Ineltek logo

Dear Valued Customer,

We would like to inform you about some special bundle solutions that we have created to support designs using Atmel's ATSAMA5D3 and ATSAMA5D4 MPU series (*please contact us for special quotes and find additional price information on page 2*)

Within the following overview you will find a host of key products which integrate perfectly with these SAMA5 MPUs. You can take advantage of the certification work already done with Active-Semi PMICs for all Atmel SAMA5D3/4 derivatives (*please contact us for special quotes and find additional price information on page 3*)

Furthermore, there is additional information on suitable NOR and NAND Flash solutions from Macronix, DRAM & SLC NAND Flash solutions from Zentel, recommended TFT Displays from ImaginOrient, TIANMA and Hantronix and the appropriate TFT controllers from Epson, which could also meet your requirements.

If you are interested in further information or special bundle offers please contact your local Ineltek Sales Office, e-mail us at info@ineltek.com or get directly in contact with our line management:

- Bastian Straßburg, strassburg@ineltek.com (Atmel Line Manager)
- Irina Braun, braun@ineltek.com (Active Semi, Epson Line Manager)
- Barbara Harbich, harbich@ineltek.com (ams, Micro Crystal Line Manager)
- Lisa Cooke, cooke@ineltek.com (Macronix, Zentel Line Manager)
- Eric Haussmann, ehaussmann@ineltek.com (Hantronix, TIANMA, ImaginOrient Line Manager)

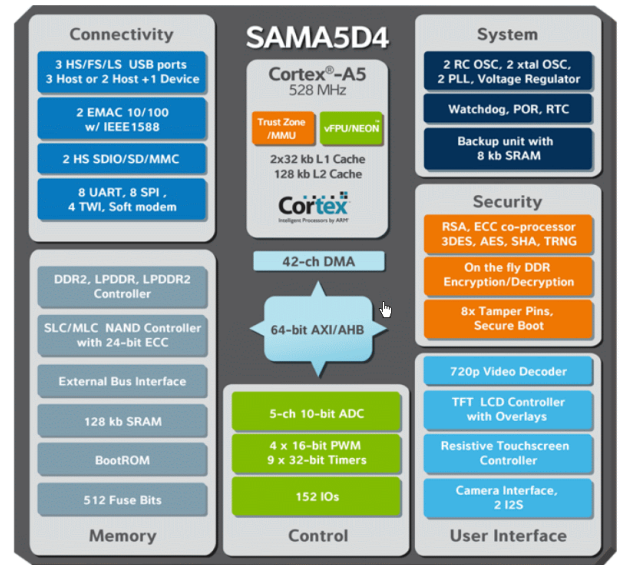Sincerely,

Your Ineltek Marketing Team

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Phone +49 7321 9385 0 · Fax +49 7321 9385 95 · info@ineltek.com · www.ineltek.com

Design-In-Expertise And Service

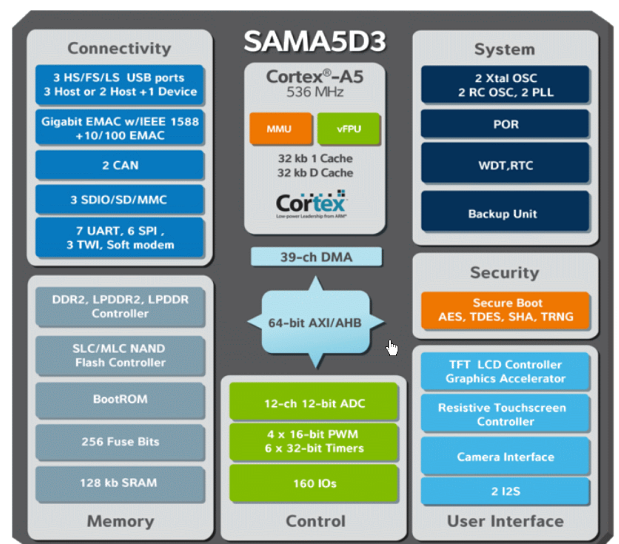# Atmel SAMA5 ARM Cortex-A5 Microprocessors

SAMA5D4 series:

- ARM® Cortex®-A5-based processor running at 528Mhz (840DMIPS)
- Neon for high-precision computing and acceleration of complex algorithms including multimedia
- 128KB of L2 cache for system performance
- 720p hardware video decoder supporting H264/263, VP8, JPEG
- Graphic LCD TFT controller with overlays for image composition
- CMOS image sensor interface.
- Three high-speed USB ports (configurable as three hosts or two hosts and one device port)
- Dual EMAC 10/100 with IEEE1588 support
- Advanced security features to prevent counterfeiting, secure external communication, and authenticate the system:

  - On-the-fly encryption/decryption of code from external DDR
  - Encryption engines supporting AES/3DES, RSA, ECC - TRNG, SHA

  - Tamper detection pins
  - Memory content protection (secure key storage)

SAMA5D3 series:

- ARM® Cortex®-A5 core running at 536MHz (850DMIPS)
- Floating point unit (FPU) for high-precision computing and accelerated data processing
- Market leading low power consumption
  - Less than 150mW in active mode at 536MHz with all peripherals activated
  - Less than 0.5mW in low power mode with SRAM and registers retention
  - Dual CAN controller
- Gigabit Ethernet MAC and 10/100 MAC with IEEE1588
- Three HS high-speed USB ports (configurable as three hosts or two hosts and one device port)
- CMOS image sensor interface
- Graphic LCD controller with overlays for image composition
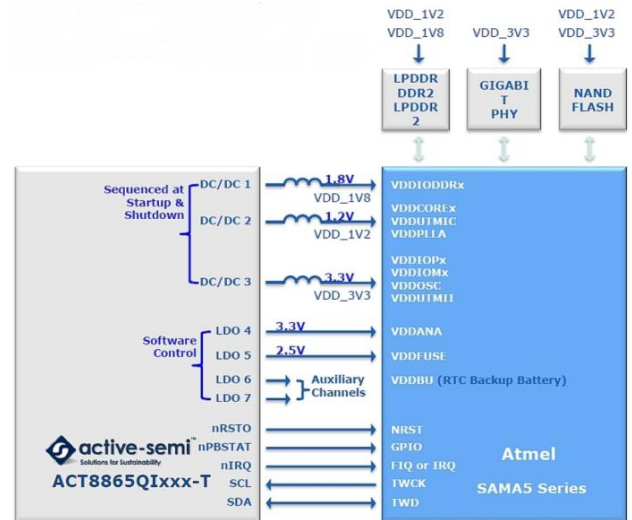- AES/3DES hardware encryption engines and secure boot

BGA324 (15x15 in 0.8pitch) package and also a small package option BGA (12x12mm in 0.5 pitch)
- Extended industrial temp. range -40°C to 105°C
- Please contact us for special price offers, example: 4,50 EUR for ATSAMA5D31A and many more

Special Quotes for ATSAMA5D3 series

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ACT8865 ActivePMU™ Power Management Solution

- Turnkey Solution for Atmel SAMA5 and SAM9 processors
- Buck Output Voltages: 1.25V, 1.55V, 3.0V
- LDO Output Voltages: 1.8V, 2.5V, 3.0V
- Step-Down DC/DCs: 2 x 1.15A, 1.3A
- Four Low-Dropout Linear Regulators: 4 x 320mA
- <2mW Standby Power
- Advanced Enable/Disable Sequencing Controller: Pre-validated & Programmable for Atmel Processor Solutions
- Lowest Noise for Analog Rails on Noise Sensitive Application
- I2C™ Serial Interface
- Minimal External Components
- Tiny 4×4mm TQFN44-32 Package (0.75mm Package Height)
- Please contact us for special quotes:
  Inquiries <3000pcs.: 0,98 EUR/pc.
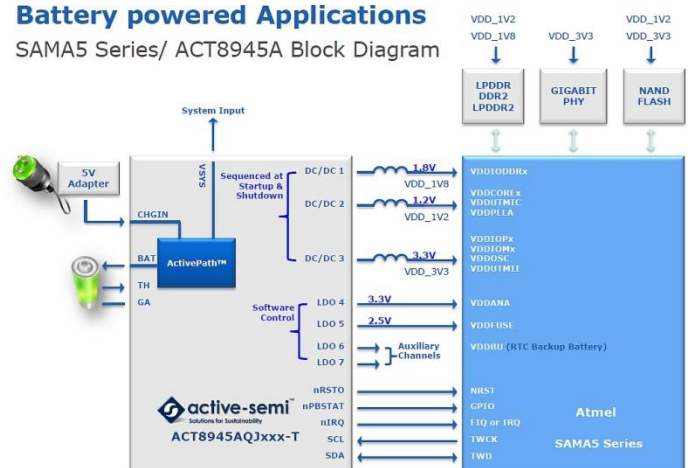 Inquiries >3000pcs.: 0,85 EUR/pc.

Special Quotes for ACT8865 series

ACT8945A ActivePMU™ Power Management Solution

- Buck Output Voltages: 1.2V, 1.8V, 3.3V
- LDO Output Voltages: 0.6V
- Step-Down DC/DCs: 2 x 1.1A, 1.2A
- Four Low-Dropout Linear Regulators: 4 x 320mA
- Advanced Enable/Disable Sequencing Controller
- I2C™ Serial Interface
- Integrated ActivePath™ Charger
- Tiny 5×5mm TQFN55-40 Package (0.75mm Package Height, Pb-Free and RoHS Compliant)
- Please contact us for special quotes:
  Inquiries <3000pcs.: 1,33 EUR/pc.
  Inquiries >3000pcs.: 1,07 EUR/pc.

Special Quotes for ACT8945 series

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AS3709 µPMIC with 5 DCDC and 2 LDOs

- 5 DCDC step down regulators (2-4MHz) with 2 IO LDOs
- input voltage range 2.7V to 5.5V
- Low-Power Quiescent Current typically 110 µA
- Up to 300mA possible output current
- Control Interface, I2C/SPI control lines, ON key with 4/8s emergency shut-down, POR with RESET I/O
- Li-Ion battery-powered or fixed 3.3V/5V supply application
- Internally fixed switching frequency (2MHz, 3MHz or 4MHz)

Macronix Serial NOR Flash

Macronix offers Serial Flash products from 512Kb to 256Mb densities in an 8-pin SOP (150mil or 200mil) or a 16-pin SOP (300 mil) package with an operating voltage range of 2.7V to 3.6V.

Moreover, Macronix also provides high performance Serial Flash products with dual I/O and quad I/O operation which doubles and quadruples the read performance up to 300Mbits/second for high-end consumer applications. The multiple I/O products are offered in densities of 8Mb and above.

Macronix also offers a family of low voltage, 1.8V and 2.5V Serial Flash products with dual I/O and quad I/O interface.

Macronix NAND Flash

One of the newest developments of Macronix is the new SLC NAND Flash product line. This is based on long term expertise in the development of memories and experience of manufacturing reliable storage product families with densities from 512Mb to 8Gb. Standard packages like TSOP and VFBGA, 8 and 16-bit bus width and requirements for ECC between 1 bit and 8-bit enables many possible applications in industrial or automotive usage in the operating temperature range of -40°C to +85°C (+125°C).

The newest Macronix development is the Octa Flash

Key Features:

- Density: 256Mb – 1Gb
- VCC: 1.7V – 2.0V
- Temperature: -40°C + 85°C
- Bus Width: x1, x8
- Sector Type: 4KB, 64KB
- Max Freq.:   STR: 133MHz / DTR: 200MHz
- Packages: 24-TFBGA (5x5 ball array)
- Additional Features:
  - Octal SPI Interfaces   - Adjustable dummy cycles
  - Configuration register   - Fast Boot
  - Individual Sector Protection   - Double Data Rate(DTR) mode support
  - 256byte page buffer   - DQS pin for data strobe

Zentel's portfolio includes standard SDRAM from 64 Mb to 256 Mb, **DDR1 SDRAM from 64 Mb to 256 Mb and DDR2 SDRAM from 256 Mb to 1 Gb density.** Zentel offers Automotive Grades 2 and 3 memory versions qualified to AEC Q-100 besides its range of commercial and industrial grades. Zentel SDRAM ICs are available in TSOP-II and FBGA packages.

With the extension of the product portfolio by SLC Nand Flash ICs, Zentel is now able to offer non-volatile memory ICs with long lasting data retention and high reprogrammability endurance. Storage capacities of Zentel's parallel SLC Nand Flash ICs range from 512Mb to 4Gb for 3.3 V supply voltage and are available in 48 lead TSOP-I and FBGA63 packages.

With the introduction of single-chip **512Mb and 1Gb Quad-SPI-serial SLC NAND Flash ICs in SOIC16W standard package including an unmatched 64kB big OTP section** Zentel enables new cost-effective, compact and secure IoT applications.

S1D13U11 Display Controller with Integrated USB Interface

- Easy-to-use USB interface
- Easily change settings (e.g. panel resolution) in an INI file
- High-speed startup that enables image display within 2 seconds after power is turned on (external flash ROM required)
- Windows 7-Only features:
    - o Control a sub-display connected to the host CPU
- Linux only features:
    - o Support for touch-screen/key-switch input

S1D13781 WQVGA Graphic Controller

- 384Kbyte Embedded Memory
- Direct and Indirect CPU Interfaces
- 8/16-bit data bus width
- SPI CPU Interface
- Support for single panel implementation:
    - o RGB interface TFT panel
    - o Color and Monochrome STN
- Programmable resolutions
- Multiple Window support for Main and PIP
- Temperature range -40° - 85°

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S1D13517 LCD Controller with External VRAM

- External 16M-bit, 64 M-bit or 128 M-bit SDRAM
- High performance SDRAM controller
- 8/16-bit asynchronous indirect parallel interface
- Input data formats: RGB 8:8:8, RGB 5:6:5
- Active Matrix TFT Interface: 18/24-bit interface
- Supports Resolutions up to 960x540 or 800x600
- PWM output for LED backlight control

RV-8803-C7 High Performance Real Time Clock Module

- Highest Accuracy: +/- 3.0ppm -40°C to +85°C
- Low current consumption of only 240nA
- I²C interface
- Ultra-miniature ceramic SMD package: 3.2 x 1.5 x 0.8 mm
- AEC-Q200 qualified

32kHz Watch Crystals

Micro Crystal offers a wide range of 32kHz quartz crystals.

All Micro Crystal products are RoHS-compliant and 100% lead free.

- SMD Ceramic Packages - 100% lead free
- SMD Metal Can Packages - RoHS-compliant
- THT Thru-Hole Type Metal Package - Cylindrical Watch Crystal Package

TFT-LCD Displays

We offer TFT displays from the manufacturers IOE, Hantronix and TIANMA. The products range from 2.2 "TFT displays up to 15" TFT displays. All models have long-term availability and therefore are ideally suited for the industrial market. Moreover, we offer TFT displays supporting a wide temperature range from -30 °C to + 85 °C and having very wide viewing angle.We are able to offer custom-made TFT display solution for small quantities (starting from 500pcs.)

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