

1 Plaintiffs Jordan Walker, Michael Bensignor, d/b/a Mike’s Computer Services, Fred
2 Williams, and Karol Juskiewicz, on behalf of themselves and all others similarly situated in the
3 United States, bring this action for damages and injunctive relief under the federal antitrust laws
4 against Defendants named herein, demanding trial by jury, and complaining and alleging as
5 follows:

6 **NATURE OF THE CASE**

7 1. This lawsuit is brought as a class action on behalf of individuals and entities that
8 purchased “Graphics Processing Units and Cards” (“GPU” or “GPUs”) (as further defined below)
9 in the United States directly from Defendants, their predecessors, or their controlled subsidiaries
10 and affiliates during the period beginning December 4, 2002 and continuing through the present
11 (the “Class Period”). Defendants Nvidia Corporation (“Nvidia”) and ATI Technologies, Inc.
12 (“ATI”) control the market for GPU.

13 2. During the Class Period, Defendants Nvidia and ATI conducted numerous secret
14 meetings and communications in which they conspired to fix, raise, maintain and stabilize prices
15 of GPUs sold in the United States. At these meetings, Defendants also colluded to coordinate the
16 timing of new product introductions that were based on similar, competing technologies which
17 also had the effect of fixing, raising, maintaining, and stabilizing GPU prices. Advanced Micro
18 Devices, Inc. (“AMD”), which finalized its acquisition of ATI on October 25, 2006, participated
19 in this conspiracy as a successor in interest to ATI for the period preceding the acquisition and
20 through its operation of ATI in the period following the acquisition.

21 3. As detailed with more specificity below, prior to entering the conspiracy, Nvidia
22 and ATI competed vigorously on innovation, speed-to-market, and price, with product
23 introductions at varying times and price points, often leapfrogging each other in product
24 advances. This competition was consistent with competitive sectors of the consumer
25 electronics/computer industry, which generally are characterized by increasing performance and
26 decreasing prices.

27 4. After the conspiracy began, a new pattern emerged. The formerly competitive
28 entities began a pattern of introducing products simultaneously or near simultaneously at identical

1 or near identical prices. In addition, GPU prices trended upward while the prices of GPU
2 components and raw materials, and the prices of comparable products, most notably CPUs,
3 continued to drop. The alleged conduct is consistent with conspiracy and inconsistent with
4 independent competitive conduct. In short, the GPU market has not functioned as would be
5 expected of a competitive market during the conspiracy.

6 5. A federal grand jury is currently conducting an investigation of Defendants'
7 conduct as alleged in this Complaint and has issued grand jury subpoenas to Defendants Nvidia
8 and AMD in connection with that investigation. The economic evidence also supports the
9 specific conspiratorial agreement that is under investigation and that is being alleged in this
10 Complaint, evidence that is inconsistent with independent competitive conduct. In particular, the
11 structure of the relevant market and economic data on pricing and supply illustrate that this
12 market has not functioned as would be expected of a competitive market during the Class Period.

13 6. Because of the unlawful price-fixing and other conspiratorial conduct alleged
14 herein, Plaintiffs and other Class members paid artificially inflated prices for GPUs and have
15 suffered antitrust injury to their business or property.

16 **JURISDICTION AND VENUE**

17 7. Plaintiffs bring this action to obtain injunctive relief and to recover damages,
18 including treble damages, costs of suit and reasonable attorneys' fees, premised on Defendants'
19 violation of the Sherman Act, 15 U.S.C. § 1.

20 8. The Court has jurisdiction over the subject matter of this action pursuant to
21 Sections 4(a) and 16 of the Clayton Act, 15 U.S.C. §§ 15 and 26, and 28 U.S.C. §§ 1331 and
22 1337. Venue is proper in this district pursuant to Section 12 of the Clayton Act, 15 U.S.C. § 22,
23 and 28 U.S.C. §§ 1391(b), (c) and (d) because a substantial part of the events giving rise to
24 Plaintiffs' claims occurred in this District, a substantial portion of the affected interstate trade and
25 commerce discussed below has been carried out in this District, and one or more of the
26 Defendants reside in this District.

27 9. As used herein, the term "Graphics Processing Units and Cards" (hereinafter
28 "GPU" or "GPUs") includes all types of GPUs used in discrete graphics cards and sold during the

1 Class Period. Discrete graphics cards are those that have their own dedicated memory. In
2 contrast, integrated graphics cards are inserted directly into the computer's motherboard chipset
3 and typically use the random access memory ("RAM") of the computer.

4 10. A GPU (also sometimes known as a visual processing unit, or VPU) is a dedicated
5 graphics rendering device for computers, workstations, servers, game consoles, and mobile
6 devices, including handheld personal digital assistants (referred to as PDAs) or cellular
7 telephones. A GPU consists of a highly specialized semiconductor and related components that
8 increase the speed, complexity, and visual fidelity of digital images that can be displayed on
9 graphical interfaces, such as computer monitors.

10 11. Modern GPUs are very efficient at manipulating and displaying computer
11 graphics, and their highly parallel structure makes them more effective than typical Central
12 Processing Units ("CPUs") for a range of complex algorithms. Modern GPUs provide support for
13 3-D computer graphics, and typically include digital video-related functions as well.

14 12. The "Class Period" or "conspiracy period" means the period from December 4,
15 2002 through the present.

16 13. "Person" means any individual, partnership, corporation, association, or other
17 business or legal entity.

18 **PLAINTIFFS**

19 12. Plaintiff Jordan Walker ("Walker") resides at 4201 Road North, Buhl, Idaho
20 83316. During the Class Period, Plaintiff Walker directly purchased GPU from one or more of
21 the Defendants or their co-conspirators and has been injured by reason of the antitrust violations
22 alleged in this Complaint.

23 13. Plaintiff Michael Bensignor, d/b/a Mike's Computer Services ("Bensignor"), is a
24 sole proprietorship with its principal place of business in Philadelphia, Pennsylvania. During the
25 Class Period, Plaintiff Bensignor directly purchased GPU from one or more of the Defendants or
26 their co-conspirators and has been injured by reason of the antitrust violations alleged in this
27 Complaint.

1 14. Plaintiff Fred Williams (“Williams”) is a resident of the State of California.
2 During the Class Period, Plaintiff Williams directly purchased GPU from one or more of the
3 Defendants or their co-conspirators and has been injured by reason of the antitrust violations
4 alleged in this Complaint.

5 15. Plaintiff Karol Juskiewicz (“Juskiewicz”) is a resident of the State of California.
6 During the Class Period, Plaintiff Juskiewicz directly purchased GPU from one or more of the
7 Defendants or their co-conspirators and has been injured by reason of the antitrust violations
8 alleged in this Complaint.

9 16. Plaintiffs Walker, Bensignor, Williams, and Juskiewicz (“Plaintiffs”) hereby agree
10 to submit to the jurisdiction of this Court by filing this Complaint.

11 **DEFENDANTS**

12 16. Defendant Nvidia Corporation (“Nvidia”) is a business entity organized under the
13 laws of Delaware with its principal place of business located at 2701 San Tomas Expressway,
14 Santa Clara, California 95050. During the time period covered by this Complaint, Nvidia
15 manufactured, marketed, sold and distributed GPUs to customers throughout the United States.
16 Nvidia earned \$2.375 billion in revenues in 2005.

17 17. Defendant ATI Technologies, Inc. (“ATI”) is a business entity organized under the
18 laws of Canada with its principal place of business located at 1 Commerce Valley Drive East,
19 Markham, Ontario, Canada L3T 7X6. During the time period covered by this Complaint, ATI
20 manufactured, marketed, sold and distributed GPUs to customers throughout the United States.
21 ATI earned \$2.222 billion in revenues in 2005.

22 18. Defendant Advanced Micro Devices, Inc. (“AMD”) is a California corporation
23 with its principal place of business located in Sunnyvale, California. AMD is a computer chip
24 manufacturer that has as its principal business the manufacturing of computer central processing
25 units. On October 25, 2006, AMD finalized its acquisition of ATI for \$5.4 billion. Plaintiffs are
26 informed and believe, and on that basis allege, that as a consequence of that acquisition, AMD
27 expressly or impliedly, or by operation of law, assumed responsibility for the liabilities of ATI,
28 including the present litigation. After the acquisition, top-level executives of ATI who were in a

1 position to know of the conspiracy became executives of AMD. After its acquisition of ATI,
2 AMD manufactured, marketed, sold and distributed GPUs to customers throughout the United
3 States.

4 19. Defendant AMD US Finance, Inc. (“AMD Finance”) is a corporation formed
5 under the laws of Delaware with its principal place of business located at One AMD Place,
6 Sunnyvale, California. AMD Finance is a wholly-owned subsidiary of AMD.

7 20. Defendant 1252986 Alberta ULC (“Alberta ULC”) is an unlimited liability
8 corporation formed under the Alberta Business Corporations Act with its designated office listed
9 as 1200, 700 Second Street SW, Calgary, Alberta, Canada. Alberta ULC is a wholly-owned
10 subsidiary of AMD Finance.

11 21. ATI is a wholly owned subsidiary of Defendant Alberta ULC. Defendants AMD
12 Finance and Alberta ULC have assumed the liabilities of ATI pursuant to the Alberta Business
13 Corporations Act. These assumed liabilities include the present litigation.

14 **CO-CONSPIRATORS**

15 22. Various other persons, firms and corporations, not named as Defendants herein,
16 and presently unknown to Plaintiffs, have participated as co-conspirators with Defendants and
17 have performed acts and made statements in furtherance of the conspiracy and/or in furtherance
18 of the anticompetitive, unfair or deceptive conduct.

19 23. Whenever in this Complaint reference is made to any act, deed or transaction of
20 any corporation, the allegation means that the corporation engaged in the act, deed or transaction
21 by or through its officers, directors, agents, employees, or representatives while they were
22 actively engaged in the management, direction, control, or transaction of the corporation’s
23 business or affairs.

24 **INTERSTATE TRADE AND COMMERCE**

25 24. Throughout the Class Period, there was a continuous and uninterrupted flow of
26 GPU sales in interstate and international commerce throughout the United States.

27 25. Defendants’ unlawful activities, as described herein, took place within the flow of
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1 interstate commerce, as well as throughout the world, and had a direct, substantial and reasonably
2 foreseeable effect upon interstate and international commerce, including the United States GPU
3 market.

4 **CLASS ACTION ALLEGATIONS**

5 26. Plaintiffs bring this action on behalf of themselves and a class of all others
6 similarly situated, pursuant to Federal Rules of Civil Procedure 23(a), 23(b)(2) and 23(b)(3) on
7 behalf of all members of the following class (the "Class"):

8 All persons and entities who, during the period December 4, 2002 to the
9 present, purchased GPU in the United States directly from Defendants or
10 any subsidiaries or affiliates thereof. Excluded from the Class are
11 Defendants, their parent companies, subsidiaries and affiliates, any co-
12 conspirators, and all governmental entities.

13 27. This action has been brought and may properly be maintained as a class action
14 pursuant to Rule 23 of the Federal Rules of Civil Procedure for the following reasons:

15 a. The Class is ascertainable and there is a well-defined community of
16 interest among members of the Class;

17 b. Based upon the nature of trade and commerce involved and the
18 number of direct purchasers of GPUs, Plaintiffs believe that the members of the
19 Class number in the hundreds or thousands, and therefore are sufficiently
20 numerous that joinder of all Class members is not practicable;

21 c. Plaintiffs' claims are typical of the claims of the members of the
22 Class because Plaintiffs directly purchased GPUs manufactured by one or more of
23 the Defendants or their co-conspirators, and therefore Plaintiffs' claims arise from
24 the same common course of conduct giving rise to the claims of the members of
25 the Class and the relief sought is common to the Class;

26 d. The following common questions of law or fact, among others,
27 exist as to the members of the Class:

28 i. Whether Defendants formed and operated a combination or
conspiracy to fix, raise, maintain, or stabilize GPU prices;

- 1 ii. Whether the combination or conspiracy caused GPU prices
- 2 to be higher than they would have been in the absence of Defendants’
- 3 conduct;
- 4 iii. The operative time period of Defendants’ combination or
- 5 conspiracy;
- 6 iv. Whether Defendants’ conduct caused injury to the business
- 7 or property of Plaintiffs and the members of the Class;
- 8 v. The appropriate measure of the amount of damages suffered
- 9 by the Class;
- 10 vi. Whether Defendants’ conduct violates Section 1 of the
- 11 Sherman Act; and
- 12 vii. The appropriate nature of class-wide equitable relief.
- 13 e. These and other questions of law and fact common to the members
- 14 of the Class predominate over any questions affecting only individual members,
- 15 including legal and factual issues relating to liability and damages;
- 16 f. Plaintiffs will fairly and adequately protect the interests of the Class
- 17 in that Plaintiffs have no interests that are antagonistic to other members of the
- 18 Class and have retained counsel competent and experienced in the prosecution of
- 19 class actions and antitrust litigation to represent them and the Class;
- 20 g. A class action is superior to other available methods for the fair and
- 21 efficient adjudication of this litigation since individual joinder of all damaged
- 22 Class members is impractical. The damages suffered by the individual Class
- 23 members are relatively small, given the expense and burden of individual
- 24 prosecution of the claims asserted in this litigation. Thus, absent the availability of
- 25 class action procedures it would not be feasible for Class members to redress the
- 26 wrongs done to them. Even if the Class members could afford individual
- 27 litigation, the court system could not. Further, individual litigation presents the
- 28 potential for inconsistent or contradictory judgments and would greatly magnify

1 the delay and expense to all parties and the court system. Therefore, the class
2 action device presents far fewer case management difficulties and will provide the
3 benefits of unitary adjudication, economy of scale, and comprehensive supervision
4 in a single court;

5 h. Defendants have acted, and/or refused to act, on grounds generally
6 applicable to the Class, thereby making appropriate final injunctive relief with
7 respect to the Class as a whole; and

8 i. In the absence of a class action, Defendants would be unjustly
9 enriched because they would be able to retain the benefits and fruits of their
10 wrongful conduct.

11 **FACTUAL ALLEGATIONS**

12 28. During the Class Period, Defendants and their co-conspirators engaged in the
13 business of marketing and selling GPUs throughout the United States.

14 29. Defendant Nvidia is a worldwide leader in programmable graphics processor
15 technologies. According to its website, Nvidia has four major product-line operating segments:
16 the graphics processing unit, or GPU, Business; the media and communications processor, or
17 MCP, Business; the Handheld GPU Business; and the Consumer Electronics Business.

18 30. Nvidia's GPU Business is composed of products that support desktop personal
19 computers, notebook PCs, and professional workstations. Its MCP Business includes NVIDIA
20 nForce products that operate as a single chip or chipset that can off-load system functions, such as
21 audio processing and network communications, and perform these operations independently from
22 the host CPU. The Handheld GPU Business includes products used in handheld personal digital
23 assistants, cellular phones and other handheld devices. Finally, the Consumer Electronics
24 Business concentrates on products used in video game consoles and other digital consumer
25 electronic devices including Sony's Playstation3 videogame consoles.

26 31. The world's leading PC and Handset OEMs (Original Equipment Manufacturers)
27 incorporate Nvidia's technology into their products, including Apple, Dell, Fujitsu Siemens,
28 Gateway, HP, IBM, Lenovo, LG, Medion, Mitsubishi, Motorola, MPC, NEC, Samsung, Sony

1 Electronics, Sony Ericsson, and Toshiba. System builders such as Alienware, Falcon Northwest,
2 HCL, SAHARA and Shuttle also use Nvidia GPUs in their products. Similarly, Nvidia's
3 products have been adopted by the world's leading add-in card and motherboard manufacturers,
4 including ASUS, BFG, EVGA, GIGABYTEM, MSI, Palit, Point of View and XFX.

5 32. Defendant ATI is also a world leader in the manufacture and development of GPU.
6 Like Nvidia, ATI's GPUs are found in desktop and notebook computers and consumer electronic
7 devices. ATI's computer products include all 3-D graphics, video and multimedia products and
8 chipsets developed for use in desktop and notebook computers, including professional
9 workstations, servers and home media PCs. Its consumer electronics products include products
10 used in mobile phones, PDAs, digital televisions and game consoles.

11 33. ATI sells its products through various channels. It sells to OEMs and system
12 integrators who build ATI's products into their PCs. It sells to original design manufacturers who
13 add ATI's products to their PC motherboard products or graphic board products. It also sells to
14 traditional and online distributors and retailers, as well as directly to consumers.

15 **I. Defendants' Agreement To Restrain Trade**

16 34. Defendants ATI and Nvidia have engaged in a series of secret meetings and
17 communications in which they restrained trade by (1) agreeing to reduce competition with each
18 other in order to maintain and increase their margins; (2) agreeing to fix prices; and (3)
19 coordinating the timing of when similar products were introduced into the market.

20 35. As a result of these meetings, on many occasions throughout the Class Period, ATI
21 and Nvidia agreed to set the price for their GPU products and coordinate when these products
22 would be introduced into the market. By agreeing on the price of the products and the timing of
23 the product launches, ATI and Nvidia were able to, and did in fact, inflate the prices of GPUs
24 charged to Plaintiffs and Class members during the Class Period.

25 **A. The DOJ Investigation**

26 36. Plaintiffs' allegations of collusion are supported by the existence of a criminal
27 investigation by the U.S. Department of Justice ("DOJ") into these allegations, which has been
28 ongoing for over ten months.

1 37. On November 30, 2006, AMD announced that it had “received a subpoena from
2 the U.S. Department of Justice Antitrust Division in connection with the DOJ’s investigation into
3 potential antitrust violations related to graphics processors and cards.”

4 38. On November 30, 2006, Nvidia announced that it had “received a subpoena from
5 the San Francisco Office of the Antitrust Division of the DOJ in connection with the latter’s
6 investigation into potential antitrust violations related to Graphics Processing Units and Cards.”
7 One report indicated: “[t]he Department of Justice investigators asked Nvidia for pricing
8 documents, customer agreements and other documents, company spokesman Michael Hara said
9 Friday. ‘They have asked for a pretty big data dump that goes back to the late ‘90s,’ Hara said.
10 ‘It’s a fairly broad request.’”

11 39. On December 4, 2006, it was reported that “The US Department of Justice
12 subpoenaed Defendants for information as to possible price-fixing in the graphic chip industry.”

13 40. In a subsequent filing with the Securities and Exchange Commission, AMD
14 confirmed that the investigation conducted by DOJ is a criminal one. This fact is significant
15 because, according to Chapter III, Section C.5 of the DOJ’s *Antitrust Division Manual*, “[c]urrent
16 Division policy is to proceed by criminal investigation and prosecution in cases involving
17 horizontal, *per se* unlawful agreements such as price-fixing, bid rigging and horizontal customer
18 and territorial allocations.”

19 41. Despite the passage of time, and despite the fact that Defendants Nvidia and AMD
20 are public companies, neither Defendant has denied the allegations of anticompetitive meetings or
21 stated that there was no plausible basis for the investigation being undertaken.

22 42. Moreover, neither Defendant has stated that they have conducted an internal
23 investigation which exonerated them or found that the criminal grand jury investigation was
24 launched for implausible reasons.

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1 **B. Defendants' Sharp Departure from Vigorous Competition Prior**
2 **to the Conspiracy**

3 43. As explained in more detail in paragraphs 58 through 112, Defendants' anti-
4 competitive behavior during the conspiracy period was a sharp departure from their vigorous
5 competition prior to the conspiracy.

6 44. Prior to the start of the conspiracy, the GPU market behaved as one would expect a
7 competitive market to behave, particularly one involving high technology products. Nvidia and
8 ATI raced to be first-to-market, leapfrogging one another with competing product introductions.
9 These product introductions during the pre-conspiracy period also had various and substantially
10 divergent prices.

11 45. In sharp contrast, during the conspiracy period, the competition between Nvidia
12 and ATI came to a halt. Defendants stopped competing on price and their competing product
13 introductions no longer leapfrogged one another.

14 46. The significant difference in Defendants' behavior during the pre-conspiracy and
15 conspiracy periods is illustrated by the price and time disparities of their competing product
16 introductions during both periods.

17 47. During the pre-conspiracy period, the difference in the price of Defendants'
18 competing product introductions ranged from \$50 to \$250, with an average difference of \$117 per
19 product.

20 48. During the pre-conspiracy period, none of Defendants' product releases were
21 identically priced.

22 49. By contrast, during the conspiracy period, every single competing product release
23 by Defendants was identically priced.

24 50. There were equally significant disparities in Defendants' timing of competing
25 product introductions in the pre-conspiracy and conspiracy periods.

26 51. During the pre-conspiracy period, the time between competing product
27 introductions ranged from four months to 11 months, with an average difference of 236 days.
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1 52. In addition, during the pre-conspiracy period, none of Defendants’ competing
2 product releases occurred on the exact same day. Seven of the ten product releases during the
3 pre-conspiracy period occurred within six to 11 months of one another. Indeed, five of these
4 releases occurred either ten or 11 months of one another. The remaining product releases
5 occurred within four or five months of one another.

6 53. By contrast, during the conspiracy period, the time between competing product
7 introductions ranged from the same day (no difference) to three months, with an average
8 difference of 23 days.¹

9 54. In addition, during the conspiracy period, of the eleven competing product releases
10 by Defendants, two occurred on the exact same day and two others occurred within ten days of
11 one another. The remaining product releases during the conspiracy period occurred within one to
12 three months of one another – with the longest gap during the entire conspiracy period being
13 where competing product releases were made three months apart.

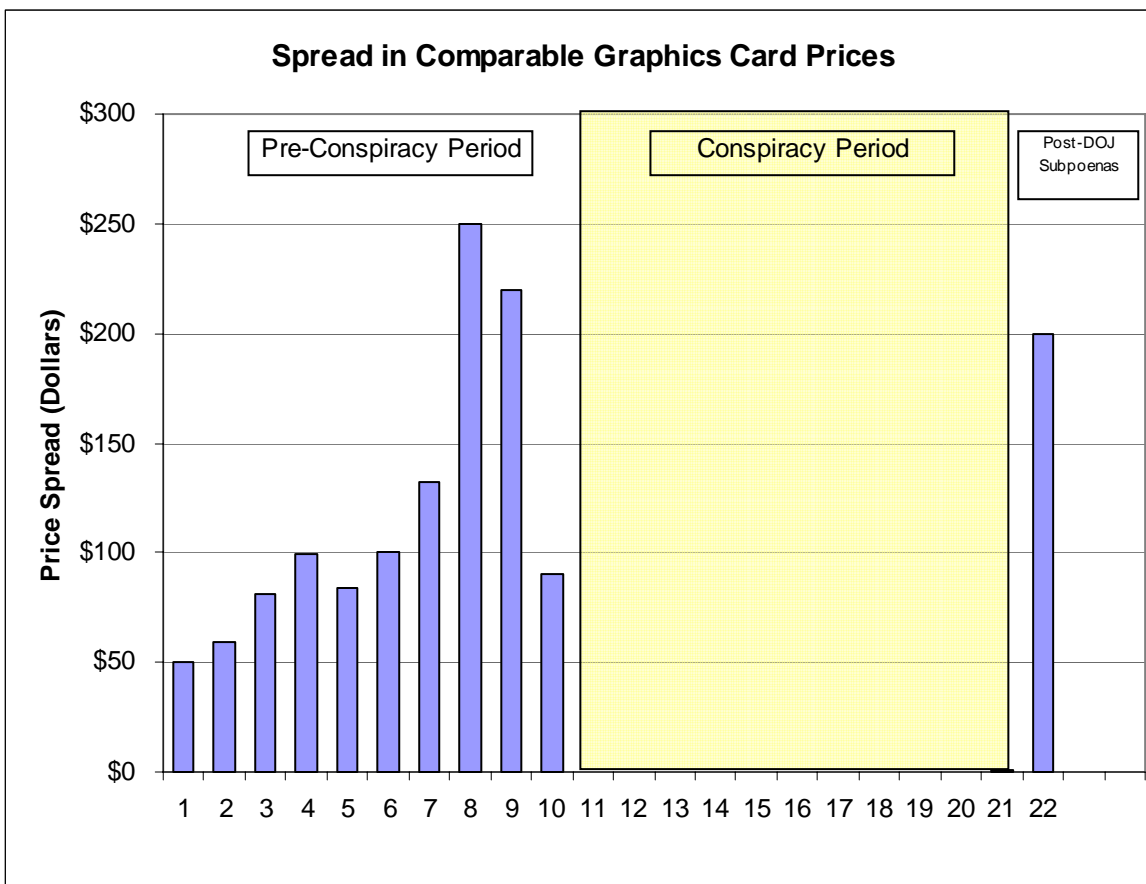
14 55. The pricing and timing of competing product introductions before the conspiracy,
15 during the conspiracy, and after the Defendants became aware of the DOJ investigation is
16 depicted in the following charts:²

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22 ¹ Where publicly available sources have not identified a specific product introduction date, but
23 rather identified only a specific month, Plaintiffs have used the 15th of the month in question for
24 purposes of calculating the average. With respect to the only example where the publicly
25 available sources confirmed that competing products were released in the same month, but did not
26 specify the releases dates within the month, Plaintiffs have assumed a 15 day difference between
27 the product introductions for purposes of calculating the average.

28 ² Where publicly available sources have not identified a specific product introduction date, but
rather identified only a specific month, Plaintiffs have used the 15th of the month in question for
purposes of charting the difference between product introduction dates. With respect to the three
of 22 examples where the publicly available sources confirmed that competing products were
released in the same month, but did not specify the releases dates within the month, Plaintiffs
have assumed a 15 day difference between the product introductions for purposes of charting the
difference between product introduction dates.

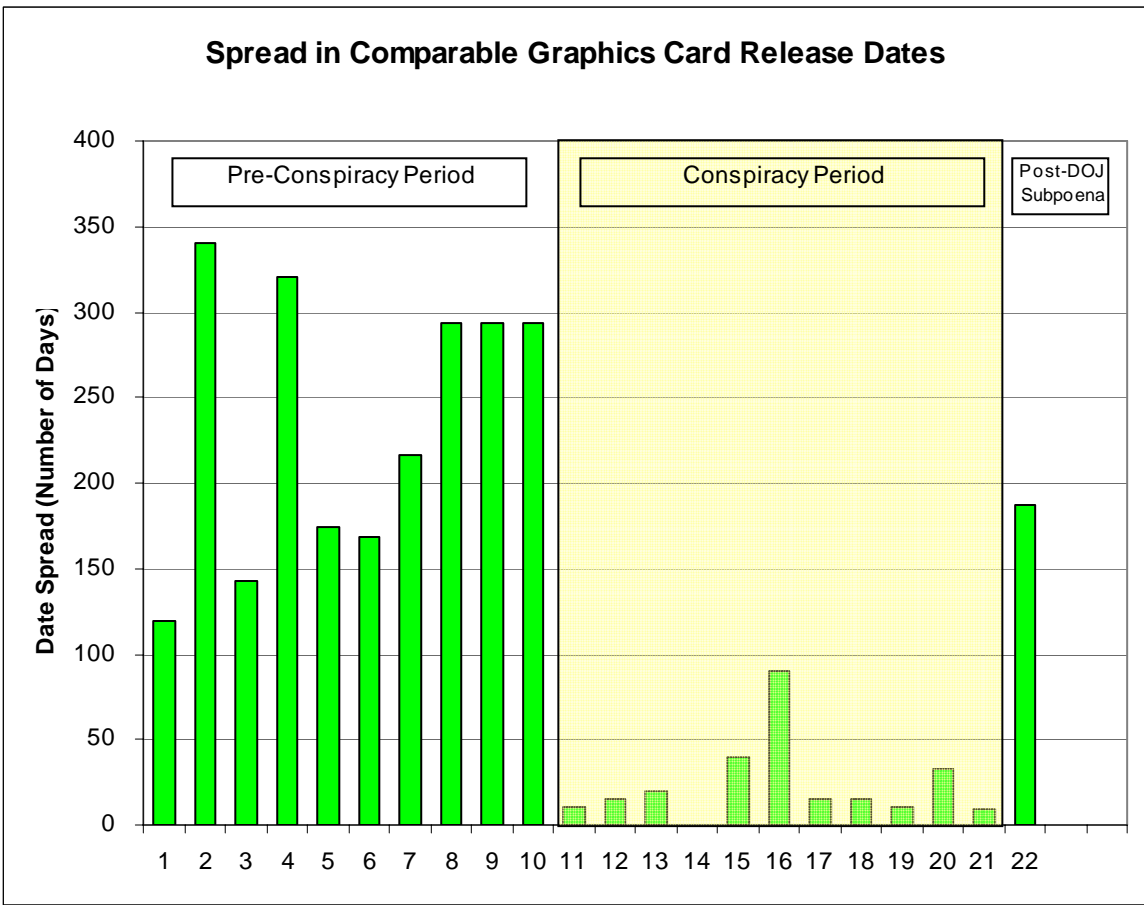
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1.	Riva128 (\$199, 9/1997) & 3D Rage II (\$149, 1/12/1998)	12.	GeForce 5600 (\$200, 4/2003) & Radeon 9600 (\$200, 4/2003)
2.	Riva TNT 16MB (\$170, 3/23/1998) & Rage Fury (\$229, 2/26/1999)	13.	GeForce 6800 Ultra (\$499, 4/14/2004) & Radeon X800 XT PE (\$499, 5/4/2004)
3.	Riva TNT2 Ultra (\$230, 3/15/1999) & Rage Fury Pro (\$149, 8/5/1999)	14.	GeForce 6800 GT (\$399, 5/4/2004) & Radeon X800 Pro (\$399, 5/4/2004)
4.	GeForce256 DDR (\$300, 8/31/1999) & Radeon DDR (\$399, 7/17/2000)	15.	GeForce 6600 GT (\$199, 8/12/2004) & Radeon X600 XT (\$199, 9/21/2004)
5.	GeForce2 MX400 (\$115, 3/6/2001) & Radeon 7500 (\$199, 8/27/2001)	16.	GeForce 6200 GT (\$140, 7/2005) & Radeon 9550 (\$140, 4/2005)
6.	GeForce3 (\$499, 2/27/2001) & Radeon 8500 (\$399, 8/14/2001)	17.	GeForce 6800 GT (\$299, 9/2005) & Radeon X800 XL CrossFire (\$299, 9/2005)
7.	GeForce4 Ti4400 (\$267, 3/18/2002) & Radeon 8500 (\$399, 8/14/2001)	18.	GeForce 6800 (\$199, 9/2005) & Radeon X800 CrossFire (\$199, 9/2005)
8.	GeForce3 Ti500 128MB (\$399, 10/1/2001) & Radeon 9000 Pro 128MB (\$149, 7/22/2002)	19.	GeForce 7600GT 256MB (\$175, 5/5/2006) & Radeon X1600 256MB (\$175, 4/24/2006)
9.	GeForce3 Ti500 64MB (\$349, 10/1/2001) & Radeon 9000 Pro 64MB (\$129, 7/22/2002)	20.	GeForce 7950 GT (\$269.99, 9/14/2006) & Radeon X1950 Pro (\$269.99, 10/17/2006)
10.	GeForce3 Ti200 (\$199, 10/1/2001) & Radeon 9000 (\$109, 7/22/2002)	21.	GeForce 7900 GS (\$200, 9/6/2006) & Radeon X1650 Pro (\$199, 9/15/2006)
11.	GeForce FX 5800 (\$399, 5/2003) & Radeon 9800 (\$399, 5/5/2003)	22.	GeForce 8800 GTX (\$599, 11/8/2006) & Radeon HD 2900 XT (\$399, 5/14/2007)

See *infra* ¶¶ 58-112.

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1.	Riva128 (\$199, 9/1997) & 3D Rage II (\$149, 1/12/1998)	12.	GeForce 5600 (\$200, 4/2003) & Radeon 9600 (\$200, 4/2003)
2.	Riva TNT 16MB (\$170, 3/23/1998) & Rage Fury (\$229, 2/26/1999)	13.	GeForce 6800 Ultra (\$499, 4/14/2004) & Radeon X800 XT PE (\$499, 5/4/2004)
3.	Riva TNT2 Ultra (\$230, 3/15/1999) & Rage Fury Pro (\$149, 8/5/1999)	14.	GeForce 6800 GT (\$399, 5/4/2004) & Radeon X800 Pro (\$399, 5/4/2004)
4.	GeForce256 DDR (\$300, 8/31/1999) & Radeon DDR (\$399, 7/17/2000)	15.	GeForce 6600 GT (\$199, 8/12/2004) & Radeon X600 XT (\$199, 9/21/2004)
5.	GeForce2 MX400 (\$115, 3/6/2001) & Radeon 7500 (\$199, 8/27/2001)	16.	GeForce 6200 GT (\$140, 7/2005) & Radeon 9550 (\$140, 4/2005)
6.	GeForce3 (\$499, 2/27/2001) & Radeon 8500 (\$399, 8/14/2001)	17.	GeForce 6800 GT (\$299, 9/2005) & Radeon X800 XL CrossFire (\$299, 9/2005)
7.	GeForce4 Ti4400 (\$267, 3/18/2002) & Radeon 8500 (\$399, 8/14/2001)	18.	GeForce 6800 (\$199, 9/2005) & Radeon X800 CrossFire (\$199, 9/2005)
8.	GeForce3 Ti500 128MB (\$399, 10/1/2001) & Radeon 9000 Pro 128MB (\$149, 7/22/2002)	19.	GeForce 7600GT 256MB (\$175, 5/5/2006) & Radeon X1600 256MB (\$175, 4/24/2006)
9.	GeForce3 Ti500 64MB (\$349, 10/1/2001) & Radeon 9000 Pro 64MB (\$129, 7/22/2002)	20.	GeForce 7950 GT (\$269.99, 9/14/2006) & Radeon X1950 Pro (\$269.99, 10/17/2006)
10.	GeForce3 Ti200 (\$199, 10/1/2001) & Radeon 9000 (\$109, 7/22/2002)	21.	GeForce 7900 GS (\$200, 9/6/2006) & Radeon X1650 Pro (\$199, 9/15/2006)
11.	GeForce FX 5800 (\$399, 5/2003) & Radeon 9800 (\$399, 5/5/2003)	22.	GeForce 8800 GTX (\$599, 11/8/2006) & Radeon HD 2900 XT (\$399, 5/14/2007)

See *infra* ¶¶ 58-112.

1 56. As these charts show, Defendants did not time and price their competing product
2 introductions in lockstep prior to the start of the conspiracy, as they did during the conspiracy
3 period.

4 57. Original equipment manufacturer (“OEM”) product cycles cannot explain
5 Defendants’ lockstep timing and pricing of GPU products during the conspiracy period.
6 Regardless of whether Defendants’ product introductions were timed to match OEM product
7 cycles, they were not timed to match *one another* in the pre-conspiracy period. Indeed, in some
8 cases it took either ATI or Nvidia almost an entire year to bring a competing product to market,
9 by which time two or more OEM product cycles had passed.

10 **C. Defendants’ Vigorous Competition in the Pre-Conspiracy Period**

11 58. Prior to the conspiracy period, the GPU market was characterized by the type of
12 intense competition that marked many other similar, high technology markets. Indeed, Nvidia
13 and ATI raced to be first-to-market with new technology products, and competed intensely on
14 price.

15 59. For example, Nvidia and ATI’s competing first generation 3-D graphics cards
16 were released in 1997 approximately four months apart and at a \$50 price difference. In
17 particular, in September 1997, Nvidia introduced its first generation 3-D graphics card, the Riva
18 128, which included Nvidia’s new NV3 graphics technology. The Riva 128 was priced at \$199.
19 ATI was not able to introduce a competing first generation 3-D graphics card until January 12,
20 1998, when it introduced the 3D Rage II, which was priced at \$149.

21 60. Likewise, Nvidia and ATI’s competing second generation 3-D graphics cards were
22 released eleven months apart in 1998 and 1999 and at a \$59 price difference. In particular,
23 Nvidia beat ATI to market with its second generation 3-D graphics card when it introduced the
24 Riva TNT 16MB, which included Nvidia’s new NV4 graphics technology, on March 23, 1998.
25 The Riva TNT was priced at \$170. ATI was not able to respond with a second generation 3-D
26 graphics card until February 26, 1999, eleven months after Nvidia had introduced its second
27 generation card. The ATI product was its Rage Fury graphics card, which contained ATI’s new
28 Rage 128 graphics technology. The Rage Fury was priced at \$229.

1 61. Nvidia and ATI's competing third generation 3-D graphics cards were released
2 approximately five months apart in 1999 and at an \$81 price difference. Nvidia beat ATI to
3 market with a third generation 3-D graphics card when it introduced its Riva TNT2 Ultra, which
4 included Nvidia's new NV5 graphics technology, on March 15, 1999. The Riva TNT2 Ultra was
5 priced at \$230. ATI was not able to respond with a third generation 3-D graphics card until
6 August 5, 1999, when it introduced its Rage Fury Pro graphics card, which contained ATI's new
7 Rage 128 Pro graphics technology. The Rage Fury Pro was priced at \$149.

8 62. Nvidia and ATI's first DirectX7 compliant³ graphics cards were released eleven
9 months apart in 1999 and 2000 and at a \$99 difference. On August 31, 1999, Nvidia introduced
10 its first DirectX7 compliant graphics card, the GeForce256 DDR. The GeForce256 DDR was
11 priced at \$300. ATI was not able to release a DirectX7 compliant graphics card until July 17,
12 2000, when it released the Radeon DDR. The Radeon DDR was priced at \$399.

13 63. In 2001, ATI and Nvidia released competing new products five months apart with
14 an \$84 price difference. Nvidia got the first-to-market advantage with its introduction of the
15 GeForce2 MX400 on March 6, 2001. The GeForce2 MX400 was priced at \$115. ATI did not
16 respond with a competing product, the Radeon 7500, until August 27, 2001. The Radeon 7500
17 was priced at \$199.

18 64. Also in 2001, Nvidia and ATI's release of the first DirectX8 compliant graphics
19 cards took place nearly six months apart and at a \$101 price difference. Nvidia released the first
20 DirectX8 compliant graphics card, the GeForce3, on February 27, 2001. The GeForce3 was
21 priced at \$500. ATI did not bring its first DirectX8 compliant graphics card to market until
22 August 14, 2001, when it introduced the Radeon 8500. The Radeon 8500 was priced at \$399.

23 65. Nvidia's response to the Radeon 8500 did not come until approximately seven
24 months after the Radeon 8500 hit the market, and it was priced \$130 less than the Radeon 8500.

25
26 ³ DirectX is a programming interface that Microsoft created for use in graphical applications. It
27 allows software in graphical applications, such as video games, to access the transistors in the
28 graphics card in order to render the graphics on the monitor screen in real time (rather than as a
delayed drawing). As graphical applications have become more complex, Microsoft has released
new versions of DirectX.

1 Specifically, on March 18, 2002, Nvidia put out a new graphics card to replace the GeForce3 and
2 compete with the Radeon 8500 – the GeForce4 Ti4400 – at a price of \$267.

3 66. On October 1, 2001, Nvidia introduced three new GeForce3 graphics cards: the
4 GeForce3 Ti500 128MB, the GeForce3 Ti500 64MB, and the GeForce3 Ti200. These cards were
5 priced at \$399, \$349 and \$199, respectively. In response, ATI introduced three competing new
6 products, the Radeon 9000 Pro 128MB, the Radeon 9000 Pro 64MB, and the Radeon 9000. ATI
7 did not bring these cards to market until July 22, 2002, nearly ten months after Nvidia’s product
8 releases. They were priced at \$149, \$129 and \$109, respectively.

9 67. As these examples show, Nvidia and ATI were racing each other to market in the
10 pre-conspiracy period, and often leapfrogged each other with the introduction of new technology
11 products. The leapfrogging products came at a variety of price points, depending on a number of
12 factors, including the time-to-market and the relative technical merits of the competing products.

13 68. The behavior of ATI and Nvidia during this timeframe is typical of normal
14 competition in a high technology market where participants compete vigorously on price and
15 innovation, with each supplier racing to release new generation products with new features and
16 capabilities and improved performance and speed significantly ahead of a competitor in order to
17 capture sales.

18 69. Because the competition to be first-to-market with new generation technologies is
19 fierce, suppliers must engage in accelerated research and development (“R&D”), which typically
20 entails greater expenses than R&D that takes place at a more leisurely pace, but is generally
21 considered necessary to stay ahead, or at least not fall behind in competitive technology
22 industries. Because of the advantages that can accrue to the first-to-market or the superior
23 technology, even duopolists have a greater incentive to innovate than in more static industries.

24 70. Nevertheless, at any point in the R&D process, numerous incidents can delay, halt,
25 or speed up the process. One reason for this is that GPU design is a complex and extremely
26 expensive proposition. Many workers’ hours and capital expenditures are used in R&D of new
27 technologies. This is another reason that it would be unlikely that competing firms’ pricing and
28 product introductions would be identically matched. Rather, in a competitive GPU market

1 operating free of collusion, it would be expected that rivals would attempt to leapfrog past one
2 another to introduce their new products as fast as possible – as occurred during the pre-conspiracy
3 period.

4 71. The historical competition in price and innovation during the pre-conspiracy
5 period squeezed or eliminated profits for Nvidia and ATI. ATI struggled for several years to turn
6 any profit at all and Nvidia experienced at least three quarters in a row of substantial losses. This
7 squeeze on their profitability led Nvidia and ATI to conspire to coordinate their new product
8 launches and to fix prices. The conspiracy was successful in this regard – profit margins for both
9 companies increased during the conspiracy period.

10 **D. Communications and Coordination Between the Defendants During the**
11 **Conspiracy Period**

12 72. The intense competition by the Defendants in the pre-conspiracy period stands in
13 stark contrast to their collusive behavior during the conspiracy period. As a result of the collusive
14 arrangements between Defendants in this case, the GPU market during the class period was
15 characterized by high prices and lethargic innovation and competition as both parties adhered to
16 these agreements. Defendants have kept prices high and moderated competition in innovation by
17 agreeing on product release schedules and prices.

18 73. Defendants' behavior is contrary to how firms would be expected to operate in a
19 competitive market, and is indicative of collusion. In short, in a competitive GPU market
20 operating free of collusion, it would not be expected that rivals would introduce their new
21 products at similar times and at identical prices, as alleged herein. Engaging in such behavior
22 would be against each Defendant's individual self-interest absent an agreement to fix prices and
23 limit competition because each Defendant would risk losing the opportunity to capture sales with
24 first-to-market and competitively priced products. However, if defendants were colluding, then
25 engaging in such behavior would be profitable and in Defendants' mutual interests.

26 74. This behavior is even more unusual and suspect because on virtually every
27 occasion (further described below) it closely followed when representatives of Nvidia and ATI
28 met together at various industry trade association conferences and events. Nvidia and ATI's

1 coordinated product releases at the same time and the same prices following meetings between
2 the companies are contrary to the history of competition in the consumer electronics and personal
3 computer industry and were done without any plausible rationale for such coordination.

4 **1. Communications and Coordination in 2003 and 2004**

5 75. In the spring and summer of 2003, pursuant to the conspiracy alleged herein, ATI
6 and Nvidia slowed the pace at which they released new GPU products and coordinated the pricing
7 of these new products.

8 76. The slowdown was intended to limit price competition on new products, to raise
9 prices on existing products, to reduce research and development expenses, and to improve the
10 profit margins of both companies.

11 77. These agreements to conspire on product introductions and pricing coincided, at
12 least in part, with when representatives of both companies attended certain industry trade
13 association conferences and events together.

14 78. On March 4-8, 2003, executives of ATI and Nvidia attended the Game Developers
15 Conference in San Jose, California.

16 79. On March 5, 2003, it was announced that the ATI Radeon 9800 would go on sale
17 that month at a price of \$399. The Nvidia GeForce FX 5800 was also scheduled to go on sale in
18 March of 2003 at a price of \$399, as well.

19 80. In April of 2003, it was announced that the ATI Radeon 9600 would be priced
20 around \$200; it was also announced that the Nvidia GeForce 5600 would appear in stores in April
21 of 2003, priced at \$200 as well.

22 81. Executives of ATI and Nvidia have been on the board of PCI-SIG, which is a trade
23 association that develops and manages peripheral component interconnect (“PCI”). PCI is
24 technology that delivers input/output (“I/O”) functionality for computers by connecting various
25 chips, adapter cards, and device drivers within a computer system. Beginning in at least 2005,
26 executives of ATI and Nvidia have been on the Board of Directors of PCI-SIG.

27 82. On June 2-3, 2003, PCI-SIG held its 2003 Game Developers Conference. On June
28 2-3, 2003 and again in August 2003, representatives of ATI and Nvidia both attended PCI-SIG

1 conferences. The June meeting was held at the San Jose McEnery Convention Center in San
2 Jose, California. The August meeting was conducted in Milpitas, California.

3 83. Following these meetings, ATI and Nvidia delayed the launch of two new
4 competing products that the industry expected to be introduced that year. ATI and Nvidia
5 delayed the launch of those products in tandem until 2004 at which point the launch was made at
6 an identical retail price point.

7 84. Specifically, Nvidia announced in October of 2003 that it was postponing the
8 introduction of its NV40 graphics technology. At the same time, ATI announced it was
9 postponing the introduction of its R400 graphics technology, which would have directly
10 competed with Nvidia's NV40 graphics technology. Although either party could have pushed
11 forward in an effort to get the jump on the other, the parties did not accelerate past one another
12 and proceeded with a coordinated launch of the new products.

13 85. Representatives of ATI and Nvidia attended the February 23-26, 2004 3GSM
14 World Congress conference in Cannes, France.

15 86. On March 22-26, 2004, ATI and Nvidia attended the 2004 Game Developers
16 Conference in San Jose, California.

17 87. In addition, in 2004, ATI posted on its website a draft presentation marked as
18 "Confidential" prepared by one of its executives that detailed future product development. The
19 presentation contained internal notes by the presenter that commented on ATI's strategies,
20 including some of those relating to Nvidia.

21 88. Then during 2004, ATI and Nvidia jointly introduced the new technologies that
22 had been jointly postponed in October 2003 at the same price and on very close to or exactly the
23 same date.

24 89. On or about April 14, 2004, Nvidia released its GeForce 6800 Ultra graphics card
25 for \$499 while ATI released its Radeon X800 XT PE graphics card on May 4, 2004 for \$499 as
26 well. Likewise, Nvidia introduced the GeForce 6800 GT on May 4, 2004 for \$399 and ATI
27 introduced the Radeon X800 Pro also on May 4, 2004 and also for \$399. These products utilized
28

1 new GPU technology – Nvidia’s products contained its new NV40 graphics technology and
2 ATI’s products contained its new R420 graphics technology.

3 90. Throughout 2004, ATI and Nvidia timed the introduction and pricing of other
4 products following meetings between these Defendants.

5 91. Representatives of Nvidia and ATI attended the June 15, 2004 PSI-SIG annual
6 meeting which was held in San Jose California.

7 92. On August 12, 2004, Nvidia announced the release of the GeForce 6600 GT at a
8 retail price of \$199. ATI released a competing product, the Radeon X600 XT, on September 21,
9 2004. The Radeon X600 GT was priced at \$199 as well.

10 **2. Communications and Coordination in 2005**

11 93. On March 7-11, 2005, representatives of Nvidia and ATI both attended the Game
12 Developers Conference, which was held in San Francisco, California.

13 94. In April 2005 and June 2005, while Nvidia and ATI were on the board of PCI-SIG,
14 they were “platinum sponsors” of PCI-SIG conferences. In the second and third weeks of April
15 PCI-SIG conferences were held in Beijing, China; Tokyo, Japan; and Taipei, Taiwan. In the first
16 week of June a PCI-SIG conference was held in San Jose, California. Following these meetings,
17 ATI and Nvidia coordinated the pricing of new GPU products that were being introduced into the
18 market.

19 95. In July 2005, Nvidia released its GeForce 6200 GT with 256 MB of double data
20 rate (“DDR”) memory and 8X AGP at a price of \$140. This came on the heels of ATI’s
21 introduction in April 2005 of the Radeon 9550, which also featured 256 MB DDR memory and
22 8X AGP, and was also priced at \$140.

23 96. Representatives of Nvidia and ATI also attended the SIGGRAPH conference in
24 Los Angeles, California from July 31 to August 4, 2005, which was an international conference
25 focused on computer graphics and interactive technologies.

26 97. Representatives of Nvidia and ATI also attended the Game Developers Conference
27 in London, England from August 30 to September 1, 2005.

28

1 98. Following these meetings in July and August of 2005, ATI and Nvidia again
2 engaged in product launches during the same time period and at the same prices.

3 99. In September of 2005, ATI announced the release of its CrossFire graphic cards,
4 including the Radeon X800 XL CrossFire and the Radeon X800 CrossFire with suggested retail
5 prices of \$299 and \$199, respectively. At the same time, Nvidia released comparable products,
6 the GeForce 6800 GT and GeForce 6800, with respective retail prices of \$299 and \$199, as well.

7 **3. Communications and Coordination in 2006**

8 100. On March 20-24, 2006, representatives of Nvidia and ATI both attended the Game
9 Developers Conference, which was held in San Jose, California.

10 101. Also in March, 2006, executives from ATI and Nvidia attended the Fabless
11 Semiconductor Association (“FSA”) Global Leadership Summit in Shanghai, China.

12 102. Following these conferences in March of 2006, ATI and Nvidia again announced
13 new GPU products within the same time period and at the same price.

14 103. Nvidia released its GeForce 7600GT, with 256 MB of DDR Memory and a 16X
15 PCIe, on May 5, 2006 at a price of about \$175. Just two weeks earlier, on April 24, 2006, ATI
16 released the Radeon X1600, which also had 256 MB of DDR memory and a 16X PCIe, at the
17 price of about \$175.

18 104. Meetings between Nvidia and ATI continued further into 2006. On July 11-14,
19 2006, representatives of Nvidia and ATI both attended the Develop 2006 Conference in Brighton,
20 England.

21 105. On July 30, 2006 to August 3, 2006, representatives of Nvidia and ATI both
22 attended and made presentations at the SIGGRAPH 2006 Conference in Boston, Massachusetts.

23 106. On August 30, 2006 to September 1, 2006, representatives of Nvidia and ATI both
24 attended and made presentations at the Computer Entertainment Software Association Developers
25 Conference in Tokyo, Japan.

26 107. In furtherance of the conspiracy, Nvidia released its GeForce 7950 GT on
27 September 14, 2006, and ATI released its Radeon X1950 Pro on October 17, 2006. The prices, as
28

1 quoted by online retailer Newegg.com, were \$269.99 for each graphics card. The features were
2 virtually identical.

3 108. In addition, Nvidia released its GeForce 7900 GS on September 6, 2006 for a price
4 of \$200. ATI also released its Radeon X1650 Pro on September 15, 2006 for a price of \$199.
5 Again, the features of these products were virtually identical.

6 109. As these examples show, Nvidia and ATI stopped racing each other to market
7 during the conspiracy period. Instead, they began introducing their products in lockstep and
8 pricing them identically or nearly identically. This unnatural behavior lasted for approximately
9 four years, until the advent of the DOJ investigation. Defendants' behavior of during this
10 timeframe was a sharp departure from the competition that existed in the pre-conspiracy period
11 and would not have been in the best interest of either Nvidia or ATI, absent a conspiracy.

12 **E. Competition After The DOJ Investigation Began**

13 110. Although only a short time has passed since the DOJ began its investigation into
14 the GPU industry, it appears as though competition has increased, with the Defendants beginning
15 to compete on price and speed-to-market again.

16 111. For example, Nvidia and ATI's introduction of their first DirectX10 compliant
17 graphics cards took place more than six months apart and with a price difference of \$200. More
18 specifically, on November 8, 2006, Nvidia introduced its first DirectX10 compliant graphics card,
19 the GeForce 8800 GTX. The GeForce 8800 GTX was priced at \$599. ATI did not release its
20 first DirectX10 compliant graphics card, the Radeon HD 2900 XT, until May 14, 2007, at a price
21 of \$399.

22 112. This apparent return to competition is in stark contrast to the lockstep pricing and
23 product introductions that characterized the conspiracy period before the DOJ investigation
24 began.

25 //

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1 **F. Industry Analyst Reports**

2 113. Public statements from industry analysts made after the DOJ investigation was
3 announced support the plausibility of Plaintiffs' allegations of collusive pricing behavior among
4 defendants.

5 114. One commentator has compared the DOJ's investigation of the GPU industry to its
6 successful prosecution of manufacturers of Dynamic Random Access Memory ("DRAM"), which
7 has resulted in \$731 million in criminal fines. In an interview with Computerworld, an industry
8 analyst stated, "If the DOJ wanted to, it could just go down every line in the semiconductor
9 industry and find the same issue. That's because there are a relatively few number of suppliers in
10 the chip industry and an open flow of communication between competitors and customers, who
11 may not define price fixing the same way the DOJ does."

12 115. Another industry analyst expressed similar sentiments in an article in the San
13 Francisco Chronicle: "I am not surprised that (the Justice Department) is looking into this as
14 there are few suppliers left, which aggregates pricing power."

15 116. The San Jose Mercury News quoted yet another industry analyst as saying, "As a
16 consumer, I have noticed that the price points of video cards have always been pretty equal. The
17 first mover comes out with a product that is \$500 and the follower comes out with a product that
18 is \$500. They tend not to be in price wars."

19 117. In addition, even prior to the announcement of DOJ's investigation, industry
20 sources had reported collusion in the GPU market. For example, the website inquirer.net reported
21 that, "Rather than battle each other hammer and tongs, sources claim that ATI and Nvidia have
22 recently had meetings in an effort to put the brakes on the speed at which new graphics products
23 are released." This article went on to state that sources claimed both companies had grown weary
24 of high R&D costs, the high cost of producing, and low margins, which led them to "huddle
25 together in secret conclaves to see what can be done and balance the financial books that little bit
26 better."

1 **II. Market Structure and Economic Data**

2 118. The relevant economic evidence, including data on GPU pricing and supply,
3 further buttresses the allegations of an illegal agreement to fix, raise, maintain, and stabilize
4 prices of GPUs sold in the United States, and to coordinate the timing of new product
5 introductions.

6 **A. Structure of the GPU Market**

7 119. The structure of the GPU market is conducive to a secret price-fixing agreement,
8 and has made collusion particularly attractive in this specific market.

9 120. The GPU market is highly concentrated and has become even more so during the
10 course of the Class Period because of significant consolidation among industry participants. In
11 addition, many smaller firms in the market have lost market share and left the market altogether.

12 121. At present, this market is essentially a two supplier business, with Nvidia holding
13 approximately a 53% market share and AMD (through ATI) holding approximately a 47% market
14 share.

15 122. The existence of excess capacity is another factor that makes collusion attractive in
16 the GPU market and contradicts the notion that independent business decisions account for the
17 strange increase in GPU prices during the class period. Both ATI and Nvidia operate as “fables”
18 manufacturers, meaning they both outsource the production of GPUs and other components, as
19 well as the assembly and packaging of the finished product. This allows the companies to avoid
20 significant costs and risks associated with operating manufacturing facilities. Additionally, these
21 companies outsource supply among multiple manufacturers. The practical effect of this way of
22 doing business is that both companies generally have effective excess capacity to produce more
23 units, and can increase or decrease output without incurring the level of added fixed costs
24 associated with building their own plants. Restricted capacity is not, therefore, a plausible
25 explanation for GPU prices going up while the prices of both similar processors and GPU
26 components go down.

1 **B. Economic Data on Pricing and Supply**

2 123. GPU pricing during the conspiracy period provides further evidence of collusion
3 as it has not behaved as would be expected in a competitive market. Rather, as detailed below,
4 GPU pricing during the conspiracy period has been characterized by unnatural price stability and
5 certain periods of upward pricing trends – in stark contrast to GPU pricing during the pre-
6 conspiracy period and the pricing trends of other analogous products and markets.

7 124. The consumer electronics and personal computer industries, and industries that
8 manufacture components for these products, are ordinarily intensely competitive (with certain
9 notable exceptions that have recently been the subject of criminal price-fixing investigations).

10 125. The price of consumer electronics and personal computer products, and their
11 components, typically fall after a new technology is introduced, as competition intensifies and
12 manufacturers begin to capture efficiencies based on experience, and on scope and scale.

13 126. In the personal computer industry, this drive to innovate and to compete on price is
14 generally present, even where the industry is considered a duopoly, such as the rivalry between
15 Intel and AMD in central processing units (“CPUs”). CPUs serve as the central point in the
16 personal computer for interpreting and processing program instructions. Like GPUs, CPUs
17 process millions, if not billions, of transactions per second, are comprised of similar raw materials
18 and components, and require large expenditures in research and development.

19 127. Despite the fact that there are only two competitors in the CPU market, both
20 innovation and price competition have been vigorous compared to this same sort of competition
21 in the GPU market during the conspiracy period, with each company striving to leapfrog the other
22 with new product releases and succeeding at doing so. This competition in the CPU market has
23 steadily driven down prices, while performance has improved exponentially.

24 128. The pricing trends in the GPU market during the pre-conspiracy period were
25 typical of those in the consumer electronics and personal computer industries. During the pre-
26 conspiracy period, GPU pricing experienced steady and substantial declines in virtually every
27 year prior to 2003.

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1 129. For instance, based on available data and published reports, GPU and CPU pricing
2 trends closely tracked each other in the pre-conspiracy period, as pricing trends in both markets
3 were substantially declining.

4 130. However, this relationship abruptly stopped during the conspiracy period, as GPU
5 and CPU prices began for the first time to trend in opposite directions. While CPU prices
6 continued to substantially decline, GPU prices began to steadily increase and continued to
7 increase throughout the conspiracy period. For example, according to published sources, average
8 CPU prices decreased more than 20% from 2002 to 2006, while average GPU prices increased
9 approximately 9% during the same time.

10 131. These differences are particularly striking given that the structure of the GPU and
11 CPU markets is identical and the physical components of the products are substantially similar.

12 132. The trend in the GPU market during the conspiracy period, where prices steadily
13 increased, is also at odds with the trends in other, similar markets as well.

14 133. Defendants' identical pricing of competing products during the conspiracy period
15 is also contrary to what would be expected in a competitive market.

16 134. Indeed, some degree of price dispersion, especially where the products are
17 somewhat differentiated, is a normal outcome in competitive markets. The "law of one price,"
18 which states that identical products sold at the same location at a given time period must be sold
19 at identical prices, is actually rarely observed in any market, especially in high-technology
20 markets where differences in performance and reliability, brand image, consumer perceptions and
21 information, and other tangible and intangible factors cause buyers to value goods differently.

22 135. The price dispersion in the GPU market that prevailed before the conspiracy
23 period is fully consistent with the operation of a competitive market. However, the identical
24 pricing of every competing product release during the conspiracy period would not have occurred
25 under the same competitive conditions.

26 **C. Economic Data on Profits and Market Share**

27 136. As a result of their collusion, ATI and Nvidia achieved stable market shares and
28 record profits during the conspiracy period.

1 137. In contrast, ATI struggled throughout the pre-conspiracy period to turn any profit
2 at all and suffered losses or no profits in every quarter after the second quarter of 2000. With the
3 exception of a two quarter dip, ATI enjoyed growing profits during the conspiracy period and
4 enjoyed record profits at various points in the conspiracy period. Likewise, immediately prior to
5 the conspiracy, Nvidia's profits fell to near zero and then during the conspiracy period grew
6 steadily and reached record levels.

7 **VIOLATIONS ALLEGED**

8 **(Violation of Section 1 of the Sherman Act)**

9 138. Plaintiffs incorporate and reallege, as though fully set forth herein, each and every
10 allegation set forth in the preceding paragraphs of this Complaint.

11 139. Beginning at a time unknown to Plaintiffs, but at least as early as December 4,
12 2002, and continuing through the present, the exact dates being unknown to Plaintiffs and
13 exclusively within the knowledge of Defendants, Defendants and their co-conspirators entered
14 into a continuing agreement, understanding, and conspiracy to unreasonably restrain trade and
15 commerce in the United States, in violation of Section 1 of the Sherman Act, 15 U.S.C. §1.

16 140. In particular, Defendants have combined and conspired to fix, raise, maintain or
17 stabilize the prices of GPUs sold in the United States.

18 141. Defendants, by their unlawful conspiracy, artificially raised, inflated and
19 maintained the market prices of GPUs as herein alleged.

20 142. The contract, combination or conspiracy consisted of a continuing agreement,
21 understanding and concert of action among Defendants and their co-conspirators, the substantial
22 terms of which were to fix, raise, maintain, and stabilize the prices of GPUs they sold in the
23 United States and elsewhere.

24 143. In formulating and carrying out the alleged agreement, understanding, and
25 conspiracy, Defendants and their co-conspirators did those things that they combined and
26 conspired to do, including, but not limited to the acts, practices, and course of conduct set forth
27 above, and the following, among others:
28

- 1 a. Participated in meetings and conversations to discuss GPU prices;
- 2 b. Agreed to limit competition in innovation by agreeing upon the
- 3 timing of new product releases;
- 4 c. Agreed to manipulate prices and supply of GPUs in a manner that
- 5 deprived purchasers of GPUs of free and open competition;
- 6 d. Issued price announcements and price quotations in accordance
- 7 with the agreements reached; and
- 8 e. Sold GPUs to customers in the United States at non-competitive
- 9 prices.

10 144. The combination and conspiracy alleged herein has had the following effects,
11 among others:

- 12 a. Price competition in the sale of GPUs has been restrained,
- 13 suppressed and/or eliminated in the United States;
- 14 b. Innovation competition in the sale of GPUs has been restrained,
- 15 suppressed and/or eliminated in the United States;
- 16 c. Prices for GPUs sold by Defendants and their co-conspirators have
- 17 been fixed, raised, maintained, and stabilized at artificially high, non-competitive
- 18 levels throughout the United States; and
- 19 d. Those that purchased GPUs from Defendants have been deprived
- 20 the benefits of free and open competition.

21 145. As a direct result of the unlawful conduct of Defendants and their co-conspirators
22 in furtherance of their continuing contract, combination, and conspiracy, Plaintiffs have been
23 injured and will continue to be injured in their business and property by paying more for GPUs
24 purchased directly from Defendants and their co-conspirators than they would have paid and will
25 pay in the absence of the combination and conspiracy.

26 146. These violations are continuing and will continue unless enjoined by this Court.

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1 147. Pursuant to Section 16 of the Clayton Act, 15 U.S.C. § 26, Plaintiffs and the Class
2 seek the issuance of an injunction against Defendants, preventing and restraining the violations
3 alleged herein.

4 148. As a result of Defendants' and their co-conspirators' violation of Section 1 of the
5 Sherman Act, 15 U.S.C. § 1, Plaintiffs seek treble damages and costs of suit, including reasonable
6 attorneys' fees, pursuant to 15 U.S.C. § 15.

7
8 **PRAYER FOR RELIEF**

9 WHEREFORE, Plaintiffs pray as follows:

10 A. That the Court determine that this action may be maintained as a class action under
11 Rules 23(a), 23(b)(2) and 23(b)(3) of the Federal Rules of Civil Procedure;

12 B. That the Court adjudge and decree that the unlawful conduct, contract,
13 combination, and conspiracy alleged herein constitutes a violation of Section 1 of the Sherman
14 Act, as alleged herein;

15 C. That Plaintiffs and the Class recover damages, as provided by the federal antitrust
16 laws, and that a joint and several judgment in favor of Plaintiffs and the Class be entered against
17 Defendants in an amount to be trebled in accordance with such laws;

18 D. That Defendants, their co-conspirators, successors, transferees, assigns, parents,
19 subsidiaries, affiliates, and the officers, directors, partners, agents and employees thereof, and all
20 other persons acting or claiming to act on behalf of Defendants, or in concert with them, be
21 permanently enjoined and restrained from, in any manner, directly or indirectly, continuing,
22 maintaining or renewing the combinations, conspiracy, agreement, understanding, or concert of
23 action, or adopting or following any practice, plan, program, or design having a similar purpose
24 or effect in restraining competition;

25 E. That the Court award Plaintiffs and the Class they represent pre-judgment and
26 post-judgment interest as permitted by law;

27 F. That Plaintiffs and the members of the Class recover their costs of suit, including
28 reasonable attorneys' fees as provided by law; and

1 G. That the Court award Plaintiffs and the Class they represent such other and further
2 relief as may be necessary and appropriate.

3 **JURY TRIAL DEMANDED**

4 Pursuant to Fed. R. Civ. P. 38(b), Plaintiffs demand a trial by jury of all of the claims
5 asserted in this Complaint so triable.

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9 Dated this 8th day of November, 2007.

Respectfully submitted,

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Attestation of Filer

The signatory to this document is William A. Isaacson, and I have obtained his concurrence to file this document on his behalf.

Dated: November 8, 2007

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