pITX-E38

ULTRASMALL 2.5" Pico-ITX BOARD WITH Intel® Atom™ E38XX SYSTEM ON CHIP (SoC)

- Intel® Atom™ E38xx SoC (1, 2 or 4 cores), TDP: 5-10 W
- SO-DIMM socket DDR3L-1333 memory (up to 8 GByte)
- Intel® Gen7 graphics, OpenGL 3.0, OpenCL 1.2, DX11, H.264, MPEG2, MCV, VC-1, VP8
- LVDS 24Bit dual channel and display port 1.1a
- 10/100/1000 MBit RJ45 Ethernet LAN, SATA, mSATA or mPCIe in mPCIe connector
pITX-E38

The pITX-E38 form factor is ideal for compact PC applications. Due to its small size (100 x 72 mm) it's easily integrated into virtually any system with severe space constraints and/or thermal restrictions, where other form factor simply will not fit the requirements.

The compact size of pITX-E38 gives the board a unique advantage over traditional PC based motherboards like the mITX or Flex to become the preferred choice in any compact applications. The industry target for smaller size and lower power plays a bigger role these days. The pITX form factor is becoming more popular due to its increasing performance and substantial range of connectivity options, while still maintaining its compact size and low power consumption. Not only are pITX-E38 compact in size, but it also offers leading edge CPU and GPU performance with the next generation Intel® Atom™ System on Chip (SoC) and a large variety of high-speed interfaces.

The pITX-E38 offers two display outputs delivering high resolution video content to LVDS driven panels or Display Port monitor as well as 3D graphics performance in a low power envelope. Not only does the low power Intel Atom™ Core provide high resolution video playback, 3D graphics and CPU core performance, but it also offers a wide range of standard interfaces. This makes the pITX-E38 board ideal for applications where compact size and standard interfaces like Gigabit Ethernet, SATA, mSATA & mPCIe are desired in a low power environment. Supporting OS bootable high capacity, high speed microSD media cards shrinks the footprint even more as applications do not necessarily require external use of SSD or HDD devices connected to the SATA port. Furthermore, the pITX-E38 board supports high-speed DDR3L memory modules which can be operated over a wide temperature range, with a passively Intel® Atom™ core cooled environment and powered by a single supply of 5Volts. The pITX-E38 supports a wide variety of Embedded and non-Embedded operating systems and 7 years supply longevity.

TYPICAL APPLICATIONS

- **POS/POI**: Higher Graphics and CPU core performance, Low power, multi display support
- **Medical**: Higher Graphics and CPU core performance, wide temperature range, longevity
- **Industrial Automation**: Wide range of I/Os, wide temperature range, compact size, longevity
- **Digital signage**: Wide temperature range, multi display support, low power, wide range of I/Os
- **Future-oriented Devices**: Due to Display Port and LVDS, low power, compact size
## TECHNICAL INFORMATION

### SOC
Intel® Atom™ E38xx SoC (1, 2 or 4 cores) up to QC 1.91 GHz, Low power 5-10 W TDP

### MEMORY
1x SO-DIMM Socket supporting DDR3L-1333/1066 (up to 8 Gbyte) (E3815/E3826 only supports DDR3L-1066)

### GRAPHICS
2x independent graphic outputs, LVDS dual channel 24bit, DP 1.1a (LVDS up to 1920x1200 / DP up to 2560x1600)

### ETHERNET
1x RJ45 10/100/1000 Mb/s Ethernet

### SATA
1x SATA 2.0, 1x mSATA shared with mPCIe

### USB
3x USB 2.0 and 1x USB2.0/3.0 (2 on front I/O, 2 internal)

### MASS STORAGE
1x microSD card slot (SDXC)

### SERIAL PORTS
2x Serial ports UART 16550 (3v3 digital inputs/outputs)

### I/O FEATURES
1x mPCIe® 2.0 port (x1 lane), 8x GPIOs, SUSLED, SATALED

### AUDIO
HD Analog audio interface (Line-In, Line-Out, Mic-In)

### POWER SUPPLY
Single supply 5 V DC, Internal and external lockable connector

### BATTERY
Battery module included with board

### TEMPERATURE
Operating -25 °C to +75 °C (E1)

### DIMENSIONS
100 x 72 mm (Pico-ITX)

### PREDICTION MODEL
Telcordia Issue 2 Method I Case 3, 40 °C and 75 °C

### THEORETICAL MTBF
414.670 / 183.190 hours @ 40 °C / 75 °C

### REGULATORY
Comply with Emission: EN55022, Immunity EN55022, RoHS

### SAFETY
IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1

### COOLING SOLUTIONS
Passive (5W SoC) and active (7-10W SoC) cooling solutions

### OPERATING SYSTEMS
Win7, Win8, WEST, WESB, Linux, VxWorks

## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>810600-4500</td>
<td>Board, pITX-E38 QC 1.91 GHz (E3845), with active cooler solution</td>
</tr>
<tr>
<td>810601-4500</td>
<td>Board, pITX-E38 DC 1.46 GHz (E3826), with passive cooler solution</td>
</tr>
<tr>
<td>810602-4500</td>
<td>Board, pITX-E38 SC 1.46 GHz (E3815), with passive cooler solution</td>
</tr>
</tbody>
</table>

### RECOMMENDED MEMORY MODULES

<table>
<thead>
<tr>
<th>NEW SKU 04/16*</th>
<th>OLD SKU</th>
<th>SKU NAME**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1060-2520</td>
<td>1055-9939</td>
<td>DDR3L-1600 SODIMM 2 GByte</td>
</tr>
<tr>
<td>1060-2522</td>
<td>1055-9941</td>
<td>DDR3L-1600 SODIMM 4 GByte</td>
</tr>
<tr>
<td>1060-2524</td>
<td>1055-9942</td>
<td>DDR3L-1600 SODIMM 8 GByte</td>
</tr>
<tr>
<td>1060-2526</td>
<td>1055-9945</td>
<td>DDR3-1600 SODIMM 1 GByte E2</td>
</tr>
<tr>
<td>1060-2528</td>
<td>1055-9946</td>
<td>DDR3-1600 SODIMM 2 GByte E2</td>
</tr>
<tr>
<td>1060-2530</td>
<td>1055-9947</td>
<td>DDR3-1600 SODIMM 4 Gbyte E2</td>
</tr>
<tr>
<td>1060-2532</td>
<td>1055-9948</td>
<td>DDR3-1600 SODIMM 8 Gbyte E2</td>
</tr>
</tbody>
</table>

*SKU changes were caused by administrative issues only, no hardware changes.

**Named are always the min. requirements, the shipped memory can fulfill a higher performance level.

## CORPORATE OFFICES

<table>
<thead>
<tr>
<th>EUROPE, MIDDLE EAST &amp; AFRICA</th>
<th>NORTH AMERICA</th>
<th>ASIA PACIFIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lise-Meitner-Str. 3-5</td>
<td>14118 Stowe Drive</td>
<td>1-2F, 10 Building, No. 8 Liangshuihe 2nd Street, Economical &amp; Technological Development Zone, Beijing, 100176, P.R.China</td>
</tr>
<tr>
<td>86155 Augsburg Germany</td>
<td>Poway, CA 92064-7147 USA</td>
<td>Tel.: +86 10 63751188</td>
</tr>
<tr>
<td>Tel.: +49 821 4086 0</td>
<td>Tel.: +1 888 294 4558</td>
<td>Fax: +86 10 63862438</td>
</tr>
<tr>
<td>Fax: +49 821 4086 111</td>
<td>Fax: +1 858 677 0898</td>
<td><a href="mailto:info@kontron.cn">info@kontron.cn</a></td>
</tr>
<tr>
<td><a href="mailto:info@kontron.com">info@kontron.com</a></td>
<td><a href="mailto:info@us.kontron.com">info@us.kontron.com</a></td>
<td><a href="http://www.kontron.com">www.kontron.com</a></td>
</tr>
</tbody>
</table>