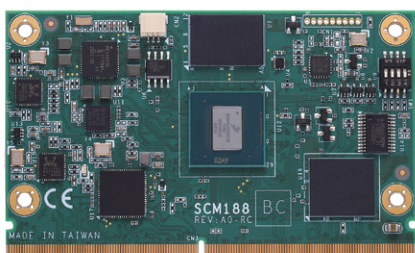
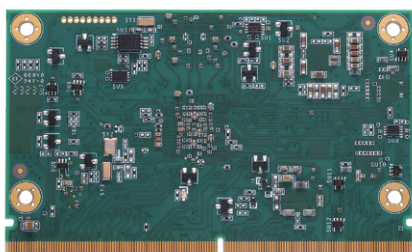


SCM188 Preliminary

RISC Embedded SMARC v2.1 SoM with i.MX 8M Plus Quad-core 1.6GHz SoC, 2GB RAM, and 16GB eMMC



▲ Top view



▲ Rear view

Features

- SMARC 2.1 (82 x 50 mm)
- NXP i.MX 8M Plus quad-core Cortex® A53 processor
- Neural Processing Unit (NPU), up to 2.3 TOPS
- Cortex-M7 for real-time control
- Dual CANbus
- HDMI
- Dual-channel 24-bit LVDS
- Dual 10/100/1000 Mbps Ethernet
- USB 3.2 Gen1
- MIPI-CSI
- Audio
- Yocto 4.0

Specifications

Core System

CPU	NXP i.MX 8M Plus 1.6GHz SoC with quad-core Cortex® A53 processor
System Memory	LPDDR4 2GB
AI Accelerator	NPU, up to 2.3 TOPS
Operating System	Yocto 4.0, Linux Kernel 5.15.52
Storage	1 x SDIO3.0 interface 1 x 16GB eMMC
RTC	Battery on the baseboard is required
Power Requirement	+5V ± 5%

I/O

Graphics	1 x Dual-channel 24-bit LVDS 1 x HDMI (up to 1080p @ 60Hz/4K @ 30Hz)
Ethernet	2 x 10/100/1000 Mbps Ethernet
USB	2 x USB 3.2 Gen1 2 x USB 2.0
COM	2 x UART TX/RX/RTS/CTS 1 x UART TX/RX (for debug console)
I ² C	3 x I ² C
QSPI	1 x QSPI
SPI	1 x SPI
CANbus	2 x CANbus
GPIO	14 x GPIO
OS Flash	1 x OS Flash
Audio	2 x I ² S
Camera Input	1 x MIPI-CSI 4-lane 1 x MIPI-CSI 2-lane
Security	1 x TPM 2.0 (optional, none in default)
Storage	1 x SDIO3.0 interface
PCIe	1 x PCIe Gen3 x1

Mechanical and Environmental

Dimensions	82 x 50 mm (3.23" x 1.97")
Board Thickness	1.2 mm ± 0.1 mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Operating Humidity	10% to 95%, non-condensing
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Storage Humidity	10% to 95%, non-condensing

Ordering Information

Standard

SCM188-2R16E-I (P/N: TBD)	SMARC Module, NXP i.MX 8M Plus 1.6GHz SoC quad-core Cortex® A53 with 2GB RAM, 16GB eMMC, industrial variant, HDMI, LVDS, LAN, and USB
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Optional

ACC100-186-HS (P/N: E39R100101)	Heatsink kit (-40°C to +75°C)
ACC100-186-HSP (P/N: E39R100102)	Heat spreader kit
SCB184-EMMC-AX (P/N: E39E184100)	Baseboard of RISC Embedded SMARC Module, default boot mode at eMMC for SMARC Module with eMMC onboard