SmartGen

MAKING CONTROL SMARTER

CMM366B-4G/CMM366CAN-4G

CLOUD MONITORING COMMUNICATION MODULE

USER MANUAL

郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen众智 **Chinese trademark**

SmartGen **English trademark**

SmartGen — make your generator ***smart***
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Table 1 – Software Version

Date	Version	Note
2020-03-10	1.0	Original release.
2020-05-15	1.1	Fix Fig. 14 Unit from cm to mm.
2020-08-04	1.2	Fix Fig. 6 Link interface communication line according to the real Figure.
2021-06-07	1.3	1. Apply the latest user manual format; 2. Change font from Arial to Roboto; 3. Modify APP installation steps; 4. Change the app download QR code of CMM366B-4G mask.
2021-10-21	1.4	1. Modify Fig.1 Panel Indicator; 2. Add 2 notes in 4.4 SIM Card Installation.
2022-08-30	1.5	Update company logo and manual format.

CONTENT

1 OVERVIEW

CMM366B-4G/CMM366CAN-4G Cloud Monitoring Communication Module is 4G wireless network communication protocol conversion module of all-modes, which can achieve genset (with SCI) connection with Internet. After logging into cloud server, module will receive corresponding genset controller communication protocol from cloud server. Cloud monitoring module can obtain genset data information via RS485, USB, LINK, CAN, or RS232 port, and send the information to related could server via 4G wireless network. Users can monitor genset running status at real time and check genset running records by mobile APP (IOS or Android), or PC etc. terminal device.

It not only can realize genset monitoring, but also can be connected with some digital alarm inputs, to realize monitoring of genset entrance guard, prevention of burglary, fire control etc. ancillary facilities.

It has GPS positioning function, which can upload the obtained longitude and latitude, altitude information at real time to the corresponding cloud server.

CMM366CAN-4G cloud monitoring communication module has CAN port, but CMM366B-4G hasn't. Except for this, these two cloud monitoring communication modules has same functions.

2 PERFORMANCE AND CHARACTERISTICS

- Connect to cloud server via 4G wireless network, one cloud monitoring module for one genset;
- Multiple communicating ports with genset control module: RS485, RS232, LINK, CAN port, USB (Host), which can monitor most genset control modules of leading brands internationally;
- Wide power supply: DC (8~35)V, which can directly use engine build-in starting battery;
- With ARM-based 32-bit SCM, high integration of system and strong programming ability;
- GPS positioning function for obtaining genset location information, to realize genset positioning;
- Apply network data communication protocol of JSON format, upload the genset data changes at real time, meanwhile compression algorithm is applied, which extremely reduces network flow;
- Immediately upload the data to cloud server when genset alarms occur;
- Event log memory function, which can ensure data won't get lost when network is not steady;
- Cloud Modem can be upgraded by 4G network, convenient for module' s maintenance;
- 2 configurable digital input ports, which can be connected with external alarm signals;
- Module panel has power and multiple communication status indicators; clear display module working status;
- Lamp test function;
- Parameter setting function: users can do parameter setting by module USB port;
- Apply standard Π-type 35mm guide-rail installation or screw-fixed installation, and the module can be installed in the genset control box;
- Modular structure design, flame retardant ABS enclosure, light weight, compact structure with easy installation.

3 SPECIFICATION

Table 2 – Technical Data

Items	Contents
Operating Voltage	DC8.0V~35.0V, continuous power supply.
Power Consumption	Standby: ≤2W Working: ≤5W
Digital Input	Digital Input, connect (B-) is active.
USB Host	A-type USB female port
RS485 Port	Isolated type
RS232	General type
LINK	SmartGen exclusive port
USB Device	B-type USB female port
CAN Port	Isolated type
GPRS Port	Standard SMA port (female), SMA port (male) for antenna.
GPS Port	Standard SMA port (female), SMA port (male) for antenna, active antenna.
Wireless Network	LTE-TDD/LTE-FDD/HSPA+/TD-SCDMA/EVDO GSM/GPRS/EDGE
Case Dimensions	72.5mmx105mmx34mm
Working Temperature	(-25~+70)°C
Working Humidity	(20~93)%RH
Storage Temperature	(-30~+80)°C
Weight	0.15kg

4 PANEL AND TERMINAL DESCRIPTION

4.1 PANEL INDICATOR AND KEYS

Fig.1 – Panel Indicator

Table 3 – Indicators Description

Icon	Note
POWER/ALARM	Green LED Light On: Power supply normal indicator; Red LED Light On: Common alarm indicator.
RS485 (Red)	Normally Light Off: RS485 disabled; Normally Light On: Communication failed; Flash: Communication normal.
USB (Red)	Normally Light Off: USB(Host) disabled; Normally Light On: Communication failed; Flash: Communication normal.
GPS (Red)	Normally Light Off: GPS disabled; Normally Light On: GPS not gained satellite signal; Flash: GPS gained satellite signal.
RS232/LINK (Red)	Normally Light Off: RS232/LINK Disabled; Normally Light On: Communication failed; Flash: Communication normal.
CAN (Red)	Normally Light Off: CAN disabled; Normally Light On: Communication failed; Flash: Communication normal.
GPRS/4G (Red)	Normally Light Off: 4G module logins with server unsuccessfully; Normally Light On: Login with server successfully; Flash: Real-time communication normal.

Internal Lamp Test/Reset Key:

Press and hold this key for 1s, all the LEDs are illuminated; press and hold for 10s, recover default configurations of CMM366B-4G/CMM366CAN-4G and all LEDs flash for 3 times.

NOTE: After reset the module, parameters need to be re-configured via PC software or mobile APP. Please operate cautiously.

4.2 GPRS/4G ANTENNA PORT

Connect GPRS antenna to GRRS/4G port.

Antenna port: 50Ω/SMA female.

4.3 GPS ANTENNA PORT

GPS enabled, connect GPS antenna to CMM366B-4G/CMM366CAN-4G.

NOTE: GPS antenna needs to be placed to open outdoors, otherwise location information may not be accurate or cannot be gained.

Antenna port: 50Ω/SMA female, active antenna.

Fig.2 – CMM366B-4G/CMM366CAN-4G Antenna Connection

NOTE: GPRS antenna and GPS antenna cannot be connected reversely.

4.4 SIM CARD INSTALLATION

Insert 4G SIM card. CMM366B-4G/CMM366CAN-4G will connect to server via wireless mobile network.

NOTE: This module supports 4G wireless network of all modes. Standard SIM card is applied (size: 25mmx15mm); GPS indicator and GPRS indicator flash at the same time means SIM card is not inserted or SIM card is in bad contact.

After removing the head cover, the installation steps are as below:

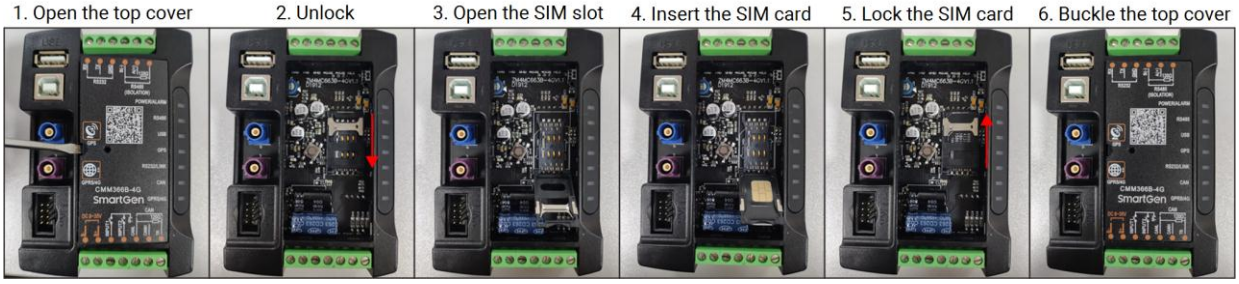

Fig.3 – SIM Card Installation Steps

NOTE: IMEI number can be viewed from the controller side.

NOTE: One card for one controller, the same card can't be removed from a module and inserted into another module, which will affect the normal use.

4.5 RS485 PORT

Receive genset data information by connecting RS485 port with genset controller RS485 port. 120Ω terminal resistor is recommonded, and short connect RS485 A(+) and TR terminal.

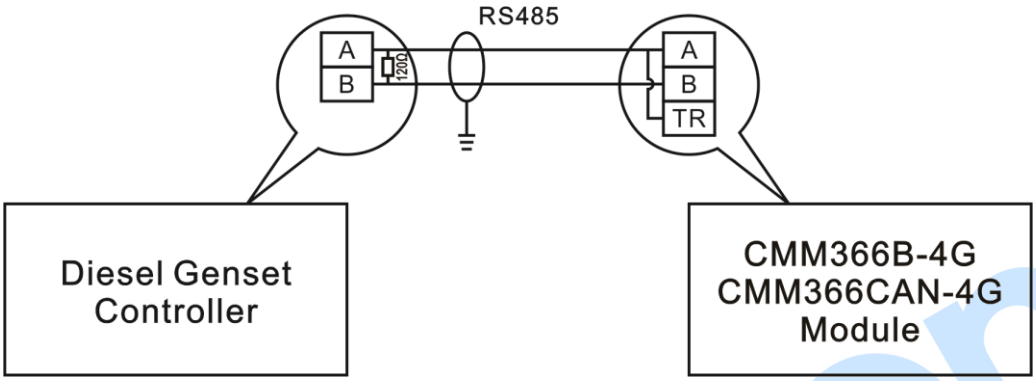

Fig.4 – RS485 Connection Diagram

4.6 RS232 PORT

Receive genset data information by connecting RS232 port with genset controller RS232 port.

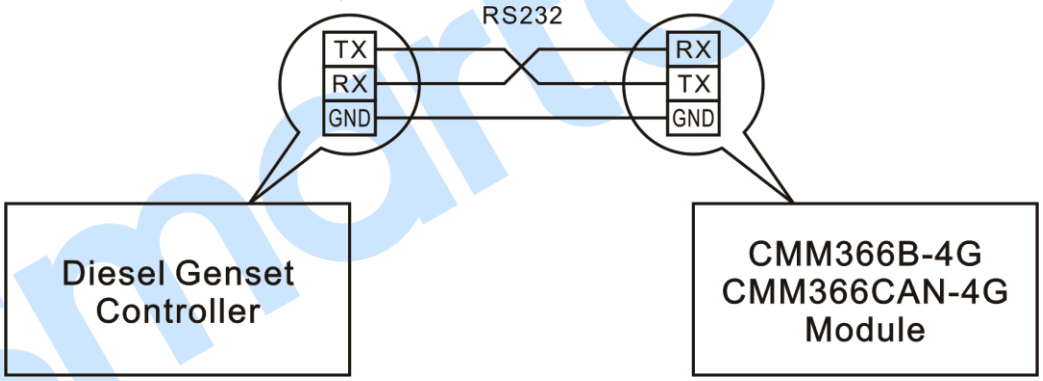

Fig.5 – RS232 Connection Diagram

4.7 LINK PORT

Receive genset data information by connecting LINK port with genset controller LINK port.

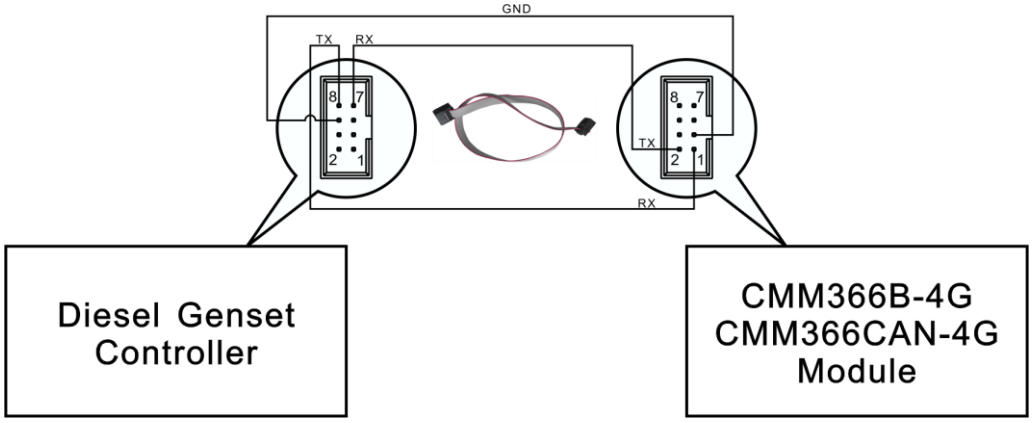

Fig.6 – LINK Connection Diagram

4.8 USB HOST PORT

Receive genset data information by connecting A-type USB port (female) with genset controller USB port via USB cable.

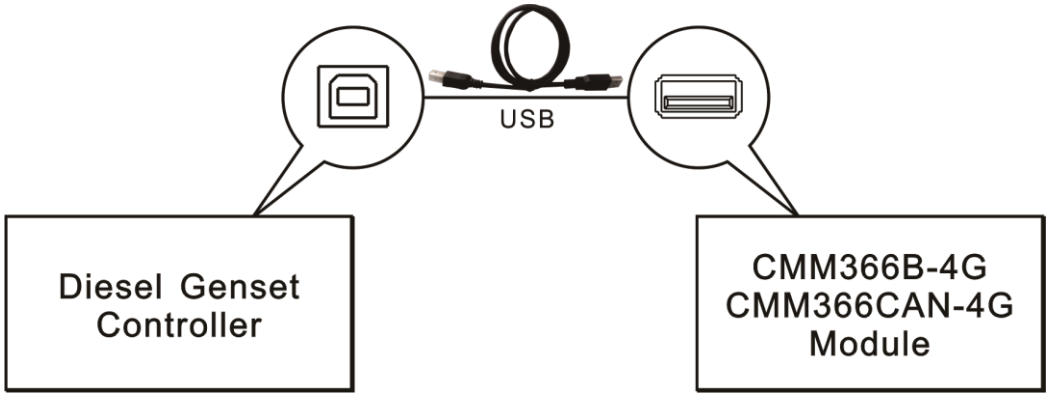

Fig.7 – USB Host Connection Diagram

4.9 USB DEVICE PORT

All the parameters can be configured and view CMM366B-4G/CMM366CAN-4G module ID&Login password by connecting USB port with PC.

Fig.8 – USB and PC Device Connection Diagram

Fig.9 – USB and SGB100 Module Connection Diagram

4.10 CAN PORT

CMM366CAN-4G model has this function. Obtain genset data information by connecting CAN port and genset CAN port. 120Ω terminal resistor is recommended and short connect CANH and TR terminal.

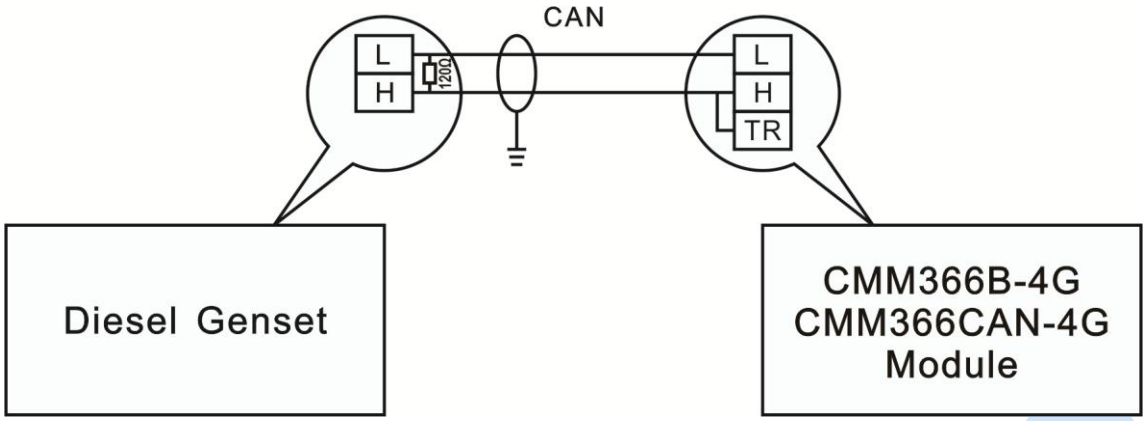

Fig.10 – CAN Connection Diagram

4.11 TERMINALS

Table 4 – Terminals Description

No.	Function	Cable Size	Note
1	B-	1.0mm^2	Connected with negative of starter battery.
2	B+	1.0mm^2	Connected with positive of starter battery. 3A fuse is recommended.
3	Digital Input 1	1.0mm^2	Active when connect to B-.
4	Digital Input 2	1.0mm^2	Active when connect to B-.
5	CANL	0.5mm^2	120Ω terminal resistor is recommended, short connect CANH and TR terminal.
6	CANH	0.5mm^2	
7	TR	0.5mm^2	
8	RS485 B(-)	0.5mm^2	120Ω terminal resistor is recommended, short connect RS485 A(+) and TR terminal.
9	RS485 A(+)	0.5mm^2	
10	TR	0.5mm^2	
11	RS232 RX	0.5mm^2	RS232 port.
12	RS232 TX	0.5mm^2	
13	RS232 GND	0.5mm^2	

5 PROGRAMMABLE PARAMETERS

5.1 CONTENTS AND SCOPES OF PARAMETERS

Table 5 – Parameter Contents & Scopes

No.	Items	Parameters	Defaults	Description
Gateway				
1	Site Name			20 Chinese characters, letters or numbers.
2	Server URL		www.smartgencloudplus.com	40 characters
3	Server Port	(0-65535)	21318	
4	Security Code		123456	16 characters
GPS				
1	GPS Enabled	(0-1)	1	0: Manual Input 1: GPS Location
2	Longitude	((-180)-180)°	113.554879	GPS location, altitude information.
3	Latitude	((-90)-90)°	34.802335	
4	Altitude	((-9999.9)-9999.9)m	100.0	
Digital Inputs				
Digital Input 1				
1	Setting	(0-9)	0	Default: Not used.
2	Type	(0-1)	0	0: Active when close; 1: Active when open. See: *Table 6 Digital Input Ports Content*.
3	Delay	(0-20.0)	0.0	Action delay.
Digital Input 2				
1	Setting	(0-9)	1	Default: Lamp test.
2	Type	(0-1)	0	0: Active when close; 1: Active when open. See: *Table 6 – Digital Input Ports Content*.
3	Delay	(0-20.0)	0.0	Action delay.

NOTE: Monitoring genset controller model, communication port, communication baud rate, and communication ID need to be set on the platform, and cloud monitoring module needs to re-power after all parameters being set.

Table 6 – Digital Input Ports Content

No.	Item	Description
0	Not Used	Not used.
1	Lamp Test	All the indicators are illuminated when input is active.
2	Remote Control Inhibited	Cloud start/stop control is prohibited when input is active.
3	Access Alarm Input	Access alarm is uploaded to server when input is active.
4	Fire Alarm Input	Fire alarm is uploaded to server when input is active.
5	Alarm Input	External alarm is uploaded to server when input is active.
6	Reserved	
7	Reserved	
8	Reserved	
9	Factory Test Mode	It is only used for factory test.

5.2 PC CONFIGURATION INTERFACE

Connecting the USB port of CMM366B-4G/CMM366CAN-4G communication module with PC to configure the parameters.

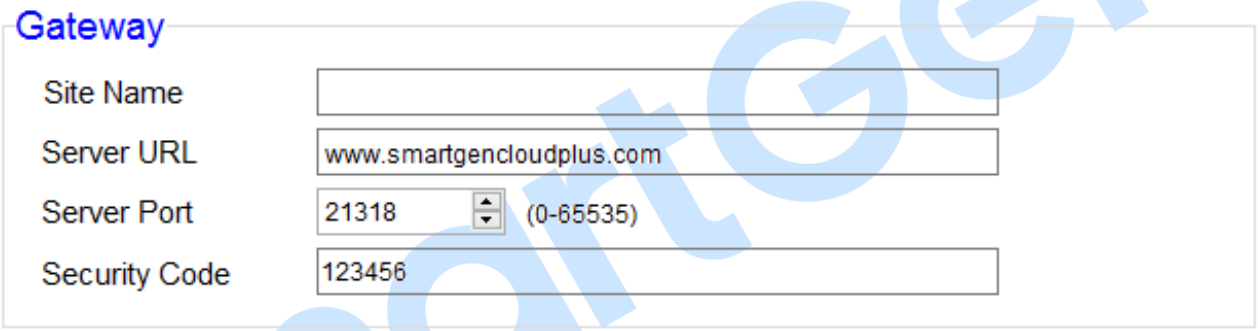

Fig.11 – Gateway Configuration

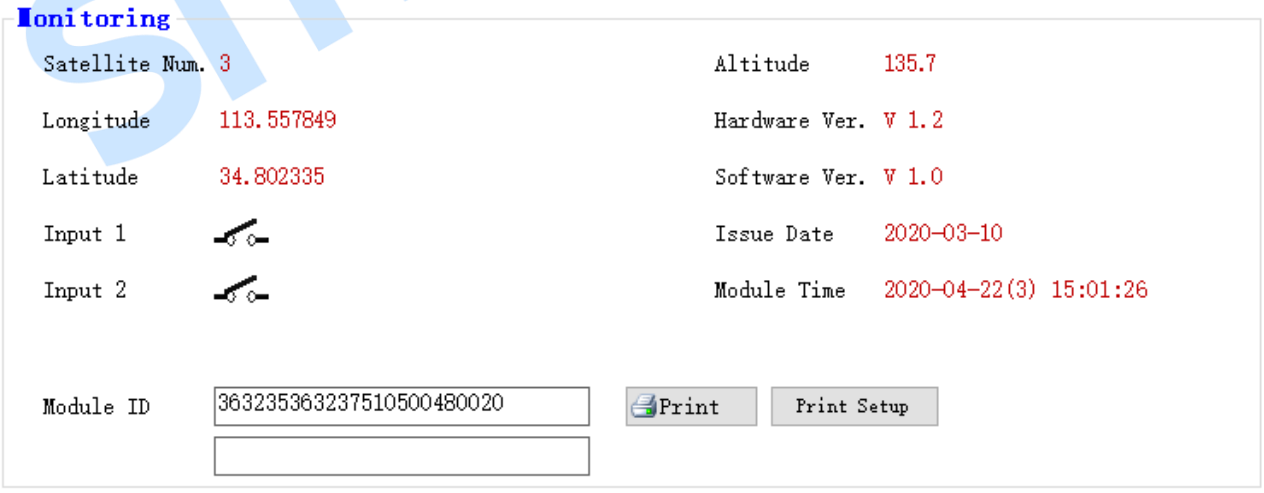

Fig.12 – Module Monitoring Interface

6 SYSTEM APPLICATION DIAGRAM

One CMM366B-4G/CMM366CAN-4G module connects with one genset monitoring module. It can be connected via RS485 port, LINK port, CAN port, RS232 port or USB port.

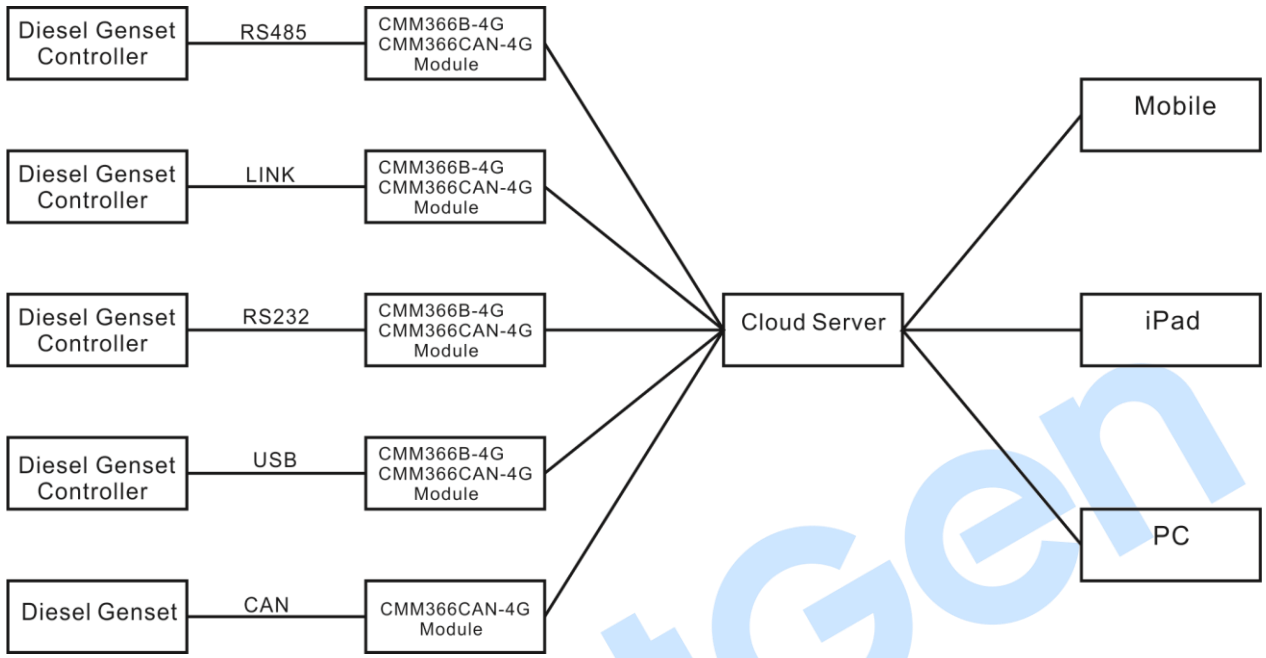

Fig.13 – CMM366B-4G/CMM366CAN-4G System Application Diagram

7 CASE DIMENSION AND INSTALLATION

35mm guide rail cabinet installation or screw-fixed (M4) installation can be applied. Case dimensions are as below:

Unit: mm

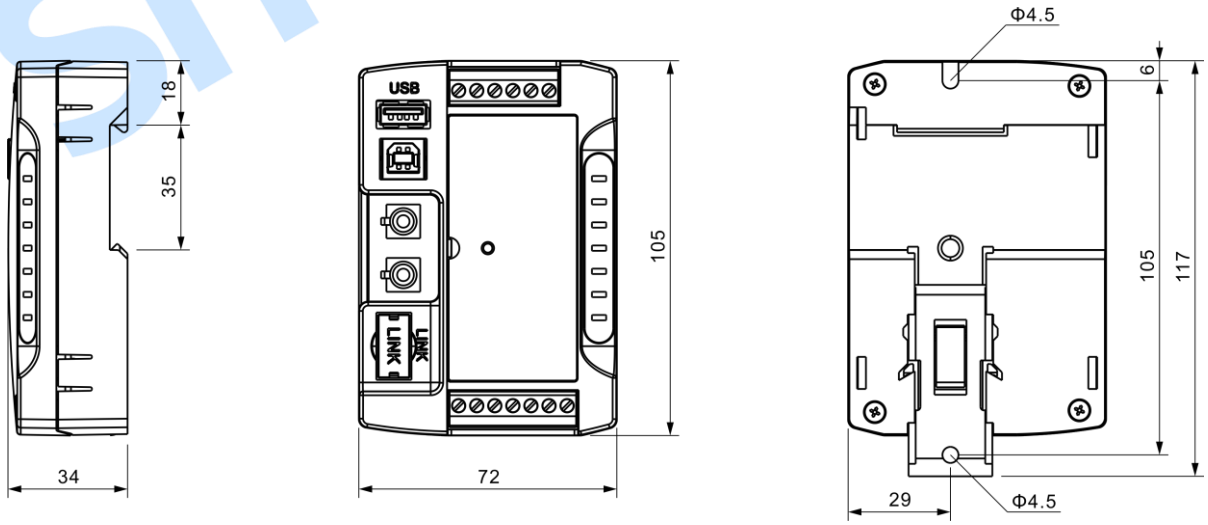

Fig.14 – CMM366B-4G/CMM366CAN-4G Case Dimension

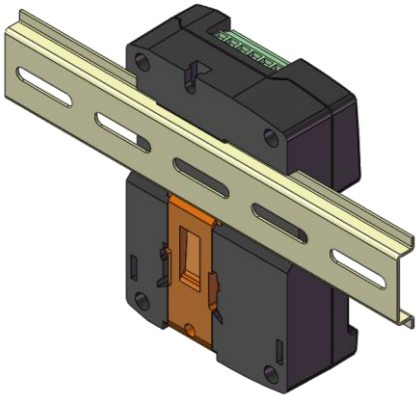

Fig.15 – CMM366B-4G/CMM366CAN-4G Guide Rail Installation

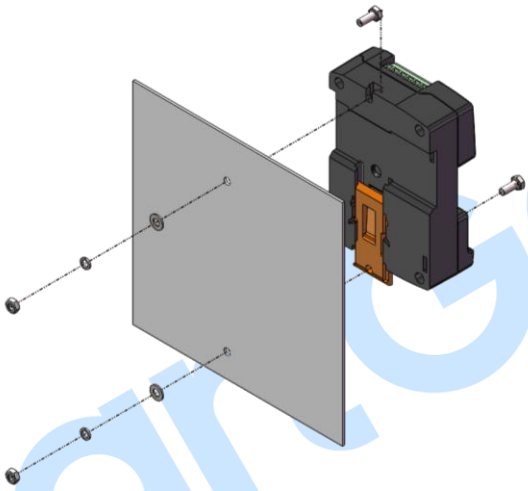

Fig.16 – CMM366B-4G/CMM366CAN-4G Screw Installation

8 APP INSTALLATION STEPS

Fig.17 – APP Download QR Code

1) Scan the QR code on the enclosure of CMM366B-4G/CMM366CAN-4G cloud monitoring communication module (QR code is as Fig. 17), download the APP and install it in the mobile;
2) Open the APP from the mobile, users have to register for the first using, then input account number and password to enter APP;
3) Other related settings please refer to “Me-Guidance” (as Fig. 18).

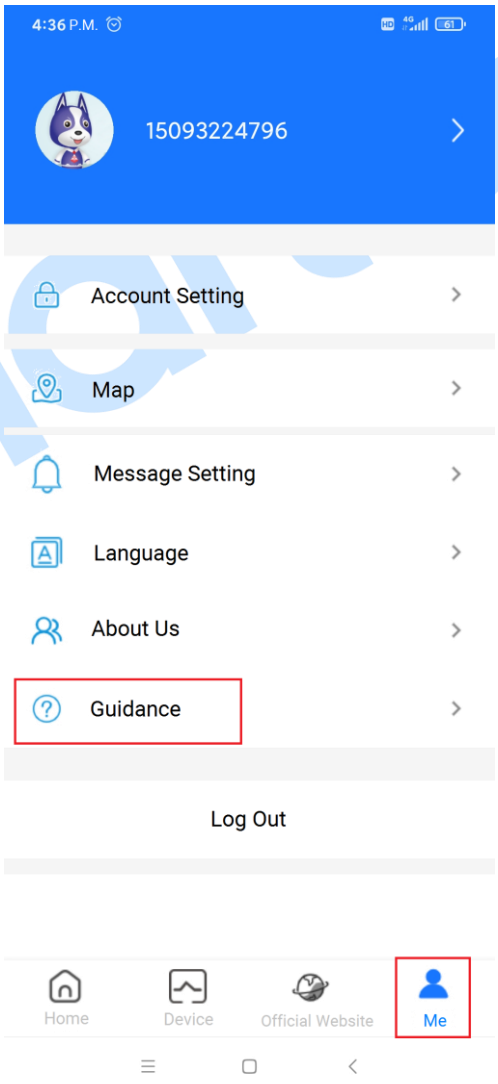

Fig.18 – APP Display Interface

9 FAULT FINDING

Table 7 – Fault Finding

Symptoms	Possible Solutions
Module No Response with Power	Check power voltage; Check module connection wirings.
GPRS/4G Indicator Off	Check SIM card is inserted or not; Check GPRS antenna is connected or not.
GPS Not Gain Location	Check GPS parameters are enabled or not; Check GPS antenna is connected or not and placed outdoor or not.
RS485 Comm. Abnormal	Check connections; Check RS485 port is enabled or not on cloud server platform communication port; Check settings of genset ID and baud rate are correct or not. Check RS485's connections of A and B is reversely connected or not.
RS232 Comm. Abnormal	Check connections; Check RS232 port is enabled or not on cloud server platform communication port; Check settings of genset ID and baud rate are correct or not.
LINK Comm. Abnormal	Check connections; Check LINK port is enabled or not on cloud server platform communication port; Check settings of genset ID and baud rate are correct or not.
CAN Comm. Abnormal	Check connections; Check CAN port is enabled or not on cloud server platform communication port; Check communication baud rate is correct or not; Check CANL and CANH are reversely connected or not; Check genset controller ID is correct or not.
USB(Host) Comm. Abnormal	Check connections; Check USB port is enabled or not on cloud server platform communication port; Check genset controller ID is correct or not.

10 PACKING LIST

Table 8 – Packing List

No.	Name	Quantity	Remark
1	Cloud Monitoring Communication Module	1	CMM366CAN-4G (with CAN port) CMM366B-4G (without CAN port)
2	4G+GPS/BD Two-in-one Antenna	1	
3	User Manual	1	
4	SIM Card Tray	1	
5	RS485 Communication Cable	1	Length: 50cm

11 APPENDIX (ORDER MODEL)

Table 9 – CMM366B-4G/CMM366CAN-4G Order Model

Order Model	Country/Area	Frequency Band	Remark
CMM366B-4G CMM366CAN-4G	Chinese Mainland	FDD-LTE: B1/B3/B8 TDD-LTE: B38/B39/B40/B41 TD-SCDMA: B34/B39 WCDMA: B1/B8 EVDO/CDMA: BC0 GSM: 900/1800MHz	
CMM366B-4G-S01 CMM366CAN-4G-S01	North America	FDD-LTE: B2/B4/B12 WCDMA: B2/B5	
CMM366B-4G-S04 CMM366CAN-4G-S04		FDD-LTE: B2/B4/B5/B13	
CMM366B-4G-S02 CMM366CAN-4G-S02	Europe/Africa/ South Korea/Thailand/ Middle East	FDD-LTE: B1/B3/B5/B7/B8/B20 TDD-LTE: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800MHz	
CMM366B-4G-S03 CMM366CAN-4G-S03	South America/ Australia/ New Zealand	FDD-LTE: B1/B2/B3/B4/B5/B7/B8/B28 TDD-LTE: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz	
CMM366B-4G-S05 CMM366CAN-4G-S05	Japan	FDD-LTE: B1/B3/B8/B18/B19/B26	