

## AW-XB560NF-NV

# IEEE 802.11a/b/g/n/ac/ax Wireless LAN 2T2R and Bluetooth 5.3 Combo Module (M.2 2230)

## **Datasheet**

Rev. A

DF

## (For Nvidia)

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 FORM NO.: FR2-015\_A
 Responsible Department : WBU
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#### Features WLAN General

- CMOS MAC, Baseband PHY and RF in a single chip for IEEE 802.11a/b/g/n/ac/ax compatible WLAN
- Support 802.11 ac/ax 2x2, Wave-2 compliant with MU-MIMO
- Complete 802.11n MIMO solution for 2.4GHz and 5GHz and 6GHz band.
- Support 802.11ax 2x2, with OFDMA and MU-MIMO, by 4 types PPDU format, such as HE-SU-PPDU, HE\_ER-SU\_PPDU, HE-MU-PPDU, and HE-TB-PPDU.
- Maximum PHY data rate up to 286.8 Mbps using 20MHz bandwidth, 573.5Mbps using 40MHz bandwidth, and 1201Mbps using 80MHz bandwidth, and 2402Mbps using 160MHz.
- Backward compatible with 802.11a/b/g devices while operating at 802.11n data rates
- Backward compatible with 802.11a/n/ac devices while operating at 802.11ax data rates.

#### Host interface

- Complies with PCI Express Base Specification Revision 2.1.
- Complies with USB2.0 FS-mode Specification for Bluetooth.
- PCIe LTR/L1.Off state supported.
- USB Selective Suspend supported.

#### **Standards Supported**

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- IEEE 802.11a/b/g/n/ac/ax compatible WLAN
- IEEE 802.11e QoS Enhancement (WMM)

- IEEE 802.11i (WPA, WPA2, WPA3). Open, shared key, and pair-wise key authentication services
- IEEE 802.11h DFS, TPC, Spectrum Measurement
- IEEE 802.11k Radio Resource Measurement
- WAPI (Wireless Authentication Privacy Infrastructure) certified.

#### **MAC Features**

- Frame aggregation for increased MAC efficiency (A-MSDU, A-MPDU)
- MU/RU/SU decision path by firmware
- Low latency immediate Block
   Acknowledgement (BA)
- PHY-level spoofing to enhance legacy compatibility
- MIMO power saving mechanism
- Support TWT function for power saving
- Channel management and co-existence
- Multiple BSSID feature allows the RTL8852CE-CG to assume multiple MAC identities when used as a wireless bridge
- Transmit Opportunity (TXOP) Short Inter-Frame Space (SIFS) bursting for higher multimedia bandwidth
- WiFi Direct supports wireless peer to peer applications. Support BSR and queue size of Qos.
- Support MU EDCA feature.
- Support DFS, Channel info, PPDU state by Rx path.

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#### Other Features

- Supports Wake-On-WLAN via Magic Packet • and Wake-up frame
- Transmit Beamforming •
- Support S3/S4 AES/TKIP group key update
- Support Dual band concurrent. (2.4G/5G) •
- FTM support distance measurement •
- Support Network List Offload •
- CCA on secondary **RTS/CTS** through • handshake.
- Support TCP/UDP/IP checksum offload

#### **Peripheral Interfaces**

- Up to 15 General Purpose Input/ Output pins. •
- Two configurable LED pins. ٠
- Generates 40MHz clock for peripheral chip. •
- Single external power source 3.3V only. ٠
- Crystal frequency support 40MHz •

#### PHY Features

- IEEE 802.11ax MIMO OFDM/OFDMA •
- IEEE 802.11ac MIMO OFDM •
- IEEE 802.11n MIMO OFDM •

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- Two Transmit and Two Receive paths •
- 20MHz / 40MHz/ 80MHz/ 160MHz bandwidth ٠ transmission
- Support 2.4GHz, 5GHz, 6GHz band channels ٠
- Short Guard Interval (0.4us) for non-HE. 1xLTF • and 0.8us guard interval for HE SU/ERSU. 4x LTF and 0.8us guard interval for HE MU
- DSSS with DBPSK and DQPSK, CCK • modulation with long and short preamble
- OFDM with BPSK, QPSK, 16QAM, 64QAM and 256QAM modulation. Convolutional Coding Rate: 1/2, 2/3, 3/4, and5/6.

- Maximum data rate 54Mbps in 802.11g, • 300Mbps in 11n and 866.7Mbps in 802.11ac, 2402Mbps in 802.11ax.
- OFDM / DSSS receive diversity with MRC • using up to 2 receive paths.
- Support STBC.
- Support LDPC. •
- Hardware antenna diversity. •
- Maximum-Likelihood Detection (MLD) •
- Fast receiver Automatic Gain Control (AGC) •
- On-chip ADC and DAC. •
- Build-in both 2.4GHz and 5GHz PA. •
- Build-in both 2.4GHz and 5GHz LNA. •

#### Bluetooth **Bluetooth Controller**

- Support BT5.3 HCI Encryption Key Size Control
- Support Bluetooth 5 system
- Compatible with Bluetooth v2.1+EDR •
- Integrated MCU to execute Bluetooth protocol • stack
- Supports all packet types in basic rate and enhanced data rate
- Supports Secure Simple Pairing
- Enhanced BT/WIFI Coexistence Control to improve transmission quality in different profiles
- Dual Mode support: Simultaneous LE and **BR/EDR**
- Supports multiple Low Energy states

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#### **Bluetooth Transceiver**

- Fast AGC control to improve receiving dynamic range
- Integrated internal Class 1, Class 2, and Class 3 PA
- Supports Enhanced Power Control
- Supports Bluetooth Low Energy
- Integrated 32K oscillator for power management



## **Revision History**

#### Document NO: R2-2560NF-DST-09

Version	Revision Date	DCN NO.	Description	Initials	Approved
Α	2024/6/24	DCN031824	Initial Version	Jeff Kuo	NC Chen



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#### 1. Introduction

#### **1.1 Product Overview**

AzureWave Technologies, Inc. introduces the pioneer of the IEEE 802.11 a/b/g/n/ac/ax WIFI with Bluetooth 5.3 combo M.2 module --- AW-XB560NF-NV. The AW-XB560NF-NV is a highly integrated single-chip that support 2-stream 802.11ax solutions with Multi-user MIMO (Multiple-Input, Multiple-Output) with Wireless LAN (WLAN) PCI Express network interface controller with integrated Bluetooth 5 USB interface controller. It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in single chip.

The AW-XB560NF-NV baseband implements Multi-user Multiple Input, Multiple Output (MU-MIMO)Orthogonal Frequency Division Multiplexing (OFDM) with two transmit and two receive paths (2T2R).Features include two spatial stream transmissions, short Guard Interval (GI), spatial spreading, and support for variant channel bandwidth. Moreover, AW-XB560NF-NV provides one spatial stream space-time block code (STBC), Transmit Beamforming (TxBF) and Low Density Parity Check (LDPC) to extend the range of transmission. At the receiver, extended range and good minimum sensitivity is achieved by having receiver diversity up to 2 antennas. As the recipient, the AW-XB547NF also supports explicit sounding packet feedback that helps senders with beamforming capability.

For legacy compatibility, Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK) and OFDM baseband processing are included to support all IEEE 802.11b, 802.11g and 802.11a data rates. Differential phase shift keying modulation schemes, DBPSK and DQPSK with data scrambling capability are available, and CCK provides support for legacy data rates, with long or short preamble. The high speed FFT/IFFT paths, combined with BPSK, QPSK, 16QAM, 64QAM and 256QAM, and up to 1024QAM modulation of the individual subcarriers, and rate compatible coding rate of 1/2, 2/3, 3/4, and 5/6, provide up to 2402Mbps for IEEE 802.11ax MIMO OFDM.

The RTL8852CE-CG builds in an enhanced signal detector, an adaptive frequency domain equalizer, and a soft-decision Viterbi decoder to alleviate severe multi-path effects and mutual interference in the reception of multiple streams. For better detection quality, receive diversity with Maximal-Ratio-Combine (MRC) applying up to two receive paths, and Maximum-Likelihood Detection (MLD) are implemented. Robust interference detection and suppression are provided to

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protect against Bluetooth, cordless phone, and microwave oven interference. Receive vector diversity for multi-stream application is implemented for efficient utilization of the MIMO channel. Efficient IQ-imbalance, DC offset, phase noise, frequency offset, and timing offset compensations are provided for the radio frequency front-end.

The RTL8852CE-CG supports fast receiver Automatic Gain Control (AGC) with synchronous and asynchronous control loops among antennas, antenna diversity functions, and adaptive transmit power control functions to obtain better performance in the analog portions of the transceiver.

The RTL8852CE-CG MAC supports 802.11e for multimedia applications, 802.11i and WAPI for security, and 802.11n/802.11ac for enhanced MAC protocol efficiency. Using packet aggregation techniques such as A-MPDU with BA and A-MSDU, protocol efficiency is significantly improved. Power saving mechanisms such as Legacy Power Save, U-APSD, and MIMO power saving reduce the power wasted during idle time, and compensate for the extra power required to transmit MIMO OFDM. The RTL8852CE-CG provides simple legacy, 20MHz/40MHz/80MHz/160MHz co-existence mechanisms to ensure backward and network compatibility.

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#### 1.2 Block Diagram



AW-XB560NF-NV BLOCK DIAGRAM



## **1.3 Specifications Table**

#### 1.3.1 General

Features	Description				
Product Description	IEEE 802.11a/b/g/n/ac/ax Wireless LAN 2T2R and Bluetooth 5.3 Combo Module (M.2 2230)				
Major Chipset	RTL8852CE-CG				
Host Interface	Ni-Fi + BT ● PCI-E + USB				
Dimension	22mm x 30mm x 2.25mm (Tolerance remarked in mechanical drawing)				
Form factor	M.2 2230 A-E Key				
Antenna	I-PEX MHF4 Connector Receptacle (20449) ANT1(AUX) : WiFi/Bluetooth $\rightarrow$ TX/RX ANT2(Main) : WiFi $\rightarrow$ TX/RX				
Weight	2.3g				

#### 1.3.2 WLAN

Features	Description
WLAN Standard	IEEE 802.11 a/b/g/n/ac/ax 2T2R
WLAN VID/PID	10EC/C852
WLAN SVID/SPID	1A3B/5600
Frequency Rage	2.4 GHz : 2.412 ~ 2.484 GHz 5 GHz : 5.180~5.825 GHz 6 GHz : 5.955~7.115 GHz
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM
Number of Channels	<ul> <li>2.4GHz</li> <li>USA, NORTH AMERICA, Canada and Taiwan – 1 ~ 11</li> <li>China, Australia, Most European Countries – 1 ~ 13</li> <li>Japan, 1 ~ 14 (CH14 only for 802.11b)</li> <li>5GHz</li> <li>USA, EUROPE – 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165</li> <li>6GHz</li> <li>CH1~CH233</li> </ul>

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	2.4G				
		Min	Тур	Max	Unit
	11b (11Mbps) @EVM<8%	17.5	19	20.5	dBm
	11g (54Mbps) @EVM≦-25 dB	16.5	18	19.5	dBm
	11n (HT20 MCS7) @EVM≦-28 dB	15.5	17	18.5	dBm
	11n (HT40 MCS7) @EVM≦-28 dB	15.5	17	18.5	dBm
	11n (VHT20 MCS8) @EVM≦-30 dB	14.5	16	17.5	dBm
	11n (VHT40 MCS9) @EVM≦-32 dB	13.5	15	16.5	dBm
	11ax (HE20 MCS11) @EVM≦-35 dB	11.5	13	14.5	dBm
	11ax (HE40 MCS11) @EVM≦-35 dB	11.5	13	14.5	dBm
	5G				
		Min	Тур	Max	Unit
Output Power (Board Level Limit) <sup>*</sup>	11a (54Mbps) @EVM<-25 dB	14.5	16	17.5	dBm
	11n (HT20 MCS7) @EVM≦-28 dB	13.5	15	16.5	dBm
	11n (HT40 MCS7) @EVM≦-28 dB	13.5	15	16.5	dBm
	11ac (VHT20 MCS8) @EVM≦-30 dB	12.5	14	15.5	dBm
	11ac (VHT40 MCS9) @EVM≦-32 dB	11.5	13	14.5	dBm
	11ac (VHT80 MCS9) @EVM≦-32 dB	11.5	13	14.5	dBm
	11ac (VHT160 MCS9) @EVM≦-32 dB	11.5	13	14.5	dBm
	11ax (HE20 MCS11) @EVM≦-35 dB	9.5	11	12.5	dBm
	11ax (HE40 MCS11) @EVM≦-35 dB	9.5	11	12.5	dBm
	11ax (HE80 MCS11) @EVM≦-35 dB	9.5	11	12.5	dBm
	11ax (HE160 MCS11) @EVM≦-35 dB	9.5	11	12.5	dBm

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6G				
	Min	Тур	Max	Unit
11ax (HE20 MCS11) @EVM≦-35 dB	7.5	9	10.5	dBm
11ax (HE40 MCS11) @EVM≦-35 dB	7.5	9	10.5	dBm
11ax (HE80 MCS11) @EVM≦-35 dB	7.5	9	10.5	dBm
11ax (HE160 MCS11) @EVM≦-35 dB	7.5	9	10.5	dBm



	2.4G				
		Min	Тур	Max	Unit
	11b (11Mbps)		-88	-85	dBm
	11g (54Mbps)		-77	-74	dBm
	11n (HT20 MCS7)		-73	-70	dBm
	11n (HT40 MCS7)		-70	-67	dBm
	11ac(VHT20 MCS8)		-68	-65	dBm
	11ac(VHT40 MCS9)		-63	-60	dBm
	11ax (HE20 MCS11)		-63	-60	dBm
	11ax (HE40 MCS11)		-60	-57	dBm
	5G				
		Min	Тур	Max	Unit
	11a (54Mbps)		-77	-74	dBm
	11n (HT20 MCS7)		-73	-70	dBm
<b>Receiver Sensitivity</b>	11n (HT40 MCS7)		-70	-67	dBm
-	11ac(VHT20 MCS8)		-68	-65	dBm
	11ac(VHT40 MCS9)		-63	-60	dBm
	11ac(VHT80 MCS9)		-62	-59	dBm
	11ac(VHT160 MCS9)		-58	-55	dBm
	11ax (HE20 MCS11)		-63	-60	dBm
	11ax (HE40 MCS11)		-60	-57	dBm
	11ax(HE80 MCS11)		-57	-54	dBm
	11ax(HE160 MCS11)		-54	-51	dBm
	66				
		Min	Typ	Max	Unit
	11ax (HE20 MCS11)		-62	-59	dBm
	11ax (HE40 MCS11)		-59	-56	dBm
	11ax (HE80 MCS11)		-56	-53	dBm
	11ax (HE160 MCS11)		-54	-51	dBm
	WLAN:				
	802.11b: 1, 2, 5.5, 11Mbr	os			
	802.11a/g: 6, 9, 12, 18, 2	24, 36, 48, 5	54Mbps		
	802.11n: up to 150Mbps-	-single	·		
Data Bata	802.11n: up to 300Mbps-	-2x2 MIMO			
Data Rate	802.11ac:up to 173.3Mbps (20MHz channel)				
	802.11ac:up to 400Mbps (40MHz channel)				
	802.11ac:up to 866.7Mbps (80MHz channel)				
	802.11ax:up to 1.2Gbps	(80MHz ch	annel)		
	802.11ax:up to 2.4Gbps	(160MHz c	hannel)		
	WAPI				
Security	WEP 64-bit and 128-bit e	encryption v	with H/W TK	IP process	sing
	WPA/WPA2/WPA3 (Wi-F	i Protected	Access)		
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AES-CCMP hardware implementation as part of 802.11i security

standard

\* If you have any certification questions about output power please contact FAE directly.

#### 1.3.3 Bluetooth

Features	Description				
Bluetooth Standard	Bluetooth 5.3				
Bluetooth VID/PID	13D3/3586				
Frequency Rage	2402~2480MHz				
Modulation	GFSK (1Mbps), П/4 DC	QPSK (2Mbp	os) and 8DP	SK (3Mbps	)
Output Power	BDR EDR Low Energy (1MHz) Low Energy (2MHz)	Min 2 2 2 2 2	Typ           4           4           4           4           4           4           4	Max 6 6 6 6	Unit dBm dBm dBm dBm
Receiver Sensitivity	BDR (BER<0.1%) EDR (π/4 DQPSK) (BER<0.07%) EDR (8PSK) (BER<0.07%) BLE(1M) (PER<-30.8%) BLE(2M) (PER<-30.8%) BLE(S=2) (PER<-30.8%) BLE(S=8) (PER<-30.8%)	Min	Typ -82 -82 -80 -85 -85 -85 -88 -88	Max -79 -79 -77 -82 -82 -82 -85 -85	Unit dBm dBm dBm dBm dBm dBm dBm



#### **1.3.4 Operating Conditions**

Features	Description			
	Operating Conditions			
Voltage	Power supply for host:3.3V			
Operating Temperature	-10°C ~70°C			
Operating Humidity	less than 85%R.H.			
Storage Temperature	-30°C ~ 85°C			
Storage Humidity	less than 60%R.H.			
ESD Protection				
Human Body Model	N/A			
Changed Device Model	N/A			

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## 2. Pin Definition

2.1 Pin Map





## 2.2 Pin Table

Pin No	Definition	Basic Description	Voltage	Туре
1	GND	Ground.		GND
2	3.3V	3.3V power supply	3.3V	VCC
3	USB_D_P	USB Differential signal		I/O
4	3.3V	3.3V power supply	3.3V	VCC
5	USB_D_N	USB Differential signal		I/O
6	LED_WLAN_L	Active low signal. The signal is used to provide status indicators via LED.		Output
7	GND	Ground.		GND
16	LED_BT_L	Active low signal. The signal is used to provide status indicators via LED.		Output
18	GND	Ground.		GND
20	BT_WAKE_HOST	BT wake Host. No function, please don't connect to this pin. We suggest configuring the control pin in in platform side as open-drain.		N/A
22	RESERVED	Please don't connect to this pin.		N/A
32	RESERVED	Please don't connect to this pin.		N/A
33	GND	Ground.		GND
34	RESERVED	Please don't connect to this pin.		N/A
35	PERp0	Differential receive.		Input
36	RESERVED	Please don't connect to this pin.		N/A
37	PERn0	Differential receive.		Input
38	BT_WAKE	Host wake BT. No function, please don't connect to this pin. We suggest configuring the control pin in in platform		N/A

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		side as open-drain.		
39	GND	Ground.		GND
41	PETp0	Differential transmit.		Output
43	PETn0	Differential transmit.		Output
45	GND	Ground.		GND
47	REFCLKP	Differential reference clock.		Input
49	REFCLKN	Differential reference clock.		Input
50	NC	Floating Pin, No connect to anything.		Floating
51	GND	Ground.		GND
52	PERST0	PCI Express Reset Signal: active low. When the PERST# is asserted at power-on state, the RTL8852BE returns to a pre-defined reset state and is ready for initialization and configuration after the de- assertion of the PERST#		Input
53	CLKREQ0	Reference clock request	3.3V	Output
54	BT_DISABLE	BT disable control.	3.3V	Input
55	PEWAKE#	Open Drain active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event.		OUT
56	W_DISABLE1#	This pin can be defined as the WLAN Radio-off function with host interface remaining connected. When this pin is pulled low, WLAN function will be Radio-off. When this function is not required, external pull high is not required. We suggest configuring the control pin in in platform side as open-drain.		IN
57	GND	Ground.		GND
63	GND	Ground.		GND
66	RESERVED	Please don't connect to this pin.		N/A
68	RESERVED	Please don't connect to this pin.		N/A

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69	GND	Ground.		GND
70	RESERVED	Please don't connect to this pin.		N/A
72	3.3V	3.3V power supply	3.3V	VCC
74	3.3V	3.3V power supply	3.3V	VCC
75	GND	Ground.		GND



## 3. Electrical Characteristics

#### **3.1 Recommended Operating Conditions**

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VD33	I/O voltage	3.15	3.3	3.6	V
VD33	Current requirement			1.5	А

## **3.2 Digital IO Pin DC Characteristics**

Table 1.	3.3V IO	D DC Ch	aracteristics
----------	---------	---------	---------------

Symbol	Parameter	Minimum	Typical	Maximum	Unit
Vін	Input high voltage	2.0	3.3	3.6	V
VIL	Input low voltage		0	0.9	V
Vон	Output high voltage	2.97		3.3	V
V <sub>OL</sub>	Output low voltage	0		0.33	V

#### Table 2. 1.8V IO DC Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Unit
Vін	Input high voltage	1.7	1.8	3.6	V
VIL	Input low voltage		0	0.8	V
Vон	Output high voltage	1.62		1.8	V
Vol	Output low voltage	0		0.18	V



## 3.3 PCIE Interface

#### 3.3.1 Power up Timing Sequence

#### 3.3.1.1 When WLAN is power off



## 3.3.1.2 When WLAN is NOT power off



Ton: The main power ramp up duration

Toff: The main power off duration

TPVPGL: Power valid PERST# input inactive

TPERST#-CLK: Reference clock stable before PERST# inactive

TATTOB: The debounce interval with a minimal duration of 100ms that provided by the USB system

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#### software

TSE0 Reset: USB host send SE0 Reset duration

TPERST#-active: PCI-e initial duration after PERST# inactive

#### Note:

- 1. T1: PERST# goes active before the power on the connector is removed.
- 2. T2: Clock to inactive after PERST# goes active.
- 3. T3: WL\_DIS# and BT\_DIS# goes asserted when the power on the connector is removed.
- 4. T4: USB D+ go active after PERST# goes inactive.
- 5. T1/T2/T3/T4 timing value should large than 0.

Symbol	Unit	Min	Typical	Max	
Ton	ms	0.5	1.5	5	
T <sub>off</sub>	ms	1.5	1.5		
TPVPGL	ms	Implementation specific; recommended 50ms			
TPERST#-CLK	us	100			
Таттов	ms	100			
TSE0 Reset	ms	10			
TPERST#-active	ms	10			

#### Table 3. The typical timing range



## 3.3.2 PCIE PERST# Timing Sequence



Table 4. PERST# Timing Parameters

	Min	Typical	Max	Unit	Description
T PERST#_LOW	6	10	Х	ms	PERST# low duration
T PERST#_HIGH	400	500	Х	ms	PERST# high duration

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#### 3.3.3 PCIE Power Off Sequence



 Table 5. PCIE Power Off Timing Parameters

	Min	Typical	Max	Unit	Description	
Тал	15			mc	Measure point start on 100%	
I OFF	1.5				1115	Measure point end on 0% (must be 0V)
Тан	0.5	15	5	me	Measure point start on 0%(must be 0V)	
ION	0.5	1.5	5	1115	Measure point end on 100%	

Note: If BT\_DIS# can't connect to the same power source with 3.3V, it need to be de-asserted before PERST# with 100ms in power on sequence.



#### 3.3.4 BT\_DIS Timing Sequence



	Min	Typical	Max	Unit	Description
BT_DIS#_LOW	200			ms	BT_DIS# low duration
BT_DIS#_HIGH	500			ms	BT_DIS# high duration



#### 3.4 Power Consumption\*

#### 3.4.1 WLA

Dand			Link		Voltage=3.3V			
	Mode	BW (MHz)	Speed	Tran	smit	Receive		
(0112)			(Mbps)	Max.	Avg.	Max.	Avg.	
	802.11b	20	11	543.6	482.4	266.9	256.4	
	802.11g	20	54	427.4	412.1	218.6	210.4	
24	902 11n	20	144.4	548.8	531.2	226.3	217.0	
2.4	002.1111	40	300	544.3	522.4	249.6	240.0	
	902 11 ox	20	286.5	556.1	532.3	235.2	231.4	
	002.11ax	40	573.5	577.1	550.0	273.2	265.1	
	802.11a	20	54	629.5	587.9	282.7	264.3	
	802.11n	20	144.4	961.7	880.9	319.2	278.7	
		40	300	982.6	922.1	362.9	305.3	
	802.11ac	20	173.3	824.5	776.5	242.3	239.0	
		40	400	830.5	784.3	293.5	272.4	
5		80	866.7	821.3	741.8	350.9	331.6	
		160	1733	921.5	828.8	527.8	476.8	
	902 <b>11</b> av	20	286.5	898.0	802.1	310.0	275.8	
		40	573.5	880.6	809.6	346.0	306.3	
	002.11ax	80	1201	903.3	808.4	412.5	368.3	
		160	2401.5	909.2	822.8	552.7	483.3	
		20	286.5	719.2	662.0	278.0	261.3	
6	802 11 av	40	573.5	814.6	748.3	322.8	288.8	
0	002.110	80	1201	841.2	754.2	377.5	347.3	
		160	2401.5	905.1	821.4	542.5	497.9	

#### 3.4.2 Bluetooth

No.	Modo	Voltage=3.3 V		
	Wode	Max.	Avg.	
1	Bluetooth RF Off	8.6	0.9	
2	No Connection with any BT device	27.2	9.0	
3	Connect BT Device*1	31.0	17.3	
4	Transmit by BER 2.1	59.7	47.3	
5	Receiver by BER 2.1	42.6	35.4	



## 4. Mechanical Information

## 4.1 Mechanical Drawing



TOLERANCES UNLESS OTHERWISE SPECIFIED: ±0.15mm



## 5. Packaging Information

#### 5.1 Label level package

TBD