Preliminary AIC8800M80 Low-Energy Wi-Fi6/BTDM5.3 SoC

Data Sheet

Revision: 0.1
Feb 2023

1. General Description

AIC8800M80 is a highly integrated chip with dual band Wi-Fi6, BTDM5.3 and high performance Cortex-M4F for wireless application.

1.1 Wi-Fi Features

- CMOS single-chip fully-integrated RF, Modem and MAC
- Support 2.4GHz/5.8GHz Wi-Fi6
- Data rates up to 600.4Mbps with 20/40/80MHz bandwidth
- Support 5MHz/10MHz mode
- RX sensitivity -97dBm in 11b 1M mode
- Tx power up to 23dBm in 11b mode, 18dBm in HT/VHT/HE MCS7 mode
- Support STA, AP, Wi-Fi Direct modes concurrently
- Support STBC, beamforming
- Support Wi-Fi6 TWT
- Support Two NAV, Buffer Report, Spatial reuse, Multi-BSSID, intra-PPDU power save
- Support LDPC
- Support MU-MIMO, OFDMA
- Support DCM, Mid-amble, UORA
- Support WEP/WPA/WPA2/WPA3-SAE Personal, MFP

1.2 BTDM5.3 Features

- Supports all the mandatory and optional features of Bluetooth 2.1+EDR/3.0/4.x/5.2/5.3
- Supports advanced master and slave topologies

1.3 CPU Features

- Integrated Cortex-M4F CPU with MPU and FPU
- On-chip memory includes 992KB SRAM and 896KB ROM
- Supports SDIO3.0/SPI/USB2.0
- Integrated hardware crypto accelerator AES/HASH
- Integrated True Random Number Generator (TRNG)
- Integrated SPI flash in package, from 8Mbits to 128Mbits flash
- Integrated GPIOs with external level/edge trigger/wakeup
- Integrated UART/I2S/I2C/PWM/SPI/SDMMC
- Integrated 2 channels application **14bits** ADC

- Integrated low power timer and watchdog
- Support freeRTOS

1.4 Other Features

- Supports SDIO3.0/USB2.0/PCIE(D80P)/HCI_UART/PCM interface
- Integrated low power timer and watchdog
- 512 bits eFuse

1.4 Packaging Information

- Compact profile package：5mm×5mm×0.75mm QFN48
- Moisture Sensitivity Level： MSL 3

1.5 Applications

- IoT device
- Wireless device

2. Platform Description

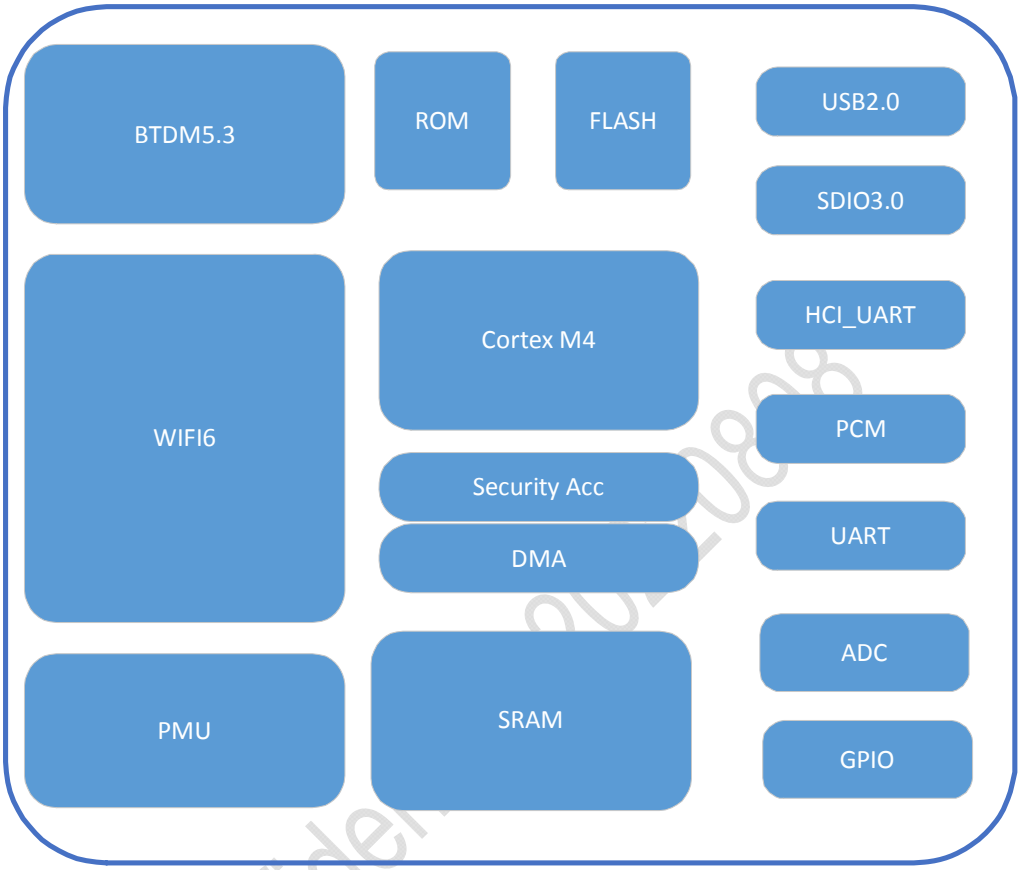


Figure2-1 AIC8800M80 Block Diagram

3. PINS Description

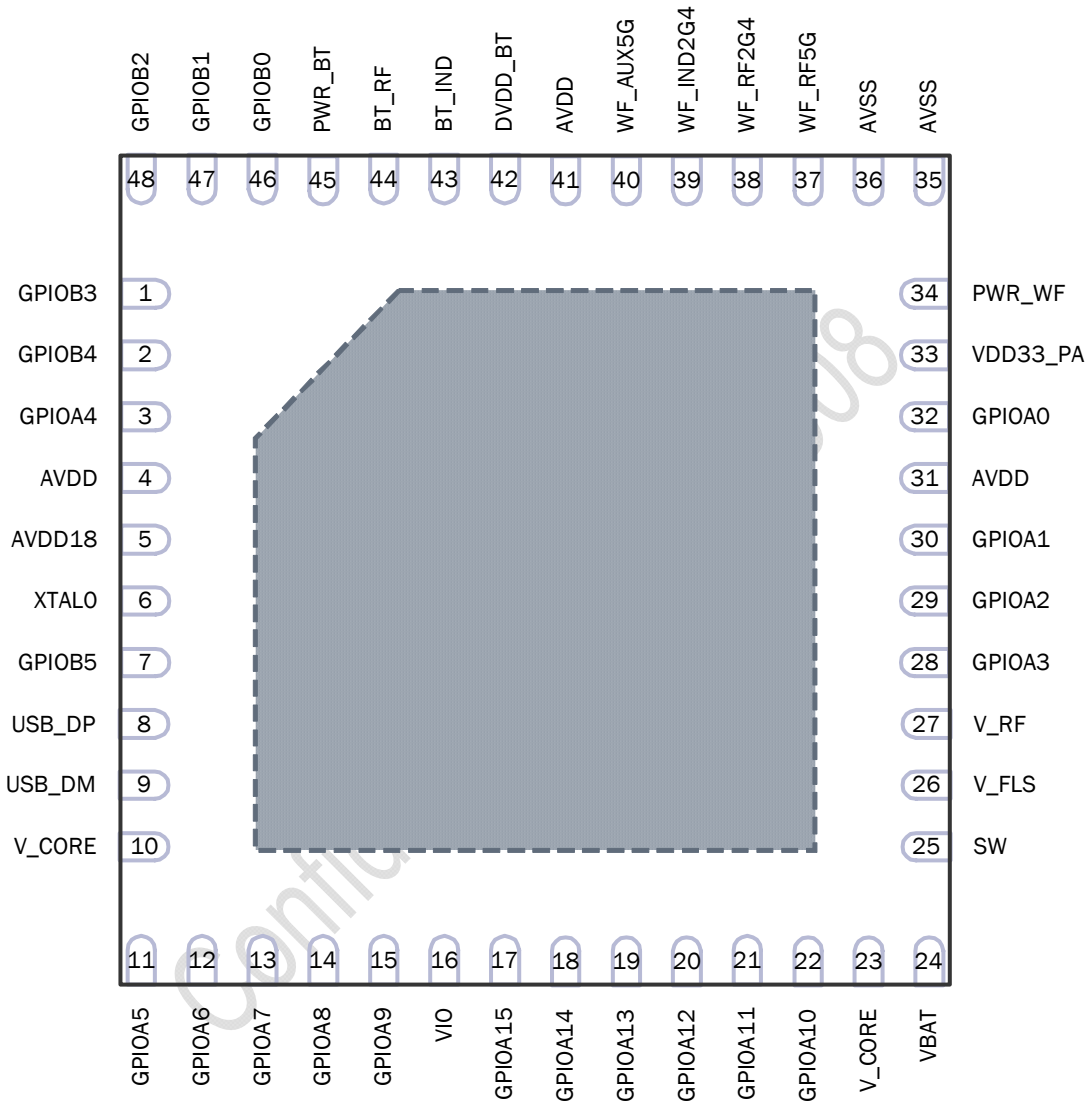


Figure 3-1 AIC8800M80 Pin Map

Table 3-1 AIC8800M80_48pin Pins Description

TERMINAL			DESCRIPTION
PIN NAME	QFN NO.	I/O	
RF			
WF_RF2G4	38	I/O	WiFi 2.4G RF
WF_IND2G4	39		WiFi 2.4G RF Ground, connect a 1.2nH inductor to ground
WF_RF5G	37	I/O	WiFi 5G RF
WF_AUX5G	40	I	WiFi 5G RX Aux
BT_RF	44	I/O	BT RF
BT_IND	43		BT RF Ground, connect a 1.2nH inductor to ground
AVSS	35		Connect to the ground
AVSS	36		Connect to the ground
PMU			
AVDD	4		Need 1uF decoupling capacitor
AVDD	31		Need 1uF decoupling capacitor
AVDD	41		Need 1uF decoupling capacitor
AVDD18	5		Power output 1.8v, internal Efuse supply voltage, connect a 1uF decoupling capacitor
V_CORE	10		Need 1uF decoupling capacitor, connect to pin23
V_CORE	23		Digital Supply Voltage
VIO	16	I	IO Power Supply, Support 1.8v/3.3v
VBAT	24	I	System power supply
SW	25	O	Power Output For V_RF
V_FLS	26	O	Power for internal Flash, need 1uF decoupling capacitor
V_RF	27	I	RF Supply Voltage
VDD33_PA	33	I	PA Supply Voltage
PWR_WF	34	I	WiFi system enable
PWR_BT	45	I	BT system enable
DVDD_BT	42		Need 1uF decoupling capacitor
CLK			
XTAL0	6	I	40M Crystal In
GPIO			
GPIOA0	32	I/O	GPIO
GPIOA1	30	I/O	GPIO
GPIOA2	29	I/O	GPIO
GPIOA3	28	I/O	GPIO
GPIOA4	3	I/O	GPIO
GPIOA5	11	I/O	GPIO
GPIOA6	12	I/O	GPIO
GPIOA7	13	I/O	GPIO
GPIOA8	14	I/O	GPIO
GPIOA9	15	I/O	GPIO
GPIOA10	22	I/O	GPIO
GPIOA11	21	I/O	GPIO
GPIOA12	20	I/O	GPIO
GPIOA13	19	I/O	GPIO
GPIOA14	18	I/O	GPIO
GPIOA15	17	I/O	GPIO

TERMINAL			DESCRIPTION
PIN NAME	QFN NO.	I/O	
GPIOB0	46	I/O	GPIO
GPIOB1	47	I/O	GPIO
GPIOB2	48	I/O	GPIO
GPIOB3	1	I/O	GPIO
GPIOB4	2	I/O	GPIO
GPIOB5	7	I/O	GPIO
USB_DP	8	I/O	USB
USB_DM	9	I/O	USB

4. Electrical Characteristics

Table 4-1 DC Electrical Specification (Recommended Operation Conditions):

SYMBOL	DESCRIPTION	MIN	TYP	MAX	UNIT
VBAT	Supply Voltage for System	3	3.3	3.6	V
V_RF	Supply Voltage from SW_RF	1.0	1.3	1.5	V
V_CORE	Supply Voltage from SW_RF	0.81	0.9	1.05	V
VDD33_PA	Supply Voltage for PA	3	3.3	3.6	V
AVDD18	Internal power supply for Efuse	1.62	1.8	1.98	V
DVDD_BT	Internal power supply for BT RF	1	1.15	1.5	V
AVDD	Connected with V_RF inside the chip	1.0	1.3	1.5	V
T_{amb}	Ambient Temperature	-20	27	+80	℃
V_{IL}	CMOS Low Level Input Voltage	0		0.3*VIO	V
V_{IH}	CMOS High Level Input Voltage	0.7*VIO		VIO	V
V_{TH}	CMOS Threshold Voltage		0.5*VIO		V

5. Radio Characteristics(TBD)

5.1 Wi-Fi Radio

5.1.1 Transmit Characteristics

Table 5-1-1 2.4 GHz Wi-Fi Transmit Performance Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Transmit mode	MIN	TYP	MAX	UNIT
	2.412	-	2.484	GHz
11b 1M				dBm
11b 11M				dBm
11g 6M				dBm
11g 54M				dBm
HT20 MCS0				dBm
HT20 MCS7				dBm
HT40 MCS0				dBm
HT40 MCS7				dBm
HE20 MCS0				dBm
HE20 MCS7				dBm
HE20 MCS9				dBm
HE20 MCS11				dBm
HE40 MCS0				dBm
HE40 MCS7				dBm
HE40 MCS9				dBm
HE40 MCS11				dBm

Table 5-2-2 5 GHz Wi-Fi Transmit Performance Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Transmit mode	MIN	TYP	MAX	UNIT
	5.180	-	5.815	GHz
11b 1M		/		dBm
11b 11M		/		dBm
11g 6M				dBm
11g 54M				dBm
HT20 MCS0				dBm
HT20 MCS7				dBm
HT40 MCS0				dBm
HT40 MCS7				dBm
HE20 MCS0				dBm
HE20 MCS7				dBm
HE20 MCS9				dBm
HE20 MCS11				dBm
HE40 MCS0				dBm
HE40 MCS7				dBm
HE40 MCS9				dBm
HE40 MCS11				dBm

5.1.2 Receive Characteristics

Table 5-1-3 2.4 GHz Wi-Fi Receive Performance Specifications

(VBAT = 3.6V, TA = 27°C, unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency range			2.412	-	2.484	GHz
Rx Sensitivity 灵敏度		1 Mbps DSSS				dBm
		11 Mbps DSSS				dBm
		6 Mbps OFDM				dBm
		54 Mbps OFDM				dBm
		HT/VHT20 MCS0				dBm
		HT/VHT20 MCS7				dBm
		HT/VHT 40 MCS0				dBm
		HT/VHT 40 MCS7				dBm
		HT/VHT 40 MCS9				dBm
		HE20 MCS0				dBm
		HE20 MCS7				dBm
		HE20 MCS8				dBm
		HE20 MCS9				dBm
		HE40 MCS0				dBm
		HE40 MCS7				dBm
		HE40 MCS8				dBm
		HE40 MCS9				dBm
Adjacent channel rejection 灵敏度		2Mbps DSS				dB
		11Mbps DSS				dB
		6 Mbps OFDM				dB
		54 Mbps OFDM				dB
		HT20 MCS0				dB
		HT20 MCS7				dB
Max input level 最大接收电平		11b				dBm
		MCS0				dBm
		MCS3				dBm
		MCS5				dBm
		MCS7				dBm

Table 5-1-4 5 GHz Wi-Fi Receive Performance Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency range			5.180	-	5.815	GHz
Rx Sensitivity 灵敏度		1 Mbps DSSS		/		dBm
		11 Mbps DSSS		/		dBm
		6 Mbps OFDM				dBm
		54 Mbps OFDM				dBm
		HT/VHT20 MCS0				dBm
		HT/VHT20 MCS7				dBm
		HT/VHT 40 MCS0				dBm
		HT/VHT 40 MCS7				dBm
		HT/VHT 40 MCS9				dBm
		HE20 MCS0				dBm
		HE20 MCS7				dBm
		HE20 MCS8				dBm
		HE20 MCS9				dBm
		HE40 MCS0				dBm
		HE40 MCS7				dBm
		HE40 MCS8				dBm
		HE40 MCS9				dBm
Adjacent channel rejection 临道抑制		2Mbps DSS		/		dB
		11Mbps DSS		/		dB
		HT20 MCS0				dB
		HT20 MCS7				dB
		HT40 MCS0				dB
		HT40 MCS7				dB
Max input level 最大接收电平		11b		/		dBm
		MCS0				dBm
		MCS3				dBm
		MCS5				dBm
		MCS7				dBm

5.2 Bluetooth Radio

5.2.1 Transmit Characteristics

Table 5-2-1 2.4 GHz BT basic rate Transmiter Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Maximum RF transmit Power						dBm
RF power control range						dB
20dB bandwidth for modulated carrier					≤1000	kHz
ACP	+2MHz				≤-20	dBm
	-2MHz				≤-20	dBm
	≥+3MHz				≤-40	dBm
	≤-3MHz				≤-40	dBm
Frequency deviation	Δf1avg Maximum Modulation				140~175	kHz
	Δf2max Minimum Modulation				≥115	kHz
	Δf2avg/ Δf1avg				≥0.8	
Initial carrier frequency tolerance					±75	kHz
Freq. Drift	DH1 packet				±25	kHz
	DH3 packet				±40	kHz
	DH5 packet				±40	kHz
Freq. Drift Rate					±20	kHz/50us
Harmonics						dBm

Table 5-2-2 2.4 GHz BT enhance data rate Transmiter Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Maximum RF transmit Power						dBm
Relative transimit power(P_{DPSK}-P_{GFSK})						dB
pi/4 DQPSK max carrier frequency stability $\|w_0\|$					±10	kHz
pi/4 DQPSK max carrier frequency stability $\|w_i\|$					±75	kHz
pi/4 DQPSK max carrier frequency stability $\|w_0+ w_i\|$					±75	kHz
8DPSK max carrier frequency stability $\|w_0\|$					±10	kHz
8DPSK max carrier frequency stability $\|w_i\|$					±75	kHz
8DPSK max carrier frequency stability $\|w_0+ w_i\|$					±75	kHz
pi/4 DQPSK Modulation Accuracy	RMS DEVM				≤20	%
	99% DEVM				≤30	%
	Peak DEVM				≤35	%

Description		Min	Typ	Max	Spec	Unit
8DPSK Modulation Accuracy	RMS DEVM				≤13	%
	99% DEVM				≤20	%
	Peak DEVM				≤25	%
In-band spurious emissions	F＞F0+3MHz				≤-40	dBm
	F＜F0-3MHz				≤-40	dBm
	F=F0+3MHz				≤-40	dBm
	F=F0-3MHz				≤-40	dBm
	F=F0+2MHz				≤-20	dBm
	F=F0-2MHz				≤-20	dBm
	F=F0+1MHz				≤-26	dB
	F=F0-1MHz				≤-26	dB
EDR Defferential Phase Encoding					≥99	%

Table 5-2-3 2.4 GHz BT low energy 1m Transmiter Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Maximum RF transmit Power						dBm
Peak power – Average power					≤3	dB
In-band emissions	≥+3MHz				≤-30	dBm
	+2MHz				≤-20	dBm
	-2MHz				≤-20	dBm
	≤-3MHz				≤-30	dBm
Modulation characteristics	Δf1avg				225~275	kHz
	99.9% Δf2max				≥185	kHz
	Δf2avg/Δf1avg				≥0.8	
Center freq. deviation, F_n(n=0,1,2,…,k)					±150	kHz
Freq. drift, $\|F_0 - F_n\|$(n=2,3,4,…,k)					±50	kHz
Initial freq. drift, $\|F_1 - F_0\|$					±20	kHz
Max. Freq. drift rate, $\|F_n - F_{n-5}\|$(n=6,7,8,…,k)					±20	kHz/50us
Harmonics						dBm

Table 5-2-4 2.4 GHz BT low energy 2m Transmiter Specifications

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Maximum RF transmit Power						dBm
Peak power – Average power					≤3	dB
In-band emissions	$f_{\_TX}$±4MHz				≤-20	dBm
	$f_{\_TX}$±5MHz				≤-20	dBm
	$f_{\_TX}$±[6+n]MHz, n=0,1,2…				≤-30	dBm
Modulation characteristics	Δf1avg				250~550	kHz
	99.9% Δf2max				≥370	kHz
	Δf2avg/Δf1avg				≥0.8	
Center freq. deviatino, F_n(n=0,1,2,…,k)					±150	±150
Freq. drift, $\|F_0 - F_n\|$(n=2,3,4,…,k)					±50	±50
Initial freq. drift, $\|F_1 - F_0\|$					±20	±20
Max. Freq. drift rate, $\|F_n - F_{n-5}\|$(n=6,7,8,…,k)					±20	±20

5.2.2 Receive Characteristics

Table 5-2-5 2.4 GHz BT Receive basic data rate

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Receiver sensitivity					≤-70	dBm
Maximum input level					≥-20	dBm
Co-Channel interference, C/I					≤ 11	dB
C/I	$F=F_0$+1MHz				≤ 0	dB
	$F=F_0$-1MHz				≤ 0	dB
	$F=F_0$+2MHz				≤-30	dB
	$F=F_0$+3MHz				≤-40	dB
	$F=F_0$-3MHz				≤-40	dB
	$F=F_{image}$				≤-20	dB
Inter-modulation					≥-39	dBm
Blocking	30MHz to 2000MHz				≥-10	dBm
	2000MHz to 2400MHz				≥-27	dBm
	2500MHz to 3000MHz				≥-27	dBm
	3000MHz to 12.75GHz				≥-10	dBm

Table 5-2-6 2.4 GHz BT Receive enhance data rate

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description			Min	Typ	Max	Spec	Unit
Receiver sensitivity		pi/4 DQPSK				≤-70	dBm
		8DPSK				≤-70	
Maximum input level		pi/4 DQPSK				≥-20	dBm
		8DPSK				≥-20	
Co-Channel interference, C/I		pi/4 DQPSK				≤ 13	dB
		8DPSK				≤ 21	
C/I	$F=F_0$+1MHz	pi/4 DQPSK				≤ 0	dB
		8DPSK				≤ 5	
	$F=F_0$-1MHz	pi/4 DQPSK				≤ 0	dB
		8DPSK				≤ 5	
	$F=F_0$+2MHz	pi/4 DQPSK				≤-30	dB
		8DPSK				≤-25	
	$F=F_0$+3MHz	pi/4 DQPSK				≤-40	dB
		8DPSK				≤-33	
	$F=F_0$-3MHz	pi/4 DQPSK				≤-40	dB

		8DPSK				⩽-33	
	$F=F_{image}$	pi/4 DQPSK				⩽-20	dB
		8DPSK				⩽-13	

Table 5-2-7 2.4 GHz BT Receive low energy 1Mbps

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Receiver sensitivity					≤-70	dBm
Maximum input level					≥-10	dBm
Co-Channel interference, C/I					≤21	dB
C/I	$F=F_0$+1MHz				≤15	dB
	$F=F_0$-1MHz				≤15	dB
	$F=F_0$+2MHz				≤-17	dB
	$F=F_0$+3MHz				≤-27	dB
	$F=F_0$-3MHz				≤-27	dB
	$F=F_{image}$				≤-15	dB
Inter-modulation					≥-50	dBm
Blocking	30MHz to 2000MHz				≥-30	dBm
	2003MHz to 2399MHz				≥-35	dBm
	2484MHz to 2997MHz				≥-35	dBm
	3000MHz to 12.75GHz				≥-30	dBm

Table 5-2-8 2.4 GHz BT Receive low energy 2Mbps

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Receiver sensitivity					≤-70	dBm
Maximum input level					≥-10	dBm
Co-Channel interference, C/I					≤21	dB
C/I	$F=F_0$+2MHz				≤15	dB
	$F=F_0$-2MHz				≤15	dB
	$F=F_0$+4MHz				≤-17	dB
	$F=F_0$+6MHz				≤-27	dB
	$F=F_0$-6MHz				≤-27	dB
	$F=F_{image}$				≤-15	dB
Inter-modulation					≥-50	dBm
Blocking	30MHz to 2000MHz				≥-30	dBm
	2003MHz to 2399MHz				≥-35	dBm
	2484MHz to 2997MHz				≥-35	dBm
	3000MHz to 12.75GHz				≥-30	dBm

Table 5-2-9 2.4 GHz BT Receive low energy long range 500kbps

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

Description		Min	Typ	Max	Spec	Unit
Receiver sensitivity					≤-75	dBm
Maximum input level					≥-10	dBm
Co-Channel interference, C/I					≤17	dB
C/I	$F=F_0$+1MHz				≤11	dB
	$F=F_0$-1MHz				≤11	dB
	$F=F_0$+2MHz				≤-21	dB
	$F=F_0$+3MHz				≤-31	dB
	$F=F_0$-3MHz				≤-31	dB
	$F=F_{image}$				≤-19	dB

Table 5-2-10 2.4 GHz BT Receive low energy long range 125kbps

(VBAT = 3.3V, TA = 27°C, unless otherwise specified)

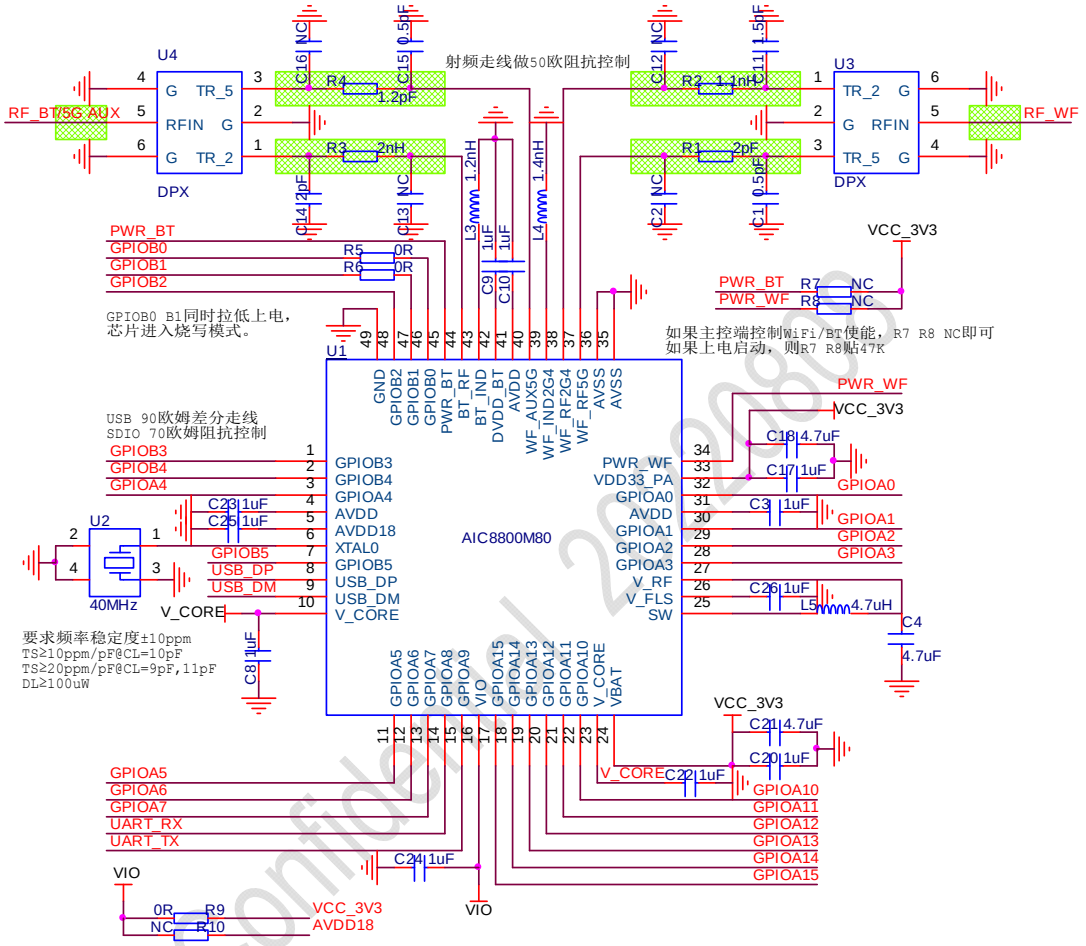
Description		Min	Typ	Max	Spec	Unit
Receiver sensitivity					≤-82	dBm
Maximum input level					≥-10	dBm
Co-Channel interference, C/I					≤12	dB
C/I	$F=F_0$+1MHz				≤6	dB
	$F=F_0$-1MHz				≤6	dB
	$F=F_0$+2MHz				≤-26	dB
	$F=F_0$+3MHz				≤-36	dB
	$F=F_0$-3MHz				≤-36	dB
	$F=F_{image}$				≤-24	dB

6. Reliability characteristics

Table 6-1 Reliability test report

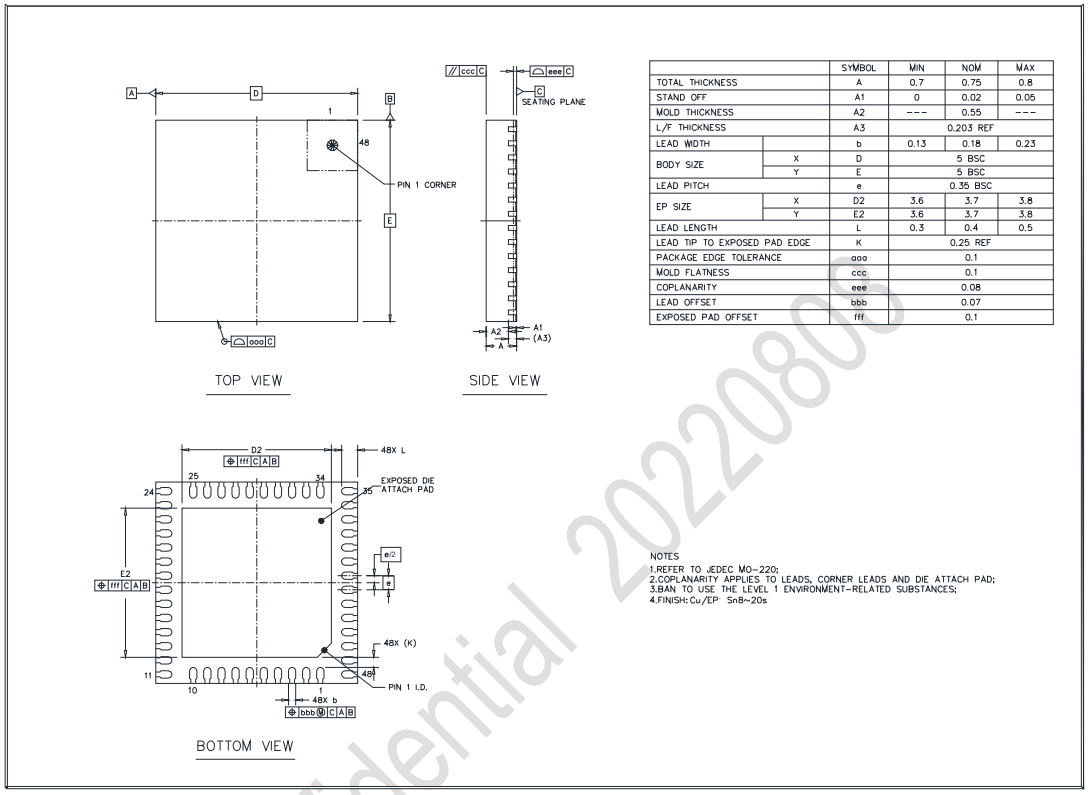
Test Items	Test Condition	Test Criteria
HTOL	Tj≥125℃ 2000hrs	JESD22-A108F
ESD	HBM:	JS-001-2017
	CDM:	JS-002-2018
Latch up	100mA Class Ⅰ	JESD78
Solder ability	Steam aging:8hrs; 245℃, 5s	J-STD-002D-2013
High Temperature Storage	150℃ （1000h）	JESD22-A103
TCT	-65℃～ 150℃, Dwell=15min, 500/1000Cycles	JESD22-A104E-2014
uHAST	130 ℃ /85%RH/ 33.3psig/96hrs	JESD22-A118
PCT	121℃, 100%RH, 205 kPa, 96/168hrs	JESD22-A102E-2015
Moisture sensitivity level	Level 3 Bake:125℃,24hrs Soak:30℃,60%	J-STD-020D

7. Application Circuit



8. Package Physical Dimension

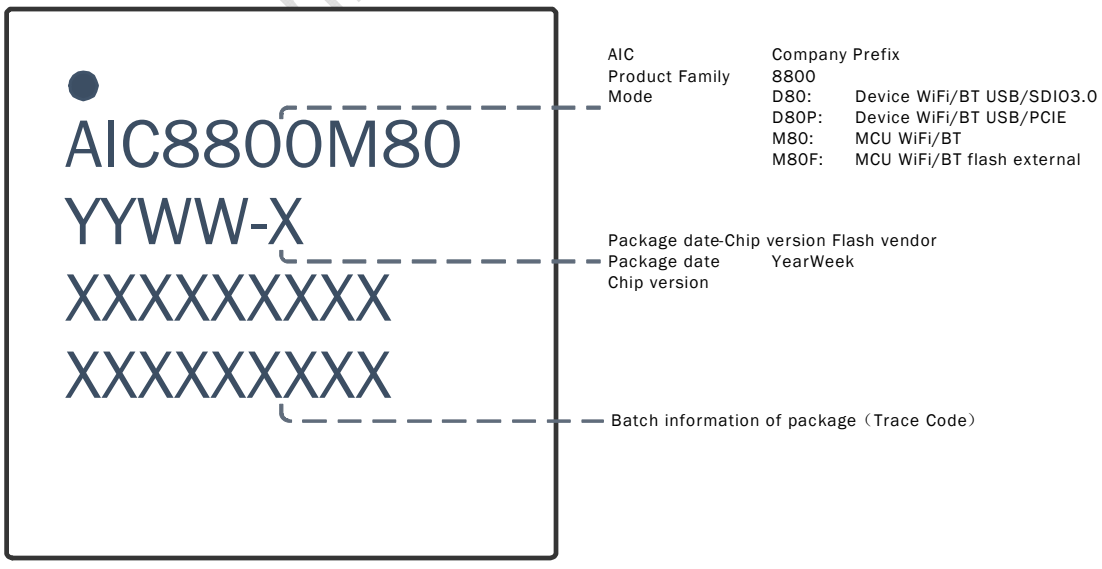
8.1 Package Dimensions



		SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS		A	0.7	0.75	0.8
STAND OFF		A1	0	0.02	0.05
MOLD THICKNESS		A2	---	0.55	---
L/F THICKNESS		A3		0.203 REF	
LEAD WIDTH		b	0.13	0.18	0.23
BODY SIZE	X	D		5 BSC	
	Y	E		5 BSC	
LEAD PITCH		e		0.35 BSC	
EP SIZE	X	D2	3.6	3.7	3.8
	Y	E2	3.6	3.7	3.8
LEAD LENGTH		L	0.3	0.4	0.5
LEAD TIP TO EXPOSED PAD EDGE		K		0.25 REF	
PACKAGE EDGE TOLERANCE		aaa		0.1	
MOLD FLATNESS		ccc		0.1	
COPLANARITY		eee		0.08	
LEAD OFFSET		bbb		0.07	
EXPOSED PAD OFFSET		fff		0.1	

NOTES
1.REFER TO JEDEC MO-220;
2.COPLANARITY APPLIES TO LEADS, CORNER LEADS AND DIE ATTACH PAD;
3.BAN TO USE THE LEVEL 1 ENVIRONMENT-RELATED SUBSTANCES;
4.FINISH: Cu/EP Sn8~20s

8.2 Product Identification



9. Solder Reflow Profile

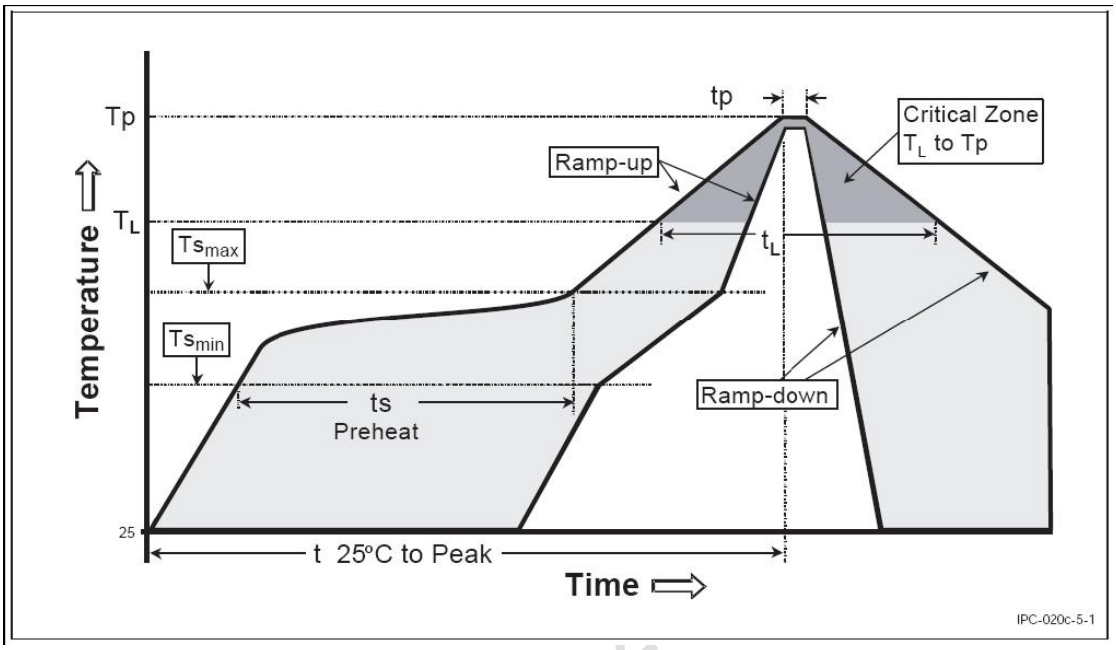


Figure9-1 Classification Reflow Profile

Table 9-1 Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate (TSmax to Tp)	3 ℃/second max.	3 ℃/second max.
Preheat -Temperature Min (Tsmin) -Temperature Max (Tsmax) -Time (tsmin to tsmax)	 100 ℃ 100 ℃ 60-120 seconds	 150 ℃ 200 ℃ 60-180 seconds
Time maintained above: -Temperature (TL) -Time (tL)	 183 ℃ 60-150seconds	 217℃ 60-150 seconds
Peak /Classification Temperature(Tp)	See Table 11-2	See Table 11-3
Time within 5 oC of actual Peak Temperature (tp)	10-30 seconds	20-40 seconds
Ramp-Down Rate	6 ℃/second max.	6 ℃/seconds max.
Time 25 oC to Peak Temperature	6 minutes max.	8 minutes max.

Table 9-2 Sn-Pb Eutectic Process – Package Peak Reflow Temperatures

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
＜2.5mm	240 + 0/-5 ℃	225 + 0/-5 ℃
≥2.5mm	225 + 0/-5 ℃	225 + 0/-5 ℃

Table 9-3 Pb-free Process – Package Classification Reflow Temperatures

Package Thickness	Volume mm3 ＜350	Volume mm3 350-2000	Volume mm3 ＞2000
＜1.6mm	260 + 0 ℃ *	260 + 0 ℃ *	260 + 0 ℃ *
1.6mm – 2.5mm	260 + 0 ℃ *	250 + 0 ℃ *	245 + 0 ℃ *
≥2.5mm	250 + 0 ℃ *	245 + 0 ℃ *	245 + 0 ℃ *
*Tolerance : The device manufacturer/supplier shall assure process compatibility up to and including the stated classification temperature(this mean Peak reflow temperature + 0 ℃. For example 260+ 0 ℃) at the rated MSL Level.			

Note 1: All temperature refers topside of the package. Measured on the package body surface.

Note 2: The profiling tolerance is + 0 ℃, - X ℃ (based on machine variation capability)whatever is required to control the profile process but at no time will it exceed – 5 ℃. The producer assures process compatibility at the peak reflow profile temperatures defined in Table 11-3.

Note 3: Package volume excludes external terminals (balls, bumps, lands, leads) and/or non integral heat sinks.

Note 4: The maximum component temperature reached during reflow depends on package the thickness and volume. The use of convection reflow processes reduces the thermal gradients between packages. However, thermal gradients due to differences in thermal mass of SMD package maysill exist.

Note 5: Components intended for use in a “lead-free” assembly process shall be evaluated using the “lead free” classification temperatures and profiles defined in Table9-1, 9-2, 9-3 whether or not lead free.

10. Change List

The following table summarizes revisions to this document.

REV	DATE	AUTHER	CHANGE DESCRIPTION
V0.1	20220808	AICSEMI	Initial version

11. RoHS Compliant

The products meet the requirements of Directive 2011/65/EU of Europe Parliament and of the Council on the Restriction of Hazardous Substance (RoHS). The products are free from halogenated or antimony trioxide-based flame retardants and other hazardous chemicals.

12. ESD Sensitivity

Electrostatic discharge (ESD) occurs naturally in laboratory and factory environments. An established high-voltage potential is always at risk of discharging to a lower potential. If this discharge path is through a semiconductor device, destructive damage may result. ESD countermeasures and handling methods must be developed and used to control the factory environment at each manufacturing site. BES products must be handled according to the ESD Association standard: ANSI/ESD S20.20-1999, Protection of Electrical and Electronic Parts, Assemblies, and Equipment.

13 Disclaimer

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