AW869A

Dual band WiFi6 + BT5.0 Module Spec

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	Design	Check	Approve	Version	Date	
				V1.3	2022.03.24	
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更改记录

Reversion History

1.	版本 Version	日期 Date	更改内容 Modification
	1.0	2021.04.27	First release
	1.1	2021.09.24	Updata Bluetooth version , release 5G band RF performance
	1.2	2021.12.14	Delete PCM description
- Filler	1.3	2022.03.24	Modify description

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1. Overview

The AW869A is a highly integrated module with Dual band WiFi6,BT5.0; combination solution to support 1 × 1 IEEE 802.11a/b/g/n/ac/ax WLAN standards and BT 5.0 enabling seamless integration of WLAN/BT and low-energy technology.

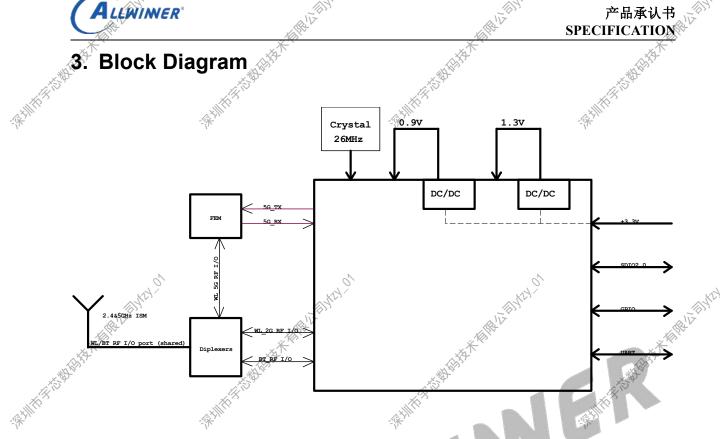
2. Features

- Supports a low-power SDIO 2.0 interface for WLAN and a HS-UART interface for BT
- Provides a highly integrated WLAN system-on-chip (SoC) for 2.4&5.8 GHz
- Supports WLAN 2.4&5.8 GHz , 20 MHz/40 MHz
- Supports BT 5.0, BLE, and ANT+ and backward compatibility with BT 1.x and BT 2.x+ Enhanced Data Rate
- Supports a single-ended RF port for cleaner and lower cost design
- Supports STA,AP,WiFi Direct modes concurrently
- Supports WiFi6 TWT
- Supports MU-MIMO,OFDMA

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珠海全志科技股份有限公司





4. General Specification

	Model	AW869A
	Product Name	WLAN 802.11a/b/g/n/ac/ax SDIO2.0 1T1R + Bluetooth 5.0 module
	Major Chipset	AIC8800D
	Standard	802.11a/b/g/n/ac/ax
	Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM/256-QAM/1024-QAM
	Frequency Band	Dual band 2.4&5.8GHz ISM
	WiFi Interface	SDIQ2.0
	BT Interface	UART
, y	Operating Temperature	20° C ~ 70° C
	Storage Temperature	-20° C ~ 125°C
深圳村镇市	Humidity	5% to 90% maximum
-徐	Dimension	12x12x1.7 (LxWxH) ±0.2mm



5. RF Specification

5.1 2.4 GHz RF Specification

· (本)					
Feature	Description				
WLAN Standard	IEEE 802.11b/g/n/ax WiFi compliant				
Frequency Range	2.400 GHz ~ 2.497 GHz (2.4 GHz ISM Band)				
Number of Channels	2.4GHz : Ch1 ~ Ch14				
Modulation	802.11b : DQPSK, DBPSK, CCK				
	802.11 g/n : OFDM /64-QAM,16-QAM, QPSK, BPSK				
The state of the s	802.11 ax : QFDMA /1024-QAM,256-QAM, 64-QAM, 16-QAM, QPSK, BPSK				
***	802.11b / 1Mbps : 17dBm ± 2 dB @ EVM ≤ -10dB				
	802.11b /11Mbps : 17dBm ± 2.dB @ EVM ≤ -15dB				
Output Power	802.11g / 6Mbps : 17dBm ± 2 dB @ EVM ≤ -5dB				
深圳	802.11g /54Mbps : 15 dBm ± 2 dB @ EVM ≤ -28dB				
	802.11n /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -5dB				
	802.11n /MCS7 : 14 dBm ± 2 dB @ EVM ≤ -30dB				
	802.11ax /HE0(20/40M) : 16 dBm ± 2 dB @ EVM ≤ -5dB				
	802.11ax /HE11(20/40M) : 13 dBm ± 2 dB @ EVM ≤ -32dB				
Receive	- 1Mbps PER @ -93 dBm, typical				
Sensitivity	- 2Mbps PER @ -90 dBm, typical				
(11b,20MHz)	- 5.5Mbps PER @ -88 dBm, typical				
@8% PER	- 11Mbps PER @ -86 dBm, typical				
CHA!	- 6Mbps PER @ -91 dBm, typical				
Receive	9Mbps PER @ -89 dBm, typical				
Sensitivity	12Mbps PER @<86 dBm, typical				
(11g,20MHz)	- 18Mbps PER @ -83 dBm, typical				
@10% PER	- 24Mbps PER @ -80 dBm, typical				
	- 36Mbps PER @ -77 dBm, typical				
	- 48Mbps PER @ -74 dBm, typical				
	- 54Mbps PER @ -72 dBm, typical				
Receive	- MCS=0 PER @ -90 dBm, typical				
Sensitivity	- MCS=1 PER @ -87 dBm, typical				
(11n,20MHz)	- MCS=2 PER @ -84 dBm, typical				
@10% PER	- MCS=3 PER @ -81 dBm, typical				
	- MCS=4 PER @ -78 dBm, typical				



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	TO THE PARTY OF TH	AND THE PARTY OF T	SPECIFICATION	IV.
	- MCS=5	PER @ -75 dBm, typical		
197°	MCS=6	PER @ -72 dBm, typical		
c xillif	- MCS=7	PER @ 70 dBm, typical	, xill High	
**************************************	- MCS=0	PER @ -87 dBm, typical	***	
	- MCS=1	PER @ -84 dBm, typical		
Deseive	- MCS=2	PER @ -81 dBm, typical		
Receive	- MCS=3	PER @ -78 dBm, typical		
Sensitivity (11n,40MHz)	- MCS=4	PER @ -75 dBm, typical		
@10% PER	- MCS=5	PER @ -72 dBm, typical		
@1070 F LT	- MCS=6	PER @ -69 dBm, typical		10
The state of the s	- MCS=7	PER @ -67 dBm, typical	_1	THINKY,
Z. A. P. L. V.	- HE∓0	PER @ -90 dBm, typical		V
	- ⊮ E =1	PER @ -88 dBm, typical	THE PARTY OF THE P	
Danain a	HE=2	PER @ -86 dBm, typical	150	
Receive	- HE=3	PER @ -84 dBm, typical	A HITT	
Sensitivity (11ax,20MHz)	- HE=4	PER @ -81 dBm, typical	-11	
@10% PER	- HE=5	PER @ -79 dBm, typical		
@10% PER	- HE=6	PER @ -76 dBm, typical		
	- HE=7	PER @ -73 dBm, typical		
	- HE=8	PER @ -70 dBm, typical		
	- HE=9	PER @ -68 dBm, typical		
The latest	- HE=0	PER @ -88 dBm, typical		10/12%
TO TO THE PARTY OF	- HE=1	PER @ -86 dBm, typical	<u> </u>	N TO THE STATE OF
This is	- HE≠2	PER @ -83 dBm, typical		
Receive	- HE=3	PER @ -80 dBm, typical	WE THE THE PERSON NAMED IN COLUMN TO	
Sensitivity (11ax,40MHz)	⊬ [™] HE=4	PER @ -77 dBm, typical		
@10% PER	- HE=5	PER @ -74 dBm, typical	:\$\frac{1}{2}\frac{1}{	
WIOWFER	- HE=6	PER @ -72 dBm, typical	V	
	- HE=7	PER @ -69 dBm, typical		
	- HE=8	PER @ -66 dBm, typical		
	- HE=9	PER @ -64 dBm, typical		
Maximum Input	802.11b : -10 dl	Bm		
Level	802.11g/n/ax : -	20 dBm		h.
Antenna Reference	Small antennas	with 0~2 dBi peak gain		10 KM



5.2 5 GHz RF Specification

Description)	× ***	**************************************	A STATE OF THE STA
Number of Channels 4.900 GHz ~ 5.845 GHz (5.0 GHz ISM Band)	Feature	Description	A A A A A A A A A A A A A A A A A A A	A A A A A A A A A A A A A A A A A A A
Number of Channels 5.0GHz : Please see the table 802.11a : OFDM /64-QAM, 16-QAM, QPSK, BPSK 802.11a : OFDM /64-QAM, 16-QAM, QPSK, BPSK 802.11ac : OFDM /256-QAM 802.11ac : OFDM /256-QAM 802.11a : OFDMA/1024-QAM 802.11a / 6Mbps : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11a / 54Mbps : 14 dBm ± 2 dB @ EVM ≤ -5dB 802.11a HT20 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11a HT20 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11a HT40 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS8 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB	WLAN Standard 🤲	IEEE 802.11a	/n/ac/ax WiFi compliant	深圳
Modulation 802.11a : OFDM /64-QAM, 16-QAM, QPSK, BPSK 802.11n : OFDM /64-QAM, 16-QAM, QPSK, BPSK 802.11a : OFDM /16-QAM, 16-QAM, QPSK, BPSK 802.11a : OFDM /16-QAM 802.11ax : OFDM /1024-QAM 802.11a / 6Mbps : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11a / 54Mbps : 14 dBm ± 2 dB @ EVM ≤ -25dB 802.11n HT20 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -28dB 802.11n HT20 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -28dB 802.11n HT40 /MCS9 : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11n HT40 /MCS9 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE1(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE1(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE1(40M) : 11 dBm ± 2 dB	Frequency Range	4.900 GHz ~ 5	5.845 GHz (5.0 GHz ISM B	and)
Modulation 802.11n : OFDM /64-QAM, 16-QAM, QPSK, BPSK 802.11ac : OFDM /256-QAM 802.11ac : OFDM /256-QAM 802.11ac : OFDM /256-QAM 802.11a / 6Mbps : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11a / 54Mbps : 14 dBm ± 2 dB @ EVM ≤ -25dB 802.11a / 1754Mbps : 14 dBm ± 2 dB @ EVM ≤ -5dB 802.11a / 1740 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -28dB 802.11a / 1740 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11a / 1740 /MCS7 : 13 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT20 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac HE1(20M) : 11 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac HE1(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -34B 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -35dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE1(40M) : 15 dBm ± 2 dB @ EVM	Number of Channels	5.0GHz : Plea	ase see the table	
Output Power S02.11n HT40 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11ac VHT20 /MCS8 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -30dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB	Modulation	802.11n : OFDN 802.11ac : OFD	// /64-QAM,16-QAM, QPSk M /256-QAM	•
Output Power S02.11n HT40 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11ac VHT20 /MCS8 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -30dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB	Charles of Charles	802.11a / 6Mbp 802.11a /54Mbp	s : 16 dBm ± 2 dB @ EVM os : 14 dBm ± 2 dB @ EVM	≤ -5dB ≤ -25dB
Output Power S02.11n HT40 /MCS0 : 16 dBm ± 2 dB @ EVM ≤ -5dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11n HT40 /MCS7 : 13dBm ± 2 dB @ EVM ≤ -28dB 802.11ac VHT20 /MCS8 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -30dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 17 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 18 dBm ± 2 dB @ EVM ≤ -32dB 802.11ac HE0(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB	A A A A A A A A A A A A A A A A A A A	802.11n HT20 / 802.11n HT20 /	MCS0 : 16 dBm ± 2 dB @ MCS7 : 13 dBm ± 2 dB @	EVM ≤ -5dB EVM ≤ -28dB
802.11ac VHT20 /MCS8 : 12 dBm ± 2 dB @ EVM ≤ -30dB 802.11ac VHT40 /MCS0 : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 15 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB - 6Mbps PER @ -93dBm, typical - 9Mbps PER @ -90 dBm, typical - 12Mbps PER @ -87 dBm, typical - 12Mbps PER @ -84 dBm, typical - 24Mbps PER @ -81 dBm, typical - 36Mbps PER @ -76 dBm, typical - 48Mbps PER @ -76 dBm, typical - 54Mbps PER @ -74 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	ALLAND TO THE STATE OF THE STAT			
802.11ac VHT40 /MCS9 : 12 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(20M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(20M) : 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M) : 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(40M) : 11 dBm ± 2 dB @ EVM ≤ -32dB - 6Mbps PER @ -93dBm, typical - 9Mbps PER @ -90 dBm, typical - 12Mbps PER @ -84 dBm, typical - 12Mbps PER @ -84 dBm, typical - 36Mbps PER @ -81 dBm, typical - 48Mbps PER @ -76 dBm, typical - 54Mbps PER @ -76 dBm, typical - 54Mbps PER @ -92 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	Output Power	802.11ac VHT2 802.11ac VHT2	0 /MCS0 : 15 dBm ± 2 dB (0 /MCS8 : 12 dBm ± 2 dB (@ EVM ≤ -5dB @ EVM ≤ -30dB
802.11ax HE11(20M): 11 dBm ± 2 dB @ EVM ≤ -32dB 802.11ax HE0(40M): 15 dBm ± 2 dB @ EVM ≤ -5dB 802.11ax HE11(40M): 11 dBm ± 2 dB @ EVM ≤ -32dB - 6Mbps PER @ -93dBm, typical - 9Mbps PER @ -90 dBm, typical - 12Mbps PER @ -87 dBm, typical - 12Mbps PER @ -84 dBm, typical - 18Mbps PER @ -81 dBm, typical - 36Mbps PER @ -78 dBm, typical - 48Mbps PER @ -76 dBm, typical - 54Mbps PER @ -76 dBm, typical - 54Mbps PER @ -74 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical				
802.11ax HE11(40M): 11 dBm ± 2 dB @ EVM ≤ -32dB - 6Mbps PER @ -93dBm, typical - 9Mbps PER @ -90 dBm, typical - 12Mbps PER @ -87 dBm, typical - 12Mbps PER @ -84 dBm, typical - 18Mbps PER @ -84 dBm, typical - 24Mbps PER @ -81 dBm, typical - 36Mbps PER @ -78 dBm, typical - 48Mbps PER @ -76 dBm, typical - 48Mbps PER @ -74 dBm, typical - 54Mbps PER @ -74 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -80 dBm, typical				
18Mbps PER @ -84 dBm, typical				
18Mbps PER @ -84 dBm, typical	with S.	- 6Mbps	PER @ -93dBm, typical	
18Mbps PER @ -84 dBm, typical		- 9Mbps	PER @ -90 dBm, typica	I
- 24Mbps PER @ -81 dBm, typical - 36Mbps PER @ -78 dBm, typical - 48Mbps PER @ -76 dBm, typical - 54Mbps PER @ -74 dBm, typical - 54Mbps PER @ -92 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical (11n,20MHz) @10% PER	A STATE OF THE STA	- 12Mbps	PER @ -87 dBm, typica	l x
PER	Receive Sensitivity	18Mbps	PER @ -84 dBm, typica	I with
- 36Mbps PER @ -78 dBm, typical - 48Mbps PER @ -76 dBm, typical - 54Mbps PER @ -74 dBm, typical - 54Mbps PER @ -92 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	(11a,20MHz) @10% 🎺	- 24Mbps	PER @ -81 dBm, typica	
- 54Mbps PER @ -74 dBm, typical - MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=3 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	1,1,1	- 36Mbps	PER @ -78 dBm, typica	1
- MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=3 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	1	- 48Mbps	PER @ -76 dBm, typica	I
- MCS=0 PER @ -92 dBm, typical - MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=3 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical		- 54Mbps	PER @ -74 dBm, typica	I
- MCS=1 PER @ -89 dBm, typical - MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical		- MCS=0	PER @ -92 dBm, typica	l
- MCS=2 PER @ -86 dBm, typical - MCS=3 PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical				
Receive Sensitivity (11n,20MHz) @10% PER PER @ -83 dBm, typical - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical		- MCS=2		
(11n,20MHz) @10% - MCS=4 PER @ -80 dBm, typical - MCS=5 PER @ -77 dBm, typical	Receive Sensitivity			
PER - MCS=5 PER @ -77 dBm, typical	0,	0,	<u> </u>	
	//>>'	_407		
	X. X. Mary	70×		100



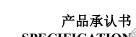
ALEWINER	A TO THE OF THE PARTY OF THE PA		THE THE PARTY OF	产品承认书 SPECIFICATION	THE STATE OF
N. A.	- MCS=7	PER @	-72 dBm, typical		
	- MCS=0		-90 dBm, typical		
	- MCS=1	/%	-87 dBm, typical		
***	- MCS=2	-1%-	-84 dBm, typical	- (* · · · · · · · · · · · · · · · · · ·	
	- MCS=3	PER @	-81 dBm, typical		
Receive Sensitivity	- MCS=4	PER @	-78 dBm, typical		
(11n,40MHz) @10%	- MCS=5	PER @	-75 dBm, typical		
PER	- MCS=6	PER @	-72 dBm, typical		
	- MCS=7	PER @	-70 dBm, typical		
to the Later that of	- MCS=0, NS	SS1 PER	@ -91 dBm, typica	al	301
	- MCS≆1, NS	SS1 PER	@ -88 dBm, typica	al	THE WAY
- 16 P	- MCS=2, NS	SS1 PER	@ -85 dBm, typica	nl (
	MCS=3, NS	SS1 PER	@ -82 dBm, typica	al KATT	
Receive Sensitivity	- MCS=4, NS	SS1 PER	@ -79 dBm, typica	al Salar	
(11ac,20MHz) @10%	- MCS=5, NS	SS1 RER	@ -76dBm, typica	I till it	
FEN T	- MCS=6, NS	SS1 PER	@ -73 dBm, typica	1	
	- MCS=7, NS	SS1 PER	@ -70 dBm, typica	al	
	- MCS=8, NS	SS1 PER	@ -68 dBm, typica	al	
	- MCS=0, NS	SS1 PER	@ -89 dBm, typica	al	
	- MCS=1, NS	SS1 PER	@ -86 dBm, typica	al	
	- MCS=2, NS	SS1 PER	@ -83 dBm, typica		
17.01	- MCS=3, NS	SS1 PER	@ -80 dBm, typica	al	THE WINDS
Receive Sensitivity	- MCS≑4, NS	SS1 PER	@ -77 dBm, typica	al ,	TE MIL.
(11ac,40MHz) @10%	- MCS=5, NS	SS1 PER	@ -74 dBm, typica	al 🦸	
PER	MCS=6, NS	SS1 PER	@-71 dBm, typica	al 💮	
	- MCS=7, NS	SS1 PER	@ -68 dBm, typica	al 👸 🔭	
""	- MCS=8, NS	SS1 PER	@ -65 dBm, typica		
T	- MCS=9, NS	SS1 PER	@ -63 dBm, typica	al	
	- HE=0	PER @	-89 dBm, typical		
	- HE=1	PER @	-86 dBm, typical		
	- HE=2	PER @	-83 dBm, typical		
	- HE=3	PER @	-80 dBm, typical		
Receive Sensitivity	- HE=4	PER @	-77 dBm, typical		
(11ax,20MHz)@10%	- HE=5	PER @	-74 dBm, typical		10/10/10
PER	- HE=6	PER @	-71 dBm, typical		N TO THE STATE OF
	- HE=7	PER @	-68 dBm, typical	- 1	Ī



ALEWINER*	WALL STREET OF	THE TO THE	产品承认书 SPECIFICATION	antal of
	-×HE=8	PER @ -65 dBm, typical		
	- HE=9	PER @ -63 dBm, typical		
a Hillipit St	- HE=0	PER @ -87 dBm, typical	a xill the state of the state o	
	- HE=1	PER @ -84 dBm, typical	-1/*·	
	- HE=2	PER @ -81 dBm, typical		
	- HE=3	PER @ -78 dBm, typical		
Receive Sensitivity	- HE=4	PER @ -75 dBm, typical		
(11ax,40MHz) @10%	- HE=5	PER @ -72 dBm, typical		
PER	- HE=6	PER @ -69 dBm, typical		
alization of	- HE=7	PER @ -66 dBm, typical		301
	- HE=8)///	PER @ -63 dBm, typical		ELANCE,
	- HE=9	PER @ -61 dBm, typical		
Maximum Input Level	802.11a/n/ac/a	x : -20 dBm	W.A.	
Antenna Reference	Small antennas	s with 0~2 dBi peak gain	A. TO WAY	

Bluetooth Section 5.3

Feature	Description	
General Specification		
Bluetooth Standard	Bluetooth V5.0 of 1, 2 and 3 Mbps.	0
Host Interface	UART	TENNEY!
Antenna Reference	Small antennas with 0~2 dBi peak gain	S. V.
Frequency Band	2402 MHz ~ 2480 MHz	
Number of Channels	BR/EDR 79 channels;BLE:40 channels	
Modulation	FHSS, GFSK, DPSK, DQPSK	
RF Specification		
Output Power, tolerance±2dBm		
BDR Output Power	7 dBm	
EDR Output Power	73dBm	10/
BLE Output Power	7 dBm	FIN MIN
Sensitivity, tolerance±2dBm		1





	SPECIFICATION
Sensitivity @ BER=0.1% for GFSK(1Mbps)	-96 dBm
Sensitivity @ BER=0.01% for π/4-DQPSK(2Mbps)	-91 dBm
Sensitivity @ BER=0.01% for 8DPSK(3Mbps)	-89 dBm
Sensitivity @ BLE=30.8% for LE(1Mbps)	-100 dBm
Sensitivity @ BLE=30.8% for LE(2Mbps)	-90 dBm
87	GFSK(1Mbps): -20 dBm
Maximum Input Level	π/4-DQPSK(2Mbps): -20 dBm
A HATTER TO THE PARTY OF THE PA	8DPSK(3Mbps): -20 dBm
6. Recommended Operat	ting Rating

6. Recommended Operating Rating

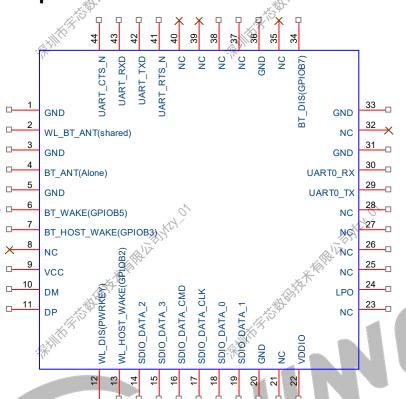
Symbol	Parameter	Minimum	Typical	Maximum	Units
VDD	3.3V supply voltage	3.0	3.3	3.6	V
VDDIO	I/O supply voltage	\$.7	1.8	g).9	V
Current	3.3V rating current			450	mA

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7. Physical Dimensions (Unit: mm) 12±0.2 44 43 42 41 40 89 88 37 36 85 34 12±0.2 6 With shield cover 1.8±0.2mm ----6.0000--5.1250----4.7500-----0.6500-0.2500-0.000



8. Pin Description



	NO.	Name	Type	Description			
	1	GND		Ground connections			
	2	RF	1/0	WL_BT RF I/O port (2.4/5GHz)			
	3	o GND	6	Ground connections			
	4	BT_ANT	I/O	NC(BT_RF_BT Alone)			
	5	GND		Ground connections			
	6	Host wake BT	-	Host wake BT(GPIOB5)			
	7	BT wake host	0	BT wake host (GPIOB3)			
	8	NC A		No connect, keep floating			
	9	VDD	P	3.3V INPUT			
	10	NC		No connect, keep floating			
	11	NC		No connect, keep floating			
	12	WL_DIS	1	Power key (L=OFF, H=ON)			
	13	WL_Wake-up host	0	WL Wake-up host (GPIOB2)			
	14	SD_DAT2	I/O	SDIO DATA2			
	15	SD_DAT3	I/O	SDIO DATA3			
	16	SD_CMD	/O	SDIO command line			
	17	SD_CLK	I/O	SDIO CLK			
	18	SD_DAT0	I/O	SDIO DATAO			



100	X()>`		Si Zen ieninot,					
19	SD_DAT1	I/O	SDIO DATA1					
20	GND	_	Ground connections					
21	NC MA	_	No connect, keep floating					
22	VDDIO	Р 🕸	I/O Voltage supply input 1.8V					
23	NC	_	No connect, keep floating					
24	LPO		No connect, keep floating					
25	NC	_	No connect, keep floating					
26	NC	_	No connect, keep floating					
27	NC	_	No connect, keep floating					
28	NC NC	_	No connect, keep floating					
29	WARTO_TX	_	No connect, keep floating(Debug pin)					
30	UARTO_RX		No connect, keep floating(Debug pin)					
3.1	GND	_	Ground connections					
32	NC NC	_	No connect, keep floating					
33	GND A		Ground connections					
34	BT_DIS	<u> </u>	Reserved (GPIOB7)					
35	NC		No connect, keep floating					
36	GND		Ground connections					
37	NC	-	No connect, keep floating					
38	NC	_	No connect, keep floating					
39	NC NC	-	No connect, keep floating					
40	NC		No connect, keep floating					
41	UART_RTS	ý O	Bluetooth UART interface					
42	UART_TX	0	Bluetooth UART interface					
43	UART_RX	I	Bluetooth UART interface					
44	UART CTS		Bluetooth UART interface					

备注: HFP(蓝牙通话)功能硬件采用 UART 接口

9. Supplier

7	-7.
Supplier list	
Name of material	Material brand
Crystal	JWT/FK/TKD/Murata/TXC
Duplexer	ACX/GLEAD/Sunlord/Walsin
Inductor	Sunlord/ CHILISIN/ SAMWHA/Murata
Wifi chip	Allwinner
RF FEM	Chipbetter
RF switch	Richwave/Qwave/RDA/Maxscend
Capacitance	SAMSUNG /EYANG
Resistance	UniOhm /YAGEO
PCB(12x12x0.5mm)	A,O,I,F
S''	ζ, 'Λέι, 'Υξι', 'Υξ



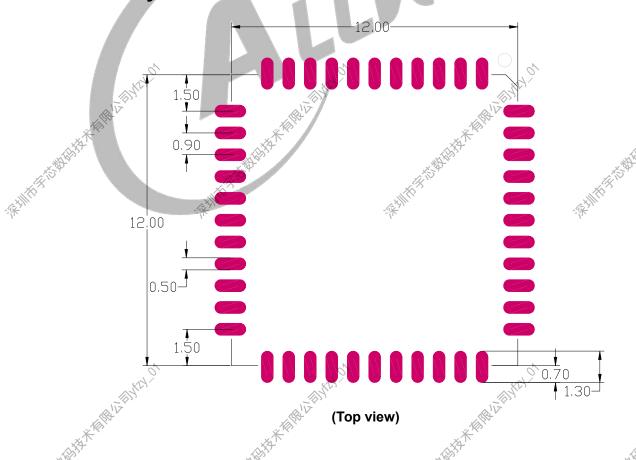
10. Physical Photo





说明: PCB 不同供应商,底部丝印有微小差异

11. Layout Recommendation





12. Baking & Storage Temperature & Recommended Reflow Profile

(烘烤,储存温度和推荐炉温)

12.1 Baking & Storage Temperature

- Storage life: 12 months. Storage conditions:<40°C. Relative humidity:<90%R.H. (保存期限: 12个月,储存环境条件: 温度在: <40°C,相对湿度: <90%R.H.)
- After this bag is opened, devices that will be subjected to infrared reflow, vapor-phase reflow, or equivalent processing must be .(模块包装被拆后, SMT 组装之时限)
 - Check the humidity card :stored at ≤ 20%RH.If :30%~40%(pink)or greater than 40%(red).Labeling module has moisture absorption.(检查湿度卡:显示值应小于30%(蓝色),如: 30%~40%(粉红色)或者大于40%(红色)表示模块已吸湿气.)
 - ✓ Mounted within 168 hours at factory conditions of: t≦30%℃,≦60%R.H. (工厂环境温度湿度管制:≦30%℃,≦60%R.H, 168小时内。)
 - ✓ Once opened, the workshop the preservation of life for168 hours.

 (拆封后,车间的保存寿命为168小时.)
- Module apart packing after 168 hours. If baking is required, devices may be baked for.
 - (如在拆封后的168个小时内未使用完,需要烘烤,烘烤条件如下:)
 - ✓ Modules must be to remove module moisture problem. (模块须重新烘烤,以除去模块吸湿问题.)
 - ✓ Baking temperature: 40℃±5℃, 120 hours. (烘烤温度条件: 40℃±5℃, 120小时).
 - ✓ After baking, put proper amount of desiccant to seal packages.

 (烘烤后,放入适量的干燥剂再密封包装)

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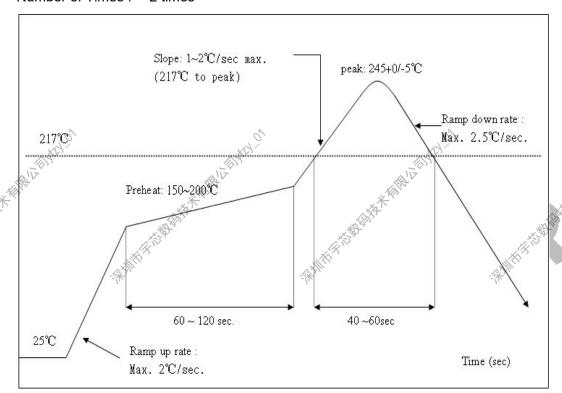


12.2 Recommended Reflow Profile

Referred IPC/JEDEC standard.

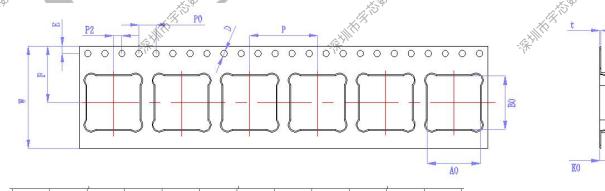
Peak Temperature: <250°C

Number of Times: 2 times



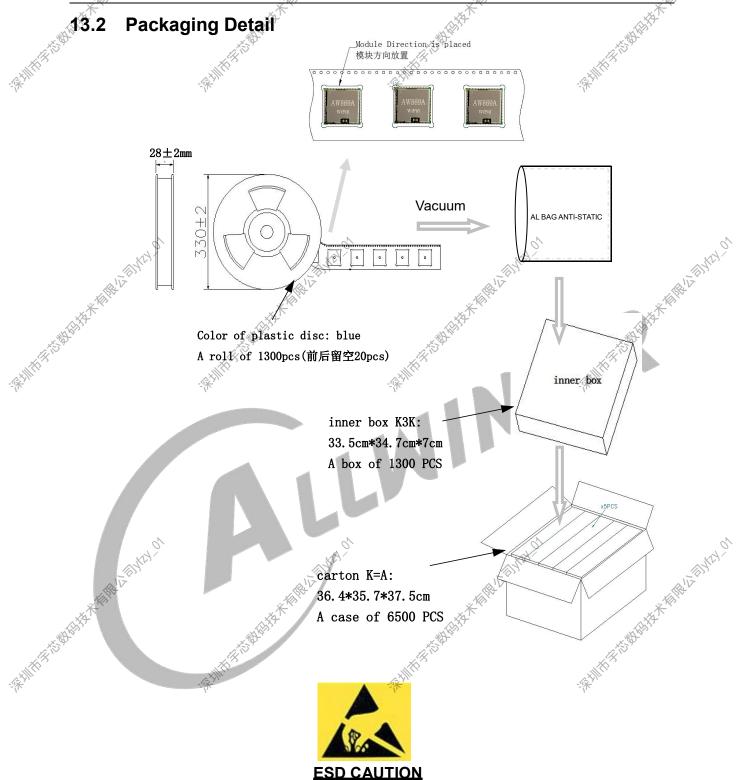
13. Packing information

13.1 Carrier Size Detail



	ITEM	¥	A0	В0	KO	P	F	Z,	D	P0	P2	T	1
300	DIM	24	12. 5	12. 5	2.8	16	13, 25	1. 75	1. 50	4	2	0.3	V
	TOLE	+0.30 -0.30	+0. 10 -0. 10	+0. 10 -0. 10	+0. 10 -0. 10	+0.10 -0.10	+0. 10 -0. 10	+0. 05 -0. 05					

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The AW869A module is ESD (electrostatic discharge) sensitive device and may be damaged with ESD or spike voltage. Although AW869A module is with built-in ESD protection circuitry, please handle with care to avoid the permanent malfunction or the performance degradation.