Installation Guide

Wireless Gateway and Wireless Repeater

with SetApp Configuration

Model: WIFI-GW

Version 1.5

Disclaimers

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The images contained in this document are for illustrative purposes only and may vary depending on product models.

Emission Compliance

This equipment has been tested and found to comply with the limits applied by the local regulations.

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, you are 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 the 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.

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

NOTE

Interference may occur when the Wireless Gateway and Repeater are installed near other 2.4 GHz emitting devices (such as dual technology PIR detectors used in alarm systems, microwave ovens, etc.). This might degrade/ disable the gateway/ repeater operation. If possible, avoid installation nearby such devices, or consider these interferences when troubleshooting.

Revision History

- Version 1.5 (July 2020):
  - Changed the LED indications.
  - Updated the installation instructions.
  - Updated the maintenance instructions.
  - Various editorial changes.

Contents

About This Guide

This user guide is intended for Photovoltaic (PV) system owners, installers, technicians, maintainers, and integrators who use the SolarEdge power harvesting system.

This guide describes how to install and set up the Wireless Gateway and Wireless Repeater(s).

This guide assumes that the SolarEdge power harvesting system is already installed and commissioned. For additional information about how to install and commission the SolarEdge power harvesting system, refer to the relevant installation guide.

This guide includes the following chapters:

- *Overview* on page 6, describes the SolarEdgeWireless Gateway and Repeater functionality and connection options.
- *Wireless Gateway Interfaces* on page 9 describes the Wireless Gateway/Repeater push-button functionality and its LED indications.
- *Connection and Configuration* on page 10 describes how to establish a Wi-Fi connection for SolarEdge inverters using the Wireless Gateway and Repeater(s).
- *Status, Errors and Troubleshooting* on page 13 describes how to identify and troubleshoot errors .

For further information, datasheets and the most up-to-date certifications for various products in different countries, please visit the SolarEdge website: www.solaredge.com.

For the quick installation guide, see:

North America

Europe and APAC

Chapter 1: Overview

The Wi-Fi communication option enables connecting a SolarEdge inverter to the SolarEdge monitoring platform. The Wireless Gateway collects all inverters monitoring data using dedicated Wi-Fi and connects to the monitoring platform through Ethernet.

The Wi-Fi connection between the gateway and the inverter is independent ("walled garden"), thus avoids problems related to the home router, for example: changing the password will not affect the PV system connection to the monitoring platform.

A Wi-Fi access point is built into the inverter. An antenna (included in the Wireless Gateway package) connects to the inverter. The Wireless Gateway is connected to the home router with an Ethernet cable.

SolarEdge offers two wireless products:

- Wireless Gateway - provides the inverter connection to the monitoring platform.
- Wireless Repeater(s) - one or two Repeaters can be used for extending the Wi-Fi range. The Repeater connection to the Wireless Gateway and inverters is wireless and does not require an Ethernet cable.

The Wireless Gateway and Repeater can be used with SolarEdge inverters with SetApp configuration.

Figure 1: The Wireless Gateway/ Repeater

Connection Options

Terminology

This document uses the following terms for describing the communication flow:

- **Uplink** - communication from the inverter or Wireless Repeater to the Wireless Gateway/Repeater towards the monitoring platform (see *Figure 2*).
- **Downlink** - communication from the Wireless Gateway or Repeater towards the inverter/ Repeater (see *Figure 2*).

Single Inverter, Wireless Connection

The inverter is wirelessly connected to the monitoring platform via the Wireless Gateway. The Wireless Gateway is connected to the home router via Ethernet. One or two optional Repeaters extend the Wi-Fi range.

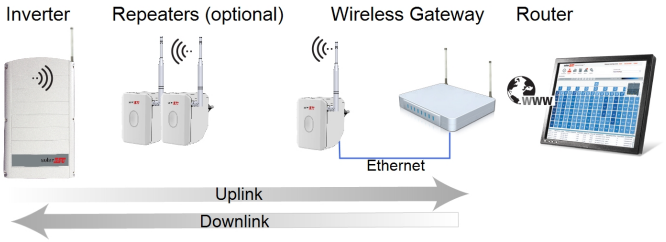

Figure 2: Single inverter, wireless connection

Multiple Inverters

Multiple devices, RS485 Master/ Slaves

Multiple inverters are connected in an RS485 bus. The master is connected wirelessly to the Wireless Gateway. The Wireless Gateway is connected to the home router via Ethernet. One or two optional Repeaters extend the Wi-Fi range.

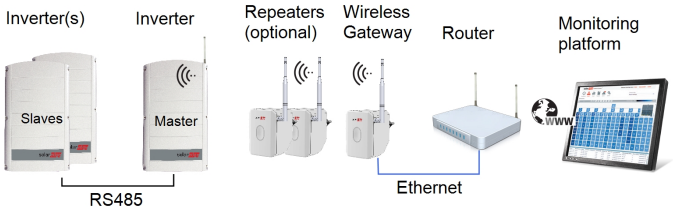

Figure 3: Multiple inverters, wired connection

Multiple devices, Wi-Fi Point to Multi-point

This configuration enables connecting multiple devices wirelessly. The Wireless Gateway is connected to the home router via Ethernet. Several inverters can be connected to a single Wireless Gateway. One or two optional Repeaters can be used to extend the Wi-Fi range.

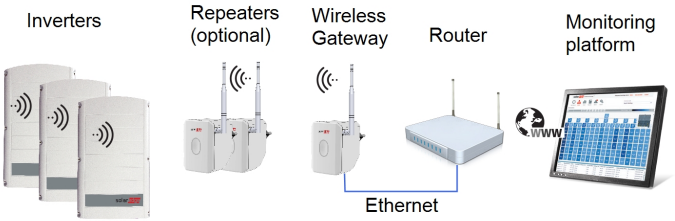

Figure 4: Multiple inverters, Wi-Fi Point to Multi-point

Package Contents

Wireless device (Wireles Gateway or Wireless Repeater) packaging include the following items:

	Wireless Gateway	Repeater
Wireless device	✓	✓
Wireless Gateway antenna	✓	✓
Wi-Fi antenna (with bracket) for inverter(1)	✓	X
Ethernet cable	✓	X
Quick installation guide	✓	✓

NOTE

Do not dispose of the quick installation guide after the installation. The label on the front page contains information used to access your wireless device.

(1) For connecting additional inverters, an antenna is available from SolarEdge

Chapter 2: Wireless Gateway Interfaces

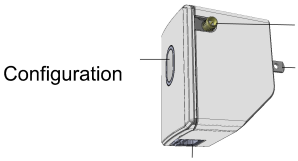

Figure 5: Wireless Gateway interfaces

Push-button

The Wireless Gateway is equipped with a configuration push-button, which is used for:

- Accessing troubleshooting mode. Refer to *Troubleshooting* on page 18.
- Enabling a mobile device (for example: smart phone, tablet) to access a web page for maintenance.
- Factory reset

The push button is illuminated by LEDs. The LED indications are summarized in the next section. The following sections describe the push-button functionality.

LED Indications

The following table describes the LED color indications for the Wireless Gateway or Repeater:

Color	Status	Indication
Red	OFF	No power
	ON	General error
	Blinking	• During factory reset
Blue	ON	• Communication between the Wireless Gateway or Repeater and the monitoring platform is OK
	Blinking	• No communication between the Wireless Gateway/Repeater and the downlink Repeater/ inverter

Chapter 3: Connection and Configuration

This section describes basic connection and configuration of one or more inverters.

You can connect the inverter(s) using just the Wireless Gateway. However, one or two Repeaters may be required to extend the Wi-Fi range.

You can choose to delay the installation completion, in which case the first configuration steps are performed by the installer, and the home owner can later connect the devices to electrical outlet(s) and the Wireless Gateway to a router. Wi-Fi connection should be established automatically.

NOTE

The Repeater adopts the SSID, password and authentication type of its paired Wireless Gateway instead of using the values on its label.

NOTE

Inverters within the site may connect to the Repeater or directly to the Wireless Gateway, depending on their distance from the gateway and on signal strength.

Before installing the Wireless Gateway, make sure that the inverter is running the required firmware version.

1. Before arriving at the site, verify that your mobile device is connected to the internet, and open SetApp. SetApp automatically downloads firmware upgrades.
2. At the site, open SetApp and follow the on-screen instructions. SetApp creates a Wi-Fi connection with the inverter and upgrades the inverter firmware.

→ To connect a Wireless Gateway and Repeater(s):

The following steps describe pairing a Wireless Gateway (and a Repeater if required), with the inverter and connecting the inverter to the monitoring platform via Wi-Fi. It is recommended to perform the pairing when the devices are close to each other.

NOTE

For multiple inverters connected on an RS485-bus, configure the RS485-bus as described in the Communication Options application note.

1. Prepare the inverter(s) and Wireless Gateway/Repeaters:
   a. Install the Wi-Fi antenna on the inverter(s), as described in the Antenna Installation guide.
   b. Open the SetApp application on your mobile device and go to the **Commissioning** screen.
   c. To configure the inverter(s) to connect to the monitoring platform via Wi-Fi, select either **Communication** or **Monitoring Communication** (depending on your SetApp version) and follow on-screen instructions.
   d. Connect the supplied antenna to the Wireless Gateway and Repeaters.
2. Use SetApp to pair the Wireless Gateway (and Repeater if required) with the inverter:
   a. Select **Communication ➔ Wi-Fi**. The Wi-Fi screen is displayed:
   b. Follow the instructions on the SetApp screen: Scan the QR codes, or enter the SSID (format: SEDG-XXXXXXXX-YY) and password, printed on the label on the back side of the device or on the first page of the quick installation guide.
      The credentials are transmitted to the inverter.
   c. On your mobile device, open the App Store or Google Play application and update SetApp.
   d. Wait for the message **All Device(s) Scanned** to appear on the SetApp screen.
   e. Plug the Wireless Gateway to a power socket.
   f. Connect the Ethernet cable between the Wireless Gateway and the home router used for Internet connection.
   g. Optionally, plug a Repeater into a power socket to extend the Wi-Fi range. Locate the devices within the distances defined in the technical specifications to ensure signal reception.
   h. Do one of the following:
      - To complete the installation now, select **Continue Now**. The inverter attempts to establish a connection with the Wireless Gateway and the monitoring platform. This may take up to 10 seconds, during which the push-button LED will fast blink purple or blue (Repeater). Upon completion, the LED will indicate the device status as described in *LED Indications* on page 9.

- To continue later, select **Continue Later**. If this option is chosen, the home owner should connect the devices to the electrical outlets and the router later on, at their own discretion.

i. After all devices are installed, verify that the blue LED on the Wireless Gateway is ON, which indicates the communication between the inverter and the monitoring platform has been established.

j. If connection failed, or after 2 minutes of attempts to connect, SetApp displays a failure indication and troubleshooting text. The LED will indicate the device status as described in *LED Indications* on page 9. For troubleshooting, refer to "Status, Errors and Troubleshooting " on page 13.

k. If required, repeat the above steps for additional inverters.

Chapter 4: Status, Errors and Troubleshooting

This section describes how to use the Wireless Gateway push button to check the system status, edit parameters, troubleshoot errors, or reset the device.

Accessing the Wireless Gateway and Repeater Web Page

You can check the Wireless Gateway parameters by accessing a web page.

If there is no Ethernet connection (**Maintenance** mode), you can use the Wireless Gateway/Repeater push button to access the maintenance web page.

→ To access the web-page when the Wireless Gateway is in the Operational mode after pairing:

1. On your mobile device, access the list of Wi-Fi networks. Select the access point with the SSID from the certification label (can be found printed on the certification label on the back of the device).
2. Open a browser on your mobile device (smart-phone, tablet).
3. When prompted, enter the IP address: 192.168.5.1 to view the Web page.

   The following is a web page example of the Wireless Gateway in the Operational mode:

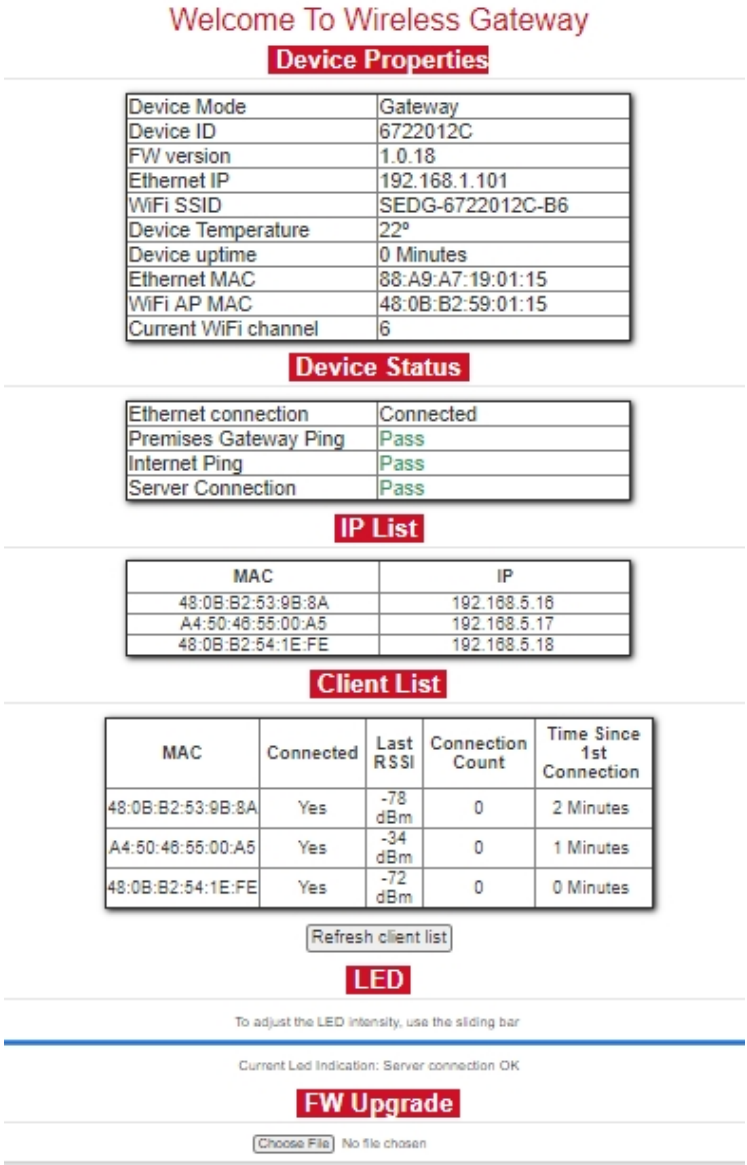

Figure 6: Geteway web page (Operational mode)

→ To access the Repeater web-page when it is in the Operational mode:

1. Open the Gateway web page and look for the Repeater IP address from the IP list table.The Repeater IP addresses start from 192.168.5.16. Use the Repeater MAC address to find its IP address (the MAC address is printed on the certification label at the back of the device).
2. Enter the Repeater IP address to view the Web page.

Accessing the Wireless Gateway Maintenance Web Page

The maintenance web page allows selecting a Wi-Fi channel, upgrading the device firmware and checking the device parameters.

→ To access the web-page when the wireless device is in the Maintenance mode:

1. Press the push-button for more than 4 seconds. The wireless device attempts to establish connection with a mobile device.
2. On your mobile device, access the list of Wi-Fi networks. The list will now contain one or more access points, as follows:
   - For Wireless Gateway: SEDG-GW-MAINT[XXXX]
   - For Wireless Repeater: SEDG-RPTR-MAINT[XXXX]. XXXX are the last 4 MAC characters on the label at the back of the device.
3. Select one of the above access points to view its parameters.
4. When prompted, enter the IP address: 192.168.5.1 to view the Web page.
   The following is a web page example of the Wireless Gateway Maintenance mode.

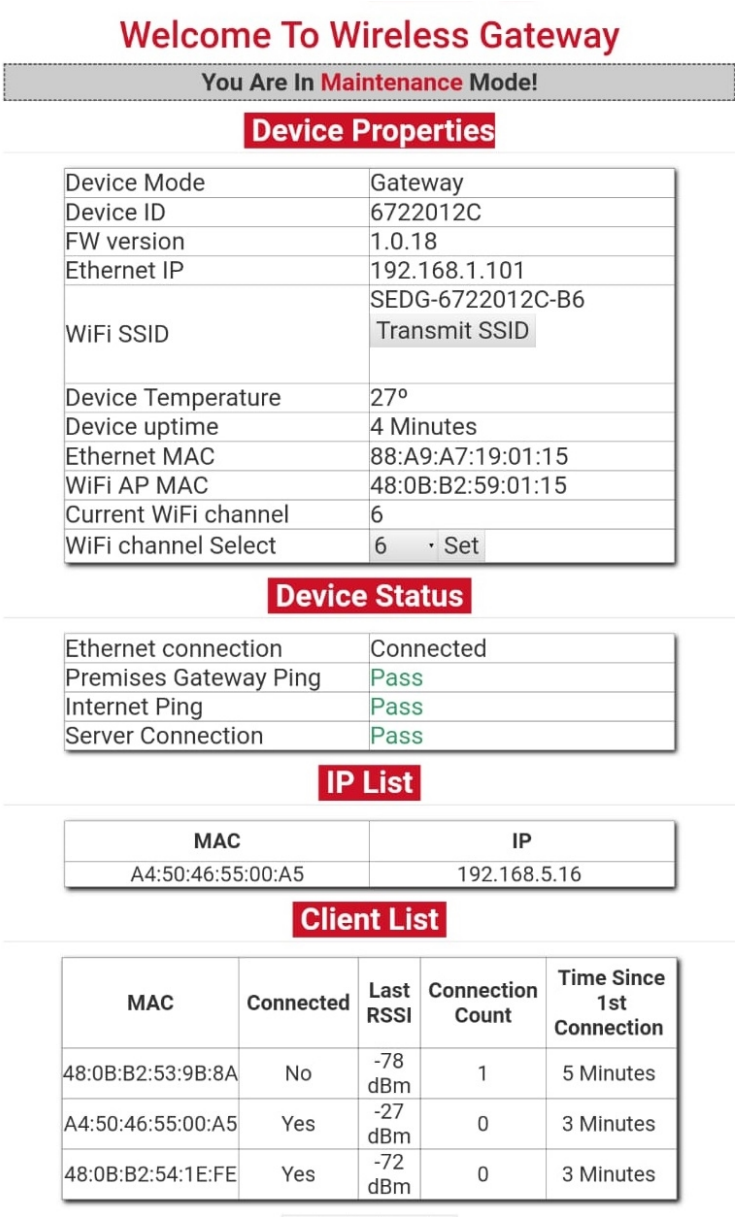

Figure 7: Getaway web page (Maintenance mode)

NOTE

For a Repeater, the WiFi SSID field shows the transmitted SSID based on its status. If a Repeater is paired its transmitted SSID is the one used by the Wireless Gateway. To show the Repeater's factory SSID, reset the Repeater to factory defaults, as explained in *Factory Reset* on page 19.

Troubleshooting

You can check for connectivity errors by observing the LED indications in troubleshooting mode.

This functionality is unavailable during pairing or if pairing failed.

→ To activate the error display:

Short-press the push-button (< 1 sec). The LED color changes in the following sequence:

Color1 blinks ➔ 0.25 sec pause ➔ **Color1** blinks ➔ 0.5 sec pause ➔ **Color2** blinks ➔ 0.25 sec pause ➔ **Color2** blinks.

The following table summarizes the colors and their indications, and how to troubleshoot errors.

Color 1	Color 2	Error #	Description	Troubleshooting
Red	Orange	1	LAN disconnected	Check the cable pinout assignment and cable connection. Refer to *Creating an Ethernet (LAN) Connection* in the *inverter installation guide*.
			No downlink Wi-Fi reception	No downlink Wi-Fi connection detected by the Repeater. Check that the Repeater is plugged in, or reduce the distance between the devices.
Red	Blue	2	DHCP Failed, or Invalid DHCP configuration	IP settings problem. 1. Check the router configuration. 2. Reset the Gateway. Consult with your network provider.
Orange	Red	3	Ping to router failed	Check the physical connection to the router. Check that the link LED at the router is lit (indicating physical link). If OK - contact your network provider, otherwise replace the cable or change it from cross to straight connection.

Color 1	Color 2	Error #	Description	Troubleshooting
Orange	Orange	4	Internet Ping Failed (to Google server)	Connect a laptop to the home router and check for internet connection. If internet access is unavailable, contact your IT admin or your internet service provider. If internet access is available, contact SolarEdge Support.
Orange	Blue	5	Server Ping Failed	Ping or connection to SolarEdge server failed. Check with your network administrator whether a firewall or another device is blocking transmission. If internet access is available, contact SolarEdge Support.
Green	Green	6	No fault	N/A
Blue	Red	7	Low uplink Wi-Fi reception	Low Wi-Fi signal received by the gateway/ Repeater. Check that the gateway/ Repeater is plugged in, or reduce the distance between the devices.
Blue	Orange	8	Low downlink Wi-Fi reception	Low Wi-Fi signal received by the Repeater. Check that the gateway/ Repeater is plugged in, or reduce the distance between the devices.

Factory Reset

Factory Reset is used to reset all the parameters to factory values, and erase the device list. Use this functionality to select a new Wi-Fi band in case no device can be connected, or multiple connection interruptions. During factory reset the red LED fast-blinks.

→ To reset the Wireless Gateway:

1. Unplug the device from the power socket.
2. Press the button while plugging the device into the power socket.
3. Release the button, when the LED starts to flash.

Support Contact Information

If you have technical problems concerning SolarEdge products, please contact us:

https://www.solaredge.com/service/support

Before contact, make sure to have the following information at hand:

- Model and serial number of the product in question.
- The error indicated on the product SetApp mobile application or on the monitoring platform or by the LEDs, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The communication method to the SolarEdge server, if the site is connected.
- The product's software version as it appears in the status screen.

Wireless Gateway and Wireless Repeater - Technical Specifications (North America)

Model: WIFI-GW

Performance		Unit
Transmit power (Max)	19.5	dBm
Receiver sensitivity	-94 to -69	dBm
EIRP with Antenna	24.5	dBm
Outdoor (LOS) range	400 / 1300	m/ft
Indoor range[1]	50 /160	m/ft
Frequency Band	2412 - 2462	MHz
Bandwidth	20	MHz
Antenna gain[2]	5	dBi
Network and Security		
Channels	1-11	
Security	WPA-PSK, WPA2-PSK, WEP	
Wireless LAN		
Standards	802.11b/g/n	
Modulation	802.11b - DSSS-CCK 802.11g - OFDM 802.11n - HT modulations MCS0-7	
Data rates	1 - 72	Mbps
Environmental		
Operating temperature	-20 to +60 / -4 to +140	°C / °F
Storage temperature	-20 to +60 / -4 to +140	°C / °F
Relative humidity (non-condensing)	0 to 80	%
Ingress protection	IP20	

[1] Approximate values, may differ depending on specific installation conditions.

[2] The antenna may have higher gain within EIRP power constraint.

Mechanical		
Dimensions (HxWxD; with pins)	66.3 x 48 x 63 / 2.6 x 1.8 x 2.5	mm/ inch
Weight without antenna	90 / 0.20	gr / lb
Weight with antenna	110 / 0.24	gr /lb
Power Supply		
AC Voltage (nominal)	100-240	Vac
AC frequency (nominal)	50/60	Hz
Max Input Current	50	mA
Standard Compliance		
Safety	UL62368-1:2014 Ed.2; CSA-C22.2 No. 62368-1:2014 Ed.2	
EMC	CFR 47 FCC Part 15, Subpart B; Canada ICES-003, Issue 6; ANSI C63.10:2013	
AC Plug	NEMA 1-15P (two-pole, no ground)	

Wireless Gateway and Wireless Repeater - Technical Specifications (Europe & APAC)

Model: WIFI-GW

Performance		Unit
Transmit power (Max)	15	dBm
Receiver sensitivity	-94 to -69	dBm
EIRP with Antenna	20	dBm
Outdoor (LOS) range	400 / 1300	m/ft
Indoor range(1)	50 /160	m/ft
Frequency Band	2412 - 2472	MHz
Bandwidth	20	MHz
Antenna gain(2)	5	dBi
Network and Security		
Channels	1-13(3)	
Security	WPA-PSK, WPA2-PSK, WEP	
Wireless LAN		
Standards	802.11b/g/n	
Modulation	802.11b - DSSS-CCK 802.11g - OFDM 802.11n - HT modulations MCS0-7	
Data rates	1 - 72	Mbps
Environmental		
Operating temperature	-20 to +60 / -4 to +140	°C / °F
Storage temperature	-20 to +60 / -4 to +140	°C / °F
Relative humidity (non-condensing)	0 to 80	%
Ingress protection	IP20	

(1)Approximate values, may differ depending on specific installation conditions.

(2)The antenna may have higher gain within EIRP power constraint.

(3)Channels 12-13 are allocated for future use.

Mechanical		
Dimensions (HxWxD; with pins)	66.3 x 48 x 82.7 / 2.6 x 1.8 x 3.2	mm/ inch
Weight without antenna	90 / 0.20	gr / lb
Weight with antenna	110 / 0.24	gr /lb
Power Supply		
AC Voltage (nominal)	100-240	Vac
AC frequency (nominal)	50/60	Hz
Max Input Current	50	mA
Standard Compliance		
Safety	IEC/EN 62368-1	
EMC	EN301 489-1; EN301 489-17; EN300 328; EN55032:2015+AC:2016; EN55035; EN61000-3-2:2041; EN61000-3-3:2013; EN61000-4-2:2009; EN61000-4-3:2006+A1:2008+A2:2010; EN61000-4-4:2012; EN61000-4-5:2014+A1:20174; EN61000-4-6:2014+AC:2015; EN61000-4-11:2004+A1:2017; AS/NZS 4268:2017	
AC Plug	EN 50075	

Interference Statements

Federal Communication Commission Interference 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. 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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all Wi-Fi product marketed in US must fixed to US operation channels only.

Industry Canada Statement

This device complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Interference Statements

Simplified EU Declaration of Conformity

SolarEdge Technologies Ltd. hereby declares that its Wireless Gateway, Wireless Repeater device is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at:

https://www.solaredge.com/sites/default/files/se_wireless_gateway_repeater_ce_declaration.pdf

The frequency and maximum transmitted power in EU:

2412 - 2472 MHz: 20 dBM

대한민국 (Republic of Korea)

해당 무선설비는 전파혼선 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없음


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