Description

The WiF-H100W01 is a WLAN module supporting IEEE 802.11 b/g/n standards with 4-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.

Scope:

The WiF-H100W01 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.

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.

Product Information

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
Security	WPA/WP2, 64/128/152-bit WEP, WPS
Transmit Output Power (Typical)	11b: 21±1.0dBm @ 11Mbps; 11g: 16±1dBm @ 54Mbps
	802.11n: (HT20), 16+/-1dBm, 802.11n: (HT40), 16+/-1dBm,
Receive Sensitivity (Typical)	11b: -88dBm @ 11Mbps; 11g: -73dBm @ 54Mpbs.
	802.11n: (HT20), -71dBm@MSC7, (HT40),-68dBm@MSC7
Operating Voltage	5.0VDC ± 5%
Operating Current	<180mA at 5.0V DC input.
Bus Interface	USB 2.0/USB1.1
USB Interface	5-pin, 2.0mm pitch male jumper ,
Antenna Impedance	50 ohm

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 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 Caution:

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.

Non-modification Statement:

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

Hardware Information

The WiF-H100W01 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.
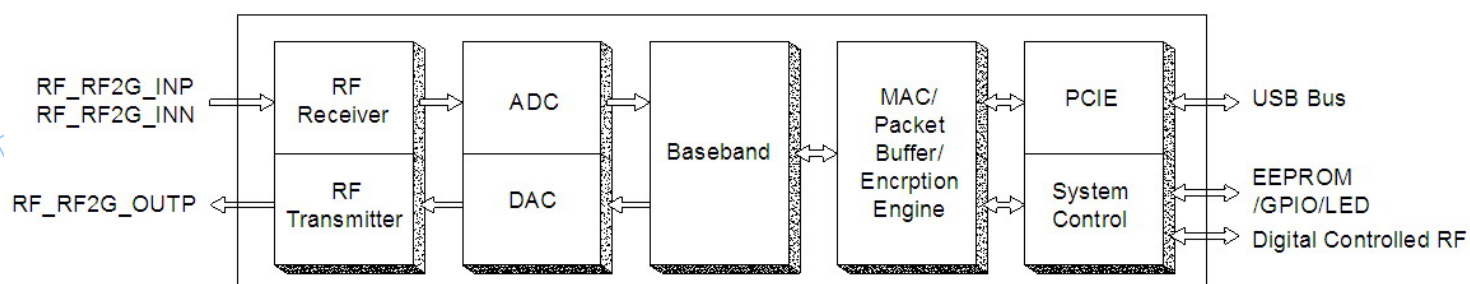
Block Diagram

Figure 1: System Block Diagram of WiF-H100W01 WLAN Module

Software and system Information

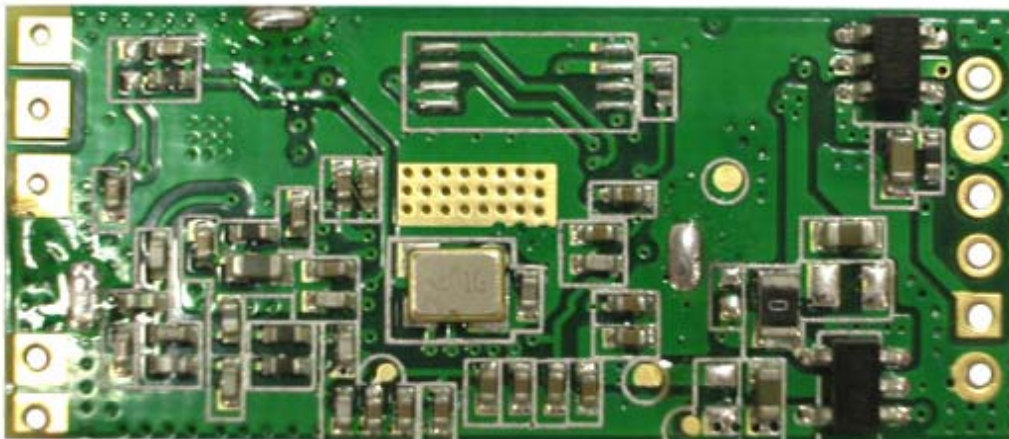| Operation System	CPU Supplier	Driver
Linux 2.4/2.6	ARM, MIPSII	Available
Windows 2000/XP/Vista/Window7	X86 Platform	Available
Windows CE 5.0/6.0	ARM, MIPSII	Available

www.elansat.com

Mechanical Information

OUTLINE and USB Connection Information （34x15mm）

a). Product picture and PCB dimensions

Top view:

Bottom view:
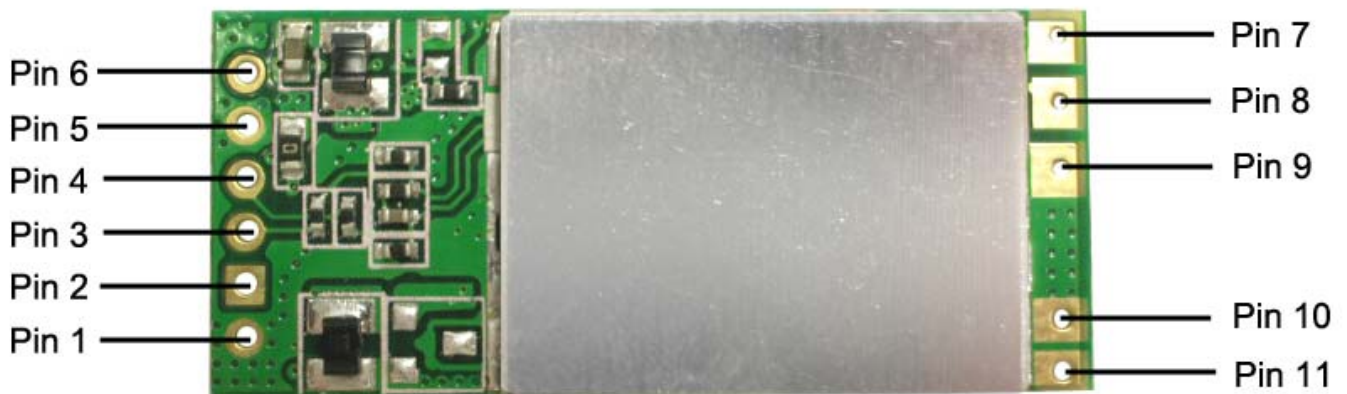
PCB dimensions(Top View):
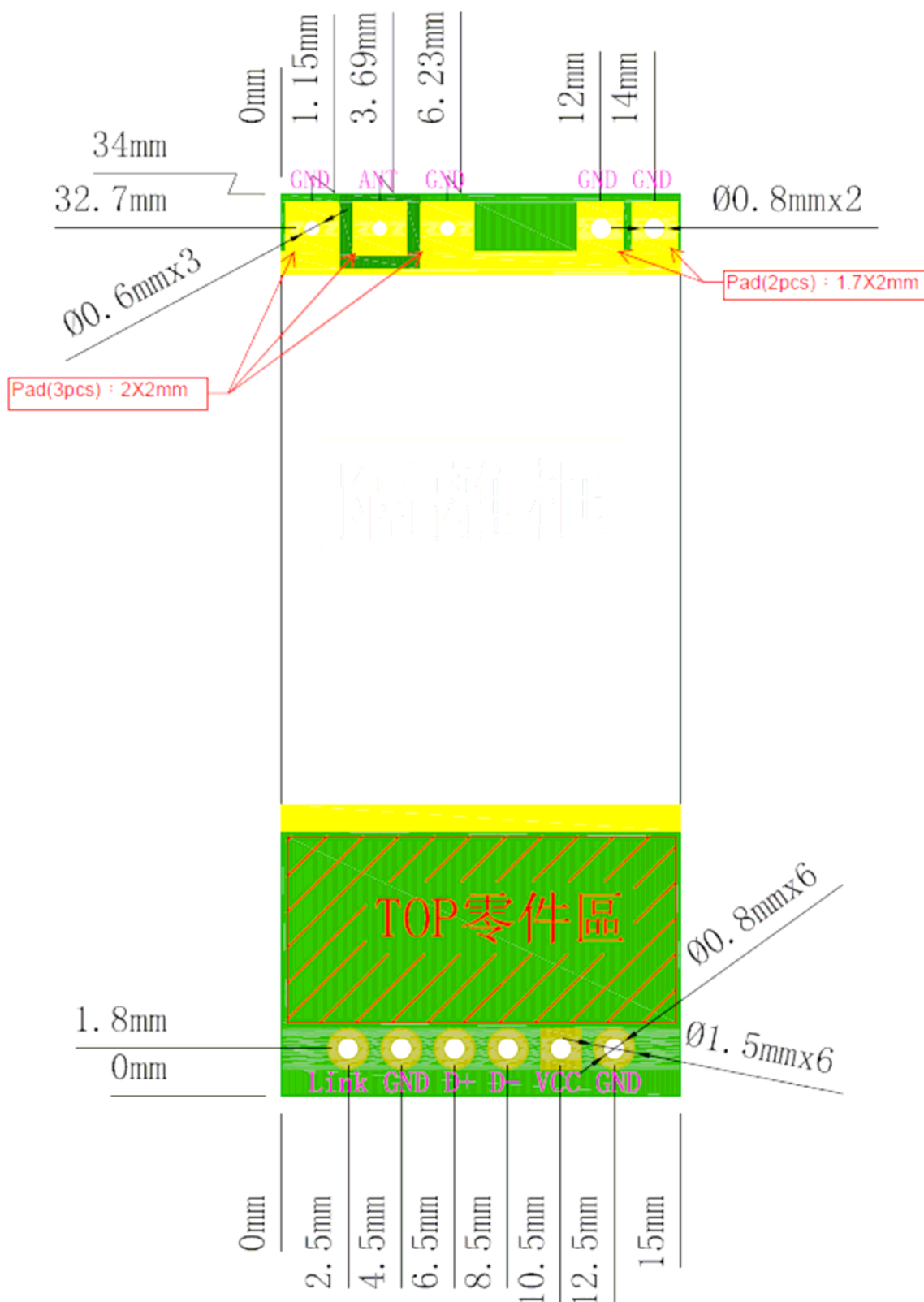
Pin definition (Top View):

Pin	5-pin 2.0mm pitch connector + antenna pad
1	GND
2	VCC (5.0VDC)
3	D- (USB data-)
4	D+ (USB data+)
5	GND (Ground)
6	LED (link light status)
7	GND
8	Antenna
9	GND
10	GND
11	GND

Antenna Connection Information:

An external antenna via a PCB pad soldering.

Order information:

P/N: WiF-H100W01

Environment

Temperature

Operating Temperature

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

Storage Temperature

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

Humidity

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).

Non-Operating Humidity Conditions (including warehouse)

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

www.elansat.com

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.

We uses reasonable efforts to include accurate and up-to-date information on this document; it does not, however, make any representations as to its accuracy or completeness of the information, text, graphics, links or other items contained within these materials. Your use of this Document is at your own risk. Ogemray, its suppliers, and other parties involved in creating and delivering this Document's contents shall not be liable for any special, indirect, incidental, or consequential damages, including without limitation, lost revenues or lost profits.

Basic RF Test

TX test
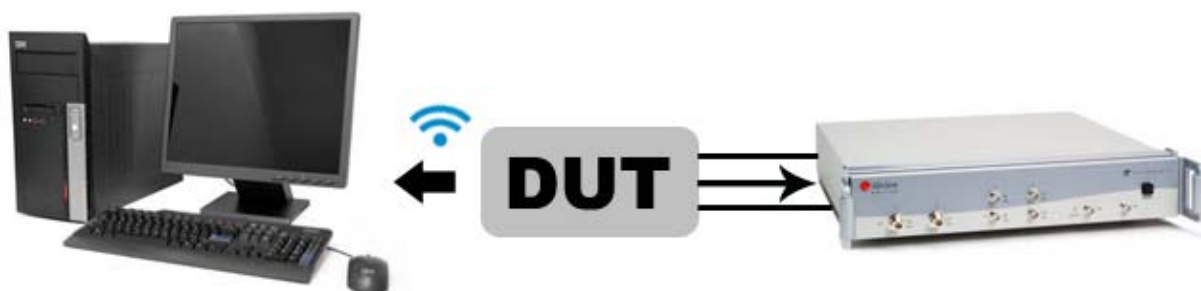
TX test (802.11g)

Test result

TX test Item	802.11g (Data Rate 54M OFDM)			
	Spec	**Ch 1**	**Ch 6**	**Ch 13**
TX power (DBm)	16dbm-18dbm	16.35	16.19	16.05
TX EVM (dB)	<-28	-29.77	-30.26	-29.68
TX Freq Err(PPM)	-20~20	-1.82	-1.79	0.87
Spec Flat(pt)	-1.0~0.0	0.000	0.000	0.000
Spec Mask	2.0~0.0	0.000%	0.000%	0.000%

TX Test (802.11b)

Test result

TX test Item	802.11b (Data Rate 11M CCK)			
	Spec	**Channel 1**	**Channel 6**	**Channel 11**
Tx power (dBm)	18dbm~22dbm	20.16	-	18.77
TX EVM (dB)		-24.11	-	-23.78
TX Freq Err(PPM)	-20~20	2.55	-	1.72

RX test
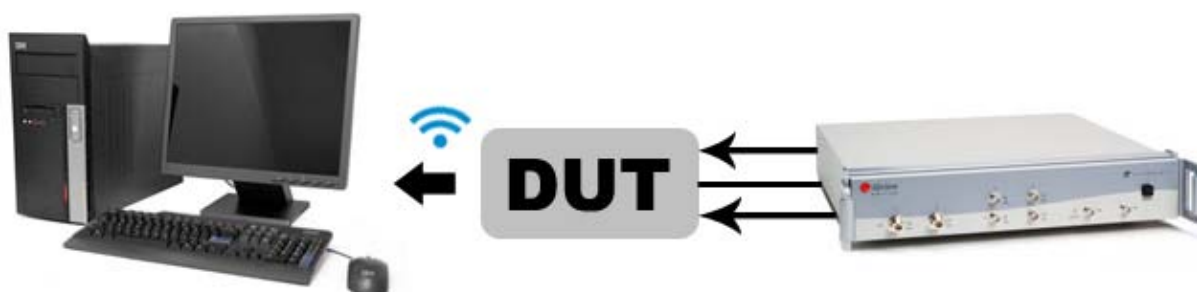
Test Environment

Test result

RX test (802.11g) (54M/-67dBm)

RX test Item	802.11g			
	Spec.	Ch. 1	Ch. 6	Ch. 11
Rx FER OFDM 54M(<-73dbm)	<10%	0.00%	0.00%	0.00%

Throughput test

Procedure:

Test its throughput by chariot 5.4

Test result:

chariot 5.4

throughput / test distance	Average(Mbps)	Minimum(Mbps)	Maximum(Mbps)
5m	50.894	3.101	72.728

Group	Run Status	Timing Records Completed	95% Confidence Interval	Average (Mbps)	Minimum (Mbps)	Maximum (Mbps)	Measured Time (sec)	Relative Precision
All Pairs		3,816		50.894	3.101	72.728		
	Pair 1 Finished: Warning(s)	3,816	0.530	52.648	3.101	72.728	57.986	1.007