

# ESP32-SG Specification

Version V1.1

Copyright © 2020

## Disclaimer and copyright notice

The information in this article, including the URL address for reference, is subject to change without prior notice. The Documentation is provided "as is" without any warranty, including any warranties of merchantability, fitness for a particular purpose, or non-infringement, and any warranties mentioned in the proposal, specification or sample. This document is not responsible for any infringement of any patent rights arising out of the use of the information in this document. No license, express or implied, by estoppel or otherwise, is hereby granted.

The test data obtained in this paper are all obtained by Ai-Thinker laboratory , and the actual results may be slightly different. The Wi-Fi alliance membership mark is owned by the WiFi alliance.

All trade mark names, trademarks and registered trademarks mentioned herein are the property of their respective owners and are hereby declared.

The final interpretation right is owned by Shenzhen Ai-Thinker Technology Co., Ltd.

### Note

The contents of this manual may be changed due to the version upgrade of the product or other reasons. Shenzhen Ai-Thinker Technology Co., Ltd. reserves the right to modify the contents of this manual without any notice. This manual is only used as a guide, and Shenzhen Ai-Thinker Technology Co., Ltd. makes every effort to provide accurate information in this manual, but Shenzhen Ai-Thinker Technology Co., Ltd. does not ensure that the contents of the manual are completely true,, All statements and information in this manual. and the recommendations do not constitute for any warranty, express or implied.

**Document development/revision/revocation resume**

Version	Date	Revised/Content	Edition	Approve
V1. 0	2020. 9. 30	First Edition	Huang Fangke	
V1. 1	2020. 11. 18	Update product picture and description	Huang Fangke	XuHong

## 一、 Product Overview

The home intelligent gateway (ESP32-G) of Wi-Fi+ BLE is designed and developed by Ai-Thinker Technology. Though the gateway that can realized the system information collection, information input, information output, centralized control, remote control, linkage control and other functions, etc. The device supports the Wi-Fi function of LAN (802.11 b/g/n). It has its own LAN port, in the LAN network, can support the STA/AP/STA\_AP operation mode, support the Smart Config/AirKiss one-click distribution network to provide a high-speed, safe and reliable service for users.

Application field for automatic meter reading, home building automation, security system, remote irrigation system.

## Characteristics

- Small, flexible, simple, customizable
- Low-power dual-core 32-bit CPU, main frequency :240 MHz, operating capacity up to 600 DMIPS, built-in 520 KB SRAM
- Support STA/AP/STA+AP operating mode
- support Smart Config/AirKiss one-click distribution
- Support for remote firmware upgrades (FOTA), embedded Lwip and FreeRTOS
- Support USB (5 V) power supply or power adapter (12 V) power supply

## Main parameters

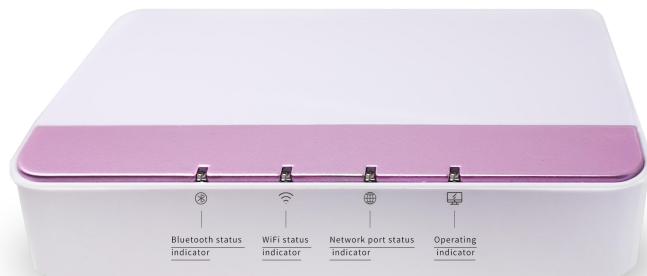
Table 1 main parameter descriptions

Model Name	ESP32-G
Size	118mm*79mm*26mm
Antenna	Build-in antenna
Frequency range	Wi-Fi band: 2412-2484MHz
Networking	Ethernet/WIFI
Operation temperature	-20 °C ~ 85 °C
Storage environment	-40 °C ~ 85 °C
Supply range	DC5~12V (advise 12V, 1A)
Power consumption	< 1.5W
Protection	IP66 (Standard configuration is only suitable for indoor use. For outdoor use, replace with waterproof antenna)
Shell material	Plastic case
Indicator	power supply, Wi-Fi WAN port and network connection indication
Button	Hardware Reset and Restore Factory Setup Key
Ethernet WIFI	antenna: built-in antenna
	10/100M WAN port

## 二、 Description of product interface and LED indicator



Name	Description
LAN port	Access to the Internet
12V DC power supply port	Connect 12 V/1A Power adapter
Power supply switch	To the left is 5 V, to the right is 12 V
Micro-USB	5V USB power supply port
Reset Button	Gateway reset



名称	描述
Bluetooth status indicator	The light is always on when the Bluetooth mode is working normally
WIFI status indicator	The light is always on when the WIFI mode is working normally
Network port status indicator	The light is always on when the network port is working normally
Operating indicator	The light is always on when the gateway is working

### 三、 WiFi gateway user way

( )

( ) A

EB

A G E G MAC



Click on the WIFI type in the gateway , you can see information as below picture,

E G



A A

I FI G N C  
( ) G M  
( ) M

#### 四、 Bluetooth Gateway user way

A G MAC

E G



C

B



Copyright © 2020 Shenzhen Ai-Thinker Technology Co., Ltd All Rights Reserved

This is a detailed view of the 'AP模式' (AP Mode) configuration section from the ESP32-G gateway setup interface. It shows the following parameters:

- SSID: aithinkerGW01\_5D1BDC
- GW地址: 192.168.4.1
- MASK地址: 255.255.255.0
- MAC地址: AC67B25D1BDC

E G

client settings

协议: MQTT  
端口号: 请输入端口号 (please enter port no.)  
服务器地址: 请输入服务地址  
发布主题: 请输入发布主题  
订阅主题: 请输入订阅主题  
用户名: admin (user name)  
密码: public (password)  
心跳间隔: 请输入心跳间隔  
qos: 0  
是否自动重连: 是 (whether to reconnect automatically)

C

M

M

A

B M

系统信息  
client设置  
当前版本:1  
OTA升级  
进行重启  
进行恢复

协议: MQTT  
端口号: 1883  
服务器地址: (highlighted in red)  
发布主题: aithinker  
订阅主题: aithinker  
用户名: (redacted)  
密码: (redacted)  
心跳间隔: 60  
qos: 0  
是否自动重连: 是  
确认

Dashboard

监控

控制台

连接

会话

主题

订阅

订阅

规则引擎

规则

资源

管理

插件

监听器

应用

工具

WebSocket

HTTP接口

C

M

:

## Websocket

连接

主机地址	端口	Path
<input type="text" value="redacted"/>	8083	/mqtt

客户端ID	用户名	密码
mqqtjs_638ff629aa	admin	<input type="password" value="redacted"/>

心跳(秒)

清除会话  SSL <ws://mqtt.myshawn.com:8083/mqtt>

**点击连接** **连接** **断开连接** 当前状态: 已连接

订阅

主题	订阅
aithinker	<b>订阅</b>

服务质量

**点击订阅**

主题	服务质量	时间	操作
aithinker	0	2020-10-13 17:49:02	X

消息

给aithinker主题名发送信息

主题	消息
aithinker	{"addr": "0005", "opcode": "d18888", "data": "0102"} 0 <input type="checkbox"/> 保留 <b>发送</b>

发布消息列表

消息	主题	服务质量	时间
{"addr": "0005", "opcode": "d18888", "data": "0102"} 2	aithinker	0	2020-10-13 17:51:46
{"addr": "0005", "opcode": "d18888", "data": "0102"} 2	aithinker	0	2020-10-13 17:51:45

订阅消息列表

消息	主题	服务质量	时间
{"addr": "0005", "opcode": "d18888", "data": "0102"} 4	aithinker	0	2020-10-13 18:12:45
{"addr": "0005", "opcode": "d18888", "data": "0102"} 4	aithinker	0	2020-10-13 18:12:44
{"addr": "0005", "opcode": "d18888", "data": "0102"} 4	aithinker	0	2020-10-13 18:12:43

E G

B B

M

B

B B A E E



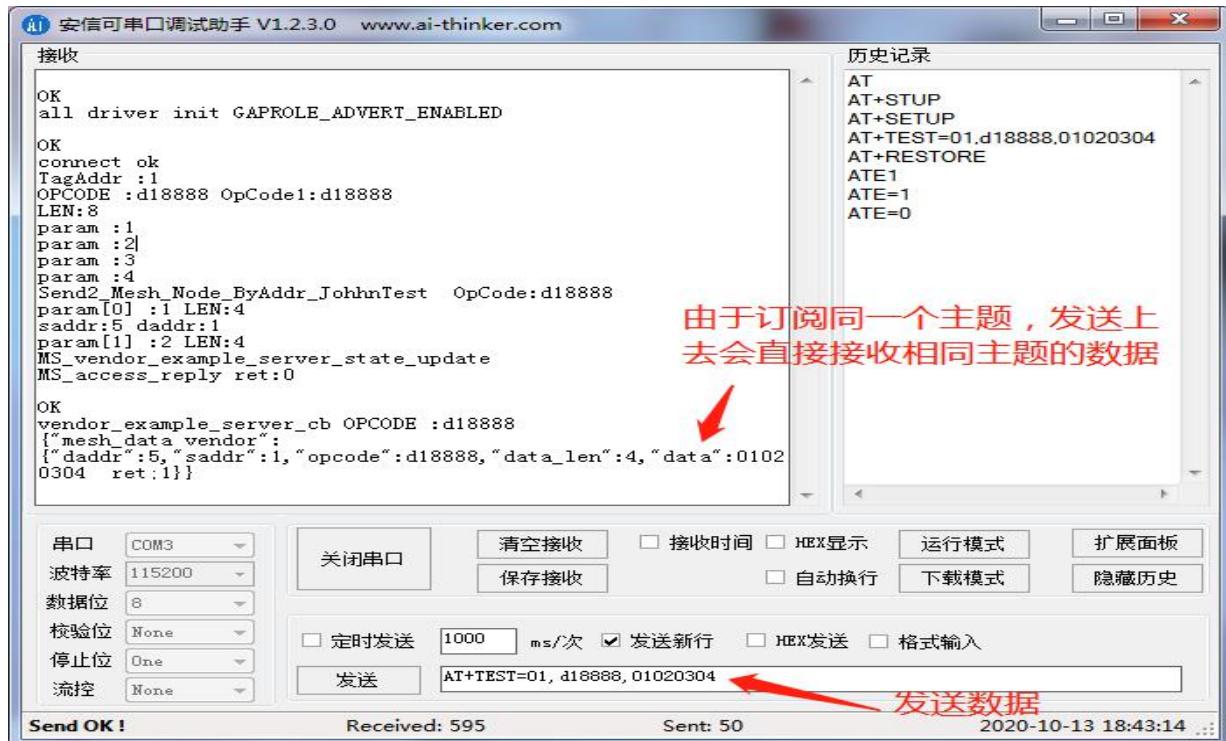
( ) A E B B

B



( ) A E

M



**订阅**

主题	订阅
aithinker	aithinker 0 2020-10-13 18:27:55 X

**服务质量**

服务质量
0

**消息**

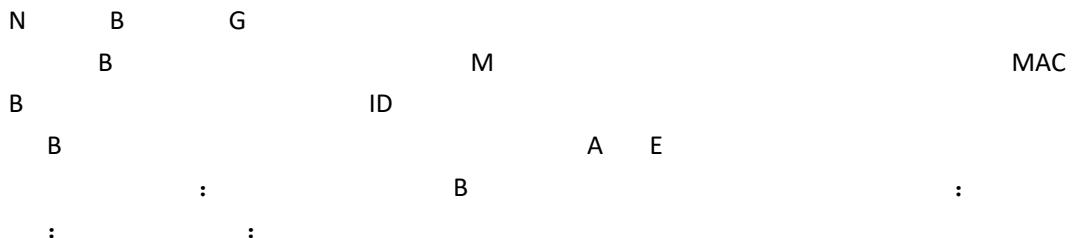
主题	消息	服务质量
aithinker	{"addr": "0005", "opcode": "d18888", "data": "0102"} 0 保留	发送

**接收到蓝牙网关发过来的数据**

消息	主题	服务质量	时间
暂无数据			
{"addr": "0005", "opcode": "d18888", "data": "01020304"} {"addr": "0005", "opcode": "d18888", "data": "01020304"} {"addr": "0005"} aithinker 0 2020-10-13 18:44:55 aithinker 0 2020-10-13 18:34:39 aithinker 0 2020-10-13 18:33:04			

The screenshot shows a MQTT client interface with the following sections:

- 订阅 (Subscription):** A search bar for '主题' (Topic) containing 'aithinker'. Below it is a dropdown for '服务质量' (Quality of Service) set to '0'. A green '订阅' (Subscribe) button is at the bottom.
- 消息 (Message):** A section for publishing messages. It has fields for '主题' (Topic), '消息' (Message), and '服务质量' (Quality of Service). The message field contains JSON: {"addr": "0005", "opcode": "d18888", "data": "01020304"}. A red arrow points from this field to the text 'MQTT服务器下发该格式的数据' (The MQTT server sends data in this format).
- 发布消息列表 (Published Message List) and 订阅消息列表 (Subscribed Message List):** Both lists show a single entry with the message content: {"addr": "0005", "opcode": "d18888", "data": "01020304"}.



## 五、 Contact us

5 ԱՓօՐԻ ԽԽՉԿՅ [ՆՀՎՎ ԼԼ ՀՕՆՈՉՔԽ ԱՍ](#)

\* ԿԻ ԿՐՎՎ = ՋՋ [ՆՀՎՎ ՋՈՒ ԵԳՆՈՉՔԽ ԱՍ](#)

9ԳՏ ՎՐԿՎ[ Խ ՆԳԿՅ [ՆՀՎՎ ՀՕՆՈՉՔԽՏ ԳԵՂԻԳԻ ԱՍ](#)

( [ ՅՈՒԿԿ ԱՍՎՎ ԿՈՂՋՈՒՅ [ԱԿՎԿԳՅ & ՀՕՆՈՉՔԽ ԱՍ](#)

: ԿԻ ՆՏՈՐՄ\_ Յ[ ՎՎՈԽՅ [Յ\[ ՎՎՈԽՅ & ՀՕՆՈՉՔԽ ԱՍ](#)

) ԱՍ ՎԳԴ\_ ' ՋՋ ԽԿԿ ( [ ԾԾՄ ) . [ ԳԼԿՄ / ՏՀԿՐՎԿՏՀ / ՏՒԱ ՀՅՈՒ 6ՈԽ > ԾԾՄ ( ԳԼՐ \* ԾՅԶ 9ՆԿՏ ՆԿՏ

: ԿՐ



## 六、 After-sales service card and disclaimer

### 售后服务卡

A

用户姓名 username	
联系电话 contact number	
用户地址 User address	
产品型号 Product number	
购买日期 Purchase date	
对应销售 Corresponding sales	
购买地址 purchase address	

### 免责声明

D

尊敬的用户：  
respected user:

本保修卡请顾客妥善保存，作为保修依据，不得有任何涂改。  
A

本品自购买日期之日起，一年之内享受保修权限。  
A

若在保修期间内存在未按正规操作产生的损坏，不在保修范围内。  
I

最终解释权归本公司所有。