

US105 User Guide

IEEE 802.11 b/g WLAN module

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Version: 1.0

Chapter 1 Functional Description

This product provides the easiest way to wireless networking.
This User Manual contains instructions in the operation of this product.
Please keep this manual for future reference.

1.1 Features

- Includes Encore signal processing for Industry-leading receive sensitivity and extended range:
 - -71 dBm at 54Mbps
- High level of integration with direct conversion radio architecture
- Flexible support for a variety of system bus interfaces including: usb, minicard
- Programmable data rates of 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps.
- Hardware-based IEEE 802.11i encryption/decryption engine, including 64-bit/128-bit WEP, TKIP, and AES
- IEEE802.1x support.
- Dynamic Power Management under driver control.
- WHQL-certified drivers for Windows® XP/Me/2000/98SE/98 operating systems.
- Wi-Fi® compliant.

1.2 Integrated Radio Transceiver

This Mini card module includes an integrated RF transceiver that has been optimized for use in 2.4-GHz WLAN systems. It has been designed to provide low-power, low-cost, and robust communications for applications operating in the globally available 2.4-GHz unlicensed ISM band. With an external transmit power amplifier, it develops full output power per the IEEE802.11b/g Specification.

1.3 Receiver Path

This Mini card module has a wide dynamic range, direct conversion receiver. It employs high-order on-chip channel filtering to ensure reliable operation in the noisy 2.4-GHz ISM band. The excellent noise figure of the receiver makes an external LNA unnecessary.

1.4 Transmitter Path

This Mini card module includes a linear transmitter capable of delivering up to +15 dBm while meeting the IEEE802.11g specification. The output power is adjustable in 1-dB steps, down to 0 dBm. Base-band data is up-converted directly to the 2.4-GHz ISM band.

1.5 Calibration

This Mini card module enables the device to be used in high-volume applications because calibration routines are not required during manufacturing test. These calibration routines are performed periodically in the course of normal radio operation.

Chapter 2 Installation Driver

2.1 Driver Features

- IEEE 802.11b/g
- Ad-Hoc / Infrastructure
- WEP 64 / 128-bit
- WPA-PSK / WPA2-PSK (by WZC / Funk Client)
- WPA / WPA2 (by WZC / Funk Client)
- 802.1x – TLS / 802.1x – PEAP (by WZC / Funk Client)
- LEAP (by Funk Client)
- WPA-TTLS (by Funk Client)

- TKIP
- AES
- IEEE Power Save

2.2 Installing the driver

Step1. Install Realtek utility.

Step2. Update driver 'rtl8187B.sys'

Product Specifications

Functional Specifications

Standard	IEEE 802.11b; IEEE802.11g; IEEE 802.11i draft	
Bus Interface	USB	
Data Rate	802.11g compliant: 11, 5.5, 2, 1 (DSSS/CCK); 6, 9, 12, 18, 24, 36, 48, 54 (OFDM) Mbps data rates	
Media Access Control	CSMA/CA with ACK	
Radio Technology	802.11g: DSSS/CCK, OFDM	
Modulation Techniques	OFDM/CCK	
Network Architecture	Ad-hoc mode (Peer-to-Peer) Infrastructure mode	
Operating Channel	802.11 b & g 11: (Ch. 1-11) – N. America, Taiwan 14: (Ch 1-14) – Japan 13: (Ch. 1-13) – Europe ETSI	
Frequency Range	802.11 b & g 2.412 ~ 2.462 GHz – N. America, Taiwan 2.412 ~ 2.484 GHz – Japan 2.412 ~ 2.472 GHz – Europe ETSI	
Transmit Output Power	802.11b 16 dBm	802.11g 14 dBm
Receiver Sensitivity	802.11b	802.11g

	11 Mbps: -84 dBm 5.5 Mbps: -86 dBm 2 Mbps: -87 dBm 1 Mbps: -88 dBm	54 Mbps: -68 dBm 48 Mbps: -70 dBm 36 Mbps: -73 dBm 24 Mbps: -76 dBm 18 Mbps: -80 dBm 12 Mbps: -82 dBm 9 Mbps: -83 dBm 6 Mbps: -84 dBm
Security	WEP/WEP2, WPA/WPA2, TKIP	
Operating Voltage	3.3V	
OS supported	Windows 200/XP, 64bit OS will be available in Q1, 2005	
Antenna Type	Dual antenna connector	

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 device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following conditions:

OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

Without Co-located

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user manual of the end product.

The user manual which is provided by OEM integrators for end users must include the following information in a prominent location.

“To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Label for end product must include “ Contains FCC ID:FCC ID: T5U-US105”

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