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UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION

COMMISSIONERS: Jon Leibowitz, Chairman
Pamela Jones Harbour
William E. Kovacic (recused)
J. Thomas Rosch

In the Matter of)
INTEL CORPORATION,)
a corporation)

DOCKET NO. 9341
REDACTED PUBLIC VERSION

ANSWER OF RESPONDENT INTEL CORPORATION

Pursuant to Rule 3.12 of the Commission's Rules of Practice for Adjudicative Proceedings, Respondent Intel Corporation ("Intel") answers the Complaint as follows:

The Complaint paints a picture of competition for microprocessors and graphics products that bears little resemblance to reality. Competition in these sectors has been robust during the period covered by the Complaint, producing greater consumer benefits than any other sector of the economy.

Decreasing Prices and Expanding Output. According to the Complaint, Intel's alleged conduct raised the prices of microprocessors (also known as "CPUs") and the products containing them. In reality, during the period covered by the Complaint, according to U.S. Bureau of Labor Statistics data, microprocessor prices, adjusted for quality, *declined* at an annual rate of 42%. *This rate of decline was greater than that of any of the 1,200 other products that the Bureau tracks, including any other high-technology product.* During the same period, the quality-adjusted price of personal computers declined at an annual rate of 23%. Contrary to the Complaint's allegation that Intel's conduct reduced output, sales of x86 microprocessors grew from 136.5 million in 1999, the first year covered by the Complaint, to 324.7 million in 2008. Although the Bureau of Labor Statistics does not make similar price data available for graphics products, over the period covered by the Complaint the quality-adjusted prices of graphics products also declined sharply. Output of graphics products rose over the same period in tandem with microprocessors.

During the time when the Complaint alleges that Intel was suppressing output, Intel made repeated multi-billion dollar investments in new semiconductor manufacturing capacity, even during business downturns. Most recently, in February 2009 Intel announced a \$7 billion investment in U.S. manufacturing, in the midst of the worst business downturn in decades.

Dramatic Increases in Innovation. The Complaint alleges that Intel's conduct has stifled innovation. But the period covered by the Complaint has been characterized by rapid innovation that has increased the functionality and performance of microprocessors and the


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platforms into which they are incorporated. During this period, Intel, among other things:

- Developed dual-core and multi-core microprocessors, with the result that most personal computers (“PCs”) today are sold with microprocessors that contain the brains of at least two separate microprocessors;
- Reduced microprocessor power consumption to improve energy efficiency and enable prolonged battery life;
- Introduced the Centrino mobile technology, the first mobile computing platform optimized for long battery life and wireless connectivity, which sparked an explosion in mobile computing and a paradigm shift in computing toward mobility;
- Introduced other important platform-level innovations, including technologies that enable IT departments to diagnose PCs remotely, even when they are turned off;
- Incorporated cache memory onto its microprocessors and has since dramatically increased the amounts of cache memory on microprocessors;
- Consistently led in transitioning to new manufacturing technologies that in each generation doubled the number of transistors that could be packed into the same area of a microprocessor chip; and
- Consistently led in manufacturing innovations, including its development of the high-k metal gate technology, which Computerworld called “one of the most significant technological advances in the past several decades.”

Intel’s main rival, Advanced Micro Devices (“AMD”) also incorporated important innovations during this period, including 64-bit extensions to the x86 microprocessor architecture, a point-to-point link for multiprocessor systems, and the introduction of an integrated memory controller in an x86 microprocessor for the first time since Intel’s i486SL processor.



This extraordinary level of innovation is a reflection of large investments in research and development, which rose sharply during the period covered by the Complaint. In 1999, Intel spent \$3.1 billion on research and development, and AMD spent \$636 million. In 2008, Intel spent \$5.7 billion on R&D, and AMD spent \$1.8 billion, nearly three times as much as it spent in 1999.

Although the Commission alleges harm to innovation in graphics processing units (“GPUs”), its own Complaint alleges that GPUs have improved dramatically in their functionality and performance. Today, even entry level integrated graphics chipsets from Intel, which the Complaint mislabels as “GPUs” and derides as laggards, render 3D animations and

display high definition content that would not have been possible even a few years ago. During the period in which Intel allegedly suppressed innovation from Nvidia, Nvidia's R&D expenditures rose from \$47 million in 1999 to \$856 million in 2008; Nvidia's R&D expenditures rose by more than \$300 million between 2006 and 2008 alone, an increase of 55 percent over that two-year period.

The large increases in AMD's and Nvidia's R&D expenditures over the period of alleged predation speak volumes to the opportunities available to Intel's competitors. These investments, and the combination of dramatic increases in product quality and unparalleled reductions in prices, provide the true measure of competition in the microprocessor and graphics industries.

A. Microprocessors

The Complaint seeks to characterize Intel as a technological laggard in microprocessors, a claim that disregards the facts disclosed in AMD's own documents in the Commission's records. AMD itself considered Intel to be the technology leader. A 2003 AMD strategy document, written after the release of both the Athlon and Opteron microprocessors that the Complaint claims placed Intel behind AMD, acknowledged that Intel possessed "best in class silicon design," "best in class silicon manufacturing," "a strong record of execution," and "one of the most recognized brands in the world."

In 2004, AMD Executive Vice President Henri Richard, the company's highest ranking sales executive, declared internally that "[i]f you look at it, with an objective set of eyes, you would never buy AMD. I certainly would never buy AMD for a personal system if I wasn't working here." Mr. Richard also declared that "[redacted]." Mr. Richard described AMD as "pathetic" for "selling processors rather than platforms [as Intel did] and exposing a partial story, particularly in the commercial segment, that is clearly inferior to Intel's, if we want to be honest with ourselves." He added that AMD is saddled with a reputation that "we're cheap, less reliable, lower quality consumer type product."

AMD's shortcomings were particularly acute in microprocessors for mobile computers, the fastest growing and now largest industry segment. Thus, one of AMD's most [redacted], stating that "the reason AMD lost business with Sony is that AMD's mobile products fell out of competitiveness with Intel." [redacted] In public, AMD's Chairman conceded that AMD had adopted a strategy under which "we were going to not be as competitive in the mobile space, even though we knew that mobile space was going to be critical." As a consequence, AMD's Chairman conceded, AMD was "late with a competitive product[]" in the mobile space."

AMD trailed Intel in many critical areas, and its executives so recognized. An AMD Corporate Vice President declared, also in 2005, that "[redacted]"

”
A 2003 analysis prepared for AMD by [REDACTED]

A contemporaneous AMD document referenced AMD’s “[l]ow credibility,” which it said was “due to poor product execution track record.”

AMD’s inability to execute was a recurring problem that impeded the company’s ability to compete successfully with Intel. In late 2006 and early 2007, after AMD began selling to Dell, it was unable to manage its supply network and failed to deliver on supply commitments to many of its customers. AMD’s acquisition of Dell as a customer, rather than bringing added success to the company, marked the beginning of a backward slide. AMD alienated loyal customers, prompting them to switch business to Intel. AMD’s Chairman and CEO admitted publicly that AMD’s acquisition of business at major original equipment manufacturers (“OEMs”) “occurred in our view probably faster than we had planned” and that AMD was unable “to make the shift in balance properly.”

In 2007, AMD [REDACTED] explained another AMD shortcoming:

“ [REDACTED] .” When a company that is unable to competes against a company that is best-in-class, as AMD itself described Intel, the market outcomes are predictable.

The Complaint relies on invective to paint ordinary and desirable competitive conduct as anticompetitive exclusion. For example, the Complaint alleges that Intel “threatened” OEMs with the loss of discounts if they increased purchases from Intel competitors. But these alleged “threats” are nothing more than an inherent implication of procompetitive price competition: a supplier offers a better price for more volume when negotiating with a customer that demands greater discounts by threatening to take some or all of the business at issue to another supplier. The offer of a lower price for more volume necessarily implies that the lower price is contingent on the additional volume. The Complaint seeks – by using words such as “threats” and “exclusionary” – to transform procompetitive, above-cost price reductions aimed at winning additional sales into something sinister. But the Supreme Court has repeatedly declared such above-cost discounting to be entirely lawful.¹ Contrary to the Statement of Chairman Leibowitz and Commissioner Rosch accompanying the Complaint, the Supreme Court has erected this rule not because of the peculiarities of private litigation but “because cutting prices in order to increase business often is the very essence of competition ... [and] mistaken inferences ... are especially costly, because they chill the very conduct the antitrust laws are designed to protect.”²

¹ *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 339 (1990) (making clear that “in the context of pricing practices, only predatory pricing has the requisite anticompetitive effect.”); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 223 (1993) (quoting *Atl. Richfield*, 495 U.S. at 340) (this principle applies “regardless of the type of antitrust claim involved.”).

² *Brooke Group*, 509 U.S. at 226 (internal quotations omitted). *See also Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312 (2007); *Verizon Commc'ns Inc. v. Law Offices of*

To characterize pricing that encourages customers to buy more as improper “punishment” is to attack competition itself.

In addition to attacking ordinary discounting, the Complaint alleges that Intel has engaged in illegal bundled pricing for microprocessors and compatible chipsets with integrated graphics. That allegation is false. Intel has provided discounted pricing to OEMs that wish to buy microprocessors or chipsets alone and has priced its “kits” (consisting of microprocessors plus chipsets) to comply with the law.

The Complaint also wrongly alleges that Intel threatened OEMs that considered buying from AMD with the loss of technical support or technical collaborations. In fact, customers that increased their dealings with AMD continued to receive competitive discounts, marketing assistance, and technical support from Intel. Moreover, AMD increased its market share dramatically during the period covered by the Complaint – because of its successes in selling microprocessors for individual consumers, whose requirements are less rigorous than those of commercial customers, and its successful introduction of an innovative new product for servers in 2003.

The Complaint even goes so far as to question technical design decisions, such as the composition of performance benchmarks that were developed by industry bodies in a fair and open process or unilaterally by third parties not controlled by Intel. The Complaint claims that one relevant industry benchmark sometimes cited by Intel unfairly disadvantages AMD, but it ignores the fact that AMD itself publicly endorsed both that same benchmark and the integrity of the organization that developed it. The Complaint not only second guesses the technical judgments made by the industry-wide engineering experts that developed the benchmarks, but seeks to punish Intel for relying on these judgments. The Complaint proposes to do so by requiring Intel to conduct costly “scientific” testing before discussing microprocessor performance with its customers, even though Intel’s customers are themselves sophisticated engineering companies that perform their own testing to evaluate microprocessors.

Contrary to well-accepted antitrust principles, the Complaint treats Intel as if it were a public utility that has an ongoing duty to help competitors. That approach reaches into every corner of the case, however inconsequential. The Complaint wrongly asserts, for example, that Intel, a minor player with a single digit market share in compilers, “degraded” the performance of AMD microprocessors. That contorted charge rests on Intel’s occasional development of compiler optimizations for some of its own microprocessors that were not immediately implemented for AMD microprocessors (which did not even provide the instructions necessary to support the optimizations when Intel first released these optimizations). The relief contemplated by the Complaint would require Intel to delay or even forego product improvements unless it could simultaneously ensure that such improvements equally benefited Intel competitors, essentially requiring Intel to design its products for the benefit of its competitors rather than for its own benefit and the benefit of consumers.

Curtis V. Trinko, LLP, 540 U.S. 398 (2004); *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104 (1986); *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).

B. Graphics

The Complaint is equally flawed with respect to graphics. To begin, the Commission did not even conduct a thorough investigation as to graphics and told Intel that – in the manner of a private plaintiffs’ attorney – it need not do so because it can learn the facts through post-Complaint discovery.

The Complaint incorrectly asserts that Intel has a GPU market share in excess of 50 percent and that it threatens to monopolize the market. But Intel does not even produce or sell discrete GPUs, which provide high-performance graphics rendering for 3D gaming and engineering workstations, among other applications. Intel does sell chipsets with integrated graphics, which combine with circuitry to control the flow of data to and from various components of a computer system and provide less sophisticated graphics functionality than GPUs; these chipsets are typically sold at prices much lower than the prices of discrete GPUs.

The Complaint further alleges that Intel has “degrad[ed]” the interconnection between its microprocessors and discrete GPUs (which Intel does not sell) in an attempt to forestall a challenge to microprocessor-centric computing. This allegation is groundless. As the Complaint acknowledges, discrete GPUs connect to Intel’s microprocessors through an industry standard, non-proprietary interconnection, called “PCI Express.” Intel has done nothing to degrade the connection provided by PCI Express. Moreover, discrete GPUs are complements to Intel microprocessors, and Intel enhances the value of its microprocessors by enabling OEMs and other customers demanding high-performance graphics for their computer systems to interconnect discrete GPUs offered by Nvidia and AMD to Intel microprocessors. Indeed, Intel’s main microprocessor rival, AMD, provides its own GPU solutions, and failing to maintain interconnections between its microprocessors and GPUs offered by Nvidia and AMD could place Intel at a competitive disadvantage to AMD.

Several of the Complaint’s other allegations relate to chipsets with integrated graphics, which Intel does sell. But the Complaint fails to disclose that those chipsets will not continue to be used widely in new computer platforms, because industry innovation is making them obsolete. Basic graphics capability that for the last decade resided in the chipset (having previously been a discrete component) is now being integrated into the microprocessor itself to improve performance, reduce energy demands, and allow smaller computer form factors. This integration is part of and entirely consistent with the industry’s history of innovating by integrating more functionalities on to a single silicon chip, which has brought about computing products with better capabilities, higher performance, and lower prices. Intel is not alone in pursuing this integration path. Nvidia already ships microprocessors with integrated graphics and AMD’s core strategy is to integrate graphics into its microprocessors. Indeed, recognizing the limited future for chipsets with integrated graphics, Nvidia announced in October 2009 that it would no longer be developing chipsets for use with future generations of either Intel or AMD microprocessors. Accordingly, the Complaint’s allegations of purported Intel exclusionary conduct regarding soon-to-be-obsolete chipsets with integrated graphics, while wrong and unsupportable, fail for the additional reason that Intel could not plausibly forestall a long term threat to microprocessor-centric computing or lead to an Intel monopoly in a “GPU” market by anticompetitive conduct aimed at chipsets with integrated graphics.

The Complaint contends that Intel has a duty to license its patents to Nvidia to enable Nvidia to build chipsets for Intel's future-generation microprocessors; the Complaint alleges that Intel has such a duty because it previously licensed Nvidia to build chipsets for an earlier generation of microprocessors. But Intel's 2004 agreement with Nvidia reflects a bargain that the parties reached to cross-license specifically-defined intellectual property rights to each other, and the license grant was solely for the field of use specified in that agreement. That Intel previously agreed to license certain limited intellectual property rights to Nvidia in exchange for carefully negotiated consideration does not establish a duty to license *other* intellectual property rights or rights outside the licensed field of use. Similarly, contrary to the Commission's allegation, Intel owed no duty, beyond any imposed by an agreement between the parties, to disclose its confidential product roadmaps to Nvidia.

C. Section 5 of the FTC Act

The Commission would employ Section 5 of the FTC Act to defy Supreme Court precedent and modern economics and punish Intel for conduct that has promoted competition and benefited consumers. The courts – in particular, the Supreme Court – have established under Section 2 of the Sherman Act clear standards for the kinds of conduct at issue here. These standards embody decades of economic learning as well as the accumulated wisdom of courts, legislators, government enforcers, private litigators, and academics. Yet the Commission has made it clear through the statements that accompany the Complaint that it finds this settled law unsatisfactory as a policy matter. Those statements reflect an intent by the Commission to proscribe procompetitive conduct and evade the clear mandates of the Supreme Court through the unbounded application of Section 5 of the FTC Act.

The Supreme Court has also been particularly insistent that antitrust principles directed at unilateral conduct give clear guidance that businesses can follow, that those principles be reliably administrable through adjudication, and that those principles not undermine the incentives for big and small firms alike to innovate and compete aggressively. The radical expansion of Section 5 that the FTC proposes would – in contravention of Supreme Court dictates – deter and punish pro-competitive business behavior, injure consumers, and undermine the objectives of predictability and administrability.

The Commission is not attempting in this case to use Section 5 to address a gap in the coverage of the antitrust laws. To the contrary, the courts have a long history of articulating under the Sherman Act standards governing the very types of business conduct that the Complaint alleges here – such as discounting and other forms of price competition, exclusive dealing, product redesign, refusals to license intellectual property, and alleged misrepresentations and product disparagement. As the Statement of Chairman Leibowitz and Commissioner Rosch makes clear, the Complaint in this case reflects a frontal assault on modern antitrust jurisprudence that, in the view of these Commissioners, has given a “free pass” to conduct that they believe should be prohibited. Statement of Chairman Leibowitz and Commissioner Rosch, *In the Matter of Intel Corporation*, at 1. At bottom, the Commissioners seek to substitute their own subjective value judgments about Intel's conduct for the clear and administrable standards established by the courts.

With respect to remedies, the Complaint proposes to impose a regulatory regime on some of the world's most innovative and well-performing markets in place of the free-market competition that has produced those results and that the antitrust laws were designed to promote. The Complaint seeks to turn Intel into a public utility. Most notably, the Complaint seeks remedies that would restrict Intel's ability to innovate and develop products that benefit consumers when competitors might be disadvantaged by those innovations, and the Complaint would require that Intel affirmatively aid its competitors. But the Supreme Court has admonished that even monopolists generally have no duty to aid competitors because, among other reasons, enforced sharing of competitive assets with rivals "may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities." *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 408 (2004). The Supreme Court has also warned that "[e]nforced sharing requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing – a role for which they are ill suited." *Id.* By its Complaint, the Commission has unfortunately declared that it is prepared to become a central planner of the microprocessor industry and related industries, and that it is intent on replacing market-driven competition with its own *ad hoc* regulation of Intel's pricing, product design, marketing activities, technological collaborations, and supply decisions.

In its quest to micromanage Intel's business and dictate market conditions, the Commission goes so far as to propose that Intel should be forced to license its patents "upon such terms and conditions as the Commission may order." The Commission proposes to create a scheme under which the Government, and not the market, would decide who can use Intel's inventions. Under the rules the Commission proposes, the inventions created by Intel's engineers and paid for by Intel's shareholders would be available to Intel's competitors merely upon a majority vote of the Commissioners – even if those inventions were protected by patents and other forms of intellectual property. For example, the Complaint asserts that Intel has a duty to provide its chipset technology to Nvidia beyond the field of use for which Nvidia bargained. In so doing, the Complaint seeks to displace the voluntarily negotiated exchange of value under an agreement between Nvidia and Intel with a Government decree that is more to Nvidia's and the Commissioners' liking.

The Complaint also threatens to rewrite other aspects of Intel's intellectual property license agreements by extending their duration or by rescinding carefully negotiated provisions regarding changes in control of the licensees. The Complaint does not and cannot challenge the lawfulness of these provisions, but nevertheless seek to strip Intel of intellectual property rights earned by Intel over many years of dedicated research and enormous investment. The only evident reason is the Commissioners' desire to alter marketplace outcomes to their own liking and to the detriment of competition and consumers.

Response to the Specific Allegations of the Complaint

Except to the extent specifically admitted herein, Intel denies each and every allegation contained in the Commission's Complaint, including all allegations contained in headings or otherwise not contained in one of the Complaint's 106 numbered paragraphs.

The preamble to the Complaint asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in the

preamble. Specifically, Intel denies that it has engaged in conduct that violates Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 45, and denies that this proceeding is in any way in the public interest.

1. The first and third sentences of paragraph 1, and the footnotes to those sentences, contain quotations which speak for themselves and to which no response is required. The remaining sentences of paragraph 1 assert legal conclusions to which no response is required. To the extent that a response is deemed necessary to any of the allegations in paragraph 1, Intel denies the allegations in paragraph 1.

2. The first sentence of paragraph 2 characterizes this action and asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in the first sentence of paragraph 2. Intel denies the allegations in the second sentence of paragraph 2.

3. Intel denies that it possesses monopoly power in the market for CPUs. Intel admits that its unit share of x86 microprocessors (but not all CPUs) has been between 70% and 85% since 1999, and that its share of revenues from such sales has generally been above 80% during that time period. Intel admits that certain CPU manufacturers have exited the CPU business since 1999. In all other respects, Intel denies the allegations of paragraph 3.

4. Intel admits that AMD released the first version of its “Athlon” microprocessor in 1999, and that AMD released a microprocessor called “Opteron” in 2003. In all other respects, Intel denies the allegations of paragraph 4.

5. Intel denies the allegations of paragraph 5.

6. Intel admits that it entered into various forms of sales agreements with its customers. Intel admits that some OEMs chose at various times to purchase microprocessors solely from Intel and that one such OEM had an indemnification agreement with Intel. In all other respects, Intel denies the allegations of paragraph 6.

7. As to the first sentence of paragraph 7, Intel denies that it offered discounts to OEMs to foreclose competition in the relevant CPU markets. Intel states that its discounts constituted proper competitive responses that benefited its customers in the form of lower prices. Intel denies that it priced below an appropriate measure of cost. As to the second and third sentences of paragraph 7, Intel denies that its discount offers foreclosed or excluded any of its competitors, except to the extent that offering customers a superior value proposition resulted in Intel winning sales in competition with those competitors. In all other respects, Intel denies the allegations in the second and third sentences of paragraph 7.

8. Intel admits that it designs and markets software compilers and related libraries. In all other respects, Intel denies the allegations of paragraph 8.

9. Intel denies the allegations of paragraph 9.

10. Intel denies the allegations of paragraph 10.

11. Intel denies the allegations of paragraph 11.
12. Intel denies the allegations of paragraph 12.
13. Intel denies the allegations of paragraph 13.
14. Intel denies the allegations of paragraph 14.
15. The terminology “integrated GPUs” used in paragraph 15 and in other paragraphs is inaccurate. Computer graphics products include (a) “chipsets with integrated graphics,” in which basic graphics capability is integrated into an integrated graphics chipset that also controls the data flow on a computer, and (b) “discrete graphics processing units,” which do not include the control functionality of chipsets, but provide much more sophisticated graphics capability, typically at a much higher price than integrated chipsets. Intel incorporates this objection to the terminology in the Complaint in all relevant responses.

The first and third sentences of paragraph 15 assert legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in the first and third sentences of paragraph 15. Intel denies the allegations in the second sentence of paragraph 15.

16. Intel admits that manufacturers such as Nvidia and AMD, through its affiliate ATI, have developed and are developing certain computer graphics products, which sometimes add more functionality with new product generations. Intel admits that Nvidia and AMD, through its affiliate ATI, claim to be developing General Purpose GPUs and related programming interfaces. Intel admits that some computing applications have adopted certain GP GPU functionality. In all other respects, Intel denies the allegations of paragraph 16.

17. Intel denies the allegations of paragraph 17.
18. Intel denies the allegations of paragraph 18.
19. Intel denies the allegations of paragraph 19.
20. Intel denies the allegations of paragraph 20.
21. Paragraph 21 asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in paragraph 21.
22. Intel denies the allegations in paragraph 22.
23. Intel denies the allegations of paragraph 23.
24. Intel denies the allegations of paragraph 24.
25. Intel denies the allegations of paragraph 25.
26. Intel denies the allegations of paragraph 26.

27. Intel denies the allegations of paragraph 27.
28. Intel denies the allegations in the first sentence of paragraph 28. The second sentence of paragraph 28 asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in the second sentence of paragraph 28.
29. Intel admits the allegations of paragraph 29, except to point out that its correct zip code is 95054.
30. Intel admits the allegations in the first sentence of paragraph 30. The second sentence of paragraph 30 puts forward the Commission's definition of "Intel" for the purposes of this litigation, to which no response is required.
31. Paragraph 31 asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies that all "acts and practices of Intel" during the relevant period "are in or affect commerce in the United States" and therefore denies the allegations in paragraph 31.
32. Intel admits that x86 microprocessors are used in desktop, notebook, and netbook computers and servers, but denies that x86 microprocessors constitute a relevant product market. In all other respects, Intel denies the allegations of paragraph 32, inclusive of subparts (a)-(g).
33. Intel admits the allegations of paragraph 33 except for the last clause. Intel denies that a microprocessor "control[s] other devices integral to the computer system."
34. Intel admits the allegations of paragraph 34.
35. Intel admits that Intel, VIA, and AMD are the only firms that currently produce and sell x86 microprocessors. Intel admits that x86 is the only architecture that runs the versions of Windows enumerated in the second sentence of paragraph 35. Intel admits that x86 is the only architecture that runs the recently released version 10.6 of the Mac operating system, but states that it is not the only architecture that runs all previous versions of the Mac OS. Intel lacks knowledge or information concerning the state of mind of "most purchasers" sufficient to admit or deny the allegations in the third sentence of paragraph 35, and on that basis denies the allegations in the third sentence of paragraph 35.
36. Intel denies that it possesses monopoly power in any properly defined market, and further denies that non-x86 architectures do not exert competitive constraints on it. Intel admits that non-x86 architectures are currently not commonly used in new personal computers, but states that such architectures are attempting to penetrate into personal computers. In all other respects, Intel denies the allegations of paragraph 36.
37. Paragraph 37 asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in paragraph 37, inclusive of subparts (a) and (b).

38. Intel admits that certain computer graphics products process computer graphics, and certain computer graphics products include other functionalities. In all other respects, Intel denies the allegations of paragraph 38.

39. Intel admits that a discrete GPU resides on a piece of silicon in a slot in the computer motherboard separate from the computer's CPU. Basic graphics capability can be integrated into a chipset. Chipsets with integrated graphics capabilities are typically less expensive but provide lesser graphics capabilities than discrete GPUs. In all other respects, Intel denies the allegations of paragraph 39.

40. Paragraph 40 asserts legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel admits that the relevant geographic market for the CPU market is worldwide, but specifically denies the validity of the Commission's various other proposed product market definitions asserted elsewhere in the Complaint.

41. As to the first and second sentences of paragraph 41, Intel denies that it possesses monopoly power in the market for CPUs. As to the second sentence of paragraph 41, Intel admits that its unit share of sales of x86 CPUs (but not all CPUs) has been between 70% and 85% since 1999, and that its revenue share of such sales generally has been above 80% during that time period. In all other respects, Intel denies the allegations of paragraph 41.

42. Intel admits that for an entrant to succeed in introducing an x86 microprocessor, it would have to (1) develop a product; (2) develop or acquire manufacturing capability (which is widely available from contract manufacturers known as foundries); (3) consider the potential for infringement of applicable patents and other intellectual property rights; and (4) market the product. Intel denies that it has used unfair methods of competition to maintain its position in the CPU market or that it has monopoly power in the CPU market. In all other respects, Intel denies the allegations of paragraph 42.

43. Intel admits that development of a new x86 microprocessor can take years from design to commercial release, with significant associated capital expenditures. Intel further admits that it is important for a microprocessor to be compatible with the operating systems and applications software used by customers. In all other respects, Intel denies the allegations of paragraph 43.

44. Intel admits that a supplier of an x86 microprocessor must obtain access to appropriate manufacturing facilities capable of mass-producing x86 microprocessors. Intel states that it is possible for an entrant to use external manufacturers, as both AMD and Nvidia currently do to manufacture their products. Intel admits the cost of developing, building, and equipping a microprocessor fabrication facility ("fab") can be as much as \$3 billion and that a manufacturer must upgrade a fab at a very substantial cost every two or three years. In all other respects, Intel denies the allegations of paragraph 44.

45. Intel admits that an entrant would need to consider the potential for infringement of applicable patents in designing and marketing a new microprocessor. Intel states that an entrant may enter the market notwithstanding its infringement of applicable patents if it possesses sufficient intellectual property rights to assert against the holders of those patents, including incumbent producers. In all other respects, Intel denies the allegations of paragraph 45.

46. Intel admits that buyers of microprocessor components generally demand highly reliable products, and that buyers of computer systems, and particularly business users, also value reliability. Intel states that its products have historically had a well-earned reputation for reliability superior to those of its competitors. In all other respects, Intel denies the allegations of paragraph 46.

47. Intel denies the allegations of paragraph 47.

48. Intel denies the allegations in the first sentence of paragraph 48. The second and third sentences of paragraph 48 assert legal conclusions to which no response is required; to the extent that a response is deemed necessary, Intel denies the allegations in the second and third sentences of paragraph 48.

49. As to the first sentence of paragraph 49, Intel admits that Hewlett-Packard/Compaq, Dell, IBM, Lenovo, Toshiba, Acer/Gateway, Sun, Sony, NEC, Apple and Fujitsu are currently, and/or were during the period addressed in the Complaint, among the largest OEMs in the world and are often referred to as "Tier One OEMs." As to the second sentence of paragraph 49, Intel admits that, during the relevant period, Tier One OEMs have accounted for more than 50% of the sales of personal computers. In all other respects, Intel denies the allegations of the first and second sentences of paragraph 49. As to the third sentence of paragraph 49, Intel denies that it has prevented or limited the sale of non-Intel microprocessors to those Tier One OEMs, or any other customers, except to the extent that offering those customers a superior value proposition has resulted in Intel winning sales in competition with other firms.

50. Intel lacks knowledge or information sufficient to admit or deny the allegations concerning the state of mind of OEMs in the first sentence of paragraph 50, and on that basis denies those allegations. Intel denies it has engaged in anticompetitive actions or made threats of retaliation to its customers, including the Tier One OEMs, for using competitive microprocessors. Intel denies that Tier One OEMs were susceptible to "retaliation." Intel admits that all of the Tier One OEMs have purchased from Intel during the relevant period. Intel denies that it is the only firm capable of being a sole supplier to a Tier One OEM. Intel denies that it is the only microprocessor supplier with the current capability to supply all or nearly all of the requirements of a Tier One OEM. Intel admits that its x86 microprocessor manufacturing capacity is the largest in the industry. Intel denies that Tier One OEMs could not credibly threaten to shift a significant portion of their microprocessor purchases from Intel. Intel denies that Tier One OEMs required Intel as a primary supplier. In all other respects, Intel denies the allegations of paragraph 50.

51. Intel denies the allegations of paragraph 51. Intel states that it provides discounts, and not "payments," to its customers, and that the Complaint's mischaracterization of discounts as "payments" is an attempt to disparage the most common form of legitimate competition. Intel further states it engages in regular discussions with its customers on a variety of business issues, including joint development projects, but did not and does not threaten or coerce its customers.

52. Intel denies the allegations of paragraph 52.

