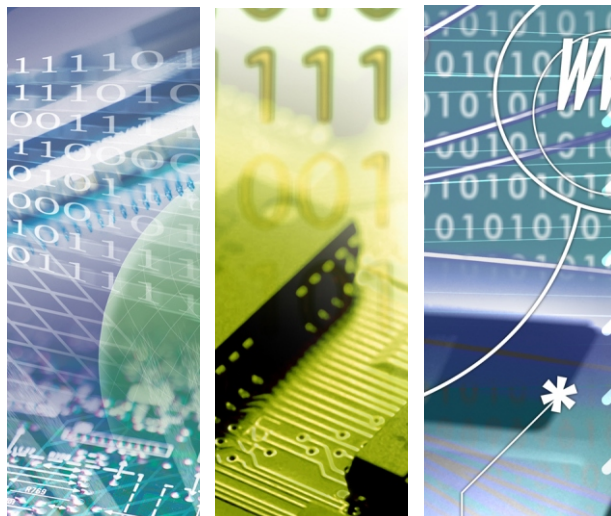




DPE307A

IEEE 802.11ABGN/AC/AX + BT5.2 Module



DPE307A

802.11abgn/ac/ax+BT5.2 ,2T2R, miniPCIe module

Introduction of Products

Bointec DPE307A is a 2.4GHz ISM Band, 5GHz and 6GHz UNII Band (dual band simultaneous, DBS), 802.11AX/AC/A/B/G/N WiFi + Bluetooth 2.1(+EDR)/3.0/4.0/4.1/4.2/5.0/5.1/5.2, NGFF(M.2) adapter. It adapts 2T2R (2 transmission stream and 2 receptive stream) on WiFi, 1T1R on Bluetooth technologies. With 802.11ax 160MHz bandwidth on 5/6GHz 1024QAM plus 80MHz bandwidth on 2.4GHz 1024QAM using DBS technology, its maximum throughput can reach 3600Mbps. It makes Bointec DPE307A allows you roaming at the speed of life with cutting-edge extreme fast speed.

Bointec DPE307A combines with Bluetooth 5.2 (backward Bluetooth standards are compatible), provides a complete 2.4GHz Bluetooth system. it supports EDR of 2Mbps and 3Mbps for data / audio communications. With Bluetooth 5, you are able to enjoy Bluetooth latest roaming feature.

DPE307A also equipped WLAN/Bluetooth coexistence feature to ensure wifi and Bluetooth co-existence wireless experience.

Product Highlight

Wi-Fi Features:

- Compliant with IEEE 802.11a/b/g/n/ac/ax (wifi 6E)
- Supports 2x2 Multi-User Multiple-Input Multiple-Output (MU-MIMO)
- Dual Band Simultaneous (DBS), up to 3 Gbps data rate (2x2+2x2 11ax DBS)
- Tri-band 2.4 GHz/5 GHz/6 GHz support
- 20 MHz/40 MHz channel bandwidth for 2.4 GHz and 20 MHz/40 MHz/80 MHz/160 MHz channel bandwidth for 5 GHz/6 GHz
- Seamless antenna sharing with Bluetooth, LTE, LTE-U, and 5G
- Dynamic Frequency Selection (DFS, radar detection)
- Offloading traffic for minimal host utilization at 802.11ac/ax speeds
- Low-power PCIe (with L1 substate) interface
- Integrated close-loop power detector

BT Features:

- Compliant with Bluetooth Milan and ANT+
- Supports 2 Mbps Bluetooth Low Energy (BLE), BLE Long Range
- Split ACL support for A2DP true stereo (earbuds)
- Dedicated Bluetooth antenna, sharing Bluetooth antenna with WLAN, and concurrent with 5G WLAN
- Dual eSCO and dual A2DP streams
- Supports class 1 and class 2 power-level transmissions without requiring an external PA (power amplifier)
- Backward-compatible with previous Bluetooth standards
- Flexible interface Slimbus/PCM/I2S for Bluetooth audio



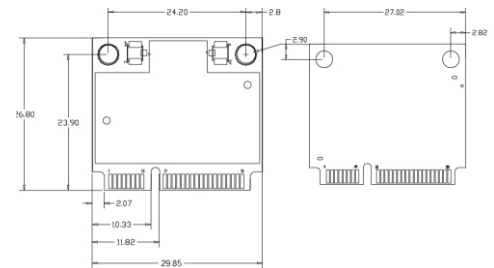
Specification

SPECIFICATIONS	
Bointec Model	DPE307A
Reference Design	Qualcomm® QCA2066-5 (board design: Qualcomm® 19732-103)
Form Factor Standard	half size miniPCI Express
RF Connector Type	U.FL connector (IPEX4;MHF4) * 2 (WiFi and Bluetooth) ;
WiFi Specification	
Standard	IEEE802.11ax, IEEE802.11ac(wave2), IEEE802.11a, IEEE802.11b, IEEE 802.11g, IEEE 802.11n
Frequency Range	6GHz UNII Bands: 802.11ax : 6 GHz ; 5GHz UNII Bands: 802.11a / ac / ax : 5.15~5.85 GHz ; 2.4GHz ISM Bands: 802.11ax : 2.412 ~ 2.4835 GHz ; 802.11bgn : 2.412 ~ 2.4835 GHz ;
Antenna Dispatch	2x MHF4, 2T2R
Bus Interface	PCI Express (PCIe 3.0/2.1/1)
Data Rate	802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps ; 802.11b: 11, 5.5, 2, 1 Mbps ; 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps ; 802.11n: MCS 0 to 15 for HT20/40MHz ; 802.11ac: MCS 0 to 8 for HT20MHz ; 802.11ac: MCS 0 to 9 for HT40/HT80/HE160MHz ; 802.11ax: MCS 0 to 11 for HE20MHz/HE40/HE80/HE160MHz ;
Media access control Mechanism	CSMA/CA (with ACK)
Modulation Techniques	802.11ax(5GHz): 1024QAM/OFDM, 256QAM/OFDM, 64QAM/OFDM, 16QAM, QPSK, BPSK ; 802.11ax(2.4GHz): 256QAM/OFDM, 64QAM, 16QAM, QPSK, BPSK ; 802.11ac(5GHz): 256QAM/OFDM, 64QAM/OFDM, 16QAM, QPSK, BPSK ; 802.11an(5GHz): 64QAM/OFDM, 16QAM, QPSK, BPSK ; 802.11gn(2.4GHz): 64QAM/OFDM, 16QAM, QPSK, BPSK ; 802.11a(5GHz): 64QAM/OFDM, 16QAM, QPSK, BPSK ; 802.11g(2.4GHz): 64QAM, 16QAM, QPSK, BPSK ; 802.11b(2.4GHz): DQPSK, DBPSK, CCK ;
Network Architecture	Ad-hoc/Wifi Direct mode (Peer-to-Peer) Infrastructure mode (Star Topology)
Dynamic Frequency Selection(DFS)	DFS Supported, In client mode
Operation Channel Number (at 5GHz)	29+41+17: (Ch. 36-64, Ch. 100-140, Ch.149-165) – United States ; 29+41+17: (Ch. 36-64, Ch. 100-140, Ch.149-165) – Europe ; 29+41+17: (Ch. 36-64, Ch. 100-140, Ch.149-165) – Japan ;
Operation Channel Number (at 2.4GHz)	11: (Ch. 1-11) – United States ; 13: (Ch. 1-13) – Europe ; 14: (Ch. 1-13) – Japan ;
Output Power(Tx)	Maximum: 19.5dbm @ 2.4GHz; (See Bointec Specification Document for detail) 16.5dbm @ 5GHz; (See Bointec Specification Document for detail)
Receiver Sensitivity (Rx)	Maximum: -95dbm @ 2.4GHz; (See Bointec Specification Document for detail) -92dbm @ 5GHz; (See Bointec Specification Document for detail)
Bluetooth Specification	
Bkuetooth Standard	Bluetooth 1~3 (BDR and EDR), Bluetooth 4.0~4.2 (LE and LE2), Bluetooth 5.0/5.2
Interface	USB 2.0
Class	Class1
Frequency Range	2.402~2.480 GHz
Modulation Scheme	GFSK, π/4-DQPSK, 8DPSK
Output Power(Tx)	BDR : 8dBm EDR : 6dBm BLE : 7dBm
Receiver Sensitivity (Rx)	-92dbm; (Check Bointec Specification Document for detail)
Receiver Sensitivity Maximum (Rx)	-20dbm; (Check Bointec Specification Document for detail)
Driver Specifications	
OS Supported	Windows: Win7/Win8/Win10/Win11 ; Linux (Open source and official driver);
General Specifications	
Power Consumption	3.3V (?? Watt (TBD))
Power Input(Maxmum)	4.5V
Power Consumption(Minimum)	3V,?Amp,?Watt
Electrostatic Discharge (ESD)	1.5KV(EID/JESD22-A114)
Damage Tolerance	250V(EIA/JESD22-C101)
Net Weight	??g(TBD)
Dimension	W22.0mm*L30.0mm*H2.0mm
Operating Temperature	-10° ~ +65°C (for DPE307A); -40° ~ +85°C (for DPE304A);
StorageTemperture	-40°C ~ +90°C
Operating Humidity	5%~95%, non-condensing;
Storage Humidity	5~95%, non-condensing;
Certifications	
Certifications	FCC (USA) IC (Canada) CE (European Union) NCC (Taiwan)

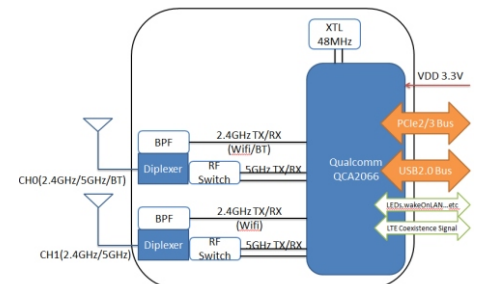
Product quick glance



ME Drawing/placement



Block diagram



Ordering Information

PART NUMBER	DESCRIPTION
TFGA-DPE307A-11	Finished good non packing Bointec, DPE307A (c-temp)
T-DPE307ADK	DPE307ADK development kit packed
TFGA-DPE304A-11	Finished good non packing Bointec, DPE304A (c-temp)

Bointec Authorized Distributer



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