

### 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
- 23dBm Tx output Power
- -74 dBm @ 54Mbps Rx Sensitivity
- 2 Hirose U.FL Antenna Connector
- 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	23dBm ± 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	54 / 48 Mbps: ≤ -74dBm / -77dBm
@ PER < 10% for 802.11g	36 / 24 Mbps: ≤ -83dBm / -86dBm
	18 / 12 Mbps: ≤ -90dBm / -91dBm
	9 / 6 Mbps: ≤ -93dBm / -94dBm
Receiver Sensitivity	11 / 5.5 Mbps: ≤ -92dBm / -95dBm
@ PER < 8% for 802.11b	2 / 1 Mbps: ≤ -96dBm / -97dBm

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

**Environmental**

Working Temperature	-20 ~ 75°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.