



S1

IoT Gateway

User's Guide

Version: 1.0

Revision History

Version	Date	Changes
1.0	10/26/2018	First release

FCC Warning

- 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.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.
- This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter
- For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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About this manual

In this user's guide, it will not only clearly introduce SiMPNiC S1 Gateway but tell you how to install this gateway with detailed instructions.

Organization of the Manual

- Chapter 1 “Introduction” describes the features of the S1 Gateway
- Chapter 2 “Installing the S1 Gateway”
- Chapter 3 “Operation”
- Chapter 4 “Maintenance”

1

Introduction

SiMPNiC's S1 Gateway is typically designed to meet the emerging Internet of Things (IoT) Ethernet requirements. This reliable solution provides the security mechanism to prevent your network from malicious attacks.

1.1 Overview of S1

With the cutting-edge technology, SiMPNiC delivers a managed Layer 2 gateway, S1, for IoT-based services in the home automation. Through the Z-Wave transmission between the provided sensors and this gateway, the users can remotely turn on/off the electrical appliances, monitor the status of plugs/windows/doors, and so on anytime and anywhere using the SiMPNiC app we develop.

The LED indicator located on the top panel eases the users' effort to monitor and manage the network status. In addition, you can easily mount it with the wall-mount bracket we provide as well.

1.2 Key Features

- Z-Wave Plus S2 Security support.
- Easy to use iOS& Android mobile App.
- Support Wi-Fi and wired network connection.
- Support WPS easy Wi-Fi connection.
- 2 x Buttons for easy Scene Control.
- Lightweight, Stylish Design to blend into your house.
- Simple installation with wall-mount kit.
- SiMPNiC Edge Security (SES) & Firewall.
- AES-128bit encryption both downstream and upstream.
- Utilize Secure Tunnel to communicate with mobile App.
- Anti-Tampering Firmware Design.
- Emergency Boot to recover Firmware.
- Patented Open Platform to Multi-Services.
- Restful Open API for 3rd Party Development.
- USB and SD card interface to FW upgrade and config restore.
- Expandable Capability via USB Interface and SD card.
- Interfaces:
 - 1 X USB 2.0(Type A) Port
 - 1 X RJ-45 Ethernet 10/100Mbps Port
 - 1 X Micro SD Slot
 - IEEE ISM 802.11n 2T2R
- Hardware:
 - CPU: 1GHz
 - RAM(Byte): 64MB
 - FLASH(Byte): 16MB
- LED:
 - Status LED
- Power:
 - Power Source: AC-to-DC 5V micro USB Type B Adaptor
 - Power Consumption: 1.3W (Min); 6.5W (Max.)

- Weight:
 - 0.22kg (Include the bracket)
- Dimensions:
 - 120(W)x140(D)x37(H)mm
- Temperature:
 - Operating: 0°C~40°C;
 - Storage: -20°C~60°C
- Humidity:
 - 5%~90%, non-condensing

1.3 Rear & Side & Top Panels

1.3.1 Rear Panel

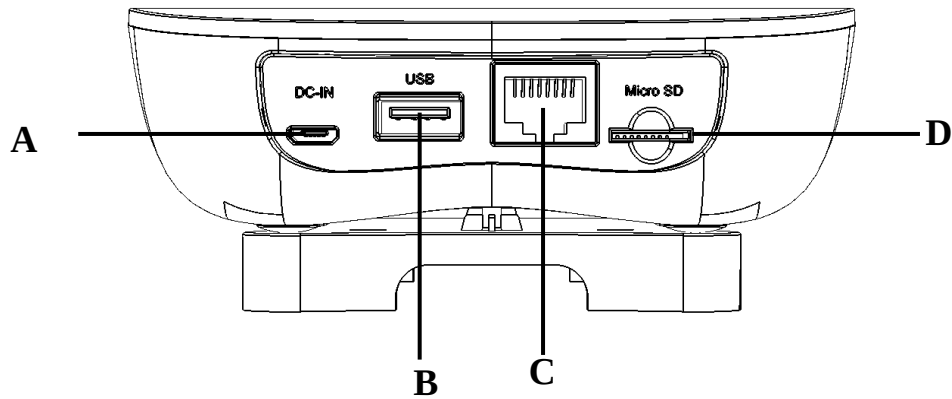


Figure 1-1 Rear View of S1 Gateway

The interfaces on the rear panel of S1 Gateway are described below:

- A. Micro USB Power Jack**
- B. USB Connector**
- C. LAN Port**
- D. Micro SD Connector**

1.3.2 Side and Top Panels

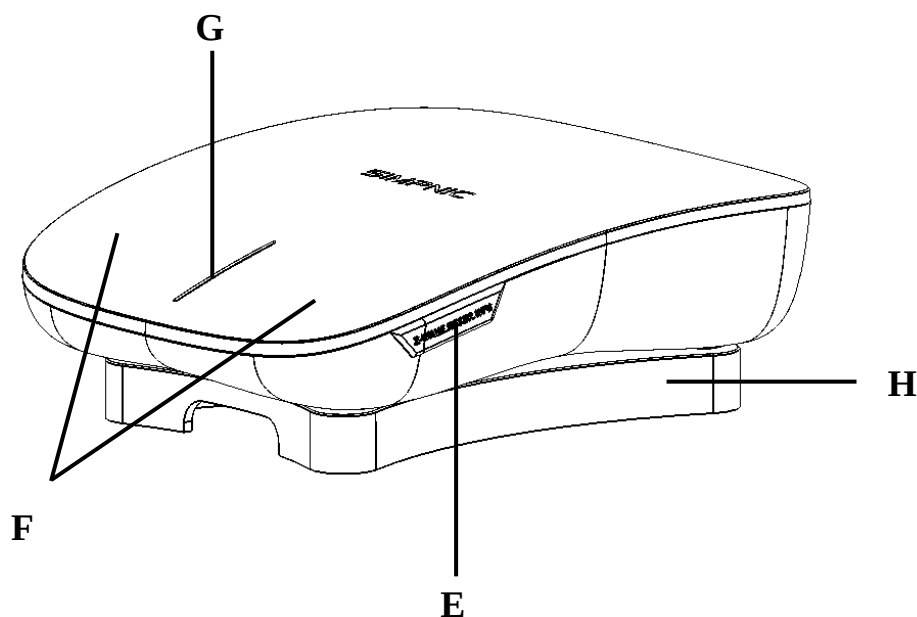


Figure 1-2. Side View of S1 Gateway

The interfaces on the side and top panels of S1 gateway are described below:

- E. Pair Button** (For more information, please refer to [Section 1.5](#))
- F. Action Buttons** (For more information, please refer to [Section 1.5](#))
- G. Status LED** (For more details on this LED description, please refer to [Section 1.4](#))
- H. Wall-mount Bracket** (For more information, please refer to [Section 2.3](#))

1.4 LED Definitions

The S1 status is indicated by the Status LED on the top panel of the device.

LED	Color	Operation
Status	Yellow	Lit when the device is booting up.
		Slowly blinking when the device is upgrading the firmware or press the Pair button for 5 seconds and then release to restart the system.
		Rapidly blinking when pressing the Pair button for more than 10 seconds and then release to reset (return to factory default settings) and restart the system.
	Blue	Lit when the system boots up completely or the device is in normal operation.
	Red	Lit when the network connection fails.
		Blinking when Z-Wave (include/ exclude fail) times out or WPS fails. The LED indicator will blink in red color for three times.
	Blue → Yellow	Blinking when pressing the Pair button twice and then release to enter the Z-Wave “Included” mode.
	Blue → Red	Blinking when pressing the Pair button 3 times and then release to enter the Z-Wave “Excluded” mode.
	Red → Yellow → Blue	Blinking when pressing the Pair button for 3 seconds and then release to enable the WPS function.

Table 1-1

1.5 Buttons Description

The following table contains various functions that will be proceeded when pressing Pair/Action button of S1 Gateway.

Button	Description
Pair Button	•Press the Pair Button of S1 for 3 seconds to enable the WPS function. •Press the Pair Button of S1 for 5 seconds to reboot the system. •Press the Pair Button of S1 for more than 10 seconds to reset the system back to the factory default settings. •Press the Pair Button of S1 one time to abort the Z-Wave connection. •Press the Pair Button of S1 twice to enter the Z-Wave “Included” mode. •Press the Pair Button of S1 three times to enter the Z-Wave “Excluded” mode.
Action Buttons	•Press the “Left” Action Button of S1 one time to enter the “Home” mode. •Press the “Right” Action Button of S1 one time to enter the “Away” mode. •Press the “Left” Action Button of S1 twice to enter the mode of Scene 1 you create. •Press the “Right” Action Button of S1 twice to enter the mode of Scene 2 you create.

Table 1-2

2

Installation

To properly install S1 Gateway, please follow the procedures listed below. These procedures will be respectively described in detail in the following sections.

- Installation Requirements
- Checking the Package Contents
- Installing S1 Gateway
- Powering on S1 Gateway
- Connecting S1 Gateway to the Network

2.1 Installation Requirements



ATTENTION

Be sure to power off before installing or wiring your S1 Gateway.

2.2 Checking the Package Contents

Unpack the package carefully and check the package contents. The standard package should contain the following items:

- One set of S1 Gateway
- 1 x Power Adaptor and USB Power Cable
- Wall-mount Bracket and Screws
- 1 x Network Cable (RJ-45)
- This User's Guide and Quick Installation Guide

Note: *If any of the above items is found missing or damaged, please contact your local sales representative for support or replacement.*

2.3 Installing S1 Gateway

2.3.1 Wall-Mounting Installation

Just follow the procedures listed below for step-by-step instructions to mount S1 on the wall.

- ❶ Select a proper space to drill 3 holes upon the mounting holes of the wall-mount bracket shipped with the package.
- ❷ Insert the screws supplied through the wall-mount bracket and into the holes on the wall.
- ❸ Tighten the screws with the screwdriver to secure mounting brackets to the wall.
- ❹ Lock downward carefully to secure S1. (See the arrow of Fig. 2-1)
- ❺ Arrange and hide cables under the bottom notch of the bracket if needed.

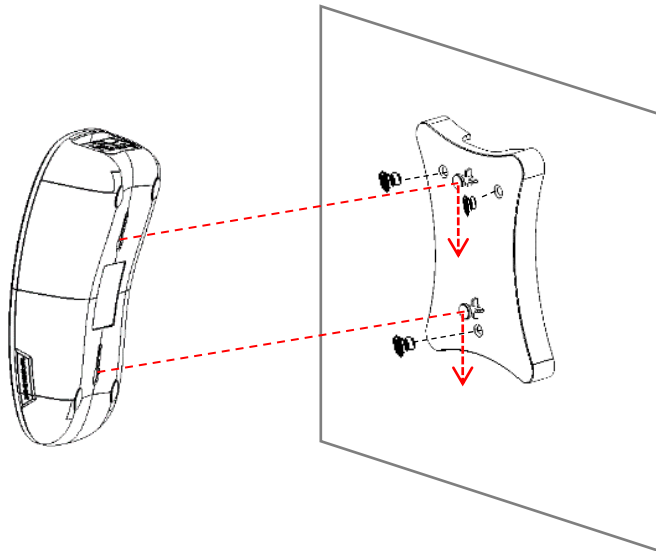


Figure 2-1. S1 Gateway
Mounting

2.4 Connecting S1 Gateway to Network

Connect to Network

Also follow the steps described below to complete the network installation for this gateway. You may refer to Section 1.3 in this user's manual for the correct locations of S1's connectors. Before powering on S1 Gateway, please make sure that network cables and power cables are securely connected.

- ❶ Connect the LAN Port of S1 to a router using the RJ-45 network cable. (Skip this step if you decide using the wireless connection.)
- ❷ Both enable the WPS function of S1 (Refer to [Section 1-4](#) or [Section 1-5](#)) and a router (Refer to router's user manual). (Skip this step if you decide using the wired connection.)
- ❸ Connect the WAN Port of your router to Internet using the RJ-45 network cable if you would like to remotely connect to S1 via App.
- ❹ Plug the power adaptor into the micro USB power jack of S1 and the status LED will light up.
- ❺ Download the SiMPNiC App from the iOS App Store/Android Google Play on your mobile phones/tablets.

Operation

S1 Gateway provides flexible interfaces for users to configure, control and monitor the system locally. To know the further information about the operation of this gateway, please refer to S1 Gateway Network Management User's Manual for the detailed management functions and required installation and operation procedures.

3.1 Network Management

Web Management is available in this gateway and can be done over the network. Once the gateway is available on the network, you can login and monitor the status of it through a web browser locally. Local Web management, especially for the first time use of the gateway to set up the needed IP, can also be done through the 10/100Base-T 8-pin RJ-45 port located on the rear panel of the gateway. Direct RJ-45 LAN cable connection between a router and the gateway is required for this local management.

Note: *The default IP Configuration Type of S1 is DHCP mode, a router with DHCP server function is required in order to automatically provide IP address for S1.*

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Maintenance

This S1 Gateway is easy to maintain. The procedures are suggested when you would like to identify faults, perform hardware replacement and do the firmware upgrade.

4.1 Fault Identification

Identifying faults can greatly reduce the time required to find problem and solution. Users may perform local check or remote check to find the problems.

4.1.1 Local Check

Users can perform local check by observing LED indicators status or check system setup and configuration through console connection.

- When the whole system fails to function,
 1. Check Status LED
 2. Check Power connection
 3. Reset power
- When certain network link fails to function,
 1. Locate the LAN port of the gateway
 2. Check Status LED of the gateway
 3. Check cable connection between the LAN port and the connected device
 4. Reset power

4.2 Hardware Replacement Procedures



WARNING!

The S1 Gateway contains no user-serviceable parts. DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair it.

Failure to observe this warning could result in personal injury or death from electrical shock.

Failure to observe the above warning will immediately void any Warranty.

4.3 Firmware Upgrade

This S1 Gateway may perform the firmware upgrade when required. The latest firmware can be downloaded using OTA (Over-the-Air) technology via your mobile phones/tablets to have your S1 Gateway updated automatically with the latest firmware. For more details on web upgrade procedures, please refer to S1 Gateway Network Management User's Manual.

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