

# Single-phase Microinverter **USER MANUAL**

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DTU-W100 3rd Gen

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# 1. Important Safety Information

## 1.1 Read This First

This manual includes important instructions for installing and maintaining the Hoymiles Data Transfer Unit (DTU).

## 1.2 Safety Instructions

Symbol	Usage
 <b>DANGER</b>	Indicates hazardous situations that can result in deadly electric shock hazards, other serious physical injuries, or fire hazards.
 <b>WARNING</b>	Indicates directions that must be fully understood and followed in their entirety to avoid potential safety hazards including equipment damage or personal injury.
 <b>CAUTION</b>	Indicates that the described operation must not be carried out. The reader should stop, use caution, and fully understand the operations explained before proceeding.

- Note that only professionals may install or replace DTU.
- Do not try to repair the DTU without approval from Hoymiles. If the DTU is damaged, send the DTU back to your installer for repairing/replacement. Disassembling the DTU without approval from Hoymiles will invalidate the remaining warranty period.
- Read all instructions and warnings on the technical specifications carefully.
- Do not use Hoymiles products in a way that is not suggested by the manufacturer. Doing so may cause death or injury to persons or damage to the equipment.

## 1.3 User

This manual is intended for use by professional installation and maintenance personnel only.

## 1.4 Support and Contact Information

If you have technical queries concerning our products, contact your system installer or distributor. If further support is required, contact Hoymiles' support at this link.

- [www.hoymiles.com](http://www.hoymiles.com)
- Hoymiles Technical Service Center: [service@hoymiles.com](mailto:service@hoymiles.com)

## 1.5 Other Information

Product information is subject to change without notice. The user manual will be frequently updated, refer to Hoymiles official website at [www.hoymiles.com](http://www.hoymiles.com) for the latest version.

## 2. About Hoymiles Microinverter System

### 2.1 The Microinverter

It converts the DC output of solar modules into grid-compliant AC power. It sends the output information of PV panels and the operation data of the microinverters to the DTU, which is the hardware basis of panel-level monitoring.

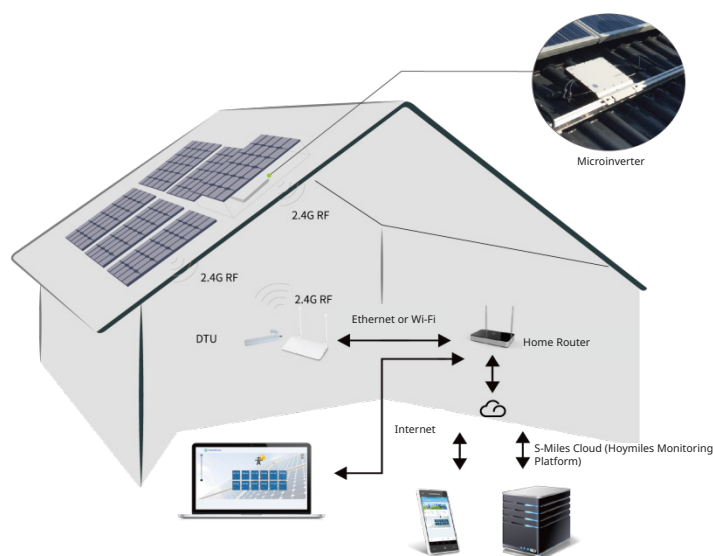
With conversion efficiency up to 96.7% and MPPT efficiency up to 99.9%, Hoymiles microinverters are among the high-quality microinverters in the world.

### 2.2 The DTU

The DTU is a key component in the Hoymiles microinverter system. It works as the communication gateway between the Hoymiles microinverters and the S-Miles Cloud (Hoymiles Monitoring Platform). The DTU communicates wirelessly with the microinverters via 2.4 GHz Proprietary RF (Nordic), and collects the operation data of the system. Meanwhile, the DTU connects to the Internet via the router and communicates with the S-Miles Cloud (Hoymiles Monitoring Platform). The microinverter system operation data will be uploaded to the S-Miles Cloud (Hoymiles Monitoring Platform) via DTU.

### 2.3 The S-Miles Cloud (Hoymiles Monitoring Platform)

It collects the operation data and status of the microinverters in the system and provides panel-level monitoring for users and maintenance staff. The following diagram shows the operation of the Hoymiles Microinverter System.



## 3. DTU Installation

### 3.1 System Capacity

The DTU is capable of monitoring up to 99 single units, 49 2-in-1 units or 24 4-in-1 units. If the communication between the DTU and the microinverters suffers interference caused by installation conditions, the number of PV modules that the DTU can monitor may be reduced.

### 3.2 Basic Conditions Required

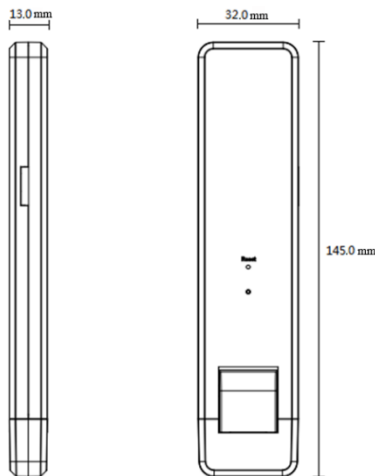
Before installing the DTU, make sure that the site meets the following requirements:

- Install the DTU close to the router.
- Stable Internet connection.
- The straight distance between the DTU and the microinverter must be less than 5 meters.
- The location should be one meter above the ground and 0.8 meters away from corners.

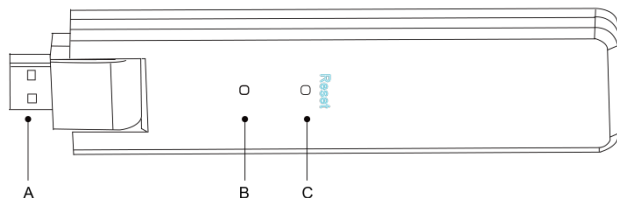
Environmental requirements for DTU installation:

- Away from dust, liquid, acids, or corrosive gas.
- The temperature should be between -20°C and 55°C.

### 3.3 Dimensions



### 3.4 Interface Layout



Item	Description
A	USB Connector
B	Status Indicator
C	Reset Bottom

### 3.5 Local Installation Assistant

The Local Installation Assistant is a new function integrated with the DTU-W100 3rd Gen. Download the Installer App (for installer/distributor use only) before use.



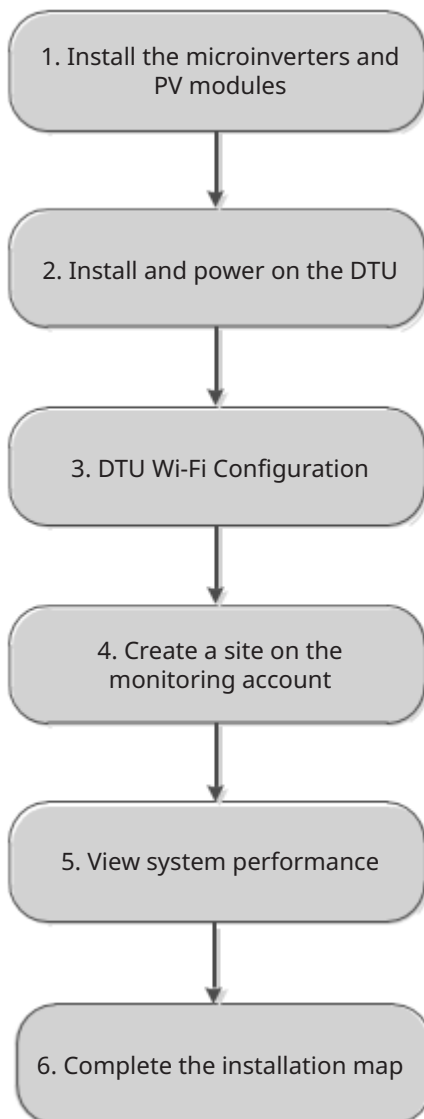
The DTU-W100 is improved over the previous generations of DTU product, and is developed with this new function that allows the installer to:

- Complete the Wi-Fi configuration in one step.
- See how many microinverters under this DTU are working properly (and the details for each microinverter) and how many are abnormal (and the details for each microinverter) at a glance through the plant overall inverter status indication.
- Add connection status, which displays the signal strength between each microinverter with connected DTU, so that the installer can adjust the DTU installation location accordingly. This function simplifies DTU installation and avoids a second visit for installer due to the poor connections between DTU and certain microinverters.

**Note:** Refer to the “Hoymiles Local Installation Assistant Technical Note” for more details.

### 3.6 System Installation Sequence

The DTU is capable of monitoring up to 99 single units, 49 2-in-1 units or 24 4-in-1 units.



**3.7 DTU Installation Procedure**

**1) Install the PV Modules and Microinverters**

Refer to the microinverter’s Manual or Quick Installation Guide for detailed installation steps.

**2) Locate the DTU**

The maximum communication distance of Hoymiles DTU is 150 m in open space. The walls, roofs, or other obstacles in between will affect the signal and reduce the communication distance in actual installations.

The range of signal reduction for possible obstacles at the site is shown below:

Material	Relative signal range reductions
Wood/Glass	0%-10%
Stone/Pressed cardboard	10%-40%
Reinforced concrete (reduction increases with the amount of reinforcement)	10%-90%
Metal	Up to 100%

Therefore, the DTU must be placed as close to the microinverters as possible at the site to ensure good communication between the DTU and the microinverters.

**3) DTU Installation**

- a. Connect the DTU to the adapter and plug it into the wall socket (Figure 1).

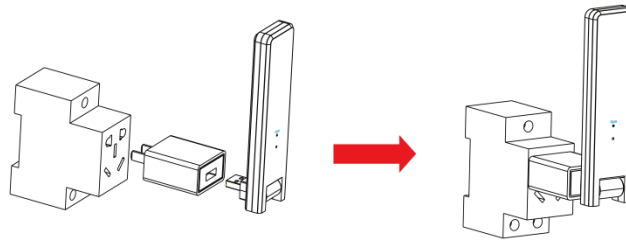


Figure 1

b. If using a power strip, make sure that it is placed at least 1 meter above the ground, and try to install the DTU at a 90 degree angle perpendicular to the ground (Figure 2).

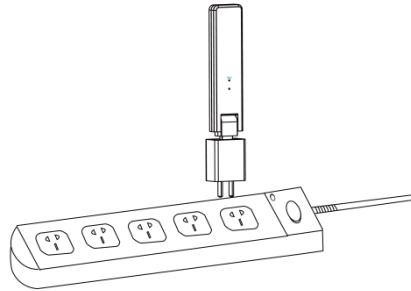


Figure 2

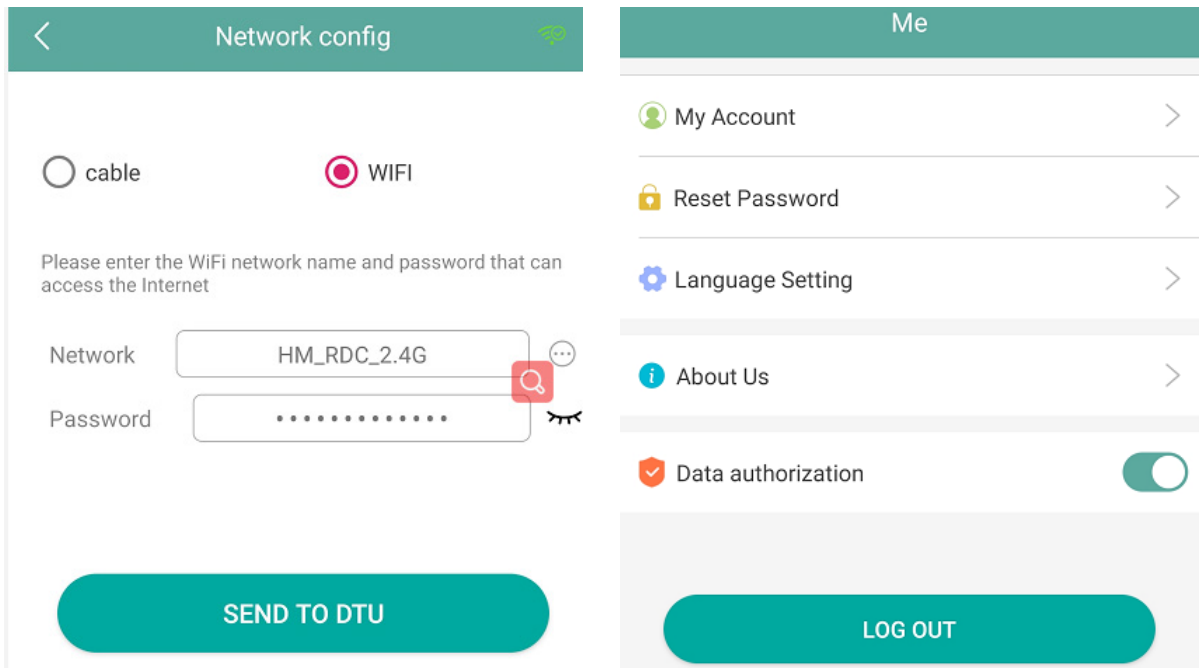
**Note:** Please do not install the DTU directly above metal or concrete to prevent signal interference.

#### 4) Start Procedure.

Once the DTU powers on, the red, green and blue lights will flash in sequence for one second each for 30 seconds.

#### 5) Wi-Fi Configuration

Use the smartphone/tablet to open the Installer App and login. Locate “Me” on the bottom of the page and select “Network Config”. Input the house router’s network name and password, then press “Send to DTU” to complete the Wi-Fi configuration.



## 4. Site Creation on S-Miles Cloud (Hoymiles Monitoring Platform)

- A. Install the Hoymiles Installer App by searching “Hoymiles” at App Store (iOS) or Google Play (Android).
- B. Open the app and log in with your installer account name and password. If you are a new installer with Hoymiles, apply for an installer account from your distributor in advance.
- C. Add Plant, select the “Plant” tab on the bottom, then select “⊕” on the top right side of the page.
- D. Select “Quick” for a single DTU and “Professional” for multiple DTUs.
- E. Fill in the plant details accordingly, and press “Next” after this is complete.
- F. Press “Add DTU SN”, scan the DTU SN (or you can manually input the SN) and press “Next” after this is complete.
- G. Press “Start pairing” and choose the angle and tilt based on the installation site.
- H. Scan the Microinverter SN (or you can manually input the SN) and check the box after completing each SN input. Press “Finish” once all Microinverter SNs have been added.
- I. Disable the Scan function on the top right side and design the layout based on the installation site. Check the box on the top right side, and then select “Next” after completing the design.
- J. Upload a picture of the site and select “Finish” to complete the site creation.
- K. The new site will appear on the plant list in the installer account.
- L. Press the “Networking” button after the plant is created.
- M. Wait about 30 minutes, after which the plant will be displayed as online, and all the Microinverter SNs will be found.

## 5. Customer Login

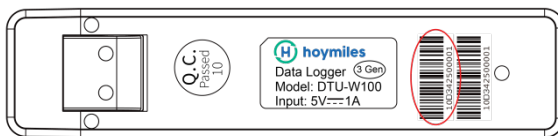
- A. Download the End User App. Search “Hoymiles” at App Store (iOS) or Google Play (Android).
- B. Log in with the password and username that have been set up by installer in the previous step (Section 4 Step B), and press “Login”.
- C. Customers will be able to view all details once the data starts to upload. Normally it will take around 30 minutes for the first data to come through.
- D. Customers can also view the microinverter generating details by accessing the S-Miles Cloud (Hoymiles Monitoring Platform) website at <https://world.hoymiles.com>.



## 6. Complete Installation Map

When the system is energized, and the DTU detects the microinverters, you need to complete the installation map.

- A. Peel the serial number label from the DTU and place it on the installation map.



- B. Complete the system information of the installation map as shown below.

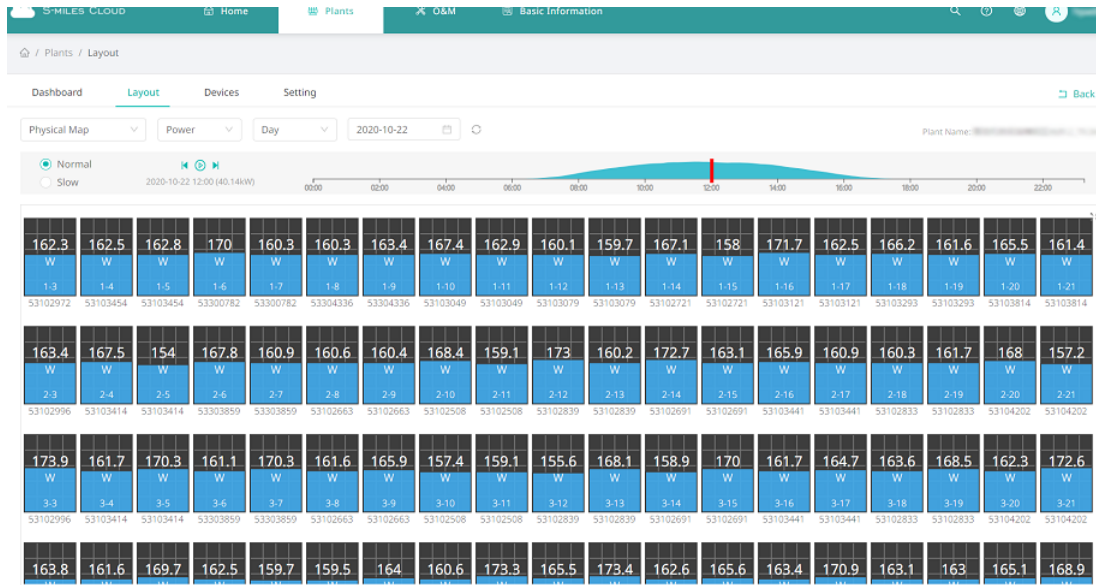
To sheet \_\_\_\_\_

	NSEW (circle one)		Panel Group: Azimuth: Tilt: Sheet _ of _				Customer Information:				DTU Serial Number:							
	⊕	⊙	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
<b>A</b>																		
<b>B</b>																		
<b>C</b>																		
<b>D</b>																		

To sheet \_\_\_\_\_

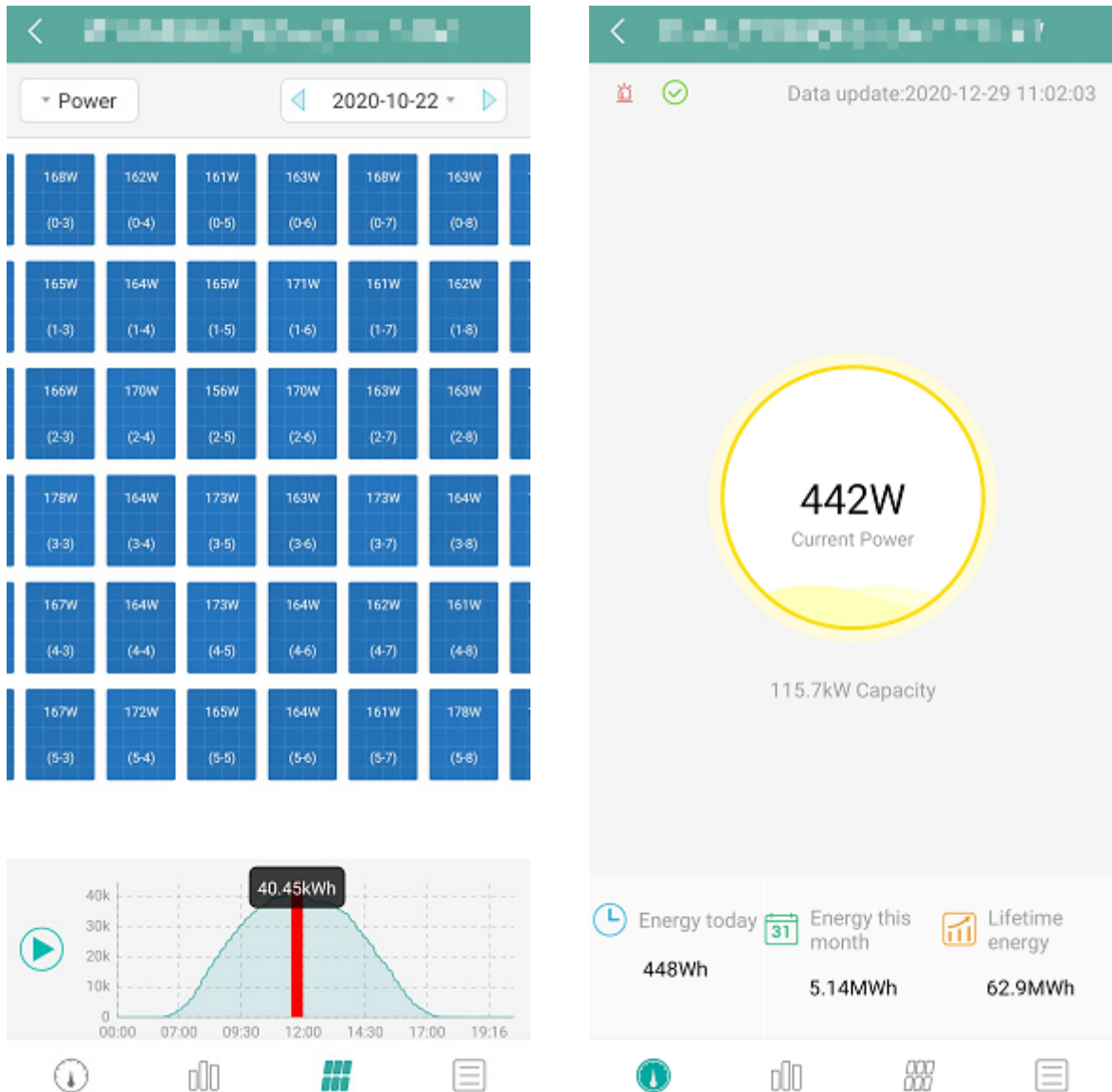
## 7. Browse the Web-Based Plant

You can view the inverter's real-time operating details on the computer web page by accessing the S-Miles Cloud (Hoymiles Monitoring Platform) at <https://world.hoymiles.com>.



## 8. View Phone App

Download the mobile phone app by searching “Hoy miles” at App Store (iOS) or Google Play (Android) and log in with the customer/installer account name and password, after which you will be able to view the operating details of all installed microinverters there.



## 9. LED Indicator Working Status Description

Red Light	Description
Flashes every 1 second	DTU disconnected from Wi-Fi
Flashes every 0.5 seconds	DTU disconnected from server
Blue Light	Description
Flashes every 1 second	No SN
Flashes every 0.5 seconds	Received data from server
Green Light	Description
Flashes every 0.5 seconds	The search SN is incomplete
Lights up constantly	Normal
RED+GREEN+BLUE	Description
Each color flashes once every 1 second	Power on
Each color flashes twice every 1 second	Firmware upgrade

## 10. Troubleshooting

Indicator	Status	Description	Solution
Red	LED flashes red every 1 second.	DTU without SN inside and disconnected from Wi-Fi.	<ul style="list-style-type: none"> <li>Check if the distance between the router and the DTU is out of range (If it is, refer to Section 3.5 Point 2).</li> </ul>
	LED red light is on without flashing.	W100 with SN inside but no Wi-Fi connection.	<ul style="list-style-type: none"> <li>Check if the distance between the router and the DTU is out of range (If it is, refer to Section 3.5 Point 2).</li> <li>Double-check if the house router's password has been correctly input during configuration.</li> <li>Use another device to connect with the house router and make sure that there is an effective reception.</li> <li>Try to connect with the hot spot from the phone to see if any data uploads successfully.</li> </ul>
	LED flashes red every 0.5 seconds.	DTU disconnected from server	<ul style="list-style-type: none"> <li>Re-do configuration.</li> <li>Double-check the port and server address inside the DTU (contact the Hoymiles Technical Service Center for the correct address).</li> </ul>
Blue	LED blue light is on without flashing.	W100 has Wi-Fi connection but without SN inside.	<ul style="list-style-type: none"> <li>Complete the site creation on the Installer App or S-Miles Cloud (Hoymiles Monitoring Platform).</li> <li>Complete networking.</li> </ul>
	LED flashes blue every 1 second.	No SN.	<ul style="list-style-type: none"> <li>Complete networking.</li> </ul>
Green	LED flashes green every 0.5 seconds.	The search SN is incomplete	<ul style="list-style-type: none"> <li>Relocate the DTU to somewhere close to both the router and the microinverter.</li> </ul>

**Note:** Network Connection:

1. Connected to Wi-Fi, and the blue indicator lights up, then you can build the plant.
2. Cannot connect to Wi-Fi, and the indicator alternates red and blue flashes, then you need to connect the DTU to the Wi-Fi again.

## 11. Datasheet

Model	DTU-W100
<b>Communication to Microinverter</b>	
Communication method	2.4 GHz Proprietary RF (Nordic)
Maximum distance (open space)	150 m
Maximum number of panels connected	99 panels
<b>Communication to Cloud</b>	
Wi-Fi communication standard	Wi-Fi (802.11b/g/n)
Data upload time	15 minutes
<b>Power Supply (Adapter)</b>	
Power supply	External adapter with USB port
Adapter input voltage/frequency	AC 100 to 240 V/50 or 60 Hz
Adapter output voltage/current	5 V/2 A
Power consumption	1.0 W (typical), 5 W (maximum)
<b>Mechanical Data</b>	
Ambient temperature range (°C)	-20 to 55
Dimensions (W × H × D mm)	143 × 33 × 12.5
Weight (kg)	0.1
Fixed method	Direct power supply
Indicator light	LED
<b>Others</b>	
Standard	EN 60950 EN 61000-3-2 EN 61000-3-3
	FCC Part 15B / 15C