

AW-CU570

**Wireless MCU with Integrated Tri-radio Wi-Fi 6
+ Bluetooth Low Energy 5.3 /802.15.4 Module**

Datasheet

Rev. C

DF

(For Standard)

Features

WLAN

- ◆ Support 1x1 dual-band 2.4 GHz/5 GHz Wi-Fi a/b/g/n/ac/ax radio
- ◆ 20 MHz channel operation
- ◆ Wi-Fi 6 Target Wake Time(TWT) support
- ◆ Wi-Fi 6 Extended Range (ER) and Dual Carrier Modulation (DCM)
- ◆ Power save features
- ◆ WPA/WPA2/WPA3 personal and enterprise

Bluetooth/802.15.4

- ◆ Supports Bluetooth LE 5.3(Class 2) certified and Bluetooth LE 5.2 features supported
- ◆ Wi-Fi/Bluetooth coexistence protocol support
- ◆ Intelligent Adaptive Frequency Hopping (AFH)
- ◆ Bluetooth LE Privacy 1.2
- ◆ Bluetooth LE Long Range
- ◆ Bluetooth LE 2 Mbps
- ◆ Bluetooth LE Isochronous Channels
- ◆ Bluetooth LE Audio with integrated LC3 codec
- ◆ Security: AES

Revision History

Document NO: R2-2570-DST-01

Version	Revision Date	DCN NO.	Description	Initials	Approved
A	2023/06/29	DCN029400	Draft version	Roger Liu	N.C Chen
B	2023/11/02	DCN030399	- Modify Pin Table GPIO[13] and GPIO[14] to SWCLK and SWDIO - Update RF specification	Roger Liu	N.C Chen
C	2024/08/26	DCN032353	- Update datasheet title - Update packing information - Dimension - Update operating temp. - Update power consumption - Remove JTAG function	Roger Liu	N.C Chen

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1. Introduction

1.1 Product Overview

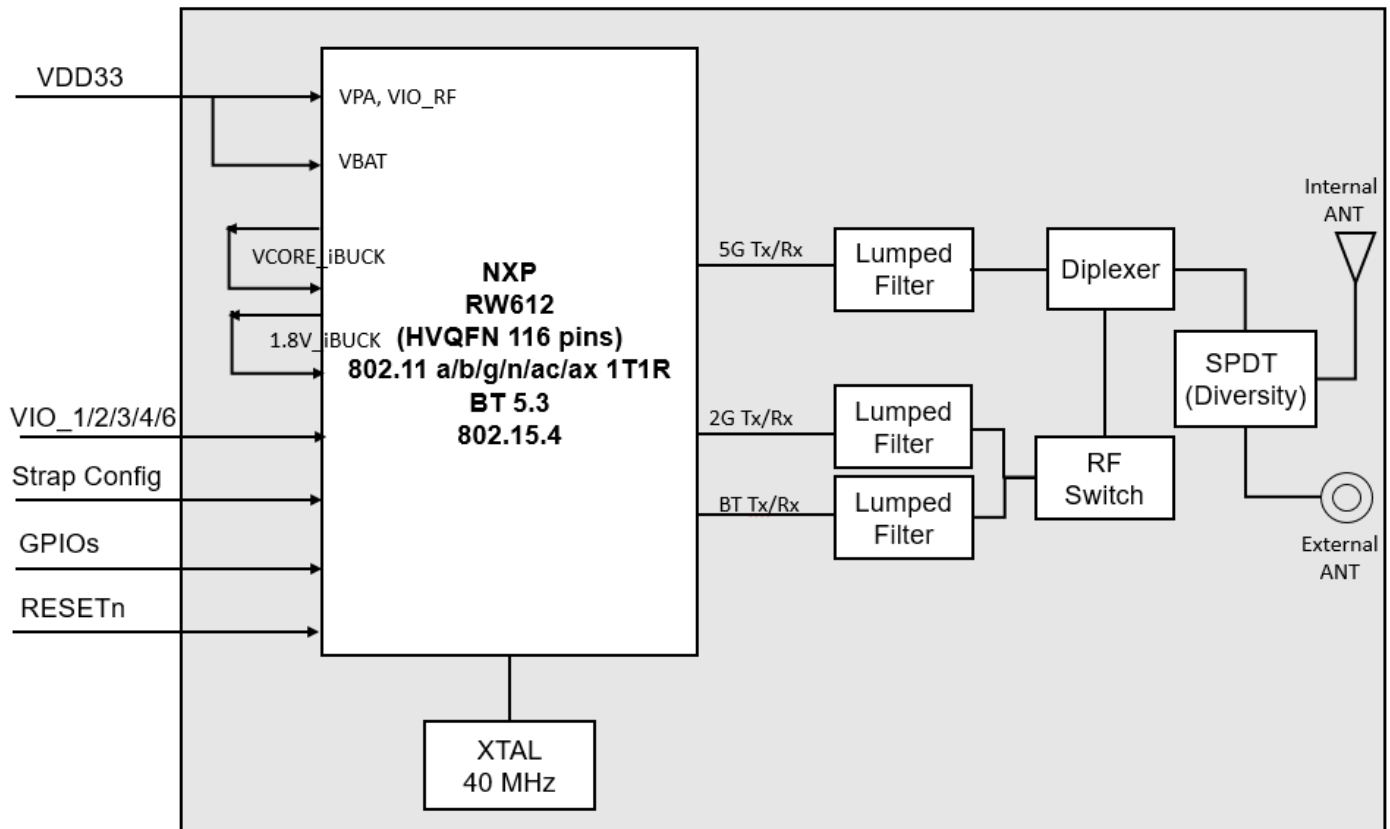
AzureWave **AW-CU570** is a highly integrated, low-power tri-radio Wireless RW612 MCU with an integrated MCU and Wi-Fi 6 + Bluetooth Low Energy (LE) 5.2 / 802.15.4 radios designed for a broad array of applications. Applications include connected smart home devices, enterprise and industrial automation, smart accessories, and smart energy.

AW-CU570 includes a 260 MHz Arm Cortex-M33 core with TrustZone-M, 1.2 MB on-chip SRAM and a Quad SPI interface with high bandwidth

AW-CU570 includes a full-featured 1x1 dual-band (2.4 GHz / 5 GHz) 20 MHz Wi-Fi 6 (802.11ax) subsystem bringing higher throughput, better network efficiency, lower latency, and improved range over previous generation Wi-Fi standards. The Bluetooth LE radio supports 2 Mbit/s high-speed data rate, long range and extended advertising as well as LE Audio for a better overall audio experience. The on-chip 802.15.4 radio can support the latest Thread mesh networking protocol. In addition, **AW-CU570** can support Matter over Wi-Fi or Matter over Thread offering a common, interoperable application layer across ecosystems and products.

The advanced design of the **AW-CU570** delivers tight integration, low power, and highly secure operation in a space- and cost-efficient wireless MCU requiring only a single 3.3 V power supply

1.2 Block Diagram



AW-CU570 Block Diagram

1.3 Specifications Table

1.3.1 General

Features	Description
Product Description	IEEE 802.11 a/b/g/n/ac/ax Wi-Fi 6 with Bluetooth 5.2 and 802.15.4 tri-radio Module
Major Chipset	NXP RW612 HVQFN(116 pins)
Host Interface	UART
Dimension	28 mm x 15 mm x 3.15 mm(Max)
Package	LGA module, 88 pins
Antenna	u.FL Connector Receptacle ANT1 : WiFi → TX/RX(diversity) Printed antenna ANT2 : WiFi → TX/RX(diversity)
Weight	1.8g

1.3.2 WLAN

Features	Description
WLAN Standard	IEEE 802.11 a/b/g/n/ac/ax 1T1R
WLAN VID/PID	NA
WLAN SVID/SPID	NA
Frequency Range	2.4 GHz ISM Bands 2.412-2.472 GHz 5.15-5.25 GHz (FCC UNII-low band) for US/Canada and Europe 5.25-5.35 GHz (FCC UNII-middle band) for US/Canada and Europe 5.47-5.725 GHz for Europe 5.725-5.825 GHz (FCC UNII-high band) for US/Canada
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, OFDMA
Number of Channels	2.4GHz: ■ USA, NORTH AMERICA, Canada and Taiwan - 1 ~ 11 ■ China, Australia, Most European Countries - 1 ~ 13 ■ Japan, 1 ~ 13 5GHz: ■ USA, Canada, Most European Countries - 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140,149,153,157,161,165

	■ Japan - 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140 ■ China - 36,40,44,48,52,56,60,64, 149,153,157,161,165				
Output Power (Board Level Limit)*	2.4G				
		Min	Typ	Max	Unit
	11b (11Mbps) @EVM<35%	16	18	20	dBm
	11g (54Mbps) @EVM≤-25 dB	14.5	16	17.5	dBm
	11n (HT20 MCS7) @EVM≤-27 dB	13.5	15	16.5	dBm
	11ax(HE20 MCS9) @EVM≤-32 dB	12.5	14	15.5	dBm
	5G				
		Min	Typ	Max	Unit
	11a (54Mbps) @EVM≤-25 dB	14	16	18	dBm
	11n (HT20 MCS7) @EVM≤-27 dB	13	15	17	dBm
	11ac(VHT20 MCS8) @EVM≤-30 dB	12	14	16	dBm
	11ax(HE20 MCS9) @EVM≤-32 dB	11	13	15	dBm
Receiver Sensitivity	2.4G				
		Min	Typ	Max	Unit
	11b (11Mbps)	-	-86	-83	dBm
	11g (54Mbps)	-	-72	-69	dBm
	11n (HT20 MCS7)	-	-69	-66	dBm
	11ax (HE20 MCS9)	-	-63	-60	dBm
	5G				
		Min	Typ	Max	Unit
	11a (54Mbps)	-	-72	-69	dBm
	11n (HT20 MCS7)	-	-70	-67	dBm
	11ac(VHT20 MCS8)	-	-66	-63	dBm
	11ax(HE20 MCS9)	-	-65	-62	dBm

Data Rate	WLAN: 802.11b : 1, 2, 5.5, 11Mbps 802.11a/g : 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n : Maximum data rates up to 72 Mbps (20 MHz channel) 802.11ac: Maximum data rates up to 87 Mbps (20 MHz channel) 802.11ax: Maximum data rates up to 115 Mbps (20 MHz channel)
Security	■ WiFi: WPA2/WPA3 personal and enterprise and AES/CCMP/CMAC/GCMP ■ BT: AES

1.3.3 Bluetooth

Features	Description				
Bluetooth Standard	Full Bluetooth 5.3 features				
Frequency Rage	2402MHz~2483MHz				
Modulation	Header GFSK Payload 2M: $\pi/4$ -DQPSK Payload 3M: 8DPSK				
Output Power					
		Min	Typ	Max	Unit
	Low Energy	0	2	4	dBm
Receiver Sensitivity					
	BT Sensitivity (PER<30.8%)				
		Min	Typ	Max	Unit
	Low Energy	-	-95	-92	dBm

1.3.4 Thread

Features	Description
Thread Standard	IEEE 802.15.4-2015 compliant supporting Thread in 2.4 GHz band
Frequency Range	2400MHz~2483.5MHz
Modulation	O-QPSK

Output Power					
		Min	Typ	Max	Unit
	Thread	2	4	6	dBm
Receiver Sensitivity	Thread Sensitivity (PER<1%)				
		Min	Typ	Max	Unit
	Thread		-97	-94	dBm

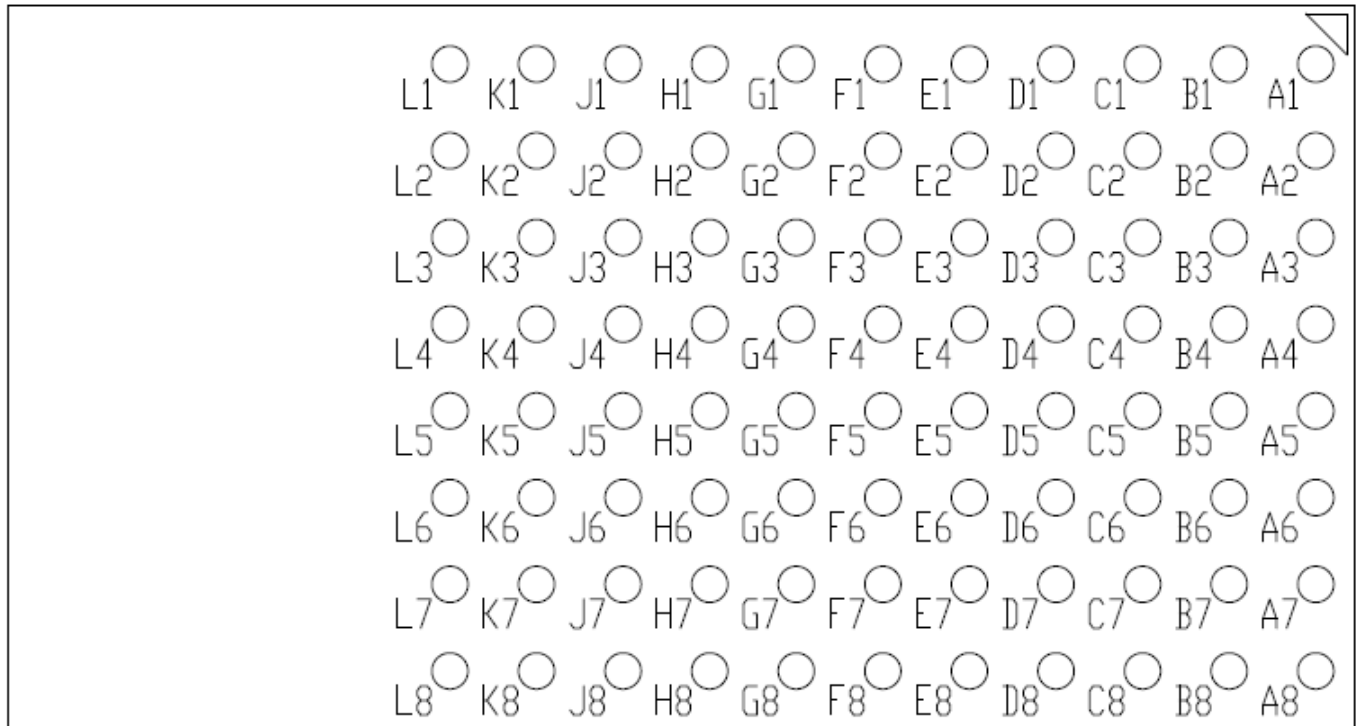
* If you have any certification questions about output power please contact FAE directly.

1.3.5 Operating Conditions

Features	Description
Operating Conditions	
Voltage	3.3V +-5%
Operating Temperature	-40°C ~ 85°C
Operating Humidity	Less than 85% R.H.
Storage Temperature	-40°C to +85°C
Storage Humidity	Less than 60% R.H.
ESD Protection	
Human Body Model	+/-2KV
Changed Device Model	+/-500V

2. Pin Definition

2.1 Pin Map



AW-CU570 Pin Map (Top View)

2.2 Pin Table

2.2.1 Power

Pin No	Definition	Basic Description	Voltage	Type
A7	3.3V_IN_1	3.3V Power input	3.3V	P
B7	3.3V_IN_2	3.3V Power input	3.3V	P
K1	VIO_1	1.8V/3.3V Digital I/O Power Supply	1.8V/3.3V	P
F1	VIO_2	1.8V/3.3V Digital I/O Power Supply	1.8V/3.3V	P
A2	VIO_3	1.8V/3.3V Digital I/O Power Supply	1.8V/3.3V	P
E1	VIO_4	1.8V/3.3V Digital I/O Power Supply	1.8V/3.3V	P
B8	VIO_6	1.8V/3.3V Digital I/O Power Supply	1.8V/3.3V	P

2.2.2 GPIO

Pin No	Definition	Basic Description	Voltage	Type
A3	GPIO_22	GPIO[22]/AON_XTAL32K_IN/SLP_CLK_32K/ SCT0_PIN_INP2/ENET_RX_DATA0	VIO_3	I/O
A5	USB_DM	USB bus data-	3.3V	I/O
A6	USB_DP	USB bus data+	3.3V	I/O
B1	GPIO_24	GPIO[24]/AON_WAKEUP/CT1_MAT2/CT_INP6/ ENET_TIMER2/FC3_RXD_SDA_MOSI_DATA_USA RT/I2C/I2S/SPI	VIO_3	I/O
B2	GPIO_26	GPIO[26]/AON_CAPT/SCT0_OUT4/SCT0_PIN_INP 4/ENET_TIMER3/FC3_TXD_SCL_MOSI_WS_USA RT/I2C/I2S/SPI	VIO_3	I/O
B3	GPIO_23	GPIO[23]/AON_XTAL32K_OUT/SCT0_PIN_INP3/E NET_RX_DATA1	VIO_3	I/O
B4	GPIO_25	GPIO[25]/AON_WAKEUP/CT1_MAT3/CT_INP7/ ENET_CLK/FC3_SCK_USART/I2S/SPI	VIO_3	I/O
B5	USB_VBUS	VBUS selection, 5 V analog power supply	---	I/O
B6	USB_IDPIN	USB OTG ID pin	3.3V	I
C1	GPIO_28	QSPI flash slave select 0	VIO_4	I/O
C2	GPIO_31	Data bit 1 for QSPI flash	VIO_4	I/O
C3	GPIO_32	Data bit 2 for QSPI flash	VIO_4	I/O
C4	GPIO_29	QSPI flash data strobe input/output	VIO_4	I/O
C5	GPIO_27	GPIO[27]/AON_OUT/SCT0_OUT5/SCT0_PIN_INP5 /ENET_TIMER0	VIO_3	I/O
C6	GPIO_4	GPIO[4]/Coexistence mode /SCT0_OUT1/SCT0_PIN_INP1/CLKIN_FRM_PD/ FC0_SCK_USART/I2S/SPI	VIO_6	I/O
C7	GPIO_3	GPIO[3]/SCT0_OUT0/SCT0_PIN_INP0/FC0_TXD_ SCL_MISO_WS_USART/I2C/I2S/SPI	VIO_6	I/O
C8	RESETn	Full Power-down (input) (active low)	3.3V	I

		0 = full power-down mode 1 = normal mode This pin has an internal pull high 51k ohm to 3.3V		
D1	GPIO_34	GPIO[34]/ QSPI_flash_CLK0/ SPIO0[2]	VIO_4	I/O
D2	GPIO_33	GPIO[33]/ QSPI_flash_D3/ SPIO0[1]	VIO_4	I/O
D3	GPIO_30	GPIO[30]/ QSPI_flash_D0	VIO_4	I/O
D7	GPIO_2	GPIO[2]/FC0_RXD_SDA_MOSI_DATA_USART/I2C/I2S/SPI	VIO_6	I/O
D8	GPIO_49	GPIO[49]/LCD_D4/LCD SPI interface chip select/ADC0_7/ADC1_7/ACOMP7/SPIO0[17]	VIO_6	I/O
E7	GPIO_48	GPIO[48]/LCD 8080 interface read control /LCD SPI interface clock/ADC0_6/ ADC1_6/ ACOMP6/ SPIO0[16]	VIO_6	I/O
E8	GPIO_47	GPIO[47]/LCD_D3 /LCD SPI interface data/ ADC0_5/ ACOMP5/ SPIO0[15]	VIO_6	I/O
F2	GPIO_13	GPIO[13]/ CT_INP3/CT0_MAT3/ SWCLK/ FC2_RXD_SDA_MOSI_DATA_USART/I2C/I2S/SPI	VIO_2	I/O
F7	GPIO_46	GPIO[46]/ LCD_D2/LCD SPI interface data in_out/ADC0_4/ ACOMP4/ SPIO0[14]	VIO_6	I/O
F8	GPIO_45	GPIO[45]/LCD tearing effect input signal used to synchronize MCU frame writing/ LCD tearing effect input signal used to synchronize MCU frame writing/ ADC0_3/ACOMP3/EXT_VREF_ADC0_DAC/ SPIO0[13]	VIO_6	I/O
G1	GPIO_15	GPIO[15]/SD_CLK/UTICK_CAP0/UCLK/FC2_SCK_USART/I2S/SPI	VIO_2	I/O
G2	GPIO_16	GPIO[16]/SD_D3/UTICK_CAP1/URST/FC2_CTS_SDA_SSELN0_USART/FC2_CTS_SDA_SSELN0_SP I/FC2_CTS_SDA_SSELN0_I2C_COPY	VIO_2	I/O
G7	GPIO_44	GPIO[44]/DAC_A/ADC0_2/ ACOMP2/output signal to reset the LCD device/SPIO0[12]	VIO_6	I/O
G8	GPIO_43	GPIO[43]/LCD_D1/ADC0_1/ACOMP1/DACB/SPIO0 [11]	VIO_6	I/O
H1	GPIO_17	GPIO[17]/SDIO_CMD/UTICK_CAP2/UIO/FC2_RTS_SCL_SSELN1_USART/FC2_RTS_SCL_SSELN1_I 2C_COPY	VIO_2	I/O
H2	GPIO_18	GPIO[18]/SDIO_DAT2/UTICK_CAP3/UVS/ GPIO_INT_BMAT	VIO_2	I/O
H7	GPIO_42	GPIO[42]/ ADC0_0/ACOMP0/LCD_D0/SPIO0[10]	VIO_6	I/O
H8	GPIO_50	GPIO[50]/FREQME_GPIO_CLK/ADC_DAC_TRIGG ER0/ SPIO0[18]	VIO_6	I/O
J1	GPIO_19	GPIO[19]/SDIO_DAT0/FC3_RTS_SCL_SSELN1_U SART/ FC3_RTS_SCL_SSELN1_I2C_COPY	VIO_2	I/O
J2	GPIO_20	GPIO[20]/SDIO_DAT1/FC3_CTS_SDA_SSELN0_U	VIO_2	I/O

		SART/SPI/ I2C_COPY		
J3	RF_CNTL1	RF_CNTL1	3.3V	O
J4	RF_CNTL2	RF_CNTL2	3.3V	O
J5	RF_CNTL3	RF_CNTL3	3.3V	O
J7	EXT_FREQ	External radio frequency input signal (optional) - muxed with WCI-2_SOUT signal of WCI-2 interface.	1.8V	I
J8	EXT_PRI	External radio input priority signal (optional) Priority of the request from the external radio.	1.8V	I
K2	GPIO_14	GPIO[14]/ CT_INP4/CT1_MAT0/ SWDIO/ FC2_TXD_SCL_MISO_WS_USART/I2C/I2S/SPI	VIO_2	I/O
K3	GPIO_7	GPIO[7]/FC1_SCK_USART/I2S/SPI	VIO_1	I/O
K4	GPIO_8	GPIO[8]/FC1_TXD_SCL_MISO_WS_USART/I2C/I2S/SPI	VIO_1	I/O
K5	GPIO_10	GPIO[10]/ FC1_RTS_SCL_SSELN1_USART	VIO_1	I/O
K7	EXT_GNT	External radio grant output signal	1.8V	O
K8	EXT_REQ	Request from external radio	1.8V	I
L2	GPIO_5	GPIO[5]/ MCLK/FC0_RTS_SCL_SSELN1_USART	VIO_1	I/O
L3	GPIO_6	GPIO[6]/FC1_CTS_SDA_SSELN0_USART/SPI	VIO_1	I/O
L4	GPIO_9	GPIO[9]/FC1_RXD_SDA_MOSI_DATA_USART/I2C/I2S/SPI	VIO_1	I/O
L5	GPIO_11	GPIO[11]/ SCT0_OUT8:	VIO_1	I/O
L7	GPIO_12	GPIO[12]/UTMI_DRV_VBUS/CT0_MAT2/CT_INP2/SD_HOST_INT	3.3V	I/O

2.2.3. GND

Pin No	Definition	Basic Description	Voltage	Type
A1	GND_A1	Ground	---	---
A4	GND_A4	Ground	---	---
A8	GND_A8	Ground	---	---
D4	GND_D4	Ground	---	---
D5	GND_D5	Ground	---	---
D6	GND_D6	Ground	---	---
E2	GND_E2	Ground	---	---
E3	GND_E3	Ground	---	---
E4	GND_E4	Ground	---	---
E5	GND_E5	Ground	---	---
E6	GND_E6	Ground	---	---
F3	GND_F3	Ground	---	---
F4	GND_F4	Ground	---	---
F5	GND_F5	Ground	---	---
F6	GND_F6	Ground	---	---
G3	GND_D3	Ground	---	---
G4	GND_G4	Ground	---	---
G5	GND_G5	Ground	---	---

G6	GND_G6	Ground	---	---
H3	GND_H3	Ground	---	---
H4	GND_H4	Ground	---	---
H5	GND_H5	Ground	---	---
H6	GND_H6	Ground	---	---
J6	GND_J6	Ground	---	---
K6	GND_K6	Ground	---	---
L1	GND_L1	Ground	---	---
L6	GND_L6	Ground	---	---
L8	GND_L8	Ground	---	---

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V _{BAT}	DC supply for the 3.3V input	-	3.3	3.96	V
V _{IO}	1.8 V/3.3 V digital I/O power supply	-	1.8	2.16	V
			3.3	3.96	V

3.2 Recommended Operating Conditions

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V _{BAT}	DC supply for the 3.3V input	3.14	3.3	3.46	V
V _{IO}	1.8 V/3.3 V digital I/O power supply	1.71	1.8	1.89	V
		3.14	3.3	3.46	V

3.3 Digital IO Pin DC Characteristics

3.3.1 VIO 1.8V Operation

Symbol	Parameter	Minimum	Typical	Maximum	Unit
V _{IO}	I/O pad supply voltage	1.71	1.8	1.89	V
V _{IH}	Input high voltage	0.7*V _{IO}	-	V _{IO} +0.4	V
V _{IL}	Input low voltage	-0.4	-	0.3*V _{IO}	
V _{OH}	Output High Voltage	V _{IO} -0.4	-	-	
V _{OL}	Output Low Voltage	-	-	0.4	
V _{HYS}	Input Hysteresis	100			mV

3.3.2 VIO 3.3V Operation

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VIO	I/O pad supply voltage	3.14	3.3	3.46	V
V _{IH}	Input high voltage	0.7*VIO	-	VIO+0.4	V
V _{IL}	Input low voltage	-0.4	-	0.3*VIO	
V _{OH}	Output High Voltage	VIO-0.4	-	-	
V _{OL}	Output Low Voltage	-	-	0.4	
V _{HYS}	Input Hysteresis	100			mV

3.4 Power Consumption

a. WLAN Power Consumption

Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	VBAT_IN=3.3 V	
				Transmit ^{*(1) (2)}	
				Max.	Avg.
2.4	11b@1Mbps	20	18	317	306
	11g@54Mbps	20	16	292	265
	11n@MCS0	20	15	250	244
	11n@MCS7	20	15	281	253
	11ax@MCS0 NSS1	20	14	232	229
	11ax@MCS11 NSS1	20	14	245	231
5	11a@6Mbps	20	16	362	356
	11n@MCS0	20	15	356	342
	11n@MCS7	20	15	400	357
	11ac@MCS0 NSS1	20	14	335	331
	11ac@MCS8 NSS1	20	14	364	339
	11ax@MCS0 NSS1	20	13	326	316
	11ax@MCS11 NSS1	20	13	341	323
Band (GHz)	Mode	BW(MHz)		Receive ^{*(1) (2)}	
				Max.	Avg.
2.4	11b@11Mbps	20		81	80
	11n@MCS7	20		84	82
	11ax@MCS11 NSS1	20		85	81
5	11a@54Mbps	20		101	89
	11n@MCS7	40		100	89

	11ac@MCS8 NSS1	80	101	100
	11ax@MCS11 NSS1	80	101	88

*Current Unit: mA

Band (GHz)	Mode	BW (MHz)	RF Power (dBm)	VDDIO=1.8 V	
				Transmit ^{*(1) (2)}	
				Max.	Avg.
2.4	11b@1Mbps	20	18	43	33
	11ax@MCS11 NSS1	20	14	32	27
5	11a@6Mbps	20	16	38	37
	11ax@MCS11 NSS1	80	13	47	37
Band (GHz)	Mode	BW(MHz)		Receive ^{*(1) (2)}	
				Max.	Avg.
2.4	11b@11Mbps	20		24	20
5	11ax@MCS11 NSS1	20		26	19

*Current Unit: mA

b. Normal Mode

VBAT_IN=3.3V								
MCU Status	WiFi Deep Sleep	WiFi STA Connected		WiFi IEEE Power Saving ^{*(3)}				WiFi Power Down ^{*(4)}
		2.4G	5G	2.4G		5G		
				DTIM 1	DTIM10	DTIM1	DTIM 10	
PM0(Active)	25.6	69.5	82.5	NA ^{*(2)}				25.6
PM1(Idle)	16.1	69.0	81.9	18.8	16.5	18.1	17.3	16.2
PM2(Standby)	4.8	69.1	62.2	7.6	5.1	6.4	5.6	4.8
PM3(Sleep)	0.3	69.7	60.9	2.8	0.8	2.2	1.2	0.3
PM4(Shutdown)	NA ^{*(1)}	NA ^{*(1)}		NA ^{*(1)}				NA ^{*(1)}

*Current Unit: mA

Voltage=VIO_1.8V								
MCU Status	WiFi Deep Sleep	WiFi STA Connected		WiFi IEEE Power Saving ^{*(3)}				WiFi Power Down ^{*(4)}
		2.4G	5G	2.4G		5G		
				DTIM 1	DTIM10	DTIM1	DTIM 10	
PM0(Active)	0.045	0.053	0.055	NA ^{*(2)}				0.045
PM1(Idle)	0.044	0.049	0.049	0.43	0.044	0.043	0.044	0.044
PM2(Standby)	0.043	0.046	0.052	0.042	0.042	0.044	0.042	0.043
PM3(Sleep)	1.65	0.047	0.048	1.50	1.63	1.57	1.62	1.65
PM4(Shutdown)	NA ^{*(1)}	NA ^{*(1)}		NA ^{*(1)}				NA ^{*(1)}

*Current Unit: mA

c. Bluetooth

Mode	Packet Type	RF Power (dBm)	VBAT_IN=3.3 V	
			Max.	Avg.
Sleep ^{*(1)}	N/A	N/A	1.22	0.28
Transmit ^{*(2) (4)}	BLE1M	2	88	83
Receive ^{*(3) (4)}	BLE1M	N/A	86	82

*Current Unit: mA

Mode	Packet Type	RF Power (dBm)	VDDIO=1.8 V	
			Max.	Avg.
Sleep ^{*(1)}	N/A	N/A	46	16
Transmit ^{*(1)}	BLE1M	2	64	60
Receive ^{*(2)}	BLE1M	N/A	61	56

*Current Unit: uA

d. 802.15.4

Mode	Packet Type	RF Power (dBm)	VBAT_IN=3.3 V	
			Max.	Avg.
Transmit ^{*(1)}	O-QPSK	4	107	102
Receive ^{*(1)}	O-QPSK	N/A	80	79

*Current Unit: mA

Mode	Packet Type	RF Power (dBm)	VDDIO=1.8 V	
			Max.	Avg.
Transmit* ⁽¹⁾	O-QPSK	4	63	58
Receive* ⁽¹⁾	O-QPSK	N/A	59	55

*Current Unit: uA

e. Peak Current

No.	Item	VBAT=3.3 V
		Max.
1	Peak current during device initialization	606
2	Peak current during device scan AP	523
3	Peak current during device connect AP	504

*Current Unit: mA

No.	Item	VDDIO=1.8 V
		Max.
1	Peak current during device initialization	12.3
2	Peak current during device scan AP	12.3
3	Peak current during device connect AP	12.1

*Current Unit: mA

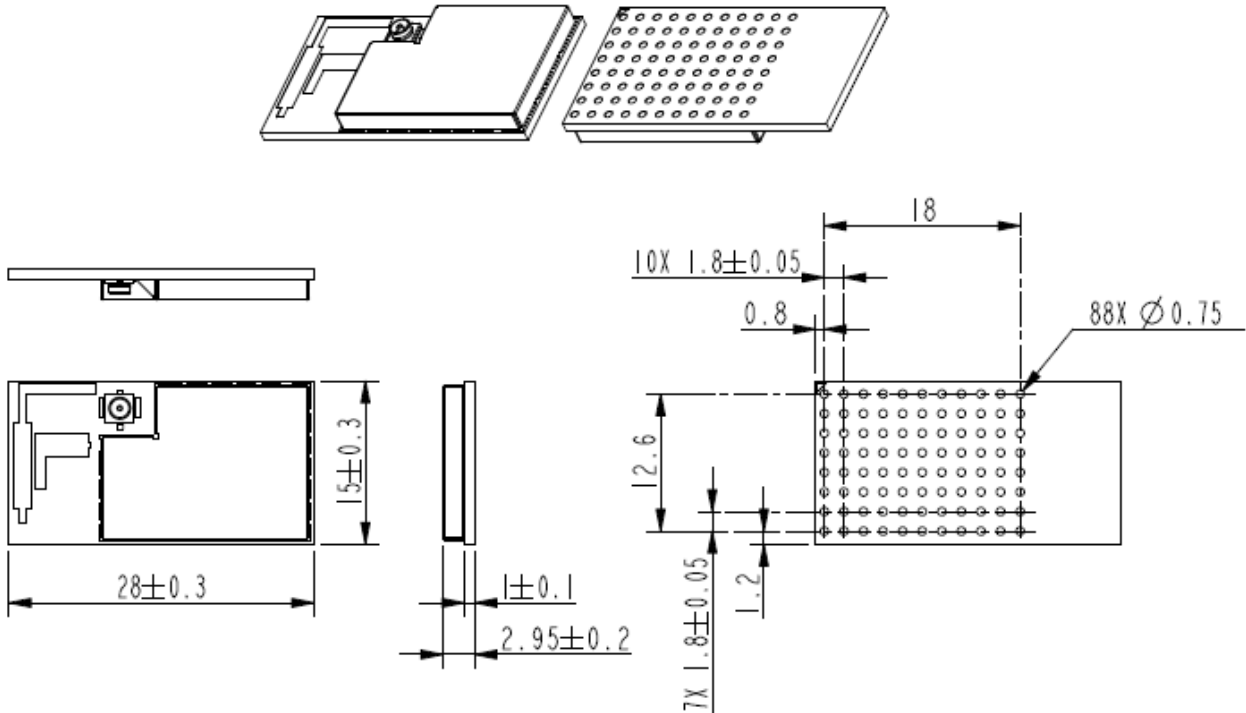
3.6 External 32.768KHZ Crystal Requirement

An external 32.768kHz crystal can be used for low-power consumption. Below are the specifications for this crystal.

Parameter	Min	Typ	Max	Unit
Clock frequency range/accuracy • CMOS input clock signal type • ± 250 ppm (initial, aging, temperature)	-	32.768	-	kHz
Phase noise requirement (@ 100 kHz)	-	-125	-	dBc/Hz
Cycle jitter	-	1.5	-	ns (RMS)
Slew rate limit (10-90%)	-	-	100	ns
Duty cycle tolerance	20	-	80	%

4. Mechanical Information

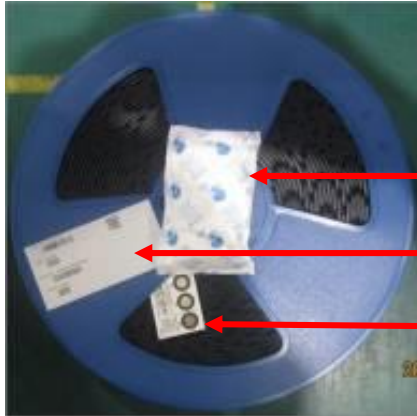
4.1 Mechanical Drawing



TOLERANCE UNLESS OTHERWISE SPECIFIED: ± 0.1 mm

5. Packing Information

1. One reel can pack 2,400pcs modules
2. One production label is pasted on the reel, one desiccant and one humidity indicator card are put on the reel



One desiccant

One production label

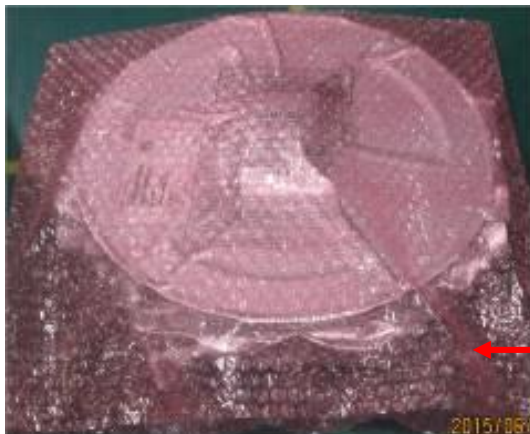
One humidity indicator card

3. One reel is put into the anti-static moisture barrier bag, and then one label is pasted on the bag



One production label

4. A bag is put into the anti-static pink bubble wrap



One anti-static pink bubble wrap

5. A bubble wrap is put into the inner box and then one label is pasted on the inner box



One production label

6. 3 inner boxes could be put into one carton



7. Sealing the carton by AzureWave tape

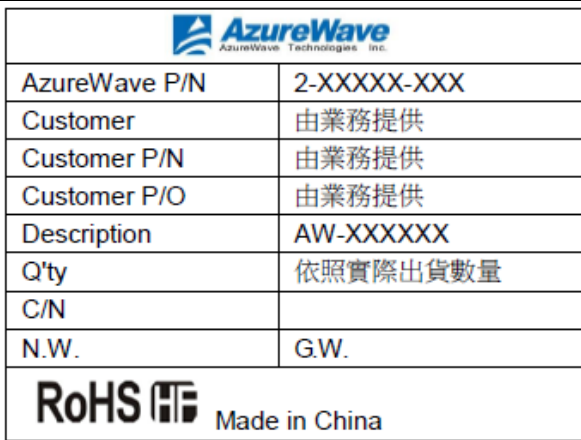
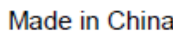
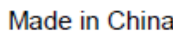
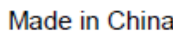


8. One carton label and one box label are pasted on the carton. If one carton is not full, one balance label pasted on the carton

One carton label

One box label



Example of carton label	 <table border="1"> <tr> <td colspan="2"> AzureWave Technologies, Inc.</td> </tr> <tr> <td>AzureWave P/N</td> <td>2-XXXXXX-XXX</td> </tr> <tr> <td>Customer</td> <td>由業務提供</td> </tr> <tr> <td>Customer P/N</td> <td>由業務提供</td> </tr> <tr> <td>Customer P/O</td> <td>由業務提供</td> </tr> <tr> <td>Description</td> <td>AW-XXXXXX</td> </tr> <tr> <td>Q'ty</td> <td>依照實際出貨數量</td> </tr> <tr> <td>C/N</td> <td></td> </tr> <tr> <td>N.W.</td> <td>G.W.</td> </tr> <tr> <td colspan="2">   </td> </tr> </table>	 AzureWave Technologies, Inc.		AzureWave P/N	2-XXXXXX-XXX	Customer	由業務提供	Customer P/N	由業務提供	Customer P/O	由業務提供	Description	AW-XXXXXX	Q'ty	依照實際出貨數量	C/N		N.W.	G.W.	 	
 AzureWave Technologies, Inc.																					
AzureWave P/N	2-XXXXXX-XXX																				
Customer	由業務提供																				
Customer P/N	由業務提供																				
Customer P/O	由業務提供																				
Description	AW-XXXXXX																				
Q'ty	依照實際出貨數量																				
C/N																					
N.W.	G.W.																				
 																					
Example of box label	 2-XXXXXX-XXX 数量: XXX BOX0275351 XXXXXX 股份有限公司																				



AzureWave

AzureWave Technologies, Inc.

Example of production label	P/N:  D/C: 1309  PCK NO.: PCKNO0069097  QTY: 294  BAG SEAL DATE: _____ 
Example of balance label	尾数 Balance

Note:

- ◆ 1 reel = 1 inner box = 800pcs
- ◆ 1 carton = 3 inner boxes = 3 * 800pcs = 2,400pcs

Appendix