

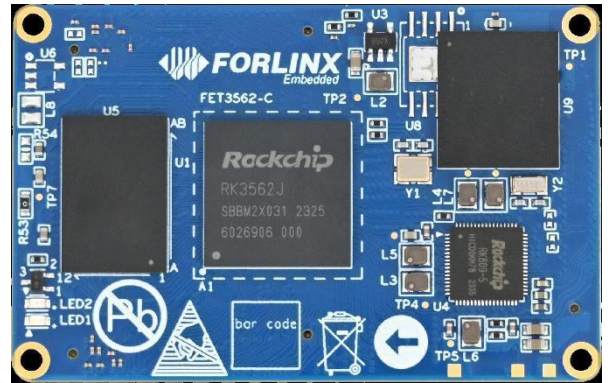
## FET3562J-C SoM

FET3562J-C System on Module (SoM) is powered by Rockchip's quad-core Cortex-A53 featuring RK3562J which is specially launched for industrial automation and electronics applications with advanced but low power performance. It has a build-in 3D GPU supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1. The SoM is also designed with 4 ultra thin connectors for connecting with carrier board, which is very convenient for maintenance.

Rigorous comprehensive tests ensures stability for device running in tough industrial environment.

### Features:

- 3x 80-pin board-to-board connectors maximize processor performance;
- 22nm processing technology;
- Compatible designing with FET3588-C;
- High definition H.265 hard decoding;
- Multiple display interface: LVDS, MIPI DSI, RGB;
- Various high-speed peripheral: PCIe2.1, USB3.0, CAN, etc.



4x A53 CPU	36×56mm Dimension	Mali-G52-2EE GPU
1TOPS NPU	H.265@4Kp30 Hard Decode	

### SoM Overview:

Processor	Rockchip RK3562J ARM: 4×Cortex-A53@1.8GHz NPU: N/ A	Rockchip RK3562 ARM: 4×Cortex-A53@2.0GHz NPU: 1TOPS INT8, supports INT4/INT8/INT16/FP16
	GPU: Mali-G52-2EE, supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.0 and 1.1 VPU: Hard encode: H.264, 1920×1080@60fps Hard decode: H.265、VP9, 4096×2304@30fps; H.264, 1920×1080@60fps	
RAM	1GB/2GB LPDDR4	
ROM	8GB/16GB eMMC	
Power input	DC 5V	
Operating temp	-40°C~+85°C	0°C~+70°C
Package	Board-to-board connector(3*80-pin, 0.5mm pitch, combined height 2.0mm)	

## SoM Features

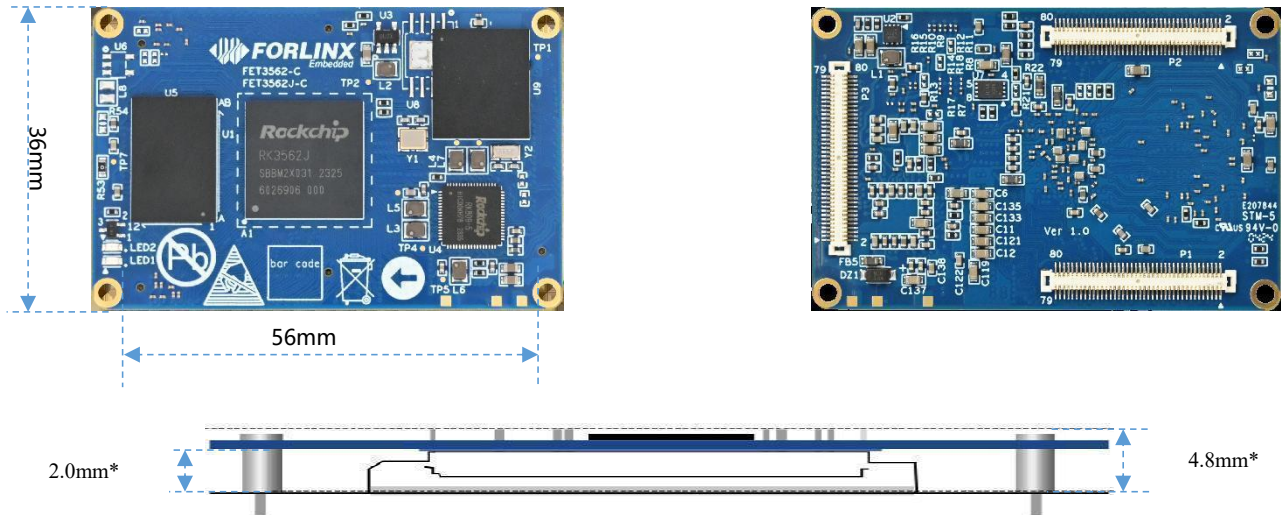
Interface	QTY	Spec.		
MIPI DSI	≤1	Supports 1x MIPI DSI TX, 4 lanes, up to 2048×1080@60Hz	Multiplexed& alternative	Can support 1 display out at most
LVDS	≤1	Supported form: VESA/JEIDA LVDS, up to 800×1280@60Hz		
RGB	≤1	RGB888 , up to 2048×1080@60Hz		
MIPI CSI	4	Two ports including MIPI_CSI_RX0 and MIPI_CSI_RX1 are available; A single port supports 4-lane with each lane up to 2.5Gbps; A single port can be split to 2x 2-lane		Can support up to 4 CSI input together
Audio	/	Built-in codec, sampling rate up to 48KHz~192KHz: single channel Speaker, class-D, 1.3W; Stereo phone output, 32)hm, 2 single-end MIC		
SAI	≤3	SAI0~SAI2, supports I2S/PCM/TDM, 8bits~32bits, sampling rate up to 192kHz; SAI0 is occupied by SoM, circuited to SoM built-in Codec		
PDM	≤1	Up to 8 channels, sampling rate up to 192KHz, host-receiving mode		
SPDIF	≤1	Supports 2x 16-bit audio data stored in one 32-bit wide location; Supports bi-phase format stereo audio data output; Supports 16/20/24-bit audio data transmission in linear PCM mode; Supports non-linear PCM transmission.		
SD Card	1	Compatible with SDIO3.0, 4 bits data width		
SDIO	≤1	Compatible with SDIO3.0, 4 bits data width		
Ethernet	≤2	Supports 1x RGMII(10/100/1000Mbps auto-negotiable) and 1x RMII(10/ 100Mbps auto-negotiable)		
USB2.0	1	USB2.0 Host, up to 480MHz		
USB3.0	≤1	Supports USB3.0 host/ slave mode, compatible with USB2.0	USB3.0 and PCIe2.1 are multiplexed, when working with PCIe2.1, USB2.0 in USB3.0 is available	
PCIe2.1	≤1	Can only used as RC mode, only available for single-channel, 5Gbps		
UART <sup>(1)</sup>	≤10	UART0~UART9, support 5/6/7/8bits serial data transferring or receiving, supports flow control(exclude UART0), up to 4Mbps		
CAN	≤2	CAN2.0B, 1Mbps		
SPI	≤3	Supports host/ slave mode		
I2C <sup>(2)</sup>	≤5	I2C1~I2C5, support 7bits mode and 10bits mode, standard mode with 100Kbit/s and HS mode with 400Kbit/s		
PWM	≤16	Supports 16 on-chip PWMs with interrupt operation, embedded 32-bit timer/counter, supports capture mode, supports continuous mode or one-shot mode		
ADC <sup>(3)</sup>	≤16	2x SARADC, each one contains 8-channel single-ended input, 10-bit, sampling rate up to 1MS/s		
GPIO	≤79	Maximum supported pins, multiplexed.		

Note(1): UART0 is a debug port, it's not suggested to be used as other functions;

Note(2): 6 I2C are available, I2C0 is occupied by SoM, it's circuited to PMIC, not available on carrier board,  
there are 5x I2C at most are available;

Note(3): SARADC0\_BOOT and SARADC0\_IN1 are relevant with system booting, pleased do not use them to  
generic ADC

## Exterior and dimensions:



Height diagram after installation

\* tolerance  $\pm 0.2\text{mm}$

## OS:

OS	Linux 5.10.198+QT5.15, Android <sup>TBD</sup> , AMP <sup>TBD</sup>
Firmware installation	USB OTG; TF card

## Driver list:

	Interface	Function	Spec.
Linux5.10.198 Driver List	SDIO	WiFi/ BT	6221A-SRC
	I2S	audio	RK809, 16bits~32bits, sampling rate up to 192KHz
	I2C	RTC	PCF8563 and rx8010
	I2C	Capacitive TP	GT928, FT5x06
	MIPI DSI	7''	FIT-LCD7.0_MIPI V2.1 V3.0, FT5x06 capactive TP, resolution 1024×600
	LVDS	10.1''	FIT_LVDS_10.1_C, GT928 capacitive TP, resolution 1280×800
	MIPI-CSI	camera	OV13855, OV5645, IMX415
	USB	4G networking	EC20/ EC25, Mini PCI-e slot
	USB	USB to 4x serial	USB-TO-4-UARTS
	PCIe	NIC	E1000E, RTL8125
	RGMII	Gigabit Ethernet	YT8521SH-CA
	RMII	Fast Ethernet	YT8512H
	CAN	Generic	
	PWM	Generic	
	ADC	Generic	
	SPI	Generic	
UART	Generic		
GPIO	Generic		

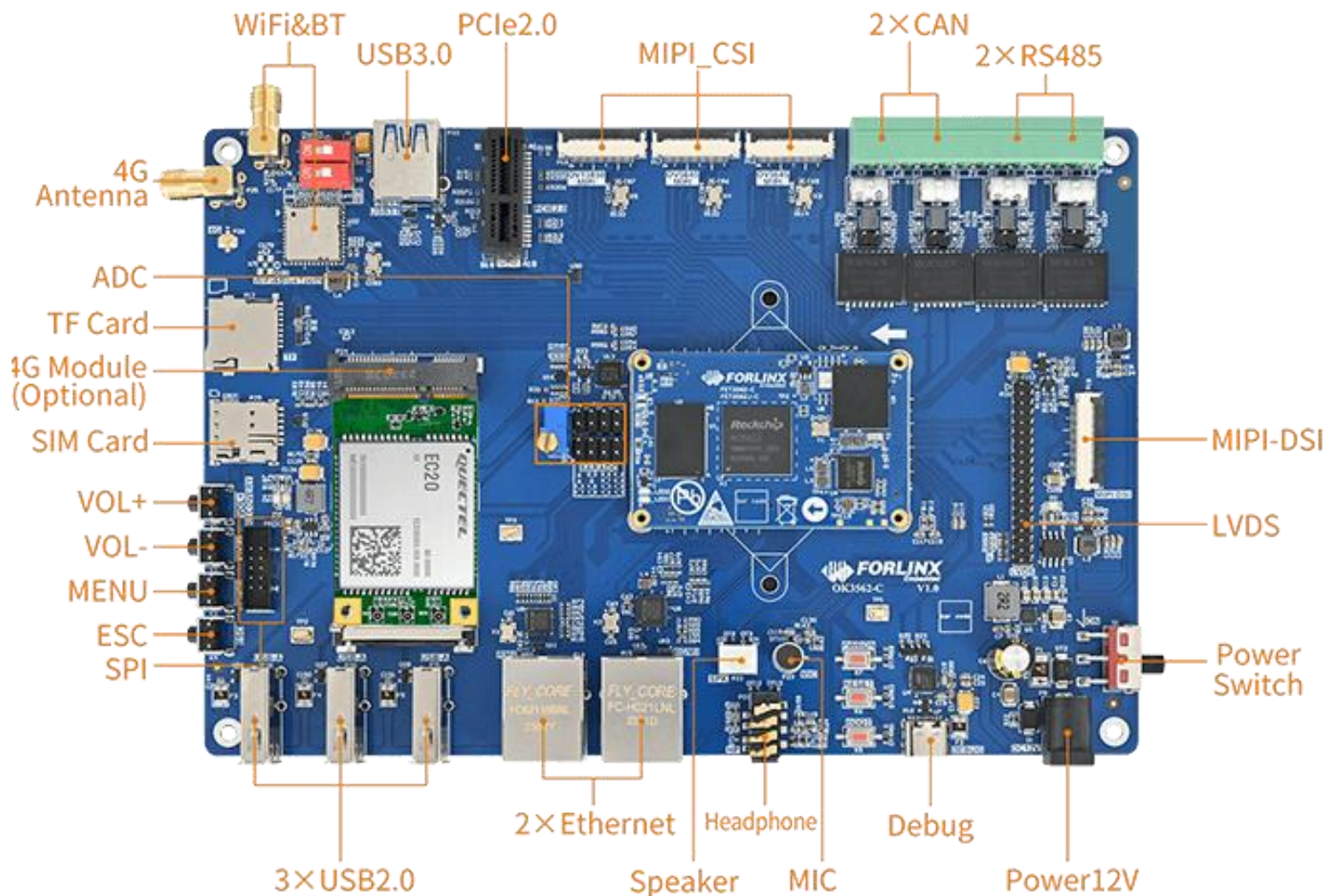
## Provided technical files

<b>Linux5.10.198</b>	User manual, compiling guideline, kernel source code, file system, OS image, VM ubuntu image, flashing tool
<b>Hardware</b>	User manual, carrier board schematic, carrier board PCB(AD) source files, datasheet, carrier board and SoM DXF files, pinmux sheet

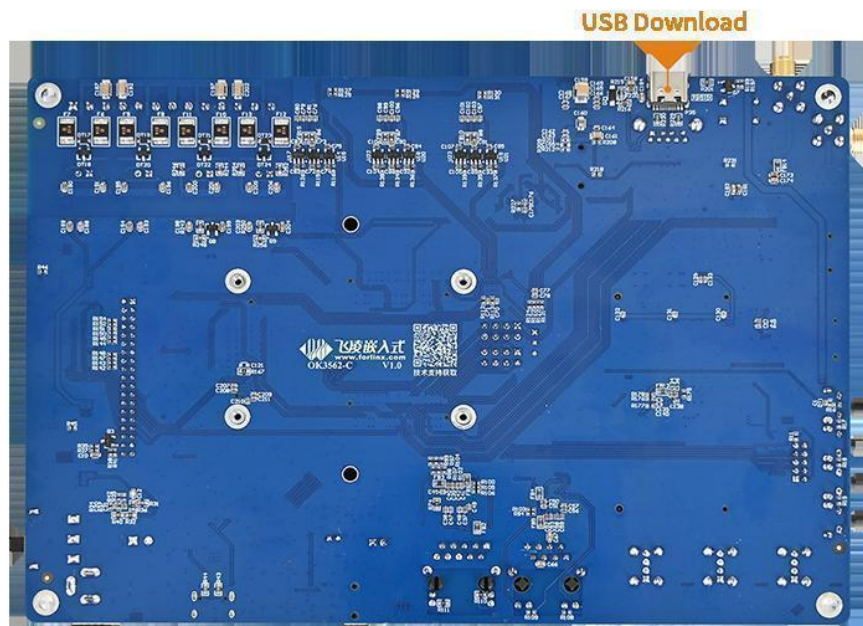
## Ordering options:

Model	Core number	CPU speed	RAM	Flash	Working temp	Status
FET3562J-C+181GSE8GIAxx: xx	4×A53	1.8GHz	1GB	8GB	-40°C~+85°C	Mass production
FET3562J-C+182GSE16GIBxx: xx	4×A53	1.8GHz	2GB	16GB	-40°C~+85°C	Mass production
FET3562J-C+184GSE32GIxxx: xx	4×A53	1.8GHz	4GB	32GB	-40°C~+85°C	Scheduled
FET3562-C+201GSE8GCxxx: xx	4×A53	2.0GHz	1GB	8GB	0°C~+70°C	Scheduled
FET3562-C+202GSE32GCxxx: xx	4×A53	2.0GHz	2GB	16GB	0°C~+70°C	Scheduled
FET3562-C+204GSE32GCxxx: xx	4×A53	2.0GHz	4GB	32GB	0°C~+70°C	Scheduled

## Development board/ kit







## Carrier board features:

Interface	QTY	Spec.	
MIPI DSI	1	Supports 4 lanes output with capacitive TP, supports backlight brightness adjustment	Multiplexed and alternative
LVDS	1	4-lanes LVDS with capacitive TP, supports backlight brightness adjustment	
MIPI-CSI	3	FPC connector, 4lanes+2lanes+2lanes	
Audio	/	Mono speaker, class-D, 1.3W; stereo earphone output, 32Ohm ; earphone recording+ on-board MIC recording	
WiFi	1	A single antenna available for 2.4G&5GHz	
BT	1	Wi-Fi Dual-band 1×1 802.11ac+Bluetooth 4.2	
Ethernet	2	2x RJ45, one Gigabit Ethernet and one Fast Ethernet	
USB2.0	3	Pinned out by USB hub, only available for host mode	
USB3.0	1	Supports host/ slave mode switchable	
PCIe	1	PCIe2.1, only available for RC mode, can only support Mono, 5Gbps	
CAN	2	CAN2.0B, with galvanic isolation	
SPI	1	box header	
4G	1	4G module with mini PCIe slot, contains USB2.0 signal	
TF Card	1	Up to SDR104	
PWM	1	backlight control	
ADC	13	Pin headers, can be connected to a sliding rheostat to collect the voltage	
KEY ADC	4	One SARADC for 4 keys	
RTC	1	CR2032	
USER GPIO	1	Key input +LED output	
RS485	2	with galvanic isolation	UART9 is for both debug and RS485, it can be controlled by a switch
UART Debug	2	Integrated in one Type-C connector, can be connected to PC for debug operation	
JTAG Debug	1		

## ■ Power Consumption:

NO.	Testing	SoM		EVK(carrier board+ SoM)	
		Power input	Rate	Power input	Rate
1	No-loading startup peak rate	5V	1.7W	12V	2.8W
2	No-loading standby	5V	0.5W	12V	1.8W
3	CPU+GPU+RAM+eMMC stressing test	5V	2.2W	12V	3.2W
4	7" LCD+ 4G+ U-disk+ video decoding	5V	1.8W	12V	7.3W
5	SoM powered off	5V	0.7mW	/	/
6	SoM under sleeping mode	5V	97mW	/	/

