

CyberTAN

Product Specification

WU163-AM

2.4GHz 802.11n 1x1 MIMO WLAN USB Module

Preliminary

Release 0.1

Date: June 10, 2010

Author: JC Liou

Table of Contents

1. Revision History.....	3
2. Related Documents.....	3
3. Introduction.....	4
4. Features.....	4
5. Specification.....	5
6. Drivers Release Plan.....	6
7. Compliant Approvals.....	6
7.1 Compliant Approvals	
7.2 Compliant PTT approvals	
8. Packaging Specifications.....	6
9. Warranty.....	6

1. Revision History

Date	Release	Author	Description
June 10, 2010	0.1	JC Liou	First Release

2. Related Documents

Date	Author	Document
	IEEE.org	IEEE 802.11n specification

3. Introduction

The WU163-AM is an IEEE802.11n-compatible USB module in a 1x1 MIMO configuration and operating in the 2.4 ISM band. This module allows an embedded host to use its USB 1.1 or 2.0 interface to connect to the IEEE802.11n compatible access point at unprecedented speeds.

The WU163-AM USB module is based on Broadcom's BCM4319 65nm chipset with internal PAs. It provides greater than 50Mbps real world throughput. Configuration and testing of this module must be done on the host via Broadcom provided software tools.

4. Features

- USB v2.0 compatible.
- Board-to-Board connector to the host PCB's needs.
- Backward compatible with USB v1.1.
- IEEE 802.11n version 2.0 compatible.
- Backward compatible with IEEE 802.11b/g standards.
- Wire-free access to networked resources from anywhere beyond the TV.
- Delivers data rate up to 150 Mbps.
- 802.11n: Dynamically shifts for data rates up to 135Mbps in a 40MHz bandwidth, based on signal strength, for maximum availability and reliability of connection.
- 802.11g: Dynamically shifts among 54, 48, 36, 24, 18, 12, 9 and 6 Mbps network speed, based on signal strength, for maximum availability and reliability of connection.
- 802.11b: Dynamically shifts among 11M, 5.5M, 2M, and 1 Mbps network speed, based on signal strength, for maximum availability and reliability of connection.
- Uses 2.4GHz frequency band, which complies with worldwide non-license bands.
- Ensures great security by providing the 64/128 bits Wired Equivalent Privacy (WEP) and WiFi Protected Access.
- Protected Access (WPA) defined in the IEEE standard.

5. Specification

Specifications	
Product Name	IEEE802.11n -Compatible WLAN USB module
Interface	USB ver 2.0 compatible ROHS 4P 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: 40MHz BW: up to 135Mbps
Modulation	802.11g/n: 64QAM (135/121.5/108/65/58.5/54/52/48Mbps), 16QAM (81/54/39/36/26/24Mbps) QPSK (40.5/27/19.5/18/12/13Mbps), BPSK (13.5/9/6.5/6Mbps) 802.11b: CCK (11/5.5Mbps), DQPSK (2Mbps) and DBPSK (1Mbps)
Network Architecture	Infrastructure and ad hoc
Operating Frequency	2.4G 11b/g/n: 2.412 ~ 2.462 GHz: North America
Operating Channels	11b/g: 1~11 for America 2.4GHz 11n: 3~9 for America
RF Output Power	18dBm (11b) 12dBm (11g) 11dBm (11n_HT20) 10dBm (11n_HT40)
Antenna	I-PEX connector * 1
LED Indicators	N/A
Receive Sensitivity	-85 dBm @ 11M (CCK, 8% PER) -70 dBm @ 54M (11g OFDM, 10% PER) -64 dBm @ 135M (11n)
Bluetooth Coexistence	4 pins reserved
Power Consumption	TX Power consumption: < 280 mA RX Power consumption: < 130 mA (Test conditions: DC 5V)
Operating Temperature	0 to 70 °C
Humidity	20% to 95% Non-condensing
Storage Temperature	-20 to 80 °C
Dimensions	(W) 37mm x (L) 56mm x (H) 3.5mm with shielding cover
Weight (g)	7.0 g
Voltage	5.0V

6. Drivers Release Plan

	Driver Release time	Utility Tools Release time
Windows 2000	n/a	
Windows XP		
Linux		

7. Compliant Approvals

7.1 Compliant Approvals

FCC Part 15 Class B, C

7.2 Compliant PTT approvals

Supported by customer request: USA

8. Packaging Specifications

The following items will be required for the complete packaging of the WU163-AM USB module :

Item	Comments
WU163-AM USB module	YES
Protective bag	Bubble bag
Carton	Bulk packing
QIG	N/A
CD-ROM	N/A

9. Warranty

One year limited warranty.

FCC Statement

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.

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

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

IMPORTANT NOTE:

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 & your body.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

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-WU163 ". 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.