



END1CTLA Monitoring Board

User Manual

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1 Appearance

Figure 1-1 Monitoring board



Figure 1-2 WiFi antenna



Figure 1-3 PCB onboard antenna



2 Functions

- The monitoring board receives information from the sampling control unit, processes, stores, and displays the information, and reports it to the management system.
- The monitoring board receives commands and upgrade program packages from the management system or mobile app, parses them, and then delivers them to the sampling control unit for execution.
- Multiple ports such as WiFi/RS485 are provided for communication and networking.
- The WiFi module soldered on the monitoring board transmits and receives radio signals.

3 Specifications

I. Board electrical specifications

① Board operating environment

Environmental Specifications				Operating Environment Condition	Transportation Environment Condition	Storage Environment Condition	Remarks
Item	Specifications	Unit					
Climate	Temperature	Lower threshold	°C	-35	-40	-40	/
		Upper threshold	°C	+70	+80	+80	/
	Humidity	Lower threshold	%	5	/	5	/
		Upper threshold	%	95	/	95	
		Condensation	Yes/No	No	/	No	
	Altitude	Lower threshold	m	0	0	0	0-3000 m (above 2000 m: refer to GB/T 3859.2 derating specifications.)

② Key electrical specifications

Table 3-1

Item	Specifications	Remarks
Input voltage range	12 V DC±10%	
Board power consumption	(0.5~2.5) W	
Radio operating frequency	2.4 (2.412~2.612) GHz	
Radio transmit power	16 dBm +/- 3 dB	Average

II. Board port definitions

Table 3-2

Pin No.	Pin Name	Description	Remarks
1	12VDC	12 V power input	
2	RS485A	RS485 +	
3	12VDC	12 V power input	
4	RS485B	RS485 –	
5	USB_DM	USB data line	
6	USB_VBUS	USB power supply	
7	USB_DP	USB data line	
8	GND	Ground	
9	PLC_TXD	PLC transmit	
10	5VDC	5 V power supply	
11	PLC_RXD	PLC receive	
12	GND	Ground	
13	CTLS	Battery enable control signal	
14	RapidSHD	Rapid shutdown signal	
15	SPS_FAULT	DC standby power supply (SPS) status detection signal	
16	Alarm	Alarm signal	
17	GND	Ground	
18	CANL	CAN communication data line	

Pin No.	Pin Name	Description	Remarks
19	GND	Ground	
20	CANH	CAN communication data line	

4 Applicable Products

The monitoring board is applicable to SUN2000L high-efficiency series:

- China edition
- Europe edition
- North America edition

5 Installation

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user manual of the end product which integrates this module. The module shall be only used with listed antenna(s) that has been originally tested and certified with this module. The final end product must be labeled in a visible area with the following: contains FCC ID: QISEND1CTLA or contains IC: 6369A-END1CTLA.

6 STATEMENT

1.1 U.S.A Regulatory Compliance

1.1.1 FCC Part 15B

Product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device does not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

If this device is modified without authorization from Huawei, the device may no longer comply with FCC requirements for Class B digital devices. In that a case, your right to use the device may be limited by FCC regulations. Moreover, you may be required to correct any interference to radio or television communications at your own expense.

This device 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 device generates, uses and radiates radio frequency energy. If it is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user may take one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Reinforce the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for assistance.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

1.2 Canada Regulatory Compliance

1.2.1 RSS-Gen statement- Licence-Exempt radio apparatus

ENGLISH:

This product complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

FRENCH:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage;
 - Connect the device into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio or TV technician for assistance.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

1.2.2 RSS-Gen statement – Detachable transmitter antenna

ENGLISH:

This device, as licence-exempt radio apparatus, equips with detachable antenna.

This radio transmitter (IC: 6369A-END1CTLA) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Table 6-1 lists all antenna types approved for use with the device.

FRENCH:

Cet appareil, en tant que dispositif radio exempt de licence, fonctionne avec une antenne amovible.

Le présent émetteur radio (IC: 6369A-END1CTLA) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Table 6-1 liste de tous les types d'antennes pour lesquelles l'utilisation avec l'appareil est approuvée.

Table 6-1 Approved antenna types / Types d'antennes approuvées

Antenna Type / Type d'antenne	Maximum Permissible Gain (in dBi) / Gain maximum autorisé	Remark / Remarque
Omni-directional	4.5 dBi	External

1.3 RF Exposure (Health) Information

This equipment complies with relevant RF radiation exposure limits set forth for a public/uncontrolled environment. This equipment should be installed and/or operated with a minimum distance as below between the radiator and your body.

- 20 centimeters