Product Profile

FUJITSU

MB86H23   *SmartMPEG*

November 2003
Edition 0.55

MPEG-2 Decoder with Macrovision

FME/MM/PP/1103

INTRODUCTION:

This *SmartMPEG* is an integrated MPEG-2 set-top-box decoder which includes the hardware extensions required to support a low Bill of Material for Set-Top-Boxes and IDTVs. This devece support Macrovision.

Highlights of the *SmartMPEG* include an ARC RISC CPU (@130.5MHz), two transport stream demultiplexers with integrated DVB descramblers, a PAL/NTSC/SECAM digital video encoder and a display controller, which overlays up to four layers of graphic data. A specially designed, shared SDRAM memory interface for the CPU and MPEG decoder connects to a single SDRAM device using either a 16 or 32-bit data bus depending on customer bandwidth requirements. The included universal processor interface allows simple connection to FLASH, hard disk drives (IDE), Common Interface and other asynchronous devices.

The *SmartMPEG* is part of Fujitsu's MPEG decoder family, and is the successor to the MB87L2250. The *SmartMPEG* offers several advantages over the MB87L2250, including support for 16/32-bit SDRAM devices up to 128Mbytes, an integrated S/P-DIF interface, DPLL, and internal audio DAC's. This helps to reduce product cost by eliminating the need for external components. The *SmartMPEG* adds also DPLL functionality, SECAM encoding, and two Smart-card interface to former MPEG devices.

To help our customers achieve the shortest possible time-to-market, the *SmartMPEG* comes with the **Fujitsu Driver Application Programming Interface (FAPI)**. FAPI is a complete driver set, allowing fast and efficient customer software design. In addition, FAPI is now the standard programming interface for Fujitsu DVB components, easing migration to future devices.

FEATURES

- MPEG2 video ISO/IEC 13818-2 (MP@ML...SP@ML)
- MPEG audio layer 1/2
- 32-bit RISC CPU (ARC Tangent A4 @130.5MHz)
- 4K I-cache, 2K D-cache
- Three timers / watchdog / power-down mode
- Shared memory interface (SDRAM, 16/32 bit data), 64Mbit...1Gbit
- Universal processor interface (IDE, NAND/NOR FLASH & Common Interface)
- Two transport stream decoders (decoding/recording) including two DVB descrambler
- Flexible MPEG video resizing (factor 1/16 to 2)
- Display controller with up to 4 true colour graphic or CLUT layers (total 6 layers)
- Flexible frame rate conversion (e.g. 50/60Hz)
- Flicker fixer for better on-screen text clarity
- Teletext / WSS / VPS / CC / VBID insertion
- PAL/NTSC/SECAM digital encod., Macrovision 7.1.L1
- RGB De-matrix (RGB or YCrCb output)
- Control of brightness, contrast and colour saturation of RGB and YCrCb output
- 5 video DAC's @10bit for analogue video / audio O/P
- ITU-R 656 video input/output (shared with TS2 input)
- S/P DIF output for PCM/AC3/MPEG
- UART / 2 x Smart Card IF / I2C / GPIO / PWM Output
- 7-segment LED controller for 5 digits / KeyBoard mon.
- Infra Red receiver / transmitter
- On-chip DPLL, requiring only 27.0MHz crystal
- Bootable from NOR Flash or I2CPROM
- FPT-208P-M06 (LQFP-Package)
- Ambient Temperature Range: 0^oC to $+70^oC$
- Advanced Technology: Fujitsu CMOS Cx81 (0.18μm)
- 1.8 volt device with 3.3 volt I/O Power consumption: typ. 700mW (Standby: 100mW)
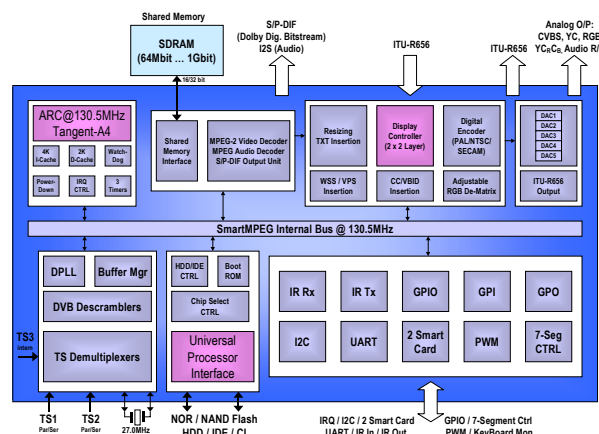
Worldwide Headquarters

Japan

Tel: +81 3 5322 3353
Fax: +81 3 5322 3386

Fujitsu Limited
Marketing Division
Electronic Devices
Shinjuku Dai-Ichi Seimei Bldg.7-1
Nishishinjuku 2-chome, Shinjuku-ku
Tokyo 163-0721
Japan

http://edevice.fujitsu.com/

Asia

Tel: +65 6281 0770
Fax: +65 6281 0220

**Fujitsu Microelectronics Asia
PTE Limited**
#05-08, 151 Lorong Chuan
New Tech Park, Singapore 556741

Tel: +82 2 3484 7100
Fax: +82 2 3484 7111

Fujitsu Microelectronics Korea Ltd.
1702 Kosmo Tower, 1002 Daechi-Dong
Kangnam-Gu, Seoul 135-280, Korea

http://www.fmal.fujitsu.com/
http://www.fmk.fujitsu.com/

USA

Tel: +1 408 922 9000
Fax: +1 408 922 9179

**Fujitsu Microelectronics
America, Inc.**
3545 North First Street
San Jose, CA 95134-1804
USA

Tel: +1 800 866 8608
Fax: +1 408 922 9179

Customer Response Center
Mon-Fri: 7am-5pm (PST)

http://www.fma.fujitsu.com/

Europe

Tel: +49 6103 690-0
Fax: +49 6103 690122

**Fujitsu Microelectronics Europe
GmbH**
Am Siebenstein 6-10
D-63303 Dreieich-Buchschlag
Germany

e-mail   multimedia_info@fme.fujitsu.com

http://www.fme.fujitsu.com/