

# CyberTAN

*Product Specification*

**WU600-TS**

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

*Preliminary*

**Release 0.3**

**Date:** Mar 30, 2009

**Author:** JC Liou

## Table of Contents

<b>1. REVISION HISTORY .....</b>	<b>1</b>
<b>2. RELATED DOCUMENTS.....</b>	<b>1</b>
<b>3. INTRODUCTION .....</b>	<b>2</b>
<b>4. FEATURES .....</b>	<b>2</b>
<b>5. SPECIFICATION .....</b>	<b>3</b>
<b>6. DRIVERS RELEASE PLAN .....</b>	<b>4</b>
<b>7. COMPLIANT APPROVALS.....</b>	<b>4</b>
7.1 COMPLIANT APPROVALS .....	4
7.2 COMPLIANT PTT APPROVALS .....	4
<b>8. PACKAGING SPECIFICATIONS .....</b>	<b>4</b>
<b>9. WARRANTY .....</b>	<b>6</b>

## 1. Revision History

Date	Release	Author	Description
March 6, 2009	0.1	JC Liou	First Release
March 26, 2009	0.2	JC Liou	Detailed Performance Data
March 30, 2009	0.3	JC Liou	Fixed Drawing Error

## 2. Related Documents

Date	Author	Document
	IEEE.org	Draft IEEE 802.11n specification

CyberTAN Confidential

### 3. Introduction

The WU600-TS 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 WU600-TS 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 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>	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
<b>Modulation</b>	802.11g/a/n---- OFDM 802.11b---- CCK (11Mbps, 5.5Mbps), QPSK (2Mbps), BPSK (1Mbps)
<b>Network Architecture</b>	Infrastructure
<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 ~ 5.850 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>Output Power (AV)</b>	16dBm, 802.11b mode 13.5dBm, 802.11g/a/n modes
<b>Receive Sensitivity</b> (typical)	-85dBm, 802.11b mode (11Mbps) -69dBm, 802.11g/a modes (54Mbps) -65dBm, 802.11n modes (MCS15)
<b>Antenna</b>	Hirose U.FL connector * 2
<b>LED Indicators</b>	N/A
<b>Coverage Area</b>	Indoor: 20M@130Mbps, 35M@24Mbps, 60M@6Mbps, 100M@11Mbps
<b>Operating Temperature</b>	-10 to 60 °C
<b>Voltage and Current Consumption</b>	5.0V, 700mA (maximum)

## 6. Drivers Release Plan

	Driver Release time	Utility Tools Release time
Windows 2000		
Windows XP		
Linux		
VxWorks		

## 7. Compliant Approvals

### 7.1 Compliant Approvals

FCC Part 15 Class B & C (included DFS), IC and CE.

### 7.2 Compliant PTT approvals

Supported by customer request: USA

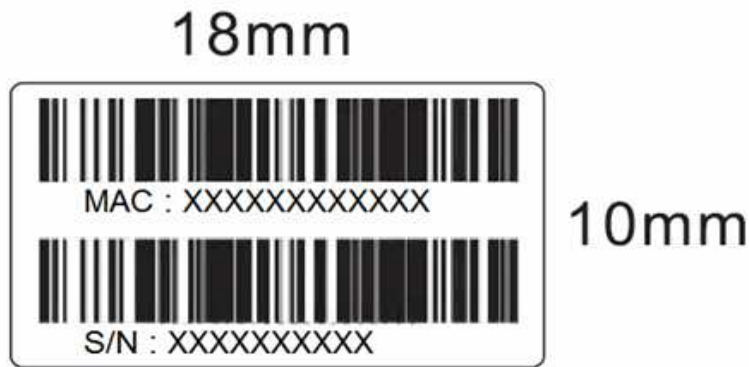
## 8. Packaging Specifications

The following items will be required for the complete packaging of the WU600-TS USB module:

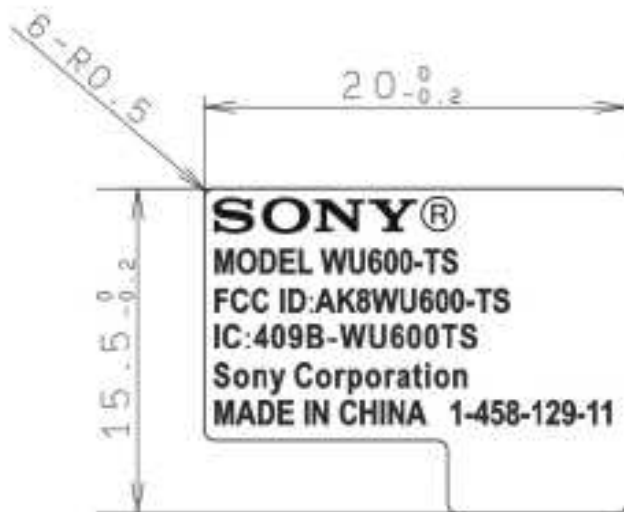
Item	Comments
WU600-TS USB module	YES
Protective case	Protective case
Carton	Bulk packing
QIG	N/A
CD-ROM	N/A

**Label Marking:**

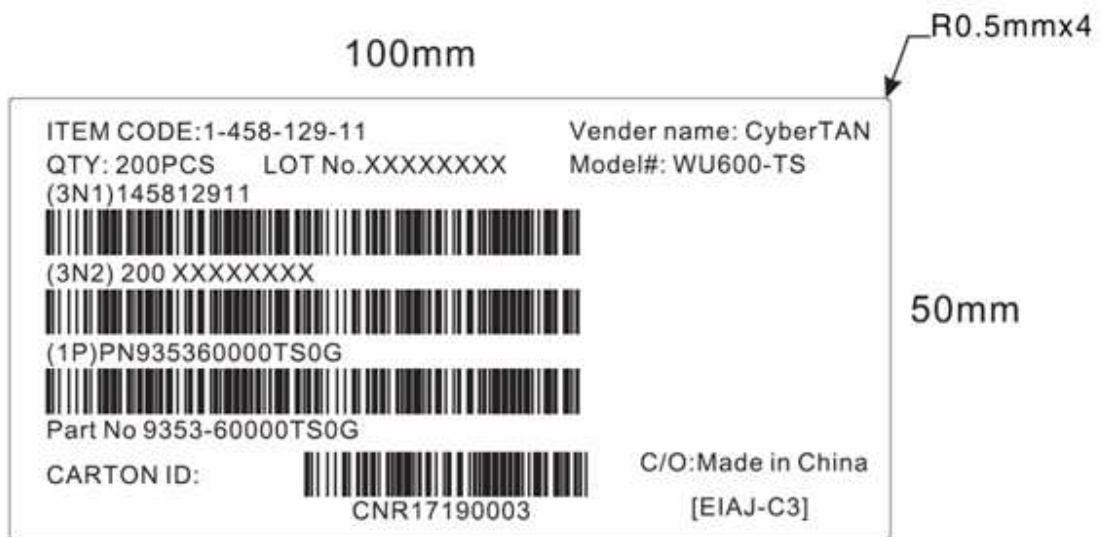
**(a)MAC Address Label :**



**(b)Certification Label:**



**(C)Carton Label Specification :**



**9. Warranty**

One year limited warranty.

**10. Warning 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.

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.

**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.

**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. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only  
IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

**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,
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 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 (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.



