

CyberTAN

User Manual

WU182-LO

802.11 b/g/n USB Module

Release 0.1

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1. Revision History

Date	Release	Author	Description
December 23, 2014	0.1	Cindy Fan	First Release

2. Related Documents

Date	Author	Document
	IEEE.org	IEEE 802.11 b/g/n specification
		Datasheet for MediaTek MT7603U

3. Introduction

The WU182-LO is a module based on a highly integrated Wi-Fi single chip which supports 300 Mbps PHY rate. It fully complies with IEEE 802.11n and IEEE 802.11 b/g standards, offering feature-rich wireless connectivity at high standards, and delivering reliable, cost-effective throughput from an extended distance.

Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. Intelligent MAC design deploys a high efficient DMA engine and hardware data processing accelerators which offloads the host processor.

The WU182-LO is designed to support standard based features in the areas of security, quality of service and international regulations, giving end users the greatest performance any time and in any circumstance.

Features and Benefits

- IEEE 802.11 b/g/n compliant
- Embedded high-performance 32-bit RISC microprocessor
- Highly integrated RF with 55nm CMOS technology
- 2T2R mode with support of 300Mbps PHY rate
- Integrate high efficiency switching regulator
- Best-in-class power consumption performance
- 6-pin header interface for USB signal and power
- 1/2/3/4-wire PTA Wi-Fi / Bluetooth coexistence support
- 802.11 d/h/k support
- Security support for WFA WPA/WPA2 personal, WPS2.0, WAPI
- Supports 802.11w protected managed frames
- QoS support of WFA WMM, WMM PS
- Supports Wi-Fi Direct
- Fully compliance with USB v2.0 High-speed mode
- Per packet transmit power control
- Antenna Detection

4. Specification

Specifications	
Product Name	IEEE802.11 b/g/n USB Module
Interface	USB2.0 in a ROHS 6P header
Network Standards	IEEE802.11n and 11b/g -compliant
Data Rate	11b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2,1 Mbps 11n: 20MHz and 40 MHz BW: up to 150 Mbps
Modulation	802.11g/n---- OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11b---- CCK (11Mbps, 5.5Mbps), QPSK (2Mbps), BPSK (1Mbps)
Network Architecture	Infrastructure and ad hoc
Operating Frequency	2.4GHz 11b/g/n: 2.412 ~ 2.462 GHz: North America
Operating Channels	11b: 1~11 for America 2.4GHz 11g/n: 1~11 for America
Antenna	Two Metal Antennas on-board design
LED Indicators	N/A
Coverage Area	Indoor: 20M@54Mbps, 35M@24Mbps, 60M@6Mbps, 100M@11Mbps
Operating Temperature	0 to 55 °C
Humidity	20% to 95% Non-condensing
Dimensions (mm)	40 x 46.45 x5.1 mm (typical) (The height including WTB connector and antenna)
Weight (g)	7.3g
Voltage	3.3 V

5. Regulatory Information

5.1 FCC Notice (USA)

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 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 and its antenna(s) must not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2PC.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

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 & your body.

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

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: N89-WU182 ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with

the following: “Contains FCC ID: N89-WU182”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

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’s manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.