

# TQMa28

## Functional talent for universal applications

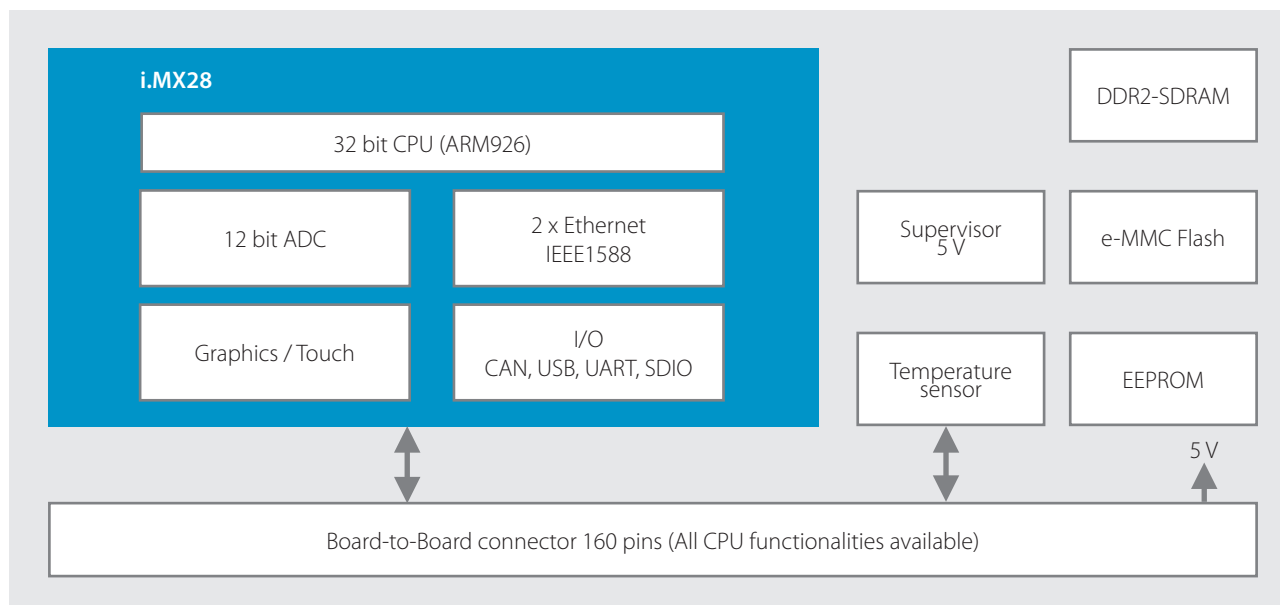
The TQMa28 Minimodule, based on the i.MX28 processor, offers a balanced ratio between computing and graphic performance. The basis for this is an ARM926 core with up to 450 MHz. The realised memory on the module provides best system support. The module is best suited for smart metering and for easy visualization and control applications.

A large number of interfaces and module functions are implemented in the CPU due to the high level of interface and function integration. This allows the basic board to be developed easily and at low-cost. All the processor's functional pins are on the module plug-in connector.

### The highlights:

- Smallest ARM9 module
- Low-cost due to highest level of integration
- 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 TQMa28



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## Technical specification

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### 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  
EEPROM: 0 / 64 kbit

### Other

Real Time Clock (RTC)  
Temperature sensor  
CPU JTAG Interface  
Supervisor 5 V

### Power supply

5 V

### Ambient conditions

Standard temperature range: -25°C...+85°C  
Extended temperature range: -40°C...+85°C

### Plug-in system

Board-to-Board plug-in system (160 Pins) 2\*80

### Operating systems

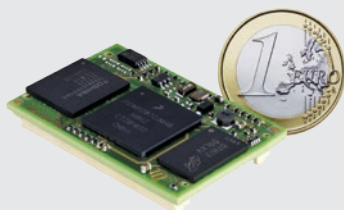
Linux 2.6, Win CE 6.0, QNX

### Operating systems on request

VxWorks

### Dimensions

26 mm x 40 mm



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## Ordering information

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### TQMa28-AA

i.MX287@ 450 MHz, 128 MB DDR2, 4 GB e-MMC flash, 64 kbit EEPROM, -25°C...+85°C

For further product variants please visit our website:  
[www.tq-group.com/en/TQMa28](http://www.tq-group.com/en/TQMa28)

### STKa28-AA

STKa28 (Eval Kit) with TQMa28-AA, i.MX287 / 450 MHz, 128 MB DDR2, 4 GB e-MMC flash, 64 kbit EEPROM, 1x RS232, 1x RS485, GPIO 4xIN / 8xOUT, 2x CAN 2.0B isol., 2x USB 2.0 HOST, 2x ETH 10/100, Stereo Out, Mono Mic In, RTC, Temperature sensor, Reset button, SD interface, Power Supply, 2 GB SD card, Z-Modem Cable

### STKDT070-AA

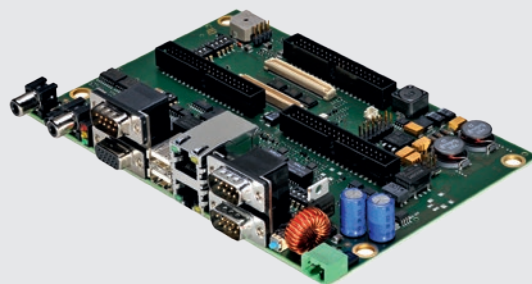
7" Touch-Display, WVGA 800x480, 300cd, Touchpen, Cable set

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## Starter kit STKa28

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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.



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