### Smallest Arm9™ module based on i.MX28 with good graphics and computing power.

### 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
- IEC 61850 stack

### TECHNICAL SPECIFICATION

<table>
<thead>
<tr>
<th>CPU</th>
<th>i.MX287 (450 MHz)</th>
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| **Interfaces** | Up to 2x Ethernet 10/100 Mbit (L2 Switch)  
Up to 2x CAN 2.0 B  
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  
Up to 8x PWM |
| **Graphic** | 24-bit TFT Interface |
| **Memory** | DDR2-SDRAM: up to 256 MB  
eMMC 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, Win CE 6.0, QNX  
VxWorks on request |
| **Dimensions** | 26 mm x 40 mm |
BLOCK DIAGRAM TQMA28

ORDERING INFORMATION

TQMa28-AA  
TQMa28 @ 450 MHz, 128 MB DDR2, 8 GB eMMC flash, 64-kbit EEPROM, -25°C...+85°C

TQMa28-AC  
TQMa28 @ 450MHz, 8 GB eMMC, 128 MB DDR2, 64 kB EEPROM, Boot EEPROM, -40°C...+85°C

TQMa28-AD  
TQMa28 @ 450MHz, 8 GB eMMC, 128 MB DDR2, 64 kB EEPROM, Boot EEPROM, -25°C...+85°C

TQMa28-AE  
TQMa28 @ 450MHz, 8 GB eMMC, 128 MB DDR2, 64 kB EEPROM, Boot EEPROM, Supervisor 5V, -25°C...+85°C

TQMa28-AF  
i.MX287 / 454MHz, 8GB eMMC-Flash, 256MB DDR2-SDRAM, 64kB EEPROM, Boot-EEPROM (-25 - +85°C)

Other configurations on request

STKa28-AA  
STKa28 (Eval Kit) with TQMa28-AA, i.MX287/450 MHz, 128 MB DDR2, 8 GB eMMC flash, 64-kbit EEPROM, 1x RS232, 1x RS485, GPIO 4x IN / 8x OUT, 2x CAN 2.0 B 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 800 × 480, 300 cd, Touchpen, Cable set

Starter kit STKa28  
The core of the STKa28 is the TQMa28 with an Arm™ 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 a TQ display kit which is adjusted for a starter kit. To develop your own hardware you can use the certified and qualified circuit components of the starter kit in your own designs.