

TQMa28L

Functional talent for universal applications

The TQMa28L Minimodule is the TQMa28 variant without connector and is directly soldered with the baseboard.

The BGA module has been developed especially for the use in high volume projects. Due to the high level of integration it is extremely space- and cost-saving. This enables an easy and cost-effective baseboard development.

The BGA module is based on the i.MX28 with an ARM926 core with up to 454 MHz.

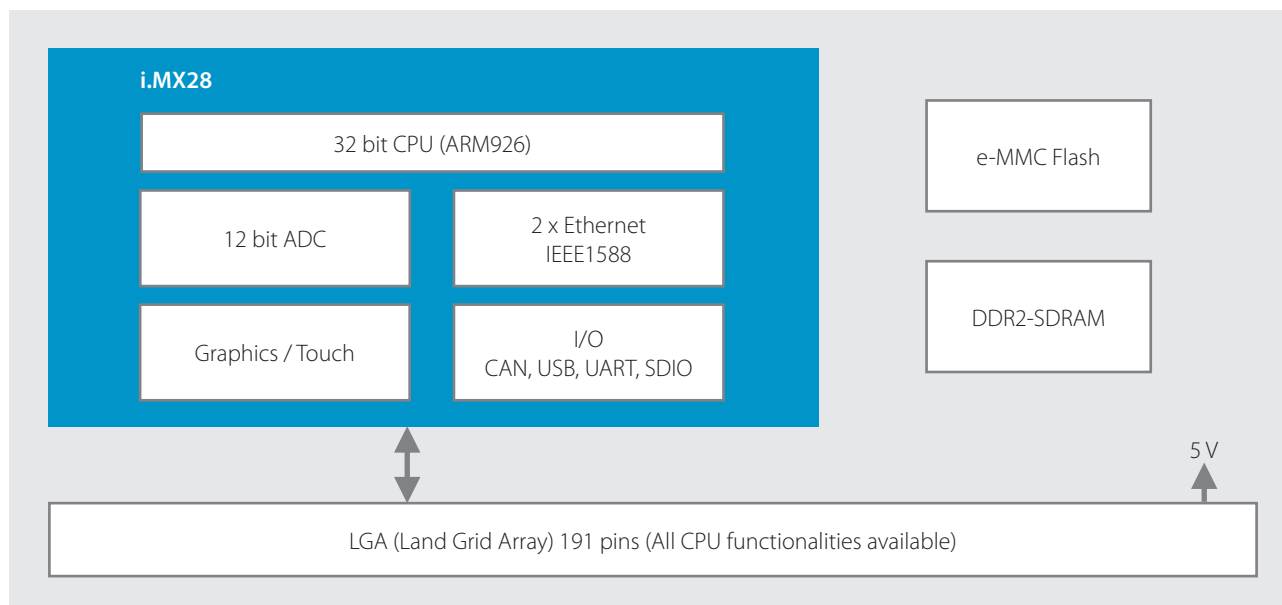
The module is best suited for smart metering and for easy visualization and control applications.

All the processor's functional pins are on the BGA pins.

The highlights:

- Smallest ARM9 module
- High quantity use
- Extended temperature range
- 2x IEEE1588 Ethernet (L2 Switch)
- Low power consumption (typ. 1 W)
- Long-term availability
- Power management
- Battery charge functionality
- IEC 61850 stack

Block diagram TQMa28L



Technical specification

Microprocessor

i.MX283, i.MX287 (450 MHz)

System interfaces

Up to 2x Ethernet 10/100 Mbit (L2 Switch)
Up to 2x CAN 2.0B
Up to 5x UART
1x USB 2.0 high-speed HOST interface
1x USB 2.0 high-speed OTG interface
1x SDIO/MMC
Up to 2x I2C
Up to 2x I2S
Up to 2x SPI
GPIO
Up to 8x 12 bit ADC channels (1x High Speed)
Up to 8x PWM

Graphic

24 bit TFT Interface

Memory

DDR2-SDRAM: up to 256 MB
e-MMC flash: up to 16 GB

Other

Real Time Clock (RTC)
CPU JTAG Interface

Power supply

5 V

Ambient conditions

Standard temperature range: 0°C...+70°C
Extended temperature range: -25°C...+85°C

Plug system

LGA (Land Grid Array) 191 pins

Operating systems

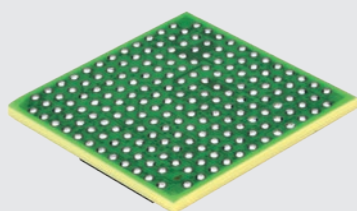
Linux 2.6, Win CE 6.0, QNX

Operating systems on request

VxWorks

Dimensions

30 mm x 30 mm



Bottom side

Ordering information

TQMa28L-AB (on request, min. 10,000 pieces)

i.MX283@ 450 MHz, 128 MB DDR2, 4 GB e-MMC flash,
-25°C...+85°C

TQMa28L-AA (on request, min. 10,000 pieces)

i.MX287@ 450 MHz, 128 MB DDR2, 4 GB e-MMC flash,
-25°C...+85°C

STKa28-AA*

STKa28 (Eval Kit) with TQMa28-AA, i.MX287 / 450 MHz,
128 MB DDR2, 4 GB e-MMC flash, 1x RS232, 1x RS485, GPIO,
4xIN / 8xOUT, 2x USB 2.0 HOST, 1x ETH 10/100, Stereo Out,
Mono Mic In, RTC, Reset button, SD interface, Power Supply,
2 GB SD card, Z-Modem Cable

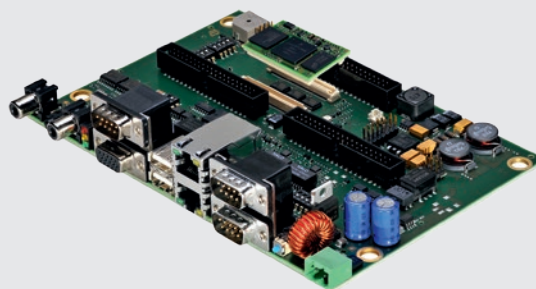
STKDT070-AA

7" Touch-Display, WVGA 800x480, 300cd, Touchpen, Cable set

Starter kit STKa28

**Please note, that for evaluation purposes we provide you with the starter kit STKa28 with the module TQMa28 (not TQMa28L!). The module mainly differs in the plug system.*

The core of the STKa28 is the TQMa28 with an ARM9 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.



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/TQMa28L