

# Preliminary AIC8800D80 Low-Energy Wi-Fi6/BTDM5.3 SoC

Data Sheet

Revision: 0.1 Aug 2022



# 1. General Description

AIC8800D80 is a highly integrated chip with dual band Wi-Fi6, BTDM5.3 for wireless application.

#### 1.1 Wi-Fi Features

- CMOS single-chip fully-integrated RF, Modem and MAC
- Support 2.4GHz/5GHz Wi-Fi6
- ➤ Data rates up to 600.4Mbps with 20/40/80MHz bandwidth
- ➤ Support 5MHz/10MHz mode
- RX sensitivity -99dBm 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 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

Sofilderilial Donalds.



# 2. Platform Description

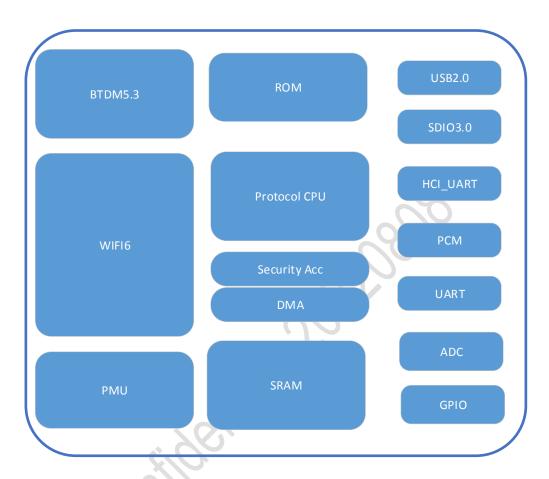


Figure 2-1 AIC8800D80 Block Diagram



# 3. PINS Description

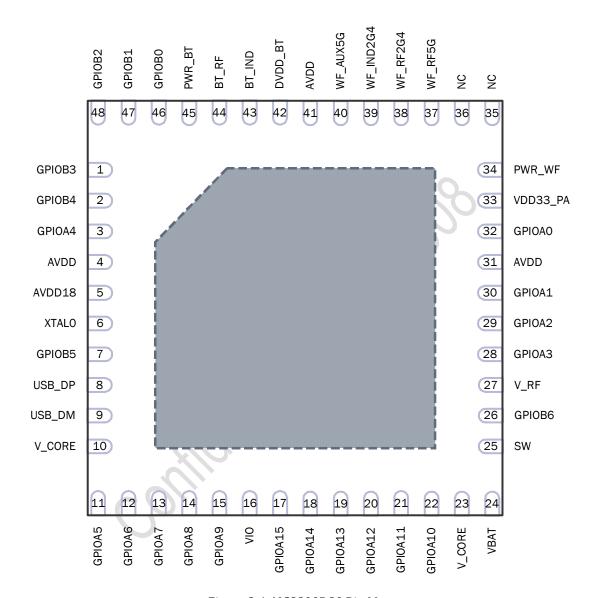


Figure 3-1 AIC8800D80 Pin Map



Table 3-1 AIC8800D80\_48pin Pins Description

TERM	INAL		DESCRIPTION		
PIN NAME	QFN NO.	1/0			
	Qiitito.	1,0			
WF RF2G4	38	1/0	WiFi 2.4G RF		
WF_KFZG4	36	1/0	WiFi 2.4G RF Ground, connect a 1.2nH inductor to		
WF_IND2G4	39		1		
WF RF5G	37	1/0	ground WiFi 5G RF		
WF_KF3G WF AUX5G	40	1/0	WiFi 5G RX Aux		
NC NC	36	<del>'</del>	NC NC		
BT RF	44	1/0	BT RF		
BT IND	43	1/0	BT RF Ground, connect a 0.8nH inductor to ground		
NC	35		NC		
PMU	33		INC		
AVDD	4		Need 1 vF decoupling capacitor		
	31		Need 1uF decoupling capacitor		
AVDD			Need 1uF decoupling capacitor		
AVDD	41		Need 1uF decoupling capacitor		
AVDD18	5		Power output 1.8v, internal Efuse supply voltage,		
V CODE	10		connect a 1uF decoupling capacitor		
V_CORE	10		Need 1uF decoupling capacitor		
V_CORE	23		Digital Supply Voltage		
VIO	16		IO Power Supply, Support 1.8v/3.3v		
VBAT	24	1	System power supply		
SW	25	0	Power Output For V_RF		
V_RF		1	RF Supply Voltage		
VDD33_PA		1	PA Supply Voltage		
PWR_WF	34	IN.	WiFi system enable		
PWR_BT	45		BT system enable		
DVDD_BT	42		Need 1uF decoupling capacitor		
CLK					
XTAL0	1		26M Crystal In		
GPIO					
GPIOA0	32	1/0	GPIO		
GPIOA1	30	1/0	GPIO		
GPIOA2	29	1/0	GPIO		
GPIOA3	28	1/0	GPIO		
GPIOA4	3	1/0	GPIO		
GPIOA5	11	1/0	GPIO		
GPIOA6	12	1/0	GPIO		
GPIOA7	13	1/0	GPIO		
GPIOA8	14	1/0	GPIO		
GPIOA9	15	1/0	GPIO		
GPIOA10	22	1/0	GPIO		
GPIOA11	21	1/0	GPIO		
GPIOA12	20	1/0	GPIO		
GPIOA13	19	1/0	GPIO		
GPIOA14	18	1/0	GPIO		
GPIOA15	17	1/0	GPIO		
GPIOB0	46	1/0	GPIO		
GPIOB1	47	1/0	GPIO		



#### AIC8800D80 Wi-Fi6/BTDM5.3 Rev0.1

TERMINAL			DESCRIPTION
PIN NAME	QFN NO.	1/0	
GPIOB2	48	1/0	GPIO
GPIOB3	1	1/0	GPIO
GPIOB4	2	1/0	GPIO
GPIOB5	7	1/0	GPIO
GPIOB6	26	1/0	GPIO
USB_DP	8	1/0	USB
USB_DM	9	1/0	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 <sub>amb</sub>	Ambient Temperature	-20	27	+80	${\mathbb C}$
V <sub>IL</sub>	CMOS Low Level Input Voltage	0	9	0.3*VIO	V
V <sub>IH</sub>	CMOS High Level Input Voltage	0.7*VIO		VIO	V
$V_{TH}$	CMOS Threshold Voltage		0.5*VIO		V
	Collifornital	2			



# 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

Transmit mode	MIN	TYP	MAX	UNIT
	2.412	-	2.484	GHz
11b 1M		~8		dBm
11b 11M				dBm
11g 6M				dBm
11g 54M				dBm
HT20 MCS0	2			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 5-2-25 GHz Wi-Fi Transmit Performance Specifications

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			2	dBm
HE20 MCS0				dBm
HE20 MCS7		70		dBm
HE20 MCS9				dBm
HE20 MCS11				dBm
HE40 MCS0	$\cup \cap_{\Lambda}$			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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency range			2.412	-	2.484	GHz
. , ,		1 Mbps DSSS				dBm
		11 Mbps DSSS				dBm
		6 Mbps OFDM				dBm
		54 Mbps OFDM				dBm
		HT/VHT20 MCS0		0		dBm
		HT/VHT20 MCS7		7		dBm
		HT/VHT 40 MCS0	0	2		dBm
Rx	Sensitivity	HT/VHT 40 MCS7				dBm
	灵敏度	HT/VHT 40 MCS9	$\square$			dBm
		HE20 MCS0				dBm
		HE20 MCS7				dBm
		HE20 MCS8				dBm
		HE20 MCS9				dBm
		HE40 MCS0				dBm
		HE40 MCS7				dBm
	4.6	HE40 MCS8				dBm
		HE40 MCS9				dBm
		2Mbps DSS				dB
	C.O.	11Mbps DSS				dB
Adjacent	channel rejection	6 Mbps OFDM				dB
	灵敏度	54 Mbps OFDM				dB
		HT20 MCS0				dB
		HT20 MCS7				dB
		11b				dBm
8.4	. Samuel Lavert	MCS0				dBm
	cinput level 大接收电平	MCS3				dBm
取力	7.1女伙 电 1	MCS5				dBm
		MCS7				dBm



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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Frequency range			5.180	-	5.815	GHz
		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
Rx	Sensitivity	HT/VHT 40 MCS7		4		dBm
	灵敏度	HT/VHT 40 MCS9	0			dBm
		HE20 MCS0	-07			dBm
		HE20 MCS7	$U \cap$			dBm
		HE20 MCS8	1.1			dBm
		HE20 MCS9				dBm
		HE40 MCS0				dBm
		HE40 MCS7				dBm
		HE40 MCS8				dBm
		HE40 MCS9				dBm
		2Mbps DSS		/		dB
		11Mbps DSS		/		dB
_	channel rejection	HT20 MCS0				dB
''	<b></b>	HT20 MCS7				dB
		HT40 MCS0				dB
		HT40 MCS7				dB
		11b		/		dBm
	. Samuel Invest	MCS0				dBm
	x input level 大接收电平	MCS3				dBm
取力	八汉以出一	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	Тур	Max	Spec	Unit
Maximum RF	transmit Power					dBm
RF power cor	ntrol range					dB
20dB bandwi	dth for modulated carrier				≤1000	kHz
	+2MHz				≤-20	dBm
ACD	-2MHz			)	≤-20	dBm
ACP	≥+3MHz			0/	≤-40	dBm
	≤-3MHz			70	≤-40	dBm
	$\Delta$ f1avg Maximum Modulation			9	140~175	kHz
Frequency deviation	$\Delta$ f2max Minimum Modulation				≥115	kHz
deviation	$\Delta$ f2avg/ $\Delta$ f1avg				≥0.8	
Initial carrier	frequency tolerance				±75	kHz
	DH1 packet				±25	kHz
Freq. Drift	DH3 packet				±40	kHz
	DH5 packet				±40	kHz
Freq. Drift Rate					±20	kHz/50us
Harmonics	* YO					dBm

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

	Description	Min	Тур	Max	Spec	Unit
Maximum RF	transmit Power					dBm
Relative trans	simit power(P <sub>DPSK</sub> -P <sub>GFSK</sub> )					dB
pi/4 DQPSK m	nax carrier frequency stability  w <sub>0</sub>				±10	kHz
pi/4 DQPSK m	nax carrier frequency stability  w <sub>i</sub>				±75	kHz
pi/4 DQPSK m	pi/4 DQPSK max carrier frequency stability   w <sub>0</sub> + w <sub>i</sub>				±75	kHz
8DPSK max ca	arrier frequency stability $ w_0 $				±10	kHz
8DPSK max ca	arrier frequency stability  w <sub>i</sub>				±75	kHz
8DPSK max ca	arrier frequency stability  w <sub>0</sub> + w <sub>i</sub>				±75	kHz
pi/4 DQPSK	RMS DEVM				≤20	%
Modulation	99% DEVM				≤30	%
Accuracy	Peak DEVM				≤35	%



# AIC8800D80 Wi-Fi6/BTDM5.3 Rev0.1

	Description	Min	Тур	Max	Spec	Unit
8DPSK	RMS DEVM				≤13	%
Modulation	99% DEVM				≤20	%
Accuracy	Peak DEVM				≤25	%
	F>F0+3MHz				≤-40	dBm
	F <f0-3mhz< td=""><td></td><td></td><td></td><td>≤-40</td><td>dBm</td></f0-3mhz<>				≤-40	dBm
la band	F=F0+3MHz				≤-40	dBm
In-band	F=F0-3MHz				≤-40	dBm
spurious emissions	F=F0+2MHz				≤-20	dBm
emissions	F=F0-2MHz				≤-20	dBm
	F=F0+1MHz				≤-26	dB
	F=F0-1MHz				≤-26	dB
EDR Defferen	tial Phase Encoding				≥99	%

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

	Description	Min	Тур	Max	Spec	Unit
Maximum RF tr	ansmit Power	0/	) `			dBm
Peak power – A	verage power				≪3	dB
	≥+3MHz				≤-30	dBm
In-band	+2MHz	b			≤-20	dBm
emissions	-2MHz				≤-20	dBm
	≤-3MHz				≤-30	dBm
Modulation	$\Delta$ f1avg				225~275	kHz
Modulation characteristics	99. 9% ∆ <b>f2max</b>				≥185	kHz
Characteristics	$\Delta$ f2avg/ $\Delta$ f1avg				≥0.8	
Center freq. dev	viation, F <sub>n</sub> (n=0,1,2,,k)				±150	kHz
Freq. drift,  F <sub>0</sub> -	F <sub>n</sub>  (n=2,3,4,,k)				±50	kHz
Initial freq. drift,  F <sub>1</sub> -F <sub>0</sub>					±20	kHz
Max. Freq. drift rate,  F <sub>n</sub> -F <sub>n-5</sub>  (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	Тур	Max	Spec	Unit
Maximum RF tr	ansmit Power					dBm
Peak power – A	verage power				≤3	dB
In-band	f_ <sub>TX</sub> ±4MHz				≤-20	dBm
emissions	f_TX±5MHz				≤-20	dBm
emissions	f_ <sub>TX</sub> ±[6+n]MHz, n=0,1,2				≤-30	dBm
Modulation	$\Delta$ f1avg				250~550	kHz
Modulation characteristics	99. 9% ∆ f2max				≥370	kHz
Characteristics	$\Delta$ f2avg/ $\Delta$ f1avg				≤3 ≤-20 ≤-20 ≤-30 250~550	
Center freq. dev	viatino, F <sub>n</sub> (n=0,1,2,,k)				±150	±150
Freq. drift,  F <sub>0</sub> -F <sub>n</sub>  (n=2,3,4,,k)					±50	±50
Initial freq. drift,  F <sub>1</sub> -F <sub>0</sub>				2	±20	±20
Max. Freq. drift	rate,  F <sub>n</sub> -F <sub>n-5</sub>  (n=6,7,8,,k)				±20	±20

Colligeriigi



#### **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	Тур	Max	Spec	Unit
Receiver sensitiv	vity				≤-70	dBm
Maximum input	level				≥-20	dBm
Co-Channel inte	rference, C/I				≤ 11	dB
	F=F <sub>0</sub> +1MHz				≤ 0	dB
	F=F <sub>0</sub> -1MHz				≤ 0	dB
C /I	F=F <sub>0</sub> +2MHz				≤-30	dB
C/I	F=F <sub>0</sub> +3MHz			20	≤-40	dB
	F=F <sub>0</sub> -3MHz				≤-40	dB
	F=F <sub>image</sub>		29	7	≤-20	dB
Inter-modulatio	n				≥-39	dBm
30MHz to 2000MHz					≥-10	dBm
Disables	2000MHz to 2400MHz				≥-27	dBm
Blocking	2500MHz to 3000MHz				≥-27	dBm
	3000MHz to 12.75GHz				≥-10	dBm

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

	Description		Min	Тур	Max	Spec	Unit
Receiver sensitivity		pi/4 DQPSK				≤-70	dBm
Receiver Se	ensitivity	8DPSK				≤-70	
Maxima	innut laval	pi/4 DQPSK				≥-20	dBm
Iviaximum	input level	8DPSK				≥-20	
Co-Channe	el interference,	pi/4 DQPSK				≤ 13	dB
C/I		8DPSK				≤ 21	
	F=F <sub>0</sub> +1MHz	pi/4 DQPSK				≤ 0	dB
		8DPSK				≤ 5	
	F_F 1N411-	pi/4 DQPSK				≤ 0	dB
	F=F <sub>0</sub> -1MHz	8DPSK				≤ 5	
C/I	F_F . 2N4U-	pi/4 DQPSK				≤-30	dB
	F=F <sub>0</sub> +2MHz	8DPSK				≤-25	
	F_F + 2N4H-	pi/4 DQPSK				≤-40	dB
	F=F <sub>0</sub> +3MHz	8DPSK				≤-33	
	F=F <sub>0</sub> -3MHz	pi/4 DQPSK				≤-40	dB



#### AIC8800D80 Wi-Fi6/BTDM5.3 Rev0.1

		8DPSK		≤-33	
F=F <sub>image</sub>	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	Тур	Max	Spec	Unit
Receiver sensitiv	vity				≤-70	dBm
Maximum input	level				≥-10	dBm
Co-Channel inte	rference, C/I				≤21	dB
	F=F <sub>0</sub> +1MHz				≤15	dB
	F=F <sub>0</sub> -1MHz				≤15	dB
0.41	F=F <sub>0</sub> +2MHz				≤-17	dB
C/I	F=F <sub>0</sub> +3MHz				≤-27	dB
F=F <sub>0</sub> -3MHz					≤-27	dB
	F=F <sub>image</sub>				≤-15	dB
Inter-modulation					≥-50	dBm
	30MHz to 2000MHz		C		≥-30	dBm
Disabises	2003MHz to 2399MHz			0	≥-35	dBm
Blocking	2484MHz to 2997MHz				≥-35	dBm
	3000MHz to 12.75GHz				≥-30	dBm

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

	Min	Тур	Max	Spec	Unit	
Receiver sensiti	vity				≤-70	dBm
Maximum input	level				≥-10	dBm
Co-Channel inte	rference, C/I				≤21	dB
	F=F <sub>0</sub> +2MHz				≤15	dB
	F=F <sub>0</sub> -2MHz				≤15	dB
C/I	F=F <sub>0</sub> +4MHz				≤-17	dB
	F=F <sub>0</sub> +6MHz				≤-27	dB
	F=F <sub>0</sub> -6MHz				≤-27	dB
	F=F <sub>image</sub>				≤-15	dB
Inter-modulatio	n				≥-50	dBm
30MHz to 2000MHz					≥-30	dBm
Disables	2003MHz to 2399MHz				≥-35	dBm
Blocking	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)

	Min	Тур	Max	Spec	Unit	
Receiver sensitiv	vity				≤-75	dBm
Maximum input	level				≥-10	dBm
Co-Channel interference, C/I					≤17	dB
	F=F <sub>0</sub> +1MHz				≤11	dB
	F=F <sub>0</sub> -1MHz				≤11	dB
C/I	F=F <sub>0</sub> +2MHz				≤-21	dB
C/I	F=F <sub>0</sub> +3MHz				≤-31	dB
	F=F <sub>0</sub> -3MHz				≤-31	dB
	F=F <sub>image</sub>				≤-19	dB

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

Description		Min	Тур	Max	Spec	Unit
Receiver sensitiv	vity				≤-82	dBm
Maximum input	level				≥-10	dBm
Co-Channel interference, C/I					≤12	dB
	F=F <sub>0</sub> +1MHz F=F <sub>0</sub> -1MHz				≪6	dB
					≪6	dB
C/I	F=F <sub>0</sub> +2MHz				≤-26	dB
C/I	F=F <sub>0</sub> +3MHz				≤-36	dB
F=F <sub>0</sub> -3MHz					≤-36	dB
	F=F <sub>image</sub>				≪-24	dB



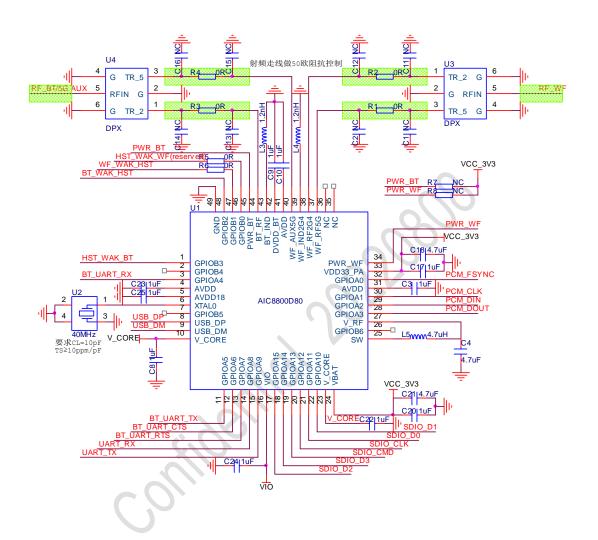
# 6. Reliability characteristics

Table 6-1 Reliability test report

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



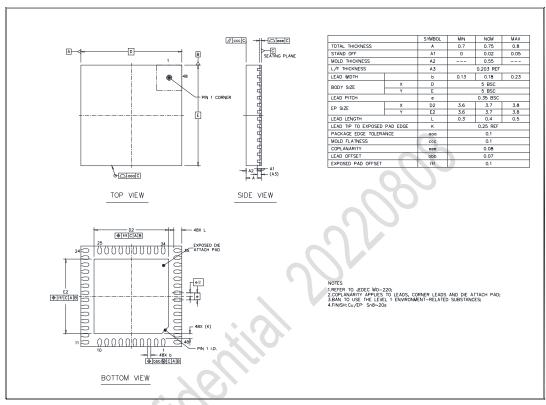
# 7. Application Circuit



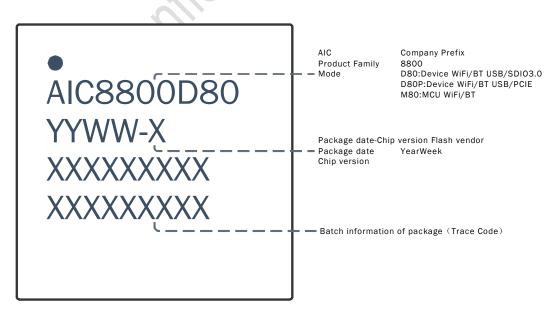


# 8. Package Physical Dimension

#### 8.1 Package Dimensions

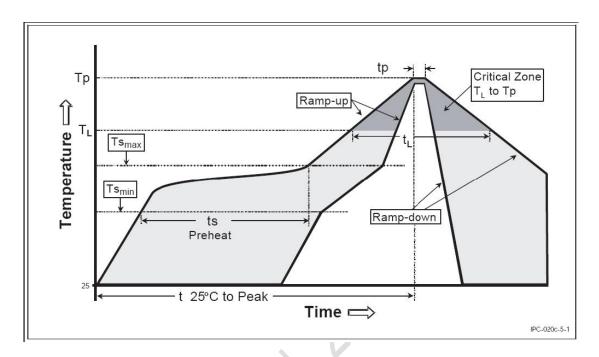


#### 8.2 Product Identification





# 9. Solder Reflow Profile



**Figure 9-1 Classification Reflow Profile** 

**Table 9-1 Classification Reflow Profiles** 

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



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

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

**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 °C *	250 + 0 °C *	245 + 0 ℃ *
≥2.5mm	250 + 0 ℃ *	245 + 0 ℃ *	245 + 0 ℃ *

<sup>\*</sup>Tolerance : The device manufacturer/supplier shall assure process compatibility up to and including the stated classification temperature(this mean Peak reflow temperature + 0  $\,^{\circ}$ C. For example 260+ 0  $\,^{\circ}$ C ) 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  $^{\circ}$ C, X  $^{\circ}$ C (based on machine variation capability)whatever is required to control the profile process but at no time will it exceed 5  $^{\circ}$ C. 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

The information provided here is believed to be reliable; AICSEMI assumes no reliability for inaccuracies and omissions. AICSEMI assumes no reliability for the use of this information and all such information should entirely be at the user's own risk. Specifications described and contained here are subjected to change without notice on the purpose of improving the design and performance. All of this information described herein should not be implied or granted for any third party. AICSEMI does not authorize or warrant any AICSEMI products for use in the life support devices or systems.

Copyright@2020 AICSEMI Inc. All rights reserved



For technical questions and additional information about AICSEMI Inc.:

Website: www.AICSEMI.com Mailbox: support@AICSEMI.com

AICSEMI (Shanghai), Inc. Tel: +86-10-84097662 Fax: +86-10-84097662