



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 | |

| Approved | RD | Quality | Drafted |
|----------|----|---------|---------|
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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.

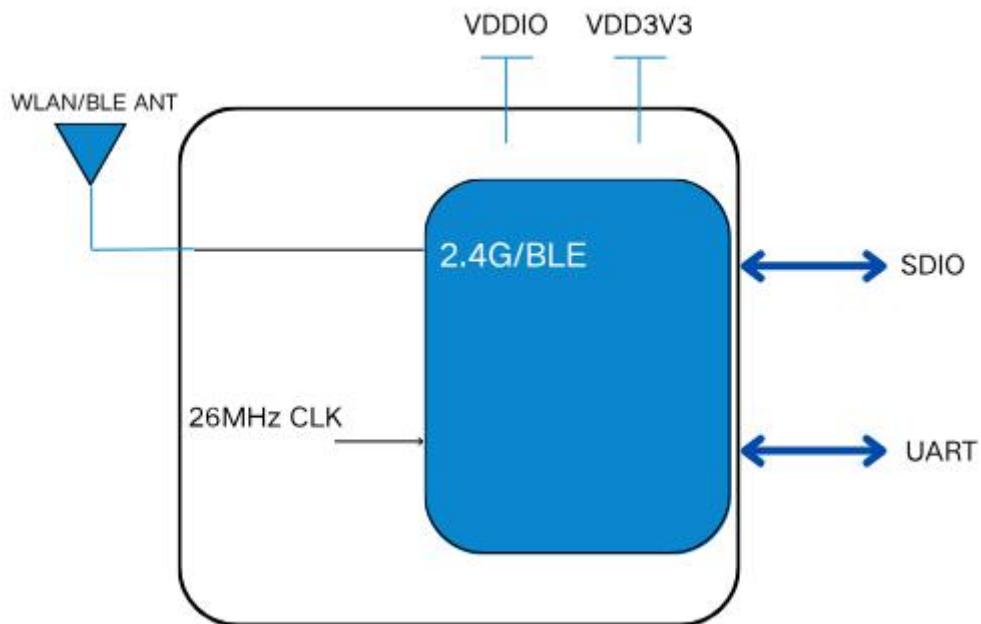


Figure1 A6880DA-SRAA Block Diagram

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: ±1.0dBm) | 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 | 802.11b@8% PER Receive maximum level \geq -10 11Mbps \leq -89dBm |
| 2.4G | 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 | |

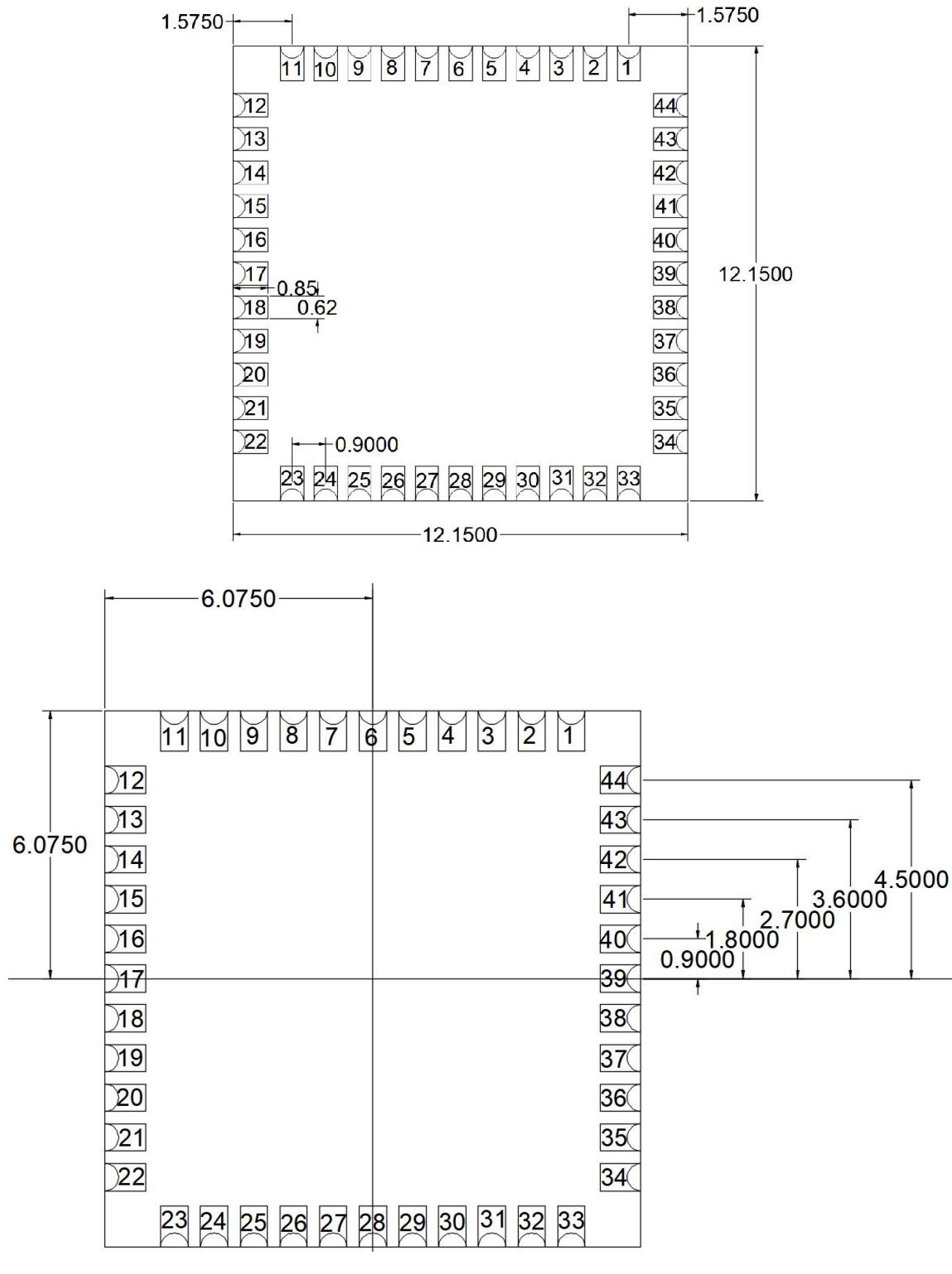
2.3 Operating Conditions

| Parameter | Min. | Typ. | Max. | Unit |
|-----------------------|------|------|------|------|
| Operating Temperature | -20 | - | +80 | °C |
| 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: $\pm 0.3\text{mm}$)





四. Environmental Requirements

4.1 Operating& Storage Conditions

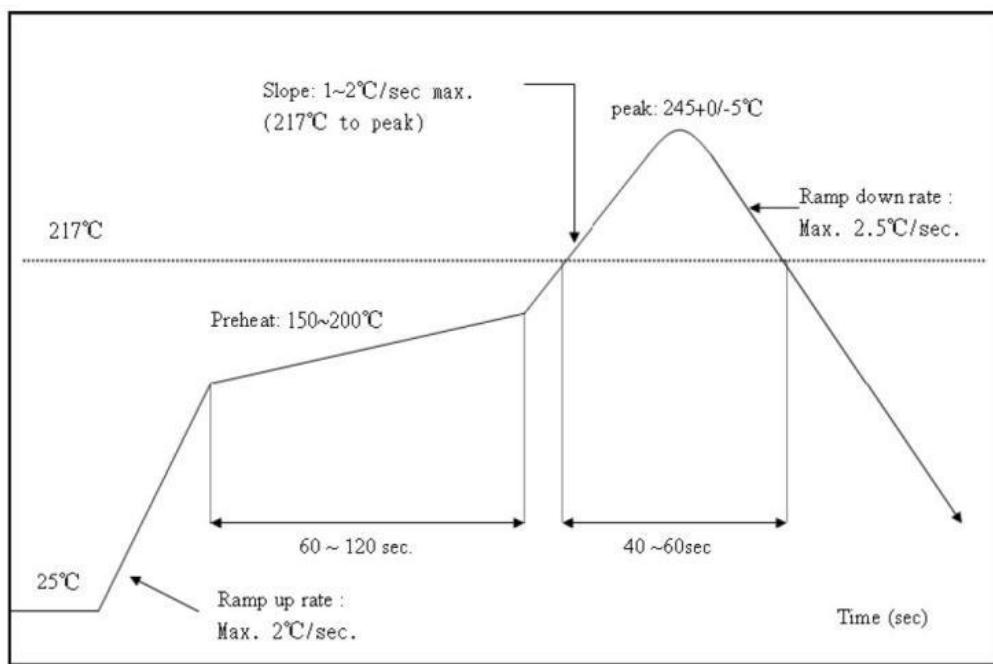
| | |
|------------------|--|
| Operating | Temperature: -20°C to +80°C |
| | Relative Humidity: 10-85% (non-condensing) |
| Storage | Temperature: 0°C to +55°C (non-operating) |
| | Relative Humidity: 5-90% (non-condensing) |

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 $250 + 5$ °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 °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: ≤ 30 °C, $\leq 60\%$ r.h..

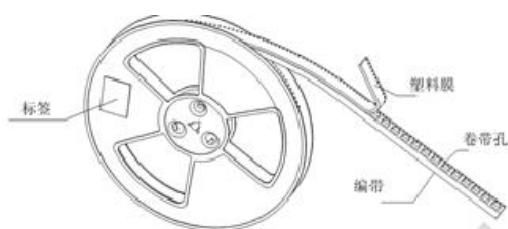
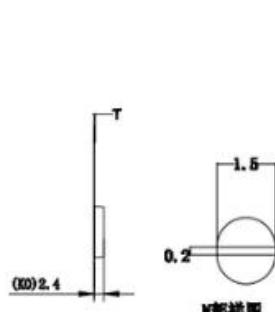
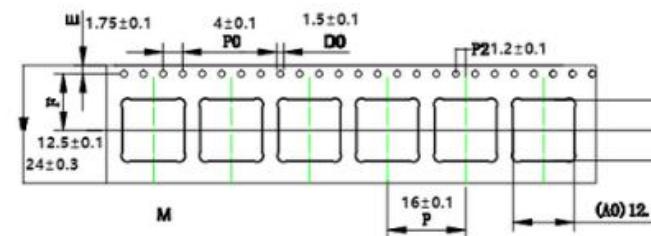
3) Once opened, the workshop the preservation of life for 168 hours.

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.





Note: Shenzhen MiaoMing may make improvements and/or changes in this document or in the product described in this document at any time. This document could include technical inaccuracies or typographical errors.

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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.