TQMa6ULx

Energy efficient for future designs

The Minimodule TQMa6ULx, based on the i.MX6UL from NXP, combines the ARM Cortex-A7 core technology with a variety of interfaces. The integrated graphics controller supports applications with display and touch screen requirements. For various applications such as, industrial automation and controls with requirements for low power and secure data processing, there are three CPU variants available. With a Single Cortex™-A7 core and a clock rate up to 528 MHz the TQMa6ULx provides a balanced ratio between applications for visualization and control performance and power dissipation.

The highlights:
- Graphic
- Extended temperature range
- 2x Ethernet with IEEE1588
- Low power consumption (typ. 1 W)
- Camera Sensor Interface
- Security functions
- Long term availability

Block Diagram TQMa6ULx
### Technical specification

**Microprocessor**
- i.MX6UL-1, i.MX6UL-2, i.MX6UL-3

**System interfaces**
- Up to 2x Ethernet 10/100 Mbit
- Up to 2x CAN
- Up to 2x USB 2.0 high speed OTG interface
- Up to 8x UART

**Periphery interfaces**
- Up to 2x SDIO/MMC
- Up to 4x I²C
- Up to 4x SPI
- Up to 3x I²S

**Graphic**
- LCD Interface (24 Bit RGB)
- 1 x 16 Bit Camera Sensor Interface

**Memory**
- DDR3L-SDRAM: Up to 1 GB
- Quad SPI NOR: Up to 256 MB
- Up to 32 GB eMMC-Flash
- EEPROM: 0 / 64 kbit

**Other**
- Real Time Clock (RTC)
- Temperature sensor
- CPU JTAG Interface

**Power supply**
- 5 V

**Ambient conditions**
- Standard temperature range: -25°C…+85°C
- Extended temperature range: -40°C…+85°C

**Dimensions**
- 46 mm x 32 mm

**Plug-in system**
- Board-to-board plug-in system 200 pins

**Operating systems**
- Linux

**Operating systems on request**
- VxWorks, QNX, WIN EC 2013

### Ordering information

**TQMa6UL1-AA**
- TQMa6UL1, Cortex-A7 / 528 MHz, 4 GB eMMC Flash
- 256 MB DDR3L, 64 kB EEPROM, -25°C …+85°C

**TQMa6UL2-AA**
- TQMa6UL2, Cortex-A7 / 528 MHz, 4 GB eMMC Flash
- 256 MB DDR3L, 64 kB EEPROM, -25°C …+85°C

**TQMa6UL3-AA**
- TQMa6UL3, Cortex-A7 / 528 MHz, 4 GB eMMC Flash
- 256 MB DDR3L, 64 kB EEPROM, -25°C …+85°C

**STKa6ULx-AA**
- STKa6 (Eval Kit) with TQMa6ULx-AA, Cortex-A7 / 528 MHz, 256 MB DDR3L, 4 GB eMMC Flash,
- 64 kB EEPROM, 1x RS232, 1x RS485, 2 x CAN 2.0B separated
- 3x USB 2.0 HOST, 1x USB 2.0 OTG, 2x ETH 10/100,
- LCD Port, 1xHDMI, LVDS, 1x Mini PCIe (only USB), RTC,
- Temperature sensor, Reset-Button, SD interface,
- Power supply, 4 GB SD card, Cables

### Starter kit STKa6ULx set

The core of the STKa6ULx set is the TQMa6ULx module with a Cortex-A7 CPU. The components contained in the starter kit constitute a modular system enabling you to develop your own product ideas. Development of graphic interfaces can be started immediately using the prepared combination of closed display unit and starter kit that are matched to each other. To develop your own hardware you can use the certified and qualified circuit components of the starter kit in your own designs.