



**Development, manufacturing
and supply of FPGA and SoC solutions
since 1992**

AMD 

→ Developing

intel®

→ Manufacturing

 **MICROCHIP**

→ Integrating

 **LATTICE**
SEMICONDUCTOR

→ Sales worldwide

All modules are developed and manufactured in Germany

Trenz Electronic GmbH



- 1992 - Foundation of Trenz Electronic as an electronic engineering office (personal undertaking).
- 2002 - Converted to Trenz Electronic GmbH limited liability company.
- 2004 - TE0140: AMD Spartan-3 FPGA micro-module.
- 2007 - Trenz Electronic becomes AMD Alliance Partner.

Trenz Electronic GmbH

2005

TE0300



AMD
SPARTAN

Trenz Electronic GmbH

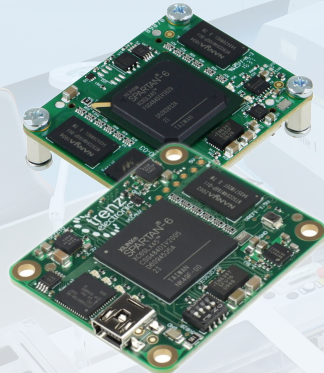
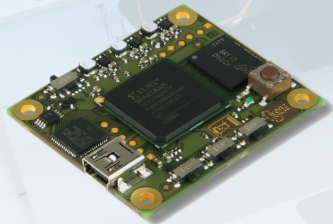
2005

TE0300

2010

TE0600

TE0630



AMD
SPARTAN

Trenz Electronic GmbH

2005

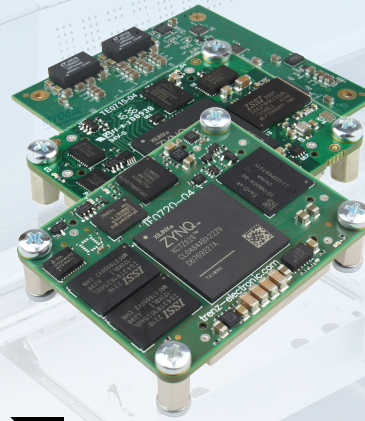
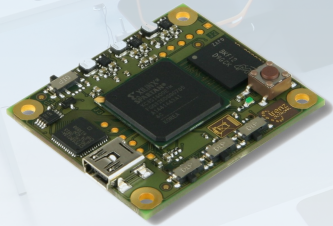
TE0300

2010

TE0600
TE0630

2013

TE07xx



AMD
SPARTAN

AMD
ZYNQ
7000

Trenz Electronic GmbH

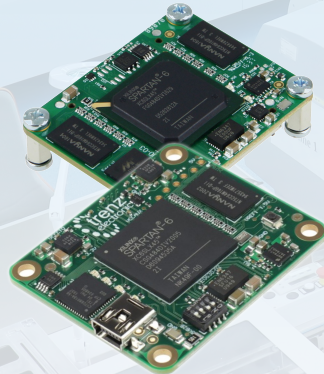
2005

TE0300



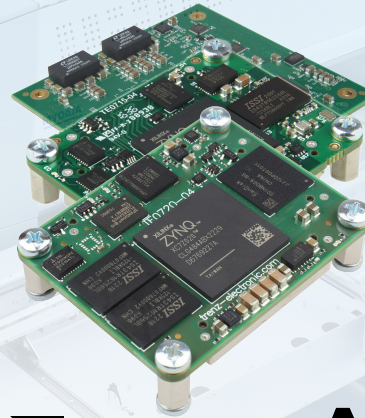
2010

TE0600
TE0630



2013

TE07xx



2016

TE080x
TE082x

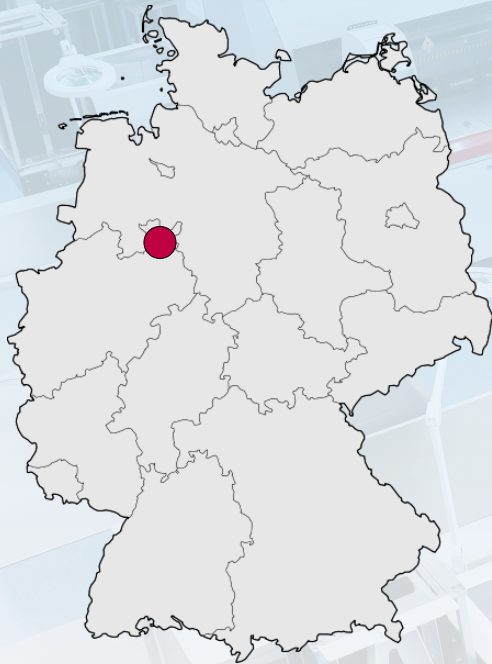


AMD
SPARTAN

AMD
ZYNQ
7000

AMD
ZYNQ
UltraScale+

Trenz Electronic GmbH today



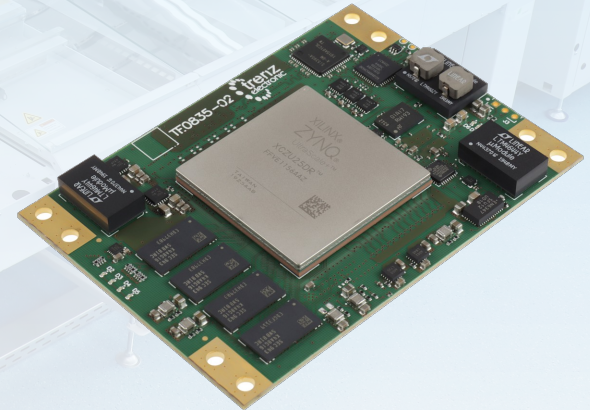
- 90+ employees
- EUR 14.5 million sales in 2022
- Approx. EUR 20 million sales in 2023
- SMD in-house production
- Automated testing
- ISO9001 and ISO14001 certified
- Embedded World Nuremberg yearly

Trenz Electronic Modules

- Small and powerfull
- Rugged for industrial applications
- Rapid prototyping
- Automotive grade available
- Extended device life cycle
- Cooling solutions
- Customizable

*Extended
device
life cycle*

*Rugged for
industrial
applications*

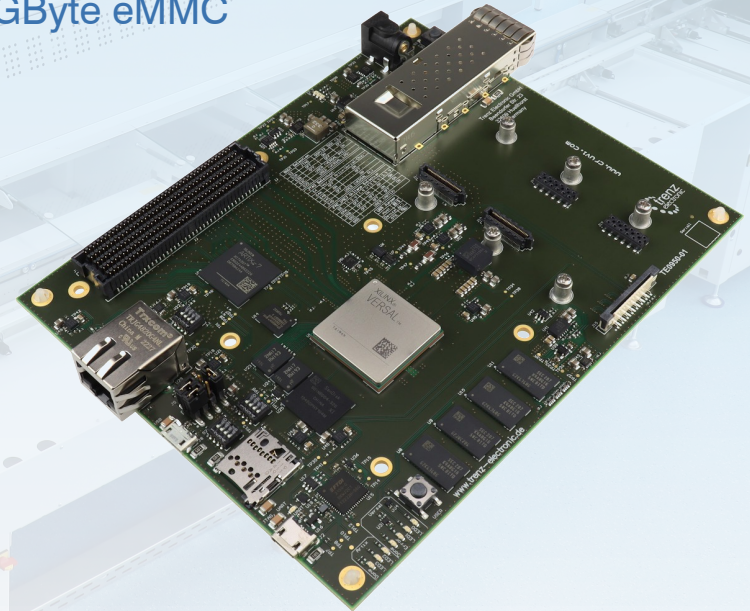


TE0950 Series

AMD Versal™ AI Edge Evaluation board

AMD
VERSAL
AI Edge

- AMD Versal™ AI Edge XCVE2302-1LSESFVA784 device
- 8 GByte DDR4 SDRAM + 128MByte FLASH + 32GByte eMMC
- FMC HPC+ with 4 GTYP Transceiver
- zQSFP with 4 GTYP Transceiver
- CSI-2 connector (camera, 2 lane MIPI)
- Ethernet, USB OTG,
- 2 x CRUVI HS, 2 x CRUVI LS
- Dimensions: 15 x 12 cm

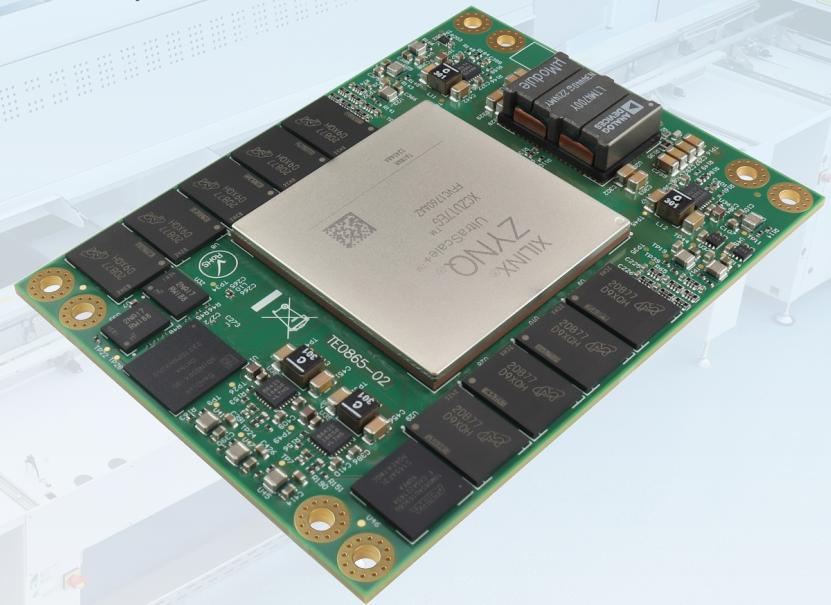


TE0865 Series

High performance MPSoC module – AMD Zynq™ UltraScale+™



- AMD Zynq™ UltraScale+™ (ZU11-ZU19)
- 4 GByte DDR4 on PS and PL each
- 96 HD I/Os, 240 HP I/Os, 21 MIOs
- 32 x GTH, 16 x GTY, 4 x GTR
- USB2.0 PHY and ETH. PHY
- Dimensions: 7.5 x 10 cm

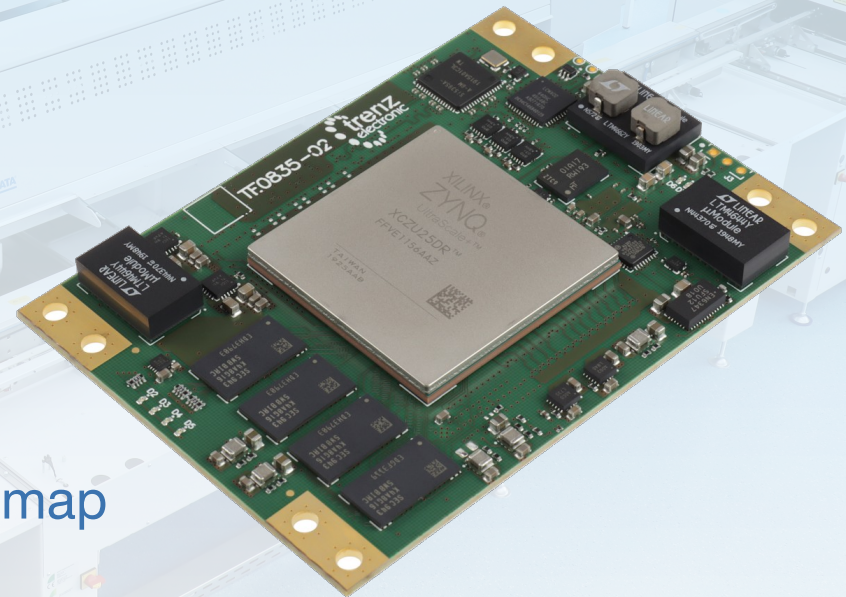


TE0835 RFSoc Series

RFSoc module with AMD Zynq™ UltraScale+™



- AMD Zynq™ UltraScale+™ RFSoc ZU25/27/47/48
- 4 GByte DDR4 SDRAM on PS
- 8 x RFADC + 8 x RFDAC
- 4 x GTR, 8 x GTY
- USB2.0 PHY and ETH. PHY
- Dimensions: 9 x 6.5 cm
- Samtec ADF6 version in the road map



AM0070 RFSoc Series

RFSoc module with AMD Zynq™ UltraScale+™



- AMD Zynq™ UltraScale+™ RFSoc ZU29/ZU39/ZU49
- 4 GByte DDR4 SDRAM with ECC on PS
- 8 GByte DDR4 SDRAM on PL
- 16 x RF-ADC + 16 x RF-DAC
- 4 x GTR + 16 x GTY
- USB2.0 PHY, ETH. PHY, eMMC
- Dimensions: 8 x 6.4 cm



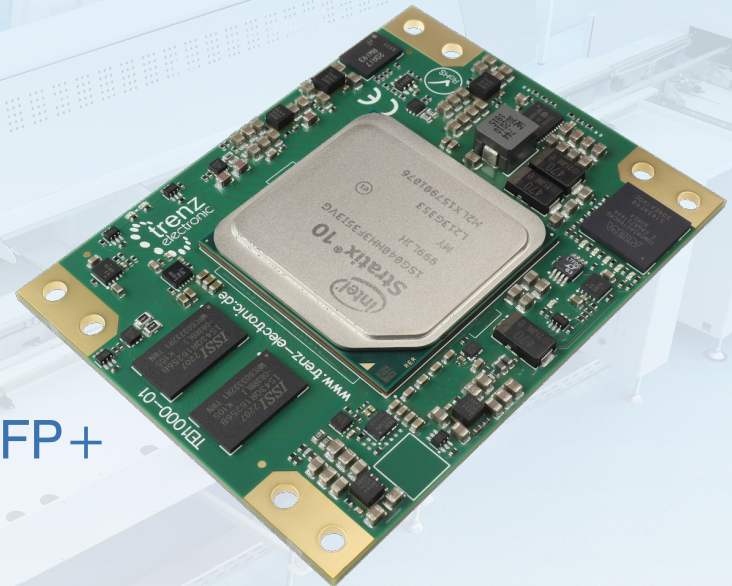
Coming
in 2024

TEI1000 Series

Entry Level Stratix® 10 FPGA - System on Module

intel®

- Intel® Stratix® 10 SX045/GX045
(065 is in the road map)
- 1 GByte DDR4 SDRAM
- 18 x GXT
- System controller MAX10
- Carrier Card: PCIe x8, FMC HPC+, SFP+
- Dimensions: 8 x 6 cm



AM Series

AM0010 industrial-grade MPSoC with AMD Zynq™ UltraScale+™



- AMD Zynq™ UltraScale+™ XCZU2CG-1SFVC784E
- 4 GByte DDR4 SDRAM with ECC
- Up to 204 PL I/Os, up to 22 PS I/Os
- 4 x GTR, 4 x GTY
- USB2.0 PHY and ETH. PHY
- Dimensions: 4 x 5.6 cm



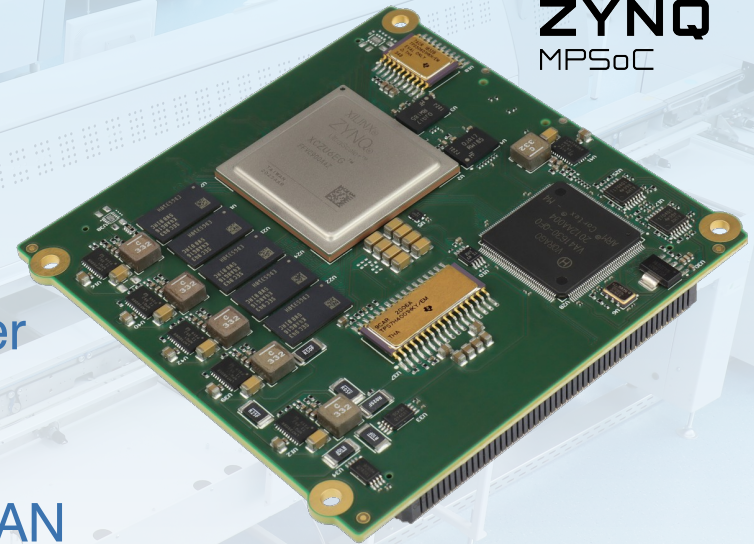
TE0812 Series

Powerful modules designed for cubesat missions

- AMD Zynq™ UltraScale+™ ZU6
- 1 GByte DDR4 SDRAM
- 2 x 128 MByte Flash
- 127 total I/O
- 16 Gbit (12 x PL, 4 x PS) transceiver
- e.MMC, MRAM, Vorago VA41630,
ETH, UART, 2 x analog input, 2 x CAN
- Dimensions: 9 x 9 cm



AMD
ZYNQ
MPSoC

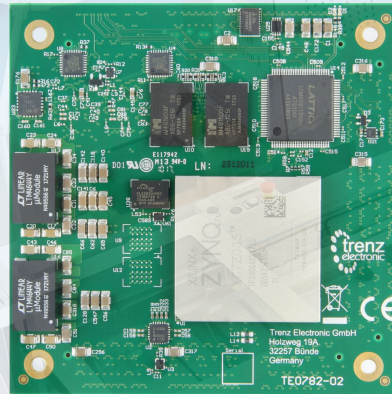
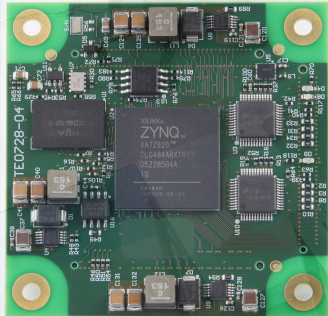


First Flight mission
June 12th with SpaceX

Automotive / High Temperature / Special

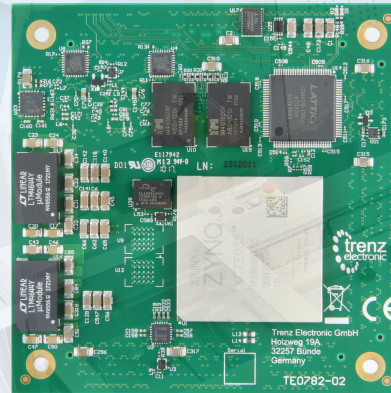
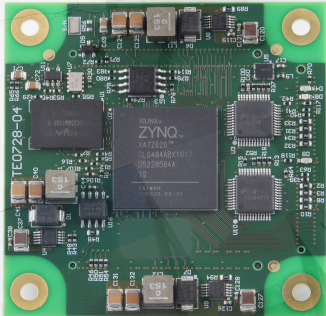
- Zynq SoC, mid to high-end devices
- Automotive
- Anti Sulfur
- Coating

AMD
ZYNQ
7000

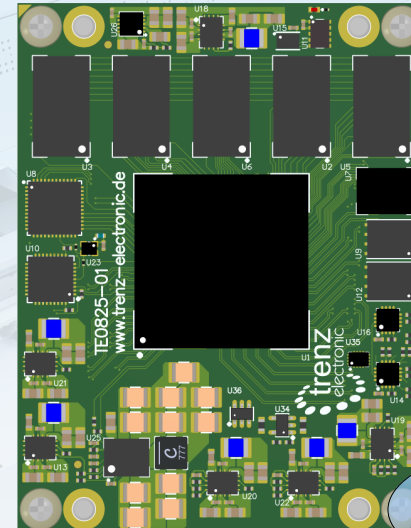


Automotive / High Temperature / Special

- Zynq SoC, mid to high-end devices
- Automotive
- Anti Sulfur
- Coating



TE0825



AMD
ZYNQ
7000

AMD
ZYNQ
MPSoC

Coming
in 2024

TE080x and TE081x Series

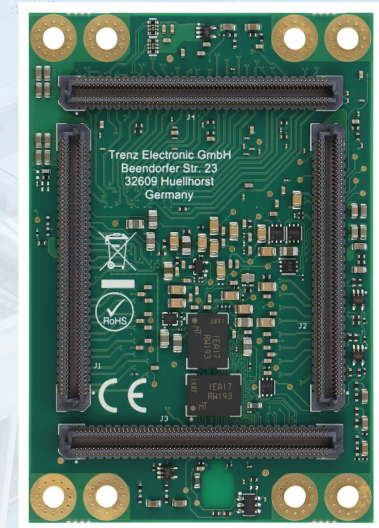
MPSoC module with AMD Zynq™ UltraScale+™

TE0808



- ZU2-ZU15, 784 pin packages
- Up to 8 GByte DDR4
- 128 MByte QSPI Flash
- 4 x 160 pin or 4 x 240 pin B2B connectors
- Dimensions: 7.6 x 5.2 cm

TE0818



4 x 5 cm MPSoC & SoC Modules

Compatible among each other



*Extended
device
life cycle*

*Rugged for
industrial
applications*

Available: AMD Zynq™ UltraScale+™, Kintex™ UltraScale™,
Zynq™ 7000, Artix™ 7, Kintex™ 7, Spartan™ 6

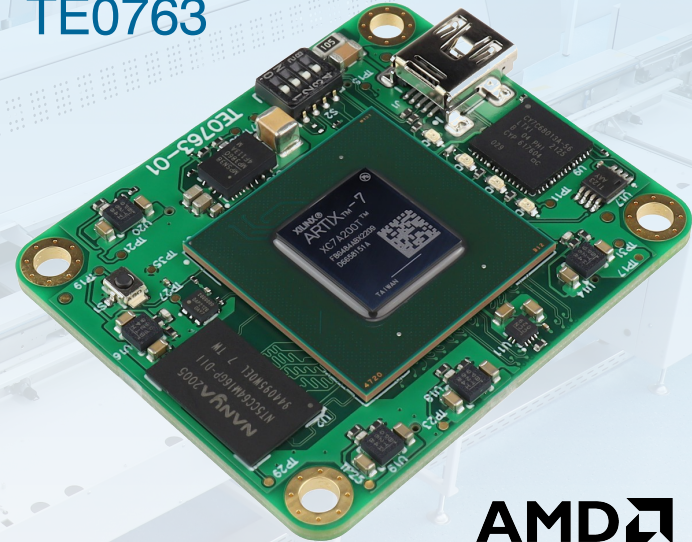
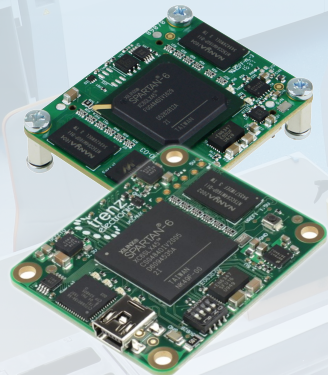
Trenz Electronic GmbH

2010

TE0600
TE0630

2023

TE0763

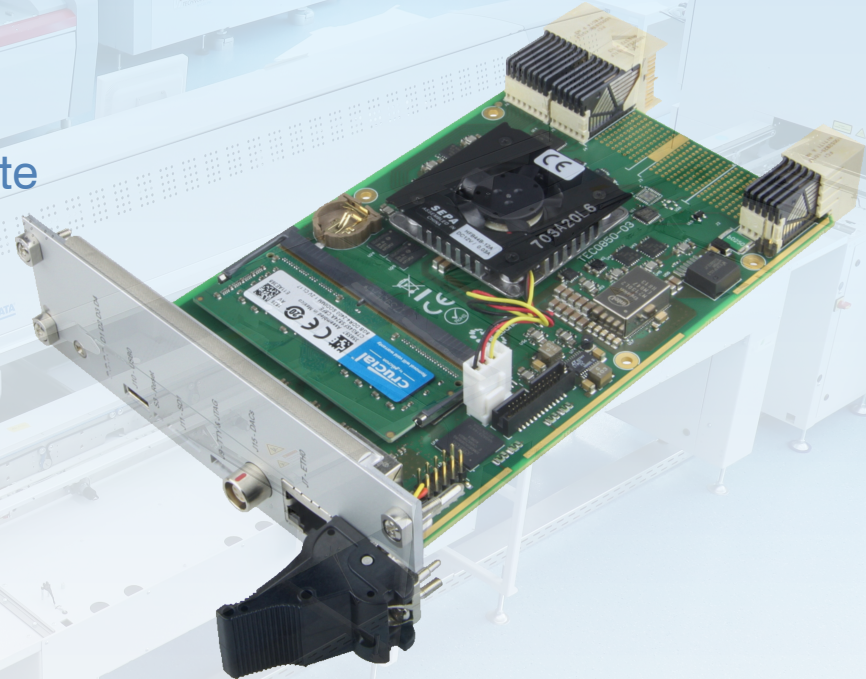


AMD
SPARTAN

AMD
SPARTAN⁷

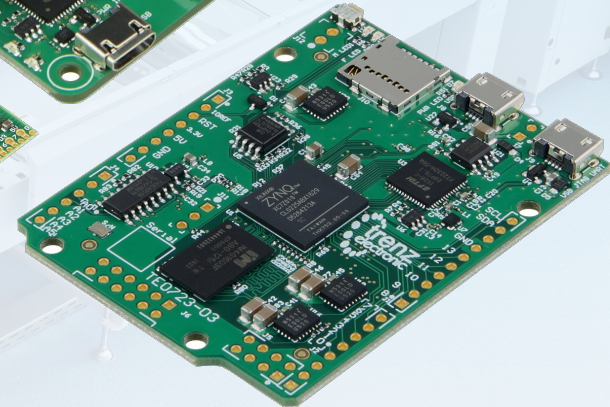
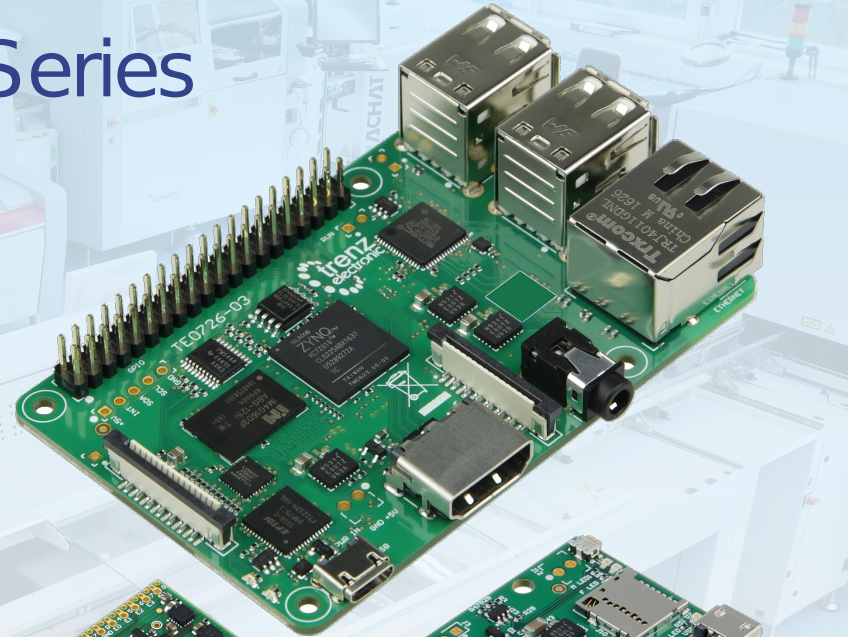
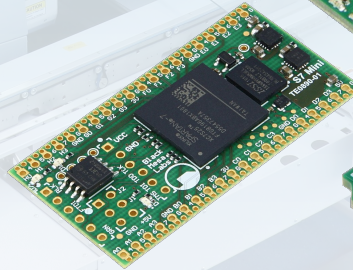
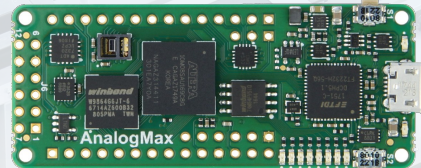
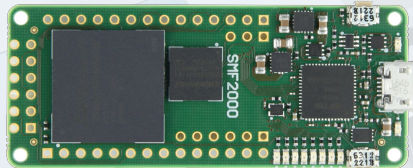
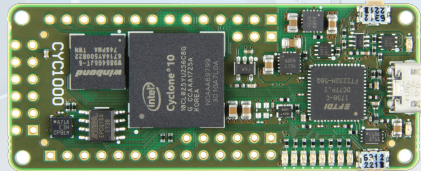
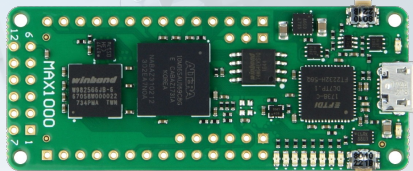
CompactPCI Serial Card

- Zynq UltraScale+ MPSoC ZU15
- 3U Form Factor
- 64-bit DDR DDR4 SODIMM max. 32 GByte
- 128 MByte QSPI Boot Flash dual parallel
- Front side interface connectors
- 4 CompactPCI Serial connectors for backplane connection



Low Cost Series

- Hobby/Maker
- Educational
- Easy to use connector/header
- Compatible: Arduino, Raspberry Pi (HAT)



Starter Kits

With AMD Zynq™ UltraScale+™ MPSoC and Zynq™ SoC

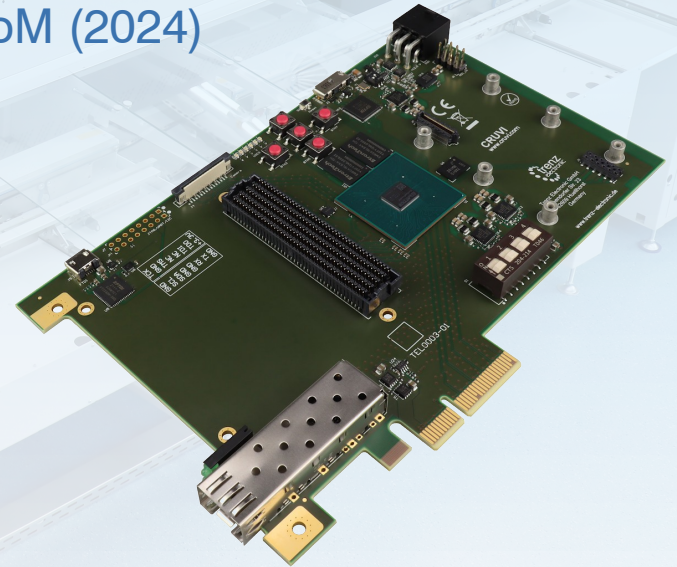
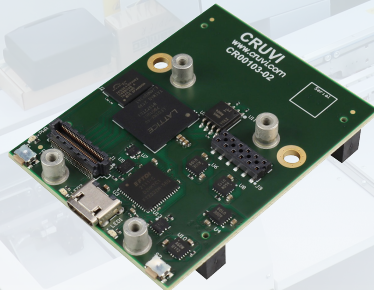
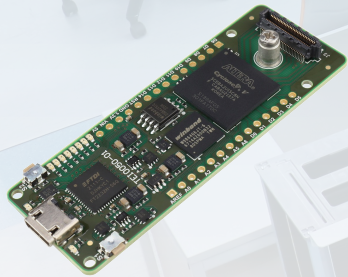
- MPSoC module with AMD Zynq™ UltraScale+™
or SoC module with AMD Zynq™ 7000
- Pre-assembled heatsink
- TEBF0808 or TE0703 baseboard
- Including accessories like power supply, XMOD FTDI
JTAG adapter, microSD card, USB cable, screws, bolts



Upcoming Products

Stay tuned

- TEI0185 Intel® Agilex® 5 Devkit (2024)
- AMD Versal™ AI Edge SoM (TBD)
- TE0806 Zynq™ UltraScale+™ MPSoC Series SoM (2024)
- CR00240 CRUVI HDMI for TE0950 (2023 Q4)



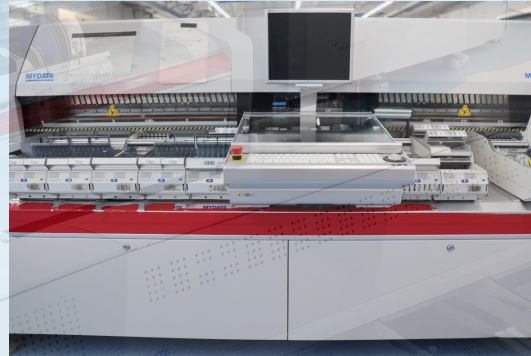
Special Project

- The 21st century realization of the Commodore™ 65 heritage: a complete 8-bit computer running more than 40x faster than a C64 while being increasingly compatible. Mechanical keyboard, digital video output, dual SDHC™ card support, Ethernet, extended memory and other features increase the fun without spoiling the 8-bit feel. Hardware designs and software are open-source.



Full SMD In-house production

- Full SMT production since 2014
- Smallest SMD part 01005
- Two Mycronic MY700 direct solder printing
- Inline PCB feeder Mycronic MY300 and MY100, pick and place
- Mycronic automatic SMD storage system
- Mycronic VI Technology 5K 3D (AOI)
- Two PI Series 3D SPI



Own inspection line

In 2023, Trenz Electronic expanded its product inspection line with an X-ray machine from Comet Yxlon.



Free Customer Support

→ Phone

→ E-Mail

→ Forum



Support Forum for Trenz Electronic products.

[web] | [downloads] | [wiki] | [Impressum] | [Privacy]




Welcome, **Guest**. Please login or register.
Did you miss your activation email?
 Forever
Login with username, password and session length

News:
Attention: For security reasons, please choose a *user name* *different* from your *login name*. Also make sure to choose a secure password and change it regularly.



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Trenz Electronic GmbH Support Forum

Trenz Electronic Products

 Trenz Electronic FPGA Modules General Discussion of all Trenz FPGA Modules	3303 Posts 623 Topics	Last post by tcogo in Re: TEBF0808-04 and TE08... on October 22, 2018, 06:41:42 PM
 UltraScale Topics related to UltraScale and UltraScale+ and UltraScale+ MPSoC	265 Posts 54 Topics	Last post by JH in Re: create project gui m... on Today at 12:37:24 PM
 Evaluation Boards Child Boards: EDDP-EDPS Support	0 Posts 0 Topics	Last post by Oleksandr Kiyenko in Re: How to modify poles ... on June 07, 2018, 10:15:15 AM

Open Source

 Open source hardware	159 Posts 33 Topics	Last post by Sheridonnnn in How does 1N4148 Diode wo... on July 11, 2018, 11:34:18 AM
 Open source IP	1 Posts 1 Topics	Last post by Antti Lukats in DisplayPort Aux monitor on August 02, 2016, 06:09:07 PM

Free Download Area



Documentation, technical reference manuals, schematics, reference designs with source files, hardware designs, drivers, assembly diagrams, 3D files and lots more

The screenshot shows the 'Download' page of the Trenz Electronic website. The header includes the Trenz Electronic logo, navigation links for Wiki and Forum, a search bar, and user options for language (German, English, French), currency (EUR), and a service/help link. The main navigation bar includes Home, Products, Download, Company, Services, Jobs, News, and Distributors. The 'Download' section features logos for Xilinx Alliance Program Certified and Digilent (a National Instruments Company). It states that Trenz Electronic GmbH is a certified member of the Xilinx Alliance Program and a partner of Digilent Inc., USA. There is a Facebook link and ISO 9001:2015 and ISO 14001:2015 certification logos. A disclaimer and a section for documents and files are present. The 'Files' section is expanded to show two categories: 'Technical Reference Manual (1 Files)' and 'Schematics (11 Files)'. The files listed include TRM-TE0720-03.pdf, SCH-TE0720-03-14S-1C.PDF, SCH-TE0720-03-1CF.PDF, SCH-TE0720-03-1CR.PDF, SCH-TE0720-03-1QF.PDF, SCH-TE0720-03-1QFA.PDF, SCH-TE0720-03-1QFGG.PDF, SCH-TE0720-03-21F.PDF, and SCH-TE0720-03-21FC3.PDF, each with its size and modification date.

trenz electronic

Wiki Forum

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XILINIX
ALLIANCE PROGRAM
CERTIFIED

Trenz Electronic GmbH is a certified member of the Xilinx Alliance Program.

DIGILENT
A National Instruments Company

Trenz Electronic GmbH is the European partner and an official distributor of Digilent Inc., USA.

Find us on: **facebook.**

ISO 9001:2015 (quality management) and ISO 14001:2015 (environmental management) certified.

Disclaimer:

- Please read the [Legal Notices](#) before downloading Trenz Electronics documents and files.

Section Documents and File:

- If you did not find the necessary documents, please send a request mail to Trenz Electronic Support ([support\[at\]trenz-electronic.de](mailto:support[at]trenz-electronic.de)).

Files

Technical Reference Manual (1 Files)

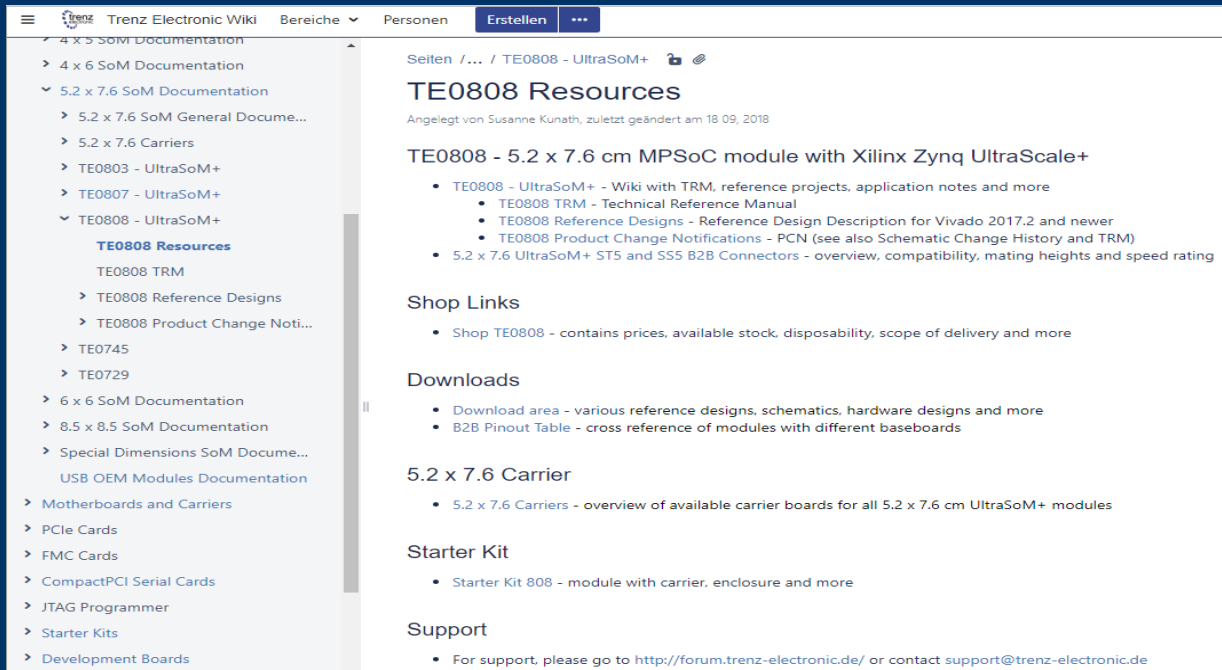
- TRM-TE0720-03.pdf
Size 2,25 MB / Modified 14.11.2017 - 08:47:45

Schematics (11 Files)

- SCH-TE0720-03-14S-1C.PDF
Size 4,44 MB / Modified 20.03.2017 - 14:56:11
- SCH-TE0720-03-1CF.PDF
Size 4,44 MB / Modified 30.11.2016 - 14:51:05
- SCH-TE0720-03-1CR.PDF
Size 4,44 MB / Modified 30.11.2016 - 14:51:05
- SCH-TE0720-03-1QF.PDF
Size 4,44 MB / Modified 30.11.2016 - 14:51:05
- SCH-TE0720-03-1QFA.PDF
Size 4,65 MB / Modified 12.03.2018 - 14:57:39
- SCH-TE0720-03-1QFGG.PDF
Size 3,87 MB / Modified 06.11.2015 - 17:47:53
- SCH-TE0720-03-21F.PDF
Size 4,44 MB / Modified 30.11.2016 - 14:51:05
- SCH-TE0720-03-21FC3.PDF
Size 4,49 MB / Modified 30.11.2016 - 14:51:05

Free Wiki

Documentation, manuals, resource pages



The screenshot shows a web browser displaying the Trenz Electronic Wiki page for TE0808 Resources. The page has a dark blue header with the Trenz Electronic logo and navigation links. The main content area is white and contains the following sections:

- TE0808 Resources**
 - Angelegt von Susanne Kunath, zuletzt geändert am 18.09.2018
 - TE0808 - 5.2 x 7.6 cm MPSoC module with Xilinx Zynq UltraScale+**
 - TE0808 - UltraSoM+ - Wiki with TRM, reference projects, application notes and more
 - TE0808 TRM - Technical Reference Manual
 - TE0808 Reference Designs - Reference Design Description for Vivado 2017.2 and newer
 - TE0808 Product Change Notifications - PCN (see also Schematic Change History and TRM)
 - 5.2 x 7.6 UltraSoM+ ST5 and SS5 B2B Connectors - overview, compatibility, mating heights and speed rating
- Shop Links**
 - Shop TE0808 - contains prices, available stock, disposability, scope of delivery and more
- Downloads**
 - Download area - various reference designs, schematics, hardware designs and more
 - B2B Pinout Table - cross reference of modules with different baseboards
- 5.2 x 7.6 Carrier**
 - 5.2 x 7.6 Carriers - overview of available carrier boards for all 5.2 x 7.6 cm UltraSoM+ modules
- Starter Kit**
 - Starter Kit 808 - module with carrier, enclosure and more
- Support**
 - For support, please go to <http://forum.trenz-electronic.de/> or contact support@trenz-electronic.de

The left sidebar contains a navigation menu with the following items:

- 4 x 5 SoM Documentation
- 4 x 6 SoM Documentation
- 5.2 x 7.6 SoM Documentation
 - 5.2 x 7.6 SoM General Docume...
 - 5.2 x 7.6 Carriers
 - TE0803 - UltraSoM+
 - TE0807 - UltraSoM+
 - TE0808 - UltraSoM+
 - TE0808 Resources**
 - TE0808 TRM
 - TE0808 Reference Designs
 - TE0808 Product Change Noti...
 - TE0745
 - TE0729
- 6 x 6 SoM Documentation
- 8.5 x 8.5 SoM Documentation
- Special Dimensions SoM Docume...
 - USB OEM Modules Documentation
- Motherboards and Carriers
- PCIe Cards
- FMC Cards
- CompactPCI Serial Cards
- JTAG Programmer
- Starter Kits
- Development Boards

Bilingual Online Shop

with detailed descriptions and photos of the product, prices, block pricing, available stock, leadtime, disposability, scope of delivery and more

The screenshot shows the product page for the "MPSoC Module with Xilinx Zynq UltraScale+ ZU3EG-1E, 2 GByte DDR4, 5.2 x 7.6 cm". The page includes a navigation menu, a search bar, and a shopping cart icon. The product is priced at €339.00 (403.41 € gross) and is ready to ship today. A quantity selector is set to 1, and an "Add to shopping cart" button is visible. Below the product image, there is a table with pricing information for different quantities.

Product information "MPSoC Module with Xilinx Zynq UltraScale+ ZU3EG-1E, 2 GByte DDR4, 5.2 x 7.6 cm"

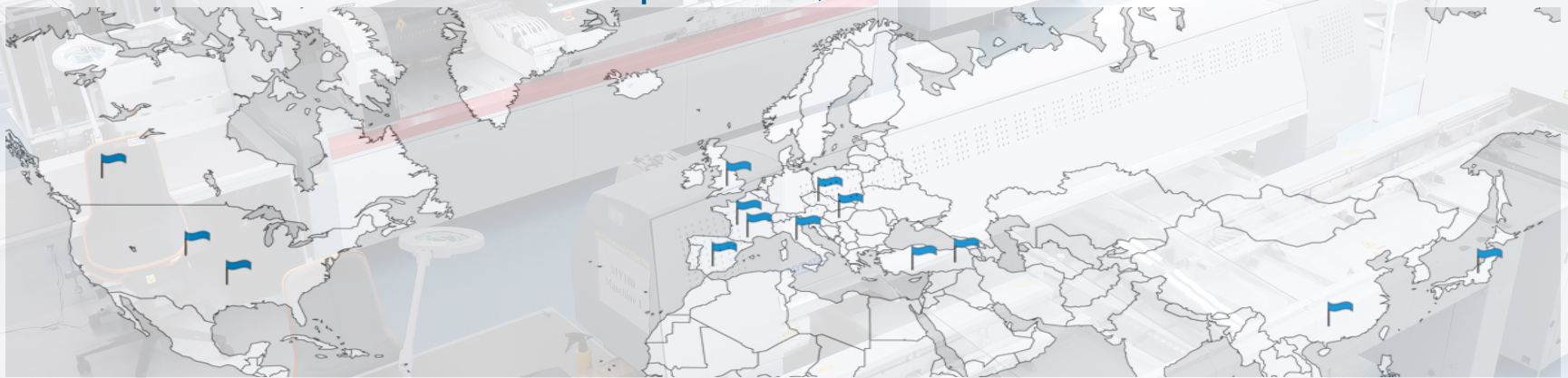
This article is the replacement for the TE0803-02-03EG-1EA.
Overview of all previous Product Change Notifications (PCNs) for this module.

The Trenz Electronic TE0803-03-3BE11-A is an Industrial-grade MPSoC module integrating a Xilinx Zynq UltraScale+ with ZU3EG, 2 GByte DDR4 SDRAM, 128 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

Quantity	Unit price
To 9	€339.00 (403.41 € gross) *
From 10	€305.10 (363.07 € gross) *
From 25	€305.10 (363.07 € gross) *
From 50	€271.20 (322.73 € gross) *
From 100	€254.25 (302.56 € gross) *
From 250	€254.25 (302.56 € gross) *
From 500	€227.13 (270.28 € gross) *
From 1000	€227.13 (270.28 € gross) *

Distributors all over the World

Global distribution: Digi-Key Electronics, Arrow Electronics, AVNET, RS Components, Mouser Electronics



Local distribution

Europe

Bulgaria, Czech Republic, France, Hungary, Israel, Italy, Poland, Russian Federation, Romania, Spain, Turkey, United Kingdom

North America

Canada, USA

Asia

China, Hong Kong, India, Japan, Korea, Taiwan

Thank You!

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Internet www.trenz-electronic.de