DTU Operating Manual

DTU is designed primarily to allow users to easily see real-time data of each module throughout the network, preserve various states of various nodes within the network, set various operating parameters, monitor the operation of the various state parameters and work out the statistics of various parameter values.

Features:

1. DTU collects the data of each node in the network through wireless Nrf2.4G (2.4G coverage radius: 50 m)
2. 10 / 100M adaptive network.
3. Current version supports 60 micro-inverter networking.
4. 2 x16 LCD displays simple but important message.

I. Interface

1. Serial port: RS232
2. Ethernet port: RJ45

It is connected to the network via RJ45 port. User can get access to DTU (httpserver) through the browser.

3. Power: DC5V (1000mA)

II. Functional operation

Start and log into DTU. LCD displays the following content according to the initialization:

(1) BOOTLOADER normal start and display:

BOOT SYSsetup….

(2) System initialization:

10:26:30 System setup….

(3) Network initialization:

10:27:55 ETH_BSP_Config

(4) Initialization completed, access to network IP

10:27:55 IP:0.0.0.0

(5) Access to IP：

10:27:55 IP:192.168.1.122

(6) Display of other important information in program run.

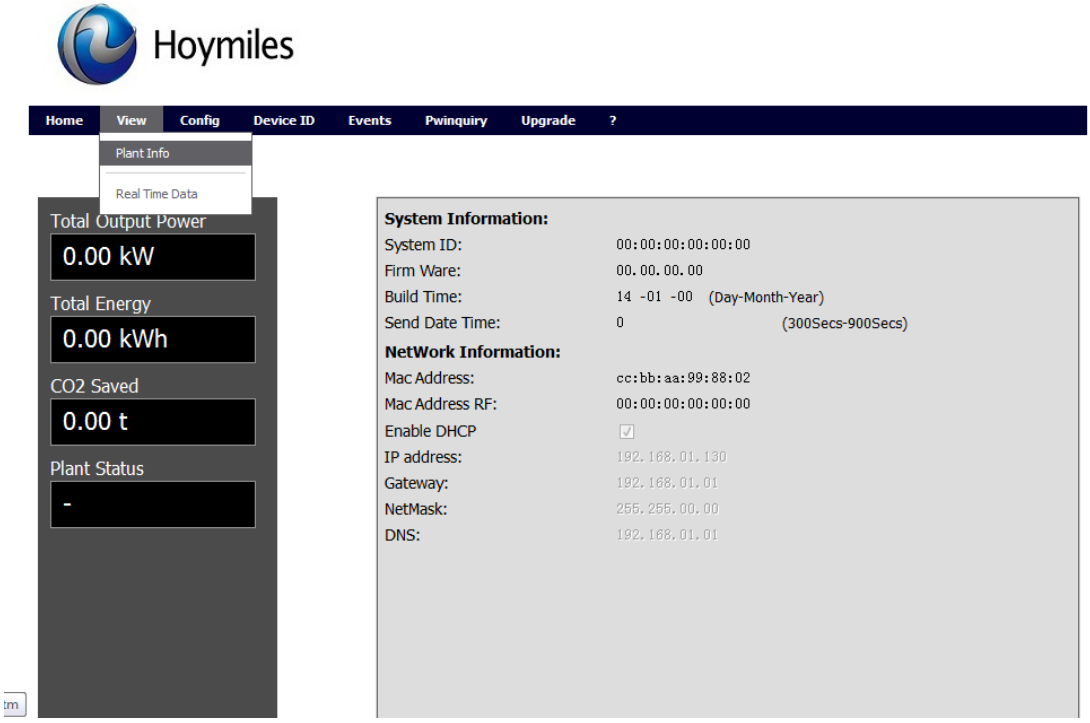
0.16kW	0.07kWh
ALL:05	LINK:01

According to IP 192.168.1.XXX displayed on LCD, log into DTU through the browser.

III. System data view

1. System information

Click View→Plant Info



Information contained:

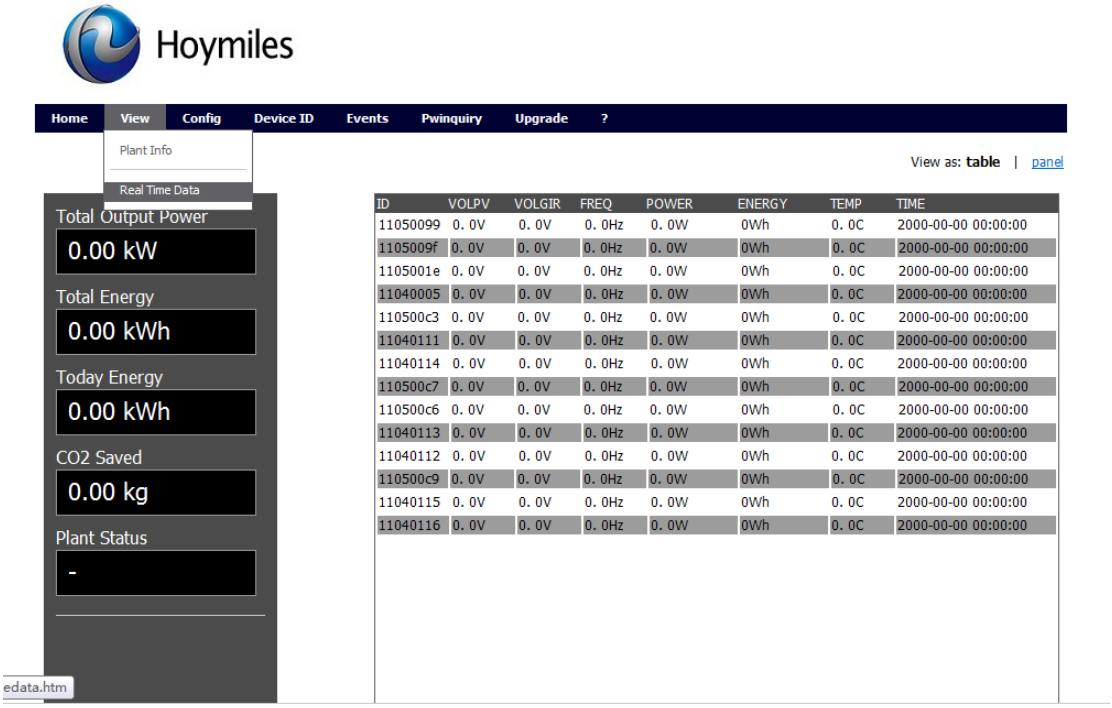
System information display, the system information is set by Config→SystemConfig when the device begins to start.

Click Home or View→Real Time Data

2. Monitoring of real-time data

Click Home or View→Real Time Data

Click Home or View →Real Time Data

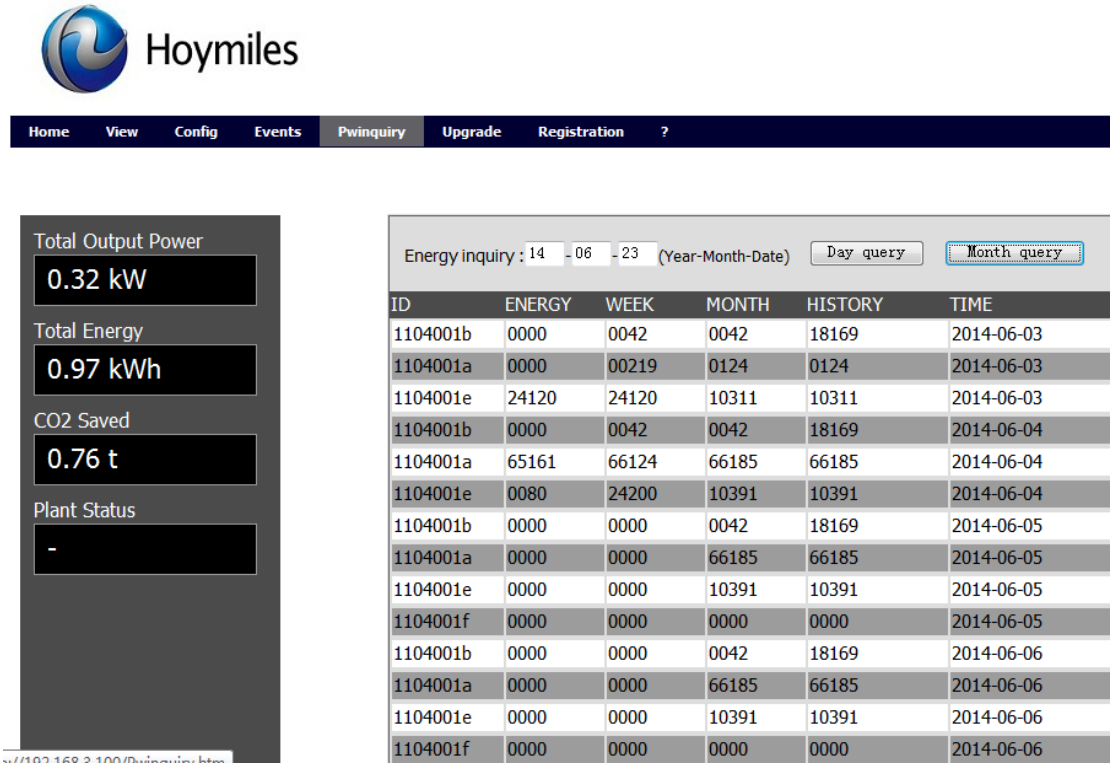


Home statistics: total outputs power, total energy, today energy, CO_2 saved

Real-time display: Node ID, VOLPV, VOLGRID, FREQ, power, energy, temperature, time.

3. Emery query

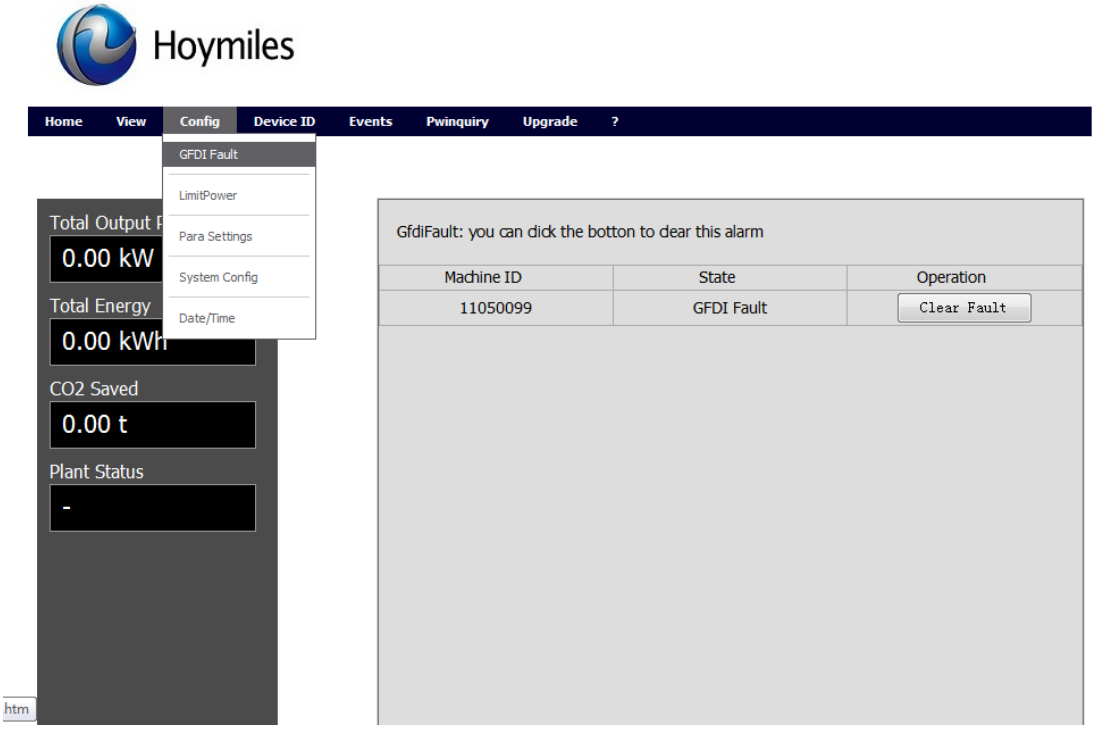
Click Pwinquiry



Description: fill in the query date, day query: energy query of entry date.
Month query: daily energy query of entry month.

4. Ground fault display and exclusion

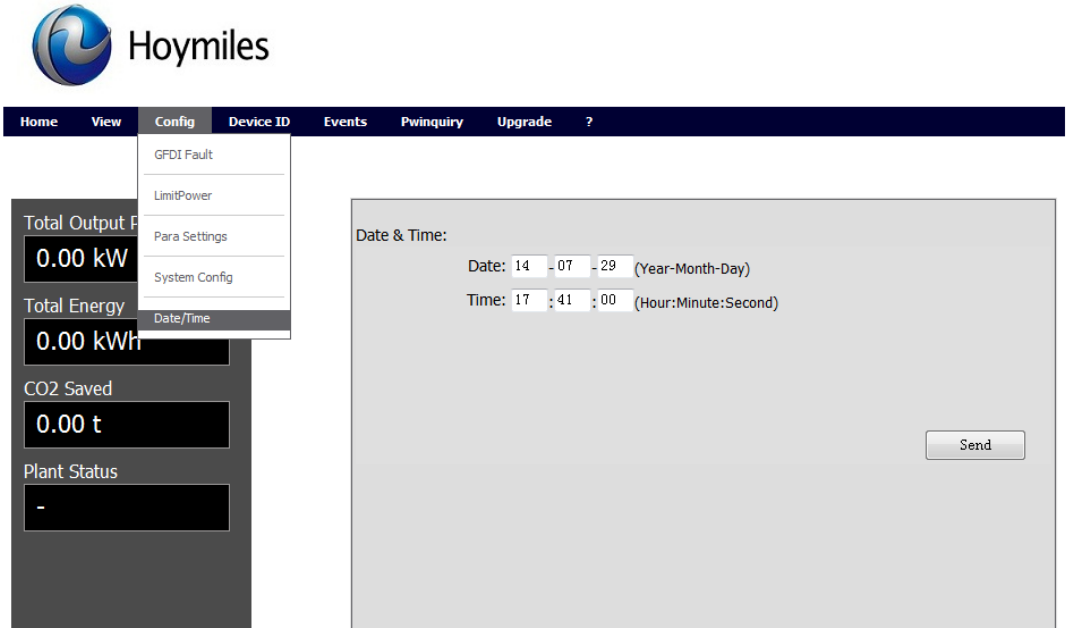
Click Config → GFDI Fault



Operation: Check whether there is a ground fault, if you need to clear the ground fault, click Clear Fault

5. Time set

Click Config→Date/Time



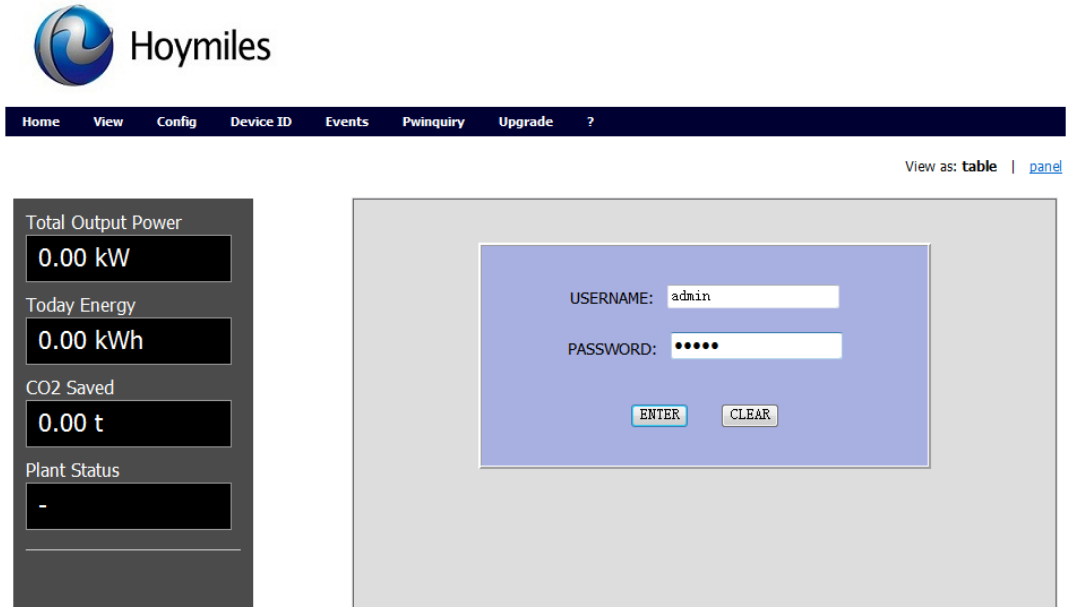
Description: if you set the system time, please fill in the time in the sequence of Year-Month-Day, Hour: Minute: Second.

IV. System login

(Non-professional users banned!)

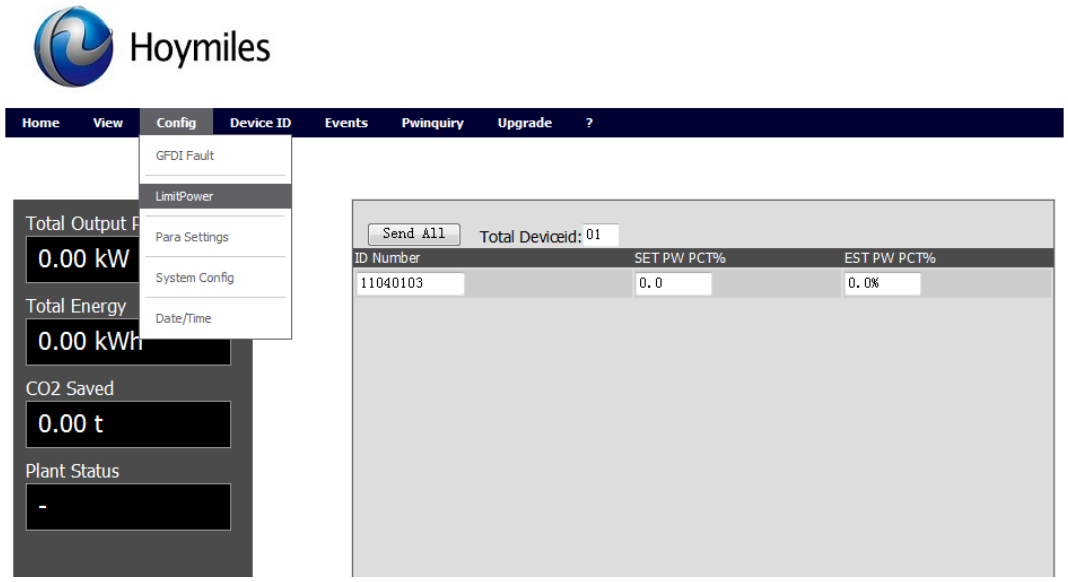
When system logs into the page that require permissions, you need username and password:

Description: After the user enters username and password, he can go to config→system config to modify the user name and password, the default is admin / admin.



1. LimitPower

Click Config→LimitPower

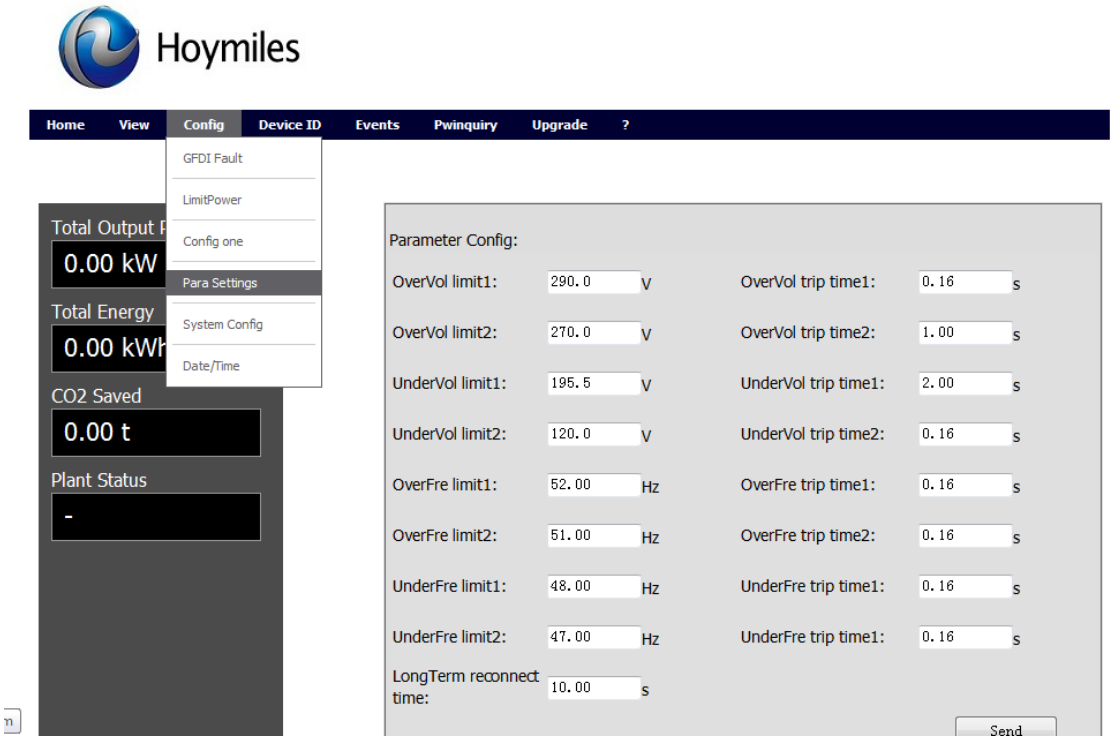


Parameter Description: In case of node set in SET PW PCT, the limit power value 0 indicates Not Set

EST PW PCT displays current limit power value of node, and 0 means Not Successful

2. Configuration of parameters grid-connected protection

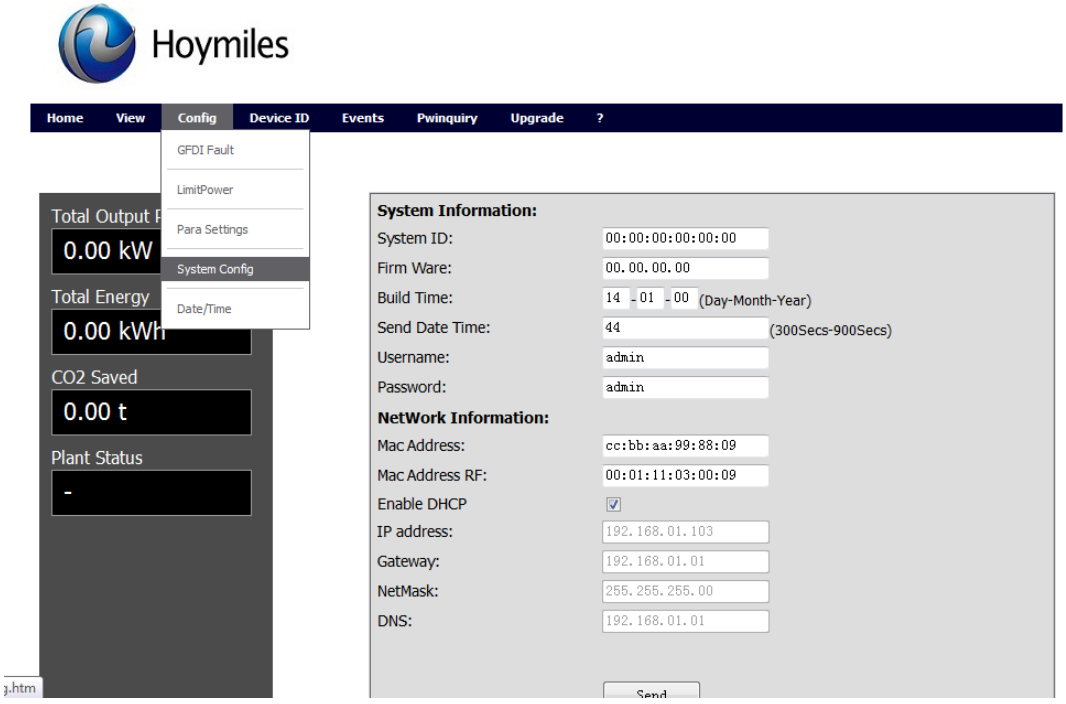
Click Config→Para Setting



Set the various protection nodes of micro-inverter and time delayed for protection operation

3. System settings

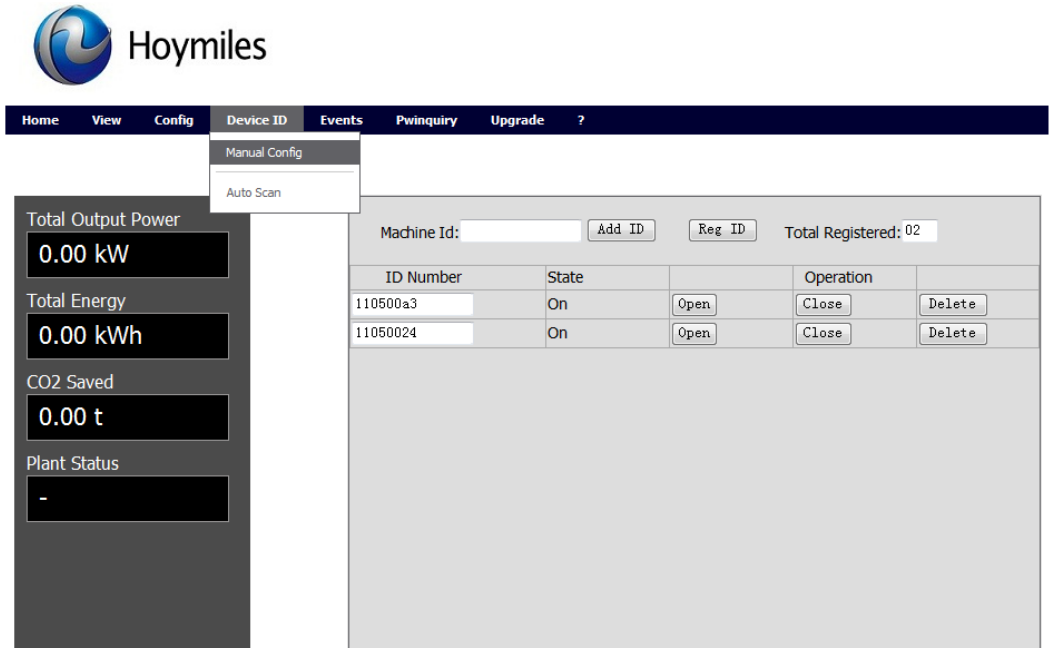
Click Config→System Config



Configuration Description: set System ID, Firm Ware, Build Time, Send Date Time, MAC address, RF address, check whether IP address is dynamically assigned or not, and set network parameters when IP address is static.

4. Manual configuration of system node ID

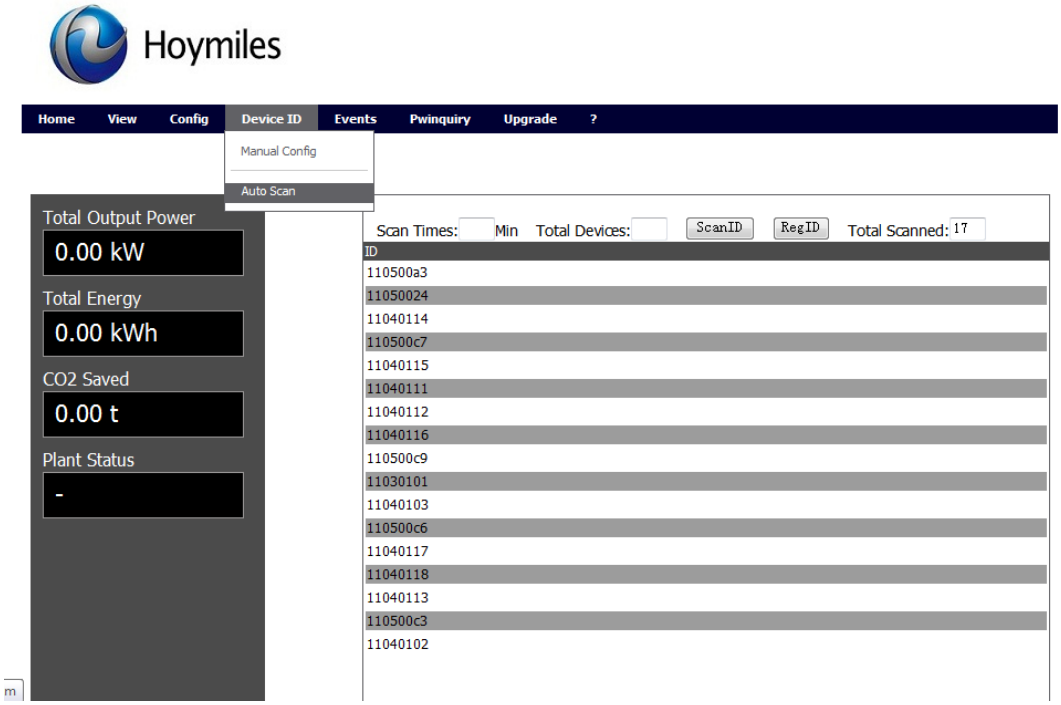
Click Device ID→Manual Config



Manually add ID by clicking ADD ID to add the ID to the list below. If you have added all ID, click REG ID for the registration of ID in the system.

5. Automatic configuration of node ID

Click Device ID→Auto Scan

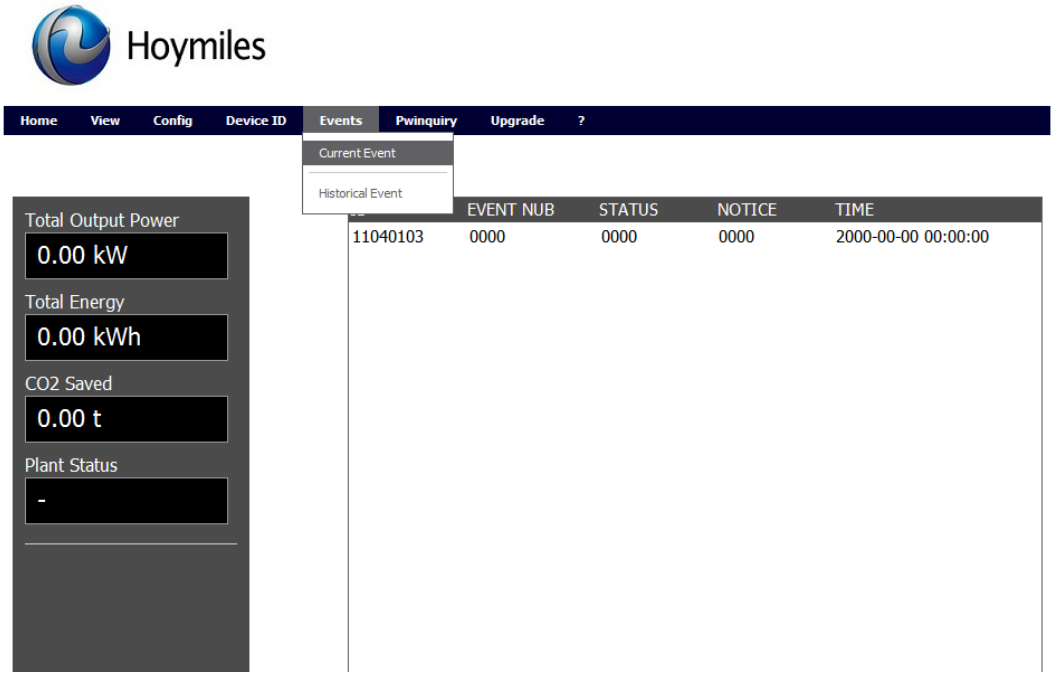


Description: Configuration of Network Node ID

Auto Search of ID and adding of Reg ID to the user ID list afterwards.

6. Real-time fault inquiry

Click Event→Current Event



View real-time fault of each node

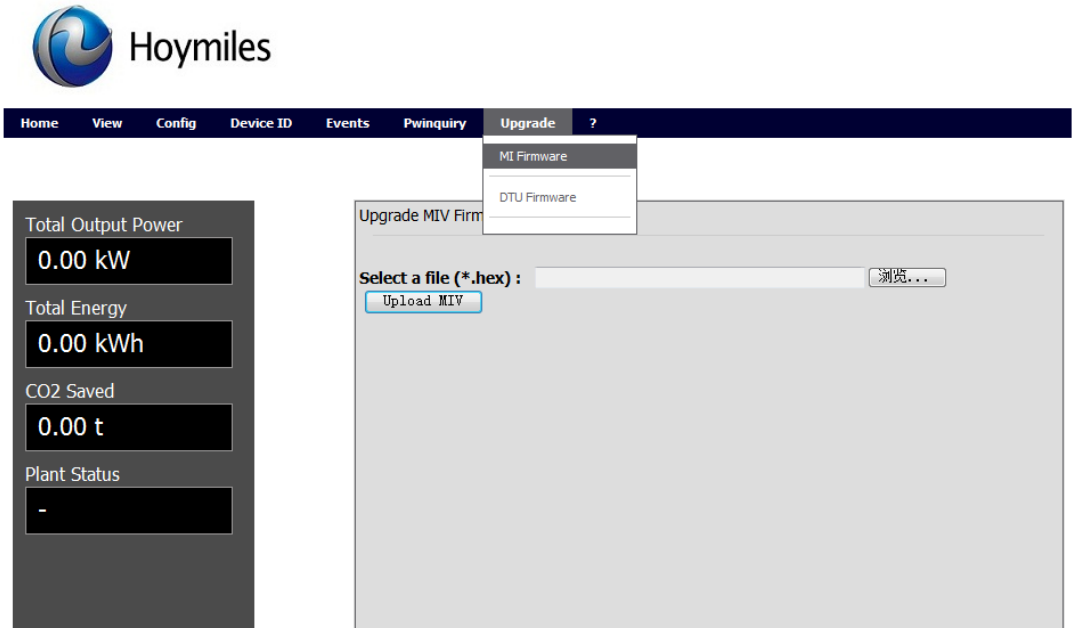
7. Historical fault query

Click Event→Historical Event

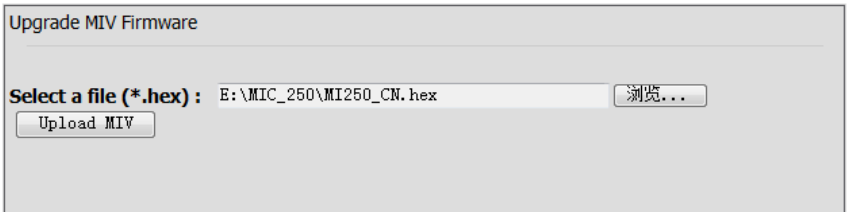
Historical fault query: Fill in time → day query or month query. If there is more than one page, click page down and up to display other data.

8. Update of micro-inverter program

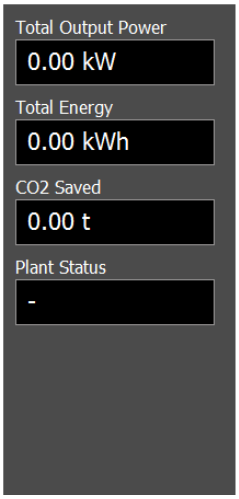
Click Device ID→Manual Config

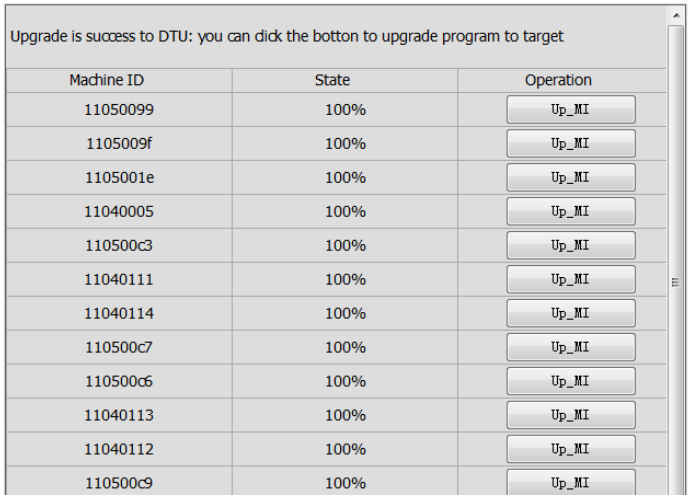


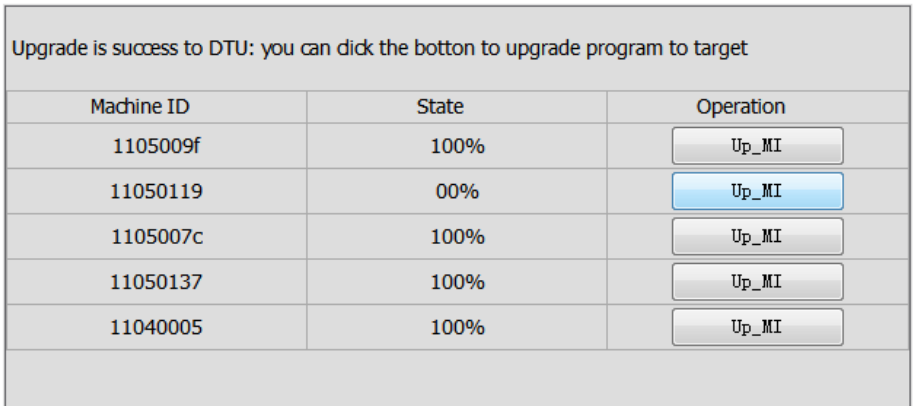
Select the program to be downloaded through Browse as follows:



Click Upload MIV. The update of ID requires micro-inverters updated as follows:



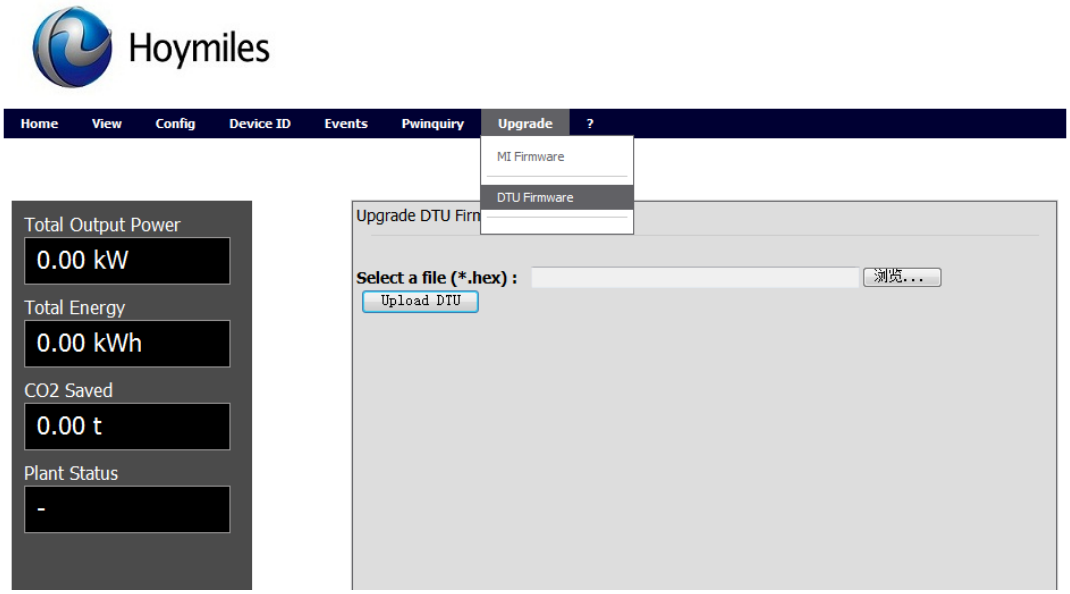




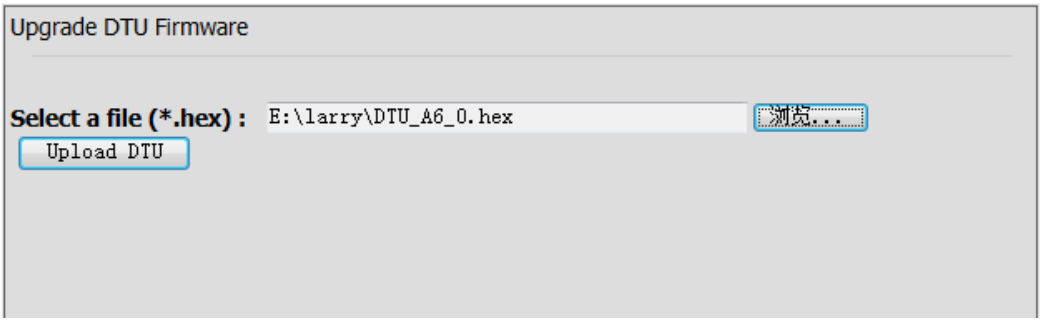
When the state shows the percentage of 100%, it indicates a successful update of micro inverters for this address.

9. DTU program update

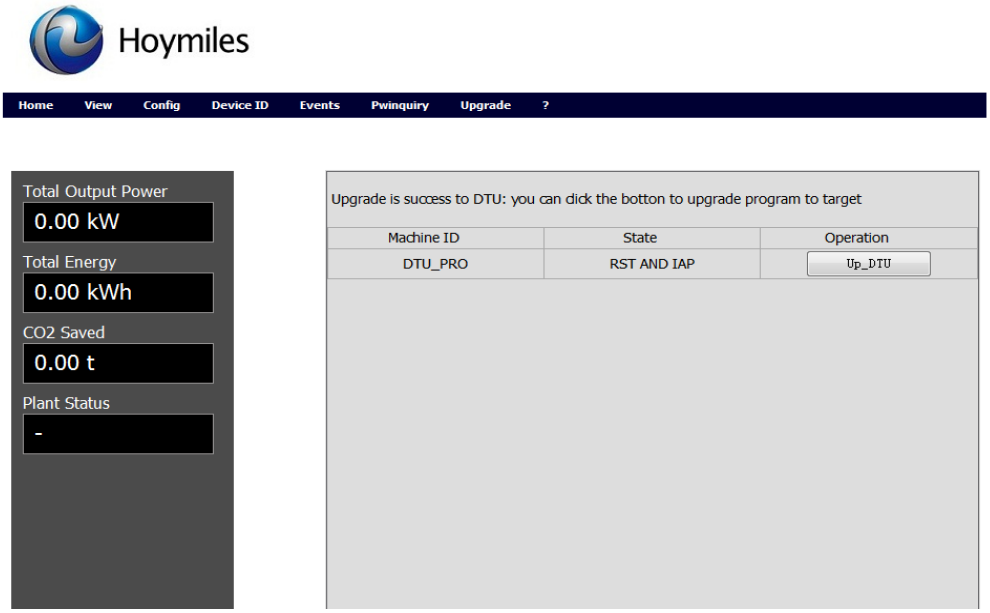
Click Upgrade→DTU Firmware



Select the program to be updated through Browse.



Click Upload DTU to upload DTU program as shown in the table below



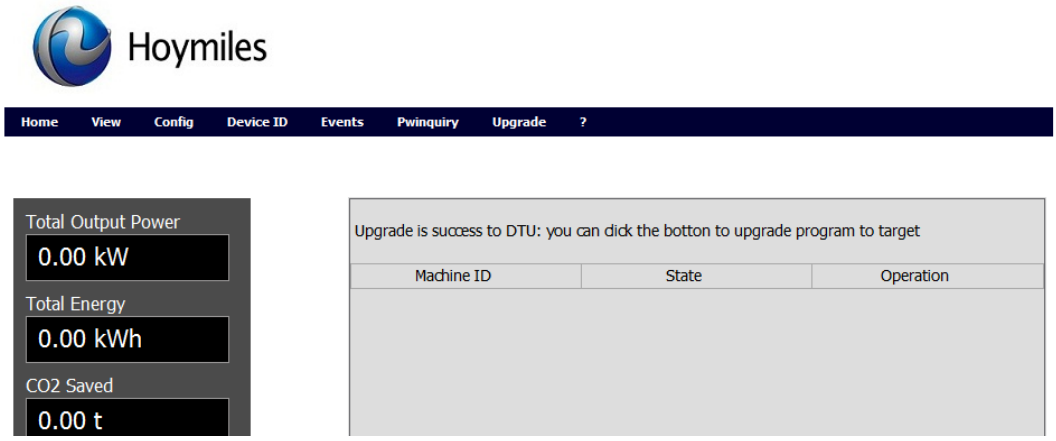
Click Up_DTU, and LCD displays.

Bootloader...IAP

DTU program updates start until LCD displays.

10:27:55 IP:192.168.1.122

It indicates update process is successful, if the original IP is the same with the original one this time, the page will display as shown below.



System update ends.