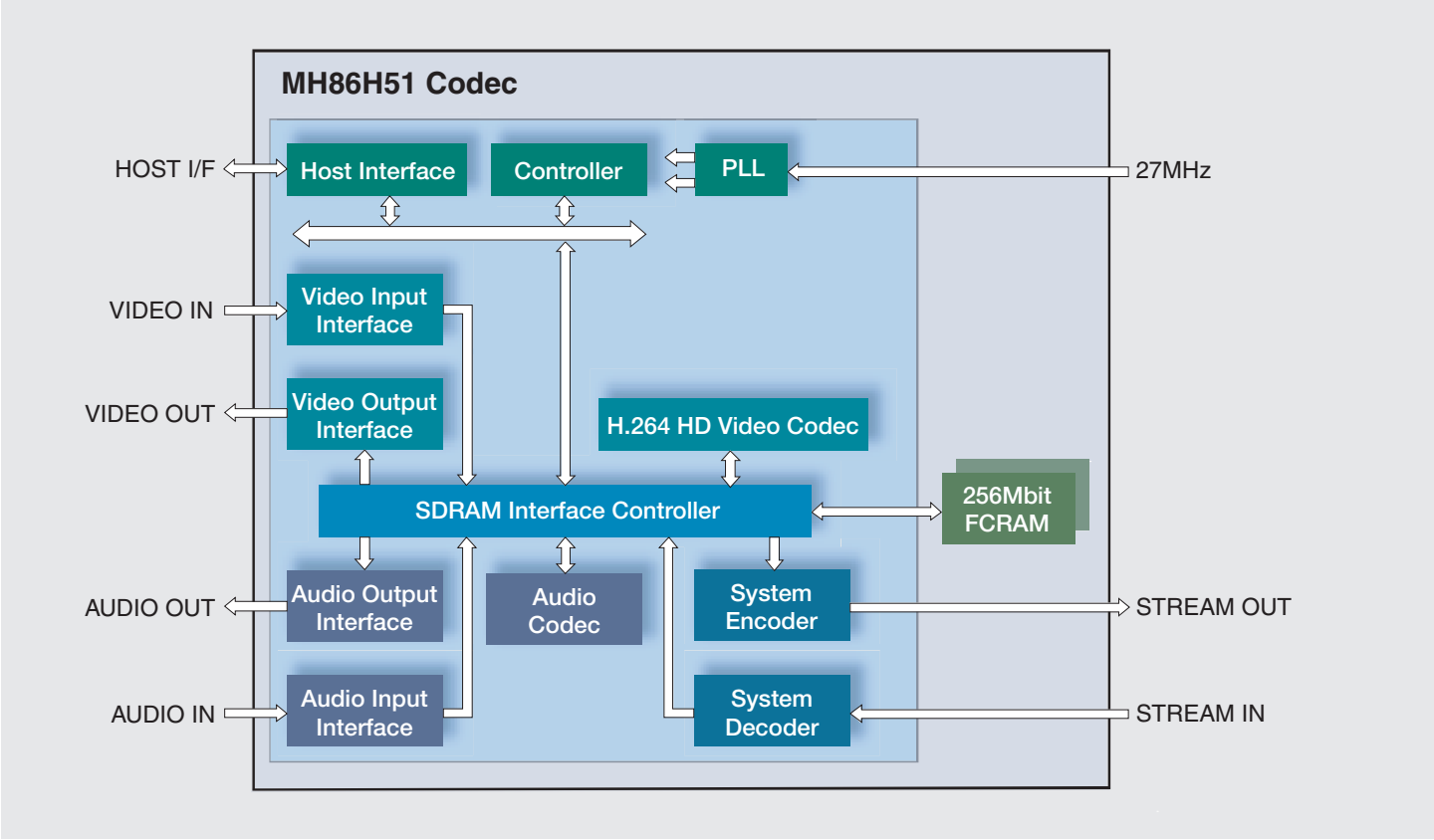
MB86H51 Full HD H.264 Codec



Introduction

The Fujitsu MB86H51 can compress and decompress full High-Definition (HD) video (1,920 dots x 1,080 lines) in the H.264 format in real time.

This chip is an enhancement of Fujitsu's MB87H50 (1,440 dots X 1,080 lines) that is currently being mass-produced and shipped. Using proprietary video compression algorithms from Fujitsu Laboratories Ltd. to reduce the processing burden, while leveraging embedded memory technologies from Fujitsu Limited to enable compactness and low power consumption, Fujitsu's new chip is the industry's first full HD H.264 high-profile LSI with memory in one package.

Applications

- Video Cameras
- Mobile Digital Broadcasts
- Next-Generation DVDs for HDTV
- Web Delivery of Digital TV Broadcasts
- Mobile Video Players
- Hard Disk Recorders
- Internet Broadcasts (VoD)
- IPTV Phones
- Mobile TV Phones

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Features

Embedded Memory Enables Compactness and Low Power Consumption

This LSI contains two blocks of 256 Megabit memory (FCRAM) in the same System in Package (SiP), and utilizes an optimized LSI design to reduce the size and lower the power consumption.

Real-Time Compression and Decompression of HDTV Video and Audio

Real-time H.264 format video compression requires more than 10 times the data processing than was necessary for previous formats. By realizing further high-speed processing, Fujitsu's new chip can support H.264 High Profile Level 4.0. Also, with this new chip audio is compressed and decompressed in real time by utilizing formats such as MPEG-1 Audio Layer2.

Proprietary Technologies for Compression and High-Quality Video

This chip utilizes a proprietary algorithm developed by Fujitsu Laboratories that automatically applies less compression to areas in the image where compression artifacts are most noticeable to human vision, such as human faces or slow-moving objects, and greater compression to other areas. Thus, high image quality for the critical zones is maximized. This feature also makes it possible for the image size to be reduced less than to half that of the MPEG-2 format with equivalent image quality.

Specifications

Video	*Spec*	H.264 High Profile / Level 4.0 Half-duplex Codec
	Resolution	1920 x 1080 x 60i/50i, 1440 x 1080 x 60i/50i, 1280 x 720 x 60p/50p, 720 x 480 x 60i, 720 x 576 x 50i
	Bit Rate	20Mbps (max.)
	Interface	SMPTE 274M / SMPTE 296M-2001, ITU-R BT.656
Audio	*Format*	MPEG-1 Audio Layer 2, MPEG-2 AAC (LC profile), Linear PCM, Dolby® Digital (AC-3)[1]
	Channels	2 channels
	Interface	LR serial
System	*Format*	MPEG-2 TS CBR / VBR
	Stream Interface	8-bit parallel or serial
Host Interface		General 16-bit interface
Input Clock		27MHz
Operating Frequency		27MHz, 108MHz (memory only: 135MHz)
Power Consumption		750mW (typ., 1.2V, 1920 x 1080 x 60i at encoding [including Memory])
Package		FBGA 650pin 15mm square SiP (Ball pitch 0.5mm)
Memory		256Mbit FCRAM x 2

[1]Dolby is a registered trademark of Dolby Laboratories.

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