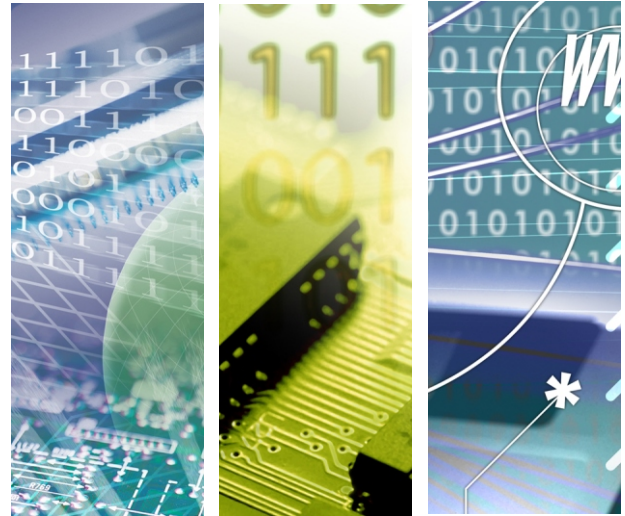




DGF307R

802.11AX/AC/abgn Wi-Fi with BT5.2 NGFF Card



DGF307R

802.11abgn/AC/AX+BT5.2/5.0, 2T2R, M.2(2230), Realtek RTL8852BE

Introduction of Products

Bointec DGF307R IEEE 802.11 a/b/g/n/ac/ax PCIE WIFI with Bluetooth 5.2 combo M.2 module is a highly integrated single-chip MIMO (Multiple In, Multiple Out) wireless local area network (WLAN) solution to let users enjoy the digital content through the latest wireless technology without using the extra cables and cords. It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in a single chip. It enables a high performance, cost effective, low power, compact solution that easily fits onto the PCI Express and USB M.2 module.

Bointec DGF307R baseband implements Multi-user Multiple Input, Multiple Output (MU-MIMO) Orthogonal Frequency Division Multiplexing (OFDM) with two transmit and two receive paths (2T2R). Features include two spatial stream transmissions, short Guard Interval (GI) of 400ns, spatial spreading, and support for variant channel bandwidth.

Moreover, Bointec DGF307R provides one spatial stream space-time block code (STBC), Transmit Beam forming (TXBF) and Low Density Parity Check (LDPC) to extend the range of transmission. At the receiver, extended range and good minimum sensitivity is achieved by having receiver diversity up to 2 antennas. As the recipient, DGF307R also supports explicit sounding packet feedback that helps senders with beam forming capability.

Product Highlight

Wi-Fi Feature:

- Support 802.11ax 2x2, Wave-2 compliant with MU-MIMO
- Complete 802.11n MIMO solution for 2.4GHz and 5GHz band
- Host Interface PCIe v2.1 Gen2.
- Multiple BSSID feature allows the RTL8852BE to assume multiple MAC identities when used as a wireless bridge

BT Feature:

- Compatible with Bluetooth v5.2
- Host Interface: USB 2.0
- Integrated 32K oscillator for power management



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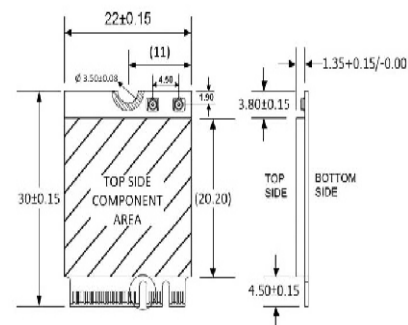
Specification

Data Rate	802.11b: 1, 2, 5.5, 11Mbps
	802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
	802.11n (HT20): MCS0~MCS7(1T1R SISO) 6.5~72.2Mbps;
	802.11n (HT20): MCS8~MCS15(2T2R MIMO) 13~144.4Mbps;
	802.11n (HT40): MCS0~MCS7(1T1R) 13.5~150Mbps;
	802.11n (HT40): MCS8~MCS15(2T2R) 27~300Mbps;
	802.11ax (HE MU, 26~242RU): MCS0~MCS11(1T1R) 0.4~143.4Mbps;
	802.11ax (HE MU, 26~242RU): MCS0~MCS11(2T2R) 0.8~286.8Mbps;
	802.11ax (HE SU, non-OFDMA 20MHz): MCS0~MCS11(1T1R) 3.6~143.4Mbps;
	802.11ax (HE SU, non-OFDMA 40MHz): MCS0~MCS11(1T1R) 7.3~286.8Mbps;
Media Access Control	802.11ax (HE SU, non-OFDMA 40MHz): MCS0~MCS11(2T2R) 14.6~573.5Mbps;
Modulation Techniques	SSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM for WLAN
Network Architecture	
Operation Channel	2.4GHz:
	USA, NORTH AMERICA, Canada and Taiwan – 1 ~ 11
	China, Australia, Most European Countries – 1 ~ 13
	Japan – 1 ~ 14(CH14 only for 802.11b)
	802.11g:
Frequency Range	USA, Canada and Taiwan – 1 ~ 11
	China, Australia, Most European Countries – 1 ~ 13
	5GHz:
Security	USA, EUROPE – 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165
	2.4 GHz : 2.412 ~ 2.484 GHz
Bluetooth	5 GHz: 4.915 ~ 5.925GHz
	WAPI
	WEP 64-bit and 128-bit encryption with H/W TKIP processing
	WPA/WPA2 (Wi-Fi Protected Access)
Standard	AES-CCMP hardware implementation as part of 802.11i security standard
Bluetooth	
Standard	Bluetooth 2.1+Enhanced Data Rate (EDR) + BT4.2+BT5.2
Bus Interface	USB2.0
Data Rate	Bluetooth 2.1+EDR data rates of 1.2, and 3Mbps
Modulation Scheme	GFSK (1Mbps), $\pi/4$ DQPSK (2Mbps) and 8DPSK (3Mbps)
Frequency Range	2402~2480MHz
Transmit Output Power	Class 2 : 0~6 dBm
Receiver Sensitivity	GFSK : -88 dBm (Typical)
	$\pi/4$ -DQPSK : -89 dBm (Typical)
	8-DPSK : -83 dBm (Typical)
Software	Bluetooth Suite
Electronics characteristics	
Operating Voltage	3.3 V
OS Supported	Microsoft Windows
Antenna Type	I-PEX MHF4 Connector Receptacle (20449)
	CH1 : Wi-Fi → TX/RX
	CH2 : Wi-Fi → TX/RX
	CH3: Bluetooth → TX/RX
Environmental	
Operating Temperature	Commercial: 0°C ~ +70°C
Storage Temperature	Commercial: -40°C ~ +85°C
Operating Humidity	Operating humidity: <85%
	storage humidity: <60%

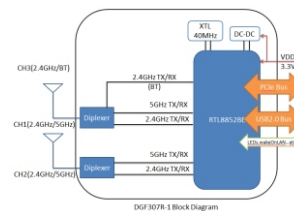
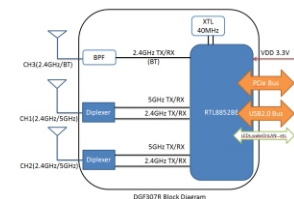
Product quick glance



ME Drawing/placement



Block Diagram



Ordering Information

PART NUMBER	DESCRIPTION
TFGA-DGF307R0-11	Finished non packaging, Bointec, DGF307R
TFGA-DGF307R1-11	Finished non packaging, Bointec, DGF307R-1



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