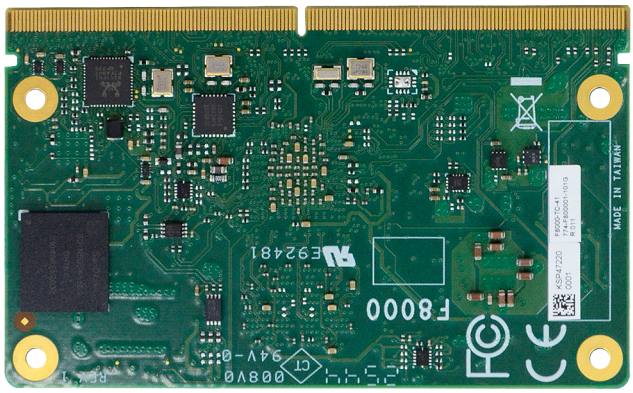
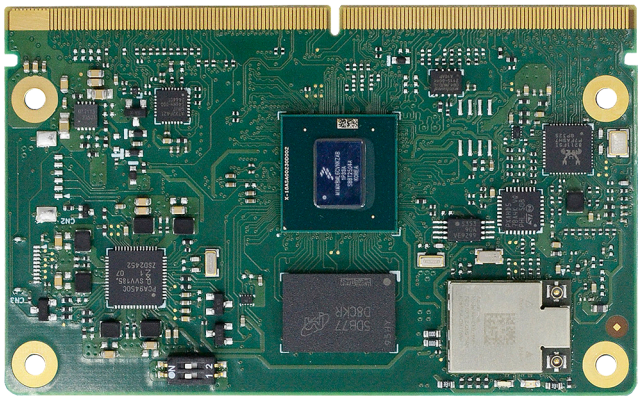
F8000

NXP i.MX8M Plus Processor
SMARC



Top View



Bottom View

KEY FEATURES

NXP i.MX8M Plus

Up to 4 Arm Cortex A53 cores

LPDDR4

Up to 8GB LPDDR4 Memory Down

Display Options

1 LVDS, 1 HDMI

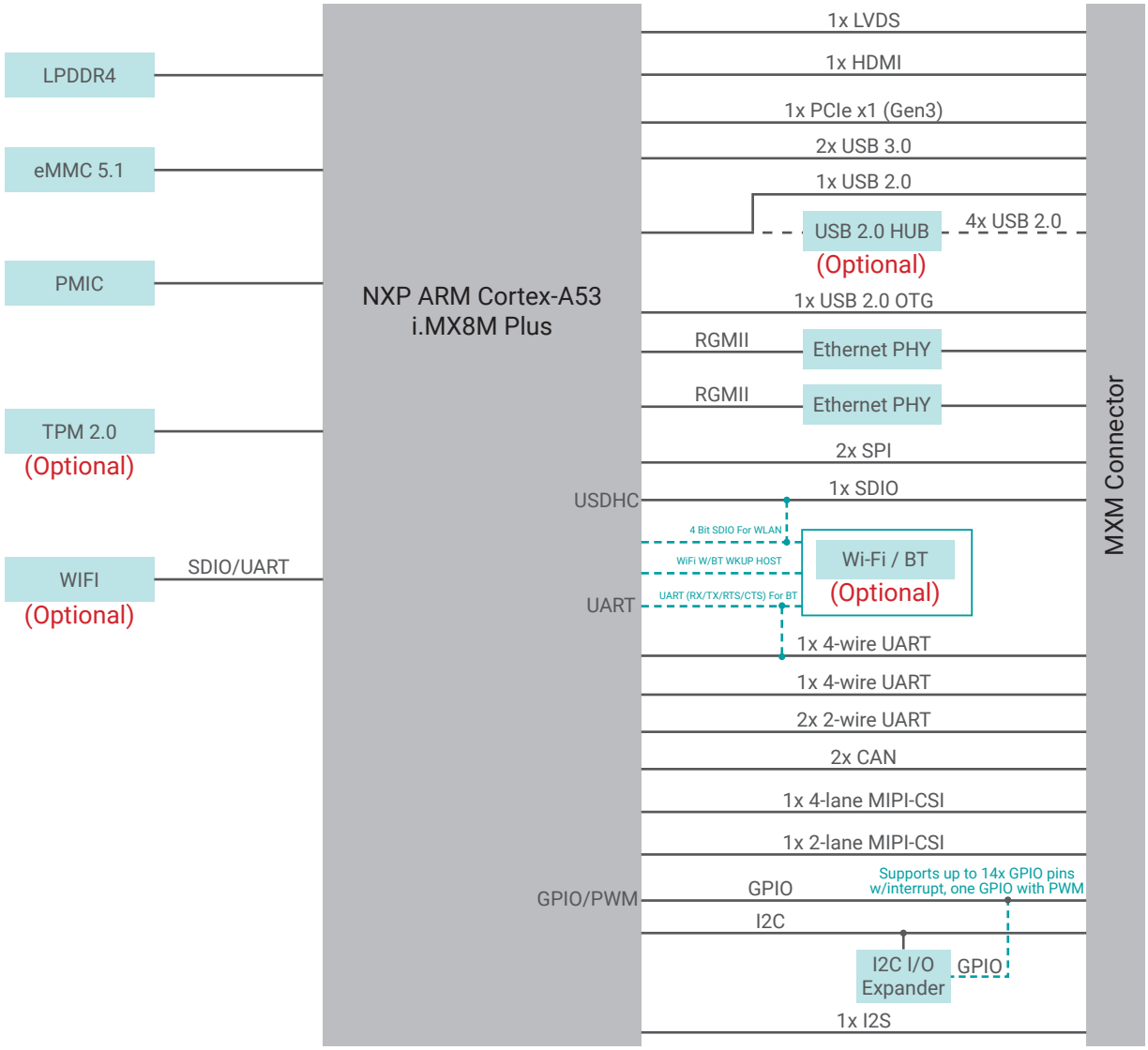
Multiple Expansion

1 PCIe 3.0 x1, SPI, I2C, CAN

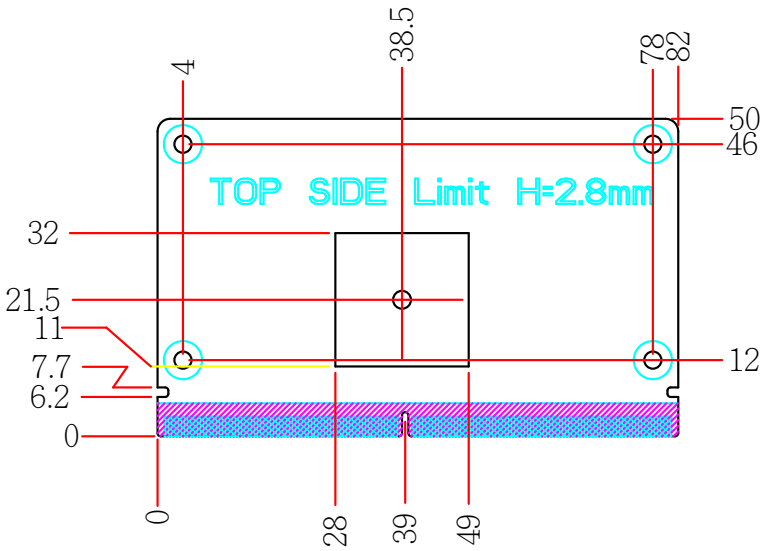
Rich I/O

2 GbE LAN, 1 USB OTG, 2 USB 3.0, 4 USB 2.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	**Processor**	NXP i.MX 8M plus Cortex-A53 processors MIMX8ML6CVNKZAB (Industrial), Quad 1.6GHz MIMX8ML8CVNKZAB (Industrial), Quad 1.6GHz	
	Memory	On-board 2/4/8GB LPDDR4	
NPU	**NPU**	2.3 TOPS	
GRAPHICS	**Controller**	GC7000UL	
	Feature	HW Decode: 1080p60 H.265, H.264, VP9, VP8 HW Endcode: 1080p60 H.265, H.264	
	Display	1 x dual-channel LVDS 1 x HDMI	
EXPENSION	**Interface**	1 x PCIe x1 (Gen 3) 1 x SDIO 3.0 1 x I2C 2 x SPI 2 x 4-wire UART and 2 x 2-wire UART 2 x CAN bus 1 x 4-lanes MIPI-CSI, 1 x 2-lanes MIPI-CSI	
AUDIO	**Interface**	1 x I2S	
ETHERNET	**Controller**	2 x 10/100/1000Mbps GbE	
WIRELESS	**Wireless**	IEEE 802.11 ac/a/b/g/n wireless LAN + Bluetooth 5.0 (available upon request)	
I/O	**USB**	1 x USB OTG 2 x USB 3.0 1 x USB 2.0 or 4 x USB2.0 thru USB HUB (available upon request)	
	eMMC	Supports eMMC 5.1 up to 128GB	
	GPIO	1 x 14-bit GPIO	
SECURITY	**TPM**	TPM 2.0 (available upon request)	
POWER	**Type**	5V DC-In	
	Consumption	TBD	
OS SUPPORT	**Linux**	Linux Yocto	
ENVIRONMENT	**Temperature**	Operating: -40 to 85°C	
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	TBD	
MECHANISM	**Dimensions**	SMARC form factor	82 mm (3.23") x 50 mm (1.97")
	Compliance	SMARC specification revision 2.2 compliance	
STANDARDS AND CERTIFICATIONS	**Certifications**	CE, FCC, RoHS	

ORDERING INFORMATION

Model Name	P/N	CPU Cores	NPU	Memory	Display	TPM	USB 2.0	eMMC	Operating Temp.
F8000-TC83	770-F800001-000G	4	Yes	8GB	LVDS + HDMI	NA	1	32GB	-40 to 85°C
F8000-TC41	770-F800001-100G	4		4GB				16GB	
F8000-TC28	770-F800001-200G	2		2GB				8GB	

PACKING LIST

- 1 F8000 board
- Heat spreader

OPTIONAL ITEMS

- SMARC Carrier Board SMX331
- Heat sink

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