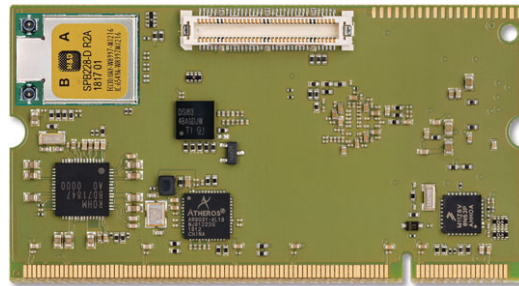
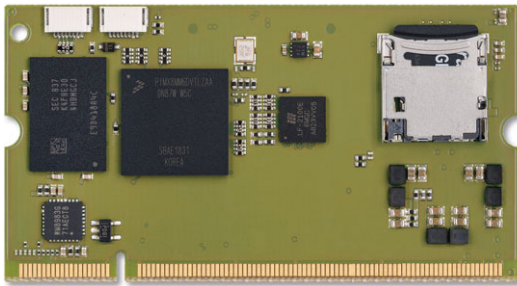


# Trizeps VIII Mini

## SODIMM-200 CPU-Module with NXP i.MX 8M Mini

Keith & Koep

- NXP i.MX 8M ARM 53 CPU up to 1.8 GHz, with additional Cortex M4
- Configurable FPGA (up to 4300 LUTs), e.g. with MIPI to RGB converter
- NXP Kinetis V ARM Cortex M0+ MCU provides additional interfaces like CAN, ADC, SPI, I2C
- Up to 8 GByte LPDDR4-3200 RAM, 32 Bit
- 1 GBit Ethernet, USB 2.0
- Onboard WLAN/Bluetooth module
- LVDS Transceiver (Single or Dual)
- Additional Hi-Fi Audio Codec
- Low power consumption via 14nm LPC FinFET technology



## Features

Processor	NXP™ i.MX 8M Mini with Arm® Cortex A53 Quad-Core up to 1.8 GHz (consumer), 1.6 GHz (industrial), with additional Cortex M4
MCU	NXP™ Kinetis V Arm® Cortex-M0+ up to 75 MHz / CAN, 8x 16 Bit ADC, UART, SPI, GPIO, I2C etc.
RAM Memory	Up to 8 GByte LPDDR4-3200, 32 Bit
Flash Storage	Onboard 4 Bit wide µSD Card Socket (recommendation) or onboard 8 Bit wide eMMC – not available at the same time
FPGA (optional)	Programmable FPGA with up to 4300 LUTs to convert parallel display/camera/data-streams to MIPI DSI/CSI
Wireless Communication (optional)	Onboard WLAN-Bluetooth module, WLAN 2.4 GHz / 5GHz, 802.11 a/b/g/n/ac 2x2 MU-MIMO / Bluetooth 4.2, 5.0
Display Interfaces	MIPI display (4 channel) / Single-, Dual-LVDS or LCD 24 Bit RGB
Interfaces	2x USB2.0 OTG, PCIe (routed to SODIMM socket or connected to WLAN-Bluetooth module), 4 Bit wide SDIO, SPDIF In/Out, I2S, Multichannel Serial-Audio-Interface, 4x UART, 2x I2C, SPI, QSPI, GPIOs, PWM
Ethernet	Onboard 10/100Mbit/1Gbit RGMII PHY and SIOP interface
Extension Connector	Additional FX11 60 pol. high-speed board to board connector
Camera Interfaces	8bit parallel, MIPI (4 channel)
Audio Codec	Stereo Headphone output, Mono Speaker output, Stereo Line-In, Microphone input
Power	High-Eff. PMIC with single supply controlled by I2C
Pin compatible	Pin compatible to Trizeps SODIMM-200 CPU modules

## General Details

System Software	Linux Kernel 4.14, Android 9, Windows 10 IoT Core
Voltage Supply	+3V3 DC
Operating Temperature	-25°C to +85°C (industrial)
Board Dimensions	67.6 x 36.7 x 6.4 mm incl. µSD Socket (W x H x D)
Environmental Standard	RoHS, REACH, WEEE
Availability	10 years form, fit, function*



\*beginning product life circle  
Technical modifications reserved, errors excepted

Rev.1911

www.keith-koep.com

Keith & Koep GmbH  
Uellendahler Str. 199  
42109 Wuppertal  
Tel +49 (202) 25253 0  
Fax +49 (202) 25253 33

# Trizeps VIII Mini

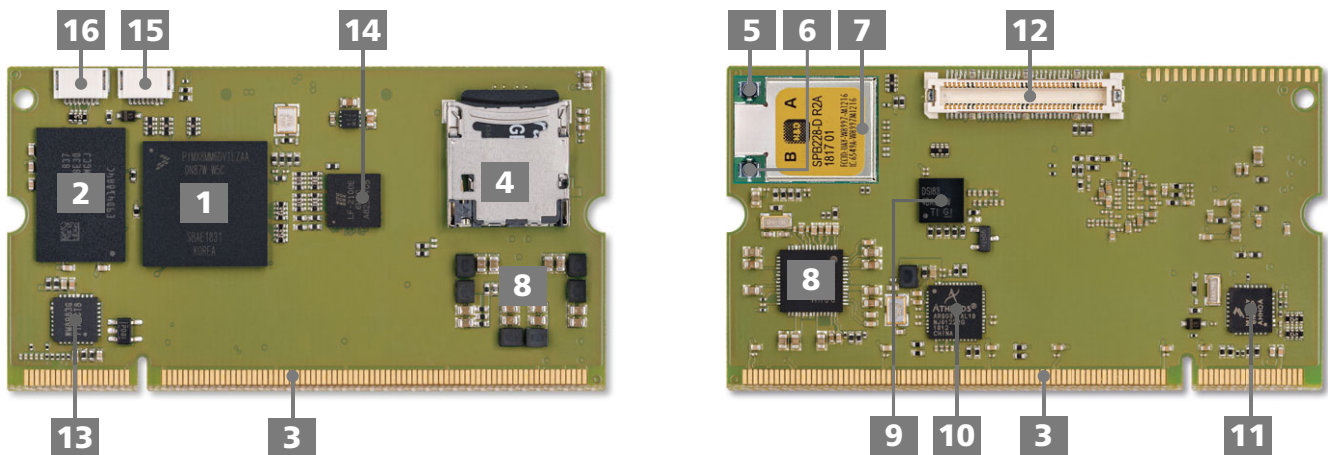
## SODIMM-200 CPU-Module with NXP i.MX 8M Mini

Keith & Koep

The new Trizeps VIII Mini CPU Module from the NXP i.MX8 series uses the i.MX 8M Mini processor, which provides the high performance demands of current video, voice, and audio processing, including video resolutions up to 1080p. The NXP iMX8M Mini CPU is produced in the 14nm LPC FinFET technology, which enables high operating frequencies in combination with a low power consumption.

The Trizeps VIII Mini adds further features with the configurable FPGA, the programmable NXP Kinetis Cortex M0+ MCU, the LVDS transceiver, the Hi-Fi Audio Codec and the onboard WLAN/Bluetooth module. This integrates e.g. CAN, ADC, SPI, I2C interfaces as well as RGB and LVDS displays in addition to the iMX8M Mini CPU functionality.

Therefore, the Trizeps VIII Mini is the ideal CPU module for typical embedded solutions such as industrial/home automation, robotics, automotive, medical, aerospace, retail and is also ideally suitable for current streaming, audio applications, modern imaging devices or handhelds as well as battery-powered solutions.



### Features

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|---|--|
| <ul style="list-style-type: none"><li><b>1</b> NXP i.MX 8M Mini Arm Cortex A53 CPU up to 1.8 GHz (Quad-Core), additional Cortex M4</li><li><b>2</b> Up to 8 GByte LPDDR4-3200 RAM, 32Bit</li><li><b>3</b> SODIMM 200 Connector<br/>Interfaces: UART (4x), SPI, SDIO, QSPI, I2C (3x), GPIO, PWM, USB 2.0 (2x), Headphone (stereo), Line-In (stereo), Microphone, Speaker, SPDIF In/Out, Serial Multichannel Audio, PCM, PCIe (routed to SODIMM socket or connected to WLAN-Bluetooth module), FPGA configurable pins (e.g. display RGB16/18/24, SPI/UART/GPIO, parallel camera), Kinetis MCU Pins (e.g. CAN, ADC 16 bit, UART, SPI), Ethernet (1 Gbit, 100/10 Mbit), +3V3 power supply</li><li><b>4</b> Socket for µSD cards (4 Bit, lockable, recommendation) or eMMC (8 Bit) – not available at the same time</li><li><b>5</b> WLAN / Bluetooth UFL Coax connector</li><li><b>6</b> WLAN / Bluetooth UFL Coax connector</li><li><b>7</b> WLAN-Bluetooth Module (optional):<br/>802.11 a/b/g/n/ac 2x2 MU-MIMO (2,4 GHz, 5 GHz) / Bluetooth 4.2, 5.0</li></ul> | <ul style="list-style-type: none"><li><b>8</b> Power Management IC (PMIC)</li><li><b>9</b> Single or Dual LVDS Transceiver</li><li><b>10</b> 1 Gbit Ethernet Phy</li><li><b>11</b> NXP Kinetis MCU, Cortex M0+</li><li><b>12</b> FX11 High-Speed board-to-board connector, 60 pole<br/>Interfaces: Mipi DSI (4 channel), Single or Dual LVDS, 1x Mipi CSI (4 channel), Ethernet SIOp</li><li><b>13</b> Hi-Fi Audio Codec</li><li><b>14</b> FPGA up to 4300 LUTs (optional)</li><li><b>15</b> JTAG (i.MX 8M Mini CPU)</li><li><b>16</b> JTAG (FPGA and MCU)</li></ul> |
|---|--|

### SODIMM Standard

The Trizeps VIII Mini includes the Keith & Koep SODIMM 200 Standard, the world's longest existing SODIMM standard. Like no other module standard, the SODIMM 200 ensures the pin compatibility of the Trizeps modules. The main difference of the Trizeps VIII Mini is the missing address/data bus, which is no longer supported by the i.MX 8M Mini CPU. The pins, which are no longer needed for this function, are used for GBit Ethernet signals. Trizeps VIII Mini and Trizeps VIII are mostly pin compatible.