Overview
Mezzanine CPU Module COM Express® mini, Type 10, 55 x 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 Express® 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)
- 1 LAN Ethernet
- 2 SPI ports: Gbit Ethernet
- 2 I2C ports (External Boot)
- LVDS ch. A’ port: 18/24-bit, 1280 x 768 @ 60Hz

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 for 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 x 84.0 x 15.0 mm

Overall Height with cooling system
- 13.0 mm (heatspreader is installed, corresponds to COM Express v2.1)
- 15.0 mm (heatshink 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 (heatshink with fins is installed)

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

Fastwel
http://www.fastwel.com
**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**

<table>
<thead>
<tr>
<th>Coating</th>
<th>Protective coating</th>
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</thead>
<tbody>
<tr>
<td>LNX</td>
<td>Linux 2.6</td>
</tr>
<tr>
<td>WXPE</td>
<td>Windows XP Embedded</td>
</tr>
</tbody>
</table>

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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