

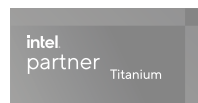
# TQMxE40S

## x86 Family



### SMARC 2.1 Module with Intel Atom® x6000E Series processors ("Elkhart Lake").

Based on



### HIGHLIGHTS

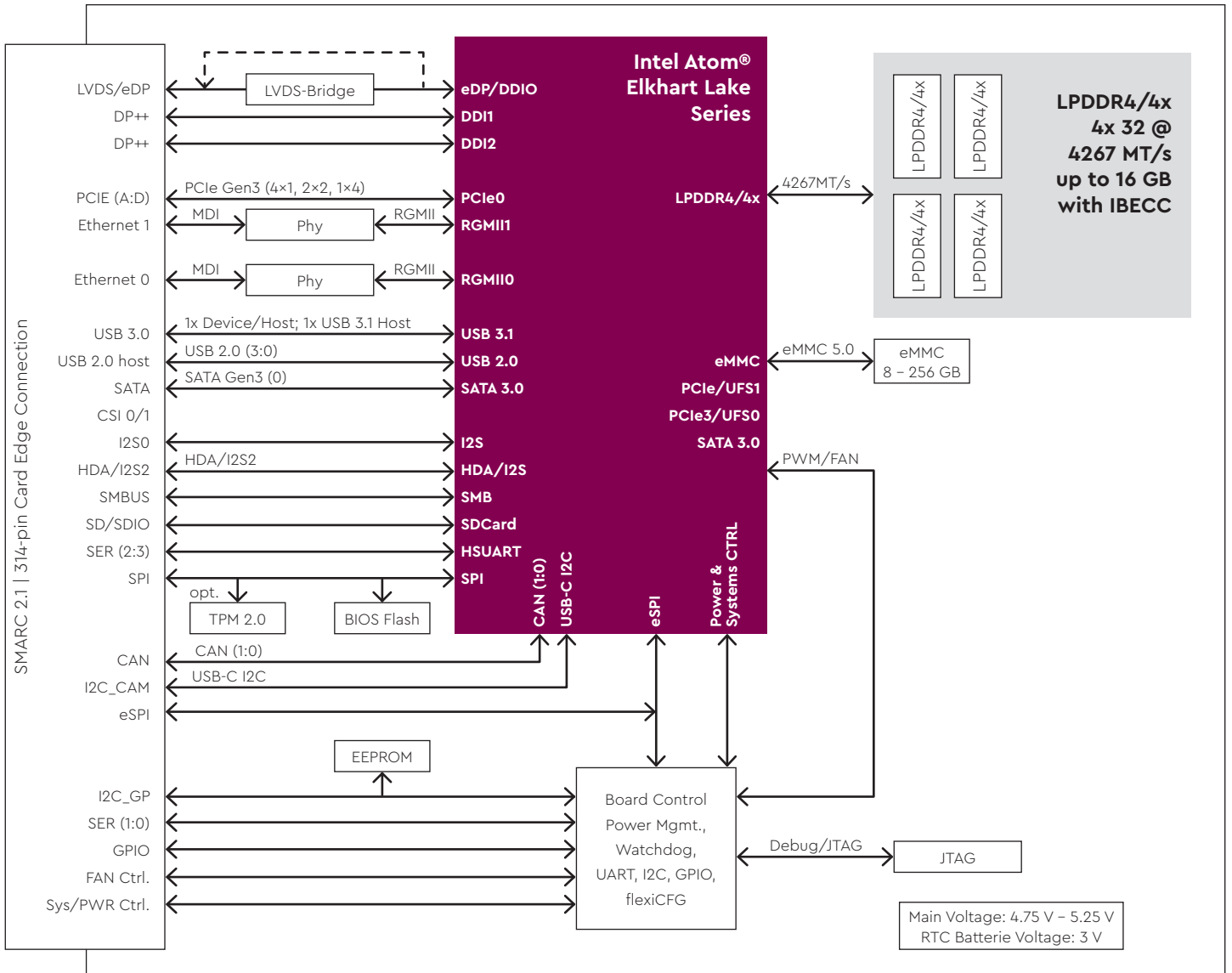
- ▶ 6<sup>th</sup> Generation Intel Atom® x6000E Series processors ("Elkhart Lake")
- ▶ Dual/Quad core computing power with up to 3.0 GHz
- ▶ Up to 16 GB soldered LPDDR4x with inband ECC (option)
- ▶ 2x Gbit Ethernet
- ▶ 2x USB 3.2 (Gen2), 4x USB 2.0 and 4 PCIe lanes (Gen3)
- ▶ Triple display support with 2x DP++ (4K) and eDP (4K)/LVDS (Dual Channel)
- ▶ Up to 256 GB eMMC Flash, soldered
- ▶ Small size (82 mm x 50 mm)
- ▶ Extended temperature support from -40°C...+85°C

### TECHNICAL SPECIFICATION

<b>CPU</b>	Intel Atom® x6000E x6211E (2-Core, 1.3/3.0 GHz, 1.5 MB, 16 EU, Turbo, 6 W TDP) x6413E (4-Core, 1.5/3.0 GHz, 1.5 MB, 16 EU, Turbo, 9 W TDP) x6425E (4-Core, 2.0/3.0 GHz, 1.5 MB, 32 EU, Turbo, 12 W TDP) x6212RE (2-Core, 1.2 GHz, 1.5 MB, 16 EU, 24/7, RT, 6 W TDP) x6414RE (4-Core, 1.5 GHz, 1.5 MB, 16 EU, 24/7, RT, 9 W TDP) x6425RE (4-Core, 1.9 GHz, 1.5 MB, 32 EU, 24/7, RT, 12 W TDP) Intel® Pentium® and Celeron® N and J Series processors on request
<b>Memory</b>	LPDDR4x: 4, 8, 16 GB with IBECC
<b>eMMC</b>	8 – 256 GB
<b>EEPROM</b>	32-kbit
<b>Graphics</b>	1x eDP (4K @ 60 Hz) or Dual Channel LVDS (18/24-bit) 2x DP++ / Digital Display Interface (DDI) (4K @ 60 Hz)
<b>Interfaces</b>	2x Gbit Ethernet, IEEE 1588 Trigger signals 2x USB 3.2 (Gen2) 4x USB 2.0

<b>Security components</b>	TPM 2.0 (SLM9670 TPM 2.0) (configuration option)
<b>Others</b>	TQMx86 board controller with watch-dog and flexiCFG Hardware monitor
<b>Peripheral interfaces</b>	1x SATA 3.0 (up to 6 Gb/s) 4x PCIe 3.0 (up to 8 Gb/s) 1x eSPI 1x HD audio (HDA)/1x I2S 1x I2S 1x I2C 2x CAN 1x SMBus 1x SPI (for external uEFI BIOS flash) 4x Serial port (4x Rx/Tx, 2x RTS/CTS) 1x SD card 14x GPIO
<b>Power supply</b>	Main Voltage: 4.75 V – 5.25 V RTC Batterie Voltage: 3 V Power: typ. 3 – 8 W/max. 14 W
<b>Environment</b>	Standard temperature: 0°C...+60°C Extended temperature: -40°C...+85°C
<b>Form factor/ dimensions</b>	SMARC 2.1, 82 mm x 50 mm

## BLOCK DIAGRAM TQMxE40S



## ORDERING INFORMATION

<b>TQMxE40S-AA</b>	Intel Atom® x6425RE, 16 GB LPDDR4x, 8 GB eMMC, eDP, -40°C...+85°C
<b>TQMxE40S-AB</b>	Intel Atom® x6414RE, 8 GB LPDDR4x, 32 GB eMMC, LVDS, TPM 2.0, -40°C...+85°C
<b>TQMxE40S-AC</b>	Intel Atom® x6212RE, 4 GB LPDDR4x, 16 GB eMMC, LVDS, TPM 2.0, -40°C...+85°C
<b>TQMxE40S-AD</b>	Intel Atom® x6425E, 16 GB LPDDR4x, LVDS, TPM 2.0, -40°C...+85°C
<b>TQMxE40S-AE</b>	Intel Atom® x6413E, 8 GB LPDDR4x, LVDS, TPM 2.0, -40°C...+85°C
<b>TQMxE40S-AF</b>	Intel Atom® x6211E, 4 GB LPDDR4x, 32 GB eMMC, LVDS, TPM 2.0, -40°C...+85°C
<b>TQMxE40S-AG</b>	Intel Atom® x6425RE, 8 GB LPDDR4x, 32 GB eMMC, LVDS, TPM 2.0, -40°C...+85°C

Other configurations on request

### TQ-Systems GmbH

Mühlstraße 2 | Gut Delling | 82229 Seefeld | Germany  
 Tel.: +49 8153 9308-0 | info@tq-group.com | tq-group.com

[tq-embedded.com](http://tq-embedded.com)