



Product Manual

IEEE802.11 b/g/n/ax 1T1R 2.4G Dual with Integrated BLE 5.2

Project Name	8800D WIFI Module
Main model	A6880DA-SRAA
Version number	A
Customer's Part NO	
Customer	

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一. Introduction

1.1 Overview

A6880DA-SRAA provides a highly integrated WiFi/BLE Combo solution, supporting WiFi6 and BLE5.2, with high reliability, high integration, ultra-low power consumption, excellent RF indicators and other features.

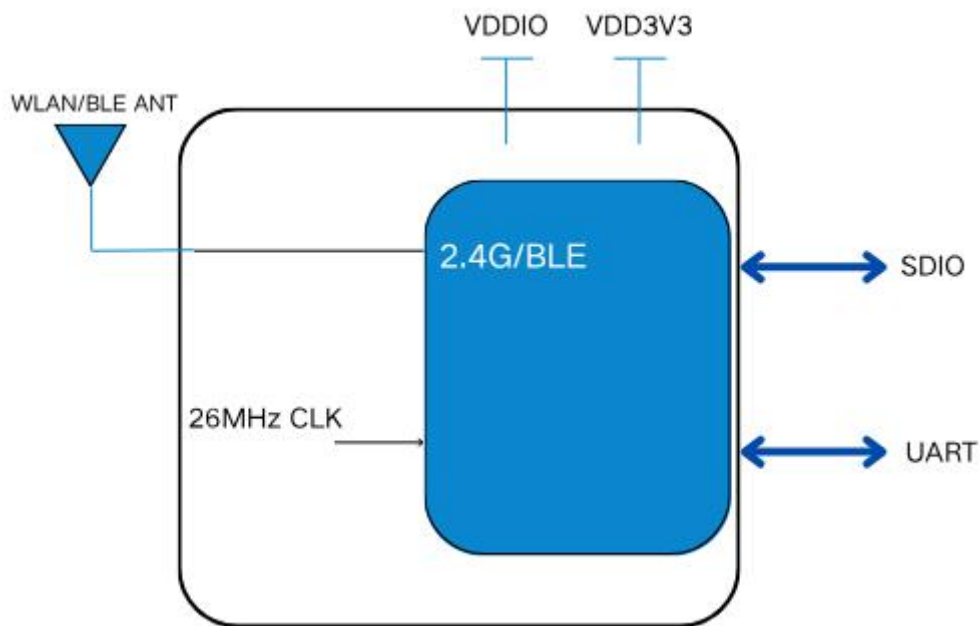


Figure1 A6880DA-SRAA Block Diagram

1.2 Product Features

- CMOS single-chip fully-integrated RF, Modem and MAC
- Support 2.4GHz Wi-Fi6
- Support 20/40MHz bandwidth
- Data rates up to 286.8Mbps@TX and 229.4Mbps@RX
- RX sensitivity -99dBm in 11b 1M mode
- Tx power up to 20dBm in 11b mode, 18dBm in HT/VHT/HE40 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
- Supports all the mandatory and optional features of Bluetooth Low Energy
- Supports BLE 5.2
- Supports advanced master and slave topologies
- Use an optimization method to assess channel quality, AFH enhancement
- Supports SDIO/UART interface

1.3 Applications

- IoT device
- Projector
- OTT
- Wireless device

二. GENERAL SPECIFICATION

2.1 WiFi RF Specifications

Features	Descriptions
Main Chip	AIC8800DL
Frequency Range	2400 ~ 2483.5MHz
Host Interface	WiFi:SDIO
Standards	WiFi: IEEE 802.11b/g/n/ax
Modulation	WiFi: 802.11b: DBPSK/DQPSK/CCK 802.11g: OFDM/BPSK/QPSK/16-QAM/64-QAM 802.11n: QPSK/16-QAM/64-QAM/256-QAM 802.11ax: BPSK/QPSK/16-QAM/64-QAM/256-QAM/1024-QAM
Transmit Output Power (Tolerance: ± 1.0 dBm)	WiFi: 2.4G: 802.11b@11Mbps 6 dBm 802.11g@54Mbps 5 dBm 802.11n@ MCS7 5 dBm

	802.11ax@ MCS11 5 dBm
EVM	802.11b 11Mbps : EVM $\leq$ -9dB 802.11g 54Mbps : EVM $\leq$ -25dB 802.11n MCS7 : EVM $\leq$ -28dB 802.11ax MCS11 : EVM $\leq$ -35dB
Receiver Sensitivity 2.4G	802.11b@8% PER Receive maximum level $\geq$ -10 11Mbps $\leq$ -89dBm
	802.11g@10% PER Receive maximum level $\geq$ -20 54Mbps $\leq$ -76dBm
	802.11n@10% PER Receive maximum level $\geq$ -20 MCS7_HT20 $\leq$ -74dBm MCS7_HT40 $\leq$ -71dBm
	802.11ax@10% PER Receive maximum level $\geq$ -20 MCS11_HT20 $\leq$ -64dBm MCS11_HT40 $\leq$ -61dBm
Operating Channel	WiFi 2.4GHz: 11: (Ch. 1-11) - United States(North America) 13: (Ch. 1-13) - Europe 14: (Ch. 1-14) - Japan
Media Access Control	WiFi: CSMA/CA with ACK
Network Architecture	WiFi: Ad-hoc mode (Peer-to-Peer) Infrastructure mode Software AP WiFi Direct
Security	WiFi: WEP, WPA, WPA2, WPA3
Antenna	External
OS Supported	Android / Linux
Dimension	Typical L12.0 mm *W12.0mm *H1.8mm (+/-0.3mm)

2.2 BT RF Specifications

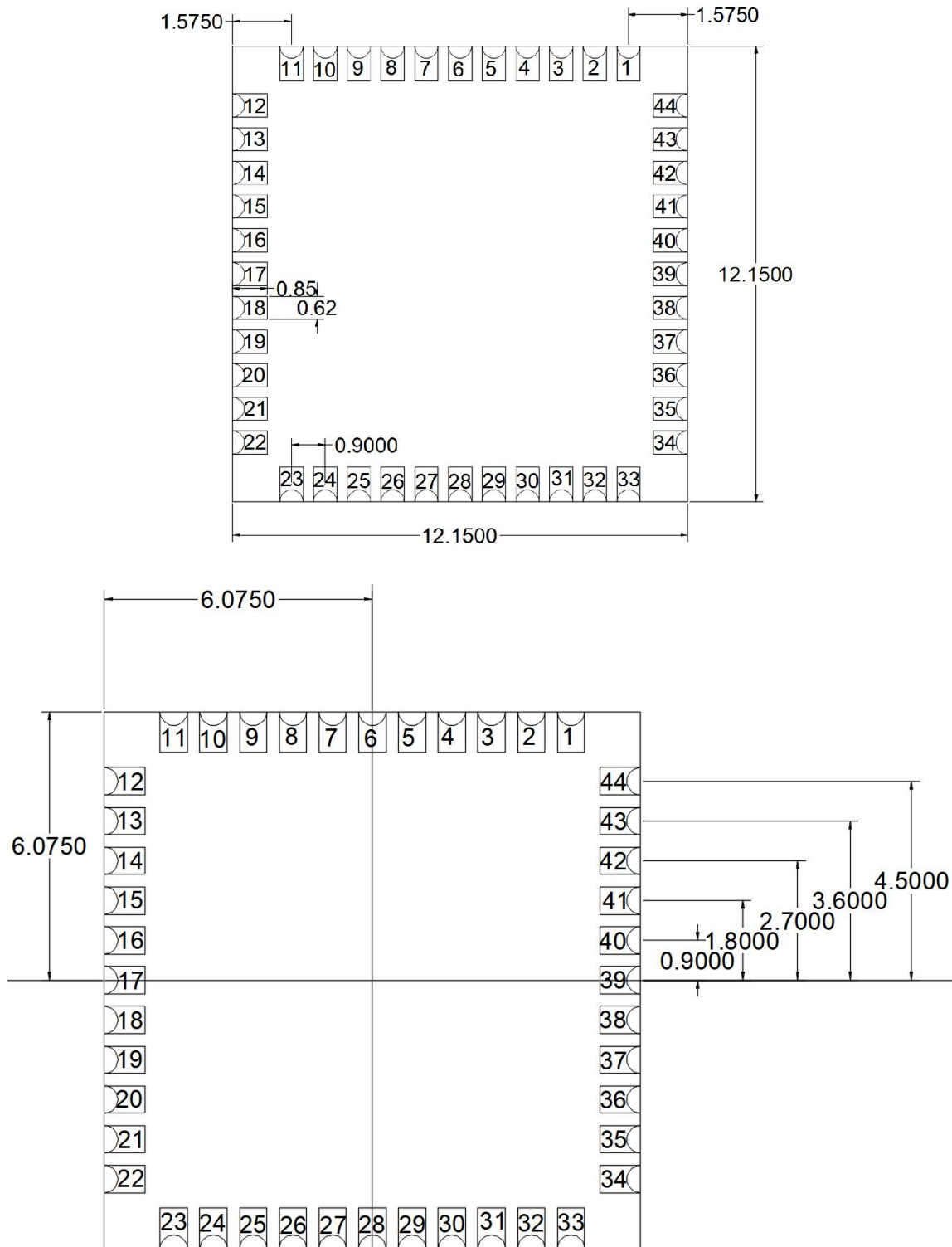
Feature	Description		
Bluetooth Standard	BLE5.2		
Host Interface	UART		
Modulation	BLE: $\pi/4$ -DQPSK; 8-DPSK		
Frequency Band	2400~2483.5MHz		
Channel numbers	79 (0~78)		
	Min	Typical	Max
Output Power	0dBm		3dBm
Sensitivity @ BER=30% for $\pi/4$ -DQPSK (1Mbps)		-94dBm	
Sensitivity @ BER=30% for 8DPSK (2Mbps)		-88dBm	

2.3 Operating Conditions

Parameter	Min.	Typ.	Max.	Unit
Operating Temperature	-20	-	+80	℃
Operating Humidity	10	-	90	%
VCC33	3.15	3.3	3.45	V
VIO	1.7	1.8	1.9	V
	3.15	3.3	3.45	V

三. Mechanical Specification

3.1 Outline Drawing (Unit: $\pm 0.3\text{mm}$)



PCB Layout

四. Environmental Requirements

4.1 Operating& Storage Conditions

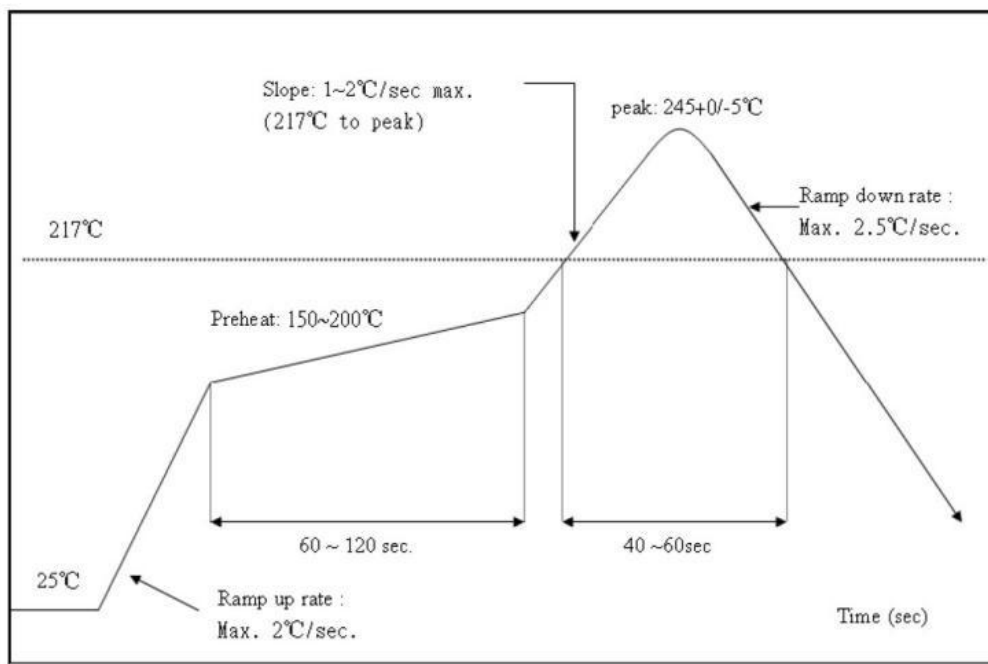
Operating	Temperature: -20°C to +80°C
	Relative Humidity: 10-85% (non-condensing)
Storage	Temperature: 0°C to +55°C (non-operating)
	Relative Humidity: 5-90% (non-condensing)

4.2 Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : <250°C

Number of Times : ≤2 times



4.3 Patch WIFI modules installed before the notice:

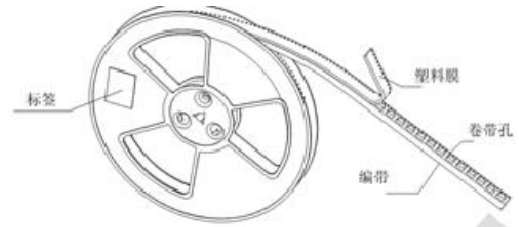
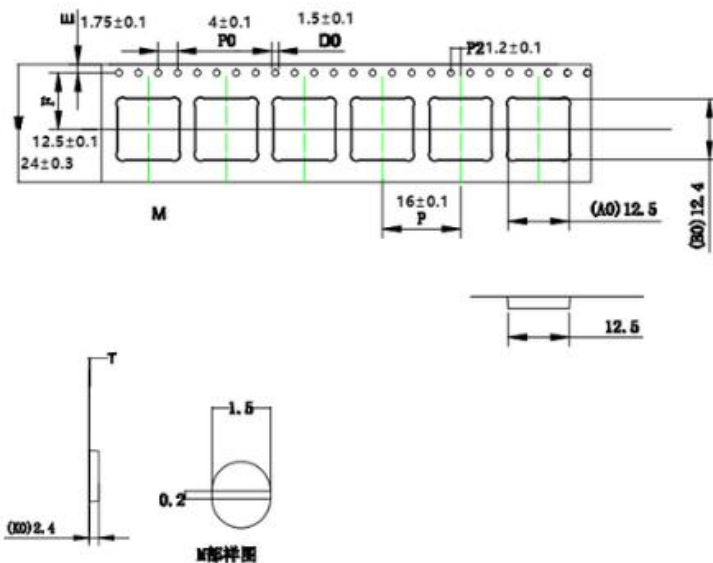
WIFI module installed note:

1. Please press 1 : 1 and then expand outward proportion to 0.7 mm, 0.18 mm thickness When open a stencil
2. Take and use the WIFI module, please insure the electrostatic protective measures.
3. Reflow soldering temperature should be according to the customer the main size of the products,

such as the temperature set at $250 \pm 5^\circ\text{C}$ for the MID motherboard.

About the module packaging, storage and use of matters needing attention are as follows:

1. The module of the reel and storage life of vacuum packing: 1). Shelf life: 8 months, storage environment conditions: temperature in: $< 40^\circ\text{C}$, relative humidity: $< 90\%$ r.h.
2. The module vacuum packing once opened, time limit of the assembly:
Card: 1) check the humidity display value should be less than 30% (in blue), such as: 30% ~ 40% (pink), or greater than 40% (red) the module have been moisture absorption.
2) factory environmental temperature humidity control: $\leq 30^\circ\text{C}$, $\leq 60\%$ r.h..
3) Once opened, the workshop the preservation of life for 168 hours.
3. Once opened, such as when not used up within 168 hours:
 - 1) The module must be again to remove the module moisture absorption.
 - 2) The baking temperature: 125°C , 8 hours.
 - 3) After baking, put the right amount of desiccant to seal package.





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THE END

FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

The device has been evaluated to meet general RF exposure requirement.
The device can be used in an uncontrolled environment without restriction.