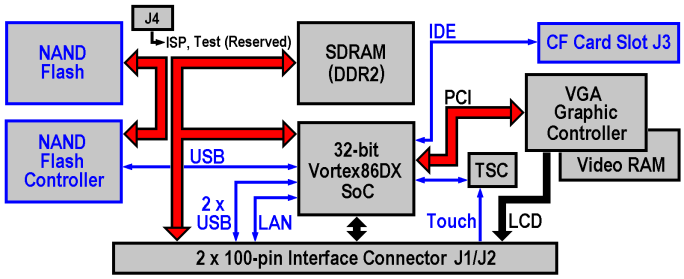
Product Information

Embedded System-on-Module eSOM/2586

Embedded Linux Module with LCD / Touch Controller, 480 Mbps USB and Java 6 Support

Description

The System-on-Module eSOM/2586 comes with a powerful Vortex86DX 32-bit x86 SoC (System-on-Chip), LCD and touch controller, preinstalled Linux O/S, full-featured TCP/IP stack, Web (HTTP) server, Telnet/SSH server, FTP/SFTP server, TFTP support, full-featured X-Server and Java 6 (J2SE) run time environment. The main application area of the eSOM/2586 is the field of embedded IP-based HMI (Human-Machine Interface) gateways for modern factory automation and laboratory environments.



Block diagram eSOM/2586:
The eSOM/2586 offers besides 1x 10/100 Mbps Ethernet LAN interface, 20-bit GPIO, 1x SPI, 3x UART and 2x USB 2.0 host port also a LCD controller with 64 MByte video RAM and a touch interface. A 16-bit bus interface supports the connection to external chips and devices.

The main component of the eSOM/2586 is the Vortex86DX. The Vortex86DX is a high performance MCU, which is compatible with DOS, Linux and Microsoft Windows CE. It integrates 32 KB write through direct map L1 cache, PCI Rev. 2.1 32-bit bus interface at 33 MHz, DDR2 SDRAM controller, ROM controller, IPC (Internal Peripheral Controller) with DMA and interrupt timer/counter, Fast Ethernet MAC and PHY, 16C550/16C552-compatible FIFO UART, USB 2.0 host controller and many more.

The eSOM/2586 drive space for the operating system and the user files is implemented with a NAND flash controller and a NAND flash chip. The NAND flash controller is connected to one of the USB 2.0 host controller of the Vortex86DX. This means the eSOM/2586 is using an on-board USB boot device. The NAND flash hosts the Linux O/S and all other software components.

The eSOM/2586 offers the footprint of the new form factor eSOM-200 with two 100-pin Hirose FX8C connectors and all the hardware and software features necessary to add high-speed Ethernet device connectivity and touch-based HMI capabilities to any product design.

Technical Data eSOM/2586

Basic

CPU	Vortex86DX 32-bit x86 SoC
Speed	600, 800, 1.000 MHz (the ex factory clock speed is 800 MHz. The other clock speeds are available over an on-board strap option)
RAM	128 MByte DDR2 SDRAM @ 300 MHz bus speed
Flash	1024 MByte NAND with USB-based controller
Flash Erase Cycles	10.000 typ.
Ethernet	1x 10/100 Mbps Ethernet

I/O Functions

Parallel I/O	20-bit GPIO or 16-bit GPIO + 4 SPI signals
Serial I/O	3x 16C550/16C552 compatible UARTs
SPI	1x SPI host controller with one chip select output
USB Interface	2x USB host port for external USB devices with HS (480 Mbps), FS and LS support
Bus Interface	16-bit data with 24 address lines for external I/O and memory devices
LCD Interface	18-bit TTL interface, VGA-based for TFT/STN panels
LCD Video Memory	64 MByte video RAM with DDR2 interface
Touch Screen Interface	4-wire for resistive touch panels (UART-based)
LED Output	1x LAN status

Special Functions

BIOS	PC-compatible AMI Basic I/O System
O/S	Linux 2.6.18 (Debian-based) with X-Server and Java 6 (J2SE) run time environment preinstalled
RTC	1x Real Time Clock with external battery-backup
Watchdogs	1x timer watchdog, 1x power supervisor
Chip Select Outputs	4x CS output lines for external expansion
Interrupt Inputs	4x INT interrupt input line for external devices
Expansion	1x IDE-based CompactFlash (CF) slot

Other

Mechanical	eSOM-200 form factor (2x 100-pin Hirose FX8C connector)
Size	50 mm x 80 mm
Power	3.3 VDC
Current	1.000 mA typ. @ 800 MHz (1.300 mA max.)
Temperature	0 – 70 °C (still air) without heat sink

Delivery

eSOM/2586	eSOM/2586 with preinstalled embedded Linux O/S
EUI/57V	Embedded User Interface device with eSOM/2586, base board BB6/eSOM and 5.7” VGA LCD, touch screen
OTP/57V	Operator Touch Panel device with eSOM/2586, base board BB6/eSOM, 5.7” VGA LCD, touch screen, front panel for 3U 19” rack mounting

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