

PC configuration utility user manual

SiteSync

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Document history

Revision	History	Date
1.0	First draft version	02 nd May 2014

1. Introduction

The purpose of the manual is to provide a walk-through over the features and screens before using the PC configuration utility.

The PC configuration utility is used to configure meters, input output devices, BMS registers and SCS communication details in DCU.

The configuration is transferred by communicating with DCU over Ethernet on local IP address. It is secured using SSL.

The configuration is stored in three XML files.

1. System configuration file. Which has Ethernet, GPRS and serial interface configuration. It also include communication related parameters for SCS server.
2. Meter configuration file: It includes the meter(s) configuration which are associated to the DCU.
3. Input and output configuration file: It includes all the input and output device(s) configuration which are associated to the DCU.

2. Platforms

Configuration utility is supported on Windows 7 and Windows 8 platform with 32/64 bit compatibility.

3. Configuration utility features

Below is the list of the features supported by the utility:

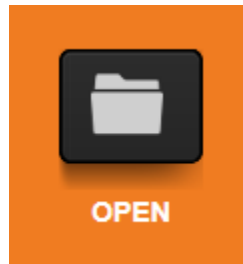
1. Open the configuration from the file system.
2. Edit the configuration using ther user interface.
3. Save the configuration to the file system.
4. Download the configuration from DCU.
5. Upload the configuration to DCU.
6. Discover DCU's connected on network.
7. Copy configuration
8. Delete configuration

Subsequent sections explains each of the above mentioned features in detail.

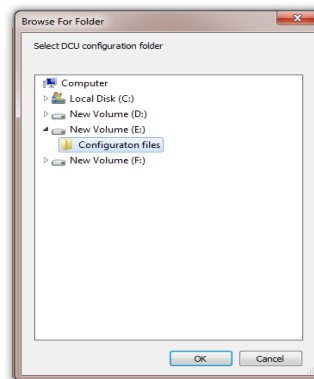
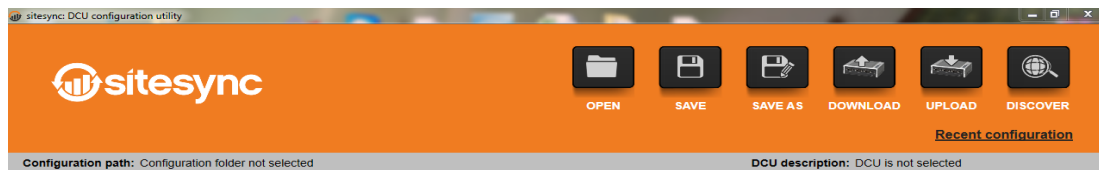
4. Open configuration from file system

Utility allows user to open the configuration which is stored on the file system. This way user can access the already stored configuration. To open the configuration follow below mentioned steps:

Step 1: Click on the “OPEN” icon.



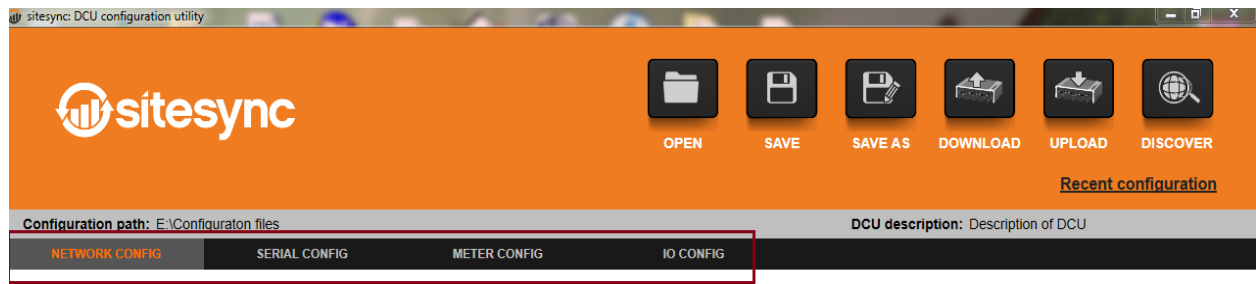
Step 2: A dialog box will appear from which user needs to select the location on the file system where the configuration files exists. After selecting the location, the configuration will be loaded and shown to user.



5. Edit the configuration

Once the configuration is loaded as mentioned in previous section, then user can change / edit the configuration. For editing the configuration, user needs to go the respective configuration page.

There are four tabs as shown in image below. User can select the tab based on the configuration which he / she want to view, add or edit.



These are the four configuration tabs.

5.1. Network configuration

To edit the network configuration user has to select “NETWORK CONFIG” tab. The screen for network configuration look like below.

The screenshot shows the 'sitesync: DCU configuration utility' window with the 'NETWORK CONFIG' tab selected. The form contains the following sections:

- DCU**
 - DCU description:
 - SMS reset pin:
 - Secret key:
 - ☐ Show characters
- BMS**
 - Slave address:
 - Media:
 - Protocol:
 - Serial tag:
- Ethernet**
 - IP address:
 - Subnet mask:
 - Gateway:
- Server Control System (SCS)**
 - Server URL:
 - Server port:
 - Server connection type:
- GPRS**
 - SIM APN:
 - SIM user name:
 - SIM password:
 - Primary DNS:
 - Secondary DNS:

5.2. Serial configuration

To edit the serial configuration user has to select “SERIAL CONFIG” tab. The screen for serial configuration look like below.

The screenshot displays the 'sitesync: DCU configuration utility' window. The top bar is orange with the 'sitesync' logo on the left and a row of icons (OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, DISCOVER) on the right. Below the icons is a 'Recent configuration' link. A status bar shows the 'Configuration path: E:\Configuration files' and 'DCU description: Description of DCU'. The main interface has a dark grey tab bar with four tabs: 'NETWORK CONFIG', 'SERIAL CONFIG' (selected), 'METER CONFIG', and 'IO CONFIG'. The 'SERIAL CONFIG' tab contains four configuration panels for 'Serial port-1', 'Serial port-2', 'Serial port-3', and 'Serial port-4'. Each panel has a checked checkbox, a 'Port' field (e.g., /dev/ttyS1), a 'Baud rate' dropdown (9600), a 'Data bits' dropdown (8 bits), a 'Parity' dropdown (None), and a 'Stop bits' dropdown (1 bit).

Configuration path: E:\Configuration files DCU description: Description of DCU

NETWORK CONFIG SERIAL CONFIG METER CONFIG IO CONFIG

Serial port-1 ☒

Port: /dev/ttyS1
Baud rate: 9600 Data bits: 8 bits
Parity: None Stop bits: 1 bit

Serial port-2 ☒

Port: /dev/ttyS2
Baud rate: 9600 Data bits: 8 bits
Parity: None Stop bits: 1 bit

Serial port-3 ☒

Port: /dev/ttyS3
Baud rate: 9600 Data bits: 8 bits
Parity: None Stop bits: 1 bit

Serial port-4 ☒

Port: /dev/ttyS4
Baud rate: 9600 Data bits: 8 bits
Parity: None Stop bits: 1 bit

5.3. Meter configuration

To edit the meter configuration user has to select “METER CONFIG” tab. The screen for meter configuration look like below.

The screenshot displays the 'sitesync DCU configuration utility' window. The interface includes a top bar with the 'sitesync' logo and navigation icons (OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, DISCOVER). Below this is a configuration path and a 'Recent configuration' link. The main area has tabs for NETWORK CONFIG, SERIAL CONFIG, METER CONFIG (selected), and IO CONFIG. On the left, an 'Add New Device' button is above a table listing devices:

Device name	Device id
Floor 1	12341
Floor 2	12342
Floor 3	12343
Floor 4	12344
Floor 5	12345

The right side shows the 'Meter Details' configuration for the selected device (Floor 1, ID 12341):

- Device id:** 12341
- Name:** Floor 1
- Type:** Electrical
- Serial port:** Serial port 1
- Protocol:** Modbus RTU over RS485
- Modbus address:** 12
- IP address:** 192.168.1.35
- Port:** 4330
- RF device id:** 1001
- Channel:** 1

Below the meter details is the 'Polling specific' section:

- Poll interval (in sec):** 30
- Offset to add:** 0
- Offset to multiply:** 100
- Register address for BMS:** 3001
- Register address:** 1001
- Register type:** Holding register
- Input data type:** float
- Byte order:** Big
- Output data type:** signed short

The bottom right corner of the window shows 'Version 14.0'.

To add new meter user has to click on “Add New Device” button. This will create a new meter entry with default values. User can edit it further.

To edit particular **meter's configuration**, user needs to select the meter from the list shown on the left hand side. The selected meter's configuration will be loaded on the right hand side from which one can edit it.

5.4. Input and output configuration

To edit the input and output configuration user has to select “IO CONFIG” tab. The screen for input and output configuration look like below.

The screenshot displays the 'sitesync DCU configuration utility' window. The top bar includes the 'sitesync' logo and navigation buttons: OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, and DISCOVER. Below this is a 'Recent configuration' link. The main interface has a tabbed menu with 'NETWORK CONFIG', 'SERIAL CONFIG', 'METER CONFIG', and 'IO CONFIG' (which is selected). The 'IO CONFIG' tab is divided into two sections: 'Common parameters' and 'Communication parameters'.

Common parameters:

- Device id:** 22345
- Name:** Push button Level 1
- IO type:** ☒ Input ☐ Output
- Type:** Push button (dropdown)
- Register address for BMS:** 4001
- Methods:** ☒ getState ☐ setState
- Poll interval (in sec):** 30
- Logical mode:** ☒ Simple ☐ Momentary
- Time interval (in sec):** 60
- Relay operation:** ☒ Open ☐ Closed
- Start offset:** 5
- Stop offset:** -5
- Protocol:** Modbus RTU over RS485 (dropdown)
- Control Mode:** ☒ Auto ☐ Manual
- Serial port:** Serial port 3 (dropdown)

Communication parameters:

- Address:** 12
- Register address:** 1000
- Register type:** Input status (dropdown)
- IP address:** 192.168.1.35
- Port:** 4330
- RF device id:** 1001
- Channel:** 1

On the left side of the 'IO CONFIG' tab, there is an 'Add New Device' button and a list of existing devices:

Device name	Device id
Push button Level 1	22345
Push button Level 2	22346
Push button Level 3	22347
Lobby 1 lighting	22348
Lobby 2 lighting	22349
Lobby 3 lighting	22349
Push button Level 3	22350
Lobby 3 lighting	22351

The bottom right corner of the window shows 'Version 14.0'.

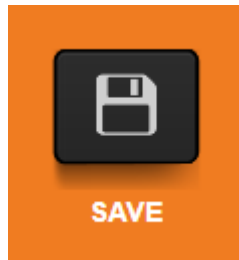
To add new input / output device user has to click on “Add New Device” button. This will create a input / output entry with default values. User can edit it further.

To edit particular **input / output device’s configuration**, user needs to select the device from the list shown on the left hand side. The selected device’s configuration will be loaded on the right hand side from which one can edit it.

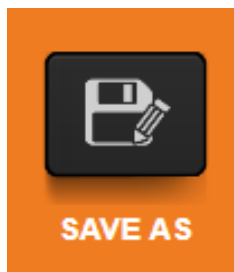
6. Save configuration to file system

Utility allows user to save the configuration on the file system in two ways.

Method 1: Click on the “SAVE” icon shown below, to save the configuration at the location from where the configuration was opened.



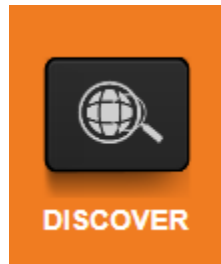
Method 2: Click on the “SAVE AS” icon shown below, to save the configuration at other location on the file system.



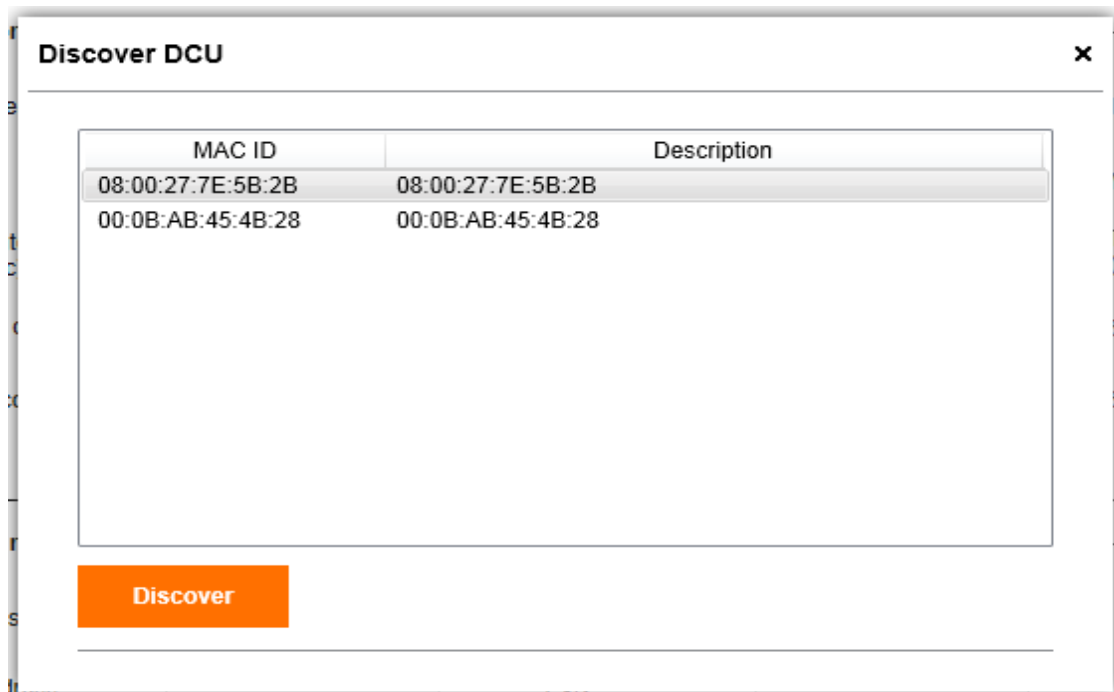
7. Discover DCU

This feature allow user to view all the DCU's which are connected on Ethernet network. To discover DCU follow below mentioned steps:

Step 1: Click on the “DISCOVER” icon.



Step 2: Click on “Discover” button and wait till utility discovers DCU's. The list of DCU's available on the network will be shown on UI.



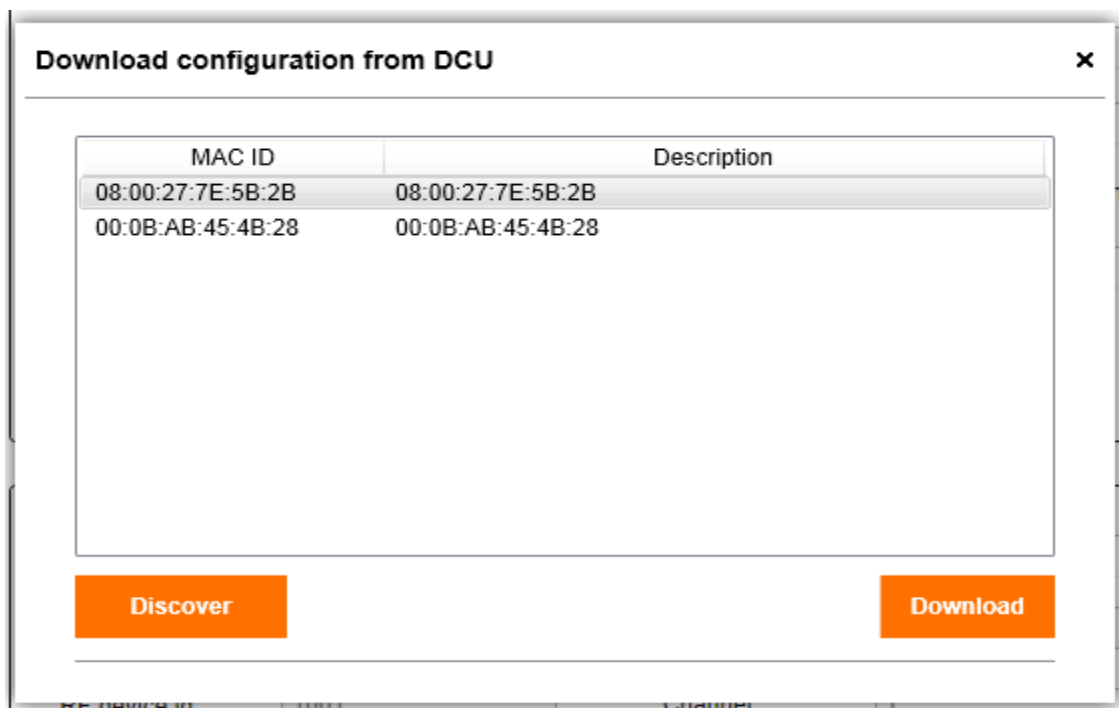
8. Download configuration from DCU

This feature is used to download all the configurations from DCU by communicating over Ethernet. To download the configuration follow below mentioned steps:

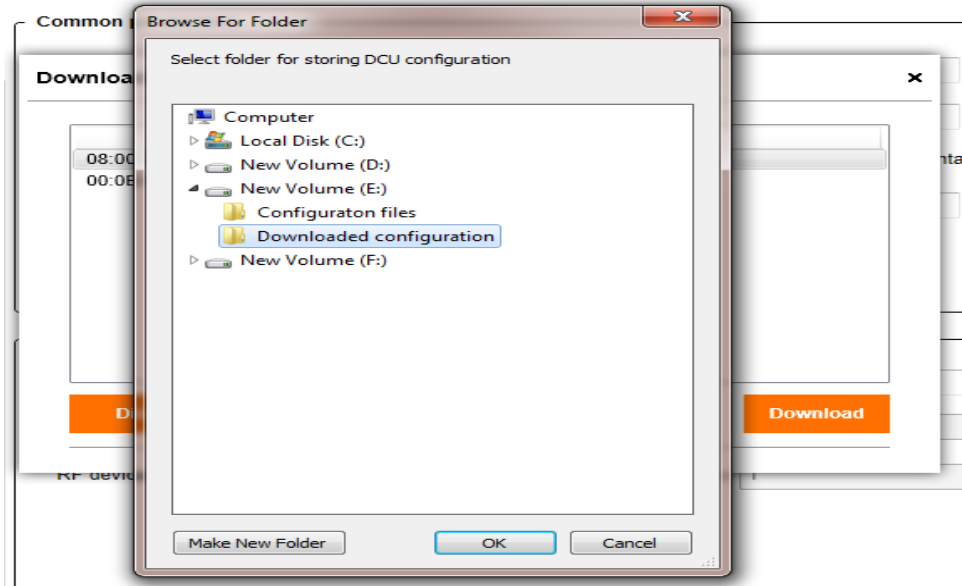
Step 1: Click on the “DOWNLOAD” icon.



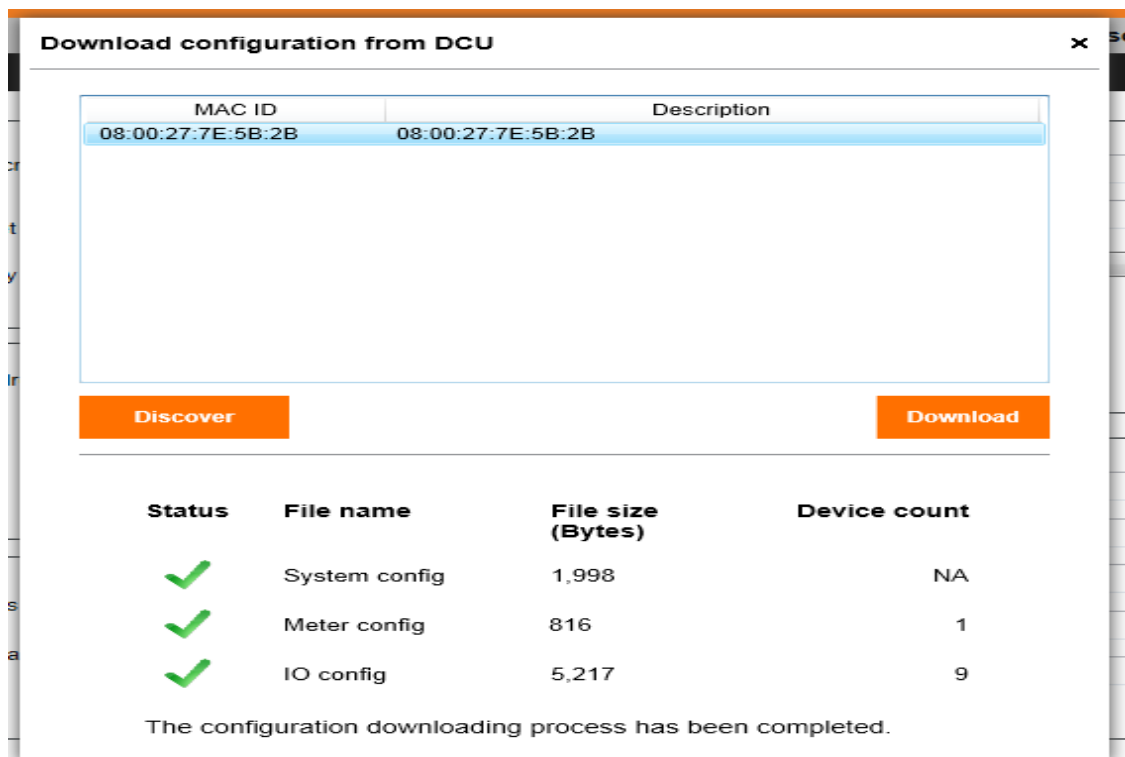
Step 2: Discover the DCU from which configuration has to be downloaded. To do so, click on “Discover” button. Select the DCU from which configuration has to be downloaded.



Step 3: Click on “Download” button and a dialog box appears to select the location where the configuration has to be downloaded. Select the location and press “OK”.



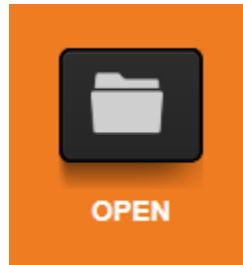
Step 4: After selecting the location, the downloading process will start and the configuration will be downloaded. You will see the downloading progress and details of each configuration which is being downloaded. To access the configuration, close the “Download configuration” popup.



9. Upload configuration from DCU

This feature is used to upload all the configurations to DCU by communicating over Ethernet. To upload the configuration follow below mentioned steps:

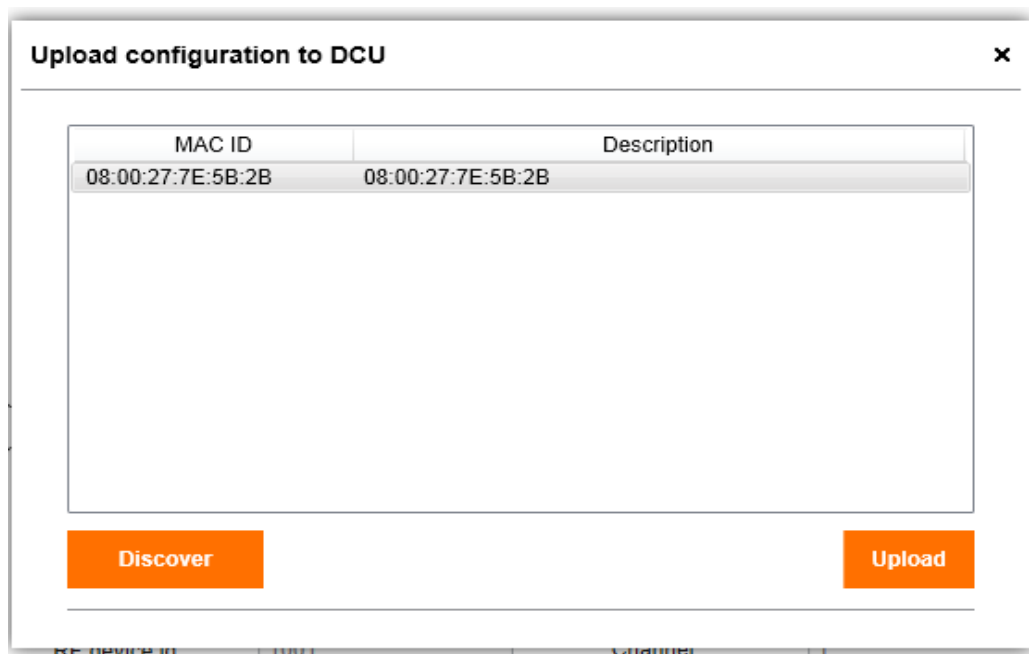
Step 1: Click on the “OPEN” icon. It is explained in section “Open configuration from filesystem”.



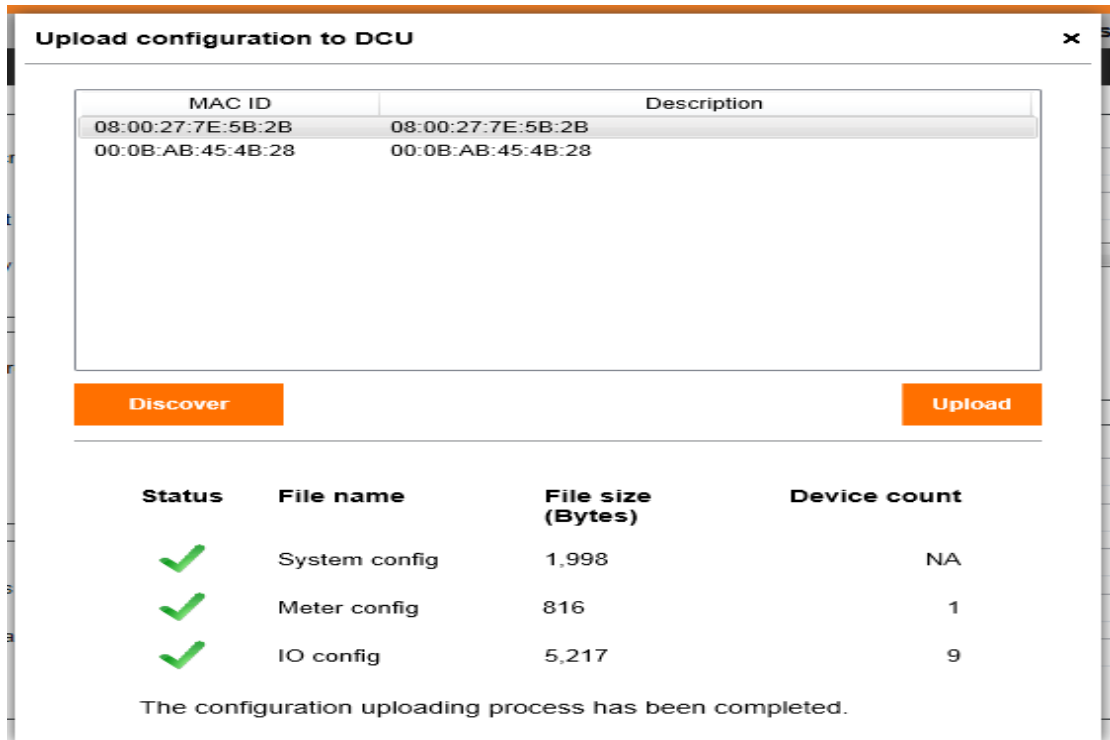
Step 2: Click on the “UPLOAD” icon.



Step 3: Discover the DCU from which configuration has to be uploaded. To do so, click on “Discover” button. Select the DCU from which configuration has to be uploaded.



Step 4: Click on “Upload” button and the selected configuration uploading process will start. You will see the uploading progress and details of each configuration which is being uploaded.



10. Auto generation of device identifier

The device identifier is generated by considering the last identifier used in the configuration. This is used on meter and IO configuration screen that is while adding and copying device.

11. Validation of configuration fields

Below mentioned are the three types of indication shown in the utility for any field.

1. If the entered value is not a valid value or if it is an erroneous value then it is indicated by showing a red circle next to the textbox having error message on its tooltip.
2. If any of the field in configuration is changed then it is indicated by changing its background color to orange.
3. On meter and IO configuration screen, with the device identifier, name list, an indication is shown whether there is a change in any of the device configuration. It is shown with three different colors as stated below,
 1. **Green** indicates no change, that is, the configuration has not been edited.
 2. **Orange** indicates change in the configuration, that is, the configuration has been edited.
 3. **Red** indicates an error in the configuration.

The screenshot displays the 'sitesync DCU configuration utility' window. The interface includes a top toolbar with icons for OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, and DISCOVER. Below the toolbar, the configuration path is 'E:\Configuration files' and the DCU description is 'Description of DCU'. The main window is divided into four tabs: NETWORK CONFIG, SERIAL CONFIG, METER CONFIG, and IO CONFIG. The METER CONFIG tab is active, showing 'Meter Details' and 'Polling specific' sections.

In the 'Meter Details' section, the 'Name' field is highlighted with a red circle and a red error message: 'This field is mandatory'. The 'Protocol' field is set to 'Modbus RTU over TCP'. The 'IP Address' field is set to '192.168.1.134' and the 'Port' field is set to '4330'. The 'Channel' field is empty.

In the 'Polling specific' section, the 'Poli interval (in sec)' is set to '30', 'Offset to add' is '0', and 'Offset to multiply' is '100'. The 'Register address for BMS' is '3003', 'Register address' is '1003', 'Register type' is 'Holding register', 'Input data type' is 'unsigned char', 'Byte order' is 'Big', and 'Output data type' is 'unsigned char'.

On the left side, there is a table for 'Add New Device' with columns 'Device name' and 'Device id'. The table lists several devices, including 'Device1' which is highlighted in red. A red arrow points to 'Device1' with the text: 'There is an error in the configuration.' Below the table, there are two lines of text: 'The configuration has been edited.' and 'The configuration has not been edited.'

12. Copy configuration

This feature is used to copy existing device configuration. This feature is included on meter and IO configuration screen. Except device identifier, all the other configuration fields are copied. The device identifier is auto generated which is explained in "Auto generation of device identifier" section. To copy the configuration follow below mentioned steps:

Step 1: Right-click on the device from the list which is displayed on the left hand side and then click "Copy" option.

The screenshot displays the 'sitesync DCU configuration utility' window. The top bar includes the 'sitesync' logo and icons for OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, and DISCOVER. Below this is a 'Recent configuration' link. The main interface has a tabbed structure with 'METER CONFIG' selected. On the left, a list of devices is shown with a context menu open for 'Floor 3' (Device id 12343), highlighting the 'Copy' option. The main configuration area shows details for 'Floor 3' (Device id 12343), including Name, Type (Gas), Serial port, Protocol (Modbus RTU over TCP/IP), Modbus address (12), IP address (192.168.1.34), Port (4330), RF device id (1001), and Channel (1). The 'Polling specific' section includes Poll interval (30), Register address for BMS (3003), Register address (1003), Register type (Holding register), Input data type (unsigned char), Byte order (Big), Offset to add (0), Offset to multiply (100), and Output data type (unsigned char).

Step 2: The copied configuration gets selected for editing.

The screenshot displays the 'sitesync DCU configuration utility' window. The interface includes a top menu bar with icons for OPEN, SAVE, SAVE AS, DOWNLOAD, UPLOAD, and DISCOVER. Below this is a status bar showing the 'Configuration path' as 'E:\Configuration files' and the 'DCU description' as 'Description of DCU'. The main window is divided into four tabs: NETWORK CONFIG, SERIAL CONFIG, METER CONFIG (selected), and IO CONFIG. On the left, under 'Add New Device', there is a table listing devices:

Device name	Device id
Floor 1	12341
Floor 2	12342
Floor 3	12343
Floor 4	12344
Floor 5	12345
Device1	12346

The 'METER CONFIG' tab is active, showing 'Meter Details' for 'Device1' (ID: 12346). The details include:

- Name: Device1
- Type: Gas
- Serial port: Serial port 1
- Protocol: Modbus RTU over TCP/IP
- Modbus address: 12
- IP address: 192.168.1.34
- Port: 4330
- RF device id: 8809
- Channel: 1

Below the meter details, the 'Polling specific' section contains the following settings:

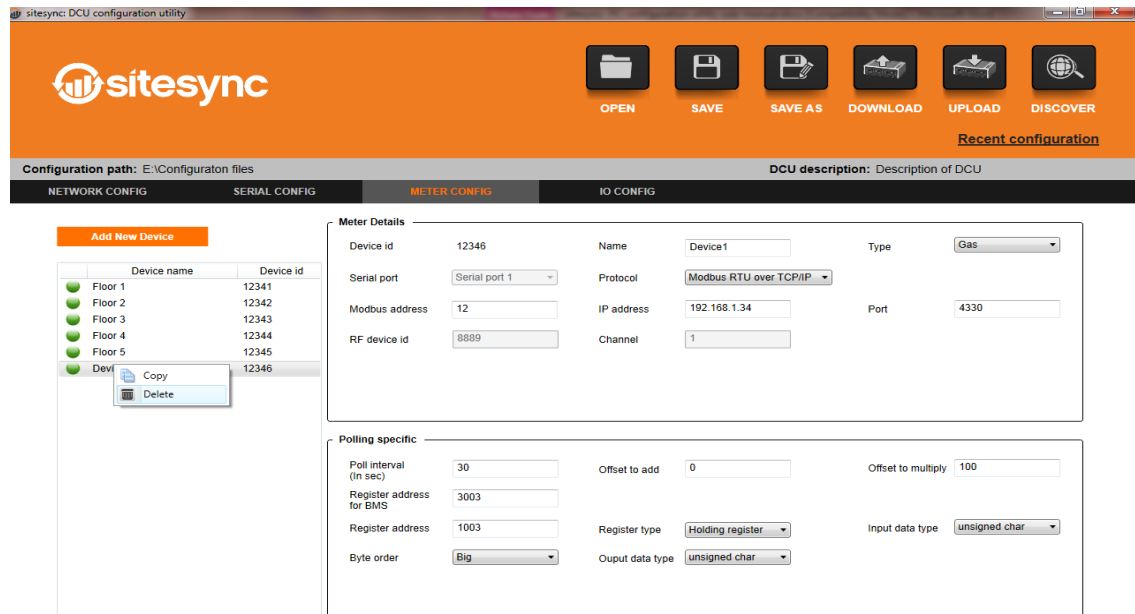
- Poll interval (In sec): 30
- Offset to add: 0
- Offset to multiply: 100
- Register address for BMS: 3003
- Register address: 1003
- Register type: Holding register
- Input data type: unsigned char
- Byte order: Big
- Output data type: unsigned char

The bottom right corner of the window indicates 'Version 14.0'.

13. Delete configuration

This feature is used to delete the device configuration. This feature is included on meter and IO configuration screen. To delete the configuration follow below mentioned step:

Step: Right-click on the device from the list which is displayed on the left hand side and then click “Delete” option.



14. Acronyms

Term	Description
DCU	Deployable Client Unit
SCS	Server Control System
BMS	Building Management System
I/O	Input/Output
UI	User Interface