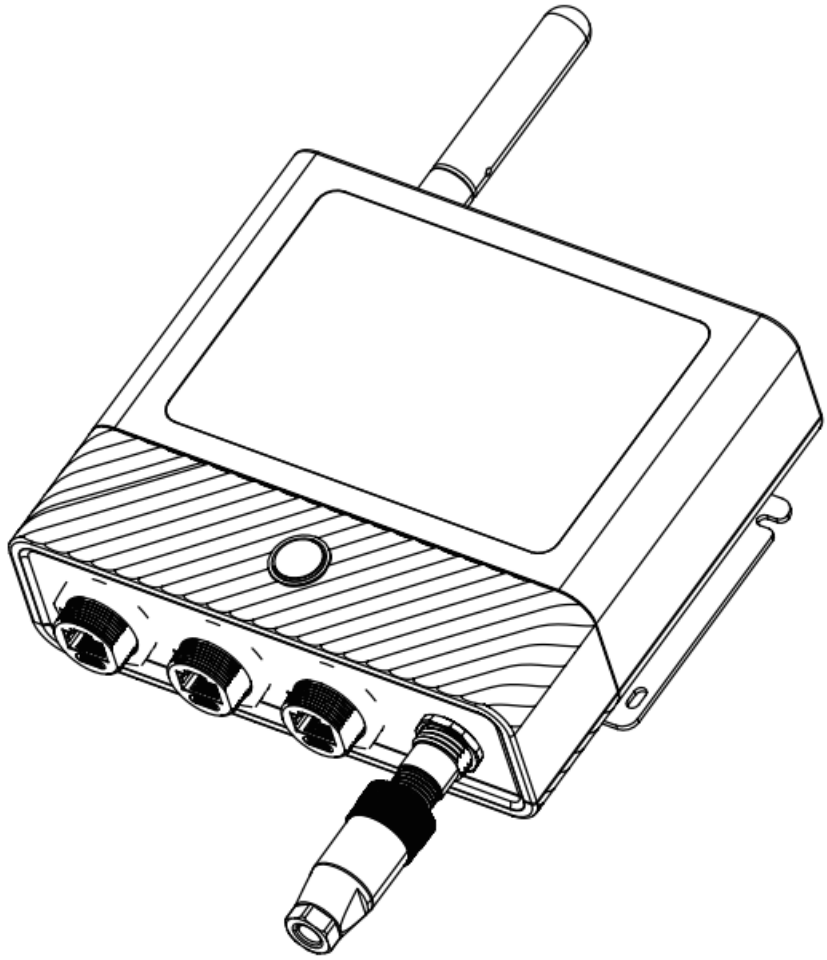
BLUETTI SEC-G1 EMS Controller User Guide

BLUETTI SEC-G1 EMS Controller



Please Read This Manual Before Use And Follow Its Guidance. Keep This Manual For Future Reference.

Contents

Thank You

Thank you for making BLUETTI a part of your family. From the very beginning, BLUETTI has tried to stay true to a sustainable future through green energy storage solutions while delivering an exceptional eco-friendly experience for our homes and our world.
That's why BLUETTI makes its presence in 100+ countries and is trusted by millions of customers across the globe.

Notice

BLUETTI's products, services, and features are subject to the agreed-upon terms and conditions during purchase. Please note that some products, services, or features described in this manual may not be available under your purchase contract. Unless otherwise specified in the contract, BLUETTI makes no representations or warranties of any kind, express or implied, with respect to the contents of this manual.

The contents of this manual are subject to change without notice. Please get the latest version from: **https://www.bluettipower.com/pages/user-guides**

If you have any questions or concerns about this manual, please contact BLUETTI support for further assistance.

Safety Instructions

- The EMS controller is ONLY applicable to BLUETTI products. Only authorized personnel should handle the internal component replacements. No end-user serviceable components available.
- The max available output power of the DC power source for this product should not exceed 15W.

⚠ 🕮 The symbol displayed is intended to remind you to read the instructions in the literature accompanying the product before operation and maintainer.

The IP Code of this product is IP65 only when the connector of multi-use port and the protecting cap of three RJ45 Connectors are in place.

⚠ **Warning:**

- Do not insert foreign objects into the product's ports.

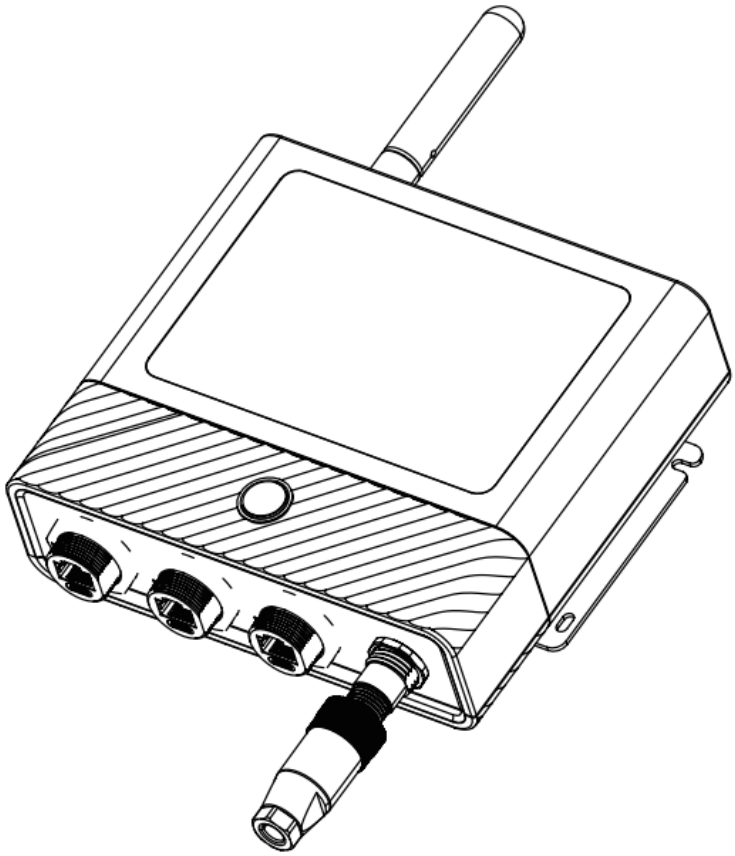
- Keep the product out of reach of children.
- In case of fire, use a dry powder fire extinguisher appropriate for the product.

Key Features

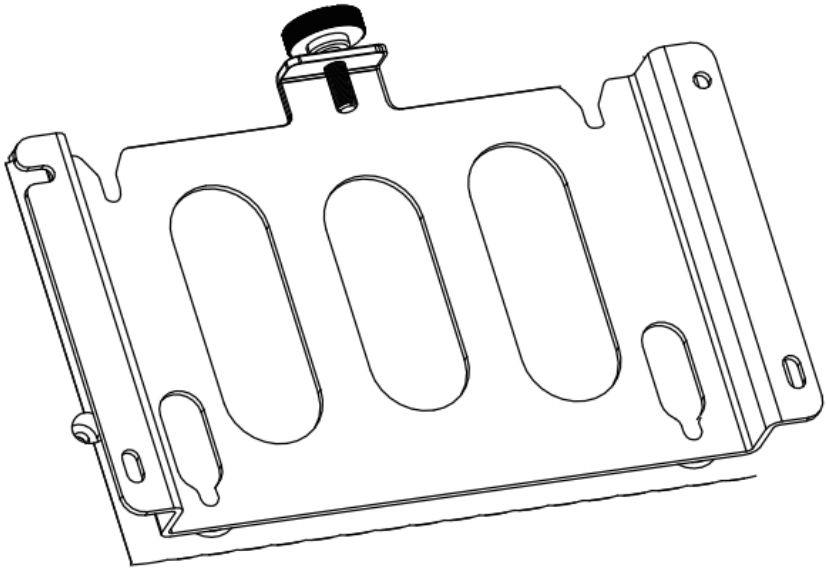
- Control and monitor one or multiple inverters remotely from anywhere.
- Intelligently balance loads, optimize battery usage, and make the most of solar energy across multiple inverters.
- A touchscreen to operate in a visual manner.

Packing List

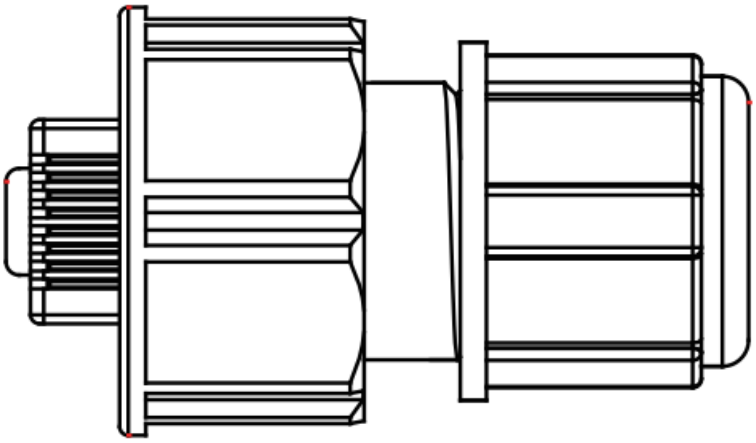
- EMS Controller



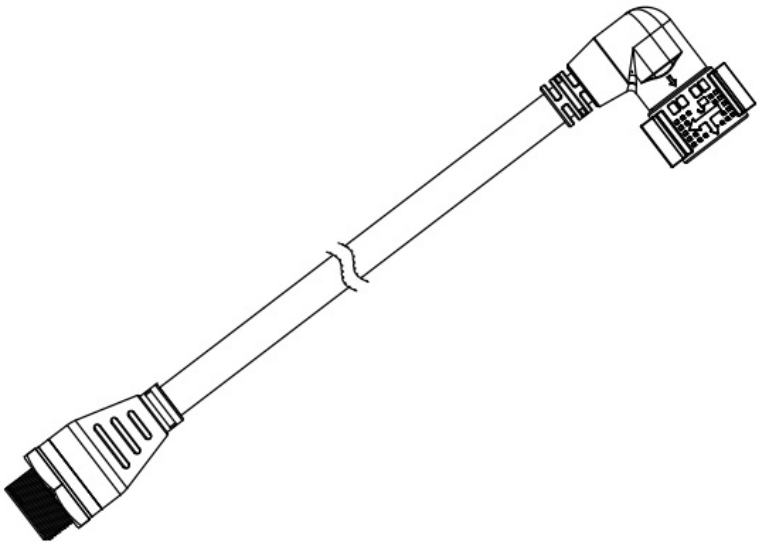
- Bracket



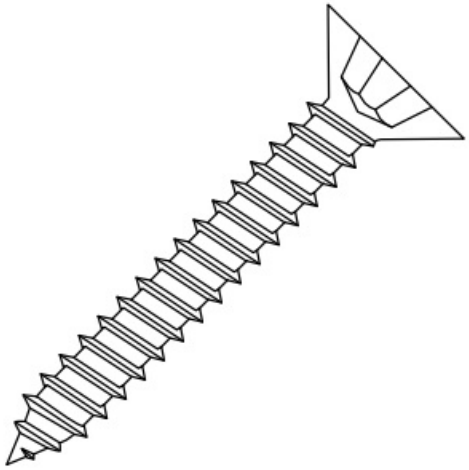
- RJ45 Male Connector (*2)



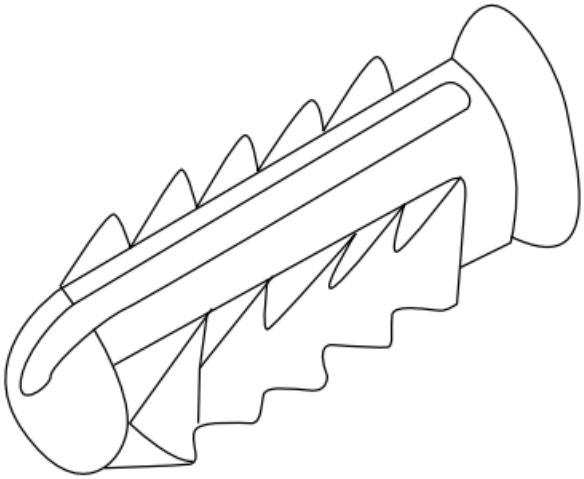
- RJ45 Connection Cable (*2)



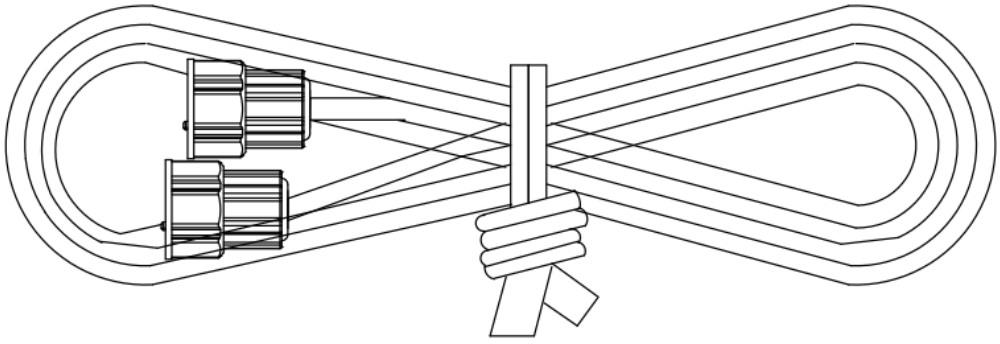
- Self-tapping Screw (*4)



- Expansion Plug (*4)



- Network cable (*2)



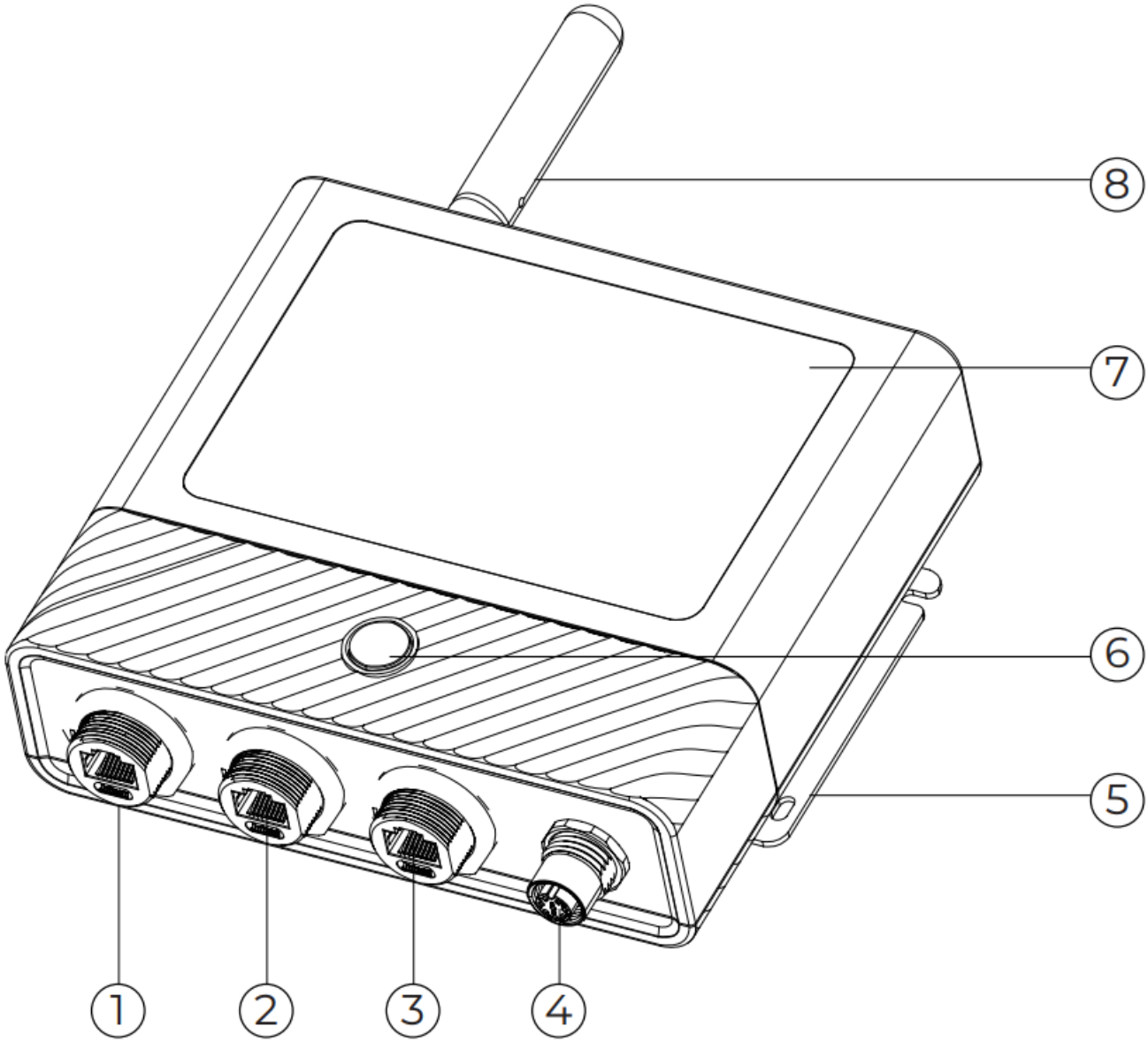
- User Manual & Warranty Card

⚠ **Notice:**

Prepare an AC PV meter that meets the inverter's specific requirements.

Product Overview

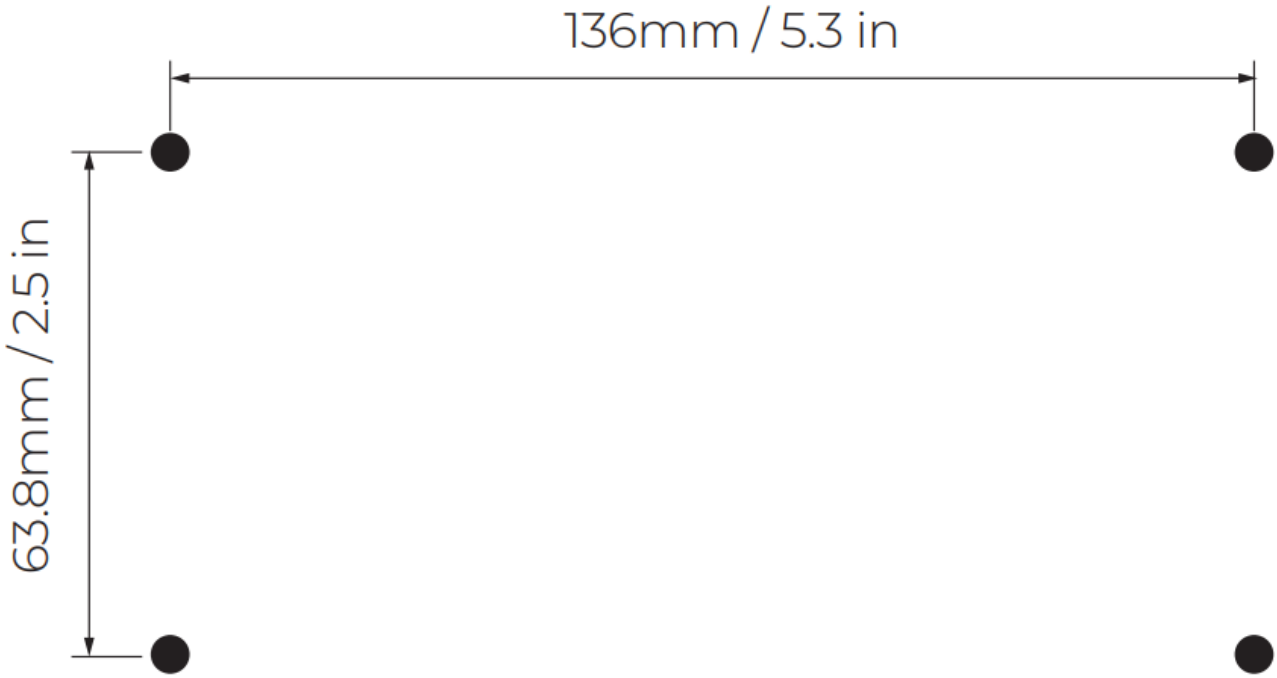
No.	Name	Description
1-3	PCS Port 1-3	Connects to the inverter's LINK PORT or other devices.
4	Multi-use Port	For third-party meter and charging station communication, as well as external ATS control. Ensure the connected meter meets the inverter's requirements.
5	Bracket	For mounting the EMS controller on the wall. Pre-assembled with the EMS controller. Remove it before installing the EMS controller.
6	Alarm Indicator / HOME Button	**Steady Green:** Normal operation Steady Yellow: Minor alarm **Steady Red:** Severe alarm **Off:** Power off During normal operation, press to access the home page.
7	Touch Screen	View EMS controller status, energy settings, and more.
8	Antenna	For internal WiFi and Bluetooth signal transmission and reception.



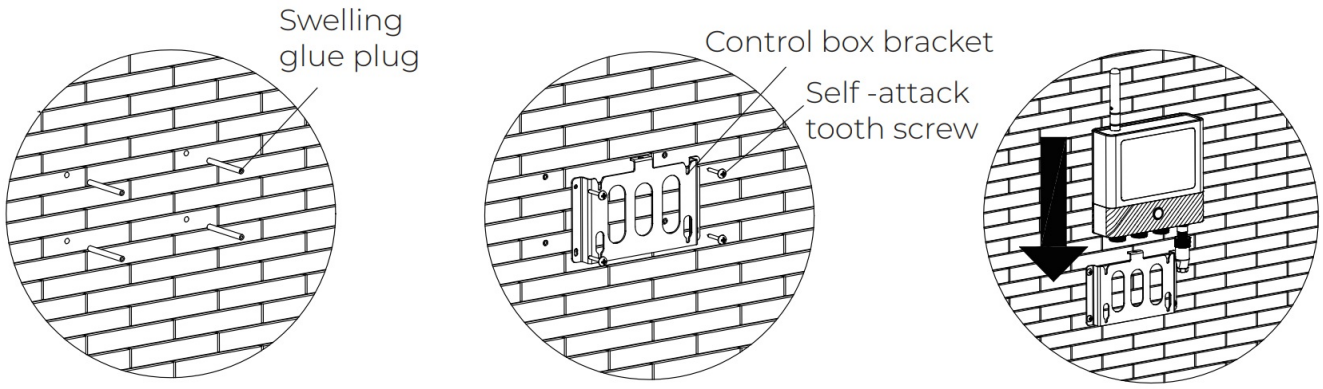
EMS Controller

For a strong and uninterrupted wireless signal, install the EMS controller in an open area, away from obstructions. Keep it close to your home WiFi router.
Do not place the controller near walls made of steel-reinforced concrete or metal, as these materials can disrupt both WiFi and Bluetooth signals.

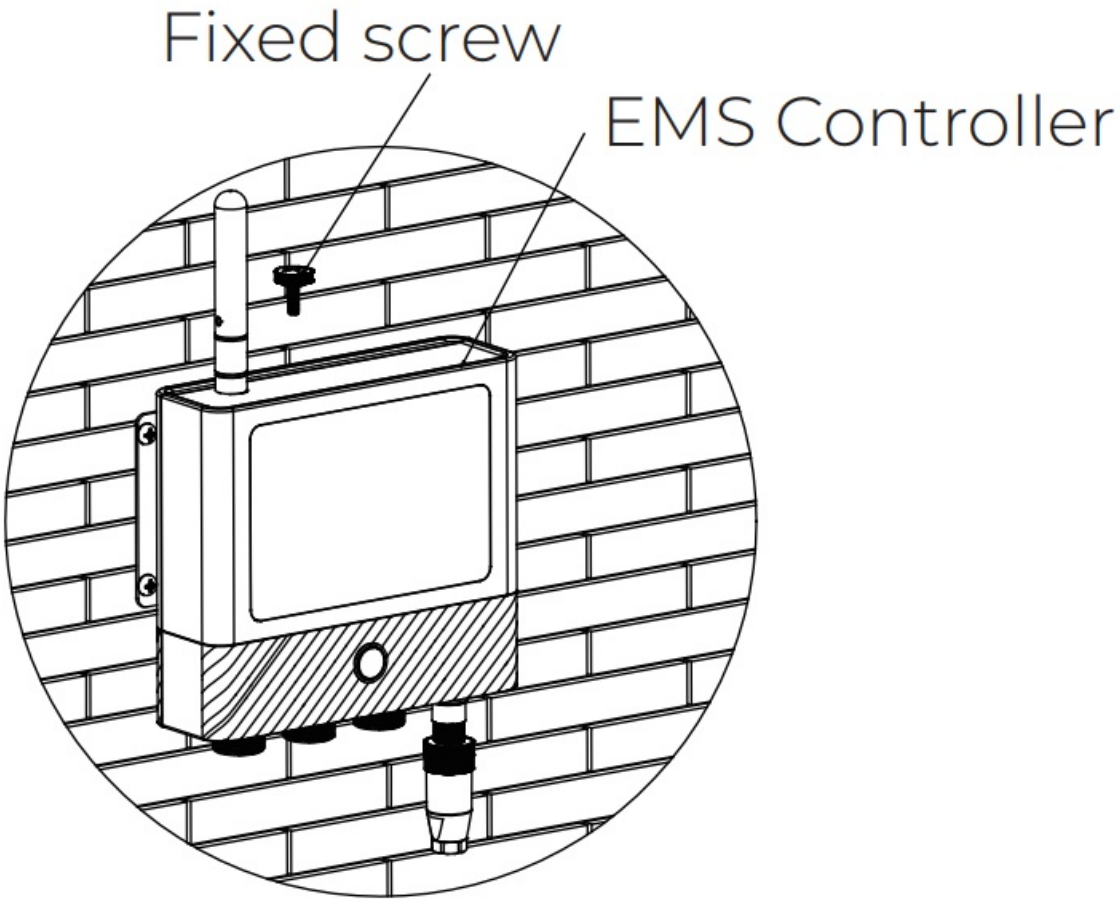
1. Remove the screws from the top of the bracket.
2. Drill 4 holes in the wall with an electric drill (5mm). The depth of the holes is 1.02in (26mm)



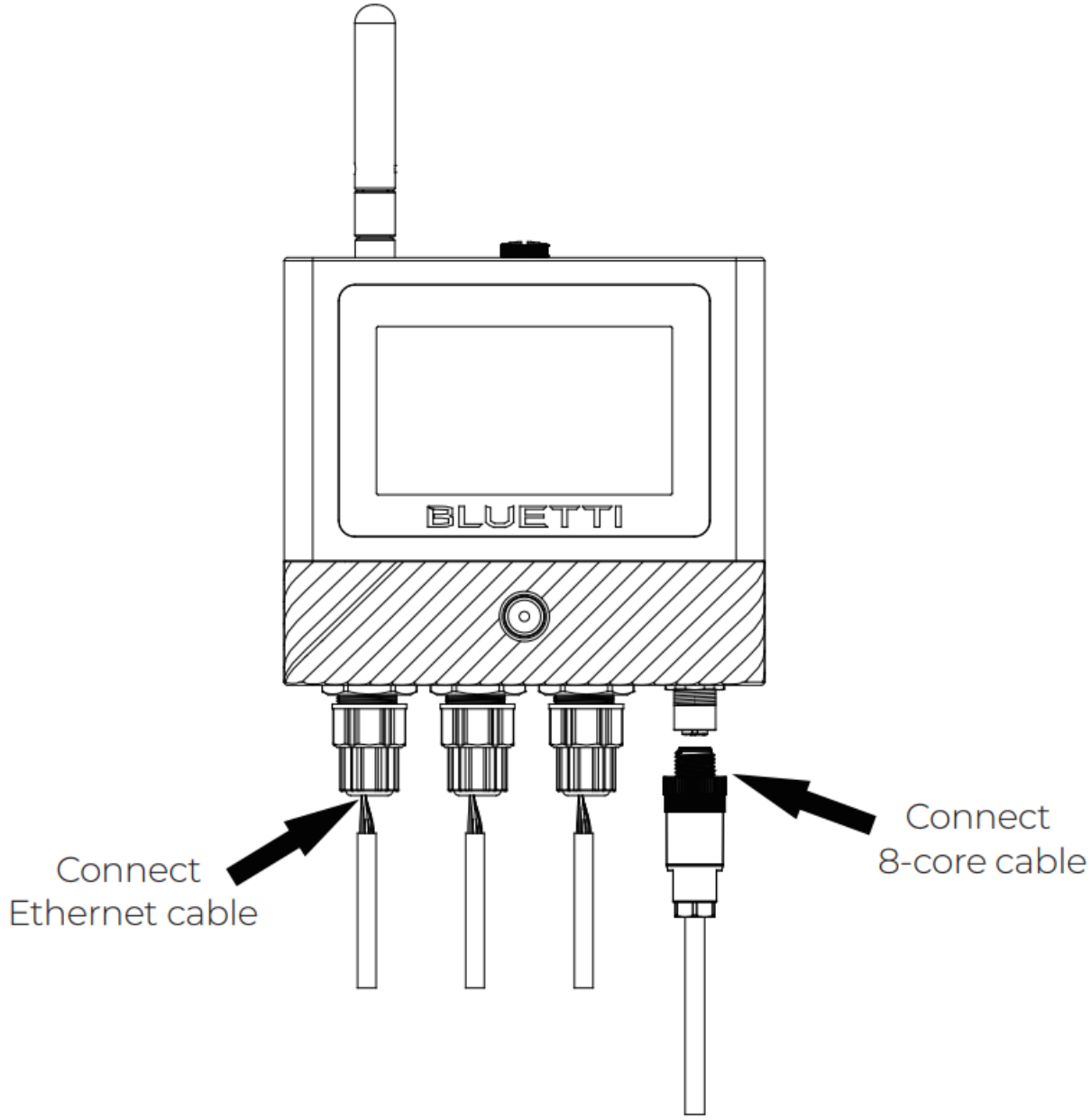
3. Put the bracket back on and snap the controller into position.



4. Secure the EMS controller using the screws removed in step 1.

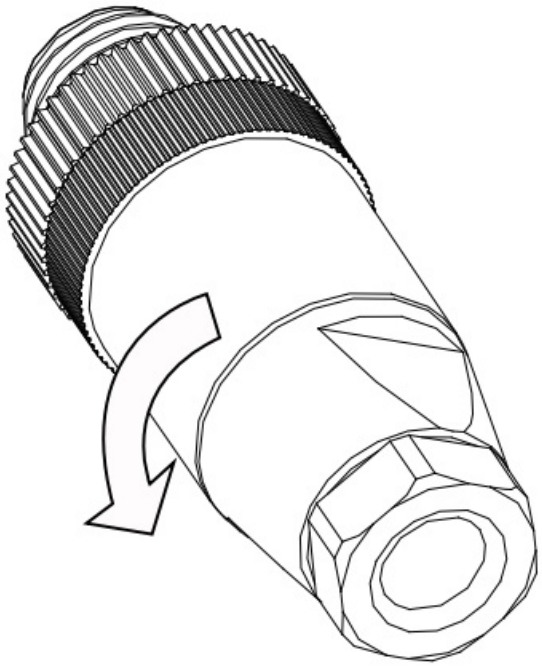


8-core Cable and Ethernet Cable Connection



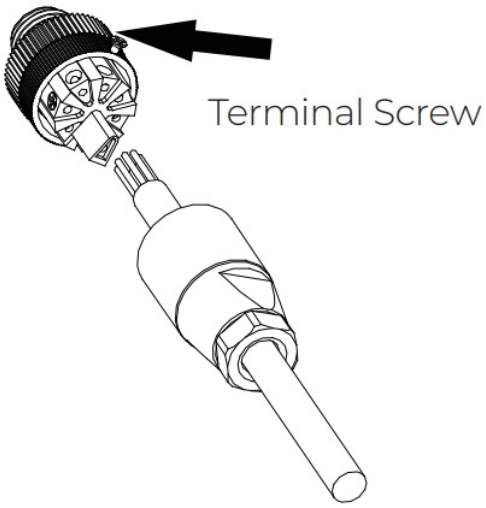
Connecting 8-core cable:

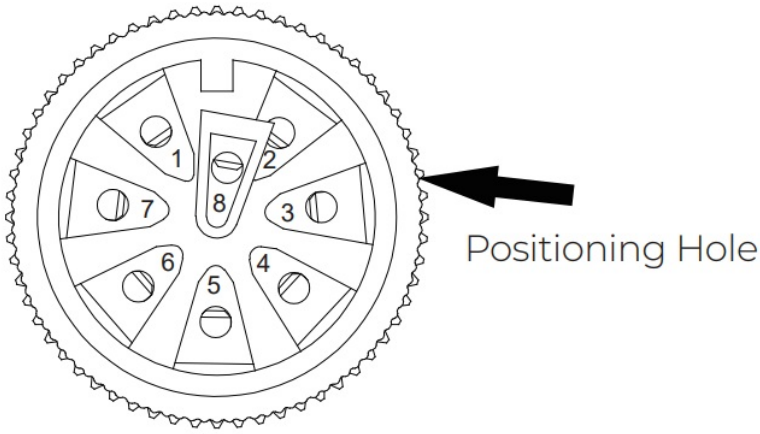
Step 1: Prepare an 8-core cable (recommended: UL2238, 24AWG) of the appropriate length.
Step 2: Twist off the end cap of the 8-core cable.

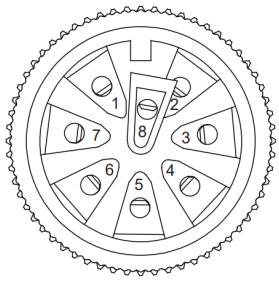


Step 3:

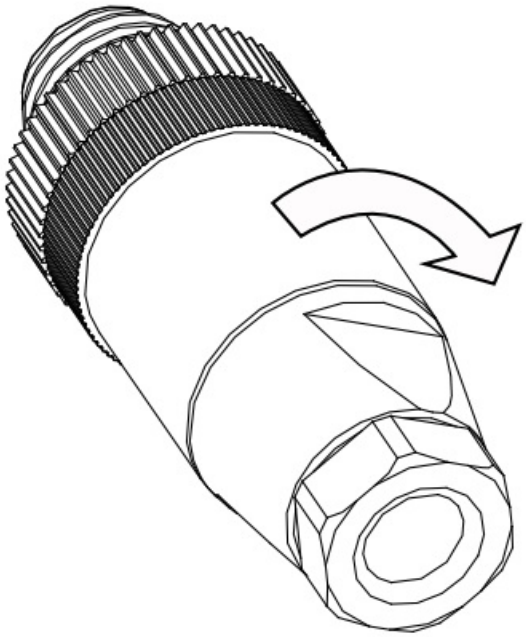
Pass the 8-core cable through the cap.
Loosen the terminal screw.
Refer to the 8-core terminal sequence in the table, insert the cores accordingly, and tighten the screw.





Connector	Function	Description	Note	Reference Diagram
1	RS485-B2	Charging station RS485 communication	Connects to RS485-B-	
2	RS485-A2		Connects to RS485-A+	
3	RS485-B1	Meter RS485 communication	Connects to grid meter and AC PV meter RS485-B-	
4	RS485-A1		Connects to grid meter and AC PV meter RS485-A+	
5	GND	I/O reference ground	For both 9-15VDC output and DRMs input	
6	EXT_IN	DRMs input	Signal input	
7	9-15VDC	9-15VDC/0.2A output	Power supply for ATS control	
8	GEN_NO	SPDT relay NO terminal	I/O control for ATS	

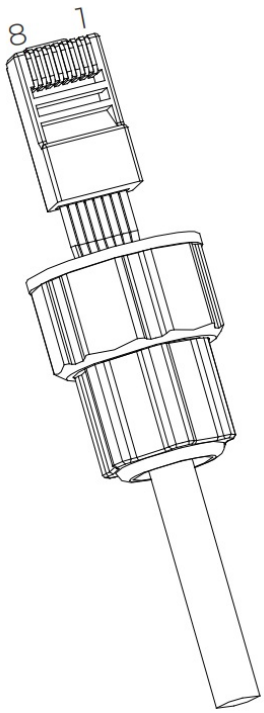
Step 4: Twist the cap back into place.



Step 5: Align the 8-core connector with the multi-use port and tighten it up.

Connecting Ethernet cable:

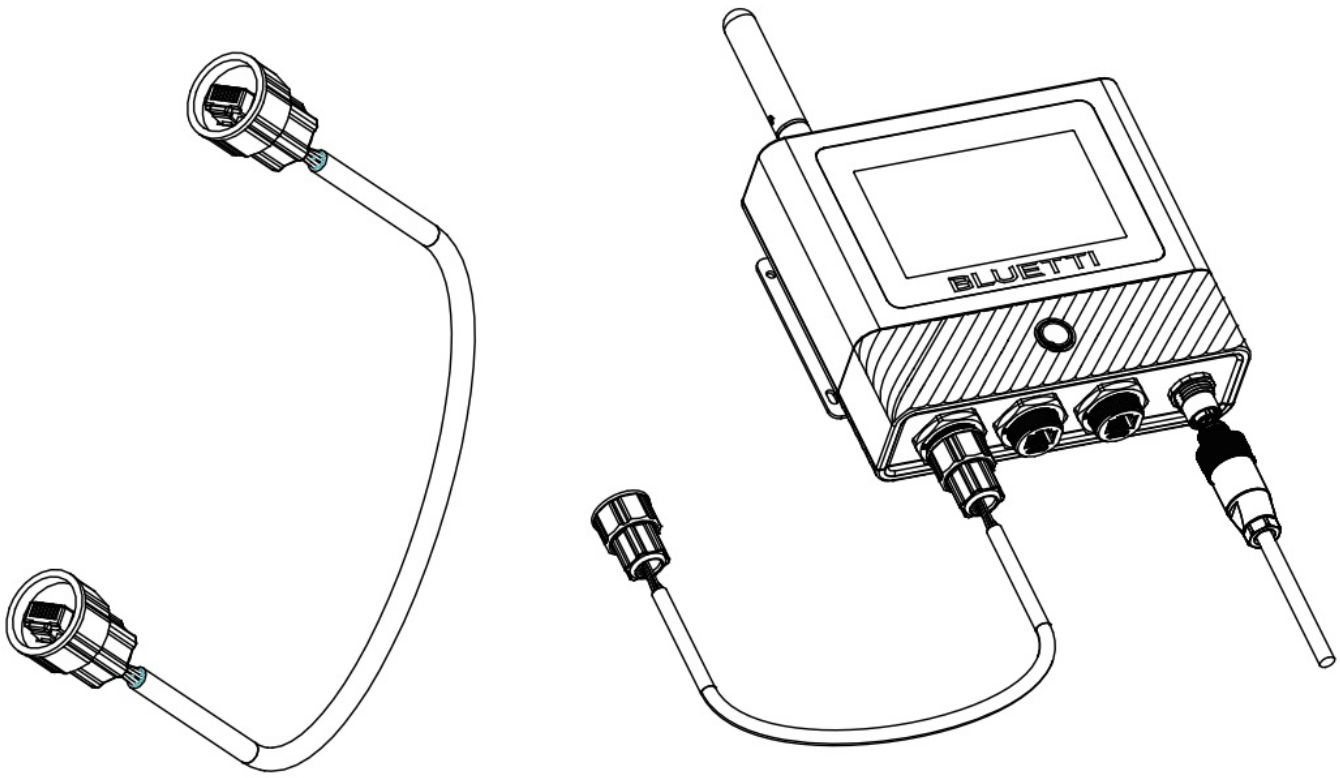
Step 1: Prepare an Ethernet cable of the appropriate length.
Step 2: Refer to the table below, and pass through the Ethernet cable through the cap. Use a crimping tool to properly crimp one end of the cable.

Pin	Function	Color	Description	Reference Diagram
1	GND	Solid Brown	Reference ground for power in put	
2	9-15VDC	Brown White	EMS controller power supply 9 -15VDC input	
3	CANH	Solid Green	For communication with PCS a nd BMS	
4	CANL	Blue White		
5	PCS_CANH	Solid Blue	For parallel connection of PCS units	
6	PCS_CANL	Green White		
7	PCS_485A+	Solid Orange	For parallel connection of PCS units	
8	PCS_485B-	Orange White		

⚠ **Notice:**

PCS1-3 ports are RJ45 network ports, the ports can not be connected to Ethernet and other devices, otherwise it may lead to equipment damage.

Step 3: Repeat the above steps to crimp the other end of the cable.



Step 4: Connect one end of the Ethernet cable to the PCS port, and twist up the cap. The other end of the cable

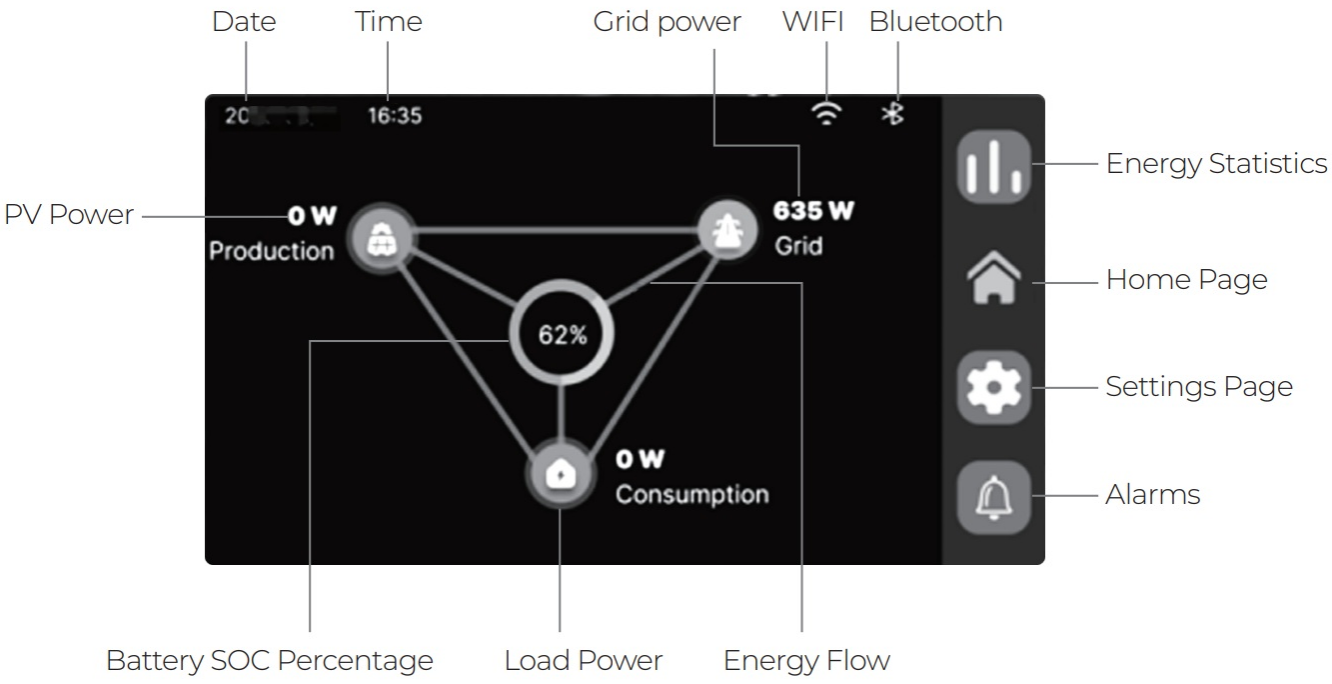
serves as an inverter parallel terminal. Connect it to the inverter using an RJ45 connection cable*

* Connections vary on a case-by-case basis.

⚠ **Attention:**

Safely secure the end cap when the PCS port is not in use.

EMS Controller Interface



Tap to view the Grid feed-in, Grid purchase, Consumption, and PV production by day, month, year, or up to now.

Tap to monitor the energy flow within the system.

Tap to configure:

- Charging and discharging settings. Besides using the BLUETTI App, you can also adjust system settings here. Please refer to the EMS Controller Interface User Manual for details.
- Display settings, including brightness, alarm sounds, and more.

Tap to check the alarm information. Please refer to the BLUETTI Home Energy Storage System User Manual for details.

Specifications

Item	Description
Communication Interface	WiFi (2.4GHz) & Bluetooth (4.2)
External Interface	**3 × RJ45:** connects to inverters or other devices **1 × 8-core Connector:** connects to meter and so on
Antenna	External Rod Antenna(North American version)
Data Interface	Up to 3 Independent CAN (250kbps)
Input Voltage	9V-15VDC
Input Current	600mA Max.
Rated Typical Power Consumption	< 5W
Dimensions (L × W × H)	6.1in × 1.81in × 5.43in / 155mm × 46mm × 138mm (Excluding Bracket)
Weight	1.43lbs / 0.65kg
Display	4.3”, 480*272 resolution, color LCD
Number of Connected Inverters	1 to 3 Units
Communication	Bluetooth / WiFi
Firmware Upgrade	OTA
Warranty	6 Years
Working Temperature	-4 °F to 140 °F / -20 °C to 60 °C
Relative Humidity	5% to 95%
Protection Grade	IP65
Cooling Method	Natural Cooling
Working Altitude	≤ 6561ft / 2000m

Radio Frequency			
	Operating Frequency	**Maximum Transmit power**	**Modulation mode**
WIFI	2412MHz 2472MHz	19.27dBm	BPSK/QPSK/16QAM/64QAM/DBPSK/DQPSK/CCK
Bluetooth 4.2	2402MHz 2480MHz	9.39dBm	GFSK,π/4-DQPSK,8DPSK
Radar Sensor	5800MHz 5860MHz	-1.69dBm	CW

Appx. 1 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. Any 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

Appx. 2 IC Warning statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

IC RF exposure statement:

This equipment complies with IC Radiation exposure limit set forth for uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the product and your body.

This radio transmitter 29079-SECG1 has been approved by Innovation, science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated.Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna type	antenna gain
Omni Antenna with SMA	2.33dBi

Warranty Instructions

1. 72-months warranty
2. After-Sale-Service mailbox: **service@bluettipower.com**
3. Following situations will go against the warranty terms:

   A. Any problems, malfunction or damages due to incorrect using methods or caused by unauthorized disassembly or repair.

   B. The damage caused by force majeure, fire and other extreme abnormal conditions.

C. Without the warranty card or the card records is not clear, complete, or without the sales company seal.

Customer Support

For more information, please visit: **Web:** https://www.bluettipower.com

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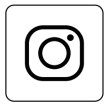

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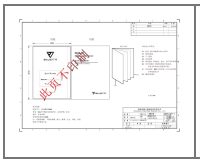
service@bluettipower.com (After-sales)

Documents / Resources

	BLUETTI SEC-G1 EMS Controller [pdf] User Guide SEC-G1, SEC-G1 EMS Controller, EMS Controller, Controller

References

- BLUETTI: Portable Power Station, Solar Generator Kit
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- User Guide - BLUETTI
- User Manual