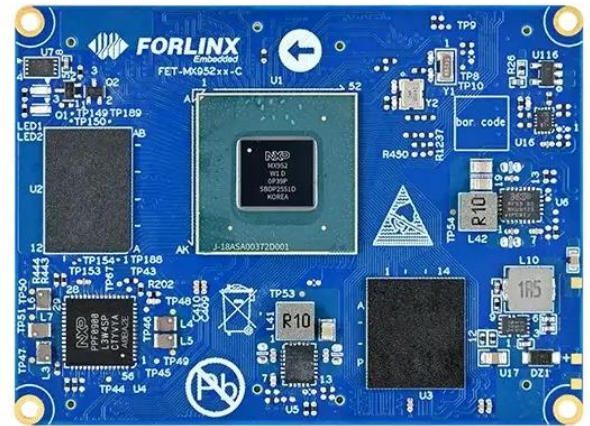


FET-MX952x-C SoM

FET-MX952xx-C SoM is powered by NXP's i.MX952 application processors available for a wide range of edge applications, from automotive wireless connectivity and eCockpit to Industry 4.0 and IoT platforms. The series supports NXP SafeAssure functional safety (ASIL-B, SIL2) platform development, featuring 4 Arm Cortex-A55 cores, Arm Mali GPU, 4K VPU, ISP, ML acceleration NPU, and EdgeLock® secure enclave for security-related functions. The i.MX952 series adopts the Energy Flex architecture, providing scalable real-time capabilities, security, and application processing partitioning for various platforms. The core board maximizes the processor's functional pins, facilitating user evaluation and secondary development. It has undergone rigorous environmental testing, stability testing, and aging testing to ensure stable and reliable operation.



Highlights:

- GPU Mali-G310: Supports OpenGL ES 3.2, Vulkan 1.2, OpenCL 3.0;
- Built-in 2eTOPS NPU, suitable for lightweight edge computing applications;
- Built-in Image Signal Processor (ISP), supports 2x MIPI-CSI camera interfaces
- Supports 3×CAN-FD
- Supports 3 Gigabit Ethernet with TSN

4×A55 Architecture	Upto 1.7GHz Clock	2eTOPS NPU
Mali-G310 GPU	M7 M-core	3 Ethernet

Product Features:

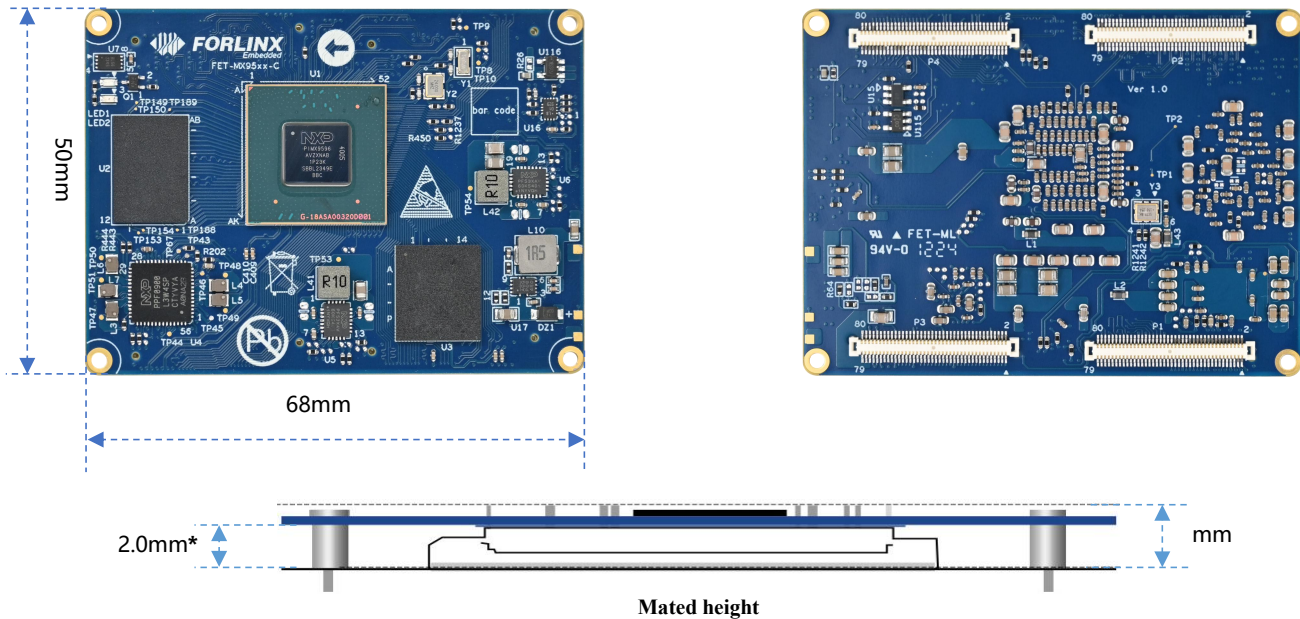
SoC	NXP i.MX952 CPU: 4× Cortex-A55@1.7GHz M7: 800MHz M33: 333MHz NPU: 2eTOPS GPU: Mali-G310; OpenGL ES 3.2, Vulkan 1.2, OpenCL 3.0 VPU: Decode: H.264, H.265: up to 4K@60fps; Encode: H.264, H.265: up to 4K@30fps
RAM	2GB/4GB/8GB LPDDR4X
Flash	64GB eMMC
Power Input	DC 12V
Operating Temperature	-40°C~+85°C
Form Factor	Board-to-board connector (4 × 80-pin ultra thin connector, pitch: 0.5mm, stack height 2mm)

■ Specification:

Peripheral	QTY	Spec.
JTAG	1	4-pin
UART	≤8	Baud rate up to 5 Mbps
SPI	≤8	Supports master/slave mode
XSPI	≤1	Supports 2 Serial NOR flash and Serial NAND flash
CAN-FD	≤3	Supports ISO11898-1, CAN 2.0B
SAI	≤5	
SD Card	≤1	SD card 3.0
SDIO	≤1	SDIO3.0
ADC	≤8	1 x 12-bit 8-lane 1MS/s ADC
1 Gbps Ethernet	≤2	1.8, V RMI/ RGMII , TSN
1 Gbps Ethernet	≤1	SGMII , multiplexed with PCIe
USB2.0	2	USB host or USB d2evice
PCIe	1	PCI Express Gen3
MIPI-DSI	≤1	1 x 350 MHz 4-lane MIPI-DSI, up to 2.5 Gbps Supports 4k@60Hz or 3840 x 1440@60Hz
MIPI CSI-2	≤2	1x 4-lane or 2x2-lane
LVDS	1	Up to 1080P@60Hz (2x 4-lane or 1x 8-lane)
IIC	≤7	
PDM	≤1	Supports 8-channel microphone interface
SPDIF	≤1	
PWM	≤6	
GPIO	≤n	

Note: Parameters in the table are hardware design or CPU theoretical values.

■ Exterior:



Dimension tolerance $\pm 0.2\text{mm}$.

■ Supported OS:

OS	Linux 6.18
Firmware flashing	• TF card • USB OTG

■ Peripheral Support List:

Linux 6.18	Interface	Module	Model
	SIDO	WiFi	AW-CM358
	UART	BT	
	IIS	Audio	NAU88C22YG
	IIC	RTC	PCF8563和RX8010
	LVDS	10.1'' LVDS module	FIT_LVDS_10.1_C
	IIC	TP: GT928	
	MIPI-DSI	7'' MIPI-DSI module	FIT-LCD7.0_MIPI V2.1
	IIC	TP: FT5306	
	USB	4G module(MiniPCIE)	EC20
	USB	USB to 4 UART	USB-TO-4-UARTS
	MIPI-CSI	MIPI-CSI	OV13850

■ Documentation:

Linux 6.18	User manual and compiling guide, OS image, kernel source code, testing demos, file system, drivers, utilities, c
Hardware	User manual, pinmux, pin definition, SoM step file, SoM DXF, carrier board DXF and carrier board schematic

Note: Rich documentation will be provided gradually after product release.

■ Ordering:

Part Number	Core Number	SoC Clock	RAM	Flash	Operating Temperature	Status
FET-MX952xx-C+172GSE64GIxx:xx	4xA55	1.7GHz	2GB	64GB	-40℃~+85℃	In development

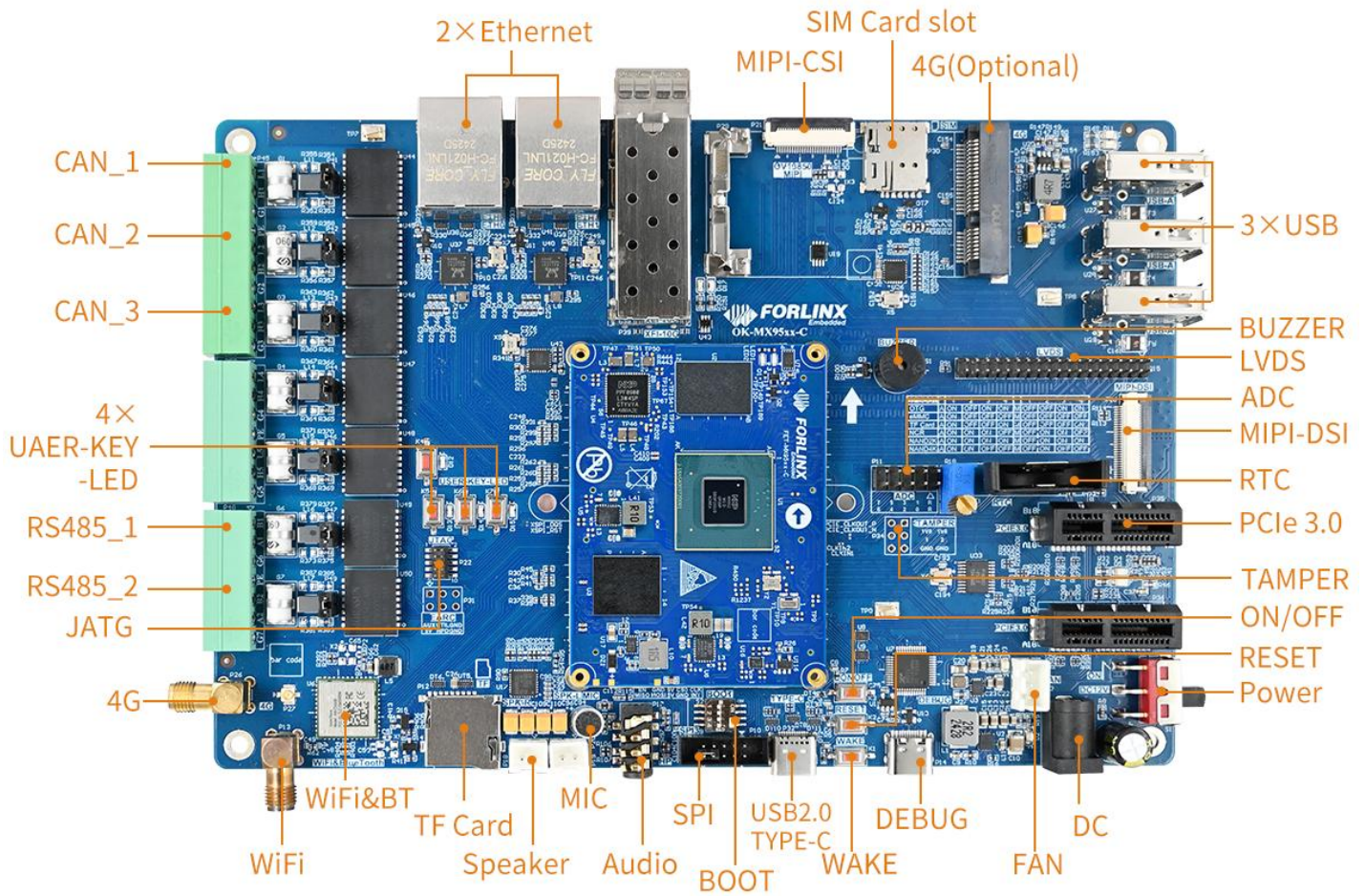
■ SoM Naming Rules:

A - B - C + D E F G H I J : K L

The table describes the terminology for SoM numbering to determine core board characteristics (e.g., CPU, clock, temperature grade, version, etc.).

Field	Description	Value	Notes
A	Product Line Identifier	FET	Forlinx SoM PN Prefix
		FL	Forlinx All-in-one product PN Prefix
-	Segment Identifier	-	
B	SoC Model	MX952xx	i.MX952
-	Segment Identifier	-	
C	Form Factor	C/C2	Board to board connector
+	Segment Identifier	+	Configuration parameters follow
D	SoC clock	17	1.7GHz
		18	1.8GHz
E	RAM (unit: Byte)	2G	2GB
		4G	4GB
		8G	8GB
F	Single ROM	SE	eMMC
G	Single ROM Capacity (unit: Byte)	16G	16GB
		32G	32GB
		64G	64GB
H	Operating Temperature	C	0°C to +80°C commercial grade
		I	-40°C to +85°C industrial grade
I	Configuration Code	A~Z	If D-H field values are identical, this field value is the same; assigned in ascending order by configuration release date
J	PCB version	10	V1.0
		11	V1.1
		xx	Vx.x
: KL	Manufacturer Internal Identifier	: xx	Manufacturer internal identifier; no impact on customer use

■ Development Board:



Note: FET-MX952x-C supports 3x CAN-FD, does not support 10G Ethernet.

■ Carrier Board Features:

Interface	QTY	Spec.
LVDS	1	Dual 8-bite, up to 1080p@60Hz
MIPI DSI	1	4lane, each lane up to 2.5Gbps, 4kp30 or 3840 x 1440p60
Ethernet	2	10/100/1000Mbps adaptive, RJ-45
TYPE-C (DEBUG)	1	Debug ports UART1/2/3 led out by USB for A53/M33/M7 debugging
TYPE-C (USB1)	1	USB2.0, TYPE-C, supports OTG, , reversible plug
USB Host	3	Hub-expanded, USB 2.0 (up to 480Mbps)
PCIE3.0	1	Standard PCIE X1 socket, supports RC and EP modes
TF	1	Compliant with SD3.0, 4bit
MIPI CSI	1	OV13850
WiFi&BlueTooth	1	On-board AW-CM358SM, 2.4G/5G dual-band Wi-Fi, BT5.0, audio Wi-Fi: 1 x SDIO BT: 1 x UART Audio: 1 x IIS
RTC	1	CR2032
SPI	1	SPI3, pin headers
KEY	7	Reset, sleep, power on/off, user-defined keys ×4
Audio	3	1x 4-segment headphone jack with HP and MIC, 1x onboard electret MIC, 1x dual-channel SPEAKER interface
CAN	3	CAN FD with protection circuit, standard CAN 2.0B, max 5Mbps
RS485	2	Auto transceiver control with protection circuit
SARADC	8	1.8V, onboard potentiometer for testing
4G	1	mini PCIE slot, compatible with EC20 module
BUZZER	1	Active buzzer
JTAG	1	Debug port
QSPI FLASH	1	XSPI, 4bit, FLASH
TAMPER	1	Pin header, tamper detection
FAN	1	Fan, for SoM cooling
LED	4	User-defined LEDs, multiplexed with user-defined keys

Note: Parameters in the table are hardware design or CPU theoretical values.

■ Target Applications:

Industrial automation, healthcare, power, transportation, environmental monitoring, smart cockpit, IoT, etc.



Healthcare



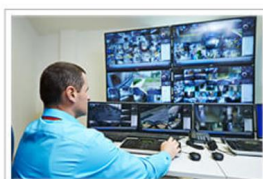
Power Management



Automation



Mobility



Security



Energy and Chemical



Communication



Smart City