

### 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 (I<sup>2</sup>C)

#### 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)
- I<sup>2</sup>C 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)

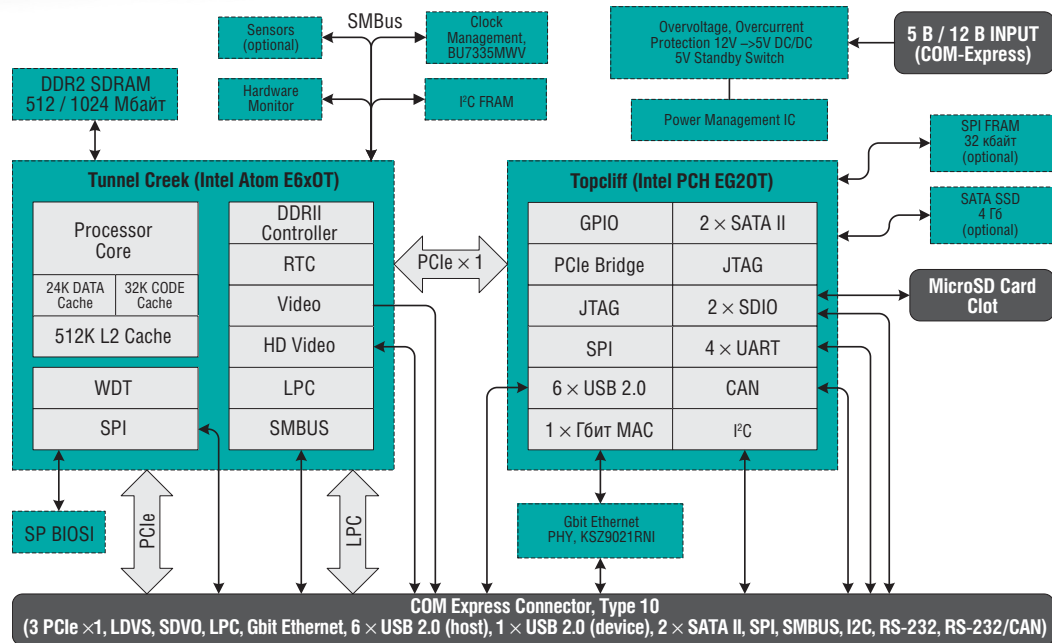
#### Weight

- 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-I

CPB907 (COM Express® mini, Type10), Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, 4 GB SSD, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, without heatsink

###### CPB907-03-E0.6-RAM1024-I

CPB907 (COM Express® mini, Type10), Intel E620T 600 MHz, 1024 MB DDR2 SDRAM, MicroSD socket, without heatsink

###### CPB907-01-E1.6-RAM1024-SSD4G-I\LNX\COATED

CPB907 (COM Express® mini, Type10), Intel E680T 1.6 GHz, 1 GB DDR2 SDRAM, 4 GB SSD, MicroSD socket, FRAM 32 KB, accelerometer, pressure sensor, without heatsink, coated, OC Linux

#### 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

- KIB1283-02** 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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