

# Product Specification

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## ***WN8522B 3-LF-MT***

**IEEE Dual Band 802.11n USB2.0 module for DTV**

*v.03*

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## Revision History

<i>Edition #</i>	<i>Reason for revision</i>	<i>Issue date</i>	<i>Written by</i>
V 0.1	◆ Initial Document	2009/09/17	Troy Chen
V0.2	◆ Update PCB outline & Antenna cable	2009/12/10	Andre Lin
V03	5G spec listed	2010/06/26	Troy Chen

# Chapter 1 Introduction

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## 1. Introduction

WN8522B 3 is a dual band wireless 802.11n USB module for DTV, Bluray Players, etc.. which enables consumer devices to support wireless connectivity over 802.11a/b/g/n WLAN .

### 1.1 Product Features

- ◆ High speed for wireless LAN connection, RX up at 300 Mbps data rate.
- ◆ Backward compatible to the existing IEEE 802.11a/b/g WLAN infrastructure.
- ◆ Support USB v2.0

### 1.2 Applications

- ◆ Module for Connected TV

# Chapter 2 Hardware

## 2.1 General Overview

- ◆ USB 2.0 Interface
- ◆ 2 \* antenna connectors

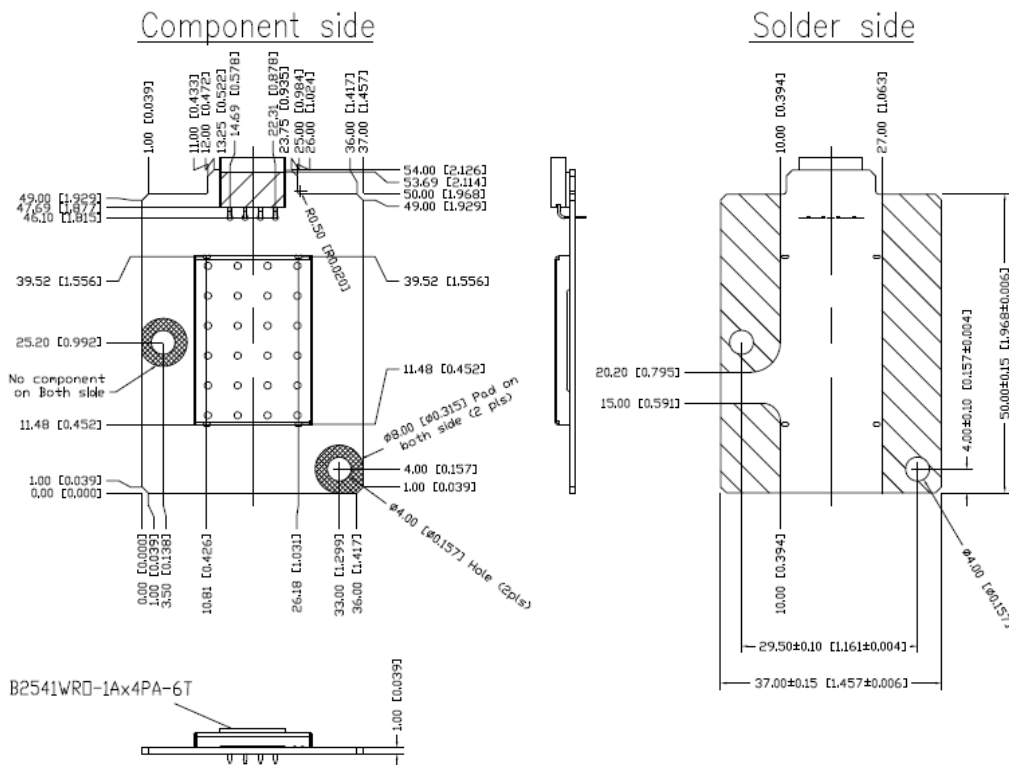
## 2.2 Hardware Architecture

Broadcom 4323 single chip USB2.0

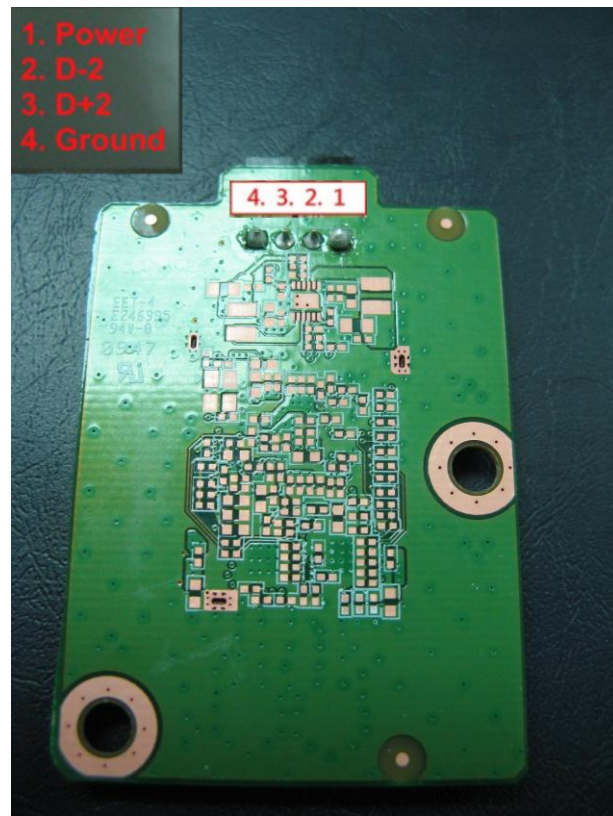
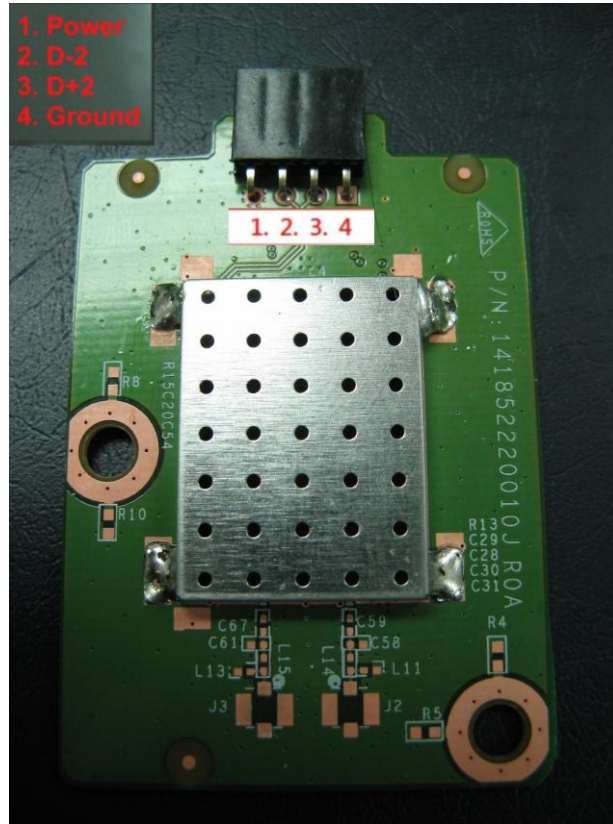
## 2.3 Main Chipset Information

**BCM4323:** MIMO MAC + Baseband processor and RF with fully forward compatible with IEEE 802.11n draft2.0 standard.

## 2.4 PCB dimension

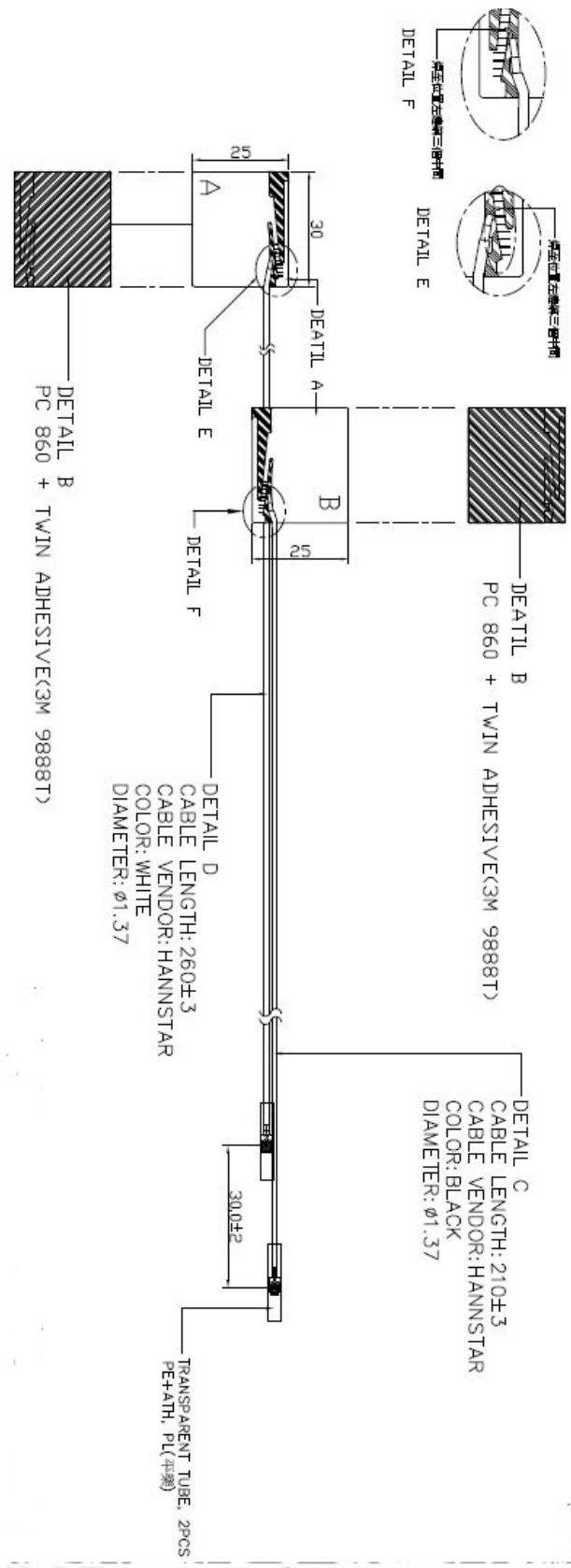


## 2.5 Pin define

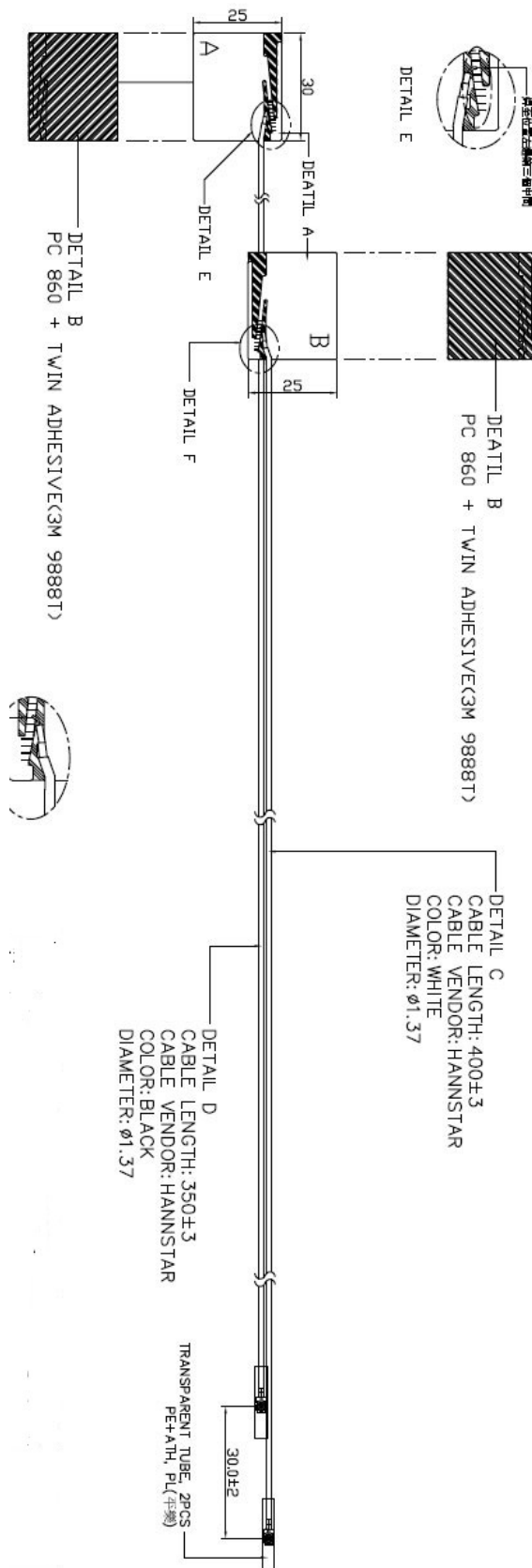


## 2.5 Antenna Cable

XVT32/ XVT37

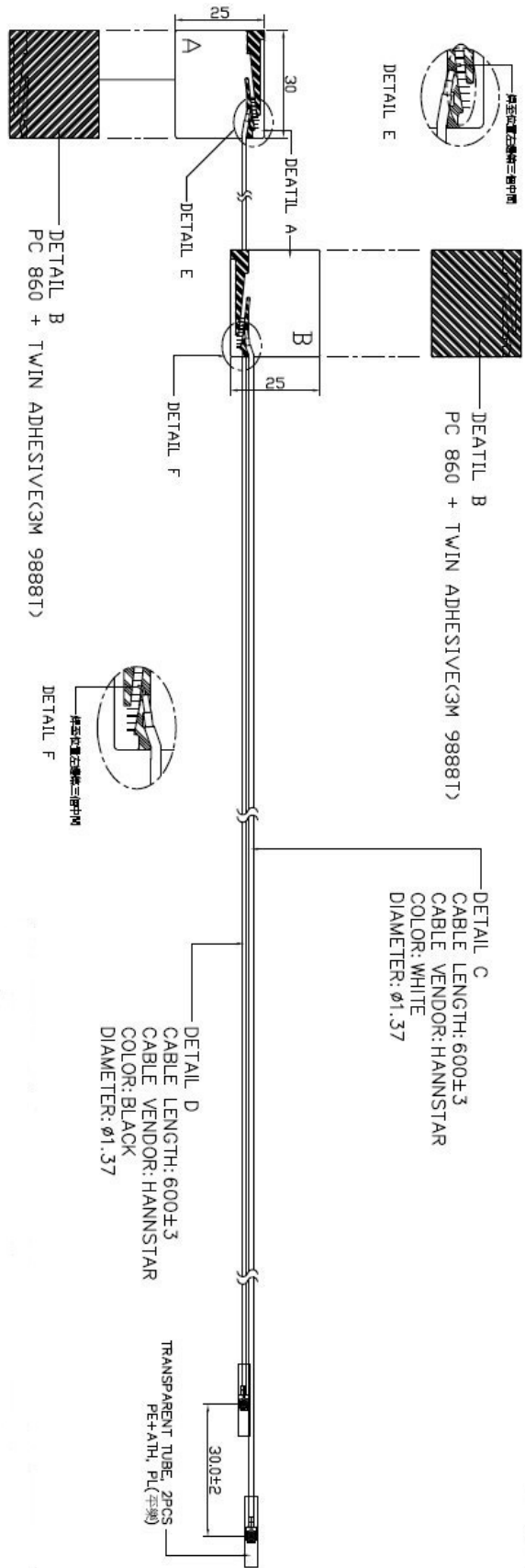


XVT42/ XVT47





XVT55



## Chapter 3 Software

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### 3.1 Operating System Supported

- ◆ Windows 2000, XP, Vista

### 3.2 Wireless Mode Supported

- ◆ AP (Infrastructure) Client mode

### 3.3 Security

- ◆ AP (Infrastructure) mode supports
  - ◆ Static WEP that support both 64 and 128 bit keys.
  - ◆ WPA(TKIP) with PSK
- ◆ Ad-hoc mode supports
  - ◆ None (plaintext)
  - ◆ Static WEP that supports both 64 and 128 bit keys.

## Chapter 4 Appearance

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**TBD**

## Chapter 5 Specifications

### ◆ Frequency Band:

802.11n Radio: 2.4 GHz

802.11g Radio: 2.4 GHz

802.11b Radio: 2.4 GHz

USA – FCC

2412~2462MHz (Ch1~Ch11)

Canada – IC

2412~2462MHz (Ch1~Ch11)

Europe – ETSI

2412~2472MHz (Ch1~Ch13)

Japan – STD-T66/STD-33

2412~2484MHz (Ch1~Ch14)

802.11a Radio : 5 GHz

5.150~5.250GHz

5.250~5.350 GHz

5.470~5.725 GHz

5.725~5.850GHz

### ◆ Operating Channels:

IEEE 802.11b/g/n compliant:

11 channels (US, Canada)

13 channels (ETSI)

14 channels (Japan)

### ● Transmit Power and Sensitivity:

TX Output Power:(Typical)

11b 16.5 +/- 1.5 dBm

11g 14.5 +/- 1.5 dBm@54Mbps

11n 13.5 +/- 1.5 dBm

11a 13.5 +/- 1.5 dBm

Rx Sensitivity:(Typical)

-84 dBm @ 11 Mbps

-72 dBm @ 54 Mbps

-64 dBm @ 64-QAM, 20MHz channel spacing

-61 dBm @ 64-QAM, 40MHz channel spacing

### ◆ Modulation

DBPSK @ 1Mbps

DQPSK@2Mbp

CCK@5.5/11Mbps

BPSK@6/9 Mbps

QPSK@12/18Mbps

16-QAM@24Mbps

64-QAM@48/54Mpb and above, RX up to 300Mbps

- ◆ Current consumption(5V DC):
  - TX: <480mA Max, @MCS15, 40MHz
  - RX: <380 mA Max, @MCS15, 40MHz
  - Radio OFF mode: <60 mA
  
- ◆ Operating Temperature: 0 ~ 40 °C ambient
- ◆ Storage Temperature: -10 ~ 70 °C ambient
- ◆ Humidity: 5 ~ 90% and must be non-condensing
  
- ◆ Regulation and certification compliance available:
  - ◆ WHQL
  - ◆ ETSI/CE
  - ◆ ESD: EN61000-4-2, which specifies 4kV contact and 8kV air discharge.

## References

- ◆ BRCM Reference Design Functional Specification
- ◆ IEEE 802.11b Standard Specification
- ◆ IEEE 802.11g Standard Specification
- ◆ IEEE 802.11n draft Standard Specification

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### **WARNING**

***This document is intended for internal use only. A Non-Disclosure Agreement (NDA) is required to release this document under any circumstances***

### **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: MDZXVT473SV-WL** ". 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.