

User Manual

WN8522D 7-JU

IEEE Dual Band 802.11n USB2.0 Adapter

v.03 draft

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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	June 7 th , 2010	Troy Chen
V 0.2	◆	Add customer code and product drawings	Oct 27 th , 2010	Jeff Wu
V 0.3	◆	Add PCB appearance	Nov 12 th , 2010	Jeff Wu
V 0.4	◆	Add dongle pictures	Jan 3 rd , 2011	Jeff Wu
V 1.0	◆	Add net weight	Jan 25 th , 2011	Jeff Wu

Chapter 1 Introduction

1. Introduction

WN8522D 7-JU is a dual band wireless 802.11n USB Adapter which enables wireless networking systems to attain data communication speeds up to 300 megabits-per-second (Mbps), while remaining backward compatible to the existing installed base of Wi-Fi systems worldwide. It supports operation to the IEEE 802.11a/b and IEEE 802.11g ,and IEEE 802.11n standards.

WN8522D 7-JU will enable a next generation of high-data-rate platforms for operation in the 2.4 GHz band that deliver a five-fold speed increase. The cost and performance advantages will make it an ideal solution for high bandwidth enterprise applications, such as wireless video conferencing and large file transfers. It is compatible with 802.11g standard's mandatory modulation schemes—Complementary Code Keying (CCK), which is used in 802.11b, and Orthogonal Frequency Division Multiplexing (OFDM), used in 802.11g and 802.11n. Using CCK ensures backward-compatibility with the installed Wi-Fi 802.11b base, while OFDM provides the speed required for today's high-bandwidth applications.

1.1 Product Features

- ◆ High speed for wireless LAN connection, Tx/Rx up at 300 Mbps data rate.
- ◆ Backward compatible to the existing IEEE 802.11a/b/g WLAN infrastructure.
- ◆ User-friendly utility to configure SSID, security setup and site survey.
- ◆ Wireless data encryption with 64, 128 encryption for security.
- ◆ Internal antenna
- ◆ Support USB v2.0

1.2 Applications

- ◆ Home networking for device sharing.
- ◆ Wireless multimedia.

Chapter 2 Hardware

2.1 General Overview

- ◆ USB 2.0 Interface and 802.11 n chipset-on-board design.
- ◆ Antenna: 2 external Antennas on board

2.2 Hardware Architecture

Broadcom 43236 single chip USB2.0

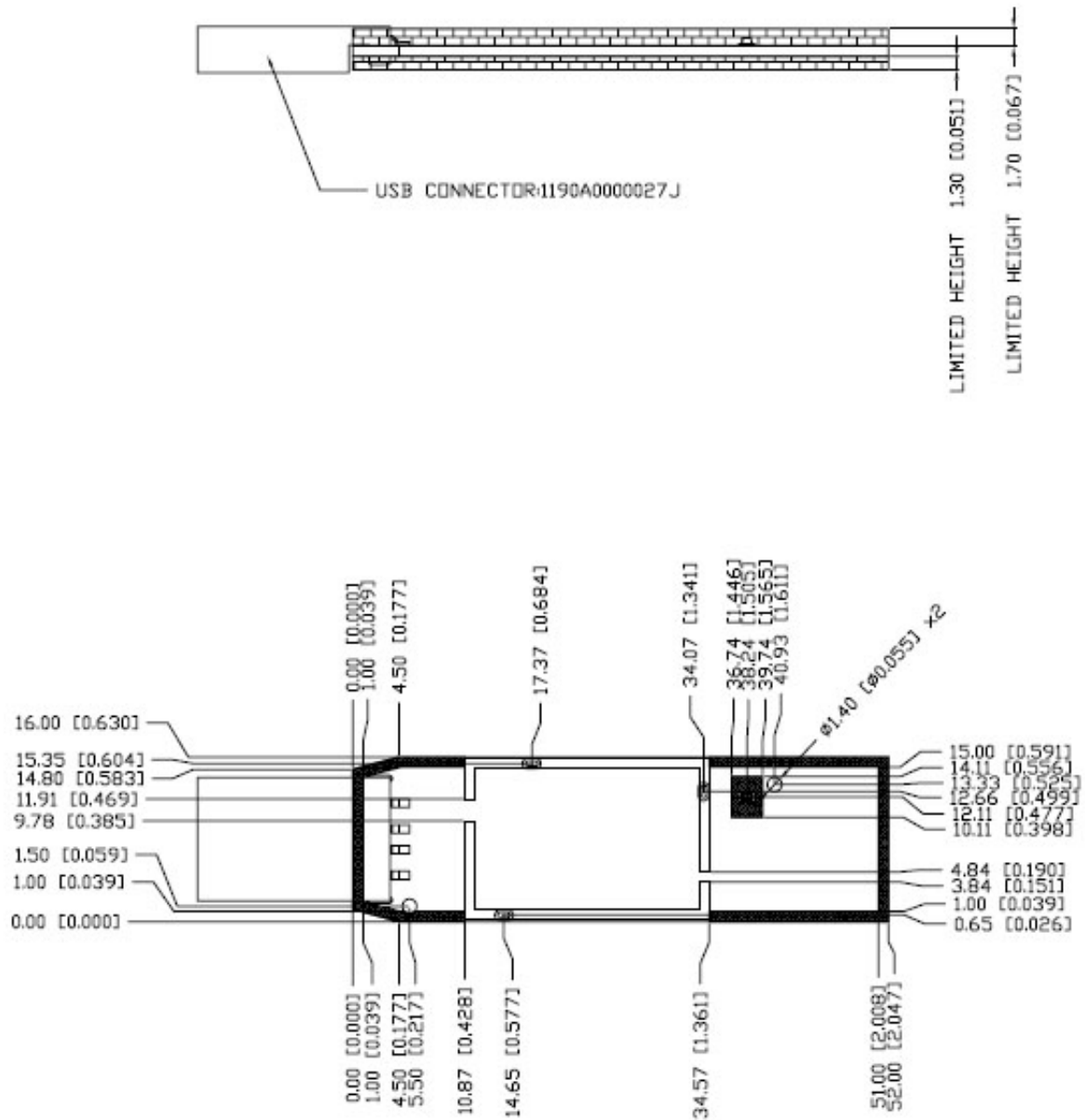
2.3 Main Chipset Information

- ◆ **BCM43236** is a dual band IEEE 802.11n-compliant MAC/PHY/Radio complete system on a chip with 2.4Ghz and 5GHz internal PA

2.5 Net Weight : 13g

2.6 PCB dimension

PCB dimension : 16x52mm



Chapter 3 Software

3.1 Operating System Supported

- ◆ Windows 2000, XP, Vista
- ◆ Linux Driver

3.2 Wireless Mode Supported

- ◆ AP (Infrastructure) Client mode

3.3 Security

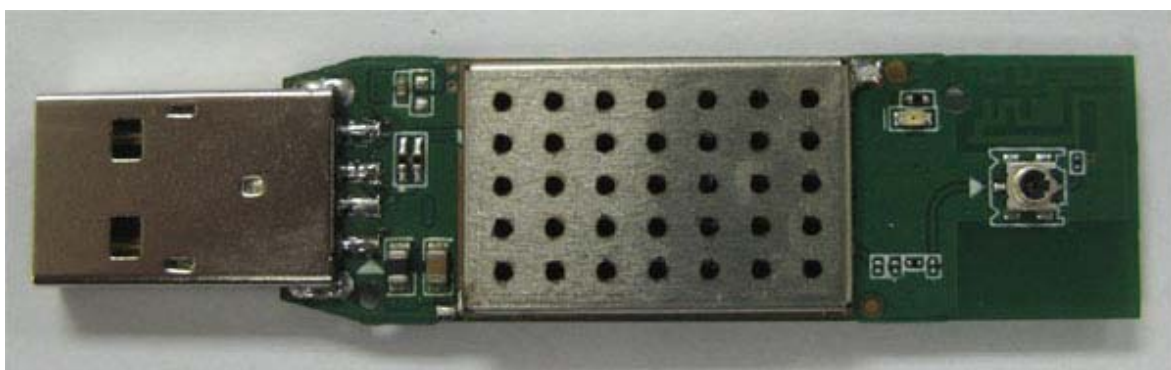
- ◆ AP (Infrastructure) mode supports
 - ◆ Static WEP that support both 64 and 128 bit keys.
 - ◆ WPA(TKIP) with PSK
- ◆ Ad-hoc mode supports
 - ◆ None (plaintext)
 - ◆ Static WEP that supports both 64 and 128 bit keys.

Chapter 4 Appearance

4.1 Housing appearance



4.2 PCB appearance



Front Side



Back Side

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:

2.4GHz

11b 17 +/- 2 dBm

11g 14 +/- 2 dBm

11n 20MHz 13 +/- 2 dBm

11n 40MHz 13 +/- 2 dBm

5GHz (5150~5250MHz , 5250~5350MHz)

11a 14 +/- 2 dBm

11n 20MHz 13 +/- 2 dBm

11n 40MHz 13 +/- 2 dBm

5GHz (5470~5725MHz, 5725~5850MHz)

11a 13 +/- 2 dBm

11n 20MHz 13 +/- 2 dBm

11n 40MHz 13 +/- 2 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

◆ Current consumption(5V DC):

- Tx: 2164mW at 11dBm HT40 CH38 2x2
- Rx: 1405mW at 11dBm HT40 CH38 2x2
- Power Saving: TBD
- Radio OFF mode: TBD

◆ Operating Temperature: 0 ~ 40 °C ambient

◆ Storage Temperature: -20 ~ 60 °C ambient

◆ Humidity: under 85% and must be non-condensing

◆ Regulation and certification compliance available:

- ◆ ETSI/CE
- ◆ FCC
- ◆ 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 Standard Specification

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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.