DPE108R
IEEE 802.11abgn/AC + BT4.0 ,miniPCIe 1X1 Module

Bointec
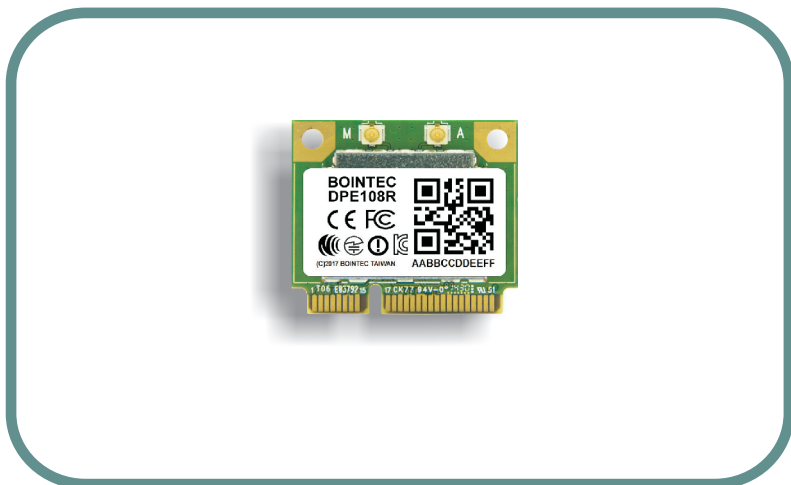
DPE108R

802.11abgn/AC , BT4.0, 1T1R, miniPCIe ,RTL8821AE
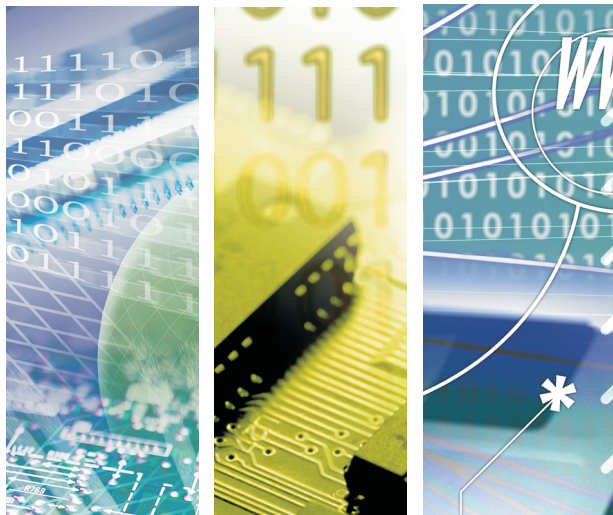
Introduction of Products

DPE108R is IEEE 802.11 a/b/g/n/ac PCIE WIFI with Bluetooth 4.0 and BT3.0+HS class I combo half mini card module .It is a highly integrated 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 with Bluetooth 4.0 and 3.0 + HS class I and provides a complete 2.4GHz Bluetooth system which is fully compliant to Bluetooth 4.0 and 3.0 + HS and v2.1 that supports EDR of 2Mbps and 3Mbps for data and audio communications.It enables a high performance, cost effective, low power, compact solution that easily fits onto the PCI Express and USB Combo half mini Card.

Compliant with the IEEE 802.11a/b/g/n/ac standard, DPE108R uses Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM), BPSK, QPSK, CCK and QAM baseband modulation technologies.

Product Highlight

- Main Chip:RTL8821AE

- Operating Frequencies :
  2.4~2.4835GHz and   5.15~5.85GHz

- Host Interface :WiFi:PCIe / BT:USB2.0

- Power Supply:3.3V±9%

- High speed wireless connection up to 433.3Mbps
  transmit/receive PHY rate using 80MHz bandwidth

- 2 antennas to support 1(Transmit)x1(Receive) diversity
  technology and Bluetooth

- WCS (Wireless Coexistence System)

- Low power consumption and high performance

- Support 802.11i (WPA/TKIP, WPA2/AES) and WAPI

- Fully qualified Bluetooth BT4.0 and BT3.0 + High speed
  system

- Enhanced Data Rate(EDR) compliant for both 2Mbps and
  3Mbps supported

- Fully speed operation with Piconet and Scatternet support
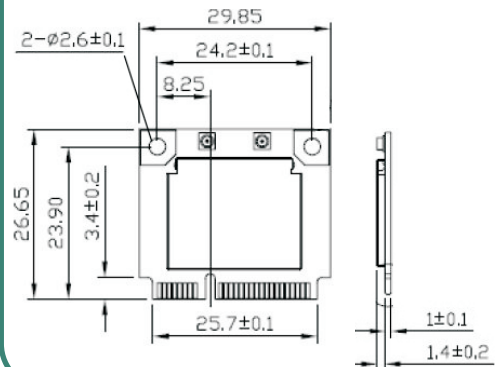
- Electrical compliant to USB1.1 & 2.0

BOINTEC WIFI DPE108R ENG v0.1

Product Description	
BlueTooth Standard	IEEE 802.11a/b/g/n/ac, Wi-Fi compliant / Bluetooth4.0 + 3.0 HS Standard
Host Interface	Wi-Fi : PCI-E / BT : USB
Major Chipset	RTL8821AE
Dimension	29.85mm x 26.65mm x 1.5 mm (Tolerance remarked in mechanical drawing)
Weight	3.28g
Antenna	Standard U.FL Connector 1: Ant1(Main): Wi-Fi Tx/Rx + BT 2: Ant2(Aux): Wi-Fi Tx/Rx + BT

Operating Conditions	
Voltage	3.3V +/- 9%
Temperature	0~70 ^{o}C
Storage temperature	-40~85°C

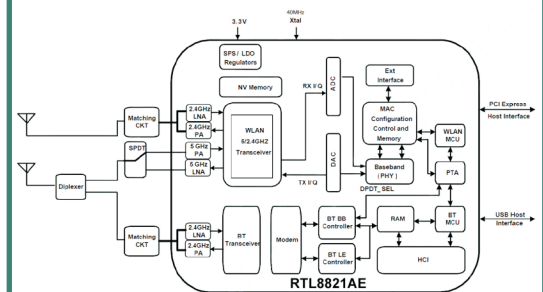| Electrical Specifications	
Frequency Range	Wi-Fi: 2.4 GHz ISM Bands 2.412-2.472 GHz 5.15-5.25 GHz (FCC UNII-low band) for US/Canada, Japan and Europe 5.25-5.35 GHz (FCC UNII-middle band) for US/Canada and Europe 5.47-5.725 GHz for Europe 5.725-5.825 GHz (FCC UNII-high band) for US/Canada BT: 2402MHz~2483MHz
Modulation	Wi-Fi: 802.11a/g/n/ac: OFDM 802.11b: CCK(11, 5.5Mbps), DQPSK(2Mbps), BPSK(1Mbps) BT: Header GFSK Payload 2M: 4-DQPSK Payload 3M: 8DPSK
TX Power	Wi-Fi: 8802.11a: 13 dBm +/- 2 dBm (54Mbps) 802.11b: 16 dBm +/- 2 dBm (11Mbps) 802.11g: 14 dBm +/- 2 dBm (54Mbps) 802.11n @2.4GHz: 13 dBm +/- 2 dBm (HT20 MCS7) 802.11n @2.4GHz: 13 dBm +/- 2dBm (HT40 MCS7) 802.11n @5GHz: 12 dBm +/- 2 dBm (HT20 MCS7) 802.11n @5GHz: 12 dBm +/- 2 dBm (HT40 MCS7) 802.11ac @5GHz: 12 dBm +/- 2 dBm (HT80 MCS7) 802.11ac @5GHz: 9 dBm +/- 2 dBm (HT80 MCS9) BT: 0 ? Output Power ? 8 dBm (Conductive)
RX Sensitivity	Wi-Fi: 802.11a: less than -65 dBm (54M) 802.11b: less than -76 dBm (11M) 802.11g: less than -65 dBm (54M) 802.11n@2.4GHz: less than -64 dBm (HT20 MCS7) 802.11n @2.4GHz: less than -61 dBm (HT40 MCS7) 802.11n@5GHz: less than -64 dBm (HT20 MCS7) 802.11n @5GHz: less than -61 dBm (HT40 MCS7) 802.11ac @5GHz: less than -51 dBm (VHT80 MCS9) BT: BER < 0.1% (Anritsu 8852B Tx -70 dBm)
Operating Range	Wi-Fi: Open Space: (300m) / Indoor:(100m) (The transmission speed may vary according to the environment) BT: 10m~20m (depending on environment and NB model)

Product quick glance

ME Drawing/placement

Block Diagram

RTL8821AE

Ordering Information

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