

### IEEE 802.11g (54Mbps) mini PCI Wireless LAN Module

Zcomax Technologies, Inc. has released its new line of Air Runner™ wireless LAN mini-PCI cards. The XG-623H+ is an IEEE 802.11g 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 XG-623H+ will fit into any design that supports the mini-PCI form factor. The XG-623H is a high performance module that exceeds both IEEE 802.11g and FCC regulatory requirements.



The XG-623H+'s reliable design helps to reduce overall costs associated with wireless integration by eliminating the need for debugging and driver support commonly associated with designing a product from the "ground up". The XG-623H+ 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 XG-623H+ is a superb choice for any wireless application requiring enhanced connectivity and reliability.

### XG-623H+ at a glance

- IEEE 802.11g compliant
- 24dBm Tx output Power
- -72Bm @ 54Mbps Rx Sensitivity
- 1 Hirose U.FL Antenna Connector
- 1 SMA Connector (primary)
- FCC and ROHS compliant
- Chipset – Atheros AR2413  
(Single Chip Design)
- Driver support – Windows, Linux and customized drivers are available.



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**Physical Specification:**

Form Factor	32-bit Mini PCI, Type III B
Dimensions (L x W x H)	59.6mm(L) * 44.5mm(W) * 2.7mm (H)
Weight	≤ 50 g

**RF Specification:**

Frequency Range (GHz)	North America:
	FCC: 2.412 ~ 2.462GHz (CH1 ~ CH 11)
	TELEC: 2.412~2.472GHz (CH1 ~ CH 13)
	ETSI: 2.412 ~ 2.472GHz (CH1 ~ CH 13)
Frequency Drift	<25KHz
Transmitter Output Power	
IEEE 802.11g 6Mbps	24dBm ± 1dBm
IEEE 802.11b 11 Mbps	23dBm ± 1dBm
Antenna Impedance	50 ohms
Media Access Protocol	CSMA/CA w/ACK
802.11g 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 802.11g	54 / 48 Mbps: ≤ -72dBm / -75dBm
	36 / 24 Mbps: ≤ -78dBm / -82dBm
	18 / 12 Mbps: ≤ -84dBm / -86dBm
	9 / 6 Mbps: ≤ -88dBm / -90dBm
Receiver Sensitivity  @ PER < 8% for 802.11b	11 / 5.5 Mbps: ≤ -87dBm / -88dBm
	2 / 1 Mbps: ≤ -90dBm / -92dBm

**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: < 1.5A, RX: < NA,

**Antenna Connector Specification**

Connector Type	1 x Hirose U.FL 50Ω
Manufacturer	Hirose Electronic Co. Ltd.
Part Number	U.FL-R-SMT (CL331-0471-0-01)

**Environmental**

Working Temperature	0 ~ 55°C, 90% relative humidity (non-condensing)
Storage Temperature	-20 ~ 80°C, 90% 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 ~ +80°C, 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% (802.11g) and assume an adequate antenna design.

Open Space – 802.11g	60 meters @ 54 Mbps
Open Space – 802.11g	120 meters @ 24/18 Mbps
Open Space – 802.11g	120 meters @ 12/9/6 Mbps
Open Space – 802.11b	80 meters @ 11 Mbps
Open Space – 802.11b	300 meters @ 1Mbps

### ***Security***

The XG-623H+ supports WPA / WPA2 and IEEE 802.1X. Support will be equal to or greater than the latest Atheros supplied driver.

### ***Reliability***

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

### ***Interoperability***

The XG-623H+ interoperates with any IEEE 802.11g compliant devices.

### ***Warranty***

The XG-623H+ is supplied with a 12 month warrantee against manufacturing defects.