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Data Sheet

XA-622H mPCI WLAN Module

802.11a (125mW) High Power Wireless LAN Module

Zcomax Technologies, Inc. has released its new line of Air Runner™ wireless High powered mini-PCI cards. The XA-622H is an 802.11a 54Mbps mini PCI module that has been designed with the integration market in mind. With its low profile external antenna connector and standard mini PCI form, the XA-622H will fit into any design that supports the mini-PCI form factor. The XA-622H is a high performance module that exceeds both IEEE 802.11a and FCC regulatory requirements.

The XA-622H's integrated high power amplifier helps to reduce overall the costs associated with wireless by eliminating the need for additional jumper cables and secondary amplifiers, while maintaining its overall quality. The XA-622H module is a robust plug and play ready device that has support for both windows and Linux operating systems.

With an excellent price / performance ratio and the field-proven reliability associated with the Atheros chipset, the XA-622H is a superb choice for any wireless application requiring enhanced connectivity and high output power.

XA-622H at a glance

- **802.11a compliant**
- **21 dBm Tx output Power**
- **-70 dBm @ 54Mbps Rx Sensitivity**
- **Hirose U.FL Antenna Connector**
- **32-bit mini-PCI Type III B Interface**
- **FCC and ROHS compliant**
- **MAC / Baseband - Atheros AR5213**
- **Radio - Atheros AR5112**
- **Driver support – Windows, Linux and customized drivers are available.**

ATHEROS® COMMUNICATIONS

RoHS Compliant

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Physical Specification:

Form Factor	32-bit Mini PCI Type IIIB
Dimensions (L x W x H)	59.6mm(L) * 44.5mm(W) * 3.25mm (H)
Weight	TBD

RF Specification:

Frequency Range (GHz)	North America:
	FCC: 5.15 ~ 5.25, 5.25~ 5.35
	FCC: 5.47 ~ 5.725. 5.725 ~ 5.825
	Japan TELEC: 5.15 ~ 5.25
	Europe ETSI: 5.15 ~ 5.35, 5.47 ~ 5.725
Frequency Drift	<25KHz
Transmitter Output Power 802.11a 54Mbps 48 Mbps 36 Mbps 6 Mbps	 19dBm ± 2dBm 20dBm ± 2dBm 21dBm ± 2dBm 21dBm ± 2dBm
Antenna Impedance	50 ohms
Media Access Protocol	CSMA/CA w/ACK
802.11a Data rates	54, 48, 36, 24,12,9,6 Mbps
Modulation	48/54 Mbps (QAM-64) 24/36 Mbps (QAM-16) 12/18 Mbps (QPSK) 6/9 Mbps (BPSK)
Receiver Sensitivity @ PER < 10% for 802.11a	54 / 48 Mbps: -70dBm / -71dBm
	36 / 24 Mbps: -75dBm / -79dBm
	18 / 12 Mbps: -82dBm / -84dBm
	9 / 6 Mbps: -86dBm / -87dBm

Electrical Specification:

Supply Voltage	3.3 Vdc, +/- 5%
Supply Voltage Ripple	120mV (pp) max.
Power-on startup time	<600 ms
Sleep-to-receive startup time	<75 ms
Power consumption	TX: <1000mA, RX: <400mA,

Antenna Connector Specification

Connector Type	Hirose U.FL 50Ω
Manufacturer	Hirose Electronic Co. Ltd.
Part Number	U.FL-R-SMT (CL331-0471-0-01)

Environmental

Working Temperature	0 ~ 55ºC, 95% relative humidity (non-condensing)
Storage Temperature	-20 ~ 80ºC, 95% relative humidity (non-condensing)

Absolute Maximum Rating

Stress above those listed in Absolute Maximum Rating may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in standard specifications is not implied.

Supply Voltage	3.7V
I/O Voltage	-0.5V ~ VCC+0.3V
Storage Temperature	-20 ~ +80ºC, 95% relative humidity (non-condensing)
Barometric Pressure	740 hPa ~ 1050 hPa

Performance

The range of a RF subsystem is determined by many different factors, including antenna design and cable loss, as well as connector selection. Typical ranges are given for PER < 10% (802.11a) and assume an adequate antenna design.

Open Space – 802.11a	80 meters @ 54 Mbps
Open Space – 802.11a	200 meters @ 24/18 Mbps
Open Space – 802.11a	240 meters @ 12/9/6 Mbps

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Storage Temperature	-20 ~ +80ºC, 95% relative humidity (non-condensing)
Barometric Pressure	740 hPa ~ 1050 hPa

Reliability

Mean Time To Failure is rated at 150,000 hours.

Interoperability

The XA-622H interoperates with any IEEE 802.11a compliant devices.

Security

The XA-622H supports WPA / WPA2 and IEEE 802.1X. Support will be equal to or greater than the latest Atheros supplied driver. See driver for full details.

Warranty

The XA-622H is supplied with a 12 month warrantee against manufacturing defects.