Choose Ampro by ADLINK™ nanoX-TCR for...

A modular and power efficient solution for extreme rugged and mobile environments.

**Description**
The Ampro by ADLINK™ nanoX-TCR is a COM Express® Nano Type 10 module with the Intel® Atom™ Processor E6xxT. The nanoX-TCR is designed Extreme Rugged for wide temperature range and high vibration environments.

**Specifications**

**Core System**
- **CPU**: Intel® Atom™ E680T, 1.6 GHz, 3.9 W TDP
- Intel® Atom™ E660T, 1.3 GHz, 3.3W TDP
- Intel® Atom™ E620T, 600 MHz, 2.7W TDP
- All versions support -40°C to +85°C wide operating temperature range
- All processors support Intel® Hyper-Threading and Intel® Virtualization Technology
- L2 cache: 512 KB on all processors
- Memory: Soldered 1GB DDR2 at 800MHz (Optional for 512MB or 2GB)
- BIOS: License-free bootloader or AMI UEFI BIOS
- Hardware Monitor: Supply voltages and CPU temperature
- Debug Interface: XDP SFF-26 extension for ICE debug
- Embedded Features: Instant on with Intel Bootloader support, Board Info & Statistics, ACPI 3.0, Smart Battery Management support, Watchdog with programmable timer ranges
- Expansion Busses: 2 PCI Express x1 available (0/1, port 2 used by GbE, port 3 used for EG20T PCH)
- LPC Bus, SMBus (system), I2C (user)
- 4 GPI and 4 GPO
- SPI (supports BIOS only)

**Video**
- 2D/3D Graphic Engine: Integrated in Intel® Atom™ Processor E6xx
- Decoding: MPEG2, MPEG4, VC1, WMV9, H.264 and DivX
- Encoding: MPEG4, H.264 (baseline at L3)
- LVDS Interface: Single channel 18- or 24-bit pixel color depths with maximum resolution of up to 1280x768 @ 60 Hz, Pixel clock rate between 19.75 MHz (minimum) and 80 MHz (maximum).
- SDVO: Serial digital video output supporting devices for DVI, TV-out, analog VGA. Maximum resolution of up to 1280x1024 @ 85Hz and pixel clock rate up to 160 MHz.

**Audio**
- High Definition Audio: Integrated in Intel® Atom™ Processor E6xx
- Characteristics: Multi-channel audio stream, 32-bit sample depth, sample rate up to 192 kHz
- Audio Codec: On carrier (standard support for ALC888)

**Multi I/O and Storage**
- Chipset: Integrated in Intel® PCH EG20T
- USB: Six USB 1.1/2.0 host ports and one USB 1.1/2.0 client port
- SATA: Two ports supporting SATA 1.5 Gb/s and 3 Gb/s
- Solid State Drive (optional): 4GB, 8GB or 16GB capacity. Occupies 1 SATA port when populated
- Serial and CAN: Two RS-232 (optional one RS-232 (RX/TX) and one CAN (AX/RX) port)
- LAN: Bosch CAN Protocol Version 2.0B Active 1 (standard and extended format)

**Power Specifications**
- Input Power: 4.75 V – 21 V wide range, supports AT mode and ATX mode (with additional 5 Vsb)
- Power States: Supports S0, S1, S3, S4, S5
- Power Consumption: 5W at 5V typical, 3W idle
- Smart Battery Support: Yes

**Mechanical and Environmental**
- Size: COM Express Mini, 84 mm x 55 mm (3.3” x 2.17”)
- Board Thickness: 0.093” (2.3mm)
- Operating Temp. Standard: -20°C to 70°C
- Operating Temp. Extended: -40°C to 85°C
- Storage Temp.: -55°C to 85°C
- Humidity: 90% at 60°C
- Vibration: Operating: 11.96 Grms, 50-20,000 Hz, each axis, MIL-STD-202G Method 214A
- Compatibility: PICMG COM Express COM.0 R2.1 Type 10
- Certifications: CE, FCC, HALT

**Operating Systems**
- Standard Support: Windows XP / Windows 7
- Linux®
- Extended Support (BSP): Windows XP Embedded
  - WinCE 6.0
  - VxWorks 6.x
  - QNX
  - AIDI Library
**Ordering Information**

### Modules

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nanoX-TCR-R-06</td>
<td>Extreme Rugged™ nanoX-TCR, Intel® Atom™ Processor E620T 0.6Ghz, 1GB DDR2 SDRAM</td>
</tr>
<tr>
<td>nanoX-TCR-R-13</td>
<td>Extreme Rugged™ nanoX-TCR, Intel® Atom™ Processor E660T 1.3Ghz, 1GB DDR2 SDRAM</td>
</tr>
<tr>
<td>nanoX-TCR-R-16</td>
<td>Extreme Rugged™ nanoX-TCR, Intel® Atom™ Processor E680T 1.6Ghz, 1GB DDR2 SDRAM, 4GB SSD</td>
</tr>
<tr>
<td>nanoX-TCR-L-06</td>
<td>QSK with R-06 module, THS-nXTCR-B passive heatsink, LCD panel, non-ETT, 250W power supply, cable kit, Software and reference manual</td>
</tr>
<tr>
<td>nanoX-TCR-L-13</td>
<td>QSK with R-13 module, THS-nXTCR-B passive heatsink, LCD panel, non-ETT, 250W power supply, cable kit, Software and reference manual</td>
</tr>
<tr>
<td>nanoX-TCR-L-16</td>
<td>QSK with R-16 module, THS-nXTCR-B passive heatsink, LCD panel, non-ETT, 250W power supply, cable kit, Software and reference manual</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Spreaders</td>
<td></td>
</tr>
<tr>
<td>HTS-nXTCR-B</td>
<td>Heatspreader for nanoX-TCR with threaded hole standoffs for bottom mounting</td>
</tr>
<tr>
<td>HTS-nXTCR-BTF</td>
<td>Heatspreader for nanoX-TCR with through hole standoffs for top mounting</td>
</tr>
<tr>
<td>Passive Heatsinks</td>
<td></td>
</tr>
<tr>
<td>THS-nXTCR-B</td>
<td>Heatsink nanoX-TCR with threaded hole standoffs for bottom mounting</td>
</tr>
</tbody>
</table>