Welcome to E-XFL.COM

Understanding Embedded - Microcontroller, Microprocessor, FPGA Modules

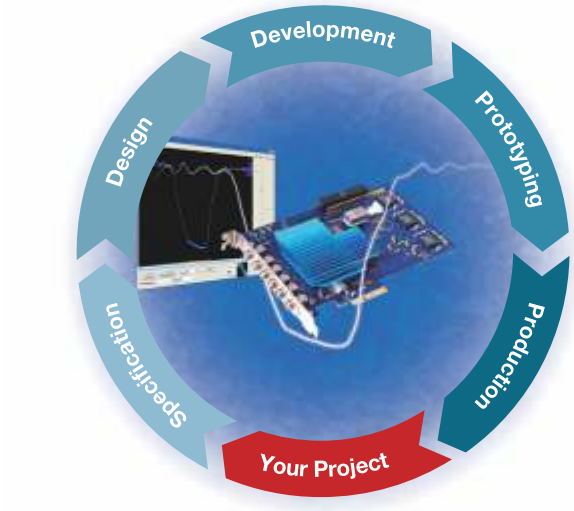
Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

Applications of Embedded - Microcontroller,

Details	
Product Status	Discontinued at Digi-Key
Module/Board Type	FPGA Core
Core Processor	Kintex-7 160T
Co-Processor	-
Speed	200MHz
Flash Size	32MB
RAM Size	-
Connector Type	Samtec LSHM
Size / Dimension	1.97" x 1.57" (50mm x 40mm)
Operating Temperature	-40°C ~ 85°C
Purchase URL	https://www.e-xfl.com/product-detail/trenz-electronic/te0741-02-160-2if

Company Profile

Since 1992, Trenz Electronic GmbH successfully operates as a development service enterprise in the electronics branch. Our services include design-in support as well as turnkey design which typically cover all steps from product specification, hardware and software design up to prototyping and production.



We are particularly specialized in the design of high-speed data acquisition, high-accuracy measurement and embedded digital signal processing systems based on FPGA and ARM architectures.

We maintain long-term customer relationships, characterized by flexibility and technical competence.

Hardware Design

- System Architecture and Design
- Hardware Integration (Design-In)
- Ultrafast Digital Logic
- Analog and Mixed Signal
- Digital Signal Processing
- Schematic Capture and PCB Layout

HDL Design

- FPGA and System-On-Chip Design
- System Design and Synthesis
- HDL Design (VHDL,Verilog)
- Integration of Soft-Cores (Xilinx MicroBlaze, ARM Cortex …)
- USB, PCI-Express, Gigabit Ethernet
- Ultrafast ADC/DAC Interfaces

Software Development

- Device Driver and Application Software development
- Software and Firmware development

ISO 9001 REGISTERED FIRM

ISO 9001:2008 (quality management) certified

ISO 14001 REGISTERED FIRM

ISO 14001:2004 (environmental management) certified

Trenz Electronic GmbH

Holzweg 19A, 32257 Bünde (Germany)
Phone: +49 (0) 5223 65301-0
Fax: +49 (0) 5223 65301-30
E-Mail: info@trenz-electronic.de
Web: www.trenz-electronic.de

Index

Overview

The Trenz Electronic TE0803 is an industrial-grade MPSoC module integrating a Xilinx Zynq UltraScale+ with up to 8 GByte 64-Bit width DDR4 SDRAM, and max. 512 MByte SPI Boot Flash memory for configuration and operation, and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking connections.

All this in a compact 5.2 x 7.6 cm form factor, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

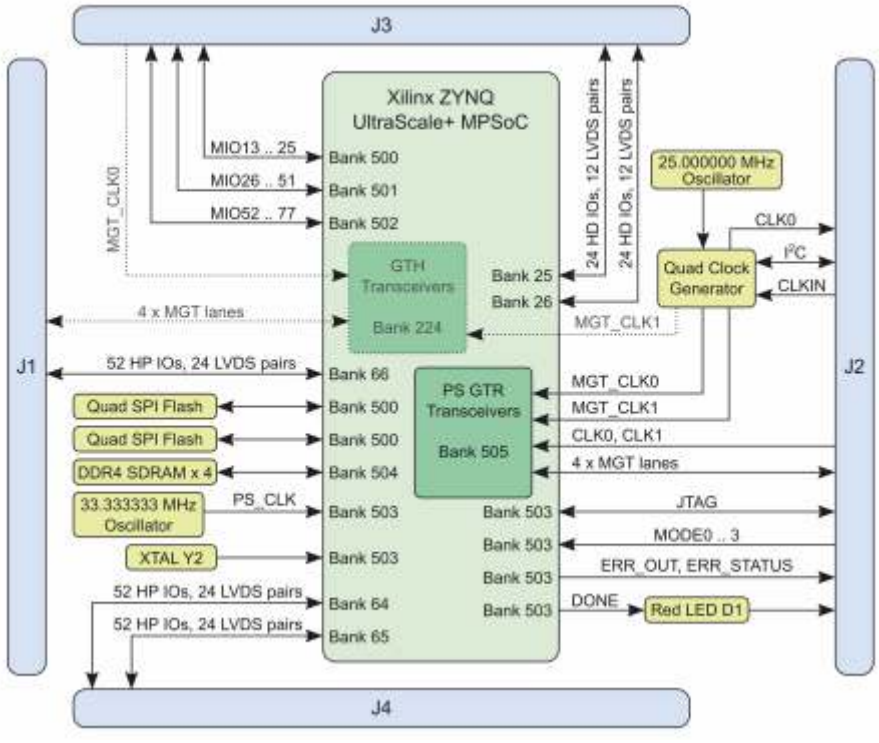
Rugged for industrial applications

XILINX ALL PROGRAMMABLE™

ZYNQ UltraSCALE+

Key Features (preliminary)

- Xilinx Zynq UltraScale+ MPSoC 784 pin package (ZU3EG, optional ZU5EV)
- Memory:
  - 64-Bit DDR4 - 8 GByte max
  - SPI Boot Flash dual parallel - 512 MByte max
- B2B connectors:
  Plug-on module with 4 x 160-pin connectors
  - 65 x MIO, 156 I/O's x HP (3 banks)
  - Serial transceiver: PS GTR 4, PL GT 4 (ZU4, ZU5 only)
  - GT Reference clock input
  - PLL for GT Clocks (optional external reference)
- Size: 52 x 76 mm
- All power supplies on board.
- Other assembly options for cost or performance optimization plus high volume prices available on request.



TE0808 UltraSOM+ Series
Xilinx Zynq UltraScale+, DDR4, Flash, 20 x Transceiver

5.2 form X factor 7.6

Overview

The Trenz Electronic TE0808 is an industrial-grade MPSoC module integrating a Xilinx Zynq UltraScale+, max. 8 GByte DDR4 SDRAM with 64-Bit width, max. 512 MByte Flash memory for configuration and operation, 20 Gigabit transceivers, and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking connections.

All this in a compact 5.2 x 7.6 cm form factor, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany

Key Features

- SoC: ZYNQ UltraScale+ ZU9EG 900 pin package
- Memory
  - 4 x 512 MByte 64-Bit DDR4 (8 GByte max.)
  - 2 x 32 MByte SPI Boot Flash dual parallel (512 MByte max.)
- User I/O
  - 65 x MIO, 48 x HD (all), 156 x HP (3 banks)
  - Serial transceiver: GTR 4 (all) + GTH 16 (all)
  - GT clocks, I2C
  - PLL clock inputs and outputs
- Size: 52 x 76 mm
- 3 mm mounting holes for skyline heat spreader
- B2B connectors: 4 x 160 pin
- Si5345 - 10 output PLL
- All power supplies on board, single 3.3V Power required
  - 14 on-board DC/DC regulators and 13 LDO's
  - LP, FP, PL separately controlled power domains
- Support for all boot modes (except NAND) and scenarios
- Support for any combination of PS connected peripherals

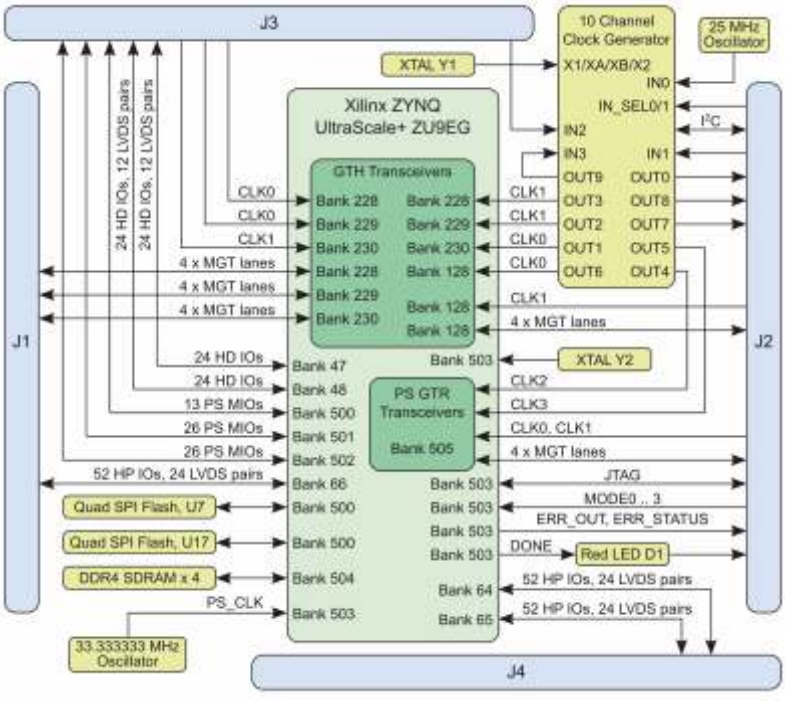
Other assembly options for cost or performance optimization plus high volume prices available on request.

Extended device life cycle

Rugged for industrial applications

XILINX ALL PROGRAMMABLE™

ZYNQ UltraSCALE+



TEC0330 Virtex-7 PCIe FMC Carrier

Overview

Trenz Electronic TEC0330 is an 8 lanes PCIe GEN2 Card integrating a high performance Xilinx Virtex-7 330T FPGA with 32 MByte Flash memory for configuration and operation, DDR3 SODIMM Socket and full FMC HPC connector for FPGA Mezzanine Cards.

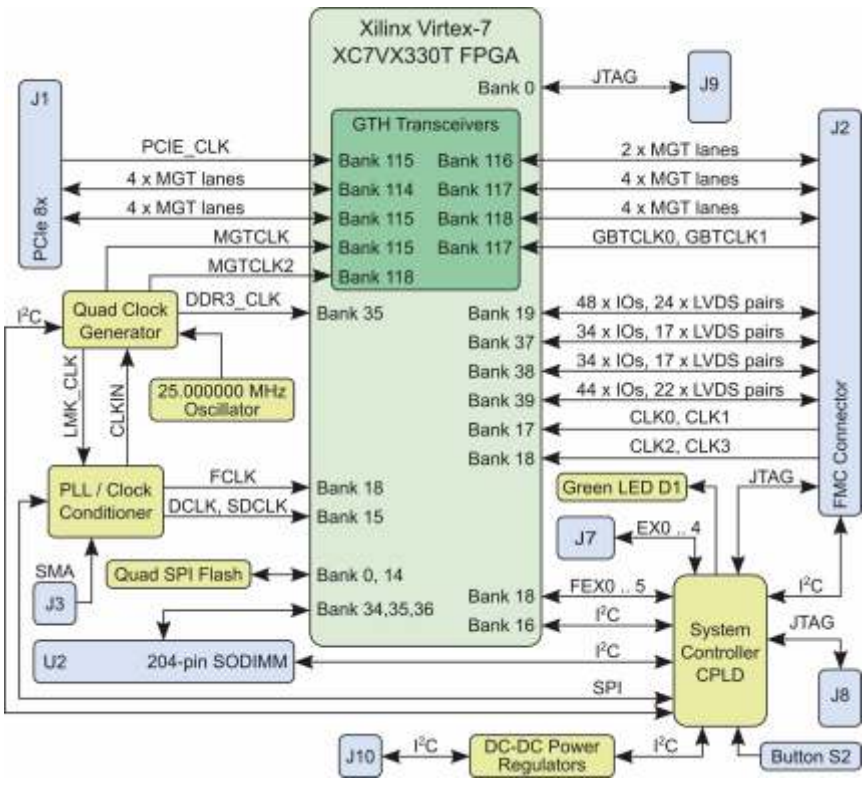
All modules produced by Trenz Electronic are developed and manufactured in Germany.

XILINX ALL PROGRAMMABLE™ VIRTEX 7

Key Features

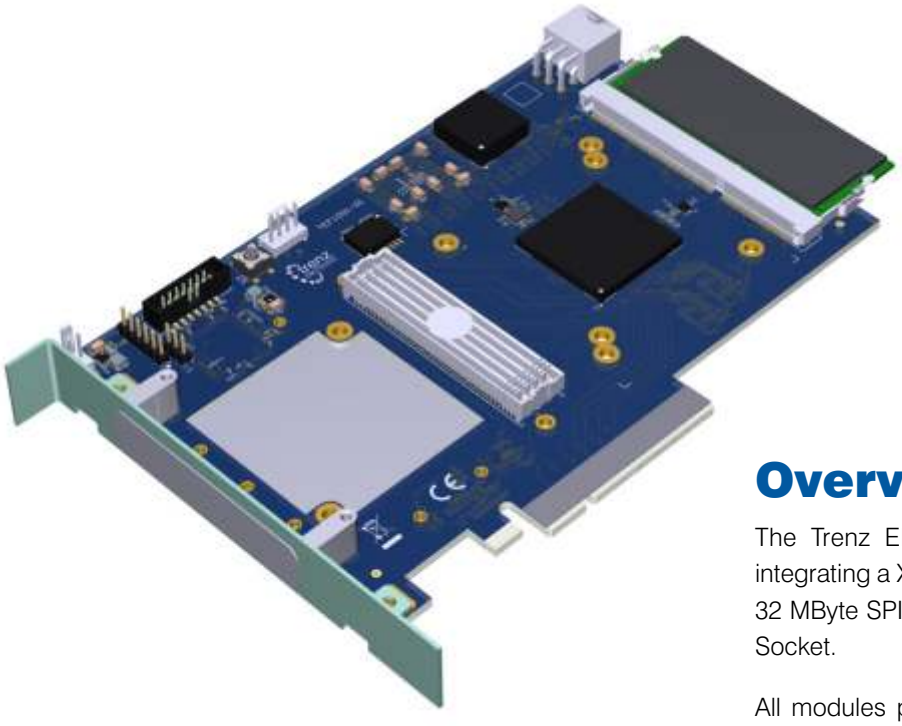
- FMC HPC
- 8 lane PCIe Gen 2 capable
- Xilinx Virtex-7 XC7VX330T-2FFG1157C
- DDR3 SODIMM Socket
- 32 MByte SPI Flash
- LMK04828B Clock Synthesizer
- External Clock Input

Other assembly options for cost or performance optimization plus high volume prices available on request.



www.trenz-electronic.de/tec0330

TEF1001 Series
PCIe FMC Carrier, Xilinx Kintex-7, SPI Flash, 4 lane PCIe



Overview

The Trenz Electronic TEF1001 is a PCIe FMC Carrier integrating a Xilinx Kintex-7 FPGA (K160T, K325T or K410T), 32 MByte SPI Flash, an 4 lane PCIe and a DDR3 SODIMM Socket.

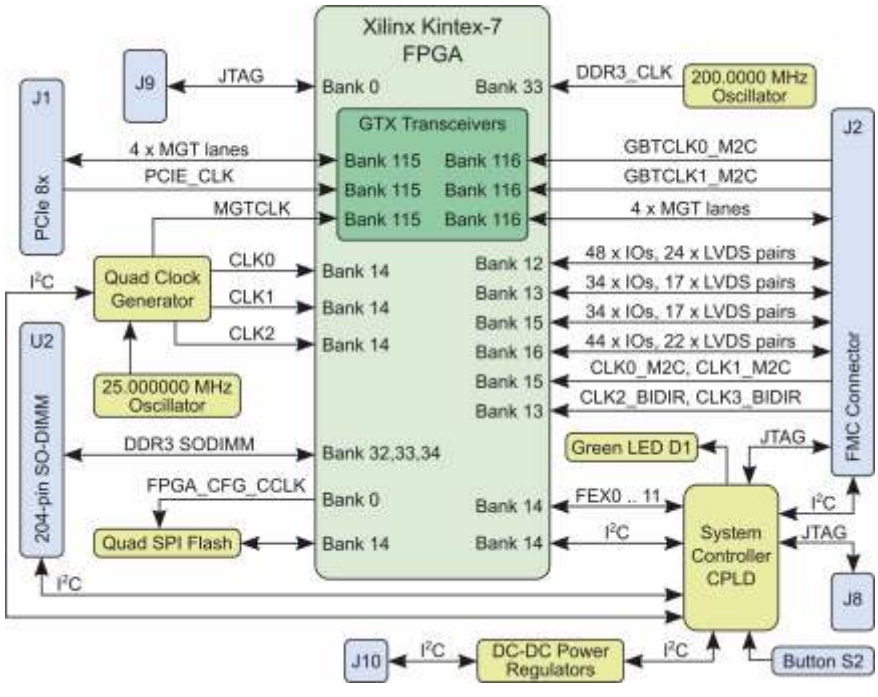
All modules produced by Trenz Electronic are developed and manufactured in Germany.

XILINX ALL PROGRAMMABLE™ KINTEX 7™

Key Features

- One Vita 57.1 FMC HPC Slot
- 4 lane PCIe Gen 2
- Xilinx Kintex-7 XC7K160T-2FBG676I
- DDR3 SODIMM Socket
- 32 MByte SPI Flash
- Programmable clock generator Si5338
- 200 MHz Low-Jitter LVDS oscillator
- High performance DC-DC converters

Other assembly options for cost or performance optimization plus high volume prices available on request.



TE0745 Series
Xilinx Zynq, 1 GByte DDR3, 32 MByte Flash, 1 GBit Ethernet

5.2 x 7.6 form factor

Overview

The Trenz Electronic TE0745 is an industrial-grade SoC module integrating a Xilinx Zynq-7 (Z-7030, Z-7035, Z-7045), 1 GByte 32-Bit wide DDR3/L, 32 MByte SPI Flash memory for configuration and operation and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking strips.

All this on a tiny footprint, smaller than a credit card, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

Rugged for industrial applications

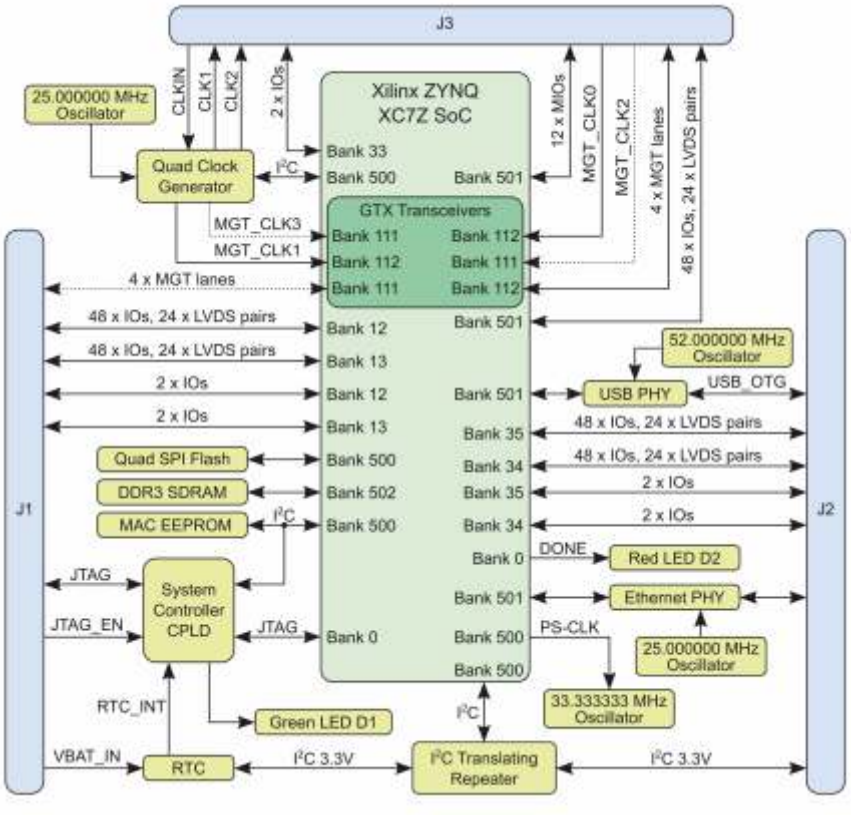
XILINX ALL PROGRAMMABLE™

ZYNQ™

Key Features

- Xilinx Zynq 7030/7035/7045
- Rugged for shock and high vibration
- 1 GByte 32-Bit wide DDR3/L
- 32 MByte SPI Flash
- Dimensions: 5.2 x 7.6 cm
- B2B Connectors with 3 x 160 pin
  - 250 I/O's, all HR and HP I/O
  - 1 GBit Ethernet PHY,
  - USB 2.0 OTG PHY
  - 8 x GTX (7030: 4 GT)
  - 2 GT Reference Clock inputs (7030: 1 REFC
  - Reference clock input for PLL (optional)
  - 2 x PLL outputs
  - I2C
  - 6 MIO
- Real Time Clock
- MAC Address EEPROM
- Evenly spread supply pins for good signal integrity

Other assembly options for cost or performance optimization plus high volume prices available on request.



TE0729 Series

Xilinx Zynq, 1x Gig ETH, 512 MByte DDR3, 2x 100MBit ETH, 4 GByte eMMC, 3.3V Only

5.2 form X factor 7.6

Overview

The Trenz Electronic TE0729 is an industrial-grade SoC module integrating a Xilinx Zynq-7020 with a Gigabit Ethernet transceiver, 2 x 100 MBit Ethernet, 512 MByte DDR3 SDRAM, 32 MByte Flash memory for configuration and operation, and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking strips.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

Rugged for industrial applications

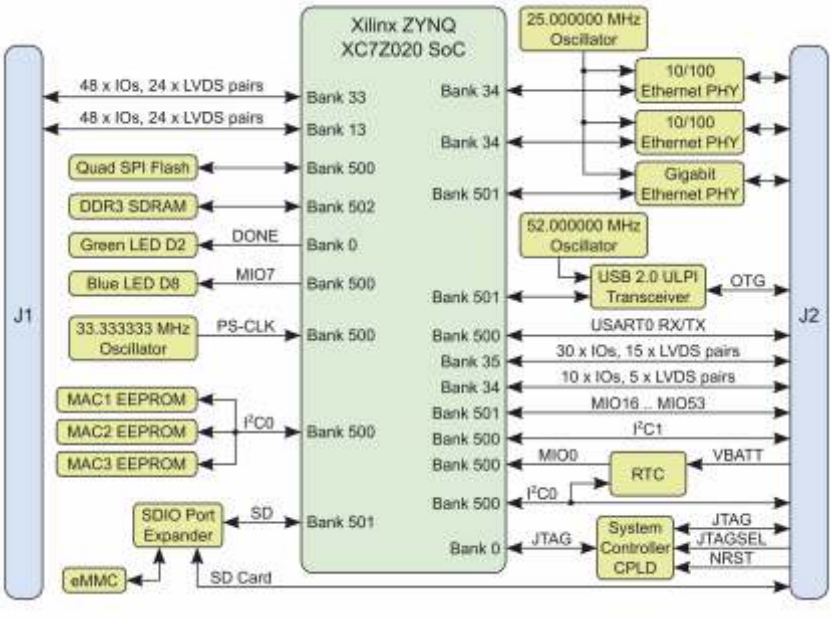
XILINX ALL PROGRAMMABLE™

ZYNQ™

Key Features

- Zynq XC7Z020-2CLG484I
- Rugged for shock and high vibration
- 2 x ARM Cortex-A9
- 1 x 10/100/1000 Mbps Ethernet transceiver PHY
- 2 x 10/100 Mbps Ethernet transceiver PHYs
- 3 x MAC-Address EEPROMs
- 16-Bit wide 512 MByte DDR3 SDRAM
- 32 MByte QSPI-Flash-Memory
- 4 GByte e-NAND-Flash-Memory (embedded eMMC Memory)
- USB 2.0 high-speed ULPI transceiver
- Plug-on module with 2 x 120-pin high-speed hermaphroditic strips
- 136 FPGA I/O's (58 LVDS pairs possible) and 14 MIO's available on
- board-to-board connectors
- On-board high-efficiency DC-DC converters
  - 4.0 A x 1.0 V power rail
  - 1.5 A x 1.5 V power rail
  - 1.5 A x 1.8 V power rail
  - 1.5 A x 2.5 V power rail
- System management
- eFUSE bit-stream encryption
- AES bit-stream encryption
- Temperature compensated RTC (real-time clock)
- User LED
- Evenly spread supply pins for good signal integrity
- 3 mm mounting holes for Skyline heat spreader
- Cooling Solution available

Other assembly options for cost or performance optimization plus high volume prices available on request.



www.trenz-electronic.de/te0729

TE0720 Series

Xilinx Zynq, 2 × Cortex-A9, DDR3, Flash, GBit Ethernet, USB

Overview

Trenz Electronic TE0720 are industrial-grade SoC modules integrating a Xilinx Zynq-7000 SoC, a gigabit Ethernet transceiver, 1 gigabyte DDR3 SDRAM with 32-Bit width, 32 megabyte Flash memory for configuration and operation, a USB ULPI transceiver, and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking strips. All modules in 4 x 5 cm form factor are mechanically compatible.
All this on a tiny footprint, smaller than a credit card, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

Rugged for industrial applications

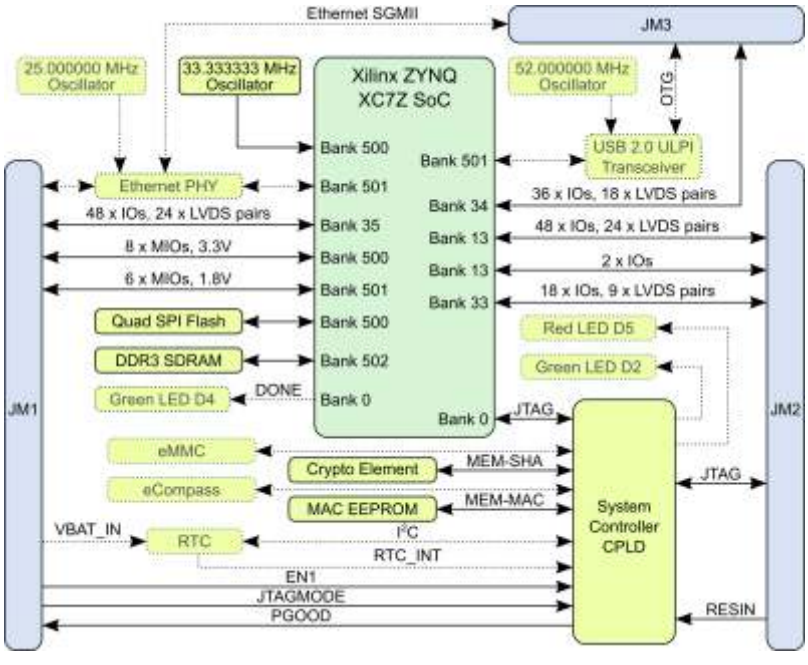
XILINX ALL PROGRAMMABLE™

ZYNQ™

Key Features

- Industrial-grade Xilinx Zynq 7020 SoM, supported by the free Xilinx Vivado WebPACK tool
- Rugged for shock and high vibration
- ARM Dual Core Cortex-A9
- 10/100/1000 tri-speed gigabit Ethernet transceiver (PHY) with SGMII
  - MAC Address EEPROM
- 32-Bit-wide 1 GByte DDR3 SDRAM
- 32 MByte QSPI Flash memory (with XiP support)
- 4 GByte (up to 32 GB) e-NAND
- Plug-on module with 2 × 100-pin and 1 × 60-pin high-speed hermaphroditic strips
- 152 FPGA I/O's (75 LVDS pairs possible) and 14 PS-MIO available on board-to-board connectors
- USB 2.0 high-speed ULPI transceiver
- On-board high-efficiency DC-DC converters
  - 4.0 A x 1.0 V power rail
  - 1.5 A x 1.5 V power rail
  - 1.5 A x 1.8 V power rail
- System management and power sequencing
- eFUSE bit-stream encryption
- AES bit-stream encryption
- Temperature compensated RTC (real-time clock)
- 3 user LEDs
- Optional MEMS sensor (3D accelerometer and 3D magnetometer)
- Evenly spread supply pins for good signal integrity

Other assembly options for cost or performance optimization plus high volume prices available on request.



TE0782 Series

Xilinx Zynq, 2 × Cortex-A9, DDR3, Flash, 2 × GBit Ethernet, 2 × USB, 16 × Transceiver

8.5 form X factor 8.5

Overview

The Trenz Electronic TE0782 are industrial-grade SoC modules integrating a Xilinx Zynq-7 XC7Z035, XC7Z045 or XC7Z100, 1 GByte DDR3 SDRAM, 4 GByte eMMC, 16 GTX high-performance transceiver lanes, 32 MByte QSPI Flash memory for configuration and operation, and powerful switch-mode power supplies for all on-board voltages.

A large number of configurable I/O's is provided via rugged high-speed stacking strips. All this in a 8.5 x 8.5 cm form factor at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

Rugged for industrial applications

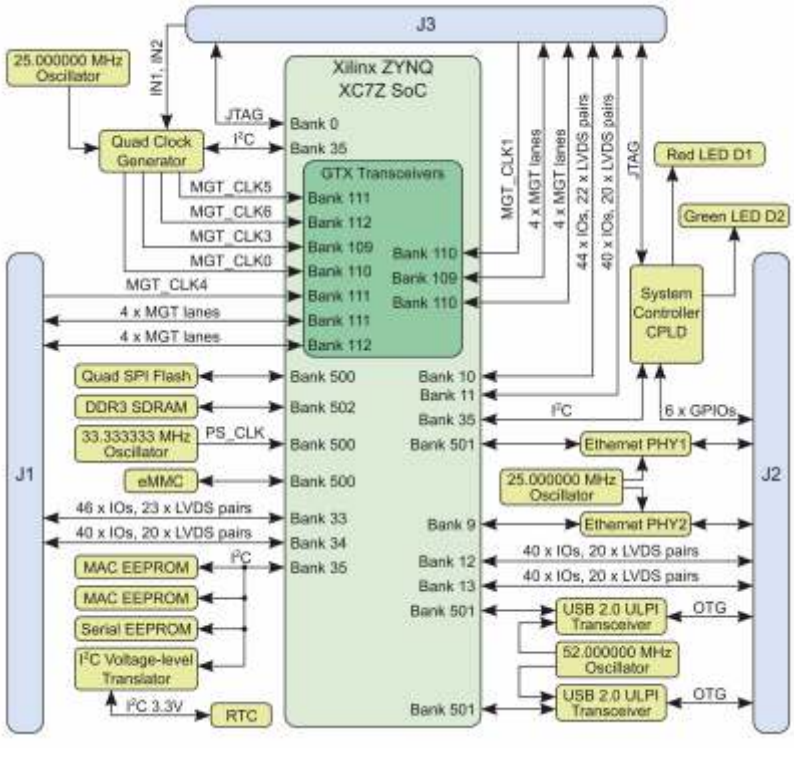
XILINX ALL PROGRAMMABLE™

ZYNQ™

Key Features

- Industrial-grade Xilinx Zynq-7 XC7Z035, XC7Z045 or XC7Z100 SOM
- Rugged for shock and high vibration
- Dual ARM Cortex-A9 MPCore
- Real Time Clock
- 2 x Hi-Speed USB2.0 ULPI Transceiver PHY
- 2 x Gigabit Ethernet Transceiver PHY
- 2 x Ethernet MAC Address EEPROM
- 1 GByte DDR3 SDRAM
- 32 MByte QSPI Flash memory
- 4 GByte eMMC (optional up to 64 GByte)
- Optional 2 x 8 MByte HyperRAM (max 2 x 32 MByte HyperRAM)
- Si5338 PLL for GTX clocking
- Plug-on module with 3 x 160-pin high-speed strips
- 16 GTX high-performance tranceiver lanes , GTX high-performance
- Transceiver clock input
- 254 FPGA I/O's (125 LVDS pairs possible) available on board-to-board connectors
- On-board high-efficiency DC-DC converters
- System management and power sequencing
- eFUSE bit-stream encryption
- AES bit-stream encryption
- Evenly spread supply pins for good signal integrity

Other assembly options for cost or performance optimization plus high volume prices available on request.



www.trenz-electronic.de/te0782

TE0722 Series

Xilinx Zynq, Dual Core ARM A9+, 16 MByte SPI Flash, DIP40 Form Factor

1.8 form X factor 5.1

Overview

The DIPFORTy1 "Soft Propeller" is based on the Xilinx Zynq-7000, a System on Chip which contains a FPGA and a Dual Core ARM A9+ processor with enough logic gates to become a Propeller. The board also has 16 MByte of Flash used for configuration and everything fits on a Propeller-compatible DIP 40 pinout.
DIPFORTy1 "Soft-Propeller" is the lowest cost Zynq based module ever made and the first Zynq module that can use existing bases and project boards (Parallax Propeller chip compatibility). All this in a compact 1.8 x 5.1 cm form factor, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Extended device life cycle

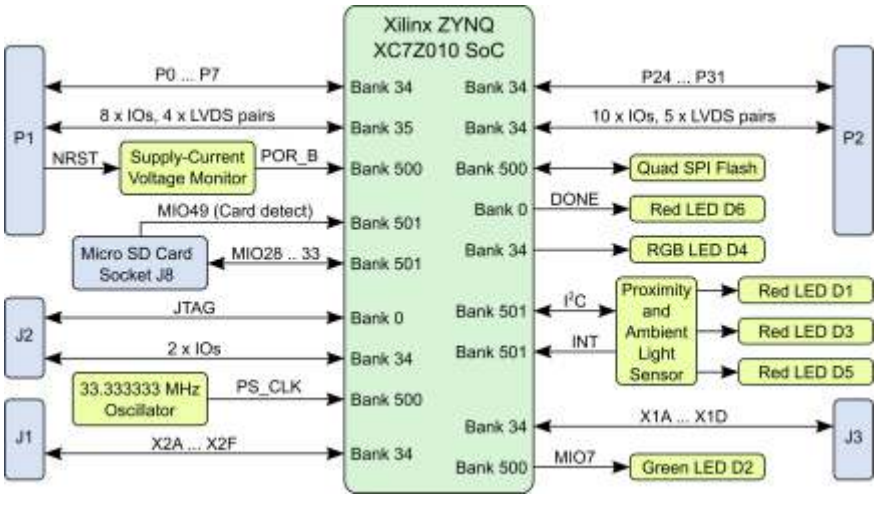
"Ideal for Maker" Make:

XILINX ALL PROGRAMMABLE™ ZYNQ™

Key Features

- Xilinx Zynq-7: XC7Z010-CLG225
  - 16 MByte SPI Flash (primary boot)
  - 33.333 MHz Clock (MEMS Oscillator)
- Dual Core ARM A9+
- DIP40 form factor
  - 2 x 20 holes for socket pins or pin-header
  - Size: 18 x 51 mm
- Total user accessible PL I/O: 46 (+3 Input only)
  - DIP40 header pins: 34 I/O
  - XMOD J1: 6 I/O
  - XMOD J2: JTAG + 2 I/O (or 3 input + 2 I/O)
  - XMOD J3: 4 I/O
- 3.3V single supply
- RGB LED (PL I/O connected)
- "Done" LED (inverted polarity)
- User LED (ARM CPU MIO GPIO)
- MicroSD Card socket (MIO, ZYNQ secondary boot media)
- Sil1143 Proximity and ambient light sensor

Other assembly options for cost or performance optimization available or high volume prices on request.



TE0712 Series

Xilinx Artix-7 T, DDR3, Flash, 100 MBit Ethernet, 4 x Transceiver, High pin count

Overview

Trenz Electronic TE0712 are industrial-grade FPGA modules integrating a Xilinx Artix-7 T FPGA, a Megabit Ethernet transceiver (physical layer), 1 Gigabyte DDR3 SDRAM with 32-Bit width, 32 Megabyte Flash memory for configuration and operation, and powerful switch-mode power supplies for all on-board voltages. A large number of configurable I/O's is provided via rugged high-speed stacking strips. All modules in 4 x 5 cm form factor are mechanically compatible.
All this on a tiny footprint, smaller than a credit card, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

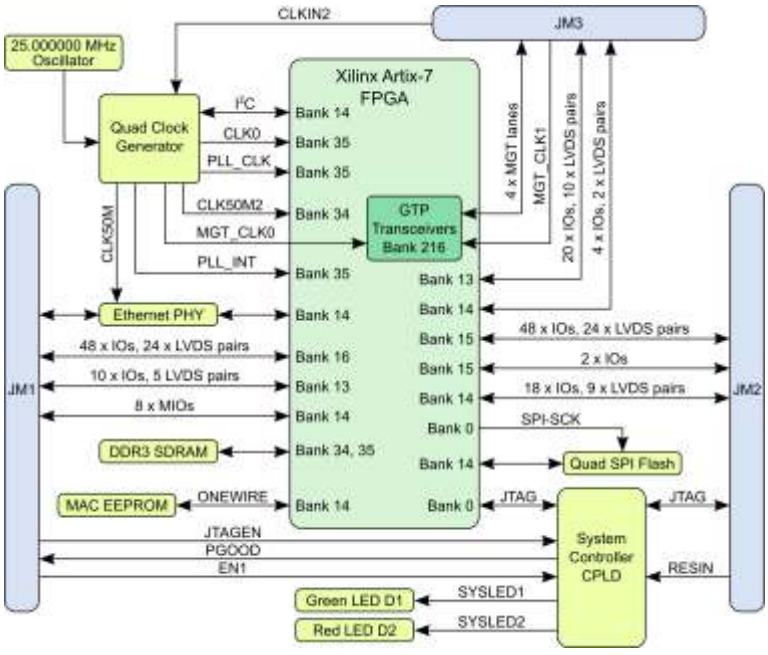
Extended device life cycle

Rugged for industrial applications

Key Features

- Industrial-grade Xilinx Artix-7 (15T to 200T) SoM, supported by the free Xilinx Vivado WebPACK tool
- Rugged for shock and high vibration
- 1 GByte DDR3 SDRAM
- 100 MBit Ethernet PHY
  - MAC Address EEPROM
- 32 MByte QSPI Flash memory (with XiP support)
- Programmable clock generator
  - Transceiver clock (default 125 MHz)
  - Fabric clock (default 200 MHz)
- Plug-on module with 2 × 100-pin and 1 × 60-pin high-speed hermaphroditic strips
- 158 FPGA I/O's (78 differential pairs) available on board-to-board connectors
- 4 GTP (high-performance transceiver) lanes
  - GTP (high-performance transceiver) clock input
- On-board high-efficiency DC-DC converters
  - 12 A x 1.0 V power rail
  - 1.5 A x 1.8 V power rail
  - 1.5 A x 1.5 V power rail
- System management and power sequencing
- eFUSE bit-stream encryption
- AES bit-stream encryption
- User LED
- Evenly spread supply pins for good signal integrity

Other assembly options for cost or performance optimization plus high volume prices available on request.



www.trenz-electronic.de/te0712

TE0713 Series

Xilinx Artix-7 T, DDR3L, USB 3.0, 4 GTP lanes

Overview

The Trenz Electronic TE0713 is an industrial-grade FPGA module integrating a Xilinx Artix-7 FPGA, USB 3.0 to FIFO bridge, 1 GByte of DDR3L SDRAM, 32 MByte Flash memory for configuration and operation, and powerful switching-mode power supplies for all on-board voltages. Numerous configurable I/O's are provided via rugged high-speed strips. Modules in 4 x 5 cm form factor are fully mechanically and largely electrically compatible among them. All this on a tiny footprint, smaller than a credit card, at the most competitive price.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

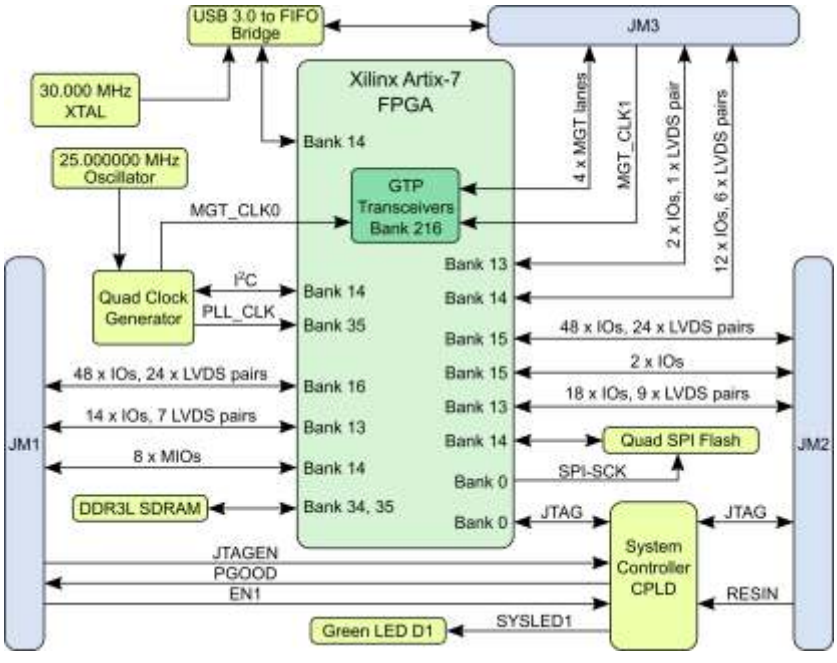
Extended device life cycle

Rugged for industrial applications

Key Features

- Xilinx Artix-7 (15T to 200T) SoM
- Both industrial and commercial temperature ranges available
- Rugged for high shock and high vibration resistance
- 1 GByte DDR3L 32-bit SDRAM
- 32 MByte QSPI Flash memory (with XiP support)
- USB 3.0 to FIFO interface bridge
- Programmable clock quad generator
  - GTP transceiver clock (default 125 MHz)
  - Fabric clock (default 200 MHz)
- Plug-on module with 2 x 100-pin and 1 x 60-pin high-speed hermaphroditic strips
- 152 FPGA I/O's (75 differential pairs) available via B2B connectors
- 4 GTP (multi Gigabit transceiver) lanes
- External clock input for GTP transceivers via B2B connector
- On-board high-efficiency DC-DC converters
- System management and power sequencing
- eFUSE bit-stream encryption
- AES bit-stream encryption
- User configurable LED
- Evenly spread supply pins for good signal integrity.

Other assembly options for cost or performance optimization plus high volume prices available on request.



www.trenz-electronic.de/te0713

Overview

Xmod-USB-X is a universal USB adapter with 2 channels based on FTDI FT2232H USB2 HS Interface chip.

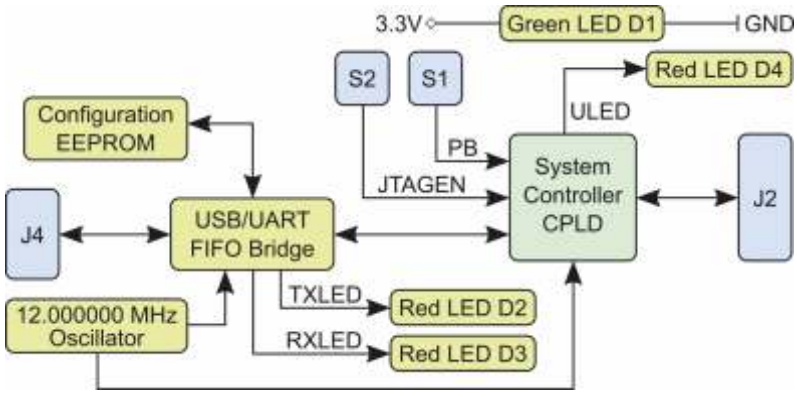
In the consigned default configu-ration Port A is JTAG and Port B is a serial interface. FT2232H port A and B are connected to small on-board programmable CPLD to allow flexible application specific remappings of FT2232H functions into 8 user I/O pins of single Xmod 12 x 8 Module.

Minimum PCB area on base board to support JTAG function 5 x 10 mm (does not include mounting hole space).
TE0790 is compatible with Xilinx Tools in contrast to the TE0790-01L, that can be used flexibly.

All modules produced by Trenz Electronic are developed and manufactured in Germany.

Key Features

- Xmod form-factor
  - Supported base slots: 6 x 2, 8 x 4, 10 x 6, 12 x 8, 5 x 2, 5 x 3
  - Size: 20 x 25 mm
  - M3 mounting hole
- FT2232H
  - Channel B RX/TX LED's (on top, not visible from front)
  - Mini-USB connector (more rugged then micro-USB)
  - 93C56 EEPROM
- Lattice XO2-256 CPLD
  - On board programmable using Lattice tools
  - 8 universal I/O pins
  - VCCIO either 3.3 V or user supplied (1.8 to 3.3V)
  - Red user LED (front visible)
  - 12 MHz clock from on-board Oscillator
- LDO for optional USB power
- Green Power-on LED (front visible)
- User button (front accesible)
- 4 position DIP switch
  - Choose CPLD program mode
  - FTDI EEPROM disable (not implemented in PCB REV 1)
  - Use VIO same as VCC
  - Use VCC from USB



TE Carrier Boards
custom built for specific Trenz Electronic micromodules

Following Trenz Electronic Carrier Boards are custom-built base boards for specific Trenz Electronic SoMs, which exposes the module's B2B-connector-pins to accessible connectors and provides a whole range of on-board components to test and evaluate Trenz Electronic SoMs.

TEBF0808

- Mini-ITX form factor
- ATX power supply connector (Important 12 V only supply required)
- optional 12 V standard power plug
- USB 3.0 with USB 3.0 HUB
- Gigabit Ethernet RJ45
- MicroSD Card (bootable) and eMMC (bootable)
- PCIe slot - one PCIe lane (16 Lane connector)
- Displayport Single Lane
- One SATA Connector
- Dual SFP+
- FMC HPC slot (1.8 V max VCCIO)
- Fan connectors, PC enclosure, FMC fan
- Intel front panel- and HDA audio-connector
- CAN FD transceiver (10 pin IDC connector)
- 20 pins ARM JTAG connector (PS JTAG0)
- One Samtec FireFly (4 GT lanes bidir)
- One Samtec FireFly connector for reverse loopback

TEB0728

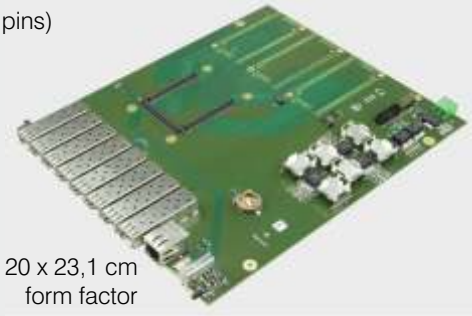
- Trenz TE0728 module socket (3 x Samtec SEM connectors 80 pins)
- 2 x RJ45 Ethernet
- SD card slot
- Power supply with DC jack
- 3 x user LED's (red/yellow/green)
- User push button

TEB0729

- Trenz TE0729 module socket (2 x Samtec BTE/BSE connectors 120 pins)
- 5 V board supply via DC jack
- 3 x RJ45 Ethernet
- 1 x MicroUSB and 1 x SD card connector
- 1 x 128K I2C CMOS Serial EEPROM
- 1 x 2K I2C Serial EEPROM
- XMOD (TE0790) pin header
- 2 x pin header FPGA bank power supply
- 1 x VBat pin header and 2 x VG96 pin header
- 1 x user push button, 1 x LED (red), user switch FPGA boot mode

TEB0745

- Trenz TE0745 module socket (3 x Samtec ST5 connectors 160 pins)
- 24 V power supply over ARKZ950/2 connecting terminal
- XMOD (TE0790) Pin Header (JTAG / UART)
- 1 x EMI Network Filter
- microSD connector
- RJ45 Ethernet connector
- USB Host connector
- 8 x SFP connector
- 6 x pin header 50 pol. (FPGA bank I/O's and power)
- 6 x pin header 12 pol. (FPGA bank I/O's and power)



20 x 23,1 cm
form factor

TEBA0714

- Trenz TE0714 module socket (2 x Samtec LSHM connectors 100 pins)
- XMOD (TE0790) pin header
- 1 x pin header 16 pol. (JTAG, MGT-CLK, boot mode, XADC, I/O's)
- 1 x pin header 10 pol. (I/O's)
- SFP connector
- LDO voltage regulator 3.3 V to 2.5 V
- 2 x user LED's (red/green) and 1 x LED (red)
- 2 x pin headers 50 pol. (FPGA bank I/O's and power)
- 1 x pin header for FPGA bank power VCCIO34 (1.8 VOUT, 2.5 V, 3.3 VOUT)
- 1 x pin header for FPGA bank power V_CFG (1.8 VOUT, 2.5 V, 3.3 VOUT)

TE0728	TE0729	TE0741	TE0745	TE0782	TE803	TE0808 „UltraSOM+“	TE820	TE0841
ZYNQ	ZYNQ	KINTEX 7	ZYNQ	ZYNQ	ZYNQ UltraSCALE+	ZYNQ UltraSCALE+	ZYNQ UltraSCALE+	KINTEX UltraSCALE
Z-7020 (automotive)	Z-7020	70T 160T 325T 410T	Z-7030 Z-7035 Z-7045	Z-7035 Z-7045 Z-7100	ZU3EG, ZU5EV, (ZU2CG-ZU5CG, ZU2EG-ZU5EG, ZU4EV, ZU5EV)	ZU9EG (ZU6CG, ZU9CG, ZU6EG, ZU9EG, ZU15EG)	ZU3EG, ZU5EV, (ZU2CG-ZU5CG ZU2EG-ZU5EG ZU4EV, ZU5EV)	KU35 KU40
6 form X factor 6	5.2 form X factor 7.6 *	4 form X factor 5	5.2 form X factor 7.6 *	8.5 form X factor 8.5	5.2 form X factor 7.6	5.2 form X factor 7.6	4 form X factor 5	4 form X factor 5
3 x Samtec SEM	2 x Samtec BTE	3 × Samtec LSHM	3 x Samtec ST5	3 x Samtec QTH	4 x Samtec ST5	4 x Samtec ST5	3 x Samtec LSHM	3 x Samtec LSHM
Artix-7	Artix-7	Kintex-7	Kintex-7	Kintex-7	UltraScale+	UltraScale+	UltraScale+	UltraScale
2 × Cortex A9	2 × Cortex A9	MicroBlaze	2 x Cortex A9	2 x Cortex A9	4 x Cortex A53+ 2 Cortex R5	4 x Cortex A53 + 2 Cortex R5	4 x Cortex A53+ 2 Cortex R5	MicroBlaze
512 DDR3	512 DDR3	-	1024 DDR3/L	1024 DDR3	8192 DDR4	8192 DDR4	4096 DDR4	4096 DDR4
16	32	32	32	32	64	64	64	32
8 KByte	3 x MAC	-	MAC	2 x MAC + 16 KByte	-	16 KByte	-	-
	4 - 64 GByte	-	-	4 - 64 GByte	-	-	4 - 64 GByte	-
2 x 100 MBit	2 x 100 MBit, 1 GBit	-	1 GBit	2 x 1 GBit	-	-	4 - 64 GByte	1 GBit
-	USB 2.0 OTG PHY	-	USB 2.0 OTG PHY	2 x USB 2.0 OTG	-	-	USB 2.0 OTG	-
124 + 34 MIO	136 + 14 MIO	144	250 + 6 MIO	250 + 2 MIO	156 + 65 MIO	204 + 65 MIO	132 + 14 MIO	144
-	-	8 x GTX	8 x GTX	16 x GTX	PS GTR 4	4 x GTR, 16 x GTH	PS GTR 4	8 x GTH
Automotive, RTC, CAN	RTC, Cooling Solution available	Programmable Clock Generator	RTC	Programmable Clock Generator, RTC, eMMC	Programmable Clock Generator	System Monitor, Programmable Clock Generator	Programmable Clock Generator, Real Time Clock, eMMC	Programmable Clock Generator

*modules with form factor 5.2. x 7.6 cm are not compatible with each other

Xilinx development boards and kits provide an out-of-the box design solution to accelerate development time and time-to-market. Xilinx offers kits complete with evaluation boards, the Vivado Design Suite tools, IP cores, reference designs and FPGA Mezzanine Card (FMC) support – so application development begins immediately out of the box.

The Vivado Design Suite delivers a SoC-strength, IP-centric and system-centric, next generation development environment that has been built from the ground up to address the productivity bottlenecks in system-level integration and implementation.

Xilinx Zynq UltraScale+ MPSoC ZCU102 Evaluation Kit

The ZCU102 Evaluation Kit enables designers to jumpstart designs for Automotive, Industrial, Video and Communications applications. This kit features a Zynq UltraScale+™ MPSoC device with a quad-core ARM® Cortex-A53, dual-core Cortex-R5 real-time processors, and a Mali-400 MP2 graphics processing unit based on Xilinx's 16nm FinFET+ programmable logic fabric. The ZCU102 supports all major peripherals and interfaces enabling development for a wide range of applications.

Key Features & Benefits

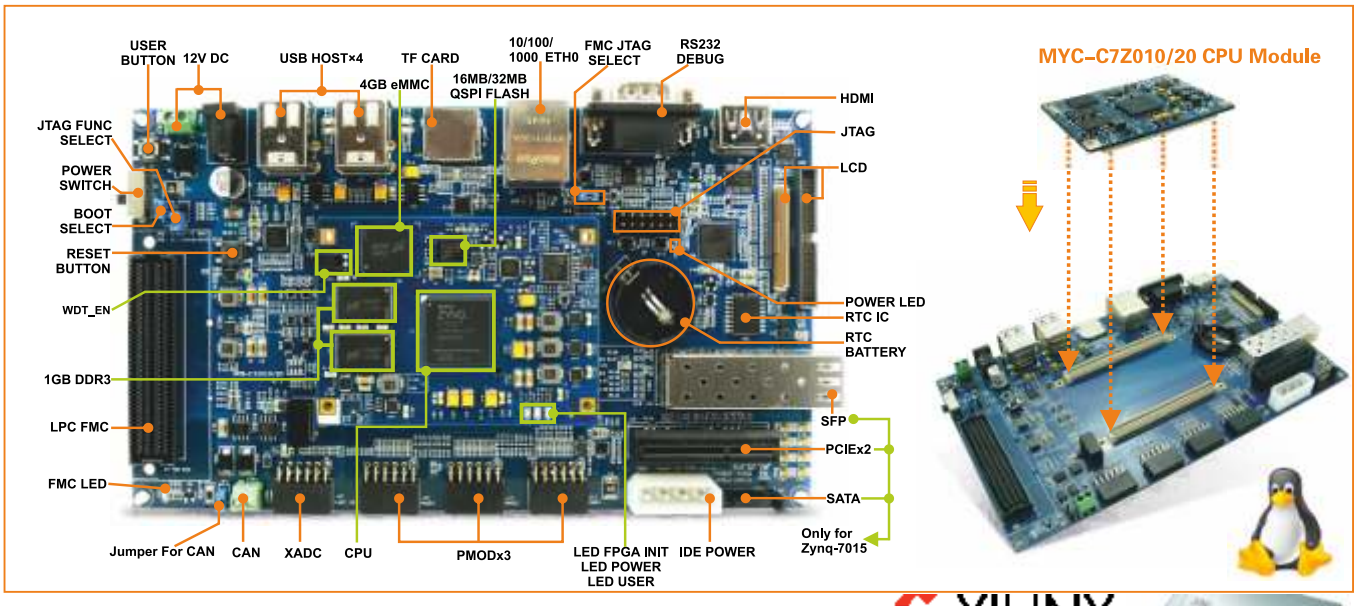
- Optimized for quick application prototyping with Zynq Ultrascale+ MPSoC
- DDR4 SODIMM – 4GB 64-bit w/ ECC attached to Processor Subsystem (PS)
- DDR4 Component – 512MB 16-bit attached to Programmable Logic (PL)
- PCIe Root Port Gen2x4, USB3, Display Port & SATA
- 4x SFP+ cages for Ethernet
- 2x FPGA Mezzanine Card (FMC) interfaces for I/O expansion including 16 x 16.3 Gb/s GTH transceivers and 64 user defined differential I/O signals

This is just one example of our wide variety of Boards and Kits from Xilinx. Please have a look in our online shop for a wider selection or ask for a quote at sales@trenz.biz.

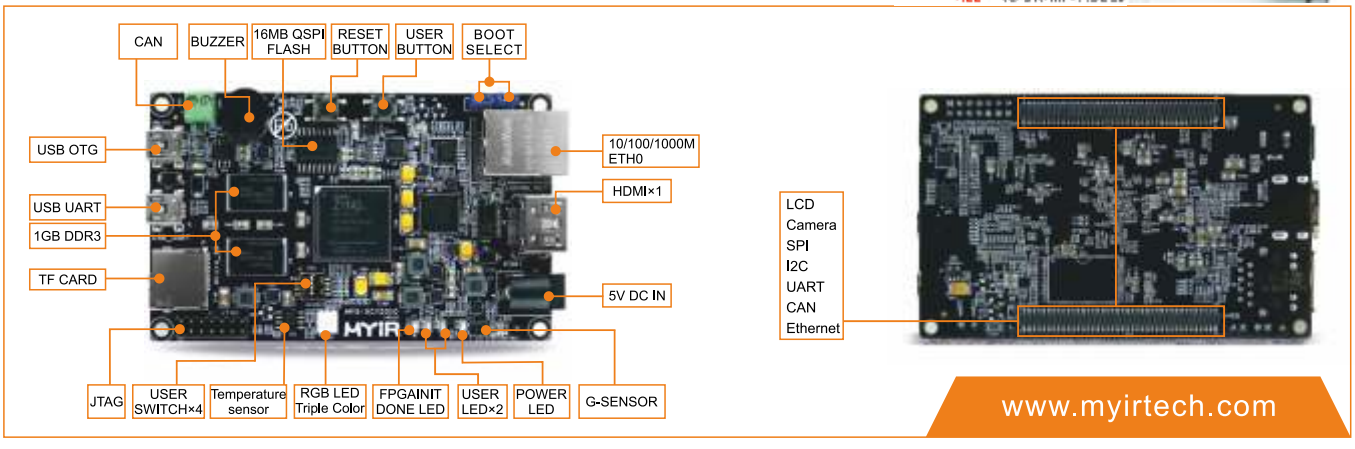
MYIR Tech Limited is a global provider of ARM hardware and software tools, design solutions for embedded applications.

MYIR is an ARM Connected Community Member and work closely with ARM and many semiconductor vendors. They sell products ranging from board level products such as development boards, single board computers and CPU modules to help with your evaluation, prototype, and system integration or creating your own applications. Their products are used widely in industrial control, medical devices, consumer electronic, telecommunication systems, Human Machine Interface (HMI) and more other embedded applications. MYIR has an experienced team and provides custom services based on many processors (especially ARM processors) to help customers make your idea a reality.

MYD–C7Z010/20 Development Board



Z-turn Board



These are just selected examples of a variety of FPGA boards from MYIR. Please have a look in our online shop or contact us at sales@trenz.biz to get a quote for any available MYIR product.

Violet Series

It has been designed to continously stream samples data to host computer main memory at full rate. These boards are ideal for any applications that require unusally long samples at rates up to 250 Msps at a resolution of 14 bits.

Examles are:

- Software Defined RadioHigh Precision FFT Spectrum Analyzers

Time Tagger

Cronologic presents a new series of low cost, mid resolution time-to-digital converters.
Two new board are available featuring 500ps to 1ns single shot resolution at highest data bandwidths.
Time Taggers are ideally suitable in applications that do not require highest single shot timing resolution, but high data acquisition rates and lowest multiple hit deadtime. These include certain types of mass spectroscopy, time correlated single photon counting (TCSPC) and frequency counting applications.

Distributor list

China

Future Linking Solution Tech Co. Ltd
Unit 01 7/F, Bright Way Tower
33 Mong Kok Rd, KL
Hong Kong

Phone: +86-755-82914675
Fax: +86-755-82971302
Web: www.fulso.com
Email: liu@fulso.com

Czech Republic

DFC Design, s.r.o.
Strmá11B
61600 Brno
Czech Republic

Phone: +420 511 112 863
Fax: +420 549 241 114
Web: www.dfcdesign.cz
Email: info@dfcdesign.cz

France

Lextronic
36/40 Rue du Général de Gaulle
94510 La Queue en Brie
France

Phone: +33(0)1.45.76.83.88
Fax: +33 (0)1.45.76.81.41
Web: www.lextronic.fr
Email: lextronic@lextronic.fr

Hungary

ChipCad Ltd.
Könyves Kálmán körút 12-14.
1097 Budapest
Hungary

Phone: +36-1-231-7000
Fax: +36-1-231-7011
Web: www.chipcad.hu
Email: info@chipcad.hu

Italy

Mirifica s.r.l.
Piazza 11 Febbraio, 7
29012 Caorso PC
Italy

Phone: +39 0200611003
Fax: +39 02700446883
Web: www.mirifica.it
Email: store@mirifica.it

Japan

Tokushu Denshi Kairo Inc.
84-403 Kanda Sakuma Gashi
101-0026 Chiyoda
Japan

Phone: +81-3-3865-5381
Fax: +81-3-3865-5382
Web: www.tokudenkairo.co.jp
Email: tonaki(at)tokudenkairo.co.jp

Slovakia

DFC Design, s.r.o.
Strmá 11B
61600 Brno
Czech Republic

Phone: +420 511 112 863
Fax: +420 549 241 114
Web: www.dfcdesign.cz
Email: info@dfcdesign.cz

Spain

Cyberall Group
Aureli Capmany 2, Local 7
08195 Sant Cugat, Barcelona
Spain

Phone: +34 93 675 64 04
Fax: +34 93 975 68 44
Web: www.cyberallgroup.com
Email: sales@cyberallgroup.com

Taiwan

Future Linking Solution Tech Co. Ltd
Unit 01 7/F, Bright Way Tower
33 Mong Kok Rd, KL
Hong Kong

Phone: +86-755-82914675
Fax: +86-755-82971302
Web: www.fulso.com
Email: liu@fulso.com

UK

Sundance Multiprocessor Technology Ltd.
Chiltern House
Waterside
Chesham
Buckinghamshire HP5 1PS
United Kingdom

Phone: +44 1494 793167
Fax: +44 1494 793168
Web: www.sundance.com
Email: trenz@sundance.com

USA

Concurrent EDA LLC
5001 Baum Blvd Ste 640
Pittsburgh, PA 15213
United States of America

Phone: +1 412-687-8800
Web: www.concurrenteda.com
Email: trenz@concurrenteda.com

Worldwide

Digi-Key Electronics
701 Brooks Avenue South
Thief River Falls
MN 56701
United States of America

Phone: +1 218-681-6674
Fax: +1 800 587 0992
Web: http://www.digikey.com
Email: sales@digikey.com

Trenz Electronic GmbH
Holzweg 19A, 32257 Bünde, Germany
CEO: Thorsten Trenz
Local Court:
Amtsgericht Bad Oeynhausen | HRB7185
P +49 (0) 5223 65301-0
F +49 (0) 5223 65301-30
E info@trenz-electronic.de
http://www.trenz-electronic.de

facebook.com/trenzelectronicgmbh

plus.google.com/+trenzelektronik

twitter.com/TrenzElectronic