**KOREA FAIR TRADE COMMISSION**

**Hearing Before Full Commission**

**Decision No. 2017-0-25** **Jan. 20, 2017**

Case Number: 2015Sigam2118

Case Name: In re Alleged Abuse of Market Dominance of Qualcomm Incorporated.

Respondent(s):

1. Qualcomm Incorporated
   5775 Morehouse Dr., San Diego, CA, United States
   Chairman: Steve M. Mollenkopf

2. Qualcomm Technologies Incorporated
   2711 Centerville Rd., Suite 400, Wilmington, DE, United States
   Chairman: Steve M. Mollenkopf

3. Qualcomm CDMA Technologies Asia-Pacific PTE Limited
   6 Serangoon North Ave. 5 #03-04, Singapore
   Directors: Wei Hsiung Lee, Cher Shen Chang, and Roawen Chen

Counsels for the Respondents
Shin & Kim
Yulchon
Yoon & Yang

## DECISION AND ORDER

1. The Respondents shall not engage in activities that interfere with other companies' business activities by compelling the following unreasonable conditions when they enter into modem chipset licensing agreements with modem chipset manufacturers that are willing to enter into such licensing agreements for the manufacture, sales, lease, use, maintenance, as well as other rights of the modem chipsets using patents belonging to the Respondents and essential for mobile communication standards such as CDMA, WCDMA, and LTE ("**Modem Chipset Licensing Agreement**"):

    a. Restricting the scope of the modem chipset manufacturer's licensed rights to sell or use its modem chipsets under the Modem Chipset Licensing Agreement.
    b. Forcing the modem chipset manufacturer to provide its trade information related to its modem chipsets, such as its customers' identity, sales volume pertaining to a specific customer, and product model information. If it is necessary to calculate the amount of royalties to be collected, the Respondents and the modem chipset manufacturer may determine the scope of information to be shared by mutual assent.
    c. Compelling the modem chipset manufacturer to license its patents to the Respondents without paying reasonable compensation and compelling the modem chipset manufacturer not to assert its patents against the Respondents as well as third parties.

2. The Respondents shall negotiate licensing terms with the modem chipset manufacturer that is willing to enter into licensing in good faith by following industry practices and complying with the following procedures:

    a. The Respondents shall deliver a draft Modem Chipset Licensing Agreement, which complies with the orders under 1 above to the modem chipset manufacturer within 60 days (or within another period if agreed to otherwise) from receiving a written request for such licensing agreement from the modem chipset manufacturer. The draft shall specifically provide a list of patents to be licensed, claims, key claim assessments, relevance to the standards, and royalty calculation method.
    b. If the modem chipset manufacturer offers alternative terms to the draft Modem Chipset Licensing Agreement offered by the Respondents, the Respondents shall negotiate those alternative terms in good faith and by following industry practices.
    c. If the Respondents and the modem chipset manufacturer are deadlocked on licensing terms and a party sends a termination notice to the other party in writing to end negotiations, the Respondents shall request the decision of an independent third party (which the modem chipset manufacturer consents to), such as the International Chamber of Commerce, World Intellectual Property Organization, and/or courts within 60 days of receipt of such request and shall comply with this independent third party's decision.
    d. The Respondents shall not file a petition for injunction against the modem chipset manufacturer with a court or government authority to prohibit the modem chipset manufacturer's manufacture, importation, and sales of its modem chipsets while engaging in the procedures specified in a though c above. Notwithstanding, this

does not apply in a situation where the modem chipset manufacturer does not comply with the procedures specified in a through c above.

3. The Respondents shall not interfere with the business of the portable telecommunications device (e.g., mobile phones and tablets) manufacturer ("**Handset Manufacturer**") by selling their modem chipsets to the Handset Manufacturer based on the condition of entering into the Modem Chipset Licensing Agreement. The Respondents' compliance with this order is not necessary when the Respondents have obtained an injunction for patent infringement because the Handset Manufacturer did not engage in licensing term negotiations with the Respondents in good faith and continued to sell its handsets using the Respondents' patents.

    a. The Respondents shall not cease, delay, or limit supply of their modem chipsets to the Handset Manufacturer based on the reason that a Modem Chipset Licensing Agreement has not been executed or has expired or has not been complied with.
    b. The Respondents shall not prohibit the Handset Manufacturer from manufacturing and selling its handsets by installing the Respondents' modem chipsets before entering into a Modem Chipset Licensing Agreement.

4. The Respondents shall modify or remove the terms of the modem chipset supply agreement that compel the Handset Manufacturer to enter into, in advance, a Modem Chipset Licensing Agreement for the purchase and use of the Respondents' modem chipsets in order for the Handset Manufacturer to modify its existing supply agreement. This order applies not only to the modem chipset supply agreement between the Respondents and the Handset Manufacturer, but also to any other agreements that have a similar effect on the Handset Manufacturer, which is prohibited by this order.

5. The Respondents shall not engage in activities interfering with the business of other companies, including the Handset Manufacturers, by compelling the following unreasonable conduct while entering into a Modem Chipset Licensing Agreement in connection with their patents essential to CDMA, WCDMA, and LTE.

    a. The Respondents shall not engage in coercive comprehensive package (or portfolio) licensing that does not separate standard essential patents from non-essential patents or group patents based on relevant standards such as CDMA, WCDMA, and LTE without seeking the Handset Manufacturer's prior consent.
    b. The Respondents, without mutual assent with the Handset Manufacturer, shall not unilaterally determine the amount of royalties to be paid by the Handset Manufacturer without a reasonable royalty assessment process in which the Respondents provide information necessary to assess the value of the licensed patents such as a list of patents to be licensed, claims, claim assessment data and relevancy to the standard, and royalty calculation method.
    c. The Respondents, without mutual assent with the Handset Manufacturer, shall not compel the Handset Manufacturer to license its patents without assessing a reasonable amount of compensation and/or compel the Handset Manufacturer to not assert its patents against the Respondents as well as third parties.

6. The Respondents shall engage in negotiation of licensing terms of the existing Modem Chipset Licensing Agreement with the Handset Manufacturer in good faith by following

industry practices and complying with the procedures specified under a through d above if the Handset Manufacturer expresses its intention to modify the existing Modem Chipset Licensing Agreement.

a. The Respondents shall convey a draft Modem Chipset Licensing Agreement that complies with the order under 5 above within 60 days (or another period if agreed to otherwise) of receipt of a written request for modification from the Handset Manufacturer.
b. The Respondents shall engage in negotiations in good faith by following industry practices if the Handset Manufacturer offers alternative terms to the draft agreement provided by the Respondents and shall comply with the procedure under 6a above.
c. If the Respondents and the Handset Manufacturer are deadlocked on licensing terms and a party sends a termination notice to the other party in writing to end negotiations, the Respondents shall request a decision of an independent third party (which the modem chipset manufacturer consents to), such as the International Chamber of Commerce, World Intellectual Property Organization and/or courts within 60 days of receipt of such request and shall comply with this independent third party's decision.
d. The Respondents shall not file a petition for injunction against the Handset Manufacturer with a court or government authority to prohibit the Handset Manufacturer's manufacture, importation, and sales of its handsets while engaging in the procedures specified under 6a though 6c above. However, this does not apply to a situation where the Handset Manufacturer does not comply with the procedures specified in 6a through 6c above.

7. The Respondents, within 30 days of receipt of these orders, shall inform all modem chipset manufacturers and Handset Manufacturers that have ever requested or obtained a license to use the Respondents patents essential to mobile communication standards such as CDMA, WCDMA, and LTE of the fact that the Korea Fair Trade Commission ("**KFTC**") has imposed these orders on the Respondents and the entire contents of the orders.

8. If the Respondents newly enter into or modify modem chipset licensing agreements, other patent licensing agreements, and/or modem chipset supply agreements with the modem chipset manufacturers or the handset manufacturers in accordance with these orders, the Respondents shall submit those newly executed or modified agreements to the KFTC within 14 days of such execution or modification.

9. The modem chipset manufacturers and handset manufacturers subject to these orders are as follows:

a. Modem Chipset Manufacturer
    i. Modem chipset manufacturer headquartered in Korea and its Korean and foreign affiliates ("**Affiliates**").
    ii. Company supplying modem chipsets to the Handset Manufacturer complying with the qualifications in 9b, i through iii below and its Affiliates.
b. Handset Manufacturer
    i. Handset manufacturer headquartered in Korea and its Affiliates.
    ii. Company selling in or into Korea and its Affiliates

iii. Company supplying handsets to a company meeting the qualifications in 9b ii and its Affiliates.

c. Modem chipset manufacturers and handset manufacturers qualified under 9a and 9b above include companies that started manufacturing or selling modem chipsets and handsets after these orders were issued.

10. If the final decisions or mandates made by the foreign courts or competition authorities are in conflict with these orders so that the Respondents are unable to comply with both decisions, the Respondents may ask the KFTC to revisit these orders.

11. The Respondents shall pay the administrative fines specified below to the Korean Government.

    a. Amount: KRW 1,031,145,000,000
        i. Qualcomm Incorporated: KRW 428,605,000,000
        ii. Qualcomm CDMA Technologies Asia-Pacific PTE Limited: KRW 602,540,000,000
    b. Due: Within 60 days from the due date specified in the Administrative Fine Notice.
    c. Place of Payment: Bank of Korea or Post Office.

## REASONING

## 1. FACTUAL BACKGROUND

### A. RESPONDENTS

*1.* The Respondent, Qualcomm Incorporated ("**QI**")[1], Qualcomm Technologies Incorporated ("**QTI**")[2] and Qualcomm CDMA Technologies Asia-Pacific PTE Limited ("**QCTAP**")[3] are United States or Singaporean companies that engage in licensing their patents necessary for mobile communication standards such as Code Division Multiple Access ("**CDMA**"), Wideband Code Division Multiple Access ("**WCDMA**"), and Long-Term Evolution ("**LTE**") to Handset Manufacturers[4], and selling modem chipsets[5] and relevant software.

*2.* The Respondents[6] have been carrying out the licensing business through Qualcomm Technology Licensing ("**QTL**") while carrying out the modem chipset business through Qualcomm CDMA Technologies ("**QCT**"). Thus, revenues from the licensing business belong to QTL while revenues from the modem chipset business belong to QCT.

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[1] Hereinafter,QI.

[2] Hereinafter,QTI.

[3] Hereinafter,QCTAP.

[4] "Handset" refers to a cellular telecommunications device where a modem chipset is installed (such as cellular phone and tablet). "Handset Manufacturer" refers to a company that manufactures handsets by itself or through other companies and sells Handsets.

[5] "Modem chipset" refers to wireless baseband chipsets or communication processors for the purpose of wireless communications. Further, "modem chipset manufacturer" refers to a company that manufactures modem chipsets by itself or through other companies, and sells modem chipsets.

[6] "Respondents" refer to QU in terms of the licensing business while QI and QCTAP prior to spin-off in 2012 and QTI and QCTAP after spin-off in 2012 in terms of the modem chipset business. Respondents refer to QI, QTI, and QCTAP when it comes to licensing and the modem chipset businesses together.

3. QTL is a part of QI, which is responsible for licensing agreements and owns almost all of the Respondents' patents. In terms of the modem chipset business, the Respondents spun off QCT from QI and merged QI into QTI, which is a wholly-owned subsidiary of QI on October 1, 2012 and QTI has been operating the modem chipset business through QCT since the restructuring.[7] Moreover, QCTAP[8] is primarily responsible for the modem chipset supply agreements with the Handset Manufacturers and QCTAP has been executing the modem chipset supply agreements with the Handset Manufacturers before the modem chipset business transferred from QI to QTI. Simply put, QTI and QCTAP under QI's control have been engaging in the modem chipset and licensing businesses respectively.

[Table 1] General Corporate Information

(As of the end of Sept. 2015, Unit: USD million)

| Respondent | Chairman | Year of Incorporation | Asset Size | Revenue | Net Income |
|---|---|---|---|---|---|
| Qualcomm | Steve Mollenkopf | 1985 | 50,796 | 25,281 | 5,268 |
| Qualcomm Technologies | Steve Mollenkopf | 2011 | 2,923 | 17,154 | 2,465 |
| Qualcomm Technology Asia-Pacific | Wei Hsiung Lee, Cher Shen Chang, and Roawen Chen | 1999 | [***] | [***] | [***] |

* Source: Materials submitted by the Respondents

4. Since incorporated in 1985, the Respondents, serving a leading role in adopting CDMA as standard technology, were engaged in a wide range of cellular telecommunications businesses regarding operation of the Base Transceiver Station Base and manufacturing cellular phones and parts until the 1990s and then started focusing on the patent licensing business and the modem chipset business from 2000 on after winding up the cellular phone and Base Transceiver Station businesses in 1990. The Respondents recorded USD 25 billion as revenue generated from the licensing and the modem chipset businesses in 2015 – the licensing business accounted for approximately 32% of the revenue.

5. [Table 2] Revenues from Licensing Business and Modem Chipset Business

(Unit: USD million)

| | 2013 | 2014 | 2015 |
|---|---|---|---|

[7] Materials submitted by the Respondents and Form 10-K submitted to the U.S. Securities and Exchange Commission in 2012.

[8] QCTAP was established on Dec. 11, 1999 and has become a wholly-owned subsidiary of QTI since QCT (a modem chipset business division of the Respondents) was transferred from QI to QTI.

| | | | |
|---|---|---|---|
| Licensing Business | 7,554 | 7,569 | 7,947 |
| Modem Chipset Business | 16,715 | 18,665 | 17,154 |

* Source: Respondent's Annual Report (10-K) in 2015

## B. JURISDICTION

*6.* The KFTC has jurisdiction over Qualcomm according to Article 2-2 of the Monopoly Regulation and Fair Trade Act because the Respondents are operating its businesses of modem chipset manufacturing and sales, software sales, patent licensing and royalty collection in the domestic and overseas market and the Respondents' activities are affecting the domestic companies' business activities and ultimately the domestic consumers.[9][10]

## C. OVERVIEW OF MOBILE COMMUNICATIONS MARKET

### 1) Overview of Mobile Communications

*7.* Wireless communications refer to a form of communications in which a wireless method such as radio waves is used to carry voice and data signals. Mobile communications are a form of wireless communications in which wireless communication is feasible not only between two fixed points but also while mobile.

[Table 3] How Mobile Communications Work
[Omitted]

### a) Evolution of Mobile Communications Method

*8.* A standard, which is an agreement to use identical protocols, is necessary to enable the transfer of voice or data between two different types of cellular phones. As the number of mobile telecommunications users and the volume of transferred data have progressively increased, mobile telecommunications technologies have developed and mobile telecommunications standards have evolved accordingly in order to efficiently use a limited range of frequencies and quickly process data.

[Table 4] Key Standard Technologies in Generation of Mobile Communication Standard

| Generation | Key Standard Technologies |
|---|---|
| First | AMPS, TACS |
| Second (1990 ~ 2012) | GSM, CDMA, TDMA, D-AMPS |
| Third (2003 ~ 2011) | CDMA 2000, UMTS (WCDMA)[11], HSDPA, HSUPA, HSPA+, |

[9] Supreme Court Mar. 24, 2006, 2004Du11275, Seoul High Court Aug. 19, 2004, 2002Nu6110 (Six Companies in Graphite Electrode Cartel).
[10] Hartford Fire Ins. V. California, 509 U.S. 764 (1993).
[11] Use hereinafter "WCDMA" for "UMTS (WCDMA)."

| | |
|---|---|
| | Wibro |
| Fourth (Since 2012) | LTE (Advanced)[12], Wibro-evolution |

*9.* Although mobile telecommunications technologies are evolving, it does not mean that a generation of standard is replaced by the other and the earlier generation disappears in the market. As there are still many users of cellphones complying with the earlier generation of standard, cellphone services based on the old technology must be available for a while in order to enable communication between cellphone users with an earlier generation of standard with a newer generation. This is called "backward-compatibility." Thus, the old generations of standards, CDMA and WCDMA are also serving a critical role in the market in addition to the latest generation of standard, LTE.

*10.* In order to enable mobile communication, a device is necessary, which is able to process voice and data generating from a cellphone in accordance with a mobile communication standard and restore the original voice and data from another cellphone. That device is the modem chipset. As the modem chipset needs backward-compatibility, a multi-mode chipset is commonly used.

**b) Features and Evolution of Mobile Telecommunications Technologies, CDMA, WCDMA, and LTE**

**(1) CDMA and WCDMA**

*11.* CDMA is a representative digital mobile telecommunications method developed by the Respondents. CDMA is a mobile telecommunications method in which different codes are assigned to each subscribing cellphone and those codes of users are transmitted through the same wireless communications resources. The Telecommunications Industry Association ("**TIA**") adopted CDMA as the US mobile communication standard in 1993. The earlier generation of CDMA was capable of transmitting voice signals but CDMA2000, the later generation of CDMA, enabled transmission of voice signals as well as data.

*12.* WCDMA was developed by the 3rd Generation Partnership Project ("**3GPP**"), which is a standard-setting organization, established by European mobile communication companies with the aim of creating an advanced second generation of the GSM standard.[13] WCDMA has enabled transmission of voice, data, and video call. WCDMA is similar in its capability of transmitting various types of communications, but differs in the method of assigning codes.[14]

[12] Use "LTE" for "LTE (Advanced)."

[13] 3GPP submitted WCDMA standard under the name of IMT-DS for third generation of mobile telecommunications standard (IMT-2000).

[14] CDMA2000 uses a single code like multiple different codes by differentiating the beginning point of the code based on the GPS absolute time while all the base transceiver stations are using a single code. By contrast, WCDMA groups base transceiver stations across the world into 512 codes and each station uses different codes by differentiating the beginning points.

*13.* WCDMA technology has steadily evolved into Release 99 with advanced voice transmission speed, HSDPA (Release 5) with advanced downward data speed, and HSPA+ (Release 7) with advanced upward and downward data speed.

[Table 5] Terminology for Mobile Communications Standards

| Standard | Subcategory of Standard | Abbreviation | Technology Method |
|---|---|---|---|
| CDMA[15] | CDMAone | IS-95A | CDMAone IS-95A |
| | | IS-95B | CDMAone IS-95B |
| | CDMA2000 | 1x | CDMA2000 1x |
| | | EVDO | CDMA2000 1xEVDO |
| | | EVDV | CDMA2000 1xEVDV |
| WCDMA | Release 99 | WCDMA | |
| | Release 5 | HSDPA | |
| | Release 7 | HSPA+ | |

**(2) LTE Technology**

*14.* The Institute of Electrical and Electronics Engineers ("**IEEE**") developed WiMax (802.16e) standard, which enhanced data transmission speed by combining Orthogonal Frequency Division Multiplexing ("**OFDM**") with an antenna technology for wireless communications, Multiple Input Multiple Output ("**MIMO**") as an alternative to CDMA technology. Further, in 2008, 3GPP, motivated by IEEE's development of the WiMax standard, set up a standard technology of LTE based on the technology developed from a combination of OFDM and MIMO, which achieved leapfrogging enhancement in data transmission speed and acceptability for high-speed communication in comparison with existing technologies.

**c) Development of Mobile Communication in Korea**

*15.* Korea Mobile Telecommunications Services Corp., a subsidiary of Korea Electricity and Telecommunications Corp., was established in 1984 and launched car-phone services by adopting the AMPS cellular system in May 1984. Since 1988, the number of cellular phones has increased and the concept of mobile phones began to change from car phones to "hand phones."

*16.* In 1993, the Ministry of Information and Communications adopted CDMA as the mobile communication standard, which had been adopted as the standard in the United

[15] 'CDMA' includes both 'CDMAone' and 'CDMA2000.'

States.[16] Since CDMA-based mobile telecommunications services were launched in Korea through a successful commercialization of CDMA in 1996, CDMA-based mobile telecommunications services have been provided in Korea. The Telecommunication Technology Association ("**TAA**") adopted CDMA as the standard for mobile communications, which uses seven approved patents applied by the Respondents in 1996; commenced a third generation of mobile communication standard services based on WCDMA in March 2004; and further, LTE service began to be provided to consumers in July 2011. Currently, first (CDMA-based)[17], second (WCDMA-based), and third (LTE-based) generation of mobile communications standards are still being used simultaneously.

[Table 6] Number of Subscribers to Mobile Communications Services and Market Share

| | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|
| CDMA | 10,753,379 | 7,741,958 | 6,331,643 | 6,331,643 |
| | 19.7% | 13.9% | 10.9% | 10.9% |
| WCDMA | 27,059,688 | 18,489,445 | 14,874,490 | 14,870,808 |
| | 49.5% | 33.2% | 25.6% | 25.6% |
| LTE | 15,811,360 | 28,449,437 | 36,001,824 | 36,087,905 |
| | 28.9% | 51.5% | 62.0% | 62.1% |
| WiBro | 1,049,788 | 983,387 | 868,481 | 868,481 |
| | 1.9% | 1.8% | 1.5% | 1.5% |
| Total | 54,674,215 | 55,664,227 | 58,076,438 | 58,158,837 |
| | 100,0% | 100.0% | 100.0% | 100.0% |

Source: Korea Communications Commission, Information on Subscribers to Wireless Telecommunications Services as of Nov. 2011

**2) Standardization of Mobile Telecommunications**

**a) Standardization and Standard Essential Patents**

**(1) Concept of Standard Technologies and Standard Essential Patents**

[16] CDMA was elected, inter alia, because CDMA was superior to other technologies in terms of subscriber capacity and CDMA, which had not been commercialized then, would likely enable Korea to achieve technology independence in case of CDMA success in Korea.

[17] KT stopped services based on second generation of standard in 2011 while SKT and LGT are still providing those services to consumers.

*17.* "Standard Technologies" refer to technologies in a certain industry adopted as standard by governments, standard-setting organizations ("**SSOs**"), or industry players.[18] Generally speaking, standard technologies are adopted by entities such as SSOs in order to prevent repetitive investments and to encourage technology developments in the relevant industry sector. SSO, which is an organization usually established to develop and voluntarily produce certain technical standards by relevant industry players, is adopting, approving, and agreeing to use specifications constituting the elected technical standard.

*18.* "Standard Essential Patents" ("**SEPs**") refer to patents that are required to be licensed to provide standard-compliant goods or services on a voluntary commitment to be licensed on fair, reasonable, and non-discriminatory ("**FRAND**") terms.[19] In other words, when ordinary industry practices and technologies to be used without licenses are considered, SEPs are patents that are essential to manufacture, sell, lease, maintain, use, operate or dispose of standard-compliant goods or services without patent infringement so that licenses to SEPs must be granted by the SEP holders.

*19.* Moreover, non-SEPs or other patents are often used to call patents that are not directly related to standard technologies. Non-SEPs refer to patents that are non-essential or are able to be used to circumvent or bypass SEPs in order to use standard technologies. Thus, non-SEPs, unlike SEPs, do not require FRAND commitments. The concept of FRAND commitments is explored in detail below.

**(2) SSOs for Mobile Communications**

*20.* There are some SSOs active in the mobile telecommunications industry such as the International Telecommunication Union ("**ITU**"), IEEE, European Telecommunications Standard Institute ("**ETSI**"), TIA, and TTA. There are also mobile communications industry collaborations between SSOs such as 3GPP (for specifications related to WCDMA and LTE), and 3GPP2 (for specifications related to CDMA).

**(3) Developing Standard Technologies and Adoption Process**

*21.* Although there are disparities in the process of developing standard technologies through SSOs and the nature of technologies to be standardized, the basic features are common. SSOs are operated by members who propose standard technologies, and then adopt finalized standard technologies through certain procedures (e.g., review by technical assessment committee and a vote of the standardization committee). Simply put, the standardization process is a process that requires collective decisions.

*22.* Moreover, SSOs do not have a process of assessing whether patents labeled as SEPs are valid or essential to the adopted standard technologies when a patent holder declares that its patents are SEPs.[20] And it is known that a considerable number of

[18] See KFTC, Guidelines on Unreasonable Exercise of Intellectual Property Rights (Amended on Mar. 23, 2016, KFTC Rule No. 247), I. 3. A(5).
[19] See KFTC, Guidelines on Unreasonable Exercise of Intellectual Property Rights (Amended on Mar. 23, 2016, KFTC Rule No. 247), I. 3. A(6).
[20] According to the ETSI Guide on IPRs (Sep. 19, 2013), "ETSI does not perform any check on the status and validity of any Essential IPRs notified to ETSI."

patents declared as SEPs have turned out to be invalid or non-SEPs through various litigations.[21] Thus, in cases where a patent holder intends to collect royalties on its patents declared as SEPs, the patent holder generally identifies the patents alleged to have been infringed and the licensees dispute such allegations.

**(4) Positive and Negative Effects of Standardization**

*23.* The upsides of standardization are as follows: first, standardization increases network externalities resulting from inter-operability enhancement. If standardization eliminates uncertainty and secures inter-operability instead, product utilities would increase in proportion to the number of users. Second, standardization would enable producers to save costs by achieving the economies of scale through innovation of production process and expansion of market. Third, standardization would improve consumer welfare through price reduction, innovation encouragement, quality enhancement because it would increase competition in the downstream market and decrease consumer switching and transaction costs.

*24.* By contrast, the downsides of standardization are as follows: first, existing competition among potentially substitutable technologies would be artificially eliminated once standard technologies are adopted and standardization would establish barriers for entry into the market. Second, as a result, a company possessing dominant standard technologies would be able to strengthen its market dominant power as SEP holders, and may be able to engage in activities interrupting implementation of the adopted standard by refusing to license SEPs or imposing unreasonable licensing terms by taking advantage of this strengthened dominant position. Third, once SSOs adopt standard technologies, it would lead to a lock-in. Sunk costs suffered by the participants in the industry such as standard-compliant component manufacturers and network service providers would increase so that the SEP holders would more likely abuse its market dominant power acquired through standardization.

**b) SEPs and FRAND Commitments**

**(1) Overview of FRAND Commitments**

*25.* While most SSOs maximize their efforts to encourage use of standard technologies and foster additional innovations with the aim of mitigating the risk of abuse of intellectual property rights, they impose an obligation on relevant patent holders to disclose their patent information and voluntarily make FRAND commitments to SSOs. Further, some SSOs have a policy of imposing a sanction of excluding non-compliant patent holders from participating in the standardization process while requiring a disclosure obligation along with FRAND commitments.

[21] According to Fairfield Resources International, a leading intellectual property consultancy, 50% ~70% of the patents declared as SEPs for GSM, WCDMA and LTE standard technologies were found to be non-SEPs. Fairfield Resources International, Analysis of Patent Declared as Essential to GSM as of June 6, 2007; Review of Patents Declared as Essential to WCDMA through December 2008; and Review of Patents Declared as Essential to LTE and SAE (4G Wireless Standards) through June 30, 2009.

*26.* In this light, it is reasonable that the FRAND commitment is a move to accept licensing on FRAND terms. Thus, once the SEP holders commit to licensing on FRAND terms, they have an obligation to license the SEPs on FRAND terms.[22]

**(2) FRAND Policy of Major SSOs**

*27.* The ITU, International Organization for Standardization ("**ISO**"), and International Electro-Technical Commission ("**IEC**") announced the Common Patent Policy for ITU-T/ITU-R/ISO/IEC in March 2007, which compares and coordinates the patent policies set up and operated by each SSO starting from November 2004. A key theme of the policy is that the SEP holders are required to declare a FRAND commitment[23] to willing licensees who are willing to pay fair and reasonable royalties, and shall be excluded from participating in standardization if failing to comply with this policy.

[Table 7] Common Patent Policy for ITU-T/ITU-R/ISO/IEC

| |
|---|
| (a) Any party participating in the work of these organizations should, from the onset, draw their attention to any known patent or to any known pending patent application, either its own or that of other organizations.<br><br>(b) If the patent holders do not engage in negotiation of the free or paid licensing agreements on FRAND terms even though the standard is already developed and information of (a) is disclosed, the patents shall not be included in the adopted standard technologies.<br><br>(c) The patent holders shall submit a "Patent Statement and Licensing Declaration" to these organizations. |

*28.* ETSI has a similar IPR policy. According to the policy, the SEP holders are required to submit an irrevocable written commitment stipulating that it is prepared to grant irrevocable licenses on FRAND terms.[24]

*29.* IEEE, which adopted some key standards including the Wi-Fi technology standard in February 2015, revised its IPR policy to specifically define the meaning of the RAND commitment. IEEE, after obtaining its board's approval, released its IPR policy, under

[22] The Seoul central district court in litigation between Samsung Electronics and Apple held that "the FRAND declaration is merely a general principle that the SEP holders are obliged to engage in negotiation of licensing agreements in good faith and on FRAND terms, and considering the totality of the circumstances including admitted facts based on the presented evidence, it does not mean that: an automatic licensing of the SEPs should be granted to unspecified third parties, a binding and non-cancellable commitment to licensing the SEPs is made, or a person who has used or will use the SEPs should be licensed to the SEPs on FRAND terms." (Seoul Central District Court Aug. 24, 2012, 2011Ga-Hap395512).

[23] In connection with the extent of licensing on FRAND terms, Article 6.1 of ETSI IPR policy includes "MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee's own design for use in MANUFACTURE; sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED; repair, use, or operate EQUIPMENT; and use METHODS." Thus, hereinafter, "license" is interpreted to mean those rights.

[24] ETSI, Intellectual Property Right Policy Article 6.1 ("the Director-General shall immediately request the owner to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licenses on fair, reasonable, and non-discriminatory ("FRAND") terms and conditions under such IPR […]."

which the SEP holder shall (1) make available a license for its SEPs to an unrestricted number of applicants on a worldwide basis without compensation or under a reasonable rate, with other reasonable terms and conditions that are demonstrably free of any unfair discrimination; (2) not file a petition for injunction against willing licensees or applicants; and (3) assign the obligation to license on RAND terms when its SEPs are to be assigned to a third party.

[Table 8] Intellectual Property Rights Policy of Major SSOs

| | ISO/IEC/ITU | ETSI | IEEE |
|---|---|---|---|
| Disclosure Obligation | Scope: Required to disclose SEPs and pending patent applications<br><br>Timing: Beginning of Standardization | Scope: Required to disclose SEPs and pending patent applications<br><br>Timing: "As early as possible" is recommended | Scope: May (not required to) disclose SEPs and pending patent applications<br><br>Timing: Opportunities to disclose are given to participants at the beginning of the meeting. |
| Patent Search Obligation | | Not required | Not required |
| Licensing Rules | Licensing on RAND terms or free of charge | Licensing on FRAND terms<br><br>Even in the case where a non-participating third party holds SEPs, ETSI may require the third party to license on FRAND terms. | Licensing on RAND terms or free of charge |
| Refusal to License | Notice of patent number, claims and relevant specifications<br><br>(recommended in ISO/IEC while required in ITU) | Exclude technologies using the patents at issue from standards and re-develop standards bypassing the patents at issue | Exclude technologies using the patents at issue from standards |

| | | | |
|---|---|---|---|
| | Relevant committees exclude technologies using the patents at issue from standards (amend or remove standards) | ETSI may sanction intentionally delayed disclosure | |
| Negotiation Rules | Negotiation outside of ISO/IEC/ITU | Prohibited from negotiation of commercial terms within ETSI | Prohibited from discussing the scope of the patent rights to be licensed or pricing<br><br>Comparison of technologies is allowed to elect the most proper technologies during the course of standardization |

**(3) Consequence of Non-Compliance with FRAND licensing obligations**

**(a) Competitive Effect of Non-Compliance with FRAND licensing obligations**

*30.* From the competition law perspective, the FRAND commitment required to be taken by SEP holders is the only way to restrict the abuse of the SEP holders' dominant position and it also replaces competitive technologies that would have existed without the standardization process. Therefore, non-compliance with FRAND terms would result in eliminating the only method of preventing activities restraining competition in a situation where no competing technologies exist in the market. Specifically, in terms of the competitive concern that could result from violations of FRAND commitments, (1) the EU Commission noted such violations would raise competitive concerns such as the distortion of the standardization process and imposition of unfavorable licensing terms to licensees [25] ; (2) the US Federal Trade Commission addressed distortion of the standardization process such as diminishing efficiencies from standardization and

[25] EU Commission, Case AT.39985 – Motorola – Enforcement of GPRS Standard Essential Patents (April 29, 2014).

increasing production costs for standard-compliant goods and passing this on to consumers.[26]

*31.* On the other hand, the anti-competitive effects caused by these breaches of FRAND commitments can be assessed differently depending on the existence of competing standards that can substitute, or compete in the downstream product market to which the standard applies.

*32.* First, in the market for technology licenses, even if there is no other technology that can be a substitute for the given SEPs, if there is a standard that can replace the current standard then the abuse of its dominance by the SEP holder can be adequately controlled. Moreover, even in the absence of a substitute standard, if there is healthy competition in the downstream market (in which the standard applies) with those products that do not apply the standard, the influence of the SEP can be diminished and each SEP holder's monopolistic position can be held in check by the competition in the downstream product market.[27] Even in the case of the SEP holder's breach of the FRAND commitments, leading to an increase in manufacturing costs in the product market, because consumers can use other substitute products, SEP holder's abuse of dominance will be limited by the downstream market's competition structure.

*33.* However, if the aforementioned two conditions are not applicable (i.e., there is no substitute standard for the given standard and there is no means to limit the abuse of monopoly power using the competition structure of the downstream market for which the standard applies) then the FRAND commitments made at the SSO remains to be the only means to prevent the patent holder's abuse of dominance.

*34.* However, when it comes to the cellular standards, WCDMA and LTE standards are standards that were set following a standard setting procedure to select the globally uniform cellular standard by an international standard setting organization, such that, there essentially exists no other substitutable standard, and there is effectively no adjacent product market that can substitute for the standard compliant products in modem chipsets and handsets. Therefore, in cellular standards, the breach of FRAND commitments directly increases the price of manufacturing costs of the standard compliant products, such as modem chipsets and handsets, thereby hindering the wide adoption of the standard, suppressing the innovation of the related technology, and ultimately resulting in a decrease in consumer welfare brought on by the anti-competitive effect. In addition, by breaching the self-declared FRAND commitments during the standard setting process, the standard setting procedure that can be characterized as the standards' competing process is corrupted, which results in the failed operation of competition among technologies.

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[26] United States of America before the Federal Trade Commission, Docket No. C-4410.

[27] For example, even though there is only one standard to manufacture and use the Blu-ray media that is used as a form of portable storage device, there exist other portable storage devices, such as the USB that can be a substitute product and is manufactured and used with another standard. Although there is no substitutability between the two standards used by each storage device, it is possible to find substitutability between the products of the Blu-ray and USB that were manufactured using different standards. Therefore, if substitutability can be found between products in the downstream market to which the standards are applied, the exercise of monopolistic power by SEPs essential to each standard for the storage devices can be limited through competition between the substitutable products in the downstream market.

**(b) The effects of breach of FRAND Commitments by a vertically integrated monopolistic enterprise**

*35.* FRAND commitments take on an especially important meaning to the vertically integrated monopolistic enterprise that participates in the downstream market and dominates the market. As seen previously, the purpose in setting a cellular standard is to allow for artificial monopolistic positions in the technology license market, in exchange for encouraging innovation and promoting competition in the standard compliant downstream market.

*36.* However, if the SEP holder is contemporaneously participating in the downstream market by manufacturing the SEP practicing products, the SEP holder gains the position of a vertically integrated enterprise in the SEP license market as well as downstream component market. When a SEP holder who is also a vertically integrated enterprise takes advantage of its monopoly power in the technology market and limits the competition in the downstream product market, any perceived benefit from setting the standard would be lost and replaced by the harmful effects of the monopoly. Indeed, a breach of FRAND commitments by the vertically integrated enterprise will produce identical results of excluding its competitors from the downstream component market. For example, in case the vertically integrated enterprise, as a member of the downstream component market, were to deny the SEPs held by the enterprise to a manufacturer of competitive products in violation of its FRAND Commitments, the manufacturer of competitive products would have a competitive disadvantage in competition with the vertically integrated enterprise because the manufacturer of competitive products would be selling defective products that are at risk of patent infringement due to the lack of SEP license.

*37.* Such effects are more evident when the vertically integrated enterprise is a monopolistic or market dominant enterprise in the downstream component market. A vertically integrated enterprise that is not a monopolistic or market dominant enterprise in the downstream component market, can exclude a competing enterprise and solidify its dominance in the downstream market by refusing to grant a license to the SEPs, but at the same time, there is also an effect of decreased royalty revenue, that could have been collected from the competing enterprise had the license been provided to it, and because of lack of dominance in the downstream component market, it will be more difficult to collect royalties from the downstream component consumer and require the consumer to execute an agreement to that effect using the market dominance. However, the situation would be different when the vertically integrated enterprise is a monopolistic or market dominant enterprise in the downstream component market. The vertically integrated enterprise can exclude a competing enterprise from the downstream product market and solidify its dominance in the downstream component market by refusing to grant a license related to SEPs in the downstream product market, and at the same time, it can maximize its profits by executing a license agreement with the downstream component consumer and receiving royalties by taking advantage of the dominance in the downstream component market.

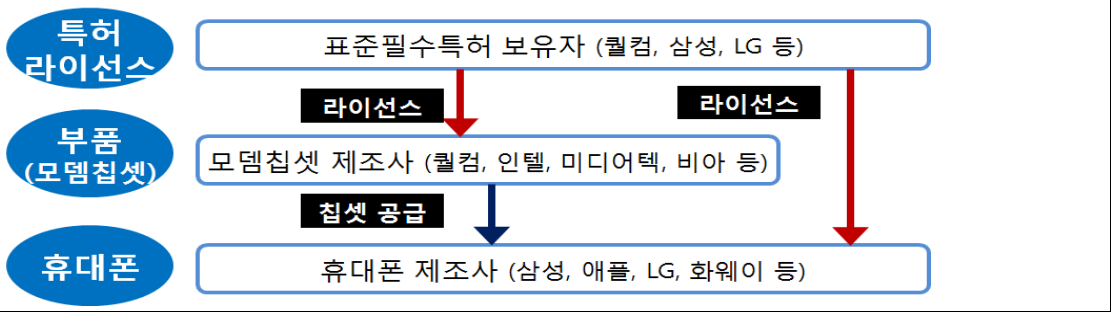
*38.* Therefore, where the SEP holder is also a monopolistic or market dominant enterprise in the downstream component market, requiring that a license be provided to its competition in compliance with its FRAND commitments takes on an even more important meaning in

limiting the anti-competitive effects in the patent license market as well as the downstream component market.

**3) The structure of mobile communications market**

*39.* The mobile communications market is mainly comprised of the patent license market, components market (such as modem chipsets used in handsets), and handset market.

[Table 9] Overview of front- and back-end market structure of mobile communications industry




*40.* In the mobile communications patent license market, the source technology owner who developed the given communication method becomes a supplier. The Respondents retain most of the CDMA SEPs, the Respondents have secured the most number of WCDMA and LTE SEPs, but other enterprises, including Samsung Electronics, Interdigital ("**IDC**"), LG Electronics, Nokia, Ericsson, also retain a substantial number of patents. The source technology owners license their patented technology to components manufacturers such as those who make modem chipsets, the handset companies, and communication equipment manufacturers, and receive royalties in return.

*41.* The component manufacturers, such as those who manufacture modem chipsets, obtain the license from the source technology owners then manufacture various components that get integrated into handsets and sell the components to the handset companies. However, there are instances where the source technology owners, like the Respondents, directly manufacture handset components.[28]

*42.* The handset companies manufacture handsets by integrating the components and software and make payments for royalties on the patented technologies that are practiced in the handsets. After manufacturing the handsets, the handset companies sell them to the wireless carriers or consumers, and the wireless carriers provide mobile communication services to the consumers.

**a) Patent license market by communication standards**

**(1) Licensed handset market share by communication standard**

[28] As explained above, these enterprises are called "vertically integrated enterprises," and the Respondents are not only vertically integrated enterprises operating in the patent license market and modem chipset market that comprise the upper stages of the entire market structure, they are also dominant vertically integrated enterprises that hold dominant positions in both markets.

*43.* Communication standards are categorized by generation, and within each generation, there may be one or more communication standards; in the case of the second generation standard, 19% of the global handset market adopted CDMA, and 81% adopted the GSM standard. Further, for the third generation standard that began in the early 2000s, the WCDMA market retains 85%, CDMA2000 market retains 13%, and the China adopted TD-SCDMA market retains 2% share of the market, and as for the 4th generation that began around 2012, the entire global cellphone market is compliant with the single LTE standard.

*44.* As a result, in the case of the second generation standard, only 19% of the entire handset market was subject to the Respondents SEPs license, whereas, after the third generation standard, essentially all of the global handset market was subject to the Respondents' license, such that the actions of the Respondents, an active participant as a vertically integrated enterprise in both the patent license market and the modem chipset market, took on a more important meaning in terms of the market competition situation.

[Table 10] Market share by mobile communication standard[29]

| | Communication standard | Major function | Handset market share |
|---|---|---|---|
| 2G (1990 ~ 2012) | GSM | Voice/text | 81% |
| | CDMA | | 19% |
| 3G (2003 ~ 2011) | WCDMA | Voice/video communication, data communication | 85% |
| | CDMA2000 | | 13% |
| | TD-SCDMA | | 2% |
| 4G (2012~) | LTE | High speed data communication | 100% |

**(2) Overview of Patentees Owning SEPs by communication standard**

*45.* Looking closely at the SEP license market within the mobile communication patent license market, the second generation CDMA standard was essentially the Respondents' independently developed technology, such that the Respondents' SEPs accounted for more than 90% of the total second generation SEPs. However, as for the third generation WCDMA and 4th generation LTE standards, the Respondents as well as a number of patent owners contributed to the development of the technologies, wherein the Respondents' SEP shares decreased to 27% and 16%, respectively. In this regard, even for one SEP, in order to manufacture and sell the standard compliant product, the implementation of the SEP is required. Considering the fundamental nature of the SEPs, the decrease in the Respondents' share of SEPs does not mean a decreased need to execute a license agreement with the Respondents as well. However, the change in

[29] Based on Strategy Analytics, "VENDOR SHARE Global Handset Market by Technology," 2G data is based on the aggregate sales volume between 1990 and 2002, 3G data is based on the same between 2003 and 2015. In addition, the source does not make a distinction between CDMA as second generation (CDMAOne) and third generation (CDMA2000), the distinction was made based on the year 2003 when the third generation began gaining wide acceptance, such that sales prior to year 2002 were categorized as second generation and sales in 2003 and thereafter were categorized as third generation.

share of SEPs owned, depending on the circumstances, may be an element to be considered in calculating the royalty payments.

[Table 11] Ownership of WCDMA SEPs by Company

(Source: ETSI Homepage; Unit: patent)

| | Company | Public | Registered | Total |
|---|---|---|---|---|
| 1 | Respondents | 786 | 1042 | 1,828(27.3%) |
| 2 | IDC | 293 | 670 | 963(14.4%) |
| 3 | Nokia | 214 | 745 | 959(14.3%) |
| 4 | Ericsson | 175 | 431 | 606(9.1%) |
| 5 | LG | 78 | 426 | 504(7.5%) |
| 6 | Huawei | 224 | 183 | 407(6.0%) |
| 7 | Blackberry | 141 | 213 | 354(5.3%) |
| 8 | Apple | 97 | 185 | 282(4.2%) |
| 9 | Motorola | 48 | 219 | 267(4.0%) |
| 10 | NEC | 128 | 137 | 265(4.0%) |
| 11 | Samsung Electronics | 59 | 201 | 260(3.9%) |
| Total Declared | | 2,243 | 4,452 | 6,695 |

[Table 12] Ownership of LTE SEPs by Company

(Based on ETSI Webpage; Unit: patent)

| | Company | Public | Registered | Total |
|---|---|---|---|---|
| 1 | Respondents | 808 | 839 | 1,647(16.0%) |
| 2 | Samsung Electronics | 503 | 536 | 1,039(10.0%) |
| 3 | IDC | 346 | 560 | 906(8.8%) |
| 4 | LG | 398 | 481 | 879(8.5%) |
| 5 | Nokia | 196 | 521 | 717(6.9%) |
| 6 | Ericsson | 315 | 391 | 706(6.8%) |
| 7 | Huawei | 255 | 176 | 431(4.2%) |
| 8 | Panasonic | 137 | 260 | 397(3.8%) |
| 9 | Motorola | 110 | 284 | 394(3.8%) |
| 10 | NEC | 170 | 167 | 337(3.3%) |
| Total Declared | | 4620 | 5708 | 10,328 |

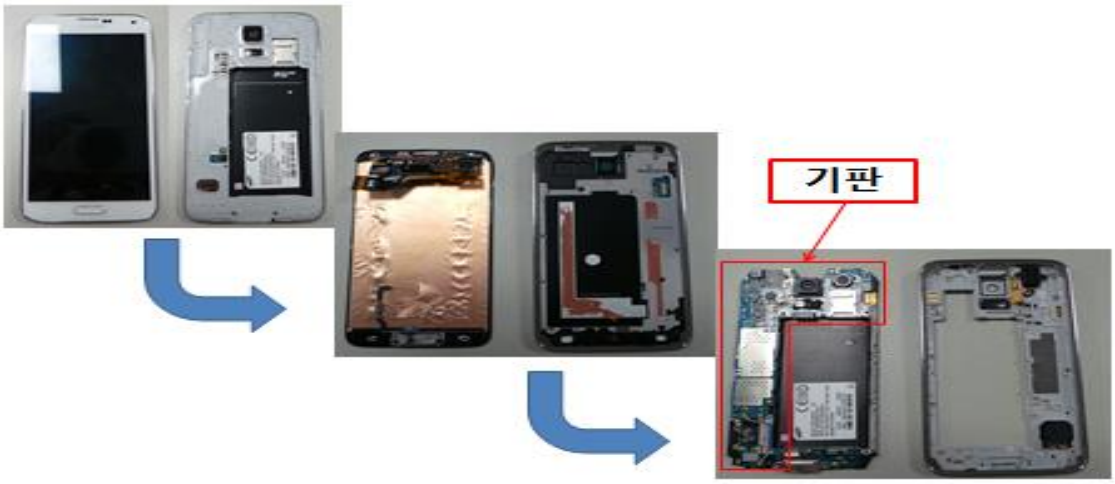
**b) Component Market**

**(1) Components comprising a handset**

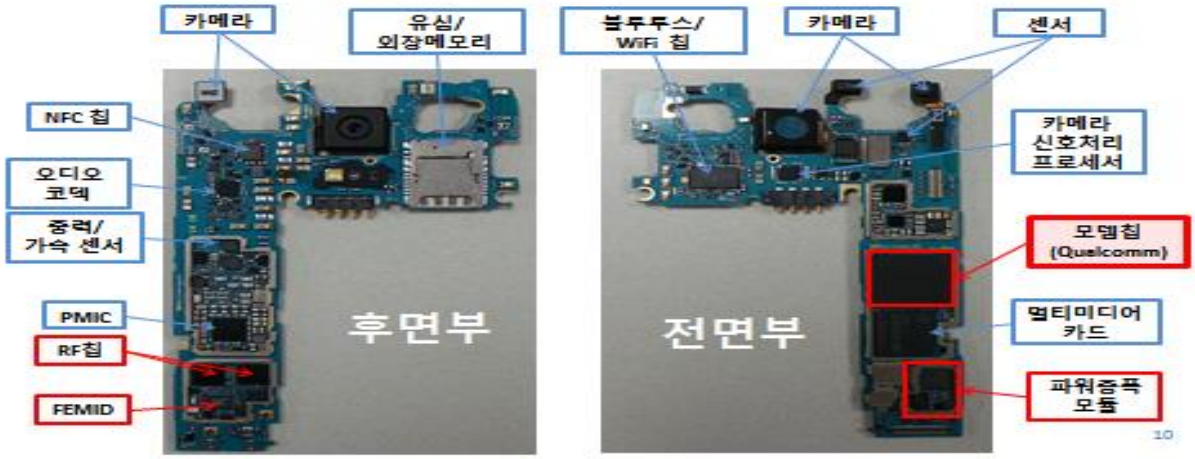
*46.* Actually, the only function of early handsets was voice communication. The core function can be said to be integrated into the modem chipsets. In contrary, recent smartphones

are considered as a do-it-all IT device that offers more than the function of a mobile communication phone. Consequently, the latest smartphones integrate convenient operating systems, fast program processing speed, high resolution cameras, touchscreens, and displays, and to that end, various components are integrated, including display, memory, wireless module, camera module, application processor ("**AP**"), and power management chips, among others. Below shows the handset's internal structure and main components, and those denoted in red letters are mobile communication related components.

[Table 13] Handset's internal structure and main components




Printed circuit board




(clockwise from the bottom left) FEMID, FR Chip, PMIC, gravity/accelerometer, audio codec, NFC chip, camera, USIM/expandable memory, blutooth/wifi chip, camera, sensor, camera signal processor, modem chip, multimedia card, power amplification module.
(in white letters) back/front

*47.* With the latest handsets evolving into multiple function integrated do-it-all IT devices, the latest smartphone price accounts for expensive components, including the high performance camera and high resolution display, among others, so that the price of the handsets are now approaching between USD 350 and USD 700. As a result, modem

chipsets, priced at between USD 20 and USD 40 on average, account for 4% of the entire price of the handset.

[Table 14] Handset main components and a rough price structure

| Component | Price | Percentage |
|---|---|---|
| Modem chipset (Communication Chipset) | *** | *** |
| Memory | *** | *** |
| AP (Application Processor) | *** | *** |
| High resolution display | *** | *** |
| High performance camera | *** | *** |
| WiFi, bluetooth, GPS | *** | *** |
| Battery | *** | *** |
| Miscellaneous | *** | *** |
| (Components subtotal) | *** | *** |
| Marketing expenses, R&D expenses, labor costs, other expenses, profits, etc. | *** | *** |

Source: submission of handset companies

**(2) Modem chipset market**

**(a) Function of modem chipsets**

*48.* Among handset components, modem chipset refers to a chipset[30] manufactured to carry out modulation and demodulation functions in one chip. In the case of a modem chipset made for mobile communication the signal is transmitted via a transmission channel using a high frequency signal, such as 2GHz, whereby the modulated output signal from the modem chipset is converted into high frequency before being transmitted through an antenna. Conversely, the high frequency signal received through the antenna is converted into low frequency and inputted into the modem chipset. For this reason, the modem chipset is often referred to as a baseband chipset.

*49.* Recently, in accordance with the improvement in semiconductor integration technology, there emerged AP-Modem combined chipsets[31] combining the AP[32] that used to be manufactured separately. AP-Modem combination chipsets have the advantage of lowering the manufacturing cost of the handsets compared to implementing the modem and the AP in separate chips and minimizing the size of the handset, but the downside is

[30] Modem is a combined word resulting from modulation and demodulation. Modulation refers to a function of converting digital information, for the purpose of transmitting the information, into appropriate symbols or signals suitable for the communication channel's characteristics. Conversely, demodulation refers to extracting digital information from the symbols or signals that were converted into the form useable in the channel.

[31] With regard to the global smartphone AP market (including AP-Modem combined chipsets), the Respondents' market share continuously increased from 34.8% in 2013, 36.6% in 1st Q. of 2014, and 41.4% in second Q. of 2014.

[32] AP(Application Processor) is a processor installed on a handset that operates the operating system and application programs, as well as controlling the various peripheral devices and interfaces, including the user's memory, camera, keypad, and the display.

that the development period is longer and the response time to the speed of the technological improvements is relatively slow.

*50.* On the other hand, even with the increase of the phones that adopt the latest LTE standard, due to the backward compatibility of the mobile communication standards requiring the ability to communicate with users of handsets implementing the second generation CDMA and third generation WCDMA, present modem chipsets are generally multi-mode baseband chipsets that generally support 4th generation LTE, and older standard CDMA, WCDMA mobile communication standards.[33]

**(b) Market condition of modem chipsets**

*51.* The modem chipset market experienced a huge growth after 2008, such that, the sales volume for 2015 is double that of 2008 at USD 21,264 million dollars. During the process of the entire modem chipset market growth, Respondents increased its market share dramatically from 36.8% in 2008 to 59.4% in 2015 and maintained the position of a top company in the market. On the contrary, during the same period, most of the modem chipset companies experienced a decrease in their market share, and some companies even exited the market, and there were no modem chipset companies that were able to make an entry into the market and obtain meaningful market share.[34]

[Table 15] Global modem chipset market condition[35]

(Unit: USD million)

| Company | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| Respondents | 4,092 (36.8%) | 4,417 (40.0%) | 5,248 (39.9%) | 6,764 (45.0%) | 9,174 (52.6%) | 12,251 (63.1%) | 14,660 (66.1%) | 12,626 (59.4%) |
| Media Teck | 1,291 (11.6%) | 1,890 (17.1%) | 1,911 (14.5%) | 1,736 (11.5%) | 2,132 (12.2%) | 2,486 (12.8%) | 3,737 (16.9%) | 4,133 (19.4%) |
| Spreadtrum | 98 (0.9% | 78 (0.7%) | 295 (2.2%) | 530 (3.5%) | 647 (3.7%) | 967 (5.0%) | 1,125 (5.1%) | 1,452 (6.8%) |
| Samsung Electronics | - | - | 13 (0.1%) | 72 (0.5%) | 103 (0.6%) | 139 (0.7%) | 231 (1.0%) | 1,249 (5.9%) |
| Intel | 643 (5.8%) | 872 (7.9%) | 1,590 (12.1%) | 2,315 (15.4%) | 2,227 (12.8%) | 1,470 (7.6%) | 561 (2.5%) | 346 (1.6%) |
| Marvel | 125 (1.1%) | 154 (1.4%) | 250 (1.9%) | 316 (2.1%) | 345 (2.0%) | 508 (2.6%) | 674 (3.0%) | 353 (1.7%) |
| Via | 45 (0.4%) | 62 (0.6%) | 96 (0.7%) | 152 (1.0%) | 156 (0.9%) | 108 (0.6%) | 72 (0.3%) | 35 (0.2%) |
| Broadcom | 78 | 240 | 483 | 813 | 889 | 699 | 365 | - |

[33] "LTE modem chipset" not only refers to modem chipsets that solely implement the LTE standard, but also includes multi-mode chipsets that support backward standards, including CDMA or WCDMA. It is the same with regard to WCDMA modem chipsets.

[34] Samsung Electronics has been manufacturing modem chipsets for its own captive use in accordance with the Modem Chipset Licensing Agreement with the Respondents.

[35] Market share was based on the total sales, and is as stated below.

| Company | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| | (0.7%) | (2.2%) | (3.7%) | (5.4%) | (5.1%) | (3.6%) | (1.6%) | |
| nVidia | 14 (0.1%) | 32 (0.3%) | 68 (0.5%) | 89 (0.6%) | 48 (0.3%) | 5 (0.0%) | 12 (0.1%) | - |
| Ericsson | 1,417 (12.7%) | 1,134 (10.3%) | 1,045 (7.9%) | 770 (5.1%) | 896 (5.1%) | 343 (1.8%) | 16 (0.1%) | - |
| Renesas | 157 (1.4%) | 143 (1.3%) | 175 (1.3%) | 142 (0.9%) | 44 (0.3%) | 5 (0.0%) | - | - |
| TI | 2,538 (22.8%) | 1,725 (15.6%) | 1,715 (13.0%) | 1,026 (6.8%) | 288 (1.7%) | 26 (0.1%) | - | - |
| ⋮ | ⋮ | ⋮ | ⋮ | ⋮ | ⋮ | ⋮ | ⋮ | ⋮ |
| Total | 11,120 | 11,042 | 13,140 | 15,034 | 17,437 | 19,415 | 22,165 | 21,264 |

Source: Strategy Analytics “Baseband Market Share Tracker”

*52.* This trend is similarly shown in the modem chipset markets for each of the CDMA, WCDMA, and LTE Standards. Particularly in the CDMA modem chipset market, the Respondents have until recently maintained higher than 90% market share, even in the LTE modem chipset market that has seen its share gaining dramatically in the combined all modem chipset markets, with the Respondents recording 96% market share in 2013 and maintaining a 70% level until recently. The Respondents are overwhelmingly the No. 1 enterprise in the market.

[Table 16] Global CDMA modem chipset market share

| Companies | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| Respondents | 98.4% | 97.6% | 96.4% | 94.3% | 92.4% | 93.1% | 91.6% | 83.1% |
| TI | 0.0% | - | - | - | - | - | - | - |
| Via | 1.6% | 2.4% | 3.6% | 5.7% | 7.6% | 6.9% | 8.4% | 16.9% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Strategy Analytics “Baseband Market Share Tracker”

[Table 17] Global LTE modem chipset market share

| Companies | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| Respondents | - | - | 34.2% | 58.8% | 94.5% | 96.0% | 84.8% | 69.4% |
| Media Tek | - | - | - | - | - | - | 4.1% | 13.7% |
| Samsung Electronics | - | - | 65.8% | 26.9% | 3.1% | 2.0% | 1.9% | 7.9% |
| Spreadtrum | - | - | - | - | 0.0% | 0.0% | 0.3% | 0.9% |
| HiSilicon | - | - | - | 0.1% | 0.0% | 0.3% | 3.4% | 3.7% |
| Intel | - | - | - | - | - | 0.7% | 1.2% | 1.0% |
| Sequence | - | - | - | 0.0% | 0.0% | 0.0% | 0.1% | 0.2% |
| Marvel | - | - | - | - | - | 0.2% | 3.3% | 2.0% |

| Companies | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| Altair | - | - | - | 0.1% | 0.0% | 0.2% | 0.4% | 0.3% |
| Leadcore | - | - | - | - | - | - | 0.0% | 0.9% |
| GCT | - | - | - | 4.4% | 0.6% | 0.4% | 0.1% | 0.0% |
| Broadcom | - | - | - | - | - | 0.0% | 0.1% | - |
| nVidia | - | - | - | - | 0.0% | 0.0% | 0.1% | 0.0% |
| Ericsson | - | - | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | - |
| Renesas | - | - | - | - | - | 0.0% | - | - |
| Mics. | - | - | - | 9.7% | 1.7% | 0.2% | 0.0% | 0.0% |
| Total | - | - | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Strategy Analytics "Baseband Market Share Tracker"

*53.* Even in the WCDMA modem chipset market, the Respondents only held less than 20% market share until 2005, but thereafter, the share steadily climbed, and between 2011 and 2013, the Respondents maintained more than 50% market share; and the figure went up as high as 53.9%. However, recently the Respondents' share decreased in the WCDMA modem chipset market, but after 2014 the modem chipset markets have been rapidly realigning around the LTE standard so that the WCDMA modem chipset market size in 2015 decreased to 1/3 or 1/4 of the size of the LTE modem chipset market. The trend has become more apparent, and the WCDMA modem chipset market size in 3Q of 2016 is less than 1/10 of the size of the LTE modem chipset market. The Respondents are no longer introducing new models of the WCDMA modem chipset after 2013.

[Table 18] Global WCDMA modem chipset market share

| Companies | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| Respondents | 38.8% | 47.4% | 45.7% | 55.0% | 50.4% | 53.9% | 48.8% | 32.3% |
| Media Tek | - | - | 0.7% | 2.3% | 11.1% | 15.5% | 31.2% | 35.9% |
| Spreadtrum | - | - | - | - | 0.0% | 0.9% | 7.4% | 23.9% |
| HiSilicon | 0.4% | 0.7% | 0.5% | 0.7% | 0.6% | 0.2% | 0.5% | 0.5% |
| Intel | 4.7% | 9.5% | 14.4% | 16.8% | 15.6% | 11.8% | 3.8% | 2.9% |
| RDA | - | - | - | - | - | - | 0.5% | 2.6% |
| Marvel | 0.9% | 1.8% | 3.0% | 3.0% | 1.4% | 4.3% | 2.9% | 0.8% |
| Rockchip | - | - | - | - | - | - | - | 0.5% |
| Freescale | 2.2% | 1.0% | 0.5% | 0.3% | 0.1% | 0.0% | - | - |
| Broadcom | 2.1% | 1.3% | 1.3% | 3.9% | 9.7% | 9.3% | 4.7% | 0.5% |
| nVidia | 0.4% | 0.8% | 1.2% | 1.2% | 0.6% | 0.1% | 0.0% | 0.0% |
| Ericsson | 15.1% | 11.7% | 6.8% | 3.6% | 7.1% | 3.4% | 0.1% | - |
| Renesas | 4.6% | 3.6% | 3.0% | 1.9% | 0.5% | 0.1% | - | - |
| TI | 30.7% | 22.3% | 22.9% | 11.3% | 3.0% | 0.3% | - | - |
| Misc. | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 0.1% | 0.0% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Strategy Analytics "Baseband Market Share Tracker"

[Table 19] Global WCDMA and LTE modem chipset sales revenue

(Unit: USD million)

| | 2012 | 2013 | 2014 | 2015 | 2016 | | |
|---|---|---|---|---|---|---|---|
| | | | | | 1Q | 2Q | 3Q |
| LTE | 3,296 | 6,884 | 12,051 | 15,864 | 4,137 | 4,879 | 5,302 |
| WCDMA | 8,216 | 7,453 | 7,406 | 4,471 | 632 | 558 | 477 |

Source: Strategy Analytics "Baseband Market Share Tracker"

**(c) Modem Chipset Market Participants**

**① Respondents**

*54.* The Respondents manufactured its first modem chipsets in 1999. Thereafter, they began manufacturing AP-Modem Combination Chipsets, and in 2008 started selling in earnest the combination chipset that supported the GSM, WCDMA, CDMA2000 standards. The Respondents then released in 2012, an AP-Modem Combination Chipset that supported the GSM, WCDMA, CDMA2000 standards as well as the LTE standard. As of 2015, the Respondents have 59.4% market share of the global modem chipset market.

**② Modem chipset companies other than the Respondents**

*55.* (i) MediaTek: MediaTek, which is headquartered in Taiwan, entered into the WCDMA modem chipset market in 2010. Focused on mainly China and other Asian markets, it supplies chipsets used in mid- to low-end smartphone products. It started selling LTE modem chipsets from 2014. As of 2015, MediaTek retains 19.4% market share of the global modem chipset market.

*56.* (ii) Spreadtrum: Spreadtrum is a Chinese company that started developing modem chipsets since 2004, and presently sells modem chipsets that support GSM, WCDMA, and LTE standards.[36] As of 2015, Spreadtrum has 6.8% market share of the global modem chipset market.

*57.* (iii) Samsung Electronics: Samsung started developing modem chipsets from 1999, and recently manufactured and used modem chipsets and AP-Modem Combination Chipsets supporting GSM, WCDMA, and LTE standards in its smartphone models targeting Korea and other territories. As of 2015, Samsung has 5.9% market share of the global modem chipset market. However, Samsung may only consume its modem chipsets for use in its own smartphone models and may not sell its modem chipsets to the other handset companies pursuant to the patent license agreement with the Respondents.

*58.* (iv) Intel: Intel is a semiconductor manufacturing company headquartered in the U.S. Near the end of 2010, Intel acquired the modem business unit of Germany's Infineon that had products and technology supporting GSM, WCDMA modems and RF technology and products. Currently, Intel is supplying modem chipsets and AP-Modem Combination Chipset products that support WCDMA and LTE.[37] As of 2015, Intel has 1.6% market share of the global modem chipset market.

[36] Spreadtrum was merged into Tsinghua Unigroup, Ltd. as of July 2013.

[37] In 2014, Intel acquired 20% interest of Tsinghua Unigroup which owns Spreadtrum and RDA. Intel develops and sells AP-Modem Combination Chipsets jointly with Spreadtrum and RDA.

59. (v) VIA: VIA is a company headquartered in Taiwan. VIA began its CDMA modem chipset business in 2002. From 2009 until present, VIA is the only company other than the Respondents that supply CDMA modem chipsets. As of 2015, VIA has 0.2% market share of the global modem chipset market and 16.5% market share of the CDMA modem chipset market. However, it does not have the ability to supply multimode modem chipsets that support WCDMA and LTE standards, instead supplying CDMA modem chipsets to be used in mainly low-end cellphones.

60. (vi) Broadcomm: Broadcomm is a company headquartered in the U.S. It entered the modem chipset market around 2004, released modem shipsets and AP-Modem Combination Chipsets that support GSM, WCDMA, and LTE standards, but exited from the modem chipset business in June 2014.

61. (vii) Nvidia: Nvidia is a U.S. semiconductor company that, after acquiring Icera around February 2011, released AP-Modem Combination Chipsets around February 2013, but exited from the modem chipset market in May 2015.

62. (viii) ST-Ericsson: Ericsson is a Swedish communication equipment company. Ericsson split off its wireless business in February 2009 and established a joint venture with ST, ST-Ericsson dissolved in August 2013. Thereafter, the modem chipset business of ST-Ericsson was acquired by Ericsson, but it exited from the modem chipset market in September 2014.

63. (ix) Eonex: Eonex is a Korean modem chipset development/ architecture company. In 2000, it supplied modem chipsets to LG Electronics, among others, but closed its business in 2009.

**c) Handset Market**

64. The handset market, a subordinate market of the modem chipset market, was led by leaders in the industry such as Samsung Electronics, Apple and Nokia. However, today, Nokia is losing its market share with Apple's[38] market share on the rise.

[Table 20] Number of units sold by vendors in the global handset market and their market share

(Unit: million)

| Revenue (Market Share) | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| **Samsung Electronics** | 280.2 (20.6%) | 327.4 (21.2%) | 396.5 (25.1%) | 451.7 (26.8%) | 405.0 (22.1%) | 390.0 (20.7%) |
| **Apple** | 47.5 (3.5%) | 93.0 (6.0%) | 135.8 (8.6%) | 153.4 (9.1%) | 192.7 (10.5%) | 231.5 (12.3%) |
| **Huawei** | 30.9 | 53.8 | 48.3 | 57.0 | 76.4 | 107.6 |

[38] Apple does not directly manufacture cell phones, but manufactures them through third party manufacturers like Foxconn. Accordingly, Apple does not have direct license agreements with the Respondents, but has an indirect licensee agreement with them as it would purchase products from third parties (like Foxconn and others) who have license agreements with the Respondents, and upon the third parties' payment of royalties on the patents to the Respondents, Apple would make a full reimbursement of such amount to the third parties.

| | | | | | | |
|---|---|---|---|---|---|---|
| | (2.3%) | (3.5%) | (3.1%) | (3.4%) | (4.2%) | (5.7%) |
| **Nokia (MS)** | 453.0 (33.3%) | 417.1 (27.0%) | 335.6 (21.2%) | 252.4 (15.0%) | 199.7 (10.9%) | 119.8 (6.4%) |
| **LG Electronics** | 116.7 (8.6%) | 88.1 (5.7%) | 56.6 (3.6%) | 71.0 (4.2%) | 78.1 (4.3%) | 72.1 (3.8%) |
| **TCL-Alcatel** | 29.7 (2.2%) | 39.7 (2.6%) | 39.5 (2.5%) | 52.0 (3.1%) | 70.3 (3.8%) | 71.5 (3.8%) |
| **Xiaomi** | - | - | 5.7 (0.4%) | 18.7 (1.1%) | 61.1 (3.3%) | 72.0 (3.8%) |
| **ZTE** | 50.7 (3.7%) | 78.1 (5.1%) | 71.7 (4.5%) | 59.8 (3.5%) | 54.7 (3.0%) | 62.7 (3.3%) |
| **Lenovo-Motorola** | 46.0 (3.4%) | 55.6 (3.6%) | 59.6 (3.8%) | 63.6 (3.8%) | 93.6 (5.1%) | 74.5 (4.0%) |
| **Others** | 305.3 (22.4%) | 393.2 (25.4%) | 430.7 (27.3%) | 505.4 (30.0%) | 600.0 (32.8%) | 681.1 (36.2%) |
| Total | 1360.0 (100%) | 1546.0 (100%) | 1580.0 (100%) | 1685.0 (100%) | 1831.6 (100%) | 1882.8 (100%) |

Source: Strategy Analytics "Global Handset Vendor Market Share for 15 Countries"

*65.* Over 70% of the market share in the domestic handset market is taken up by local cell phone manufacturers, such as Samsung Electronics, LG, and Pantech, and Apple is the only foreign cell phone manufacturer who has been holding over 1 percent of market share in the domestic handset market since 2009.

[Table 21] Vendor market share in the domestic handset market

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| Samsung Electronics | 51.6% | 51.8% | 52.5% | 58.8% | 56.3% | 56.6% | 54% |
| LG | 28.7% | 20.3% | 16.7% | 13.5% | 20.6% | 21.4% | 17.2% |
| Apple | - | 6.5% | 10.8% | 6.1% | 5.8% | 10.3% | 17.2% |
| Pantech | 13.7% | 14.3% | 13.8% | 19.3% | 16.6% | 7.3% | 1.5% |
| Blackberry | - | - | - | 0.2% | - | - | - |
| HTC | - | - | - | 1.2% | - | - | - |
| Nokia | - | - | - | 0.2% | - | - | - |
| Others | 6.1% | 7.2% | 6.2% | 0.6% | 0.8% | 4.4% | 10% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Strategy Analytics "Global Handset Vendor Market Share for 15 Countries"

## 2. DETERMINING ILLEGALITY

### A. Admitted Facts and Evidence

#### 1) Respondents' status in the telecommunications industry

*66.* Since their establishment in 1985, the Respondents have engaged in all areas of the telecommunications business including base stations, cell phones and components. However, in the late 1990's, they sold off or closed down their base station and cell phone businesses and from 2000 onwards, they concentrated on the manufacture and sale of modem chipsets and patent licensing. Thereafter, as stated in section C. 3)

above, the Respondents, as a vertically integrated entity, established dominance in both the telecommunications patent license and modem chipset markets. The Respondents continued to hold such dominance in the patent license and modem chipset markets during the period when the cellular standard was changing to the WCDMA and LTE standards.

**2) Respondents' FRAND commitment to the standard setting organization and obtaining standard-essential patents**

*67.* Each time the cellular standards were established, from the 2G CDMA in 1993, the 3G WCDMA and CDMA2000 from the late 1990s to early 2000s, and the 4G LTE in the late 2000s, the Respondents made the FRAND commitment to the respective standard-setting organizations including the ETSI, TIA, ITU, and TTA to license their patents on fair, reasonable and non-discriminatory terms.

*68.* Furthermore, in a press release dated March 26, 1999, the Respondents stated that they will "license their essential patents … to the rest of the industry on a fair and reasonable basis free from unfair discrimination."[39]

**3) Overview of the Respondents' business model**

*69.* In licensing their standard-essential patents ("**SEPs**") with respect to CDMA, WCDMA and LTE standards, the Respondents bypassed licensing (their SEPs) at the stage of modem chipsets and provided licenses at the cell phone stage, thereby charging cell phone manufacturers royalties based on the entire revenue of cell phone sales. Such licensing policy at the stage of cell phones relates to the separation of selling modem chipsets and their licensing policy.

*70.* In general, if the patent holder legitimately sells its product, then the patent holder's patent that restricts the use of the product thereby extinguishes, and the user or purchaser of the product need not execute a separate license agreement with the patent holder.[40] Therefore, if the modem chipset manufacturer obtained from their patent holder, SEPs in modem chipsets and thereafter manufactures modem chipsets and sells them to cell phone manufacturers, there is no need for a cell phone manufacturer to pay additional royalties to the holders of SEPs as the royalties related to the SEPs are already included in the purchase price of modem chipsets.

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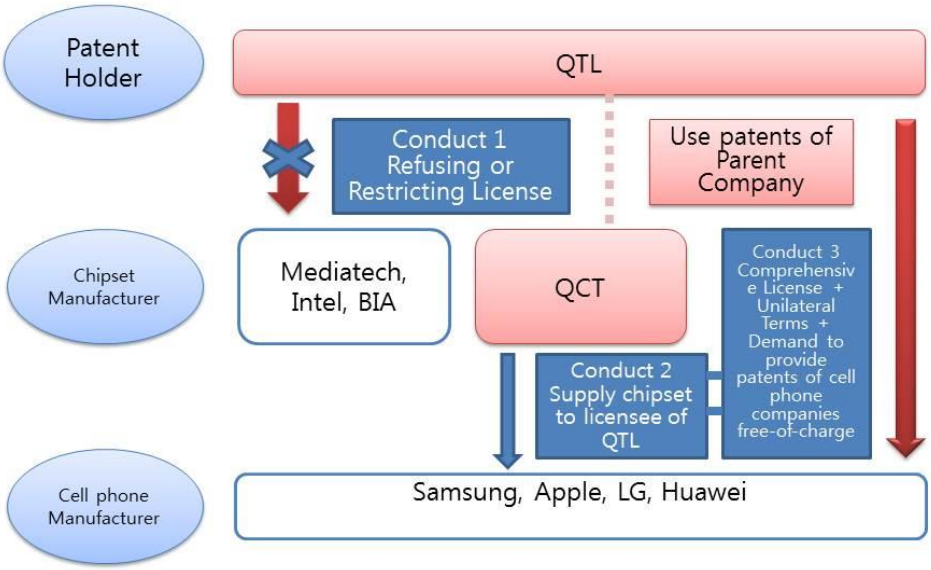
[39] At the time, the Respondents refused to commit to FRAND terms due to its conflict with Ericsson, and as a result, the ITU announced that it will exclude the Respondents' technology from the 3G standard. In response, the Respondents via press release announced that they will "license their essential patents… to the rest of the industry on a fair and reasonable basis free from unfair discrimination." The press release was as follows: "As part of the agreement, the companies will each commit to the ITU and to other standard bodies to license their essential patents for a single CDMA standard or any of its modes to the rest of the industry on a fair and reasonable basis free from unfair discrimination." (https://www.qualcomm.com/news/releases/1999/03/25/ericsson-and-qualcomm-reach-global-cdma-resolution)

[40] This is called "the doctrine of patent exhaustion." If the licensee (having the right) sells the product with the patent, the rights obtained by the licensee are passed through to the customer and the rights will extinguish. Therefore, the customer of the licensee may use the product as it wishes without having to execute a separate patent license agreement.

71. However, the Respondents have a business policy which separates its cellular patents from the sale of modem chipsets, thereby licensing them at the stage of cell phones. Therefore, cell phone manufacturers who purchase modem chipsets from their competitors must execute a separate license agreement with the Respondents. Since concentrating their businesses in patent licensing and the manufacture and sale of modem chipsets from 2000 onwards, following the close down or selling off of their base station equipment and manufacture and sale of cell phones, they have stated in their modem chipset supply agreement that notwithstanding the sale of modem chipsets, the license of the patents in the modem chipsets do not transfer (to the purchasers).

[Table 22] Overview of the Respondents' Business Model




72. The business policy of the Respondents, through the following conducts, became more sophisticated because each conduct would systematically correlate with each other: Refusing or restricting the license of cellular SEPs to competing modem chipset manufacturers (conduct 1), correlating modem chipset supply agreements and patent license agreements to cell phone manufacturers (conduct 2), and based on the foregoing, executing patent license agreements with cell phone manufacturers. The details of the conducts are as follows:

73. First, the Respondents do not provide complete licenses of their cellular SEPs to their competing modem chipset manufacturers, and upon request to provide such license, the Respondents refuse or restrict the license. As a result, since modem chipsets do not carry the license of the Respondents' SEPs, cell phone manufacturers who wish to purchase such modem chipsets must execute a separate license with the Respondents.

*74.* Second, under such structure, the Respondents demand that cell phone manufacturers, who wish to purchase their modem chipsets, first execute a license agreement with them. They will not supply[41], or suspend/restrict the supply of their modem chipsets if they fail to execute such a license agreement or faithfully perform such license agreement.[42] The Respondents have stipulated these terms in the supply agreement of modem chipsets, and from the cell phone manufacturer's perspective, this is not a situation where the cell phone manufacturer must execute a separate patent license agreement in addition to purchasing modem chipsets. However, this was the case. In order to have the Respondents supply modem chipsets, the cell phone manufacturers must, in advance, execute and perform a patent license agreement with the Respondents. The execution and performance of such license agreement is thereby linked to the supply of modem chipsets.[43]

*75.* Third, under such structure, when executing patent license agreements with cell phone manufacturers who wish to be supplied with their modem chipsets, the Respondents (i) executed a "comprehensive license agreement"[44] which includes not only the cellular SEPs in modem chipsets, but their entire patents, (ii) and as a result, imposed royalties on a certain percentage[45] of the sale price of the entire cell phones, while in the meantime (iii) being provided free-of-charge, the patents of cell phone manufacturers required for the manufacture, use, and sale of their modem chipsets in the form of cross licensing, and by preventing cell phone manufacturers from claiming the rights of their patents against the Respondents and other customers who purchase the Respondents' modem chipsets (cross-grant), they have set up a patent umbrella[46] for their modem chipsets. Through such process, the Respondents have mutually linked the businesses of modem chipsets and patent licensing by providing the benefits derived from the patent

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[41] Furthermore, even if the cell phone manufacturer is supplied with the modem chipset, if it does not execute a license agreement in accordance with the modem chipset supply agreement, the cell phone manufacturer may not use the chipsets.

[42] In a case where the Respondents executed a conditional agreement with the modem chipset manufacturer, they restricted the sellers of modem chipsets to their licensees, and therefore, as a cell phone manufacturer, it is not only difficult to purchase the modem chipsets from the Respondents, but also that of their competitors, unless the cell phone manufacturer executes a license agreement with the Respondents.

[43] In their response to the KFTC, the Respondents stated that "QTL, due to its policy, does not execute a component supply agreement with cell phone manufacturers who have not been provided with a license (response by the Respondents upon demand by the KFTC for Exhibit 34).

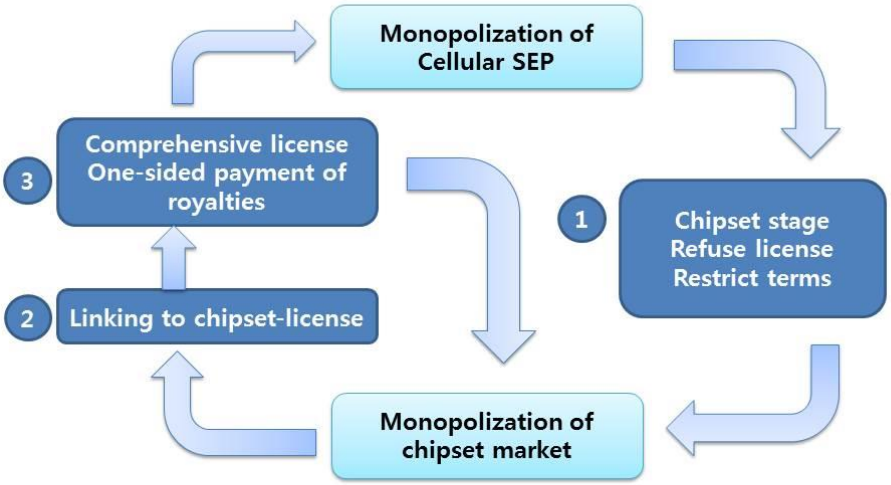
[44] During the deliberation, the Respondents demonstrated that they have certain cases in which they executed license agreements limited to cellular SEPs only (***, ***, ***, ***). However, in a response submitted to the KFTC, the Respondents answered that "hundreds of license agreements executed between QTL and global cell phone manufacturers are substantially similar in their structure and terms. To be more specific, in almost all of its license agreements, QTL provides rights to its patent portfolio (through a license agreement or covenant not to sue) to manufacture, sell, and distribute sets that use 2G, 3G or 4G cellular technologies" (response of the Respondents in 1st request to submit materials regarding Exhibit 32).

[45] While there is a difference between cellular generations and manufacturers of cell phones, royalties in general are within the limit of *% from the net sales of cell phones.

[46] As cell phone manufacturers cannot raise a patent infringement claim against modem chipset customers of the Respondents, it provides a large shield against such infringement claims by cell phone manufacturers.

umbrella to their customers who purchased their modem chipsets, and subsequently having them become beneficial to their modem chipset business, etc.[47]

[Table 23] The Respondents' Business Model in Systematic Correlation




*76.* Set forth below are details regarding the Respondents' conducts 1, 2 and 3 taken to structure, strengthen, and continue their business model.

**4) Misconduct 1: Refusing or restricting licenses on cellular SEPs to competing modem chipset manufacturers**

**a) Grant of license with restriction in use and attached with various conditions (before 2008)**

*77.* When executing patent license agreements with cell phone manufacturers on their cellular SEPs, the Respondents entered into a restricted scope of license with modem chipset manufacturers, ***, ***, *** and from cell phone manufacturers, they collected royalties based on the price of cell phones, and from modem chipset manufacturers, they collected the price of modem chipsets. Before 2008, the Respondents provided licenses for each stage of modem chipsets and cell phones but the Respondents had the following conditions in the license agreements executed with modem chipset manufacturers:

[47] Since 2012, the Respondent QI has separate entities for its licensing business (QTL) and modem chipset business (QCT). While they are different entities with QI undertaking the patent licensing business and the modem chipset business being conducted by its subsidiary QTI, its operating method of linking the patent license business with modem chipset business remains the same, notwithstanding such separation.

*78.* ① Restriction in the use of the license: The Respondents excluded in the scope of license, the right to use modem chipsets.[48] Accordingly, despite paying royalties to the Respondents, competing modem chipset manufacturers could only manufacture and sell such modem chipsets and they did not have the right to use them in the modem chipsets that the competing modem chipset manufacturers manufactured and sold. Therefore, in order for cell phone manufacturers to purchase modem chipsets from competing modem chipset manufacturers, executing a separate patent license agreement with the Respondents was required.

*79.* ② Restriction on who buys the modem chipsets: The Respondents restricted their competing modem chipset manufacturers by allowing the sale of their chipsets to only cell phone manufacturers who have executed license agreements with them. Therefore, even if competing modem chipset manufacturers had license agreements with the Respondents, they could not sell their modem chipsets based on their business decisions but could only sell them after verification that the cell phone manufacturer has a separate license agreement executed with the Respondents at the cell phone stage.

*80.* ③ Duty to report business information: Under the contractual structure in which the Respondents granted a limited license to competing modem chipset manufacturers while receiving royalty payments from cell phone manufacturers, they had modem chipset manufacturers who had license agreements with them report their respective business information, including the number of modem chipsets sold and buyers, the numbers in accordance with each buyer, the time of purchase, type of products, price and others.[49]

*81.* ④ Cross grant (free of charge): Although the Respondents restricted the scope of license granted to competing modem chipset manufacturers, they demanded that patent licenses held by competing modem chipset manufacturers be granted to the Respondents and to customers purchasing the Respondents' modem chipsets, or that a term be included in the agreement in which patent infringement could not be claimed, and therefore, agreements including such terms were executed.

*82.* The terms and conditions, and dates of the executed agreements between the Respondents and each modem chipset manufacturer are summarized as follows in Table 24.

[48] Among the rights granted in the license include the right to manufacture, sell, lend, use, repair, dispose, etc., and (violation of) each such act independently constitutes patent infringement. However, the license granted to modem chipset manufacturers by the Respondents included the right to manufacturer and sell, but excluded the right to use.

[49] After 2008, the Respondents did not collect royalties as they refused to grant licenses to competing modem chipset manufacturers, but continued to have them report such business information. Meanwhile, the Respondents also had this duty to report business information in the patent license agreements with cell phone manufacturers, but they were limited to information necessary to verify the appropriateness of the royalties (total number of sales and revenues during the relevant period, amount excluded from royalties, etc.).

[Table 24] Terms and conditions of the agreements executed with each modem chipset manufacturer and dates[50]

| | Terms and Conditions | Name of the Agreements and their Dates |
|---|---|---|
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents<br>Demand business information on price, sales volume and buyers<br>Demand cross license free-of-charge and covenant not to sue | ***<br>Date of execution: * * 2002 |
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents<br>Demand business information on price, sales volume and buyers<br>Demand cross license free-of-charge and covenant not to sue | ***<br>Date of execution: * * 2005<br>- Amended : * * 2010 |
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents<br>Demand business information on price, sales volume and buyers<br>Demand cross license free-of-charge and covenant not to sue | ***<br>Date of execution: * * 2004<br>Amended : * * 2010 |
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents<br>Demand business information on price, sales volume and buyers<br>Demand cross license free-of-charge and covenant not to sue | ***<br>Date of execution: * * 1997<br>Amended : * * 2006 |
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents<br>Demand business information on price, sales volume and buyers | ***[51]<br>Date of execution: * * 2009<br>Upon execution on *, 2013, deleted term on restricting buyers |

[50] The Respondents submitted as of August 2014, * number of modem chipset manufacturers' list which have executed valid agreements in writing, including ***, ***, ***, ***, ***, ***, ***, ***, ***, ***, ***. In case of ***, ***, they are different in that they are *** agreements. Meanwhile, the Respondents have executed agreements with ***, *** and other modem chipset manufacturers, but they are not currently valid.

[51] This *** agreement with the Respondents was executed as a response to reconcile their 3-year global patent dispute that began in 2005, and it was conditioned upon ***'s withdrawal of all claims and actions with any and all global authorities, including antitrust authorities and courts, and irrevocable reconciliation. In consideration, the Respondents paid USD ***. However, as the Respondents did not grant a complete license, the situation remains the same – the purchasers of ***'s cellular modem chipsets are still exposed to patent infringement attacks from the Respondents.

| | | |
|---|---|---|
| | Demand covenant not to sue their parties (the Respondents' licensees). | |
| *** | Except for the right to make and sell modem chipsets, limit right of use<br>Restrict buyers to licensees of the Respondents | ***<br>Date of execution: * * 2002 |
| *** | Except for the right to make and sell modem chipsets, limit right of use | ***<br>Date of execution: * * 2009 |
| ***[52] | Except for the right to make and sell modem chipsets, limit right of use | ***<br>Date of execution: * * 2000 |

*83.* These facts have been consistently acknowledged by the Respondents starting from the investigation stage through deliberation process, and they have also acknowledged patent license agreements between the Respondents and: *** (Exhibit 5 in deliberation report[53]), *** (Exhibit 6) and *** (Exhibit 7).

**b) Refusing to license, with various conditions attached (after 2008)**

**(1) Amendment of licensing policy following refusal to enter into license agreements on cellular SEPs at the modem chipset stage**

*84.* Although with restrictions, the Respondents had previously executed patent license agreements with cell phone manufacturers and infra equipment/component manufacturers conditioned upon payment of royalties. However, between 2006 and 2008, they established a business policy amending their license programs.

*85.* ① The Respondents stated in their 2007 business report that through licensing or agreements with modem chipset manufacturers, it had permitted licensees, the right to manufacture and sell modem chipsets; however, in business reports after 2008, all terms pertaining to "license" or "licensee" were deleted and instead the Respondents added that in no event are they granting exhaustive rights to patents through agreements with modem chipset manufacturers. And in case cell phone manufacturers use competing modem chipsets manufacturer's modem chipsets, they have to pay royalties to the

[52] In 1997, *** requested that the Respondents provide them with a license for CDMA SEPs which the Respondents refused to grant for 3 years. In December 2000, they revealed that competition in the modem chipset market was impossible because only a patent portfolio agreement was executed instead of a complete license.

[53] Hereinafter, Exhibit [*] will be used instead of Exhibit [*] in deliberation report.

Respondents pertaining to the relevant portion of cell phones in accordance with separate license agreements entered into with the Respondents.

*86.* ② In a conference meeting in Taiwan dated February 26, 2008, the presentation material stated that upon a determination that the previous agreements with modem chipset manufacturers could extinguish their patents, the Respondents altered their stance so as not to provide restricted rights that had been previously granted.

*87.* ③ As one way of publicizing such business policy, the Respondents categorized their competing modem chipset manufacturers in a group excluded from their SEP licensing programs in material titles "Qualcomm Technology Licensing" dated February 20, 2013.

*88.* Unlike prior to 2008, where a license was granted with limitations, following the change in business policy, the Respondents refused to execute license agreements with competing modem chipset manufacturers even if they requested the licensing of cellular SEPs that are essential for the manufacture, sale and use of modem chipsets and offered "restricted agreements" only[54]. And although they were not license agreements, they demanded the same terms and conditions that were demanded in limited license agreements such as: (i) restricting the buyers of modem chipsets to cell phone manufacturers who have executed license agreements with the Respondents, (ii) conditioning a duty to report business information to the Respondents every quarter including sales volume of modem chipsets, their buyers, sales amounts according to each buyer, and price, and (iii) free cross grant licensing on patents held by modem chipset manufacturers.

*89.* These facts have been consistently acknowledged by the Respondents from the investigation stage through the deliberation process, and they are presented in the Respondents' response to the KFTC's request for information (Exhibit 32), business report of the Respondents (documents no. 37 ・ 38), the Respondents' presentation materials in its Taiwan conference dated February 2008 (Exhibit46), and presentation materials of the Respondents' licensing program (Exhibit 49).

[54] In general, patent holders will provide licensees an "exhaustive license" and if the licensee legitimately sells patent products, their exhaustive rights will pass through to the customers of the licensees. However, the Respondents' restricted agreement is different from such exhaustive license in that it had: (i) a covenant not to sue: in which the patent holder contractually agrees not to claim its rights in patents against licensees, and they are usually adopted as a result of reconciling a patent dispute. It is unclear whether exhaustive rights passed through to the customers of the licensees; (ii) covenant to exhaust remedies: in which the patent holder contractually agrees not to claim its right to patents against the licensees, and that it would first claim patent infringement against the third party using the licensee's products, and that claiming patent rights against the licensees will be their last relief and that the licensee will, in a way, have joint liability. It makes it clear whether patent holders can claim patent infringement against the customers of the licensees, thereby restricting the pass through of exhaustive rights; and (iii) stand still: in which the patent holder contractually agrees that for a certain period (60 or 90 days) it will not claim its rights on patents. Therefore, after a certain period, the patent holder can claim patent infringement against the licensees. This exposes customers of the licensees to patent infringement attacks after a certain period thereby blocking the pass through of an exhaustive license.

**(2) Following a refusal to enter into a license agreement, offering restricted agreements with various conditions attached**

: Case A

Following the launch of 2G GSM modem chipsets in 200*, A mostly sold GSM based modem chipsets prior to 2008. Thereafter, upon the global spread of the 3G WCDMA standard, it requested that a license agreement be entered into with the Respondents as to expand their business into WCDMA modem chipsets after 2008.

**(a) Covenant not to sue in 2009**

*90.* After *, 2008, the Respondents refused A's request to enter into a license agreement on WCDMA cellular SEPs and offered a covenant not sue attached with conditions.

*91.* In an email dated * 2008, A requested that the Respondents offer terms and conditions in regard to licensing the WCDMA patent in which the Respondents replied on * *, 2008 that it will provide a draft license agreement on the WCDMA modem chipsets for A's review. However, despite repeated requests from A, the Respondents did not provide the license terms for over 4 months without any explanation.

[Table 25] Extracted e-mail between A and the Respondents[55]

| |
|---|
| |

*92.* However, contrary to the previous proposal, the Respondents offered in an e-mail dated * *, 2008, a covenant not to sue attached with conditions.[56] Furthermore, in the covenant not to sue, the following conditions were attached: (i) modem chipsets can be sold only to the licensees of the Respondents designated and notified by the Respondents, (ii) a quarterly report on business information must be made to the Respondents, including but not limited to the sales volume of A's modem chipsets, areas sold and purchasers, and (iii) in regards to the patents held by A, a covenant not to sue offered to the Respondents and to third parties.

*93.* In response, A set up a teleconference with the Respondents on or around *, 2008 and sent about 30 questions via email, including questions on the following; why a covenant not to sue was offered in lieu of a license agreement, why the Respondents were attaching conditions on the sale of modem chipsets only to the licensees, whether offering a covenant not to sue instead of a license on WCDMA SEPs was compliant with the FRAND commitment in light of its commitment with the standard setting organizations that they will provide the license on FRAND terms; whether it was unfair

[55] Exhibit 41, Emails between A and the Respondents.

[56] As previously explained, unlike the license agreement, although this is a promise that the Respondents will not make a patent claim against A, it can still make a patent infringement attack against customers who have purchased A's modem chipsets without restrictions.

for A to only be offered a covenant not to sue compared to other modem chipset manufacturers who were granted licenses, and why A should grant its license to the Respondents free-of-charge when A is only being offered a covenant not to sue.

[Table 26] List of questions for teleconference between A and the Respondents[57]

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*94.* The Respondents without clearly responding to A's request only reiterated their position that they cannot accept A's request as is. Thereafter, A entered into with the Respondents, not a license agreement but a covenant not sue[58] attached with conditions dated * *, 2009.[59]

**(b) 2013 *** Agreement**

*95.* During the 2nd round of patent license agreement negotiations that began in 2012, the Respondents again refused to grant a license on patents for the manufacture and sale of modem chipsets to A.

*96.* A had entered into the WCDMA modem chipset business following the execution of the 1st agreement in 2009, but upon realizing that it was impossible to fairly compete with the Respondents due to the conditions attached to the covenant not to sue[60], less than 3 years from executing the agreement in 2009, it made a repeated request in *, 2012 for a patent license under FRAND terms in compliance with the FRAND commitment the Respondents had declared during the standard setting process to the standard setting organizations.

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[57] Exhibit 44, List of questions for teleconference between A and the Respondents.

[58] Exhibit 2, Covenant not to sue executed between A and the Respondents in 2009.

[59] In regards thereto, A replied that "based on Qualcomm's past practices and its testimonies, we believed we had no choice but to execute the two covenants not to sue as offered by Qualcomm because at least a few certain customers believed it was necessary that A execute such agreements with Qualcomm (Exhibit 80).

[60] In an opinion submitted to the KFTC, A stated that upon reporting sensitive business information on the modem chipset business to the Respondents in accordance with the 1st agreement, the Respondents were able to broadly monitor A's activities, and based on such information, the Respondents would approach A's customers and interfere with A's modem chipset business. A realized that A was becoming an agent of the Respondents by selling their patents because in order for A to sell modem chipsets it had to request that cell phone manufacturers who did not have a license agreement with the Respondents enter into a patent license agreement due to the condition that A could only sell to cell phone manufacturers who were holders of the patent license. Furthermore, under the covenant not to sue, if a cell phone manufacturer was to purchase A's modem chipsets, the transaction cost would rise because in addition to purchasing the modem chipsets they would have to separately enter into a license agreement with another business, thereby discouraging the purchase of A's modem chipsets. A realized that under the existing covenant not to sue it was impossible to fairly compete with the Respondents. For instance, one customer who had only used A's products were threatened by Qualcomm that a stricter audit would be conducted unless they started using Qualcomm products (Exhibit 80).

*97.* On **, 2012, A, citing unfair terms and conditions in the covenant not to sue - including restricting buyers of the modem chipsets to licensees of the Respondents, and reasons for refusing to license to A despite making the FRAND commitment, and thereby having to grant licenses under FRAND terms in return for payment of royalties - requested that the parties enter into a license agreement under which A would pay royalties on the Respondents' proposed royalties pursuant to the FRAND terms.

[Table 27] Letter A sent to the Respondents dated * *, 2012[61]

*98.* In replying to A's letter, on * *, 2013[62], five months after the letter dated * *, 2012 above was sent out, the Respondents' Vice President & Legal Counsel, Fabian Gonell, clearly stated that the Respondents "did not agree to enter into a license agreement with A and that the Respondents and A have executed a covenant not sue for which rights to patents do not extinguish and that this is not a license agreement."

[Table 28] The Respondents' reply to A dated * *, 2013[63]

*99.* In response, A sent a reply dated * *, 2013 that cited the failure of the Respondents to respond to A's request to propose licensing terms and conditions and FRAND royalties. A repeated its request to propose royalty rates and licensing terms and conditions.

[Table 29] Second email sent by A to the Respondents dated * *, 2013 [64]

[61] Exhibit 43, Letter sent to the Respondents from A

[62] Five months after sending the letter dated * *, 2012 above, A requested in its letter dated * *, 2012 that the Respondents reply to A's proposal within 3 weeks. The Respondents replied 5 months later on * *, 2013.

[63] Exhibit 43, The Respondents' reply to A dated * *, 2013

[64] Exhibit 43, Second email sent by A to the Respondents dated * *, 2013

100. Despite A's request above, the Respondents replied on * *, 2013 that while they may negotiate the possibility of amending or replacing the existing agreement executed with A, it repeatedly refused A's request to propose specific licensing terms and conditions and royalty rates.

[Table 30] Second email sent by the Respondents to A dated 2013.*.*[65]

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101. In response, A in an email dated * *, 2013 reminded the Respondents that it wishes that the Respondents would agree to the basic principle that it must enter into license agreements with those who have agreed to the FRAND terms with respect to SEPs that were selected as standard by the standing setting organizations, and in the meantime requested that the Respondents propose FRAND licensing terms and conditions by * *, 2013.

[Table 31] Third email sent by A to the Respondents dated * *, 2013[66]

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102. In their reply dated * *, 2013, the Respondents responded that they have no duty to grant a license to A, and they did not send a draft license agreement containing the agreement terms and conditions or royalty rates. The Respondents while not offering any FRAND licensing terms and conditions to A, revealed their intent to terminate the existing agreement and replace it with a new agreement, and continued to negotiate for something that was not a license agreement by asking A to inform them of what rights they were seeking to additionally acquire.

[Table 32] Third email sent by the Respondents to A dated * *, 2013[67]

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[65] Exhibit 43, Second email sent by the Respondents to A
[66] Exhibit 43, Third email sent by A to the Respondents
[67] Exhibit 43, Third email sent by the Respondents to A

*103.* Thereafter, the negotiations to execute a license agreement between the parties were suspended, and instead a *** agreement replacing the existing agreement was executed dated * *, 2013.[68]

*104.* The recital of the *** agreement clearly states that at the time A requested that it be granted the license for SEPs, and that the Respondents claimed that it was not necessary to provide A with the license, ■ and key terms of the agreement are ***.

[Table 33] *** agreement between A and the Respondents dated * *, 2013[69]

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*105.* These facts have been consistently acknowledged by the Respondents from the investigation stage through the deliberation process, and they further are demonstrated by: emails between A and the Respondents (Exhibit 41 and 43), draft of the agreement proposed by the Respondents to A (document no. 42), the list of questions for the teleconference sent by A to the Respondents (document no. 44), A's response upon request to submit information (Exhibit 80), the covenant not to sue executed between the Respondents and A in 2009 (Exhibit 2), and the 2013 [***] agreement between the Respondents and A (Exhibit 3).

**(3) Refusing to enter into a license agreement and no deal as a result of demanding conditions other than licensing terms**

**(a) Case B**

*106.* In 1993, B and the Respondents executed a patent license agreement necessary to use the Respondents' CDMA standard technology. The key terms of the license agreement stated that B be granted the rights to manufacture, sell and use cell phones (subscriber unit) using the Respondents' cellular SEPs. However, B was only allowed to manufacture modem chipsets for the purpose of installing them in their own cell phones and it was a breach of the agreement if B sold modem chipsets to other businesses.

[Table 34] Terms relating to modem chipsets in the 1993 patent license agreement[70]

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[68] Exhibit 3, *** agreement
[69] Exhibit 3, A's 2013 *** agreement
[70] Exhibit 11, B's 1993 Patent License Agreement.

*107.* B and the Respondents amended other parts of the agreement in 1997, 2004, 2005, 2009, etc., but the condition in regards to selling modem chipsets to other businesses remained the same. Therefore, selling B's manufactured modem chipsets to other businesses was outside the scope of the license granted to B under its agreement with the Respondents, and therefore, the Respondents could at any time claim patent infringement against B.

*108.* Under such circumstances, B had a business department ■ under the semiconductor division that manufactured the AP used in cell phones. Around 2011, B determined that in the future, unified chipsets that combined modem chipsets and AP would lead the market and decided to commence the door-to-door sale of modem chipsets (in which it did not have previous experience). At the time, B contacted cell phone manufacturers who were its potential business customers, but this raised the customers' risk of Respondents making a patent infringement attack against them in case they purchased B's modem chipsets without the Respondents' license. Furthermore, they requested that they be contractually indemnified of damages that arise from the Respondents' patent infringement attacks or that B warrant that they (including B) were free from such attacks by the Respondents.[71]

*109.* Accordingly, B deemed it necessary to obtain a license from the Respondents to engage in door-to-door sales, and requested that the Respondents enter into a license agreement allowing the door-to-door sale of modem chipsets from *, 2011 onwards, but the Respondents refused. Their conduct is detailed as follows.

*110.* First, the president of Qualcomm Korea, Young-gu Cha, interviewed with Etnews on June 29, 2011 stating that "anyone can sell modem chipsets using the Respondents' patent", and right after the interview was publicized, B requested that the Respondents on or around * *, 2011 enter into a patent license agreement for the manufacture and sale of modem chipsets and the Respondents refused.[72]

[Table 35] Confirmation from officer upon B's request for a license[73]

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*111.* Since the Respondents rejected the request for licensing without any room for negotiations, B requested that the Respondents execute an agreement under the same standards as other agreements provided to other modem chipset manufacturers.

[71] Exhibit 62, statement submitted by B in regard to refusal to license chipsets
[72] Exhibit 60, confirmation regarding request to Respondents for a license agreement
[73] [THE ORIGINAL KOREAN VERSION SEEMS TO HAVE INTENTIONALLY OR INADVERTENTLY OMITTED FOOTNOTE 73]

*112.* In response, unlike agreements with other competing modem chipset manufacturers, the Respondents sent B a draft agreement with a focus on exhaust remedies as the essence of the agreement on [*] 2011.[74] Exhaust remedies required B to carry a type of joint liability which subjects B to the risk of lawsuits wherein the Respondents can sue both handset manufacturers and the Respondents in the event that handset manufacturers that have purchased B's modem chipsets breach the agreement with the Respondents (e.g., handset manufacturers' failure to pay royalties to the Respondents, etc.).

*113.* Further, this agreement with exhaust remedies still contained terms that the Respondents had required from A, such as (i) limitation on the selection of sale of modem chipsets, (ii) obligation to report sales information, (iii) cross-licensing of patents in B's possession, and (iv) joint liability between B and handset manufacturers in case of disputes on patents between the handset manufacturers and the Respondents due to the failure of handset manufacturers who have purchased B's modem chipsets to pay royalties.

[Table 36] Status of Qualcomm's effort to promote execution of agreements for sale of modem chipset B[75]

*114.* Despite such unfair terms, securing a written agreement which the Respondents would not be able to terminate was necessary for B to facilitate a business for modem chipset sales. Therefore, B continued to negotiate with the Respondents. Thereafter, for over one year, B continued to negotiate with the Respondents to adjust the details, such as the specific conditions for exhaust remedies to be applied, adjustment of the scope of products subject to licensing, etc. by exchanging revisions of the agreement on several occasions.

*115.* At the end of [*], 2013, B decided to accept the exhaust remedies, which the Respondents continuously requested as a condition of the agreement for its business for modem chipset sales. Although this was not adequate for the business, B continued to negotiate with the Respondents on other detailed terms.

[Table 37] Conference report prepared by B on external sale of Qualcomm's IC (1) [76]

*116.* Thereafter, until mid-[*] of 2013, B discussed the terms of the agreement with the Respondents,[77] but the Respondents, during a meeting held on [*] of the same year, suggested a standstill (a term more disadvantageous to B) as a condition of the agreement in lieu of the exhaust remedies, which they had been continuously discussing. … , the Respondents suggested a new proposal in which the Respondents would defer their claim of patent infringement against B for a period of [*] days, after which they

[74] Exhibit 63, Draft licensing agreement between the Respondents and B.
[75] Exhibit 59, Status of Q's efforts to promote execution of agreements for sale of modem chipsets
[76] Exhibit 64, Conference report prepared by B on external sale of Qualcomm's IC on [*], 2013.
[77] B and the Respondents had a meeting or exchanged emails on [*] 2011, [*] 2012, [*] 2012, [*] 2012, [*] 2013, [*] 2013, and [*] 2013.

would be able to claim B's liability at any time after the aforementioned period.[78] Thereafter, during the meeting on [*] of the same year, the Respondents gave notice to B that it would be difficult for B to execute the agreement for the sale of B's modem chipsets if B refuses to accept the standstill as a condition of the agreement.[79] There were no further discussions regarding the execution of the agreement for the sale of B's modem chipsets after such time.[80]

[Table 38] Conference report prepared by B on external sale of Qualcomm's IC (2)[81]

*117.* On the other hand, on a separate account, B was asked on [*], 2010 to take a share in Project [*] through which investors aimed to establish a joint venture company[82] for modem development and entered into a joint venture agreement in [*] 2011. In this joint venture agreement, execution of the licensing agreement between [*] and the Respondents was stipulated as a condition precedent to the establishment of the joint venture company. However, [*] ultimately failed to obtain relevant modem chipset licenses from the Respondents, and establishment of a joint venture company for modem development by B and [*] foundered.[83]

**(b) C's Case**

*118.* Around 2009, C requested that the Respondents grant a license in order to manufacture and sell modem chipsets for Handsets. The Respondents refused by offering unacceptable terms to C. Further, in the beginning of [***] 2009, the Respondents indicated that they were willing to allow C to use their patents (that would not be exhausted) instead of granting a license.[84]

*119.* The Respondents continued to require C to accept the following terms that had been previously offered to B: (1) restricting customers; (2) supply of sales and marketing information of modem chipsets; and (3) grant of the right to use patents to be exhausted, while not changing its stance that the Respondents could not grant a license to their patents for C's modem chipsets notwithstanding negotiations held twice in [***] 2009. Thereafter, the negotiations between the Respondents and C did not make any progress

[78] Thereafter, the Respondents sent an email to B with the same content on [*], 2013.
[79] In response, B replied that, despite the risk to B related to the exhaust remedies, B had inevitably continued the negotiations to obtain the right to sell modem chipsets to outside customers. However, as the Respondents newly suggested a standstill as a condition of the agreement, B understood it as the Respondents' intention not to accept any of B's requests and the Respondents' unwillingness to further negotiate with B. (Exhibit 62 Details of rejection to license chipset B).
[80] Since then, B has not been able to initiate the business for sale of its modem chipsets to handset manufacturers other than itself.
[81] Exhibit 65, Conference report prepared by B on the external sale of Qualcomm's IC (2)
[82] It was planned that 3 other companies ([*], [*], [*]) besides [*] were to invest in the joint venture company.
[83] Materials relating to Project [*] which B submitted to the KFTC on October 7, 2016 (Attachment 2) "Failure to secure a QCOM ASIC license: Securing a QCOM ASIC license was contractually a pre-requisite for First Closing to happen, but NEWCo & [***] failed to achieve that and offered no remedy."
[84] The Respondents [***].

and C failed to obtain any right to the SEPs belonging to the Respondents.[85] As a result, C could not engage in the modem chipset business.[86]

**(c) D's Case**

*120.* In early 2012, D requested to the Respondents that the existing CDMA2000 licensing agreement[87] should be modified or redrafted to obtain a license to WCDMA technologies, which would apply to D's modem chipsets. However, the Respondents proposed instead that the CDMA2000 licensing agreement be terminated and replaced by supplemental covenants containing licenses to CDMA2000 and WCDMA.

*121.* In response, D, on [***], 2012, sent an email requesting that the Respondents comply with the FRAND commitment, asserting that the Respondent's proposal did not actually grant any rights to the SEPs.[88] The Respondents refused to grant a license, sticking with the proposal of supplemental covenants so that no further progress was made with respect to WCDMA licensing negotiations to manufacture and sell WCDMA-based modem chipsets.[89]

**(d) Other Cases**

*122.* In addition, in 2010 and 2011 respectively, modem chipset manufacturers asked for a grant of license from the Respondents in order to manufacture and sell modem chipsets for mobile communications. However, the Respondents, firmly following their business policy, refused to license their SEPs to modem chipset manufacturers so that no licensing agreement was entered into between the Respondents and modem chipset manufacturers in order to manufacture and sell modem chipsets using the Respondents' SEPs.[90]

*123.* The Respondents did not dispute the facts specified above from the stage of investigation to the stage of adjudicative proceedings. The following evidence also supports these facts: Patent Licensing Agreement of 1993 between the Respondents and B (Exhibit 11); RFI Responses (Exhibit 32, 33); B's internal report on the progress of agreement with Qualcomm in connection with sales of modem chipsets (Exhibit 59); Affidavit of NAME of B (Exhibit 60); B's written explanation on the Respondents' refusal to license to B (Exhibit 62); Draft patent licensing agreement of 2011 (Exhibit 63); B's meeting minutes of meetings with the Respondents in 2013 (Exhibit 64, 65); C's RFI

[85] C alleged that the licensing negotiation was deadlocked mainly because Qualcomm did not offer fair and reasonable licensing terms in connection with components to be installed in handsets. Particularly, C could not execute a licensing agreement with Qualcomm not only because Qualcomm declined to grant complete licensing to C, but also because Qualcomm demanded that C should sell its modem chipsets only to customers that obtained licenses from Qualcomm (Exhibit 79 C's RFI Responses).

[86] Thereafter, C could commence its modem chipset business by acquiring [COMPANY NAME] in 2011, which was a modem chipset manufacturer that had licenses to use Qualcomm's SEPs. ([***] entered into a patent portfolio agreement for modem chipsets with the Respondents on [MONTH DAY, YEAR].

[87] D had a license to CDMA2000 because D acquired [***] in 2003, which had a patent licensing agreement with the Respondents on [***].

[88] The original texts are as follows: [***] (Exhibit 40, D's emails sent to the Respondents).

[89] Consequently, D failed to enter the WCDMA-based modem chipset market.

[90] Exhibit 33, Respondents' Response as of June 26, 2015.

responses (Exhibit 79); D's emails sent to the Respondents in 2012 (Exhibit 40); Materials submitted by B on October 7, 2016 ([***] Project related materials).

**5) Misconduct 2: Requiring handset manufacturers to execute and fulfill licensing agreements as a condition of the Respondents' supply of modem chipsets**

*124.* As shown in 2. A. 4) above, the Respondents have committed to their business policy to either reject any requests to license the Respondents' patents including SEPs to modem chipset manufacturers or refuse to provide a complete form of licensing, and instead have required handset manufacturers intending to purchase the Respondents' modem chipsets to first enter into licensing agreements with the Respondents as a condition for the supply of the Respondents' modem chipsets.

*125.* First, since 1993 the Respondents have entered into modem chipset agreements with handset manufacturers separately from licensing agreements, and all modem chipset supply agreements between the Respondents and handset manufacturers were executed after the execution of licensing agreements.[91] The dates on which the Respondents entered into licensing agreements and modem chipset supply agreements with major handset manufacturers are as follows in Table 39.

[Table 39] Dates on which the Respondents entered licensing agreements and modem chipset supply agreements with major handset manufacturers[92]

| Handset Manufacturer | Initial Execution Date for Licensing Agreement | Execution Date for Modem Chipset Supply Agreement |
|---|---|---|
| *** | 1993.8.*. | 1994.3.*. |
| *** | 1997.8.*. | 1997.9.*. |
| *** | 1993.8.*. | 1996.2.*. |
| *** | 2000.12.*. | 2001.6.*. |
| *** | 2001.4.*. | 2001.7.*. |
| *** | 2001.9.*. | 2001.11.*. |
| *** | 2003.8.*. | 2003.8.*. |

Source: Materials Submitted by Respondents (Exhibit 35)

**a) Supply of modem chipsets on the condition of executing licensing agreements in the modem chipset supply agreements**

*126.* The Respondents stipulated the following in the modem chipset supply agreements executed with handset manufacturers:[93]

[91] Through their response submitted to the KFTC, the Respondents made it clear that for policy reasons, they do not enter into component supply agreements with handset manufacturers who are not granted the Respondents' licenses and do not sell modem chipsets to those who have not entered into licensing agreements with the Respondents.

[92] The Respondents submitted materials relating to the execution dates of licensing agreements and modem chipset agreements which they had executed with [*] handset manufacturers. Table 39 contains only the execution dates of agreements with major handset manufacturers.

[93] Through their response submitted to the KFTC, the Respondents disclosed that such provisions are in fact stipulated in all of the Respondents' component supply agreements and generally worded in the same way (Exhibit 34, Materials Submitted by Respondents on June 26, 2015)

127. First, the sale of modem chipsets does not include patent licensing. Without patents, handset manufacturers may not use purchased modem chipsets or sell them in packages with other components. Purchased modem chipsets may only be used or sold in accordance with licensing agreements, and equipping cell phones with modem chipsets does not lead to an exemption from the royalty payment obligation under licensing agreements.[94]

128. Second, purchased modem chipsets may only be used for development and production of cell phones, and cell phones equipped with such modem chipsets shall be used or sold in accordance with the terms and conditions of licensing agreements.[95]

129. Third, in the event that purchasers breach modem chipset supply agreements or licensing agreements and fail to cure such breach within [*] days or [*] days,[96] the Respondents may terminate modem chipset supply agreements or suspend or defer supply of modem chipsets.[97]

130. Major cases of modem chipset supply agreements executed by the Respondents in connection with licensing agreements are as follows in Table 40.

[Table 40] Major modem chipset supply agreements linked with licensing agreements

| Handset manufacturer | Title of Agreement | Execution Date |
|---|---|---|
| *** | Component Supply Agreement (***) | 2004.9.*. |
| *** | Customized Integrated Circuit Supply Agreement (***) | 2000.9.*. |
| *** | Component Supply Agreement (***) | 2001.3.*. |
| *** | Component Supply Agreement (***) | 2001.6.*. |
| *** | Component Supply Agreement (***) | 2003.8.*. |
| *** | Component Supply Agreement (***) | 2001.11.*. |

Source: Material submitted by Respondents (Exhibit 26 through 31)

**b) Specific cases**

**(1) E's Case**

131. After the execution of a CDMA licensing agreement between the Respondents and E in 1993, in the course of executing an amended licensing agreement from 2003 to 2004,

94 [***].
95 [***].
96 [***].
97 [***].

the Respondents and E had disputes over the interpretation of the licensing agreement regarding whether the existing CDMA licensing agreement covered WCDMA and whether the royalty terms needed to be adjusted reflecting the decrease in the proportion of SEPs for WCDMA owned by the Respondents. Details of the disputes are as follows.

*132.* ① In the course of executing a WCDMA licensing agreement with the Respondents from 2003 to 2004, E notified the Respondents in [*] 2003 that it would not pay royalties for the Respondents' WCDMA patents, as the existing CDMA licensing did not apply to WCDMA patents.

*133.* ② The Respondents gave notice to E by email dated [*], 2004 that they would terminate the memorandum of understanding ("**MOU**")[98] for the rebates on modem chipsets and suspend provision of all rebates,[99] as the existing CDMA licensing agreement executed in [*] covered WCDMA patents and the failure to pay royalties was a breach of the licensing agreement, leading to a consequential breach of the modem chipset supply agreement ([*]).[100]

*134.* ③ In response, on [*], 2004, E conveyed to the Respondents that it was not proper for the Respondents to argue for a breach of the modem chipset supply agreement based on the breach of another agreement (i.e., licensing agreement) and requested that the Respondents settle the dispute over the interpretation of the licensing agreement pursuant to the arbitration procedures stipulated in the licensing agreement.[101]

*135.* ④ However, on [*], 2004, the Respondents reminded [102] E that although the Respondents had only terminated the MOU in connection with the rebates on modem chipsets on [*], 2004, they still had the right to terminate the modem chipset supply agreements in case of the parties' failure to immediately reach a mutual agreement.

*136.* ⑤ As a result, E began to worry[103] about the worsening situation, which could result in a setback on its cell phone business.[104] Thereafter, on [*], 2004, the Respondents gave notice to E of its detailed plan to suspend their supply of WCDMA standard modem chipsets through the suspension of the purchase order made by E for WCDMA standard modem chipsets, suspension on delivery, recovery of related engineering materials, software return, etc.[105] E, concerned about a setback on its cell phone business caused

[98] Memorandum of Understanding (MOU) was executed between the Respondents and E along with a modem chipset supply agreement in 2000.
[99] Based on E's internal report
[100] Original content of email sent by the Respondents to E is as follows (Exhibit 70).
[101] Original content of email sent by the E to the Respondents is as follows (Exhibit 71).
[102] Original content of email sent by the Respondents to E is as follows (Exhibit 72).
[103] [***].
[104] Based on E's internal report, it is stated … (Exhibit 69, E's internal report dated [*], [[***]*])
[105] SEOUL No. 167, an email sent to E by the Respondents via fax and DHL

by such suspension of and/or delay in the supply of modem chipsets,[106] executed an amended licensing agreement on [*], 2004, under the terms and conditions requested by the Respondents.[107]

**(2) F's Case**

*137.* ① In 2009, F started a business of manufacturing data modems for PCs using the Respondents' modem chipsets, which was not explicitly mentioned in the scope of the existing licensing agreement with the Respondents.

*138.* ② Then, the modem chipset operation division of Qualcomm Korea [*] notified F through email on [*] 2009 of an impending request for suspension of the supply of modem chipsets due to F's production of unlicensed components using the Respondents' modem chipsets, and requested F to sign a data modem licensing agreement, which was still under negotiation, if F wanted to avoid a serious situation.[108]

*139.* ③ In the meantime, in reporting the above facts to the head office on the same date, [*] above inquired to the licensing division whether the Respondents should suspend the supply of all modem chipsets to F or the supply of modem chipsets only to the relevant division (i.e., computer operation division).[109]

*140.* ④ Thereafter, on [*], 2009, the Respondents and F executed an amended licensing agreement which covers the abovementioned products.

*141.* The Respondents consistently acknowledged the above facts throughout the course of the investigation up to the review stage, and it is acknowledged through the modem chipset supply agreements which the Respondents executed with [*], [*], [*], [*], [*] and [*] (Exhibit 26 through 31), Response to the KFTC submitted by the Respondents (Exhibit 34 through 36), the Respondents' 2007 business report (Exhibit 38), E's opinion (Exhibit 67), E's explanations and internal reports on the negotiation status with the Respondents from 2003 to 2004 (Exhibit 68 and 69), emails exchanged between the Respondents and E in 2004 (Exhibit 70 through 73), the amended licensing agreement in 2004 between E and the Respondents E (Exhibit 15), etc.

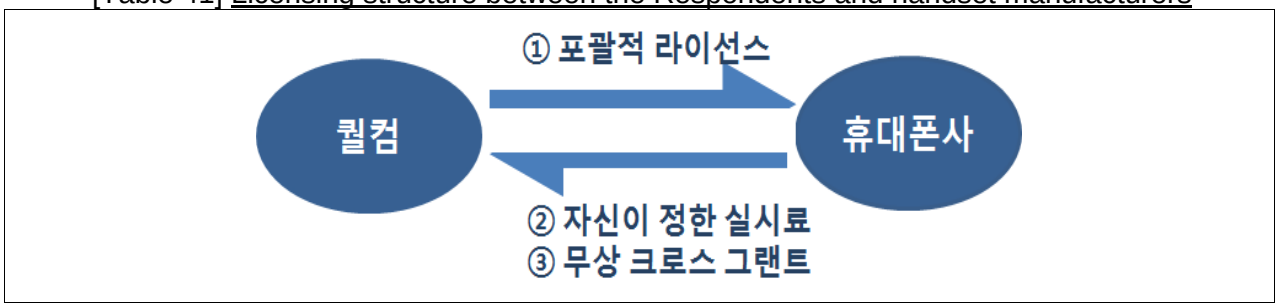
**6) Misconduct 3: Proposing contract terms in executing licensing agreements with handset manufacturers including comprehensive licensing, self-determined royalty terms, and cross-licensing free of charge**

*142.* Under the foundation and structure of executing agreements as in 2. A. 5) above, the Respondents, in executing licensing agreements on cellular SEPs with handset

[106] In connection with this, E, in negotiating with the Respondents for a licensing agreement, analyzed that … , and E [*], who participated in the meeting with the Respondents, reported on [*], 2004 that … (Exhibit 69, email of E [*], dated [*], 2004).
[107] Exhibit 15, amended licensing agreement in 2004 between E and the Respondents
[108] Original content of the pertinent email is as follows. (email of [*], dated [*], 2009)
[109] Original content of the pertinent email is as follows ([*]'s email dated [*], 2009)

manufacturers[110] suggested terms for licensing agreements which included (1) executing comprehensive licensing agreements that cover all patents in the Respondents' possession instead of specifying or distinguishing the scope of patents subject to licensing ("**Comprehensive Licensing**"), (2) under comprehensive licensing, unilaterally calculating royalties based on the total price of cell phones without good faith negotiations regarding the assessment or calculation of patent values ("**Self-Determined Royalty Terms**") or, (3) providing to the Respondents or its customers (who have purchased the Respondents' modem chipsets) with patents owned by handset manufacturers (i.e., the other parties to the agreement) free of charge, or prohibiting patent infringement claims in consideration of licensing the Respondents' patents ("**Cross-Licensing free of charge**"). Ultimately, the Respondents entered into such licensing agreements that included these conditions.

[Table 41] Licensing structure between the Respondents and handset manufacturers




**a) Terms and conditions of licensing agreements executed by the Respondents with handset manufacturers**

*143.* As of September 2015, the Respondents have entered into and are in licensing agreements with 195 handset manufacturers worldwide,[111] and the structure and terms of such licensing agreements are practically similar in regard to the aspects described below.[112]

**(1) Comprehensive licensing**

*144.* Patents can be divided into cellular SEPs, Non-cellular SEPs and Non-SEPs, which are

[110] As the Organization for Standardization newly selected 3G standards as the standard and the WCDMA standard began to spread worldwide around 2000, discussions were held on amending the existing licensing agreements in connection with WCDMA, and it is understood that Misconduct 3 predominantly occurred from 2000 to 2004. Looking at individual handset manufacturers, the Respondents amended their licensing agreements with [*] on [*], 2002, with [*] on [*], 2004, and with [*] on [*], 2004 and included WCDMA in the agreements.

[111] As of September 18, 2015 (reference date), the Respondents have entered into licensing agreements with [*] handset manufacturers, and licensing agreements with [*] licensees which expired on the reference date.

[112] The Respondents responded that the hundreds of licensing agreements which they have executed with handset manufacturers worldwide are almost practically identical in terms of the structure and terms and conditions, and that such agreements provide the rights to Qualcomm's a patent portfolio, which allow licensees to manufacture, sell, and distribute cell phones equipped with 2G, 3G and 4G cellular technologies in all of their licensing agreements (Exhibit 32, the Respondents' response to the request for submission of materials by the KFTC).

not directly related to the standards. However, the Respondents stipulate in its standard form licensing agreements and actual licensing agreements executed with handset manufacturers that the patents subject to licensing are all of their patents[113] and prescribe that such patents refer to "all technically essential intellectual property rights in the Respondents' possession and all other intellectual property rights of the Respondents."[114] Accordingly, the Respondents do not distinguish cellular SEPs and other patents[115] from among the patents in their possession or they do not distinguish their patents based on each cellular standard such as CDMA, WCDMA, LTE, etc. Rather, the Respondents suggest that handset manufacturers enter into comprehensive licensing agreements covering all patents in their possession, and agreements were executed as such.

**(2) Self-determined royalty terms**

*145.* The Respondents stipulate in its standard form licensing agreement that royalties shall be calculated to be a specific ratio[116] of the net selling prices[117] of cell phones. In fact, the Respondents executed licensing agreements with handset manufacturers under the royalty rates of approximately [*]% for cell phones using CDMA and WCDMA standards, [*]% for cell phones using LTE standards only, and [*]% for cell phones using a multimode, equal to the royalty ratio of those using CDMA and WCDMA standards.[118] Royalty terms of licensing agreements executed by the Respondents with major handset manufacturers are as follows in Table 42.

[Table 42] Royalty terms of licensing agreements executed by the Respondents with cell phone manufacturers

| | Calculation Basis | Precedence Royalty | Royalty Rate |
|---|---|---|---|
| *** | Cell Phone Wholesale Price[119] | *** | ***[120] |
| *** | Cell Phone Wholesale Price[121] | *** | ***[122] [123] [124] |

[113] The Respondents call this "QUALCOMM's Licensed Patent Claims" in the standard form of agreement, and use the term "QUALCOMM's Intellectual Property" in individual agreements.
[114] The original content of the Respondents' standard form of agreement is as follows: "'QUALCOMM's Licensed Patent Claims' means QUALCOMM's Technically Necessary IPR and QUALCOMM's Included Other IPR" (Exhibit 9, 10).
[115] "Other patents" include Non-Cellular SEPs and Non-SEPs. These other patents are not essential to manufacture or sell cell phones adopting cellular standards or can be substituted by alternative technologies from a third party, and thus, use of such patents cannot be deemed necessary at any cost.
[116] Net selling price refers to the amount that results from subtracting certain deduction items from the wholesale price of cell phones set by handset manufacturers.
[117] Article 5.2 of the Respondents' standard form agreement … (Exhibit 9 the Respondents' standard form agreement)
[118] Generally, even LTE cell phones carry multi-mode modem chipsets using not only LTE, but also CDMA or WCDMA standards, and thus, [*]% instead of the [*]% royalty rate is applied.
[119] In case of [*] cell phone sold after the amended agreement becomes effective on January 2009, net selling price of cell phone, which provides the calculation basis for royalty rates, shall not exceed US$[*] (Section 4.1.3 of amended agreement dated [*], [[***]*]).
[120] Royalty rate under licensing agreement … of [[***]*] has been adjusted pursuant to the amended agreement of [[***]*].
[121] [***]
[122] From the licensing agreement of [[***]*] with [*] … to amended agreement of [[***]*] …
[123] Unlike the current dual mode LTE, which uses LTE networks for data communications and 3G and LTE networks for voice communications alternatively, the single mode LTE uses only LTE networks for

| | | | |
|---|---|---|---|
| *** | Cell Phone Wholesale Price[125] | *** | *** |
| *** | Cell Phone Wholesale Price | ***[126] | ***[127] |
| *** | Previous Price of Cell Phone Provided to [*][128] | *** | ***[129] |

**(3) Royalty terms for CDMA applied equally to WCDMA and LTE**

*146.* The Respondents applied royalty terms of SEPs for CDMA equally to 3G and 4G cellular standards. To be more specific, the Respondents, with regard to WCDMA and LTE standards compared to CDMA, did not enter into separate licensing agreements for each generation standard regardless of the number of patents, importance,[130] value, or contribution level of each patent in the Respondents' possession, and caused WCDMA or LTE standards to be included in the scope of the CDMA / WCDMA agreements that had been previously executed. This resulted in the terms of royalty payment under the existing licensing agreements being applied to the next-generation cellular standard technologies.[131] For instance, the Respondents, in amending licensing agreements with [*] in year [*], included all other standard patents besides the already-included CDMA, CDMA2000, WCDMA standards, such as LTE, in the scope of patents subject to licensing. This caused the application of the royalty rate on LTE (for which the possession rate of SEPs by the Respondents is 16%) to be equal to those of CDMA and WCDMA (for which the possession rates of such patents are 90% and 27%, respectively).

**(4) Long-term and permanent contract terms**

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both voice and data communications. Therefore, due to the nature of cellular technologies which requires concurrent use of the previous generation's standards for compatibility purposes, cell phones using the single mode LTE modem chipsets are close to none.

[124] The Respondents and [*] in [[***]*] entered into separate OFDM agreements which apply to cell phones adopting only LTE standards. They prescribed that the royalty rates for single mode LTE cell phones are [*]%, and the maximum royalty is US$[*]/phone (for LTE cell phones begun to be sold after [*], [[***]*], it is US$[*].)

[125] The maximum royalty under the agreement between the Respondents and [*] is US$ [*].

[126] CDMA licensing agreements of [[***]*] between the Respondents and [*] in regards to sale of cell phones outside [*] …

[127]

[128] Cell phone transfer prices of phones provided by [*]'s entrusted manufacturer [*] to [*] include costs of components, royalties, and commissions for the provision of [*]'s services to be paid by [*].

[129] The above licensing agreements with [*] contain terms and conditions of typical standard agreements of the Respondents, and other handset manufacturers such as [*], and [*] in general have the same royalty terms as [*].

[130] Among all SEPs for each generation, those in the Respondents' possession are 90% for CDMA, 27% for WCDMA and 16% for LTE.

[131] On the other hand, the Respondents sometimes also executed separate licensing agreements for LTE standards, and in such case, they lowered the royalty rate from [*]% to [*]%, but such lowered royalty was only limitedly applied to the LTE single mode. However, due to the nature of cellular technology which requires the standard from the previous generation to be used for the purpose of network compatibility, cell phones using LTE single mode modem chipsets are close to none. Therefore, for most cell phones using the multimode modem chipsets, the royalty rate of [*]% (same as those of CDMA and WCDMA licensing agreements) was applied as is.

147. The Respondents set the contract periods for licensing agreements with handset manufacturers to be permanent or longer than or equal to 15 years. Therefore, even in the case where the Respondents' patents became invalidated during the contract period, or patents expired[132] or obligations to pay royalties were exempted in accordance with provisions on the completion of payment in individual contracts, the level of royalties were maintained at the same level as before.[133] Terms of licensing agreements between the Respondents and major handset manufacturers are as follows in Table 43.

[Table 43] Terms of licensing agreements between the Respondents and handset manufacturers

| Handset Manufacturer | Initial Execution Date | Closing Date | Royalty Rate During the Term of Agreement |
|---|---|---|---|
| *** | 1993.*.*. | 2023.*.*.[134] | Fixed[135] |
| *** | 1993.*.*. | Permanent | Fixed |
| *** | 1997.*.*. | Permanent | Fixed |
| *** | 2003.*.*. | Permanent | Fixed |
| *** | 2005.*.*. | Permanent | Fixed |
| *** | 2001.*.*. | Permanent | Fixed |
| *** | 2000.*.*. | Permanent | Fixed |
| *** | 1992.*.*. | Permanent | Fixed |
| *** | 1996.*.*. | Permanent | Fixed |
| *** | 1990.*.*. | 2013.*.*. | Fixed |

**(5) Cross-licensing free of charge**

148. The Respondents, on the one hand, received royalties for licensing their patents, and, on the other hand, requested that handset manufacturers provide SEPs and other patents in their possession to the Respondents and their customers free of charge, and entered into agreements under the foregoing terms.[136] In other words, the Respondents included in the licensing agreements with handset manufacturers a provision that

[132] Article 88 of the Patent Act prescribes that the effective period of patents shall be from the registration date of the patent to 20 years after the filing of the application for the patent.
[133] For instance, the Respondents in the agreement with [*] in [[***]*] and [[***]*], … but the Respondents apply the same royalty payment term to [*].
[134] Licensing agreement between the Respondents and [*] in [[***]*]
[135] In some agreements with handset manufacturers, the Respondents take methods to increase royalties step-by-step on the basis of cell phone sales. However, such step-by-step royalty rates are also stated as [*] since they are not subject to adjustment based on the change in the patent value.
[136] In connection with this, the Respondents stated in its response submitted to the KFTC that "Qualcomm requests that all licensees provide cross-licensing for the purpose of protecting Qualcomm's component business and component customers from patent claims of licensees. (omitted) To explain in more detail, Qualcomm typically asks for cross-licensing of components from the beginning, and in connection with this (i) with regard to licensees' cellular SEPs, Qualcomm requests cross-licensing for the current and future patents, (ii) with regard to licensees' other patents such as non-SEPs and non-cellular SEPs (for instance, Wi-Fi and standards for Video encoding, etc.), it is typical to request cross-licensing for patents that have been applied during the limited capture period." (Exhibit 32, Response of the Respondents to the request for submission of materials)

handset manufacturers are to exhaustively license[137] those required for the Respondents to produce and sell modem chipsets among the patents in possession of handset manufacturers or a provision providing a 2-stage covenant not to sue [138] the Respondents and the customers who purchase the Respondents' modem chipsets. As of September 18, 2015, the Respondents are in licensing agreements with 195 handset manufacturers worldwide. All licensing agreements with handset manufacturers except for [*] contain such provisions, and the status of cross-licensing or covenants not to sue executed by the Respondents with handset manufacturers is as follows in Table 44.[139]

[Table 44] Status of cross-licensing or covenants not to sue executed by the Respondents with handset manufacturers

| Handset Manufacturer | Condition for Cross-Licensing | Execution Date |
|---|---|---|
| *** | Exhaustive license [changed to a covenant not to sue the Respondents (including its affiliates) and the Respondents' customers when amending the agreement in [year]] | 1993, [*] |
| *** | Exhaustive license [changed to a covenant not to sue the Respondents (including its affiliates) and the Respondents' customers when amending the agreement in [year] | 1993, [*] |
| *** | Covenant not to sue in connection with licensing to the Respondents (including its affiliates) and the Respondents' licensees | 2002, [*] |
| *** | Covenant not to sue in connection with licensing to the Respondents (including its affiliates) and the Respondents' licensees [changed to a covenant not to sue the Respondents (including its affiliates) and the Respondents' customers when amending the agreement in [year]] | 2000, [*] |
| *** | Covenant not to sue in connection with licensing to the Respondents (including its affiliates) and the Respondents' licensees | 2000, [*] |
| *** | Covenant not to sue in connection with licensing to the Respondents (including its affiliates) and the Respondents' licensees [stipulated in the amended agreement of [year] that the licenses provided to the | 2005, [*] |

[137] In case of exhaustive licensing, if the licensee sells products to which patents have been adopted under the legitimate authority, the exhaustive right which the licensee has obtained is transferred to the customer of the licensee. Therefore, customers of the licensee may utilize the relevant product in its own election without a separate royalty payment.

[138] Covenant not to sue is an agreement under contract in which a patent holder agrees not to claim its patent right against the licensee. A 2-stage covenant not to sue provides a covenant not to sue both the Respondents and their customers; therefore, a patent holder cannot claim infringement of patents against either the Respondents or the Respondents' customers who have purchased the Respondents' products. Therefore, in terms of the risk of bringing a claim for infringement against patent holders, such covenant would have the same effect as that of exhaustive licensing.

[139] On the other hand, the Respondents and [*] … (Exhibit 25)

| | | |
|---|---|---|
| | Respondents are exhaustive licenses provided to the Respondents' customers] | |
| *** | CDMA Licensing agreement : Exhaustive License<br>WCDMA MOU : covenant not to sue the Respondents (including its affiliates) and the Respondents' customers | CDMA Agreement : 2003, [*]<br>WCDMA MOU : 2004, [*] |

*149.* Furthermore, despite its receipt of cross-licensing from handset manufacturers, the Respondents did not offer any procedures for the calculation of consideration and did not pay any consideration for such licensing. In connection with the foregoing, it is stipulated in the Respondents' standard licensing agreements that licenses received by the Respondents through cross-licensing are royalty-free,[140] and, in fact, it is explicitly stipulated in the actual CDMA licensing agreements that the Respondents executed with [*] in 2004[141] and with [*] in 2003,[142] and under the WCDMA MOU that the Respondents executed with [*] in 2004 that handset manufacturers' licenses received by the Respondents through cross-licensing are royalty-free. Further, the Respondents themselves stated in their response to the KFTC that the reasons for receiving cross-licensing free of charge are as follows: "Most of the Respondents' licensees do not possess any patents under cross-licensing or even in the case of possessing some patents under cross-licensing they only include patents with no significant value. It is not only that such licensees generally do not request that Qualcomm modify the licensing terms, but also that such licensees' patents, at the most, are of no significant value to the Respondents. Thus, considering that unnecessary disputes can arise for the relative values of such patents, modifying the license terms is not necessary."

**b) Licensing negotiations between the Respondents and handset manufacturers**

*150.* ① The Respondents neither detailed to handset manufacturers which patents in their possession could be infringed nor disclosed how such infringement could arise in the course of executing licensing agreements. The Respondents also did not provide handset manufacturers with the basic negotiation materials for licensing agreements, such as the list of patents subject to licensing, major claims, analysis of major claims, or materials indicating the relationship with the standards, etc. In connection with this, (i) [*] responded that, in the course of executing licensing agreements with the Respondents on SEPs of CDMA and WCDMA from 2003 to 2004, "the Respondents not once provided a list of patents in the course of negotiations for licensing, and therefore, we never had any detailed discussion with the Respondents on the infringement of any patents,"[143] (ii) [*] responded that, in the course of executing licensing agreements with

[140] It is stipulated in Article 6.1 of the Respondents' standard form of agreements as follows … (Exhibit 9, 10)

[141] In the course of negotiating for the amendment of the licensing agreement with the Respondents on [*] 2003, [*] pointed out that the Respondents were using [*]'s patents without paying any consideration and requested compensation for value of the patents. However, the Respondents refused to pay to [*] any compensation by stating that [*]'s patents were licensed to the Respondents for free pursuant to the existing agreement and by citing that they had never paid any compensation for cross-licensing to licensors such as [*] and [*]. (Exhibit 69, [*]'s Internal report on the negotiation status from 2003 to 2004)

[142] The CDMA licensing agreement executed between the Respondents and [*] was amended in 2004, 2008, and 2013, but the provision on cross-licensing was maintained without any change.

[143] Exhibit 77, Response of [*] to the submission of materials to the KFTC

the Respondents on SEPs of WCDMA in 2004, “despite requests by a licensee [*] on several occasions, the Respondents neither provided a list containing patents, which form the basis of determining the nature of the patents, nor provided a clear basis for calculating the royalties,”[144] and (iii) [*] responded that it has been negotiating with the Respondents since 2005[145] for the purpose of executing licensing agreements, and “although [*] wished to be provided with a list of patents from the Respondents so that [*] could evaluate the actual value of the Respondents’ patents and exclude unnecessary patents from licensing, the Respondents not only failed to provide them with a list of patents, but also did not allow [*] the foregoing.”[146] [147]

*151.* ② Furthermore, in response to the KFTC’s question on how royalty rates were determined when negotiating with the Respondents, (i) [*] responded that “royalty rates are standard and non-negotiable terms to the Respondents, and thus, there is no option but to accept royalty rates suggested by the Respondents and it is impossible to negotiate with regard to the foregoing”[148] and (ii) in the course of negotiating for the amendment of licensing agreements between the Respondents and [*] in 2004, [*] requested that the Respondents exclude the costs of the components that have no relation to cellular standard technologies such as [*] and [*] in calculating royalties, but the Respondents stopped having a conversation on this issue.[149]Further, (iii) [*] responded that “the Respondents never provided any estimates of royalties.”[150]

*152.* ③ Concerning this, (i) Steve Altman, the representative for the Respondents, stated that during his interview with Deutsche Bank in 2005, “As long as we have one patent applicable to any product of the handset manufacturers, or just one claim against them, the handset manufacturers must pay us the same royalty,”[151] and (ii) during the press conference held on June 25, 2005, Paul Jacobs, the representative for the Respondents, answered the question on calculation methods of royalties for the use of its WCDMA patents, “given that WCDMA is essentially CDMA, royalties remain the same as before for all manufacturers.”[152]

*153.* The Respondents have consistently admitted to these facts throughout the investigations and hearings, and these facts have been substantiated by the Respondents’ standard

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[144] Exhibit 67, 1st response to the request for submission of materials by the KFTC

[145] [*], without directly executing licensing agreements with the Respondents, was relying on the licensing agreements between Contract Manufacturers (CM) and the Respondents by obtaining a supply of cell phones through the CM, such as [*], [*], [*] that executed licensing agreements with the Respondents. [*] was under licensing agreements with several other SEP licensors in the cellular industry, and also wanted to directly execute licensing agreements with the Respondents (Exhibit 75 Response of [*] to the request for submission of materials by the KFTC).

[146] Exhibit 75, Response of [*] to the request for submission of materials by the KFTC

[147] In fact, the Respondents, with regard to the request for provision of patent information by [*] for the purpose of executing a licensing agreement on [*], 2006 … (Exhibit 101, emails between the Respondents and [*])

[148] Exhibit 77, 2nd response of [*]

[149] Exhibit 67, Response of [*], Exhibit 68 Explanatory materials on negotiations between 2003 and 2004, and Exhibit 69 Materials for internal report on the status of negotiation.

[150] Exhibit 75, [***]’s first opinion, Exhibit 76, Draft agreement proposed by the Respondents in 2006.

[151] Exhibit 91, Interview of Steve Altman by Brian Modoff from Deutsche Bank.

[152] Exhibit 92, Paul Jacob’s Answer During the Press Conference on June 25, 2005.

contract (Exhibit 9, 10), the patent license agreements entered into between the Respondents and [***],[***],[***],[***],[***],[***],[***],[***] (Exhibit 11 through 24), the Respondents' Response to the KFTC (Exhibit 32), materials and internal records relating to negotiations held between [***] and the Respondents from 2003 to 2004 (Exhibit Nos. 68, 69), [***],[***],[***]'s Response to KFTC's Request for Submission (Exhibit Nos. 67, 75, 77), Interview with Steve Altman by Brian Modoff of Deutsche Bank (Exhibit 91), Paul Jacobs' answer during the press conference on June 25, 2005 (Exhibit 92).

## B. DEFINING RELEVANT MARKETS

*154.* An overall assessment of the acts of the Respondents demonstrates that (i) Misconduct 1: the Respondents have refused to execute a license agreement with competing modem chipset manufacturers or restricted the scope of the license despite the requests of the competing modem chipset manufacturers, which required the SEPs for mobile communications such as CDMA, WCDMA and LTE for the production and/or sale of modem chipsets; (ii) Misconduct 2: the Respondents linked its chipset supply with patent license agreements with regards to handset manufacturers wishing to purchase the Respondents' modem chipsets by asking the handset manufacturers to execute and comply with a license agreement prior to purchasing the modem chipsets; and (iii) Misconduct 3: While, based on the abovementioned negotiation practices and business model, the Respondents executed license agreements with the handset manufacturers without engaging in fair negotiations properly expected in such negotiations, offering only comprehensive portfolio license terms without conducting procedures to calculate fair compensation, and demanding that the handset manufacturers accept their royalty terms, the Respondents also arranged for the handset manufacturers to cross-grant their patents royalty-free to the Respondents and their clients; and in this process, the respective conducts mutually interact with one another to form a structural and organic model.

*155.* As such, the commonly relevant markets for misconduct 1, 2 and 3 are the cellular SEP license market and modem chipset market. Specifically, misconduct 1, which entails refusing or restricting licenses in relation to competing modem chipset manufacturers, contributes to the Respondents' market dominance in the cellular SEP license market and the market power is exercised in the modem chipset market. Regarding misconduct 2 and 3, which are linked with the modem chipset supply agreement to a patent license agreement in inducing handset manufacturers to execute the license agreement, the Respondents' market dominance is formed in the modem chipset market, while the effects of the dominant position is felt in the cellular SEP license market. In turn, the resulting effects influence the modem chipset market. As the markets relevant to misconduct 1, 2, and 3 are the cellular SEP license market and the modem chipset market, the relevant markets are defined as follows:

### 1) Cellular SEP Licensing Market

### a) Product Market for Cellular SEP Licensing

*156.* After consideration of the following, Market for Cellular SEP License-Related Products is defined as the market for all of the Respondents' SEPs licenses subject to each telecommunications standard such as CDMA, WCDMA and LTE.

157. It is impossible to comply with each telecommunications standard without using the Respondents' SEPs licenses subject to each telecommunications standard such as CDMA, WCDMA and LTE, and there is no compatibility across the different telecommunications standards. A patented technology conforming to one standard cannot also conform to another standard because the requisite technologies for each standard are different in terms of their structure, function and transmission methods.

158. Given that each of the Respondents' patented technologies subject to each telecommunications standard serves independent functions, each of the technologies is not interchangeable. Therefore, each market corresponding to each of the Respondents' SEPs subject to CDMA, WCDMA, LTE could have been defined as the relevant market with market dominance. However, ensuring performance in accordance with a particular telecommunications standard requires all of the Respondents' technologies that supplement each other, and considering that the Respondents grant licenses for the entirety of its patented telecommunications-standard technologies instead of licensing each technology in isolation, the relevant product market is defined as the market for all of the Respondents' SEPs licenses subject to each telecommunications standard such as CDMA, WCDMA and LTE.

**b) Geographic Market for Cellular SEP Licensing**

159. Considering the below, the relevant geographic market for cellular SEP license is the global market.

160. Telecommunications standards such as CDMA, WCDMA and LTE were established by SSOs like ETSI and ITU, and entities from all across Asia, Europe and the Americas which possess telecommunications technologies or expect to use such technologies. They participate in the process to establish such standards.

161. Users of the SEPs are granted the license without regard to the geographic location of the patented technology or the owner of the technology, and SEP licensors also execute license agreements without heavily considering the geographic location of the licensee.

162. Each telecommunications standard established by global SSOs is incorporated into the corresponding state or region when the state adopts a certain standard to use as the state's industry standard. For instance, while TD-SCDMA and CDMA2000, both 3G standards, have been incorporated into relatively narrow geographic areas, the 3G WCDMA or 4G LTE have been adopted as the global standard, covering relatively larger areas. In the present case, however, narrowly defining the relevant geographic market would result in the level of the Respondents' market dominance because all of the Respondents' patents constitute the product market and because the SEPs, by definition, do not permit a substitutable technology or competitor in the product market.

**2) Modem Chipset Market**

**a) Product Market for Modem Chipsets**

163. Taking into account the below points, the product market for modem chipsets means the modem chipset market which is subject to each of the CDMA, WCDMA and LTE

standards.

*164.* There is no possibility under which a technology compliant with one standard can also comply with and substitute for another standard because, as discussed above, each telecommunications standard requires different technologies in terms of frequency range, transmittal and/or alteration of signals, and the number of antennas. As a cell tower and handset subject to different cellular standards cannot send or receive information, unless the cell coverage is adjusted, it is not feasible to use a modem chipset compliant with a different standard.

*165.* As a modem chipset supplier, the Respondents have reflected these limitations in the way they categorize modem chipset products by cellular standards CDMA, WCDMA and LTE, and the Respondents tailor competitive strategies for each modem chipset market. Furthermore, as purchasers of modem chipsets, the handset manufacturers such as ***, ***, *** understand that modem chipsets compliant with different telecommunications standards are distinct products which cannot be used interchangeably as substitutes for one another.

*166.* As such, modem chipset per each of the CDMA, WCDMA and LTE standards form a separate product market as it is impossible to supply or use them interchangeably across different standards.[153]

**b) Geographic Market for Modem Chipsets**

*167.* The geographic market for modem chipsets is defined as the global market where each standard has been adopted and used, considering the handset modem chipset's physical properties, structure of dealings, substitutability in supply and/or demand, perception and/or behavior of the market participants, and the telecommunications standard adopted in each region, as discussed below.

*168.* As a small semiconductor product, the modem chipset is cheap to transport over long distances because it rarely corrodes and/or deteriorates in transportation between countries or in storage for the long term. Due to the low transportation cost, geographic divergence would not substantially affect the definition of the market.

*169.* Modem chipset manufacturers operate factories globally and their marketing activities extend beyond any certain region. Especially, the competition among handset manufacturers that purchase modem chipsets has recently intensified, and the handset manufacturers base their purchase decisions not on the manufacturer's geographic location but on the modem chipset's performance stability under the telecommunications standard, risks of patent disputes, and prices and services offered in connection with the modem chipset.

[153] However, certain LTE modem chipsets can be used interchangeably as they also comply with the previous generation standard. There is substitutability with respect to demand as the purchaser is able to use one modem chipset that works for multiple standards, or use a chipset for the LTE standard together with another chipset made for a different standard. With the chipsets, there is also substitutability in supply because a supplier can manufacture and sell modem chipsets tailored to the LTE standard. Therefore, LTE modem chipsets that are also compliant with 2G and 3G standards and LTE modem chipsets which are tailored to the LTE standard may be defined as one product market.

170. Given the relatively high price of the Respondents' product, the Respondents recognize the pressure to offer competitive prices in comparison to their foreign competitors, and accordingly, have established strategies to lower product prices. This understanding and is shared among other modem chipset manufacturers as well.

171. As telecommunications standards are globally adopted with advances in telecommunications technology, the 3G and 4G standards in practice have been uniformly incorporated across the world. Accordingly, it is more likely than before that the geographic market will extend globally.

172. As a general principle, each country considers the particular needs and circumstances of the region to select and incorporate a telecommunications standard from the standards that SSOs have established to secure substitutability in telecommunications and promote efficient use of the limited frequencies.

173. In the past, Korea adopted CDMA as the 2G standard which permitted use of only the compatible modem chipsets. With the introduction of 3G, telecommunications service providers adopted standards from WCDMA and CDMA2000, and, since the late 2000s, LTE has prevailed as the 4G standard.

174. A global overview of the history of telecommunications standards shows that different regions used different 2G standards as Korea and North America, etc. adopted CDMA while Europe and Japan chose GSM based on TDMA and PDC, respectively.

175. With the arrival of 3G in the 2000s and regional consolidation in standards, countries including Korea widely adopted 3G WCDMA, which combined GSM and CDMA, and since the late 2000s, the LTE standard has practically become the only telecommunications standard being widely distributed.

[Table 45] Global Market Share by Telecommunications Standard

| Generation | Telecommunications Standard | Main Functions | Region | Market Share | Subject to License by Respondents |
|---|---|---|---|---|---|
| 2G | GSM | Network Communication (Voice Call/SMS) | Europe, etc. | 81% | X |
| | CDMA | | Korea, USA | 19% | O |
| 3G | WCDMA | Voice/Video Call, Data | Most Countries | 85% | O |
| | CDMA2000 | | Korea, USA, Japan | 13% | O |
| | TD-SCDMA | | China | 2% | X |
| 4G | LTE | High-Speed Data | All Countries | 100% | O |

Source: Strategic Analysis (time points for market share assessment: 2002 for 2G; 2011

for 3G; 2013 for 4G)

*176.* Given the handset modem chipset's physical properties, ease of transportation, the global consolidation of standards, and the transnational business transactions between modem chipset sellers and buyers, the geographic market for modem chipsetd should be the global market.

## C. UNLAWFUL CONDUCT

### 1) Misconduct 1: Restricting Licenses or Refusing to License SEPs to Competing Modem Chipset Manufacturers

### a) Applicable Laws and Regulations

The Monopoly Regulation and Fair Trade Act ("**MRFTA**" or the "**Act**")[154]

**Article 3-2 (Prohibition of Abuse of Market-Dominant Position):** ① No market-dominating enterprise shall commit any act falling under any of the following subparagraphs (hereinafter referred to as "**abusive acts**"): [1 - 2 omitted]

3. Unreasonably obstructing the business activities of other enterprises.

**The Enforcement Decree of Monopoly Regulation and Fair Trade Act ("Enforcement Decree")[155]**

**Article 5 (Type of or Standards for Abusive Acts):** ③ The unfair obstruction of business activities carried out by other enterprises referred to in Article 3-2 (1) 3 of the [Monopoly Regulation and Fair Trade] Act shall be cases where business activities are made difficult to be carried out by other enterprises by performing directly or indirectly an act falling under any of the following subparagraphs: [1 - 2 Omitted]

3. Denying, interrupting or limiting access to the use of elements indispensable for other enterprises to produce, supply and market their goods or services without justifiable grounds;

4. Making it difficult for other enterprises to carry out their business activities through unfair means, other than those referred to in subparagraphs 1 through 3, which is publicly announced by the Fair Trade Commission.

**The Guidelines on Examination of Abuse of Market Dominating Position (the "Examination Guidelines")[156]**

**IV. Types and Criteria for Abuse of Market-Dominant Position**

3. Unreasonably obstructing the business activities of other enterprises (Article 3-2.1.3 of the Act):

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[154] Amended by Act No. 14137, Mar. 29, 2016. Hereinafter referred to as the "**Act**".

[155] Amended by Executive Order No. 27534, Sept. 29, 2016. Hereinafter referred to as the "**Enforcement Decree**"

[156] Amended by KFTC Announcement No. 2015-15, Oct. 23, 2015. Hereinafter referred to as the "**Examination Guidelines**"

The cases where business activities are made difficult to be carried by other enterprises by performing directly or indirectly an act falling under any of the following subparagraphs (Article 5.3 of the Enforcement Decree): [A - B Omitted]

C. Denying, interrupting or limiting access to the use of elements indispensable for other enterprises to produce, supply, and market their goods or services without justifiable grounds (Article 5.3.3 of the Enforcement Decree):

(1) 「Indispensable elements (hereinafter, "**Indispensable Elements**")」 include tangible and intangible elements such as network and key facilities, and shall satisfy the requirements of each of the following subparagraphs:

(a) Without use of the element, other enterprises cannot participate in certain transactions or is continuously and substantially disadvantaged in the competition because production and/or supply or sale of goods or services becomes impossible;

(b) A certain business entity exclusively owns or controls the element; and

(c) It is not practically, legally, or economically possible for other enterprises intending to use or access the element to replicate or substitute the element with another element.

(2) Under these provisions 「other enterprise」 means an enterprise which participates in the field of transaction where the owner and/or controller of the element or its affiliate is participating or is expected to do so in the near future.

(3) An 「act denying, interrupting or limiting」 means an act that practically denies, interrupts or limits or causes the same effects, including the following acts:

(a) Offering unreasonable prices or terms that render it practically or economically impossible to access the Indispensable Element;

(b) Offering price terms that are substantially discriminatory in comparison to the terms applicable to existing users of the Indispensable Element or unreasonable terms such as exclusions and tie-in sales;

(4) In assessing whether there are 「justifiable grounds」, consideration is given to whether any of the following applies:

(a) Providing Indispensable Elements would cause conspicuous impairment of just compensation to the enterprise providing such elements, provided that, profit reduction arising from the expansion of competition is not deemed impairment of just compensation;

(b) It is impossible to provide the Indispensable Elements without substantially reducing the supply volume to existing users;

(c) There is a risk that provision of Indispensable Elements would substantially degrade the quality of services that are already being provided;

(d) It is technically impossible to provide the Indispensable Elements because of non-compliance with the technology standard, etc.; and

(e) There is a risk that provision of the Indispensable Elements would threaten life or cause bodily injury to the service user.

D. Making it difficult for other enterprises to carry out their business activities through unfair means, other than those referred to in subparagraphs 1 through 3 (Article 5.3.4 of the Enforcement Decree):

(1) Refusing to transact with a certain enterprise without justifiable grounds or substantially restricting the quantity or substance of the product

(2) Offering the other transacting party terms that are unreasonable in light of common practices of transaction or discriminatory with regard to price or transaction terms

without justifiable grounds. [(3) - (6) Omitted]

**b) Whether the Respondents Offered Unreasonable Terms or Unreasonably Discriminated in Offering Prices or Terms in Light of Common Practices of Transaction[157]**

**(1) Applicable Legal Principles**

*177.* Article 3-2(1)3 of the Act forbids a market dominant enterprise from unreasonably interfering with the business activities of other enterprises, and Article 5(3)4 of the Act and the Examination Guidelines IV.3.D specifically forbids an enterprise from "offering the other transacting party terms that are unreasonable in light of the common practices of transaction or discriminatory with regard to price or transaction terms without justifiable grounds."

*178.* For the provisions to apply to the Respondents' conduct, (i) the Respondents must be market-dominant, (ii) the conduct must be an offer of terms to the other enterprise that are unreasonable in light of the common practices of transaction, and (iii) the conduct of the Respondents must interfere with the business activities of other enterprises. Determination as to interference with the business activities of other enterprises is made after taking into consideration (as a whole) manufacturing, financial, and sales activities of the other enterprises, including where there is risk that the business activities may discontinue.

*179.* Here, the common practices of transaction are in principle judged based on the common practice of transaction in the relevant market, and under particular circumstances may mean customs in agreement with a pro-competitive environment, but does not always match with the common practices of transaction that actually exist.[158]

*180.* Furthermore, the finding of "unreasonableness" or "unfairness" in conduct that interferes with other enterprises' business activities by offering terms that are unreasonable in light of the common practices of transaction is not condition upon the mere fact that a certain enterprise suffered harm from independent and unreasonable terms, but requires intent or purpose to maintain or strengthen market dominance. Meaning that, there was intent or purpose to artificially influence the market order by restricting free competition, and an objective evaluation of the conduct in question should conclude that the conduct has actual risks of anti-competitive effects[159].

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[157] Article 3-2(1)3 of the Act, Article 5(3)4 of the Enforcement Decree, and IV.3.D(2) of the Examination Guidelines: "offering the other transacting party terms that are unreasonable in light of the common practices of transaction or discriminatory with regards to price or transaction terms without justifiable grounds."

[158] Seoul High Court judgment, 2009Nu33777, Seoul High Court judgment, 2008Nu2868, Seoul High Court judgment, 2008Nu2462, etc.

[159] The Supreme Court has ruled that refusal to deal is "a type of abuse of dominant position by a market dominant enterprise prohibited under Article 3-2(1)3 of the Act, and such refusal to deal is "an act that unreasonably interferes with the business activities of a certain enterprise by declining to transact with that enterprise [omitted]." However, the fact that the dominant enterprise declined a certain enterprise's request to transact with unreasonable intent or purpose or the fact that a certain enterprise experienced difficulties in its business activities or that a risk of such difficult has arisen, alone, is insufficient to support a finding of illegality, and illegality may be found upon a showing of an act of refusal to transact with intent or purpose to maintain or strengthen market dominance, meaning intent

181. Where there is proof of anti-competitive effects such as the increase in product prices, reduction in manufacturing, lack of innovation, lowering the number of potential competitors, and weakening of diversity due to the offer of terms that are unreasonable in light of the common practices of transaction, the evidence establishes a factual presumption that there was a risk of causing anti-competitive effects as well as intent or purpose to cause such effects at the time of the conduct. In other cases, determination of whether there was intent or purpose with regard to conduct that has a risk of anti-competitive effects was a holistic process that took into account the background and motivation of the conduct, behavior pattern, characteristics of the relevant market, level of harm experienced by the other transacting party, any changes in price and volume manufactured in the relevant market, impediments to innovation, weakening of diversity, etc.

182. Considering the above, the conduct of a holder of SEPs that betray the FRAND commitments may be presumed to be acts accompanied by a subjective anti-competitive intent or purpose. Once a particular technology is adopted as the standard in accordance with the procedures of an SSO, the holder of the SEPs is promptly put in the position to acquire market dominance, not as a result of competition but following the collective decision-making of an SSO. Under the circumstances, if the SEP holder demands unreasonable royalties or contract terms and discriminates licensees in granting of licenses, such acts would inhibit promotion of efficiency and intended effects of standardization such as enhancement of consumer welfare and encouraging innovation, while the market is left with harmful anti-competitive effects such as higher royalties for monopolized technology, exiting of competitors from the relevant market, and future impediment to innovation. To guard against these risks following standardization, SSOs require the patent holder to abide by FRAND commitments, and considering the purpose of the FRAND commitments, acts betraying FRAND commitments alone may amount to acts containing risks of anti-competitive effects and may create a presumption that the actor had the subjective anti-competitive intent or purpose.

**(2) Whether the Respondents Are Market Dominant**

**(a) Licensing Market for All Respondents' Patented Technologies Incorporating CDMA, WCDMA and LTE Cellular Communications Standards**

183. Upon due consideration of the details below, the Respondents are market-dominant enterprises in the market for licensing all of the Respondents' patented technologies applicable to the telecommunications standards of CDMA, WCDMA and LTE.[160]

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or purpose to artificially influence the market order by restricting free competition, and an act that may objectively be evaluated to cause an actual risk of anti-competitive effects." (Supreme Court judgment, 2002Du8626, Nov. 22, 2007, en banc decision, POSCO's abuse of market dominance).

[160] Seoul High Court's decision 「Qualcomm Inc., Qualcomm Korea, Qualcomm CDMA Technologies Korea's abuse of market dominance」in a case commenced by claims to rectify, etc. and vacate (Dec. 30, 2009. KFTC Corrective Order No. 2009-281) (2010Nu3932), found that (similar to KFTC) the relevant market would be "the licensing market for all of Qualcomm's patented technologies that are included under the CDMA standard," and found the legal presumption that Qualcomm was a market-dominant enterprise in the relevant market because its market share was 100%.

184. First, since the nature of the SEPs dictates that the Respondents' patents are necessary for complying with technology standards, and because it is impossible to replace the SEPs with a competitor's technologies, each forms an isolated relevant market. Therefore, in each of the SEP licensing markets corresponding to the telecommunications standards CDMA, WCDMA, and LTE, the Respondents have 100% market shares and are legally presumed to possess market dominance.

185. Second, as the Respondents do not allow licensees to sub-license their cellular SEPs to a third party, there cannot exist another enterprise to compete against the Respondents.

**<Review of Respondents' Argument ①>**

186. The Respondents contend that it is improper to find that they together constitute a market dominant enterprise due to the fact that they hold the SEPs and further contend that they are not a market dominant enterprise because the ability of the Respondents to maintain and/or determine or modify terms of a transaction or to exercise the right to exclude is restricted by the FRAND commitments and other cellular SEP holders.

187. Upon evaluation, the Respondents' position is baseless because (i) the Respondents hold SEPs for each cellular standard such as CDMA, WCDMA and LTE, etc. and is a 100% market dominant enterprise in the relevant licensing market and no alternative standard exists because a downstream market has formed for each telecommunications standard, (ii) the fact that standardizing organizations require the SEP holders like the Respondents to adhere to FRAND commitments is a measure to prevent abuse of a market dominant position formed by standard setting, and therefore, this cannot form the basis to disallow a finding of the Respondents' market dominant status, and (iii) each of the patented technology subject to each cellular standard serves a different function and are not interchangeable with other patented technologies.

**(b) Modem Chipset Market by Standards: CDMA, WCDMA and LTE**

188. Upon considering the points discussed below, the Respondents constitute a market dominant enterprise in the modem chipset market under each standard, CDMA, WCDMA and LTE.[161]

189. First, entering into the modem chipset market requires certain production conditions such as an enormous investment, network, labor,[162] etc., the handset market as the

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[161] Seoul High Court's decision 「Qualcomm Inc., Qualcomm Korea, Qualcomm CDMA Technologies Korea's abuse of market dominance」in a case commenced by claims to rectify, etc. and vacate (Dec. 30, 2009. KFTC Corrective Order No. 2009-281) (2010Nu3932), found (similar to KFTC) that the relevant product market was "the modem chipset market for the CDMA 2000 standard" and that Qualcomm was legally presumed to be the market-dominant enterprise in the relevant market because its market share far exceeded 50%.

[162] The modem chipset is a high-technology semiconductor product that demands highly skilled labor and enormous capital from the early stages of production and requires continuous investment to respond to advances in technologies. In fact, designing a modem chipset alone is known to cost between KRW 15 billion and KRW 20 billion.

modem chipset's downstream market has a short period of product replacement, and thus, the handset manufacturers generally prefer trustworthy and reliable modem chipsets of existing enterprises over that of a new enterprise. Therefore, to minimize the product development period, handset enterprises must pass multiple levels of compatibility tests and acquire network approval in order to supply handsets; meaning that, there is a high market entry barrier for new modem chipset manufacturers in the modem chipset market.

190. Second, in a market such as this where there is a high market entry barrier, the Respondents possess market shares that are high enough to create the legal presumption of being a market dominant enterprise in the respective modem chipset market by cellular standards such as CDMA, WCDMA, and LTE, as shown in [Table 46] below.

[Table 46] Market Shares of the Respondents in the Global Modem Chipset Market

| Standard | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| CDMA | 98.4% | 97.6% | 96.4% | 94.3% | 92.4% | 93.1% | 91.6% | 83.1% |
| WCDMA | 38.8% | 47.4% | 45.7% | 55.0% | 50.4% | 53.9% | 48.8% | 32.3% |
| LTE | - | - | 34.2% | 58.8% | 94.5% | 96.0% | 84.8% | 69.4% |

Source: Strategy Analytics "Baseband Market Share Tracker"

191. Third, upon examination of the CDMA modem chipset market, the Respondents possess 90% or more of the CDMA SEPs, in which they have continuously maintained market shares of 90% and above since entering the CDMA modem chipset market up to 2014, and the Respondents' sole competitor is [***]. [***]'s CDMA modem chipsets. However, these modem chipsets are usually installed on low-priced handsets, and when [***] requested that the Respondents execute a license agreement with regard to production and/or sale of WCDMA modem chipsets in 2012, the Respondents declined and [***] could not enter the relevant market.

192. Fourth, through the backward compatibility of modem chipsets, the Respondents' dominant market shares have continued to impact the CDMA modem chipset market up to the current 4G LTE standard, solidifying the market power in the LTE modem chipset market. In order for the handset manufacturers to be able to supply handsets to mobile service providers which adopted the 2G CDMA standard[163], they require "CDMA-LTE Multi-Mode" modem chipsets, but practically the only modem chipset manufacturer of the "CDMA-LTE Multi-Mode" modem chipsets is the Respondents.

193. Fifth, upon examination of the LTE modem chipset market, the Respondents' market share began to sharply increase in the earlier stages of their LTE modem chipset business to record 96% in 2013 and has maintained 70% in 2015, positioning the Respondents as a market dominant enterprise in the LTE modem chipset market. When this market is witnessing the rise of the premium LTE modem chipset, which is upgraded LTE that processes large volumes of data more quickly; the Respondents virtually do not

[163] To name a few, Verizon and Sprint of the USA, China Telecom of the People's Republic of China, and KDDI of Japan.

have a competitor in the premium LTE modem chipset market.[164]

194. Sixth, the Respondents are not only the first-place enterprise in the modem chipset market but also at the same time a vertically integrated enterprise engaged in the licensing business, as distinguished from competing modem chipset manufacturers, and are strengthening their market dominance in both markets through the organic and mutually reinforcing effects of linking its supply of modem chipsets and the license agreements.

**<Review of Respondents' Argument ②>**

195. Stating that there are modem chipset suppliers who can replace the Respondents' modem chipsets, the Respondents state that key handset manufacturers possess substantial purchasing power in the modem chipset market, and especially in the recent WCDMA and LTE modem chipset market, the Respondents' market share has declined. The Respondents contend that they are not a market dominant enterprise in the modem chipset market.[165]

196. Upon review, the Respondents' contention is found be baseless because (1) even though the Respondents' market shares have partially decreased in the WCDMA and LTE modem chipset markets, the Respondents are still subject to the legal presumption of market dominance [166] and (2) the Respondents have maintained their market dominance in the WCDMA modem chipset market. Since 2005 when their market share was below 20%, the market share has continuously increased to propel the Respondents to maintain first place between 2008 and 2014, and the market share stayed in upwards of 50% from 2011 to 2013, (3) the partial decrease in the Respondents' market share in the WCDMA modem chipset market post-2015 was influenced by the fact that the Respondents no longer produced the new WCDMA-standard modem chipsets in 2013 because the market was being transformed by the 4G

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[164] According to internal records of the Respondents, they categorize [***] · [***] · [***] · [***] as their competitors for LTE modem chipset products priced in the mid-to-low range, while indicating that only [***] is their competition in the high-end premium products group. (Exhibit 56, Respondents' Internal Document from Sept. 2014). Since [***] cannot sell modem chipsets externally due to its patent license agreement with the Respondents, the Respondents do not have any competitor in the premium modem chipset market.

[165] Even though the Respondents argued that their acts had no anti-competitive effects for the same reason, their claim on the issue is rejected for the reasons stated below.

[166] As Article 4(2)3 of the Act provides for the legal presumption of market dominance where the sum of the market shares of three or fewer enterprises is 75% or above (excluding any enterprise whose market share is below 10%), the Respondents are legally presumed to be market-dominant enterprises in 2015 (according to Strategy Analytics) since ① their modem chipset market shares recorded above 50% in the CDMA (83.1%) and LTE (69.4%) markets, and ② in the case of WCDMA modem chipsets, the sum of the market shares of MediaTek (35.9%) puts the Respondents (32.3%) in second place, and Spreadtrum with the third-largest shares (23.9%) was higher than 75%. The same presumption applies to the third quarter of 2016, when ① the Respondents' modem chipset market shares were above 50% in the CDMA (71%) and LTE (54%) markets, and ② in the WCDMA modem chipset market, the Respondents had the third largest shares at around 10% and the sum of the three largest shares (including MediaTek's 44% and Spreadtrum's 40%) exceeded 75%.

LTE standard[167], (4) taking into account the backward compatibility across cellular standards of different generations, the fact that the Respondents' market share partially decreased in the WCDMA modem chipset market alone does not render the Respondents non-dominant in the WCDMA modem chipset market,[168] and (5) the Respondents' market share in 2015 is still about 78.5% in the LTE modem chipset market, excluding the volume of modem chipsets that the handset manufacturers manufacture and supply themselves[169] and calculating based on the volume of modem chipsets which competes with the Respondents in practice, and (6) the Respondents' reasons are insufficient to rebut the legal presumption.

**(c) Sub-Conclusion**

*197.* Based on the foregoing, the Respondents are a market-dominant enterprise in both the cellular SEPs license market and the modem chipset market.

*198.* In regards to this, the Respondents acquired and consolidated their market dominance in the cellular SEPs license market not through competition but by artificially becoming the SEP holder via mutual agreement among enterprises to standardize and through pledging to abide by FRAND commitments (i.e. to provide licenses fairly, reasonably, and without discrimination). In addition, the Respondents deny granting licenses for SEPs to modem chipset manufacturers while granting licenses to the handset manufacturers and while at the same time directly participating in the modem chipset market as a vertically-integrated enterprise. Furthermore, the Respondents are currently the only vertically-integrated market dominant enterprise in both the cellular SEPs license market and the modem chipset market. Moreover, where a vertically-integrated market dominant enterprise like the Respondents emerges, there are more reasons to betray the FRAND commitments and to restrict competition in both markets and the resulting anti-competitive effects become significant, as discussed in 1.C.2).b).(4).(b).

*199.* The standards for determining whether Conducts 1, 2 and 3 of the Respondents constitute a violation of abuse of a market-dominant position under Article 3-2 of the Act could not be the same as the standard applied to (i) acts of a market-dominant enterprise which has acquired the position not through standardization and FRAND

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[167] In 2015, the aggregate global sales revenues for WCDMA modem chipsets were around 1/4 ~ 1/3 of the aggregate figures for the LTE market, and the figures further dropped to 1/10 of LTE sales in the third quarter of 2016.

[168] With regard to this, [***] who participated in the KFTC hearings as the expert for an Interested Party (an Economics Professor at [***] University) gave the opinion that (i) because WCDMA modem chipsets are actually weakening in the market, the market share of "WCDMA-only chipsets" is meaningless, but the market share of "WCDMA+LTE modem chipsets" based on sales revenue shows instead that the Respondents' market share jumped from 2008's 38.8% to 43.2% in 2016, which positions the Respondents as the uncontested first-place enterprise, far ahead of MediaTek (25.4%) and Spreadtrum (10.5%), (ii) the market share of the Respondents' LTE modem chipset is still above 50% (53 ~ 55%) based on sales revenue instead of sales volume, and (iii) albeit not mentioned by the Respondents, their market share in the CDMA modem chipset market is consistently higher than 90%. (Aug. 17, 2016. Second KFTC Full-Commission Hearing).

[169] As representative examples, Samsung Electronics and HiSilicon manufacture modem chipsets exclusively for themselves, and their global market share in 2015's LTE modem chipset market (Table 17) was 7.9% for Samsung Electronics, and 3.7% for HiSilicon.

commitments but instead through competition, (ii) acts not of a vertically-integrated enterprise but those of an ordinary market-dominant enterprise, or (iii) acts of an ordinary vertically-integrated enterprise which does not have market dominance in both markets, and in order to reduce anti-competitive effects and to prevent the harmful consequences, appropriate standards should be established and an evaluation of the acts should take place thereunder. This is discussed in further detail below.

**(3) Whether the Respondents Offered Unreasonable Terms in Light of Common Practices of Transactions**

*200.* Application of the rules to the admitted facts and evidence shows that the Respondents did offer unreasonable terms in light of common practices in transactions because the Respondents denied the modem chipset manufacturers' request to enter into a license agreement with regard to the Respondents' SEPs or the Respondents limited the scope of license by restricting use, rights, etc. instead of granting a complete license in connection with the modem chipset's production, sale, lease, use, and repair, among other things.

**(a) Meaning of Common Practice in Transactions in Licensing on the Modem Chipset-Level**

*201.* The common practices of transaction are understood as the norm and common practices of transaction are understood to be in accordance with a pro-competitive environment. Whether a transaction qualifies as a common practice of transaction is based on the norms and common practices in the relevant market, which do not necessarily match with the existing common practices of transaction, and any common practices of transaction that actually exist in practice should be judged to see whether it is a healthy practice in agreement with a competitive environment.

*202.* In determining what constitutes common practices of licensing transactions in agreement with pro-competitiveness at the modem chipset level, the following should be considered: what industry customs in connection with the SEPs currently exist, whether the SEP licensing at the modem chipset level is necessary in light of the meaning and properties of the SEPs, whether it is reasonable to expect the SEP licensing given the basic purpose of the FRAND commitments, and whether it is practically impossible to provide a SEP license at the modem chipset level.

*203.* Notwithstanding more in-depth discussions on the issue further below, the following is an overview of what may constitute common practice of licensing transactions at the modem chipset level.

*204.* First, there is an industry practice of providing a SEP license at the modem chipset level as the Respondents themselves have been granted licenses to use others' SEPs for the manufacture and sale of their own modem chipsets and there have been instances of providing SEP licensing at the modem chipset level or examples of components similar to modem chipsets.

*205.* Second, there is a need to provide SEP licensing at the modem chipset level given the meaning and properties of the SEPs, the fact that the Respondents are aware that they require licensing from the Respondents for their own modem chipset business, etc.

206. Third, there is a possibility of a reasonable expectation from modem chipset manufacturers (that hope to receive such license) to expect that a license for the SEPs may be provided on FRAND terms in light of the process and the purpose of pledging the SEPs for FRAND commitments with the SSOs, the positions taken by the SSOs and competition authorities, as well as the opinions that the Respondents have expressed on the FRAND thus far.

207. Fourth, it is neither difficult nor impossible for the Respondents to provide licensing at the modem chipset level despite incurring some costs because the Respondents admit to owning SEPs embodied at the modem chipset level and licensing does in fact occur at the component level, such as the modem chipset.

208. In view of the foregoing, the common practices of transaction are for the SEP holder, having pledged FRAND commitments, to grant on a FRAND-basis a complete license of their SEPs, allowing full access and use to modem chipset manufacturers that request licensing and intend to pay just compensation for the SEPs.

209. As discussed, where there is a vertically-integrated market dominant enterprise in both the cellular SEPs license market and the modem chipset market (such as the Respondents) and where the enterprise denies SEP licenses to competing modem chipset manufacturers in violation of its FRAND commitments and the common practices of transaction, the harmful effects of the anti-competitive conduct would be significant, and thus such enterprise is obligated to abide by and carry out its FRAND commitments even more fully and diligently.

210. The following is a detailed discussion of what may constitute common practices of licensing transactions at the modem chipset level:

**① Industry Practice of Licensing SEPs at the Modem Chipset Level**

211. Upon assessment of whether there are common practices of transaction at the modem chipset level with regard to cellular SEPs in the current cellular communication industry.

212. First, the Respondents themselves have been granted licenses with regard to SEPs necessary for the manufacture and/or sale of their own modem chipsets from 297 SEP holders globally as of May 2015, including the handset manufacturers, modem chipset manufacturers, cell tower equipment manufacturers, and patent management firms.

213. Second, 35 enterprises including [***], [***], [***], [***], [***], [***], [***], [***] are participating in a patent pool where each patent holder licenses its patents including cellular SEPs at all levels including the modem chipset level.[170]

214. Third, competing modem chipset manufacturers such as [***], [***], [***], [***] have cross-licensed all of the SEPs including the cellular SEPs that each company owns.[171]

[170] Exhibit 87, Materials Introducing Via Licensing's LTE SEP Licensing Program

[171] The terms of the cross-license agreement have been sealed to protect the trade secrets of the enterprises.

215. Fourth, it is a known fact that SEP licenses at the component-level are granted for the manufacture and sale of components installed on handsets, including those relating to Wi-Fi, application processor ("**AP**"), memory, and camera.[172]

216. Therefore, there are common practices of transactions granting cellular SEPs, not to manufacturers of modem chipsets or the finished product, but to the manufacturers of components, such as modem chipsets.

**<Review of Respondents' Argument ③>**

217. In this regard, the Respondents argue that licensing at the handset level has existed in the market since the early stage when they entered the market; that since [***] • [***], etc. are licensing to the handset manufacturers, the licensing at the handset level is a common practice of transaction; and that the Respondents' acts in accordance with this common practice should not be a problem.

218. To review this argument, there are no grounds to consider the Respondents' argument given the following points:

219. First, if we could deem that an individual/specific act of the Respondents is within a range of common practices of transaction, we should judge this by taking into consideration the individual/specific nature of the act as well as the act itself, and since there was or is a case of licensing at the handset level, the Respondents' individual/specific actions cannot be deemed to be a common practice of transaction.

220. (i) The Respondents' acts are related to "SEPs" but not to general patents. The Respondents became the "SEP holder" that acquired a dominant position with regard to their own patented technology through an artificial process of standard-setting but not competition, and instead, they made the FRAND commitments that they would waive the right to "exclude" and "discriminate" which a general patent holder may be entitled to do[173]. Thus, it is difficult to deem the Respondents' act of refusing to license the SEPs to the competing modem chipset manufacturers (i.e., the act of "exclusion" and "discrimination") as a common practice of transaction based on the business model of other enterprises.

221. (ii) The Respondents are a vertically integrated monopolistic enterprise both in the cellular SEP market and the modem chipset market. If a vertically integrated monopolistic enterprise's act adversely affects competition in the market, the extent of

[172] [***] who participated in the KTFC hearing as an Interested Party stated that "chipset-level licensing is common practice in the semiconductor industry, including for baseband chipsets" (Sept. 5, 2016. [***]'s Materials Presented During the Third KTFC Full-Commission Hearing), [***] who worked as a licensing manager at [***] submitted the opinion that "There is a license for modem technology to connect the computer to the Internet ... the license was granted at the chipset level". (Sept. 9, 2016. [***]'s Expert Opinion Submission)

[173] In Qualcomm Inc., Comment on the FRAND submitted to the U.S. FTC in 2011, the Respondents declared, "the patent holder who made the RAND commitments waived the right to refuse a license." [Qualcomm Inc., Comment to the U.S. Federal Trade Commission, Project No. P11-1204, (2011.6.13.)]

the harmful effect will be more significant than that of a general SEP holder or non-dominant vertically integrated enterprise. Stricter criteria applicable to them are required accordingly. Therefore, we can hardly say that the Respondents' acts are consistent with the common practice of transaction based only on the grounds that there are some cases wherein the transaction method of some enterprises were the same as or similar to that of the Respondents.[174]

*222.* (iii) The SEPs for which the Respondents intend to license and collect royalties at the handset level (and they refuse to license at the modem chipset level despite competitors' request for licensing) are the "SEPs implemented at the modem chipset level." Thus, unless there is any special circumstance, such as cases where a modem chipset company does not want the SEP license or a handset company wants the SEP license at its free will, an act of refusing and/or restricting the SEPs license at the modem chipset level or an act of coercing a license at the handset level without reasonable and justifiable cause against the will of the licensee is likely to result in the licensee unfairly paying the royalties to the SEP holder; and therefore, such an act cannot be deemed to be a common practice of transaction.

*223.* Second, unlike the Respondents' argument, SEP licenses are broadly granted not only at the modem chipset level but also at the level of components such as modem chipsets. The Respondents themselves are a representative case of the foregoing. Currently, the Respondents have been receiving SEP licenses from 297 other companies in the world for manufacturing and/or selling of their own modem chipsets. In addition, the Respondents had entered into modem chipset license agreements with [***] etc. and collected royalties, under which use rights were restricted. Furthermore, in addition to the Respondents, other companies are also granting the SEP licenses at the modem chipset level by participating in a patent pool or by means of cross-license, etc. Other than the modem chipsets, the SEP licenses for other components used in handsets, such as Wi-Fi, application processor (AP), memories, camera, etc. are provided at the component level. Thus, licensing at the handset level cannot be deemed to be the only way or the common practice related to the licensing of cellular SEPs.

*224.* Third, in the past, when the Respondents entered the market, handsets in its initial stages only functioned as a cellular phone for voice communication, and the key functions of mobile communications were concentrated in modem chipsets. However, the latest smartphone is a multi-functional IT device, and the modem chipset price accounts for only 4% of the handset price. Given the changes in the modem chipset market and the handset market as mentioned above, we cannot deem that the Respondents' acts simply accord with the common practices of transaction on the grounds that there was a case of licensing at the handset level in the past or on the basis of other similar licensing methods of some companies.

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[174] In this regard, the European Commission declared that the ruling on illegality would not differ even if abuse of market dominance happened to accord with the industry practice. The original text of the ruling read as follows: "In any case, there are no grounds under Article 82 of the Treaty according to which instance of behavior by a dominant company which accord with industry practice should be screened out. Even if it were therefore the case that other vendors did not disclose similar interface information, this would not mechanically exculpate Microsoft." (Commission decision of 24.03.2004, Case COMP/C-3/37.792, Footnote 877)

### ② Necessity for SEP Licensing at the Modem Chipset Level

*225.* With regard to the issue of whether the modem chipset manufacturers need to be granted the licenses from the Respondents for the SEPs of CDMA, WCDMA and LTE owned by the Respondents when they manufacture and/or sell the modem chipsets:

*226.* There is no difference between the Respondents and the Interested Parties with regard to the following facts: the SEPs, in their concept and nature, unlike non-SEPs, are necessary to the modem chipset manufacturers to manufacture and/or sell the modem chipset[175], and some of the SEPs for CDMA, WCDMA and LTE owned by the Respondents are necessary to manufacture and/or sell the modem chipset, and such SEPs exist.[176]

*227.* Thus, if a modem chipset company manufactures and/or sells the modem chipsets without being licensed the SEPs, the modem chipset company is exposed to the potential risk that it may be at any time subjected to a lawsuit for damage compensation[177] or injunction for sale and/or use, etc. of the relevant product to be brought by the Respondents on the basis of the alleged patent infringement.

*228.* Moreover, as the Respondents stated in the Annual Report (10-K Form) “the mobile communications industry generally recognizes that a company seeking to develop, manufacture and/or sell products that use CDMA technology will require a patent license from us[178], they themselves have taken the position it is necessary to receive the license from them for a company to carry out the modem chipset business. They also stated that they have practiced the forbearance policy with regard to the use of their patents by competing modem chipset manufacturers that request the license. Meaning that, if a modem chipset company uses any of their own SEPs without a license, the modem chipset company infringes the patent but they practice forbearance. In other words, the forbearance policy is based on a premise that the modem chipset infringes their own SEPs.

*229.* Therefore, all things considered, the modem chipset manufacturers must first obtain the licenses for SEPs related to CDMA, WCDMA and LTE from the Respondents in order to carry out the sales business of modem chipsets. To start the business of manufacturing and/or selling modem chipsets with a high entry barrier, they require not only financial resources, high technical skills and a sound business plan, but also implementation of

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[175] In this regard, the Respondents had entered into the license agreement at the modem chipset level until 2008, and in the lawsuit with Broadcom in 2006, they claimed that Broadcom modem chipsets infringed upon their SEPs. (Broadcom v. Qualcomm, Case NO. 08cv1607, Southern District of California)

[176] However, there is a difference between the Respondents and the Interested Parties with regard to the scope of the SEPs embodied in the modem chipsets and the figures of their portions. Nevertheless, the Respondents themselves admitted that 4.23% of their own SEPs are related to modem chipsets in all of the patent claims.

[177] In particular, since punitive damages may be applicable in the ruling on damage compensation in a case of patent infringement in the U.S., the burden of the licensee (the modem chipset manufacturers in this Case) will significantly increase if a patent infringement is finally confirmed.

[178] 2014 Annual Report of Form 10-K, the Respondents state, “The mobile communications industry generally recognizes that a company seeking to develop, manufacture and/or sell products that use CDMA technology will require a patent license from us."

thorough precautions not to be entangled in patent disputes.

**<Review of Respondents' Argument ④>**

*230.* In this regard, the Respondents argue that since they have practiced forbearance with the modem chipset manufacturers implementing their SEPs, the modem chipset manufacturers can carry out the modem chipset manufacture and/or sales business without the license agreement with the Respondents, and therefore, there is no special uncertainty regarding patent disputes such as infringement claims, etc.

*231.* However, the Respondents' argument has no grounds given the following points:

*232.* First, in light of the purpose and terms of the FRAND commitments, the common practice of transaction anticipated for a request for the SEP license is to grant an irrevocable license under the FRAND terms and not a simple forbearance as claimed by the Respondents. In addition, the forbearance as claimed by the Respondents is, in fact, just to reserve the patent holder's discretionary exercise of rights. It does not mean that the patent holder will not exercise any rights. From the perspective of the party requesting the license, there exist incomparable and fundamental differences between the forbearance policy and execution of a license agreement because the party faces the risk of patent infringement.[179] Therefore, it is difficult to deem that such an act of declaring forbearance with such party's implementation while refusing the request for the SEP license is within the range of common practices of transaction.

*233.* Second, we cannot exclude the possibility that the Respondents may withdraw the forbearance policy at any time depending on changes in circumstances or their own necessity or at their own discretion and then bring infringement claims on their own SEPs against the modem chipset manufacturers, taking into consideration the following facts that: the Respondents did not officially declare the forbearance policy (as they claim) an irrecoverable commitment; (i) the licensing executive of the Respondents, [***], in a telephone call with B's executive [***] on **, 2011, at first accepted B's request that "the Respondents' commitment not to interfere or prevent B from selling its modem chipsets to others be made in writing in the form of a specific agreement," but shifting his stance thereafter, he said in an e-mail dated **, 2011, "B will not need a separate agreement to sell the modem chipsets to others",[180] and (ii) the licensing executive of the Respondents, [***], stated in an email dated **, 2011 that he sent to executives and employees, "We did not do anything to allow E to develop and sell modem chipsets to third parties. If E sells

[179] In this regard, [***](professor at Law School, [***] University), who participated as an expert in the examination of the KFTC, stated, "A contract means an agreement of both parties regarding terms and conditions of considerations they take and give. An act not satisfying the requirements for conclusion of such an agreement cannot be recognized as a contract. Even if a party has unilaterally declared to the other party that it will not sue the other party for patent infringement, the declaration does not constitute a legally effective contract unless there are considerations taken and given between the parties for the declaration and an agreement of the intention of both parties. A declaration that does not lead to a contract does not constitute a license agreement; and thus, to only make a declaration is not to comply with the FRAND commitments.([***] Opinion submitted at the 3rd hearing meeting of KFTC held on Sep. 5, 2016)

[180] Exhibit 60

modem chipsets to third parties, we can claim our patent against E or E's customers[181]." Therefore, we cannot say that the declaration of the forbearance policy alone (as claimed by the Respondents) removed the uncertainty regarding patent disputes for modem chipset manufacturers that carry out the modem chipset business.

*234.* Third, the Respondents (i) had entered into royalty-based license agreements with ** competing modem chipset manufacturers until 2008; (ii) after 2005, in the lawsuit with Broadcom, they claimed that the license was necessary because Broadcom infringed their patent in the process of manufacturing modem chipsets[182]; in 2003, they filed a lawsuit for termination of their license agreement against Texas Instruments ("**TI**") on the grounds that TI breached the confidentiality clause[183]. In this way the Respondents have made patent infringement claims against competing modem chipset manufacturers. Given these facts, it is difficult to deem that the Respondents have consistently practiced forbearance with the modem chipset manufacturers implementing their patents, and thus, we cannot say positively that there is no uncertainty concerning patent infringement litigation.

**③ Reasonable Expectation of SEP Licensing at the Modem Chipset Level**

*235.* The Respondents acquired the status of SEP holder by making commitments to a number of SSOs that they would grant licensed under the FRAND terms to those who are willing to implement their SEPs. Thus, unless there is any special circumstance, they are obligated to negotiate with the modem chipset manufacturers in good faith under the principle that unlimited access to and use of cellular SEPs should be guaranteed for the modem chipset manufacturers in accordance with the purposes of standard-setting and FRAND commitments. Therefore, it is reasonable for the modem chipset manufacturers, who are willing to receive a license, to expect that they will be able to receive the SEP license necessary to manufacture and/or sell the modem chipset from the Respondents under the FRAND terms.

**<Review of Respondents' Argument ⑤>**

*236.* In this regard, the Respondents argue that the intellectual property rights ("**IPR**") policy of ETSI, one of the SSOs, does not expressly prescribe that the object of the license is a modem chipset, a component, and can be interpreted to prescribe that end products are subject to license; and thus, refusal to grant the SEP license to the modem chipset manufacturers cannot be deemed to constitute a violation of the FRAND commitments.

*237.* However, apart from the individual provisions of ETSI, given the concept of SEPs and the acknowledgment process, the purpose of the FRAND commitments as well as the stance of other SSOs or competition authorities, and the stance that the Respondents have maintained on the FRAND commitments, it is reasonable to interpret this to mean that granting the modem chipset manufacturers the SEP license essential to manufacture and/or sell the modem chipset conforms with the common practices of transaction. Therefore, the Respondents' argument is groundless.

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[181] Exhibit 47

[182] Broadcom v. Qualcomm, Case No. 08cv1607, Southern District of California

[183].(Exhibit 90, [***] Submission)

238. First, the SEP license is necessarily required, conceptually and/or intrinsically, in manufacturing and/or selling products in which SEPs are implemented. If a party who wants to manufacture and/or sell the product fails to enter into a license agreement, the party will be exposed to the risk of patent infringement claims from the SEP holder. The same happens to the modem chipset manufacturers that intend to manufacture and/or sell modem chipsets. To prevent these harmful effects, SSOs require the patent holder to declare the FRAND commitments before adopting its technology as the standard one, and the Respondents have already made the FRAND commitments in writing to the SSOs that they would grant licenses for their own SEPs under the FRAND terms.

239. Second, if a SEP holder makes the FRAND commitments, with regard to the scope of prospective licensees, it is the stance of major competition authorities, SSOs and the courts that the prospective licensees who may be licensed by the SEP holder under the FRAND terms include, but not be limited to makers of components such as modem chipsets or makers of end products such as handsets as elaborated below.[184][185]

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[184] In this regard, [***](professor at Law School, [***] University), who participated as an expert in the examination of the KFTC, stated his opinion as follows: “The requirement to grant a license to anyone is attributable to the nature of standard-setting. Standard-setting has the effect that the cooperative action of many participants makes technologies not selected as standard exit from the market and enables only the holder of the selected patent to implement the technology exclusively. To prevent such an artificial monopoly, FRAND commitments include the requirement for anyone. If a SEP holder is able to select a licensee, the patented invention will be an exclusive property of a few or a sole patent holder and would harm competition accordingly. To prevent this harmful effect, the ‘to anyone’ requirement is necessary. In this sense, it is the most important among various requirements for the FRAND commitments. Since the license agreement itself cannot exist without compliance with any single requirement, it does not even allow an opportunity to discuss other requirements for FRAND commitments. Therefore, stricter measures against non-compliance of the “anyone” requirement are more necessary than the non-compliance of other requirements.”([***] Opinion submitted at the 3rd hearing meeting of the KFTC held on Sep. 5, 2016)

[185] Besides, we can list a number of scholars who stated their views that there is no restriction on the licensees who are willing to receive the license on FRAND terms as follows:

(i) Yoo Kye Hwan, "Review of Possibility of Restriction on Standard Patent Holder’s Exercise of Unfair Rights”, p. 57 ("’FRAND’ declaration is a system that enables anyone to use the standard patent by placing restrictions on the holder’s exercise of exclusive patent rights.")

(ii) Lee Ho Young, "Study of Enforcement of the Fair Trade Act on SEP Holder’s Violation of FRAND Commitments”, 「Commercial Law Review」 Vol. 31, No. 4, 2013, p. 256 (“A standard patent holder shall not refuse a license agreement due to the anyone requirement, and this issue is unquestionable.”)

(iii) Jay P. Kesan and Carol M. Hayes, *Patent Transfers in the Information Age: FRAND Commitments and Transparency*, p. 5 ("During the standard setting process, a board or committee may request that members disclose relevant patents, and may also seek agreements from patent holders to either license these patents on royalty-free (FRAND-RF) or FRAND terms to anyone who requests a license.")

(iv) Brian T. Yeh, *Availability of Injunctive Relief for Standard-Essential Patent Holders*, 2012, in summary ("when those companies have previously committed themselves to license their patented technology to anyone (corporate partners or competitors) on FRAND terms.")

(v) Stanley M. Besen, *Why Royalties for Standard Essential Patents Should Not Be Set by the Courts*, 15 Chi.-Kent J. Intell. Prop. 19, 20 (2015) ("The policies often require or encourage members of the standard setting organizations to identify patents that are essential to a proposed standard and to

*240.* (i) In the Guideline on Horizontal Cooperation Agreements, the European Commission states that the SEP holder shall provide an irrevocable commitment in writing to offer to license their essential IPR to "all third parties" on FRAND terms. [186]

*241.* (ii) The U.S. Ministry of Justice ("**DOJ**") stated that the FRAND commitments shall extend to "all implementers" of the standard whether or not they are a member of an SSO.[187]

*242.* (iii) Major SSOs such as ITU, ISO, IEC, TIA, and ARIB, etc. state that patent holders are prepared to grant a license "to an unrestricted number of applicants" under the FRAND commitments[188], and IEEE stated that a patent holder making the FRAND commitments cannot refuse to license its patents for use in IEEE SA standards at certain levels of production.[189]

*243.* (iv) The 9th Circuit Court of Appeals of the U.S. ruled that "there are no restrictions on the eligibility or the number of applicants who may be licensed under the FRAND commitments"[190], and the Northern District Court of Illinois, the U.S. [191] and the Federal Circuit Court of the U.S.[192] ordered to grant a license for SEPs to anyone [193] on FRAND terms without phased discrimination.

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agree to license their essential patents on reasonable and non-discriminatory ("RAND") terms to anyone who requests a license.")

[186] "In order to ensure effective access to the standard, the IPR policy would need to require participants wishing to have their IPR included in the standard to provide an irrevocable commitment in writing to offer to license their essential IPR to all third parties on fair, reasonable and non-discriminatory terms (FRAND commitment). That commitment should be given prior to the adoption of the standard."(the European Commission, Guidelines on Horizontal Cooperation Agreements 285).

[187] "We have encouraged SSOs to: Make it clear that licensing commitments made to the standards body are intended to bind both the current patent holder and subsequent purchasers of the patents and that these commitments extend to all implementers of the standard whether or not they are a member of the standards body."(Department of Justice, "The Role of Standards in the Current Patent Wars")

[188] ITU, ISO, and IEC describe in the Licensing Declaration, "Patent holders are prepared to grant a license to an unrestricted number of applicants on a worldwide non-discriminatory basis and on reasonable terms and conditions to make, use and sell implementations of the above document."

[189] "The Update obligates patent holders band by the IEEE RAND commitment to license their patents for 'any compliant Implementation' meaning that a patent holder making an IEEE RAND Commitment cannot refuse to license its patents for use in IEEE SA standards at certain levels of production"(Exhibit 86 The U.S. MOJ's Opinion on Change of FIEEE IPR)

[190] Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 884 (9th Cir.2012)

[191] Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2nd, 901, 914 (N.D. Ill 2012) "By committing to license its patents on FRAND terms, Motorola committed to license the '898 to anyone willing to pay a FRAND royalty and thus implicitly acknowledged that a royalty is adequate compensation for a license to use that patent."

In re Innovatio IP Ventures, LLC Patent Litig., No. 11 C 9308, 2013 WL 5593609 (N.D. I ll. Oct. 3, 2013) "considering the profit of the chip manufacturer on the chip, rather than the profit margins of the Manufacturers on the accused products, is appropriate because a RAND licensor such as Innovatio cannot discriminate between licensees on the basis of their position in the market."

[192] Ericsson, Inc. v. D-Link Sys., Inc., 773 F.3d 1201, 1231 (Fed. Cir. 2014) "Ericsson promised that it would 'grant a license under reasonable rates to an unrestricted number of applicants on a worldwide basis with reasonable terms and conditions that are demonstrably free of unfair discrimination.'"

[193] The original text reads, "to anyone" or "to an unrestricted number of applicants on a worldwide basis".

*244.* Third, as elaborated below, the Respondents themselves have admitted that they are obligated to grant a license on the FRAND terms at the modem chipset level since they made the FRAND commitments in the lawsuit with Ericsson in 1998, the materials at the investors meeting in 2005, the amicus brief filed in the LG Electronics vs. Quanta Computer case in 2008 and the statement submitted to the U.S. FTC in 2011.

*245.* (i) On October 6, 1998, in the lawsuit with Ericsson, the Respondents made a statement that Ericsson was obligated to grant a license for its own SEP to the Respondents under the FRAND terms[194], and on March 26, 1999 thereafter, terminating the legal dispute with Ericsson, the Respondents declared in a press release[195] that they would grant the license for their own SEPs "to the rest of the industry" under the FRAND terms.

*246.* (ii) In the investors meeting of the Respondents in 2005, with regard to the claim that the Respondents are trying to exclude competing modem chipset companies from the market, CEO Steve Altman mentioned, "Qualcomm has never refused to license its WCDMA SEP license to any company."[196]

*247.* (iii) In the amicus brief Qualcomm submitted to the U.S. Federal Supreme Court in the LG Electronics vs. Quanta Computer, Inc. case[197] in 2008, the Respondents stated that the modem chipset is a product implementing the standard, and they have offered licenses for their own SEPs under FRAND terms to entities desiring such a license to produce products that implement a given standard, and these portfolio licenses have enabled makers of various components such as modem chipsets to manufacture and sell them.[198]

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[194] Ericsson Inc. et al vs. Qualcomm Inc. Civil Action No. 2-96-CY183 (E.D.Tex)

[195] "As part of the agreement, the companies will each commit to the ITU and to other standard bodies to license their essential patents for a single CDMA standard or any of its modes to the rest of the industry on a fair and reasonable basis free from unfair discrimination" (https://www.qualcomm.com/news/releases/1999/03/25/ericsson-and-qualcomm-reach-global-cdma-resolution).

[196] "They claim that we're trying to exclude competing manufacturers of chipsets from the market, or preventing them from entering. (omitted) We've never refused to license our WCDMA essential patents to any company." (Exhibit82 Materials for the 2005 Investors Meeting of the Respondents)

[197] Quanta Computer, Inc. v. LG Electronics, Inc. 553 U.S. 617, 635 (2008); LG Electronics holds a method patent that efficiently manages various memories and buses through a microprocessor and a chipset. Under a license agreement with Intel, LG Electronics licensed the patent to Intel under the condition that Intel must obtain permission from LG Electronics when it manufactures a computer system in combination with a memory or bus manufactured by any party other than LG Electronics or Intel. LG Electronics claimed the patent infringement in breach of the condition against Quanta, a customer of Intel, which did not comply with the condition. In this regard, the court ruled that: (i) as a method patent is implemented in the product, the doctrine of patent exhaustion applies to the method patent; and (ii) if the product essentially implements the method patent, sale of the product exhausts the method patent. That is, in the case where a product implements an essential feature of a patent under a duly authorized right, the sale exhausts the patent even if a limited right is established narrowly when entering into the license agreement.

[198] "Qualcomm is a member of many standards setting organizations, which typically request that a member commit to license its patents that are actually essential to a standard on terms that are Fair, Reasonable and Non-Discriminatory ("FRAND"). (omitted) Qualcomm has offered licenses to its portfolio of technically necessary patents on FRAND terms to entities desiring such a license to produce products that implement a given standard. Qualcomm has entered into over 200 patent license agreements covering all or substantial portions of its patent portfolio. (omitted) These portfolio

*248.* (iv) In the Qualcomm Inc. Comment submitted to the U.S. FTC in 2011, the Respondents stated, "a patent holder who gives a RAND[199] commitment gives up the right to refuse to license."[200]

*249.* In the meantime, the Respondents argue, on the basis of the IPR Policy of ETSI only among the major SSOs, that under §15 of ETSI IPR Policy, "manufacture" means production of "equipment," and "equipment" means "any device fully conforming to a standard," and the modem chipset is not a device fully conforming to a standard because it is not an end product, and thus, they are not obligated to grant a license to the modem chipset manufacturers. However, (i) §6.1 of ETSI IPR Policy expressly defines the object of license as "customized components"[201]; (ii) the phrase of "any device fully conforming to a standard" therein is understood literally as it means, and given that the modem chipset conforms to the cellular standard, it is difficult to consider that "equipment" does not include modem chipsets. (iii) Moreover, to review the license agreement that the Respondents entered into with the competing modem chipset manufacturers or the handset manufacturers, they describe the modem chipset as a "device conforming to a standard"[202]. Thus, since the Respondents seem to understand that "equipment" includes components, it is difficult to accept the Respondents' argument regarding the interpretation of ETSI IPR Policy.

*250.* Therefore, when we put together the foregoing (as mentioned earlier), we cannot find any grounds in the Respondents' argument that demonstrate that refusal to grant the SEP license to the modem chipset manufacturers does not constitute a violation of FRAND commitments.

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licenses have enabled numerous entities to manufacture and sell a wide variety of CDMA components, products and combinations thereof, including wireless chips and handsets."
(Qualcomm Amicus Brief in the LG Electronics vs. Quanta Computer case)

[199] Some people consider the concept of reasonable or non-discriminatory can embrace the concept of fair, and instead of "FRAND," use the term of "RAND."

[200] "a patent-holder who gives a RAND commitment gives up the right to refuse to license" [Qualcomm. Inc., Comment to U.S. Federal Trade Commission, Project No. P11-1204, (2011.6.13.)]

[201] Article 6.1 of ETSI IPR Policy is as follows:

6. Availability of Licenses

6.1 When an ESSENTIAL IPR relating to a particular STANDARD or TECHNICAL SPECIFICATION is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licenses on fair, reasonable and non-discriminatory ("FRAND") terms and conditions under such IPR to at least the following extent:

- MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee's own design for use in MANUFACTURE;
- sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED;
- repair, use, or operate EQUIPMENT; and
- use METHODS.

[202] Under Article ** of the Patent Portfolio Agreement between the Respondents and [***] and the Appendix 1 Definitions to the Patent Agreement between the Respondents and [***], the Respondents define the "integrated circuit" which is a modem chipset to be included in the "device," and when ASIC usually referring to a modem chipset is deemed to mean an application specific integrated circuit, the modem chipset is also deemed to be a kind of device.

**④ Feasibility of Licensing at the Modem Chipset Level**

*251.* With regard to the issue of whether it is practicable for the Respondents to license their own SEPs to the modem chipset manufacturers, (i) the Respondents had entered into royalty-based license agreements with ** competing modem chipset manufacturers and collected royalties from them until 2008; (ii) it has been confirmed that the Respondents have been licensed from 297 SEP holders including handset manufacturers around the world for the SEPs necessary for the manufacture and/or sale, etc. of their modem chipsets as of May 2015; (iii) licensing SEPs at the component level such as modem chipsets seems to be possible in the general patent licensing practice[203]. (iv) Meanwhile, as the Respondents claim[204], even if licensing at the modem chipset level causes multi-level licenses and increase of costs to the Respondents, it is reasonable to consider that the cost is within the scope of tax to be borne as a matter of course by a patent holder to collect royalties.[205] Therefore, given the above-mentioned facts, we can hardly deem that it is practically difficult or impossible for the Respondents to grant the SEP licenses to the modem chipset manufacturers.

**<Review of Respondents' Argument ⑥>**

*252.* In this regard, the Respondents argue that since their patents are not entirely implemented in the component level, such as modem chipsets, etc. but is instead implemented in the final handset level, licensing at the handset level can guarantee due compensation for the patents owned by the Respondents.

*253.* To review this argument of the Respondents:

*254.* First, the SEPs held by the Respondents can be classified into the categories implemented at each level (i.e., at the modem chipset level and the handset level, respectively); the Respondents admit that there are SEPs implemented at the modem chipset level; in the white paper the Respondents sent to the handset manufacturers, they state that the modem chipsets implemented their cellular SEPs[206]. Given the above, it is reasonable to grant the license for the SEPs implemented in the modem chipsets to the modem chipset manufacturers, and it is practically possible to distinguish the SEPs

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[203] In this regard, [***] ([***] Vice-President), [***] (professor at Electronics & Telecommunications Engineering Department, [***] University), and [***] (patent attorney) who participated as an expert in the examination of the KFTC, stated, “licensing at the modem chipset level accords with the patent practice, it is possible to assort the patents by level and to enter into a license agreement separately at the modem chipset level and the handset level, and if patent claims cover a number of products, it is possible to define the scope of product by each patent claim for the purpose of licensing.”

[204] The Respondents claim that even if they grant the license at the modem chipset level, they need to additionally enter into a license agreement with the handset manufacturers because some of their patents are still implemented in the handset level, and thus, they cannot avoid licensing at multiple levels (at the modem chipset level + at the handset level).

[205] In addition, the Respondents themselves had already granted licenses at multiple levels of modem chipsets and handsets until 2008 as reviewed earlier.

[206] The original text read as follows; “Qualcomm’s chipsets including components implementing the CDMA2000 family of standards, the WCDMA family of standards and/or OFDM/OFDMA family of standards.”(Exhibit 39 Qualcomm PR Material on Benefits in Use of Third Party Patents)

implemented in the modem chipset from other SEPs.[207]

255. Second, in the LG Electronics vs. Quanta Computer case in 2008, the Respondents submitted an amicus brief to the effect that "licensing at the modem chipset level is a way to guarantee full compensation for the value of patent rights"; as they had actually entered into multiple level license agreements both at the modem chipset level and the handset level and collected royalties until 2008, if it is possible to enter into the license agreement and collect royalties by each level (such as at the modem chipset level and the handset level), they can collect the royalty at any level by proving that such patents are implemented in any part other than the modem chipset even if they grant license at the modem chipset level. Therefore, we do not believe that it is impossible for the Respondents to receive due compensation for their own SEPs.[208]

256. Third, in light of the opinions of the Interested Parties[209] and experts[210] that were submitted during the hearing as well as the arguments among the Respondents and the Interested Parties and Experts over the opinions[211], etc., it is difficult to accept the

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[207] In this regard, [***], expert for [***]* who participated as the Interested Party in the examination of the KFTC, submitted a statement of his experience when working at A, stating as follows: "A organized the licensing program in a way that they could derive value from A's patent portfolio. They classified the patent portfolio into two groups: (i) system patents and (ii) chip patents. And then, they adopted different licensing programs to each group of patents because of a significant difference between the two methods of calculating royalties for the patents (i.e., (i) system-based royalty and (ii) chip-based royalty). For A to operate the respective licensing programs for the system patents and chip patents, of course, it needs to know which patent is substantially implemented in the chipset and which patent is applied to the entire system. Because of this, A introduced the very sorting process that Qualcomm claims to be impossible."([***] Expert's Opinion submitted on Sep. 9, 2016)

[208] In this regard, [***]([***] Vice-President), [***] (professor at Electronics & Telecommunications Engineering Department, [***] University), and [***] (patent attorney) who participated as an expert in the examination of the KFTC, submitted the statement of opinion that: "licensing the patent to the modem chipset manufacturers does not lose the value of Qualcomm patents for all of their patent rights are not exhausted at the modem chipset level but only the patent claim implemented in the modem chipset is exhausted and the other patent claims remain unexhausted."(the 2nd full-commission hearing of the KFTC held on August 17, 2016)

[209] Expert [***] for [***]* who participated as the Interested Party in the examination of the KTFC stated his opinion that while 56.5% of the Respondents' SEPs are implemented in the modem chipsets, the SEPs implemented in the handsets account for only 1%.

[210] In this regard, [***]([***] Vice-President), [***] (professor at Electronics & Telecommunications Engineering Department, [***] University), and [***] (patent attorney) who participated as an expert in the examination of the KFTC, argued that the Respondents intentionally reduced the ratio of SEPs implemented in the modem chipsets on the basis of the following grounds that: (i) one patent is composed of many claims; the 4.23% as claimed by the Respondents is a product of calculation of the patents in which all claims are implemented only in the modem chipset, but since infringement of only one claim constitutes a patent infringement, the Respondents' classification was wrong; (ii) the Respondents claim that their SEPs are the patents implemented in the handset level on the basis of their discretionary classification of SEPs and non-SEPs; and (iii) it is reasonable to regard the four patents typically representing the patents at the handsel level (as presented by the Respondents in the 1st hearing) as, in fact, the patents at the modem chipset level.(the 2nd full-commission hearing of KFTC held on August 17, 2016)

[211] At the 1st full-commission hearing of the KTFC, among their own patents, the Respondents presented four representative cases of patents including claims that are not exclusively implemented only in modem chipsets (which have combinations of claims for modem chipsets and claims for any items other than modem chipsets). However, at the 2nd hearing, an expert participant refuted it as mentioned

Respondents' claim that the portion of the SEPs implemented in the modem chipsets compared to their whole SEPs only accounts for 4.23%.

257. Therefore, all things considered, it is difficult to consider that the cellular SEPs of the Respondents are implemented only at the handset level and that the only way that the Respondents can receive the due compensation for the patents is to license at the handset level.

**(b) Whether the Respondents Offered Unreasonable Terms in Light of the Common Practices of Transaction**

258. As reviewed in (a) above, the common practice of transaction with regard to SEP licensing at the modem chipset level is that a SEP holder grants a license to a modem chipset company desiring to enter into the license agreement for the cellular SEPs under the FRAND terms, and grants the full license free of any restrictions as a condition of licensing.

259. However, in light of the acknowledged fact-finding and the following points, the Respondents' refusal to enter into the license agreement for the SEPs with the modem chipset manufacturers does not accord with the common practice of transaction, and the various restrictive terms offered by the Respondents to the competing modem chipset manufacturers in return for granting the license cannot be deemed to be those that may be offered upon request to enter into a license agreement for SEPs under the common practices of transaction. Thus, the Respondents' act constitutes the offering of unreasonable terms in light of the common practices of transaction.

260. First, in light of the IPR Policies of the SSOs regarding the scope of license[212] and the provisions regarding licensing under the Patent Act[213], "granting a license" for SEPs can be interpreted to "include all of the rights to at least manufacture, to sell, lease, dispose of, repair, use, operate the manufactured device and the right to use method," and each activity of manufacturing, selling, leasing, disposing of, repairing, using, and operating, etc. constitutes patent infringement; and thus, a complete license agreement must be a contract granting the rights to freely do all of the activities enumerated above, but not a contract granting only a limited scope of rights by limiting some of those activities.

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in Footnote No. 209 above, and then, they withdrew the argument on three of the four patents originally presented at the 1st hearing before the 3rd hearing. (2016.9.2. Shin & Kim No. 16-5397, Correction to the 1st Presentation Materials submitted by the Respondents)

[212] Article 6.1 of ETSI IPR Policy defines the object of license "to include the rights to at least manufacture, to sell, lease, dispose of, repair, use, and operate the manufactured device and the right to use method."

[213] The term "executing" in sub-paragraph 3, Article 2 (Definitions) of the Patent Act means any of the following activities:

(a) An invention of a thing: Manufacturing, using, selling, leasing, importing the thing or offering to sell or lease the thing (including displaying a thing for the purpose of sale or lease; hereinafter the same shall apply);

(b) An invention of a process: using the process;

(c) An invention of a process of manufacturing a thing: Using, selling, leasing, or importing a thing manufactured by the process or offering to sell or lease such thing, other than the activities specified in item (b).

*261.* Second, before 2008, the Respondents had entered into license agreements for their own SEPs with the competing modem chipset manufacturers such as [***], [***], [***], [***], [***], etc. in a restrictive way by attaching the following conditions: that (i) exclude the right to use modem chipsets of other competing modem chipset manufacturers; (ii) limit the customers of modem chipsets of the other competing modem chipset manufacturers to the handset manufacturers which entered into the license agreement with the Respondents[214]; (iii) impose on the competing modem chipset manufacturers an obligation to report to the Respondents the sales business information including price, buyers, sales amount for each buyer, date of purchase, product model, etc. of the modem chipset[215]; and (iv) require the competing modem chipset manufacturers to grant their own patents to the Respondents and their customers who buy the modem chipsets of the Respondents without due compensation or upon the promise not to bring patent infringement claims.[216]

*262.* Third, after 2008, (i) while the Respondents expressly declared in the Annual Report and external publications, etc. that they would not grant a license for their own patents including the SEPs to competing modem chipset manufacturers; (ii) under this business policy, they have consistently refused to enter into a license agreement even though the competing modem chipset manufacturers such as [***], [***], [***], [***], etc. requested a license agreement for SEPs; (iii) offering to enter into a not-to-sue agreement or a supplementary agreement to reserve the exercise of the right or not to sue for a limited time, the Respondents suggested the following terms: that (i) the modem chipset company shall report the sales business information related to the sales of modem chipsets[217]; (ii) the modem chipset company provide a not-to-sue agreement to the Respondents and their customers of modem chipsets with regard to its own patents; (iii) the modem chipset company shall sell the modem chipsets only to handset manufacturers that have entered into the license agreement with the Respondents; and (iv) if there arises any patent dispute between the Respondents and the handset company which purchased the modem chipset form the competing modem chipset

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[214] Under these terms of (i) and (ii), (1) the sales business activities of the competing modem chipset manufacturers were restricted because they had to sell the modem chipsets only to the handset manufacturers that entered into the license agreement with the Respondents; (2) the handset manufacturers were reluctant to purchase the modem chipsets from the competing modem chipset manufacturers without a full license [in this regard, LG Electronics seriously considers whether a modem chipset maker is licensed and where there is a guarantee with regard to patents when selecting a modem chipset (Exhibit 66 [***] Internal Document regarding Considerations in Terms of IPR in Selection of Chipsets)]; and (3) these terms form a system under which even if a handset company purchases the modem chipset from a competing modem chipset company other than the Respondents, it has no choice but to necessarily enter into a license agreement with the Respondents.

[215] This term of (iii) enabled the Respondents to have access to the sensitive management information of the competing modem chipset manufacturers, such as sales business information, market strategy, etc.

[216] This term of (iv) enabled the Respondents to build up a so-called “patent umbrella” that provides a license for the patent held by the competing modem chipset company or a not-to-sue agreement to their modem chipset customers.

[217] In this regard, B stated, “Even after the obligation to report is relaxed, B still had the obligation to report the total sales quantity by each category (to Qualcomm). In particular, B must confirm the number of chipset customers of B who were not licensed by Qualcomm and the total quantity of chipsets sold to the unlicensed customers. This provision of information forces B to disclose its trade secrets and information on its customers that must be unavailable or otherwise may have been unavailable to Qualcomm’s access.”(Exhibit 80, B’s RFI Responses)

company, the modem chipset company shall be liable for the damage incurred by the Respondents jointly and severally together with the handset company. These acts of the Respondents can be deemed to have offered unreasonable terms of transaction in light of the common practices of transaction.

**(4) Whether the Respondents Unfairly Interfered with the Business Activities of Other Enterprises**

**(a) Anti-competitive Intent or Purpose**

*263.* The Respondents are deemed to have refused or limited the execution of license agreements for cellular SEPs with competing modem chipset manufacturers with the intention to perform and/or fix the licensing business model at the handset level by restricting the competition in the modem chipset market and by securing / maintaining / strengthening their market dominance over modem chipsets, taking into consideration the following factors: the Respondents' status as a vertically integrated enterprise in the modem chipset market and the cellular SEP license market; the fact that the Respondents are aware of the necessity of complying with the FRAND commitments; and the Respondents' awareness of the importance of securing the cellular SEPs in the modem chipset business and their patent licensing system as confirmed in the Annual Report and the external publications of the Respondents.

**① Anti-competitive Motivations of a Vertically-Integrated Dominant Enterprise**

*264.* As reviewed in 2. C. 1) (b) (ii) above, the Respondents hold SEPs by each cellular standard such as CDMA, WCDMA and LTE, etc. and is a 100% market dominant enterprise in the relevant licensing market. At the same time, they are engaging in the business of manufacturing and/or selling modem chipsets using the SEPs and are also dominant enterprises in the modem chipset market. Because the Respondents have the status of a vertically integrated monopolistic enterprise, they can be said to have a motive or intention to maximize the profit in the way in which they exclude competing enterprises from the modem chipset market and strengthen their dominance in the modem chipset market by refusing to grant their own SEP licenses to the competing modem chipset manufacturers and by manufacturing and/or selling their own modem chipsets free of any restrictions, while simultaneously, entering into license agreements with the handset manufacturers using their dominance in the modem chipset market and through collection of royalties.[218]

*265.* To review the emails to and from [***], the general supervisor in charge of the sale of

[218] As reviewed earlier, even if the Respondents refuse to grant the patent license to competing modem chipset manufacturers, their royalty revenues do not decrease. This is the reason why the Respondents enter into license agreements with the handset manufacturers and collect royalties based on the price of the entire handset, because they cannot collect the royalties for the same patent both at the modem chipset level and the handset level under the doctrine of patent exhaustion pursuant to the Patent Act. The recent handset functions as a multiple IT device but not a telephone for voice communication, therefore, the portion of the modem chipset price to the entire price of the handset is merely 4%. Given these factors, the Respondents' inducement or motive can be said to be bigger.

modem chipsets in China and Qualcomm Asia Vice-President [***] of the Respondents in 2013[219], we can see a discussion that "maintaining competence in the chipset division (QCT)" is important for the Respondents to maintain the strong sales source of the licensing division (QTL)[220]. This shows that the Respondents recognize their modem chipset competitiveness as a leverage to force the handset manufacturers to enter into a patent license agreement[221]. Through this evidence, we can see that the Respondents had the intention to restrict the competition and they were aware of it.

**② Breach of FRAND Commitments**

*266.* The Respondents made a declaration of the FRAND commitment to SSOs that they would license their own patented technology to all participants in the industry under fair, reasonable and non-discriminatory terms as a condition that their own patented technology be adopted as standard. Moreover, in the past lawsuit with Ericsson, they claimed that Ericsson was obligated to license its own SEP to Qualcomm, and they declared that they would license their own SEPs to "all participants in the industry" under the FRAND terms. Thus, they can be said to have fully been aware that the acts of refusing and/or restricting the competing modem chipset manufacturers' request to enter into the license agreement would constitute a violation of the FRAND commitments and would not be permitted. Nevertheless, until 2008, the Respondents had granted a limited license restricting the right to use with regard to requests from competing modem chipset manufacturers to enter into license agreements. And since 2008, they have refused to grant the license itself. We have to consider such an act of the Respondents as having the intention to secure favorable licensing conditions in the handset level by restricting the competition in the modem chipset market and strengthening their dominance over the modem chipset market.

**③ Refusing to License or Restricting License Despite the Awareness that Comprehensive Access to Licenses Is Paramount in the Modem Chipset Market**

*267.* In light of the Annual Report, and external publications by the CEO or other executives of the Respondents, we can see that they were fully aware that it was very important to secure licenses for cellular SEPs in order to protect their own products from patent attacks and to secure design freedom, which is a key factor in the modem chipset business. Nevertheless, while the Respondents obtain licenses from other patent holders and provide them to their customers who buy modem chipsets from the Respondents, they refused and/or restricted competing modem chipset manufacturers from entering into license agreements for their own cellular SEPs. Such an act of the Respondents can be said to have the intention to restrict competition in the modem chipset market.

*268.* (i) Eric Reifschneider, who is the patent licensing executive of the Respondents, stated in the PT materials of February 2013 that Qualcomm obtained the licenses from other

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[219] This e-mail was sent to the major executives of the Respondents, including Vice-Presidents [***] and [***], etc.

[220] "[***] "(Exhibit 51 E-mails between the Executives/Employees of the Respondents dated * *, 2013)

[221] In addition, similar contents are confirmed in other e-mails between these individuals.
"[***]"(Exhibit 50 E-mails between the Executives/Employees of the Respondents dated * *, 2013)

patent holders through cross-grant and as a result, Qualcomm can protect itself from patent attacks and provide long-term design freedom, a key factor in the modem chipset business.[222]

*269.* (ii) In the Annual Reports from 2002 to 2007, the Respondents stated that the reason why they license their SEPs to the competing modem chipset manufacturers is "to support the deployment of CDMA-based systems and technologies worldwide in order to grow Qualcomm's business, even if we lose market share[223]," but since 2008, they deleted these statements from the Annual Reports and refused requests from competing modem chipset manufacturers to enter into patent license agreements.

**④ Double Standard for Licensing at the Modem Chipset Level**

*270.* While the Respondents refuse and/or restrict the execution of license agreements for their own cellular SEPs against the competing modem chipset manufacturers, they have received cross-grants for cellular patents necessary to manufacture and/or sell their modem chipsets from 195 handset manufacturers around the world as of August 2015, which demonstrates their double standards. In addition, during the negotiation for the patent license agreement with [***][224], [***][225], the Respondents granted a full license for non-cellular terminal, but refused to grant the license for modem chipsets for handsets. Moreover, whereas the Respondents refused to license to competing modem chipset manufacturers including B, which requested a license to sell the modem chipsets to others, and C, which requested a license to start a new business of modem chipsets, they demanded that the competitors cross-grant their own licenses for free or otherwise offered limited terms; and thus, the negotiation for the license agreement ended. We deem that the double standards of the Respondents stem from their intention to make a system advantageous to themselves only using their own cellular SEPs and to make it difficult for the competing modem chipset manufacturers to compete fairly and equally. Otherwise, we cannot find any other reasonable grounds.

**⑤ Offering Particularly Disadvantageous Terms to Strong Competitors**

*271.* The Respondents offered the more restrictive terms to the stronger competitors. (i) Above all, as we can see from the internal documents of the Respondents, they recognized B as

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[222] Exhibit 49, Qualcomm Technology Licensing Program PT Materials

[223] The original text read as follows: "We license our CDMA intellectual property to the competitors of our QCT segment to support the deployment of CDMA-based systems and technologies worldwide in order to grow our royalty revenues from customers licensed to sell CDMA phones and equipment. We believe that, if the use of CDMA expands sufficiently, QCT's business will also grow, even if we lose market share."

[224] In the negotiation for patent licensing with [***] in 2009, the Respondents refused to grant the exhaustive license of modem chipsets for handsets and modem chipsets for computers equipped with telecommunications functions to [***]. Thereafter, the Respondents partially revised the proposed negotiation and adhered to their stance that they would not grant the exhaustive license for modem chipsets for handset in any case. (Exhibit 79 [***] Response to KFTC's Request for Submission)

[225] While settling the patent dispute with [***] in 2009, the Respondents entered into an agreement for patent use (Settlement. Patent License and Not-to-Sue Agreement). Under this agreement, the Respondents paid approximately $[***] as the settlement for the legal dispute with [***] (Exhibit81 [***] Response to KFTC's Request for Submission)

a stronger competitor[226]. In 2011, when B requested that the Respondents enter into a license agreement, they initially offered a "supplementary agreement for exercise of rights" as a proposed negotiation, but amended it to "a reservation not to sue for a limited time." Although the supplementary agreement for exercise of rights offered by Respondents initially provides the patent infringement claim against handset manufacturers, the patent infringement claim against B as the last relief, the reservation not to sue for a limited time is to reserve the patent infringement claim against B only for a given period of ** days to ** days, and the latter can be said to be more disadvantageous to B.[227] (ii) Furthermore, offering A an agreement not-to-sue instead of a license agreement for WCDMA standards in 2009, the Respondents attached a term limiting A's customers to the Respondents' licensees and inserted a clause imposing a penalty upon violation of the provision that limits customers, which was not applicable to other modem chipset manufacturers. Given that A was emerging as * ranking enterprise beating [***], [***], [***], etc. in the modem chipset market related to the GSM standard, the Respondents' act of imposing the stricter terms on A seems to have come from the intention to restrict A's business in the WCDMA modem chipset market. (iii) In the meantime, when their sole rival C in the CDMA modem chipset market requested that they enter into a license agreement for WCDMA standards in 2012, the Respondents demanded that C amend the existing CDMA license agreement to the supplementary agreement for exercise of rights, even though they entered into the license agreement for WCDMA standards with [***], [***], [***], etc. which had weak positions in the modem chipset market. This also demonstrates that the Respondents offered more disadvantageous terms to their stronger competitors.

**(b) Anti-Competitive Effects**

*272.* Taking the facts acknowledged above into consideration, the Respondents' refusal and/or restriction to enter into license agreements for cellular SEPs [to the modem chipset manufacturers] will likely have the following effects: (i) it directly causes a risk of business interruption due to discontinuation of the sale of modem chipsets to competing modem chipset manufacturers; (ii) it results in an increase of costs for the competing modem chipset manufacturers; (iii) it operates as an entry barrier to a potential competitor; (iv) it disturbs business activities of other competitors which provides the Respondents with a more advantageous position than other competitors through their refusal to enter into license agreements as well as their application of unfair contractual terms; (v) as a result, a number of competitors will exit from the market or discontinue their business, whereas the Respondents' market share in the whole modem chipset market will increase and their position in the market will solidify; and (vi) it will become more difficult to control the Respondents' abuse of dominance as a monopolistic and vertically integrated enterprise that violates the FRAND commitments. Therefore, all things considered, such an act of the Respondents can be deemed to be an act that threatens to restrict the competition in or cause the anti-competitive effects on, the modem chipset market by each cellular standard.

[226] In the internal documents prepared by the Respondents (Exhibit 56 Qualcomm Korea's Internal Documents)

[227] For reference, the supplementary agreement for exercise of rights or the reservation not to sue for a limited time as offered by the Respondents are all unfavorable terms in comparison with a common exhaustive license.

**① Constant Risk of Interruption and Discontinuation of Modem Chipset Sales by the Competing Modem chipset manufacturers**

*273.* The most direct impact that a failure to obtain the SEP license from the Respondents has on the competing modem chipset manufacturers is that the Respondents may attack them for patent infringement at any time; and as a result, there is a risk of interruption and discontinuation of the sale of modem chipsets. Moreover, the risks of patent infringement will more seriously and unfairly interfere with the business activities of the competing modem chipset manufacturers and make these activities difficult, in that: (i) the SEPs held by the Respondents are necessarily infringed to manufacture and/sell the modem chipsets; (ii) since the risk in the business due to patent infringement can lead to interruption of the whole business all at once, the degree of risk upon the occurrence is more significant than the risk of uncertainty in the ordinary course of business; (iii) the competing modem chipset manufacturers cannot anticipate whether they will be attacked by patents due to failure to obtain a written agreement for a license from the Respondents; while (iv) on the other hand, the handset manufacturers are reluctant to buy the modem chipsets because licensing issues remain unaddressed[228].

**② Increase in Costs to Competing Modem chipset manufacturers**

**(A) Increase in Costs Due to Risk of Patent Attack by Respondents**

**ⓐ Cost Increase Mechanism Attributable to Possible Patent Attacks by the Respondents**

*274.* If the Respondents refuse to grant licenses on the SEPs to competing modem chipset manufacturers, it will result in a cost increase for competing modem chipset manufacturers due to possible patent attacks.

*275.* As illustrated in Table 47 below, if the Respondents do not grant licenses on the SEPs embodied in modem chipsets to handset company C, the competing modem chipset manufacturers will face the risk of patent infringement action from the Respondents immediately upon their sale of modem chipsets to company C (because neither the competing modem chipset manufacturers nor company C has obtained a license on the Respondents' patents), and accordingly, the competing modem chipset manufacturers will be forced to relinquish the sale of their modem chipsets to company C. If the competing modem chipset manufacturers sold the modem chipsets to company C, which is not a licensee of the Respondents, notwithstanding the risk of patent attacks from the Respondents, and if the Respondents sued company C for patent infringement with respect to its purchase of modem chipsets not licensed by the Respondents, company C will demand that the competing modem chipset manufacturers bear any cost arising from such lawsuit ("**indemnification cost**"). Given that such indemnification cost will be

[228] Although B's modem chipset business division tried to contact many handset manufacturers to promote sales of modem chipsets, the handset manufacturers were reluctant to buy the modem chipsets from B, determining that they cannot be free from patent attacks by the Respondents under the circumstances wherein B does not obtain a license from the Respondents; and [***] disclosed that because the Respondents filed a lawsuit seeking a declaratory judgment to prohibit [***] from selling the modem chipsets, its customers gave up on the transaction with [***] on the basis of this fact alone.(Exhibit 90 [***] Submission)

calculated based on the damage amount claimed by the customer on account of patent infringement, and the fact that the Respondents impose royalties based on the price of the entire handset, it is highly probable that the competing modem chipset manufacturers will be unable to cover the indemnification costs with the margin from the sale of modem chipsets.

276. The cost increase effect will not be removed entirely even if the competing modem chipset manufacturers sold modem chipsets to handset manufacturers (A, B) licensed by the Respondents. First of all, from the perspective of the competing modem chipset manufacturers, if a patent dispute were to arise between companies A and B and the Respondents with respect to royalty payments, the competing modem chipset manufacturers may also get caught up in the patent dispute for selling the modem chipsets without any license from the Respondents.

277. From the perspective of companies A and B, if the competing modem chipset manufacturers, which are not licensees of the Respondents, were attacked by the Respondents on account of the patents, companies A and B may also face problems in their handsets due to their use of the competing modem chipset manufacturers' modem chipsets. Given such risks, companies A and B may demand that the competing modem chipset manufacturers share the cost or reduce the price of modem chipsets (which will trigger a cost increase for the competing modem chipset manufacturers). Had the Respondents granted a complete and exhaustive license to the competing modem chipset manufacturers, without refusing to grant a license or placing any restrictions thereon, it would not be necessary for either companies A and B (Respondents' licensees), or company C (not a licensee of the Respondents) to demand that the competing modem chipset manufacturers bear additional indemnification costs or to share costs in addition to the price of the modem chipsets, since there would be no danger of patent attacks from the Respondents.

**ⓑ Actual Instances of Cost Increase Triggered by Threats of the Respondents' Patent Attacks**

278. The following cases demonstrate that it is important for modem chipset manufacturers to secure patent licenses, which would otherwise give rise to cost increase due to patent disputes or risks, etc.

279. (i) In company G's document dated [***]*. *. *, which is titled “IPR Considerations Result Sharing in Selecting Baseband Chipsets,” we can see that the handset manufacturers seriously consider the modem chipset license and warranties related to patents, etc. from the perspective of IPRs when actually selecting modem chipsets.

<Table 48> IPR Considerations in Selecting Chipsets[229]

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[229] Exhibit 66, Company G's internal document on IPR considerations in selecting chipsets.

*280.* (ii) Company H, one of the competing modem chipset manufacturers, in material submitted to the KFTC[230], revealed that when Qualcomm filed a motion for declaratory judgement in the year [***], which could have suspended company H's sale of modem chipsets[231], company H's major customers became concerned by the filing of the motion itself and questioned whether company H was entitled to legitimately supply the modem chipsets, and therefore, eventually suspended transactions with company H.

*281.* (iii) Company I, one of the competing modem chipset manufacturers, discussed indemnification provisions against patent infringement attacks by the Respondents and any other third parties during the negotiations in the year [***] for supply of modem chipsets to the a handset company.[232]

*282.* (iv) Company J, one of the competing modem chipset manufacturers, undertook to bear a considerable portion (up to *% of the modem chipset purchase price) of the patent dispute costs, which the handset company may incur from its purchase of J modem chipsets in executing the modem chipset supply contract with company J.[233]

*283.* (v) Company K, one of the competing modem chipset manufacturers, attempted to sell modem chipsets to a handset company before securing the license on cellular SEPs from Qualcomm. However, the handset company insisted that it would purchase the modem chipsets from company K only if it undertook to bear any costs arising from patent disputes, and company K eventually executed an agreement with the handset company on * *, 2009, providing full indemnification for any costs arising from patent disputes.[234]

**(B) Cost Increase for Competitors Due to the "Patent Umbrella" Established by the Respondents**

**ⓐ Cost Increase Mechanism Attributable to the "Patent Umbrella" Established by the Respondents**

*284.* As seen in the overview of the Respondents' business model in 2. A .3) above, Qualcomm did not merely refuse to grant patent licenses to competing modem chipset manufacturers, but further combined it by tying its modem chipset supply and patent license agreement together with the coercion of unreasonable patent license terms against handset manufacturers. This enabled Qualcomm to secure free cross-grants

[230] Exhibit 90, Material submitted by company H.

[231] Company H revealed that on * *, 2003, Qualcomm filed a motion before the Delaware court against company H for declaratory judgment which would allow Qualcomm to suspend the rights of company H while maintaining its rights under the patent portfolio agreement. On * *, 2005, the Delaware Supreme Court unanimously affirmed the ruling of the Court of Chancery that Qualcomm was not entitled to terminate the patent portfolio agreement with company H (Exhibit 90, material submitted by company H).

[232] [Material submitted by company I to the KFTC on Sep. 26, 2016]

[233] Exhibit 58, Company J's provision of indemnification against patent disputes

[234] Exhibit 57, Company K's provision of indemnification against patent disputes

without due consideration from the handset manufacturers[235], and to establish the "patent umbrella" which prevents handset manufacturers from raising any patent infringement claims even against customers purchasing Qualcomm modem chipsets (not to mention the Respondents themselves).

*285.* We will discuss the patent umbrella effects in more detail hereinafter. As illustrated in Table 49, the Respondents, while refusing or restricting licenses to modem chipset manufacturers, virtually and concurrently blocked handset manufacturers from exercising their rights to the SEPs by demanding/securing a covenant not to sue from their licensee handset manufacturers $A_H$, $B_H$ against the other handset manufacturers ($A_H$ to $B_H$ and $B_H$ to $A_H$, respectively) which purchased modem chipsets from the Respondents.[236]

*286.* As such, Qualcomm has established the "patent umbrella"[237] comprised of its patents and those of their licensee handset manufacturers by securing the covenant not to sue from the handset manufacturers even for their own modem chipset customers. The Respondents take advantage of the same to amplify the competitor exclusion effect by additionally increasing the costs of the competing modem chipset company ($R_M$).

[Table 49] Cost Increase Effect on Competitors due to Qualcomm's Patent Umbrella

[235] The Respondents were able to secure free cross-grants against the will of the handset manufacturers by first refusing to grant licenses to modem chipset manufacturers at the modem chipset level, and by requiring that the handset manufacturers pay royalties at the handset level, and then by demanding that the handset manufacturers (that want to purchase Qualcomm chipsets) first execute the license agreement. We will discuss this part in detail in Act 3 below.

[236] The Respondents claim that the handset manufacturers are unable to collect royalty on account of the covenant not to sue undertaken even for Qualcomm customers because they are reflected in the cross-license and royalty terms between the two companies upon comparison of the technology offered by the Respondents and those of the handset manufacturers. However, the Respondents do not go through assessment of the total volume or value of the patents owned by individual handset manufacturers, and even if any handset company owns many SEPs, they do not properly pay any consideration in return for the covenant not to sue undertaken for their own customers. The Japan Fair Trade Commission and the NDRC of China both found such an act to be illegal and prohibited the same in 2009 and February 2015, respectively.

[237] The "patent umbrella" established by Qualcomm not only enforces competition exclusion in the modem chipset market, but also further reduces the inducement for technology innovation because the handset manufacturers cannot receive proper compensation for their technology. The effect of restricting competition or reducing the inducement for technology innovation in the technology license market through blocking the exercise of SEP rights by handset manufacturers will be discussed later.

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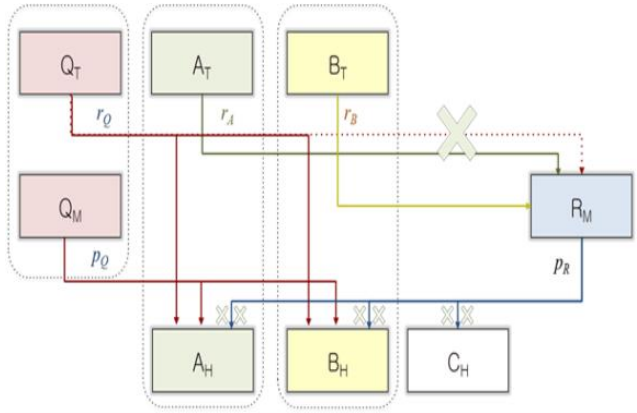
|---|---|
|  | * $Q_T$: Respondents (licensing business)<br>* $Q_M$: Respondents (modem chipset business)<br>* $R_M$: Competing modem chipset company<br>* $A_T$, $B_T$: Patent holders<br>* $A_H$, $B_H$: Handset manufacturers licensed by the Respondents<br>* $C_H$: Handset company not licensed by the Respondents |

287. In Table 49 above, when companies $A_H$ and $B_H$ purchase modem chipsets from Qualcomm ($Q_M$), they only have to pay $P_Q+r_Q$, which is the sum of the modem chipset price plus royalty. However, if companies $A_H$ and $B_H$ purchase the chipsets from the competing modem chipset company $R_M$, company $A_H$ has to pay '$P_R+ r_Q+ r_B$', and company $B_H$, '$P_R+ r_Q+ r_A$'. In other words, companies $A_H$ and $B_H$ have to additionally pay $r_B$ and $r_A$, respectively, when purchasing the chipsets from company $R_M$, rather than from Qualcomm ($Q_M$). Therefore, even if the competing modem chipset company $R_M$ is able to supply the modem chipsets at the same price ($P_R=P_Q$) as Qualcomm, $R_M$ would still incur additional costs of $r_B$ and $r_A$.

288. This may also be viewed as a price discrimination effect between Qualcomm ($Q_M$) and the competing modem chipset manufacturers. Since Qualcomm ($Q_T$) secured a cross-license or covenant not to sue (expanded even to their own customers) from the other patent holders ($A_T$, $B_T$), Qualcomm ($Q_M$) does not have to pay royalties to the other patent holders ($A_T$, $B_T$). On the contrary, the competing modem chipset company $R_M$ has to pay the sum of $r_Q+ r_A+ r_B$ as royalty even to companies $A_T$, $B_T$, as well as to Qualcomm ($Q_T$).[238] Accordingly, company $R_M$ has to pay the additional royalty of $r_A+ r_B$, in addition to the royalty ($r_Q$) arising from the technology differences between the two companies, when compared to Qualcomm.

289. This may be viewed as Qualcomm's coercion of royalty discrimination between itself (or its affiliates) and the competitors upon the handset manufacturers through the 'covenant not to sue pool'. That is, they induce royalty discrimination and cost increase on the competitors by requiring the handset manufacturers to impose normal royalties on the competitors, while not imposing any on themselves.

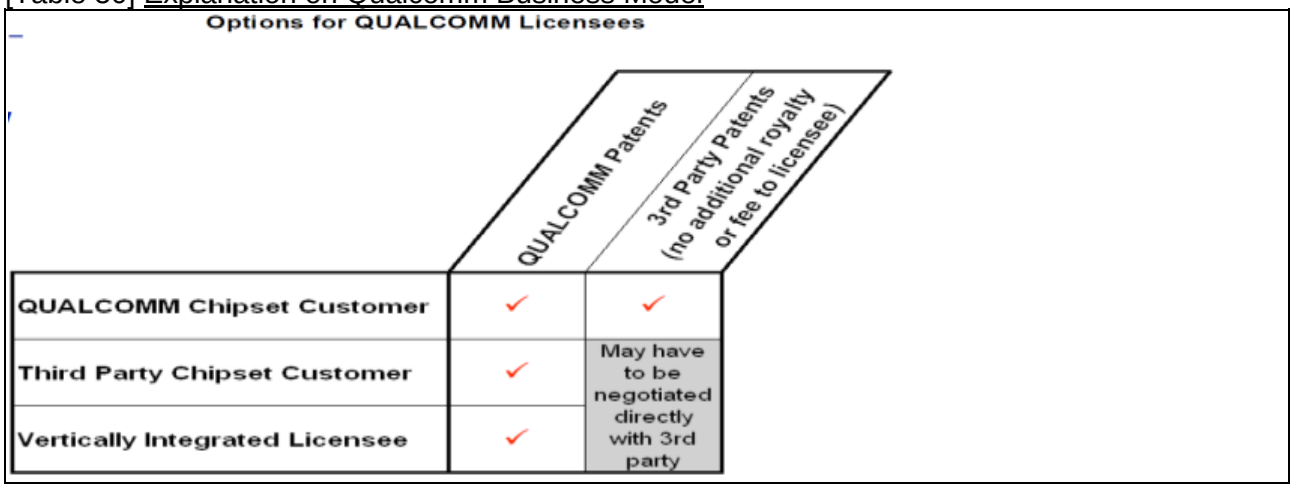
### ⓑ Actual Instances of Cost Increase Triggered by the "Patent Umbrella" Established by the Respondents

290. The following cases show how Qualcomm gained the upper hand on competitors in the modem chipset market through the "patent umbrella," and the "patent umbrella" in turn increased costs of the competitors.

[238] Qualcomm has not been collecting royalty on their patents from competing chipset companies since 2009. Therefore, the competitors have not been paying royalty to Qualcomm ($r_Q$) since 2009.

291. (i) Since 2004, Qualcomm has been publishing and distributing promotional materials on modem chipsets in the form of white paper to the handset manufacturers on more than 240 occasions until recently. In the white paper,[239] Qualcomm classified the possible modem chipset supply options for the handset manufacturers as Qualcomm (Qualcomm Chipset Customer), competitors (Thirty Party Chipset Customer), self-procurement (Vertically integrated Licensee), and emphasized that they would be afforded protection from the patents of both Qualcomm and third parties only when they purchased Qualcomm modem chipsets.[240] It shows that those who have purchased competing modem chipsets will not be afforded protection from third party patents, requiring direct negotiation thereon with the third party and royalty payments thereto, which would increase the costs more so than buying Qualcomm modem chipsets.

[Table 50] Explanation on Qualcomm Business Model




292. (ii) In its response submitted to the KFTC, [***], a competing modem chipset company, stated that "[***]'s major ODM[241] company told [***] that if they used [***]'s chipsets, they will be excluded from the IPR protection afforded by Qualcomm. Only when they purchase Qualcomm chipsets, including the IPRs of [***], [***], [***] and other companies, and even if they purchased modem chipsets at a cheaper price, the value of such IPRs (reported to be * dollars per handset) is sufficiently large enough to make a difference in the chipset purchase decision, and has clearly become one of the factors in the ODM company's decision not to purchase [***] chipsets".[242] This clearly shows that Qualcomm's patent umbrella is an important consideration in modem chipset decisions.

293. (iii) Moreover, the period of the patent license term executed between Qualcomm and the handset manufacturers is ** years or more, or [***], and the agreements executed

[239] Exhibit 54, explanation on Qualcomm business model.
[240] Since 2009 when Qualcomm decided not to provide even a limited arrangement not to sue to modem chipset manufacturers, the handset manufacturers were no longer safe from Qualcomm's patents if they purchased competing modem chipsets. When the above material was prepared in 2006, Qualcomm executed limited license agreements with, and collected royalties from, the modem chipset manufacturers.
[241] Acronym for Original Development Manufacturing.
[242] Exhibit 80, [***]'s response submitted in response to the KFTC's request for submission of materials

with [***], [***], [***], and [***], etc. even provide that the cross-grant provided to Qualcomm survives even after termination of the patent license agreements[243]. Therefore, the cross-grant, which Qualcomm secured from the handset manufacturers, ultimately ends up excluding the competitors through long-term and perpetual cost increase derived from the patent umbrella effect.

*294.* The following cases show that Qualcomm was aware, and thus aggressively promoted, that its patent umbrella is the key to securing, maintaining and enforcing the competitiveness of its own modem chipsets because it enables them to protect their own modem chipset customers from the attacks of other patent holders, to reduce their customers' costs in negotiating with other patent holders, and to reduce the royalty payable if the customers purchased competing modem chipsets, etc.

*295.* (i) When promoting spin-off of the modem chipset division in 2000, Qualcomm mentioned in its annual report (10-K) the risks related to the separation of the modem chipset division (QCT) (i.e., if the modem chipset division were completely separated from Qualcomm, they will no longer be able to pass through their licensees' patent rights to their modem chipset customers) that their modem chipsets will become susceptible to patent attacks from other patent holders, which would harm their ability to market their products due to such weakened patent protection.[244]

*296.* (ii) During the investors' meeting held in the UK in November 2005, Mr. Steve Altman, Qualcomm CEO, emphasized the importance of the patent umbrella in the modem chipset business. He mentioned that "if they buy Qualcomm modem chipsets, they can prevent royalty stacking because they will be able to access the IPRs of more than 100 companies, as well as those of Qualcomm's. However, if they buy competing modem chipsets, they will have to negotiate individually with each and every one of them, and become potentially liable to pay separate royalty." He emphasized that their modem chipsets were superior in terms of patent protection thanks to the patent umbrella.[245]

*297.* (iii) In the white paper "Third Party IP Rights Benefiting" sent to the handset manufacturers, Qualcomm explained that as it has been authorized to use patents by a total [***] companies[246] as of November 2008, if they purchased Qualcomm modem

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[243] The patent license agreement executed between Qualcomm and [***] is as follows:

[244] Following is an excerpt from the annual report (Exhibit 83, Respondents' annual report for 2000):
"EXHIBIT 99.1 SET FORTH BELOW ARE CERTAIN RISK FACTORS INCLUDED IN THE REGISTRATION STATEMENT ON FORM S-1 (NO. 333- 42138) FILED BY QUALCOMM SPINCO, INC. WITH THE SECURITIES AND EXCHANGE COMMISSION ON JULY 25, 2000, AND PREPARED AS OF SUCH DATE. (Omitted) RISKS RELATED TO OUR SEPARATION FROM QUALCOMM. (Omitted) AFTER OUR SEPARATION FROM QUALCOMM, WE WILL NO LONGER BE ABLE TO PASS THROUGH OR SUBLICENSE SELECTED INTELLECTUAL PROPERTY RIGHTS OF QUALCOMM'S LICENSEES, WHICH MAY HARM OUR ABILITY TO MARKET OUR PRODUCTS AND SUBJECT US TO LIABILITY. (Omitted) Following our separation from QUALCOMM, we will no longer be able to pass on those benefits to our customers, which may harm our ability to market our products and may subject us to claims for indemnification by our customers if they are sued by the holders of the intellectual property licensed to QUALCOMM."

[245] Exhibit 82, material for the Respondents' investors' meeting in 2005.

[246] In similar material Qualcomm sent to the handset manufacturers in April 2013, the total number of companies entitled to third party IP rights benefits was increased substantially to [***] (Exhibit 39, Third Party IP Rights Benefiting).

chipsets, they will be able to enjoy substantial royalty savings that would otherwise be payable if they purchased competing modem chipsets,[247] in effect saying that Qualcomm modem chipsets are at a comparative advantage in terms of substantial price thanks to the patent umbrella.

### ③ Barriers to Entry for Potential Competitors

#### (A) Contributing Factors to Barriers to Entry

*298.* Since Qualcomm publicly announced and actually implemented that it would not license cellular SEPs to competing modem chipset manufacturers, the potential competing modem chipset manufacturers have to decide whether to enter the modem chipset market, with due consideration for the additional cost arising from the fact that they cannot obtain a patent license from Qualcomm.

*299.* However, the cost increase in ② above operates as a barrier in the potential modem chipset manufacturers' entry into the modem chipset market by reducing their anticipated profits. Moreover, as the entry into the modem chipset market requires enormous investment on product development and commercialization, etc., this will also operate as an entry barrier because selling modem chipsets without securing a license from Qualcomm on the cellular SEPs will induce constant business uncertainties arising from Qualcomm's possible patent attacks.

#### (B) Instances of Barriers to Entry in Operation

*300.* (i) In * 2011, company B requested that Qualcomm execute a patent license agreement for the sale of modem chipsets,[248] but as mentioned in 2. A .4) (b) (iii) a. above, Qualcomm refused, and company B now manufactures modem chipsets only for installation in its own handsets, and has not been able otherwise to join the modem chipset market.

*301.* (ii) Further, as mentioned in 2. A. 4) (b) (iii) a. above, company B attempted to set up a joint venture company for modem development ([***] project) with [***] in or around * 2011, but its attempt to enter the modem chipset market through a joint venture company eventually failed because [***] was unable to obtain a license on modem chipsets from Qualcomm.[249]

*302.* (iii) In [***]*, company C requested that Qualcomm execute a patent license agreement, but as mentioned in 2. A. 4) (b) (iii) b. above, Qualcomm maintained that they could not provide a license on modem chipsets for handsets, and refused by presenting contract

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[247] Exhibit 39, Third Party IP Rights Benefiting.

[248] In the license agreement with company B in the year [***], "[***]" Qualcomm granted only the license to manufacture modem chipsets. Therefore, company B could manufacture modem chipsets, but not sell them to any third party under the contract.

[249] At that time, company B believed that it would not be able to effectively sell modem chipsets in the market due to Qualcomm's threats because [***] failed to obtain a license from Qualcomm. The original text reads as follows:

" ". [Project-related material submitted by company B to the KFTC on Oct. 7, 2016 (Schedule 2)]

terms unacceptable to company C[250], such as demanding an exhaustive license on the patents owned by company C, and company C was unable to join the modem chipset market until 2011.[251]

*303.* (iv) Company D had considerable market share in the CDMA standard modem chipset market, and they requested a license from Qualcomm in 2012 on the WCDMA SEPs, but as mentioned in 2. A. 4) (b) (iii) c. above, Qualcomm refused and they have not been able to enter the WCDMA modem chipset market.

**④ Interfering with Competitors' Business Activities and Securing Competitive Advantage Through Refusal to License and Unfair Contract Terms**

*304.* Qualcomm refused a license to competing modem chipset manufacturers, or offered or executed contracts on restrictive terms. Specifically, Qualcomm restricted competing modem chipset manufacturers' sale to only handset manufacturers that have executed patent license agreements with Qualcomm. Thereby, they forced the competing modem chipset manufacturers to cross-grant their patents, and required the competing modem chipset manufacturers to report to Qualcomm about quarterly marketing information including new business trends, modem chipset purchasers (customers), and sales volume per customer, etc.[252]

*305.* First of all, due to Qualcomm's license refusal and restriction on sale to the competing modem chipset manufacturers, the competing modem chipset manufacturers could not sell modem chipsets to the handset manufacturers which did not have a patent license from Qualcomm, or had to require the handset manufacturers to execute a patent license agreement with Qualcomm in advance if they wanted to sell modem chipsets to them. This enables Qualcomm to secure a competitive advantage in the modem chipset business by first contacting the handset manufacturers, which are potential customers of the competing modem chipset manufacturers, and utilizing the same in their own modem chipset business.

*306.* Even in the case of handset manufacturers, that have already obtained a patent license from Qualcomm, Qualcomm is able to interfere with the business activities of the competing modem chipset manufacturers by intervening in the transactions between the handset manufacturers and the competing modem chipset manufacturers by taking advantage of their patent license agreements with the handset manufacturers. This can be confirmed from ' ' prepared by Qualcomm on * *, 2012. In this report, Qualcomm claims, after conducting royalty audits on [***], that [***] failed to pay the royalty of [***] dollars to Qualcomm, and demanded as a solution that [***] not design smart phones

[250] In addition, Qualcomm also demanded from company C contract terms such as restriction on sale (only to Qualcomm licensees), and quarterly reports on marketing information, etc.

[251] Thereafter, company C abandoned its attempts for a direct license from Qualcomm, but acquired in 2011 [***] ([***] executed in [***]* a patent license agreement with Qualcomm at the modem chipset level), which already had a license from Qualcomm.

[252] Qualcomm required the competing modem chipset manufacturers to continue to report even after 2008 when the royalty was exempted. Although Qualcomm also required the handset manufacturers to report under the patent license agreement, this obligation was limited to information necessary to confirm appropriate royalty level (total sales volume and turnover, amount subject to royalty deduction, etc. during the applicable period).

using company D's modem chipsets, and that [***]'s '[***]+** project' should be suspended in order to maintain Qualcomm's WCDMA market share throughout the world, including China.[253]

*307.* Qualcomm can likewise achieve such anti-competitive effects through utilization of the marketing information of the competing modem chipset manufacturers by using this information to unfairly secure a competitive advantage. Qualcomm granted restrictive licenses or other such arrangements to competing modem chipset manufacturers and required them to periodically report their marketing information, such as modem chipset price, customers, sales volume, product models, etc., which enabled them to grasp the competing modem chipset manufacturers' key marketing strategies, and to secure an advantageous position in the market. In the document prepared by Qualcomm in relation thereto on * *, 2012[254], we can confirm that Qualcomm discussed the countermeasures after finding out the details such as model, price and quantity of the modem chipsets to be supplied by E and F to G from the marketing information provided by E, and took advantage of such information to begin negotiations with G even before release of G's products in order to reduce influence of the competing modem chipset manufacturers.[255]

*308.* In the meantime, **'s market share began to rise after Qualcomm relieved ** from the restriction on sale and reporting obligation in [***]*.[256]

### ⑤ Major Competitors' Exit from the Modem Chipset Market and Increase in Respondents' Market Share

*309.* Competing modem chipset manufacturers such as [***], [***], [***], etc. which executed agreements on restrictive terms with Qualcomm on or before 2008 were ousted from the modem chipset market[257], and [***] stated that "having invested enormous entry costs and marketing expense, Qualcomm's business model causes cost increase on the competitors and makes it difficult to make a profit, and Qualcomm's interference with the competitors prevents them from securing customers and cuts down their margin".[258][259] While such major competing modem chipset manufacturers were either ousted from the market or faced difficulties in business, Qualcomm's share in the global modem chipset

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[253] Exhibit 52

[254] Exhibit 55

[255] In the opinion submitted to the KFTC, E stated that "one of E's customers that used 100% of E's products was threatened by Qualcomm that they would conduct stricter audits on cell phone sales unless E began to use Qualcomm products. (Omitted) E was being forced to disclose its trade secrets and customer base; which should not and otherwise would not have been accessible by Qualcomm, its competitor." (Exhibit 80, E's opinion submitted in response to the KFTC's request for submission of materials)

[256]

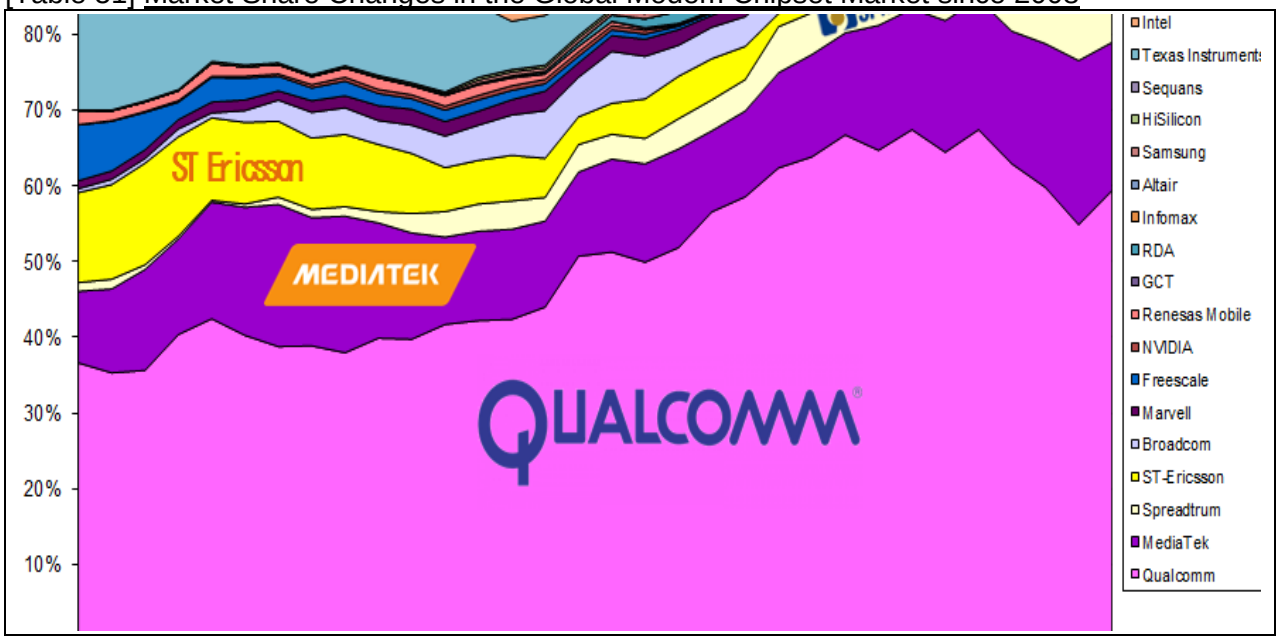
[257] They were ousted from the modem chipset market.

[258] [***]'s statement during the second KFTC full-commission hearing on Aug. 17, 2016.

[259] [***] (Economics professor at [***] university), who attended as an expert for the interested parties at the KFTC hearing, stated that "given the characteristics of the modem chipset business with fast technical innovation and cutthroat competition on R&D investment for release of new products, Qualcomm's anti-competitive acts unduly raised Qualcomm's ROI, and reduced that of its competitors. There is causal relationship between Qualcomm's anti-competitive SEP licensing business model and ousting of major modem chipset manufacturers."(second KFTC full-commission hearing on Aug. 17, 2016)

market increased from 36.8% in 2008 to 59.4% in 2015, and the Herfindahl-Hirschman Index (HHI) which shows market concentration rose from 2,224 in 2008 to 4,670 in 2014.[260]

[Table 51] Market Share Changes in the Global Modem Chipset Market since 2008




Source: Strategy Analytics "Baseband Market Share Tracker"

### ⑥ Transfer of Anti-Competitive Effects to an Adjacent Market

*310.* Given the recent expansion on the system of the one chip trend[261] in the handset parts market where modem chipsets and application processors are combined and embodied in one chipset, the anti-competitive effect upon the modem chipset market arising from the Respondents' acts is highly likely to be transferred to the adjacent application processor market. In fact, Qualcomm's share in the global application processor market rose from merely 24% in 2008 to more than 50% since 2013.

### ⑦ Anti-Competitive Effects Caused by Breach of FRAND Commitments

*311.* As explained above, Qualcomm's refusal to grant a license on cellular SEPs to the competing modem chipset manufacturers constitutes breach of the FRAND

[260] [***] (Economics professor at [***] university), who attended as an expert for the interested parties at the KFTC hearing, analyzed the long-term trend of Qualcomm's modem chipset market share, and stated that Qualcomm's ① overall modem chipset market share increased 2.6% points every year, and ② HHI increased by 164 every year (second KFTC full-commission hearing on Aug. 17, 2016). In the meantime, the Guidelines on Examination of Business Combination provides that any business combination not falling under "the HHI of 2,500 or more and the HHI increment of less than 150" is highly likely to substantially restrict competition.

[261] One chip sometimes encompasses embodiment of Wi-Fi, bluebooth (BT) and even GPS functions, but in general, it refers to the chip combining AP and CP functions, and in this report, the chipset combining AP and modem chipsets.

commitments. Moreover, the breach of FRAND commitments by the Respondents, which are dominant vertically integrated enterprises in the cellular SEP licensing market and the modem chipset market, will forfeit the benefits of standard setting and leave only the harmful consequences of monopoly because there is no other standard that can replace the Respondents' specific standard, and it will not be possible to control abuse of monopolistic strength through the competition structure in the downstream product market to which the standard applies.

**⑧ Impeding Innovation in the Modem Chipset Market**

*312.* Even Qualcomm acknowledges[262] that securing a patent license is important in providing long-term design freedom in the modem chipset business. Despite the foregoing, Qualcomm impeded inducement to technology innovation for competing modem chipset manufacturers by refusing or restricting license agreement execution on cellular SEPs. The effects of impediment to innovative competition will be discussed in detail in the anti-competitive effects of Act 3.

**⑨ Harming Production of Diversity and Consumer Choice**

*313.* Due to the aforementioned virtual blockade of market entry against competing modem chipset manufacturers, the opportunities in options of the handset manufacturers and consequently handset consumers have been reduced drastically, followed by reduced diversity in modem chipset products.

**⑩ Coercing Unfair Licensing Agreements upon Handset manufacturers**

*314.* Qualcomm's license refusal and restriction on the competing modem chipset manufacturers not only excluded competition in the modem chipset market, but was also used as the means of coercing unfair patent license agreements upon the handset manufacturers, as stated in the following Acts 2 and 3. The details of the acts and their anti-competitive effects will be discussed below in Acts 2 and 3.

**<Review of Respondents' Argument ⑦>**

*315.* Qualcomm argues that if licensing were provided at the modem chipset level, it would have to impose royalties both on the modem chipset manufacturers and the handset manufacturers, which will trigger massive patent disputes and inefficiency as to which party shall bear the royalty (e.g., between the modem chipset company and the handset company or between Qualcomm and the modem chipset company or the handset company).

*316.* However, Qualcomm's argument above is unreasonable for the following reasons.

*317.* Even if a license is provided both at the modem chipset and handset levels, with respect to cellular SEPs embodied in the modem chipsets, Qualcomm can provide licenses to the modem chipset manufacturers and collect royalties calculated through fair

[262] Exhibit 49, presentation on Qualcomm's technology licensing program.

negotiation procedures under the FRAND terms from the modem chipset manufacturers. With respect to the SEPs not embodied in the modem chipsets or those embodied beyond the scope of modem chipsets, they could enter into separate patent license agreements with the handset manufacturers through fair negotiations also under the FRAND terms. With respect to Qualcomm's patents already embodied in the modem chipsets, the handset manufacturers can assert patent exhaustion, object to paying separate royalties thereon, and also raise claims at the Patent Court, if necessary.

318. Therefore, even if licenses were granted at both modem chipset and handset levels, Qualcomm could enter into patent license agreements with both modem chipset manufacturers and handset manufacturers, and any negotiations on royalty calculations arising between the parties during the process are not unnecessary disputes or inefficiency, but a fair assessment on the validity or value of the SEPs which will induce pro-competitive effects.[263]

**(5) Sub-conclusion**

319. Therefore, Qualcomm's refusal or restriction on cellular SEP licenses to the competing modem chipset manufacturers described in 2. A. 4) above constitutes the act of unreasonably interfering with the business activities of other enterprises proscribed under Article 3-2, Paragraph 1, Section 3 of the Act and Article 5, Paragraph 3, Section 4 of its Enforcement Decree. It also constitutes the act of causing hardship to the business activities of other enterprises by forcing terms that are unreasonable to the counterparty in light of the ordinary practice in transactions, and therefore, is illegal.

**c) Whether the Respondents Denied or Restricted Use or Access to Indispensable Elements for Manufacture and Sale Without Justifiable Grounds[264]**

**(1) Applicable Legal Principles**

320. In order for “denying, interrupting or limiting use or access to the indispensable elements for other enterprises to produce, supply and market their goods or services without justifiable grounds” under Article 5, Paragraph 3, Section 3 (Type of or Standards for Abusive Acts) of the Enforcement Decree, among Paragraph (1)3 “unreasonably interfering with the business activities of other enterprises” of Article 3-2 (Prohibition of Abuse of Market-Dominating Position) of the Act, to stand, (i) a market-dominating enterprise (ii) by denying, interrupting or limiting use or access to the elements indispensable (indispensable elements) for other enterprises to produce, supply and market their goods or services (iii) shall have caused hardship in the business activities of other enterprises.

321. In judging whether one has caused hardship in the business activities of other enterprises, production, financial, distribution activities of other enterprises shall be considered comprehensively, including when there is possible concern for causing hardship in the business activities.

[263] In fact, Qualcomm had executed license agreements, albeit restrictively, with some ** competing modem chipset manufacturers and received royalty from them until 2008, and also received royalty at the handset level as well.

[264] Article 3-2(1)3 of the Act and Article 5(3)3 of the Enforcement Decree.

322. Indispensable elements include tangible/intangible elements such as network and key facilities, (i) without which it is virtually impossible to produce, supply or market goods or services, or to participate in a certain field of transactions, and the status of unavoidable material competitive disadvantage would be maintained in the relevant field (indispensability), (ii) which are owned or controlled exclusively by a certain enterprise (controllability), and (iii) which are virtually, legally or economically impossible for any person intending to use or access such an element to reproduce or replace them with another element (non-substitutability).[265]

323. Denying, interrupting or limiting use or access to the indispensable elements refers to such cases as (i) offering prices or terms that are unreasonable to the degree that renders access to the indispensable elements virtually or economically impossible, or (ii) inducing virtually the same result as denying use of the indispensable elements by offering prices or terms that are conspicuously discriminatory or unfair when compared to the existing users who have been using the indispensable elements.

**(2) Whether the Respondents Are Market Dominant**

324. As already discussed in 2. C. 2) (b) (ii) above, the Respondents are market-dominating enterprises in the overall patent licensing market for each communication standard they own, including CDMA, WCDMA and LTE, etc., and in the modem chipset market for each standard including CDMA, WCDMA and LTE, etc.

**(3) Whether the SEPs Are Indispensable Elements for Modem Chipset Manufacturers**

325. As discussed below, the SEPs owned by Qualcomm are indispensable in producing, selling or using modem chipsets, and they are controlled exclusively by Qualcomm and are non-substitutable. Therefore, Qualcomm's SEPs are elements indispensable to the modem chipset manufacturers.

**(a) Indispensability**

326. The SEPs mean patents that must be used during the technical embodiment process of a product by an enterprise in accordance with the standard specifications determined by an SSO, which would be unavoidably infringed if the technical elements stated in the standard document of the SSO were implemented. Therefore, in order for the modem chipset manufacturers to enter the modem chipset market embodying the cellular functions, access to and use of the SEPs owned by Qualcomm for each communication standard, including CDMA, WCDMA and LTE, etc. have to be guaranteed. If the modem

[265] With respect to the concept and requirements of indispensable elements, the Seoul High Court ruled that indispensable elements refer to “in general, facilities (elements) without which it would be impossible for the competitor to provide customer services, and such facilities (elements) which would make it virtually impossible or induce conspicuous impediment to the business activities of the competitor if access thereto is denied because the facilities (elements) that are indispensable in the activities of the competitor are under the exclusive possession of the market-dominating enterprise, and because it is virtually impossible or economically unfeasible to establish equivalent facilities (elements).” (Seoul High Court judgment 2001Nu5851 rendered on April 17, 2003; joint interference in business activities by the Credit Finance Association and 7 credit card companies)

chipset manufacturers manufactured and/or sold modem chipsets before obtaining a license on the SEPs, the modem chipset manufacturers will be exposed to the risk of damage compensation or patent infringement claims from Qualcomm. Therefore, the SEPs owned by Qualcomm for each communication standard, including CDMA, WCDMA and LTE, etc., shall be deemed elements indispensable to the manufacture and/or sale of modem chipsets.

**(b) Control**

*327.* The SEPs owned by Qualcomm for each communication standard, including CDMA, WCDMA and LTE, etc. have been duly applied for or registered at the patent authorities of each country, and Qualcomm has the authority to exclusively own or control such SEPs, which are the ordinary rights of a patent holder.[266]

**(c) Non-substitutability**

*328.* Technically, the SEPs are patents that cannot but be infringed upon because it is impossible to design around or avoid the design technically or economically when implementing certain technical standards. Therefore, if Qualcomm refused to grant patent licenses on the SEPs necessary for embodying each CDMA, WCDMA, or LTE standard selected by the SSOs, it would be impossible for the enterprise intending to use the SEPs to find a replacement technology or to effectively compete in the market by applying the replacement technology, if any, to the product.[267]

**(4) Whether the Use of Indispensable Elements Was Denied or Limited**

*329.* First, as already reviewed in the acknowledged facts, until 2008, Qualcomm granted licenses on their SEPs, which are elements indispensable to the manufacture, sale and use of modem chipsets, to competing modem chipset manufacturers, which included willing licensees such as [***], [***], [***], [***], [***], but only restrictively, allowing the manufacture and sale of modem chipsets, but not their use, and also demanded terms that unfairly restricted the scope of the patent license such as restriction on sale, demand for free cross-grants, and demand for marketing information, etc.

*330.* Second, ever since 2008 when Qualcomm changed its policy not to grant licenses to modem chipset manufacturers, Qualcomm refused, even though willing licensees such as [***], [***], [***] with the capability and willingness to pay royalties requested a license

[266] With respect to exclusive controllability, it may be argued that since the FRAND commitments for the SEPs have been declared before the SSO, it is required to grant a license to willing licensees and therefore, the controllability requirement is lacking. However, even the SEP holder who has made the FRAND commitments is still entitled to receive royalties under fair and non-discriminatory terms, and can receive fair consideration after negotiations with the willing licensees on the reasonable level of royalties. Therefore, it is reasonable to conclude that the holders of the SEPs exclusively owns and controls the patents, just like any other patents.

[267] If there is a competing standard that can replace a certain standard, or if the downstream market embodying the relevant standard technology is not locked in the relevant standard, the SEPs cannot immediately be deemed to be indispensable elements. However, in case of the SEPs owned by Qualcomm (WCDMA, LTE, etc.), since there is no replaceable standard, and since the downstream modem chipset market, handset market, and base station equipment market, etc. are all locked in the relevant standard, it is not possible to secure a replaceable technology.

on the SEPs.

331. Qualcomm's acts constitute direct denial on the use of indispensable elements against the competing modem chipset manufacturers, or limits the use of indispensable elements, and also induces substantially the same result as denial or use of indispensable elements through offering terms that are conspicuously discriminatory or unfair compared to other users who use the indispensable elements, including Qualcomm.

**(5) Whether the Respondents Unreasonably Interfered with the Business Activities of Other Enterprises**

332. For the same reason as discussed in 2. C. 1) (b) (iv) above, Qualcomm's refusal to grant licenses on SEPs for the modem chipset manufacture and/or sale, and provision of limited arrangements attaching unfair terms to the competing modem chipset manufacturers constitute the act of causing hardship to the business activities of the competing modem chipset manufacturers.[268]

**(6) Whether Justifiable Grounds Existed**

333. First, if Qualcomm provided a license on the SEPs for the modem chipset manufacture and/or sale, it would not impair just compensation for Qualcomm's investment.[269] As already discussed in 2. C. 1) (b) (iii) a. ④ above, Qualcomm's SEPs are not embodied only at the handset level, and providing the license only at the handset level is not the only means possible for receiving just compensation for Qualcomm's patents. Moreover, as the SEP holder who declared FRAND commitments before the SSO, Qualcomm is guaranteed the opportunity to receive royalties by granting a license on its SEPs under the FRAND terms. Therefore, granting of a license on the SEPs to the modem chipset manufacturers does not conspicuously impair just compensation for Qualcomm's investment.

334. Further, once certain technology is selected as the standard, through implementation of the relevant technology, the SEP holders can enjoy extensive business expansion opportunities through selection as the standard, specifically, expansion of the base of the relevant technology users, and of the opportunity to grant licenses of its own patented technology to more parties. Therefore, standard selection in itself provides ample opportunities for compensation to the patent owner itself.

335. At the same time, any profit reduction caused by competition expansion is not viewed as impairment of just compensation, and even if profit is reduced because of patent holdup against the licensees through Qualcomm's compliance with the FRAND commitments,

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[268] The anti-competitive intention or effect of Qualcomm's entering into limited arrangements without providing a license to competitors was already discussed in detail, therefore, we will not discuss its unfair nature again.

[269] The Examination Guidelines provide that in case of conspicuous impairment of just compensation for investment by the enterprise providing indispensable elements, it could justify limitation on the use of or access to the indispensable elements, but does not view profit reduction arising from expansion of competition as impairment of just compensation. [Article Ⅳ.3.C(4)(a) of the Guidelines on Examination of Abuse of Market Dominating Position]

this does not constitute impairment of just profit because this results from expansion of competition.

336. Second, even if Qualcomm granted licenses on the SEPs for the modem chipset manufacture and/or sale to competing modem chipset manufacturers, it would not reduce provision to the existing users.[270] Qualcomm's SEPs constitute intangible property rights, rather than facilities with limited quantity. Therefore, provision of a license to certain implementers does not limit the license to the other implementers, and granting of a license on the SEPs is not liable to reduce existing supply volume.

337. Third, if Qualcomm granted a license on the SEPs for the modem chipset manufacture and/or sale to competing modem chipset manufacturers, it will not conspicuously degrade quality of the existing services.[271] Even if a license on the SEPs, which are indispensable elements, is provided to new modem chipset manufacturers, it is merely granting of a license for the intangible property rights owned exclusively by the Respondents, and does not in any way degrade the quality of existing services that used to be provided to the modem chipset manufacturers.

338. Fourth, the Respondents' granting of a license on the SEPs for the modem chipset manufacture and/or sale to competing modem chipset manufacturers is not impossible due to non-compliance with the technology standard, etc.[272] Cellular SEPs embody the technology selected by the SSO as the standard for each generation of cellular technology, and thus provision of a license on the SEPs does not trigger issues such as non-compliance with the technology standard.

339. Fifth, the Respondents' granting of a license on the SEPs for the modem chipset manufacture and/or sale is irrelevant with the life or physical safety of the customers.

**(7) Sub-Conclusion**

340. Therefore, Qualcomm's denial or limitation of a license on the cellular SEPs to competing modem chipset manufacturers as described in 2. A. 4) above constitute the act of unreasonably interfering with the business activities of other enterprises prescribed under Article 3-2(1)3 of the Act and Article 5(3)4 of its Enforcement Decree, and constitutes denial or limitation of use or access to the indispensable elements for other enterprises to produce, supply their goods without justifiable grounds, and thus, is illegal.

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[270] The Examination Guidelines provide that if it is impossible to provide the indispensable elements without conspicuously reducing the supply volume to the existing users, the limitation on use of or access to the indispensable elements could be justified. [Article Ⅳ.3.C(4)(b) of the Guidelines on Examination of Abuse of Market Dominating Position]

[271] The Examination Guidelines provide that if the provision of the indispensable elements is liable to conspicuously degrade the quality of services that have been provided, the limitation on use of or access to the indispensable elements could be justified. [Article Ⅳ.3.C(4)(c) of the Guidelines on Examination of Abuse of Market Dominating Position]

[272] The Examination Guidelines provide that if it is technically impossible to provide the indispensable elements due to non-compliance with the technology standard, etc., the limitation on use of or access to the indispensable elements could be justified. [Article Ⅳ.3.C(4)(d) of the Guidelines on Examination of Abuse of Market Dominating Position]

**2) Conduct 2: Conditioning the Supplying of Modem Chipsets on Handset Companies' Acceptance of a License and Performance Thereunder**

**a) Applicable Laws and Legal Principles**

**(1) Applicable Laws**

**Article 3-2 of the Act (Prohibition of Abuse of Market-Dominating Position)**

① No market-dominating enterprise shall commit any act falling under any of the following subparagraphs (hereinafter referred to as "abusive acts")

3. Unfairly obstructing with the business activities of other enterprises

**Article 5 of the Enforcement Decree (Types of, or Standards for, Abusive Acts)**

③ The unfair obstruction of business activities carried out by other enterprises referred to in Article 3-2(1)3 of the Act shall be cases where business activities are made hard to be carried by other enterprises by performing directly or indirectly an act falling under any of the following subparagraphs:

1.~3. (Omitted)

4. Making it difficult, in an unfair manner, for other enterprises to carry out their business activities, other than those referred to in subparagraphs 1 through 3, which is publicly announced by the Fair Trade Commission.

**Examination Guidelines, IV. Type and Criteria for Abuse of Market-Dominating Position**

3. Unreasonably obstructing the business activities of other enterprises (Article 3-2(1)3 of the Act)

Cases where [the dominating enterprise] makes it difficult for other enterprises to carry out their business activities by directly or indirectly performing an act falling under any of the following subparagraphs (Article 5(3) of the Enforcement Decree)

A. ~ C. (Omitted)

D. Other conducts that make other enterprises' business activity difficult as follows (Article 5(3)4 of the Enforcement Decree)

(1) ~ (2) (Omitted)

(3) Unfairly coercing the transaction counterparty into accepting a disadvantageous transaction or engaging in a disadvantageous act

(4) ~ (6) (Omitted)

**(2) Applicable Legal Principles**

*341* Article 3-2(1)3 of the Act forbids unfairly interfering with the business activities of other enterprises, and Article 5(3)4 of the Enforcement Decree as well as IV.3.D of the Examination Guidelines specify this to mean '[u]nfairly coercing the transaction counterparty into accepting a disadvantageous transaction or engaging in a disadvantageous act,' '[m]aking it difficult for other enterprises to carry out their business activities.'

342 Therefore, the following elements are required for the Respondents' acts to come within the meaning of abuse of a market dominant position which unfairly interferes with the business activities of other enterprises. First, the Respondents must be in a market dominant position; second, the Respondents' conduct must unfairly coerce the counterparty into accepting a disadvantageous transaction or engaging in a disadvantageous act; and third, the Respondents' conduct must interfere with the business activities of other enterprises. Determination of any interference with the business activities of other enterprises should involve a comprehensive consideration of manufacturing, financial, and sales activities of the other enterprises, including where there is a risk that the business activities may experience hardship.

343 Specifically, a finding of 'unfairness' in relation to an abuse of a market dominant position by a dominant enterprise is not established upon just the fact that a certain enterprise suffered isolated harm from discrimination, etc., but requires intent or purpose to maintain or strengthen market dominance, where the intent or purpose is to artificially influence the market order by restricting free competition and, under objective evaluation, the act would create a risk of such anti-competitive effects.[273]

344 Where there is proof of anti-competitive effects due to a market dominant enterprise's forcing of disadvantages upon other enterprises, such proof also establishes a factual presumption that there was a risk of causing anti-competitive effects and the intent or purpose to cause such effects at the time of the act. Otherwise, the determination of whether there was intent or purpose with regard to the coercive act inviting the risk of anti-competitive effects is a comprehensive process which takes into account the background to, and the motivation for, the coercive act, the type of such coercion, the characteristics of the relevant market, the level of harm sustained by the counterparty, the changes in prices or volume manufactured in the relevant market, the impediment to innovation, the weakening of diversity, etc.

**b) Whether the Respondents Are Market Dominant**

345 As already discussed in 2.C.1)b)(2) above, the Respondents are market dominant enterprises in the technology licensing market for all patents held by the Respondents for each cellular communications standard including CDMA, WCDMA and LTE, and in the modem chipset market for each standard including CDMA, WCDMA and LTE.

[273] With respect to imposition of disadvantages as an abuse of a market dominant position, Seoul High Court ruled that "the unfairness of coercion of disadvantages as a type of abuse of market dominant position under Article 3-2(1)3 of the Act shall be construed in accordance with the legislative purpose of 'promotion of competition in the monopolistic/oligopolistic market'. However, the unfairness cannot be acknowledged from the fact alone that a certain enterprise suffered harm to its business activities, such as in all cases where the market dominant enterprise coerced disadvantage with unfair intent or object against a certain enterprise which is the counterparty in an individual transaction, or that a certain enterprise suffered or was liable to suffer difficulties in business activities due to such coercion of disadvantage. The unfairness is acknowledged only in cases of coercing disadvantage where there is the intent or purpose to maintain or strengthen monopoly in the market, i.e., the intent or purpose to arbitrarily affect the market order by restricting free competition in the market, and such act should also be acknowledged objectively as liable to induce such anti-competitive effect". (Seoul High Court judgment 2008Nu37543 rendered on July 22, 2009, remanded after reversal and affirmed at the high court)

**c) Whether the Conduct Constitutes Coercion of Unfair Transaction or Acts upon the Counterparty**

*346* After pledging FRAND commitments to offer license to potential SEP licensees on fair, reasonable, and non-discriminatory terms, a SEP holder bears the obligation to engage in good-faith negotiations with those who request to obtain a license for the SEPs.[274]

*347* Despite the foregoing, because the Respondents provided licenses for cellular SEPs not at the modem chipset level but at the finished handset product level, the Respondents have established and/or maintained a business policy which separated the supply of modem chipsets from patent licensing for modem chipsets regarding the Respondents' supply of modem chipsets.[275] Therefore, handset companies which wished to purchase modem chipsets had to enter into a patent licensing agreement with the Respondents, in addition to executing a supply agreement for modem chipsets.[276]

*348* The Respondents, however, did not stop at the situation where modem chipsets and the patens were independent and further carried out business policies which linked the modem shipsets and the patents. This meant that ① the Respondents forced handset companies intent on purchasing and using the Respondents' modem chipsets to execute a patent licensing agreement with the Respondents prior to purchasing and/or using modem chipsets, by refusing to supply modem chipsets to handset companies which had not executed a licensing agreement with the Respondents[277] or by forbidding them from using the modem chipsets that had already been supplied. ② Further, the Respondents linked the patent licensing agreement and the modem chipset supply following the execution of the patent licensing agreement by including in the modem chipset supply agreement the clause that the Respondents could terminate the 'modem chipset supply agreement' or suspend and/or withhold supply of modem chipsets if the modem chipset companies breach the 'patent licensing agreement.' Within the framework created by the licensing agreement with handset companies, the Respondents coerced the handset companies into accepting unreasonable patent license conditions[278] as the companies faced the risk of interruption in the supply of modem chipsets in the event of breach of the licensing agreement, and hindered fair

[274] Seoul Central District Court judgment 2011Gahap39552 rendered on August 24, 2012.

[275] The Respondents' such business policy is different from those of the competing modem chipset companies including *** and ***. Ordinarily, the competing modem chipset companies do not require the handset companies to separately enter into license agreements on their patents when selling modem chipsets to handset companies, or refuse to sell the modem chipsets when handset companies do not enter into such patent license agreements.

[276] If the modem chipset companies fail to obtain patent license from the Respondents, the handset companies which purchase and use such modem chips are forced to enter into patent license agreements with the Respondents in order to avoid patent infringement.

[277] In its brief submitted to the KFTC, Qualcomm stated that "pursuant to Qualcomm policy, Qualcomm will not execute parts supply contracts with any unlicensed handset companies", "Qualcomm does not sell mobile chips to handset companies which have not been licensed by Qualcomm". (Examiner's Exhibit Nos. 32 and 34).

[278] In fact, the Respondents took advantage of the link between modem chipset supply and license agreement to coerce unfair patent license terms to the handset companies such as comprehensive license terms, unilateral royalty, and free cross-grant, etc., without going through fair negotiations. We will elaborate on this point in 3) Conduct 3 below.

negotiation of licensing terms from an equal footing in accordance with FRAND commitments.

*349* The following is a discussion of the specific types of disadvantageous transactions or acts, the process which forces such results, and relevant examples.

**(1) Lack of Opportunities for Fair Negotiations for SEP Licensing Caused by 'Linking Modem Chipset Supply Agreement and Licensing Agreement'**

*350* Since the Respondents are SEP holders which have pledged FRAND commitments, they should engage in good faith negotiations on FRAND terms when entering into a SEP licensing agreement with handset companies. In other words, a handset company that wishes to receive licenses for SEPs is entitled to opportunities for a fair negotiation during the discussions for licensing with the Respondents. Despite this, the Respondents have deprived the handset companies of the opportunities to negotiate licensing terms on a FRAND basis by holding the Respondents' modem chipsets as hostage[279] and coercing handset companies to execute a licensing agreement prior to supplying modem chipsets.

*351* First of all, the Respondents are market dominant enterprises in the CDMA, WCDMA and LTE modem chipset markets, and particularly in the premium product tier, no product could replace the Respondents' modem chipsets, such that the Respondents themselves are aware of[280] the lack of competition. Under these circumstances, whether the Respondents would supply their modem chipsets is an important precondition for consideration, for handset companies entering the handset industry or launching a new handset product. Given this, such handset company would find it practically impossible to decline the Respondent's request to execute a licensing agreement prior to supplying their modem chipsets, and the handset company has to accept the Respondents' unfair licensing terms in violation of FRAND commitments due to fear of interruption in the supply of the modem chipsets, forgoing any opportunity to engage in fair negotiations in accordance with FRAND commitments. Even if the Respondents supply modem chipsets prior to executing a patent licensing agreement, handset companies must first execute licensing agreements with the Respondents due to the clause in the modem chipset supply agreement that "without patent license agreements, the handset company shall not use or combine with other components the modem chipsets it has purchased", and they still remain deprived of FRAND-negotiations.

*352* The same disadvantageous terms apply to handset companies which have already executed a patent licensing agreement with the Respondents and are being supplied modem chipsets. When a new cellular communications standard is set or a licensing agreement expires, the handset companies have to engage in negotiations for patent licensing with the Respondents in the process of modifying or renewing the existing agreement. Again, because of the clause in the modem chipset supply agreement that modem chipsets may be withheld even in the event of breach of a licensing agreement

[279] In the mid-****s, *** attempted the same business model as Qualcomm for its subsidiary engaged in the modem chipset business, but eventually failed to implement the same because they did not have dominance in the modem chipset market, unlike Qualcomm.

[280] Examiner's Exhibit No. 56, Qualcomm's internal material, * 2014.

for patents not directly related to the supply of modem chipsets, the handset companies still face the fear that the supply of modem chipsets may be suspended or delayed if they refuse to accept the disadvantageous terms offered by the Respondents, which places the handset companies in the weaker position in executing SEP licensing agreement with the Respondents.

353 Therefore, the Respondents' conduct of linking their supply of modem chipsets with licensing agreements is a conduct that practically deprives their counterparty, i.e., the handset companies, of an opportunity for FRAND negotiations and thus constitutes a conduct which coerces disadvantageous transaction or obligations upon the counterparty to the transaction.

**(2) Risk of Discontinuing Handset Business Created by 'Linking of Modem Chipset Supply Agreement with Licensing Agreement'**

354 By the Respondents linking modem chipset supply agreements with patent licensing agreements, the handset companies are exposed to the risk of endangering their entire handset business if the supply of modem chipsets is interrupted due to a breach of the licensing agreement which has no direct relevance to the supply of modem chipsets[281].

355 Generally, when a handset company releases a new product, it requires approximately two years for technical verification of specifications such as the modem chipset's performance and interoperability with other components, and it is practically impossible for the handset company to switch the modem chipset once the modem chipset has been confirmed for installation on the new product, considering the speed at which cellular communications technologies evolve, the life cycle of a handset product, etc. If a handset company in the product development or manufacturing stage, following its decision to use the Respondents' modem chipsets, cannot receive supply of modem chipsets from the Respondents, the handset company would experience business hardship where it would either have to suspend or discontinue production.[282]

356 Therefore, the Respondents' conduct of linking their supply of modem chipsets with licensing agreements, so that they may halt the supply of modem chipsets based on breach of the licensing agreement, is a conduct which coerces a disadvantageous transaction upon the counterparty to the transaction.

**(3) Examples of Coercing Other Enterprises into Accepting and Performing under Patent Licensing Agreements**

**(a) Example E**

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[281] Moreover, the modem chip supply agreement executed between the Respondents and the handset companies provided that 'upon failure to remedy the same within ** days, Qualcomm may terminate the modem chip supply agreement, or suspend or withhold supply of modem chipsets'. However, the criteria for determining the handset company's performance of the patent license agreement are somewhat ambiguous, allowing Qualcomm to unilaterally declare a breach of the license agreement.

[282] In this regard, *** *** stated that "even if there is another company's chipset that is replaceable, since we have to go through internal technical verification and business approval procedure on the substitute product, we won't be able to sell the products, albeit temporarily, until we have completed such procedures, and it will still incur enormous impediment to our handset business". (Examiner's Exhibit No. 61, *** ***"s statement)

357 As already mentioned in 2.A.5)b)(1) above, when a dispute arose between the Respondents and E regarding a 'condition to licensing agreement' relating to WCDMA during negotiations from 2003 to 2004 for an amendment agreement to a WCDMA patent licensing agreement, the Respondents notified E that, based on the modem chipset supply agreement provisions linking the patent licensing agreement and modem chipset supply, the Respondents would be terminating the parties' memorandum of understanding ("MOU") for modem chipset rebates and suspend their supply of modem chipsets to E. Fearing that its handset business will suffer from the suspension and delay of the modem chipset supply for a breach of the patent licensing agreement, E executed the amendment to the licensing agreement on the Respondents' terms.

358 It is apparent from this that E promptly executed the amendment to the licensing agreement with the Respondents, within two months, even though E recognized that the terms of the patent licensing agreement offered by the Respondents were disadvantageous to it because, upon the Respondents' threat of interruption of the modem chipset supply, E feared that an actual interruption in the supply of modem chipsets would harm its business. Therefore, there is no reasonable expectation that E was guaranteed FRAND-negotiations in good faith, which E was certainly entitled to in SEP licensing.

**(b) Example F**

359 In 1993, F and the Respondents entered into a CDMA patent licensing agreement, and they engaged in negotiations for WCDMA-related patent licensing agreement in early 2000s. Regarding licensing negotiations between the parties on ** **, 2004, F *** testified to the KFTC as follows. "Although it was difficult for us to accept the terms offered by the Respondents[283], because of the risk that the supply of Respondents' modem chipsets may become inconsistent if the licensing negotiations with the Respondents failed, it was difficult for us to insist on our position. At the time, since the Respondents supplied most of the modem chipsets and no substitute for the Respondent's modem chipsets existed, and given the inventory was not going to last for long, we expected that an interruption in the supply of the Respondent's modem chipsets would cause various business problems, such as the immediate impracticability of launching the handset and the risk that we may not recover the investment into the new product development . . . (omitted) Considering the business realities that it would be more devastating to face negative business effects over the substantial time period it would take for royalties to drop to a reasonable level, we arrived at the conclusion that we should accept the Respondents' terms and promptly finalize the licensing agreement to secure a prompt and stable supply of the modem chips,[284]"*** stated.[285] It is apparent

[283] At that time, Qualcomm asserted against F that there was no reason to reduce the existing royalty rate because WCDMA is also wireless communication technology just like CDMA, and the existing 1993 contract was a comprehensive contract covering all patents including WCDMA as well as CDMA. (Examiner's Exhibit No. 61, F ***'s statement)

[284] Thereafter, Qualcomm and F executed a patent license agreement at the royalty rate of *% at the end of * 2004.

[285] Examiner's Exhibit No. 61, F ***'s statement.

that F was forcibly deprived of opportunities for FRAND-negotiations equitably and in good faith during the SEP licensing process, as it promptly executed the licensing agreement without a reasonable process for royalty adjustment, because F's handset business was dependent on the Respondents' modem chipsets, and F feared that a failure of licensing negotiations would interrupt the modem chipset supply.

360 As discussed in paragraph 2.A.5)b)(2), when F started its PC data modem chip business using the Respondents' modem chipsets in around 2009, ***of Qualcomm Korea's modem chipset business department e-mailed F on * *, 2009, to notify F that it would cease its supply of modem chipsets due to F's violation of the licensing agreement, and *** actually inquired whether it should halt the modem chipset supply with the licensing department of the Respondents' headquarters, and following this on * *, 2009, the Respondents and F entered into a patent licensing agreement which also applied to the product in question. As such, it is apparent that the Respondents' linking of the modem chipset supply and licensing agreement exposed F to the risk of interruption in the modem chipset supply due to a breach of the licensing agreement, and that F had no choice but to execute the licensing agreement on the terms offered by the Respondents in order to prevent such business risks as a company dependent on Respondents' modem chipsets.

**<Evaluation of Respondents' Argument ⑧>**

361 In this regard, the Respondents argue that they neither coerced others into executing licensing agreements nor leveraged the supply of modem chipsets to influence licensing negotiations in their favor because, as the Respondents have executed licensing agreements with large-scale handset suppliers since they were a small company, the Respondents' licensing terms have been widely known since before the standardization of WCDMA and LTE, and because the Respondents have never actually ceased to supply modem chipsets due to a dispute in the process of executing a patent licensing agreement.

362 The Respondents' argument is unreasonable for the following reasons.

363 First, the Respondents' business model leveraged their supply of modem chipsets for executing patent licensing agreements and did in fact use their business model to execute licensing agreements with handset companies. The Respondents demanded that handset companies intending to purchase their modem chipsets first execute a licensing agreement, and the supply agreement for modem chipsets clearly provides for termination of the agreement and suspension of the supply in case of a failure to perform under the licensing agreement. As a result, for the handset companies to continue their businesses using Respondents' modem chipsets, they had no choice but to accept even the unreasonable licensing terms requested by the Respondents. Such coercion applies to all handset companies which relied on the Respondents' modem chipsets, considering that the Respondents are the vertically-integrated dominant enterprise in both the modem chipset and cellular SEPs markets.

364 In addition, since the early 2000s, the Respondents have included provisions that link their modem chipset supply agreement with handset companies to the licensing agreements, and the Respondents have not licensed cellular SEPs to competing modem

chipset companies since 2008. As seen from the Respondent's splitting of their licensing business and modem chipset business into separate corporations in 2012, the Respondents have implemented a business policy of leveraging their modem chipsets to link modem chipsets and licensing.

*365* As a result, the Respondent's licensing terms are uniformly applied to handset companies because the Respondents use their licensing terms from when their CDMA technology was selected as the standard in the 1990s to apply to the WCDMA and LTE standards, even though the Respondents' contribution to WCDMA and LTE has been lower than that for the existing CDMA.

*366* Further, even though the Respondents have never ceased the supply of modem chipsets, the risk of interruption or termination of modem chipset supply is enough to pose a substantial business threat to handset companies in amending the patent licensing agreement, and the Respondents' threat of halting the supply of modem chipsets can operate as a real threat for the handset companies. The Respondents have coerced handset companies into disadvantageous transactions because the transacting parties do not execute a patent licensing agreement in a fair and mutually equal relationship.

**d) Whether the Respondents Unreasonably Interfered with the Business Activities of Other Enterprises**

**(1) Anti-competitive Intent or Purpose**

*367* Given the Respondents' position as a vertically-integrated dominant enterprise in both modem chipset market and mobile communication SEP licensing market, the Respondents' awareness of the obligation to comply with the FRAND commitments, the Respondents' annual reports and internal materials, and the Respondents' patent license negotiation process, etc., we find that the Respondents had the intent or purpose to restrict competition during the mobile communication SEP license negotiation process by exceptionally separating the modem chip supply agreement and patent licensing agreement, and linking them in such a way as to force the patent licensing agreement to be executed before the modem chipset supply agreement, thereby enabling themselves to suspend modem chipset supply even on the ground of a breach of the licensing agreement.

**(a) Anti-competitive Motivations as Vertically-Integrated Dominant Enterprise**

*368* The Respondents are vertically-integrated enterprises as the manufacturer and distributor of modem chipsets, and also mobile communication SEP licensing entity. Given the fact that it is also the dominating enterprise in the modem chipset market, they have the motivation to strengthen their dominance, e.g., increase revenue in the mobile communication SEP licensing market, without fair negotiations, by linking modem chipset supply and licensing agreements, and using dominance in the modem chipset market as leverage for execution of favorable patent licensing agreements with the handset companies.[286]

[286] In addition, the Respondents also have the motivation to maximize the effect of patent hold-up and restrict competition in the mobile communication SEP licensing market by linking unfair contract terms

369 As already mentioned in C.1)b)(4)(a)① above, the fact that the Respondents were themselves aware of such anti-competitive motivation can be confirmed from the e-mails [287] exchanged between Qualcomm executives in * 2013 to the effect that "maintenance of competitiveness in modem chipsets is important for maintaining revenue in the licensing business".

**(b) Intention to Evade Duty to Engage in Fair Negotiations Pursuant to FRAND Commitments**

370 The Respondents, which have made the FRAND commitments, are obligated to engage in good-faith negotiations during the process of executing SEP licensing agreements, and are aware that they have such an obligation as SEP holders who have made the FRAND commitments since they have posted on their website that "the patent holder and licensee are required to engage in good-faith negotiations on the license terms pursuant to the FRAND principle".[288]

371 Despite the foregoing, as already discussed in c) above, the Respondents' linking of modem chipset supply and licensing agreements, and using the modem chipset supply as leverage to execute and/or perform patent licensing agreements show the intent and purpose of forcing disadvantageous contract terms upon handset companies and using such to the Respondents' advantage by avoiding the good-faith negotiations required under the FRAND commitments and leveraging its dominance in the modem chipset market.

**(c) Deterring Handset Companies from Avoiding Respondents' Business Model by Coercing Handset Companies into Using Competitors' Modem Chipsets**

372 The Respondents did not license their own SEPs to the competing modem chipset companies, which enabled the Respondents to block the handset companies from using competing modem chipsets to circumvent the business model linking the Respondents' modem chipset supply and licensing agreement.

373 If the competing modem chipset companies obtained complete exhaustive license on the SEPs embodied in the Respondents' modem chipsets in accordance with the intent of the Respondents' FRAND commitments, the handset companies might have been able to alleviate possible patent claims from the Respondents by selecting competing modem

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during execution of license contracts, as well as to use unjustly secured contract terms such as free cross-grant again to strengthen/maintain dominance in the modem chipset market. This will be discussed in Conduct 3 below.

[287] In the e-mails exchanged between ***, supervisor of Qualcomm modem chipset sales in China, and ***, VP of Qualcomm Asia, they say that maintenance of competitiveness in the Qualcomm chipset division (QCT) is important for the maintenance of a strong revenue source at the licensing division (QTL). (Examiner's Exhibit No. 50, e-mails dated *. *, 2013 between Qualcomm officers/employees; and Examiner's Exhibit No. 51, e-mails dated *. *, 2013 between Qualcomm officers/employees).

[288] The original text reads that "FRAND is a well-established principle that appropriately balances the interests of patent holders to obtain a fair return on their innovations and those of implementers to obtain a [sic] access to such innovations through good [faith] bilateral [negotiations] of licensing terms and conditions."[http://www.qualcomm.com/invention/licensing, 'LTE/Wimax PATENT LICENSING STATEMENT' (December 2008)]

chipsets or using such an option as leverage in the negotiations, instead of engaging disadvantageous license negotiations in order to purchase the Respondents' modem chipsets.[289] However, the Respondents do not grant license to the competing modem chipset companies, and even when entering into limited patent arrangements with some modem chipset companies, the Respondents attempted to block any route which would enable the handset companies to purchase modem chipsets without executing licensing agreements with the Respondents in advance, by restricting the sale of modem chipsets only to handset companies with which they have executed the licensing agreement, and by demanding the handset companies to report on the competing modem chipset companies' customers and sales volume per such customer.

*374* The Respondents' such intention is clearly revealed in the aforementioned e-mail between Qualcomm officers/employees in 2013 titled 'Big potential risk from QTL new deal with ***'.[290] At that time, the Respondents had relaxed the restriction on sale against *** and greatly relieved the obligation to report marketing information such as customers through the ** agreement with *** in 2013. It seems that the Respondents were concerned that they might not be able to monitor the modem chipset sales by the competing modem chipset companies because of the agreement in question, which would then make it difficult for them to coerce the handset companies into executing licensing agreements.

**(d) Threat of Suspending Supply as a Negotiation Tool During Actual Licensing Discussions**

*375* As already discussed in 2.A.5)b) above, the Respondents mentioned the suspension of modem chipset supply, invoking the provision linking modem chipset supply, as they claimed breach of the licensing agreement by E and F during the negotiations for the patent license with E from 2003 until 2004, and with F in 2009, respectively. During the process, the Respondents did not attempt to resolve the disputes related to SEP licensing agreements through good-faith negotiations pursuant to FRAND terms, but rather executed the patent licensing agreement on their terms by leveraging their dominance in the modem chipset market, and the modem chip supply agreement linked with the licensing agreement. These examples show that the Respondents' linking of modem chipset supply and licensing agreement was carried out with the intent to restrict competition by subjecting the counterparty to disadvantage and by interfering with its business activities through taking advantage of such structure during the execution of licensing agreements with the handset companies.

**(e) Anomalous Business Model Compared to Modem Chipset Makers**

*376* In selling modem chipsets to the handset companies, none of the competing modem chipset companies including *** and ***, etc. demanded execution of a licensing

[289] We have already discussed in Conduct 1 above that due to the Qualcomm's refusal to grant license at the modem chipset level, the competition in the modem chipset market was restricted. Qualcomm was consequently able to secure, maintain and strengthen its dominance in the modem chipset market, and the number of competing modem chipsets which could be chosen by the handset companies was reduced.

[290] [redacted] (Examiner's Exhibit No. 50, e-mail dated *. *, 2013 between Qualcomm officers/employees: -mail dated *. *, 2013 between Qualcomm officers)

agreement on their patents, or refused to supply modem chipsets on the ground of the refusal to enter into a patent licensing agreement. Further, the handset companies also did not execute separate patent licensing agreement with any party other than the Respondents when purchasing modem chipsets. The Respondents' anti-competitive intent can be confirmed clearly from the fact that no one other than the Respondents in the mobile communications industry requires execution of separate agreements for modem chipset supply and SEP licensing.[291]

**<Evaluation of Respondents' Argument ⑨>**

*377* The Respondents argue that they did not intend to restrict competition by linking modem chipset supply and licensing agreements, but merely decided to not cooperate in patent infringement and to protect their own patent rights instead, because the use of modem chipsets by the handset companies with which they did not execute a patent licensing agreement would inevitably infringe upon the Respondents' patents.

*378* However, Qualcomm's above argument is unreasonable for the following reasons.

*379* First, Qualcomm's argument that manufacturing handsets with Qualcomm's modem chipsets naturally constitutes patent infringement is unacceptable. In case of patents embodied in modem chipsets, even if the handset company which purchased the modem chipset ended up infringing such patents, such infringement was not intended by the handset company, but is attributable to Qualcomm's business policy of separating patents from modem chipsets and not granting licenses at the modem chipset level, unlike other ordinary modem chipsets. In case of patents not embodied in the modem chipsets, linking modem chipset supply and licensing agreements in order to protect even such patents cannot be considered to be reasonable patent protection since such patent infringement is irrelevant to the handset company's purchase and use of the modem chipsets.

*380* Therefore, it is not through execution of a patent licensing agreement with the Respondents before supply of modem chipsets that the Respondents' patents can be protected. If there is any patent infringement issue, the Respondents could at any time exercise patent rights through contract negotiation or claim patent infringement through litigation.[292]

*381* Second, this cannot be considered a reasonable means for patent protection because the Respondents, without regard to good-faith license negotiations under the FRAND commitments or lawful judicial remedies, used refusal and/or suspension of modem chipset supply as a means of self-help that would cause hardship to the handset companies' business itself in order to protect their own patent rights.

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[291] In fact, the Respondents divided the modem chipset business and licensing business as separate entities in 2012 in order to detach modem chipset supply and patent license agreements, and stated the purpose of such separation as "further protecting and insulating our valuable patent portfolio". (Qualcomm Annual Report 2012)

[292] In its opinion submitted to the KFTC, the Respondents replied that "even when the patent holder asserts the patent, if the patent implementer disputes validity of such patent assertion, patent implementation will not be prohibited until the patent holder receives a court judgment in its favor". (Respondents' Opinion, p. 187)

*382* Third, as already mentioned in 1. Factual Background above, when a patent holder declares and discloses a patented technology falling under a standard before the SSO, the SSO does not have a separate procedure for verifying whether such patent technology actually constitutes the SEP. The task falls on the relevant parties to verify the same afterwards during licensing negotiations, and many of such declared patents are found to be invalid or non-SEPs, thus not the SEPs. Therefore, it shall fall upon the Respondents to demonstrate, if they were to receive royalty on the SEPs, which of the Respondents' patents the handset companies are infringing in what way, and in the meantime, the handset companies shall be guaranteed an opportunity to dispute the validity and essential nature of the Respondents' SEPs and to what extent they are embodied in their own handsets.[293]

*383* If the Respondents wanted patent protection, if there was an infringement issue, the Respondents, as SEP holders who have made the FRAND commitments, should have resorted to good-faith license negotiations or utilized appropriate judicial remedy, instead of using the self-help method of refusal and/or suspension of modem chipset supply through prior linking of modem chipset supply and patent licensing agreement. Despite the foregoing, the Respondents used modem chipset supply as leverage to demand execution of the licensing agreement, without revealing in detail or providing the patent information during the negotiations for the patent licensing agreement with the handset companies, which cannot be deemed to have been intended for the protection of or the prevention against infringement on the Respondents' patent rights.

**(2) Anti-competitive Effects**

**(a) Evading Fair Negotiations in Breach of FRAND Commitments**

**① Evading Duty to Engage in Fair Negotiations As Per FRAND Commitments**

*384* A SEP holder who has made the FRAND commitments is obligated to negotiate in good-faith with any willing licensee, and since the Respondents have made the FRAND commitments with respect to their SEPs during the standard selection process, they are required to negotiate in good faith on the FRAND license terms for the SEP licensing agreement with the handset companies. As already mentioned above, the Respondents' linking of modem chipset supply and licensing agreements, and using their dominance in the modem chipset market to coerce licensing agreement execution, notwithstanding their obligation to engage in good-faith negotiations, are in breach of the FRAND commitments.

**② Anti-competitive Effects Caused by Breach of FRAND Commitments**

*385* Given the basic nature of standardization which adopts a certain technology as the standard to the exclusion of competing technologies, and role of the FRAND

[293] On July 16, 2015, European Court of Justice (ECJ) ruled in the lawsuit between Huawei and ZTE that the proprietor of an SEP may bring an action for infringement seeking an injunction as long as prior to bringing that action, the proprietor has, first, alerted the alleged infringer, and shall be allowed to challenge, in parallel to the negotiations relating to the grant of licenses, the validity of those patents and/or the essential nature of those patents.

commitments which suppress abuse of dominance by the SEP holders by substituting competing technologies after the standardization, breach of the FRAND commitments will result in a removal of the only means for prevention of anti-competition arising from standardization. Moreover, if there is no substitute that can replace a certain standard, or there is no way to control abuse of monopoly by the SEP owner through competition structure in the downstream product market to which the standard applies, the SEP holder's breach of the FRAND commitments would directly result in more serious harmful consequences of anti-competition such as cost increase of products applying the standard, reduction in product diversity, restriction on technology innovation, and reduction in consumer welfare, etc.

*386* In the meantime, the Respondents are vertically-integrated monopolistic enterprises, with dual dominance as the holders of mobile communication SEPs, and as the dominant enterprise in the modem chipset market in which such SEPs are embodied. Therefore, the Respondents' breach of the FRAND commitments would induce anti-competitive effects in the mobile communication SEP licensing market, the modem chipset market, and the innovation market.

**③ Anti-Competitiveness of SEP Holder's Prohibition on Sale**

*387* If a SEP holder who has made the FRAND commitments files for injunction on sale against a potential licensee, which is engaged in negotiations in good faith to obtain license, such goes against the FRAND principle and is likely to constitute an unlawful act.

*388* (i) Article 3-2(1)3 of the Act prohibits the market-dominating enterprises from unreasonably interfering with the business activities of other enterprises, and Article 5(3)4 of the Enforcement Decree and IV.3.D(6) of the Examination Guidelines go into further detail to prohibit the market-dominating enterprises from 'making it difficult for other enterprises to carry out their business activities through unfair use of patent infringement action, patent invalidation action or other judicial/administrative proceedings related to intellectual property rights'. Moreover, while the Guidelines on Examination of Unfair Exercise of Intellectual Property Rights acknowledge legal proceedings such as patent infringement action as an important means for guaranteeing the patent holder's rights, they also provide that abuse of legal/administrative proceedings such as patent infringement action could be found to fall beyond the lawful exercise of patent rights.

*389* (ii) The EU Commission found that, unlike claim for injunction on infringement by an ordinary patent holder, a SEP holder, which has given a commitment to license that patent on FRAND terms and conditions, abuses a dominant position when it seeks and enforces an injunction on the basis that SEP against a potential licensee that is actively willing to enter into a licensing agreement on FRAND terms and conditions.[294] In Samsung Electronics' injunction action against Apple, the EU Commission adopted the decision that Samsung shall comply with the Licensing Framework[295] that complies with

[294] 2014. 4. 29. EU Commission, Case AT.39985 - Motorola - Enforcement of GPRS Standard essential patents.

[295] The Licensing Framework in compliance with FRAND terms referred to by the EU Commission means ① a negotiation period of up to 12 months, and ② submission of the dispute to arbitration or to court adjudication in order to determine FRAND terms and conditions in the event no licensing agreement or

FRAND terms, and Samsung will not be able to seek injunctions on the basis of its Mobile SEPs against any potential licensee in compliance with FRAND terms and conditions.[296]

390 (iii) The European Court of Justice (ECJ) ruled that the proprietor of an SEP, which has given an undertaking to grant a license to third parties on FRAND terms, does not abuse its dominant position by bringing an action for infringement seeking an injunction, as long as ⓐ prior to bringing that action, the proprietor has first alerted the alleged infringer, ⓑ after the alleged infringer has expressed its willingness to enter into a licensing agreement on FRAND terms, presented to such infringer a specific, written offer for a license on such terms, specifying, in particular, the royalty and the way in which it is to be calculated, ⓒ where the alleged infringer continues to use the patent in question but has not diligently responded to such offer.[297]

391 (iv) The US Federal Trade Commission adopted a consent order prohibiting injunction claims against a potential licensee willing to execute a licensing agreement on the SEPs. Specifically, an injunction claim may be filed only when ⓐ the respondent and potential licensee agree to negotiate, for a period of at least six (6) months, ⓑ at any time after six months, at the option of the respondent or within sixty (60) days of the request of the potential licensee, the respondents shall send the potential licensee a proposed relevant licensing agreement, which if executed will form a binding licensing agreement, ⓒ the potential licensee shall elect to have the contested terms resolved through a court request for a FRAND determination or a binding arbitration, and ⓓ the respondent may seek injunctive relief for the alleged infringement in case of a potential licensee who has stated in writing or in sworn testimony that it will not license the FRAND patent on any terms, or is outside the jurisdiction of the United States District Courts, etc.[298]

392 (v) In the brief submitted to the US Court Of Appeals for the Federal Circuit in connection with the patent dispute between Apple and Motorola, the US Federal Trade Commission opined that “a royalty negotiation that occurs under the threat of an injunction may be heavily weighted in favor of the patentee in a way that is in tension with the RAND commitment. High switching costs combined with the threat of an injunction could allow the patentee to obtain unreasonable licensing terms despite its RAND commitment because implementers are locked into practicing the standard. The resulting imbalance between the value of the patented technology and the rewards to the patentee may be especially acute where the injunction is based on a patent covering a minor component of a complex multicomponent product, as is often the case with standard-essential patents in information technology industries”.[299]

393 (vi) With respect to the SSO IEEE’s proposed update to the Patent Policy of limiting the

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alternative process for determining FRAND terms and conditions was agreed upon at the end of the negotiation period.

296 2014. 4. 29. EU Commission, Case AT.39939 - Samsung - Enforcement of UMTS Standard essential patents

297 2015.7.16. European Court of Justice (ECJ) Case C-170/13

298 2013.7.23. Federal Trade Commission, In the Matter of MOTOROLA MBILITY LLC and GOOGLE INC. Docket No.C-4410

299 2012.12.4. Federal Trade Commission, Brief of Amicus Curiae Federal Trade Commission Supporting Neither Party, Nos. 2012-1548, 2012-1549

ability of patent holders who have made an IEEE RAND Commitment to seek prohibitive orders, the US Department of Justice stated, in support thereof, that limiting this threat of exclusion from a market reduces the possibility that a patent holder will take advantage of the inclusion of its patent in a standard to engage in patent hold up, and also that it provides comfort to implementers in developing their products.[300]

**④ Disproportionate Anti-Competitive Effects Caused by Prohibition on Sale**

*394* As discussed in ① through ③ above, a SEP holder who has made the FRAND commitments may not file an injunction claim or engage in any act with virtually the same effect, which constitutes breach of the FRAND commitments in SEP license negotiations.

*395* Despite the foregoing, the Respondents linked both in order to force handset companies to execute and/or perform a patent licensing agreement in advance as a condition for modem chipset supply, in lieu of an injunction claim. This enabled the Respondents to avoid the restrictions under the FRAND commitments, and to force the handset companies which had no choice but to purchase their modem chipsets, to enter into patent licensing agreements on unfair terms unilaterally determined by the Respondents. This is coercion of the handset companies to execute a patent licensing agreement that is in a way more powerful and unfair than an injunction action.

*396* (i) In general, an injunction claim is filed by the patent owner as a lawsuit before the court of competent jurisdiction, which renders its decision after considering the applicable laws and regulations and the contract terms, and both parties are granted sufficient opportunities to present their respective arguments. On the other hand, with respect to the Respondents' act of linking the modem chip supply agreement and licensing agreements (Conduct 2), the Respondents determine for themselves whether the handset companies have breached the patent license, and if so, take the self-help method of refusing or suspending the modem chipset supply. In such a case, the handset companies are forced to accept the Respondents' unilateral demands, without having the opportunity to sufficiently present their arguments or to hold fair negotiations on an equal footing.

*397* (ii) In case of a claim for injunction on sale, it usually takes a number of years after the lawsuit is filed to conduct a technical analysis, etc. on the patent infringement; therefore, there is no risk of immediate suspension of the handset companies' business activities on account of the injunction claim. However, in Conduct 2, the modem chipset supply can be suspended immediately and completely, depending on the arbitrary judgment of the Respondents, which is hard to predict for the handset companies.

*398* (iii) Normally, the effect of an injunction decision is limited to the jurisdiction of the court before which the claimant filed the injunction claim, and the handset companies are able to continue their business activities outside such a scope. However, if the Respondents refuse or suspend modem chipset supply, the handset companies will be forced to suspend all production of handsets embodying the Respondents' modem chipsets, regardless of the territory.

[300] Examiner's Exhibit No. 86, US Department of Justice's business review letter on IEEE's proposed update to its Patent Policy.

399 In conclusion, as can be seen in <Table 52> below, the Respondents' Conduct 2 means in practice the Respondents' immediate suspension of the handset companies' business activities throughout the world as a means of self-help, and is in breach of the FRAND commitments.

<Table 52> Comparison between Injunction Claim and Conduct 2

| | Injunction | Conduct 2: refusal/suspension of modem chipset supply |
|---|---|---|
| Subject of Judgment | Neutral institution such as court | Self-help of the Respondents |
| Judgment Criteria | Applicable laws and regulations, contract terms, etc. | Arbitrary judgment of the Respondents |
| Timing of Effect | After final judgment | Immediately |
| Scope of Effect | Within the jurisdiction | Entire business |

**<Evaluation of Respondents' Argument ⑩>**

400 In this regard, the Respondents argue that if the injunction order is issued, the handset companies which refuse to obtain license from the Respondents will be entirely prohibited from manufacturing/supplying handsets, while the handset companies will still be able to purchase modem chipsets from the other modem chipset companies and continue to make handsets, even if the Respondents suspended modem chipset supply on the ground of a breach of the patent license.

401 However, Qualcomm's above argument is unreasonable for the following reasons.

402 First, as already mentioned above, the Respondents' refusal and/or suspension of modem chipset supply would result in significantly large uncertainty and risks in business to the handset companies due to the arbitrary nature of judgment, immediate effect, and vast scope of effect, etc. when compared to the injunction claim.

403 Second, the Respondents are market-dominating enterprises in all of modem chipset markets related to CDMA, WCDMA and LTE standards; there is virtually no competition especially in CDMA modem chipset, multimode modem chipset that is backward compatible with CDMA, and high-end LTE/premium modem chipset product groups; and the Respondents even coerce restrictive terms on the competing modem chipset companies, forcing them to sell modem chipsets to the Respondents' licensees, making it difficult to procure modem chipsets even through the competing modem chipset companies.

**(b) Transfer of Market Dominance from Modem Chipset Market to SEP Licensing Market**

404 Above all, the Respondents are market-dominating enterprises in the CDMA, WCDMA and LTE modem chipset markets, and especially in the premium product group, there is no substitute that can replace the Respondents' modem chipsets, even to the degree that the Respondents themselves consider there to be no competition. Therefore, the

handset companies are forced to rely on the Respondents' modem chipset supply in order to secure continuity and stability in business.

*405* In the meantime, during the negotiations for patent license with E from 2003 until 2004, and with F in 2009, respectively, the Respondents took advantage of such dominance in the modem chipset market and executed patent licensing agreements with the handset companies, without good-faith negotiations pursuant to FRAND terms, by threatening to suspend modem chipset supply.

*406* Further, *** mentioned to the Respondents in 2013 that "Qualcomm can take *% royalty because Qualcomm chipsets are essential", and that "*** would not have executed a licensing agreement like this if *** did not rely on Qualcomm modem chipsets", and even the Respondents agreed to this and reasoned that maintenance of competitiveness in the Respondents' modem chipset division was important in maintaining strong revenue in the licensing division.[301] Given the above, the Respondents breached the FRAND commitments which they were obliged to comply with as the SEP holders in the SEP licensing, by using their modem chipset dominance as leverage, and thus abused their dominance.[302]

**(c) Patent Hold-up Through Linkage**

*407* The Respondents' act of linking the modem chipset supply and patent licensing agreement is a means for enabling patent hold-up during the patent licensing agreement execution process. The Respondents have been offering and coercing comprehensive licenses and unilateral royalty rates to the handset companies with the modem chipset supply as the leverage, and also have been coercing and executing patent licensing agreements on unfair conditions, including free cross-grant on patents held by the counterparty in return for the patent license. The disadvantageous license terms thus obtained by the Respondents, i.e., royalty rates based on the price of the entire handset and free cross-grant, led to the exclusion of the modem chipset market through increased indemnification costs on the competing modem chipset companies, or by inducing a business cost difference between the Respondents and the competing modem chipset companies. Such disadvantageous license terms also impede innovation in mobile communications.

*408* The details of such conduct and their anti-competitive effect will be discussed in Conduct 3 in 3) below.

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[301] Examiner's Exhibit No. 51, e-mail dated *. *. 2013 between *** and ***.

[302] Even if the Respondents maintained dominance in the modem chipset market, there is not much possibility that dominance would be transferred to the patent license market, unless the modem chipset supply and patent license agreement were linked. That is because the Respondents are bound by the FRAND declaration just like ordinary SEP holders. That is, even if the Respondents offered unjust license terms, the handset companies could execute license agreements under FRAND terms through means such as arbitration or litigation, etc., and the Respondents would have to offer license terms in compliance with FRAND terms and undergo good-faith negotiations to enter into a license agreement. However, the Respondents avoided the obligation to engage in good-faith negotiations with the handset companies and forced them to accept its unilateral license terms by foreclosing modem chipset supply and handset business itself until the handset companies would execute the license agreements.

**<Evaluation of Respondents' Argument ⑪>**

409 Meanwhile, the Respondents argue that even if they coerced disadvantageous license execution to the handset companies by linking modem chipset supply and licensing agreement, they are merely disadvantages upon the handset companies, and are irrelevant with anti-competitive effects as exclusionary effects.

410 However, Qualcomm's above argument is unreasonable for the following reasons.

411 First, the Respondents were able to coerce disadvantageous license terms to the handset companies because they used modem chipset dominance to avoid the FRAND commitments required of the SEP holders; therefore, this is not merely an issue of forcing disadvantage or exploitation. The fact that the handset companies as well as the Respondents are aware the Respondents' modem chipset dominance is the factor that enables execution of a disadvantageous licensing agreement is acknowledged sufficiently in light of the facts and evidence acknowledged in (B) above.

412 Second, the Respondents' breach of the FRAND commitments and engagement in patent hold-up by taking advantage of the modem chipset dominance are not merely an act of exploitation. They are in themselves a breach of the FRAND commitments which are the means for controlling anti-competitive effects caused by standardization. Further, as already discussed in (C) above, the Respondents, by using the disadvantageous contract terms obtained through the licensing process, i.e., unilateral royalty rates based on the price of the entire handset and free cross-grant, only to their advantage, restricted competition in the modem chipset market by increasing the cost of the competing modem chipset companies, and impeded innovation in mobile communications by inducing imbalance between investment and compensation in technology development.

**e) Sub-conclusion**

413 Therefore, the Respondents' Conduct 2 in 2.A.5) above (forcing the handset companies to execute and perform patent licensing agreement with modem chipset supply as leverage) falls under the act of unreasonably interfering with the business activities of other enterprises prescribed under Article 3-2(1)3 of the Act and Article 5(3)4 of its Enforcement Decree, and constitutes undue coercion of disadvantageous transaction or act upon the counterparty, and thus is illegal.

**3) Conduct 3: Offering Terms on a Comprehensive Portfolio License, Royalty Assessment on SEP Holders' Preferred Terms, and Royalty-Free Cross Grants During SEP License Negotiations with the Handset Companies**

**a) Applicable Laws and Legal Principles**

414 The laws and regulations, and legal principles applicable to Conduct 3 are the same as those applicable to Conduct 2 in 2.C.2)a) above.

**b) Whether the Respondents are Market Dominant**

415 As already discussed in 2.C.2)b) above, the Respondents are market-dominating enterprises in the licensing market for all patents held by the Respondents for each

communication standard including CDMA, WCDMA and LTE, and in the modem chipset market for each standard including CDMA, WCDMA and LTE.

**c) Whether the Conduct Coerces Other Transacting Parties into Accepting Unfair Transactions or Acts**

*416* As already discussed above, the Respondents, having made the FRAND commitments with respect to their SEPs before the SSOs such as ETSI and TIA, are obligated to negotiate in good-faith on FRAND terms when negotiating for licensing agreement on the SEPs with the handset companies willing to obtain license in return for fair consideration.

*417* In the ordinary negotiation procedure for patent licensing agreements, the contracting parties specify the target patents, determine whether to license by calculating the scope of embodiment and value of each patent, and then decide the level of royalty. That is, before execution of a license, the patent holder shall provide to the potential licensee (i) a patent list and claim chart, etc. in order to specify the subject of patent license and scope of patent rights,[303] (ii) an opportunity to confirm whether the applicable patents are valid by confirming their validity period and relationship with prior technology, etc., and (iii) confirmation on patent infringement by checking whether the potential licensee's product actually uses the patent in question.

*418* If it were to assert its patent rights due to the existence of patent infringement, the SEP holder which has made the FRAND commitments shall warn against patent infringement by notifying the potential licensee which patent has been infringed in what way before filing the claim for injunction on sale, and if the alleged infringer wishes to obtain a license on FRAND terms, shall present a detailed written offer on the license terms including royalty and royalty calculation method, etc.[304]

*419* Despite the foregoing, as already discussed in Conduct 1 and 2, the Respondents structured it in such a way that the handset companies were forced to execute licensing agreements at the handset level by refusing to license their own SEPs to the competing modem chipset companies at the modem chipset level (Conduct 1). Next, the Respondents took advantage of their modem chipset dominance to link modem chipset supply and licensing agreement, thus forcing the handset companies to execute patent licensing agreements with the Respondents in advance (Conduct 2). Then, as will be discussed below, (i) they eliminated the opportunity for FRAND negotiations on the SEPs from the handset companies by offering comprehensive license terms, without sufficiently providing appropriate information necessary for patent license negotiations, (ii) forced them to accept their unilateral royalty terms, without giving them an option through classification of the license by each cellular communications standard or other patents, and (iii) forced the handset companies to provide a free cross-grant of their own patents, etc., thus coercing transaction terms or acts which are advantageous to themselves, and which the handset companies would otherwise not have accepted had they gone through fair negotiation procedures under FRAND terms.

[303] The scope of rights of a registered patent, and whether it has been infringed, are determined in accordance with the scope of patent claims, therefore, the scope of claims shall be interpreted first before determining whether the potential licensee has committed infringement.

[304] CJEU, Case C-170/13, Huawei Technology Co. LTD v. ZTE Corp., ZTE Deutschland GmbH.

**(1) Coercing Acceptance of One-Sided Terms by Avoiding Negotiation on FRAND Terms and Precluding a Reasonable Right to Choose**

*420* The SSOs do not have separate procedures for verifying the validity of the SEPs, specifically, whether the patents which the SEP holders disclosed and registered as the SEPs selected by the SSOs actually qualify as SEPs. Therefore, the verification and evaluation of such validity is normally conducted during the actual licensing agreement execution procedure. Therefore, if a SEP holder wishes to execute a paid licensing agreement, it has to provide reasonable explanation that its own patent qualifies as SEP and that the counterparty is infringing upon its own SEP.[305] This is the same for any holder of extensive SEPs.

*421* At the time of the execution of a patent licensing agreement, the Respondents present 'QUALCOMM's Intellectual Property or QUALCOMM's Licensed Patent Claims'[306] as the target object of the contract, which include patents embodied in modem chipsets and those embodied outside modem chipsets, the SEPs and other patents, and the SEPs for each of CDMA, WCDMA and LTE standards.

*422* Despite the foregoing, as already discussed in 2.A.6)b), the Respondents did not specify which of their patents were being infringed by the handset companies or the grounds for infringement, and did not provide to the handset companies the basic materials for license negotiations including a list of patents subject to license and analysis of the claims, etc., despite the requests of the handset companies such as ***, *** and ***, etc. during the process of executing the patent licensing agreements.

*423* ① As a result, the handset companies ended up executing the patent licensing agreement with the Respondents, without knowing the basic information necessary for patent license negotiations, such as the list, number, validity and contributory value, etc. of the patents included in 'QUALCOMM's Intellectual Property or QUALCOMM's Licensed Patent Claims', and executed comprehensive licensing agreements, regardless of the handset company's intention, without even being allowed to review whether patents that are unnecessary such as non-SEPs or non-cellular SEPs,[307] or replaceable patents are included in 'QUALCOMM's Intellectual Property or QUALCOMM's Licensed Patent Claims'.[308]

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[305].(Examiner's Exhibit No. 69, *** Internal Report on 2003 - 2004 Negotiation Status)

[306] (Examiner's Exhibit No. 69, *** Inter

[307] In the response submitted to the KFTC, *** stated "Qualcomm licensed 'technically required IPRs (SEPs)' and 'commercially required IPRs (non-SEPs)', but in fact, such non-SEPs are not necessary" (Examiner's Exhibit No. 79), nevertheless, *** executed with Qualcomm a patent license agreement including the non-SEPs.

[308] On February 9, 2015, the National Development and Reform Commission (NDRC) of China issued the following decision:

"Having reviewed evidence submitted by multiple licensees, the argument that the licensees were allowed at any time even to select a license only on cellular SEPs is far from the truth. According to our investigation, while a number of licensees voluntarily requested a license on patent portfolio from the Respondents, some licensees were forced to accept a license on the Respondents' non-SEPs if they were to obtain a license on the Respondents' cellular SEPs. (Omitted) The Respondents refused to provide the list of patents to the licensees, and ordinarily did not offer licenses encompassing only cellular SEPs to the licensees."

*424* ② Although the percentage of the Respondents' SEPs among the entire SEPs for each mobile communication generation declined markedly in accordance with the changes in the generation of cellular communication standards from CDMA to WCDMA and LTE, etc.,[309] as already discussed in 2.A. 6)b) above, Steve Altman and Paul Jacobs, Qualcomm CEOs, offered the handset companies unilateral license terms such as royalty at *% of the handset price on account of it being a comprehensive license, while repeatedly announcing their position that the handset companies are required to pay the same royalty even if they use only one among their patents. The Respondents refused even when the handset companies such as ***, *** and *** requested for the execution of a patent licensing agreement that distinguish between the generations of cellular communication standards, or when they requested for information on the patents.[310] The Respondents unilaterally determined the royalty rates based on the price of the entire handsets, without regard to the intentions of the handset companies, refusing when the handset companies declined to grant cross-grant or expressed the intent to adjust the royalty rate to reflect the value of patents being provided as cross-grant. On the contrary, the other SEP holders such as *** and ***, with respect to their own SEPs, make reasonable adjustments to royalty at the request of the licensees, such as by separating the SEPs and the non-SEPs, by setting the royalty after distinguishing between cellular communication standards, or by reflecting the patent value of the counterparty. After all, unlike the other SEP holders, only the Respondents offered license terms advantageous only to themselves such as comprehensive license terms and unilateral royalty terms, and forced the licensees to accordingly execute the agreement, depriving the handset companies of the opportunity for fair negotiations, or not allowing them to choose between non-SEPs or other patents as the licensee.

*425* Consequently, due to the Respondents' comprehensive license terms and unilateral royalty terms, etc., the handset companies were deprived of the opportunity for FRAND negotiations during the process of obtaining license on the SEPs from the Respondents, and were blocked from choosing between non-SEPs and other patents as the licensee.

**(2) Coercing Acceptance of Royalty-Free Cross Grants without Just Compensation**

*426* In addition to what has been discussed in (1) above, because the Respondents included in the patent licensing agreement with the handset companies a free cross-grant on the patents held by the handset companies, the handset companies are not able to receive any compensation for their own patents from the Respondents, and also forfeited the opportunity to receive just compensation such as royalties from the customers who purchased Qualcomm modem chipsets.

**(3) Example of Coercion**

*427* As already discussed in Conduct 2 above, the patent licensing agreements between the Respondents and the handset companies, containing such comprehensive and

[309] According to the SEPs registered with the ETSI, although the percentage of the SEPs held by the Respondents among the entire SEPs accounted for 90% in CDMA standards, they declined rapidly to 27.3% in WCDMA standards, and to 16% in LTE standards.

[310] [redacted](Examiner's Exhibit No. 73, e-mail dated *. *. 2004 by the person in charge of license negotiations at Qualcomm).

unilateral royalty terms and even free cross-grants, were executed consistently,[311] without regard to the intentions of the handset companies, where the dominance of the Respondents in the modem chipset market worked as leverage under the linkage of the modem chipset supply and licensing agreements established by the Respondents, as can be confirmed from the examples in (A) through (C) below.

**(a) *** Example**

*428* During the process of executing a WCDMA patent licensing agreement with the Respondents in 2003, *** pointed out that the Respondents were using ***'s patents without royalty and demanded consideration therefor.[312] However, the Respondents refused to pay consideration for the cross-grant on the grounds that ***'s existing CDMA patent licensing agreement was on a 'royalty-free' condition, that the Respondents never paid any royalty to the other licensees including ** and **, etc., and that royalty adjustment was 'difficult because it could affect the Respondents' entire licensing program'.[313] This shows that even when the handset companies requested just compensation for their own SEPs, the Respondents continued to insist on free cross-grants in order to maintain their standard licensing method of comprehensive license.

**(b) *** Example**

*429* In the response submitted to the KFTC, *** stated that *** was forced to accept the patent license terms executed with the Respondents because of the Respondents' linking of modem chipset supply and licensing agreement, that they execute licensing agreements with other patent holders through mutual negotiations, unlike the licensing agreements with the Respondents which are dominant in the modem chipset market, and that they have never been forced to accept free cross-grant or high royalty terms from the other patent holders.[314]

**(c) ***, *** Examples**

*430* The Respondents failed to carry through the unilateral royalty terms to *** which did not rely on their modem chipsets,[315] or to secure a cross-grant for ***'s patents.[316] The

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[311] The Respondents executed virtually identical agreements (comprehensive license, unilateral royalty calculation terms, free cross-grant) with *** handset companies throughout the world in accordance with their standard patent license agreement.

[312] At that time, *** communicated their position to Qualcomm that "the percentage of Qualcomm's IPRs with respect to WCDMA standard has been reduced", "although *** did not have any patents at the time of execution of the existing (CDMA) agreement, *** now owns a considerable number of patents so their value should be reflected in a royalty adjustment". (Examiner's Exhibit No. 69, *** Internal Report on 2003 - 2004 Negotiation Status)

[313] Examiner's Exhibit No. 69, *** Internal Report on 2003 - 2004 Negotiation Status.

[314] *** responded that "I believe that Qualcomm's supply of baseband chipsets only on condition that they do not raise any objection to the execution of a license agreement or to its terms plays an important role in connection with the terms of the license agreement", "*** executed license agreements with other patent holders through mutual negotiations. Unlike the agreement with Qualcomm which occupies a dominant position in the modem chipset supply market, *** was never forced to accept free cross-grant or high royalty rates in agreements with the other patent holders". (Examiner's Exhibit No. 79, ***'s Response to KFTC's Request for Submission)

[315] While the Respondents' ordinary royalty rate is *%, [redacted].

Respondents named *** as the only patent holder from whom they failed to obtain a cross-grant. Further, *** stated to the KFTC that "*** trades with Qualcomm on general terms and conditions with respect to non-cellular products (bluetooth, Wi-Fi) over which Qualcomm is not dominant. Qualcomm does not demand a separate patent license for those products, but sells them exhaustively and guarantees supply. The relationship between Qualcomm and *** over modem chipsets is exceptional".[317]

*431* These examples show that the patent license terms including a free cross-grant, which the Respondents secured from the handset companies, were obtained with the Respondent's dominance in the modem chipset market as leverage.

*432* Therefore, if the Respondents were not dominant in the modem chipset market and mobile communication SEP licensing market, or if they were, but engaged in fair and good-faith license negotiations on an equal footing pursuant to the FRAND commitments, the handset companies can hardly be expected to execute patent licensing agreements with such comprehensive license, unilateral royalty, and free cross-grant terms, without being provided specific information on the patents subject to license, or without an analysis on the patent value or substantial negotiations on the license terms. That is, the fact that the Respondents executed patent licensing agreements with the handset companies under terms that are advantageous only to the Respondents, which the handset companies would otherwise not have accepted but for fair negotiation opportunities, shows that the Respondents unilaterally coerced such contract terms, without going through fair negotiations under FRAND terms.

**<Evaluation of Respondents' Argument ⑫>**

*433* The Respondents argue that the cross-grant they received from the handset companies was not royalty-free, and were reflected in the calculation of consideration for the overall license they received from the handset companies after comparing the value of the patents held by both parties.

*434* However, the Respondents' argument that they calculated the consideration for license after comparing the patent value of both parties is unreasonable for the following reasons: (i) the Respondents themselves have stated that they do not pay consideration for cross-grants because most of the handset companies either have no patent or hold patents with minimal value,[318] (ii) according to the terms of the patent licensing agreements executed between the Respondents and the handset companies, there is no difference in royalty rates even among handset companies with considerable differences in the value of their patents, although there should be differences in the respective royalties depending on the value of patents held by the handset companies if the Respondents indeed reflected the consideration for a cross-grant in the calculation of royalties,[319] and (iii) overseas competition authorities such as those in China[320] and

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317 2016. 8. 17. KFTC Second Full-Commission Hearing.

318 During the course of investigation, the Examiner asked the Respondents repeatedly based on what criteria the value of consideration for cross-grant were calculated, but the Respondents failed to present any evidence.

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320 On February 9, 2015, National Development and Reform Commission (NDRC) ruled as follows:

Japan[321] have already prohibited the Respondents from requiring the licensees to provide a cross-grant to the Respondents and their customers without just consideration.

**d) Determination on Whether the Respondents' Conduct Unreasonably Interfered with the Business Activities of Other Enterprises**

**(1) Anti-Competitive Intent or Purpose**

**(a) Intent or Purpose to Consolidate Dominance in the Cellular SEP Licensing Market**

*435* As already discussed above, the Respondents had the intent or purpose to consolidate dominance in the mobile communication SEP licensing market in light of the following facts: (i) the Respondents did not engage in, but rather avoided, good-faith negotiations with the handset companies in breach of the FRAND commitments, (ii) as the SEP holders and dominating enterprise in the modem chipset market, the Respondents are the only enterprises which do not supply modem chipsets before executing a patent licensing agreement, having separated and linked modem chipset supply and patent licensing agreement, (iii) the Respondents forced license terms determined unilaterally in accordance with the standard contracting method of comprehensive licenses, without providing any information necessary for specifying or assessing the value of patents subject to license, in executing patent licensing agreements with the handset companies under such a structure, (iv) on the contrary, the Respondents failed to coerce unilateral royalty terms to ***, which did not rely on the Respondents' modem chipsets, or to secure cross-grant for ***'s patents, and (v) it seems the Respondents attempted, through comprehensive license terms, to extend dominance over the original CDMA technology, which was held at an overwhelming level by the Respondents among the cellular communication standards, to WCDMA and LTE standards with relatively lower percentage, and to expand the dominance over the SEPs even to non-SEPs.

**(b) Intent or Purpose to Exclude Competing Modem Chipset Companies from Market**

*436* The Respondents established a 'patent umbrella' by obtaining cross-grants for patents owned by the handset companies, without paying due consideration therefor, during the process of executing licensing agreements with the handset companies by linking their modem chip supply and patent licensing agreement, while refusing to grant license on their SEPs to the competing modem chipset companies.

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'the Respondents paid the relevant consideration with respect to patents cross-licensed by certain licensees' in licensing their patents, and there is insufficient factual background and evidence to support the Respondents' argument that free cross-license is a part of the overall exchange of consideration between the Respondents and the licensees. (Omitted) The NDRC finds that the Respondents forced the licensees to grant free cross-grant (without deducting from the royalty paid to the Respondents, or paying consideration for, the value of patents cross-licensed by the licensees) through their dominant position in the cellular SEP licensing market as leverage.

[321] On September 28, 2009, the Japan Fair Trade Commission ruled as follows:

Contract provisions to the effect that domestic handset manufacturer/distributor shall provide free license to Qualcomm with respect to IPRs held or to be held by the domestic handset manufacturer/distributor for manufacture/distribution of CDMA chips, that [the licensee] shall not claim its rights against Qualcomm or Qualcomm's customers, and that [the licensee] shall not claim its rights against Qualcomm's licensees should be made void."(Japan Fair Trade Commission, 2009, No.22)

*437* The Respondents' aforementioned conduct was carried out with the intent and purpose of restricting competition in the modem chipset market, by positioning themselves at an advantage over competing modem chipset companies, in light of the following facts: (i) risk of patent dispute and provision of indemnification are important factors in the handset companies' decision to purchase modem chipsets; (ii) the Respondents, themselves aware of the above, promoted the fact that [the potential licensees] can be protected from their patents and those of third parties only when [the potential licensees] purchased modem chipsets from them in more than 240 occasions since 2004 through annual report, and white paper, etc. during the sales promotion for their own modem chipsets; and (iii) Paul Jacobs, Qualcomm's CEO, emphasized at the investors' meeting in London that [the investors] do not have to pay separate royalties to the other patent holders if they purchased Qualcomm modem chips, but would otherwise incur extra expense if [the investors] purchased competing modem chipsets, etc.[322]

**(2) Anti-Competitive Effects**

**(A) Consolidating Dominance in Cellular SEP Licensing Market**

**① Consolidating Dominance over All of Respondents' Patents through Comprehensive Licensing Terms**

*438* The Respondents extended their dominance over the SEPs to the Non-SEPs, by coercing comprehensive portfolio licenses that makes it difficult to distinguish the licensing terms of the cellular SEPs from those of Non-SEPs and those of each generation of cellular communication standards. They also restricted the handset companies' option to choose patents and consolidated dominance over all of their patents, by extending their dominance over CDMA SEPs to the subsequent standards, such as WCDMA and LTE, etc.

*439* Furthermore, the comprehensive portfolio licensing terms intensified the dependence on the patents of the Respondents as a whole. As the handset companies have already paid the costs for all patents existing or to be developed in the future that are included in the patents of the Respondents, they have considerably less incentive to enter into any other licensing agreement even if design-around/avoidance design is possible or alternative technology exists.

**② Evading Licensing Negotiations in Good Faith in Breach of FRAND Commitments**

*440* Despite the Respondents' declaration of FRAND commitments, they coerced the execution of patent licensing agreements in advance by using their chipset supply as

[322] Paul Jacobs made the following speech: Over 100 companies have provided us with a handful of IP transfer right bundles. It means that when I sell modem chips and software to a certain company, that company is able to access Qualcomm's intellectual property, and this means that the company gets access to intellectual property held by more than 100 companies. This can prevent accumulation of enormous potential royalties, because otherwise, if they did not obtain chips or secure IPR license from another company, they would have to negotiate individually with the other companies, and may end up having to pay royalties to each one of them."(Examiner's Exhibit No. 82, material for Qualcomm's 2005 Investor Meeting)

leverage[323]. In the process, they evaded the obligation to negotiate in good faith under FRAND commitments by establishing licensing terms in a way that licensing terms of the cellular SEPs from those of Non-SEPs and those of each generation of cellular communication standards became indistinguishable. As the result, the benefits of standardization have been lost and harmful consequences of monopolization remain. Moreover, given that the Respondents have the position as a vertically integrated enterprise in the cellular SEP licensing market and the modem chipset market, their conduct not only directly increase the costs of the competing modem chipset companies, which results in the exclusion of competitors from the market, but also consolidates their dominance in the cellular SEP licensing market. This results in harmful consequences of anti-competition such as a decrease of product diversity, restriction on technology innovation, and reduction of consumer welfare.

**(b) Effect of Patent Hold-up**

*441* The Respondents coerced the royalty term that they unilaterally apply a certain rate to the sales price of the whole handset without suggesting a detailed basis of calculation of royalties. As a result, the handset companies (i) must pay royalties to the Respondents even for the added-value of the handset generated from their own innovation, irrespective of the Respondents' patents.[324] (ii) In addition, the Respondents established a long-term/permanent contractual period without distinguishing the licenses per cellular communication standard, thereby enabling them to maintain similar royalty rates, irrespective of changes in patent value such as a decrease in the portion of their own SEPs according to the changes in the cellular communication standards.[325]

*442* Furthermore, the Respondents which coerced unfair license terms, such as a comprehensive portfolio license, unilaterally determined royalties, royalty-free cross-grants, etc. on the handset companies led to the effect of exclusion in the modem chipset market and innovation market, as well as the cellular SEP licensing market as discussed further below.

**(c) Exclusion of Competing Modem Chipset Companies from the Market**

*443* The 'patent umbrella' that the Respondents built up through the royalty-free cross-grant they obtained from 195 handset companies causes the following anti-competitive effects of excluding the competing modem chipset companies from the modem chipset market: (i) discriminating their modem chipset customers unfairly by charging royalty favorable to only themselves; (ii) increasing the cost of competitors due to the cost of indemnification for patent infringement; (iii) prolonging/perpetuation of anti-competitive effects by

[323] As reviewed above, in light of the fact that an injunction by a SEP holder constitutes a breach of FRAND commitments and violates the law, the conduct of the Respondents results in an anti-competitive effect stronger than an injunction in the SEP license market.

[324] It brings about a result that various technologies and values contained in a handset, for example, components such as memory, camera, etc., and operating system, sound recognition, fingerprint verification, mobile payment system, etc., are included in the royalty payable to the Respondents, even though they are in fact unrelated to the Respondents' cellular SEPs.

[325] Moreover, the license agreements the Respondents entered into with *** • *** • *** • ***, etc. provide that the cross-grant provided to the Respondents shall be maintained even after the termination of the agreement.

establishing a long-term/permanent contractual period; and (iv) spreading the anti-competitiveness to the neighboring market through integration of the modem chipset and application processor. We have already discussed the details of the anti-competitive effect in the portion regarding anti-competitive effect in b) (4) Conduct 1 (Refusal or Restriction on Cellular SEP License to the Competing Modem Chipset Companies) above.

**(d) Impeding Technology Innovation by Reducing Incentive of Other Patent Holders to Invest and Innovate**

*444* (i) The Respondents' royalty-free cross-grants not only deprives the handset companies of the opportunity to receive due compensation for their development of patents[326] but also significantly reduces the incentive of the handset companies to invest in technology development and impedes technology innovation[327], taking into consideration the following points: the long period for which the handset companies must provide the royalty-free cross-grant to the Respondents; or even after termination of the licensing agreement with the Respondents, the royalty-free cross-grant provided by the handset companies does not terminate and remains permanently in effect; and in fact, a handset company stated that it was difficult to continue innovative research and development of patents because of the royalty-free cross-grant to the Respondents.[328]

*445* (ii) As the Respondents coerce the uniform royalty term based on the price of handset, the handset companies do not sufficiently recover the consideration for the added-value of handset generated from their own technical development, whereas the Respondents receive a free ride on the innovative value of other enterprises, which eventually will result in reduction of incentives for technical development of other enterprises in the

[326] These anti-competitive effects increase much more in consideration of the following points: (i) the Respondents required the handset companies to provide the cross-grant for Non-SEPs as well as SEPs; (ii) given the high market share of the Respondents in the modem chipset market, there is less opportunity for the competitors to receive due compensation from the other handset companies which do not purchase modem chipset from the Respondents; and (iii) 195 handset companies in the world provide the royalty-free cross-grant to the Respondents.

Meanwhile, the IPR Policy of IEEE as amended recently with regard to the cross-grant for Non-SEPs allows a SEP holder to grant a patent license and to require a cross-license for the licensee's SEP at the same time but prohibits a SEP holder from coercing a grant of license for Non-SEP held by the licensee in return of granting a license for its own SEP. The decision on this amendment came out of a serious consideration that a compulsory demand of cross-license can impede a motive for innovation. (Business Review Letter sent by the U.S. MOJ to IEEE with regard to the amendment to the IEEE's IPR Policy)

[327] A handset company *** stated in the response submitted to KFTC, "the current and future technologies to be developed newly by *** were offered to Qualcomm and its customers without any consideration to ***. *** has no way to continue innovative research and development without reasonable compensation for the patents".(Examiner's Exhibit No. 95 ***'s Response to KFTC's Request for Submission of Documents)

[328] In fact, in the patent litigation between Samsung Electronics and Apple from 2012 to 2014, the court of the Netherlands ruled that since Samsung Electronics provided a covenant not to sue to the modem chipset customers of the Respondents and Apple used the modem chipset of the Respondents, the patent of Samsung Electronics was exhausted. For reference, among the WCDMA standards, the Respondents have 1,828 SEPs and Samsung Electronics has 260 SEPs; and among the LTE standards, the Respondents have 1,647 SEPs and Samsung Electronics has 1,039 SEPs.

mobile communication industry.[329]

*446* (iii) In addition, as the Respondents coerce the comprehensive portfolio license for SEPs and Non-SEPs, the handset companies have no incentive to use Non-SEPs of other enterprises through workaround/avoidance design, and in turn, other enterprises have less incentive for technical development.

*447* This imbalance between the Respondents and other enterprises regarding the incentive for technical development restricts the innovation competition in the whole mobile communication industry and destroys the virtuous cycle of 'technical development → acquisition of patent → contribution to standardization → compensation through the SEP licensing'. There is a concern that ultimately, these effects will increase the influence of the Respondents and consolidate their position in the standardization process.

**(e) Harm on End-User's Consumer Welfare**

*448* As the Respondents coerce the unfair patent license terms on the handset companies, it increases the costs of the handset companies. If so, such cost will be reflected in the price of the handsets and passed on to the consumers. Moreover, the exclusion of competitors not only reduces product diversity but also restricts technology innovation, which will ultimately result in a decrease in consumer welfare as one of the harmful consequences of anti-competition.

**< Evaluation of Respondents' Argument ⑬>**

*449* The Respondents argue that since each of the comprehensive portfolio license term, the uniform royalty term, and royalty-free cross-grant term is a separate conduct, for the KFTC to take them as a whole to establish illegality is to avoid its burden of proof.

*450* To review this argument, the following points should be considered: (i) the Respondents themselves explained that while granting a comprehensive portfolio license, they 'calculate the royalty based on the price of handset and receive a royalty-free cross-grant' as a benefit in return; (ii) all of such conduct are commonly incorporated in the standard agreement of the Respondents, and they have consistently adhered to these provisions in entering into a patent licensing agreement with the handset companies; (iii) since such conduct are the means by which the Respondents practice the patent hold-up to evade FRAND commitments, it is reasonable to decide whether all such conduct are illegal or not; and (iv) such conduct are also connected with the exclusionary effects in both the modem chipset market and the SEP licensing market in terms of the anti-competitive effects. Thus, it is reasonable to take such conduct in the aspects of its

[329] In this regard, *** (Economics professor at *** University), who attended as an expert for the Interested Parties at the KFTC hearing, gave his opinion that "① if the Respondents collect excessive royalties from the handset companies, the Respondents' investment incentive unfairly increases but the competitors' investment incentive unfairly decreases, and thus, the Respondents will hold a unfair dominant position in competing development of the next generation product; ② the Respondents provided the cross-grant for the patents of the handset companies they obtained under the license agreement, discriminately only to their own modem chipset, thereby resulting in the increase of the competitors' costs. Eventually, the Respondents' collection of excessive royalties will lead to the exclusionary effect".(The 2nd KFTC Full-Commission Hearing on Aug. 17, 2016).

method and effects as a package of patent hold-up to decide whether they are illegal or not. Therefore, the Respondents' argument is groundless.

**e) Sub-conclusion**

*451* In conclusion, the Respondents' Conduct 3 mentioned in 2.A.6) above (Offering Terms on Comprehensive Portfolio License, Royalty Assessment on SEP Holders' Preferred Terms, and Royalty-Free Cross Grants During SEP License Negotiations with the Handset Companies) is conduct that causes difficulties in an unfair manner for other enterprises to carry out their business activities in accordance with Article 3-2(1)3 and Article 5(3)4 of the Enforcement Decree of the Act. Such conduct constitutes an act of unfairly coercing a transaction or conduct disadvantageous to the counterparty, and thus, is illegal.

**4) Inter-relatedness of Conduct 1, 2 and 3 and the Resulting Exacerbation of Anti-competitive Effects**

*452* As discussed in 2.C.1) through 3), each of Conduct 1, 2 and 3 causes anti-competitive effects and constitutes illegal conduct. Further, as examined in the summary of the Respondents' business model in 2.A.3) above, Conduct 1, 2 and 3 above were fulfilled as a matter of the Respondents' business policies that became a systematically interconnected, mutually fortifying precondition or means that exacerbated the ensuing anti-competitive effects.

*453* First, the Respondents' control over the supply of modem chipsets enable them to coerce the handset companies to accept a patent licensing agreement as the Respondents refuse to license and/or restrict licensing as to the competing modem chipset companies. This is because the Respondents need to first prevent the exhaustion of a license at the modem chipset level in order for them to demand that the handset companies enter into a patent licensing agreement with them.

*454* Second, the Respondents have capitalized on their ability to leverage their control over the supply of modem chipsets to coerce the handset companies into accepting a patent licensing agreement in that the Respondents demanded disadvantageous patent licensing agreement terms to the handset companies, including comprehensive portfolio licenses, royalties on the Respondents' preferred terms, and royalty-free cross grants.

*455* Third, by refusing to license and/or restricting licenses as to the competing modem chipset companies, the Respondents exposed the competing modem chipset companies to the threat of patent attacks, while simultaneously creating a 'patent umbrella' for their modem chipsets by forcing disadvantageous licensing terms, particularly the terms on royalty-free cross grant. As a result, the Respondents consolidated their dominance in the modem chipset market and cellular SEP licensing market and built a 'skewed playing field' of patent protection with their modem chipset customers.

**5) Conduct 2 · 3: Abuse of Superior Trading Position in Transactions**

**a) Applicable Laws and Regulations**

**(1) Applicable Laws**

The Act, Article 23 (Prohibition of Unfair Trade Practices) (1) No enterpriser shall commit any act which falls under any of the following subparagraphs, and which is likely to impede fair trade (hereinafter referred to as "unfair trade practices"), or make an affiliated company or other enterprisers perform such act.

4. Trading with a certain transaction partner by unfairly taking advantage of his/her trade position

Enforcement Decree, Article 36 (Designation of Unfair Trade Practices) (1) Categories or standards of unfair trade practices in accordance with Article 23(3) of the Act shall be as set out in attached Table 1-2.

[Table 1-2] Categories or Standards of Unfair Trade Practices (Article 36(1))

6. Abuse of Superior Trading Position

"Trading with a certain transaction partner by unfairly taking advantage of his/her superior trading position" as set out in Article 23(1)4 of the Act, Prohibition of Unfair Trade Practices, is an act falling under any of the following subparagraphs.

A. ~ C. (omitted)

D. Imposing Disadvantages

An act which imposes or modifies to impose transaction terms that are disadvantageous to the counterparty thereto or which causes the counterparty to suffer from disadvantages in performance thereof, in a manner other than those defined in the preceding subparagraphs

**(2) Applicable Legal Principles**

*456* Whether an enterprise is in a superior trading position in relation to the counterparty in the transaction requires a comprehensive determination which takes into account any history of prior dealings, reliance on the transaction, feasibility of securing a substitute business partner, authority to supervise, market conditions, characteristics of related products or services, among others.

*457* For a finding of a superior trading position, it would be sufficient to show that one party has the superior position or at least a position which allows the party to substantially influence the transaction with the counterparty, in consideration of the market conditions, any discrepancies in the overall ability to conduct business, and characteristics of the product subject to the transaction.[330]

*458* A finding that a party unfairly imposed disadvantages on the counterparty using its superior trading position requires a showing that the disadvantages were imposed in the setting or modifying of transaction terms or in the process of performance, as well as a determination of whether the conduct threatened to restrict a fair transaction by falling outside the ordinary business practices based on the characteristics of the product, the

[330] The Supreme Court, June 29, 2006, 2003Du1646.

circumstances of the transaction, the degree of market dominance, the disadvantages imposed on the counterparty, and specific behavior-related factors such as intent, purpose, effects and consequences.[331]

**b) Conduct 2: Conditioning the Supply of Modem Chipsets on Handset Companies' Acceptance of a Patent Licensing Agreement and Performance Thereunder**

**(1) Whether the Respondents Have a Superior Trading Position**

*459* Upon overall consideration of the foregoing and the discussions below, the Respondents are in a superior position in relation to the counterparty, which are the handset companies, or the Respondents have a superior trading position which enables them to substantially influence transactions with their counterparties.

*460* First, as the Respondents have a 90% market share in the global CDMA modem chipset market, a 50% share in the WCDMA modem chipset market, and 60~90% share in the LTE modem chipset market, handset companies which mostly rely on the Respondents' supply of modem chipsets understand that for their business it is paramount to maintain a stable business relationship with the Respondents. Given that domestic handset companies are particularly dependent on the Respondents as they source more than 95% of their LTE-standard modem chipsets from the Respondents, it is practically impossible for a handset company in such position to refuse transaction terms offered by the Respondents.

*461* Second, the handset companies' business would be in danger of shutting down should their business relationship with the Respondents come to an end because they would struggle to promptly substitute the Respondents' modem chipsets with another product. Given that the handset companies develop and launch new handsets and in the process select the modem chipset to install in their new product after investing about two years to acquire customer approval and to verify technological specifications, such as the modem chipset's performance and interoperability with other components, it is practically impossible for them to substitute a different modem chipset once a certain modem chipset has been confirmed for installation on the new product.

*462* Since under the circumstances the Respondents' suspension of modem chipset supply would force the handset companies to forego and/or discontinue production of handsets which use the Respondents' modem chipsets, the Respondents are in a position to substantially influence the business activities of the handset companies.

**(2) Whether the Respondents Unfairly Imposed Disadvantages on Other Enterprises**

**(a) Whether there was a Disadvantage**

*463* As seen in the discussion of Conduct 2 in 2.C.2)c), the Respondents' conditioning the supply of modem chipsets on handset companies' acceptance of and performance under a patent licensing agreement (Conduct 2) deprived the handset companies of opportunities to negotiate licenses on FRAND terms and imposed on the handset

[331] The Supreme Court, Sept. 8, 2006, 2003Du7859.

companies the danger that their entire businesses may discontinue upon breach of the licensing agreement and the ensuing interruption in the supply of modem chipsets, meaning that the transaction terms were disadvantageous to the counterparty, the handset companies.

**(b) Whether the Respondents Used Their Superior Trading Position in Unfairly Imposing Disadvantages on the Counterparties**

*464* In consideration of the below points, the Respondents' conditioning the supply of modem chipsets on handset companies' acceptance of and performance under a patent licensing agreement (Conduct 2) was an unfair use of the Respondents' superior position which imposed disadvantages upon the counterparty, the handset companies.

*465* First, as previously discussed in 2.C.2)d), the Respondents intentionally fashioned business policies which could enable the transfer of their market dominance in the modem chipset market to the patent licensing market and used such policies in their negotiation for patent licensing with the handset companies, so that they may circumvent their FRAND commitments and coerce their preferred terms from their counterparties.

*466* Second, the Respondents' conditioning the supply of modem chipsets on handset companies' acceptance of and performance under a patent licensing agreement (Conduct 2) constitutes an unfair transaction term which falls outside the ordinary trade practices.

*467* (i) there has not been a case where the Respondents declined to sell modem chipsets to competing modem chipset companies for refusing to first execute a patent licensing agreement, but (ii) while the Respondents have isolated their patents from modem chipsets for their use, they linked their supply of modem chipsets with patent licensing agreements to force the handset companies to execute a licensing agreement with them prior to purchasing modem chipsets. (iii) Despite the fact that the holder of FRAND-encumbered SEPs is not permitted to unilaterally coerce acceptance of licensing agreements through threats such as demanding to discontinue sale, the Respondents in violation of their FRAND commitments have leveraged their control over modem chipset supply to circumvent good-faith negotiations and have forced the handset companies to accept licensing agreements.

*468* Third, the Respondents' conduct creates the risk that the business of the handset companies may discontinue for unpredictable reasons. According to the supply agreement for modem chipsets entered into between the Respondents and the handset companies, if the Respondents judge that the handset company has breached the licensing agreement, the Respondents may unilaterally cease its supply of the modem chipsets to the handset companies. Further, considering that the handset companies are heavily dependent on the Respondents' modem chipsets, a risk of such interruption in the supply of modem chipsets can in fact lead to the danger of terminating an entire handset business.

*469* Fourth, the Respondents' conditioning of the supply of modem chipsets on execution of a licensing agreement operates as an instrument for the Respondents to insist on unfair licensing terms without fail. Through this mechanism, the Respondents have left the handset companies with no choice but to execute licensing agreements with the

Respondents and have in fact executed licensing agreements containing unfair terms for all of the handset companies.

**(3) Sub-conclusion**

*470* As such, Conduct 2 of the Respondents as discussed in 2.A.5) is unlawful as a violation under Article 23(1)4 of the Act.

**c) Conduct 3: Offering Terms on Comprehensive Portfolio License, Royalty Assessment on SEP Holders' Preferred Terms, and Royalty-Free Cross Grants During SEP License Negotiations with the Handset Companies**

**(1) Whether the Respondents Have a Superior Trading Position**

*471* For reasons reviewed in 2.C.5)b)(1), the Respondents are in a superior trading position in relation to the handset companies, with regard to the Respondents' offering of terms on comprehensive portfolio license, royalty assessment on their preferred terms, and royalty-free cross grants during patent licensing negotiations with the handset companies (Conduct 3).

**(2) Whether the Respondents Unfairly Imposed Disadvantages**

**(a) Whether There Was a Disadvantage**

*472* First, harmful effects arose in that the Respondent's conduct violated the handset companies' right to choose as licensees, as the handset companies found it impossible to distinguish the licensing terms between SEP licenses and other licenses in the comprehensive portfolio which Respondents provided in contravention of its FRAND commitments, and the handset companies accepted licenses for unnecessary or replaceable technologies.

*473* Second, the handset companies suffered a disadvantage in that they accepted the royalty terms offered by the Respondents when it was impossible for the handset companies to determine whether the licensing terms were appropriate because the Respondents had failed to furnish the handset companies with the basic materials for an accurate assessment of the value of the patents.

*474* Third, the Respondents forced the handset companies to accept royalty terms which were indiscriminately based on prices of the handset. Under such terms, handset companies paid royalties in a uniform manner which failed to reflect diverse factors such as each handset's functionality and features, degree of patent infringement, the value of the patent *vis-à-vis* the handset, and the importance of proprietary patents.

*475* Fourth, the Respondents did not pay the handset companies just compensation for the licenses the Respondents received for their modem chipset business in cross-licensing with the handset companies. Without just compensation, this harmed the handset companies' right to receive royalties, and the handset companies could not properly exercise their rights even when their patents were being infringed.

**(b) Whether the Respondents Used Their Superior Trading Position in Unfairly Imposing**

**Disadvantages on the Counterparty**

*476* Although the holder of FRAND-encumbered SEPs bears an obligation to negotiate licenses on FRAND terms and in good faith, the Respondents caused execution of licensing agreements on their unilateral and preferred terms. Since a party to an SEP licensing agreement would not be expected to forgo rights and benefits available on FRAND terms and accept one-sided terms in a negotiation between parties of equal footing and within ordinary practices of transaction, the Respondents' conduct was that of using their superior trading position in unfairly impose disadvantages on the counterparty to the transaction.

**(3) Sub-conclusion**

*477* Conduct 3 of the Respondents as discussed in 2.A.6) constitutes a violation under Article 23(1)4 of the Act.

**3. ORDERS**

**A. Corrective Order and Penalty Surcharges**

*478* Respondent The Respondents' conduct mentioned in 2. A. 4) violates Article 3-2(1)3 of the Act[332]; and the conduct mentioned in 2. A. 5) violates Article 3-2(1)3 and Article 23(1)4 of the Act, respectively; and the conduct mentioned in 2. A. 6) violates Article 3-2(1)3 and Article 23(1)4 of the Act, respectively. Meanwhile, the legislative purpose, the legal benefit and protection intended to prohibit the abuse of market dominance under Article 3-2 of the Act are different from those that prohibit unfair trade practices under Article 23. The types and forms of the abuse of market dominance cannot embrace all of the types and forms of the unfair trade practices. Therefore, as a matter of principle, the two provisions may be applicable concurrently to the conduct mentioned in 2. A. 5) and 6) above.

*479* The Respondents' conduct mentioned in 2. A. 4) through 6) above significantly interfere with the fair and free completion order and have great effect on consumers, and thus, constitute a substantial and very severe violation. Therefore, we decide to impose the Corrective Order in accordance with Article 5 of the Act and the penalty surcharge in accordance with Articles 6 and 55-3 of the Act, Articles 9 and 61, and [Attached Table 2] of the Enforcement Decree of the Act, and the Notification of Detailed Criteria for Imposition of Penalty Surcharge (KFTC Notification No. 2015-14 dated October 7, 2015; hereinafter the "Penalty Surcharge Notification") for the abuse of market dominance; and to impose the Corrective Order in accordance with Article 24 of the Act and the penalty surcharge in accordance with Articles 24-2 and 55-3 of the Act, Articles 9 and 61, and [Attached Table 2] of the Enforcement Decree of the Act, and the Penalty Surcharge Notification for the unfair trade practices.

**< Evaluation of Respondents' Argument ⑭>**

[332] To put it more concretely, the conduct mentioned in 2. A. 4) violates both Articles 5(3)4 and 5(3)3 of the Enforcement Decree of the Act. However, the cause of violation of law is based on one fact and the violation period and the relevant revenues are the same; and thus, the KFTC decides not to impose a penalty surcharge separately for each violation.

480 In this regard, the Respondents argue that if the Corrective Order that shall be applicable even to a foreign territory and patents registered in a foreign country is issued, it will likely infringe sovereignty of other countries; and thus, KFTC must refrain from issuing the Corrective Order in consideration of international comity and limit the scope of the application of the Corrective Order to the territory of Korea and the patents registered in Korea.

481 We will review this argument as follows: ① The Respondents are operating the same licensing policy and modem chipset supply policy in the global market. Accordingly, the illegal conduct of the Respondents have been carried out not only against the Korean enterprises and the Korea-registered patents in the territory of Korea but also in the remaining parts of the world, in the same way and at the same time. The effects of the illegal conduct influence overseas markets as well as the domestic market. Under these circumstances, with regard to the issue of whether the Corrective Order and the scope of application may extend even to the territories outside of Korea, we need to review the scope in terms of the principle of proportionality, taking into account how to guarantee the effectiveness of the Corrective Order, and what and how serious the illegal conduct are, in order to effectively remedy the illegal acts that were conducted in the market and to effectively remove the anti-competitive effects. The Respondents' illegal conduct maintain and strengthen the unfair trade order systematically and cause anti-competitive effects on a worldwide scale, which lead to adverse effects on the Korean market and Korean consumers, as well. Moreover, since the Respondents' business model and transactions thereunder are systematically connected with each other, the effects of the illegal conduct are also connected automatically with each other. Under these circumstances, given that it is difficult and ineffective to distinguish the Korean market from overseas markets for the purpose of applying the Corrective Order to remove the anti-competitive effects, it is reasonable not to limit the Corrective Order and the scope of application only to the territory of Korea and the Korea-registered patents, in order to effectively remove the anti-competitive effects influencing the Korean market.

482 ② We decide to limit the scope of the Corrective Order to the modem chipset companies and the handset companies, as stated in Clause 9 of the Main Text of the Corrective Order, since we believe that the Corrective Order will have a direct, significant and reasonably predictable influence on the Korean market.

483 ③ The issue of international comity related to a law enforcement of other countries is to be considered in cases where there is any conflict between the Corrective Order issued by KFTC and any law enforcement of another country, etc. The issue of international comity does not arise simply because a conduct carried out of the country is included in the matters subject to a corrective order. At this moment, there is no specific issue of conflict between the Corrective Order and the existing foreign law enforcement. As stated in Clause 10 of the Main Text of the Corrective Order, it provides, "The Respondents may request the Korea Fair Trade Commission to re-review this Corrective Order if the final and binding judgment, measure or order of a foreign court or competition authorities affirms, after the date of this Corrective Order, conflicts with this Corrective Order, making it impossible to comply with both of them at the same time." Thus, we believe that the issue of conflict with law enforcement of other countries can be removed.

**B. Calculation of Penalty Surcharge for Violation of Provision Prohibiting Abuse of Market dominant Position (Article 3-2 of the Act)**

*484* Penalty surcharge must be imposed on the Respondents for the illegal conduct in accordance with 3. A. above. Given that the illegal conduct carried out by the Respondents organically combine together to form one business model and double the anti-competitive effects; and in turn, the effects of each conduct are mutually connected to form an organic feedback structure, we decide to impose the penalty surcharge, taking each of the conduct as a whole.

**1) Standards for Calculation**

**a) Calculation of the Relevant Turnover**

*485* As a general principle, the violation period refers to the period from the date when an illegal conduct is commenced to the date when it ends. In the case where an illegal conduct does not end by the date of hearing at KFTC regarding a case where the penalty surcharge is imposed, the date of hearing at KFTC regarding the relevant case shall be deemed to be the end date of the illegal conduct; provided, however, that if the hearing is held for two days or longer, the last day of the hearing shall be deemed to be the end date of the illegal conduct. Therefore, the end date of the conduct is the last day of hearing at KFTC regarding this case, i.e., December 21, 2016.

*486* Meanwhile, with regard to the commencement date of the illegal conduct, we have decided to impose the penalty surcharge taking each conduct as a whole on the grounds mentioned above. In order for the timing for the imposition of the penalty surcharge to coincide, Conduct 1 shall be a basis for the record time of onset of the illegal conduct, because each of the Respondents' conduct arises in a circular manner, linked with and based on the refusal/restriction to grant the license to the competing modem chipset companies (Conduct 1); provided, however, that the record time shall be the time when the Respondents expressly rejected the request for license from the competing modem chipset companies and the intent or purpose of the Respondents' illegal conduct, or the illegality thereof are found in detail and can be definitely confirmed through evidence, from the many examples of refusal/restriction in Conduct 1. Under this principle, the time for calculation of the penalty surcharge on the illegal conduct shall be **, 2009 when the Respondents rejected A's request to enter into a licensing agreement and entered into a covenant not to sue with restrictive terms with A.

*487* Meanwhile, the relevant turnover, on which calculation of the penalty surcharge is based, means the sales revenues or equivalent amount thereof in relation to the relevant products sold by the Respondents during the violation period. The relevant products for calculation of the penalty surcharge in this case are as follows: ① the modem chipset related to CDMA, WCDMA and LTE standards; and ② the patent license related to CDMA, WCDMA and LTE standards. Accordingly, the relevant turnover for calculation of the penalty surcharge shall be the following turnovers of the Respondents that are deemed to have a direct and significant influence on the Korean market during the violation period:

488 ① With regard to the modem chipsets related to CDMA, WCDMA and LTE standards among the relevant products, the turnover of the modem chipsets related to CDMA, WCDMA and LTE standards that the Respondents sold to the Korean handset companies during the violation period, and out of the turnover of the modem chipsets related to CDMA, WCDMA and LTE standards that the Respondents sold to the non-Korean handset companies during the violation period, the turnover of the modem chipsets equipped in the handset sold in Korea; and

489 ② With regard to the patent licenses related to CDMA, WCDMA and LTE standards among the relevant products, the turnover of the patent licenses related to CDMA, WCDMA and LTE standards that the Respondents granted to the Korean handset companies during the violation period, and out of the turnover of the patent licenses related to CDMA, WCDMA and LTE standards that the Respondents granted to the non-Korean handset companies during the violation period, the turnover of the patent licenses for the products sold in Korea.

490 The relevant turnover under these criteria[333] is ① $18,734,319,351 in the aggregate for the modem chipset related to CDMA, WCDMA and LTE standards[334], and ② $13,326,302,653 in the aggregate for the modem chipset related to CDMA, WCDMA and LTE standards.

491 However, the turnover of modem chipsets is all the turnover of QCTAP, and the turnover of patent licenses is all the turnover of QI. Thus, the relevant turnovers of each Respondent are as follows: $18,734,319,351 for QCTAP and $13,326,302,653 for QI.

**< Evaluation of Respondents' Argument ⑮>**

492 ① The Respondents argue that the relevant turnover should be limited to the turnover of modem chipsets equipped in the handset sold for use in Korea and the license turnover therefrom out of the license and modem chipset turnover of the Respondents generated from the Korean handset companies.

493 However, the relevant products should be individually/concretely judged in consideration of the type and nature of the product directly or indirectly affected by the illegal conduct,

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[333] The Respondents submitted only the documents regarding the relevant turnovers as of September 30, 2016. We estimated the relevant turnovers on a daily basis for the period from October 1 to December 21, 2016 out of the whole violation period on the basis of the relevant turnover of the Respondents for the past one year.

[334] However, the Respondents stated it is impossible to calculate the turnover of modem chipset equipped in the handset imported into Korea, out of the turnover of the modem chipset the Respondents sold to the handset companies which are headquartered out of Korea. With regard to the relevant turnover for this portion, we estimated the Respondents' relevant turnover ($***) of modem chipset for this portion on the basis of the quantity of handset that a handset maker ***, which is headquartered out of Korea and continuously maintains significant market share in the Korean handset market after the onset of the violation period, equipped with the modem chipset of the Respondents and sold in Korea and the average unit price at which it purchased the modem chipset from the Respondents. The details of calculation are as follows:

① [redacted]

② [redacted]

territory, counterparty, transaction step, etc. As the Respondents' conduct are carried out at the same time under the same business model in/out of Korea, all of the domestic/overseas modem chipsets and licenses the Respondents sold to Korean or non-Korean enterprises can be deemed to be the relevant products. Nevertheless, given the extent of influence, territory and counterparty, etc., we included all of the quantities the Respondents sold to Korean enterprises in the relevant turnover but excluded the quantity not sold in Korea out of the quantities sold to overseas enterprises from the relevant turnover. Thus, the Respondents' argument is groundless.

*494* ② The Respondents argue that since KFTC has already imposed a penalty surcharge on the grounds that the Respondents charged discriminative royalties and provided conditional rebate with regard to the sale of their modem chipset[335], the turnover accrued until the date of decision of the relevant case (December 30, 2009) should be excluded from the relevant turnover. However, whereas the end date of the violation period for the calculation of the penalty surcharge in the case as claimed by the Respondents was until July 15, 2009, the violation period related to the penalty surcharge in this case begins after *. *, 2009. Therefore, the Respondents' argument is groundless.

*495* ③ The Respondents argue that the turnover for the period during which their market share is less than 50% in the modem chipset market in relation to WCDMA and LTE standards should be excluded from the relevant turnover because they cannot be deemed to have the market dominant position during the period. As reviewed in 2. C. 1) b) (2) above, since the Respondents are deemed to have the market dominant position in the market, their argument is groundless.

*496* ④ The Respondents argue that only if it was actually proved that the handset companies were coerced to enter into a licensing agreement under unfavorable terms at the same time upon purchase of the modem chipset from the Respondents, the turnover of the royalties under such license should be included in the relevant turnover. However, this argument is groundless, taking into consideration of the following facts: (i) the Respondents' conduct have not only been carried out against a number of certain enterprises but also have been consistently and continuously practiced, in fact, with regard to all agreements under their business model; (ii) even from the standpoint of an individual handset company, it had no choice but to enter into an agreement with the Respondents under the structure they had already set up, that is, a structure composed of their refusal of licensing to the modem chipset companies, linking the supply of modem chipset to the handset companies with licensing agreements, and coercing licensing agreements with unfavorable terms by utilizing its dominance in modem chipsets; (iii) the Respondents themselves stated, "hundreds of licensing agreements they entered into with the handset companies all over the world have actually similar structures and terms in almost all cases"; (iv) the terms of the agreements the Respondents have entered into with the handset companies until now (comprehensive portfolio licenses, uniform royalties, royalty-free cross-grants) are favorable to themselves only and if the handset companies had an opportunity to undergo a fair negotiation process, they might have otherwise agreed to any terms that were not unfavorable; and (v) the relevant market affected by the Respondents' illegal conduct is the whole licensing market.

[335] KFTC Decision No. 2009-281(2009.12.30.)

**b) Imposed Standard Rate**

*497* 2.7% shall be applied since the Respondents' conduct constitute a very severe violation in light of the following: ① The Respondents have maintained the method of its conduct for a long period from the beginning of their business; ② the Respondents' conduct not only disturb the condition of competition where efficiency competition based on strong point should be allowed, and restrict competition in the modem chipset market and the SEP licensing market, but also distort fair innovation competition in the technology innovation market; ③ as the illegal conduct are carried out on a global scale, the relevant market affected by them is also global; and ④ the relevant turnover generated from the illegal conduct significantly exceed KRW 300 billion.

**c) Standards for Calculation**

*498* The standards for calculation for each Respondent, which are the products of the relevant turnovers of each Respondent multiplied by the imposed standard rate of 2.7%, are as follows: $505,826,622 for QCTAP and $359,810,171 for QI.

**2) First and Second Adjustments**

*499* Since there is no reason to make the first and second adjustments for the Respondents, the standards for calculation of the first and second adjustments are the same as above.

**3) Decision on Penalty Surcharge to Be Imposed**

*500* The penalty surcharges to be imposed on each Respondent are as follows: KRW 602,540,000,000 for QCTAP; and KRW 428,605,000,000 for QI, which are the amounts calculated by applying the standards for calculation of the second adjustment (since there is no reason to make the additional adjustment for Respondents) and converting the dollars into Korean Won at the base exchange rate (1USD=KRW1,191.2) first notified by KEB Hana Bank Co., Ltd on the date of agreement of KFTC (December 21, 2016)[336] and subsequently discarding any amounts less than one million Won.

**C. Calculation of Penalty Surcharge for Violation of Provision Prohibiting Unfair Trade Practice (Article 23 of the Act)**

*501* The Respondents' Conduct 2 and 3 constitute not only the abuse of market dominant position but also the unfair trade practice. After considering all of the reasons as mentioned in 3. B. above, we impose the penalty surcharges for the Conduct 2 and 3, taking all of the Conduct as a whole.

**1) Standards for Calculation**

[336] The Penalty Surcharge Notification provides, 'The penalty surcharge to be imposed shall be decided by converting the amount denominated in foreign currency into Korean Won at the exchange rate first notified by Korea Exchange Bank Co., Ltd. on the date of agreement of KTFC.' Korea Exchange Bank was merged with Hana Bank Co., Ltd. to become KEB Hana Bank Co., Ltd. on September 1, 2015.

**a) Calculation of the Relevant Turnover**

502 The violation period shall be from * *, 2009 to December 21, 2016 for the reasons discussed in 3. B. 1) a) above, and the relevant turnover of each Respondent[337][338] is $18,734,319,351 for QCTAP and $13,326,302,653 for QI.

**b) Imposed Standard Rate**

503 1.8% shall be applied since the Respondents' conduct constitute a very severe violation for the reasons discussed in 3. B. 1) b) above.

**c) Standards for Calculation**

504 The standards for calculation for each Respondent, which are the products of the relevant turnovers of each Respondent multiplied by the imposed standard rate of 1.8%, are as follows: $337,217,748 for QCTAP and $239,873,447 for QI.

**2) First and Second Adjustments**

505 Since there is no reason to make the first and second adjustments for the Respondents, the standards for calculation of the first and second adjustments are the same as above.

**3) Decision on Penalty Surcharge to Be Imposed**

506 The penalty surcharges to be imposed on each Respondent are as follows: KRW 401,693,000,000 for QCTAP; and KRW 285,737,000,000 for QI, which are the amounts calculated by applying the standards for calculation of the second adjustment (since there is no reason to make the additional adjustment for Respondents) and converting the dollars into Korean Won at the base exchange rate (1USD=KRW1,191.2) first notified by KEB Hana Bank Co., Ltd on the date of agreement of KFTC (December 21, 2016) and subsequently discarding any amounts less than one million Won.

**D. Decision on Final Penalty Surcharge to Be Imposed**

507 The provision prohibiting the abuse of market dominant position and the provision

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337 The Respondents submitted only the documents regarding the relevant turnover as of September 30, 2016. We estimated the relevant turnover on a daily basis for the period from October 1 to December 21, 2016 out of the whole violation period on the basis of the relevant turnover of the Respondents for the past one year.

338 However, the Respondents stated it is impossible to calculate the turnover of modem chipset equipped in the handset imported into Korea, out of the turnover of the modem chipset the Respondents sold to the handset companies which are headquartered out of Korea. With regard to the relevant turnover for this portion, we estimated the Respondents' relevant turnover ($***) of modem chipset for this portion on the basis of the quantity of handset that a handset maker ***, which is headquartered out of Korea and continuously maintains significant market share in the Korean handset market after the onset of the violation period, equipped with the modem chipset of the Respondents and sold in Korea and the average unit price at which it purchased the modem chipset from the Respondents. The details of calculation are as follows:

①

②

prohibiting the unfair trade practice may be concurrently applicable to the Conduct 2 and 3 as mentioned in 2. A. 5) and 6) above. However, considering that the cause of violation of law is based on one fact, KFTC decides to impose only the penalty surcharge for violation of the provision prohibiting the abuse of market dominant position, of which the imposed standard rate is higher.

508 Therefore, the final penalty surcharges to be imposed on the Respondents for the Conduct 1 through 3 as mentioned in 2. A. 4) through 6) above shall be the amounts calculated in accordance with the provision prohibiting the abuse of market dominant position, i.e., KRW 602,540,000,000 for QCTAP and KRW 428,605,000,000 for QI.

## 4. CONCLUSION

509 The Respondents' conduct mentioned in 2. A. 4) above constitutes a violation of Article 3-2(1)3 of the Act; their conduct mentioned in 2. A. 5) above constitutes a violation of Article 3-2(1)3 and Article 23(1)4 of the Act; and their conduct mentioned in 2. A. 6) above constitutes a violation of Article 3-2(1)3 and Article 23(1)4 of the Act. Therefore, we hereby decide as stated in the Main Text by applying Articles 5 and 24 to the corrective measures and Articles 6 and 24-2 to the penalty surcharge, respectively.

**Korea Fair Trade Commission has made its decision as set forth in the above.**

January 20, 2017

**Chaired by** Jeong Jae-Chan, Chairman
Kim Hack-Hyun, Vice Chairman
Kim Seok-Ho, Chief Commissioner
Shin Dong-Kwon, Commissioner
Kim Sung-Ha, Commissioner
Ko Dong-Su, Commissioner
Lee Jae-Gu, Commissioner