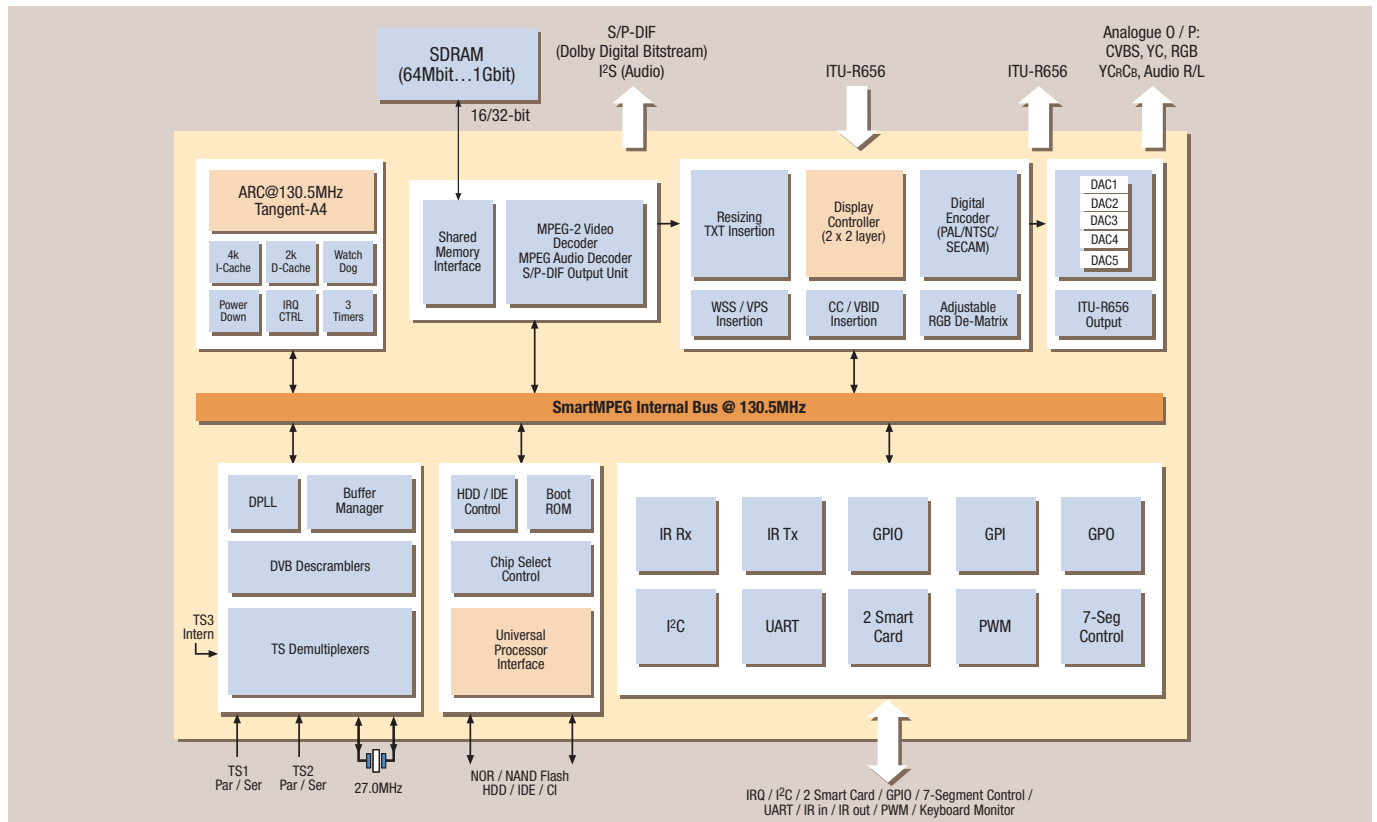


MB86H20B

SmartMPEG

MPEG-2 Decoder for set-top boxes



MB86H20B SmartMPEG block diagram.

Description

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.

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 DACs. This helps to reduce product cost by eliminating the need for external components. The SmartMPEG also adds DPLL functionality, SECAM encoding, and two Smart-card interfaces 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 descramblers
- 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 encoder
- RGB De-matrix (RGB or YC_RC_B output)
- Control of brightness, contrast and colour saturation of RGB and YC_RC_B output
- 5 video DACs @10-bit 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/PC/GPIO/PWM Output
- 7-segment LED controller for 5 digits/keyboard monitor
- Infra-red receiver/transmitter
- On-chip DPLL, requiring only 27.0MHz crystal
- Bootable from NOR Flash
- FPT-208P-M06 (LQFP-Package)
- Ambient temperature range (Std Pkg): 0 to +70°C
- Advanced technology: Fujitsu 0.18µm CMOS
- 1.8V device with 3.3V I/O
- Power consumption: typ. 700mW (Standby: 100mW)

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