EUROPEAN COMMISSION
DG Competition

Case M.7585 - NXP SEMICONDUCTORS / FREESCALE SEMICONDUCTOR

Only the English text is available and authentic.

REGULATION (EC) No 139/2004
MERGER PROCEDURE

Article 6(1)(b) in conjunction with Art 6(2)
Date: 17/09/2015

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EUROPEAN COMMISSION

Brussels, 17.9.2015
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In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus […]. Where possible the information omitted has been replaced by ranges of figures or a general description.

PUBLIC VERSION

MERGER PROCEDURE

To the notifying party:

Dear Madam(s) and/or Sir(s),

Subject: **Case M.7585 - NXP Semiconductors / Freescale Semiconductor Commission decision pursuant to Article 6(1)(b) in conjunction with Article 6(2) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]**

(1) On 31 July 2015, the European Commission received notification of a proposed concentration pursuant to Article 4 of the Merger Regulation by which the undertaking NXP Semiconductors N.V. ("NXP" or the "Notifying Party", the Netherlands) acquires within the meaning of Article 3(1)(b) of the Merger Regulation sole control of Freescale Semiconductor Ltd ("Freescale", Bermuda), by way of purchase of shares (the "proposed transaction").[3] NXP and Freescale are referred to together as the "Parties".

1 OJ L 24, 29.1.2004, p. 1 ('the Merger Regulation'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ('TFEU') has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

2 OJ L 1, 3.1.1994, p.3 ("the EEA Agreement").

3 Publication in the Official Journal of the European Union No C 258, 7.08.2015, p. 3.

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I. THE PARTIES

(2) NXP is active in the manufacturing and sale of semiconductors, in particular integrated circuits ("ICs") and single unit semiconductors ("discretes"). NXP sells broadly two categories of products, standard products and high performance mixed signal ("HPMS") devices. Standard products are standard devices with limited functionality (discrete transistors, transceivers and diodes) that can be incorporated into many different types of electronics equipment and that are typically sold to a wide variety of customers. NXP's HPMS business includes semiconductors for (i) secure identification solutions; (ii) secure connected devices; (iii) automotive (keyless entry, radio and other car entertainment, in-vehicle networking and Car-2X communications); and (iv) secure interface and power (interface products, power analog products and radio frequency products).

(3) Freescale is a global semiconductor company and focuses on the development, manufacturing and sale of embedded processors such as microcontrollers and digital networking processors. In addition, Freescale manufactures and sells analog, sensor and radio frequency devices. Freescale is organised in five different product groups: (i) microcontrollers; (ii) radio frequency; (iii) automotive microcontrollers; (iv) digital networking; and (v) analog and sensors for use in embedded processing applications in the automotive, industrial and consumer markets.

II. THE OPERATION

(4) The proposed transaction involves the acquisition of sole control by NXP over Freescale.

(5) On 1 March 2015, the Parties entered into a merger agreement following which NXP, by means of an indirect subsidiary, will acquire all of the shares of Freescale and thus exercise sole control over Freescale.

(6) The proposed transaction therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

III. EU DIMENSION

(7) The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million[4] (NXP: EUR 4 257 million; Freescale: EUR 3 488 million). Each of them has an EU-wide turnover in excess of EUR 250 million (NXP: EUR 804 million; Freescale: EUR 779 million), but they do not achieve more than two-thirds of their aggregate EU-wide turnover within one and the same Member State.

(8) The proposed transaction therefore has an EU dimension under Article 1(2) of the Merger Regulation.

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4 Turnover calculated in accordance with Article 5 of the Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C 95, 16.4.2008, p. 1).

IV. RELEVANT MARKETS

(9) The proposed transaction concerns the manufacturing and sale of semiconductor devices.

(10) Semiconductors are materials, such as silicon, which can act as an insulator, but are also capable of conducting electricity. Semiconductors are at the heart of devices such as diodes, transistors and other electronic components, and can be found in virtually every electronic device today. The end-products that contain semiconductor devices range from base stations, mobile phones, computers, domestic appliances and cars to medical equipment, identification systems, large-scale industry electronics and aerospace equipment.

(11) Semiconductor devices are rarely bought as end-products by consumers. They are mainly bought by equipment manufacturers in virtually all sectors within the electronic equipment industry.

IV.1. Overview of the semiconductor industry

(12) The Notifying Parry provided a classification of semiconductors based on various established industry reports (Gartner, Strategy Analytics and ABI Research). On the basis of these industry reports, the Notifying Party submits that semiconductors should be distinguished in ICs, discretes, optical semiconductors and sensors and actuators, and that within each of these categories further separate product markets and segments can be identified. These further distinctions are discussed below in sections IV.2 to IV.4.

(13) The results of the market investigation in the present case confirmed the general categorization of semiconductors outlined by the Notifying Party. Most customers and competitors responding to the market investigation agreed that semiconductor devices can be classified into the four distinct categories of (i) ICs, (ii) discretes, (iii) optical semiconductors and (iv) sensors and actuators.[5]

(14) Therefore, the Commission considers that it is appropriate to distinguish semiconductors within the categories of ICs, discretes, and sensors and actuators as the starting point of its assessment.

(15) The Parties have overlapping activities within each of these general categories, except for optical semiconductors, where Freescale is not active.[6] Therefore, for the purpose of this decision, optical semiconductors are not further discussed.

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5 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 4.

6 Optical semiconductors are devices that have either luminescent or light-receiving functionalities. Luminescent devices include light-emitting diodes (“LED”) and laser diodes, while light-receiving devices include solar cells and photo-detectors.

(16) In the following sections, the Commission will assess in more detail the possible relevant markets within each of the above identified semiconductor categories of ICs, discretes and sensors and actuators.

IV.2. ICs

IV.2.1. Product market definition

(17) An IC is a semiconductor device composed of diodes, transistors and other electronic components, combined with conductive interconnect material, which controls the current and voltage of electricity running through it. While the first ICs consisted of a handful of components, over the years ICs have become increasingly compact and complicated. Current existing ICs used in electronic devices are called “microchips” or “chips” and can contain several billion transistors along with diodes and other electronic components.

IV.2.1.1. The Notifying Party’s view

(18) On the basis of the existing industry reports, the Notifying Party argues that a distinction should be drawn between digital and analog ICs.

(19) ICs can incorporate digital technology, analog technology or a combination of both technologies. In digital technology, the input and output signals of systems alternate between two voltage levels. This translates in values of "1"s and "0"s, which, when combined with other digital signal values, are used to process data. In analog technology, system input and output signals are not limited to "1"s and "0"s. Instead, analog ICs deal with signals varying from zero to a voltage level that is even higher than the full power supply voltage.[7]

(20) The Notifying Party submits that semiconductor manufacturers generally classify ICs based on the IC's ratio of digital and analog content. If an IC contains solely digital or analog technology, it is labelled as a digital or analog IC, respectively. Additionally, the Notifying Party argues that both digital and analog ICs can be further segmented.

(21) More specifically, the Notifying Party explains that digital ICs can be segmented into three categories: (i) microcomponents, (ii) memory ICs, and (iii) logic ICs. In turn, the microcomponents segment can be further subdivided into three sub-segments, which are microprocessors (“MPUs”), microcontrollers (“MCUs”) and Digital Signal Processors (“DSPs”).

(22) As for analog ICs, according to the Notifying Party, these can be divided between general purpose analog ICs and application specific analog ICs.

Digital ICs and further sub-segments

[7] Analog circuitry serves as a bridge connecting the real-world signals with the digital world, making analog technology indispensable in almost all electronic applications.

(23) With respect to the possible subdivisions within digital ICs, the Notifying Party refers to Case M.5535 – *Renesas Technology/NEC Electronics*, where the Commission classified ICs into the three broad segments: of microcomponents, memory ICs and logic ICs.[8] These segments are also acknowledged in the relevant industry reports on which the Notifying Party relies.

(24) As regards these segments, the Notifying Party argues that it is not necessary to further determine the precise product market definition with respect to memory ICs and logic ICs, because the proposed transaction does not raise concerns in this regard, irrespective of the precise product market definition.

(25) With reference to the microcomponents segment within digital ICs, and the possible sub-segments thereof, the Notifying Party argues that MPUs should be distinguished from the other types of microcomponents. MPUs consist of a large amount of transistors and are specialised in the processing of very large amounts of data. Typically, MPUs are multipurpose, programmable logic-based devices containing all the functions for a computer's central processing unit (CPU). The Notifying Party refers to the Commission's findings in case M.5535 – *Renesas Technology / NEC Electronics*, where the market investigation indicated that MPUs are sophisticated general purposes ICs, which would not be suitable to perform effectively the same functions of other microcomponents. The Notifying Party argues that in any event, it is not necessary to reach a definitive view on whether MPUs belong to a different product market, given that the Parties' activities do not overlap in this category.

(26) With regard to MCUs, the Notifying Party explains that a MCU is a stand-alone device that performs a dedicated or embedded computing function within an electronic system without the need of other support circuits. A MCU is principally a controlling device, which processes or manipulates data received in real time. This differentiates MCUs from MPUs, which are more powerful processing device. The objective of MCUs is to interface with the "real world" (such as processing measurements from sensors) or to supervise and control certain system functions (such as power management, battery charging, actuators or interface to peripherals). MCUs are in general less expensive and less power-consuming than MPUs.

(27) The Notifying Party explains that MCUs can be further distinguished between general purpose MCUs and application specific MCUs, and on the basis of the number of bits (8-, 16- and 32-bit size) they contain.

(28) By reference to the Commission's findings in Case M.5535 – *Renesas Technology / NEC Electronics*, the Notifying Party argues that MCUs can generally be distinguished by application, and that there is limited demand-side and supply-side substitutability between different application specific MCUs. The Notifying Party thus argues that a distinction should be made between on the one hand general

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[8] Memory ICs provide data storage and retrieval capacity within an electronic system. There is a range of different memory ICs on the market, such as dynamic random-access memory ("DRAM"), electrically erasable programmable read-only memory ("EEPROM" and flash memory). Logic ICs are chips that perform a logical operation based on multiple digital inputs, consisting of "1"s and "0"s. Logic ICs can be further classified between general purpose and application specific.

purpose MCUs and on the other hand application specific MCUs, and that application specific MCUs should be distinguished from one another according to their field of application. However, the Notifying Party concludes that the exact product market definition can be left open, as the proposed transaction does not raise concerns in relation to MCUs irrespective of the market definition.

(29) Finally, with reference to DSPs, the Notifying Party explains that DSPs have a modified MPU architecture and consist of many parallel channels that allow for a large simultaneous flow of data. DSPs have a high processing capacity and are used in many industries, the main one being wireless communications.

(30) The Notifying Party submits that DSPs can be classified in a manner similar to MCUs. A distinction should be made between on the one hand general purpose DSPs and on the other hand application specific DSPs, which are tailored for specific functions. Application specific DSPs can be further distinguished between Application Specific Standard Integrated Circuits ("ASICs") and Application specific standard products ("ASSPs") for sectors such, for instance, as automotive, wired communications, wireless communications. The Notifying Party argues that all application specific DSPs should be distinguished from one another as well. However, the Notifying Party submits that the exact market definition may ultimately be left open, as the proposed transaction does not raise concerns in this respect under any possible product market definition.

Analog ICs and further sub-segments

(31) Within analog ICs, the Notifying Party argues that a distinction should be drawn between general purpose analog ICs and application specific analog ICs.

(32) With respect to general purpose analog ICs, the Notifying Party submits that the precise product market definition can be left open, as the proposed transaction does not raise concerns.

(33) As regards application specific analog ICs, the Notifying Party explained that these are products tailored to serve dedicated functions in specific devices. In general, application specific analog ICs are split by the end markets they serve, such as consumer, computing, communication/wireless, industrial and automotive.

(34) Within application specific analog ICs for the automotive sector, the Notifying Party submits that is important to make a further distinction between on the one hand power analog devices and on the other hand non-power analog devices. Power devices are designed to monitor and manage the electric power supply of other electric components. Power analog devices include power regulators and alternators, switches and power transistors. Non-power analog devices consist of a combination of general purpose ICs such amplifiers and data converters as well as non-power analog application specific ICs. The Notifying Party submits that power and non-power analog devices for the automotive sector constitute two separate product markets, as there is no demand-side or supply side substitutability.

(35) The Notifying Party explains that non-power analog ICs and power analog ICs are products with a completely different function. Non-power analog ICs consume as little power as possible and serve functions such as data conversion, filtering, low-noise amplification, and oscillators. On the other hand, power analog ICs serve a very different purpose. They are intended to handle high power, such as in DC-DC conversion functions,[9] power switches and drivers for power actuation, battery management. Therefore, in the Notifying Party's view, customers cannot substitute one product for the other, as they serve different uses in different systems.

(36) The Notifying Party further submits that given these different functions, power and non-power analog ICs rely on different technologies. Non-power devices require technologies that use lower voltages to reduce power consumption to a minimum. The development and innovation of these technologies is thus focused on energy reduction with every next product generation. Conversely, the technology for power devices use high voltages to generate the high power required. Therefore, from a supply-side perspective manufacturers cannot substitute production of one product for the other without accruing significant costs and delays.

(37) As regards the other types of application specific analog ICs, the Notifying Party submits that the product market definition can be left open, as the proposed transaction does not raise concerns.

IV.2.1.2. The results of the market investigation and the Commission's assessment

(38) The majority of respondents to the Commission's market investigation confirmed the relevance of the distinction within ICs between digital ICs and analog ICs.[10] This classification reflects the structure of customer purchasing categories and is in line with the standard definition provided by World Semiconductor Trade Statistics (WSTS). Semiconductor manufacturers generally classify ICs based on the IC's ratio of digital and analog content. If an IC contains solely digital or analog technology, it is labelled as a digital or analog IC, respectively.

Digital ICs and further sub-segments

(39) Within digital ICs, the results of the market investigation also confirmed that digital ICs can be further segmented into the three categories of microcomponents ICs, memory ICs and logic ICs.[11] For instance, one respondent among the competitors submitted that those products are difficult to substitute, from the demand side, due to their different functionalities, and from the supply side, because the underlying technologies in both the design and production process are different.

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9 A DC-to-DC converter is an electronic circuit which converts a source of direct current ("DC") from one voltage level to another.

10 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 5.

11 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 5.

(40) As regards the further distinctions within the microcomponents segment of digital ICs, the majority of the respondents to the market investigation also confirmed that it is relevant to distinguish the three sub-segments of MPUs, MCUs and DSPs.[12]

(41) For example, one respondent explained that, from a technical perspective, MCUs and MPUs differ since the first have non-volatile memory that requires different production technology, which results in the two being used for different purposes. This respondent explained that MCUs are typically used as controllers to handle relatively small-scale and marginal-performance required applications, while MPUs are used as processors to handle large-scale and higher-performance required applications, such as PCs and servers.

(42) These findings are in line with previous Commission decisions, where the Commission considered that MPUs might represent a separate product market.[13] In *Intel / McAfee*, the Commission considered x86 CPUs as a separate product market, in this way acknowledging a distinction between MPUs on one hand and MCUs and DSPs on the other hand.[14]

(43) In relation to a further sub-segmentation of MCUs, the market investigation showed that a distinction based on technical parameters and intended use would also be relevant. The majority of both customers and competitors confirmed that MCUs can be distinguished on the basis of the number of bits (8-bit, 16-bit, 32-bit), as this distinction relates to both their performance and cost.[15]

(44) Market respondents also confirmed that a distinction should be made between general purpose MCUs and application specific MCUs.[16] In particular, the majority of the respondents to the market investigation submitted that application specific MCUs can be distinguished depending on their category of application and that application specific MCUs of one category are not substitutable with those of another category, both from a demand side and supply side perspective.[17] One customer highlighted that a substantial amount of time and effort on the design and qualification of a particular device is required in order to switch from one application to another.

(45) Most respondents to the market investigation also confirmed that application specific MCUs can be further segmented in the following product categories: (i) automotive;

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12 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 6.

13 Commission decision of 2 December 2009 in Case M. 5535 - *Renesas Technology/NERC Electronics.*

14 Commission decision of 26 January 2011 in Case M.5984 - *Intel / Mcafee*, paragraphs 23 to 30.

15 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 8.

16 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 9.

17 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 10.

(ii) ID and smart card; (iii) consumer; (iv) computers and peripherals; (v) wireless communication; and (vi) wired communications.[18]

(46) Therefore, in light of the findings of the market investigation, the Commission considers that digital ICs can likely be differentiated in microcomponents, memory ICs and logic ICs, given that these products have different functions and features and do not appear to be readily substitutable with each other, and that within microcomponents there may be separate product markets for each of MCUs, MPUs and DSPs for the same considerations. The results of the market investigation also suggest that MCUs can be further sub-segmented depending on the number of bits and their application, between general purpose MCUs and application specific MCUs. As for DSPs, the Commission considers that it may be appropriate to distinguish general purpose DSPs from application specific DSPs, and that the latter could be further distinguished between ASICs and ASSPs, although the market investigation was not conclusive with respect to DSPs.

(47) In any event, for the purpose of this decision the precise product market definition can be left open, as the proposed transaction does not raise serious doubts as to its compatibility with the internal market with regard to ICs, and any relevant sub-segments therein, under any alternative product market definition.

Analog ICs and further sub-segments

(48) The results of the market investigation confirmed that analog ICs should be distinguished between general purpose analog ICs and application specific analog ICs, which are tailored to specific functions on specific devices.[19] For instance, one customer explained that general purpose analog ICs are normally usable in a variety of applications or functions, while application specific analog ICs often contain application specific circuitry or even digital circuitry that make them specifically suitable to certain applications only. For this reason, general purpose and application specific ICs are usually not substitutable without significant expenditure of time and money on design and qualification.

(49) The majority of respondents to the market investigation also confirmed that application specific analog ICs can be further segmented in the following product categories: (i) consumer; (ii) data processing (including computing and storage functions); (iii) communications (sub-divided into wired communications and wireless communications); (iv) automotive; (v) industrial; and (vi) military/aerospace.[20] One respondent explained that products belonging to each of these categories are not substitutable between each other, as they are each based on

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18 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 11.

19 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 12.

20 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 13.

highly specialized technology and have many specific features, which prevent them from being used in other applications.

(50) Moreover, when commenting upon analog ICs for the automotive industry, all customers and the majority of competitors responding to the market investigation agreed that a distinction between power and non-power analog devices is relevant.[21]

(51) Therefore, in light of the findings of the market investigation, it appears that analog ICs can be distinguished between general purpose and application specific, and that within application specific analog ICs for the automotive industry a further distinction may be drawn between power and non-power analog ICs.

(52) In any event, for the purpose of this decision the precise product market definition can be left open, as the proposed transaction does not raise serious doubts as to its compatibility with the internal market with regard to ICs, and any relevant sub-segments therein, under any alternative product market definition.

IV.2.2. Geographic market definition

IV.2.2.1. The Notifying Party's views

(53) The Notifying Party submits that the relevant geographic market for semiconductors is worldwide in scope, irrespective of any possible relevant categories or sub-segmentations considered, for the same reasons: (i) manufacturing is performed on a worldwide basis with manufacturing facilities spread around the globe; (ii) competition between suppliers is at worldwide level both for existing products and new pipeline products; (iii) there are no regulatory barriers; (iv) transportation costs are low and account for less than 1% of the product-value; and (v) price differences among regions are small.

(54) Therefore, the Notifying Party takes the view that the geographic market for ICs, both digital and analog, and their possible sub-segments, is also worldwide in scope.

IV.2.2.2. The results of the market investigation and the Commission's assessment

(55) With respect to the geographic scope of the market for semiconductors, in previous cases the Commission considered that the geographic scope of semiconductor markets may be at least EEA-wide, if not worldwide, although the precise scope of the geographic market was ultimately left open.[22]

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21 See replies to Commission questionnaires to competitors Q1 and to customers Q2 of 31 July 2015, question 14.

22 Commission decision of 24 June 2002 in Case M. 2820 - *STMicroelectronics/AlcatelMicroelectronics*; Commission decision of 3 July 2001 in Case M.2439 - *Hitachi/STMicroelectronics/SuperH JV*; Commission decision of 10 August 2007 in Case M. 4751- *STM/Intel/JV*; Commission decision of 27 June 2008 in Case M. 5173 - *STM/NXP/JV*; Commission decision of 25 November 2008 in Case M. 5332 - *Ericson/STM/JV*; and Commission decision of 2 December 2009 in Case M.5535 - *Renesas Technology/NEC Electronics.*

(56) In *Intel / McAfee*, the Commission concluded that the markets for x86 CPUs are worldwide.[23] This conclusion was supported by the fact that the main suppliers compete globally, CPU architectures are the same around the world, the main customers (in particular the OEMs) operate on a worldwide basis, and the cost of shipping CPUs around the world is low compared to their cost of manufacture.

(57) The market investigation in the present case indicated that the geographic scope of the semiconductor markets is likely to be worldwide in scope, as competition between suppliers is worldwide, transport costs are very low and price differences among regions are small. Respondents did not indicate that such geographic scope should be different for ICs, and any of their possible segments or sub-segments.[24]

(58) Based on the results of the market investigation, the Commission notes that there are strong indications that the various possible segments for ICs are likely to be worldwide in scope. However, the precise scope of the geographic market can be left open, as the proposed transaction does not raise serious doubts as to its compatibility with the internal market with regard to ICs irrespective of the precise geographic market definition.

IV.3. Discretes and RF Power transistors

IV.3.1. Product market definition

(59) Discretes are physically standalone packaged semiconductors specified to perform an elementary electronic function.

IV.3.1.1. The Notifying Party's view

(60) On the basis of the relevant industry reports, the Notifying Party submits that discretes can be divided into four segments: (i) RF and microwave, (ii) power transistors and thyristors, (iii) rectifiers and power diodes, and (iv) small signal and other discretes.

(61) In turn, within the RF and microwave segment, a further distinction can be made between RF power transistors, RF small signal transistors ("RF SST"), and RF diodes.

(62) The Notifying Party argues that ultimately it is not necessary to reach a final conclusion on the definition of the relevant product market with regard to discretes, given that the Parties' activities do not overlap in this category of semiconductors or in any of its possible sub-segmentations, with the exception of the RF power transistors market within RF power and microwave.

(63) RF and microwave technology is the basis for wireless communication and connectivity. This technology uses radio waves, which are a type of electromagnetic radiation with wavelength ranging from 100 km to 1 mm and covering the frequencies

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23 Case M.5984 - Intel / McAfee of 26 January 2011, para. 33.

24 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 26 and to customers Q2 of 31 July 2015, question 23.

from 3 kHz to 300 GHz (the so called the radio frequency spectrum) to transfer information through space. RF and microwave technology is used among others in cellular phones and other mobile wireless devices, radio and television broadcasting, space and satellite communication, military communication, two-way radios, radars, medical equipment (such as MRI scanners), industrial applications and many other applications.

(64) Within RF and microwave, the Notifying Party argues that RF power transistors should be distinguished from RF SSTs and RF diodes.

(65) The Notifying Party explains that, from a technical viewpoint, RF power transistors are typically high power (>1 watt average output power up to more than 1 kW) devices, whereas RF SST and RF diodes are low power RF devices with average output power of less than 1 watt. Additionally, there is also a significant price difference, as the price of RF power amplifier modules amounts to approximately USD 25, whereas RF SSTs for mobile handsets and RF SSTs for infrastructure are typically sold for USD 10-20 cents and 30-120 cents respectively.

(66) In order to deliver the desired high output power, RF power transistors currently rely on two main process technologies: (i) silicon based laterally-diffused metal oxide semiconductor ("LDMOS") and (ii) gallium nitride on silicon carbide substrate ("GaN"). The Notifying Party submits that LDMOS is the most used technology, while GaN is less used today, but is poised to grow in the next years.

(67) The Notifying Party argues that LDMOS and GaN devices can be considered as constituting separate product markets within RF power transistors.

(68) RF power transistors are used in six major applications: (i) wireless infrastructure; (ii) military; (iii) commercial avionics and air traffic control; (iv) industrial/scientific/medical ("ISM"); (v) broadcast; and (vi) non-cellular communications.

(69) The majority of RF power devices are used for wireless infrastructure, which accounts for [60-70] % of the total RF power market. The Notifying Party explains that, within the wireless segment, RF power transistors are predominantly used in base stations for mobile telecommunications (3G, 4G, LTE).[25] The major customers in this market segment are the providers of RAN equipment for mobile telecom operators, such as Huawei, ZTE, Ericsson, Nokia and Alcatel-Lucent.

(70) The Notifying Party further explains that, within wireless infrastructure, LDMOS is the leading technology ([80-90] % of all RF power devices for wireless infrastructure sold in 2013 were based on this technology), as it represents a good compromise for cost, RF performance, high voltage operation and ease of use. GaN is the upcoming technology, mainly used in military, radar/avionics and satellite/space

[25] RF power amplifiers are essential parts of base stations for wireless infrastructure. Since a radio signal loses its strength when traveling through space, base stations must be able to both transmit a sufficiently powerful signal in order to reach wireless devices kilometres away and amplify a weak received signal and then pass it on. RF power transistors serve this purpose.

communications, given that GaN devices are more efficient and resistant, but also more costly. However, GaN technology is also being developed for more mainstream applications.

(71) Therefore, the Notifying Party submits that there is a separate relevant product market for RF power devices for base stations in wireless infrastructure. The Notifying Party emphasizes that such RF power market for base stations requires application specific RF power products that are optimised for linearity, allows for further differentiation in solution performance through innovative and patented system design concepts, and requires a rapid sampling capability with high performance consistency between samples and final products.

(72) However, the Notifying Party explains that the product market definition can ultimately be left open also with respect to RF power devices for base stations in wireless infrastructure, given that the commitments submitted by the Notifying Party remove any serious doubts as to the proposed transaction's compatibility with the internal market in relation to the RF power transistors market and its possible sub-segments.

IV.3.1.2. The results of the market investigation and the Commission's assessment

(73) The market investigation confirmed that four segments can be identified within discretes: (i) RF and microwave, (ii) power transistors and thyristors; (iii) rectifiers and power diodes[26] and (iv) small signal and other discretes.[27]

(74) Moreover, the market investigation also confirmed that within the RF and microwave segment a further distinction can be made between RF power transistors, RF SSTs, and RF diodes.[28] Respondents to the market investigation indicated that substitutability between these three categories is low. Furthermore, the results of the market investigation indicated that there are difficulties in switching to the production of RF power transistors from other types of semiconductors. RF Power transistors require specific technologies and expertise for the design, manufacturing, testing and packaging activities which can be obtained only thorough a sizable investment over a protracted period of time.[29] Customers also indicated that the RF Power transistors require a long qualification process. This differentiates the RF Power transistors from the other two categories within the RF Power and microwave market.

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26 The word "power" used in categories (ii) and (iii) has a different meaning than when it is used in relation to RF power transistors. In fact categories (ii) and (iii) are power management discretes, which have as purpose to control the flow of the electric current, whereas RF power transistors amplify the strength of a radio frequency signal, making it more powerful. Therefore, RF Power transistors are a different product from power transistors.

27 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 17 and to customers Q2 of 31 July 2015, question 16.

28 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 18 and to customers Q2 of 31 July 2015, question 17.

29 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 21.

(75) In relation to RF power transistors, market participants answering to the market investigation also agreed with the classification by end application retained in the industry reports between (i) wireless infrastructure; (ii) military (iii) commercial avionics and air traffic control; (iv) ISM (v) broadcast and (vi) non-cellular communications. Competitors explained that this is the common view in the industry. One customer explained that these are applications that require individual approaches in relation to the development and design of the relevant products.[30] In particular, the majority of respondents to the market investigation explained that RF power transistors used in base stations in wireless infrastructure constitute a separate product market. Customers commented that RF power transistors have a very specific function in the context of wireless infrastructure, as they are a critical part of the RF power amplifiers used in base stations. Furthermore, RF power transistors employ highly specialised technologies (LDMOS or GaN) and are products which need to respond to the specific qualifications required by the six main customers in this market.

(76) In relation to RF power transistors used in wireless infrastructure, the majority of respondents to the market investigation also indicated that it may be relevant to distinguish between LDMOS and GaN technologies.[31] Thus respondents highlighted the technology and price differences between LDMOS and GaN devices. One customer explained that the different technologies used for each product result in fundamentally different device characteristics: GaN power chips operate at higher voltages, frequencies and temperatures, and are more expensive to produce than LDMOS devices.[32]

(77) Furthermore, market participants emphasised that while LDMOS technology's main application is power amplifiers for the cellular market, GaN's main application fields are industrial, aerospace and military applications.[33] However, some market participants expect that in the next five to ten years there will be more demand for GAN technology within the wireless infrastructure market, although LDMOS will continue to be the standard technology used in cellular infrastructure.[34]

(78) In light of the results of the market investigation, the Commission considers that, within discretes, a distinction can be made between the segments for RF and microwave, power transistors and thyristors, rectifiers and power diodes, and small signal and other discretes. Furthermore, within the RF and microwave segment, the Commission considers that RF power transistors should likely be distinguished as a separate product market from RF SSTs and RF diodes. There are also indications that

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30 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 19 and to customers Q2 of 31 July 2015, question 18.

31 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 22 and to customers Q2 of 31 July 2015, question 20.

32 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 21.

33 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 24.

34 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 25 and to customers Q2 of 31 July 2015, question 22.

RF power transistors for base stations in wireless infrastructure may constitute a separate product market from RF power transistors used for other applications. Finally, there are also indications that at present time, due to different technology and pricing, RF Power transistors employing LDMOS technology may be different than those employing GaN technology. However, these differences may become blurred in the next few years. This is because in the next 10 years it is expected that the usage of GaN technology for RF Transistors will increase, including in wireless infrastructure, and the price difference between LDMOS and GaN technology may decrease as well.

(79) For the purpose of the present decision, the Commission considers that within the segment of RF and microwave of discretes, RF power transistors constitute a separate product market from RF SST and RF diodes.

(80) As regards the other possible segmentations and sub-segmentations within discretes, the Commission considers that, for the purpose of the present decision, the question on the exact scope of the product market for discretes can be left open, as the proposed transaction does not raise serious doubts with respect to discretes and most segments of discretes (that is to say in with respect to (i) power transistors and thyristors; (ii) rectifiers and power diodes and (iii) small signal and other discretes). Furthermore, the question whether the product market of RF power transistors should be further segmented depending on the application can be left open, as the final commitments submitted by the Notifying Party on 16 September 2015 (the "Final Commitments") remove any serious doubts as to the compatibility of the proposed transaction with the internal market with regard to the RF power transistors market and any of its possible sub-segments.

IV.3.2. Geographic market definition

IV.3.2.1. The Notifying Party's view

(81) The Notifying Party submits that the relevant geographic market for semiconductors is worldwide in scope, irrespective of any possible relevant categories or sub-segmentations considered, for the same reasons: (i) manufacturing is performed on a worldwide basis with manufacturing facilities spread around the globe; (ii) competition between suppliers is at worldwide level both for existing products and new pipeline products; (iii) there are no regulatory barriers; (iv) transportation costs are low and account for less than 1% of the product-value; and (v) price differences among regions are small.

(82) The Notifying Party takes the view that the geographic market for discretes, and all its possible segments and sub-segments, is also worldwide in scope.

IV.3.2.2. The results of the market investigation and the Commission's assessment

(83) As explained in recital (55), in previous cases the Commission considered the geographic scope of semiconductor markets to be at least EEA-wide, if not worldwide, although the precise scope of the geographic market was ultimately left open.

(84) The results of the market investigation in the present case indicate that the geographic scope of the semiconductor markets is likely to be worldwide in scope. Respondents did not indicate that such geographic scope should be different for discretes or any of their possible segments and sub-segments.[35]

(85) Based on the results of the market investigation, the Commission notes that there are strong indications that the various possible markets and segments for discretes are likely to be worldwide in scope. However, for the purpose of the present decision, the question on the exact scope of the geographic market for discretes can be left open, as regardless of the exact geographic market definition the proposed transaction does not raise serious doubts with respect to most segments of discretes, (that is to say, with respect to (i) power transistors and thyristors; (ii) rectifiers and power diodes and (iii) small signal and other discretes; moreover within the RF and microwave market the transaction only raises concerns as regards the market for RF power transistors) and the Final Commitments remove any serious doubts as to the compatibility of the proposed transaction with the internal market with regard to the market of RF power transistors and its possible segments and sub-segments.

IV.4. Sensors

IV.4.1. Product market definition

(86) Sensors semiconductors are used to help to manage and transmit data from a real-world environment for embedded processing applications. Sensors are specifically designed to measure externalities like pressure, temperature, magnetic fields or acceleration.

(87) Actuators use electronic signals in order to influence the real world by performing a certain action.

(88) Given that the Parties have offerings only as regards sensors, actuators are not further discussed for the purposes of this decision.

IV.4.1.1. The Notifying Party's view

(89) The Notifying Party submits that separate product markets should be defined for sensors depending on their intended function. The Notifying Party argues that sensors are specifically designed for a particular function and that sensors performing one function are not interchangeable with sensors performing a different function. The technology used for one type of sensor is generally not applicable for the functions of other sensors. Therefore, the Notifying Party argues that there is no supply-side substitutability between different kinds of sensors.

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35 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 26 and to customers Q2 of 31 July 2015, question 23. Only one customer pointed out that in the case of RF power transistors employing GaN technology due to export restrictions the market may be narrower than worldwide. However, such restrictions do not exist for the RF transistors employing the LDMOS technology.

(90) The Notifying Party refers to previous Commission decisions, where the Commission defined separate product markets for speed sensors and temperature sensors and discussed a previous case, where it divided sensors by function and identified separate product markets for temperature sensors, pressure sensors, level sensors, speed sensors and accelerometers.[36]

IV.4.1.2. The results of the market investigation and the Commission's assessment

(91) The majority of customers responding to the market investigation agreed that it is appropriate to partition sensors according to their function. Such respondents identified separate market segments for sensors in automotive sector, in particular: (i) temperature sensors; (ii) pressure sensors; (iii) level sensors; (iv) speed sensors (ABS and powertrain); and (v) accelerometers.[37]

(92) Conversely, most of the competitors did not completely agree with this distinction and noted that the proposed segmentation was missing certain product categories, such as acoustic sensors. One respondent among competitors submitted that this categorization is subject to changes due to the market dynamics but, in any case, NXP and Freescale offer products for different uses, therefore they are not direct competitors in this segment.[38]

(93) In light of the results of the market investigation, the Commission considers that sensors should likely be distinguished on the basis of their function and end application.

(94) In any event, for the purpose of the present decision, the question on the exact scope of the product market for sensors can be left open, as the proposed transaction does not raise serious doubts as to its compatibility with the internal market with respect to sensors, under any possible product market definition.

IV.4.2. Geographic market definition

IV.4.2.1. The Notifying Party's view

(95) The Notifying Party submits that the relevant geographic market for semiconductors is worldwide in scope, irrespective of any possible relevant categories or sub-segmentations considered, for the same reasons: (i) manufacturing is performed on a worldwide basis with manufacturing facilities spread around the globe; (ii) competition between suppliers is at worldwide level both for existing products and new pipeline products; (iii) there are no regulatory barriers; (iv) transportation costs are low and account for less than 1% of the product-value; and (v) price differences among regions are small.

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36 Commission decision of 4 August 2000 in Case M. 2036- *Valeo / Labinal*.

37 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 7.

38 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 7.

(96) The Notifying Party takes the view that the geographic market for sensors, and its possible sub-segments, is also worldwide in scope.

IV.4.2.2. The results of the market investigation and the Commission's assessment

(97) As explained in recital (55), in previous cases the Commission considered the geographic scope of semiconductor markets to be at least EEA-wide, if not worldwide, although the precise scope of the geographic market was ultimately left open.

(98) The results of the market investigation in the present case indicate that the geographic scope of the semiconductor markets is likely to be worldwide in scope. Respondents did not indicate that such geographic scope should be different for sensor and actuators, and any of their possible segments or sub-segments.[39]

(99) Based on the results of the market investigation, the Commission notes that there are strong indications that the various possible segments for sensors are likely to be worldwide in scope. However, the precise scope of the geographic market can be left open, as the proposed transaction does not raise serious doubts as to its compatibility with the internal market with regard to sensors irrespective of the geographic market definition.

V. COMPETITIVE ASSESSMENT

(100) By way of introduction, the Commission notes that the market share data provided in this Section are typically based on third party industry reports and are therefore considered to be reliable. Since these reports typically report market data at the worldwide level, unless otherwise indicated, the relevant share data refer to worldwide market shares. Furthermore, although the industry reports do not comprise data at EEA or even Europe, Middle-East and Africa ("EMEA") level, the Notifying Party has been able to confirm[40], based on its internal analysis, the Parties' turnover and estimates[41], that to the best of its knowledge, the Parties' and their competitors' positions at the EEA level are unlikely to materially differ from their positions at the worldwide level in the various relevant (and affected) markets and possible market segments for the purposes of the proposed transaction. Furthermore, the market investigation did not provide any indication that the position of the Parties and their competitors at the EEA level would substantially differ from their position at the world-wide level.

(101) As explained in recital (15), the Parties' activities overlap within three of the four broad categories of semiconductors identified by the Notifying Party, which the market investigation has confirmed to be relevant, namely: ICs, discretes and sensors.

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39 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 26 and to customers Q2 of 31 July 2015, question 23.

40 Notifying Party's response to Commission's Request for information of 4 September 2015, Question 1, p1.

41 Notifying Party's response to Commission's Request for information of 20 April 2015, Question 3, p2.

However, at general level of the categories of ICs, discretes and sensors, the proposed transaction does not give rise to horizontally affected markets, as the Parties' combined market share is below 20% in each of these three product groups. In more detail, within ICs, NXP and Freescale each have a share of [0-5]%. Within discretes, NXP's share is of [5-10]%, Freescale's of [0-5] %. Within sensors and actuators, NXP has a share of [0-5]%, Freescale of [0-5]%.

(102) The Commission has further assessed the overlaps between the Parties' activities within the various narrower relevant segments and sub-segments of ICs, discretes and sensors identified and described in section IV.

V.1. Horizontally affected possible markets

V.1.1. ICs and further sub-segments

(103) First, as regards ICs, the Parties have activities in both digital and analog ICs, but their combined shares are below 20% in each of these categories.[42]

(104) Within the three sub-categories of digital ICs, the Parties overlap within microcomponents and logic ICs, but not in Memory ICs, where only NXP is active.

(105) However, the Parties' combined shares remain below 20% in both microcomponents and logic ICs. In microcomponents, the Parties have a combined share of [5-10]% (NXP [0-5]%, Freescale [0-5]%), whereas in logic ICs the Parties' combined share is around [0-5]% (NXP [0-5]%, Freescale [0-5]%).

(106) Within the narrower possible sub-segments of microcomponents, the Parties have overlapping activities within MCUs and DSPs, but not in MPUs, where only Freescale is active. However, the Parties' shares are below 20% both in MCUs and DSPs. In MCUs, NXP has a share of [5-10]%, Freescale of [10-20]%. In DSPs, NXP has a share of [5-10]%, Freescale of [0-5]%.

(107) Within the possible sub-segments of MCUs, classified by bit size and type of application, the proposed transaction gives rise to possible horizontally affected markets only in relation to 8-bit MCUs and application specific MCUs for the automotive segment, where the Parties' combined market share would be above 20%. In all other possible sub-segments classifications of MCUs per bit size and type of application, the proposed transaction does not give rise to any possible horizontally affected markets.[43]

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42 In the overall category of digital ICs, NXP has a market share of [0-5]%, Freescale of [0-5]%. Within analog ICs, NXP has a market share of [0-5] %, Freescale of [0-5]%.

43 As regards bit size, the proposed transaction does not give rise to possible horizontally affected markets for 4 bit, 16 bit and 32 bit MCUs, as the Parties do not overlap or have combined shares below 20% in these segments. As regards application type, the Parties' combined share is below 20% within general application MCUs, and the Parties' activities do not overlap in the other possible categories of application specific MCUs (ID and smart card, consumer, computer and peripheral, wireless communications, wired communications).

(108) Within the possible sub-segments of DSPs identified by the Notifying Party on the basis of type of application and recalled in recital (30) of this decision, the proposed transaction does not give rise to potential horizontally affected markets within the segments of general purpose DSPs and within application specific DSPs, where the Parties' combined shares are below 20%. The Notifying Party further explains that in application specific DSPs, NXP is particularly focused on the automotive industry, whereas Freescale sells application specific DSPs to the wired and wireless communications industry with limited sales of legacy baseband products for wireless handsets, where NXP has no market presence.

(109) However, as regards application specific DSPs, the Parties' combined share is above 20% within the possible narrower sub-segment of ASSPs.[44] More specifically, within the possible further classifications of ASSPs per end application, the Parties' share is above 20% within ASSPs for the automotive sector. In this sub-segment, the Parties would have a combined share of [70-80]%.

(110) Therefore, within DSPs, the proposed transaction gives rise to a possible horizontally affected market as regards application-specific DSP ASSPs and ASSPs for the automotive sector therein.

(111) Within analog ICs, the Parties' activities do not overlap within general purpose analog ICs, where only NXP is active,[45] but overlap as regards application specific analog ICs. However, the Parties' combined share is below 20% in application specific analog ICs (NXP: [0-5]%, Freescale: [0-5]%). The proposed transaction gives rise to a possible horizontally affected market only within the narrower segment of application specific analog ICs for the automotive sector, where the Parties' combined share is more than 20%. In all other possible sub-segments of application specific analog ICs per end use, the Parties do not overlap, or have shares below 20%.[46]

(112) Therefore, as regards ICs, the proposed transaction does not give rise to any possible horizontally affected markets within the category of digital ICs and its further segmentation, with the exception of the possible sub-segments of 8-bit MCUs and application specific MCUs for the automotive segment. As regards the category of analog ICs, the proposed transaction does not raise any possible horizontally affected markets, with the exception of the sub-segment of application specific analog ICs for the automotive sector.

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44 Within the other possible segment of application specific DSPs, which is ASICs, the Parties are not active.

45 General purpose Analog ICs are divided into four product categories: amplifiers/comparators, voltage regulators/reference, data converters and interface devices.

46 The Parties' activities do not overlap in application specific analog ICs for computers and peripherals and wired communications, and the Parties' combined share is below 20% in application specific analog ICs for consumers and wireless communications.

V.1.2. Discretes and RF power

(113) Within discretes and the relevant the sub-categories identified by the Notifying Party and the market investigation, mentioned in recital (60) of this decision, the Parties' activities overlap only within the RF power and microwave segment. The Parties do not overlap in the remaining possible narrower categories of discretes, that is, power transistors and thyristors, rectifiers and power diodes, and small signal and other discretes. In these remaining categories, only NXP is active.

(114) Within the segment of RF power and microwave, the proposed transaction gives rise to a horizontally affected market, as the Parties have a combined share of [30-40]% (NXP: [10-20]% and Freescale [20-30]%). However, the Parties only overlap in the narrower RF power transistors market, as in the other two possible sub-segments of SST and RF diodes, only NXP is active.

(115) In the market of RF power transistors, the Parties' combined share is of [60-70]% (NXP [20-30]% and Freescale [30-40]%). Furthermore, in the possible segment of RF Power transistors used in wireless infrastructure, the Parties' combined share amounts to [70-80]% (NXP [20-30]% and Freescale [40-50]%).

(116) The proposed transaction thus gives rise to a horizontally affected market in relation to the market for RF power transistors, where the Parties have a combined share of more than 20%.

V.1.3. Sensors

(117) Within sensors, both NXP and Freescale have activities. However, the Parties' combined share within sensors and/or any of the possible sub-segments thereof does not give rise to a horizontally affected market.

(118) Moreover, the Notifying Party submits that within sensors the Parties' activities are largely complementary, and do not overlap, should sensors be segmented at a narrower level on the basis of a sensor's end use. On the basis of one of the relevant industry reports, the Notifying Party explained that NXP has a position in the temperature sensors and magnetic field, whereas Freescale has a presence in pressure sensors, inertial sensors and other types of sensors.

(119) More specifically, Freescale manufactures sensors for the automotive, consumer and the industrial segments. In the automotive segment, Freescale provides products such as accelerometers, battery sensors and pressure sensors. Consumer applications include smartphones, e-readers, navigation devices, and home appliances. Freescale's sensor products are also present in industrial applications (gas pressure sensors, blood pressure monitoring and motion sensing).

(120) Conversely, NXP offers largely two types of sensors for automotive applications: (i) silicon based sensors for determining temperature and (ii) magneto-resistive sensors ("MR sensors") to measure rotational speed and angle. Freescale also offers MR sensors (with limited sales), but these are applied in mobile phone type applications and are not suitable for automotive applications.

V.1.4. Conclusion on horizontally affected possible markets

(121) In light of the above, the Commission concludes that the proposed transaction gives rise to possible horizontally affected markets only in relation to the following possible market segments, where the Parties' combined share is more than 20%.

- Application specific MCUs for the automotive sector and 8-bit MCUs;
- Application specific DSP ASSPs and application specific DSP ASSPs for the automotive sector;
- Application specific analog ICs for the automotive sector; and
- RF and microwave, and in the market for RF Power transistors and its sub-segment of RF power transistors for use in wireless infrastructure.

(122) These horizontally affected markets/segments are assessed by the Commission in the following sections.

V.2. Application specific MCUs for automotive and 8-bit MCUs

(123) The Notifying Party submits that the overall value of the MCUs segment amounts to approximately USD 3.0 billion worldwide. In relation to these products, the Parties have a combined worldwide market share of [10-20]% (NXP [5-10]%, Freescale [10-20]%). Other competitors include Renesas ([20-30]%), Infineon [5-10]%) and STMicroelectronics ([5-10]%).

(124) As discussed in recital (121), the proposed transaction would lead to horizontally affected markets in the potential narrower segments of application specific MCUs for the automotive sector and of 8-bit MCUs.

V.2.1. The Notifying Party's view

(125) The Notifying Party argues that there are a large number of strong competitors within MCUs, both on the overall market and on all narrower potential segments, which will remain active post-transaction both worldwide and at the EEA level.

V.2.2. The results of the market investigation and the Commission's assessment

(126) On the basis of the results of the market investigation and the information provided by the Notifying Party, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market as regards 8-bit MCUs and application specific MCUs for the automotive sector for the following reasons.

(127) First, the Parties do not hold a significant combined share on either of these segments. Table 1 below shows the worldwide shares of the Parties and their main competitors within MCUs and the possible narrower segments, which are horizontally affected by the proposed transaction, based on the IHS technology report, to which the Notifying Party refers.

(128) In both of the segments of 8-bit MCUs and application specific MCUs for the automotive sector, the Parties' combined share is just above 20%. As explained in recital (100), while EEA-wide market shares are not readily available from the

relevant industry reports, the Notifying Party has confirmed, on the basis of internal estimates, that the Parties' shares at the EEA level do not materially differ from their worldwide shares.[47]

Table 1: Parties' worldwide shares in MCUs, 8 bit MCUs and application specific MCUs for automotive (2014)

MCUs		**8 bit MCUs**		**Application specific MCUs for automotive**	
NXP	[5-10]%	NXP	[10-20]%	NXP	[0-5]%
Freescale	[10-20]%	Freescale	[5-10]%	Freescale	[20-30]%
Combined	**[10-20]%**	**Combined**	**[20-30]%**	**Combined**	**[20-30]%**
Renesas Electronics Corporation	[20-30]%	Microchip Technology	[10-20]%	Renesas Electronics Corporation	[20-30]%
Infineon Technologies	[5-10]%	Renesas Electronics Corporation	[10-20]%	Infineon Technologies	[10-20]%
STMicroelectronics	[5-10]%	Atmel Corporation	[5-10]%	Microchip Technology	[5-10]%
Microchip Technology	[5-10]%	STMicroelectronics	[5-10]%	STMicroelectronics	[5-10]%
Others	[20-30]%	Others	[20-30]%	Others	[20-30]%

Source: IHS Technology

(129) Second, the results of the market investigation indicated that the Parties do not closely compete as regards MCUs, including 8 bit MCUs and application-specific MCUs for automotive, both worldwide and at the EEA level.

(130) Most customers responding to the Commission's market investigation indicated that in their view the Parties do not closely compete in the manufacture and supply of MCUs.[48] Customers commented that NXP is mainly in active in the manufacture and supply of general purpose MCUs, whereas Freescale mainly operates in the "niche" segment of MCUs for the automotive sector.[49] One respondent replied that the Parties' portfolios in MCUs are mostly complementary.

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47 Notifying Party's response to Commission's Request for information of 4 September 2015, Question 1, p1, and Notifying Party's response to Commission's Request for information of 20 April 2015, Question 3, p2.

48 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 26.1.

49 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 26.1.1.

(131) Customers responding to the market investigation confirmed such findings also in relation the possible narrower market segments of 8-bit MCUs and application specific MCUs for the automotive sector.

(132) With respect to 8-bit MCUs, most respondents among customers found that NXP and Freescale are not close competitors in this segment.[50] The results are similar when considering automotive-specific MCUs. One customer submitted that NXP has no real focus on automotive MCUs and that several other major manufacturers, such as Texas Instruments, ST Microelectronics and Renesas are active in the same market segment.[51] Customers' views as regards closeness of competition between the Parties did not differ in relation to the EEA level.

(133) Most competitors also submitted that NXP and Freescale do not closely compete in relation to 8-bit and automotive MCUs,[52] but considered them to closely compete in the overall MCUs market. However, all the competitors that indicated the Parties as close competitors did not provide support for their reasoning.[53] In addition, these same respondents, when asked to rank the top five market players in the production and sale of MCUs, did not list NXP and Freescale within the top five market players.[54] Competitors' views did not differ as regards the Parties' position within the EEA.

(134) In any event, the market investigation confirmed that post-transaction there will be a sufficient number of manufacturers and suppliers in the overall market of MCUs and in the segments of 8-bit and automotive MCUs, both worldwide and EEA-wide. Other major operators remaining active in the market include Microchip, Texas Instruments, ST Microelectronics, Infineon and, in particular, Renesas, which will keep its leading position in the market. [55]

(135) Lastly, the majority of respondents to the market investigation considered that the proposed transaction would not have any impact in the MCUs market and/or its possible sub-segments. Some customers and competitors submitted that the proposed transaction may also have a positive impact, as the merged entity will likely compete more vigorously in the market.[56]

(136) Therefore, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market in relation to potential

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50 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 26.2.

51 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 26.3.

52 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, questions 29.2 and 29.3.

53 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 29.1.

54 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 28.

55 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 30 and to customers Q2 of 31 July 2015, question 27.

56 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 55.1 and to customers Q2 of 31 July 2015, question 53.1.

MCUs market and narrower potential markets for 8-bit MCUs and automotive MCUs, in light of the fact that the Parties do not have a significant combined share (their combined share being slightly over 20%), do not closely compete, and alternative market players will remain active post-transaction, both worldwide and within the EEA.

V.3. Application specific DSP ASSPs and application-specific DSP ASSPs for automotive

(137) As discussed in recital (121), the proposed transaction would lead to a possible horizontally affected market as regards application specific DSP ASSPs and ASSPs for the automotive sector therein.

V.3.1. The Notifying Party's view

(138) The Notifying Party submits that NXP and Freescale target different applications with their application specific DSPs. NXP's DSPs are only used in car radio devices while Freescale's DSPs are used for different purpose for wired and wireless communications.

(139) On that basis, the Notifying Party submits that, while the Parties' activities may overlap within the overall category of DSP ASSP, the Parties have hardly any overlap within the narrower potential markets for automotive, wired and wireless communications. NXP is mainly active in the automotive segment, whereas Freescale is specialized in DSPs for wired and wireless communications.

(140) In relation to DSPs for the automotive sector, where NXP has a leading position, the Notifying Party explains that a provider of non-automotive DSPs such as Freescale would need between two to three years and significant investment to ensure that its products meet the standards qualifications required by the automotive industry.

V.3.2. The Commission's assessment

(141) On the basis of the results of the market investigation and the information provided by the Notifying Party, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market as regards application specific DSP ASSPs and application specific DSP ASSPs for the automotive sector for the following reasons.

(142) First, the share data provided by the Notifying Party on the basis of the relevant industry reports confirm that, while the Parties have a share above 20% in the potential overall market for application specific DSP ASSPs, they would hold a combined share below 20% in most of the potential narrower sub-segments therein.

(143) The possible narrower sub-segments of DSP ASSPs by end application are: consumer; computers and peripherals; wireless communications; and wired communications. Within these narrower sub-segments, the proposed transaction does not raise possible horizontally affected markets.

(144) In application specific DSP ASSPs for consumer uses, the Parties' share is below 20% (NXP: [0-5]%; Freescale: [0-5]%). The Parties have no activities as regards application specific DSP ASSPs for computers and peripherals. Finally, in wireless communications and wired communications, only Freescale is active.

(145) Therefore, the Parties' combined share raises a possible horizontally affected market only within the narrower sub-segment of application specific DSP ASSPs for the automotive sector, where the Parties would have a combined share of [70-80]%, as mentioned in recital (109).

(146) However, in this potential narrower market for application specific DSP ASSPs for the automotive sector, Freescale's position in the market segment is limited, and amounts only to [0-5]%, whereas NXP has a share of [70-80]%. Therefore, the proposed transaction would cause only a limited increment to the Parties' shares. Furthermore, Freescale's low share is due to the sale of a legacy product line to only two customers,[…] who continue to use the products for longer than Freescale anticipated.[57]

(147) Table 2 below shows the Parties' worldwide shares, based on the IHS technology report, which the Notifying Party relies upon. As explained in recitals (143) to (146), the Parties' have different focus and portfolio offering within application specific DSP ASSPs. As regards wireless and wired communications, only Freescale is active, and within application specific DSP ASSPs for the automotive sector, Freescale has a very limited presence compared to NXP. As explained in recital (100), while EEA-wide market shares are not readily available from the relevant industry reports, the Notifying Party has confirmed, on the basis of internal estimates, that the Parties' shares at the EEA level do not materially differ from their worldwide shares.[58] Therefore, the Parties' activities at the EEA level also do not overlap, or overlap to a very limited extent, as regards application specific DSP ASSPs.

57 See the Notifying Party's reply to question 16 to the Commission request for information of 20 April 2015.

58 Notifying Party's response to Commission's Request for information of 4 September 2015, Question 1, p1, and Notifying Party's response to Commission's Request for information of 20 April 2015, Question 3, p2.

Table 2: Parties' worldwide shares in DSPs ASSP and DSPs ASSP for automotive, wireless communications and wired communications (2014)

DSP ASSPs		DSP ASSPs – Automotive		DSP ASSPs – Wireless Communications		DSPs ASSPs – Wired Communications	
NXP	[10-20]%	NXP	[70-80]%	NXP	[0-5]%	NXP	[0-5]%
Freescale	[5-10]%	Freescale	[0-5]%	Freescale	[10-20]%	Freescale	[5-10]%
Combined	**[20-30]%**	**Combined**	**[70-80]%**	**Combined**	**[10-20]%**	**Combined**	**[5-10]%**
Texas Instruments	[50-60]%	Texas Instruments	[10-20]%	Texas Instruments	[50-60]%	Texas Instruments	[70-80]%
Analog Devices	[5-10]%	Toshiba	[5-10]%	nVidia	[10-20]%	M/A-COM	[10-20]%
NVidia	[5-10]%			Analog Devices	[10-20]%	Renesas	[0-5]%
Others	[5-10]%			Toshiba	[0-5]%		
				Others	[50-60]%		

Source: IHS Technology.

(148) Secondly, since Freescale's portfolio is based on communications DSPs, it would need significant time and R&D investment in order to enter the DSPs automotive market segment.

(149) Finally, the results of the market investigation indicated that a sufficient number of manufacturers will remain present in these markets post-transaction, both at worldwide and at EEA-wide level. These players include large manufacturers such as Analog Devices, nVidia, Renesas, Toshiba and, in particular, Texas Instruments, which, will remain active in all market segments and has the strongest position in the overall DSPs ASSP market segment with a share of sales of [50-60]%.

(150) Therefore, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market in relation to a potential DSP ASSPs market and the narrower potential market for automotive DSP ASSPs, both at the worldwide and EEA-wide level, in light of the fact that the Parties do not have a significant combined share, do not closely compete (given the differences in their product portfolios), and alternative market players will remain active on the market post-transaction.

V.4. Application specific analog ICs for the automotive sector and potential narrower segments

(151) As discussed in recital (121), the proposed transaction would lead to a possible horizontally affected market as regards application specific analog ICs for the automotive sector.

V.4.1. The Notifying Party's view

(152) As explained in recitals (34) to (36) of this decision, the Notifying Party submits that within application specific analog ICs for the automotive sector, a further

distinction should be drawn between power and non-power analog devices, which constitute two separate narrower product markets with no demand-side or supply-side substitutability.

(153) On that basis, the Notifying Party submits that, while the Parties' activities may overlap within the overall category of analog ICs for automotive, the Parties have hardly any overlap within the two separate markets for power and non-power analog devices for the automotive sector.

(154) The Notifying Party explains that Freescale is predominantly active in power analog devices. Freescale's portfolio includes system basis chips ("SBCs") and power management devices for airbag, alternator/regulator, and battery management (monitoring, charging), braking, engine control, and gasoline/diesel injection control. Freescale's Analog ICs also manage switches & drivers for power actuation such as in body electronics modules & motors (includes extreme switch, bridge drivers & motor drivers).

(155) NXP's activities within power analog devices are limited to the sale of some SBCs. Conversely, NXP has a strong market presence in non-power analog devices, where it focuses on car infotainment applications, secure car process applications, and IVN systems, where it offers a range of transceivers. In non-power devices, Freescale has *de minimis* sales, limited to some standalone transceivers.

(156) The Notifying Party therefore submits that the Parties have virtually no overlap in the separate markets of power and non-power analog ICs for the automotive sector, and that therefore the proposed transaction raises no concerns. This conclusion does not change even if separate product markets were identified for SBCs within power devices and for transceivers in non-power devices, and a separate competitive assessment were carried out for these products. Finally, the Notifying Party explains that several strong competitors are and will remain active in the provision of both power and non-power analog ICs for the automotive sector.

V.4.2. The results of the market investigation and the Commission's assessment

(157) On the basis of the results of the market investigation and the information provided by the Notifying Party, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market as regards application specific analog ICs for the automotive sector for the following reasons.

(158) First, the Parties' share data provided by the Notifying Party on the basis of the relevant industry reports confirm that, while the Parties have a combined share above 20% in the potential overall market for analog ICs in the automotive sector, they would hold a combined share below 20% in each of the two potential narrower segments of power and non-power analog ICs for automotive.

(159) Table 3 below shows the Parties' worldwide shares, based on the IHS technology report, which the Notifying Party relies upon.

Table 3: Parties' worldwide shares in analog ICs for automotive, power analog ICs for automotive and non-power analog ICs for automotive (2014) [59]

Analog ICs – Automotive		Power Analog ICs - Automotive		Non-Power Analog ICs - Automotive	
NXP	[10-20]%	NXP	[0-5]%	NXP	[10-20]%
Freescale	[5-10]%	Freescale	[10-20]%	Freescale	[0-5]%
Combined	**[20-30]%**	**Combined**	**[10-20]%**	**Combined**	**[10-20]%**
Infineon Technologies	[20-30]%	Infineon	[20-30]%	Texas Instruments	[10-20]%
STMicroelectronics	[10-20]%	STMicroelectronics	[20-30]%	STMicroelectronics	[10-20]%
Texas Instruments	[5-10]%	Bosch	[10-20]%	ON Semi	[10-20]%
Sanken Electric Company	[5-10]%	Texas Instruments	[10-20]%	Rohm	[5-10]%
Others	[20-30]%	Others	[10-20]%	Others	[5-10]%

Source: IHS Technology and Strategy Analytics.

(160) The shares provided above show that the Parties have no overlap in each of the segments of power and non-power analog devices for automotive. In fact, such two possible sub-segments would not be horizontally affected by the proposed transaction. As explained in recital (100), while EEA-wide market shares are not readily available from the relevant industry reports, the Notifying Party has confirmed, on the basis of internal estimates, that the Parties' shares at the EEA level do not materially differ from their worldwide shares.[60] Therefore, the Parties' activities at the EEA level as regards application specific analog ICs for automotive also do not overlap when considering the narrower possible segments of power and non-power analog ICs therein.

(161) Second, most respondents to the market investigation confirmed that the Parties do not closely compete in the manufacturing and supply of automotive analog ICs, both

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59 Analog ICs shares are from IHS Technology while segmentation in Power and Non-power analog ICs has been provided by Strategy Analytics. Gartner Technology and Strategy Analytics used different classification technics and for this reason the size of the market segment of Analog ICs for automotive does not perfectly match. Based on Gartner's IHS Technology, Analog ICs for automotive in 2014 amounted to USD [~7 billion] (NXP: USD [~800 million]; Freescale: USD [~400 million); while based on Strategy Analytics, the size of the market segment was USD [~9 billion] (NXP: USD [~900 million]; Freescale: USD [~500 million].

60 Notifying Party's response to Commission's Request for information of 4 September 2015, Question 1, p1, and Notifying Party's response to Commission's Request for information of 20 April 2015, Question 3, p2.

at worldwide and at EEA level.[61] Those results are also confirmed by the fact that, as also shown by the share data included in Table 3 above, NXP is only active in power analog ICs and Freescale in non-power analog ICs.[62]

(162) Third, the majority of respondents to the market investigation consider that a sufficient number of manufacturers will remain present in these segments post-transaction, both at worldwide and at EEA-wide level. These players include Infineon, Texas Instruments, ST Microelectronics, with shares higher than the combined entity in the Power Analog ICs segment, and shares close to NXP in the non- power analog ICs segment.

(163) In addition, within the automotive market segment, the Commission also focused its assessment on the categories of system base chips ("SBCs") and In Vehicle Networking ("IVN"), where the Parties' offerings in the automotive sector overlap or appear to be more significant based on contact with third parties during pre-notification. [63] These products partially include analog ICs and thus, for the purpose of the present decision, will be discussed in this section as possible sub-segments of the market for application specific analog ICs for the automotive sector.

(164) Therefore, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market in relation to the potential market for Analog ICs in the automotive sector, as well as in the narrower potential markets for power and non-power Analog ICs in the automotive sector, in light of the fact that the Parties have a low combined market share, do not closely compete, and alternative market players will remain active post-transaction, both at worldwide level and within the EEA.

V.4.2.1. SBCs

(165) SBCs are a type of IC consisting of a number of components that are integrated into a single device. In the design stage, these components are integrated and subsequently printed on the same silicon die in the wafer fabs. The majority of the components in an SBC are analog power devices such as power supply, drivers, switches, diagnostics or watchdog.

(166) SBCs are used in the automotive industry to perform the analog power functions of various automotive electronic control units ("ECUs"). The same functions can often be performed by the relevant standalone components assembled together. There is no standard type or form of SBC. SBCs can include different components depending on the supplier's or on the customer's requirements, and customers can select other similarly integrated devices with similar functionality as alternatives to SBCs.

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61 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, questions 33 and 33.1 and to customers Q2 of 31 July 2015, questions 30 and 30.1.

62 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, questions 33.2 and 33.3 and to customers Q2 of 31 July 2015, questions 30.2 and 30.3.

63 Conference call with a competitor: "Non confidential minutes - Conference call with a competitor", dated 12 May 2015.

(167) NXP sells SBCs that include voltage regulators and transceivers for application in the automotive industry, in particular for IVN functionality. Freescale's SBCs are comprised of power analog blocks, transceivers, and sometimes also MCUs.

(168) The Commission understands that industry reports do not comprise separate sales data as regards SBCs.

(169) Most customers that responded to the market investigation did not consider NXP and Freescale to closely compete in the manufacturing and sale of SBCs, either at worldwide or at EEA-wide level.[64] These respondents also indicated different market players as the closest competitors for each of NXP and Freescale, and considered that the same competitive conditions of analog ICs also apply to SBCs. One respondent submitted that NXP is mainly active in CAN/LIN SBCs where Infineon is its closest competitor, while Freescale is focused on Motor control SBCs where Renesas and Texas Instruments are its closest competitors.

(170) The results of the market investigation report that a sufficient number of manufacturers will be present in this market segment post-transaction, both at worldwide and at EEA-wide level.[65] Other competitors active in the market segment include large suppliers such as Infineon, Renesas, ST Microelectronics, Atmel and Texas Instruments. [66]

(171) Therefore, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market as regards SBCs.

V.4.2.2. IVN

(172) The various ECUs that can be used across various car applications are linked with each other through the car's IVN. The IVN is a collection of various interface technologies that act as the car's nervous system.

(173) Non-power analog transceiver devices are required for the ECUs to move signals by transmitting signals to or receiving signals from the car's data bus. Transceivers use different interface technologies depending on the data bandwidth and safety requirements. These interfaces are well-defined and standardised formats used for exchanging messages with varying data bandwidth. The four main IVN technologies in the automotive industry are: LIN (low-speed single-mastered/multiple-slave serial networking protocol), CAN (multiple-master serial network protocol), FlexRay (next-generation protocol enabling high-bandwidth) and RF/Ethernet.

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64 See replies to Commission questionnaires to customers Q2 of 31 July 2015, question 30.4.

65 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 35.4 and to customers Q2 of 31 July 2015, question 33.4.

66 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 32 and to customers Q2 of 31 July 2015, question 29.

(174) For some IVN applications, it is also possible to use SBCs as these consist of a number of integrated components, including power analog devices such as power supply, drivers, switches, diagnostics or watchdog.

(175) As regards IVN, NXP sells non-power analog ICs in the automotive industry, which are also used for IVN functionality. Therefore, the majority of NXP's IVN portfolio consists of non-power analog standalone transistor ICs, with some additional sales in FlexRay standalone non-power analog ICs and limited sales in power-analog SBCs. Freescale's sales in power analog ICs in the automotive sector include SBCs for IVN application.

(176) The results of the market investigation confirmed that NXP and Freescale are both active in the provision of IVN, but most of the respondents among customers and competitors indicated that they do not closely compete, either at worldwide or at EEA-wide level. Some respondents highlighted that, even if NXP is a leader in this market segment, the two companies have complementary products. Some respondents argued that in this segment Freescale is focused on the combination with MCUs and relying on the provision of transceivers from other suppliers, while NXP produces its own transceivers.[67]

(177) Customers also considered that post-transaction there will be a sufficient number of players in the IVN segment, both at worldwide and at EEA-wide level, that the merger will not change the competitive landscape in the IVN segment and that several suppliers would still remain active and for this reason the proposed transaction would not affect the dynamics in the market segment.[68]

(178) Competitors expressed more mixed views on competition post-transaction. Some competitors considered that the merged entity would have a very substantive share of sales in the IVN segment, with the other competitors following at a far distance. However, other competitors explained that, although the merged entity would have a significant position in IVN, the merger would not impact the market, since NXP was very strong in IVN even before the proposed transaction.[69] In any case, respondents indicated that other suppliers would remain active in the market segment including Infineon, Renesas, Atmel and Texas Instruments. [70]

(179) Therefore, the Commission considers that the proposed transaction does not raise serious doubts as to its compatibility with the internal market as regards IVN systems.

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67 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 37 and to customers Q2 of 31 July 2015, question 35.

68 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 36.

69 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 38.

70 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 36.

V.5. RF Power transistors

(180) As mentioned in recital (114), the Parties' combined share is above 20% within RF power and microwave. However, the Parties' activities overlap and are above 20% only as regards the narrower market for RF power transistors, whereas Freescale has no activities in the other two possible sub-segments of SSTs and RF diodes.

(181) Therefore, in this section the Commission will carry out its competitive assessment only with reference to the market for RF power transistors.

V.5.1. The Notifying Party's view

(182) The Notifying Party submits that both Parties are large manufacturers of RF power transistors. However, NXP plans to divest its RF Power transistors business, thereby removing the entire overlap between the Parties' activities with respect to RF power transistors.

V.5.2. The results of the market investigation and the Commission's assessment

(183) The overall value of the RF Power transistors market amounts to approximately USD 1.5 billion worldwide. In relation to these products, based on the information provided by the Notifying Party, the Parties have a combined worldwide market share of [60-70]% (NXP [20-30]%, Freescale [30-40]%). Other competitors include Infineon, Mitsubishi and Qorvo. These shares are illustrated in Table 4 below. The Notifying Party has confirmed that Parties' shares at EEA-level do not materially differ from those at world-wide level, and thus they remain very high within the EEA.

Table 4: The Parties' worldwide market shares in the RF Power Transistors

RF power transistors			
	2012	**2013**	**2014**
NXP	[10-20]%	[20-30]%	[20-30]%
Freescale	[20-30]%	[30-40]%	[30-40]%
Combined	**[40-50]%**	**[50-60]%**	**[60-70]%**
Infineon Technologies	[10-20]%	[10-20]%	[5-10]%
Mitsubishi	[10-20]%	[5-10]%	[5-10]%
M/A-Com Technology solutions	[5-10]%	[5-10]%	[0-5]%
Qorvo	[0-5]%	[0-5]%	[0-5]%
Cree	[0-5]%	[0-5]%	[0-5]%
Microsemi	[0-5]%	[0-5]%	[0-5]%
Skyworks solutions	[0-5]%	[5-10]%	[0-5]%
Others	[10-20]%	[10-20]%	[0-5]%

Source: IHS Technology

(184) The Parties' position is even stronger in the narrower segment of RF power transistors for wireless infrastructure, which represents approximately […]% and […]% of respectively NXP's and Freescale's RF Power business. On this segment, the Parties' combined worldwide market share is [70-80]% (NXP [20-30]%, Freescale [40-50]%) and Infineon [10-20]%) and SEDI [5-10]%)[71] would be the only other operators with a meaningful market presence. Furthermore, the Notifying Party estimates that the Parties' combined share for LDMOS RF power transistors for wireless infrastructure would be [80-90]% (NXP: [20-30]%, Freescale: [50-60]%) with Infineon [10-20]%) being the only other significant competitor.

(185) Finally, in two other possible segments of the RF Power transistors market, the proposed transaction gives rise to horizontally affected markets: in the industrial, scientific, medical (ISM) and broadcast segments, the Parties estimate that they have a combined market share of over [60-70]%. In the ISM segment, the Parties would have a combined market share of approximately [60-70]% (NXP: [40-50]%, Freescale [20-30]%) and in the broadcast segment they would have a combined market share of [70-80] (NXP: [60-70]%, Freescale [10-20]). [72]

(186) According to the Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (the "Horizontal Merger Guidelines"), market shares and concentration levels provide useful first indications of the market structure and of the competitive importance of the Parties and their competitors.[73] The larger the market share, the more likely a firm is to possess market power. And the larger the addition of market share, the more likely it is that a merger will lead to significant increase in market power.[74] The Horizontal Merger Guidelines indicate that very large market shares - 50 % or more - may in themselves be evidence of the existence of a dominant market position.[75]

(187) In the present case, NXP and Freescale are the number one and two supplier in the market for RF power transistors and the Parties' combined share will be over [60-70]% in the RF power transistors market and even higher in the segment of RF transistors for wireless infrastructure, ISM and broadcast. Therefore, the proposed transaction will create a dominant market player and, as a result, give rise to competition concerns.

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71 SEDI uses GaN technology.

72 The Parties' activities are limited in the military, commercial avionics and air traffic control and non-cellular communications.

73 Horizontal Merger Guidelines, OJ C 31, 5.2.2004, p. 5, paragraphs 14 and 15; Case T-79/12, *Cisco Systems v. Commission*, T:2013:635, paragraph 47.

74 Horizontal Merger Guidelines, paragraph 27.

75 Horizontal Merger Guidelines, paragraph 17. Case T-221/95, *Endemol v Commission*, T:1999:85, paragraph 134, and Case T-102/96, *Gencor v Commission*, T:1999:65, paragraph 205.

(188) The market investigation also confirmed that Freescale and NXP are the two main suppliers of RF Power transistors worldwide and in particular of RF power transistors employing LDMOS technology[76], and that they closely compete with each other.[77] For example, one customer explained that, as far as LDMOS RF power transistors are concerned, "*Freescale is the dominant market leader followed by NXP. Infineon remains a distant third*".[78]

(189) In relation to Freescale, one respondent commented that "*Freescale has a very strong technology base in LDMOS and integrated passive devices (IPD) matching elements, as well as a very strong plastic overmold packaging technology. Freescale also has a very broad portfolio of products in all RF Power applications (cellular and other). It has a very large and experienced R&D team in several locations worldwide. Moreover, Freescale has a very strong application knowledge and ability to design circuits for customers.*"[79] Other respondents also submitted that Freescale had potentially the broadest and best product portfolio in the RF power transistors sector. In relation to NXP, one respondent noted that "*NXP recently launched a new family of RFIC*[80] *(MMIC)*[81] *products. NXP has a very strong customer support and a worldwide application engineering network.*"[82]

(190) The Parties' internal documents confirm the intense rivalry between NXP and Freescale. In one internal document, NXP targets leadership in the RF power transistors for wireless infrastructure and in this context identifies Freescale as its main competitor from which intends to gain market share.[83] Freescale's internal documents also indicate NXP as its main competitor in RF power transistors. As illustrated in the picture below, NXP's product portfolio is the most comparable to that of Freescale and Freescale also identifies NXP as aggressive on price and R&D.[84]

Figure 1 - Freescale's internal documents – RF competitive landscape

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76 In relation to RF power transistors employing GaN-on-Sic technology, respondents to the market investigation do not consider NXP and Freescale as important suppliers. Sumitomo is generally considered the market leader for this type of RF power transistors.

77 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, questions 42 and 43 and to customers Q2 of 31 July 2015, questions 40 and 41.

78 See replies to Commission questionnaires to customers Q2 of 31 July 2015, questions 41.1.

79 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 46.1.

80 RFIC is an abbreviation of Radio Frequency Integrated Circuit. Applications for RFICs include radar and communications, although the term RFIC might be applied to any integrated electrical circuit operating in a frequency range suitable for wireless transmission.

81 A Monolithic Microwave Integrated Circuit is a type of integrated circuit (IC) device that operates at microwave frequencies (300 MHz to 300 GHz).

82 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 46.2.

83 NXP's internal documents, "RF Power Strategy slides" of September 2014, page 14, ID 391-84.

84 Freescale's internal documents, "RF Strategic Plan Review", of 30 October 2014, page 3, ID 39.

(191) In another internal document, Freescale notes in relation to RF Power transistors: "*Taken share from NXP, plus build out of LTE infrastructure in China, India and Europe over 2015-2018 will sustain growth. With [60-70]% market share and some pick up from NXP, how much to go for and what happens when the LTE slows?*"[85]

(192) In addition, most respondents to the market investigation believe that there should be at least three competitors in the RF power market for a healthy competition[86] and that post-transaction there would not be enough alternative providers left in the market.[87]

(193) The market investigation showed that most customers have more than one potential supplier. A competitor indicated that: "*all 6 major customers (Ericsson, Huawei, Nokia, Alcatel-Lucent, ZTE, Samsung) have high-level relationships with at least 2 (or all 3) of the major LDMOS suppliers (Freescale, NXP, Infineon). A few of these customers have already established similar relationships with GaN-on-SiC vendors (e.g. Sumitomo, RFHIC). Due to the strategic importance of RF Power products for their wireless infrastructure business, all 6 customers have policies in place to ensure that they do not become overly dependent on 1 or 2 vendors*."[88]

(194) Additionally, the Commission notes that entry in the market for RF Power transistors is difficult, if not very difficult: all respondents to the market investigation explained that entry on the market required serious investment (several million dollars) and time (at least two years).[89] Furthermore, according to market participants, there has been no significant entrant for the supply of LDMOS transistors, but there have been several entrants using the GAN-on-SIC technology.[90] This fact aggravates the anticompetitive effects of the merger, as the difficulty and unlikelihood of market entry makes it more likely that the merger would pose significant anti-competitive risks.

(195) In light of the above, the Commission concludes that the proposed transaction raises serious doubts as to its compatibility with the internal market in relation to RF Power transistors and, at a further level of segmentation of RF power transistors for (i) wireless infrastructure, (ii) ISM and (iii) broadcast.

V.6. Conclusion on competitive assessment

(196) The Commission concludes that, irrespective of whether the markets for semiconductors are worldwide or EEA-wide, the proposed transaction does not raises

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85 Freescale's internal documents, "Freescale portfolio review", of 24 November 2014, page 3, ID 93-50.

86 See replies to Commission questionnaire to customers Q2 of 31 July 2015, question 50.

87 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 49 and to customers Q2 of 31 July 2015, question 50.

88 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 50.

89 See replies to Commission questionnaire to competitors Q1 of 31 July 2015, question 52.

90 See replies to Commission questionnaires to competitors Q1 of 31 July 2015, question 51 and to customers Q2 of 31 July 2015, questions 53.

serious doubts as to its compatibility with the internal market with regard to application specific MCUs for the automotive sector and 8-bit MCUs, application specific DSP ASSPs and application specific DSP ASSPs for the automotive sector, application specific analog ICs for the automotive sector and other potential narrower segments for the automotive industry.

(197) The proposed transaction raises serious doubts as to its compatibility with the internal market in relation to RF Power transistors and, at a further level of segmentation of RF power transistors for (i) wireless infrastructure, (ii) ISM and (iii) broadcast.

VI. COMMITMENTS

(198) In order to remove the competition concerns arising from the proposed transaction described in Section V.5, the Notifying Party submitted commitments as a fix-it-first solution (that is to say that the Notifying Party identified and entered into a legally binding agreement with a buyer outlining the essential of the purchase during the Commission procedure[91]) on the same day of formal notification of the proposed transaction (the "First Commitments"). The Commission launched a market test of the First Commitments on 10 August 2015, seeking responses from customers (including all major customers of RF power transistors for wireless infrastructure) and competitors of the Parties.

(199) The Commission communicated the preliminary results of the market test and the Commission's assessment of the First Commitments to the Notifying Party on 20 August 2015.

(200) In light of the procedural developments in the review of the transaction by the U.S. Committee on Foreign Investment in the United States ("CFIUS") as further described in Section VI.1.2, the Notifying Party submitted the Final Commitments on 16 September 2015. The Final Commitments consist of a revised set of commitments, essentially transforming the First Commitments into an up-front buyer remedy, that is to say, the Notifying Party submitted the same remedy in scope and undertook not to complete the proposed transaction before having entered into a binding agreement with a purchaser for the divested business, purchaser which first has to be approved by the Commission.

VI.1. Description of the proposed commitments

VI.1.1. First Commitments

(201) The First Commitments consist of the divestment of NXP's entire RF Power business (the “RF Power business”) as a fix-it-first solution aiming to eliminate the entire overlap between the Parties’ activities in RF Power transistors for all applications. The Divestment Business did not exist pre-merger as a separate legal entity within NXP. It was therefore carved out by NXP from its existing

91 Commission notice on the remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004, OJ 2008/C 267/01, paragraph 56.

semiconductor business and included the following assets (that will be transferred to newly created legal entities):

a. All tangible assets required for the operation, production and sales of the RF Power business, including but not limited to:

    i. The ownership of part of the manufacturing facility located in Cabuyao (Philippines) ("APP") used or held for use in manufacturing products of the RF Power business and all manufacturing equipment of the APP manufacturing facility used or held for use in manufacturing products of the RF Power business;

    ii. Selected assets at NXP's facility in Hamburg (Germany) ("DHAM") that are currently used exclusively for the RF Power business in the backside metallization and thin wafer grinding processes;

    iii. Selected assets at NXP's facility in Kaoshiung (Taiwan) ("APK") that are currently used exclusively for the RF Power business, in back-end manufacturing processes, including wafer testing and sawing and the assembly and testing of plastics packages;

    iv. All R&D assets currently used exclusively for the RF Power business, including all lab and pilot line (product development and sample production) equipment in Nijmegen (the Netherlands) and Shanghai (China) and application lab equipment in Smithfield, Rhode Island (US), Nijmegen (the Netherlands), Shanghai and Shenzhen (China), and lab equipment in Toulouse (France);

    v. All customer support equipment in Kista (Sweden), Oulu (Finland), Chengdu and Xian (China), Seoul (South Korea) and Dallas (US); and

    vi. All raw materials, finished goods, dies, work-in-process and goods in transit allocated to the APP manufacturing facility or physically located elsewhere thereafter in the flow, and finished goods allocated to APK in Taiwan, to the extent that these goods consist of, or are intended for use in the manufacture and packaging of products of the RF Power business.

b. All intangible assets required for the operation, production and sales of the RF Power business, including but not limited to:

    i. All patents and technologies that are exclusively or predominantly used for the RF Power business;

    ii. Four unregistered trademarks;

    iii. A non-exclusive, non-transferable, irrevocable, world-wide, royalty-free, fully paid-up license to use all other NXP patents and technologies required by the RF Power business;

    iv. A non-exclusive, non-transferable, irrevocable, world-wide, royalty-free, fully paid-up license to use all third party patents and technologies licensed to NXP for the RF Power business, provided that NXP has the right to grant sublicenses; and

v. Temporary licenses to use NXP's trademarks (including the brand name of NXP) exclusively for the RF Power Transistors for a period of nine months from Closing.

c. All customer and supplier contracts, R&D contracts, records and related materials necessary to operate the RF Power business, to the extent permitted under those arrangements.

(202) The new holding company of the Divestment Business, Samba Holdco Netherlands B.V. ("Samba"), has been incorporated and is registered in Eindhoven (the Netherlands). Its place of management and operation will be Nijmegen (the Netherlands). Samba will be the operational company for the Netherlands, and will also own five subsidiaries respectively registered and operational in Shanghai (China), Toulouse (France), Cabuyao (Philippines), Kista (Sweden), and Smithfield, Rhode Island (USA). In Finland, South Korea, Japan, Hong Kong and the United Kingdom, Samba will be registered as a branch office and all local assets and liabilities will be transferred to Samba.

(203) The RF Power business comprises researching, designing, developing, testing, manufacturing, commercializing, packaging, marketing, distributing, selling and/or servicing of RF Power transistors.

(204) With specific respect to RF power transistor manufacturing, it should be noted that the manufacturing of these products comprises several steps, which can be broadly grouped into front-end manufacturing and back-end manufacturing.

(205) *Front-end manufacturing* consists first of the printing of the circuitry on semiconductor material (“wafers”). An RF Power transistor is a module with 4 to 16 ICs that are packaged together in one module package. An LDMOS RF Power Transistor consists of 1-4 LDMOS ICs, and 3-12 Metal Oxide Silicon Capacitors ("MOSCAPs"). MOSCAPs are standard products and represent the "simple" components of an RF Power transistor. A GaN RF Power transistor consists of 1-4 GaN ICs, and 3-12 MOSCAPs.

(206) The subsequent phases in the front-end manufacturing of RF Power transistors are grinding (thinning) and backside metallization of wafers. Grinding makes a wafer thinner and backside metal is then applied to enhance thermal connectivity to the package and therefore the heat dissipating capacity.

(207) *Back-end manufacturing* involves the assembly and packaging in non-plastic (high-end) packaging or in plastic (low-end) packaging. Different package material and packaging processes are applied that will determine the heat dissipation capacity of the RF Power transistors. The best heat dissipation for high power devices is typically offered by non-plastic packages (ceramic and air cavity packages), whereas plastic packages (such as quad flat no-lead and overmolded plastic packages) offer a lower ability for heat dissipation. After packaged, products are then assembled and tested.

(208) The *front-end manufacturing* is currently carried out by NXP in the sites of ICN8 (Nijmegen, the Netherlands) and DHAM (Germany). The ICN8 site is the main location for the front-end manufacturing. In the ICN8 site only [a very limited part] […] of the capacity is used for the RF Power transistors manufacturing, with the rest of the capacity being used for the manufacturing of other semiconductor products. ICN8 does not have production lines separated per specific products, but consists of numerous and different categories of tools and machines, that are capable of running a

multitude of different "recipes" for the manufacturing of different wafers in a cost effective way. As regards the DHAM site, only [a limited part][…] of the capacity is used for RF Power transistors manufacturing with the rest of the capacity being used for the manufacturing of other semiconductor products.

(209) The *back-end manufacturing* is currently carried out by NXP in its plants of APK (Taiwan) and APP (the Philippines).

(210) Wafer testing for all RF Power transistors is currently performed at NXP's APK site in Taiwan. Already prior to the proposed transaction, NXP planned to move wafer testing to the APP site in the Philippines in […] . The assembly and final testing in plastic packaging is currently done at the APK site, where [a very limited part][…] of the capacity is used for the manufacturing of RF Power transistors.

(211) The assembly and final testing of all other non-plastic packages is currently performed at NXP's APP site in the Philippines. Around […] of the manufacturing space in the APP site is used for the manufacturing of RF Power transistors, and there are dedicated production lines for the manufacturing of the RF Power transistors in a separate area of this site. The manufacturing activities at the APP site represent approximately 85% of the total manufacturing costs of RF Power transistors.

(212) Based on the First Commitments, the Divestment Business' manufacturing activities would be organised as follows:

(213) The *front-end manufacturing* of LDMOS wafers will be outsourced to a (pre-identified) third party foundry […], Thus, no current equipment of NXP for the front-end manufacturing will be transferred to the Divestment Business, which will rely on the foundry agreement for its front-end manufacturing.[92] The Notifying Party submitted that many providers of semiconductor devices rely on third-party “fabrication” plants (also called "fabs" or "foundries"). A foundry manufactures in its fab many other semiconductor products on machines that are not specifically dedicated to RF Power or other semiconductor products, and will use these machines to manufacture for the Divestment Business as well. In fact, although for historic reasons NXP has been producing RF Power wafers in-house, […].

(214) Nevertheless, all R&D assets used by the RF Power business, including lab and pilot lines in various locations, as well the R&D personnel currently working for the RF Power, business will be transferred to the Divestment Business.

(215) As for the *back-end manufacturing* (packaging and wafer testing), under the First Commitments, NXP offered to transfer the activities and assets from the APK and APP sites to the Divestment Business in the APP Philippines site. The Divestment Business would relocate the assets in a separate building in the APP site next to the NXP's (remaining) facilities in the site.[93] The Divestment Business’ assets will be

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92 An exception is the option for the buyer of the Divestment Business to purchase some assets for the front-end manufacturing of MOSCAP wafers, from NXP's DHAM facility.

93 Some of the back-end packaging activities will also be outsourced to third parties.

physically separated from the other remaining NXP's assets in APP, which will be used for the manufacturing of other semiconductor products of NXP.[94]

(216) As a result, the Divestment Business would concentrate its (LDMOS and MOSCAP) RF Power transistors manufacturing activities in two physical sites, the third party foundry site for front-end manufacturing and the APP site in the Philippines for back-end manufacturing, compared to the four different sites where NXP's manufacturing process is currently located.

(217) Finally, as part of the First Commitments, NXP's existing contracts with third party foundries for the wafer supply of GaN RF Power manufacturing will also be assigned to the Divestment Business. The Divestment Business already works with a third party foundry,[…]. Both these foundry services supplier contracts with these two partners will be assigned to the Divestment Business, which will also have all GaN-on-SiC process engineers and relevant IP.

(218) In order to ensure that the Divestment Business can operate during the period of the transfer and re-location of the assets, NXP also committed under the First Commitments to enter into a manufacturing services agreement ("MSA")[95] and a transitional services agreements ("TSAs") with the Divestment Business.

(219) First, through the MSA, NXP committed to provide to the Divestment Business the front-end and back-end manufacturing in relation to LDMOS RF Power transistors for the time necessary for the Divestment Business to start relying on the front-end manufacturing activities of the third party foundry. The services under the MSAs would be provided at cost and most of them for a duration between […] from the Closing of the transaction.

(220) Only in relation to the provision of front-end manufacturing of the LDMOS wafers, the MSA envisages a duration of the services for a period of five years, with the possibility of a […]extension.

(221) Under the First Commitments, immediately after closing, the Divestment Business will start the transfer of the LDMOS front-end manufacturing to the foundry partner.

(222) The older generations of LDMOS […] will not be transferred to […] For these LDMOS wafers, the Divestment Business will rely on the MSA with NXP to supply the wafers, through NXP's front-end manufacturing in its ICN8 site. On the other hand, the front-end manufacturing of LDMOS […] generation and of the upcoming generation LDMOS […] will be transferred from NXP to the foundry partner. The

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94 Until these assets have been completely separated from NXP's site, NXP will provide to the Divestment Business basic utility services (e.g. water, energy and IT).

95 According to the Commitments, under the MSA NXP will provide to the Divestment Business manufacturing services including (i) production of LDMOS wafers for […]years, (ii) production of MOSCAP wafers for […]years, (iii) grinding and backside metallization of LDMOS and MOSCAP wafers for […] years, and (iv) wafer testing & sawing, and assembly and final testing of QFN and OMP packaged products for […]

LDMOS […] process technology was expected to be fully released in the foundry partner by […] and the LDMOS […] process technology by […].

(223) For these […] LDMOS generations, new products will be released at the foundry partner only after their transfer. For the products of LDMOS Generations […] which will have already been released at ICN8, NXP will continue to supply to the Divestment Business the front-end manufacturing as part of the MSA. The Notifying Party explained that this is necessary because otherwise customers would need to requalify the new foundry for the front-manufacturing of products already released in ICN8.[96]

(224) In the Notifying Party's view, should the front-end manufacturing of products already released in ICN8 also be transferred to the foundry partner by the Divestment Business, customers would not be willing to carry out the requalification for those products, given that it is extremely time consuming and costly. This would hamper the viability of the Divestment Business, as customers would not rely on it. For that reason, the Notifying Party argues, the MSA will cover also LDMOS Generation […] products already released in ICN8, in addition to previous generations of LDMOS, so that customers need not requalify.

(225) Second, the TSAs included in the First Commitments covered various services that NXP will provide to the Divestment Business such as: (i) IT, (ii) marketing and sales, (iii) finance and accounting, (iv) pensions, (v) supply chain management, (vi) purchasing, regarding purchasing support capacity and master data administration, (vii) R&D support, (viii) real estate, (ix) quality and reliability, including reliability testing and failure analysis, (x) human resources, (xi) technical assistance in relation to transferred IP, and (xii) various services at the APP facility in Cabuyao, Philippines. The services under the TSAs would be provided at cost and for a duration of between […] from the Closing of the transaction. The Commission launched a market test on the First Commitments on 10 August 2015.

(226) Most of the customers responding to the market test identified the Divestment Business as a viable and standalone business capable to compete effectively on the market.[97] One customer noted that the Divestment Business was already moving to a standalone business before the divestment, and will have the same products as before.

(227) As regards the scope of the First Commitments, most respondents found that the Divestment Business would have all the necessary tangible and intangible assets to operate as an independent and viable business on the market.[98] One customer

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96 Requalification would be necessary because, when front-end manufacturing production is transferred from one foundry to another, the products released at the latter will never be exactly match those previously released at the former. Therefore, when such a transfer process takes place, customers must requalify the new foundry so that it can manufacture the requested products to the requisite standards.

97 See replies to Commission remedies questionnaires Q4 to customers of 10 August 2015, question 4.

98 See replies to Commission remedies questionnaires to customers Q4 of 10 August 2015, questions 5 and 24.

indicated that all parts of the RF Power division are included in the Divestment Business and that the terms and conditions of the technology transfer to the new wafer fab allow business continuity. Another customer commented that the Divestment Business would be successful, as long as the relationship with the third part foundry could be set up to ensure production. Respondents to the market test also agreed that the Divestment Business included all the necessary R&D assets and personnel.[99]

(228) As regards the outsourcing of front-end manufacturing of RF power, respondents agreed that the Divestment Business could be effectively run while relying on a third party foundry for that purpose.[100] Some respondents raised the concern that outsourcing the front-end manufacturing to a third party (as opposed to carrying out such activity in-house, as NXP currently does for the majority of its LDMOS RF power transistors) may put the Divestment Business at a competitive disadvantage (in terms of manufacturing flexibility, supply chain management, etc.). In particular, these respondents noted that special knowledge and expertise are needed to make wafers for RF power and that much depends on the quality of the personnel, and that close cooperation between technical and project management is necessary. One customer explained that the Divestment Business and the foundry will need a solid agreement to make sure the process functions properly. Others highlighted the importance of adjusting the process to meet specific requirements of LDMOS wafers, and that it would be important that a foundry partner allows this.

(229) However, most respondents found that there would not be difficulties in running the Divestment Business while relying on a foundry partner.[101] One customer commented that there could be challenges, but that it should be possible to manage communication across sites effectively. Most customers also indicated that the production of LDMOS wafers does not require specific technology or equipment, and can be carried out by third party foundries.[102] In this sense, one customer explained that many foundries have equal or better processes than most semiconductor suppliers and are able to innovate faster, as many of their customers would rely on their accumulated critical mass of production. One customer commented that, given that the transition to the third party foundry will be made step by step and with appropriate qualifications, this will not impact product quality and reliability. The market test also confirmed that the selected foundry partner […] has the required knowledge, expertise and means to serve as a foundry partner to the Divestment Business.[103]

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99 See replies to Commission remedies questionnaires to competitors Q3 of 10 August 2015, questions 24, 25 and 26, and to customers Q4 of 10 August 2015, questions 24, 25 and 26.

100 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 7.

101 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 10.

102 See replies to Commission remedies questionnaires to customers Q4 of 10 August 2015, question 9.

103 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 8.

(230) As regards the MSA, respondents to the market investigation confirmed that a manufacturing arrangement is essential to ensure the viability of the Divestment Business.[104] One customer explained that it would be a significant expense to have to re-qualify products and efforts should be made to eliminate or minimize this. Another commented that the transfer of products to a new wafer fab is extremely difficult and all products need to be re-qualified, and that the MSA would provide stable business continuity without transfers. Customers also agreed that the MSA would not affect the viability and the independence of the Divestment Business.[105]

(231) Most of the respondents also agreed that the Divestment Business can be run as a viable competitive force while relying on the TSAs with NXP[106] and, further, confirmed that the timing and pricing structure proposed as appropriate.[107] In particular one customer highlighted how NXP and the Divestment Business will have a good working relationship since they have been working together as one company and there is no reason why this should change in the future.

(232) Most of the respondents to the market test considered that, overall, the Divestment Business is a viable and stand-alone business that will be able to compete effectively on the market[108] and that customers will continue to purchase products from the Divestment Business post transaction.[109]

VI.1.2. Final Commitments

(233) The First Commitments were submitted as a fix-it-first solution. On 27 May 2015 NXP signed a Sales Purchase Agreement ("SPA") with Jianguang Asset Management Co. Ltd ("JAC") of China, for the sale of the Divestment Business. JAC is a subsidiary of the private equity JIC Capital ("JIC") – a state-controlled Chinese investment company.

(234) The sale of the Divestment Business to the proposed purchaser JAC is, among other things, subject to a regulatory approval by the Committee on Foreign Investment in the U.S. ("CFIUS").

(235) CFIUS is authorized by the U.S. President to investigate the impact on U.S. national security of mergers that could result in control of a U.S. business by a foreign person.

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104 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, questions 14 to 16.

105 See replies to Commission remedies questionnaires to customers Q4 of 10 August 2015, questions 12.

106 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 21.

107 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, questions 22 and 23.

108 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 4.

109 See replies to Commission remedies questionnaires to competitors Q3 and to customers Q4 of 10 August 2015, question 39.

The CFIUS review entails a first phase review that may last up to 30 days. After that, CFIUS may initiate an additional 45-day investigation (an in-depth review). In exceptional circumstances, when CFIUS cannot decide on a recommendation or when the transaction should be suspended or blocked, the matter may be referred to the U.S. President who will have 15 more days to decide on the case, and in this scenario the CFIUS process may take up to 90 days in total.

(236) During the first phase investigation, it became clear that the CFIUS review process of JAC's acquisition of the Divestment Business would likely not be completed before the deadline for a Commission decision in first phase. As a result, the Commission would not be in a position to assess, as part of its phase I investigation, the possible impact of the outcome of the CFIUS review process on the viability of the Divestment Business in the hands of JAC.

(237) Indeed, based on the very limited information available, the Commission understands that CFIUS may impose potentially far-reaching remedies on businesses at the end of its review process. As a result, a possible negative outcome of the CFIUS process could impact the viability of the Divestment Business in the hands of JAC and its ability to operate as a fully-fledged competitor in the market. This is because the CFIUS review process may result, for example, in a prohibition imposed on the Divestment Business to sell its products to certain customers in the United States (for instance RF energy customers or the US military) or to sell its products in the United States at all, or even, in a ban on the Divestment Business' products being included in products (such as mobile base stations) that are in turn sold in the United States.

(238) Although the Notifying Party was confident of a positive outcome of the CFIUS review process, to address the uncertainty stemming from the timing and outcome of this, NXP submitted the Final Commitments on 16 September 2015.

(239) The Final Commitments comprise in terms of scope the same Divestment Business as the First Commitments. However they provide for an up-front buyer clause instead of a fix-it-first solution. Therefore, the proposed transaction will not be implemented before NXP or the appointed divestiture trustee has entered into a final binding sale and purchase agreement for the sale of the Divestment Business and the Commission has approved the purchaser and the terms of sale.

(240) In more detail, the Final Commitments comprise the same tangible and intangible assets that were included in the First Commitments.

(241) Moreover, NXP also commits to provide for as long as required manufacturing and transitional services to the Divestment Business upon the purchaser's request. These services comprise (but are not limited to) the services to be provided under the MSA and TSA of the First Commitments. However, the duration of these manufacturing and transitional services is not specified in the Final Commitments. NXP also committed to provide any other services that may be requested by the purchaser, as well as to include in the Divestment Business, if necessary, an agreement with a reputable wafer foundry partner.

(242) Finally, NXP commits to put in place all necessary measures to ensure that no commercially sensitive information is shared between the Divestment Business and NXP as a result of the implementation of the transitional agreements beyond what is strictly necessary for NXP to comply with these agreements.

(243) Because the Final Commitments encompass in scope the same Divestment Business as the First Commitments and the market test of the First Commitments was positive regarding the scope of the Divestment Business, the Commission did not consider it necessary to carry out another market test of the Final Commitments.

VI.2. The Commission's assessment

VI.2.1. Remedies principles

(244) According to the Commission's notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 (the "Remedies Notice"), where a concentration raises serious doubts as to its compatibility with the internal market, the parties may undertake to modify the concentration so as to resolve the competition concerns identified by the Commission and thereby gain clearance of their merger.[110]

(245) The following principles from the Remedies Notice apply where parties choose to offer commitments in order to restore effective competition.

(246) It is for the parties to the concentration to put forward commitments.[111] The Commission only has power to accept commitments that are deemed capable of rendering the concentration compatible with the internal market.[112] In Phase I, commitments can only be accepted where the competition problem is readily identifiable and can easily be remedied. The competition problem therefore needs to be so straightforward and the remedies so clear-cut that it is not necessary to enter into an in-depth investigation and that the commitments are sufficient to clearly rule out serious doubts within the meaning of Article 6(1)(c) of the Merger Regulation. Where the assessment indicates that the proposed commitments remove the grounds for serious doubts on this basis, the Commission clears the merger in phase I.[113]

(247) Although normally the divestiture of an existing viable standalone business is required, the Commission taking into account the principle of proportionality, may also consider the divestiture of businesses which have existing strong links or are partially integrated with businesses retained by the parties and therefore need to be 'carved out' in those respects. However, the Commission is only able to accept such commitments if it can be certain that, at least at the time when the business is transferred to the purchaser, a viable business on a standalone basis will be divested and the risks for the viability and competitiveness caused by the carve-out will thereby be reduced to a minimum.

(248) The divested activities must consist of a viable business that, if operated by a suitable purchaser, can compete effectively with the merged entity on a lasting basis and that

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110 OJ 2008/C 267/01, paragraph 5.

111 Remedies Notice, Paragraph 6.

112 Remedies Notice, Paragraph 9.

113 Remedies Notice, Paragraph 81.

is divested as a going concern. The business must include all the assets which contribute to its current operation or which are necessary to ensure its viability and competitiveness and all personnel which are currently employed or which are necessary to ensure the business' viability and competitiveness.[114]

(249) Personnel and assets which are currently shared between the business to be divested and other businesses of the parties, but which contribute to the operation of the business or which are necessary to ensure its viability and competitiveness, must also be included. Otherwise, the viability and competitiveness of the business to be divested would be endangered. Therefore, the divested business must contain the personnel providing essential functions for the business such as, for instance, group R&D and information technology staff even where such personnel are currently employed by another business unit of the parties — at least in a sufficient proportion to meet the on-going needs of the divested business.[115]

(250) A viable business is a business that can operate on a stand-alone-basis, which means independently of the merging parties as regards the supply of input materials or other forms of cooperation other than during a transitory period.[116]

(251) The intended effect of the divestiture will only be achieved if and once the business is transferred to a suitable purchaser in whose hands it will become an active competitive force in the market. The potential of a business to attract a suitable purchaser is an important element already of the Commission's assessment of the appropriateness of the proposed commitment. In order to ensure that the business is divested to a suitable purchaser, the commitments must include criteria to define the suitability of potential purchasers. This will allow the Commission to conclude that the divestiture of the business to such a purchaser will likely remove the competition concerns identified.[117]

(252) In the ultimate assessment of proposed commitments, the Commission considers all relevant factors including *inter alia* the type, scale and scope of the proposed commitments, judged by reference to the structure and particular characteristics of the market concerned, including the position of the parties and other participants on the market.[118] The commitments must be capable of being implemented effectively within a short period of time.[119]

(253) It is against this background that the Commission analysed the proposed Commitments in this case.

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114 Remedies Notice, paragraph 23-25.

115 Remedies Notice, paragraph 26.

116 Remedies Notice, paragraph 32.

117 Remedies Notice, paragraph 47.

118 Remedies Notice, Paragraph 12.

119 Remedies Notice, Paragraph 9.

VI.2.2. Assessment of the Final Commitments

(254) In this case, the Commission considers that the Final Commitments are sufficient to remove the serious doubts regarding the compatibility of the proposed transaction with the internal market in relation to RF Power transistors and, at a further level of segmentation of RF power transistors for (i) wireless infrastructure, (ii) ISM and (iii) broadcast as outlined in Section V.5.

(255) The competition concerns in this case, as outlined in Section V.5, are readily identifiable, given the Parties' significant market shares, the limited number of competitors and the high barriers to entry in the market for RF Power transistors.

(256) The Final Commitments are suitable to provide a clear-cut answer to the competition concerns identified by the Commission.

(257) Indeed, the Final Commitments consist of the divestment of the RF Power business, containing all the necessary assets and personnel for a viable stand-alone business, and eliminate the entire overlap between the Parties in the RF Power transistors market and its possible segments. Although the Divestment Business is in the form of a "carve-out", it has already been operated by NXP as a separate operational business line and it could be disentangled from NXP semiconductor business and transferred to a different undertaking.

(258) As regards R&D, all R&D assets currently used for RF Power business including all labs and pilot line will be transferred to the Divestment Business. The relevant R&D engineers working on the front-end product development are today already part of the RF Power business line, and can thus easily be transferred to the Divestment Business. These resources are exclusively working on LDMOS process development that is useful only to the RF Power business and therefore are easily identifiable. The Final Commitments ensure that all R&D personnel, including R&D Manager and Technology Fellow, working in France and the Netherlands on LDMOS and GaN-on-Sic process technologies are transferred and are part of the Divestment Business.

(259) Moreover, in order to ensure the viability of the Divestment Business, all intangible assets required for the operation, production and sales of the RF Power business will also be transferred as described in paragraph (201) above.

(260) Furthermore, the Commission also considers that the fact that the Final Commitments do not include NXP's front-end manufacturing facilities and/or assets for RF Power products (such as the ICN8 site for example), but provide for the outsourcing of this step of the production process to a reputable foundry is not likely to negatively impact the viability and competitiveness of the Divestment Business:

(261) First, outsourcing of wafer manufacturing is a common practice in the semiconductors industry. The Notifying Party itself also has numerous experiences with previous transfers of manufacturing activities from one location to another. For instance, in NXP's case, the GaN-on-Sic process technology already runs at a foundry partner […].

(262) Second, the process technology R&D engineers will transfer with the Divestment Business, and will thus continue to drive process innovation for the Divestment Business. When working with the foundry, the RF Power business R&D engineers will be in the future working with the production engineers at the foundry instead of those at ICN8. Because the foundry partner would have to be a reputable one, it

would have to possess the necessary technical capabilities ensuring that the manufacturing of the RF Power products as well as the development and release of new processes at least preserves the competitiveness of the Divestment Business. Having a geographical distance between the process technology R&D in the Netherlands and a fab elsewhere is not a significant issue. For example, the Divestment Business has helped drive GaN process technology development in the fab of the foundry […] from Nijmegen, and as regards back-end manufacturing has implemented innovation between Nijmegen on the one hand and the Philippines and Taiwan on the other. Therefore, the Divestment Business will be able to continue the technology development and innovation implementation as regards the front-end LDMOS manufacturing as well.

(263) Third, establishing a wafer fab dedicated only to the production of LDMOS RF Power transistors would likely be uneconomical. Such a dedicated fab could be up to ten times less efficient than an average sized wafer fab like ICN8, which includes the production of wafers for many other semiconductor products, and most of the manufacturing assets needed would be underutilized to a great extent.

(264) Fourth, the lack of transferred equipment will not be an issue, as should a foundry be selected it will have its own installed wafer manufacturing lines, and no specific front-end equipment will need to be transferred to the Divestment Business.

(265) Fifth, as already mentioned, during the market test of the First Commitments, the majority of the market participants also expressed the view that the outsourcing of the front-end manufacturing will not negatively affect the competitiveness of the Divestment Business. Based on the results of the market test, the Commission considers that the outsourcing of the front-end manufacturing to a reputable foundry and the fact that the RF Power business R&D engineers will be working closely with the production engineers at the chosen foundry, will ensure the competitiveness of the Divestment Business.

(266) Finally, the commitments include a requirement for an agreement with a reputable foundry (at the purchaser's request), similar to the one tested as part of the First Commitments, to be put in place regarding the front-end manufacturing.

(267) In terms of the independence of the Divestment Business, the Commission considers that the existence of manufacturing and transitional services agreements between the Divestment Business and NXP is not of a nature as to compromise its independence. The Commission also considers that the inclusion in the Final Commitments of the requirement that NXP will, upon the Purchaser's request, provide to the Divestment Business several transitional services as long as reasonably required, is necessary to preserve the viability of the Divestment Business. The market test supports the Notifying Party's claims that these agreements will be necessary to ensure that the Divestment Business will be a credible supplier during the transitional period, including for legacy LDMOS products ([…]) that will gradually be phased out as new generations of LDMOS are released. The MSA in particular is necessary in order to avoid requalification costs and additional time for the customers of the Divestment Business. In the absence of such agreement, it may well be that the customers would be driven away from the Divestment Business post-transaction.

(268) Furthermore, the Final Commitments provide that NXP will take the necessary measures to ensure that no commercially sensitive information is shared between the Divestment Business and NXP as a result of the implementation of the transitional agreements.

(269) Lastly, given the increased incentive for the Notifying Party to close the divestiture in order to complete the proposed transaction, the inclusion of an up-front buyer clause is likely to accelerate the transfer of the Divestment Business. The Commission considers that this provision further ensures the long term viability and competitiveness of Divestment Business.

VI.2.3. Conclusion

(270) For the reasons outlined above, the Final Commitments entered into by the undertakings concerned are sufficient to eliminate the serious doubts as to the compatibility of the proposed transaction with the internal market.

VI.3. Conditions and obligations

(271) Under the first sentence of the second subparagraph of Article 6(2) of the Merger Regulation, the Commission may attach to its decision conditions and obligations intended to ensure that the undertakings concerned comply with the commitments they have entered into vis-à-vis the Commission with a view to rendering the concentration compatible with the internal market.

(272) The achievement of the measure that gives rise to the change of the market is a condition, whereas the implementing steps which are necessary to achieve this result are generally obligations on the parties. Where a condition is not fulfilled, the Commission's decision declaring the concentration compatible with the internal market no longer stands. Where the undertakings concerned commit a breach of an obligation, the Commission may revoke the clearance decision in accordance with Article 8(6)(b) of the Merger Regulation. The undertakings concerned may also be subject to fines and periodic penalty payments under Articles 14(2) and 15(1) of the Merger Regulation.[120]

(273) In accordance with the basic distinction between conditions and obligations, the decision in this case is conditional on full compliance with the requirements set out in section B (as well as the associated Schedule) of the Final Commitments, which constitute conditions attached to this decision, as only through full compliance therewith can the structural changes in the relevant markets be achieved. The other requirements set out in the Final Commitments constitute obligations, as they concern the implementing steps which are necessary to achieve the modifications sought in a manner compatible with the internal market.

(274) The full text of the Final Commitments is annexed to this decision as Annex and forms an integral part thereof.

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120 See case T-471/11, *Éditions Odile Jacob v Commission*, T:2014:739, paragraphs 79-83.

VII. CONCLUSION

(275) For the above reasons, the Commission has decided not to oppose the notified operation as modified by the Final Commitments and to declare it compatible with the internal market and with the functioning of the EEA Agreement, subject to full compliance with the conditions in section B of the Final Commitments annexed to the present decision and with the obligations contained in the other sections of the said commitments. This decision is adopted in application of Article 6(1)(b) in conjunction with Article 6(2) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(signed)
Margrethe VESTAGER
Member of the Commission

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CASE M.7585 – NXP SEMICONDUCTORS/FREESCALE SEMICONDUCTOR

COMMITMENTS TO THE EUROPEAN COMMISSION

Pursuant to Article 6(2) of Council Regulation (EC) No. 139/2004 (the "**Merger Regulation**"), NXP Semiconductors N.V. ("**NXP**") and Freescale Semiconductor Limited ("**Freescale**", and together with NXP the "**Parties**") hereby provide the following Commitments (the "**Commitments**") to the European Commission (the "**Commission**") with a view to rendering the acquisition by NXP of sole control over Freescale (the "**Concentration**") compatible with the internal market and the functioning of the EEA Agreement.

This text shall be interpreted in light of the Commission's Decision pursuant to Article 6(1)(b) of the Merger Regulation to declare the Concentration compatible with the internal market and the functioning of the EEA Agreement (the "**Decision**"), in the general framework of European Union law, in particular in light of the Merger Regulation, and by reference to the Commission Notice on remedies acceptable under Council Regulation (EC) No. 139/2004 and under Commission Regulation (EC) No. 802/2004 (the "**Remedies Notice**").

SECTION A. DEFINITIONS

1. For the purpose of the Commitments, the following terms shall have the following meaning:

Affiliated Undertakings: undertakings controlled by the Parties and/or by the ultimate parents of the Parties, whereby the notion of control shall be interpreted pursuant to Article 3 of the Merger Regulation and in light of the Commission Consolidated Jurisdictional Notice under Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the "**Consolidated Jurisdictional Notice**").

Assets: the assets that contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Business as indicated in Section B, paragraph 6 (a), (b) and (c) and described more in detail in the Schedule.

Closing: the transfer of the legal title of the Divestment Business to the Purchaser.

Closing period: the period of […] from the approval of the Purchaser and the terms of sale by the Commission.

Confidential information: any business secrets, know-how, commercial information, or any other information of a proprietary nature that is not in the public domain.

Conflict of Interest: any conflict of interest that impairs the Trustee's objectivity and independence in discharging its duties under the Commitments.

Corporate Trade Names: all NXP's commercial names, trade names, doing business as (d/b/a) names, registered and unregistered trademarks and service marks.

Divestment Business: the business as defined in Section B and in the Schedule which NXP commits to divest.

Divestiture Trustee: one or more natural or legal person(s), who is/are approved by the Commission and appointed by NXP and who has/have received from NXP the exclusive Trustee Mandate to sell the Divestment Business to a Purchaser at no minimum price.

Effective Date: the date of adoption of the Decision.

First Divestiture Period: the period of […] from the Effective Date.

Freescale: Freescale Semiconductor Limited, incorporated under the laws of Bermuda, with its registered office at Clarendon House, 2 Church Street, Hamilton HM11, Bermuda.

Hold Separate Manager: the person appointed by NXP for the Divestment Business to manage the day-to-day business under the supervision of the Monitoring Trustee.

Key Personnel: all personnel necessary to maintain the viability and competitiveness of the Divestment Business, as listed in **Annex 2** to the Schedule, including the Hold Separate Manager.

Monitoring Trustee: one or more natural or legal person(s), who is/are approved by the Commission and appointed by NXP, and who has/have the

duty to monitor NXP's compliance with the conditions and obligations attached to the Decision.

NXP: NXP Semiconductors N.V., incorporated under the laws of the Netherlands, with its registered office at High Tech Campus 60 2-22, 5656 AG Eindhoven, The Netherlands.

Parties: NXP Semiconductors N.V. and Freescale Semiconductor Limited.

Personnel: all staff currently employed by the Divestment Business, including staff seconded to the Divestment Business, shared personnel and the additional personnel listed in the Schedule.

Purchaser: the entity approved by the Commission as acquirer of the Divestment Business in accordance with the criteria set out in Section D.

Purchaser Criteria: the criteria laid down in paragraph 18 of these Commitments that the Purchaser must fulfil in order to be approved by the Commission.

Retained Assets: (i) Corporate Trade Names and portion of website content, domain names, or e-mail addresses that contain Corporate Trade Names;

(ii) Real property (except for the BY Building located at Halfgeleiderweg 8, 6534 AV, Nijmegen, The Netherlands and the SiPS Building, located at Philips Avenue, LISP 1, Barrio Diezmo, Cabuyao City, Laguna, Philippines); and (iii) Tangible Personal Property relating to both the operation of the RF Power Business and any other business owned by NXP prior to the proposed concentration, unless such Tangible Personal Property is primarily relating to or connected with, or belonging to or required for or used in the Divestment Business as at Closing.

Retained Intellectual Property: any owned or licensed (as licensor or licensee) intellectual property (not included in the Retained Assets) relating to both the operation of the RF Power Business and any other business owned by NXP prior to the concentration proposed, unless such intellectual property is predominantly used by the RF Power Business.

RF Power business: the entire RF Power business currently owned by NXP, which comprises the business of researching, designing, developing, testing, manufacturing, commercializing, packaging, marketing, distributing, selling and/or servicing of RF Power Transistors.

RF Power Transistors: for "high power" RF Power transistors (from >1 watt peak power to more than 1 kW) for applications including but not limited to cellular base stations, broadcast systems, radars, medical equipment (such as MRI machines) and various industrial applications, which are manufactured using Si-LDMOS, VDMOS or GaN-on-SiC process technologies in order to be able to deliver the desired high output power and heat dissipation.

Schedule: the schedule to these Commitments describing more in detail the Divestment Business.

Tangible Personal Property: all machinery, equipment, tools, furniture, office equipment, computer hardware, supplies, materials, vehicles, and other items of tangible personal property (other than inventories) of every kind owned or leased, together with any express or implied warranty by the manufacturers or sellers or lessors of any item or component part thereof and all maintenance records and other documents relating thereto.

Trustee(s): the Monitoring Trustee and/or the Divestiture Trustee as the case may be.

Trustee Divestiture Period: the period of […] from the end of the First Divestiture Period.

SECTION B. THE COMMITMENT TO DIVEST AND THE DIVESTMENT BUSINESS

Commitment to divest

2. In order to maintain effective competition, NXP commits to divest, or procure the divestiture of the Divestment Business by the end of the Trustee Divestiture Period as a going concern to a purchaser and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 19 of these Commitments. To carry out the divestiture, NXP commits to enter into a final binding sale and purchase agreement with the Purchaser for the sale of the Divestment Business within the First Divestiture Period. If NXP has not entered into such an agreement at the end of the First Divestiture Period, NXP shall grant the Divestiture Trustee an exclusive mandate to sell the Divestment Business in accordance with the procedure described in paragraph 30 in the Trustee Divestiture Period.

3. The proposed concentration shall not be implemented before NXP or the Divestiture Trustee has entered into a final binding sale and purchase agreement for the sale of the Divestment Business and the Commission has approved the Purchaser and the terms of sale in accordance with paragraph 19.

4. NXP shall be deemed to have complied with this commitment if:

   a. by the end of the Trustee Divestiture Period, NXP or the Divestiture Trustee has entered into a final binding sale and purchase agreement and the Commission approves the proposed purchaser and the terms of sale as being consistent with the Commitments in accordance with the procedure described in paragraph 19;
   b. the Closing of the sale of the Divestment Business to the Purchaser takes place within the Closing Period; and
   c. NXP complies with all transitional agreements entered with the Purchaser pursuant to paragraphs 7(e), 7(f) and 7(g), which agreements NXP shall not terminate unilaterally because of a material breach by the Purchaser, in the absence of a final order of a court of arbitration or a court of competent jurisdiction.

5. In order to maintain the structural effect of the Commitments, NXP shall, for a period of 10 years after Closing, not acquire, whether directly or indirectly, the possibility of exercising influence (as defined in paragraph 43 of the Remedies Notice, footnote 3) over the whole or part of the Divestment Business (including, but not limited to, by entering into supply or other agreements with the Divestment Business which may negatively impact on the Divestment Business' independence and/or on its ability and/or incentive to effectively compete with NXP), unless, following the submission of a reasoned request from NXP showing good cause and accompanied by a report from the Monitoring Trustee (as provided in paragraph 62 of these Commitments), the Commission finds that the structure of the market has changed to such an extent that the absence of influence over the Divestment Business is no longer necessary to render the proposed concentration compatible with the internal market.

Structure and definition of the Divestment Business

6. The Divestment Business consists of the RF Power business.

7. The legal and functional structure of the Divestment Business as operated to date is described in Schedule A. The Divestment Business, described further in Schedule A, includes all assets and staff that contribute to the current operation or are necessary to ensure the viability and competitiveness of the Divestment Business, in particular:

   (a) All customer and supplier contracts, R&D contracts, records and related materials necessary to operate the RF Power Business, to the extent permitted under those arrangements;

   (b) All tangible assets required for the operation, production and sales of the RF Power business, including but not limited to:

      (i) the ownership of part of the manufacturing facility located in Cabuyao (Philippines) ("**APP**") used or held for use in manufacturing products of the RF Power Business and all manufacturing equipment of the APP manufacturing facility used or held for use in manufacturing products of the RF Power Business;

(ii) Selected assets at NXP's facility in Hamburg (Germany) ("**DHAM**") that are currently used exclusively for the RF Power Business in the backside metallization and thin wafer grinding processes;

(iii) Selected assets at NXP's facility in Kaoshiung (Taiwan) ("**APK**") that are currently used exclusively for the RF Power Business, in back-end manufacturing processes, including wafer testing and sawing and the assembly and testing of plastics packages;

(iv) All R&D assets currently used exclusively for the RF Power Business, including all lab and pilot line (product development and sample production) equipment in Nijmegen (the Netherlands) and Shanghai (China) and application lab equipment in Smithfield, Rhode Island (US), Nijmegen (the Netherlands), Shanghai and Shenzhen (China), and lab equipment in Toulouse (France);

(v) All customer support equipment in Kista (Sweden), Oulu (Finland), Chengdu and Xian (China), Seoul (South Korea) and Dallas (US).

(vi) All raw materials, finished goods, dies, work-in-process and goods in transit allocated to the APP manufacturing facility or physically located elsewhere thereafter in the flow, and finished goods allocated to APK in Taiwan, to the extent that these goods consist of, or are intended for use in the manufacture and packaging of products of the RF Power Business;

Provided, however, that the Divestment Business shall not include the Retained Assets.

(c) All intangible assets required for the operation, production and sales of the RF Power business, including but not limited to:

(i) All patents and technologies that are exclusively or predominantly used for the RF Power Business;

(ii) Four unregistered trademarks;

(iii) A non-exclusive, non-transferable, irrevocable, world-wide, royalty-free, fully paid-up license to use all other NXP patents and technologies required by the RF Power Business;

(iv) A non-exclusive, non-transferable, irrevocable, world-wide, royalty-free, fully paid-up license to use all third party patents and technologies licensed to NXP for the RF Power Business, provided that NXP has the right to grant sublicenses;

(v) Temporary licenses to use NXP's trademarks (including the brand name of NXP) exclusively for the RF Power Transistors for a period of nine months from Closing;

Provided, however, that the Divestment Business shall not include the Retained Intellectual Property.

(d) Upon the Purchaser's request, an agreement between the Divestment Business and a reputable third party wafer foundry for LDMOS and MOSCAP wafer manufacturing, thinning of the wafer ("grinding") and backside metallization, allowing the Divestment Business to start competitively manufacturing all of its RF Power Transistors at the third party wafer fab independently of NXP and as soon as possible after the Closing, thereby ensuring the viability and competitiveness of the Divestment Business.

(e) Upon the Purchaser's request, the provision by NXP to the Divestment Business after the Closing as long as reasonably required and at cost of all manufacturing services which are necessary to ensure the viability and competitiveness of the Divestment Business, including but not limited to:

(i) Production and supply of LDMOS wafers and LDMOS technology innovation;

(ii) Production and supply of MOSCAP wafers;

(iii) Grinding and backside metallization of LDMOS and MOSCAP wafers;

(iv) Wafer testing and sawing;

(v) OMP assembly and final testing;

(vi) QFN assembly and final testing;

(f) Upon the Purchaser's request, the provision by NXP to the Divestment Business of services in the area of IT, marketing and sales, finance and accounting, pensions, supply chain management (SCM), purchasing, R&D, real estate, quality and reliability (Q&R), human resources, IP,

and various services at the APP facility, at cost, including, but not limited to, services in the following areas:

(i) IT, regarding IT issues such as general business applications, R&D applications, generic infrastructure, firewall management and desktop virtualization services (Citrix);

(ii) Marketing and sales;

(iii) Finance and accounting;

(iv) Pensions;

(v) Supply chain management (SCM);

(vi) Purchasing, regarding purchasing support capacity and master data administration services;

(vii) R&D support services;

(viii) Real estate;

(ix) Quality and reliability (Q&R), including reliability testing and failure analysis;

(x) Human resources, notably pay-rolling, pensions, insurance and travel and expenses;

(xi) Technical assistance in relation to transferred IP;

(xii) Various services at the APP facility in Cabuyao, Philippines.

(g) Upon the Purchaser's request, the provision by NXP to the Divestment Business after the Closing and as long as reasonably required of any other transitional services which may be necessary to ensure the viability and competitiveness of the Divestment Business, at cost.

8. In addition, the Divestment Business includes the benefit, for a transitional period after Closing and on terms and conditions equivalent to those at present afforded to the Divestment Business, as detailed in Schedule A, of all current arrangements under which NXP or Affiliated Undertakings supply products or services to the Divestment Business, unless otherwise agreed with the Purchaser.

9. NXP commits to put in place all necessary measures to ensure that no commercially sensitive information is shared between the Divestment Business and NXP as a result of the implementation of the above identified supply agreements beyond what is strictly necessary for NXP to comply with these agreements and that, in any event, no such information is shared within NXP beyond the individuals who are responsible for the implementation of these agreements. NXP shall provide the Monitoring Trustee and the Commission with a detailed description of the measures that it proposes to put in place within one month from the Effective Date. The Monitoring Trustee shall assess the appropriateness of these measures and be entitled to request any amendment that it deems necessary. The Monitoring Trustee shall also monitor the implementation of these measures for the entire duration of the relevant agreements.

SECTION C. RELATED COMMITMENTS

Preservation of viability, marketability and competitiveness

10. From the Effective Date until Closing, NXP shall preserve or procure the preservation of the economic viability, marketability and competitiveness of the Divestment Business, in accordance with good business practice, and shall minimise as far as possible any risk of loss of competitive potential of the Divestment Business. In particular NXP undertakes:

    (a) not to carry out any action that might have a significant adverse impact on the value, management or competitiveness of the Divestment Business or that might alter the nature and scope of activity, or the industrial or commercial strategy or the investment policy of the Divestment Business;

    (b) to make available, or procure to make available, sufficient resources for the development of the Divestment Business, on the basis and continuation of the existing business plans;

    (c) to take all reasonable steps, or procure that all reasonable steps are being taken, including appropriate incentive schemes (based on industry practice), to encourage all Key Personnel to remain with the

Divestment Business, and not to solicit or move any Personnel to NXP's remaining business. Where, nevertheless, individual members of the Key Personnel exceptionally leave the Divestment Business, NXP shall provide a reasoned proposal to replace the person or persons concerned to the Commission and the Monitoring Trustee. NXP must be able to demonstrate to the Commission that the replacement is well suited to carry out the functions exercised by those individual members of the Key Personnel. The replacement shall take place under the supervision of the Monitoring Trustee, who shall report to the Commission.

Hold-separate obligations of Parties

11. NXP commits, from the Effective Date until Closing, to procure that the Divestment Business is kept separate from the businesses that NXP will be retaining and, after closing of the notified transaction to keep the Divestment Business separate from the business that NXP is retaining, and to ensure that unless explicitly permitted under these Commitments: (i) management and staff of the businesses retained by NXP have no involvement in the Divestment Business; (ii) the Key Personnel and Personnel of the Divestment Business have no involvement in any business retained by NXP and do not report to any individual outside the Divestment Business.

12. Until Closing, NXP shall assist the Monitoring Trustee in ensuring that the Divestment Business is managed as a distinct and saleable entity separate from the businesses which NXP is retaining. Immediately after the adoption of the Decision, NXP shall appoint a Hold Separate Manager. The Hold Separate Manager, who shall be part of the Key Personnel, shall manage the Divestment Business independently and in the best interest of the business with a view to ensuring its continued economic viability, marketability and competitiveness and its independence from the businesses retained by NXP. The Hold Separate Manager shall closely cooperate with and report to the Monitoring Trustee and, if applicable, the Divestiture Trustee. Any replacement of the Hold Separate Manager shall be subject to the procedure laid down in paragraph 10(c) of these Commitments. The Commission may, after having heard NXP, require NXP to replace the Hold Separate Manager.

Ring-fencing

13. NXP shall implement, or procure to implement, all necessary measures to ensure that it does not, after the Effective Date, obtain any Confidential Information relating to the Divestment Business and that any such Confidential Information obtained by NXP before the Effective Date will be eliminated and not be used by NXP. This includes measures vis-à-vis NXP's appointees on the supervisory board and/or board of directors of the Divestment Business. In particular, the participation of the Divestment Business in any central information technology network shall be severed to the extent possible, without comprising the viability of the Divestment Business. NXP may obtain or keep information relating to the Divestment Business which is reasonably necessary for the divestiture of the Divestment Business or the disclosure of which to NXP is required by law.

Non-solicitation clause

14. The Parties undertake, subject to customary limitations, not to solicit, and to procure that Affiliated Undertakings do not solicit, the Key Personnel transferred with the Divestment Business for a period of […] after Closing.

Due Diligence

15. In order to enable potential purchasers to carry out a reasonable due diligence of the Divestment Business, NXP shall, subject to customary confidentiality assurances and dependent on the stage of the divestiture process:

    (a) provide to potential purchasers sufficient information as regards the Divestment Business;

    (b) provide potential purchasers sufficient information relating to the Personnel and allow them reasonable access to the Personnel.

Reporting

16. NXP shall submit written reports in English on potential purchasers of the Divestment Business and developments in the negotiations with such potential purchasers to the Commission and the Monitoring Trustee no later than 10 days after the end of every month following the Effective Date (or otherwise at the Commission's request). NXP shall submit a list of all potential purchasers having expressed interest in acquiring the Divestment Business to the Commission at each and every stage of the divestiture process, as well as a copy of all the offers made by potential purchasers within five days of their receipt.

17. NXP shall inform the Commission and the Monitoring Trustee on the preparation of the data room documentation and the due diligence procedure and shall submit a copy of an information memorandum to the Commission and the Monitoring Trustee before sending the memorandum out to potential purchasers.

SECTION D. THE PURCHASER

18. In order to be approved by the Commission, the Purchaser must fulfil the following criteria:

(a) The Purchaser shall be independent of and unconnected to the Parties and their Affiliated Undertakings (this being assessed having regard to the situation following the divestiture);

(b) The Purchaser shall have the financial resources, proven expertise and incentive to maintain and develop the Divestment Business as a viable and active competitive force in competition with the Parties and other competitors;

(c) The acquisition of the Divestment Business by the Purchaser must neither be likely to create, in the light of the information available to the Commission, *prima facie* competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed. In

particular, the Purchaser must reasonably be expected to obtain all necessary approvals from the relevant regulatory authorities for the acquisition of the Divestment Business.

19. The final binding sale and purchase agreement (as well as ancillary agreements) relating to the divestment of the Divestment Business shall be conditional on the Commission's approval. When NXP has reached an agreement with a purchaser, it shall submit a fully documented and reasoned proposal, including a copy of the final agreements, within one week to the Commission and the Monitoring Trustee. NXP must be able to demonstrate to the Commission that the purchaser fulfils the Purchaser Criteria and that the Divestment Business is being sold in a manner consistent with the Commission's Decision and Commitments. For the approval, the Commission shall verify that the purchaser fulfils the Purchaser Criteria and that the Divestment Business is being sold in a manner consistent with the Commitments including their objective to bring about a lasting structural change in the market. The Commission may approve the sale of the Divestment Business without one or more Assets or parts of the Personnel, or by substituting one or more Assets or parts of the Personnel with one or more different assets or different personnel, if this does not affect the viability and competitiveness of the Divestment Business after the sale, taking account of the proposed purchasers.

SECTION E. TRUSTEE

I. Appointment Procedure

20. NXP shall appoint a Monitoring Trustee to carry out the functions specified in the Commitments for a Monitoring Trustee. The Parties commit not to close the Concentration before the appointment of a Monitoring Trustee.

21. If NXP has not entered into a binding sale and purchase agreement regarding the Divestment Business one month before the end of the First Divestiture Period or if the Commission has rejected a purchaser proposed by NXP at that time or thereafter, NXP shall appoint a Divestiture Trustee. The appointment of the Divestiture Trustee shall take effect upon the commencement of the Trustee Divestiture Period.

22. The Trustee shall:
(i) be independent of the Parties and their Affiliated Undertakings at the time of appointment;
(ii) possess the necessary qualifications to carry out its mandate, for example have sufficient relevant experience as an investment banker or consultant or auditor; and
(iii) neither have nor become exposed to a Conflict of Interest.

23. The Trustee shall be remunerated by NXP in a way that does not impede the independent and effective fulfilment of its mandate. In particular, where the remuneration package of a Divestiture Trustee includes a success premium linked to the final sale value of the Divestment Business, such success premium may only be earned if the divestiture takes place within the Trustee Divestiture Period.

Proposal by NXP

24. No later than two weeks after the Effective Date, NXP shall submit the name or names of one or more natural or legal persons whom NXP proposes to appoint as the Monitoring Trustee to the Commission for approval. No later than one month before the end of the First Divestiture Period, NXP shall submit a list of one or more persons whom NXP proposes to appoint as Divestiture Trustee to the Commission for approval. The proposal shall contain sufficient information for the Commission to verify that person or persons proposed as Trustee fulfils the requirements set out in paragraph 22 and shall include:

(a) the full terms of the proposed mandate, which shall include all provisions necessary to enable the Trustee to fulfil its duties under these Commitments;

(b) the outline of a work plan which describes how the Trustee intends to carry out its assigned tasks;

(c) an indication whether the proposed Trustee is to act as both Monitoring Trustee an Divestiture Trustee or whether different trustees are proposed for the two functions.

Approval or rejection by the Commission

25. The Commission shall have the discretion to approve or reject the proposed Trustee(s) and to approve the proposed mandate subject to any modifications it deems necessary for the Trustee to fulfil its obligations. If only one name is approved, NXP shall appoint or cause to be appointed the person or persons concerned as Trustee, in accordance with the mandate approved by the Commission. If more than one name is approved, NXP shall be free to choose the Trustee to be appointed from among the names approved. The Trustee shall be appointed within one week of the Commission's approval, in accordance with the mandate approved by the Commission.

New proposal by NXP

26. If all the proposed Trustees are rejected, NXP shall submit the names of at least two more natural or legal persons within one week of being informed of the rejection, in accordance with paragraphs 21 and 25 of these Commitments.

Trustee nominated by the Commission

27. If all further proposed Trustees are rejected by the Commission, the Commission shall nominate a Trustee, whom NXP shall appoint, or cause to be appointed, in accordance with a trustee mandate approved by the Commission.

II. <u>Functions of the Trustee</u>

28. The Trustee shall assume its specified duties in order to ensure compliance with the Commitments. The Commission may, on its own initiative or at the request of the Trustee or NXP, give any orders or instructions to the Trustee in order to ensure compliance with the conditions and obligations attached to the Decision.

Duties and obligations of the Monitoring Trustee

29. The Monitoring Trustee shall:

(i) propose in its first report to the Commission a detailed work plan describing how it intends to monitor compliance with the obligations and conditions attached to the Decision.

(ii) oversee, in close co-operation with the Hold Separate Manager, the on-going management of the Divestment Business with a view to ensuring its continued economic viability, marketability and competitiveness and monitor compliance by NXP with the conditions and obligations attached to the Decision. To that end the Monitoring Trustee shall:

(a) monitor the preservation of the economic viability, marketability and competitiveness of the Divestment Business, and the keeping separate of the Divestment Business from the business retained by NXP, in accordance with paragraphs 8 and 9 of the Commitments;

(b) supervise the management of the Divestment Business as a distinct and saleable entity, in accordance with paragraph 10 of the Commitments;

(c) with respect to Confidential Information:
- determine all necessary measures to ensure that NXP does not after the Effective Date obtain any Confidential Information relating to the Divestment Business,
- in particular strive for the severing of the Divestment Business' participation in a central information technology network to the extent possible, without compromising the viability of the Divestment Business,
- make sure that any Confidential Information relating to the Divestment Business obtained by NXP before the Effective Date is eliminated and will not be used by NXP and
- decide whether such information may be disclosed to or kept by NXP as the disclosure is reasonably necessary to allow

NXP to carry out the divestiture or as the disclosure is required by law;

(d) monitor the splitting of assets and the allocation of Personnel between the Divestment Business and NXP or Affiliated Undertakings;

(iii) propose to NXP such measures as the Monitoring Trustee considers necessary to ensure NXP's compliance with the conditions and obligations attached to the Decision, in particular the maintenance of the full economic viability, marketability or competitiveness of the Divestment Business, the holding separate of the Divestment Business and the non-disclosure of competitively sensitive information;

(iv) review and assess potential purchasers as well as the progress of the divestiture process and verify that, dependent on the stage of the divestiture process:

(a) potential purchasers receive sufficient and correct information relating to the Divestment Business and the Personnel in particular by reviewing, if available, the data room documentation, the information memorandum and the due diligence process, and

(b) potential purchasers are granted reasonable access to the Personnel;

(v) act as a contact point for any requests by third parties, in particular potential purchasers, in relation to the Commitments;

(vi) provide to the Commission, sending NXP a non-confidential copy at the same time, a written report within 15 days after the end of every month that shall cover the operation and management of the Divestment Business as well as the splitting of assets and the allocation of Personnel so that the Commission can assess whether the business is held in a manner consistent with the Commitments

and the progress of the divestiture process as well as potential purchasers;

(vii) promptly report in writing to the Commission, sending NXP a non-confidential copy at the same time, if it concludes on reasonable grounds that NXP is failing to comply with these Commitments;

(viii) within one week after receipt of the documented proposal referred to in paragraph 18 of these Commitments, submit to the Commission, sending NXP a non-confidential copy at the same time, a reasoned opinion as to the suitability and independence of the proposed purchaser and the viability of the Divestment Business after the Sale and as to whether the Divestment Business is sold in a manner consistent with the conditions and obligations attached to the Decision, in particular, if relevant, whether the Sale of the Divestment Business without one or more Assets or not all of the Personnel affects the viability of the Divestment Business after the sale, taking account of the proposed purchaser;

(ix) assume the other functions assigned to the Monitoring Trustee under the conditions and obligations attached to the Decision.

30. If the Monitoring and Divestiture Trustee are not the same legal or natural persons, the Monitoring Trustee and the Divestiture Trustee shall cooperate closely with each other during and for the purpose of the preparation of the Trustee Divestiture Period in order to facilitate each other's tasks.

Duties and obligations of the Divestiture Trustee

31. Within the Trustee Divestiture Period, the Divestiture Trustee shall sell at no minimum price the Divestment Business to a purchaser, provided that the Commission has approved both the purchaser and the final binding sale and purchase agreement (and ancillary agreements) as in line with the Commission's Decision and the Commitments in accordance with paragraphs 17 and 18 of these Commitments. The Divestiture Trustee shall include in the sale and purchase agreement (as well as any ancillary agreements) such terms and conditions as it considers appropriate for an expedient sale in the Trustee Divestiture Period. In particular, the

Divestiture Trustee may include in the sale and purchase agreement such customary representations and warranties and indemnities as are reasonably required to effect the sale. The Divestiture Trustee shall protect the legitimate financial interests of NXP, subject to NXP's unconditional obligation to divest at no minimum price in the Trustee Divestiture Period.

32. In the Trustee Divestiture Period (or otherwise at the Commission's request), the Divestiture Trustee shall provide the Commission with a comprehensive monthly report written in English on the progress of the divestiture process. Such reports shall be submitted within 15 days after the end of every month with a simultaneous copy to the Monitoring Trustee and a non-confidential copy to NXP.

III. Duties and obligations of NXP

33. NXP shall provide and shall cause its advisors to provide the Trustee with all such co-operation, assistance and information as the Trustee may reasonably require to perform its tasks. The Trustee shall have full and complete access to any of NXP's or the Divestment Business' books, records, documents, management or other personnel, facilities, sites and technical information necessary for fulfilling its duties under the Commitments and NXP and the Divestment Business shall provide the Trustee upon request with copies of any document. NXP and the Divestment Business shall make available to the Trustee one or more offices on their premises and shall be available for meetings in order to provide the Trustee with all information necessary for the performance of its tasks.

34. NXP shall provide the Monitoring Trustee with all managerial and administrative support that it may reasonably request on behalf of the management of the Divestment Business. This shall include all administrative support functions relating to the Divestment Business which are currently carried out at headquarters level. NXP shall provide and shall cause its advisors to provide the Monitoring Trustee, on request, with the information submitted to potential purchasers, in particular give the Monitoring Trustee access to the data room documentation and all other information granted to potential purchasers in the due diligence procedure. NXP shall inform the Monitoring Trustee on possible purchasers, submit a list of potential purchasers at each stage of the selection process, including

the offers made by potential purchasers at those stages, and keep the Monitoring Trustee informed of all developments in the divestiture process.

35. NXP shall grant or procure the Affiliated Undertakings to grant comprehensive powers of attorney, duly executed, to the Divestiture Trustee to effect the sale (including ancillary agreements), the Closing and all actions and declarations which the Divestiture Trustee considers necessary or appropriate to achieve the sale and the Closing, including the appointment of advisors to assist with the sale process. Upon request of the Divestiture Trustee, NXP shall cause the documents required for effecting the sale and the Closing to be duly executed.

36. NXP shall indemnify the Trustee and its employees and agents (each an "**Indemnified Party**") and hold each Indemnified Party harmless against, and hereby agrees that an Indemnified Party shall no liability to NXP for any liabilities arising out of the performance of the Trustee's duties under the Commitments, except to the extent that such liabilities result from the wilful default, recklessness, gross negligence or bad faith of the Trustee, its employees, agents or advisors.

37. At the expense of NXP, the Trustee may appoint advisors (in particular for corporate finance or legal advice), subject to NXP's approval (this approval not to be unreasonably withheld or delayed) if the Trustee considers the appointment of such advisors necessary or appropriate for the performance of its duties and obligations under the Mandate, provided that any fees and other expenses incurred by the Trustee are reasonable. Should NXP refuse to approve the advisors proposed by the Trustee the Commission may approve the appointment of such advisors instead, after having heard NXP. Only the Trustee shall be entitled to issue instruction to the advisors. Paragraph 36 shall apply *mutatis mutandis*. In the Trustee Divestiture Period, the Divestiture Trustee may use advisors who served NXP during the Divestiture Period if the Divestiture Trustee considers this in the best interest of an expedient sale.

38. NXP agrees that the Commission may share Confidential Information proprietary to NXP with the Trustee. The Trustee shall not disclose such information and the principles contained in Article 17 (1) and (2) of the Merger Regulation apply *mutatis mutandis*.

39. NXP agrees that the contact details of the Monitoring Trustee are published on the website of the Commission's Directorate-General for Competition and it shall inform interested third parties, in particular any potential purchasers, of the identity and the tasks of the Monitoring Trustee.

40. For a period of 10 years from the Effective Date the Commission may request all information from the Parties that is reasonably necessary to monitor the effective implementation of these Commitments.

IV. Replacement, discharge and reappointment of the Trustee

41. If the Trustee ceases to perform its functions under the Commitments or for any other good cause, including the exposure of the Trustee to a Conflict of Interest:

(a) the Commission may, after hearing the Trustee and NXP, require NXP to replace the Trustee; or

(b) NXP may, with the prior approval of the Commission, replace the Trustee.

42. If the Trustee is removed according to paragraph 41, the Trustee may be required to continue in its function until a new Trustee is in place to whom the Trustee has effected a full hand over of all relevant information. The new Trustee shall be appointed in accordance with the procedure referred to in paragraphs 20-27 of these Commitments.

43. Unless removed according to paragraph 41 of these Commitments, the Trustee shall cease to act as Trustee only after the Commission has discharged it from its duties after all the Commitments with which the Trustee has been entrusted have been implemented. However, the Commission may at any time require the reappointment of the Monitoring Trustee if it subsequently appears that the relevant remedies might not have been fully and properly implemented.

SECTION F. FAST TRACK DISPUTE RESOLUTION

44. In the event that a third party claims that NXP or an Affiliated Undertaking is failing to comply with the requirements described above in Section B (the "Commitment") vis-à-vis that third party, the fast track dispute resolution procedure as described herein shall apply.

45. Any third party who wishes to avail itself of the fast track dispute resolution procedure (a "Requesting Party") shall send a written request to NXP (with a copy to the Trustee) setting out in detail the reasons leading that party to believe that NXP is failing to comply with the requirements of the Commitment. The Requesting Party and NXP will use their best efforts to resolve all differences of opinion and to settle all disputes that may arise through co-operation and consultation within a reasonable period of time not exceeding fifteen (15) working days after receipt of the Request. The Trustee shall present its own proposal (the "Trustee Proposal") for resolving the dispute within eight (8] working days, specifying in writing the action, if any, to be taken by NXP or an Affiliated Undertaking in order to ensure compliance with the commitments vis-à-vis the Requesting Party, and be prepared, if requested, to facilitate the settlement of the dispute.

46. Should the Requesting Party and NXP (together the "Parties to the Arbitration") fail to resolve their differences of opinion in the consultation phase, the Requesting Party shall serve a notice (the "Notice"), in the sense of a request for arbitration, to the ICC (hereinafter the "Arbitral Institution"), with a copy of such Notice and request for arbitration to NXP. The Notice shall set out in detail the dispute, difference or claim (the "Dispute") and shall contain, inter alia, all issues of both fact and law, including any suggestions as to the procedure, and all documents relied upon shall be attached, e.g. documents, agreements, expert reports, and witness statements. The Notice shall also contain a detailed description of the action to be undertaken by NXP (including, if appropriate, a draft contract comprising all relevant terms and conditions) and the Trustee Proposal, including a comment as to its appropriateness.

47. NXP shall, within ten (10) working days from receipt of the Notice, submit its answer (the "Answer"), which shall provide detailed reasons for its

conduct and set out, inter alia, all issues of both fact and law, including any suggestions as to the procedure, and all documents relied upon, e.g. documents, agreements, expert reports, and witness statements. The Answer shall, if appropriate, contain a detailed description of the action which NXP proposes to undertake vis-à-vis the Requesting Party (including, if appropriate, a draft contract comprising all relevant terms and conditions) and the Trustee Proposal (if not already submitted), including a comment as to its appropriateness.

Appointment of the Arbitrators

48. The Arbitral Tribunal shall consist of three persons. The Requesting Party shall nominate its arbitrator in the Notice; NXP shall nominate its arbitrator in the Answer. The arbitrator nominated by the Requesting Party and by NXP shall, within five (5) working days of the nomination of the latter, nominate the chairman, making such nomination known to the parties and the Arbitral Institution which shall forthwith confirm the appointment of all three arbitrators. Should the Requesting Party wish to have the Dispute decided by a sole arbitrator it shall indicate this in the Notice. In this case, the Requesting Party and NXP shall agree on the nomination of a sole arbitrator within five (5) working days from the communication of the Answer, communicating this to the Arbitral Institution. Should NXP fail to nominate an arbitrator, or if the two arbitrators fail to agree on the chairman, or should the Parties to the Arbitration fail to agree on a sole arbitrator, the default appointment(s) shall be made by the Arbitral Institution. The three-person arbitral tribunal or, as the case may be, the sole arbitrator, are herein referred to as the "Arbitral Tribunal".

Arbitration Procedure

49. The Dispute shall be finally resolved by arbitration under the rules of the ICC, with such modifications or adaptations as foreseen herein or necessary under the circumstances (the "Rules"). The arbitration shall be conducted in Amsterdam, the Netherlands, in the English language.

50. The procedure shall be a fast-track procedure. For this purpose, the Arbitral Tribunal shall shorten all applicable procedural time-limits under the Rules as far as admissible and appropriate in the circumstances. The Parties to the

Arbitration shall consent to the use of e-mail for the exchange of documents. The Arbitral Tribunal shall, as soon as practical after the confirmation of the Arbitral Tribunal, hold an organisational conference to discuss any procedural issues with the Parties to the Arbitration. Terms of Reference shall be drawn up and signed by the Parties to the Arbitration and the Arbitration Tribunal at the organisational meeting or thereafter and a procedural time-table shall be established by the Arbitral Tribunal. An oral hearing shall, as a rule, be established within two months of the confirmation of the Arbitral Tribunal.

51. In order to enable the Arbitral Tribunal to reach a decision, it shall be entitled to request any relevant information from the Parties to the Arbitration, to appoint experts and to examine them at the hearing, and to establish the facts by all appropriate means. The Arbitral Tribunal is also entitled to ask for assistance by the Trustee in all stages of the procedure if the Parties to the Arbitration agree.

52. The Arbitral Tribunal shall not disclose confidential information and apply the standards attributable to confidential information under the Merger Regulation. The Arbitral Tribunal may take the measures necessary for protecting confidential information in particular by restricting access to confidential information to the Arbitral Tribunal, the Trustee, and outside counsel and experts of the opposing party.

53. The burden of proof in any dispute under these Rules shall be borne as follows: (i) the Requesting Party must produce evidence of a prima facie case and (ii) if the Requesting Party produces evidence of a prima facie case, the Arbitral Tribunal must find in favour of the Requesting Party unless NXP can produce evidence to the contrary.

<u>Involvement of the Commission</u>

54. The Commission shall be allowed and enabled to participate in all stages of the procedure by
    - Receiving all written submissions (including documents and reports, etc.) made by the Parties to the Arbitration;
    - Receiving all orders, interim and final awards and other documents exchanged by the Arbitral Tribunal with the Parties to the Arbitration (including Terms of Reference and procedural time-table);

- Giving the Commission the opportunity to file *amicus curiae* briefs; and
- Being present at the hearing(s) and being allowed to ask questions to parties witnesses and experts.

The Arbitral Tribunal shall forward, or shall order the Parties to the Arbitration to forward, the documents mentioned to the Commission without delay.

In the event of disagreement between the Parties to the Arbitration regarding the interpretation of the Commitment, the Arbitral Tribunal may seek the Commission's interpretation of the Commitment before finding in favour of any Party to the Arbitration and shall be bound by the interpretation.

Decision of the Arbitral Tribunal

55. The Arbitral Tribunal shall decide the dispute on the basis of the Commitment and the Decision. Issues not covered by the Commitment and the Decision shall be decided (in the order as stated) by reference to the Merger Regulation, EU law and general principles of law common to the legal orders of the Member States without a requirement to apply a particular national system. The Arbitral Tribunal shall take all decisions by majority vote.

56. Upon request of the Requesting Party, the Arbitral Tribunal may make a preliminary ruling on the Dispute. The preliminary ruling shall be rendered within one month after the confirmation of the Arbitral Tribunal, shall be applicable immediately and, as a rule, remain in force until a final decision is rendered.

57. The Arbitral Tribunal shall, in the preliminary ruling as well as in the final award, specify the action, if any, to be taken by NXP or an Affiliated Undertaking in order to comply with the commitments vis-à-vis the Requesting Party (e.g. specify a contract including all relevant terms and conditions). The final award shall be final and binding on the Parties to the Arbitration and shall resolve the Dispute and determine any and all claims, motions or requests submitted to the Arbitral Tribunal. The arbitral award shall also determine the reimbursement of the costs of the successful party and the allocation of the arbitration costs. In case of granting a preliminary

ruling or if otherwise appropriate, the Arbitral Tribunal shall specify that terms and conditions determined in the final award apply retroactively.

58. The final award shall, as a rule, be rendered within six (6) months after the confirmation of the Arbitral Tribunal. The time-frame shall, in any case, be extended by the time the Commission takes to submit an interpretation of the Commitment if asked by the Arbitral Tribunal.

59. The Parties to the Arbitration shall prepare a non-confidential version of the final award, without business secrets. The Commission may publish the non-confidential version of the award.

60. Nothing in the arbitration procedure shall affect the power to the Commission to take decisions in relation to the Commitment in accordance with its powers under the Merger Regulation.

SECTION G. THE REVIEW CLAUSE

61. The Commission may extend the time periods foreseen in the Commitments in response to a request from NXP or, in appropriate cases, on its own initiative. Where NXP requests an extension of a time period, it shall submit a reasoned request to the Commission no later than one month before the expiry of that period, showing good cause. This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to NXP. Only in exceptional circumstances shall NXP be entitled to request an extension within the last month of any period.

62. The Commission may further, in response to a reasoned request from NXP showing good cause waive, modify or substitute, in exceptional circumstances, one or more of the undertakings in these Commitments. This request shall be accompanied by a report from the Monitoring Trustee, who shall, at the same time send a non-confidential copy of the report to NXP. The request shall not have the effect of suspending the application of the undertaking and, in particular, of suspending the expiry of any time period in which the undertaking has to be complied with.

SECTION H. ENTRY INTO FORCE

63. The Commitments shall take effect upon the date of adoption of the Decision.

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duly authorised for and on behalf of

NXP Semiconductors N.V.

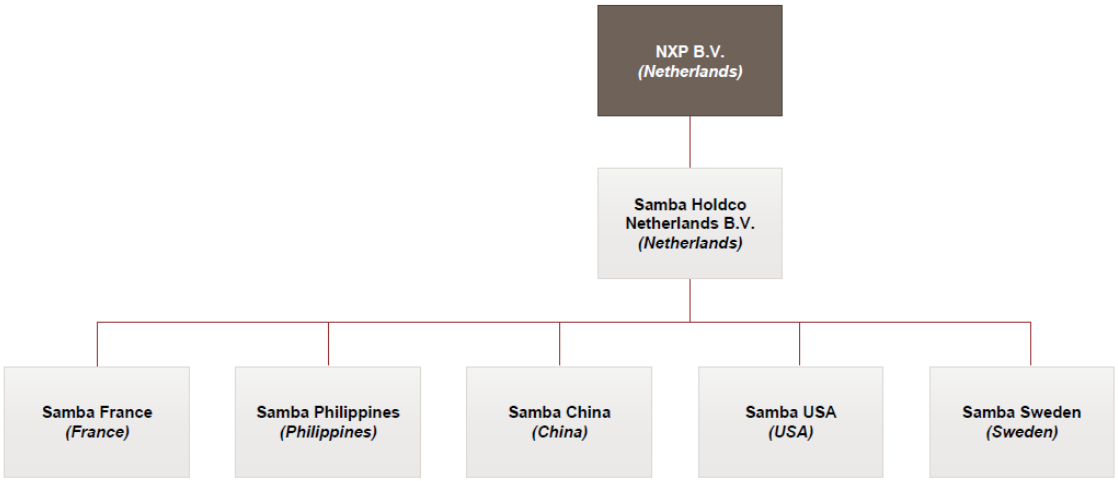
SCHEDULE A

1. NXP's RF Power Business is currently a separate operational business line in NXP's secure interface and power segment. It is currently not carried out in a separate legal entity.

2. NXP will disentangle its complete RF Power Business and transfer it to newly created legal entities. The holding company, Samba Holdco Netherlands B.V., has been incorporated and is registered in Eindhoven (the Netherlands). Its place of management and operation will be Nijmegen (the Netherlands). Samba Holdco Netherlands B.V. will be the operational company for the Netherlands, and will also own five subsidiaries respectively registered and operational in Shanghai (China), Toulouse (France), Cabuyao (Philippines), Kista (Sweden), and Smithfield, Rhode Island (USA). In Finland, South Korea, Japan, Hong Kong and the United Kingdom, Samba Holdco Netherlands B.V. will be registered as a branch office and all local assets and liabilities will be transferred to Samba Holdco Netherlands B.V.

3. Samba Holdco Netherlands B.V. will together with its subsidiaries operate as a stand-alone operating unit and will be responsible for the development, production and sales of RF Power Business products on a worldwide scale. A provisional legal structure chart is submitted below.

(Provisional) Legal structure after completion of the disentanglement



4. In addition to paragraph 7 of these Commitments, the Divestment Business also includes, but is not limited to:

   (a) the main customer and supplier contracts. No later than the Closing, NXP shall secure all consents, assignments, and waivers from all main customers and suppliers that are necessary for the divestiture of the Assets; provided, however, that NXP may satisfy this requirement by certifying that the Purchaser has executed appropriate agreements directly with each of the relevant main customers and suppliers; and provided further that in the event NXP is unable to obtain any consent, assignment, or waiver required by this par. 4(a), NXP shall provide such assistance as the Purchaser may reasonably request in its efforts to obtain the consent..

   (b) The Divestment Business' current Personnel counting approximately 1,741 FTEs, as listed in **Annex 1**; and

   (c) The Key Personnel as listed in **Annex 2.**

5. The Divestment Business includes all assets and personnel necessary for the continued viability and competitiveness of the Divestment Business.

If there is any asset or personnel which is not be covered by these Commitments but which is both used (exclusively or not) in the Divestment Business and necessary for the continued viability and competitiveness of the Divestment Business, that asset or adequate substitute will be offered to the potential purchasers of the Divestment Business.

Annex 1 – Personnel

FTEs working in function of the Divestment Business

Site	Headcount (FTEs)	Primary activities
Netherlands	[…]	[…]
Philippines	[…]	[…]
France	[…]	[…]
Finland	[…]	[…]
Sweden	[…]	[…]
China	[…]	[…]
US	[…]	[…]
Hong Kong	[…]	[…]
South Korea	[…]	[…]
Japan	[…]	[…]
United Kingdom	[…]	[…]
Germany	[…]	[…]
Total	[…]	

Organizational chart of the Divestment Business

[…]

Annex 2 – Key Personnel

Name	**Position**
[…]	General Manager
[…]	Manager Sales China
[…]	Manager Operations Manila
[…]	HR Manager
[…]	Manager PL Multi Market
[…]	Manager Sales EMEA, AMEC
[…]	Executive Vice President NXP
[…]	R&D Manager
[…]	Manager PL Base Stations
[…]	R&D-Technology Fellow
[…]	F&A - Business controller
[…]	Manager Operations & Quality