



The power behind competitiveness

## Delta PPM N1U\_SB1

PPM N1U\_SB1

Operation and Installation Manual

[www.deltaww.com](http://www.deltaww.com)





5013266900

# PPM N1U\_SB1 Sub-1G module Quick Installation Guide

## Essential Points for Safety

- Request a specialist to dispose of the product.
- Take care to ensure no water or other liquid gets on the SUB\_1G.
- The product may malfunction or may be damaged by static electricity. Be sure to remove any static electricity on the body, through such means as touching a metal object nearby, prior to coming into contact with the product.
- Store the product in a location with the temperature ranging between -30 and +70°C, with the humidity ranging from 30 to 85% RH.

## Do not install the product in the following places:

- Do not expose to extreme fluctuation temperature.
- Do not expose to salt air.
- Do not expose to corrosive substances, explosive / flammable GAS, chemicals.
- Do not install in direct sunlight.
- Do not install in a place exceeding the operating temperature range (-25 to +55°C).
- Do not install above 3000m MSL or higher.
- Do not expose to water vapor, oil vapor, smoke, cotton dust, metal powder, sawdust.  
If installed outdoor, please put it in box which is suitable for outdoor use.

Warning	
	Do not allow any fire producing objects to be near the product, or apply any spray, including combustible gases, to the product. The product may ignite or explode in the unlikely event such an occurrence takes place.
	Do not touch the product with wet hands. The product may cause injury due to electric shock or equipment malfunction may occur in the unlikely event such an occurrence takes place.
	Do not disassemble or modify the product. The product may cause injury or fire due to electric shock in the unlikely event such an occurrence takes place.
Caution	
	When installing the SUB_1G on a wall made of materials that are not wood, be sure to acquire plastic anchors available on the market to secure SUB_1G on the wall surface. There is danger of injury from the product falling in some rare cases.
	Do not install the product in the following types of locations: There is danger of burnout in some rare cases. <ul style="list-style-type: none"> <li>• Locations that are exposed to rain water, such as outdoors or under eaves and the like.</li> <li>• Locations that are exposed to steam or where the moisture level is 30 to 85% RH, such as lavatories, changing rooms, work sites, kitchens and the like.</li> </ul>
	Do not use organic solvents (paint thinners, benzene and the like), strong alkaline substances or strong acidic substances to clean the case of the product. There is danger of discoloring the case or the equipment malfunctioning in some rare cases.
	Do not install the product in a place that is subject to significant effects of vibration and impact. There is danger of injury from the product falling in some rare cases.

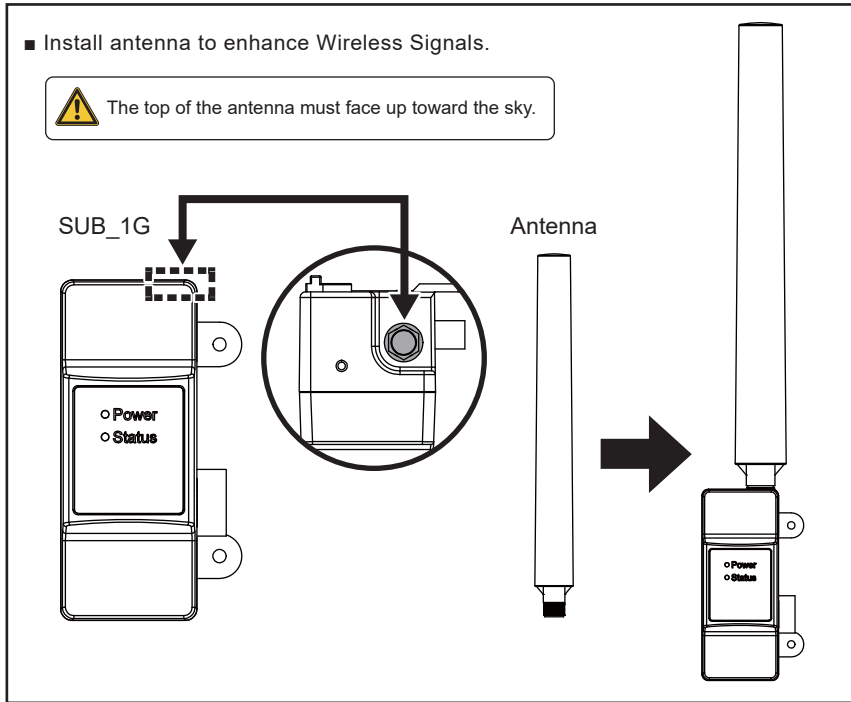
## Scope of Delivery

NO.	Product name	Qty	Remarks	Shape
1	SUB_1G	1 unit	Main unit	
2	Antenna	1 piece	Install antenna to enhance Wireless Signals.	
3	Quick Installation Guide	1 copy	Installation guide	
4	Screw	2 pieces	SUB_1G screws	

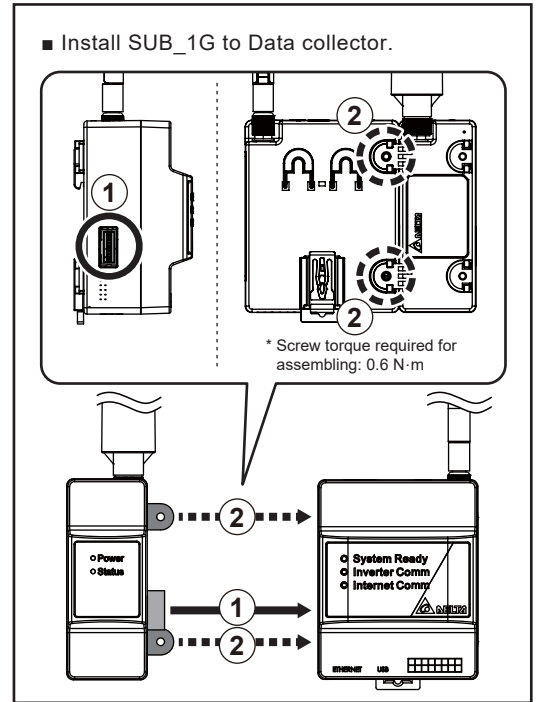
## SUB\_1G Module

■ SUB_1G Module	
Name	Explanation
Network standard support	FCC/CE/TELEC/NCC
Data rates	5860bps (BW: 500kHz) 2930bps (BW: 250kHz)
Modulation techniques	FSK/OOK
Bandwidth	FCC: 500kHz CE: 250kHz TELEC: 500kHz NCC: 500kHz

## SUB\_1G Antenna



## Installation Diagram



## LED Description

Status	Red LED	Yellow LED	Green LED	Description
Upgrade N1	Slow Flash	OFF	Slow Flash	Update N1 card.
Upgrade Module	Slow Flash	Slow Flash	OFF	Update RF module.
No Host	OFF	Slow Flash	Slow Flash	No back-end devices are connected.
Module Not Ready	Slow Flash	OFF	OFF	Waiting for module initialization.
Ext. Idle	OFF	ON	OFF	No Ext. data transmission for more than 300 seconds.
Int. Idle	OFF	Slow Flash	OFF	No Int. data transmission for more than 600 seconds.
Normal	OFF	OFF	ON	Connecting.

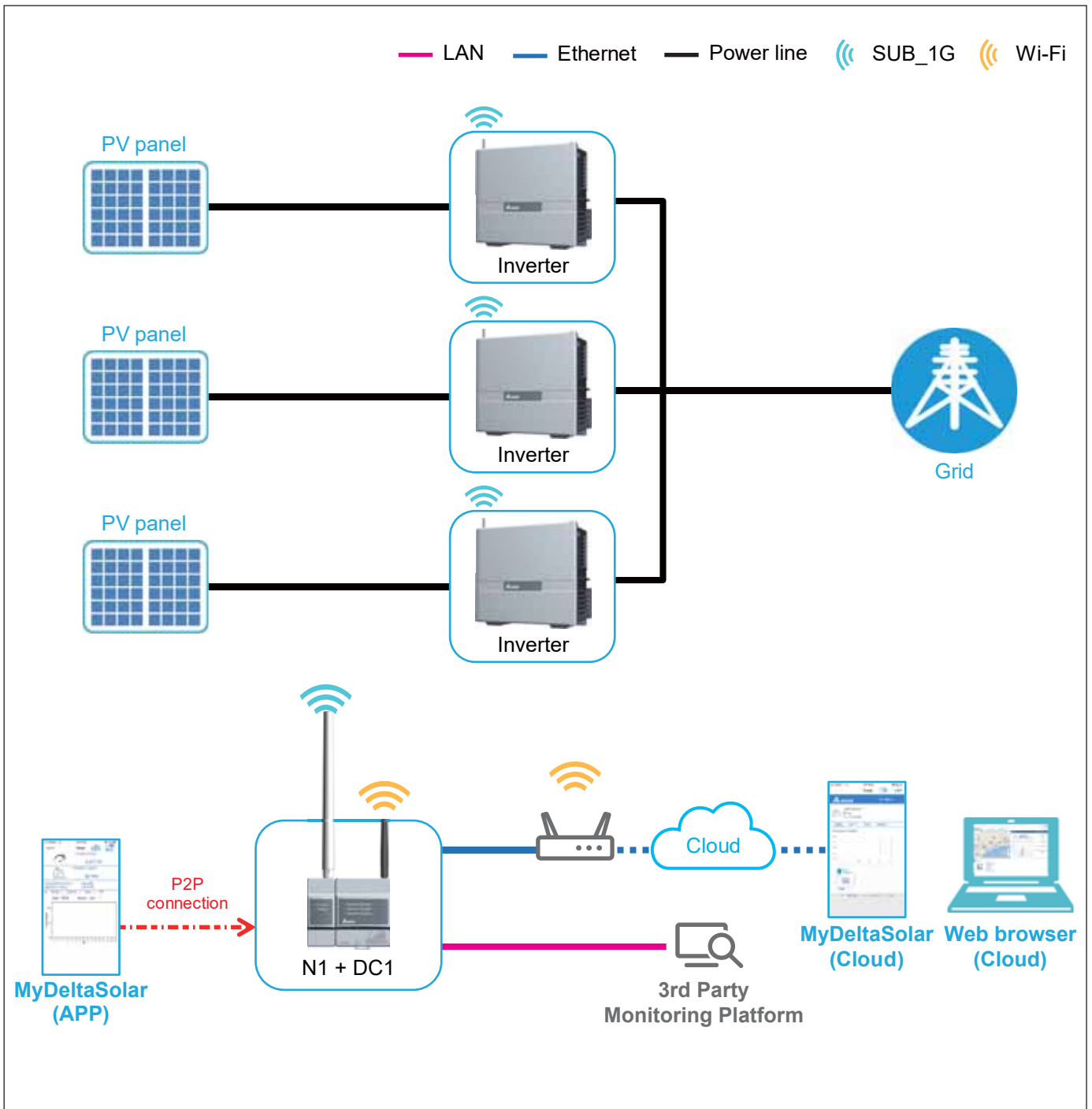
Power	Light Green LED	Description
	ON	When the device is receiving power.
	OFF	Powered off.

# 1 .System Architecture

## 1.1. N1U Application

The WI-FI Inverter is set by operating the DC1 with N1U through the APP. Upload power generation data to Cloud Server for monitoring.

Note, DC1 data collector is designed for monitoring PV inverter and conducting partial / zero export application to ensure solar power won't feed back into the grid. With its wired and wireless communication interface, DC1 can be connected to either MyDeltaSolar or 3rd party cloud service to realize remote management and optimize the efficiency of the PV system.



# 2 .Commissioning

## 2.1.First startup

To use Delta cloud service, user will have to register Data Collector to colud, please refer following procdure.



### MyDeltaSolar

1. This APP should collocate with Delta Inverter.
2. If inverter is not connected to cloud, you still can monitor inverter operation by APP.

### Where can search for MyDeltaSolar APP?

- QR Code: Please scan the QR code to MyDeltaSolar cloud.
- IOS system: Please search “MyDeltaSolar” in App store.
- Android system: Please search “MyDeltaSolar” in Google Play.



QR Code



IOS

<https://itunes.apple.com/ng/app/mydeltasolar/id1271609228?mt=8>



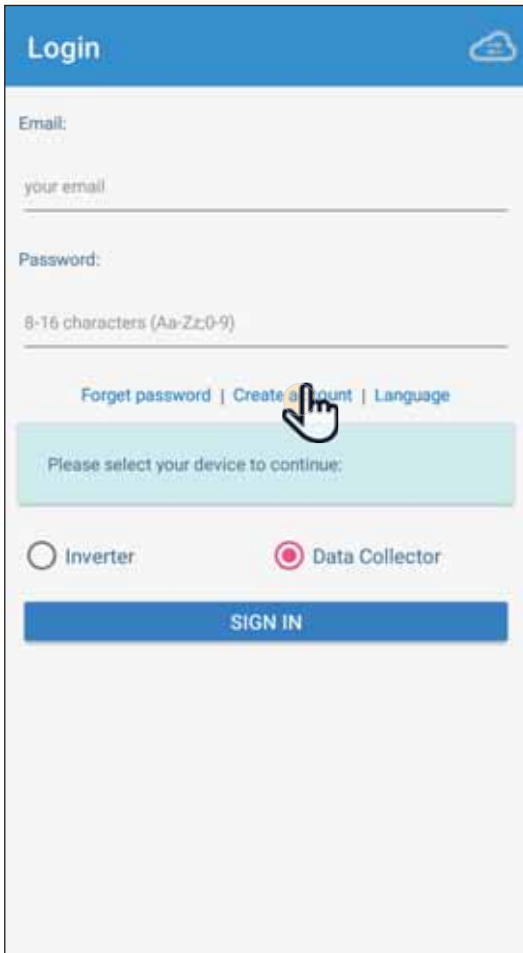
Android

[https://play.google.com/store/apps/details?id=com.mydeltasolar\\_1\\_0\\_0.app&hl=zh-TW](https://play.google.com/store/apps/details?id=com.mydeltasolar_1_0_0.app&hl=zh-TW)

### ATTENTION



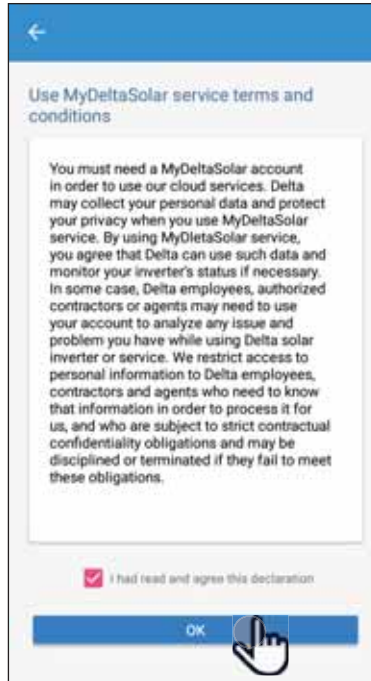
- Please check the smart phone is connected to the Internet and the communication is good.



[ 1 ]

After opening the MyDeltaSolar APP, please click [Create account] to apply for an account. (Suggestion)

If you do not apply for an account, please click the icon on the top right to access the APP through the P2P connection.



[ 2 ]

After checking the box, click the [OK] button.



[ 3 ]

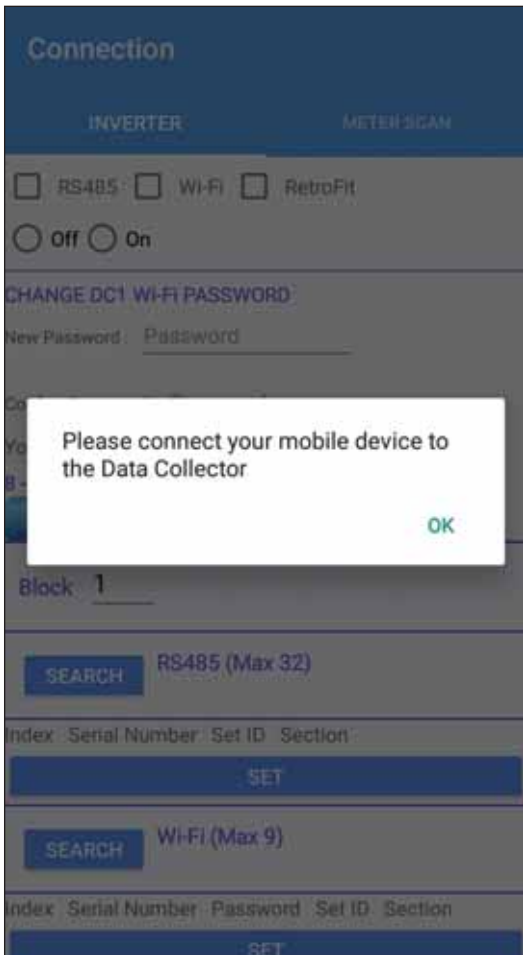
Please fill-in basic information when register an account.

▶ Delta has the option of providing cloud services, allowing users to have multiple locations anytime, anywhere.

The monitoring and management of the case, all the information will be collected and stored in the cloud reliably.

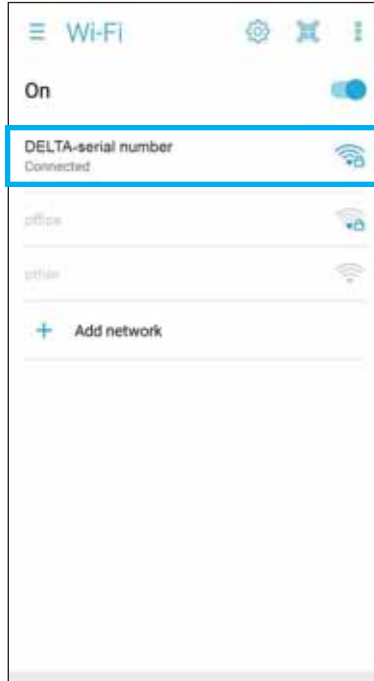
Further analysis of the anomaly and automatic notification to the user for repair as soon as possible and replacement to avoid causing greater power loss, if not used, will be necessary stored in the local site device

▶ APP is designed to connect and monitor different target devices, if there is a Data Collector on the plant, you can directly connect to the Data Collector. Monitor and display multiple Inverters through it



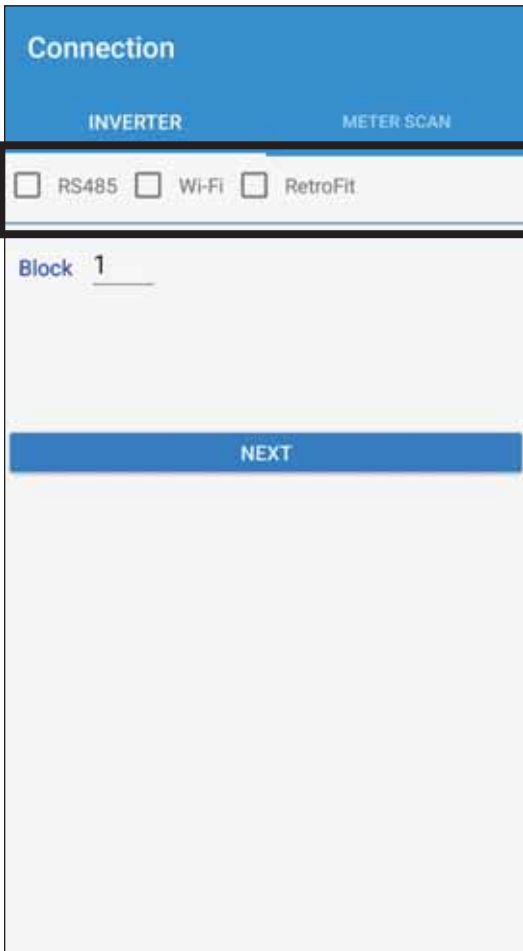
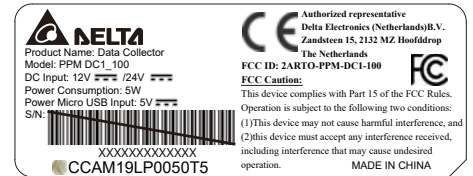
[ 4 ]

Please go to the Wi-Fi settings page and connect your mobile device to Data Collector.



[ 5 ]

SSID will be "DELTA-serial number".  
 (The serial number information is indicated on the rating label of the machine)  
 The password is "DELTASOL"



[ 6 ]

After connecting to the Data Collector, please go back to the APP for connection. Please select your connection mode. [RS-485/ Wi-Fi/ RetroFit] (Please refer to Chapter 5 for more detailed setting process of each mode)

[RS-485]



[Wi-Fi]



[RetroFit]





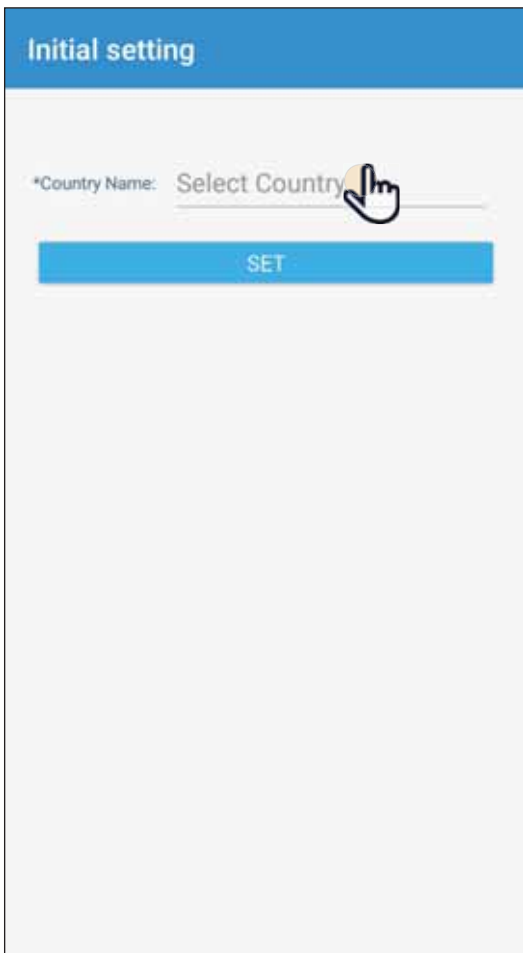
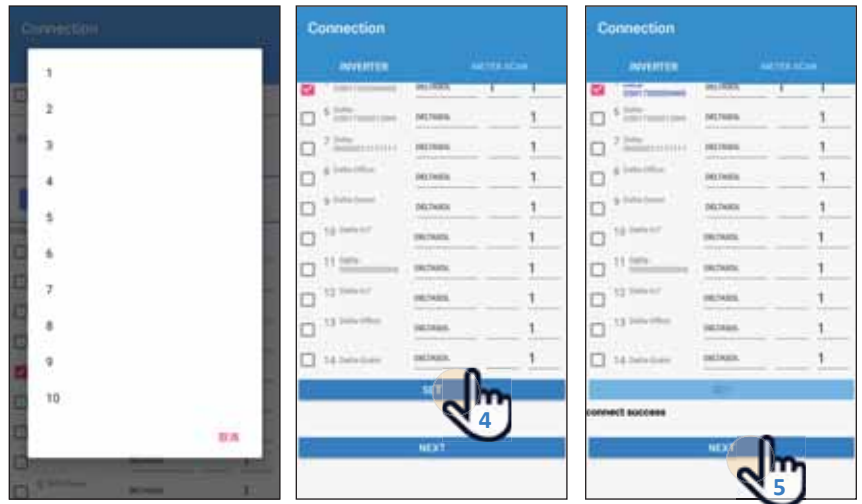
[ 7 ] (Take Wi-Fi connection as example.)

1. Please click [SEARCH] to detect inverter
2. Please check your inverter serial number (the serial number information is marked on the rating label of the machine)
3. Set the inverter ID
4. After confirming, please click the [SET] button. (please wait 2 to 10 minutes for setting, depending on how many inverter connect to Data collector)



Wi-Fi communication will be disconnected from your Data Collector account at this time. Please go back to the Wi-Fi settings page and reconnect to the Data Collector.

5. When the message [Connected Successfully] appears, click the [NEXT] button to proceed to the next step.



[ 8 ]

Please select proper country code for data collector to set inverter.





**CLOUD REGISTER**

**User Account**

Email:

Password:

Confirm Password:

---

**Plant Register**

Plant Name:

Country:

Time Zone:

**SET INFO**

[9]

Please confirm cloud register information and select correct time zone of your region. (Cloud service will display the information base on country and time zone, such as weather, map indicate...etc)

The screenshot shows the 'CLOUD REGISTER' form with a white notification dialog box in the center. The dialog box has the title 'Notification' and the text 'Set done' with an 'OK' button in the bottom right corner. The background form is dimmed, showing the 'User Account' and 'Plant Register' sections.

**Change Password**

**CHANGE DC1 WI-FI PASSWORD**

Same as cloud

Change to other

New Password:

Confirm Password:

Your password must have:  
8 - 16 characters

**Reset** **Set**

[10]

Can change the Wi-Fi password for the Data collector, user can choose "Same as cloud" or "Change to other", it is recommended to use the same password as login cloud to avoid confusion and forget.

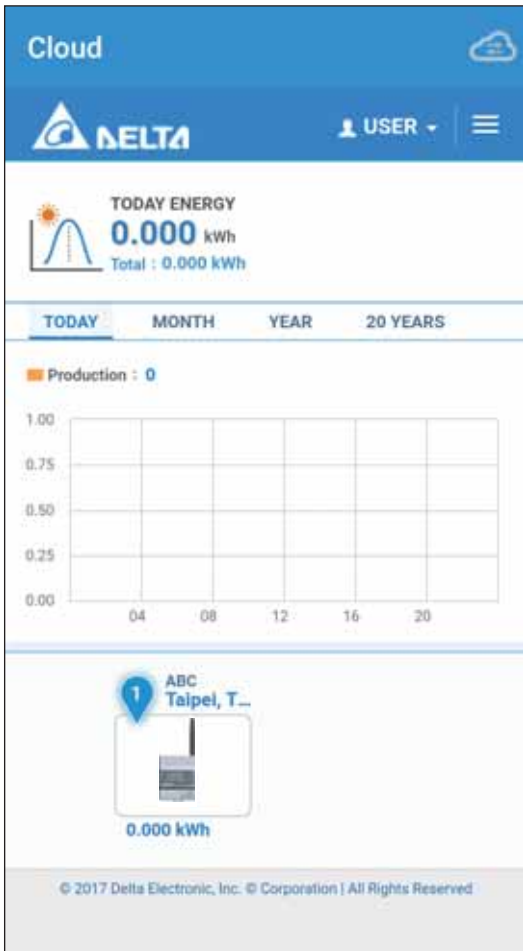
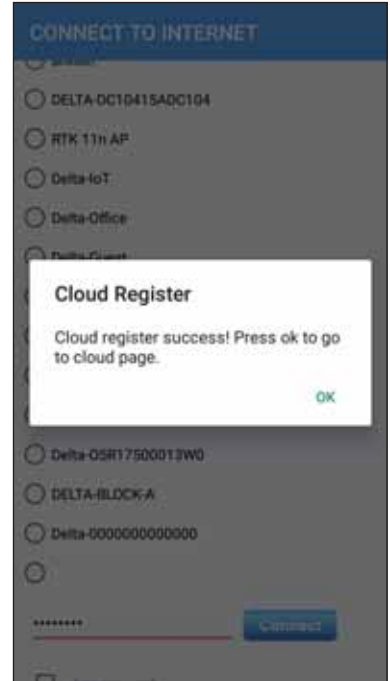
The screenshot shows the 'Change Password' form with a white notification dialog box. The dialog box has the title 'Change Password' and the text: 'Data collector's password has been updated! Please use the new password next time you login'. There is an 'OK' button in the bottom right corner.

The screenshot shows the 'Change Password' form with a white notification dialog box. The dialog box has the title 'Connect to DC1' and the text: 'WiFi password has been change,please reconnect to DC1'. There is an 'OK' button in the bottom right corner.



[11]

Click "Scan" to search Wi-Fi signal which have internet ability and type in the password. ( DC1 also can connect to cloud by Ethernet, please refer chater 6.6 Network)  
Click "Connect" to set Data collector connect to cloud.



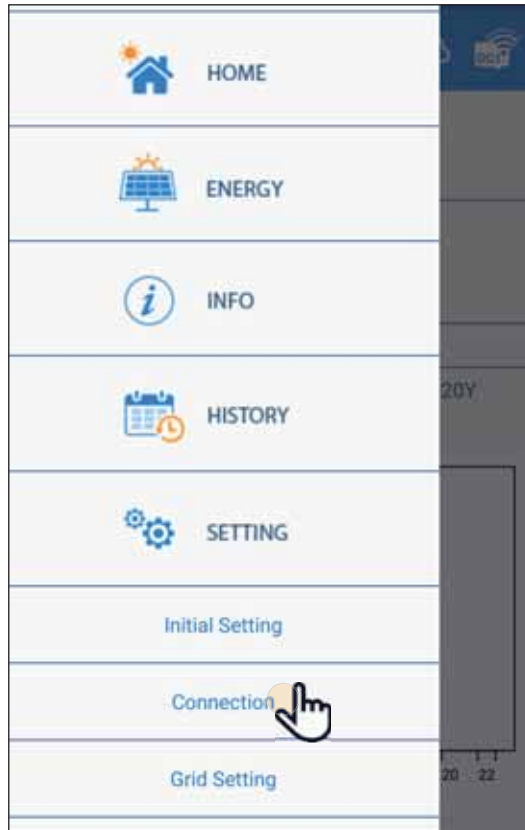
[12]

After cloud register success, APP will lead to cloud main page.


# 2 .Commissioning

## 2.2.Connect to PPM N1U

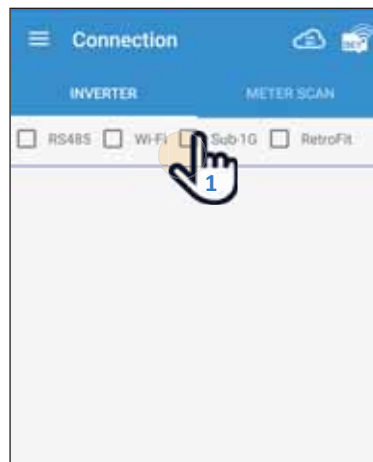
User will have to click 'Connection' to set N1U, please refer following procedure.



[ 1 ] Go to Connection

After connecting the DC1 on the MyDeltaSolar APP, please click [menu]  to expand the Navigation menu.

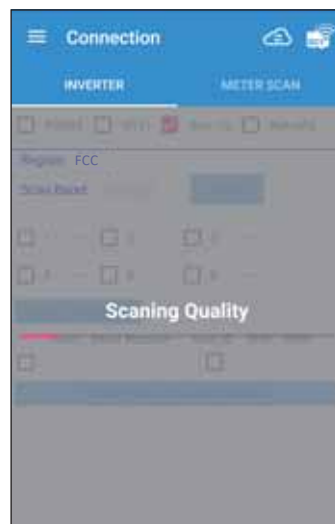
If you do not connect to DC1, please refer chapter 2-1. First startup to access the APP through the P2P connection.



[ 2 ] Scanning Quality

1. Please checking  Sub-1G.

2. Fill in password is '1234', click [LOGIN] button.



3. Please click the [SCAN] button.

After click the [SCAN] button, start to 'Scanning Quality'.

4. After scanning band, please choose one frequency.

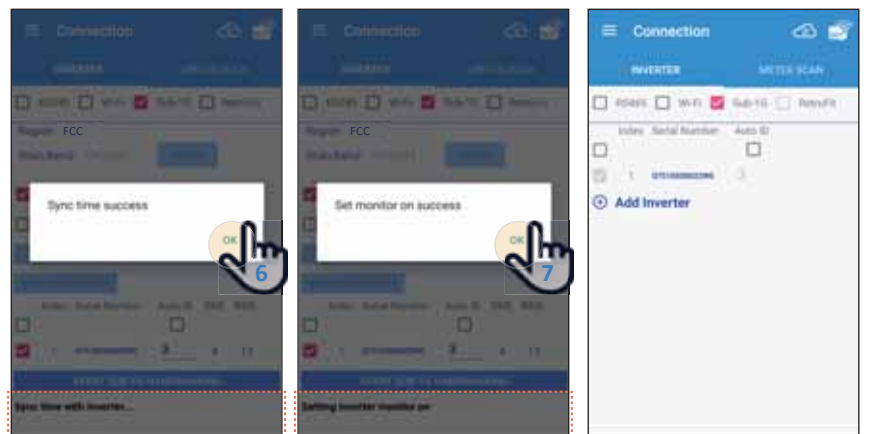
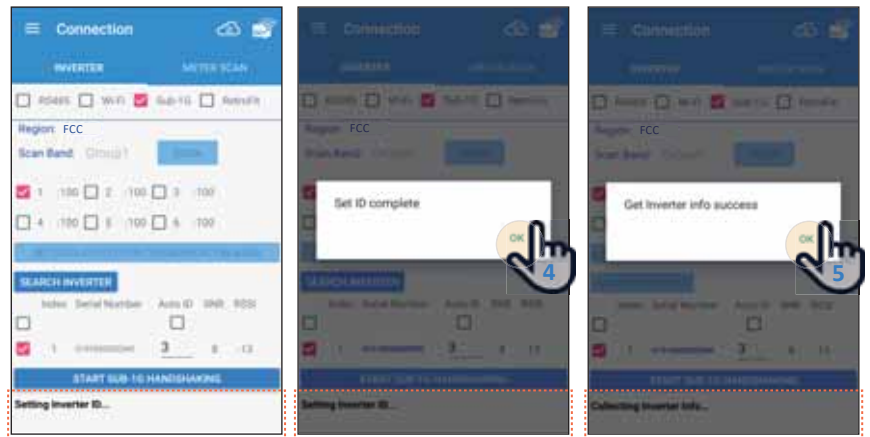
5. Please click the [SET DATA COLLECTOR COMMUNICATION BAND] button.

6. When the message [Set Successfully] appears, click the [OK] button to proceed to the next step.



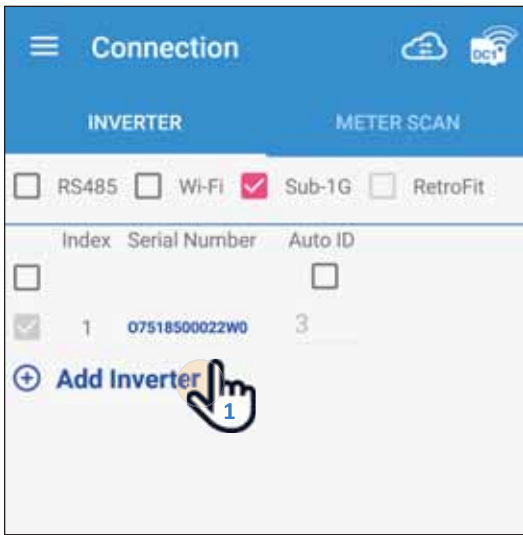
### [ 3 ] Search Inverters

1. Please click [SEARCH INVERTER] to proceed to search inverter.
2. After scanning inverter, please choose inverter.
3. When check the inverter box, click [START SUB-1G HANDSHAKING] button. Start setting inverter ID.



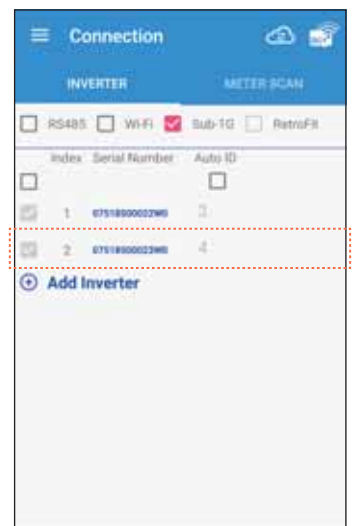
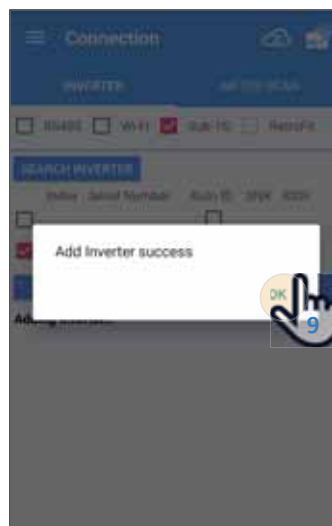
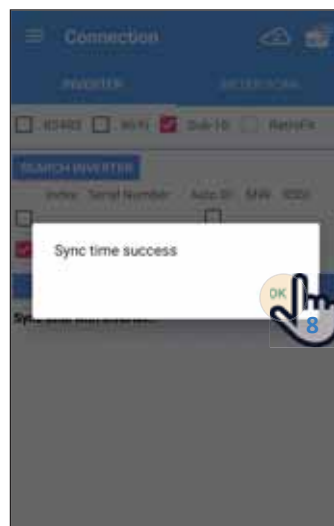
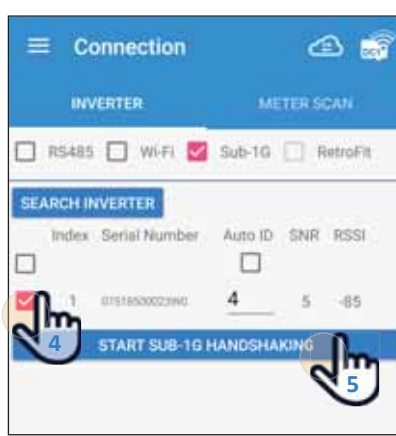
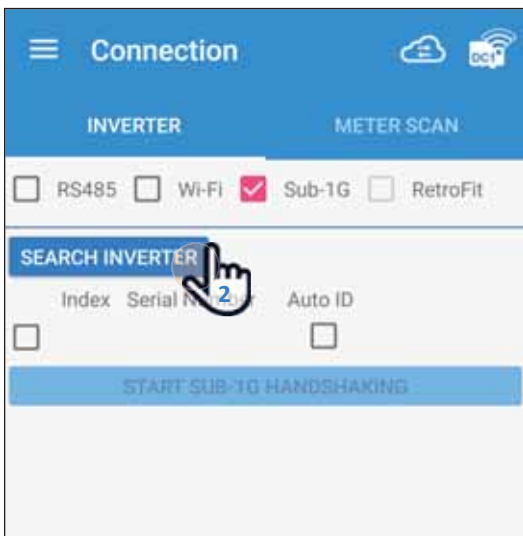
4. When the message [Set ID complete] appears, click the [OK] button to proceed to set inverter ID.
5. When the message [Get Inverter info success] appears, click the [OK] button to collect inverter info.
6. When the message [Sync time success] appears, click the [OK] button to proceed to Sync time with inverter.
7. When the message [Set monitor on success] appears, click the [OK] button to proceed to set inverter monitor on.

\* Finally, user can monitor inverter or add inverter.



#### [ 4 ] Add Inverters


1. Please click Add inverter.
2. User click [SEARCH INVERTER] button to search inverter.
3. When the message [Search complete] appears, click the [OK] button to find inverter.



4. After scanning inverter, please choose inverter.
5. When check the inverter box, click [START SUB-1G HANDSHAKING] button.  
Start setting inverter ID.
6. When the message [Set ID complete] appears, click the [OK] button to proceed to set inverter ID.
7. When the message [Get Inverter info success] appears, click the [OK] button to collect inverter info.
8. When the message [Sync time success] appears, click the [OK] button to proceed to Sync time with inverter.
9. When the message [Add Inverter success] appears, click the [OK] button to proceed to add inverter.



## [ 5 ] Information

1. After connecting the DC1 on the MyDeltaSolar APP, please click [menu]  to expand the Navigation menu.
2. After click [INFO] on Navigation menu, see general info, total energy, inverter info, input, output, operation data, string current, de-rating log, fw version.



## Warning

### **FCC Part 15.19**

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.

### **FCC Part 15.21 information for user**

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

### **FCC Section 15.105 Information to the user.**

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.

### **IMPORTANT NOTE :**

#### **FCC 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 20cm between the radiator & your body.



