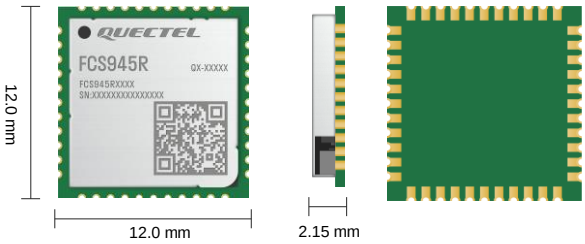
Quectel FCS945R

Wi-Fi 4 & Bluetooth 5.2 Module
Ultra-compact LCC Package



FCS945R is a high-performance Wi-Fi 4 and Bluetooth 5.2 module launched by Quectel, which can be used for WLAN and Bluetooth connections. In IEEE 802.11n mode, it delivers maximum data rate up to 150 Mbps.

FCS945R is in a LCC form factor with an ultra-compact package size of 12.0 mm × 12.0 mm × 2.15 mm, and it can optimize the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface-mount Technology (SMT) makes FCS945R an ideal solution for durable and rugged designs. The low profile and small size of LCC package ensure that FCS945R can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package and the laser-engraved label with better heat dissipation and indelible markings allow for large-scale automated manufacturing that has strict requirements on cost and efficiency. Coupled with its compact size and wide operating temperature range, FCS945R can meet various needs of commercial applications.

Key Features

- Dual-band 2.4 GHz and 5 GHz Wi-Fi and Bluetooth 5.2
- SDIO 2.0 interface with higher data transmission rate and lower power consumption
- Supports IEEE 802.11a/b/g/n
- Faster time-to-market: simple design minimizes design-in time and development efforts
- Wide operating temperature range: -20 to +70 °C or -40 to +85 °C

Ultra-compact Size

Bluetooth 5.2

IEEE 802.11 a/b/g/n

SDIO

SDIO 2.0 Interface

Operating Temperature Range: -20 to +70 °C or -40 to +85 °C

LCC

LCC Package

Quectel FCS945R

Wi-Fi 4 & Bluetooth 5.2	FCS945R
WLAN Protocol	IEEE 802.11a/b/g/n
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz
Wi-Fi Antenna	1 × 1
Wi-Fi Modulation Mode	CCK/ BPSK/ QPSK/ DQPSK/ 16QAM/ 64QAM
2.4 GHz Channel Bandwidth	20 MHz/ 40 MHz
5 GHz Channel Bandwidth	20 MHz/ 40 MHz
Bluetooth Protocol	Bluetooth 5.2
Encryption Mode	WPA3
Wi-Fi Operating Mode	AP/ STA/ AP + STA
Dimensions	12.0 mm × 12.0 mm × 2.15 mm
Weight	Approx. 0.62 g
Temperature Range	
Operating Temperature	-20 to +70 °C or -40 to +85 °C (Optional)
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	150 Mbps
Interfaces	
PCM	× 1 (For Bluetooth)
SDIO 2.0	× 1 (For Wi-Fi)
UART	× 1 (For Bluetooth)
Wi-Fi Antenna Interface	× 1 (ANT_WIFI/BT)
Bluetooth Antenna Interface	× 1 (ANT_BT) (Optional)
Electrical Features	
Power Supply Voltage	VBAT: 3.0–3.6 V, Typ. 3.3 V
I/O Supply Voltage	VDD_IO: ● 1.62–1.98 V, Typ. 1.8 V ● 3.0–3.6 V, Typ. 3.3 V
Power Consumption	Max. current at Tx mode: 335 mA @ VBAT 10 mA @ VDD_IO
Certifications	
Regulatory	**Europe:** CE **America:** FCC **China:** SRRC **Canada:** IC **Australia/New Zealand:** RCM **Japan:** JATE*/ TELEC* **South Korea**: KC*

NOTE:

*: Planning.

Copyright © 2024 Quectel Wireless Solutions Co., Ltd. All Rights Reserved http://www.quectel.com
HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 51086236 Email: info@quectel.com

Quectel FCS945R

Wi-Fi 4 & Bluetooth 5.2		FCS945R	
Wi-Fi Performance			
		Receiver Sensitivity (Typ.)	**Transmit Power (Typ.)**
2.4 GHz	**802.11b/1 Mbps**	-94 dBm	18 dBm
	802.11b/11 Mbps	-87 dBm	18 dBm
	802.11g/6 Mbps	-91 dBm	18 dBm
	802.11g/54 Mbps	-73 dBm	17 dBm
	802.11n/HT20 MCS 0	-91 dBm	17 dBm
	802.11n/HT20 MCS 7	-71 dBm	16 dBm
	802.11n/HT40 MCS 0	-90 dBm	17 dBm
	802.11n/HT40 MCS 7	-70 dBm	16 dBm
5 GHz	**802.11a/6 Mbps**	-90 dBm	18 dBm
	802.11a/54 Mbps	-72 dBm	17 dBm
	802.11n/HT20 MCS 0	-90 dBm	17 dBm
	802.11n/HT20 MCS 7	-71 dBm	16 dBm
	802.11n/HT40 MCS 0	-87 dBm	17 dBm
	802.11n/HT40 MCS 7	-68 dBm	16 dBm

Bluetooth Performance		
	Receiver Sensitivity (Typ.)	**Transmit Power (Typ.)**
BR	-93 dBm	5 dBm
EDR (π/4-DQPSK)	-87 dBm	5 dBm
EDR (8-DPSK)	-87 dBm	5 dBm
BLE (1 Mbps)	-99 dBm	5 dBm
BLE (2 Mbps)	-96 dBm	5 dBm
BLE (S = 2)	-102 dBm	5 dBm
BLE (S = 8)	-105 dBm	5 dBm

Model	Ordering Code	Antenna	Operating Temperature	Coexistence with Cellular Module	Development Board (Only for Debugging)
FCS945R	FCS945RAAMD	One antenna	-20 to +70 °C	-	FCS945RAAM2
FCS945R	FCS945RABMD	Two antennas	-20 to +70 °C	-	FCS945RABM2
FCS945R	FCS945RACMD	One antenna	-40 to +85 °C	-	FCS945RACM2
FCS945R	FCS945RADMD	Two antennas	-40 to +85 °C	-	FCS945RADM2

Copyright © 2024 Quectel Wireless Solutions Co., Ltd. All Rights Reserved http://www.quectel.com
HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 51086236 Email: info@quectel.com

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

QUECTEL:

EG25GGB-256-SGNS EG25GGD-256-SGNS EP06ALA-512-SGAD YC0010AA EC200UEUAC-N05-SNNSA EC200UEUAA-N05-MN0AA EC600NCNLA-N05-SNNSA FC66EAAMD FC900EABM2 LC86GLAMD YCGO014AA EC25JFA-MINIPCIE BC28FFA-04-STD EC20CEHDLG-MINIPCIE-CB EG21GGB-MINIPCIE EG915NLAAP-N06-SGNSA L86-M33 YF0007BA YSAN026EA YSAN028EA BG96MA-128-SGN EC25EUGA-512-SGNS EG91VXGA-128-SGNS LG69TAJMD UC200AGLAA-N06-SNNSA EC600UCNLC-N05-SNNSA2 BG95M2LATEA-64-SGNS EC21JFA-MINIPCIE FC21SDTEA-Q93 EC25JFA-512-STD