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11 **UNITED STATES DISTRICT COURT**

12 **CENTRAL DISTRICT OF CALIFORNIA**

13 USB Technologies, LLC, a California )  
14 limited liability company, )

15 Plaintiff, )

16 v. )

17 Rakuten Commerce, LLC. d/b/a )  
18 www.rakuten.com, a Delaware Limited )  
19 Liability company; Rakuten USA, Inc., a )  
20 Delaware corporation; and DOES 1 )  
21 through 10, Inclusive, )

22 Defendants. )

Case No. 8:15-cv-01021

**FIRST AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT  
AND PERMANENT INJUNCTION**

**DEMAND FOR JURY TRIAL**

1 Plaintiff USB Technologies, LLC, (“USB Technologies”), by and through its  
2 undersigned counsel, for its First Amended Complaint against Defendants, Rakuten  
3 U.S.A., Inc., Rakuten Commerce, LLC., a Delaware Limited Liability company  
4 (“Rakuten”); and Does 1-10 (collectively, “Defendants”) makes the following  
5 allegations. These allegations are made upon information and belief.

6 **JURISDICTION AND VENUE**

7 1. This is an action for patent infringement arising under the patent laws of  
8 the United States, including 35 U.S.C. §§ 271, 281, and 283-285.

9 2. This Court has subject matter jurisdiction over this action pursuant to 28  
10 U.S.C. § § 1331 and 1338(a) because it arises under United States Patent law.

11 3. Venue is proper in this District pursuant to 28 U.S.C. §1391(b) and (c).  
12 On information and belief, Defendants are subject to this Court’s personal jurisdiction  
13 in that the acts and transactions complained of herein include the import and sale of  
14 infringing goods, identified herein, through the State of California and specifically in  
15 this District. Furthermore, Defendants’ sales transactions are initiated nationwide  
16 over the Internet, including sales targeted to the State of California and this District,  
17 thereby purposefully availing themselves of the benefits of the state.

18 **THE PARTIES**

19 4. USB Technologies is a limited liability company organized under the  
20 laws of the State of California and has an office and principal place of business at 35  
21 Hugus Alley, Suite 210 Pasadena, California 91103.

22 5. Upon information and belief, Rakuten Commerce, LLC. d/b/a  
23 www.rakuten.com, a Delaware Limited Liability company, having a place of business  
24 at 85 Enterprise, Suite 100, Aliso Viejo, CA 92656.

25 6. Upon information and belief, Rakuten USA, Inc., a Delaware  
26 corporation, having a place of business at 85 Enterprise, Suite 100, Aliso Viejo, CA  
27 92656.

1           7.     The true names and capacities, whether individual, corporate or  
2 otherwise of the Defendants named herein as DOES 1 through 10, inclusive, are  
3 unknown to Plaintiff, who therefore sues Defendants by such fictitious  
4 names. Plaintiff will ask leave of Court to amend this Complaint and insert the true  
5 names and capacities of said Defendants when the same have been ascertained.

6           8.     Plaintiff is informed and believes and, upon such, alleges that each of the  
7 Defendants designated herein as "DOE" are allegedly responsible in some manner for  
8 the events and happenings herein alleged, and that Plaintiff's damages as alleged  
9 herein were proximately caused by such Defendants.

### 10                                     FACTS

11           9.     USB Technologies is the owner, by assignment, of U.S. Patent No.  
12 7,809,866 ("the '866 Patent"), which was duly and legally issued on October 5, 2010  
13 by the United States Patent and Trademark Office. A copy of U.S. Patent No.  
14 7,809,866 is attached to this complaint as **Exhibit A**.

15           10.    The claims of the '866 Patent are valid and enforceable.

16           11.    The Defendant(s) sell(s) and offer(s) to sell the General Mobile  
17 Technology Company ("GMobi") iStick Lightning to USB flash drive products in  
18 various sizes, including 8 GB, 16 GB, 32 GB, 64 GB and 128 GB ("GMobi iStick  
19 Product Family").

20           12.    The GMobi iStick Product Family are double interface Lightning to USB  
21 flash memory drives. The GMobi iStick Product Family comprises a first transmission  
22 interface, a circuit board with a microprocessor and a plurality of flash memory. The  
23 GMobi iStick Product Family comprises a first bus interface to perform a signal  
24 transmission and a second bus interface circuit different from the flash memory card.  
25 The GMobi iStick Product Family also contains interface detection and switching  
26 circuit, for switching to the first interface circuit or the second interface circuit based  
27 on an initializing signal generated from the system interface circuit. The  
28 microprocessor within the GMobi iStick Product Family switches to the right

1 interface, determining and supporting a connection action automatically based on the  
2 type of system interface circuit detected.

3 13. Each of the products in the GMobi iStick Product Family infringe on the  
4 claims of the ‘866 patent, including, but not limited to claim 1.

5 14. Defendant Rakuten imports, buys, sells and offers to sell to consumers  
6 the iStick Product Family over a worldwide website, [www.rakuten.com](http://www.rakuten.com), without  
7 regard to the patent rights of USB Technologies. A copy of an offer for sale of the  
8 GMobi iStick Product Family on the Rakuten website, is attached herewith as **Exhibit**  
9 **B**.

10 15. The Defendant(s) sell(s) and offer(s) to sell the Photofast i-FlashDrive  
11 HD and i-FlashDrive Evo Lightning to USB flash drive products in various sizes,  
12 including 16 GB, 32 GB, and 64 GB (“i-FlashDrive Product Family”).

13 16. The i-FlashDrive Product Family are double interface Lightning to USB  
14 flash memory drives. The i-FlashDrive Product Family comprises a first transmission  
15 interface, a circuit board with a microprocessor and a plurality of flash memory. The i-  
16 FlashDrive Product Family comprises a first bus interface to perform a signal  
17 transmission and a second bus interface circuit different from the flash memory card.  
18 The i-FlashDrive Product Family also contains interface detection and switching  
19 circuit, for switching to the first interface circuit or the second interface circuit based  
20 on an initializing signal generated from the system interface circuit. The  
21 microprocessor within the i-FlashDrive Product Family switches to the right interface,  
22 determining and supporting a connection action automatically based on the type of  
23 system interface circuit detected.

24 17. Each of the products in the i-FlashDrive Product Family infringe on the  
25 claims of the ‘866 patent, including, but not limited to claim 1.

26 18. Defendants, buy, sell and offer to sell to consumers the i-FlashDrive  
27 Product Family over a worldwide website, <http://www.rakuten.com>, without regard to  
28

1 the patent rights of USB Technologies. A copy of an offer for sale of the i-FlashDrive  
2 Product Family on the Rakuten website, is attached herewith as **Exhibit C**.

3 19. The Defendant(s) sell(s) and offer(s) to sell the Leef iBridge Lightning to  
4 USB flash drive products in various sizes, including 16 GB, 32 GB, 64 GB and 128  
5 GB (“iBridge Product Family”).

6 20. The iBridge Product Family are double interface Lightning to USB flash  
7 memory drives. The iBridge Product Family comprises a first transmission interface, a  
8 circuit board with a microprocessor and a plurality of flash memory. The iBridge  
9 Product Family comprises a first bus interface to perform a signal transmission and a  
10 second bus interface circuit different from the flash memory card. The iBridge  
11 Product Family also contains interface detection and switching circuit, for switching  
12 to the first interface circuit or the second interface circuit based on an initializing  
13 signal generated from the system interface circuit. The microprocessor within the  
14 iBridge Product Family switches to the right interface, determining and supporting a  
15 connection action automatically based on the type of system interface circuit detected.

16 21. Each of the products in the iBridge Product Family infringe on the claims  
17 of the ‘866 patent, including, but not limited to claim 1.

18 22. Defendants, buy, sell and offer to sell to consumers the iBridge Product  
19 Family over a worldwide website, <http://www.rakuten.com>, without regard to the  
20 patent rights of USB Technologies. A copy of an offer for sale of the iBridge Product  
21 Family on the Rakuten website, is attached herewith as **Exhibit D**.

22 23. Unless enjoined by this Court, Defendants will continue to infringe  
23 the ‘866 patent.

24 24. Plaintiff has been, and will continue to be, irreparably harmed by  
25 Defendants’ ongoing infringement of the ‘866 patent.

26 25. This is an exceptional case under 35 U.S.C. § 285 and Plaintiff  
27 should therefore be awarded treble damages pursuant to 35 U.S.C. §284, of any  
28 and all damages awarded for Defendants’ infringement of the ‘866 patent.

**COUNT I**

**CLAIM FOR PATENT INFRINGEMENT**

**UNDER 35 U.S.C. § 271 ('866 PATENT)**

1  
2  
3  
4 26. USB Technologies hereby incorporates by reference the allegations of  
5 paragraphs 1 through 24 of this Complaint as if fully set forth herein.

6 27. Defendants have imported, offered to sell and provide, have sold and  
7 provided, and continue to offer to sell and provide in the United States and in this  
8 District, products and services, namely the the GMobi iStick Product Family, the i-  
9 FlashDrive Product Family, and the iBridge Product Family, that infringe one or more  
10 claims of the '866 Patent, including, but not limited to, Claim 1.

11 28. Defendants' infringement of the '866 Patent has been and continues to be  
12 willful.

13 29. Unless enjoined by this Court, Defendants will continue to infringe  
14 the '866 Patent.

15 30. As a direct and proximate result of Defendants' infringement of the '866  
16 Patent, USB Technologies has been and will continue to be damaged in an amount yet  
17 to be determined, including but not limited to Plaintiff's lost profits and/or reasonable  
18 royalties.

**PRAYER FOR RELIEF**

19  
20 WHEREFORE, Plaintiff prays for relief against Defendants as follows:

21 A. For a preliminary injunction to issue against each Defendant, its agents,  
22 servants, employees, successors and assigns and all others in concert and privity with  
23 it from making, using, offering to sell, selling, or importing into the United States any  
24 product infringing on the claims of United States Patent No. 7,809,866;

25 B. For a permanent injunction to issue against each Defendant, its agents,  
26 servants, employees, successors and assigns and all others in concert and privity with  
27 it from making, using, offering to sell, selling, or importing into the United States any  
28 product infringing on claims of United States Letters Patent No. 7,809,866;

1 C. An award of damages in an amount to be determined at trial, but not less  
2 than a reasonable royalty and/or Plaintiff’s lost profits as a result of each Defendant’s  
3 infringing actions;

4 D. A finding that each Defendant’s infringement has been willful;

5 E. A trebling, pursuant to 35 U.S.C. § 284, of any and all damages awarded  
6 for each Defendant’s infringement of the ‘866 Patent;

7 F. A finding that this is an exceptional case under 35 U.S.C. § 285;

8 G. An award, pursuant to 35 U.S.C. § 285, of reasonable attorneys’ fees;

9 H. An award of interest and costs; and

10 I. For such other and further relief as may be just and equitable.

11 **DEMAND FOR TRIAL BY JURY**

12 Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff hereby  
13 demands a jury trial on all issues and causes of action triable to a jury.

14  
15 Respectfully submitted,

16 DATED: August 20, 2015

**COTMAN IP LAW GROUP, PLC**

s/ Rasheed M. McWilliams

18 By: \_\_\_\_\_

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25 Attorneys for Plaintiff

26 USB Technologies, LLC



(12) **United States Patent**  
**Liu et al.**

(10) **Patent No.:** **US 7,809,866 B2**  
 (45) **Date of Patent:** **Oct. 5, 2010**

(54) **DOUBLE INTERFACE SD FLASH MEMORY CARD**

6,658,516 B2 \* 12/2003 Yao ..... 710/301  
 2003/0100203 A1 \* 5/2003 Yen ..... 439/79

(75) Inventors: **Wen-Tsung Liu**, Taipei Hsien (TW);  
**Chia-Li Chen**, Taipei Hsien (TW)

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 Universal Serial Bus Specification 2.0, p. 87.\*  
 SimpleTech, [http://www.simpletech.com/flash/secure\\_digital.php](http://www.simpletech.com/flash/secure_digital.php).  
 \*

(73) Assignee: **Carry Computer Engineering Company, Limited**, Hsin Tien (TW)

\* cited by examiner

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

Primary Examiner—Alan Chen

(21) Appl. No.: **10/216,611**

(57) **ABSTRACT**

(22) Filed: **Aug. 12, 2002**

A double interface SD flash memory card includes a SD flash memory card and a USB adaptor. The SD flash memory card has a standard SD card interface and a circuit board, which has a microprocessor and flash memories. The USB adaptor has at least a SD interface socket and a USB plug. The SD interface socket can be inserted with a SD flash memory card and the USB plug can be connected to other information devices. The double interface SD flash memory card includes a SD bus interface circuit for the SD flash card, a USB bus interface circuit for a system end, and an interface detection and switching circuit detect if there is an initialized signal from the system interface and switch to the SD bus interface circuit or the USB bus interface circuit based on result of the detection. The microprocessor can detect, identify, and support connecting signal of SD interface or USB interface automatically. When a signal is sent from the SD card interface or the USB card interface, the microprocessor will switch the circuit and relevant electronic elements in the circuit board to support the SD card or the USB card to access the data in the flash memories in the card.

(65) **Prior Publication Data**

US 2004/0059846 A1 Mar. 25, 2004

(51) **Int. Cl.**  
**G06F 13/12** (2006.01)  
**G06F 3/00** (2006.01)

(52) **U.S. Cl.** ..... **710/62; 710/2; 710/8; 710/72**

(58) **Field of Classification Search** ..... **710/72, 710/2, 74, 8, 62**

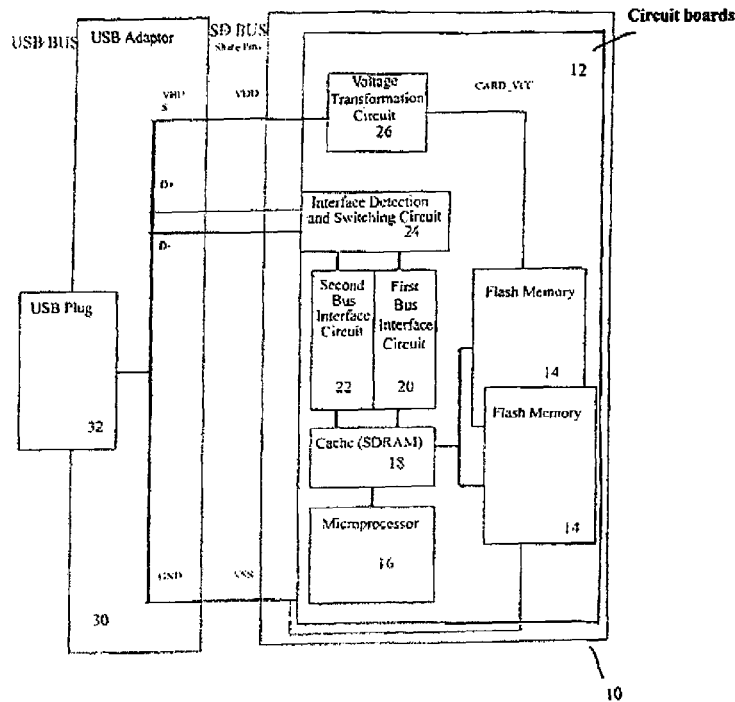
See application file for complete search history.

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**20 Claims, 4 Drawing Sheets**





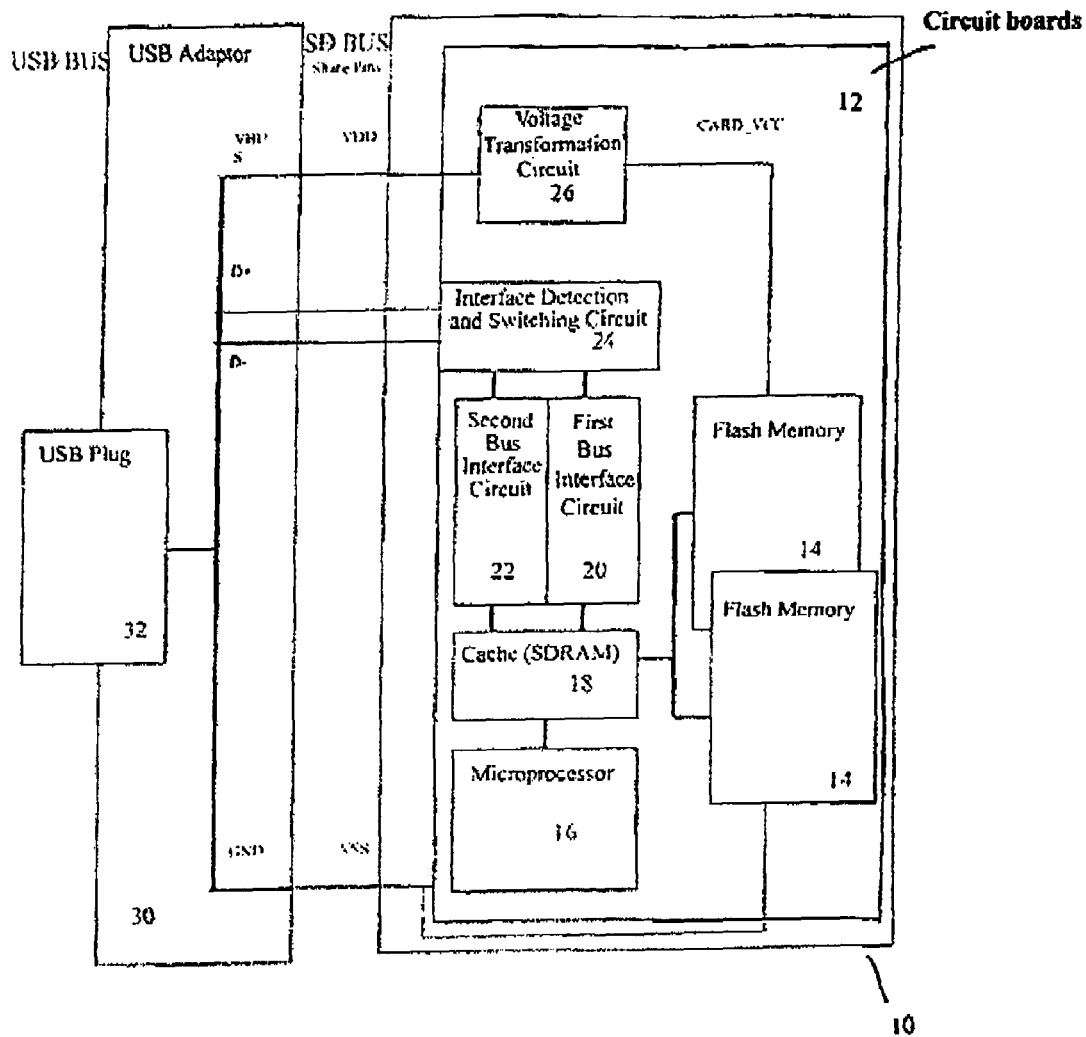


Fig 1

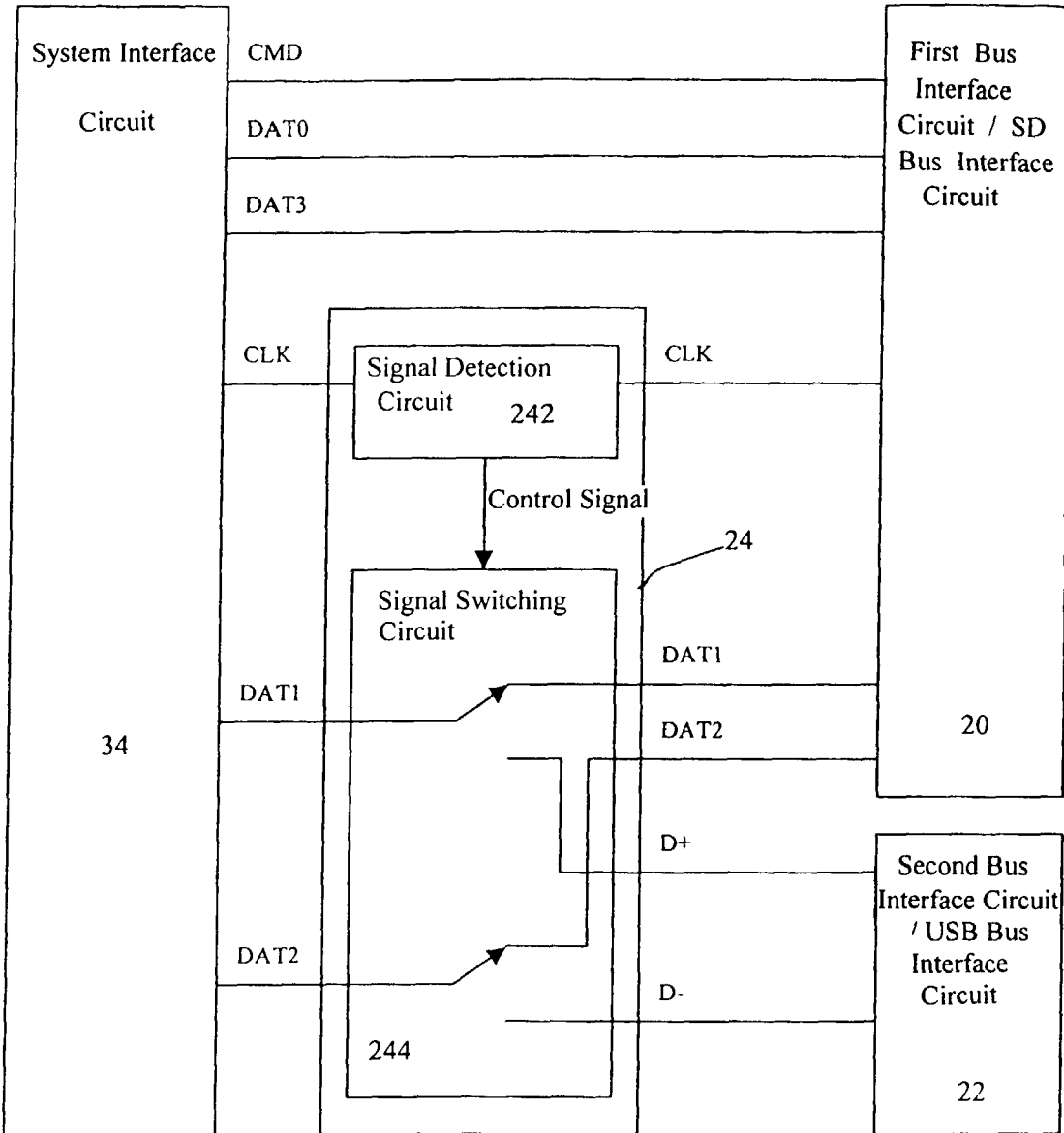


Fig 2

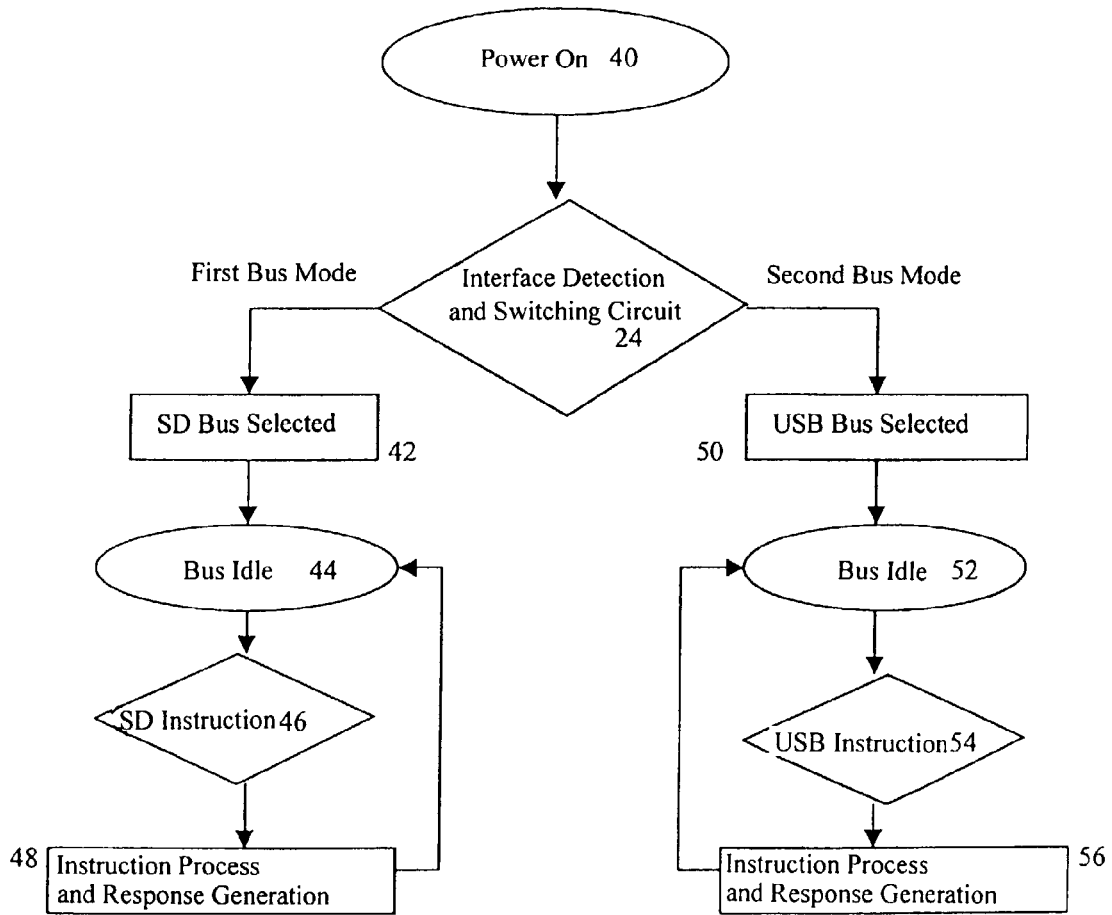


Fig 3

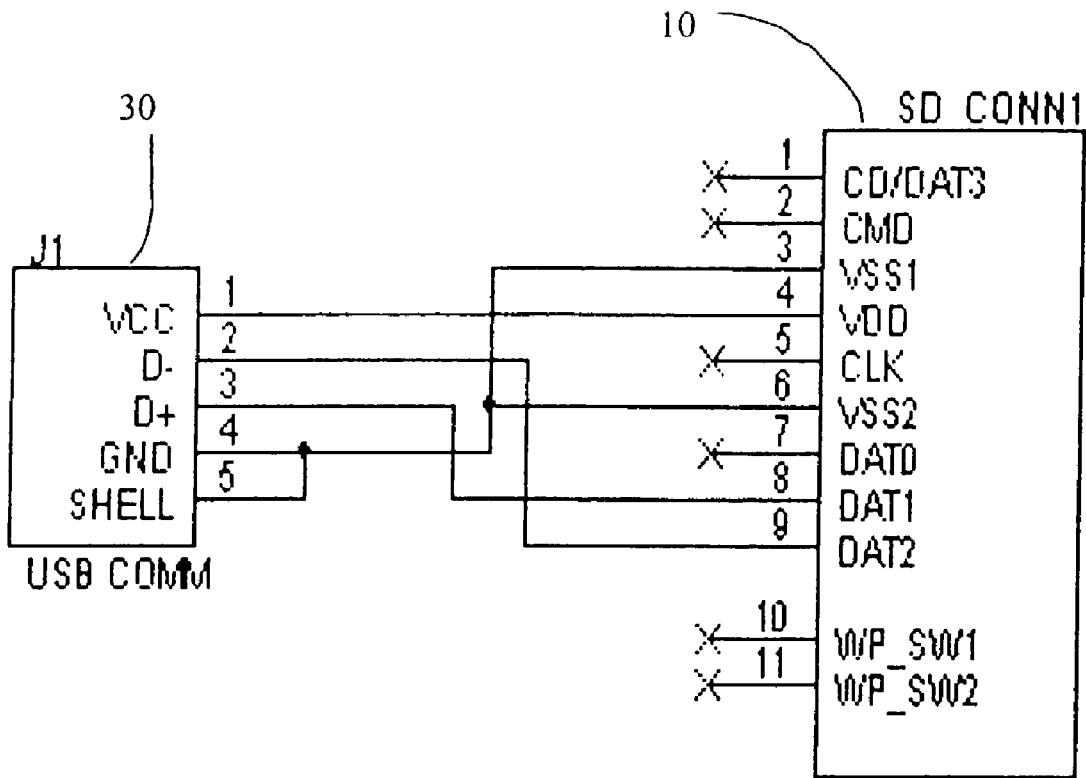


Fig 4

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**DOUBLE INTERFACE SD FLASH MEMORY  
CARD**

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

The present invention is related to a double interface flash memory card, in particular to a double interface SD flash memory card.

## 2. Description of Related Art

Since the USB (Universal Serial Bus) interface was developed in 1996, it has gradually taken over the position of various conventional transmission interfaces due to its high transmission rate, easy installation, hot-swapping and plug & play features. With a USB interface, the host can be connected to various peripheral equipments, such as scanner, keyboard, printer, etc., without the need of installing drivers. Thus products with USB interfaces are widely used not only in computers (e.g., desktops or notebooks) or peripheral equipment but also in various IA products (e.g., PDA, DSC, MP3 Player, etc.).

In year 2,000, Matsushita, SanDisk, and Toshiba introduced a new "SD Flash Memory Card" standard, which is referred as "Secure Digital Card". A SD Card comprises of several flash memories, a microprocessor, and a semiconductor circuit. Due to its lightweight, small size, high access speed, and large capacity, the SD card is widely used in peripheral equipment, PDAs, DSCs, MP3 Players, etc., and has become a new portable storage media that has vast market value. The SD card adopts a dedicated SD interface. Though manufacturers of peripheral equipment or information appliances can develop products dedicated used with SD flash memory cards, these products can't meet the requirements of customers to exchange data between them and computer systems (desktops or notebooks) or other digital products communicating with USB interfaces. For example, if a consumer wants to access the data in a DSC with the SD flash memory card and display or edit the data in a computer system or a product with a USB interface, this work can't be done because that there is no corresponding SD interface at the computer system or the digital product described above.

In such cases, the consumers have to buy a flash memory card driver (card reader) or an Adaptor that supports SD cards to exchange data with the computer systems or digital products with USB interfaces. Or they may buy a card having the same transfer interface as that of the computer system as the intermediate media to access the data in the SD card. Both of the two approaches add the cost of the product and the complexity of operation, bringing inconvenience to the interoperability between SD cards and products with USB interfaces.

## SUMMARY OF THE INVENTION

In consideration of above problems, the inventor invents a "Double Interface SD Flash Memory Card", which can eliminate the shortcomings in legacy SD cards.

The Double Interface SD Flash Memory Card eliminates the intermediate device or Adaptor, which decreases the cost of manufacturing and the complexity in application.

Another purpose of this invention is to provide a flash memory product that can access computers or products with USB interfaces through a cheap USB Adaptor with the detection, control, and switching actions of its microprocessor. The invention is similar to the Removable Hard Disk product in structure. However, besides supporting SD flash memory cards, this invention can also support USB interface. In other words, the microprocessor of this invention integrates the

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functionalities of the control chip on a legacy Adaptor to facilitate storage, transfer, and exchange of digital data between the invention and computer systems/IA products at lowest cost and through the simplest approach.

A further purpose of this invention is to significantly decrease the cost of the system (eliminating the additional Adaptor device) while enhance the convenience of application (installation, operation, etc.) of this product. With the dedicated SD interface and the new Adaptor integrated, the device can detect/identify the circuit of the system interface, and then switches the device to the right system interface. It not only support USB interface, but also support SD interface.

## BRIEF DESCRIPTION OF THE DRAWINGS

The present invention can be more fully understood by reference to the following description and accompanying drawings, in which:

FIG. 1 is a block diagram of the control circuit of the double interface SD flash memory card according to the present invention;

FIG. 2 is a block diagram of the arbitration circuit for detection, control, and switching of the double interface SD flash memory card of the present invention;

FIG. 3 is a preferred flowchart of the detection, control, and switching procedure according to this invention; and

FIG. 4 is a circuit diagram of a USB adaptor in the double interface SD flash memory card of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED  
EMBODIMENT

Referring to FIG. 1, a block diagram of the control circuit of double interface SD flash memory card of this invention. The double interface SD flash memory card integrates a USB interface, which is popular in the market, to communicate with computers or other digital products with USB interface. As shown in FIG. 1, the double interface SD flash memory card has a standard transfer interface (first interface, 9 I/O pins) and a corresponding circuit board (12), which has a microprocessor (16) and multi flash memory chips (14), circuit board (12) has at least a bus interface circuit (first interface circuit 20), a cache (SDRAM 18), and a power transfer circuit (26), as well as an access interface and a Flash (not shown). The USB adaptor (30) has at least a flash memory interface socket (not shown) and a transmission interface (second interface), which is a USB plug (32). Apparently, this flash memory interface serves as an interface of the double interface SD flash memory Card (10). And the double interface SD flash memory card (10) can be connected to computer systems or other digital products with USB interface through the second transmission interface (USB Plug 32) of the USB adaptor. The unique feature of this invention lies in that:

an interface bus circuit (second bus interface circuit) (22) embedded in the microprocessor (16);

a interface detection and switching circuit (24) embedded in the microprocessor (16) to detect and switch to the first bus interface circuit (20) or the second bus interface circuit (22).

The microprocessor (16) can automatically detect, identify, and support signals from the SD interface or the USB plug (32). When a signal at the SD interface or the USB plug (32) occurs, the microprocessor (16) will switch the circuit and relevant elements in the circuit board (12) to support the data transmission from the SD interface or the USB plug (32) to the flash memory chips (14).

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The preceding first bus interface circuit **20** in the preferred embodiment is a SD bus interface circuit used for the SD flash memory card and the second bus interface circuit **22** is a USB bus interface circuit used for a system end. Both the bus interface circuits **20**, carry out data transmission with the USB adapter **30** or a system interface circuit **34** suitable for the SD flash memory card via being electrically connected to the interface detection and switching circuit **24**. The interface detection and switching circuit **24** is used for detecting if there is an initialized signal generated by a system interface circuit of the SD flash memory card and switching to the first (SD) bus interface circuit **20** or the second (USB) bus interface circuit **22** based on if the signal is detected.

It should be emphasized that the microprocessor (**16**) of double interface SD flash memory card (**10**) not only can identify and control the SD interface, but also support products with USB Interface under the help of the USB adaptor (**30**). Thus, the invention serves as a portable storage media supporting SD and USB interfaces.

Referring to FIG. 2, the block diagram of the arbitration circuit of the invention to perform identification, control, and switching functions. There are two system interface circuits (**34**) in the double interface SD flash memory card (**10**), i.e., the card (**10**) integrates functions that must be implemented with a card reader and the control chip of an adaptor. The figure shows six different signal terminals (CLK, CMD, DAT0, DAT1, DAT2, DAT3). The DAT1 and DAT2 are used for connecting and switching to the D+ and D- signals of the USB system interface circuit (**34**), i.e. the two and DAT2 are used as common terminals D+ and D- steals of the USB plug and the CLK is used as the signal for detection of the system interface circuit (**34**), i.e., it serves as the basis to select the First Bus interface circuit (**20**) or the Second Bus Interface Circuit/USB Bus Interface Circuit (**22**).

According to the specification for SD flash memory cards, when the card is powered on, if the system interface of the SD flash memory card (**34**) detects an initialization signal (74 pulses/s), the SD Bus Interface circuit (**20**) will trigger the CLK signal to indicate that the SD Bus Interface circuit (**20**) is currently selected. On the contrary, if no such an initialization is detected by the system interface (**34**), the signal detection circuit (**242**) will output a control signal to the signal switching circuit (**244**) to switch the DAT1 and DAT2 terminals to the USB Bus Interface Circuit (**22**). In this way, on the basis of the signal from the interface detection and switching circuit (**24**), the invention will determine which system interface circuit (**34**) should be switched to. In order to support different system interface circuits (**34**) at the same time, the microprocessor (**16**) of this invention integrates the processes to support both system interface circuits (**34**), and support both system interface circuits (**34**) to generate corresponding instructions and communication protocols.

Please see FIG. 3, a flow chart of a preferred circuit detection and switching process of this invention. From the figure we can see that when the power supply module (**40**) provides power to the Double Interface SD Flash Memory Card (**10**), the microprocessor (**16**) will switch to the correct working mode and initialize the appropriate system interface circuit (**34**) in according to the interface circuit detected by the interface detection and switching circuit (**24**). Then, the microprocessor (**16**) will receive the instruction and perform necessary process and generates appropriate response in accordance with the specification for the system interface circuit (**34**) currently selected. For example, if the system interface circuit (**34**) detected by the interface detection and switching circuit (**24**) is the First Bus Mode (i.e., SD Bus Mode), the process will enter into the working cycle for SD

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interface, i.e., selects SD Bus (**42**), generates a SD instruction (**46**) after the Bus Idle (**44**) signal is detected, and performs necessary process and generates appropriate response (**48**), and finally returns to Bus Idle (**44**) mode. On the contrary, if the system interface circuit detected by the interface detection and switching circuit (**24**) is the Second Bus Mode (i.e., USB Bus Mode), the process will enter into the working cycle for USB interface, i.e., selects USB Bus (**50**), generates a USB instruction (**54**) after the Bus Idle (**52**) signal is detected, and performs necessary process and generates appropriate response (**56**), and finally returns to Bus Idle (**52**) mode.

When the system interface (**34**) is set, it can't be altered afterwards. If it has to be altered, it should be entirely removed, and then the power should be switched off. Finally, the other system interface circuit can be selected. Please see FIG. 4, a wiring chart of the USB Adaptor in the Double Interface SD Flash Memory Card. This figure is a sketch map of the connection between the Double Interface SD Flash Memory Card and a cheap USB adaptor (**30**). In conclusion, the double interface SD flash memory Card of this invention has the following advantages:

1. This invention substitutes the relatively expensive auxiliary card reader or Adaptor device with a much cheaper adaptor, and implements the data transfer or exchange with various digital products. It decreases the cost of manufacturing and the complexity in application.
2. This invention can provide a flash memory product that can access computers or products with USB interfaces through a cheap USB adaptor with the detection, control, and switching functions of its microprocessor. Besides supporting SD flash memory cards, this invention can also support USB interface. In other words, the microprocessor of this invention integrates the functionalities of the control chip on a conventional adaptor to facilitate storage, transfer, and exchange of digital data between the invention and computer systems/IA products at lowest cost and through the simplest approach.
3. This invention can significantly decrease the cost of the system (eliminating the additional adaptor device) while enhances the convenience of application (installation, operation, etc.) of this product. With the dedicated SD interface and the new adaptor integrated, the device can detect/identify the circuit of the system interface, and then switches the device to the right system interface. It not only support USB interface, which is popular in computer systems and other digital products, but also serves as a portable flash memory card integrating SD and USB interfaces.

While the invention has been described with reference to the a preferred embodiment thereof, it is to be understood that modifications or variations may be easily made without departing from the spirit of this invention, which is defined by the appended claims.

The invention claimed is:

1. A double interface flash memory card, which has a first transmission interface and a circuit board with a microprocessor and a plurality of flash memory thereon, comprising:
    - a first bus interface circuit especially for a system interface circuit of the flash memory card being able to perform signal transmission;
    - a second bus interface circuit for the other information apparatuses, which are different from the flash memory card, being able to perform signal transmission; and
- an interface detection and switching circuit, electrically connecting with the first transmission interface, the first bus interface circuit and the second bus interface circuit for detecting if there is an initializing signal generated

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from the system interface circuit and switching to the first bus interface circuit or the second bus interface circuit according to the initializing signal being generated or not generated;

wherein, the microprocessor switches the status thereof to a working mode and a suitable system interface circuit mode is started according to what type of the system interface circuit being detected by the interface detection and switching circuit so that the microprocessor can detect, determine and support a connection action signal automatically; when either the first transmission interface or the second transmission interface offers the action signal at the transmission end thereof and, in the mean time, the microprocessor switches the circuit and the related electronic elements on the circuit board to support data transmission action of the first transmission interface or the second transmission interface in the flash memories.

2. The double interface flash memory card as defined in claim 1, further comprises a double interface SD flash memory card and, in other words, the first transmission interface is a standard transmission interface of the SD interface flash memory card.

3. The double interface flash memory card as defined in claim 1, wherein the microprocessor further has a built-in cache unit and a power transfer circuit and the cache unit is electrically connected to the first bus interface circuit, the second bus interface circuit, the microprocessor and the flash memories.

4. The double interface flash memory card as defined in claim 1, wherein the first bus interface circuit comprises a standard SD bus interface circuit.

5. The double interface flash memory card as defined in claim 1, wherein the second bus interface circuit comprises a USB bus interface circuit.

6. The double interface flash memory card as defined in claim 1 is connected to an adapter, which has an interface socket for being inserted with said first interface and a second transmission interface for being used with other information apparatuses.

7. The double interface flash memory card as defined in claim 6, wherein the second transmission interface comprises a USB plug.

8. A double interface SD flash memory card combination, comprising:

- a double interface SD flash memory card; and
- a USB adapter;

wherein the double interface SD flash memory card further comprises:

- a first transmission interface; and
- a circuit board, providing a microprocessor and a plurality of flash memories, the microprocessor having at least a built-in first bus interface circuit; and the USB adaptor having at least a SD interface socket for being inserted with the double interface SD flash memory card and has a second transmission interface for being used with other information apparatus;

wherein the first bus interface circuit is built in the double interface SD flash memory card especially for a system interface circuit of the flash memory card being able to perform signal transmission; a second bus interface circuit is built in the double interface SD flash memory card for the other information apparatuses, which are different from the flash memory card, being able to perform signal transmission; and an interface detection and switching circuit is built in the double interface SD flash memory card for detecting if there is an initializing

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signal generated from the system interface circuit and switching to the first bus interface circuit or the second bus interface circuit according to the initializing signal being generated or not;

whereby, the microprocessor can detect, determine and support a connection action signal automatically; when either the first transmission interface or the second transmission interface offers the action signal at the transmission end thereof and, in the mean time, the microprocessor switches the circuit and the related electronic elements on the circuit board to support data transmission action of the first transmission interface or the second transmission interface in the flash memories.

9. The double interface SD flash memory card combination as defined in claim 8, wherein the microprocessor further has a built-in cache unit and a power transfer circuit and the cache unit is electrically connected to the first bus interface circuit, the second bus interface circuit, the microprocessor and the flash memories.

10. The double interface SD flash memory card combination as defined in claim 8, wherein the first transmission interface comprises a standard transmission interface of the SD interface flash memory card.

11. The double interface SD flash memory card combination as defined in claim 8, wherein the second transmission interface comprises a USB plug.

12. The double interface SD flash memory card combination as defined in claim 8, wherein the first bus interface circuit comprises a standard SD bus interface circuit.

13. The double interface SD flash memory card combination as defined in claim 8, wherein the second bus interface circuit comprises a USB bus interface circuit.

14. A double interface flash memory card, which has a first transmission interface and a circuit board with microprocessor and a plurality of flash memories, at least comprises:

- a first bus interface circuit especially for a system interface circuit of the flash memory card being able to perform signal transmission;
- a second bus interface circuit for the other information apparatuses, which are different from the flash memory card, being able to perform signal transmission;
- a plurality of common pins, being formed as common connecting ends for signal transmission between the double interface flash memory card and a system interface circuit and the information apparatuses; and

an interface detection and switching circuit, electrically connecting with the first transmission interface, the first bus interface circuit and the second bus interface circuit for detecting if there is an initializing signal generated from the system interface circuit and switching the common pins to the first bus interface circuit or the second bus interface circuit according to the initializing signal being generated or not generated;

wherein, the microprocessor switches the status thereof to a working mode and a suitable system interface circuit mode is started according to what type of the system interface circuit being detected by the interface detection and switching circuit.

15. The double interface flash memory card as defined in claim 14, further comprises a double interface SD flash memory card and the first transmission interface is a standard transmission interface of the SD interface flash memory card.

16. The double interface flash memory card as defined in claim 14, wherein the microprocessor further has a built-in cache unit and a power transfer circuit and the cache unit is

US 7,809,866 B2

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electrically connected to the first bus interface circuit, the second bus interface circuit, the microprocessor and the flash memories.

17. The double interface flash memory card as defined in claim 14, wherein the first bus interface circuit comprises a standard SD bus interface circuit.

18. The double interface flash memory card as defined in claim 14 is connected to a adapter, which has an interface socket for being inserted with said first interface and a second

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transmission interface for being used with other information apparatuses.

19. The double interface flash memory card as defined in claim 14, wherein the second transmission interface comprises a USB plug.

20. The double interface flash memory card as defined in claim 14, wherein the second bus interface circuit comprises a USB bus interface circuit.

\* \* \* \* \*



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You can transfer music from the computer to an iPod touch or playback directly from the iStick. No need for lengthy synchronization or pay for streaming services.

Free up space on your iPhone by backing up all your photos, videos and files to the high capacity iStick. No need to pay for recurring online Cloud storage subscription.

Stream tons of movies directly from the iStick onto your iPad, anytime and anywhere you want, even on planes. No Internet or wireless network required. The iStick app features a hardware accelerated video decoder that supports a wide variety of non-iOS native video formats like MP4, M4V, MPV, MOV, MPG, MKV, AVI, WMV, RMVB, FLV, 3GP, GIF.

iStick is safe and secure since no data is sent through 3rd party services or transferred through the Internet or Cloud where hackers and others (like server operators) may gain access.

Features

- Free universal iPhone/iPad/iPod touch iOS app

- Music & Movie Player (able to decode MKV, RMVB, AVI, WMV etc.)
- 1080p HD movie streaming, direct playback from iStick
- Photo & Document (Excel, Word, Powerpoint, PDF, iWork) Viewer
- Open files directly on the iStick without the need to copy to iDevice
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**Tech Specs**

- **Capacity:** 16GB
- **Connectors:** Standard USB 2.0 and Apple MFi-Certified Lightning Connector
- **iStick-to-USB Speed:** 12MB/s (Read), 7.5MB/s (Write)
- **iStick-to-iDevice Speed:** 2.5MB/s (Read), 1.9MB/s (Write)
- **Construction:** ABS Plastic and/or Aluminum
- **Dimensions:** 51.6 x 28.6 x 9.1mm
- **Weight:** 10g
- **Supported File Formats:**
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