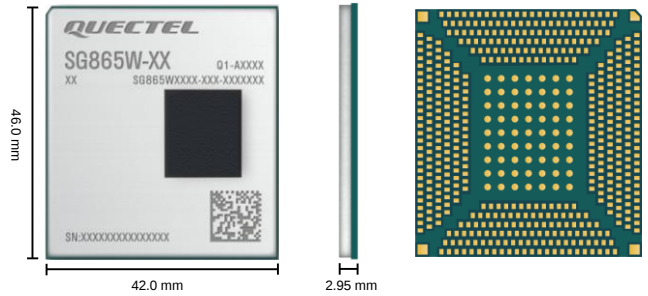


Quectel SG865W-WF

Smart Module with Wi-Fi & Bluetooth



SG865W-WF is Quectel’s new generation of flagship Android Smart module. Based on Qualcomm's flagship IoT chipset QCS8250 with built-in octa-core high-performance Kryo™ 585 CPU, Adreno™ 650 GPU, Adreno 995 DPU, Adreno 665 VPU, Hexagon™ DSP, and Spectra™ 480 ISP, the module supports Wi-Fi 6, Bluetooth 5.1 and 2 × 2 Wi-Fi MIMO technology. Featuring powerful performance and rich multimedia functions, it is ideal for both industrial and consumer applications requiring high computing power and multimedia functions.

A rich set of interfaces (such as LCM, Camera, Touch Panel, I2S, PCIe, UART, USB, I2C, SPI, etc.) extend the applicability of the module to a wide range of M2M applications, including video conference systems, live streaming devices, gaming, edge computing, robots, AR/VR, intelligent retail and smart safety.



Key Features

- ✓ Kryo™ 585 CPU
- ✓ Adreno™ 650 GPU
- ✓ Hexagon™ DSP + 4 × Hexagon Vector eXtensions (HVX)
- ✓ Spectra™ 480 ISP
- ✓ Adreno 665 VPU
- ✓ Adreno 995 DPU
- ✓ Neural processing unit (NPU230)
- ✓ Security processing unit (SPU240)
- ✓ IEEE 802.11ax, 2 × 2 Wi-Fi MIMO
- ✓ Bluetooth 5.1
- ✓ Video encoder: 4K @ 120 fps; 8K @ 30 fps
Video decoder: 4K @ 240 fps; 8K @ 60 fps
- ✓ Computing power of up to 15 TOPS



Qualcomm
Kryo™ 585
CPU (Octa-core)



Qualcomm
Adreno™ 650
GPU



Android 10/ Android 13/
Ubuntu 18.04



PCIe Interface



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



Bluetooth 5.1
(BR/ EDR + BLE)



VPU Multimedia
Processing Engine

Quectel SG865W-WF

Wi-Fi & Bluetooth		SG865W-WF
Region/Operator	Global	
OS	Android 10/ Andriod 13/ Ubuntu 18.04	
Memory	64 GB UFS + 8 GB LPDDR5 (Default) 256 GB UFS + 12 GB LPDDR5 (Optional)	
Dimensions (mm)	46.0 × 42.0 × 2.95	
Package	LGA	
Weight (g)	Approx. 14 g	
Temperature Range		
Operating Temperature	-35 °C to 75 °C	
Frequency Bands		
WLAN	2.4 & 5 GHz, Wi-Fi 6, 802.11a/ b/ g/ n/ ac/ ax, 2 × 2 Wi-Fi MIMO	
Bluetooth	Bluetooth 5.1 (BR/ EDR + BLE)	
Certifications		
Carrier	Not supported	
Regulatory	CE/ FCC/ IC/ KC	
Others	RoHS	
General Features		
Supply Voltage Range	3.55–4.4 V, typ. 3.8 V	
Power Consumption (Typical)	200 µA @ power off; 7 mA @ sleep mode	
Interfaces		
Display	2 × 4-lane MIPI DSI 5040 × 2160 @ 60 fps (8 lanes) (2560 × 1600 @ 60 fps) × 2 (4 lanes + 4 lanes) 4K @ 60 fps Miracast DisplayPort v1.4 over Type-C	
Camera	6 × 4-lane MIPI CSI 2 × Full ISP + 2 × Lite ISP 2 × Front-end input: 25 MP (4:3 aspect ratio) or 18 MP (16:9 aspect ratio) 2 × Front-end input: Mono/YUV interface Max. 64 MP @ 30 fps ZSL @ 2 × ISP	
Audio	SWR, Digital Microphone, MI2S interfaces	
Video	Encoder: 4K @ 120 fps; 8K @ 30 fps Decoder: 4K @ 240 fps; 8K @ 60 fps H.264 High Profile, H.265 Main 10 Profile,VP8, HDR 10-bit video playback (HLG, HDR10), HDR 10-bit capture (HLG)	
USB	× 2, both are USB 3.1/2.0 compliant - USB0 supports USB OTG and DisplayPort v1.4 - USB1 only supports USB host mode	
PCIe	× 2 - PCIe1: 2-lane, Gen 3 - PCIe2: 2-lane, Gen 3	
UART	× 4	
Vibrator Drive	× 1, for ERM/LRA vibrator	
SD Card	× 1, SD 3.0	
I2C	× 9	
I2S	× 3	
Flashlight	3 high-current flash LED drivers, which support both flash and torch modes - Up to 1.5 A in total for FLASH_LED1/FLASH_LED2 in flash mode - Up to 0.75 A for FLASH_LED3 in flash mode	
ADC	× 4, general-purpose ADC interfaces	
SPI	× 5, only supports master mode	
Charging Management	Supports battery voltage detection, fuel gauge, battery temperature detection	
Real Time Clock	Supported	
PWRKEY	Internally pulled up	
GPIO	× 16	
Antenna	× 2, Wi-Fi/Bluetooth and Wi-Fi MIMO antenna interfaces	

