

Automotive Infortainment System LAN IDB-1394 Controller MB88387

IDB-1394 serial bus controller conforming to the IEEE1394b standard (IEEE Std 1394b-2002). This product enables the multiplex transmission of DVD video and digital TV images to rear vehicle displays; it is optimal for rear-seat entertainment systems.

Overview

IDB-1394 is in the spotlight as an automotive multimedia network that enables the multiplex transmission of audio and images. FUJITSU has developed “MB88387” as IDB-1394 controller for rear-seat entertainment systems by applying its records of the AV protocol and DTCP (Digital Transmission Content Protection) in 1394 controller for commercial devices.

Fig.1 presents a schematic of the rear-seat entertainment system.

This product integrates a PHY layer, LINK layer, AV protocol, and DTCP function on a single chip to minimize the mounting area and reduce power consumption. Furthermore, it mounts two interfaces for MPEG2-TS (Transport Stream) transmission that are independent of the system bus interface for command transmission, thus enabling the simultaneous streaming of DVD video and digital TV. It also mounts an audio interface supporting I²S (Inter-IC Sound) and the transmission of linear PCM audio and DVD audio is possible.

Fig.2 presents the roadmap for FUJITSU’s IDB-1394 controller development.

We plan to develop IDB-1394 controller with built-in simple video codec in the future in order to enable the further multiplexing of image transmission and cost reduction for the system.

Product Features

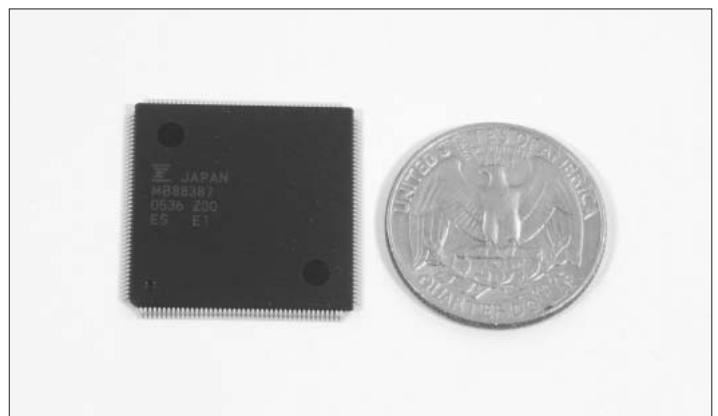
■ Conforming to the IEEE1394b high-performance serial bus standard (IEEE Std 1394b-2002)

With two built-in cable ports, transmission speed of S100, S200, and S400 are supported.

■ AV protocol function

Functions supporting MPEG2-TS (IEC61883-4), DSS (IEC61883-7), and Audio (IEC61883-6) are incorporated to enable the real-time transmission of digital video and digital audio streams.

Photo 1 External View



DTCP function

This product incorporates a DTCP function to simultaneously encode/decode two streams.

Other functions

- Built-in 4Kbytes×2 channels of dual-function data buffer for isochronous transmission/reception
- Built-in 512bytes special buffer for asynchronous transmission/reception

- 2 special ports for isochronous transmission (8-bit bus)
- 3-line I²S input/output port for audio data transmission
- Power-supply voltage: 3.3V (I/O), 1.8V (internal)
- Operation temperatures: -40°C to +85°C
- Package: LQFP-176 (FPT-176P-M07)

Fig.3 presents a block diagram of this product. ★

Figure 1 Rear-seat Entertainment System Schematic

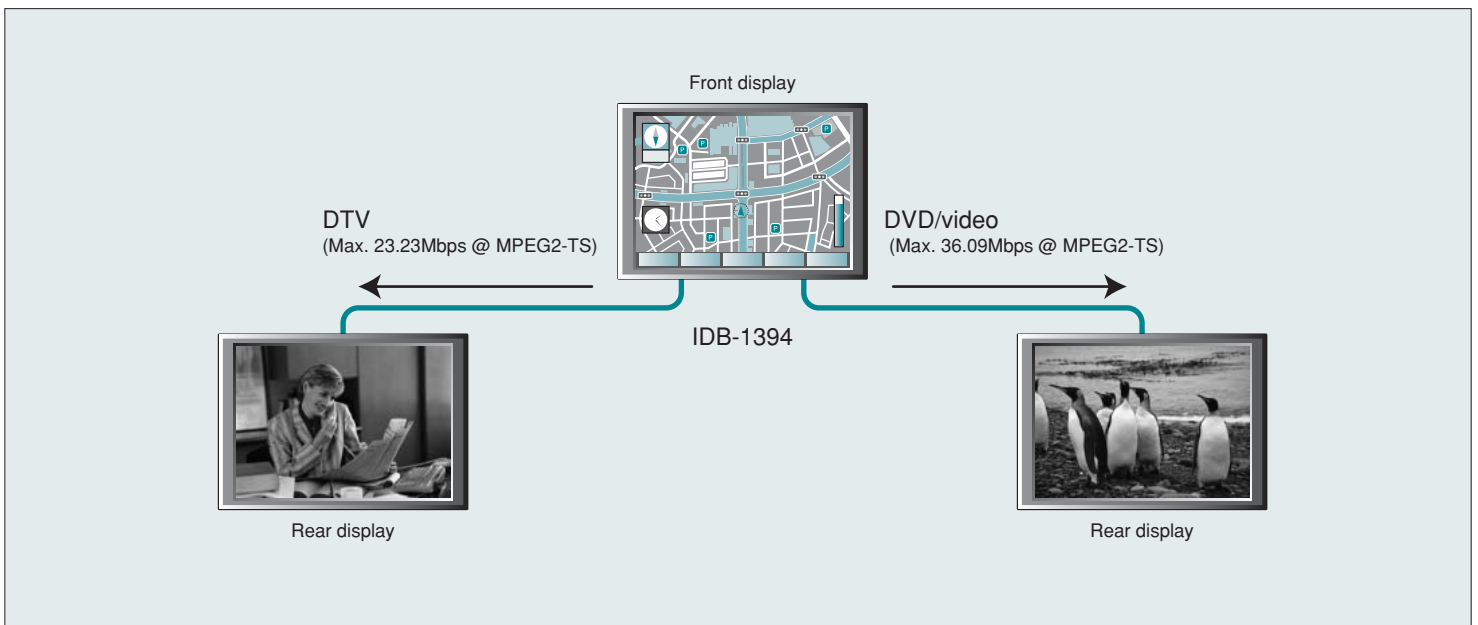


Figure 2 Roadmap of FUJITSU's IDB-1394 Controller

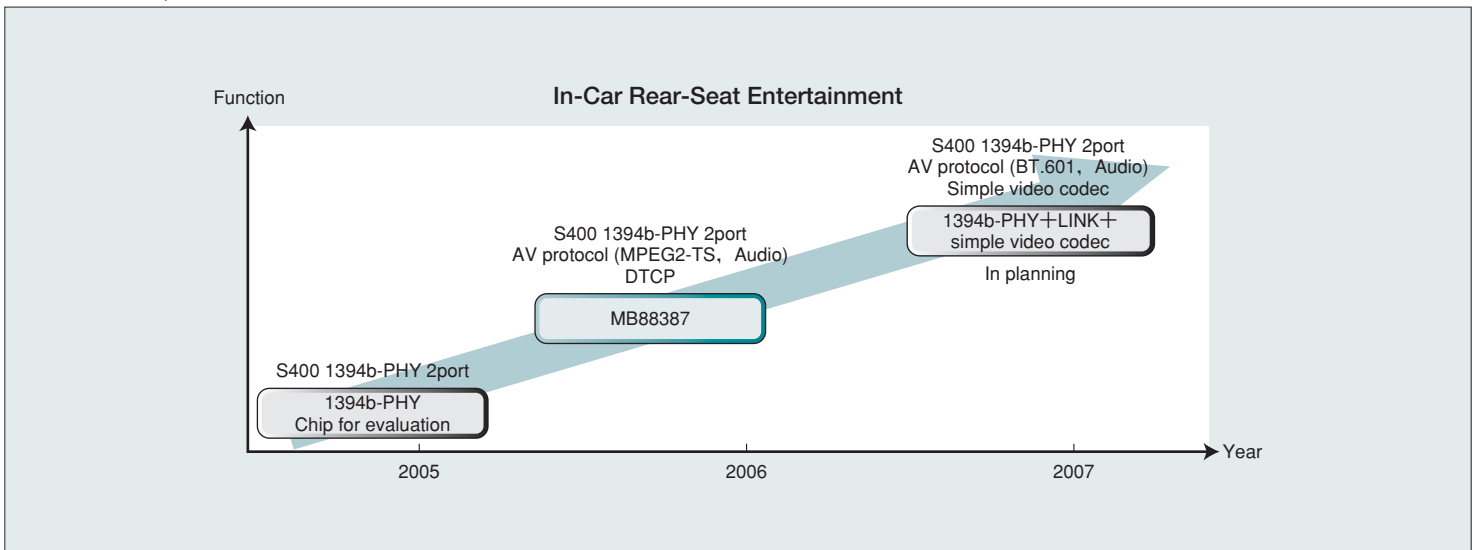


Figure 3 Block Diagram (MB88387)

