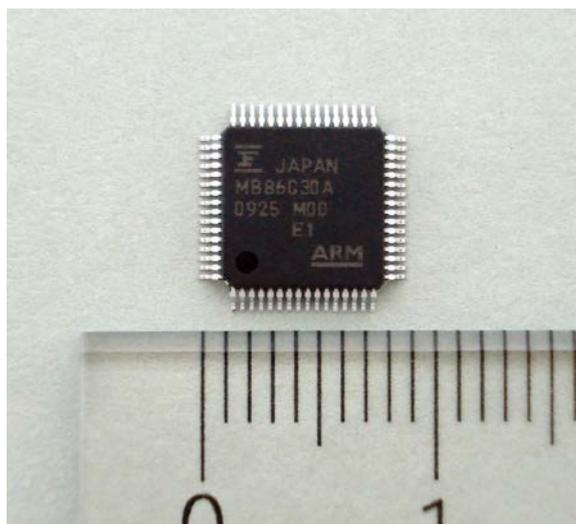


## **Fujitsu Ships USB 3.0 - SATA Bridge IC for PC Peripherals**

- Supports 5Gbps SuperSpeed USB; over 10 times faster than USB 2.0 -

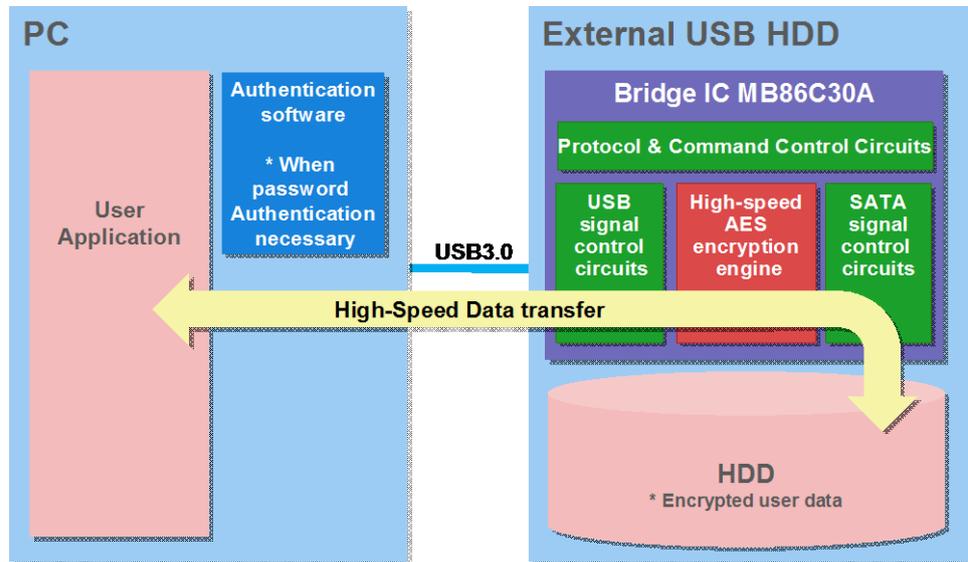
**Tokyo, July 27, 2009** - Fujitsu Microelectronics Limited today announced the shipment of one of the first available USB 3.0 - SATA (\*1) bridge (\*2) ICs in the market, which supports SuperSpeed USB, the USB 3.0 specification (\*3), and enables data transfer rates of 5Gbps maximum between external storage devices – such as hard disk drives (HDDs) – and PCs. The new IC, the MB86C30A, is the first in the MB86C30 Series of USB 3.0-SATA bridge ICs, and when embedded in PC peripheral devices, enables over 10-fold faster data transfer rates in comparison to the USB 2.0 specification. In addition to the bridge functionality, the new IC also features a high-speed data encryption/decryption engine, offering high security without impairing the high-speed performance of USB 3.0. Samples of the new MB86C30A IC are available from today, July 27, 2009.



**Figure 1: USB 3.0 - SATA bridge IC, MB86C30A (unit: cm)**

Today, PCs and digital audio-visual equipment handle an ever-growing volume of data such as digital photos, audio and video files. These market needs are driving storage devices, such as hard disk drives, to have ever-increasing data volumes and speeds. The ubiquitous USB interface, used widely in external hard drives and USB memory sticks, has had a slow maximum data transfer rate of 480Mbps under the USB 2.0 specification, too slow to meet current strong demand for the ability to read and write high volumes of data in shorter time. The USB 3.0 specification (SuperSpeed USB) ratified in November 2008 resolves this issue by providing a maximum data transfer rate that is over 10 times faster than that of USB 2.0. In addition, this revolutionary next-generation specification includes greater protocol efficiency as well as improved power management techniques, which enable lower power consumption.

As this IC series enables 5Gbps high-speed data transfer between the PC and external HDDs, for the case of 3.5-HDDs, copying two hours worth of full high-vision video can be reduced from 12 minutes to approximately 3 minutes 30 seconds to 4 minutes in comparison to USB 2.0.



**Figure 2: Example of system using the USB 3.0 -SATA bridge IC**

The MB86C30A IC also contains an embedded AES (\*4) encryption engine that makes it possible to store encrypted data on HDDs, thus protecting confidential information from threats when portable devices are lost or stolen – a well-publicized problem in recent years – or to prevent data leaks when storage devices are disposed of. In addition, compared to software encryption, this hardware encryption does not burden the CPU of the host PC while providing more secure protection of user's data.

This series of ICs is being co-developed with Fujitsu Laboratories Limited, utilizing their high-speed serial interface technologies (\*5), and Fujitsu LSI Solutions Limited. Going forward, Fujitsu Microelectronics will strengthen and expand its line-up of USB3.0 IC products including those for digital AV equipment.

#### **Sample Availability**

MB86C30A: From July 27, 2009

#### **Sales Target**

1 million units per month

#### **Product Features**

##### **1. One of the first available USB 3.0 (SuperSpeed USB) ICs for PC peripherals to enable high-speed data transfer**

The new IC is a USB 3.0 - SATA bridge IC for PC peripherals, which features - integrated on a single chip - the USB signal communication control circuits, SATA signal communication control circuits, protocol and command control circuits, and Fujitsu proprietary high-speed serial interface technologies, thus enabling 5Gbps high-speed data transfer.

## **2. High-speed AES encryption/decryption engine**

The MB86C30A features an AES encryption/decryption engine - which eliminates the need for encryption software or separate encryption/decryption IC – and makes it possible to encode data stored on external storage HDDs featuring the SATA standard interface, widely used for PCs. Furthermore, the IC supports data transfer speeds that can cover SATA HDD performance, allowing protection of data without impairing high-speed performance or usability..

## **Attachment**

Key specifications of the USB 3.0 - SATA bridge IC, MB86C30A

## **Glossary and Notes**

### 1. SATA (or Serial ATA):

One of the ATA interface standards for connecting PCs to mass storage devices such as hard disk drives, and is integrated into most PCs.

### 2. Bridge IC:

An IC with integrated functions that convert between more than two interfaces. Fujitsu's MB86C30A converts data between the PC interface USB 3.0, and SATA, which is a popular interface for hard disk drives and other external storage devices.

### 3. USB 3.0 Specification (Universal Serial Bus Specification 3.0, Revision 1.0):

A specification defined by the USB 3.0 Promoter Group.

### 4. AES (Advanced Encryption Standard):

The Advanced Encryption Standard (AES) is an encryption standard adopted by the U.S. National Institute of Standard and Technology (NIST), and used widely worldwide. The standard defines three key lengths of 128 bit, 192 bit and 256 bit, with longer key lengths representing higher security.

### 5. Fujitsu's high-speed interface technologies:

Refers to Fujitsu's technologies that enable low power consumption, small form-factors, and low cost for Gbps-class high-speed serial interfaces, such as in 40Gbps optical systems, multi-channel 10Gbps for blade servers, PCI-express, SATA, USB, etc. , in CMOS.

## **For more information:**

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**About Fujitsu Microelectronics Limited (FML)**

Fujitsu Microelectronics Limited designs and manufactures semiconductors, providing highly reliable, optimal solutions and support to meet the varying needs of its customers. Products and services include ASICs/COT, ASSPs, power management ICs, and flash microcontrollers, with wide-ranging expertise focusing on imaging, wireless, automotive and security applications. Fujitsu Microelectronics also drives power efficiency and environmental initiatives. Headquartered in Tokyo, Fujitsu Microelectronics Limited was established as a subsidiary of Fujitsu Limited on March 21, 2008. Through its global sales and development network, with sites in Japan and throughout Asia, Europe, and the Americas, Fujitsu Microelectronics offers semiconductor solutions to the global marketplace.

For more information: <http://jp.fujitsu.com/fml/en/>

## Attachment

Key specifications of the USB 3.0 - SATA bridge IC, MB86C30A

		MB86C30A
USB	Standard	Universal Serial Bus Specification 3.0, Revision 1.0 Universal Serial Bus Specification, Revision 2.0
	Bit Rate	5Gbps (SuperSpeed) / 480Mbps (High-Speed)
	Device Class	Mass Storage Class Bulk-Only Transport, Revision 1.0
SATA	Standard	Serial ATA Specification Revision 2.6
	Bit Rate	3Gbps (Gen2i) / 1.5Gbps(Gen1i)
	ATA/ATAPI Device	HDD/SSD/Blu-ray/DVD/CD
Encryption Hardware	Algorithm	AES
	Mode	CBC / XTS*
	Block Size	128bit
	Key Length	128bit/256bit(CBC mode) 128bit+128bit/256bit+256bit(XTS mode)
	Throughput	200MB/s (CBC mode, 128bit) 150MB/s (CBC mode, 256bit) 300MB/s (XTS mode, 128bit+128bit) 270MB/s (XTS mode, 256bit+256bit)
MPU	Core	ARM7TDMI-S™
	Max. Operating Frequency	75MHz
	RAM Size	64KByte
	Package	LQFP 64 pin 7mm x 7mm (0.4mm pitch)
Process Technology	65nm CMOS	

\*CBC (Cipher Block Chaining):

An AES mode suited for encrypting block data.

\*XTS (XEX encryption mode with tweak and ciphertext stealing):

An AES mode adopted by IEEE1619 (Standard for Cryptographic Protection of Data on Block-Oriented Storage Devices), suited for encrypting block data.

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