



Features

- Intel Atom E6xxT™ 0.6 / 1.6 GHz CPU
- DDR2-800 SDRAM, 1GB, soldered
- Integrated graphics controller 400 MHz
- 4 GB NAND flash (SLC)
- COM Express® Type 10 connector signals
- OS compatibility: Microsoft™ MS-DOS® 6.22, FreeDOS, Linux 2.6, QNX 6.5.x, Microsoft™ Windows® CE 6.0, Microsoft™ Windows® XP Embedded, Microsoft™ Windows® 7 Embedded
- Operating temp. range: -40°C... +85°C
- Shock / vibration stability: 50g / 5g
- MTBF: 200 000 hours

Overview

Mezzanine CPU Module COM Express® mini, Type 10, 55 × 84 mm. Designed for building highly-reliable energy-efficient embedded systems with small dimensions.

Conforms to "PICMG® COM.0 COM Express® Module Base Specification Revision 2.1".

Technical Specifications

CPU: Intel Atom E6xxT™

- 0.6 / 1.6 GHz
- IA32 x86 core
- 32-bit memory bus
- Cache level 1: 32 KB
- Cache level 2: 512 KB
- Hyper-Threading (2 Threads)
- Intel SpeedStep
- Deep Power Down support
- SIMD Extension 2&3 (SSE2, SSE3, SSSE3)

Platform Controller Hub

- Intel EG20T

System memory

- DDR2-800 SDRAM, 512 / 1024 MB, soldered

Integrated graphics controller

- 400 MHz
- 2D / 3D accelerator
- Hardware video decoding (H.264, MPEG2, MPEG4, VC1, WMV9)
- Hardware video encoding (H.264, MPEG4, H.263)
- Two independent displays
- Video memory shared with system

Flash BIOS

- 2 MB, in-system modification
- Reserved (on carrier board)

Integrated non-volatile memory

- 32 KB FRAM (SPI) for user data (CPB907-01/02 only)
- 8 KB FRAM (I2C) for configuration storage
- Batteryless operation: CMOS configuration parameters stored in FRAM (I²C)

Flash-disk (CPB907-01 only)

- SATA interface
- 4 GB NAND flash (SLC)
- Read / write : 100 / 80 MB/s
- Built-in wear control and ECC

MicroSD socket

- SD, SDHC support, speed class 6
- Capacity up to 32 GB

Real time clock

(battery power supply from the carrier board)

Hardware monitor

- CPU and module temperature monitor (-55...+125°C)
- Main power voltages monitoring
- External fan control

Digital accelerometer (CPB907-01/02 only)

- Measurement of acceleration along 3 axes
- Resolution 8/14 bit (relative error is not rated)
- Programmed measurement range: ±2g / ±4g / ±8g
- Event definition: free fall, movement, shaking, change of space orientation
- Event interruptions generation.

COM ExpressR Type 10 connector signals

- 3 PCIe x1 (PCIe Spec. Rev 1.0a), 2.5 Gb/s
- 6 USB 2.0 host ports
- 1 USB 2.0 client port
- 2 SATA II ports (1.5 Gbps Gen. I & 3 Gbps Gen II) (1 port for CPB907-01)
- "LAN 0" port: Gbit Ethernet
- SPI port (External Boot)
- "LVDS Ch. A" port: 18/24-bit, 1280×768 @ 60Hz

- DDI port: SDVO, 1920×1080 @ 50Hz
- LPC port (Spec. Rev. 1.1)
- SMBus port (Spec. Rev. 2.0)
- I²C port
- HD Audio port
- "Speaker Out" port
- SDIO port (shared with GPIO ports)
- RS-232 (CMOS 3.3V, 256 B FIFO, up to 4 Mbps)
- RS-232 (CMOS 3.3V, 64-byte FIFO, up to 1 Mbps) or CAN 2.0B Active (CMOS 3.3V, up to 1 Mbps) "RTC battery" port

Digital barometer (CPB907-01/02 only)

- Pressure measurement from 50 to 115 kPa
- Conversion time: 1 ms
- Resolution: 0.15 kPa
- Standard measurement accuracy ±1 kPa (at the temperature from -20...+85°C, calibration during microchip manufacturing, relative error is not rated)

Watchdog timer

- Integrated in CPU - 1 μs... 10 min

OS compatibility

- Microsoft™ MS-DOS® 6.22, FreeDOS
- Linux 2.6
- QNX 6.5.x
- Microsoft™ Windows® CE 6.0
- Microsoft™ Windows® XP Embedded
- Microsoft™ Windows® 7 Embedded

Power voltage

- +4.75...+20.0 V (operation)
- +5 V ±5% (for standby mode only)
- Short circuit and overvoltage protection (up to 25 V)
- For module operation the main power supply voltage is sufficient

Power consumption

- 9 W CPB907-01/-02 (operating mode, 12V @ 0.75A)
- 7.5 W for CPB907-03 (operating mode, 12V @ 0.62A)
- W (standby mode, 5W @ 0.2A).

Operating temp. range

-40...+85°C

Humidity:

- 5...95%, at +25°C, noncondensing

Shock / vibration stability

- 50g / 5g

MTBF

- 200 000 hours

Dimensions

- Max 55.0 × 84.0 × 15.0 mm (without heatspreader / heatsink)

Overall Height with cooling system

(excluding COM Express connector):

- 13.0 mm (heatspreader is installed, corresponds to COM Express v2.1)
- 15.0 mm (heatsink with fins is installed)

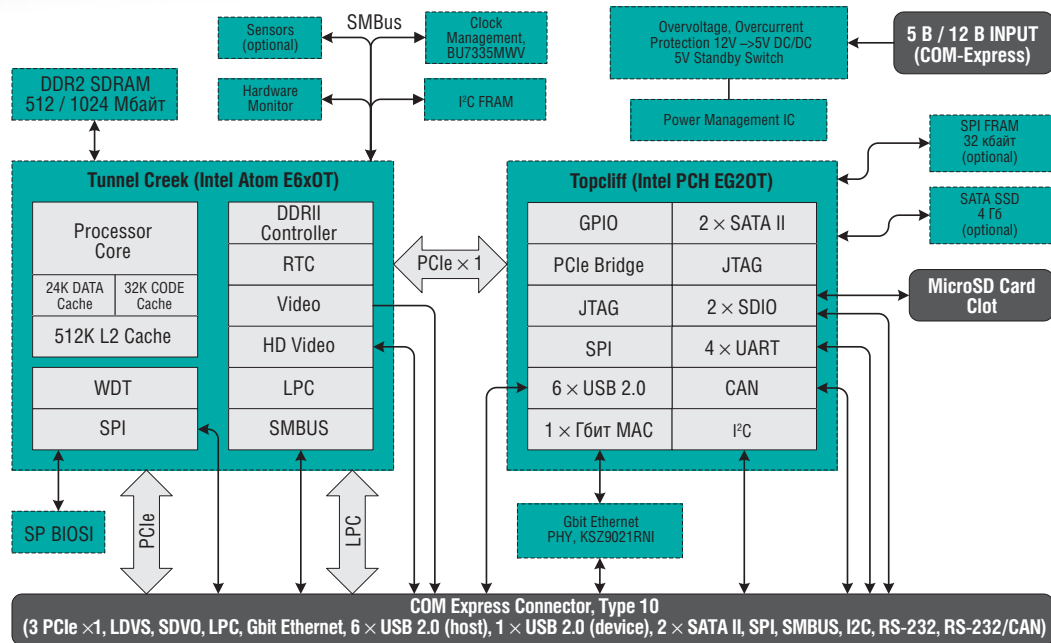
Weight

- 40 g max

Weight with cooling system

- No more than 125 g (heatspreader is installed)
- No more than 145 g (heatsink with fins is installed)

Block Diagram



Ordering Information

CPB907 Configuration

Device Type

- CPB907-01-E1.6-RAM1024-SSD4G-R1-I**
Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, 4 GB SSD, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, heatspreader
- CPB907-01-E1.6-RAM1024-SSD4G-R2-I**
Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, 4 GB SSD, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, heatsink with fins
- CPB907-02-E1.6-RAM1024-R1-I**
Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, heatspreader
- CPB907-02-E1.6-RAM1024-R2-I**
Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, heatsink with fins
- CPB907-03-E0.6-RAM1024-R1-I**
Intel E620T 600 MHz, 1 GB DDR2 SDRAM, MicroSD socket, heatspreader
- CPB907-03-E0.6-RAM1024-R2-I**
Intel E620T 600 MHz, 1 GB DDR2 SDRAM, MicroSD socket, heatsink with fins

CPB907 Available Options

Coating	
\COATED	Protective coating
Preinstalled operating system	
\LNX	Linux 2.6
\WXPE	Windows XP Embedded

Other configurations and options are available upon request.

Delivery Checklist:

1. CPB907 CPU module
2. Heatspreader or heatsink with fins (depending on the version)
3. Mounting kit for fixing of COM Express mini module on carrier board
4. Package

Additional Accessories

- KIB1283** COM Express mini developer's carrier board
- ACS30067** Additional heatsink with mounting kit for COM Express mini modules (installed in the heatspreader)

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Product specifications are subject to change without notice

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