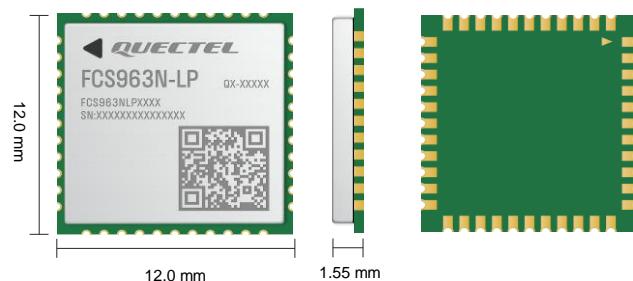


Quectel FCS963N-LP

Wi-Fi 6E & Bluetooth 5.4 Module
2.4/ 5/ 6 GHz Wi-Fi Bands
1 × 1 SISO



FCS963N-LP is a highly integrated industrial-grade module that supports Wi-Fi 6E and Bluetooth 5.4. The module supports 2.4 GHz, 5 GHz and 6 GHz Wi-Fi bands and 1 × 1 SISO. In addition, it can support Bluetooth LE Audio and BLE long-range.

With an ultra-compact size of 12.0 mm × 12.0 mm × 1.55 mm, the module optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface-mount technology (SMT) makes the module an ideal solution for durable and rugged designs. The low profile and small size of LCC package ensure that the module can be easily embedded into size-constrained applications and provide reliable connectivity with these applications.

FCS963N-LP is designed for IoT applications to improve network efficiency, expand IoT applications, and save energy. The module is particularly suitable for low-speed transmission scenarios to meet the different needs of IoT and IIoT applications, such as network cameras, video doorbells, smart homes, smart glasses, smart locks, smart speakers, smart lighting, and home appliances.



Key Features

- ✓ 2.4 GHz/5 GHz/6 GHz Wi-Fi bands
- ✓ Bluetooth 5.4
- ✓ Supports Bluetooth LE Audio and BLE Long Range
- ✓ SDIO 3.0 interface with lower power consumption
- ✓ Wide operating temperature: -40 °C to +85 °C



Bluetooth 5.4



Low Power Consumption



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



SDIO 3.0 Interface



Operating Temperature Range: -40 °C to +85 °C



Ultra-compact Size

Quectel FCS963N-LP

Wi-Fi 6E & Bluetooth 5.4	FCS963N-LP
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax
Wi-Fi Frequency Band	2.4 GHz/5 GHz/6 GHz
Wi-Fi Antenna	1 × 1
Wi-Fi Modulation Mode	DSSS/CCK/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM/1024QAM
2.4 GHz Channel Bandwidth	20 MHz
5 GHz Channel Bandwidth	20 MHz
6 GHz Channel Bandwidth	20 MHz
Encryption Mode	WPA3
Wi-Fi Operating Mode	AP/STA
Bluetooth Protocol	Bluetooth 5.4
Dimensions	12.0 mm × 12.0 mm × 1.55 mm
Weight	Approx. 0.5 g
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Max. Physical Rate	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	72.2 Mbps
802.11ac	86.7 Mbps
802.11ax	143.4 Mbps
Interfaces	
SDIO 3.0/GSPI	× 1 (for Wi-Fi)
UART	× 1 (for Bluetooth)
PCM	× 1 (for Bluetooth Audio)
Wi-Fi/Bluetooth Antenna	× 1
Electrical Features	
Power Supply Voltage	VBAT: 3.0–4.8 V ^① , Typ. 3.3 V VDD_IO: 1.62–1.98 V, Typ. 1.8 V
Power Consumption	Max. current at TX mode: 148.65 mA @ VBAT 3.11 mA @ VDD_IO
Certifications	
Regulatory (Planning)	Europe: CE America: FCC Canada: IC China: SRRC Australia/New Zealand: RCM

NOTE:

①: Functionality is guaranteed within this supply voltage range. Optimum RF performance is only guaranteed in the 3.13–3.6 V.

Quectel FCS963N-LP

Wi-Fi 6E & Bluetooth 5.4		FCS963N-LP		
Wi-Fi Performance		Transmit Power	Receiver Sensitivity	
2.4 GHz	802.11b/1 Mbps	19 dBm ±2 dB	-97 dBm ±2 dB	
	802.11b/11 Mbps	19 dBm ±2 dB	-89 dBm ±2 dB	
	802.11g/6 Mbps	18.5 dBm ±2 dB	-93 dBm ±2 dB	
	802.11g/54 Mbps	18 dBm ±2 dB	-76 dBm ±2 dB	
	802.11n/HT20 MCS 0	18 dBm ±2 dB	-93 dBm ±2 dB	
	802.11n/HT20 MCS 7	17 dBm ±2 dB	-75 dBm ±2 dB	
	802.11ax/HE20 MCS 0	18 dBm ±2 dB	-93 dBm ±2 dB	
	802.11ax/HE20 MCS 11	15 dBm ±2 dB	-63 dBm ±2 dB	
	802.11a/6 Mbps	17.5 dBm ±2 dB	-91 dBm ±2 dB	
5 GHz	802.11a/54 Mbps	16.5 dBm ±2 dB	-74 dBm ±2 dB	
	802.11n/HT20 MCS 0	17.5 dBm ±2 dB	-91 dBm ±2 dB	
	802.11n/HT20 MCS 7	15 dBm ±2 dB	-74 dBm ±2 dB	
	802.11ac/VHT20 MCS 0	17.5 dBm ±2 dB	-91 dBm ±2 dB	
	802.11ac/VHT20 MCS 8	14 dBm ±2 dB	-68 dBm ±2 dB	
	802.11ax/HE20 MCS 0	17.5 dBm ±2 dB	-91 dBm ±2 dB	
	802.11ax/HE20 MCS 11	13 dBm ±2 dB	-60 dBm ±2 dB	
	802.11a/6 Mbps	15 dBm ±2 dB	-88 dBm ±2 dB	
	802.11a/54 Mbps	13.5 dBm ±2 dB	-71 dBm ±2 dB	
6 GHz	802.11ax/HE20 MCS 0	15 dBm ±2 dB	-88 dBm ±2 dB	
	802.11ax/HE20 MCS 11	10 dBm ±2 dB	-57 dBm ±2 dB	
Bluetooth Performance		Transmit Power	Receiver Sensitivity	
BR (GFSK)		7.5 dBm ±3.5 dB	-91 dBm ±3.5 dB	
EDR ($\pi/4$-DQPSK)		5 dBm ±3.5 dB	-87 dBm ±3.5 dB	
EDR (8-DPSK)		5 dBm ±3.5 dB	-87 dBm ±3.5 dB	
BLE (1 Mbps)		7.5 dBm ±3.5 dB	-94 dBm ±3.5 dB	
BLE (2 Mbps)		7.5 dBm ±3.5 dB	-92 dBm ±3.5 dB	
Model	Ordering Code	Antenna	DBS	Development Board (Only for Debugging)
FCS963N-LP	FCS963NLPAAMD	One antenna	-	FCS963NLPAAM2