

# TQMxE39S

## x86 Family

Rugged interconnect™  
TECHNOLOGIES  
Technologies evolve, our commitment remains



**SMARC 2.0 Short Size Module with Intel Atom® x5/x7 E3900 ("Apollo Lake-I") and soldered LPDDR4.**

### HIGHLIGHTS

- ▶ Intel Atom® x5/x7 E3900 series ("Apollo Lake-I"), Pentium® N4200 and Celeron® N3350 processors
- ▶ Dual/Quad core computing power with up to 2.5 GHz
- ▶ Up to 8 GB LPDDR4
- ▶ High-speed interconnected with Gbit Ethernet, 6x 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
- ▶ Small size (82 × 50 mm)
- ▶ Extended temperature support

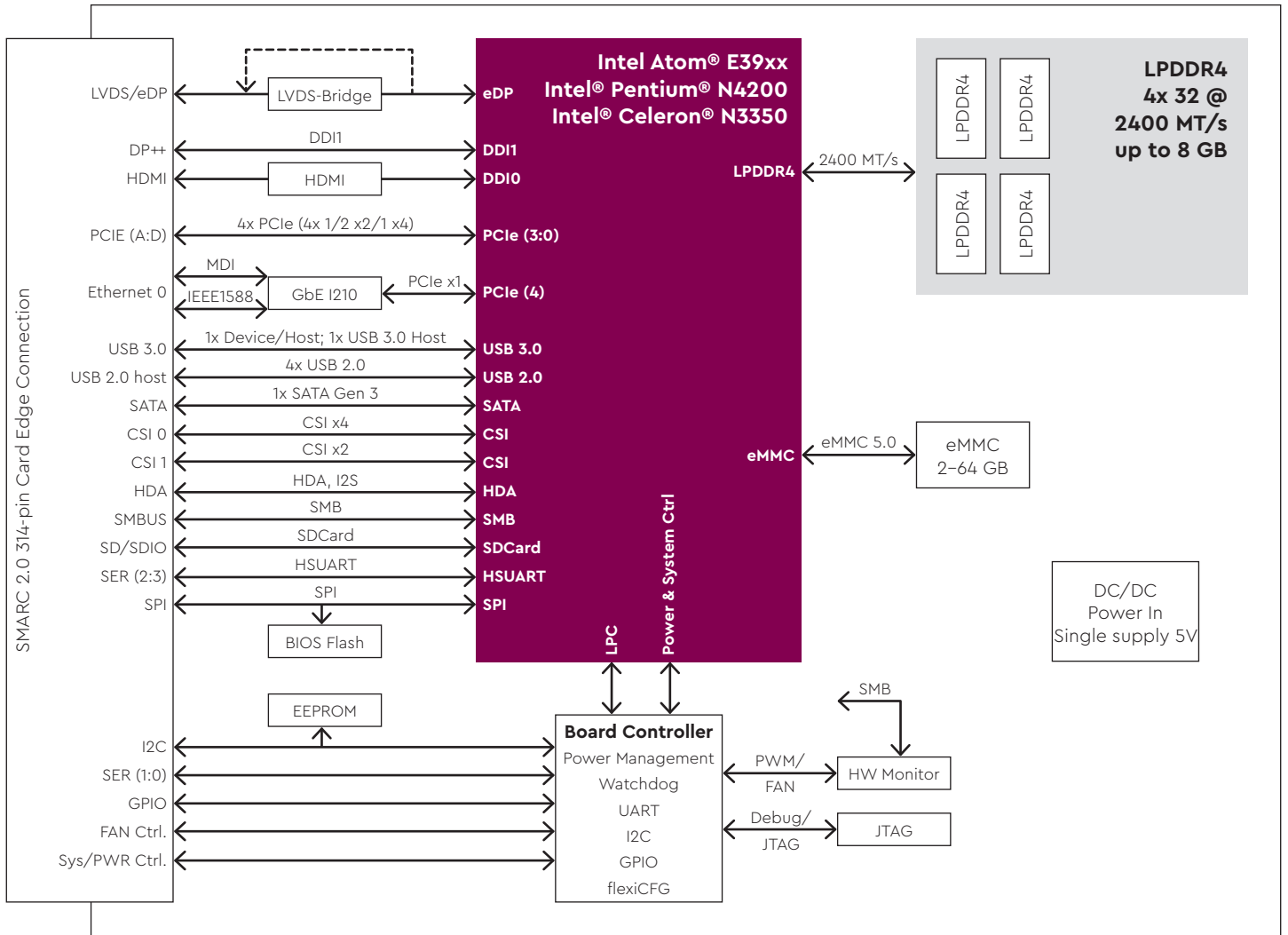
Based on



### TECHNICAL SPECIFICATION

<b>CPU</b>	Intel Atom® x5/x7 E3900 („Apollo Lake-I") Atom® x5-E3930 2x 1.8 GHz, 6.5 W Atom® x5-E3940 4x 1.8 GHz, 9.5 W Atom® x7-E3950 4x 2.0 GHz, 12 W Celeron® N3350 2x 2.4 GHz, 6 W Pentium® N4200 4x 2.5 GHz, 6 W	<b>Peripheral interfaces</b>	1x SATA 3.0 (up to 6 Gb/s), eSATA capable Up to 4x PCIe 2.0 (up to 5 Gb/s) 1x Intel® HD audio (HDA) 1x I2C (master/slave capable) 1x SMBus 1x SPI (for external uEFI BIOS flash) 4x Serial port (Rx/Tx, legacy compatible) 1x SD card interface 2x MIPI CSI
<b>Memory</b>	LPDDR4: 2/4/8 GB eMMC: 8–64 GB (optional) EEPROM: 32-kbit (24LC32) (optional)	<b>Others</b>	TQMx86 board controller with watchdog and flexiCFG Hardware monitor
<b>Graphics</b>	1x Digital Display Interface (DDI) for DP 1.2a, HDMI 1.4b 1x eDP1.4/Dual Channel LVDS 1x HDMI 1.4b	<b>Power supply</b>	Voltage: 4.75 V – 5.25 V, 3 V Battery for RTC Power: typ. 3–8 W/max. 14W
<b>System interfaces</b>	1x Gbit Ethernet (Intel® i210) (external IEEE1588 sync optional through TQ flexiCFG) 2x USB 3.0 4x USB 2.0 1x USB 2.0 OTG	<b>Environment</b>	Standard temperature: 0°C...+60°C Extended temperature: -40°C...+85°C
		<b>Form factor/ dimensions</b>	SMARC 2.0, 82 mm x 50 mm

## BLOCK DIAGRAM TQMxE39S



## ORDERING INFORMATION

<b>TQMxE39S-AA</b>	Intel® Atom™ E3950, 8GB LPDDR4, 32GB eMMC, -40...+85°C, LVDS
<b>TQMxE39S-AB</b>	Intel® Atom™ E3940, 8GB LPDDR4, 32GB eMMC, -40...+85°C, eDP
<b>TQMxE39S-AC</b>	Intel® Atom™ E3930, 4GB LPDDR4, 8GB eMMC, -40...+85°C, LVDS
<b>TQMxE39S-AD</b>	Intel® Celeron® N3350, 4GB LPDDR4, 8GB eMMC, 0...+60°C, LVDS
<b>TQMxE39S-AE</b>	Intel® Pentium® N4200, 8GB LPDDR4, 32GB eMMC, 0...+60°C, eDP
<b>TQMxE39S-AF</b>	Intel® Atom™ E3940, 8GB LPDDR4, 32GB eMMC, -40...+85°C, LVDS
<b>TQMxE39S-AG</b>	Intel® Atom™ E3950, 8GB LPDDR4, 32GB eMMC, -40...+85°C, eDP

Other configurations on request

### Evaluation platform MB-SMARC-1

Mainboard for SMARC 2.0 Interfaces: 1x DP++, eDP/LVDS, 2x GB ethernet, 1x USB 3.0, 1x USB 2.0, audio, fan, Debug, 170 mm x 170 mm, HDMI, USB-C, Micro SD-Card, 4 different M.2 sockets

### STKXE39S-E

Individual Starterkit for TQMxE39S. Includes selected SMARC module, selected mainboard MB-SMARC-1, heatspreader and accessories.

### 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)