

# *CyberTAN*

Product Specification  
**WU260-A1-AM**

*2.4/5GHz Draft 802.11n 2x2 MIMO WLAN USB Module*

*Preliminary*

**Release 0.2**

<b>Date</b>	<b>July 16, 2010</b>
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## 1. Revision History

<b>Date</b>	<b>Release</b>	<b>Author</b>	<b>Description</b>
Nov 27th, 2008	0.1	Bryan Chou	First Release
Jan 21th, 2009	0.2	Bryan Chou	Pg3, Modulation revised Pg4, Compliant Approvals revised
Mar 27, 2009	0.3	JC Liou	Performance validation
Aug 30, 2009	0.4	Selina Liaw	1.Update driver release 2.Remove warranty condition, which will be included the purchase contract.
Sep 22,2009	0.5	Selina Liaw	Page 9 adding test condition of power consumption. Page 8 11a data rate
Aug 5, 2010	0.6	Evelyn Chang	Page 8 RF Output Power Spec 10dbm (2.4GHz,11n, 20MHz) 10dbm (2.4GHz,11n, 40MHz) 10dbm (5GHz,11n, 20MHz) 10dbm (5GHz,11n, 40MHz)

## 2. Related Documents

<b>Date</b>	<b>Author</b>	<b>Document</b>
	IEEE.org	Draft IEEE 802.11n specification

### 3. Introduction

The WU260-A1-AM is a Draft IEEE802.11n-compatible USB module in a 2x2 MIMO configuration and operating in the 2.4 and 5GHz ISM band. This module allows an embedded host to use its USB 1.1 or 2.0 interface to connect to a Draft IEEE802.11n compatible access point at unprecedented speeds.

The WU260-A1-AM USB module is based on Broadcom's BCM4323 65nm chipset. It provides greater than 100Mbps real world throughput using high-speed spatial multiplexing modes. 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.
- Draft 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 300 Mbps.
- 802.11n: Dynamically shifts among 130, 117, 104, 78, 52, 39, 26 and 13Mbps in a 20MHz bandwidth and 270, 243, 216, 162, 108, 81, 54 and 27Mbps in a 40MHz bandwidth, based on signal strength, for maximum availability and reliability of connection.
- 802.11a/g: 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 2.4 and 5GHz 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	
<b>Product Name</b>	Draft IEEE802.11n -Compatible WLAN USB module
<b>Interface</b>	USB ver 2.0 compatible ROHS 4P header
<b>Network Standards</b>	Draft IEEE802.11n and 11a/b/g -compliant
<b>Data Rate</b>	11a: 54,48,36,24,18,12,9,6Mbps 11b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2,1 Mbps 11n: 20MHz BW: 130, 117, 104, 78, 52, 39, 26, and 13Mbps 40MHz BW: 270, 243, 216, 162, 108, 81, 54, and 27Mbps
<b>Modulation</b>	802.11a/g/n---- OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11b---- CCK (11Mbps, 5.5Mbps), QPSK (2Mbps), BPSK (1Mbps)
<b>Technique</b>	Direct Sequence Spread Spectrum(802.11b)
<b>Network Architecture</b>	Infrastructure and ad hoc
<b>Operating Frequency</b>	2.4G 11b/g/n: 2.412 ~ 2.462 GHz: North America 5G 11a/n: 5.15 ~ 5.35GHz/ 5.47 ~ 5.825 GHz: North America UNII
<b>Operating Channels</b>	11b: 1~11 for America 2.4GHz 11g/n: 1~11 for America 5GHz 11a/n: 36-64, 100-161 North America
<b>RF Output Power</b>	16dBm +/- 1.5dBm (2.4GHz, 11Mbps, CCK) 13.5Bm +/- 1.5dBm (2.4GHz, 54Mbps, OFDM) 13.5dBm +/- 1.5dBm (5GHz, 54Mbps, OFDM) 10 dBm +/- 1.5dBm (2.4GHz, 11n, 20MHz BW ) 10 dBm +/- 1.5dBm (2.4GHz, 11n, 40MHz BW ) 10 dBm +/- 1.5dBm (5GHz, 11n, 20MHz BW) 10 dBm +/- 1.5dBm (5GHz, 11n, 40MHz BW)
<b>Antenna</b>	I-PEX connector * 2
<b>LED Indicators</b>	N/A
<b>Coverage Area</b>	Indoor: 20M@54Mbps, 35M@24Mbps, 60M@6Mbps, 100M@11Mbps

<b>Receive Sensitivity</b>	-84 dBm @ 11M (CCK, 10% PER) -70 dBm @ 54M (2RX 11g OFDM, 10% PER) -70 dBm @ 54M (2RX 11a OFDM, 10% PER) -64 dBm @ 130Mbps (2.4GHz, 2RX 11n OFDM with 20MHz BW, 10% PER) -62 dBm @ 130Mbps (5GHz, 2RX 11n OFDM with 20MHz BW, 10% PER) -62 dBm @ 270Mbps (2.4GHz, 2RX 11n OFDM with 40MHz BW, 10% PER) -60 dBm @ 270Mbps (5GHz, 2RX 11n OFDM with 40MHz BW, 10% PER)
<b>Power Consumption</b>	TX Power consumption: < 700 mA RX Power consumption: < 460 mA ( Test conditions: DC 5V ; for power saving and radio off 35mA )
<b>Operating Temperature</b>	0 to 60 °C
<b>Humidity</b>	20% to 95% Non-condensing
<b>Storage Temperature</b>	-20 to 80 °C
<b>Dimensions (mm)</b>	(W) 36mm x (L) 54mm x (H) 4.8 mm with shielding cover
<b>Weight (g)</b>	8.8 g
<b>Voltage</b>	5.0V

## 6. Drivers Release

Driver	Release version	Release date
Windows XP	5.10.79.30	2009/7/6

## 7. Compliant Approvals

### 7.1 Compliant Approvals

FCC Part 15 Class B, C & E

### 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 WU260-AM USB module:

<b>Item</b>	<b>Comments</b>
WU260-A1-AM USB module	YES
Protective bag	Bubble bag
Carton	Bulk packing
QIG	N/A
CD-ROM	N/A

**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.

This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

**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-WU260A1 ". 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.