



IEEE 802.11 b/g/n WiFi Module

Product Specifications

Model: M05

Version: 1.3

2010-12-27



1. Introduction

GWF-M05 is a WLAN module supporting IEEE 802.11 b/g/n standards with 6-pin connector supporting USB 2.0 interface. This is a low cost compact WLAN module designed in the product with embedded system for the wireless connectivity.

1.1 Scope:

GWF-M05 WLAN Module is designed to operate in 2.4GHz ISM frequency band, it applies a highly integrated MAC/BBP and RF single chip RT3070 with 150Mbps PHY rate supporting. It fully complies with IEEE802.11n draft 3.0 and IEEE802.11b/g feature.

1.2 Features

- 802.11b: 1, 2, 5.5, 11Mbps;
- 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
- 802.11n: (20MHz) MCS0-7, Support up to 72Mbps
(40MHz) MCS0-7, Support up to 150Mbps
- OFDM, Peak rate 150Mbps, Peak throughput 90Mbps.
- Security support for 64/128 WEP, WPA, WPA2, TKIP, AES
- Operates in 2.4GHz frequency bands. Power Management
- Antenna configuration: I-PEX receptacle for external antenna.

2. Product Information

2.1 Specification Overview

Standards	IEEE802.11b/g & 802.11n (1T1R mode)
Operating Frequency	USA (FCC): 2.412GHz ~ 2.462GHz (channel 1 – 11) ISM band
	Europe (CE): 2.412GHz ~ 2.472GHz (channel 1 – 13) ISM band
Protocols	802.11b: CCK, QPSK, BPSK, 802.11g/n: OFDM
Antenna	External Antenna via an I-PEX receptacle
Security	WPA/WP2, 64/128/152-bit WEP, WPS
Transmit Output Power (PK Power)	11b: 21±1.0dBm; 11g: 2016±1dBm
	802.11n: (HT20), 20+/-1dBm, 802.11n: (HT40), 20+/-1dBm,
Receive Sensitivity (Typical)	11b: -84dBm @ 11Mbps; 11g: -68dBm @ 54Mbps.
	802.11n: (HT20), -66dBm@MSC7, (HT40), -62dBm@MSC7
Operating Voltage	5.0VDC ± 5% (or3.3VDV± 5% upon special requirement)
Operating Current	<110mA at 5.0V DC input.



Bus Interface	USB 2.0/USB1.1
USB Interface	6-pin, 2.0mm pitch male jumper , or 1.0mm pitch connector
Antenna Impedance	50 ohm

2.2 Hardware Information

GWF-M05 is low power consumption and low-cost compact WLAN module. This module can be built-in other embedded applications such as IP Camera, IP set top box, GPS, Internet radio apparatus.

2.2.1 Block Diagram

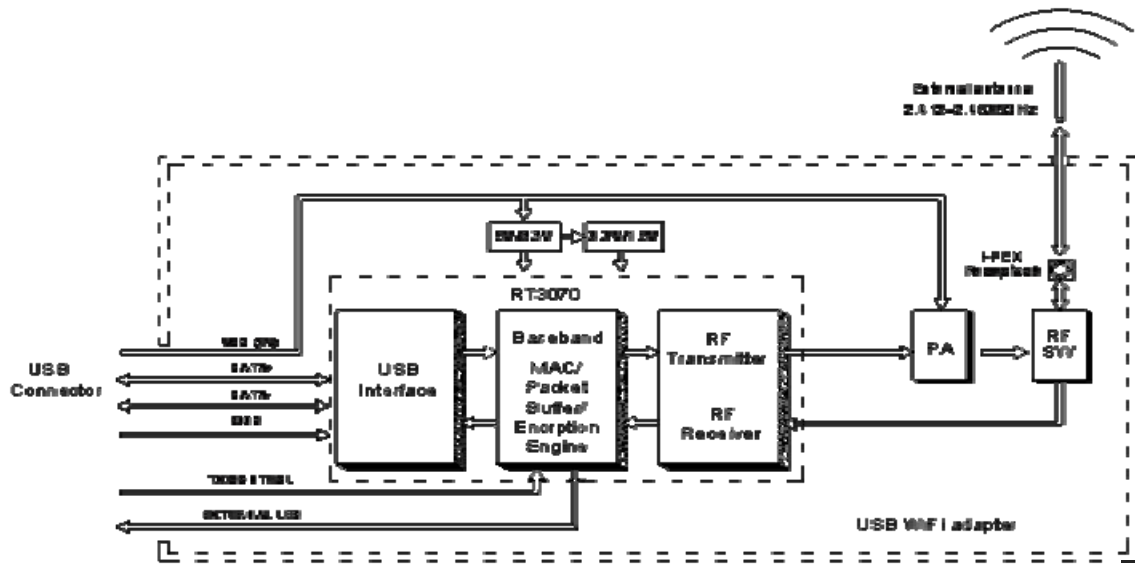


Figure 1: System Block Diagram of GWF-3M04 5.0V WLAN Module

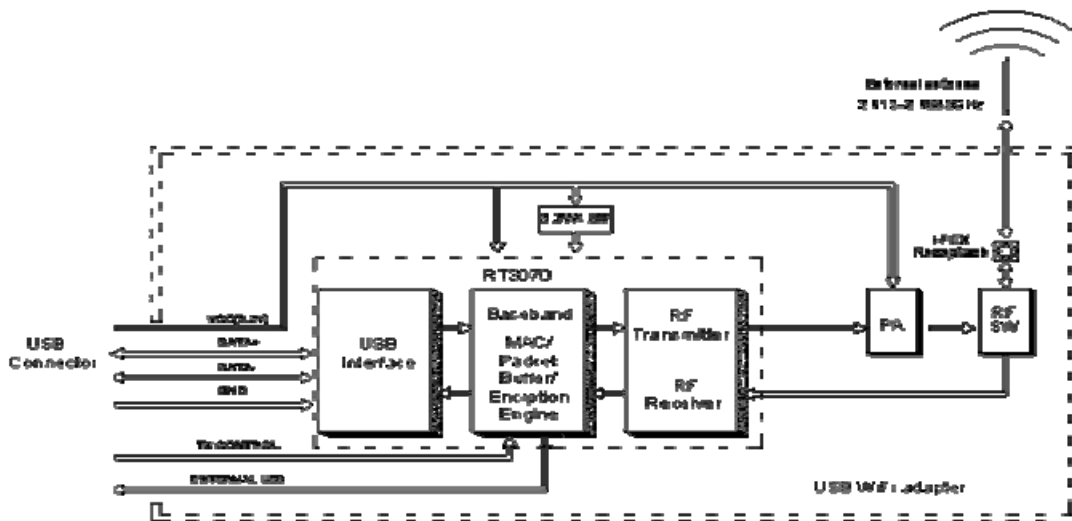


Figure 2: System Block Diagram of GWF-3M04 3.3V WLAN Module



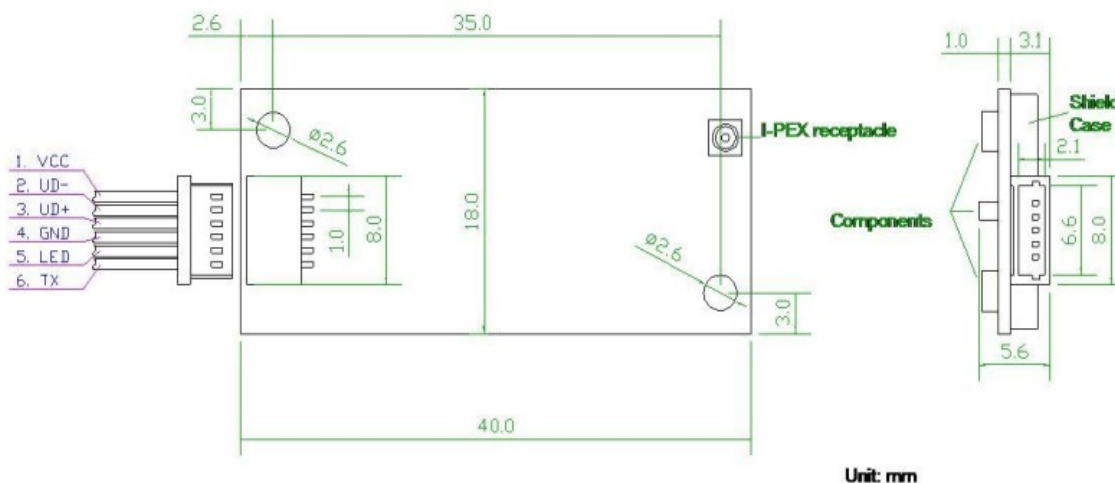
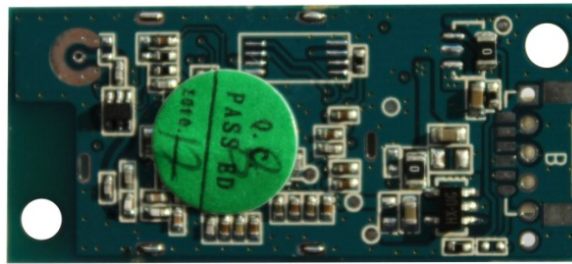
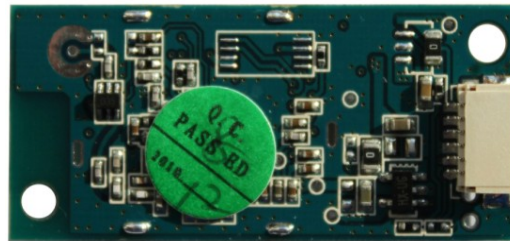
2.3 Software and system Information

Operation System	CPU Supplier	Driver
Linux 2.4/2.6	ARM, MIPSII	Available
Windows 2000/XP/Vista	X86 Platform	Available
Windows CE 5.0/6.0	ARM, MIPSII	Available

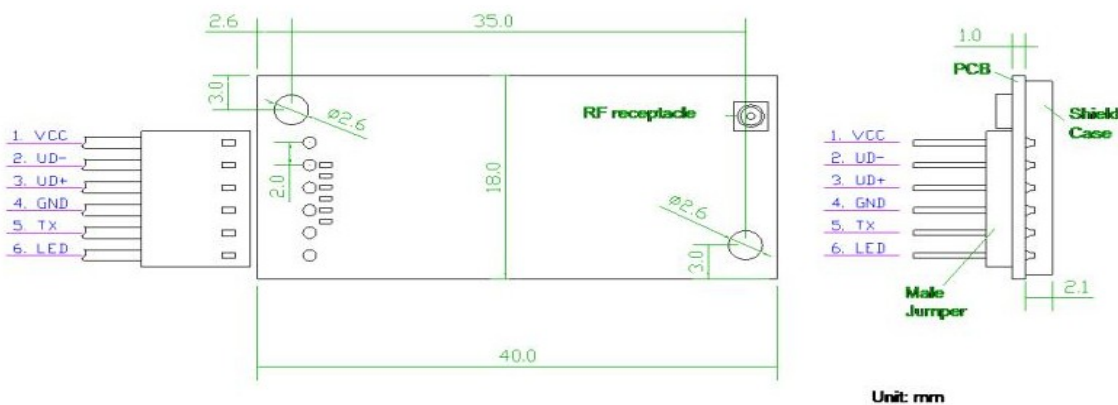
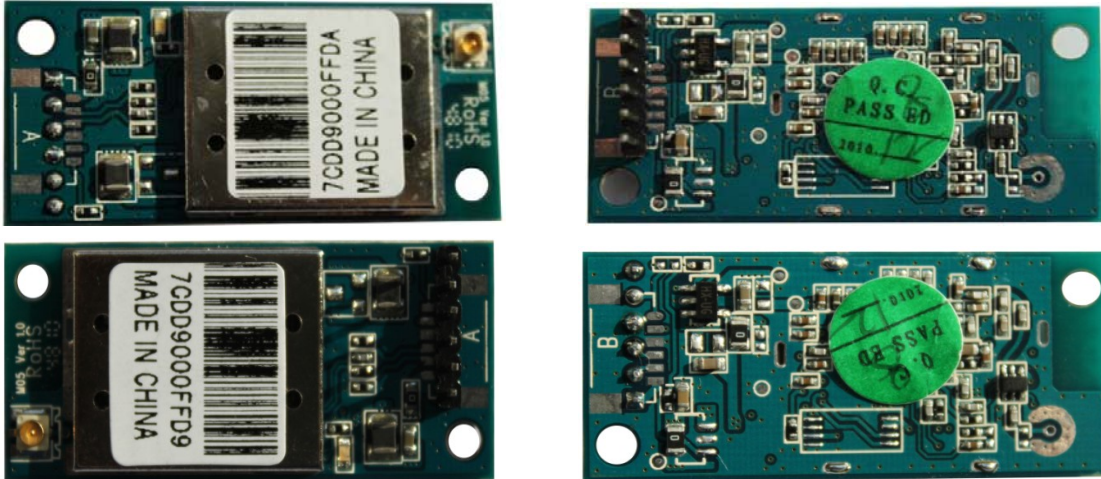
2.4 Mechanical Information

2.4.1 OUTLINE and USB Connection Information (40x18mm)

a). 6-pin 1.0 mm pitch connector.



b). 6-pin 2.0 mm pitch male jumper.



(To be noted: For special application, the direction of the male jumper can be upside down mounted)

2.4.2 Pin definition:

Pin	6-pin 1.0mm pitch connector	6-pin 2.0mm pitch male jumper
1	VCC (3.3 VDC or 5.0VDC)	VCC (3.3 VDC or 5.0VDC)
2	UD- (USB data-)	UD- (USB data-)
3	UD+ (USB data+)	UD+ (USB data+)
4	GND (Ground)	GND (Ground)
5	LED (Wireless TX status)	TX (RF ON/OFF control)
6	TX (RF ON/OFF control)	LED (Wireless TX status)

**The TX (RF ON/OFF control) is low level activated to OFF.*

2.4.3 Antenna Connection Information

An external antenna via an I-PEX receptacle.

2.5 Order information:



GWF-3M05-33-T, for 3.3+/-5%VDC, the long pins are at the same side with the shield case.

GWF-3M05-33-B, for 3.3+/-5%VDC, the long pins are at the opposite side with the shield case.

GWF-3M05-33-C, for 3.3+/-5%VDC, Soldered with 6 pin connector.

GWF-3M05-50-T, for 5.0+/-5%VDC, the long pins are at the same side with the shield case.

GWF-3M05-50-B, for 5.0+/-5%VDC, the long pins are at the opposite side with the shield case.

GWF-3M05-50-C, for 5.0+/-5%VDC, Soldered with 6 pin connector.

3. Agency Approval

Agency	Approval
FCC Part15	undergoing
CE	√
RoHS	√

4. Environment

4.1 Temperature

4.1.1 Operating Temperature

Continuous reliable operation in ambient temperature: 0°C to +50°C.

4.1.2 Storage Temperature

The product is not damaged or degraded when keeping in -20°C to +85°C.

4.2 Humidity

4.2.1 Operating Humidity Conditions

The product is capable of continuous reliable operation when subjected to relative humidity in the range of 20% to 80% (non-condensing).

4.2.2 Non-Operating Humidity Conditions (including warehouse)

The product is not damaged or degraded when kept in the relative humidity range from 20% to 80%.

5 Disclaimer

THESE MATERIALS AND INFORMATION ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED , INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A



PARTICULAR PURPOSE OR NON-INFRINGEMENT.

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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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 or more 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 Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & end User's body.