



TQMx60EB

**COM Express® Basic Module (Type 6)
with 6th Generation Intel® Core™ i7/i5/i3 6000E and
Intel® Xeon® E3-1500 v5 series**

The TQ minimodule TQMx60EB is designed for high end computing and graphics capabilities. With Dual-Channel DDR4-2133 support, high bandwidth PCIe, 4x SATA (6 Gb/s) and 4x USB 3.0 the TQMx60EB guarantees best in class system performance. The module can be equipped with 6th Generation Intel® Core™ i7/i5/i3 and Intel® Xeon® E3-15xx v5 processors (Codename Skylake-H). The integrated Intel® GT1/GT2/GT4e graphics controller supports up to three independent display outputs with up to 4K resolution @ 60 Hz and excellent 3D / rendering performance. Latest power and performance optimizing functions like Intel® Turbo Boost Technology 2.0 and Enhanced Intel® SpeedStep Technology enable perfect user experience with moderate power consumption.

This high end COM Express® Basic Type 6 module is best suited for high demand medical, gaming and industrial applications.

Based on

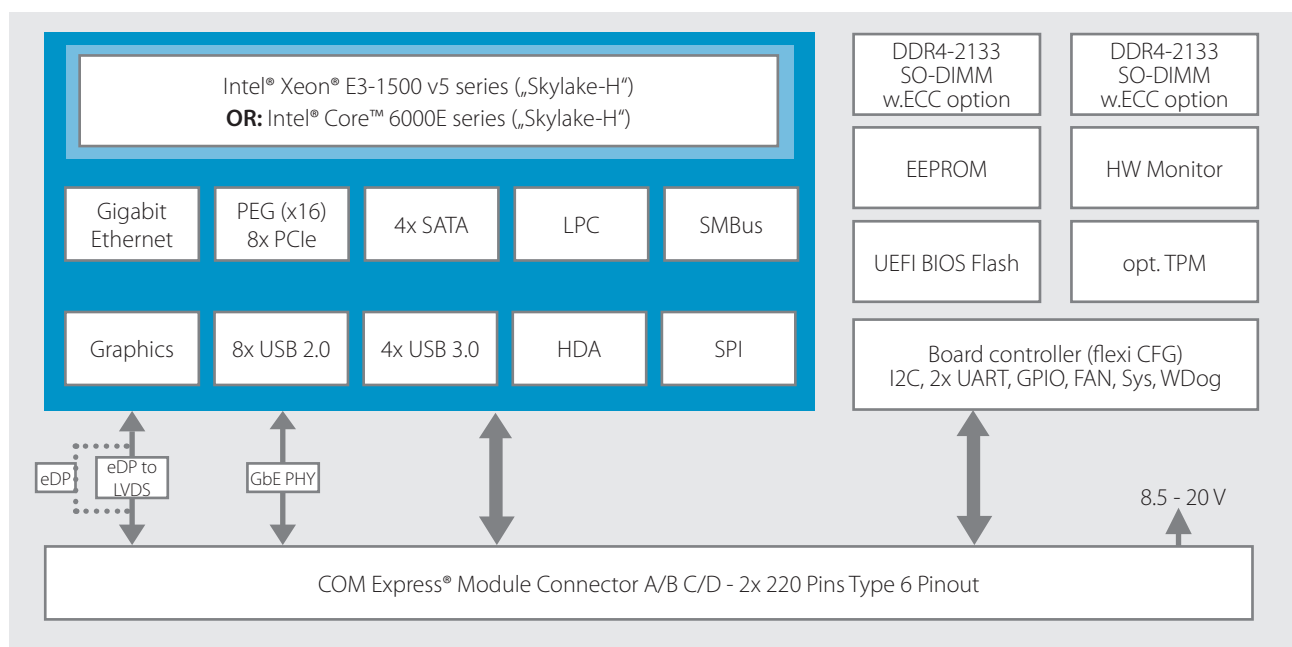


Technology
Provider
Platinum 2016

Highlights:

- High end performance up to Quad-Core 3.7 GHz / 8 MB cache
- Impressive graphics performance (Intel® Iris™ Pro)
- Best in class power optimization
- Up to 32 GB Dual-Channel DDR4 (2 SO-DIMMs), ECC
- High bandwidth with up to 24 PCIe Gen. 3 lanes (incl. PCIe x16 PEG port)
- TQMx86 board controller with flexible customization options (flexiCFG)
- Mobile Intel® 100 series chipset (CM236)
- TPM 1.2 / 2.0
- "Green ECO-Off" (minimum of standby power)
- Watchdog und thermal management
- Highest reliability, 24/7 certified
- Quality Made-in-Germany

Block diagram TQMx60EB



Technical details

CPU

Intel® Xeon® E3-1500 v5 series („Skylake-H“)

Xeon E3-1505M v5 (4x 2.8 / 3.7 GHz, 8 MB, GT2, 45 / 35 W)

Xeon E3-1505L v5 (4x 2.0 / 2.8 GHz, 8 MB, GT2, 25 W)

Intel® Core™ 6000E series („Skylake-H“)

Core i7-6820EQ (4x 2.8 / 3.5 GHz, 8 MB, GT2, 45 / 35W)

Core i7-6822EQ (4x 2.0 / 2.8 GHz, 8 MB, GT2, 25 W)

Core i5-6440EQ (4x 2.7 / 3.4 GHz, 6 MB, GT2, 45 W / 35W)

Core i5-6442EQ (4x 1.9 / 2.7 GHz, 6 MB, GT2, 25 W)

Core i3-6100E (2x 2.7 GHz, 3 MB, GT2, 35 W)

Core i3-6102E (2x 1.9 GHz, 3 MB, GT2, 25 W)

Memory

DDR4-2133: up to 32 GB, w. ECC option, 2 SO-DIMMs

EEPROM: 32 kBit (24LC32)

Graphics

Three independent display outputs:

3x Digital Display Interface / DP++ with up to 4K @ 60Hz
for DP 1.2a / HDMI 1.4 with multi stream transport (MST)

LVDS Interface (18/24 bit, Single/Dual Channel)

(optional eDP 1.3 with 4 lanes instead of LVDS)

Intel® Quick Sync Video and Wireless Display support

Interfaces

1x Gigabit Ethernet (Intel® i219-LM)

4x USB 3.0 (with USB 2.0 backward compatibility)

8x USB 2.0 (incl. USB 3.0 ports)

4x SATA Gen3 (up to 6Gb/s)

1x PEG Port with PCIe x16 Gen 3

8x PCIe Gen 3 (4x1 or 1x4)

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)

8x GPIO

Additional components and controller

TPM (SLB9660 TPM 1.2, alternatively SLB9665 TPM 2.0)

TQmX86 board controller with watchdog and flexiCFG

Hardware monitor for thermal management

Power supply

Voltage: 8.5 V - 20 V

5 V Standby (optional)

3 V battery

Power: typ. 25-30 W / max. 60 W

(Green ECO-Off: < 0.1 W)

Environment

Temperature: 0°C ... +60°C

Form factor / dimensions

COM Express® Basic, type 6, PICMG COM.0 R2.1

125 mm x 95 mm

Ordering information

TQMx60EB-xx

The current standard variants can be found on the TQ product website www.tq-group.com/en/TQMx60EB

Options:

CPU, TPM, LVDS/eDP, special configurations

Accessories

TQMx60EB-HSP

Heatspreader for TQMx60EB according to the COM Express® specification

Evaluation platform MB-COME6-2

Mainboard for COM Express® Compact/Basic, Type 6

Interfaces: 2x HDMI, DP++, LVDS, 2x Gb Ethernet, 4x USB 3.0, 8x USB 2.0, 2x COM, audio, mini PCIe, m.2, 2.5" SSD, riser extension with PCIe x16, 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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