

"Zefeer"[®]

ARM9 CPU Module Series



- CPU module based on ARM920T core from Cirrus Logic
- Bus speed from 166 to 200 MHz
- Ethernet MAC + PHY, PCMCIA, IDE, USB Hosts, Graphic Engine, Display Interface
- Compact form factor
- Ready for Linux 2.6.X, Windows CE BSP
- Evaluation Board available with all peripherals and exhaustive development kit
- ITE & ISM approvals
- Ready-to-go. Regular operation starts just powering module.
- "One-module-fits-all", i.e. all modules are pin compatible

Zefeer is a family of compact and essential CPU modules based on Cirrus Logic EP93XX ARM920T based family. Modules are aiming to a simple usage by customers, while maintaining a very high-performing profile. **Zefeer** modules are "ready-to-go", i.e. only few components are needed to start modules in their standard configuration. Also, a unique pinning disposition for whole **Zefeer** family allows to span from the most simple entry-point to the most sophisticated full-features solution.

Zefeer module linecard supports both Linux and WindowsCE.net OS as well as eCos, that are provided with the **Zefeer** Evaluation Board. **Zefeer** Evaluation Board is a flexible and complete system where users can test their own applications or add their own expansion boards. Since all modules are pin-compatible, Evaluation Board fits all types of modules.

All **Zefeer** modules are provided with SDRAM, Flash, CPU supervisor and Ethernet MAC+PHY on board. External bus interface at 16 bits, AC97, I2S, SPI, JTAG, timers, UARTs, USBs, IrDA and GPIOs are common to all **Zefeer** family as explained in the Common Technical Data.

Table below summarizes main characteristics of off-the-shelf modules.

| MODULE NAME | CPU | Processor speed | Bus speed | Flash [MB] | SDRAM [MB] | UARTs (max) | Audio engine and floating point coprocessor | PCMCIA | IDE controller | USB Host | LCD controller | Graphic Engine | Touch screen or ADC |
|-------------|--------|-----------------|-----------|------------|------------|-------------|---|--------|----------------|----------|----------------|----------------|---------------------|
| DZA 4100C | EP9301 | 166 | 66 | 4 | 16* | 2 | | | | 2 | | | 5ADC |
| DZB 4100C | EP9302 | 200 | 100 | 4 | 16* | 2 | Y | | | 2 | | | 5ADC |
| DZG 8600C | EP9307 | 200 | 100 | 8 | 64 | 3 | Y | | | 3 | Y | Y | 8 wire |
| DZN 3600C | EP9312 | 200 | 100 | 32 | 64 | 3 | Y | | Y | 3 | Y | | 8 wire |
| DZQ 3600C | EP9315 | 200 | 100 | 32 | 64 | 3 | Y | Y | Y | 3 | Y | Y | 8 wire |

- * access to the SDRAM is performed at 16 bit.
- Extended temperature range is also available. Customizations and adaptations are also possible. Informations are subject to change. Informations may be not complete due to the need to condensate many informations in one table. In order to have a detailed information about each module, please contact sales department.

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Common Technical Data

| | |
|--------------------------------------|--|
| CPU | ARM9 (920T core) @166 or 200 MHz with MMU |
| CPU supervision | |
| PSU supervisors | Core and I/O power supply separate supervision |
| Watchdog | 1 |
| DMA | 12 internal |
| Digital ID | unique 32 bit |
| Memory | |
| Cache | 16K cache for instructions +16K cache for data |
| SDRAM | from 16MBytes to 128MBytes (16-bit access in DZA and DZB only) |
| Flash NOR | 4 MBytes (2M x 16bit) to 64 MBytes (32M x 16bit) ; access is at 16-bit |
| EEPROM | internal 16 kbit |
| Interfaces (to the connector) | |
| Ethernet PHY | 1/10/100Mbps ready for magnetics |
| UART | 16550 compatible; IrDA on UART nr.2, HDLC on UART nr. 3 when existing |
| SPI | 1 channel |
| AC97 | 2 channels |
| I ² S | 6 channels |
| I ² C | Master/slave/multimaster 400kHz |
| Timers | two general purpose 16-bit, one general purpose 32-bit, one 40-bit debug timer |
| External Bus | 8/16-bit byte - 29 Address Bits -5 direct Chip Select |
| I/O Controller | yes (see model specs) |
| Debug | JTAG IEEE 1149.1 Test Access Port |
| Interrupts | up to 54 |
| Mechanical | |
| Physical | 67,50 x 50,80 x 1,00 mm ³ (2,7"x 2,0"), with fixing holes |
| Connectors | 2 x 120 pins 0.6mm pitch, gold-plated contacts |
| Compatibility | Hirose FX8-120S-SV |
| PCB | 8 layers |
| Material | FR4 |
| Technology | double-sided SMT |
| Temperature | 0÷70 °C (-40÷85 °C available) operational temperature |
| PSU | |
| Single 3.3V± 5% | Through connector; 1.8V regulated on-board |
| Consumption | Less than 1,0W total power consumption |
| Software | |
| RTOS | eCos (Order Code ZECK) |
| Multitasking OS | Linux 2.6.XX (Order Code ZELK) |
| Multitasking OS | Windows CE.net (Order Code ZWCK) |
| Agency approvals | |
| CE Mark | ITE & ISM (EN 55022, EN 55011, EN 55024) |

Typical applications: Industrial Controls, Digital Media Servers, Home Media Gateways, Digital Audio Jukeboxes, Streaming Audio Players, Set-Top Boxes, Point-of-Sale Terminals, Koisks, Biometric Security Systems, GPS Systems, Consumer Electronic Applications.

Informations and sales

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