



CPE902A

Industrial grade 802.11 a/b/g/n mini PCI Express Card



CPE902A

2.4GHz industrial wireless LAN Access Point only choice

Introduction of Products

Bointec CPE902A included industrial grade chipset, is a single-chip, dual-band (2.4/5 GHz), 2-stream 11n solution. With PCIe interface, It packs the Atheros Signal-Sustain Technology (SST) technology that enhances rate-over-range performance. Features are enabled by 802.11n including LDPC, TxBF and MLD. Impressively increase in rate-over-range of ~+100% at short range, ~+50% at mid range and ~+25% at long range.

Bointec CPE902A consumes less power in every operation mode active TX, active RX, idle associated and sleep than other Atheros previous chipsets. It keeps the notebook and other computing platforms running much longer on a single battery-charge, while providing TCP throughput of more than 200 Mbps when used in 2x2 mode.

Bointec CPE902A is also optimized for Atheros Direct Connect™ P2P applications. With its Fast Channel Switch (FCS) feature, the channel switching time between the 2.4 GHz and 5 GHz bands is reduced from 10 ms to as little as 1 ms.

Product Highlight

- Industrial grade highly integrated Single-chip, 802.11n-certified wireless LAN client solution
- IEEE 802.11a/b/g/n compliant 2.4/5 GHz dual band
- Based on Atheros' fourth-generation 802.11n technology Fully Support 2-stream MIMO performance with data rate up to 300 Mbps
- PCI Express Half-Mini Card 1.2 compliant
- Compliant with IEEE 802.11b, 802.11g, 802.11d, 802.11e, 802.11i, and 802.11n
- Signal-Sustain Technology (SST) rate-over-range enhancements: LDPC, MLD, TxBF
- Conserves power with 1x1 downshift, using Dynamic MIMO Power Save
- Driver offering includes Linux, Windows 7 and Embedded XP
- Linux supplicant available for WPA/WPA2-PSK & 802.1x EAP
- Customer Driver development available
- IEEE 802.11e QOS support
- Lead-free RoHS compliant



Specification

Module (PCB-A)						
Dimensions	26.80(+/-0.1mm)* 29.85(+/-0.1mm) * 3.37(+/-0.1mm)					
Main Chip	Atheros® AR9592					
Host Interface	PCI Express® Mini Card Electromechanical Specification Revision 1.2.					
Operation voltage	3.3V +/- 5%					
Transfer data rate	802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps					
	802.11b: 1, 2, 5.5, 11Mbps					
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps					
	802.11n: @800GI(400GI) □ 20MHz BW					
RF connector	1 Nss: 65(72.2) Mbps maximal					
	2 Nss: 130(144.444) Mbps maximal □ 40MHz BW					
	1 Nss: 135(150) Mbps maximal					
	2 Nss: 270(300) Mbps maximal					
RF connector	2 x SMT Ultra-miniature coaxial connectors					
TX/RX	2T2R (2x2 with MCS 0-15)					
Electronics characteristics						
Operating Temperature	-40° ~ 85°C					
Storage Temperature	-40° ~ 105°C					
Power Consumption						
Transmit Power consumption @ 25°C	(mA)	802.11a	802.11b	802.11g	802.11n (2.4GHz)	802.11n (5GHz)
	100% TX duty	550	405	436	365	445
This can be treated as the peak current consumption during operation.						
Receive (typical)						
Sleep (typical)						

Radio Configuration & General Specifications

Center Frequency:

802.11a, na HT20: 5180 - 5825 MHz

802.11na HT40: 5190 - 5795 MHz

802.11b, g, ng HT20: 2412 - 2472 (Ch. 1 - 13)

802.11ng HT40: 2412 - 2462 (Ch. 3 - 11)

Channel Spacing:

802.11a, na HT20: 20 MHz

802.11b, g, ng HT20/HT40: 5 MHz

802.11na HT40: 40 MHz

Modulation Type:

802.11a, na OFDM (64QAM, 16QAM, QPSK, BPSK)

802.11b DSSS (CCK, DQPSK, DBPSK)

802.11g, ng DSSS-OFDM (64QAM, 16QAM, QPSK, BPSK)

Standard Compliance

Device Interfaces

- IEEE802.11a/b/g/n/e/h/i

- PCI Express Mini Card v1.2 (Single definitions: PCI Express v1.1)

Regulatory

- TELEC (Japan Radio Law Rule Article 2 Sect. 1 Number 19)

- Certifiable for FCC, IC, CE and other regulatory requirements*.

Driver Support

Bointec Linux Reference Driver:

- 802.11a/b/g/n supported

- Ad hoc, Infrastructure, Access Point mode

Bointec WPA Software:

- WPA Supplicant (Station) / WPA Authenticator (AP)

- Customized based on Open Source WPA supplicant / hostapd

- WPA - TKIP/AES - PSK/EAP (TLS/TTLS/PEAP/FAST)

- WPA2 - AES - PSK/EAP (TLS/TTLS/PEAP/FAST)

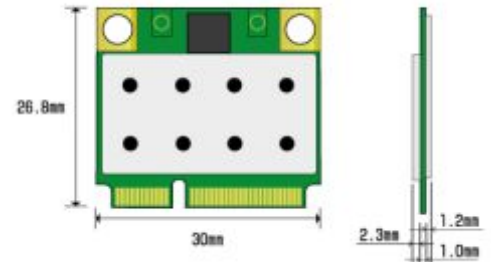
- IEEE 802.1X - WEP / None - EAP (TLS/TTLS/PEAP/FAST)

Windows Embedded (Windows XP/Windows 7)

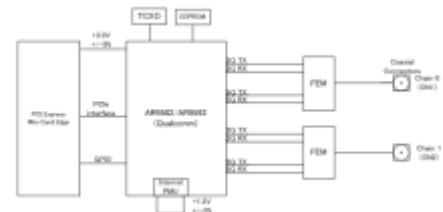
Product quick glance



ME Drawing/placement



Block diagram



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