

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

POWER MANAGEMENT ENTERPRISES, LLC, a ) Texas Limited Liability Company, ) ) Plaintiff, ) ) v. ) Civil Action No. ) ) FUJITSU AMERICA, INC., a California ) corporation, ) ) Defendant. )	
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**COMPLAINT**

Plaintiff Power Management Enterprises, LLC (“PME”) files this, its Complaint against Fujitsu America, Inc. (“Fujitsu”), showing this Honorable Court as follows.

**NATURE OF THE ACTION**

1. This is an action for patent infringement, arising out of Defendant’s infringement of two U.S. patents relating to the art of managing cache memory containing data that has not been committed to persistent storage. Specifically, this Complaint asserts claims against Defendant arising from its infringement of various claims in U.S. Pat. No. 5,895,485, issued on April 20, 1999, and entitled “METHOD AND DEVICE USING A REDUNDANT CACHE FOR PREVENTING THE LOSS OF DIRTY DATA” (the “‘485 Patent”) and U.S. Pat. No. 5,895,488, issued on April 20, 1999, and entitled “CACHE FLUSHING METHODS AND APPARATUS” (the “‘488 Patent”) (collectively, “Patents-in-Suit”). [True and correct copies of the ‘485 Patent and ‘488 Patent are attached hereto as Exhibits A and B, respectively.]

### **THE PARTIES**

2. Plaintiff is a limited liability company, organized and existing under the laws of Texas with its principal place of business in this District.

3. Upon information and belief, Defendant Fujitsu is a corporation organized and existing under the laws of the state of California. Upon information and belief, Fujitsu's principal place of business is located in Sunnyvale, California. Fujitsu may be served through its registered agent for service of process, CT Corporation System, 350 N. St. Paul St., Ste. 2900, Dallas, Texas 75201-4234.

### **JURISDICTION AND VENUE**

4. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and/or 1338.

5. This Court has personal jurisdiction over the Defendant. Defendant has conducted and does conduct business within the State of Texas, including within this District. Defendant offers for sale, sells, and advertises its products and services within the State of Texas, including within this District. Defendant has committed the tort of patent infringement within the State of Texas, including within this District.

6. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and/or 1400.

### **OPERATIVE FACTS**

#### THE PATENTS-IN-SUIT

7. PME is the owner by assignment of all right, title, and interest in the Patents-in-Suit.

8. The '485 Patent describes a novel method and device using redundant cache for preventing the loss of data that has not been committed to persistent memory. The device includes first and second controllers, each including cache memory, arranged between a client

host and a persistent memory device. When operating in write-back mode, the write-back cache does not immediately commit the data to persistent storage. In a single cache system, the data is exposed to loss if the cache system fails. However, to prevent memory failure in write-back mode, data is transmitted to the second redundant cache. After dirty data is stored on the persistent memory device, the stored data is cleared from both caches.

9. Claim 6 of the '485 Patent provides:

6. A system for providing storage for a client, the system comprising:

a) a mass storage device;

b) a first controller, including a cache, for controlling the mass storage device in response to requests from the client; and

c) a second controller, including a cache, for controlling the mass storage device in response to requests from the client,

wherein one of the first and second controllers responding to an I/O request, sends dirty data to the cache of another of the first and second controllers.

'485 Patent, Col. 11, ll. 40-51.

10. The '488 Patent describes a novel method and device for managing a cache containing data that has not been committed to persistent storage. The invention determines when to flush cache lines containing such uncommitted data. The device flushes the data when the device determines that its system state is idle. This state is based upon at least two of the following indicators: (i) CPU idle percentage, (ii) data bus busyness percentage, (iii) percentage of dirty lines, and (iv) I/Os per second.

11. Claim 8 of the '488 Patent provides:

8. In a system having a host computer and a mass storage device, a mass storage controller comprising:

- a) an input/output interface for permitting communication between the host computer, the mass storage controller, and the mass storage device;
- b) a cache having a number of cache lines, some of which cache lines may include dirty data; and
- c) an input/output management controller, the input output management controller including
  - i) means for determining whether a state of a system is idle based on at least two indicators including (i) a host CPU idle percentage, (ii) data bus busyness percentage, (iii) percentage of dirty lines, and (iv) I/Os per second; and
  - (ii) means for flushing a line of the cache if the state of the system is determined to be idle.

'488 Patent, Col. 7. 1.63-Col. 8, 1.12.

#### THE INFRINGING PRODUCTS

12. Defendant Fujitsu, within the United States, manufactures, uses, offers for sale, or sells disk storage systems, including, but not limited to, the Fujitsu ETERNUS DX storage systems, (the "Fujitsu Storage Systems") that, among other things, uses two controllers that connect a host to a mass storage device. Each controller includes a cache and responds to requests from the host. While in write-back mode, the Fujitsu Storage Systems send data that has not been committed to persistent memory from one of the controller's cache to the other controller's cache.

13. The Fujitsu Storage Systems practice each limitation set forth in at least claim 6 of the '485 Patent.

14. Defendant Fujitsu, within the United States, manufactures, uses, offers for sale, or sells computers, including, but not limited to, the Fujitsu Celcius H920 with an Intel Core i5 processor (2.6 GHz, 3 MB L3 cache) and Windows 8, (the "Fujitsu Computers") that, among other things, operates in write-back mode creating cache data that has not been committed to persistent memory. The Fujitsu Computers flush this data when the processor's System Agent, in conjunction with Windows 8, determines that the state of the system is idle. To determine the idle state, the System Agent and Windows 8 use the following indicators: processor idle demote threshold; and I/Os per second and expected I/Os per second.

15. The Fujitsu Computers practice each limitation set forth in at least claim 8 of the '488 Patent.

16. Defendant Fujitsu does not have a license or other authorization to practice the claims set forth in the Patents-in-Suit.

17. All conditions precedent to the assertion of the claims in this Complaint have been satisfied or waived.

#### COUNT ONE

##### FUJITSU'S INFRINGEMENT OF THE '485 PATENT

18. PME incorporates by reference as if fully set forth herein the averments contained within Paragraphs 1-17, above.

19. By reason of some or all of the foregoing, Defendant Fujitsu has infringed at least claim of 6 the '485 Patent.

20. By reason of some or all of the foregoing, PME has suffered damages as a direct and proximate result of Defendant Fujitsu's infringement of the '485 Patent.

COUNT TWO

FUJITSU'S INFRINGEMENT OF THE '488 PATENT

21. PME incorporates by reference as if fully set forth herein the averments contained within Paragraphs 1-20, above.

22. By reason of some or all of the foregoing, Defendant Fujitsu has infringed at least claim 8 of the '488 Patent.

**PRAYER FOR RELIEF**

23. By reason of some or all of the foregoing, PME has suffered damages as the direct and proximate result of Defendant Fujitsu's infringement of the '488 Patent.

WHEREFORE, PME prays that this Court:

- (1) Enter judgment in favor of PME and against Defendant Fujitsu for infringement of the '485 Patent;
- (2) Award damages to PME in an amount to be proven at trial for infringement of the '485 Patent, pursuant to 35 U.S.C. § 284, including pre-judgment and post-judgment interest;
- (3) Enter judgment in favor of PME and against Defendant Fujitsu for infringement of the '488 Patent;
- (4) Award damages to PME in an amount to be proven at trial for infringement of the '488 Patent, pursuant to 35 U.S.C. § 284, including pre-judgment and post-judgment interest; and

- (5) Award PME such other and further relief as the Court deems just and proper, premises considered.

August 19, 2013

Respectfully submitted,

By: /s/Andrew W. Spangler  
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