USER MANUAL

WN7911B

IEEE 802.11n SDIO WiFi module

V 01

.

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Revision History

Edition #	*Reason for revision*	*Issue date*	*Written by*
V 0.1	♦ Initial Document	July 10 2012	Troy Chen

Chapter 1 Introduction

1.1 Introduction

WN7911Ban industrial wireless 802.11n SDIO WiFi module enable wireless networking systems to attain data transmission speeds up to 150megabits-per-second (Mbps), while remaining backward compatible to the existing installed base of Wi-Fi systems worldwide. It supports operation to the IEEE 802.11b and IEEE 802.11g ,and IEEE 802.11n standards.

1.2 Product Features

- Operate at ISM frequency bands (2.4GHz)
- SDIO/GSPI interface for WiFi
- IEEE standards support: IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE
- 802.11d, IEEE 802.11e, IEEE 802.11h, IEEE 802.11i
- Enterprise level security which can apply WPA2 certification for WiFi.
- WiFi 1 transmitter and 1 receiver allow data rates supporting up to 150 Mbps
- downstream and 150 Mbps upstream PHY rates.
- Full-featured software utility for easy configuration and management
- RoHS compliance
- Low Halogen compliance

1.3 Applications

- Mobile networking for Tablet PC

Chapter 2 Hardware

2.1 General Specification

Host Interface	SDIO/GSPI
Standard	IEEE 802.11n, 802.11b/g
Chipset	RTL8189ESC9G34P1
Description	Realtek RTL8189ESC9G34P1:MAC/ WiFi Baseband / RF:
Modulation	802.11b: CCK, DQPSK, DBPSK 802.11g: 64 QAM, 16 QAM, QPSK, BPSK 802.11n: BPSK, QPSK, 16-QAM, 64-QAM
Data Rate	8802.11b: 11, 5.5, 2, 1 Mbps; 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: MCS 0 to 7 for HT20MHz; MCS 0 to 7 for HT40MHz
Network Architecture	Infrastructure mode
Operating Frequency	Draft 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)
Operating Channel	WiFi 2.4GHz: 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14(ch1-14)– Japan 2.400GHz ~ 2.4835 GHz
Security	WPA, WPA-PSK, WPA2, WPA2-PSK, WEP 64bit & 128bit, IEEE 802.11x, IEEE 802.11i
Antenna Connector	One antenna allowing transmission or reception on both, simultaneously
Operating System Supported	Windows XP/Vista/Win7
Temperatures	Operating Temperature: 0°C to +40 °C Storage Temperature: -40°C to +80°C (non-operating)
Humidity	5-90

2.2 Ping Assignment

Pin Definition

PIN#	Type	Pin Description
1	I/O	SDIO Data Line0
2	I/O	SDIO Data Line 1
3		Ground
4	I	SDIO Data Clock Input
5	I/O	SDIO Data Command Input
6	I/O	SDIO Data Line 2
7	I/O	SDIO Data Line 3
8	P	Shut down RTL8189ES internally
9	O I/O	LED pins(Active Low) Share with GPIO 5, can be selected by control register
10	I/O	General Purpose I/O pin Tie it to ground if not use
11		Ground
12		Ground
13	I/O	General Purpose Input/Output
14	P	VDD 3.3V
15	P	VDD for SDIO pin, the power supply is same as the signal of SDIO bus (3.3V~1.8)

2.3 Antenna List

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	arcaduan	WN7911B-ZZ-R0A	PCB Antenna	N/A	0.44

Note: The EUT has one antenna.

Chapter 3 Appearance

3.1 PCB dimension

Module size: 25mm X 12.5mm X 2.1mm

	Length	Width	Height
Dimensions (mm)	25 **(Tolerance:±0.1mm)**	12.5 **(Tolerance:±0.1mm)**	2.1 **(Tolerance:±0.15mm)**

3.2 PCB Fabricated Spec

PCB: FR-4

Tg: Tg150

Au >1.2u”

PCB is “ ENIG + Entek” , Please don’t roast.

IR reflow, please refer JEDEC J-STD-020C

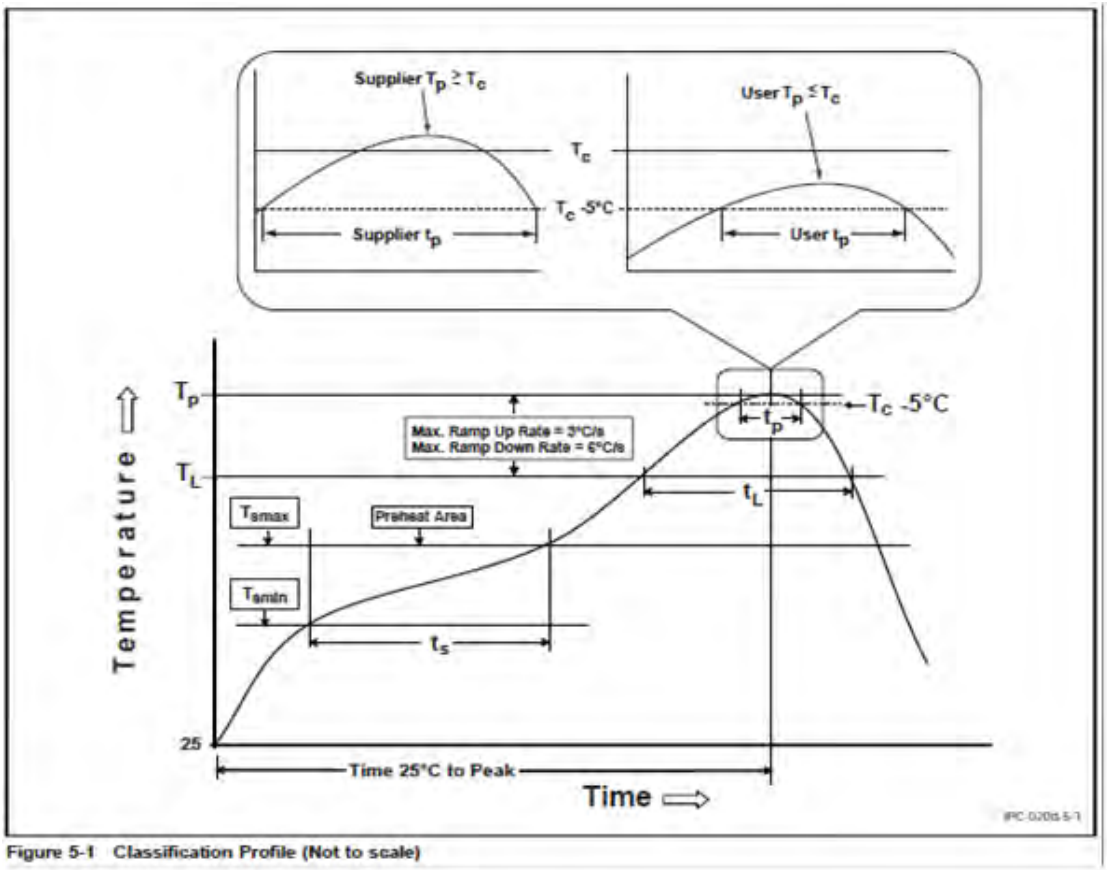


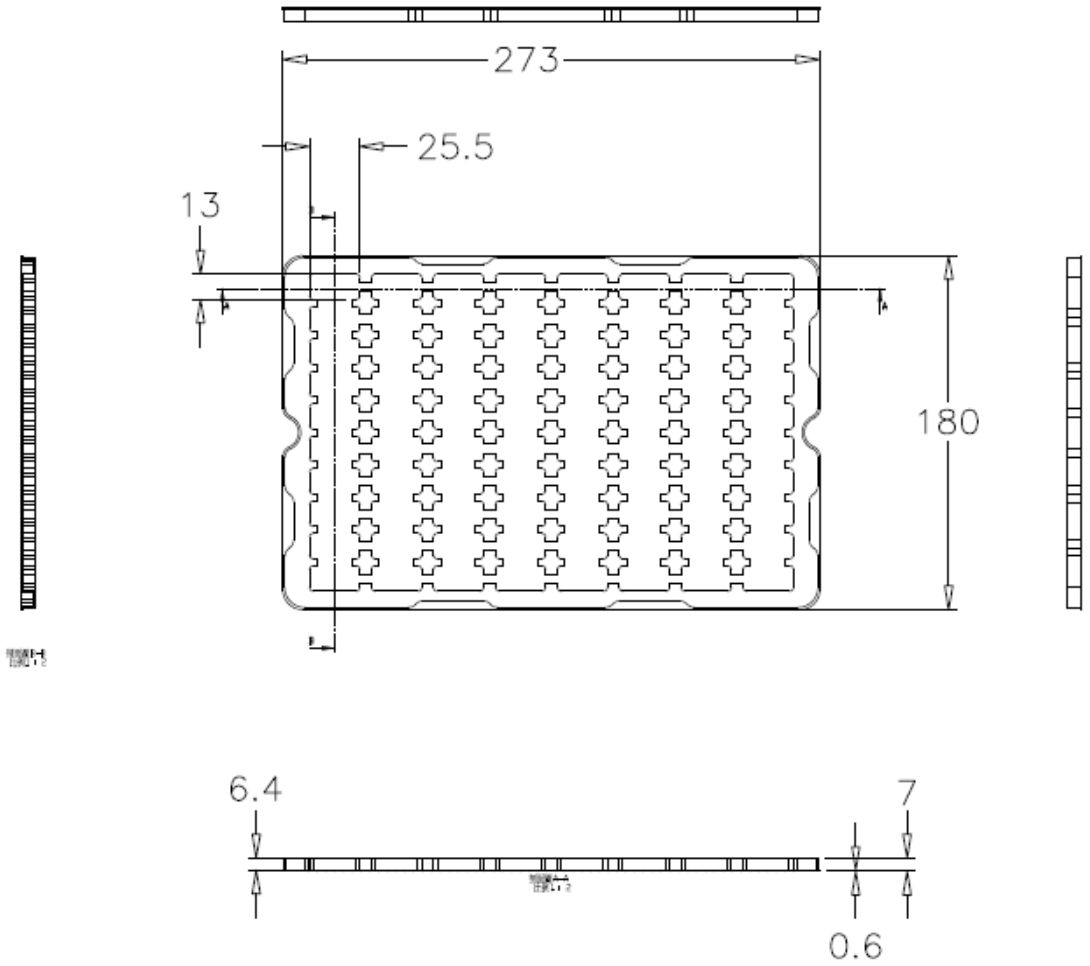
Figure 5-1 Classification Profile (Not to scale)

3.3 Packing:

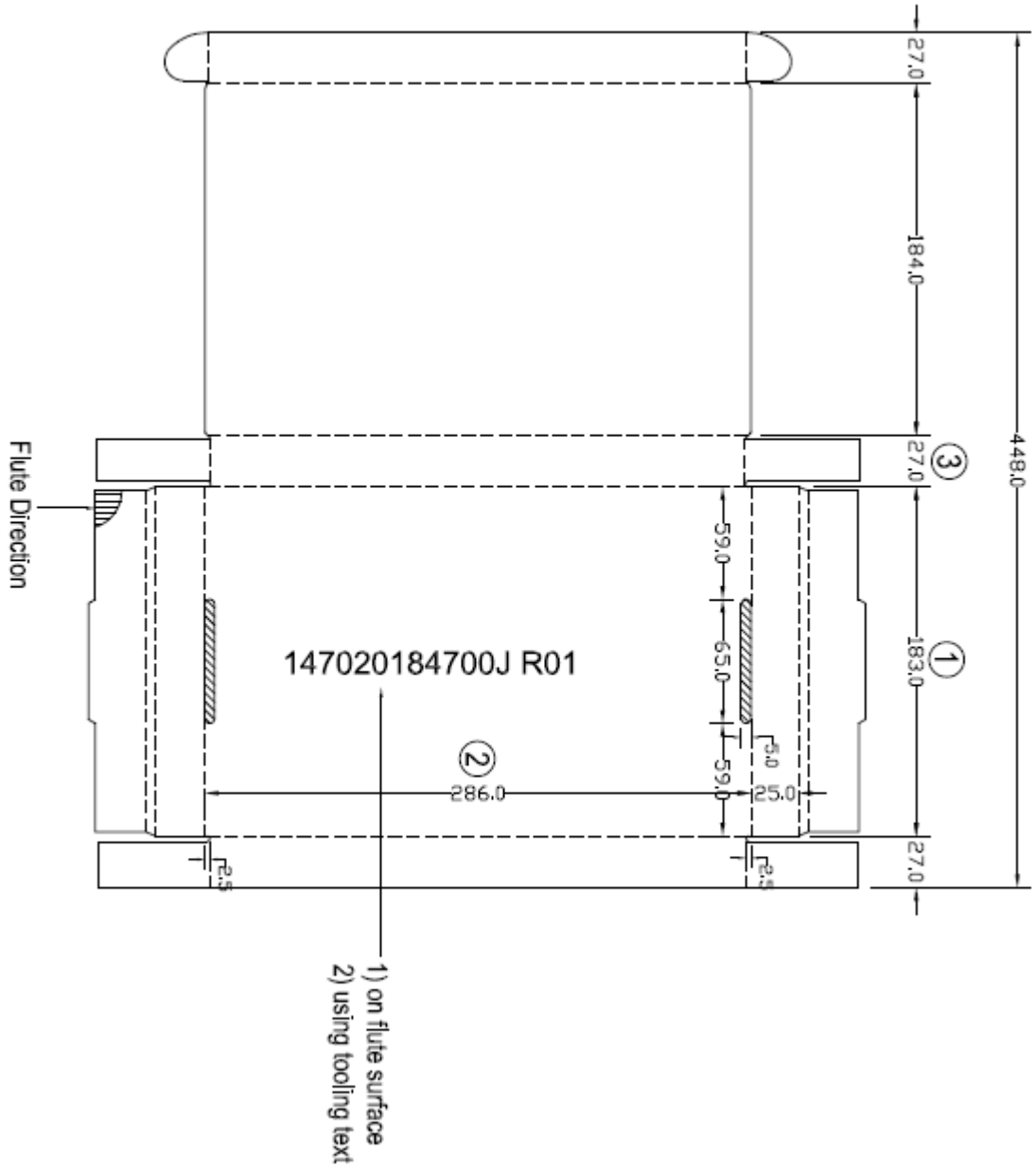
One tray: 80pcs

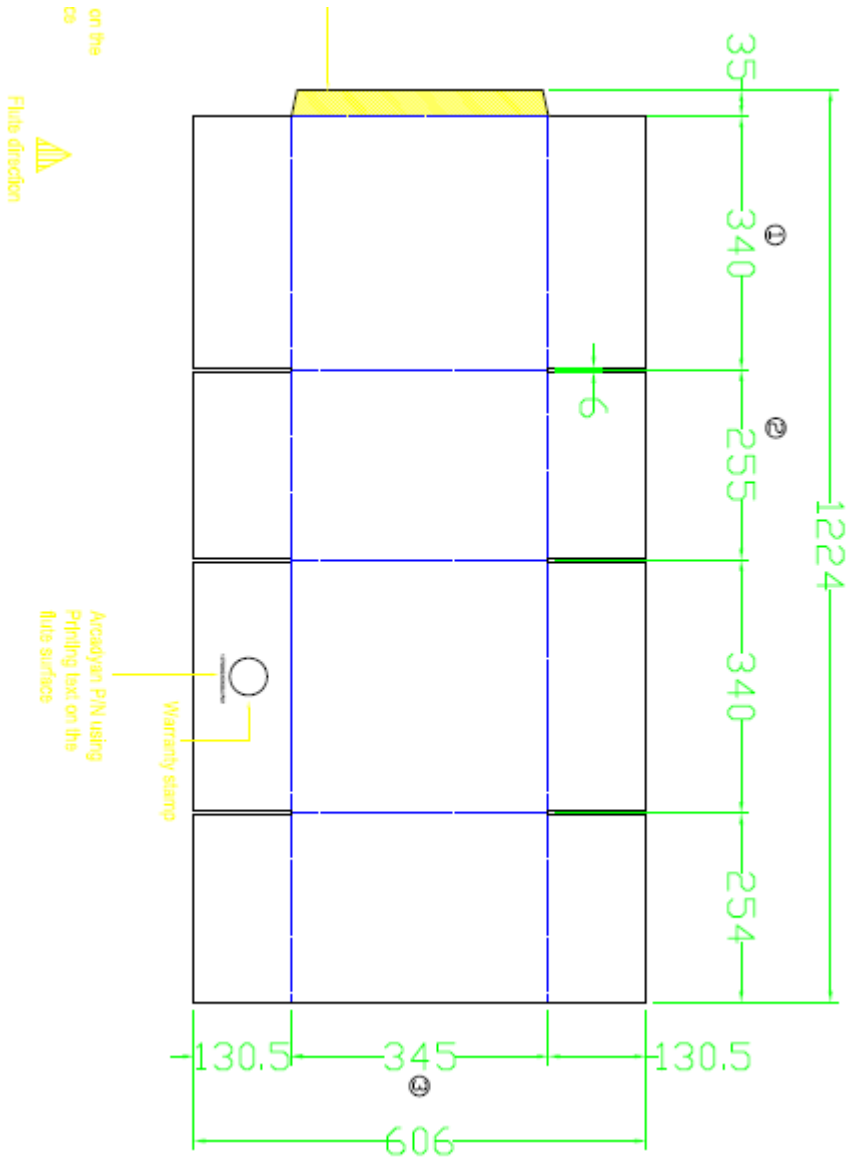
Box: 240pcs

1 carton: 10 boxes


273
25.5
13
180

6.4
7
0.6


27.0
184.0
27.0
448.0
3
Flute Direction
59.0
65.0
5.0
59.0
5.0
147020184700J R01
183.0
1
2
286.0
27.0
2.5
2.5
1) on flute surface
2) using tooling text



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.

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 with any other transmitters except in accordance with FCC multi-transmitter product procedures.
Refering to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2P.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.
Additional testing and certification may be necessary when multiple modules are used.
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: RAXWN7911B ". 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.

(1) 「經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能」。

(2) 「低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾」。

(3) 「不致造成違反低功率電波輻射性電機管理辦法之所有控制、調整及開關之使用方法」。

(4) 「對任何可能造成違反管理辦法規定之調整予以警告，或建議由具有發射機維修專長之技術人員執行或由其直接監督及負責」。

(5) 「對任何可能造成違反管理辦法之零件(晶體、半導體等)置換之警告」。

(6) 「本模組於取得認證後將依規定於模組本體標示審驗合格標籤, 並要求平台廠商於平台上標示「本產品內含射頻模組 CC XX xx LP yyy Z z」。