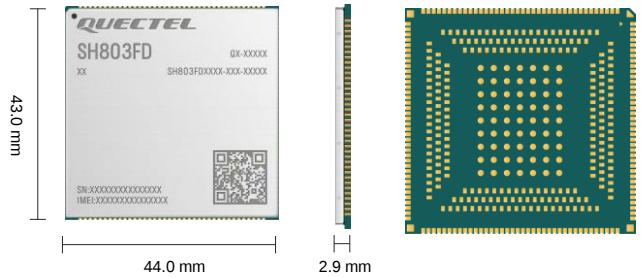


Quectel SH803FD Series

Smart Module with Wi-Fi & Bluetooth



The SH803FD series is a new generation of mid-to-high-end smart modules launched by Quectel. Based on the Genio G720 (MT8391) platform, which integrates an octa-core Cortex-A78 + A55 processor, built-in ARM Mali-G57 MC2 GPU, and runs Android 15*/Yocto Linux (Kernel 6.6)*/Ubuntu* operating systems, it supports Wi-Fi 6E 2 × 2 and Bluetooth 5.4. The NPU delivers up to 10.5 Tops of computing power, offering robust performance and rich multimedia capabilities, fully meeting customer demands for high-speed data rates, multimedia functionality, and long product lifecycles in industrial and consumer applications. The SH803FD series includes two variants: SH803FD-WF* (Wi-Fi 6_1 × 1/6E_2 × 2) and SH803FD-AP*.

The SH803FD series integrates a rich set of interfaces (such as LCM, camera, touch panel, microphone, 4 × UART, 5 × USB 3.0/2.0, 8 × I2C, 5 × SPI, RGMII, PCIe, etc.) and supports dual-screen independent display video output interfaces (MIPI(LVDS)/EDP/DP). This combination significantly expands their applications across fields including M2M, industrial rugged tablets, smart intercom recorders, edge computing devices, vending machines, logistics lockers, edge computing BOX, smart POS systems, aftermarket in-vehicle entertainment devices, digital signage, audio/video recorders, smart companion devices, and smart home systems.



Key Features

- ✓ Based on the Genio G720 (MT8391) platform, it features a high-performance Cortex-A78 + A55 processor
- ✓ ARM Mali-G57 MC2 GPU
- ✓ NPU up to 10.5 tops
- ✓ Features built-in LPDDR5X memory, supporting up to 16 GB DRAM
- ✓ Supports dual-screen independent display via MIPI(LVDS)/EDP/DP interfaces
- ✓ Supports up to 16 MP + 16 MP @ 30 fps camera
- ✓ 4K @ 60 fps video decoding
- ✓ 4K @ 30 fps video encoding
- ✓ PCIe 2.0/USB3.2/SD 3.0
- ✓ Wi-Fi 6E, 802.11 a/b/g/n/ac/ax
- ✓ RGMII, 10M/100M/1000M bps



cortex-A78 + A55
Processor (octa-core)



MTK
ARM Mali-G57 MC2 GPU



Android/ Ubuntu/
Yocto Linux (Kernel 6.6)/



Powerful Multimedia
Functions



IEEE 802.11
a/ b/ g/ n/ ac/ ax



Bluetooth 5.4
(BR/ EDR + BLE)

Quectel SH803FD Series

	SH803FD-WF*		SH803FD-AP*
Region/ Operator	Global		Global
CPU	Genio G720 (MT8391) 2 × A78 @ 2.6 GHz, 6 × A55 @ 2.0 GHz		Genio G720 (MT8391) 2 × A78 @ 2.6 GHz, 6 × A55 @ 2.0 GHz
NPU	10.5 Tops		10.5 Tops
Memory	4 GB LPDDR5X + 64 GB UFS (default) 8 GB LPDDR5X + 128 GB UFS (optional) 12 GB LPDDR5X + 256 GB UFS (optional)		4 GB LPDDR5X + 64 GB UFS (default) 8 GB LPDDR5X + 128 GB UFS (optional) 12 GB LPDDR5X + 256 GB UFS (optional)
OS	Android 15*/Yocto Linux* (Kernel 6.6)/ Ubuntu*		Android 15*/Yocto Linux* (Kernel 6.6)/ Ubuntu*
Dimensions (mm)	43 × 44 × 2.9		43 × 44 × 2.9
Package	LCC		LCC
Weight (g)	11.76		TBD
Temperature Range			
Operating Temperature	-35 °C to +75 °C		-35 °C to +75 °C
Frequency Bands			
LTE-FDD	-		-
LTE-TDD	-		-
WCDMA	-		-
GSM	-		-
WLAN	Wi-Fi 6E 2.4 & 5 & 6 Ghz, 802.11 a/b/g/n/ac/ax Wi-Fi 2 × 2	Wi-Fi 6 2.4 & 5 Ghz, 802.11 a/b/g/n/ac/ax Wi-Fi 1 × 1	-
Bluetooth	Bluetooth 5.4	Bluetooth 5.0	-
GNSS	-		-
Certifications			
Carrier	TBD		TBD
Regulatory/ Conformance	Europe: CE* America: FCC* Australia/New Zealand: RCM* Canada: IC*		Europe: CE* America: FCC* Australia/New Zealand: RCM* Canada: IC*
Others	RoHS/ REACH		RoHS/ REACH
Enhanced Features			
3GPP E-UTRA	-		-
Bandwidth	-		-
Rx-diversity	-		-
DL MIMO 2 × 2	-		-
(U)SIM Card Detection	-		-
DSDS	-		-
Firmware Upgrade via USB	●		●
Firmware Upgrade via OTA	●		●

Notes:

1. ●: Supported
2. *: Under development/ in progress/ planning
3. ①: TBD

Quectel SH803FD Series

General Features	
Interfaces	
LCM	4-lane MIPI DSI, 4-lane eDP, 4-lane DP(multiplexed from USB 3.0), 4-lane LVDS(multiplexed from DSI) Single-screen display: resolution and frame rate up to 5120 × 2160 @ 60 fps or 3840 × 2160 @ 60 fps, 2560 × 1600 @ 120 fps Dual monitors: resolution and frame rate up to 2560 × 1600 @ 60 fps
Camera	2 × 4-lane MIPI CSI, up to 2.5 Gbps/ lane Supports 2 cameras, dual ISP, up to 16 MP + 16 MP @ 30 fps camera
Touch Panel	Capacitive touch panel, controlled by I2C
Audio	3 analog input: MIC0, MIC1 (earpiece), MIC2 3 analog output: Line-out, earpiece, headphone
Video	Decode: 4K @ 60 fps; H.265/H.264/VP9 Encode: 4K @ 30 fps; H.265/H.264
USB	× 5 USB 0 complies with USB 3.2 Gen 1 specifications and supports USB OTG USB 1 complies with the USB 2.0 specification and only supports HOST USB 2 complies with the USB 2.0 specification and only supports HOST USB 3 complies with the USB 3.2 Gen 1 specification and only supports HOST USB 4 complies with the USB 2.0 specification and only supports HOST
UART	× 4 Debug UART: 2-wire UART, dedicated for debugging UART1: 2-wire UART UART2: 4-wire UART, supports RTS and CTS hardware flow control UART3: 4-wire UART, supports RTS and CTS hardware flow control
PCIe	× 1, Gen 2, 1-lane
SD Card	× 1, SD 3.0, supports 4-bit SDIO
SDIO	× 1, SDIO 3.0, supports 4-bit SDIO
ADC	× 4, general-purpose ADC interface
PCM	× 1
RGMII	× 1, 10M/100M/1000M bps
DMIC	× 2
I2C ^①	× 8 (Multiplexed)
I2S ^①	× 2 (Multiplexed)
SPI ^①	× 5 (Multiplexed)
PWRKEY	3.55–4.4 V, pull it down to power on
GPIO ^①	× 104
Antenna	Wi-Fi & Bluetooth antennas
Electrical Features	
Supply Voltage Range	3.55–4.4 V, typ. 3.8 V
Power Consumption (Typ.)	TBD

Notes:

- ①: SPI, I2C, I2S and GPIO outputs are multiplexed. Let us know if you need to customize them. We will assist you in customizing the software needed.
- *: Under development/ in progress/ planning