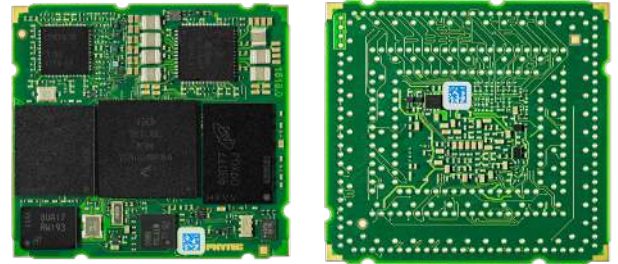


# phyCORE<sup>®</sup>-i.MX 8M Mini/Nano

ARM Cortex<sup>™</sup>-A53/-M4F

The phyCORE-i.MX 8M Mini/Nano System on Module combines best-in-class performance with low power consumption, compact size and low cost. With a BGA footprint this SOM can be directly soldered to your PCBA in Production like all other components in your Bill of Materials. There is no compromise in terms of signal quality and system stability due to the placement of capacitors directly below the processor. In addition to features such as USB, PCIe, and MIPI-CSI; PHYTEC integrated a MIPI<sup>®</sup>-DSI to Flat-Link<sup>™</sup> (LVDS) converter for ease of common display integration into your application.



Processor from NXP with up to 1.8 GHz and 2D/3D graphics acceleration:

## i.MX 8M Mini

- Quad Cortex<sup>™</sup>-A53 1.8 GHz, Cortex<sup>™</sup>-M4F 400 MHz
- GC Nano Ultra 3D GPU and GC320 2D GPU
- 1080p VPU

## or i.MX 8M Nano

- Quad Cortex<sup>™</sup>-A53 1.5 GHz, Cortex<sup>™</sup>-M7 750 MHz
- GC7000UL 3D GPU

## On-Board

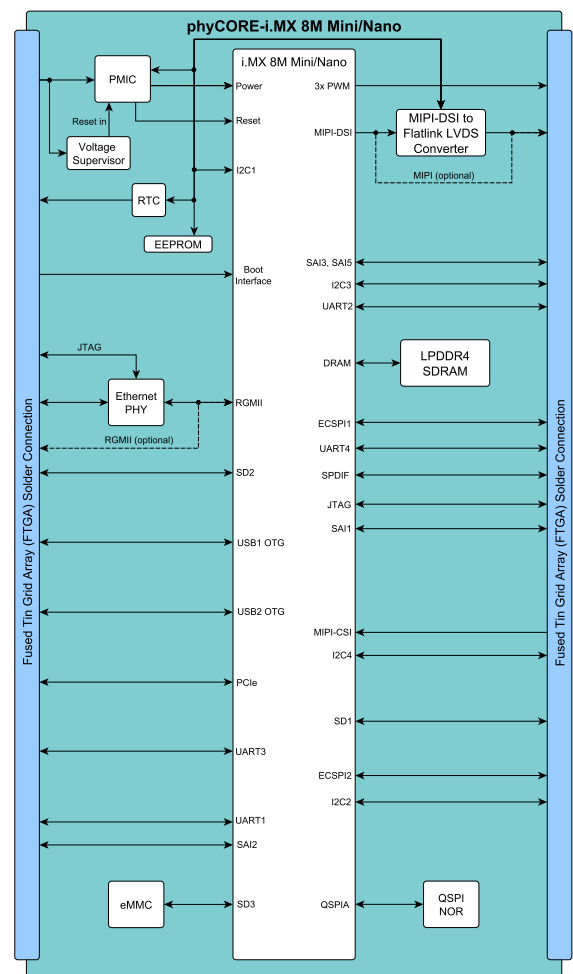
- Maximum 4 GB LPDDR4 RAM, up to 64 GB eMMC
- 4 kB EEPROM and up to 64 MB QSPI NOR-Flash
- PMIC, Gb Ethernet-PHY, RTC
- MIPI<sup>®</sup>-DSI to FlatLink<sup>™</sup> (LVDS) converter

## Small compact dimensions

- Size 40 mm x 37 mm x 3.8 mm
- 319 solder contacts
- Fused Tin Grid Array (FTGA) with proven vibration resistance

## Development advantages

- 3.3 V supply, optimized pinout, and extensively periphery to accelerate carrier board development.
- Performance and price scalable as the module support both NXP i.MX 8M Mini and Nano processors
- Readily adaptable BSPs for Linux and Android
- Global Support with offices in America, China, France, Germany, and India



## Module Configuration | phyCORE-i.MX 8M Mini/Nano (PCL-069)

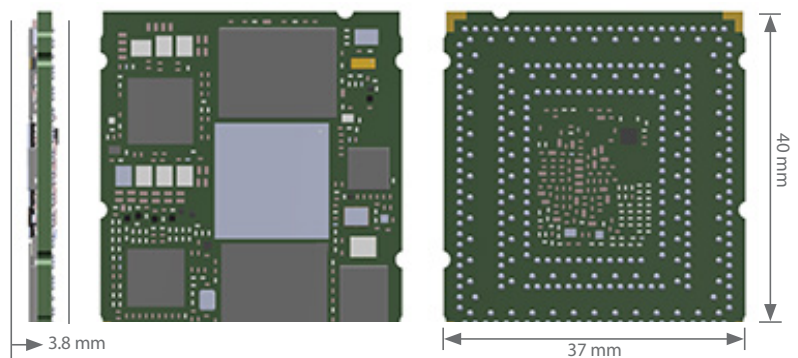
Configuration Order Code	Module Options	Kit Configuration PCL-069-1032311I	Basic Configuration PCL-069-1011011I	Minimal Configuration PCL-069-0611010C
Processor	i.MX 8M Mini/Nano Solo/SoloLite/Dual/DualLite/Quad/QuadLite	i.MX 8M Mini Quad	i.MX 8M Mini Quad	i.MX 8M Nano SoloLite
Cores	up to 4x Cortex-A53	4x Cortex-A53	4x Cortex-A53	1x Cortex-A53
Coprocessor	Mini: Cortex-M4F Nano: Cortex-M7	Cortex-M4F	Cortex-M4F	Cortex-M7
Frequency	Mini: up to 1.8 GHz Nano: up to 1.5 GHz	1.6 GHz	1.6 GHz	1.5 GHz
2D/3D Graphics acceleration	Mini: 2D/3D Nano: 3D	3D: GC Nano Ultra 2D: GC320	3D: GC Nano Ultra 2D: GC320	-
Video En-/Decoding	Mini: 1080p Nano: -	1080p	1080p	-
eMMC	up to 64 GB	8 GB	4 GB	4 GB
LPDDR4 RAM	up to 4 GB	2 GB	1 GB	1 GB
SPI NOR-Flash	up to 64 MB	32 MB	-	-
EEPROM	4 kB	4 kB	4 kB	4 kB
RTC	Yes	Yes	Yes	Yes
Display interface	MIPI-DSI or LVDS	LVDS	LVDS	MIPI-DSI
Ethernet	Gigabit ETH PHY / RGMII	Gigabit ETH PHY	Gigabit ETH PHY	Gigabit ETH PHY
Temperature	0°C to +70°C / -40°C to +85°C	-40 °C to +85 °C	-40 °C to +85 °C	0 °C to +70 °C
BSP	Linux	Linux	Linux	Linux
Development Platform	phyBOARD-Polis i.MX 8M Mini/Nano			

\*Contact PHYTEC Sales for additional configuration options

## Module Interfaces

Feature	Standard*	Maximum**
Ethernet	1x Gigabit or RGMII	1x Gigabit or RGMII
UART	4	4
USB	Mini: 2x USB 2.0 OTG Nano: 1x USB 2.0 OTG	Mini: 2x USB 2.0 OTG Nano: 1x USB 2.0 OTG
SPI	2x ECSPi	3x ECSPi
I2C	3	3
MMC/SDIO	2	2
PWM	3	4
Display	1x MIPI-DSI or LVDS	1x MIPI-DSI or LVDS
Audio	4x SAI + 1x SPDIF	5x SAI + 1x SPDIF
Camera	MIPI CSI-2	MIPI CSI-2
PCIe	Mini: 1x PCIe 2.0 Nano: -	Mini: 1x PCIe 2.0 Nano: -
GPIO	4	110
JTAG	i.MX 8M Mini/Nano Ethernet PHY	i.MX 8M Mini/Nano Ethernet PHY

\* Due to multiplexing it is possible that not all interfaces are available simultaneously



## Physical Properties

Dimensions	40 mm x 37 mm x 3.8 mm
Weight	8 g
Storage temperature	-40 °C to +85 °C
Operating temperature	0 °C to +70 °C (commercial) -40 °C to +85 °C (industrial)
Humidity	95 % RH non-condensing
Supply voltage	3.3 V
Power consumption	1.5 W