



TQMxE38C

COM Express™ Compact Module (Type 6) with Intel® Atom™ E3800

The TQ Minimodule TQMxE38C enables the implementation of powerful but also economical x86 based systems based on the international established PICMG™ standard COM Express™ Compact (COM.0 R2.1). At the type 6 compliant pin out the user has access to all fundamental interfaces of the CPU. For that all features of the Intel® Atom™ processor can be used.

The compact and robust design as well as the option of conformal coating extends the use cases to applications within rugged industry, railway and aviation environments. Based on the very low power consumption and the extended temperature support it is also possible to realize outdoor applications in an easy and reliable way.

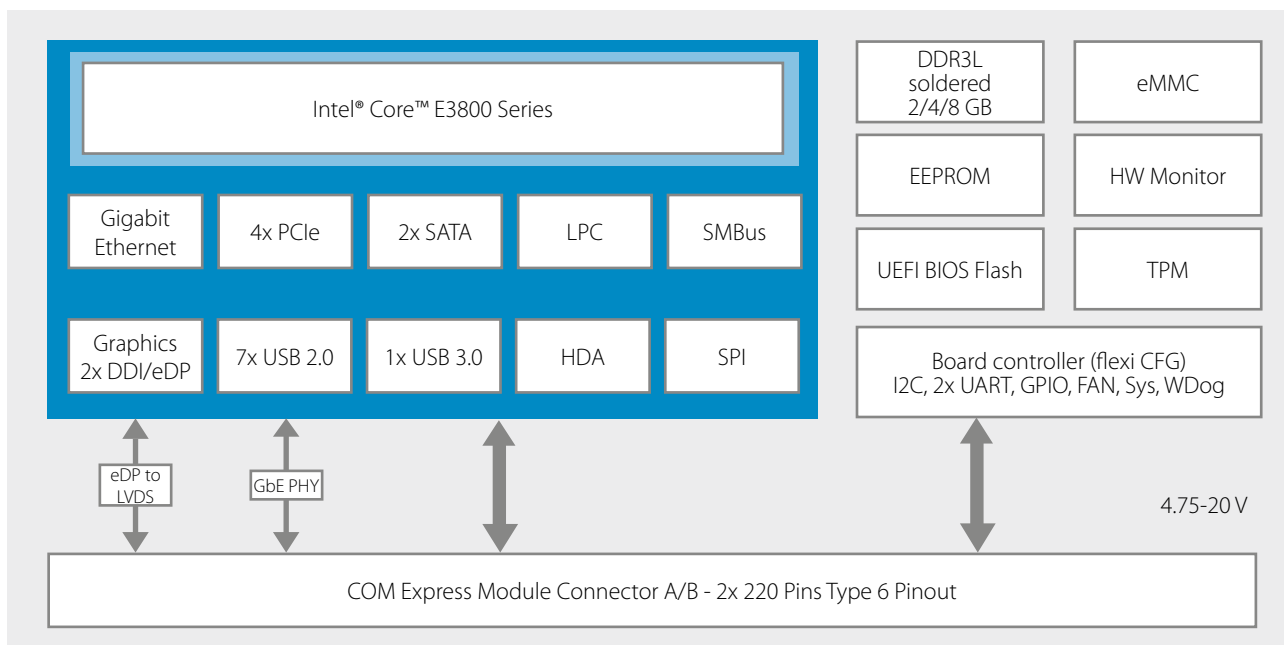
Based on



Highlights:

- Intel® Atom™ E3800 ("Bay Trail-I")
- Up to 8 GB DDR3L with ECC support
- Optimized for ultra low power
- Extended temperature support
- Reach featured uEFI BIOS with easy-config, multi-setup and touch support
- TQMx86 board controller with flexible customization options (flexiCFG)
- TPM 1.2 / 2.0
- iRTC (highly accurate industrial real time clock)
- "Green ECO-Off" (minimum of standby power)
- Watchdog und thermal management
- Highest reliability, 24/7 certified
- Very robust design
- Conformal coating capability

Block diagram TQMxE38C



Technical details

CPU

Intel® Atom™ E3800 („Bay Trail-I“)
E3815: 1x 1.46 GHz, 512 KB L2-Cache, 5W
E3805: 2x 1.33 GHz, 1 MB L2-Cache, 3W, without graphics
E3825: 2x 1.33 GHz, 1 MB L2-Cache, 6W
E3826: 2x 1.46 GHz, 1 MB L2-Cache, 7W
E3827: 2x 1.75 GHz, 1 MB L2-Cache, 8W
E3845: 4x 1.91 GHz, 2 MB L2-Cache, 10W

Memory

DDR3L: 2 GB, 4 GB, 8 GB, ECC support, soldered down
EEPROM: 32 kbit (24LC32)
eMMC: up to 64 GB

Graphics

2x Digital Display Interface (DDI) / LVDS
a) for DP 1.1a, DVI, HDMI 1.4a
b) for DP 1.1a, DVI, HDMI 1.4a or
LVDS Interface (18/24 bit, Single/Dual Channel)
1x VGA (CRT) (max. 2 independent display outputs)

System interfaces

1x Gigabit Ethernet (Intel® i210)
(external IEEE1588 sync optional through TQ flexiCFG)
1x USB 3.0 (with USB 2.0 backward compatibility)
7x USB 2.0 (includes 4 ports via onboard HSIC USB Hub)

Peripheral interfaces

2x SATA 2.0 (up to 3Gb/s), eSATA capable
3x PCIe 2.0 (up to 5Gb/s)
(4th lane optional, if no Ethernet)
1x LPC bus
1x Intel® HD audio (HDA)
1x I²C, (2nd I²C optional) (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 (default) / optional 8x GPIO (assembly option)

Security components

TPM (SLB9660 TPM 1.2, alternatively SLB9665 TPM 2.0)

Others

TQMx86 board controller with watchdog and flexiCFG
Industrial real time clock (iRTC), Hardware monitor

Power supply

Voltage: 4.75 V - 20 V
5V Standby (optional)
3 V Battery / GoldCAP (optional)
Power: typ. 2 - 6 W / max. 13 W (Green ECO-Off: < 5 mW)

Environment

Standard temperature: 0°C...+60°C
Extended temperature: -40°C...+85°C

Form factor / dimensions

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

Ordering information

TQMxE38C-xx

The current standard variants can be found on the TQ product website www.tq-group.com/en/TQMxE38C

Options:

CPU, memory, eMMC, TPM, iRTC, special configurations, temperature range

Accessory

TQMxE38C-HSP

Heatspreader for TQMxE38C according to the COM Express™ specification

Evaluation platform MB-COME6-1

Mainboard for COM Express™ Compact/Basic, Type 6
Interfaces: DP, LVDS, 2x Gb Ethernet, 5x USB, 3x COM, audio, mini PCIe, mSATA, 2.5" SSD, SD card, 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,...

TQ-Systems GmbH

Mühlstr. 2 | Gut Delling | 82229 Seefeld | Germany

Phone: +49 8153 9308-0 | Fax: +49 8153 4223

info@tq-group.com | www.tq-group.com

>> Quicklink: www.tq-group.com/en/TQMxE38C



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