

**PROJECT: GUSBWLRGM-B/N**

**(1) Introduction**

GUSBWLRGM is a USB1.1/USB2.0 interface IEEE 802.11b/g **module** for Windows PC.

It's conform with RoSH-2002/95/EC standard

**(2) Features**

**Features**

- Host interface: USB1.1 / USB2.0
- Full Implementation of the MAC Protocol specified in IEEE Standards 802.11-1999 and 802.11g and 802.11g-2003
- Supported Operating System: Windows XP, Windows 2000, Windows ME, 98SE
- Security: 64/128 WEP, WPA, AES
- Mitigates Multipath Delay Spread up to 100ns at 54Mbps
- Support H/W radio on/off PIN
- Support peer to peer communication among any wireless users, no Access Point required.
- Support antenna diversity function (The module has no built-in antenna)

**(3) Specification**

**3.1 Interface:**

- USB1.1 / USB2.0

**3.2 Functions:**

- Protocol : Compatible with IEEE 802.11b /g Standard
- Modulation Technique :
  - 802.11b : DSSS (Direct Sequence Spread Spectrum) with BPSK (1Mbps), QPSK (2Mbps), and CCK (5.5 and 11Mbps)
  - 802.11g : OFDM
- Transfer data rate : **802.11g** : 54, 48, 36, 24, 18, 12, 9, 6Mbps, auto-fallback  
**802.11b** : 11, 5.5, 2, 1Mbps, auto-fallback
- Media access protocol : CSMA/CA with ACK
- Antenna: Built-in antenna connector
- Output Power : 16 + 2 or 16 -1dBm(CCK), 11 + 2 or 11-1dBm(OFDM)
- RF sensitivity : @PER <0.08 , 11Mbps < -84dBm(typical)  
@ PER <0.08 , 54Mbps < -70dBm(typical)
- Security : 64/128-bit WEP Encryption

64/128-bit TKIP Data Encryption

64/128-bit AES Data Encryption

- Channels Support :

US/Canada: 11 (1 ~ 11)

Major European country: 13 (1 ~ 13)

France: 4 (10 ~ 13)

Japan: 14 (1~13 or 14th)

**(4). Mechanical**

Dimension: 60.07 x 25.02 x 4.5 mm (L x W x H)

(PCBA only)

**( 5 ). Operating Voltage VCC 3.3V ±10 %**

**(6). Power Consumption**

- Maximum: Transmit : 265mA <max>

Receive : 237mA <max>

- Idle: 88 ~ 90 mA <Radio off>

- Link state: 197 ~ 210 mA < Radio on>

**(7). Green Certification**

**RoSH-2002/95/EC**

**(8). Environmental Operating Ranges**

- Operating Temperature : 0 ~70° C , Humidity 10 ~ 90%

- Storage Temperature : -20 ~90° C, Humidity 10 ~ 90%

**(9).Drivers support**

Windows XP, Windows 2000, Windows ME, 98SE

## **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### **End Product Labeling**

The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: NLFGUSBWLRGM".