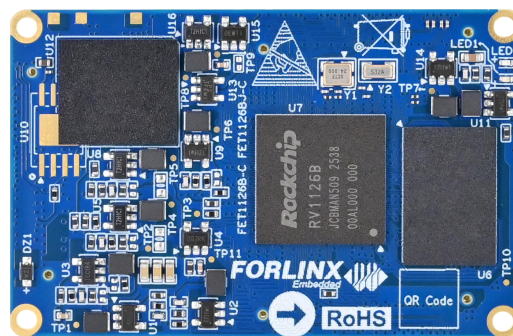


FET1126B-C/FET1126BJ-C SoM

The FET1126B-C/FET1126BJ-C SoM is developed based on the Rockchip RV1126B/RV1126BJ processor, a low-power, cost-effective application processor specifically designed by Rockchip for edge-side and terminal-side AI computing.

It integrates four high-performance ARM Cortex-A53 cores, delivering 3 TOPS@INT8 AI computing power, and is equipped with multiple industrial interfaces suitable for edge-side applications. It fully meets the AI analysis demands of edge video analytics and target recognition in scenarios such as smart industry, smart campuses, and smart construction sites. Supporting AOA (Always On Audio) and AOV (Always On Video), it enables ultra-low-power standby operation.

It has passed rigorous industrial environment testing in Forlinx Embedded's laboratory, ensuring stable and reliable quality. It also offers 10–15 years longevity, guaranteeing long-term and stable supply.



4×A53 CPU	3TOPS AI computing power	36mm×56mm Compact size
Up to 1.6GHz Clock	RGMII Gigabit Ethernet port	AOV&AOA Ultra-low power consumption

Product Features:

- Compact size of 36mm × 56mm, all functional pins are routed out from the processor;
- 3 TOPS computing power, providing NPU usage examples such as RKNN;
- MIPI DSI and RGB;
- RGMII, UART, CAN FD, SPI, etc;
- Edge-side AI algorithm routines for testing;
- AOA and AOV;
- Wide operating temperature range of -20°C to +85°C / -40°C to +85°C.

SoM Parameter:

Processor	Rockchip RV1126B		Rockchip RV1126BJ	
	CPU:	4×Cortex-A53, up to 1.6GHz	CPU:	4×Cortex-A53, up to 1.3GHz
	NPU:	3 TOPS@INT8	NPU:	3 TOPS@INT8
	GPU:	No 3D GPU; supports 2D RGA only	GPU:	No 3D GPU; supports 2D RGA only

	ISP:	VICAP input: RX raw8/raw10/raw12/raw14/raw16 Maximum input: 12M@20fps Minimum input: 264x264	
	AI	Maximum input: 8M@30fps	
	ISP:	Maximum Resolution: 4096 x4096	
	VPU:	Video Decoder: ● Supports H.264 and H.265 hardware decoding ● H.265 HEVC/MVC Main Profile yuv420@L5.0 up to 3840x2160@30fps ● H.264 AVC/MVC Main Profile yuv400/yuv420/yuv422@L5.1 up to 3840x2160@30fps Video Encoder: ● Supports HEVC, H.264 and JPEG hardware encoding ● Supports parallel encoding (HEVC+JPEG or H.264+JPEG) ● Supports up to 12M@30fps JPEG decoder: ● Supported image resolutions: 48x48 to 65520x65520 ● Supports YUV400/YUV420/YUV422/YUV440/YUV411/YUV444	
RAM		1GB/2GB/4GB LPDDR4	1GB/2GB/4GB LPDDR4
ROM		64GB eMMC	8GB/16GB/32GB/64GB eMMC
Operating Temperature		-20°C~+85°C	-40°C~+85°C
Operating Voltage		DC 5V	
Connection		Ultra-thin board-to-board connector (3*80pin, 0.5 mm pitch, total height 2.0 mm)	

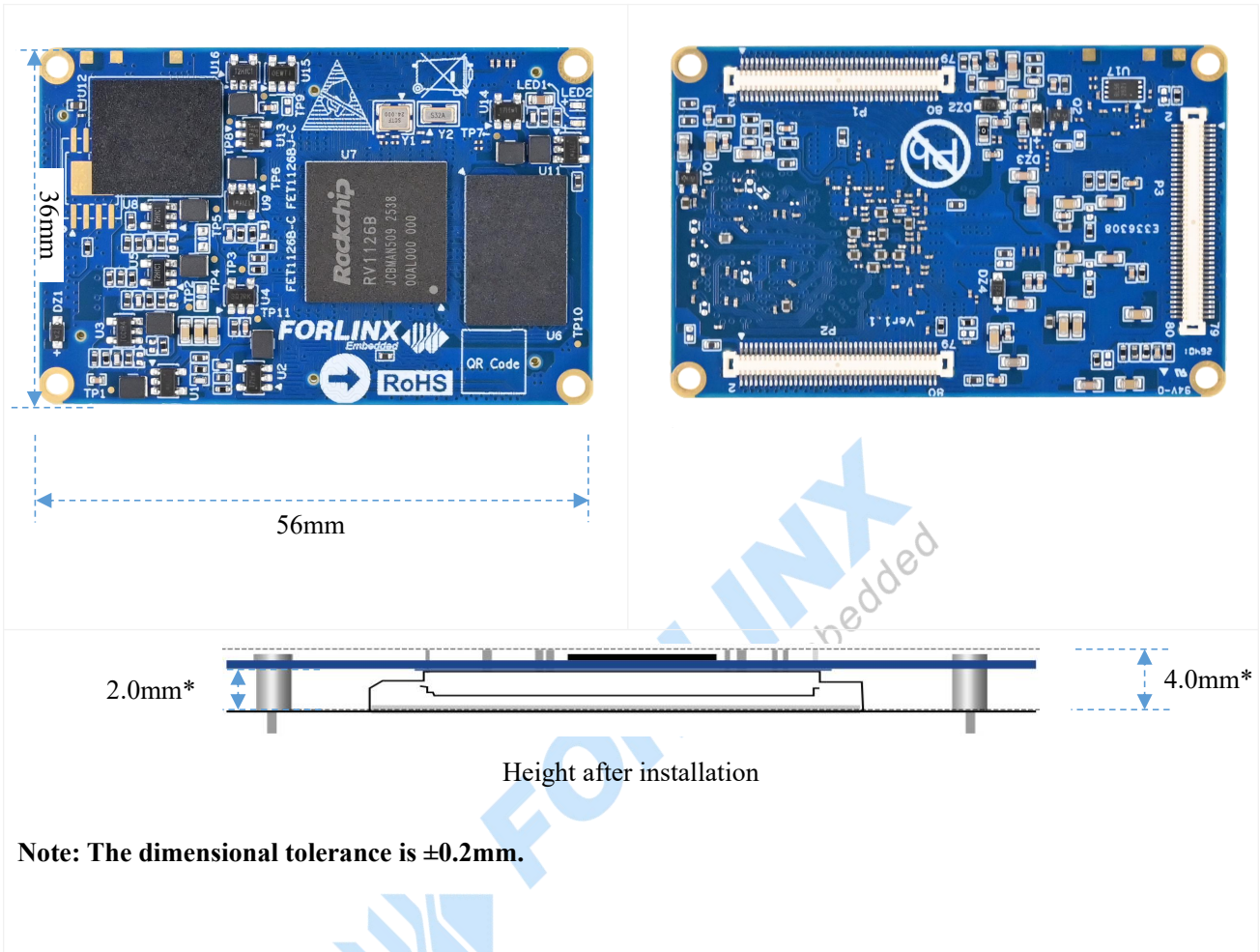
■ SoM Function Parameters:

Function	Quantity	Parameter
Display	1	Supports 1 x display output, with a maximum resolution of 1920*1080@60fps Supports various display interfaces: ● RGB: 24bit ● MIPI-DSI: 4lane, 1.5Gbps/lane

		● BT.656/BT.1120
MIPI CSI	≤2	Supports 2 x 4lane, 2.5g bps/lane ● Supports two MIPI CSI/LVDS/SubLVDS DPHYs ● Each MIPI DPHY V1.2, 4lane, 2.5Gbps/lane ● Each interface can be configured as a 2x2 data channel port ● Virtual channels are supported
DVP	1	Supports 8/10/12/14/16-bit, with an I/O frequency of up to 150 MHz Supports BT.601/ BT.656 and BT.1120 Input
Ethernet	1	1 x MAC, which can be used for either one RGMII interface or one 100 Mbit/s interface (the CPU has one integrated 100 Mbit/s PHY)
USB	2	1 x USB2.0 Host 1 x USB 2.0/3.0 DRD
UART	≤8	The maximum supported baud rate is 4 Mbps; UART1–UART7 support automatic flow control.
CAN	≤2	Supports CAN2.0/ B
SDIO 3.0	≤2	1 x TF card slot, supporting high-speed cards; 1 x SDIO interface, 3.3V logic level
DSMC	≤1	1 x host interface, which can be used to connect to an FPGA Supports 4 chip-select signals and 8-wire or 16-wire serial transmission modes
FSPI	≤1	Supports boot-up; 1/2/4-bit modes
SPI	≤2	Configurable master-slave mode
I2C	≤5	Supports 7bits and 10bits address modes up to 1 Mbit/s
PWM	≤27	Supports up to 27 channels of PWM.
ADC	≤24	24 single-ended inputs, 13bit, 2 MSPS
SAI	≤3	Configurable master-slave mode
Audio ADC	≤2	2 x differential MIC inputs, 2 x Audio DSM differential outputs
GPIO	≤118	The total quantity excluding the internal use of the SoM

Note: The parameters in the table are based on hardware design or theoretical CPU values.

■ Appearance & Dimensions:



■ Software Support:

OS	Linux 6.1.141
Flashing	USB OTG, TF

■ Product Materials:

Linux6.1 Documentation List:	User Manual, User Compilation Guide, Flashing Image, Kernel Source Code, Test Program Source Code, File System, Driver Tools, Download Tools, Burning Tools, Development Environment, AI Algorithm Examples.
Hardware Documentation List:	Hardware Manual, Pin Multiplexing Comparison Table, Pin Function Comparison Table, SoM STEP File, Carrier Board STEP File, SoM DXF File, Carrier Board

DXF File, Carrier Board PDF Schematic, Carrier Board PCB Source File, Carrier Board Design Data.

Note: The documentation will be gradually provided and enriched after the product is released.

■ Order Model List:

Specification:	Core	CPU Clock	RAM	ROM	Temperature Range	Supply
FET1126B-C+161GSE64GExx:xx	4×A53	Up to 1.6GHz	1GB	64GB eMMC*	-20°C~+85°C	R&D
FET1126B-C+162GSE64GExx:xx	4×A53	Up to 1.6GHz	2GB	64GB eMMC*	-20°C~+85°C	Mass Production
FET1126B-C+164GSE64GExx:xx	4×A53	Up to 1.6GHz	4GB	64GB eMMC*	-20°C~+85°C	R&D
FET1126BJ-C+131GSE8GIxx:xx	4×A53	Up to 1.3GHz	1GB	8GB eMMC	-40°C~+85°C	Plan
FET1126BJ-C+132GSE16GIxx:xx	4×A53	Up to 1.3GHz	2GB	16GB eMMC	-40°C~+85°C	R&D
FET1126BJ-C+134GSE32GIxx:xx	4×A53	Up to 1.3GHz	4GB	32GB eMMC	-40°C~+85°C	Plan

As the commercial - grade eMMC capacity of each eMMC brand starts from 64GB and eMMCs below 64GB will all be discontinued, the minimum selectable capacity is 64GB.

The planning and configuration status may change at any time without further notice. If you have any requirements, please contact our sales department for the latest progress.

■ SoM Naming Rules:

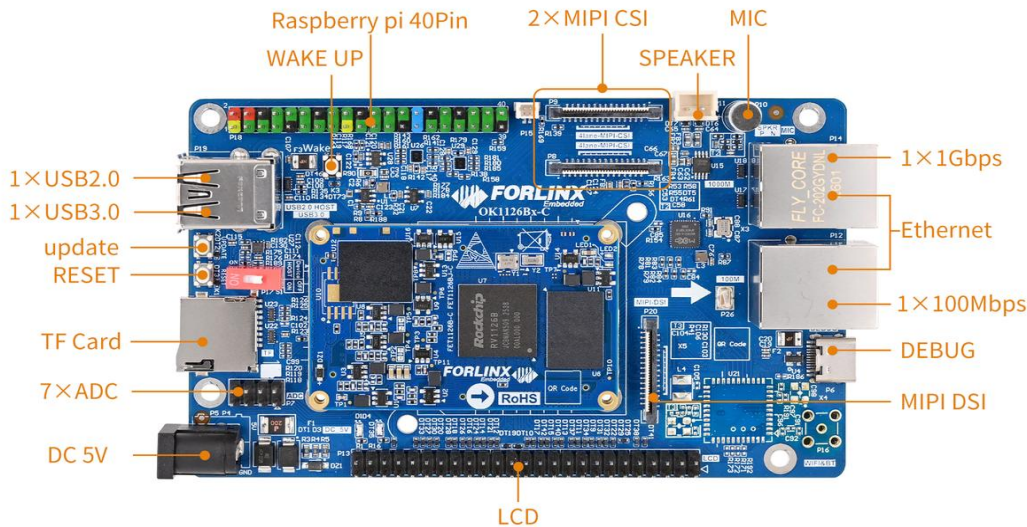
A	B	-	C	+	D	E	F	G	H	I	J	:	K	L
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This table describes SoM number terms to define its characteristics (e.g., CPU, frequency, temperature grade, version).

Field	Field Description	Value	Description
A	Product Line Identification	FET	Forlinx Embedded SoM
B	CPU Name	1126B	RV1126B
		1126BJ	RV1126BJ
-	Segment Identification	-	

C	Connection	C	Board to board connector
+	Segment Identification	+	The configuration parameter section follows this identifier.
D	CPU Clock (Max.)	16	1.6 GHz
		13	1.3 GHz
E	RAM Capacity (Unit: Byte)	512	512MB
		1G	1GB
		2G	2GB
		4G	4GB
F	Single ROM Type	SN	Nand Flash
		SE	eMMC
G	Single ROM Capacity (Unit: Byte)	8G	8GB
		16G	16GB
		32G	32GB
		64G	64GB
H	Running temperature	C	0 to 70°C Commercial-grade
		E	-20 to 85°C
		I	-40 to 85°C Industrial-grade
I	Configuration No.	A~Z	If the D ~ H field values of each product are the same, the field values are the same, in ascending order according to the configuration release time
J	PCB Version	10	V1.0
		11	V1.1
		xx	Vx.x
:	Separator	:	This symbol is followed by the internal identification of the manufacturer, which has no effect on the use.
KL	Internal Identification of the Manufacturer	xx	This is the internal identification of the manufacturer and has no impact on the use.

■ OK1126Bx Development Board Interface:



Note: PCB dimensions: 120mm × 75mm; supply voltage: 5V DC

■ OK1126Bx-C Development Board Function Parameters:

Function	Quantity	Parameter
TF Card	1	Data rate up to SDR104;
KEY	3	CPU Reset, Boot Options and Wake-up Button
UART Debug	1	Integrated into a single Type-C port, enabling connection to a PC for debugging.
USB2.0	2	1 x USB_HOST port is connected via a USB socket; 1 x USB_OTG port is connected via a Type-C connector for use with OTG programming or, when combined with USB 3.0, via a USB 3.0 socket.
USB3.0	1	The USB 3.0 host is connected to the USB 3.0 socket.
WiFi Bluetooth (1)	1	Single antenna 2.4G&5GHz Wi-Fi Dual-band 1X1 802.11ac +Bluetooth 4.2,
SPI	1	SPI1 is routed out via the Raspberry Pi's 40PIN header
RTC	1	Powered by an external CR2032 button cell; data retention time when power is off
Ethernet	1	Featuring a standard RJ45 socket, with either a 100 Mbps port or a 1 Gbps port, the RV1126B is equipped with a single GMAC controller. This allows it to provide RMII/RGMII interfaces for connecting external 100 Mbps or one Gbps Ethernet PHY chips, or to switch to the built-in 100 Mbps FEPHY. Only one of these options

		can be selected at a time; they cannot be used simultaneously.
UART	1	UART5 is routed out via the Raspberry Pi's 40PIN header
I2C	2	I2C3 and I2C4 are connected via the Raspberry Pi's 40PIN header
SPEAKER	1	Through the power amplifier chip, it can be connected to an external 4Ω-3.3W speaker.
MIC	2	One channel is connected to the onboard electret microphone, and the other channel is not externally accessible.
ADC	7	7 x ADC are routed out via pin headers.
MIPI-CSI	2	Routed out via an FPC connector, 4 lanes + 4 lanes.
LCD	1	Routed out via pin headers, supports capacitive touch screens.
MIPI_DSI	1	4-lane MIPI-DSI, supports capacitive touch screens

Note: The parameters in the table are based on hardware design or theoretical CPU values.

WiFi/Bluetooth is currently not supported in this version; the carrier board circuit can be referenced.

■ Power Consumption:

No.	Item	SoM Power (W)	Development Board Power (including SoM)
1	No-load startup peak power	1.86W	2.32W
2	No-load standby	0.44W	1.18W
3	Sleep mode	0.36W	0.58W
4	USB Read and Write	0.54W	2.20W
5	TF Read and Write	0.75W	1.52W
6	PING Network	0.65W	1.78W
7	Camera with a load	0.72W	2W
8	Load 7-inch MIPI screen + play video	0.95W	5.65W
9	On-load camera + on-load 7-inch MIPI screen + video playback	1.15W	6.43W
10	CPU with full load	1.54W	2.3W
11	Memory is full	1.06W	1.82W
12	EMMC Read and Write	1.24W	1.98W
13	CPU pressure + memory pressure + eMMC read/write pressure test power	1.84W	2.79W
14	AOV mode + camera + sleep mode	0.007W	0.065W
15	AOV mode + camera + face recognition	1.01W	1.65W

Note: The SoM is configured with 2GB LPDDR4+16GB eMMC, and the display is a Forlinx optional product. Both the SoM and the development board are powered by a 5V supply. Power consumption is for reference only.