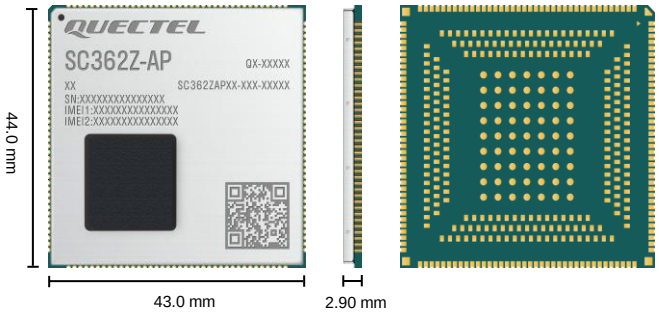
Quectel SC362Z-AP

Smart Module



SC362Z-AP is Quectel's next-generation smart module, featuring an embedded Linux/ Android/ OpenHarmony operating system. The module incorporates the Rockchip IoT SoC RK3562/ RK3562J, built around a high-performance quad-core ARM Cortex-A53 CPU and an ARM Mali-G52 GPU. With its 13-MegaPixel ISP supporting HDR, a 1-TOPS NPU, and support for external Wi-Fi and Bluetooth connectivity, the module is well-suited for industrial automation as well as consumer applications that demand high data throughput and advanced multimedia capabilities.

The SC362Z-AP module integrates a rich set of peripheral interfaces, including an LVDS/ RGB/ MIPI display interface, dual 1000 M/ 100 M Ethernet ports, multiple industrial serial interfaces, two USBs, one PCIe, and ten UARTs. With its integrated 4K video decoder, 1080P video encoder, 1-TOPS NPU, and comprehensive deep learning framework, the module is well-equipped to meet the demands for edge device localization in edge-computing-driven industrial control applications. Compatible with external Quectel modules, such as Cat 4/ 1 cellular, 5G, Wi-Fi 6, and GNSS, the module is highly suitable for M2M applications across a wide range of industries, including smart commercial displays, parcel lockers, electric power systems, vehicle center consoles, tablet PCs, industrial control terminals, and smart home solutions.

Key Features

- Quad-core ARM Cortex-A53 CPU
- ARM Mali G52 GPU
- 13 M ISP HDR
- 1 TOPS NPU
- 4K @ 60 fps video decoder
- 1080p @ 60 fps video encoder
- PCIe 2.1/ USB 3.0/ SD 3.0
- MIPI DSI 1.2/ LVDS/ RGB
- MIPI CSI 1.2
- Dual 1000 M/ 100 M ethernet ports

Quad-core ARM Cortex-A53 CPU

ARM Mali G52 GPU

Linux/ Android/ OpenHarmony*/ Debian*

PCI Express

Multimedia Processing Engine

Dual 1000 M/ 100 M Ethernet Ports

Version: 1.6 | Status: Released

Quectel SC362Z-AP

Module	SC362Z-AP	
Grade	Commercial-grade	Industrial-grade
CPU	RK3562, 4 × A53 @ 2.0 GHz	RK3562J, 4 × A53 @ 1.2 GHz
Memory	LP4/ LP4x, • 2 GB + 64 GB (Default) • 4 GB + 64 GB (Optional) • 1 GB + 8 GB (Optional)	LP4/ LP4x, • 2 GB + 16 GB (Default) • 4 GB + 32 GB (Optional) • 1 GB + 8 GB (Optional)
Temperature Range		
Operating Temperature	-25 °C ~ +75 °C	-40 °C ~ +85 °C
Electrical Features		
Power Consumption	• 3.09 mA (2 GB + 32 GB) @ sleep • 4.29 mA (4 GB + 32 GB) @ sleep	• 2.61 mA (2 GB + 16 GB) @ sleep • 3.24 mA (4 GB + 32 GB) @ sleep
Module	**General Features**	
Region/ Operator	Global	
NPU	1 TOPS	
OS	Linux (Kernel 5.10)/ Android 13/ OpenHarmony (5.0.3)*/ Debian*	
Dimensions (mm)	44.0 × 43.0 × 2.90	
Package	LCC + LGA	
Weight (g)	Approx. 11.6	
Certifications		
Regulatory/ conformance	CE/ RCM	
Interfaces		
LCM	• 1 × 4-lane MIPI DSI/ LVDS: – MIPI DSI 1.2: Max. (2048 × 1080) @ 60 Hz – LVDS: TIA/ EIA-644-A, Max. (1280 × 800) @ 60 Hz • 1 × RGB: RGB: Max. (2048 × 1080) @ 60 Hz • 1 × BT.656/ BT.1120: – BT.656: Max. 576 dpi – BT.1120: Max. 1080 dpi • Duplicate dual displays	
Camera	• 2 × 4-lane MIPI CSI, which can be divided into 4 × 2-lane MIPI CSI • Max. 2.5 Gbps/ lane, Max. 13 M pixels • DVP (BT.656/ 1120) analog camera*	
Audio	• Loudspeaker, earpiece (audio jack detection), analog microphone (× 1 differential, configurable as 2 single-ended inputs) and digital audio • **Encoder and decoder:** AAC/ APE/ MP3/ WMALOSSLESS/ WMAPRO/ WMAV1/ WMAV2/ ADPCM_TMA_QT/ VORBIS/ PCM_S16LE/ PCM_S24LE/ FLAC/ MP1/ MP2/ AMR_WB/ AMR_NB	
Video	• **Encoder:** H.264, Max. 1920 × 1080 @ 60 fps • **Decoder:** – H.264 AVC/ MVC Main Profile yuv400/ yuv420/ yuv422 @ L5.0, Max. 1920 × 1080 @ 60 fps – H.265 HEVC/ MVC Main Profile yuv420 @ L5.0, Max. 4096 × 2304 @ 30 fps	
USB	× 2, compliant with USB 3.0/ 2.0: • USB0: USB 2.0/ 3.0; USB OTG only (multiplexed with the pin of PCIe function) • USB1: USB 2.0; USB HOST only	
PCIe	× 1 • PCIe1: 1-lane, Gen 2 • RC mode only (multiplexed with the pin of USB 3.0 OTG function)	
RMII	Max. × 2	
RGMII	Max. × 1	
UART	Max. × 10 (max. × 6 operating concurrently)	
SD Card	× 1, SD 3.0	
SDIO	Max. × 2	
I2C	Max. × 5	
I2S	Max. × 3	
ADC	× 13, general-purpose ADC interfaces	
SPI	Max. × 3, both master and slave modes	
PWM	Max. × 16	
CAN	Max. × 2	
RTC	Supported	
Keypad	PWRKEY/ RESET_N/ VOL_UP/ BOOT/ VOL_DOWN	
GPIO	Max. × 86	
Electrical Features		
Supply Voltage Range	3.3–3.5 V, typ. 3.4 V	

NOTE:

*: Under development

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