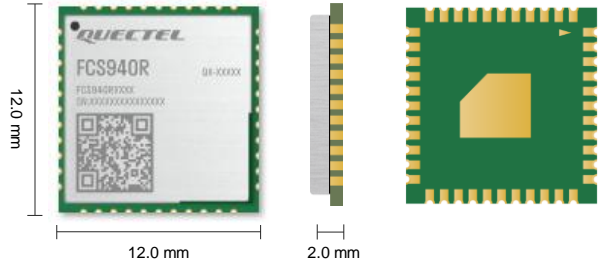


Quectel FCS940R

Wi-Fi 4 & Bluetooth 5.0 Module

Ultra-compact LCC Package



FCS940R is a high-performance 2.4 GHz Wi-Fi 4 and Bluetooth 5.0 module in LCC package with an ultra-compact form factor of 12.0 mm × 12.0 mm × 2.0 mm. It enables seamless WLAN and Bluetooth connectivity and is designed to optimize end-product size and cost. It incorporates reliable SDIO 2.0 and HS-UART interfaces to provide robust WLAN capability.

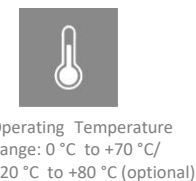
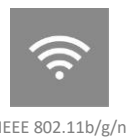
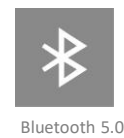
FCS940R is a Bluetooth 5.0 compliant module that supports dual mode (BR/EDR + Bluetooth Low Energy). It enables scatternet topology and active links in both slave and master modes for BR/EDR. In Bluetooth Low Energy mode, it supports multiple functions, such as monitoring, broadcasting, scanning, and allows active links in master mode. Therefore, this module offers a comprehensive solution for high throughput performance in wireless LAN and Bluetooth applications.

Surface-mount technology (SMT) makes FCS940R an ideal solution for durable and rugged designs. The low profile and compact size of LCC package enable seamless integration into size-constrained applications, ensuring reliable connectivity. The advanced package design, combined with a laser-engraved label, improved heat dissipation and indelible markings allow for large-scale automated manufacturing, meeting stringent cost and efficiency requirements.



Key Features

- ✓ Single band (2.4 GHz) Wi-Fi and Bluetooth 5.0
- ✓ SDIO 2.0 interface that supports higher data transmission rate and enables lower power consumption
- ✓ Faster time-to-market: simple design minimizes design-in time and development efforts
- ✓ Wide operating temperature range:
0 °C to +70 °C/-20 °C to +80 °C (optional)



Quectel FCS940R

Wi-Fi 4 & Bluetooth 5.0		FCS940R
WLAN Protocol	IEEE 802.11b/g/n	
Wi-Fi Frequency Band	2.4 GHz	
Wi-Fi Antenna	1 × 1	
Wi-Fi Modulation Mode	OFDM/CCK/BPSK/QPSK/16QAM/64QAM	
2.4 GHz Channel Bandwidth	20 MHz/40 MHz	
Encryption Mode	WPA3	
Operating Mode	AP/STA	
Bluetooth Protocol	Bluetooth 5.0	
Dimension	12.0 mm × 12.0 mm × 2.0 mm	
Weight	Approx. 0.53 g	
Temperature Range		
Operating Temperature	0 °C to +70 °C/-20 °C to +80 °C (Optional)	
Storage Temperature	-40 °C to +95 °C	
Data Rate (Max.)		
802.11b	11 Mbps	
802.11g	54 Mbps	
802.11n	150 Mbps	
Interfaces		
SDIO 2.0	× 1 (for Wi-Fi)	
UART	× 1 (for Bluetooth)	
PCM	× 1 (for Bluetooth)	
Special Pins	WLAN_EN, BT_EN, BT_WAKE_HOST	
Wi-Fi/Bluetooth Antenna	× 1 (Wi-Fi and Bluetooth share an antenna)	
Electrical Features		
Power Supply Voltage	VBAT: 3.0–3.6 V, Typ. 3.3 V	
I/O Power Supply Voltage	VDDIO: 1.62–3.6 V, Typ. 1.8/3.3 V	
Power Consumption (Typ.)	Max. current at Tx mode: 364.6 mA @ VBAT 26.6 mA @ VDDIO	
Certification		
Regulatory	Europe: CE America: FCC China: SRRC Canada: IC Australia/New Zealand: RCM Japan: JATE/TELEC* South Korea: KC*	

NOTE:

*: planning.

Quectel FCS940R

Wi-Fi 4 & Bluetooth 5.0

FCS940R

Wi-Fi Performance

	Receiver Sensitivity (Typ.)	Transmit Power (Typ.)	
2.4 GHz	802.11b/1 Mbps	-93 dBm	17 dBm
	802.11b/11 Mbps	-87 dBm	17 dBm
	802.11g/6 Mbps	-91 dBm	17 dBm
	802.11g/54 Mbps	-73 dBm	15 dBm
	802.11n/HT20 MCS 0	-90 dBm	16 dBm
	802.11n/HT20 MCS 7	-71 dBm	14 dBm
	802.11n/HT40 MCS 0	-87 dBm	16 dBm
	802.11n/HT40 MCS 7	-68 dBm	14 dBm

Bluetooth Performance

	Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
BR	-91 dBm	4 dBm
EDR ($\pi/4$ -DQPSK)	-91 dBm	4 dBm
EDR (8-DPSK)	-86 dBm	4 dBm
BLE	-94 dBm	4 dBm

Model	Ordering Code	Antenna	Operating Temperature	Development Board (for debugging)
FCS940R	FCS940RAAMD	One antenna	0 °C to +70 °C	FCS940RAAM2
FCS940R	FCS940RABMD	One antenna	-20 °C to +80 °C	FCS940RABM2