Wireless Communication Card
Operation Manual

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1 Product overview

The Bluetooth and WiFi series communication cards are designed to meet customers' wireless monitoring requirements. With the Bluetooth communication card, you can implement local wireless monitoring; and with the WiFi communication card, you can implement local wireless monitoring, and can also implement remote wireless monitoring based on public operator networks.

2 Technical specifications

Table 1 Wireless communication card technical parameters

Category	Name	Detailed description
Wireless parameters	Wireless module	Industry-level wireless module
	WiFi standard	2.4 GHz, IEEE802.11b/g/n
	WiFi data transmission rate	Max. rate: 150 Mbps
	Bluetooth standard	BLUETOOTH 4.0, 2.4 GHz, IEEE802.15
	Bluetooth data transmission rate	Max. rate: 24 Mbps
	Transmission distance	When an external antenna is used and there is no obstacle, the transmission distance is no shorter than 30 m; and when a built-in antenna is used and there is no obstacle, the transmission distance is no shorter than 20 m.

Table 2 Connection modes of the WiFi card

SN	Mode	Description
1	AP Server mode	In this mode, the WiFi card works as a hotspot, and mobile phones, tablets, and laptops can connect to the hotspot directly.
2	STAServer mode	In this mode, the WiFi card is connected to a router but still works as a Server module. The address can be set to a fixed one or be allocated by the router. Mobile phones, tablets, and laptops can be connected to the module through a router.
3	STA Client mode	In this mode, the WiFi card is connected to a remote server through a router. The data transmitted to the server is packed according to the requirements of the communication protocol, and other data is still transmitted in the pass-through mode.

3 Operation guide for mobile phone-based monitoring

(1) Follow the operation guide of the inverter to insert the extension card into the slot and fix it, and then install the antenna (The antenna can be either a trace antenna or sucker antenna. For sucker antennas, you need to add a coaxial cable. See the delivery BOM for details.)

(2) Scan the QR code on the nameplate of the inverter to down the INVT Workshop

application and install it on your mobile phone.

(3) Use the application in the local monitoring mode.

A. Open the INVT Workshop application.

The homepage is displayed, as shown in Figure 1.

Figure 1

B. Click **Local monitoring**.

The detailed information page of the local monitored devices is displayed, as shown in Figure 2.

Figure 2

C. Click the icon to display the device list.

You can click the **BLE** or **WIFI** tab to display the Bluetooth device list or the WiFi device list, as shown in Figure 3.

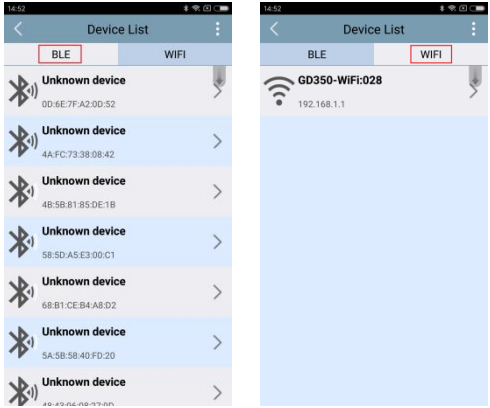

Figure 3

Note: You can refresh the list by using a drop-down gesture. Before searching for the WiFi module, ensure that your mobile phone has been connected to the corresponding WiFi hotspot of the WiFi module. The name of the hotspot is the serial number on the bar code. The connection can be completed through the setting function of the mobile phone. The password of the hotspot is "*00 + the key on the bar code*".

D. After the connection is completed, return to the detailed information page of the local monitored device to start the monitoring, as shown in Figure 4.

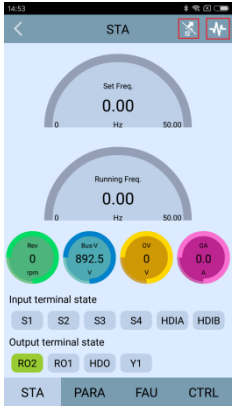

Figure 4

Instruction: After the connection is completed, the icon turns into , and you can click to disconnect the device. You can click **STA**, **PARA**, **FAU**, or **CTRL** to monitor the corresponding operation information of the device. If a Bluetooth device is connected, the icon is not displayed on the upper right. The oscilloscope function is provided only for local monitoring with WiFi connection. The serial number displayed on the name of the Bluetooth or WiFi device is the communication address of the inverter, which can be set through P14.00.

E. You can click the icon on the upper right to display the oscilloscope page, as shown in Figure 5.

Figure 5

Note: The control buttons, from left to right, on the bottom of the page indicate the "Return", "Start", "Stop", "Shift left", "Shift right", "Create channel", "Set upper/lower limit", "Open waveform" and "Save waveform" functions, and the operation process is as follows: "Create channel"->"Set upper/lower limit"->"Start"->"Stop"->"Shift left/Shift right"->"Save waveform"->"Open waveform". A maximum of 2 oscillographic channels can be created.

(4) Use the application in the remote monitoring mode.

A. Remote monitoring can be implemented only in the WiFi communication mode. Click **WiFi setup** on the homepage of the application to enter the **WiFi list** page, as shown in Figure 6.

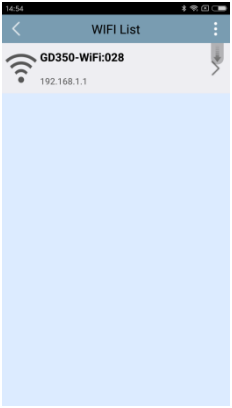

Figure 6

B. Ensure that the mobile phone has been connected to the WiFi module. For details about the connection, see the operation described in the local monitoring mode. Refresh the WiFi list and select the corresponding WiFi module.

The **WiFi setup** page is displayed, as shown in Figure 7.

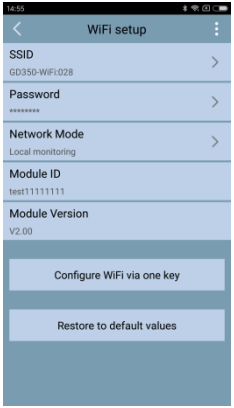

Figure 7

Note：

(1) When configuring remote monitoring, you must set the **Network Mode** to **Remote monitoring**. Then, you need only to enter the correct WiFi name and password and click **Configure WiFi via one key**.

(2) If you enter an incorrect wireless network name or password on the **WiFi setup** page and click **Configure WiFi via one key**, you can click **Restore to default values**. In this case, the WiFi working mode is reset to the local monitoring mode. Click **WiFi setup** on the homepage of the APP to enter the **WiFi setup** page, and select the correct wireless network and enter the correct password. Ensure that the connected wireless network is accessible, and then you can click **Remote monitoring** to enter the remote monitoring mode.

Special reminder:

Local monitoring can be implemented in two ways: (a) The WiFi module directly communicates with the mobile phone; and (b) The WiFi module establishes a local area network (LAN) with a mobile phone through a router and communicates with the mobile phone on the LAN. For local monitoring, set **Network Mode** to **Local monitoring**, which is a kind of LAN communication. In the local monitoring mode, the function of restoring to the default values is to reset the LAN communication way to the direct communication way, which is equivalent to the switching of the two ways of the local monitoring.

C. Return to the homepage, click **Remote monitoring**, and enter your account and password, as shown in Figure 8.

After logging in, you can monitor all the monitored devices of your account in real time.

Figure 8

Special reminder:

You can apply to the manufacturer for an account and password, and you need to provide the serial number and key on the bar code of the WiFi card when making the application.

D. Click **Login**.

After you log in, the device list page is displayed, as shown in Figure 9. You can enter a module name to quickly find the module that needs to be monitored.

Figure 9

Note: "--" indicates that the module is in the offline state. A module can be monitored remotely only when it is online. No data about a module is displayed when it is offline.

E. Click a module. The corresponding detailed information page is displayed, as shown in Figure 10.

Figure 10

Note: If you need to switch to the local monitoring mode from the remote monitoring mode, you can click **CTRL** on the detailed information page to display the **CTRL** page, and then click **Return to local monitoring mode**, as shown in Figure 11.

Figure 11

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