DNUB-S234B Manual

ITEM	USB Embedded Module
MODEL NAME	DNUB-S234B
DESCRIPTION	IEEE 802.11n 1x1 WiFi Mode
SOLUTION	Broadcom: BCM43234B
SAMSUNG P/N	AK59-00138A
WNC P/N	

Green Procurement

Vendor Code			
Registration Date			
DRAWING	CHECK	AGREEMENT	APPROVAL
A TERM OF VALIDITY	**OVER AT LEAST 15-YEARS FROM ISSUED DATE**		

Indemnification
WNC will indemnify, hold harmless, and at Samsung's request, defend Samsung and Samsung's directors, officers, employees, agents and independent contractors from and against any loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) arising out of or resulting from any third party claim that any Products and/or Components provided by WNC infringes patent, copyright, trade secret right or other intellectual property right. If WNC receives notice of an alleged patent, copyright, trade secret or other intellectual property right infringement or if Samsung's use of the Products and/or the Components provided by WNC shall be prevented by permanent injunction for reasons of patent, copyright or trade secret infringement, WNC may, at its sole option and expense, procure for Samsung the right to continued use of the Products and/or the Components as provided hereunder, or modify the allegedly infringing item such that it is no longer infringing, or replace the allegedly infringing item.

MAKER	WNC	TEL	886-3-6667799
ADDRESS	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan		

Part _ Specification

1. Introduction

DNUB-S234B is a USB embedded module compliant with IEEE802.11n standard. The core chipset is from Broadcom, part number BCM43234B.

2. Features

- 1x1 b/g/n Single Band SISO technology
- Antenna Diversity function
- Support Data rate from MCS 0-7 in 20 MHz Channels.
- Designs meet Pb-free/RoHS worldwide requirements
- Integrated ARM® Cortex-M3™ CPU core plus 256KB ROM and 448KB RAM
- Security through a variety of encryption schemes including WEP, TKIP, AES, WPA™, WPA2™, and IEEE 802.1X
- Integrated 2.4 GHz Power Amplifier to lower solution cost for single-band designs
- Support for Windows® XP, Windows Vista®, and Linux® Operating Systems

3. Hardware Architecture:

3.1 Main Chipset Information

Item	Vender	Part number
MAC/PHY/Radio Transceiver/PA	Broadcom	BCM43234B

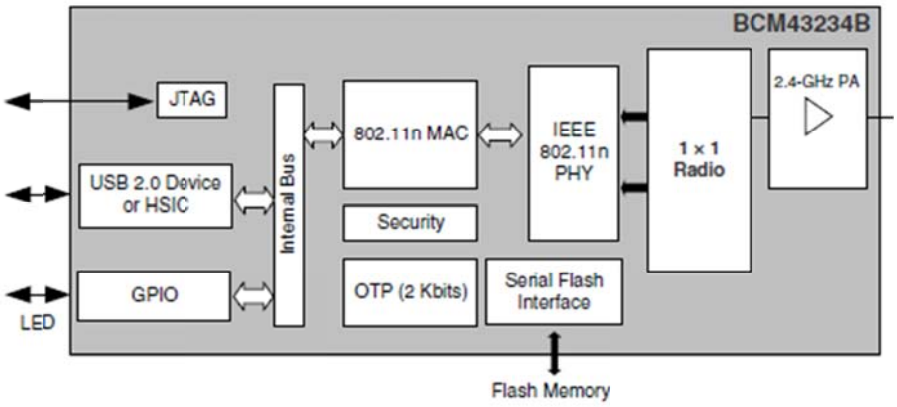


Figure 1-1 DNUB-S234B Chip Block Diagram

3.2 Circuit Block Diagram

The major internal components and external interfaces of DNUB-S234B are illustrated in Figure 1-2.

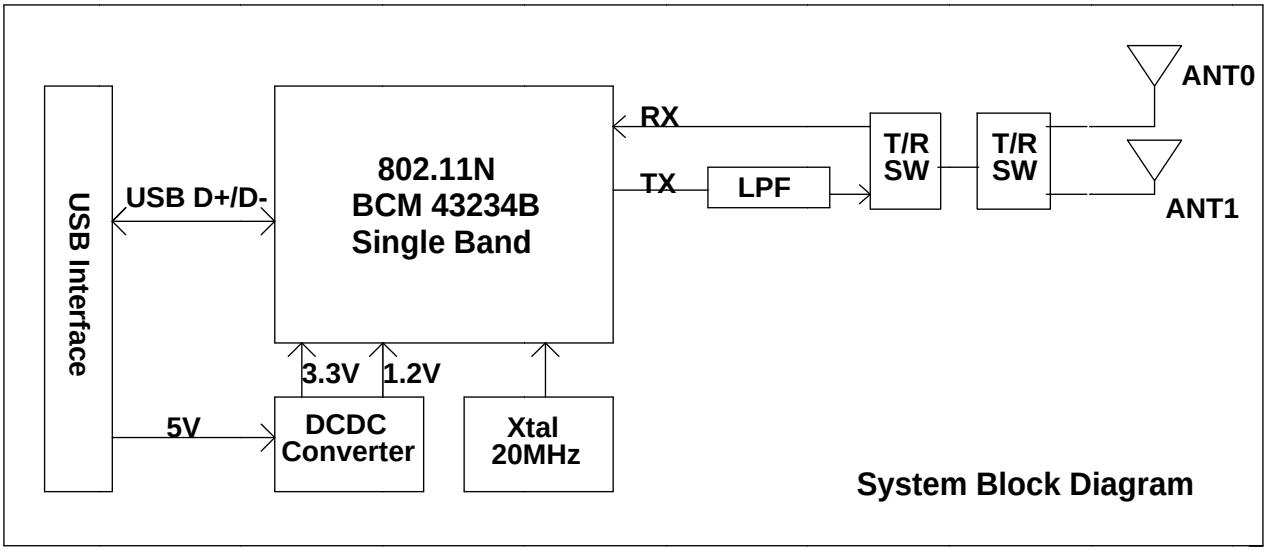
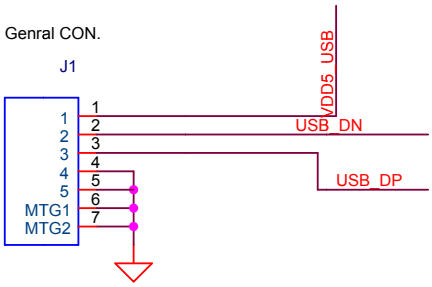
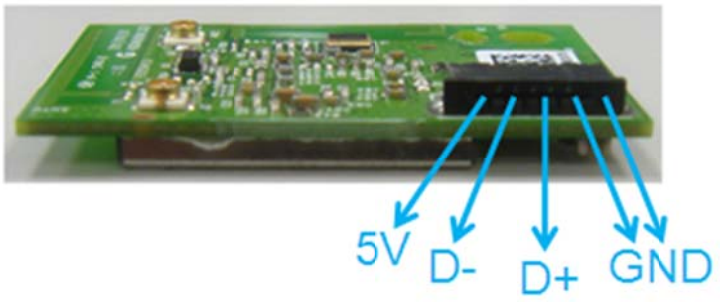


Figure 1-2 DNUB-S234B Major Component and System Interface

4. Interface definition





5. Specifications:

5.1 Supply Voltage:

5 V ⎓ , 400 mA

5.2 Current Consumttion

DNUB-S234B Current Consumption Measurement @~92 % Duty Cycle		
Condition	5 V supply only	
	TX power	AVG
11b Cont. TX @ 1 M (SISO)	15	325
11b Cont. TX @ 11 M (SISO)	15	322
11g Cont. TX @ 6 M (SISO)	15	328
11g Cont. TX @ 54 M (SISO)	15	315
11n Cont. TX @ HT20 MCS0 (SISO)	15	352
11n Cont. TX @ HT20 MCS7 (SISO)	15	334

Current Consumption of DUT

6. Environmental Spec.

Operating Temperature Range:	-10degree C~ 60degree C
Storage Temperature Range:	Temperature: -20 ～ 80 ℃ Humidity: 95 % (MAX)
Operating Humidity Range:	10 % ～ 90 % (No dew condensation)

7. Statements

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.

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 20 cm between the radiator & your body.

USERS MANUAL OF THE END PRODUCT:

In the user 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 user 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 FCC ID: A3LDNUBS234B**". 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.

IC Statement

This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de la classe B est conforme á la norme NMB-003 du Canada.

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.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

IC Radiation Exposure Statement

This device is in compliance with SAR for general population/uncontrolled exposure limits in IC RSS-102 and has been tested in accordance with the measurement methods and procedures specified in IEEE 1528. This equipment should be installed and operated with a minimum separation distance of 20 cm between the device and your body. The device and its antenna must not be co-located or operated in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the IC 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 IC RSS-102 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 user 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 IC 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. IC statement is required to be available in the user manual: This Class B digital apparatus complies with Canadian ICES-003. 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 IC : 649E-DNUB234B**".