

IEEE 802.11g (54Mbps) USB Stick Module

Zcomax Technologies, Inc. has released its new line of Air Runner™ wireless USB Adapters. The XG-705A is an 802.11g 54Mbps USB stick module that has been designed with the integration market in mind. With an integrated antenna design and standard USB 2.0 form, the XG-705A will fit into any design that has a USB host interface. The XG-705A is a superior USB module that exceeds both IEEE 802.11g and FCC regulatory requirements.

The XG-705A's integrated antenna design helps to reduce overall costs associated with wireless by eliminating the need for additional jumper cables and antennas, while maintaining its overall quality. The XG-705A USB device is a robust plug and play ready module that supports all major Windows operating systems as well as Linux. Custom drivers for windows CE are also available upon request.

With an excellent price / performance ratio and field-proven reliability associated with the Conexant chipset, the XG-705A is a superb choice for any wireless application requiring enhanced connectivity and performance in the USB form.



XG-705A at a glance

- IEEE 802.11g compliant
- 16.5 dBm Tx output Power
- -65 dBm @54Mbps Rx Sensitivity
- Integrated Antenna
- USB 2.0 interface
- FCC and ROHS compliant
- MAC / Baseband – GW3887AIK
- Radio - ISL3686BIR
- Driver support – Windows, Linux



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Physical Specification:

Form Factor	USB 2.0
Dimensions (L x W x H)	84.57mm(L) * 12.58mm(W) * 27.45mm (H)
Weight	≤ 35g

RF Specification:

Frequency Range (GHz)	North America: 2.412 ~ 2.462
	Japan TELEC: 2.412 ~ 2.484 802.11b
	Japan TELEC: 2.412 ~ 2.472 802.11g
	Europe ETSI: 2.412 ~ 2.472
	Spain: 2.457 ~ 2.462
Frequency Drift	<25KHz
Transmitter Output Power	
802.11b	16.5 dBm (45mw) @1,2,5.5 and 11Mbps
802.11g	
54/48 Mbps	14 dBm (25 mw)
36/24 Mbps	16.5 dBm (45 mw)
18/12 Mbps	16.5 dBm (45 mw)
9/6 Mbps	16.5 dBm (45 mw)
Antenna Impedance	50 ohms
Media Access Protocol	CSMA/CA w/ACK
802.11b Data rates	11, 5.5, 2, 1 Mbps
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: -65dBm / -66dBm
	36 / 24 Mbps: -70dBm / -72dBm
@ PER < 10% for 802.11g	18 / 12 Mbps: -77dBm / -79dBm
	9 / 6 Mbps: -81dBm / -82dBm
@ PER < 8% for 802.11b	11 / 5.5Mbps: -80dBm / -83dBm
	2 / 1 Mbps: -84dBm / -87dBm

Electrical Specification:

Supply Voltage	5 Vdc, +/- 5%
Supply Voltage Ripple	120mV (pp) max.
Power-on startup time	<600 ms
Sleep-to-receive startup time	<75 ms
Power consumption	TX: <480mA, RX: <430mA,

Antenna Specification

Antenna Type	PCB Print
Gain	1 dBi

Environmental

Working Temperature	0 ~ 55°C, 95% relative humidity (non-condensing)
Storage Temperature	-20 ~ 80°C, 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	5.25V
Storage Temperature	-20 ~ +80°C, 95% relative humidity (non-condensing)
Barometric Pressure	740 hPa ~ 1050 hPa

Security

The XG-705A supports 64-bit and 128-bit WEP encryption. 64-bit WEP requires a 40-bit key plus a 24-bit initialization vector. 128-bit WEP utilizes a 104-bit key plus a 24-bit initialization vector. WPA /WPA2 security features are identical to the latest conexant version as determined by the driver.

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, < 8% for 802.11b) and assume an adequate antenna design.

Open Space – 802.11g	80 meters @ 54 Mbps
Open Space – 802.11g	200 meters @ 24/18 Mbps
Open Space – 802.11g	240 meters @ 12/9/6 Mbps
Open Space – 802.11b	150 meters @ 11 Mbps
Open Space – 802.11b	400 meters @ 1Mbps

Reliability

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

Interoperability

The XG-705A interoperates with any IEEE 802.11g or 802.11b compliant devices.

International Frequencies

Regulatory requirements at different countries mandate different operating frequencies (channels). The XG-621 may be factory configured to support different frequency requirements. Allowable channels for each typical Domain is listed below.

Domain	Allowable channels
FCC	Channels 1 ~ 11
ETSI	Channels 1 ~ 13
Telec 802.11b	Channels 1 ~ 14
Telec 802.11g	Channels 1 ~ 13

Warranty

The XG-705A is supplied with a 12 month warrantee against manufacturing defects.