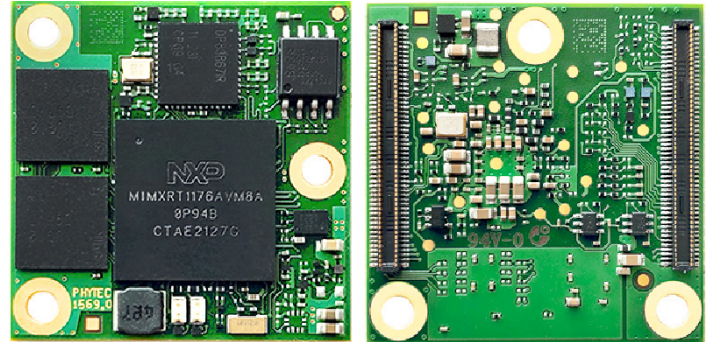


phyCORE®-i.MX RT1170

Crossover MCU for real-time applications

The phyCORE-i.MX RT1170 System on Module is our smallest connectorized SOM. It's a crossover MCU designed for consumer, industrial and automotive markets with dual-core and advanced security. This miniature SOM combines superior computing power and multimedia with easy to use and real-time functionality. Features are not compromised as the 30 x 30 mm module includes an interconnect of 200 pins including MIPI CSI/DSI, Audio, CAN, Dual Ethernet and more!



NXP i.MX RT1170 Processor

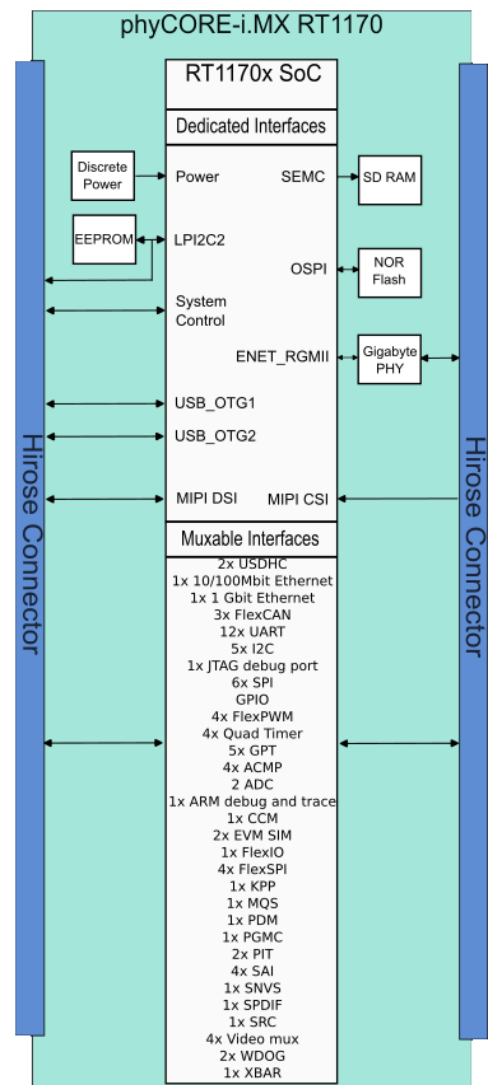
- 6468 CoreMark with Arm Cortex-M7 at 1 Ghz and Arm Cortex-M4 at 400 MHz
- 2 MB SRAM with 512 KB of TCM for Arm Cortex-M7 and 256 KB of TCM for Cortex-M4
- MCUXpresso ecosystem support
- Zephyr RTOS support
- Advanced security, including Secure Boot and crypto engines, and is part of the EdgeLock® Assurance program
- 2 x Gb ENET with AVB and TSN
- 2D GPU
- MIPI® CSI/DSI

Module Features

- Minimum dimensions of only 30 mm x 30 mm
- Multimedia capabilities: 1x MIPI DSI/ MIPI CSI, audio codec
- Industrial interfaces: Dual Ethernet, 3x CAN FD, 6x I2C, 9x UART
- Extensive security features
- Realize real-time with Zephyr OS

Your Advantages

- Ready adapted Zephyr operating system
- Only one device design for different performance configurations
- Product Lifecycle Management program
- Global Technical Support



Technical Data

Module Configuration

Processor	NXP RT1176
Core(s)	1x Arm® Cortex®-M7; 1x Arm® Cortex®-M4
Clock frequency	800 MHz (M7) 400 MHz (M4)
Internal RAM	64 MB SRAM
Security Accelerators	3DES, AES, DES, HAB, SHA-1, SHA-2, TRNG, eFUSE
EXT. MEMORY	
NOR	16 MB (Octal/Quad SPI Flash)
SD/SDIO/MMC	2
EEPROM	4 kB
PHYSICAL PROPERTIES	
Dimensions	30 mm x 30 mm
Weight	tbd.
Operating temperature	-40 °C to +85 °C
Humidity	95 % RH non condensing
Operating voltage	3.3 V
Power consumption typ.	tbd.
SOFTWARE	
Operating system	Zephyr

Module Interfaces

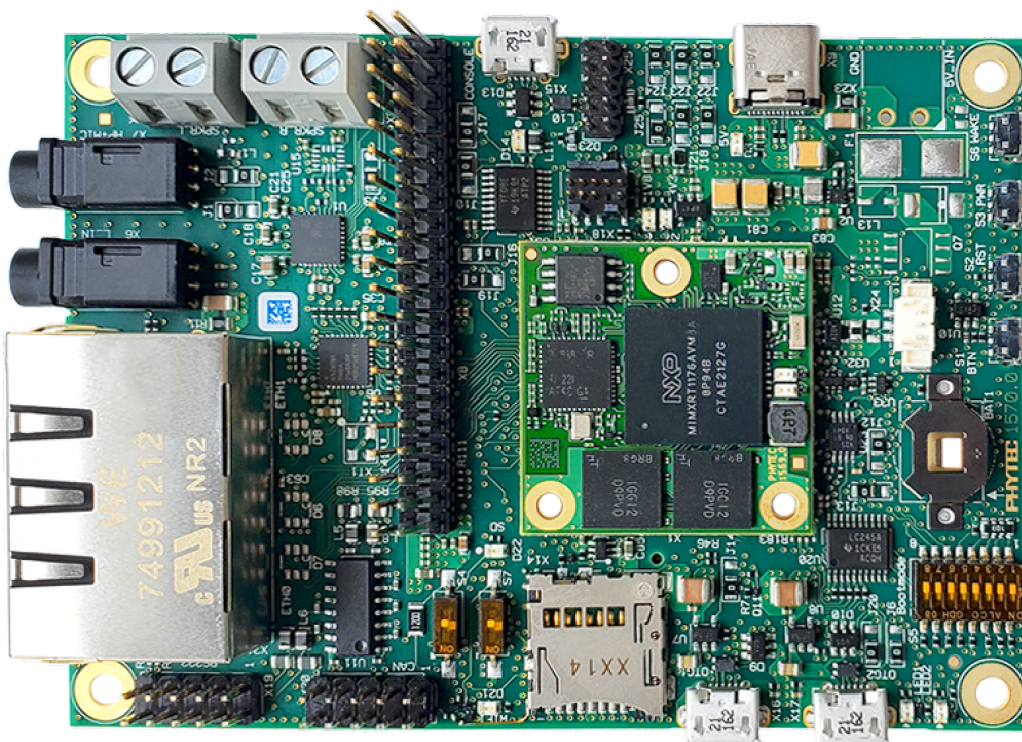
Ethernet	1x 10/100 Mb, 1x GB AVB, 1x Gb TSN
USB	2x USB 2.0 OTG
UART	12x
ADC	2x
CAN	3x CAN-FD
GPIO	Yes
I2C	6x
PWM	4x FlexPWM
SPI/SSP	6x
Display	1x MIPI DSI
Camera	1x MIPI CSI
Audio	4x SAI
JTAG	Yes
RTC	Yes

* Due to multiplexing, not all interfaces may be fully available.

** Due to the exclusive use of individual interfaces on the module, the maximum number may differ from the processor specification.

phyCORE-i.MX RT1170 Development Kit

Easy to Use for Consumer and Industrial IoT



INTERFACES

Ethernet	1x 10/100 1x 10/100/1000
USB	2x USB 2.0 OTG (Micro USB)
Serial	1x RS 232 1x CAN FD
Display	1x MIPI DSI
Camera	1x MIPI CSI
Audio	1x Audio In HP+MIC (3.2 mm Klinke) 1x Audio In Line-In 2x Speaker via Class-D Amplifier
Debugging	JTAG/SWD 2x UART via USB-C
Various	I2C, SPI, GPIO, UART, ADC, DAC (Expansion connectors)

MISCELLANEOUS

MMC/SD/SDIO	microSD Card Slot
User Control	1x User Button 1x Reset Button 1x PWR Button 1x WAKE Button 2x LED (Red, Green)
Dimensions	100 mm x 72 mm
Power	5 V Power In via USB-C Onboard Current Sense Circuit Battery Holder (10 mm Coin-Cell) for RTC