



Rugged interconnect™
TECHNOLOGIES
Technologies evolve, our commitment remains

TQMxE39C1

COM Express® Compact Module with Intel® Atom™ x5/x7 E3900 and soldered DDR3L with ECC support

The TQ module TQMxE39C1 is based on the latest generation of Intel® Atom™ processors. It achieves a new level of compute performance, security and media processing performance in a very compact form factor to empower real-time computing, industrial automation, digital surveillance, aviation, medical, retail and more. The module corresponds to the international established PICMG standard COM Express® Compact (COM.0 R2.1) with type 6 pinout. With the latest Intel® graphics processor integrated the module delivers 4K high resolution graphics output, immersive 3D processing and also greatly increased video encode and playback performance. Time coordinated computing capabilities enable time synchronized processes within IoT networks and industrial control applications. Onboard eMMC up to 64 GB and the option for LVDS or native eDP enable flexibility and reduce overall BOM cost. Combined with options on request like conformal coating and optimized cooling solutions the TQMxE39C1 fits also perfectly into ruggedized applications.

Based on

COM Express

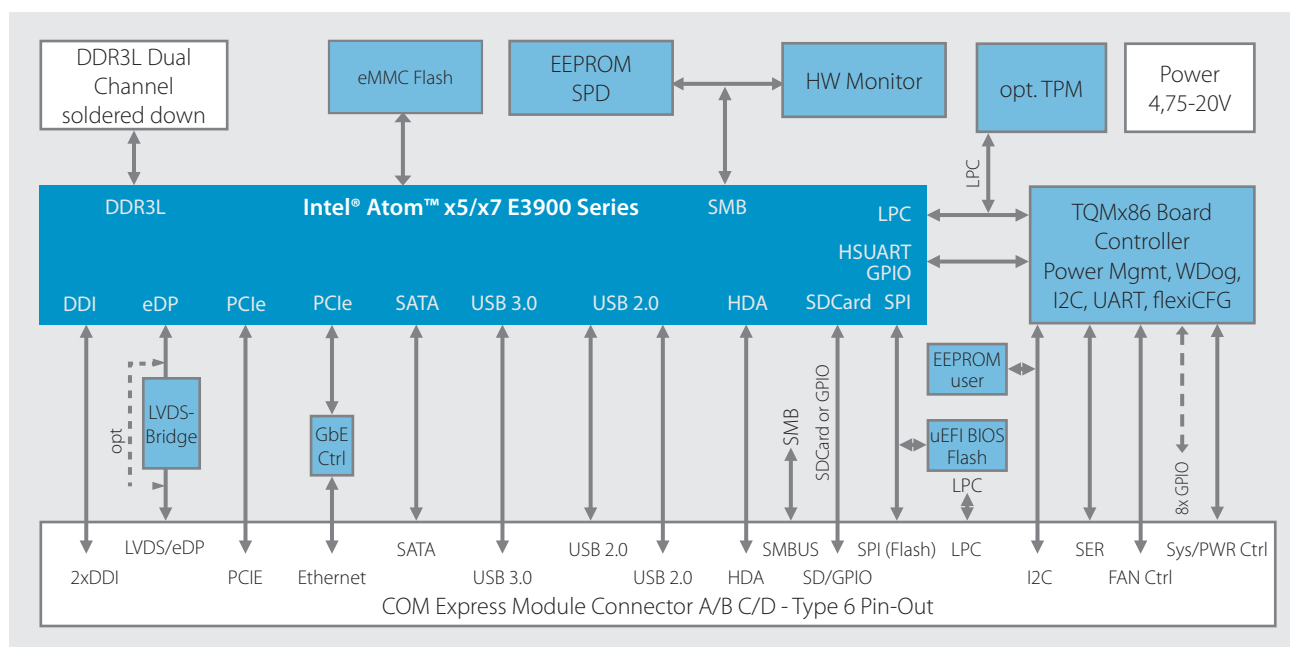


Technology
Provider
Platinum 2017

Highlights:

- Intel® Atom™ x5/x7 E3900 series ("Apollo Lake-I")
- Dual/Quad core computing power with up to 2.5 GHz
- 4/8 GB DDR3L (dual channel), soldered, ECC
- High-speed interconnected with Gigabit Ethernet, 8x USB (3.0 / 2.0) and up to 4 PCIe lanes
- Triple display support (up to 4K UHD) and eDP/LVDS
- Up to 64 GB eMMC Flash, soldered
- Extended temperature support
- Watchdog und thermal management
- Highest reliability, 24/7 certified
- Conformal coating (on request) and optimized cooling solutions for ruggedized applications

Block diagram TQMxE39C1



Technical details

CPU

Intel® Atom™ x5/x7 E3900 („Apollo Lake-I“)
Atom™ x5-E3930 2x1.8 GHz, 6.5 W
Atom™ x5-E3940 4x1.8 GHz, 9.5 W
Atom™ x7-E3950 4x2.0 GHz, 12 W

Memory

DDR3L: 4/8 GB ECC, Dual Channel, ECC
eMMC: 8-64 GB
EEPROM: 32 kbit (24LC32)

Graphics

2x Digital Display Interface (DDI)
for DP 1.2a, HDMI 1.4b
1x eDP1.4/ Dual Channel LVDS

System interfaces

1x Gigabit Ethernet (Intel® i210)
(external IEEE1588 sync optional through TQ flexiCFG)
3x USB 3.0
5x USB 2.0

Peripheral interfaces

2x SATA 3.0 (up to 6Gb/s), eSATA capable
4x PCIe 2.0 (up to 5Gb/s)
1x LPC bus
1x Intel® HD audio (HDA)
1x I²C (master/slave capable)
1x SMBus
1x SPI (for external uEFI BIOS flash)
2x Serial port (Rx/Tx, legacy compatible)
(4 wire optional through TQ flexiCFG)
1x SD card interface / on request: 8x GPIO (multiplexed)

Security components

TPM (SLB9660 TPM 1.2, alternatively SLB9665 TPM 2.0) (on request)

Others

TQMx86 board controller with watchdog and flexiCFG
Hardware monitor

Power supply

Voltage: 4.75 V - 20 V
4.75 V - 20 V Standby (optional)
3 V Battery for RTC
Power: typ. 3 - 8 W / max. 14 W
(Green ECO-Off: < 0.1W)

Environment

Extended temperature: -40°C...+85°C

Form factor / dimensions

COM Express™ Compact, Type 6, 95 mm x 95 mm

Ordering information

TQMxE39C1-xx

The current standard variants can be found on the TQ product website www.tq-group.com/en/TQMxE39C1

On request:
CPU, memory, TPM, eMMC, eDP/LVDS, special configurations

Accessory

TQMxE39C1-HSP

Heatspreader for TQMxE39C1 according to the COM Express™ specification

Evaluation platform MB-COME6-1

Mainboard for COM Express™ Compact/Basic, Type 6
Interfaces: 2x DP++, eDP/LVDS, 2x Gb ethernet, 2x USB 3.0,
3x USB 2.0, 3x COM, audio, mini PCIe, mSATA, 2,5" SSD, CFast,
riser extension with 2x PCIe and USB, fan, debug
170 mm x 170 mm

TQMx86 software tools

for uEFI BIOS programming and to adapt / configure setup
default values (including multi config), boot logo,...

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