CoreModule®1-86DX2

PC/104 Single Board Computer with Vortex86DX2 System-on-Chip

Features

- Ultra low power, DM&P Vortex86DX2 SoC
- Full ISA bus support with built in redundancy
- 512MB/1G onboard DDR2 memory
- 2x Ethernet ports
- 8x GPIO
- VGA and 18/24-bit single channel LVDS
- HD Audio for CM1-86DX2-1G version
- PCI Express Mini Card and optional MicroSD slot
- -40°C to +85°C operating temperature range
- Supports Smart Embedded Management Agent (SEMA) functions

* Please refer to Comparison table to know detailed specification differentiation on page 2.

Specifications

Core System

CPU	Vortex86DX2 SoC, 800/1000 MHz
Memory	Standard: 512MB DDR2 soldered on board
	Optional: 1GB DDR2 soldered on board
BIOS	AMI BIOS, integrated in SoC
SEMA	Yes
Hardware Monitor	2x LAN, watchdog
Watchdog Timer	Yes, 3 different
Expansion Busses	PC/104 (ISA)
	PCI Express Mini Card slot

Video

VGA Interface	Yes
LVDS Interface	18/24 bit single channel

Audio (option)

Chipset	ALC886
Audio Codec	HD Audio

Ethernet

Standard	1x integrated PHY (10/100 Mbit)
Optional	1x integrated PHY (10/100 Mbit)
	1x Intel i210IT (10/100/1000 Mbit)

Multi I/O and Storage

USB	3x USB 2.0
SATA	1x SATA 1.5Gbit/s or 1x mSATA
MicroSD	1x standard slot for micro SD and micro SDHC, UDMA-2 mode
Serial	Standard: 2x RS232/485
	Optional: 4x RS232/485
PS2	Keyboard and mouse
LPT	Yes
GPIO	Standard: 8x
	Alternative configuration(s): - TTL level COM - PWM
A/D	8x Input

Power

Input Power	5VDC or ATX or Stack
Power Consumption	TBD (estimated ~ 6 to 7 W)
Power States	no ACPI

Mechanical and Environmental

Dimensions	96 mm x 90 mm (3.775" x 3.550")
Operating Temperature	Standard: 0°C to 60°C
	Industrial: -20°C to 70°C
	Extended: -40°C to 85°C
Storage Temperature	-55°C to 85°C
Cooling	Passive
Humidity	10% to 90% (non-condensing)
Shock	Non-operating: 50G peak-to-peak, 11ms duration, MIL-STD-202G Method 213B
Vibration	Operating: 11.95 Grms, 50-2000 Hz, each axis, MIL-STD-202G Method 214A
MTBF	TBD

Operating Systems

Standard Support	Windows XP, Windows XPe, Win CE 6.0, Linux

Ordering Information

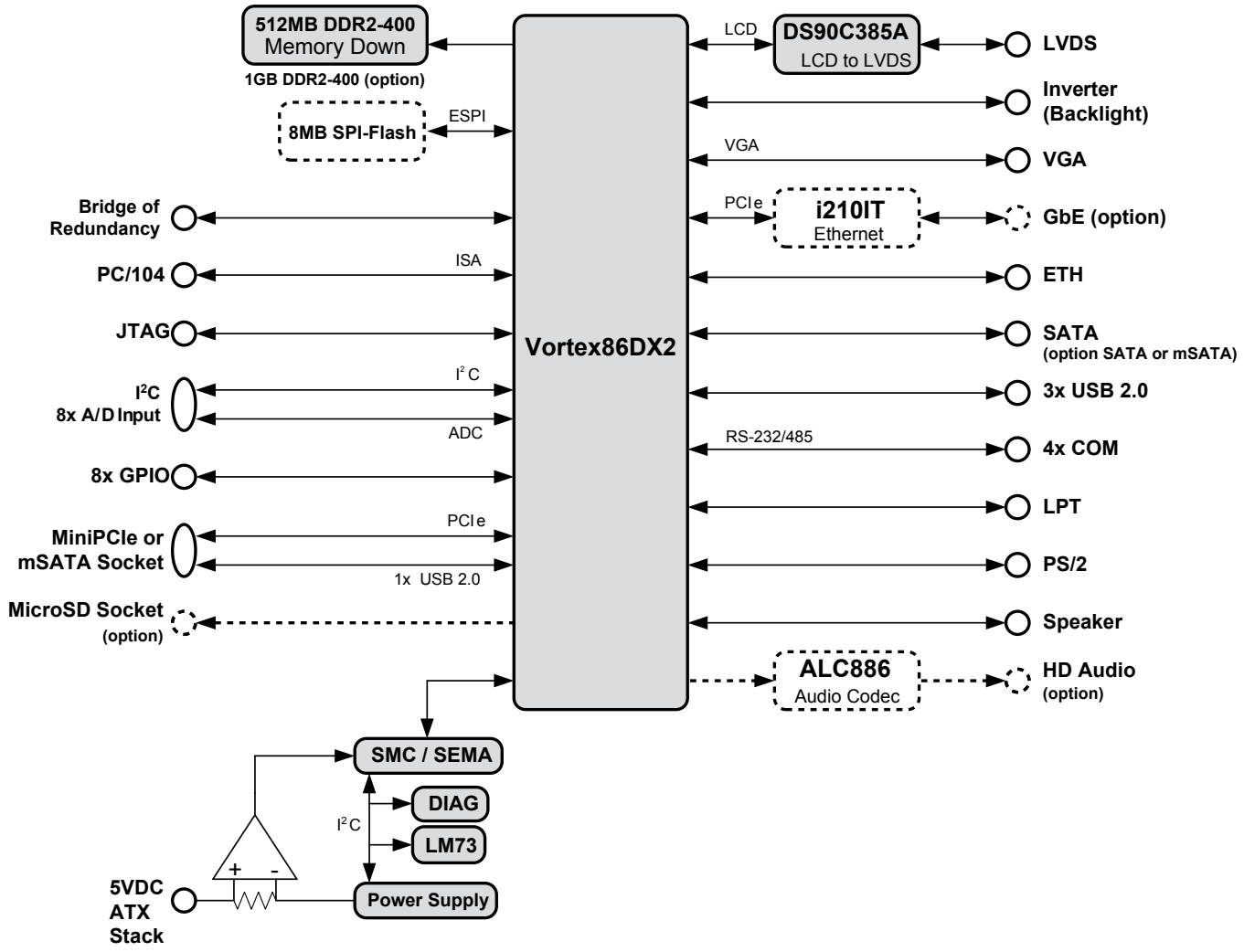
Modules

Model Number	Description/Configuration
702-0018-10	PC/104, CM1-86DX2, Vortex 86DX2, 1.0 GHz, 1GB DRR2 onboard, incl. heatsink, 0°C to 60°C
702-0020-10	PC/104, CM1-86DX2, Vortex 86DX2, 1.0 GHz, 512MB DRR2 onboard, incl. heatsink, 0°C to 60°C
802-0018-10	PC/104, CM1-86DX2, Vortex 86DX2, 1.0 GHz, 1GB DRR2 onboard, incl. heatsink, -20°C to 70°C
802-0020-10	PC/104, CM1-86DX2, Vortex 86DX2, 1.0 GHz, 512MB DRR2 onboard, incl. heatsink, -20°C to 70°C
902-0018-10	PC/104, CM1-86DX2, Vortex 86DX2, 800 MHz, 1GB DRR2 onboard, incl. heatsink, -40°C to 85°C
902-0020-10	PC/104, CM1-86DX2, Vortex 86DX2, 800 MHz, 512MB DRR2 onboard, incl. heatsink, -40°C to 85°C

Accessories

Model Number	Description/Configuration
763-0024-10	Cable set, CM1-86DX2

Functional Diagram



CM1-86DX2 Standard Variants

Product Name	CM1-86DX2-512	CM1-86DX2-1G
Form factor	PC/104	PC/104
P/N	702-0020-10 802-0020-10 902-0020-10	702-0018-10 802-0018-10 902-0018-10
CPU / SoC	Vortex 86DX2	Vortex 86DX2
CPU / SoC Speed	1.0 GHz (@ ext. temp. max. 800 MHz)	1.0 GHz (@ ext. temp. max. 800 MHz)
Overall TDP	~ 6-6.5W	~ 7W
Supply Voltage [5 VDC / ATX / Stack]	Yes / Yes / Yes	Yes / Yes / Yes
Soldered DDR2 RAM	512MB	1GB
Bridge of Redundancy	Yes	Yes
SPI-Flash (8MB) (option)	No	Yes
ISA Bus (PC/104)	Yes	Yes
JTAG	Yes	Yes
I²C	Yes	Yes
PS/2	Yes	Yes

Speaker	Yes	Yes
HD Audio (option)	No	Yes
VGA	Yes	Yes
LVDS	Yes	Yes
MicroSD socket (option)	No	Yes
SATA (1.5 Gbit/s)	1	1
mSATA (loose 1x SATA port AND mPCIe)	1	1
mPCIe (loose mSATA)	1	1
10/100 Mbit ETH	1	1
GbE Ports (option)	0	1
USB2.0	3	3
COM Ports	2	4
LPT	1	1
GPIO	8	8
A/D Input(s)	8	8