

保密等级：机密

SPECIFICATION

产品规格书

SKI.WB800M.1_800D

IEEE 802.11a/b/g/n/ac/ax 1T1R WiFi Module

Integrated BT 5.0+SOC

Approved by Shikun		
Checked by 审核	Rechecked by 复审	Approved by 批准

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REVISION HISTORY.

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V0	2021.4.25	SKI.WB800M.1	All	First Issued	
V1	2021.6.28	SKI.WB800M.1	6~15	Modify power	
V2	2021.7.10	SKI.WB800M.1	6~15	Modify TX power	
V3	2021.8.9	SKI.WB800M.1	5	Operation Temperature	

Content

1. Introduction (简介)	1
2. Features (特性)	1
3. Block Diagram (结构框图)	2
4. Package Outline and Mounting (外形及安装尺寸)	2
6. Product Pictures (实物图片)	4
7. Key Materials (关键物料)	5
8. General Requirements (一般要求)	5
9. Electrical Characteristics (电气特性)	6
9.1 IEEE 802.11b Section(2.4GHz)	6
9.2 IEEE 802.11g Section(2.4GHz)	7
9.3 IEEE 802.11n HT20 Section(2.4GHz)	8
9.4 IEEE 802.11n HT40 Section(2.4GHz)	9
9.5 IEEE 802.11ax Section(2.4GHz)	10
9.6 IEEE 802.11a Section(5GHz)	11
9.7 IEEE 802.11n HT20 Section(5GHz)	12
9.8 IEEE 802.11n HT40 Section(5GHz)	13
9.9 IEEE 802.11ac Section(5GHz)	14
9.10 IEEE 802.11ax Section(5GHz)	15
9.11 Bluetooth Section	16
10. Reference Design (参考设计)	18
11. Package (包装)	19

1. Introduction (简介)

SKI.WB800M.1 module is based on AICSEMI AIC8800M solution. SKI.WB800M.1 is a Wi-Fi 6 / BT 5.0 combo low-power, high-performance and high-integrated wireless communication module with a high-performance Cortex-M4F 480MHz CPU built, which is designed for meeting the customers' needs of small size and low cost. This module supports both WLAN and BT functions. Its WLAN/BT function supports the USB 2.0 / SDIO 2.0 interface, and its BT function supports the UART/PCM interface, and the module meets the requirements of standard protocol IEEE 802.11 b/g/n/ax. Such units as power management, power amplifier, low-noise amplifier and 128Mbits Flash are integrated in the main chip of the module. Its WLAN PHY rate is up to 266.8Mbps@TX. The module can be applied in smart sound boxes, set-top boxes, game machines, printers, IP cameras, tachographs, and other smart equipment. This documentation describes the engineering requirements specification.

SKI.WB800M.1 模块基于爱科微 AIC8800M 方案。SKI.WB800M.1 是一款内置高性能 Cortex-M4F 480MHz CPU 的 Wi-Fi 6 / BT 5.0 组合的低功耗、高性能、高集成度无线通信模块，专为满足客户小尺寸、低成本的需求而设计。该模块支持 WLAN 和 BT 功能。WLAN/BT 功能支持 USB 2.0 / SDIO 2.0 接口，BT 功能支持 UART/PCM 接口，满足 IEEE 802.11 a/b/g/n/ac/ax 标准协议要求。该模块的主芯片集成了功率管理、功率放大器、低噪声放大器单元，128Mbits Flash。其 WLAN PHY 速率达到 266.8Mbps@TX。该模块可应用于智能音箱、机顶盒、游戏机、打印机、IP 摄像头、测速仪等智能设备。本文档描述了工程要求规范。本文档描述了工程要求规范。

2. Features (特性)

Reserving System 接收制式	IEEE Std. 802.11b
	IEEE Std. 802.11g
	IEEE Std. 802.11n
	IEEE Std. 802.11a
	IEEE Std. 802.11ac
	IEEE Std. 802.11ax
	BT 5.0
Chip Solution 芯片方案	AIC8800M
Band 波段	2.4GHz/5GHz
Dimensions 尺寸	13mm×15mm×2mm

Model 型号	Installation Mode 安装方式	Protocol I 支持标准	Frequency 频段	Antenna 天线	Remark 备注
SKI.WB800M.1	SMD	IEEE 802.11a/b/g/n/ac/ax BT 5.0	2.4GHz/5GHz	Stamp Hole*3	13mm×15mm× 2mm

3. Block Diagram (结构框图)

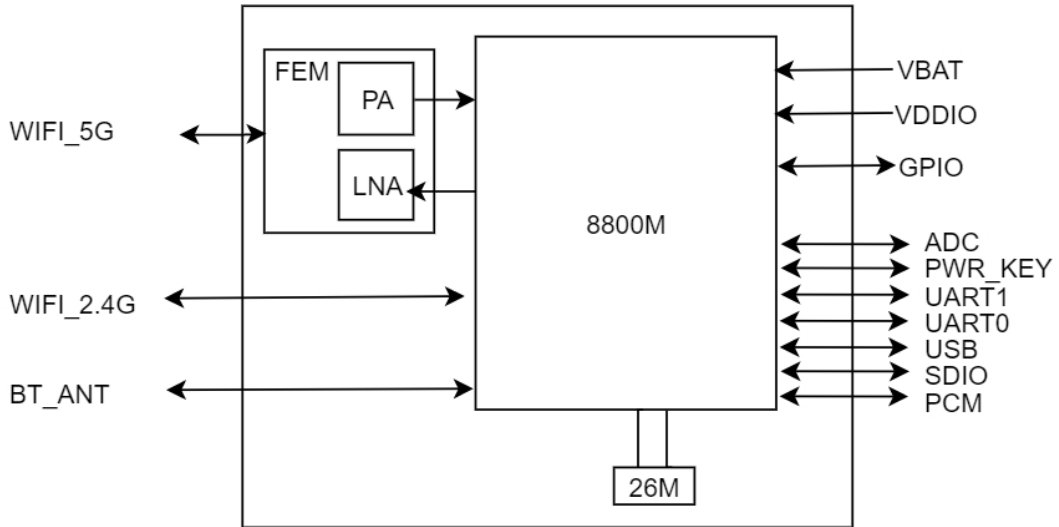
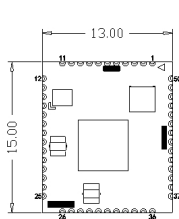
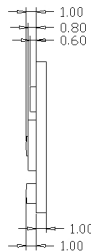


Figure 1 SKI.WB800M.1 Block Diagram

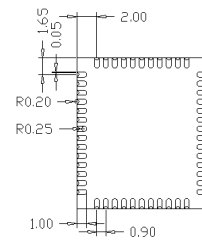
4. Package Outline and Mounting (外形及安装尺寸)



模组俯视图

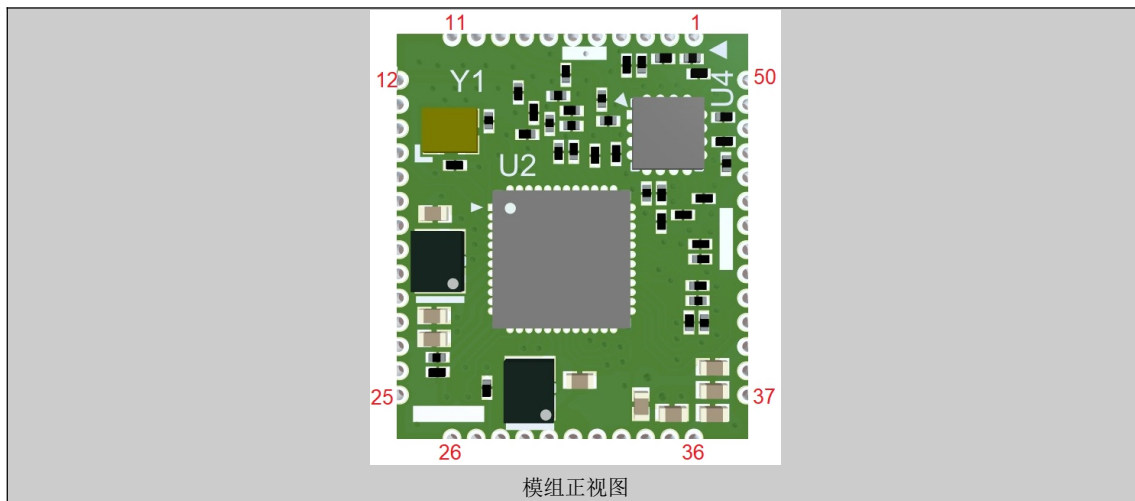


模组侧视图



模组底视图

5. Pin Definition (引脚定义)



PIN	SYMBOL	DESCRIPTION	Voltage
1	GND	Connected to Ground \ 接地	
2	WF_5G	WIFI 5G RF port\WIFI 5G 射频接口	
3	GND	Connected to Ground \ 接地	
4	GND	Connected to Ground \ 接地	
5	GND	Connected to Ground \ 接地	
6	GND	Connected to Ground \ 接地	
7	GND	Connected to Ground \ 接地	
8	GND	Connected to Ground \ 接地	
9	WF_2.4G	WIFI 2.4G RF port\WIFI 2.4G 射频接口	
10	GND	Connected to Ground \ 接地	
11	GND	Connected to Ground \ 接地	
12	RF_BT	BT ANT RF port\BT 天线射频接口	
13	GND	Connected to Ground \ 接地	
14	ADC	ADC 功能	
15	PWR_KEY	PWR_KEY\内接芯片脚	
16	GPIOB4/HSOT_WAKE_WIFI	TBD\待定义	
17	SD_CMD	SDIO Command Input\SDIO 控制信号	
18	SD_CLK	SDIO Clock Input\SDIO 时钟	
19	SD_D3	SDIO Data Line3\SDIO 数据 3	
20	SD_D2	SDIO Data Line2\SDIO 数据 2	
21	SD_D0	SDIO Data Line0\SDIO 数据 0	
22	SD_D1	SDIO Data Line1\SDIO 数据 1	
23	GND	Connected to Ground \ 接地	
24	GPIOB2/WIFI_WAKE_HOST	TBD\待定义	
25	USB_DP	USB 功能	
26	USB_DM	USB 功能	

27	NC	NC	
28	NC	NC	
29	NC	NC	
30	NC	NC	
31	GPIOB6	TBD	
32	GND	Connected to Ground \ 接地	
33	GPIOB7	TBD	
34	VIO	IO Power Supply	
35	NC	NC	
36	VBAT	3.3V Power supply\3.3V 供电	
37	I2C_SCL/CTS	TBD\待定义	
38	I2C_SDA/RTS	TBD\待定义	
39	GND	Connected to Ground \ 接地	
40	GPIOB3/BT_WAKE_HOST	TBD\待定义	3.3V
41	UART0_TX	Debug UART	3.3V
42	GND	Connected to Ground \ 接地	
43	UART0_RX	Debug UART	3.3V
44	UART1_TX	BT UART	3.3V
45	UART1_RX	BT UART	3.3V
46	GND	Connected to Ground \ 接地	
47	NC	NC	
48	GND	Connected to Ground \ 接地	
49	GPIOB13	TBD\待定义	3.3V
50	GPIOB5/HOST_WAKE_BT	TBD\待定义	3.3V

6. Product Pictures (实物图片)



正视图 (top view)



背视图 (bottom view)

7. Key Materials (关键物料)

序号	关键件名称	型号	规格/材料	备注
1	集成电路	AIC8800M	48-QFN	
2	PCB	SKI.WB800M.1	FR-4,4LAY	
3	晶体振荡器	CN4026M00012T2115181	26MHz	

8. General Requirements (一般要求)

No.	Feature	Description
8-1	Operation Voltage 工作电压范围	3.3V+/-0.3
8-2	Current Consumption 最大电流	600mA
8-3	Ripple 纹波	≤120mV
8-4	Operation Temperature 工作温度范围	-20°C to +80°C
8-5	Antenna Type 天线类型	External antenna
8-6	USB	High Speed USB 2.0 Interface
8-7	Storage Temperature 存储温度	-40°C to +85°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；

9.1 IEEE 802.11b Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11b				
Mode	CCK				
Channel	CH1 to CH13				
Data rate	1, 2, 5.5, 11Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels(Calibrated)					
1) For antenna port (CCK 11M)	15	17	19	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 ≤8%)	-	-	-83	dBm	
2) 2Mbps (FER ≤8%)	-	-	-80	dBm	
3) 5.5Mbps (FER ≤8%)	-	-	-79	dBm	
4) 11Mbps (FER ≤8%)	-	-	-76	dBm	
6 Maximum Input Level (FER ≤8%)	-10	-	-	dBm	

9.2 IEEE 802.11g Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11g				
Mode	OFDM				
Channel	CH1 to CH13				
Data rate	6, 9, 12, 18, 24, 36, 48, 54Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) For antenna port (54M)	13.5	15.5	17.5	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 ≤10%)	-	-	-85	dBm	
2) 9Mbps (PER ≤10%)	-	-	-84	dBm	
3) 12Mbps (PER ≤10%)	-	-	-82	dBm	
4) 18Mbps (PER ≤10%)	-	-	-80	dBm	
5) 24Mbps (PER ≤10%)	-	-	-77	dBm	
6) 36Mbps (PER ≤10%)	-	-	-73	dBm	
7) 48Mbps (PER ≤10%)	-	-	-69	dBm	
8) 54Mbps (PER ≤10%)	-	-	-65	dBm	
6 Maximum Input Level (PER ≤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				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels					
1) For antenna port (MCS7)	13.5	15.5	17.5	dBm	
2. Spectrum Mask @ target power					
1) at fc +/-11MHz	-	-	-20	dB	
2) at fc +/-20MHz	-	-	-28	dB	
3) at fc > +/-30MHz	-	-	-45	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	-	-	-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 802.11n HT40 Section(2.4GHZ)

Items	Contents				
Specification	IEEE802.11n HT40 @ 2.4GHz				
Mode	OFDM				
Channel	CH3 to CH11				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (MCS7)	13.5	15.5	17.5	dBm	
2. Spectrum Mask @target power					
1) at fc +/-22MHz	-	-	-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	
5. Minimum Input Level Sensitivity (each chain)					
1) MCS0 (PER \leq 10%)	-	-	-79	dBm	
2) MCS1 (PER \leq 10%)	-	-	-76	dBm	
3) MCS2 (PER \leq 10%)	-	-	-74	dBm	
4) MCS3 (PER \leq 10%)	-	-	-71	dBm	
5) MCS4 (PER \leq 10%)	-	-	-67	dBm	
6) MCS5 (PER \leq 10%)	-	-	-63	dBm	
7) MCS6 (PER \leq 10%)	-	-	-62	dBm	
8) MCS7 (PER \leq 10%)	-	-	-61	dBm	
6. Maximum Input Level (PER \leq 10%)	-20	-	-	dBm	

9.5 IEEE 802.11ax Section(2.4GHz)

Items	Contents				
Specification	IEEE802.11ax				
Mode	BPSK, QPSK, 16QAM, 64QAM,256QAM, 1024QAM and OFDMA				
Channel	HE20: CH1 to CH13 HE40: CH3 to CH11				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9				
TX Characteristics	Min.	Typ.	Max.		Unit
1. Power Levels (Calibrated)					
1) For antenna port (MCS0~MCS9)	13	15	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
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	
1) MCS0 (PER \leq 10%)	-	-	-82	-79	dBm
2) MCS1 (PER \leq 10%)	-	-	-79	-76	dBm
3) MCS2 (PER \leq 10%)	-	-	-77	-74	dBm
4) MCS3 (PER \leq 10%)	-	-	-74	-71	dBm
5) MCS4 (PER \leq 10%)	-	-	-70	-67	dBm
6) MCS5 (PER \leq 10%)	-	-	-66	-63	dBm
7) MCS6 (PER \leq 10%)	-	-	-65	-62	dBm

8) MCS7 (PER ≤10%)	-	-	-64	-61		dBm	
9) MCS8(PER ≤10%)	-	-	-59	-56		dBm	
10) MCS9(PER ≤10%)	-	-	-57	-54		dBm	
11) MCS10(PER ≤10%)	-	-	-54	-51		dBm	
12) MCS11(PER ≤10%)	-	-	-52	-49		dBm	
6. Maximum Input Level (PER ≤10%)	-30	-		-		dBm	

9.6 IEEE 802.11a Section(5GHz)

Items	Contents				
Specification	IEEE802.11a				
Mode	OFDM				
Channel	CH36 to CH165				
Data rate (MCS index)	6, 9, 12, 18, 24, 36, 48, 54Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (6M~36M)	11	13	15	dBm	
2) For antenna port (48M~54M)	9	11	13	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 ≤10%)	-	-	-82	dBm	
2) 9Mbps (PER ≤10%)	-	-	-81	dBm	
3) 12Mbps (PER ≤10%)	-	-	-79	dBm	
4) 18Mbps (PER ≤10%)	-	-	-77	dBm	
5) 24Mbps (PER ≤10%)	-	-	-74	dBm	
6) 36Mbps (PER ≤10%)	-	-	-70	dBm	
7) 48Mbps (PER ≤10%)	-	-	-66	dBm	

8) 54Mbps (PER $\leq 10\%$)	-	-	-65	dBm	
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-	dBm	

9.7 IEEE 802.11n HT20 Section(5GHz)

Items	Contents				
Specification	IEEE802.11n HT20 @ 5GHz				
Mode	BPSK, QPSK, 16QAM, 64QAM and OFDM				
Channel	CH36 to CH165				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (MCS0~MCS4)	11	13	15	dBm	
2) For antenna port (MCS5~MCS7)	9	11	13	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	
6. 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	
6. Maximum Input Level (PER $\leq 10\%$)	-30	-	-	dBm	

9.8 IEEE 802.11n HT40 Section(5GHz)

Items	Contents				
Specification	IEEE802.11n HT40 @ 5GHz				
Mode	BPSK, QPSK, 16QAM, 64QAM and OFDM				
Channel	CH38 to CH163				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7				
TX Characteristics	Min.	Typ.	Max.	Unit	
1. Power Levels (Calibrated)					
1) For antenna port (MCS0~MCS4)	11	13	15	dBm	
2) For antenna port (MCS5~MCS7)	9	11	13	dBm	
2. Spectrum Mask @target power					
1) at fc +/-21MHz	-	-	-20	dB	
2) at fc +/-40MHz	-	-	-28	dB	
3) at fc > +/-60MHz	-	-	-45	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	-	-	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
7. Minimum Input Level Sensitivity (each chain)					
1) MCS0 (PER \leq 10%)	-	-	-79	dBm	
2) MCS1 (PER \leq 10%)	-	-	-76	dBm	
3) MCS2 (PER \leq 10%)	-	-	-74	dBm	
4) MCS3 (PER \leq 10%)	-	-	-71	dBm	
5) MCS4 (PER \leq 10%)	-	-	-67	dBm	
6) MCS5 (PER \leq 10%)	-	-	-63	dBm	
7) MCS6 (PER \leq 10%)	-	-	-62	dBm	
8) MCS7 (PER \leq 10%)	-	-	-61	dBm	
6. Maximum Input Level (PER \leq 10%)	-30	-	-	dBm	

9.9 IEEE 802.11ac Section(5GHz)

Items	Contents				
Specification	IEEE802.11ac				
Mode	BPSK, QPSK, 16QAM, 64QAM, 256QAM and OFDM				
Channel	CH36 to CH165 VHT20 CH38 to CH163 VHT40				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9				
TX Characteristics	Min.	Typ.	Max.		Unit
1. Power Levels (Calibrated)					
1) For antenna port (MCS0~MCS4)	11	13	15		dBm
2) For antenna port (MCS5~MCS9)	9	11	13		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	
1) MCS0 (PER ≤10%)	-	-	-82	-79	dBm
2) MCS1 (PER ≤10%)	-	-	-79	-76	dBm
3) MCS2 (PER ≤10%)	-	-	-77	-74	dBm
4) MCS3 (PER ≤10%)	-	-	-74	-71	dBm
5) MCS4 (PER ≤10%)	-	-	-70	-67	dBm
6) MCS5 (PER ≤10%)	-	-	-66	-63	dBm
7) MCS6 (PER ≤10%)	-	-	-65	-62	dBm
8) MCS7 (PER ≤10%)	-	-	-64	-61	dBm
9) MCS8 (PER ≤10%)	-	-	-59	-56	dBm

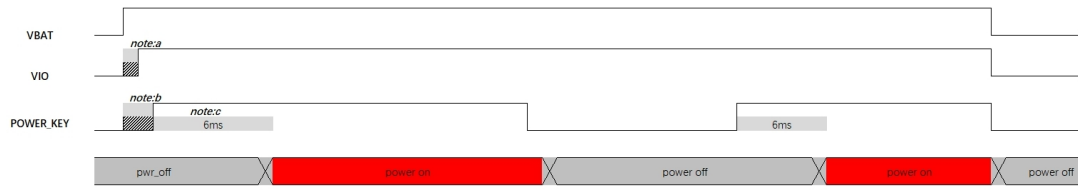
10) MCS9(PER \leq 10%)	-	-	-57	-54			dBm	
6. Maximum Input Level (PER \leq 10%)	-30	-		-			dBm	

9.10 IEEE 802.11ax Section(5GHz)

Items	Contents					
Specification	IEEE802.11ax					
Mode	BPSK, QPSK, 16QAM, 64QAM,256QAM, 1024QAM and OFDMA					
Channel	CH36 to CH165 HE20 CH38 to CH163 HE40					
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9					
TX Characteristics	Min.	Typ.	Max.		Unit	
1. Power Levels (Calibrated)						
1) For antenna port (MCS0~MCS4)	11	13	15		dBm	
2) For antenna port (MCS5~MCS9)	9	11	13		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)			HE 20	HE 40		
1) MCS0 (PER \leq 10%)	-	-	-82	-79	dBm	
2) MCS1 (PER \leq 10%)	-	-	-79	-76	dBm	
3) MCS2 (PER \leq 10%)	-	-	-77	-74	dBm	
4) MCS3 (PER \leq 10%)	-	-	-74	-71	dBm	
5) MCS4 (PER \leq 10%)	-	-	-70	-67	dBm	
6) MCS5 (PER \leq 10%)	-	-	-66	-63	dBm	

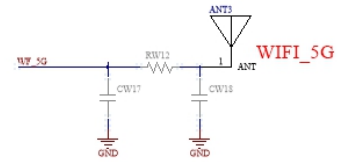
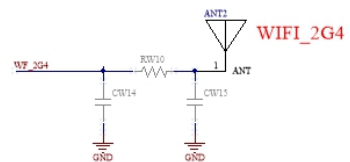
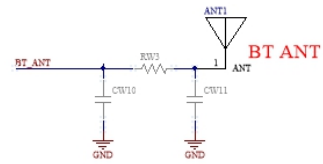
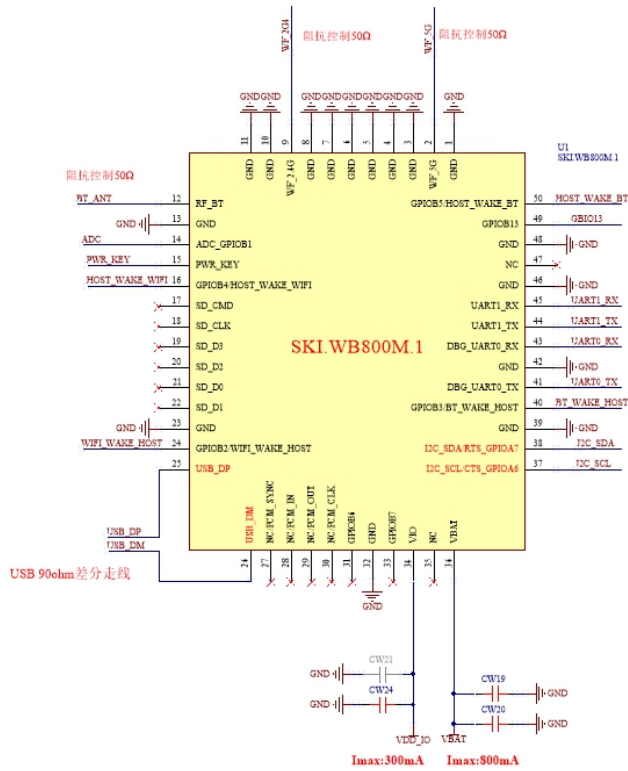
1). One slot packet (DH1)				KHz	
2). Two slot packet (DH3)				KHz	
3). Five slot packet (DH5)				KHz	
4). Max drift rate				KHz/50us	
16. TX output spectrum(20dB bandwidth)				KHz	
17. In-Band spurious emission					
1). ± 2 MHz offset	-			dBm	
2). ± 3 MHz offset	-			dBm	
3). $> \pm 3$ MHz offset	-			dBm	

10. Reference Design (参考设计)



Note a: VIO's power on time >= VBAT's
 Note b: power key's high time >= VIO's
 Note c: chip all power on ready time >= power key high time + 6ms

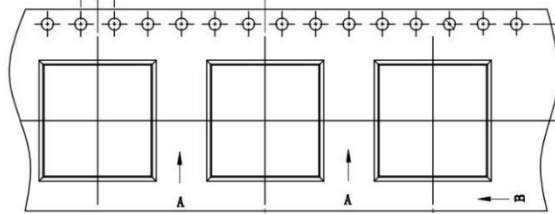
时序要求



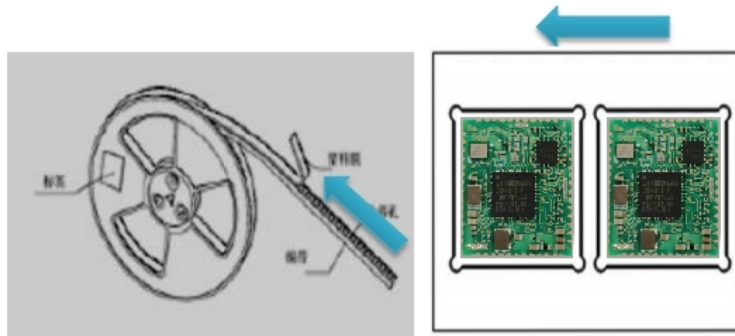
参考原理图

11. Package (包装)

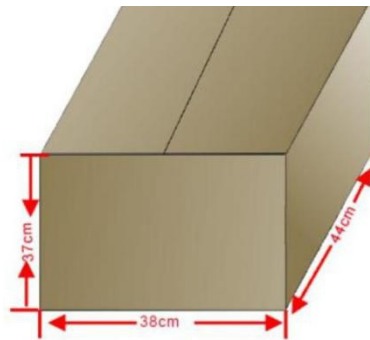
(1) 编带包装



(2) 编带方向



(3) 外箱尺寸



(4) 最小包装量 1400PCS/盘*8 盘/箱=11200PCS/箱