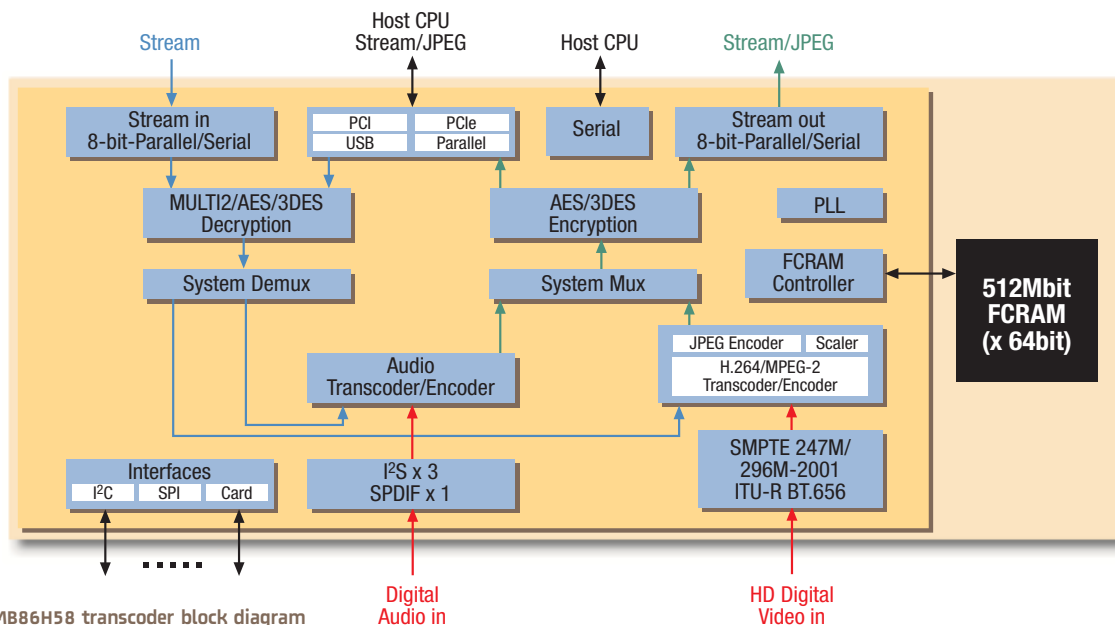


**FACTSHEET**  
**MB86H57/MB86H58**  
**TRANSCODER**

# MB86H57/MB86H58

## Low power H.264/MPEG-2 full HD transcoder



MB86H57/MB86H58 transcoder block diagram

### Description

The Fujitsu MB86H57, MB86H58 can convert between Full HD (1920 dots x 1080 lines), MPEG-2 video data and H.264 video data, as well as transcoding between audio formats while featuring low power consumption.

These new ICs are targeted for consumer equipment supporting the growing number of applications related to digital recording and transcoding of broadcast content. By employing Fujitsu's proprietary transcode technology, Fujitsu Microelectronics realised industry-leading low power consumption of only 1.0 Watt (W) including the in-package memory.

Combined with the small form-factor packaging, these ICs can also be used in mobile products such as notebook PCs.

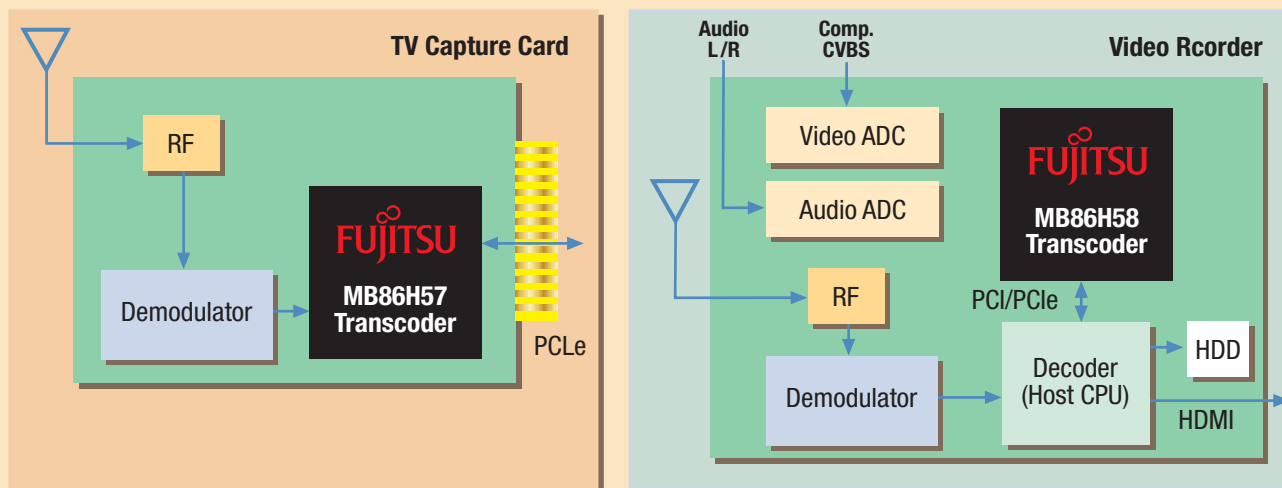
In addition to the transcode function, security functions are included on a

single chip to make it easier for customers to create their systems.

### Features

- **Industry-leading low power consumption and small form-factor.** Fujitsu Microelectronics' proprietary transcoding technology has enabled the company to create a Full HD H.264/MPEG-2 transcoder with industry-leading low power consumption. Using Fujitsu's 65nm process technology the power consumption in Full HD transcoding operation is just 1.0W including one 512Mb FCRAM™-in-package. In addition, the MB86H57 small form-factor option will allow the creation of innovative portable and mobile products.
- **Necessary functions for recording digital broadcasts in a single chip.** Both ICs integrate all the necessary functions for systems developed to record digital broadcasts, including security functions and an interface to digital TV demodulators.

- **H.264/MPEG-2 bi-directional transcoder functionality.** Building on the functionality of the previous generation product, MB86H52, to transcode from MPEG-2 to H.264, these new ICs also transcode from H.264 to MPEG-2 SD. With this additional capability, the new devices support the majority of formats used worldwide. The combination of transcoding and time re-stamping allows the audio operation to be adjusted to customer needs.
- **Interfaces to connect peripheral ICs.** Both products contain a variety of interfaces for improved connectivity. As a host interface to connect to an external CPU, there is a 16-bit parallel interface and a TS interface for video streaming. In addition, the MB86H57 and MB86H58 have serial, PCI, PCI Express and USB interfaces. Connection to external ROM is also possible, enabling high-speed boot-up for equipment deploying the ICs.

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**System Configuration Example**


MB86H57/MB86H58 transcoder block diagram

**Specifications**

<b>Function</b>	Transcode	Video	TS(MPEG-2 HD/SD) ⇒ TS(H.264 HD/SD), MP4(H.264 QVGA) <sup>∞</sup> TS(MPEG-2 HD/SD) ⇒ TS/PS(MPEG-2 SD) TS(H.264 HD/SD) ⇒ TS/PS(MPEG-2 SD)
		Audio	Single Audio Transcode, Time stamp re-allocation, Double Audio Re-Multiplexing support
	Encode	PSI/Private PES Re-Multiplexing	
	Thumbnail	Video	VBS <sup>*1</sup> ⇒ TS(H.264 HD/SD), TS/PS(MPEG-2 SD)
	Profile	Audio	ABS <sup>*2</sup> ⇒ MPEG-1 Audio Layer2, etc
<b>Video</b>	Interface	JPEG Encode	
	Format	H.264 High profile / Level 4.0	
	Channels	H.264 Main profile / Level 3.0	
	Interface	H.264 Baseline profile / Level 3.1	
	Format	MPEG-2 Video Main profile / High Level	
<b>Audio</b>	Interface	SMPTE 274M / SMPTE 296M-2001, ITU-R BT.656, External sync mode (H/V/F + 16-bit data)	
	Format	Dolby <sup>®</sup> Digital (AC-3) <sup>*3</sup> , MPEG-2/4 AAC-LC/HE-ACC, MPEG-1 Audio Layer2, Linear PCM	
	Channels	Max. 5.1ch <sup>*4</sup>	
	Interface	I <sup>2</sup> S, S/PDIF	
<b>JPEG Stream</b>	Resolution	320 x 240, 320 x 192	
	Format	MPEG-2 TS/PS, Video/Audio ES output	
	Interface	Stream (8-bit parallel, Serial), General 16-bit parallel, PCI, PCI Express, USB	
<b>Host Interface</b>		General 16-bit parallel, Serial, PCI, PCI Express, USB	
<b>Security</b>		AES, 3DES, MULTI2 (Decrypt only)	
<b>Peripheral I/O</b>		I <sup>2</sup> C, SPI, Card	
<b>Input Clock Frequency</b>		27MHz	
<b>Operating Frequency</b>		216MHz (internal memory interface only: 243MHz)	
<b>Power Consumption (including memory)</b>		1.0W (typ., 1.2V, MPEG-2 HD to H.264 HD Transcoding)	
<b>Package</b>		MB86H57: FBGA 650pin 15mm square SiP (Ball pitch 0.5mm)	
		MB86H58: FBGA 496pin 27mm square SiP (Ball pitch 1.0mm)	
<b>Memory</b>		512Mbit FCRAM x 1	

<sup>\*1</sup> Video Baseband Signal, <sup>\*2</sup> Audio Baseband Signal, <sup>\*3</sup> Dolby is a registered trademark of Dolby Laboratories,

<sup>\*4</sup> Number of channels depend on audio format

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