



Data Transfer Unit USER MANUAL

DTU-Lite-S SE

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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-Lite-S SE).

DTU-Lite-S SE is only compatible with Hoymiles new HMS and HMT series of microinverters.

1.2 Safety Instructions

Symbol	Usage	
4 DANGER	This indicates a hazardous situation that can result in deadly electric shocks, serious physical injuries, and fire incidents.	
VARNING	This indicates that directions must be strictly followed to avoid safety hazards such as equipment damage and personal injury.	
CAUTION	This indicates that the act is forbidden. You should stop, use caution and fully understand the operations explained before proceeding.	

- Note that only professionals can install or replace DTU.
- Do not try to repair DTU without Hoymiles' permission. If the DTU is damaged, please send it back to your installer for repair/replacement. Disassembling DTU without Hoymiles' permission will invalidate the remaining warranty period.
- Please read all the instructions and warnings in the technical specifications carefully.
- Do not use Hoymiles products in a way that is not suggested by the manufacturer. Otherwise it can cause death, personal injuries, or equipment damage.

1.3 User

This manual is only for professional installation and maintenance personnel.

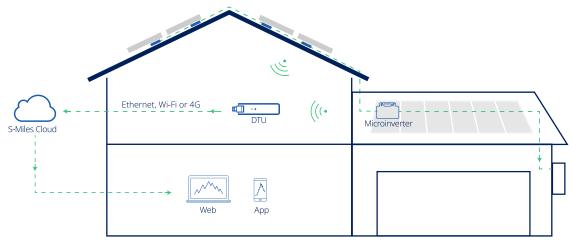
1.4 Support and Contact Information

If you have technical queries concerning our products, please contact your installer or distributor. If further technical support is required, please contact our support team at service@hoymiles.com. For other questions please contact info@hoymiles.com.

1.5 Other Information

Product information is subject to change without notice. The user manual will be updated regularly. Please refer to Hoymiles official website at <u>www.hoymiles.com</u> for the latest version.

2. Hoymiles Microinverter System



The complete Hoymiles PV microinverter system is composed of PV microinverter, Hoymiles gateway DTU and Hoymiles S-Miles Cloud.

The microinverter converts direct current to alternating current and sends each module's power generation and operation data to the DTU.

DTU can communicate with multiple microinverters, collect their operation data, and send them to S-Miles Cloud.

On S-Miles Cloud, you can check the real-time data of each PV module and perform remote operation and maintenance.

2.1 Microinverter

Microinverters convert the DC output of PV modules into grid-compliant AC power. They send their operation data and the output information of PV modules to the DTU, which is the hardware basis of the module-level monitoring. With conversion efficiency up to 96.7% and MPPT efficiency up to 99.9%, Hoymiles microinverters rank among the first class in the industry worldwide.

2.2 DTU

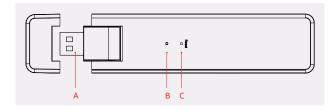
DTU is the key component in Hoymiles microinverter system. It works as the communication gateway between the Hoymiles microinverters and S-Miles Cloud. The DTU communicates with the microinverter in a wireless way and collects the operation data of the system. Meanwhile, the DTU connects to the Internet using different communication options such as Ethernet, Wi-Fi or 4G and communicates with S-Miles Cloud. The operation data of the microinverter system will be uploaded to S-Miles Cloud via DTU.

2.3 S-Miles Cloud

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

3. Interface Layout

Item	Description	
А	USB Connector	
В	Status Indicator	
С	Reset Button	



4. Installation Planning and Preparation

4.1 **Pre-installation**

4.1.1 System Capacity

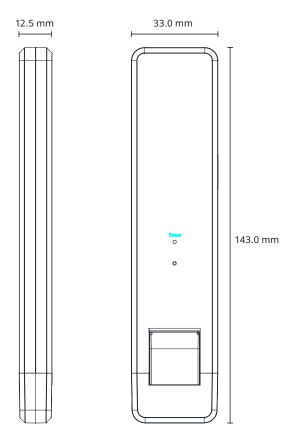
Hoymiles new DTU-Lite-S SE has been specially designed to suit residential budgets and requirements. In combination with Hoymiles S-Miles Cloud, the DTU-Lite-S SE optimizes data collection, system monitoring, and communication with up to 12 PV modules. If the communication between the DTU and microinverter is affected by the installation conditions, the number of PV modules that the DTU can monitor may be reduced.

Note: The maximum number of modules is only possible in open space when installation conditions detailed in DTU and microinverter manuals are fulfilled and the microinverter and DTU are properly placed apart as required.

4.1.2 Environmental Requirements for DTU Installation:

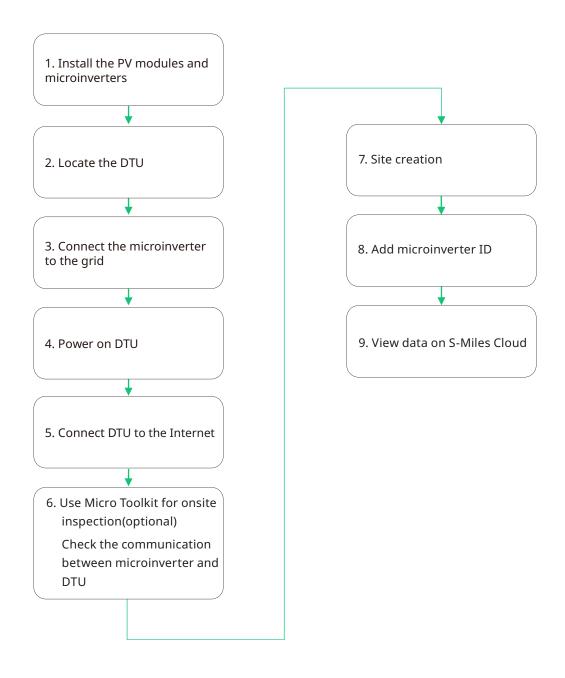
- The DTU should be installed away from dust, liquid, acidic, or corrosive gas.
- The ambient temperature should be between -20°C and 55°C.

4.2 **Dimensions**



4.3 System Installation Steps

Steps 1 to 6 need to be finished on site while steps 7 to 9 can be done either on site or at home. Step 6 must be done correctly in order to complete site creation on S-Miles Cloud.



5. DTU Installation

5.1 Installation Instructions

- A) Check the box for the following items:
 - ✓ Hoymiles DTU-Lite-S SE
 - ✓ Adapter

B) Power the DTU-Lite-S SE

Option 1: Connect the DTU to the adapter and plug it into a wall socket.

Option 2: Connect the DTU to the adapter and plug it into the power socket.

Note:

1. Please make sure that it is placed at least 0.5 meters above the ground, and try to install the DTU perpendicular to the ground.

Option 1

2. To prevent signal attenuation, please do not install the DTU directly above metal or concrete.

5.2 Online Setting

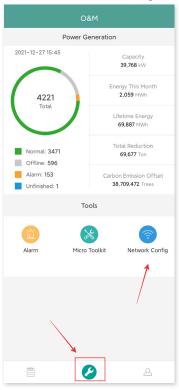
- A) Plug in the power adapter to power the DTU, once the DTU powers on, the red, green and blue lights will flash for one second in turn for 30 seconds.
- B) Download the Hoymiles mobile installer App



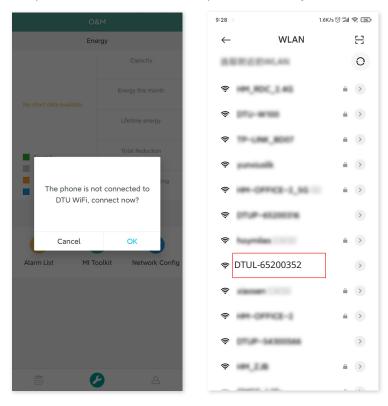
Option 2

0,

- C) Use the App to connect to the DTU
 - ✓ Open the Installer App on a smartphone/tablet and log in. Click "O&M" at the bottom of the page and then click "Network Config".



✓ Select the DTU's wireless network and click Connect. (The network name of the DTU consists of DTUL and product serial number, and is password-free by default.)



D) Set up Internet

✓ When the connection is successful, click "Network Config" again and enter the Network Config page.

0	&M	Network Config
Power G	Generation	
2021-12-27 15:45	Capacity 39,768 kW	
4221 Total	Energy This Month 2,059 MWh	Wi-Fi
lotal	Lifetime Energy 69,887 MWh	۲
Normal: 3471	Total Reduction 69,677 Ton	Please select a WiFi network and enter the password.
Alarm: 153 Unfinished: 1	Carbon Emission Offset 38,709,472 Trees	Password Enter 7
То	ools	Send to DTU
Alarm Micro	Network Config	
	/	
	۸ ک	

- ✓ Select the router Wi-Fi and enter the password.
- ✓ Click "Send to DTU".

hoymiles Send to DTU	< Network Config	K Network Config
Wi-Fi hoymiles Password Enter	444,000,046 144,000,046 144,000,00 19-046,000	Wi-Fi ©
Cancel	INTERNAL - 1,000 DITAR - 4200003 DITAR - 700042348 DITAR - 700042348 DITAR - 100042348	Wi-Fi hoymiles ~ Password Enter 777

- ✓ The network configuration takes about 1 minute, please be patient.
- $\checkmark\,$ If the network is not connected, please check the internet as instructed.

< Network Configuration	< Network Configuration
Network Configuration Succeed	Failed to connect to WiFi Network
DTU Router S-Miles Server	DTU Router S-Miles Server
Network Information Network Information Network Information Network Information	Please check the WiFi network and password.
OK Reset	Return
Overview History More	Overview History More

Check the indicator light of DTU when the connection is successful (green light shall remain on).
 Note: If your configuration page is inconsistent with the above, please update the DTU firmware to the latest version.

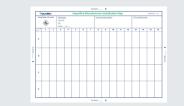
5.3 Complete Installation Map

Please complete the installation map.

 Peel the serial number label from the DTU and affix it to the installation map.



B) Complete system information of the installation map as shown on the right.

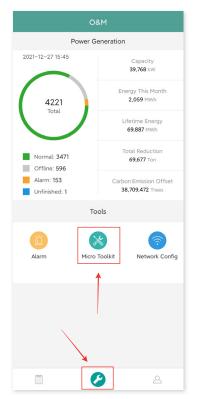


6. Micro Toolkit

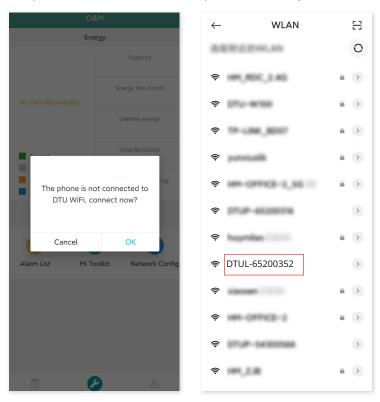
Micro Toolkit is one of the toolkits that come with the S-Miles Cloud app. It can be used for on-site inspection after the PV power station is completed, so that the operation of microinverter can be monitored without Site Creation.

6.1 Connect to the DTU

- \checkmark Open the Installer app on smartphone/tablet and log in.
- ✓ Click "O&M" on the bottom of the page and then "Micro Toolkit".



✓ Select the DTU's wireless network and click "Connect". (The network name of the DTU consists of DTUL and product serial number, and is password-free by default.)



6.2 Field Commissioning and Data Viewing

6.2.1 Data Overview

1. Click O&M and enter Micro Toolkit.

O&M		
Power G	eneration	
2021-12-27 15:45	Capacity 39,768 kW	
4221 Total	Energy This Month 2,059 MWh	
	Lifetime Energy 69,887 MWh	
Offline: 596	Total Reduction 69,677 Ton	
Alarm: 153 Unfinished: 1	Carbon Emission Offset 38,709,472 Trees	
Tools		
Alarm	Toolkit Network Config	
	•	
	2	

2. If you have already created the power station on the monitoring platform, you can directly view the data and information on the overview page. (Refer to Section 6.2.3 for more details)

6.2.2 Add Microinverter

If power station is not yet created on the platform, you need to type in microinverter SN to view power station data as instructed below.

1. Click "Power generation" button

< Overview
Cloud Communication
Last DTU Connection to the platform: Wi-Fi Last Connection Status: 🎅 Last Connection Time:
Power Generation and Control
Total Production: 0W Update Time: 2022-01-10 13:31:37
Micro Status
Qty of Micros Connected: 1 Communication succeeded: 0 , Offline: 1
DTU Information >
DTU-SN: 10F864200890
Meter
Image: Coverview Image: Coverview (co) Coverview Power Generation and Control Connection Status Cloud Communication

2. Press the "Add Device" button to add the microinverter to the list. (The microinverter added here is only used for on-site debugging, and it will not be uploaded to the server, nor can it replace the power station creation on S-Miles Cloud.)

✓ Micro-inverse	power gene	eration and c	ontro
Add Device	e	Self-che	ck
MI-SN	Current ge	neration powe	r
116573326575	0W		···
	generation Conr	K nection Status	Cloud

3. You can click "Automatic Search" to add microinverter, or you can type in / scan the microinverter ID.

Add	Device
	Save

4. The search result of microinverters and microinverters added will be displayed in the list. Tap the button on the right if you want to delete it.

< Add Device
Searching
116573326525
.116573326526
Add Microinverter
Save

5. Confirm that the microinverter ID in the list is correct, and tap Save.

< Add Devie	ce
Searching	
116573326525 112163700067	•
116573326526 116161004118	•
Add Microinverter	Scan code
Save	

6.2.3 View Microinverter Data

1. Click "Power Generation" and you can see the list of microinverter and PV power of each microinverter.

14:40 😝		2.5K/s ⊙	11 - 0
< Micro−inverse p	oower ger	eration and	contro
Add Device		Self-cł	neck
MI-SN	Current g	eneration pov	ver
116573326525	0W0		
116573326526	0W		
116573326527	ow		
	00 Internetion Col	School Status	Cloud

2. If you want to see more details of one microinverter, just click the serial number, then you can check the input and output data on the page shown as below.

14:47 👵 0.8K/s 🗇 🖫 🥱 🗐
< Real-time data
Connection Status
116573326025
MI-SN: 116161004118
Update time: 2021-05-31 14:48:25
PV power: 0W
Input port2
PV current: 0.02A PV voltage: 1.3V
PV power: 0W
Input port3
PV current: 0.03A PV voltage: 46.4V
PV power: 1.4W
Input port4
PV current: 14.47A PV voltage: 46.4V
PV power: 670.5W
Output grid port
AC voltage : 237.9V AC frequency : 50Hz
AC active power: 638.3W
Microinverter
Temperature ; 67.8°C

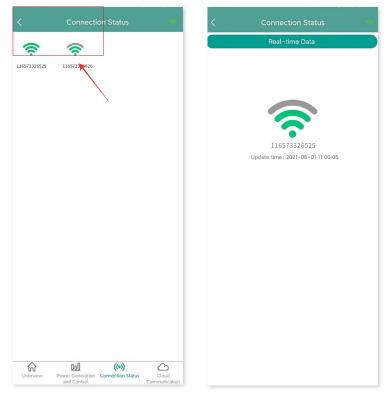
Note: If the microinverter signal is so weak that the real-time data are not updated, move the DTU closer to the microinverter.

6.2.4 View Communication Status with Microinverter

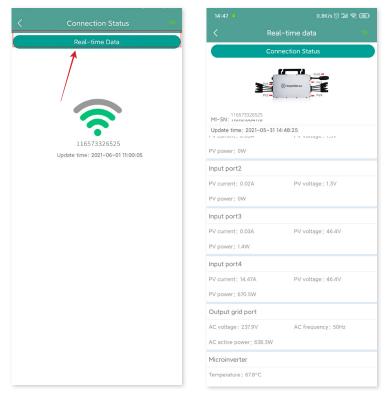
1. Re-enter Micro Toolkit and tap "Connection Status".

C Overview
Cloud communication
Last time DTU connected to the platform: WIFI Last connection status: 奈 Last connection time:
Power generation and control
Total power: Update time:
Microinverter status
MI No.: 6 Communication succeeded: 0 , Offline: 6
DTU Information >
DTU ID: 10F862814833
Overview Power generation

2. On this page, you can check the signal strength between the DTU and each microinverter. Tap the signal icon to enter the respective microinverter page (signal quality is constantly refreshed).



3. You can also tap the button to switch the signal quality and real-time data page.



Note: If the microinverter has no signal, please check whether the microinverter is powered on or refer to the microinverter user manual for troubleshooting.

7. Site Creation on S-Miles Cloud

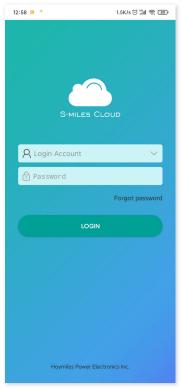
This is a brief description of how to create a new site. You can refer to "Quick Installation Guide for S-Miles Cloud Online Registration" for detailed account creation instructions.

7.1 Site Creation

1. Search "Hoymiles" in the App Store (IOS) or the Play Store (Android), or scan the QR code to download the Hoymiles Installer app.



2. Open the app and log in with your installer account and password. If you are a new installer with Hoymiles, please apply for an Installer account from your distributor in advance.



3. Select the "Station" tab on the bottom, and then select " \oplus " on the right top side of the page to add station.



Fill in the station details and press "Next". Select one from the three types of plant: Home Plant, Enterprise Plant, and Large Professional Plant.

12:59 📕 🍮	1.8K/s 🛇 ''개네 🛜 💷 '	13:00 💻 🖨	0.9K/s 🗇 📶 🤶
< Informa	tion 🖳	< Infor	
* Plant Name	Please enter	* Plant Name	12457349
* Plant Type	Please select $>$	* Plant Type	Home P
* Installed capacity (kW)	Please enter	* Installed capacity (kW)	
* Time Zone	Please select >	* Time Zone	
* Address	Please select ♀	* Address	
* Area	Please select >	* Area	
Please upload pictures in jpg. pl	ng, bmp format within 5M	Please upload pictures in j	Heg, png, bmp format within
		Hom	e Plant
		Enterp	rise Plant
		Large Profe	essional Plant
Next		Ca	ncel

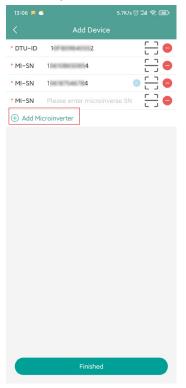
4. Select owner for the plant. Create a new one if there is none.

13:03 📕 🝮	1.5K/s 🗇 🕼 🥱 🕮
<	Select owner
Add owne	Choose owner
Previous	Next
Frevious	нел
13:03 📁 📥	3.0K/s 🗇 🕮 🧙 💷
13:03 🔎 🛆	3.0K/s 🗇 🖫 ବ୍ 🐲 Add owner
<	Add owner
 Login Account Password 	Add owner Please enter Please enter
 Login Account Password Confirm Password 	Add owner Please enter Please enter Please enter Please enter
 Login Account Password Confirm Password Name 	Add owner Please enter Please enter Please enter Please enter
 Login Account Password Confirm Password 	Add owner Please enter Please enter Please enter Please enter
 Login Account Password Confirm Password Name 	Add owner Please enter Please enter Please enter Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter
 Login Account Password Confirm Password Name Email 	Add owner Please enter

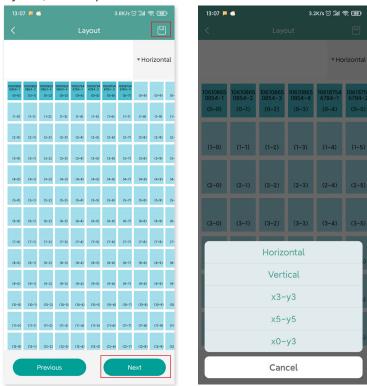
5. Press "Add DTU ID". Scan or input the DTU ID.

13:05 📕 📥	4.5	
<	Devices	
	🕂 Add DTU	
Previ	ous	Next

6. Scan or input the microinverter ID. Press "Finish" when all microinverter IDs have been input.



7. Customize the layout based on the installation (or click the tick box on the top right to select preset layouts). Then tap "Next".



8. Save the design layout and fill in the information.



9. Upload a picture of the site and tap "Next".

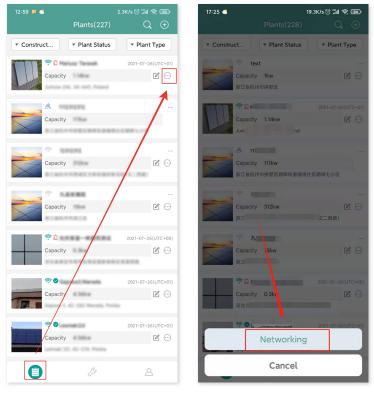


10. Please enter the currency unit and your electricity price. Click the "Networking" button and tap "Save" to complete the site creation.

13:10 📁 🍮	5.6K/s 🛈 📶 🥱 🕮
< Settin	g
Plant Name	text
Currency Unit	eur >
Unit Electricity Price	0
layout swich for owner	
Networking	
Previous	Save
r revious	Jave

- 11. The new site will appear on the station list under the Installer account.
- 12. Please wait about 30 minutes, and the station will appear online where you can see the ID of all microinverters.

13. Networking will fail if the DTU is not powered on. Please tap networking again after the DTU is powered on.



7.2 Customer Login

- A. Please download the End User app by searching "Hoymiles" in App Store (IOS) or Play Store (Android).
- B. Log in with the password and username that have been set up by the installer on the previous step.
- C. Customers will be able to view all details once the data start to upload. If it's the first power station created, normally it takes around 30 minutes for the data to come through.
- D. Customers can also view power generation details on the S-Miles Cloud monitoring platform at global.hoymiles.com.

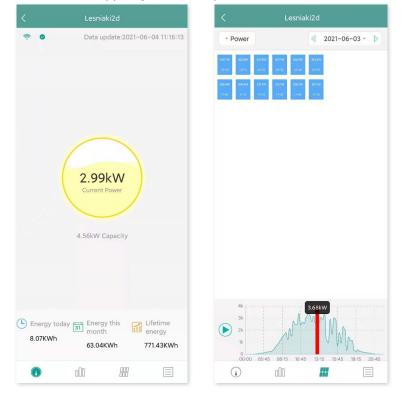
7.3 Browse Station on Webpage

Log in to your account and browse the station on webpage.

						glish v
		<u></u>	S-miles Cloud			
		Ukananda da para da kata	ter password. Ø	4/18 cr store.		
	🗎 Home	∰ Plants 🗶 O&M	Basic Information		۹ ۵ ۵ ۵	
Power Generation	me Energy	Plants X OBM FlattStatus FlattStatus	All Devices	Microinverter 4759 UTU 255 Repeater 0	Q Q Q Hello, date/ut/brogdnl Altered Court 1 Basic A Status 0 Quest Ust Q	
Power Generation Pressy the Match Tory To Science Read Pressy the Match Tory To Science Read Press, and Advance Read Press, and Advance History Deta	me Energy GWn ralent to Planting	Plant Status	All Devices	Repeater 0	Hello, dakehuzhongkini Amare Dynamic (1977) Lim Ty Ogosty, 43840, Over Questy, 188 Odek Links	
Power Generation Image this Match Image this Match 107.75 Min Image Test Reduction 8.417 Tool	me Energy GWn ralent to Planting	Plant Status	All Devices	📥 DTU: 235	Helio, dakehuzhonguint	
Four Generation I brang min block III child 10775 loss III child 2477 br III child 6477 br III child 10775 loss III child 1075 loss III child 1075 loss III child 1075 loss III child </td <td>me Energy GWn ralent to Planting</td> <td>Plant Status</td> <td>All Devices</td> <td>Repeater 0</td> <td>Heller, datablishebhogstell</td> <td></td>	me Energy GWn ralent to Planting	Plant Status	All Devices	Repeater 0	Heller, datablishebhogstell	
Four Generation • •	me Energy GWn ralent to Planting	Plant Status	All Devices	Repeater 0	Helio, data/hub/hoguld Arliand Council (*) Opsity LEMM Council Analy 168 (*) Opsity LEMM Council Analy 168 (*) Op Council Analy 168 (*) O	
Four Generation I brang min block III child 10775 loss III child 2477 br III child 6477 br III child 10775 loss III child 1075 loss III child 1075 loss III child 1075 loss III child </td <td>me Energy GWn ralent to Planting</td> <td>Plant Status</td> <td>All Devices</td> <td>Repeater 0</td> <td>Helio, databutubungsini Affansi oggi oggi oggi oggi oggi oggi oggi og</td> <td></td>	me Energy GWn ralent to Planting	Plant Status	All Devices	Repeater 0	Helio, databutubungsini Affansi oggi oggi oggi oggi oggi oggi oggi og	

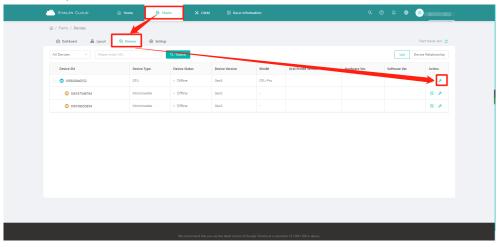
7.4 View Phone App

Download the app on your mobile phone and view station information.



8. DTU Replacement

- 1. If you need to replace the original DTU, please complete the installation according to the instructions in this manual. Otherwise data on the monitoring platform may be lost.
- 2. Log in to your account on the web. Select "Devices > Action > Device Maintenance" for the plants that need a DTU replacement.



3. Click "Replace Device", enter the current device SN and click "OK" to complete DTU replacement.

	S-MILES CLOUD	🗁 Home 😽	Plants X O		Device Maintenance			×
					DTU-SN:	10F809840552	Creation Time: 2021-07-26 13:08:17 (UTC+08)	
	C Dashboard a Layout	🐣 Devices 🔘 Set	ings		Plant:	text	Qty of Microinverters Connected 2	
	All Devices V Please		Q. Search		Hardware Ver.:		Software Ver.: -	
	Device SN	Device Type	Device Status	Device Version	Device Maintenance:	C Restart	Firmware Upgrade	
	 10F809840552 	DTU	 Offline 	Gen3				
	0 106187546784	Microinverter	+ Offline	Gen2				
	0 106108650854	Microinverter	+ Offline	Gen2			A Networking	
n / Denne ter _ Denne He : 1989546552 Ter Denne He _ Denne He : 1989546552 Ter Denne He _ Denne He = Denne He _ Denne He = Denne						Delete Device		
// furtis / Deces @ becker								
/ freis // foreis @ table@ @ table@ @ table@								
// furtis / Deces @ becker								
/ Partin / Dentem Dentem <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td>								
/ freis // foreis @ table@ @ table@ @ table@								
// furtis / Deces @ becker								
Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets Prets								
Press Press Press Press Press Press Press Press Press Press Press Press </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <th></th> <td></td>								
C / Rong / R								
C / Rong / R	-							
Contract Contract Contract <p< th=""><th></th><th>🛱 Home 🖷</th><th>Plants X</th><th>Device Maintenance</th><th>Replace Device</th><th></th><th></th><th>~</th></p<>		🛱 Home 🖷	Plants X	Device Maintenance	Replace Device			~
Image:				DT	Original Device	SN: 10F809840552		
Context M Deves Type Deves Mana Context MA Colline Colline Context Mana Colline Context Mana Colline			ings		* Current Device	SN: Device SN		
Image: Constraints CPU - Office Image: Constraints - Office Image: Constraints - Office			Q. Search	Hardwar				
10110340744 Microsoffer 1010040774 Microsoffer	Device SN	Device Type	Device Status	Device Mainter				
101 10200024 Monometer College Colleg	0 10F809840552		• Offline					
	106187546784		• Offline					
			• Offline					

9. LED Indicators

You can also learn about the system status via LED indicators.

Red Light	Description
Flashes every 1 second	Wi-Fi disconnected
Flashes every 0.5 seconds	Connection with server failed
Blue Light	Description
Flashes every 1 second	No ID
Flashes every 0.5 seconds	Received data from server
Green Light	Description
Flashes every 0.5 seconds	ID searching 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. Technical Data

Model	DTU-Lite-S SE
Communication to Microinverter	
Туре	Sub-1G
Maximum distance (open space)	400 m
Monitoring data limit from solar panels ¹	12
Communication to S-Miles Cloud	
Signal	802.11b/g/n
Sample rate	Per 15 minutes
Interaction	
LED	LED Indicator
Local App	S-Miles Toolkit
Power Supply (Adapter)	
Туре	External adapter
Adapter input voltage/frequency	100 to 240 V AC / 50 or 60Hz
Adapter output voltage/current	5V / 2A
Power consumption (DTU)	Typ. 1.0W / Max. 5.0W
Mechanical Data	
Ambient temperature range (°C)	-20 to +55
Dimensions (W \times H \times D mm)	143 × 33 × 12.5
Weight (kg)	0.1
Installation option	Direct plug-in
Compliance	
Certificate	Anatel
Microinverter Compatibility	
Microinverter model	HMS series, HMT series

*1 This depends on the installation environment. Please refer to user manual for more details.