

保密等级：机密

SPECIFICATION

产品规格书

SKO.WB276P.1 B23453

IEEE 802.11b/g/n/a/ac/ax 2T2R PCIE WiFi Module

Integrated BT 2.1+EDR/4.2/5.3

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1. Introduction（简介）

SKO.WB276P.1 module is based on AMPAK AP6276P solution.

AP6276P is a highly integrated module which features a low power 2x2 11a/b/g/n/ac/ax dual-band Wi-Fi subsystem and a Bluetooth v5.3 subsystem, offering feature-rich wireless connectivity at high standards, and delivering reliable, cost-effective throughput from an extended distance.

AP6276P data rate up to 1200Mbps with PCIE3.0. Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. Intelligent MAC design deploys a high efficient offload engine, and hardware data processing accelerators which fully offloads Wi-Fi task of the host processor, AP6276P is designed to support standard based features in the areas of security, quality of service and international regulations, giving end users the greatest performance any time and in any circumstance. This documentation describes the engineering requirements specification.

SKO.WB276P.1 模块基于正基 AP6276P 方案。AP6276P 是一款高度集成的单模组，符合 2x2 11a/b/g/n/ac/ax 标准，支持低功耗的双频 Wi-Fi 和蓝牙 v5.3 子系统，提供功能丰富的无线标准接口，以及可靠、高效的远距离吞吐量。

AP6276P 使用 PCIE3.0 高速接口，数据速率高达 1200Mbps，优化后的射频架构和基带算法提供了卓越的性能，并且功耗很低。MAC 部署了一个高效的卸载引擎和硬件数据处理加速器，可完全卸载主机处理器的 Wi-Fi 任务。AP6276P 安全、优异的性能，并且符合国际法律法规标准，无论何时何地都为用户提供最好的应用体验。本文档描述了工程要求规范。

2. Features（特性）

Reserving System 接收制式	IEEE Std. 802.11a
	IEEE Std. 802.11b
	IEEE Std. 802.11g
	IEEE Std. 802.11n
	IEEE Std. 802.11ac
	IEEE Std. 802.11ax
	BT 5.3
Module Solution 模组方案	AP6276P
Band 波段	2.4GHz&5GHz&6GHz
Dimensions 尺寸	22mm×30mm×2.65mm

型号	安装方式	支持标准	频段	天线接口	备注
SKO.WB276P.1	M.2 E-key	IEEE 802.11a/b/g/n/ac/ax BT 2.1+EDR/4.2/5.3	2.4GHz/5GHz /6GHz	4 代 IpeX*2	22mm×30mm ×3.0mm

3. Block Diagram（结构框图）

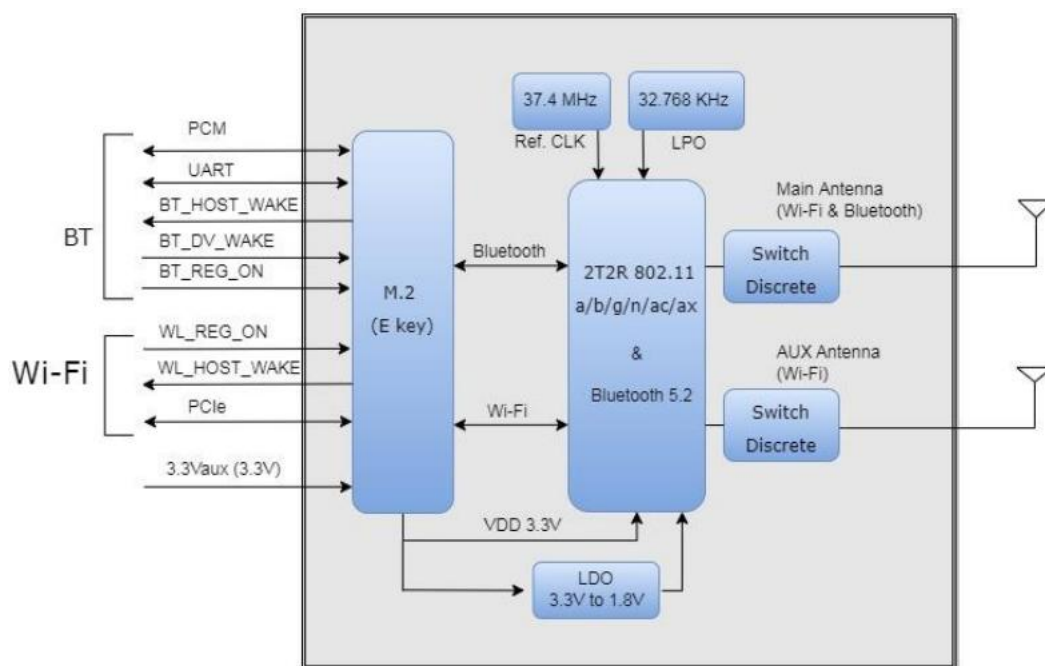
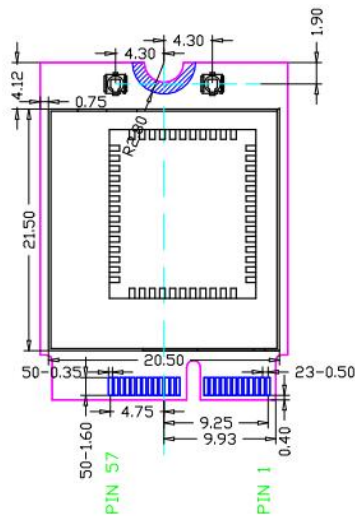
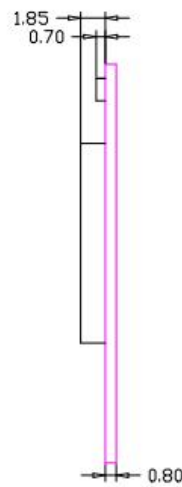


Figure 1 SKO.WB276P.1 Block Diagram

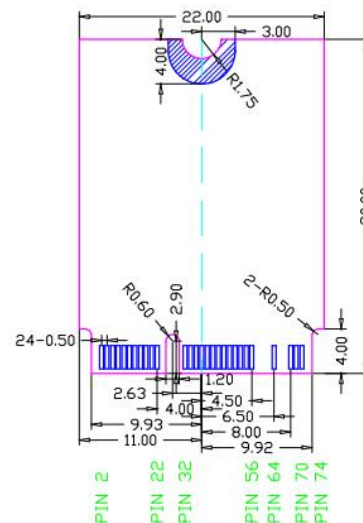
4. Package Outline and Mounting (外形及安装尺寸)



模组俯视图



模组侧视图



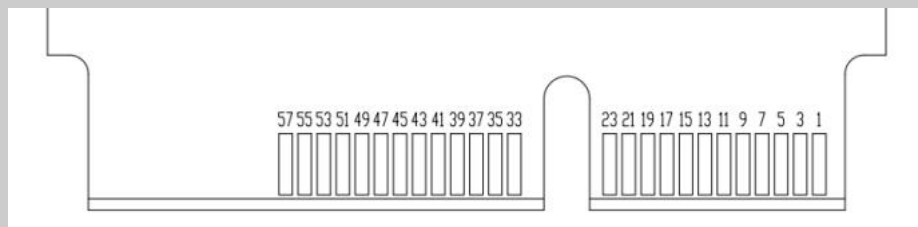
模组底视图

注意：1. 单位为 mm。

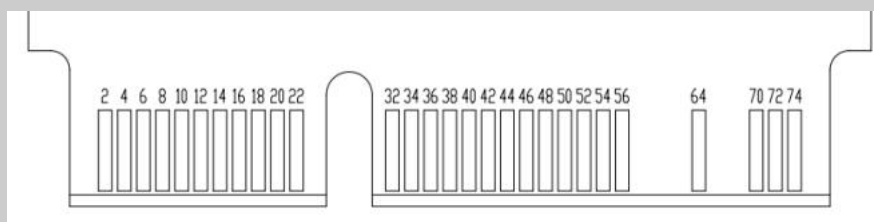
2. 模组外形尺寸公差为 $\pm 0.2\text{mm}$ ，板厚及未标注公差为 $\pm 0.2\text{mm}$ 。

3. 平面度要求： $< 0.15\text{mm}$ 。

5. Pin Definition (引脚定义)



模组正视图



模组后视图

PIN	SYMBOL	DESCRIPTION
TOP		
1	GND	GND
3	NC	Not connect
5	NC	Not connect
7	GND	GND

9	NC	Not connect
11	NC	Not connect
13	NC	Not connect
15	NC	Not connect
17	NC	Not connect
19	NC	Not connect
21	NC	Not connect
23	NC	Not connect
33	GND	GND
35	PCIE_RXP	Differential receive
37	PCIE_RXN	Differential receive
39	GND	GND
41	PCIE_TXP	Differential transmit
43	PCIE_TXN	Differential transmit
45	GND	GND
47	PCIE_CKP	Differential reference clock
49	PCIE_CKN	Differential reference clock
51	GND	GND
53	PCIE_CLKREQ	PCIE_CLKREQ (3.3V)
55	PCIE_WAKE	PCIE_WAKE (1.8V)
57	GND	GND
BOTTOM		
2	3V3	3V3
4	3V3	3V3
6	NC	Not connect
8	PCM_CLK	PCM_CLOCK (1.8V)
10	PCM_SYNC	PCM_sync signal (1.8V)
12	PCM_OUT	PCM_OUT (1.8V)
14	PCM_IN	PCM_IN (1.8V)
16	NC	Not connect
18	GND	GND
20	BT_WAKE_H	BT_WAKE_H (1.8V)
22	UART_TXD	UART_TX (1.8V)
32	UART_RXD	UART_RX (1.8V)
34	UART_RTS	UART_RXD (1.8V)
36	UART_CTS	UART_CTS (1.8V)
38	H_WAKE_BT	H_WAKE_BT (1.8V)
40	WL_WAKE_H	WL_WAKE_H (1.8V)

42	NC	Not connect
44	NC	Not connect
46	NC	Not connect
48	NC	Not connect
50	NC	Not connect
52	RST_N	Reset (3.3V)
54	BT_EN	BT_enable (3.3V)
56	WLAN_EN	WLAN_enable (3.3V)
64	NC	Not connect
70	NC	Not connect
72	VIO	3.3V
74	VIO	3.3V

6. Product Pictures (实物图片)



标签信息 (information view)

配置说明: (待更新)

CVTE 提供一种模块配置, 如下图

机型	CVTE 料号	正视图	背视图
SKO.WB276P.1	002.029.0001217		

7. Key Materials (关键物料)

序号	关键件名称	型号	规格/材料	备注
1	集成模块	AP6276P	55-DRQFN	
2	PCB	SKO.WB276P.1	FR-4,4LAY	
3	无源晶体	37.4MHz, ± 10 ppm, 3225		JWT,MDH
4	有源晶体	32.768KHz, ± 10 ppm, 3225		JWT,MDH
5	LDO 芯片	2~6V,300mA,1.8V,SOT23-5		
6	电平转换芯片	1.65~3.6V,2.3~5.5V,FBGA12		

8. General Requirements（一般要求）

No.	Feature	Description
1	Operation Voltage 工作电压范围	3.3V+/-0.3
2	Current Consumption 最大电流	1A（预留 2A）
3	Ripple 纹波	≤10%
4	Operation Temperature 工作温度范围	-10°C to +70°C
5	Antenna Type 天线类型	External antenna
6	Interface	PCIE3.0 UART
7	Storage Temperature 存储温度	-40°C to +125°C

9. Electrical Characteristics（电气特性）

除非另有说明，电气规范试验都在下列条件下进行：

环境条件温度：25°C ± 5°C；

电源电压：模块输入电压 3.3V+/-0.3；

The Test for electrical specification was performed under the following condition unless otherwise specified:

Ambient condition Temperature :25°C ± 5°C；

Power supply voltages: 3.3V+/-0.3 input power at the Module;

According to country code, channel 12 and 13 would be disabled in North America.

The Power levels below were only for reference, and the final transmitted power would be set in factory.

9.1 IEEE 802.11b Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11b				
Mode	CCK				
Channel	CH1 to CH13				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels(Calibrated)					
1) For antenna port (CCK 11M)	16	17	18	dBm	
2. Spectrum Mask @ target power					
1) fc +/-11MHz to +/-22MHz	-	-	-30	dBr	
2) fc > +/-22MHz	-	-	-50	dBr	
3 Constellation Error(EVM)@ target power					
1) 1Mbps	-	-	-10	dB	
2) 2Mbps	-	-	-10	dB	

3) 5.5Mbps	-	-	-10	dB	
4) 11Mbps	-	-	-10	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5 Minimum Input Level Sensitivity (each chain)					
1) 1Mbps (FER $\leq 8\%$)	-	-	-83	dBm	
2) 2Mbps (FER $\leq 8\%$)	-	-	-80	dBm	
3) 5.5Mbps (FER $\leq 8\%$)	-	-	-79	dBm	
4) 11Mbps (FER $\leq 8\%$)	-	-	-76	dBm	
6 Maximum Input Level (FER $\leq 8\%$)	-10	-	-	dBm	

9.2 IEEE 802.11g Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11g				
Mode	OFDM				
Channel	CH1 to CH13				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) For antenna port (54M)	14	15	16	dBm	
2. Spectrum Mask @ target power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-40	dBr	
3 Constellation Error(EVM)@ target power					
1) 6Mbps	-	-	-5	dB	
2) 9Mbps	-	-	-8	dB	
3) 12Mbps	-	-	-10	dB	
4) 18Mbps	-	-	-13	dB	
5) 24Mbps	-	-	-16	dB	
6) 36Mbps	-	-	-19	dB	
7) 48Mbps	-	-	-22	dB	
8) 54Mbps	-	-	-25	dB	
4 Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5 Minimum Input Level Sensitivity (each chain)					
1) 6Mbps (PER $\leq 10\%$)	-	-	-85	dBm	
2) 9Mbps (PER $\leq 10\%$)	-	-	-84	dBm	
3) 12Mbps (PER $\leq 10\%$)	-	-	-82	dBm	
4) 18Mbps (PER $\leq 10\%$)	-	-	-80	dBm	

5) 24Mbps (PER $\leq 10\%$)	-	-	-77	dBm	
6) 36Mbps (PER $\leq 10\%$)	-	-	-73	dBm	
7) 48Mbps (PER $\leq 10\%$)	-	-	-69	dBm	
8) 54Mbps (PER $\leq 10\%$)	-	-	-65	dBm	
6 Maximum Input Level (PER $\leq 10\%$)	-20	-	-	dBm	

9.3 IEEE 802.11n HT20 Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11n HT20 @ 2.4GHz				
Mode	OFDM				
Channel	CH1 to CH13				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels					
1) For antenna port (MCS7)	12	14	17	dBm	
2. Spectrum Mask @ target power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-45	dBr	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity (each chain)					
1) MCS0 (PER $\leq 10\%$)	-	-	-82	dBm	
2) MCS1 (PER $\leq 10\%$)	-	-	-79	dBm	
3) MCS2 (PER $\leq 10\%$)	-	-	-77	dBm	
4) MCS3 (PER $\leq 10\%$)	-	-	-74	dBm	
5) MCS4 (PER $\leq 10\%$)	-	-	-70	dBm	
6) MCS5 (PER $\leq 10\%$)	-	-	-66	dBm	
7) MCS6 (PER $\leq 10\%$)	-	-	-65	dBm	
8) MCS7 (PER $\leq 10\%$)	-	-	-64	dBm	
7. Maximum Input Level (PER $\leq 10\%$)	-20	-	-	dBm	

9.4 IEEE 802.11ax Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11ax				
Mode	BPSK, QPSK, 16QAM, 64QAM, 256QAM, and OFDMA				
Channel	HE20: CH1 to CH13				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (MCS0~MCS9)	15	17	20	dBm	
2. Spectrum Mask @VHT20/VHT40/VHT80 target power					
1) at fc +/-11MHz/21MHz/41MHz	-	-	-20	dB	
2) at fc +/-20MHz/40MHz/80MHz	-	-	-28	dB	
3) at fc +/-30MHz/60MHz/120MHz	-	-	-40	dB	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-27	dB	
9) MCS8	-	-	-30	dB	
10) MCS9	-	-	-32	dB	
11) MCS10			-34	dB	
12) MCS11			-35	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity (each chain)			HE20		
1) MCS0 (PER ≤10%)	-	-	-82	dBm	
2) MCS1 (PER ≤10%)	-	-	-79	dBm	
3) MCS2 (PER ≤10%)	-	-	-77	dBm	
4) MCS3 (PER ≤10%)	-	-	-74	dBm	
5) MCS4 (PER ≤10%)	-	-	-70	dBm	
6) MCS5 (PER ≤10%)	-	-	-66	dBm	
7) MCS6 (PER ≤10%)	-	-	-65	dBm	
8) MCS7 (PER ≤10%)	-	-	-64	dBm	
9) MCS8 (PER ≤10%)	-	-	-59	dBm	
10) MCS9 (PER ≤10%)	-	-	-57	dBm	

11) MCS10(PER $\leq 10\%$)	-	-	-54			dBm	
12) MCS11(PER $\leq 10\%$)	-	-	-52			dBm	
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-			dBm	

9.5 IEEE 802.11a Section(5GHz)

Items	Contents				
Specification	IEEE802.11a				
Mode	OFDM				
Channel	5GHz CH36 to CH165				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (5GHz 54M)	13	15	16	dBm	
2. Spectrum Mask @target power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-40	dBr	
3. Constellation Error(EVM)@ target power					
1) 6Mbps	-	-	-5	dB	
2) 9Mbps	-	-	-8	dB	
3) 12Mbps	-	-	-10	dB	
4) 18Mbps	-	-	-13	dB	
5) 24Mbps	-	-	-16	dB	
6) 36Mbps	-	-	-19	dB	
7) 48Mbps	-	-	-22	dB	
8) 54Mbps	-	-	-25	dB	
4 Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5 Minimum Input Level Sensitivity (each chain)					
1) 6Mbps (PER $\leq 10\%$)	-	-	-82	dBm	
2) 9Mbps (PER $\leq 10\%$)	-	-	-81	dBm	
3) 12Mbps (PER $\leq 10\%$)	-	-	-79	dBm	
4) 18Mbps (PER $\leq 10\%$)	-	-	-77	dBm	
5) 24Mbps (PER $\leq 10\%$)	-	-	-74	dBm	
6) 36Mbps (PER $\leq 10\%$)	-	-	-70	dBm	
7) 48Mbps (PER $\leq 10\%$)	-	-	-66	dBm	
8) 54Mbps (PER $\leq 10\%$)	-	-	-65	dBm	
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-	dBm	

9.6 IEEE 802.11n HT20 Section(5GHz)

Items	Contents
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Specification	IEEE802.11n HT20 @ 5GHz				
Mode	BPSK, QPSK, 16QAM, 64QAM and OFDM				
Channel	5GHz CH36 to CH165				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (5GHz MCS7)	6	13	17	dBm	
2. Spectrum Mask @target power					
1) at fc +/-11MHz	-	-	-20	dBm	
2) at fc +/-20MHz	-	-	-28	dBm	
3) at fc > +/-30MHz	-	-	-45	dBm	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity (each chain)					
1) MCS0 (PER ≤10%)	-	-	-82	dBm	
2) MCS1 (PER ≤10%)	-	-	-79	dBm	
3) MCS2 (PER ≤10%)	-	-	-77	dBm	
4) MCS3 (PER ≤10%)	-	-	-74	dBm	
5) MCS4 (PER ≤10%)	-	-	-70	dBm	
6) MCS5 (PER ≤10%)	-	-	-66	dBm	
7) MCS6 (PER ≤10%)	-	-	-65	dBm	
8) MCS7 (PER ≤10%)	-	-	-64	dBm	
6. Maximum Input Level (PER ≤10%)	-30	-	-	dBm	

9.7 IEEE 802.11n HT40 Section(5GHz)

Items	Contents				
Specification	IEEE802.11n HT40 @ 5GHz				
Mode	BPSK, QPSK, 16QAM, 64QAM and OFDM				
Channel	5GHz CH38 to CH163				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (5GHz MCS7)	10	13	16	dBm	

2. Spectrum Mask @target power					
1) at fc +/-21MHz	-	-	-20	dBr	
2) at fc +/-40MHz	-	-	-28	dBr	
3) at fc > +/-60MHz	-	-	-45	dBr	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
6. Minimum Input Level Sensitivity (each chain)					
1) MCS0 (PER ≤10%)	-	-	-79	dBm	
2) MCS1 (PER ≤10%)	-	-	-76	dBm	
3) MCS2 (PER ≤10%)	-	-	-74	dBm	
4) MCS3 (PER ≤10%)	-	-	-71	dBm	
5) MCS4 (PER ≤10%)	-	-	-67	dBm	
6) MCS5 (PER ≤10%)	-	-	-63	dBm	
7) MCS6 (PER ≤10%)	-	-	-62	dBm	
8) MCS7 (PER ≤10%)	-	-	-61	dBm	
6. Maximum Input Level (PER ≤10%)	-30	-	-	dBm	

9.8 IEEE 802.11ac Section(5GHz)

Items	Contents				
Specification	IEEE802.11ac				
Mode	BPSK, QPSK, 16QAM, 64QAM ,256QAM and OFDM				
Channel	5GHz CH36 to CH165 VHT20 5GHz CH38 to CH163 VHT40 5GHz CH42 to CH157 VHT80				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (5GHz MCS0~MCS7)	6	13	17	dBm	
1) For antenna port (5GHz MCS8~MCS9)	6	12	17	dBm	
2. Spectrum Mask @VHT20/VHT40/VHT80 target power					
1) at fc +/-11MHz/21MHz/41MHz	-	-	-20	dBr	

2) at fc +/-20MHz/40MHz/80MHz	-	-	-28	dBr	
3) at fc +/-30MHz/60MHz/120MHz	-	-	-40	dBr	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-27	dB	
9) MCS8	-	-	-30	dB	
10) MCS9	-	-	-32	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5.Minimum Input Level Sensitivity (each chain)			VHT 20	VHT 40	VHT 80
1) MCS0 (PER $\leq 10\%$)	-	-	-82	-79	-76
2) MCS1 (PER $\leq 10\%$)	-	-	-79	-76	-73
3) MCS2 (PER $\leq 10\%$)	-	-	-77	-74	-71
4) MCS3 (PER $\leq 10\%$)	-	-	-74	-71	-68
5) MCS4 (PER $\leq 10\%$)	-	-	-70	-67	-64
6) MCS5 (PER $\leq 10\%$)	-	-	-66	-63	-60
7) MCS6 (PER $\leq 10\%$)	-	-	-65	-62	-59
8) MCS7 (PER $\leq 10\%$)	-	-	-64	-61	-58
9) MCS8(PER $\leq 10\%$)	-	-	-59	-56	-53
10) MCS9(PER $\leq 10\%$)	-	-	-57	-54	-51
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-	dBm	

9.9 IEEE 802.11ax Section(5GHz&6GHz)

Items	Contents				
Specification	IEEE802.11ax				
Mode	BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM and OFDMA				
Channel	5GHz CH36 to CH165 VHT20 5GHz CH38 to CH163 VHT40 5GHz CH42 to CH157 VHT80 6GHz CH1 to CH113 VHT20 6GHz CH3 to CH107 VHT40 6GHz CH7 to CH103 VHT80				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					

1) For antenna port (5GHz MCS0~MCS9)	6	10	14	dBm	
2) For antenna port(5GHz MCS10~MCS11)	6	10	14	dbm	
3) For antenna port (6GHz MCS0~MCS9)	-5	7	7	dBm	
4) For antenna port(6GHz MCS10~MCS11)	-5	7	7	dbm	
2. Spectrum Mask @HE20/HE40/HE80 target power					
1) at fc +/-11MHz/21MHz/41MHz	-	-	-20	dBr	
2) at fc +/-20MHz/40MHz/80MHz	-	-	-28	dBr	
3) at fc +/-30MHz/60MHz/120MHz	-	-	-40	dBr	
3. Constellation Error(EVM)@ target power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-	-27	dB	
9) MCS8	-	-	-30	dB	
10) MCS9	-	-	-32	dB	
11) MCS10			-34	dB	
12) MCS11			-35	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5.Minimum Input Level Sensitivity (each chain)			HE 20	HE 40	HE 80
1) MCS0 (PER $\leq 10\%$)	-	-	-82	-79	-76
2) MCS1 (PER $\leq 10\%$)	-	-	-79	-76	-73
3) MCS2 (PER $\leq 10\%$)	-	-	-77	-74	-71
4) MCS3 (PER $\leq 10\%$)	-	-	-74	-71	-68
5) MCS4 (PER $\leq 10\%$)	-	-	-70	-67	-64
6) MCS5 (PER $\leq 10\%$)	-	-	-66	-63	-60
7) MCS6 (PER $\leq 10\%$)	-	-	-65	-62	-59
8) MCS7 (PER $\leq 10\%$)	-	-	-64	-61	-58
9) MCS8(PER $\leq 10\%$)	-	-	-59	-56	-53
10) MCS9(PER $\leq 10\%$)	-	-	-57	-54	-51
11) MCS10(PER $\leq 10\%$)	-	-	-54	-51	-48
12) MCS11(PER $\leq 10\%$)	-	-	-52	-49	-46
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-	dBm	

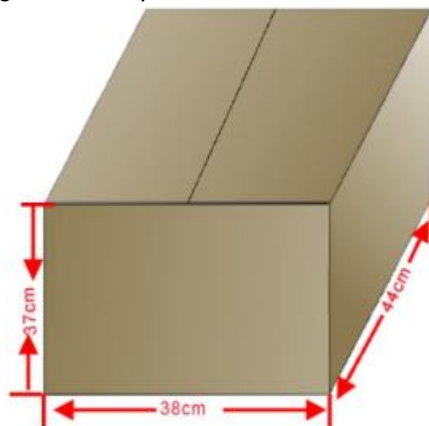
9.10 Bluetooth Section

Items	Contents
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Specification	BT2.1+EDR/4.2/5.2 with BLE				
Mode	FHSS,GFSK,DPSK,DQPSK				
Number of Channel	79 Channels				
Frequency Band	2.402 GHz ~2.480GHz				
	Min.	Typ.	Max.	Unit	Remark
1. Output Power	-	8	-	dBm	
2. Gain step	-	1	-	dB	
3. Receiver sensitivity (BER $\leq 0.1\%$)	-	-92	-80	dBm	
4. Maximum usable signal (BER $\leq 0.1\%$)	-20	-	-		
5. C/I co-channel (BER<0.1%)	-	4	11	dB	
6. C/I 1MHz (BER<0.1%)	-	-7	0	dB	
7. C/I 2MHz (BER<0.1%)	-	-40	-30	dB	
8. C/I ≥ 3 MHz (BER<0.1%)	-	-43	-40	dB	
9. C/I Image channel (BER<0.1%)	-	-20	-9	dB	
10. C/I Image 1MHz (BER<0.1%)	-	-35	-20	dB	
11. Inter-modulation	-39	-30	-	dB	
12. Out-of-band blocking					
1). 30MHz to 2000MHz	-10	-	-	dBm	
2). 2000MHz to 2399MHz	-27	-	-	dBm	
3). 2498MHz to 3000MHz	-27	-	-	dBm	
4). 3000MHz to 12.75GHz	-10	-	-	dBm	
13. Modulation characteristics					
1). Δf_{1avg}	140	157	175	KHz	
2). Δf_{2max} (For at least 99.9% of all Δf_{2max})	115	145	-	KHz	
3). $\Delta f_{1avg} / \Delta f_{2avg}$	0.8	0.98	-	KHz	
14. ICFT	-75	± 18	+75	KHz	
15. Carrier frequency drift					
1). One slot packet (DH1)	-25	± 15	+25	KHz	
2). Two slot packet (DH3)	-40	± 15	+40	KHz	
3). Five slot packet (DH5)	-40	± 15	+40	KHz	
4). Max drift rate	-	10	20	KHz/50us	
16. TX output spectrum(20dB bandwidth)	-	922	1000	KHz	
17. In-Band spurious emission					
1). ± 2 MHz offset	-	-38	-20	dBm	
2). ± 3 MHz offset	-	-43	-40	dBm	
3). $> \pm 3$ MHz offset	-	-45	-40	dBm	

(2) 外箱图纸, 统一规格: 44X38X37cm

Outer box drawings, unified specifications: 44X38X37cm



(3) 包装数量 Packing quantity

每盘包装 100pcs, 每箱装 53 盘, 每箱数量=100*53=5300pcs

Each tray is packed with 100pcs, each box contains 53 trays, the quantity per box=100*53=5300pcs