

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

AQUILA INNOVATIONS, INC., a  
Delaware corporation,

Plaintiff,

v.

ADVANCED MICRO DEVICES, INC., a  
Delaware corporation

Defendant.

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No. 1:18-cv-554

**DEMAND FOR JURY TRIAL**

**ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT**

Aquila Innovations, Inc. (“Aquila”) files this Complaint against Advanced Micro Devices, Inc. (“AMD”), for its infringement of United States Patents 6,239,614 and 6,895,519. Aquila alleges as follows:

**PARTIES**

1. Aquila Innovations, Inc. is a Delaware corporation with its principal place of business at 15090 Avenue of Science, Suite 103, San Diego, California 92128.

2. Upon information and belief, AMD is a Delaware corporation doing business in Texas with offices in Austin, Texas, and principle executive offices in Sunnyvale, California. AMD may be served in Texas via its registered agent CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, TX 75201.

**JURISDICTION**

3. Aquila brings this action under the patent laws of the United States, 35 U.S.C. § 1 *et. seq.* This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331,

1332(a)(2), and 1338(a).

### **VENUE**

4. Venue is proper in this District under 28 U.S.C. § 1400(b). AMD has sold, offered to sell, and used in this District, products that practice or embody one or more claims of each of the patents in suit, as discussed more fully herein. AMD's location in Austin, Texas is a regular and established place of business in this District. AMD reports that its Austin location is its "largest facility by headcount," and has "more employees than the rest of its U.S. facilities combined."

### **THE PATENTS IN SUIT**

5. On May 29, 2001 the United States Patent and Trademark Office duly and legally issued United States Patent No. 6,239,614 B2 ("the '614 Patent"), which is entitled "Semiconductor Integrated Circuit Device," and identifies Koichi Morikawa as the sole inventor. A true and correct copy of the '614 Patent is attached hereto as Exhibit A. The '614 Patent has been assigned to Plaintiff Aquila. Aquila holds all right, title, and interest in the '614 Patent, including the right to sue for and receive damages for past, present and future infringement of the '614 Patent.

6. On May 17, 2005, the United States Patent and Trademark Office duly and legally issued United States Patent No. 6,895,519 B2 ("the '519 Patent"), which is entitled "System LSI" and identifies Hitoshi Endo as the sole inventor. A true and correct copy of the '519 Patent is attached hereto as Exhibit B. The '519 Patent has been assigned to Plaintiff Aquila. Aquila holds all right, title, and interest in the '519 Patent, including the right to sue for and receive damages for past, present and future infringement of the '519 Patent.

7. Aquila has offered to license the '614 and '519 Patents to AMD. Aquila has engaged in numerous discussions with AMD, through correspondence and in person and telephonic meetings spanning several months, but AMD has not agreed to pay a reasonable royalty to license the patents in suit despite several good-faith offers from Aquila. Aquila has therefore been compelled to file this suit to protect its rights.

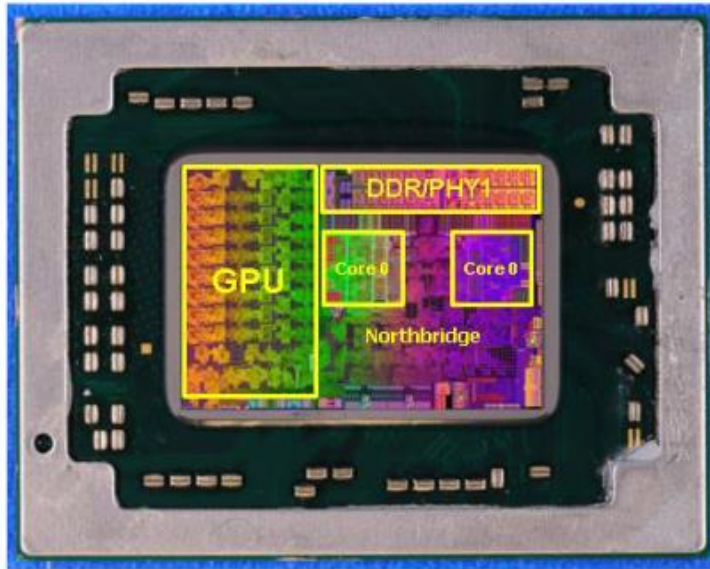
**FIRST CLAIM FOR RELIEF**

**Infringement of U.S. Patent No. 6,239,614**

8. Aquila realleges and incorporates by reference the allegations of paragraphs 1-6, inclusive, as if set forth in full herein.

9. AMD has infringed, and continues to infringe, at least claims 1 and 2 of the '614 Patent. AMD makes, uses, offers to sell, or sells, within the United States or imports into the United States, products with cores using the Bulldozer, Excavator, or Piledriver microarchitectures, including but not limited to the AMD A-Series Processors integrating Excavator CPU cores, A-Series PRO Processors integrating Excavator CPU cores, FX-Series Processors integrating Piledriver and Bulldozer CPU cores ("614 Representative Accused Products") that meet each and every limitation of claims 1 and 2.

10. By way of example, the AMD A10-8700P APU is depicted below:



11. The '614 Representative Accused Products are each a semiconductor integrated circuit device. The cells in the cores that have regular voltage threshold (RVT) are a plurality of first unit cells each including a plurality of first MOS transistors, each of the first MOS transistors having a first threshold voltage. The cells in the core having high voltage threshold (HVT) are a plurality of second unit cells each including a plurality of second MOS transistors,

each of the second MOS transistors having a second threshold voltage. The RVT and HVT cells in the cores are laid in array form. A power gate ring having high voltage threshold is disposed around the unit cell array and has a plurality of third MOS transistors. A plurality of input/output circuits are disposed around said unit cell array.

12. Said power switch is turned off during standby in Core C6 state (CC6 state) and turned on when taken active in C0 state.

13. Other AMD products similarly infringe one or more claims of the '614 Patent. Aquila accuses of infringement all AMD products that contain features and functions similar to those described above and that practice one or more claims of the '614 Patent.

14. AMD has induced and continues to induce infringement of one or more claims of the '614 Patent, including, but not limited to, Claims 1 and 2, by encouraging its customers and other third parties to use AMD's infringing products. This use of AMD's infringing products, constitutes infringement of one or more claims of the '614 Patent by such customers or third parties. AMD's acts of inducement include: providing its customers with the '614 Patent Infringing Products and intending its customers to use the '614 Infringing Products with hardware, software, and other infrastructure that enable and/or make use of these products; advertising these products through its own and third-party websites; encouraging customers and other third parties to communicate directly with AMD representatives about these products; and providing instructions on how to use these products.

15. AMD has had notice of the '614 Patent and of the infringement of the '614 Patent for more than one year. Before initiating litigation, Aquila made substantial efforts to license the '614 Patent to AMD. AMD has refused to pay a reasonable royalty to license the '614 Patent and continues to infringe one or more claims of the '614 Patent despite being aware of its infringement of the '614 Patent on the basis of claim charts provided by Aquila and subsequent discussions between the parties. AMD's infringement of the '614 Patent has therefore been, and continues to be knowing, willful, and deliberate and has caused and continues to cause substantial damage to Aquila.

**SECOND CLAIM FOR RELIEF**

**Infringement of U.S. Patent No. 6,895,519**

16. Aquila realleges and incorporates by reference the allegations of paragraphs 1-15, inclusive, as if set forth in full herein.

17. AMD has infringed, and continues to infringe, at least claim 1 of the '519 Patent. AMD makes, uses, offers to sell, or sells, within the United States or imports into the United States, products with cores using the Bulldozer, Excavator, Piledriver, Steamroller, or Zen microarchitectures, including but not limited to the AMD A-Series Processors integrating Excavator CPU cores, A-Series PRO Processors integrating Excavator CPU cores, FX-Series Processors integrating Piledriver and Bulldozer CPU cores, ("519 Representative Accused Products") that meet each and every limitation of claims 1 and 2.

18. The '519 Representative Accused Products have a plurality of ordinary operation modes, Core-P states, and a plurality of special modes, Core-C states. The Core-P states "are operational performance states characterized by a unique combination of core frequency ... software requests core-P state changes for each core independently," and the Core-C state transitions requests are evaluated and chosen by frequency and voltage domain dependencies, with action fields defined in D18F4x11[C:8]. The memory accessed by the SMU/SMC that executes firmware that manages transitions between the P-states is a first memory that stores a clock control library for controlling a clock frequency transition between said ordinary operation modes. The System Management Unit ("SMU") and/or System Management Controller ("SMC") is a system control circuit. The registers accessed by the power management features for P-states, and the addresses specified by MSRC001-0073[CstateAddr] C-state base address, or D18F4x128[HaltCstateIndex] C-state Policy Control 1 are a register. The SMC carries out the requests that cause transitions between the P-states and C-states, and also carries out the clock frequency transition among CPU core-P states and transitions between core-P states, in response to said clock control library. The Digital Frequency Synthesizer that receives

reference clocks from the PLL, and creates a clock for the CPU (CCLK) is a clock generation circuit that receives a plurality of standard clocks, wherein said clock generation circuit generates a clock supplied to said central processing unit according to control by said system control circuit. The on-chip L1/L2 cache hierarchy is a second memory that stores an application program, the software that dynamically controls the Core-P states, ACPI drivers, power management utilities, or other software that causes the SMU/SMC firmware to perform P-state transitions, enabling user selectable clock frequency transition. In Core C1 state, the clock frequency of the core ramps down and the clocks may be turned off, and in Package C1 (“PC1”) state, the core may also be halted, and in the Package C6 (PC6”) state, VDD can be reduced to a non-operational voltage, halting the supply of power to the core.

19. Other AMD products similarly infringe one or more claims of the ’519 Patent. Aquila accuses of infringement all AMD products that contain features and functions similar to those described above that practice one or more claims of the ’519 Patent.

20. AMD has induced and continues to induce infringement of one or more claims of the ’519 Patent, including, but not limited to, Claim 1, pursuant to 35 U.S.C. § 271(b), by encouraging its customers and other third parties to use AMD’s products having the infringing features such as Core-P and Core-C states. This use of AMD’s infringing products, constitutes infringement of one or more claims of the ’519 Patent by such customers or third parties. AMD’s acts of inducement include: providing its customers with the ’519 Patent Infringing Products and intending its customers to use the ’519 Infringing Products with hardware, software, and other infrastructure that enable and/or make use of these products; advertising these products through its own and third-party websites; encouraging customers and other third parties to communicate directly with AMD representatives about these products; and providing instructions on how to use these products.

21. AMD has had notice of the ’519 Patent and of the infringement of the ’519 Patent for more than one year. Before initiating litigation, Aquila made substantial efforts to license the ’519 Patent to AMD. AMD has refused to pay a reasonable royalty to license the ’519 Patent

and continues to infringe one or more claims of the '519 Patent despite being aware of its infringement of the '519 Patent on the basis of claim charts provided by Aquila and subsequent discussions between the parties. AMD's infringement of the '519 Patent has therefore been, and continues to be knowing, willful, and deliberate and has caused and continues to cause substantial damage to Aquila.

**DEMAND FOR JURY TRIAL**

22. Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Aquila demands a trial by jury on all issues so triable.

**PRAYER**

WHEREFORE, Aquila prays that judgment be entered in its favor and against AMD as follows:

- a. For damages in an amount according to proof, but no less than a reasonable royalty for infringement of the patents in suit;
- b. For enhanced damages pursuant to 35 U.S.C. § 284;
- c. For prejudgment and post-judgment interest as provided by law;
- d. For costs of suit and reasonable attorneys' fees incurred herein; and
- e. For such other relief as the Court deems proper.

Dated: July 2, 2018

Respectfully submitted,

/s/ Henry B. Gonzalez III

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