ComAp
The heart of smart control

UC-7112-LX Plus

Universal communication module

SW version 2.0.0

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User Guide

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1 Document information

1.1 Clarification of notation

Note: *This type of paragraph calls readers attention to a notice or related theme.*

IMPORTANT: This type of paragraph highlights a procedure, adjustment etc., which can cause a damage or improper function of the equipment if not performed correctly and may not be clear at first sight.

Example: This type of paragraph contains information that is used to illustrate how a specific function works.

1.2 About this guide

This guide describes how to configure UC-7112-LX Plus module and where you can download predefined configuration. For electrical and mechanical specification, please use datasheet.

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1.4 Document history

Revision number	Related sw. version	Date	Author
2	2.0.0	28.2.2019	Jakub Suchý
1	1.0.0	18.9.2017	Jakub Suchý

2 About the Module

UC-7112-LX Plus is multipurpose communication gateway. It can acts as:

- Gateway for connecting 3rd party devices into WebSupervisor
- Connection PV inverters to InteliSys NTC Hybrid controller
- Connection MTU MIP engine to ComAp controller.
- Using this module can be realized in three scenarios:
  - Create configuration by selecting predefined devices selected from list.
  - Using predefined configuration, available on ComAp website.
  - In case of specific requests or non-supported device, please contact ComAp support for help with solution. ComAp support can prepare custom configuration file. This service may be charged.

2.1 LED indication

LED name	Description	Meaning
Ready	Indicates the state of device	▶ Off - device is out of power or damaged ▶ Solid light - Device is starting. If the LED is steadily lighting after 5 minutes after turning on - please contact technical support, the device is probably corrupted ▶ Flashes - standard operation. Flashing speed is 0.5 Hz.
RX/TX - P1	Recieve/transmit at P1 port.	▶ Off - no communication at port P1 ▶ Flashes - communication on port P1 (RS232 or RS485)
RX/TX - P2	Recieve/transmit at P2 port.	▶ Off - no communication at port P2 ▶ Flashes - communication on port P2 (RS232 or RS485)
Ethernet LEDs	Indicates state of LAN	▶ Green - 100Mbit LAN is connected ▶ Orange - 10 Mbit LAN is connected Flashing indicates LAN traffic.

2.2 Resetting the module

For resetting the UC-7112-LX Plus please unplug the power and plug in again.

Do not use the reset button! Reset button can remove the entire system inside and the module needs to be sent back to ComAp for reprogramming.

2.3 Starting the module

After the power is turned on, the module will start the operating system. In this time the Ready LED is light on. When the system is running the LED starts flashing and then the LAN ports are being initialized. During the LAN initialization the device is not detectable via „ComAp Communication Gateway Configurator“.

The starting procedure may take up to 5 minutes.

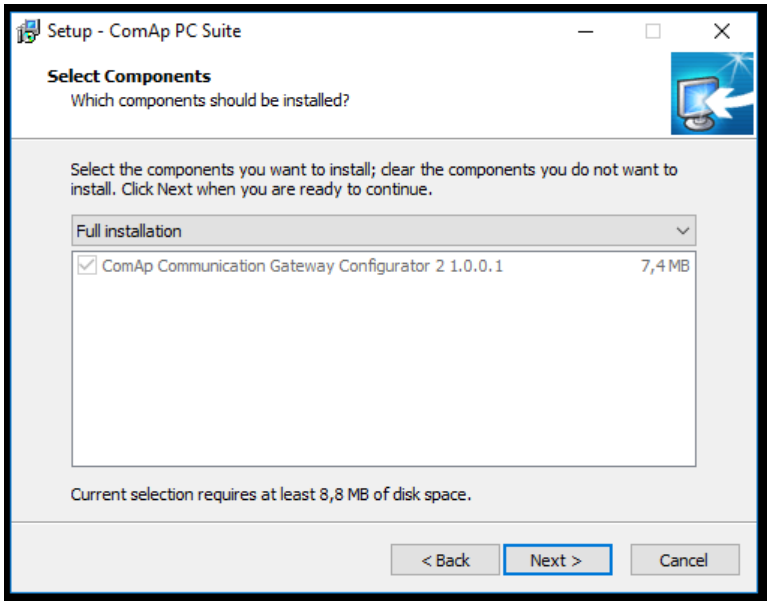
3 Setting up the Module

For setting up the module there is „ComAp Communication Gateway Configurator 2“ PC based application. First you need to download it from ComAp website:

https://www.comap-control.com/products/communications/uc-7112-lx-plus

3.1 Installation of ComAp Gateway Configurator 2

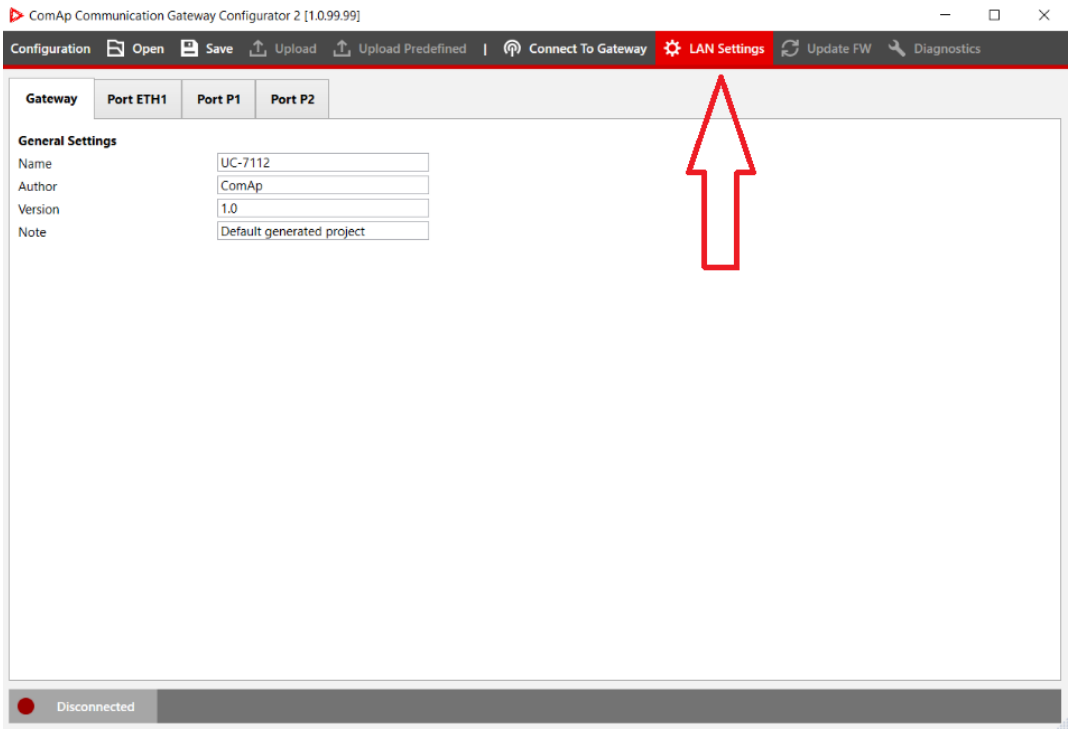
To install „ComAp Communication Gateway Configurator 2“ open downloaded Windows Installer package file and follow the instructions.



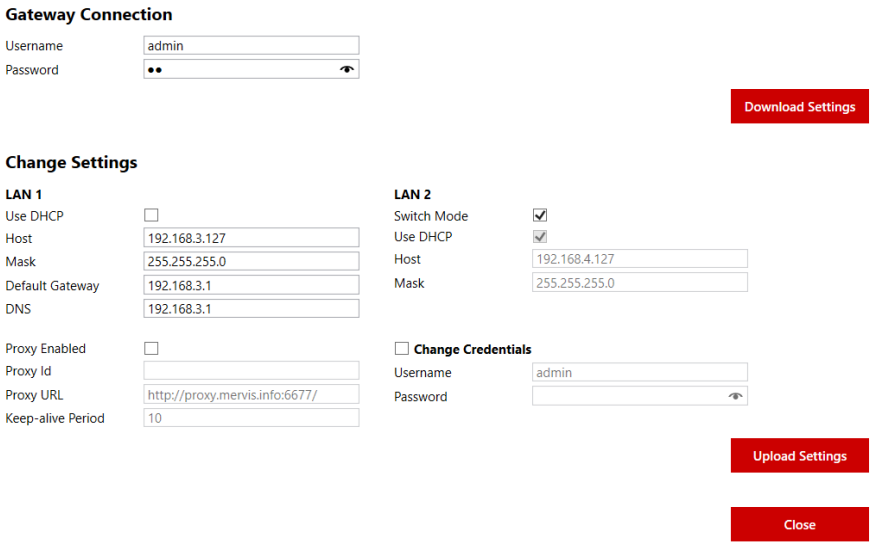
Note: *ComAp Communication Gateway Configurator 2“ icon should be created on your PC desktop.*

3.2 Change network settings

ComAp Gateway Configurator 2 allows you to change network settings of Gateway. The network settings can be changed even in case that UC-7112 is in different subnet. To change settings click on “LAN Settings” button in upper bar of „ComAp Communication Gateway Configurator 2“.



Select required device from the list of detected devices, fill username and password. Then click on “Download Settings” button. After download is completed you can change network settings. Click on “Upload Settings” button to apply settings.

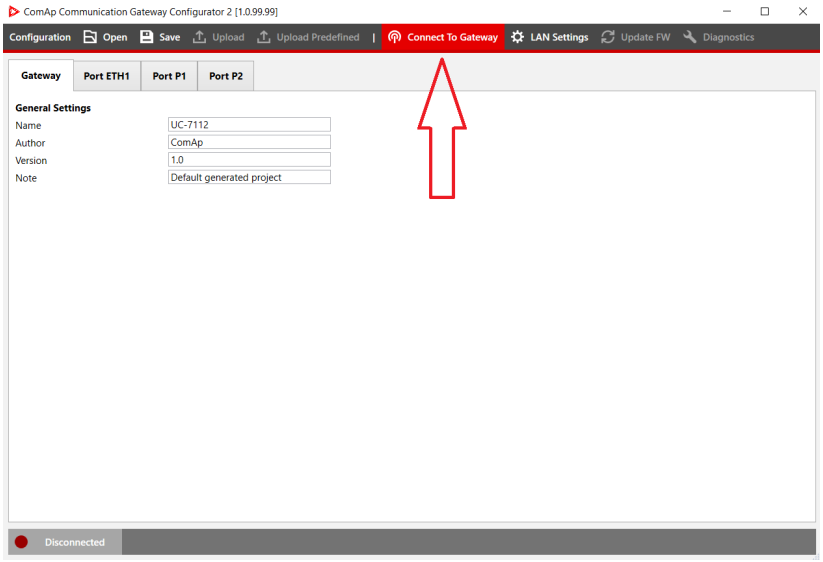


IMPORTANT: It is highly recommended to change default password.

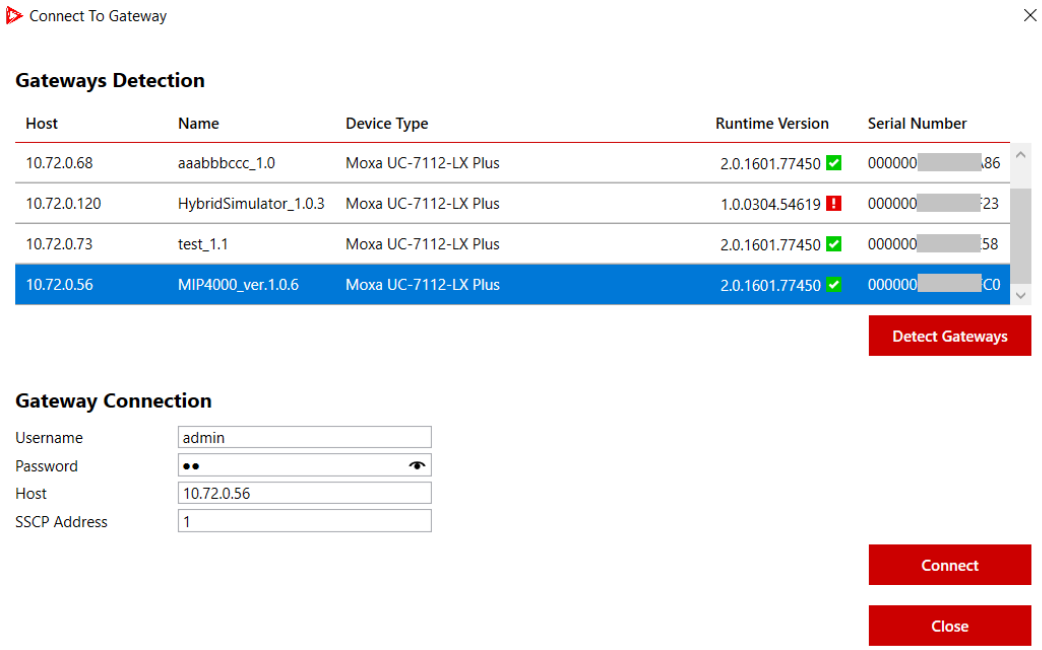
Switch mode can be used when is needed to connect more Ethernet devices. Eg. ComAp controller can be connected through UC-7112-LX Plus to WebSupervisor. But it is not recommended to pass high traffic through UC-7112-LX Plus.

3.3 Connecting to the Module

To connect to Gateway click on: „Connect To Gateway“ button:



„Connect to gateway“ window with a list of available devices will be displayed. Select required device and fill username, password then click on “Connect” button. For connection you need to be in the same subnet as UC-7112 device. In case if your device is in different subnet, you should adjust LAN parameters.



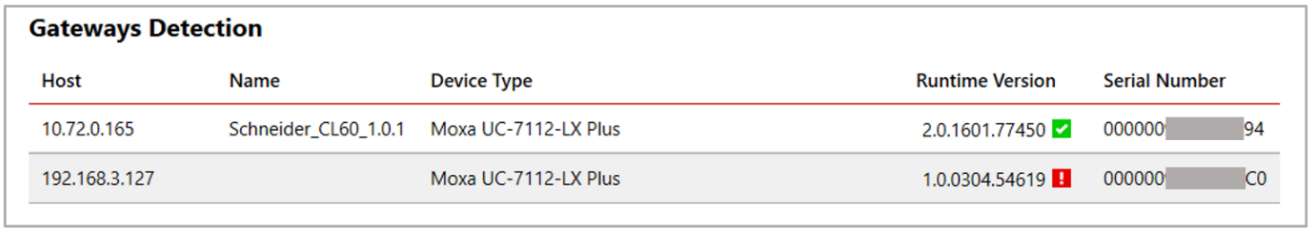
Note: *Host address can be written manually in case device was not detected. This problem could be caused by firewall for instance.*

> **IMPORTANT: Default Username is „admin “. Default Password is „rw“. Default IP address for LAN1: 192.168.3.127 and for LAN2: 192.168.4.127**

Note: *In case of connection failure see* ***Troubleshooting (page 17)****.*

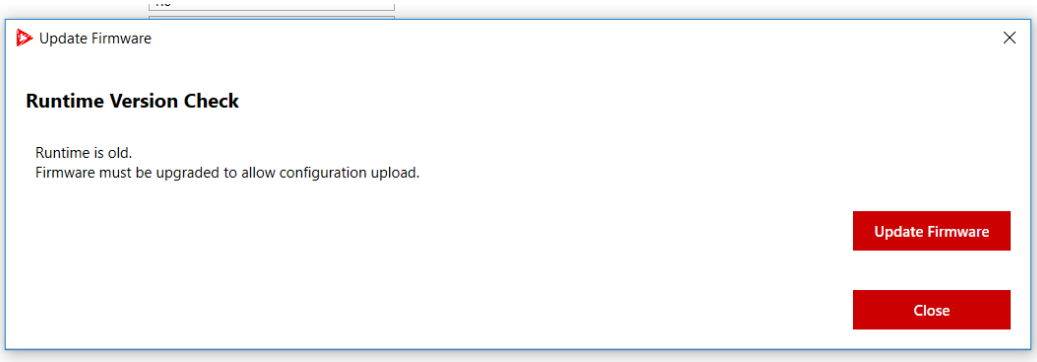
3.4 Updating firmware

Red square in „runtime version“ column means that detected device has old version of firmware. The device with old version of firmware needs to be upgraded to allow configuration upload.

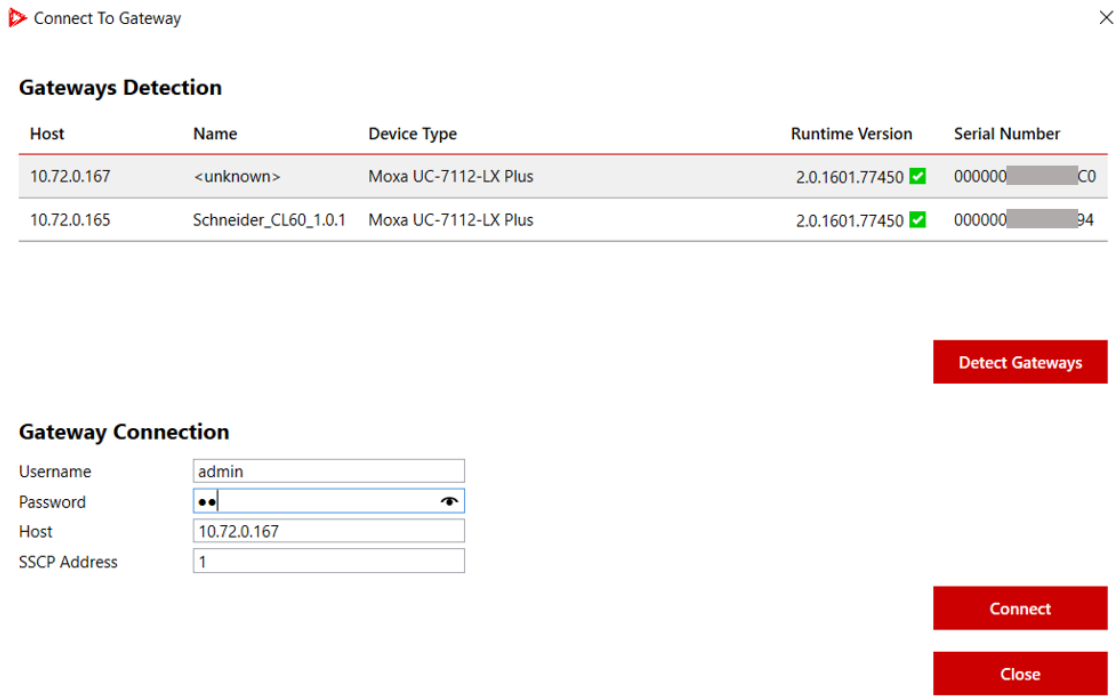


To upgrade firmware first connect to gateway and click on „Update FW“ button in the upper bar of „ComAp Communication Gateway Configurator 2“. Then click on “Update Firmware” button.

Note: *It is not possible to downgrade runtime version of firmware.*



After FW update is successfully finished you should see green square in Runtime version column.

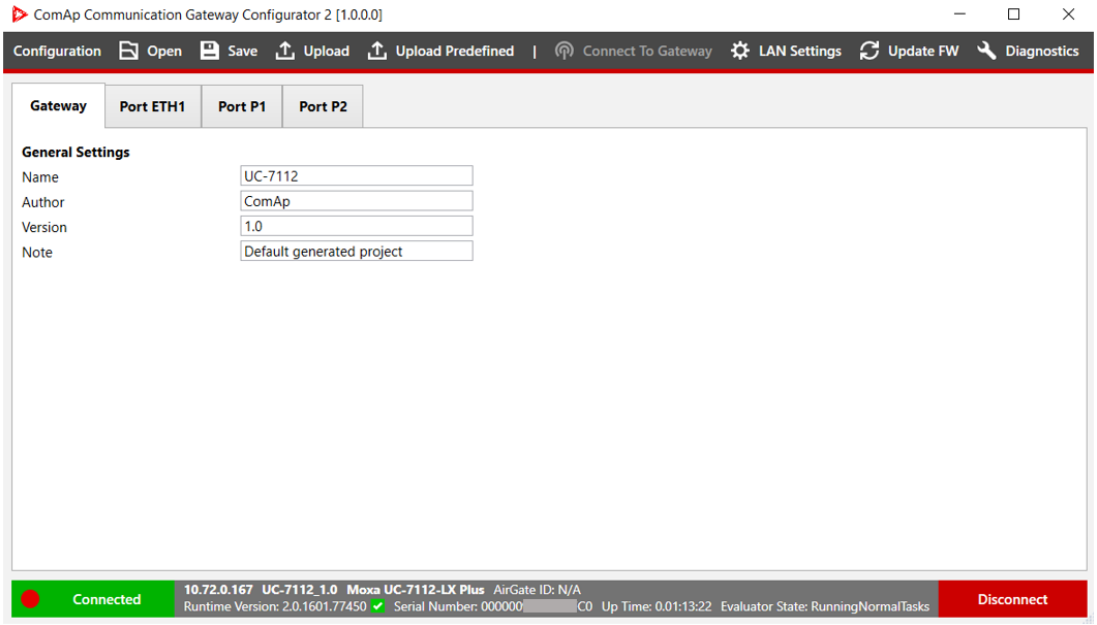


Note: *After uploading firmware the UC-7112-LX Plus will be restarted. This operation can take up to 5 minutes.*

3.5 Creating configuration

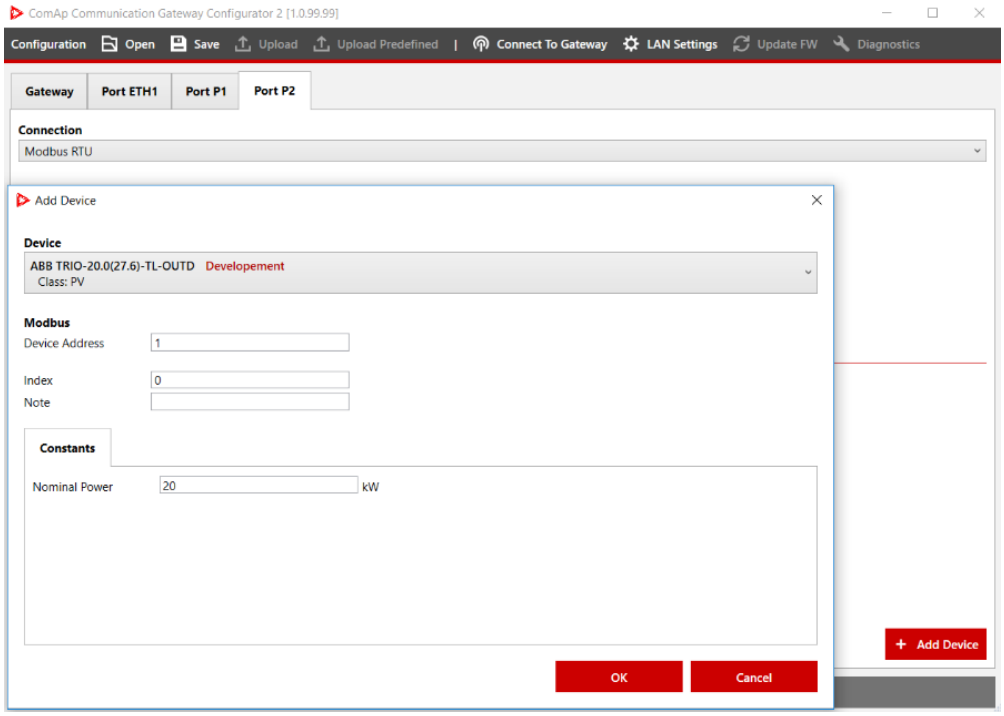
This chapter is related to creating configuration based on list of predefined devices. Mainly used for communication with PV inverters (Hybrid application)

- In Gateway tab fill information about project. Especially name and version are important to fill. The name will be visible during detection of gateways.

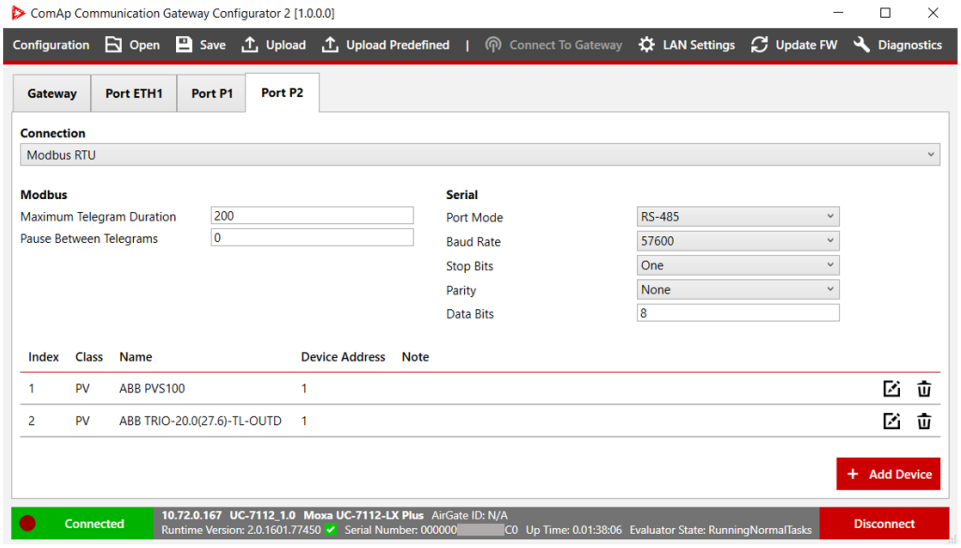


Note: *Port P1 is determined for connecting InteliSys Hybrid controller only. Port P2 and Port ETH1 can be used for connecting e.g. PV inverters. In case of predefined configuration, the P1 port can be used with different device.*

- Add Device from list by click on button „ Add device" in ETH1 or P2 tab.

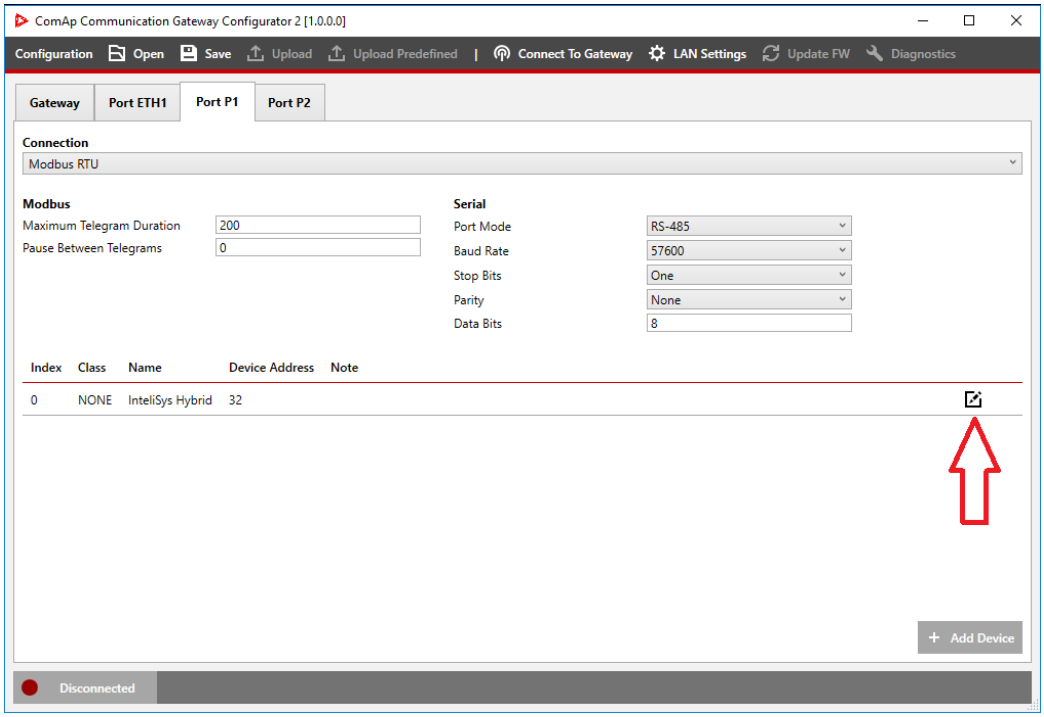


- Set Device address and set constants. If the device is connected via ETH1, the IP address needs to be set.
- Add all devices used on site.

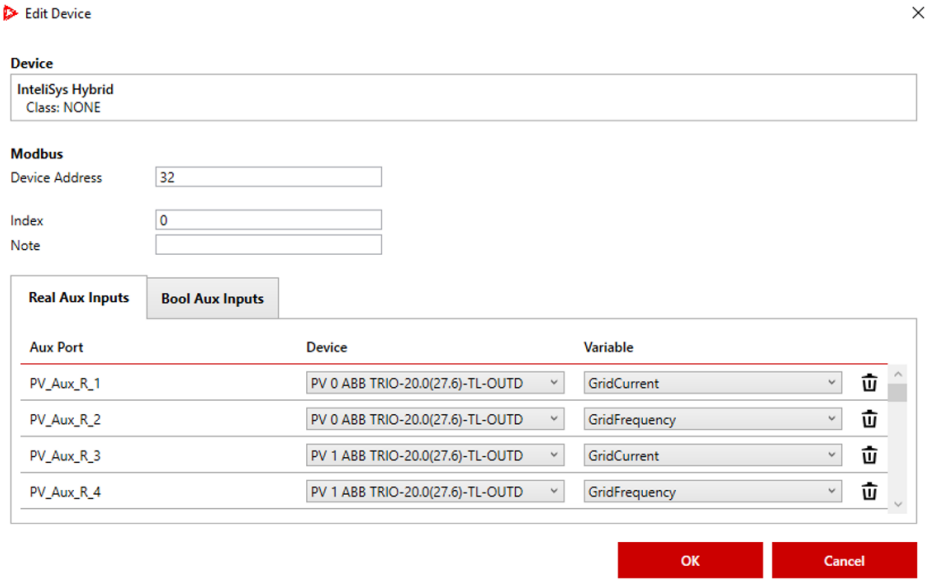


Note: *Up to 16 PV inverters and 4 Wind turbine inverters and one battery inverter can be added.*

- Add auxiliary values (optional)
  - Go to Port P1 tab and click edit icon in InteliSys Hybrid

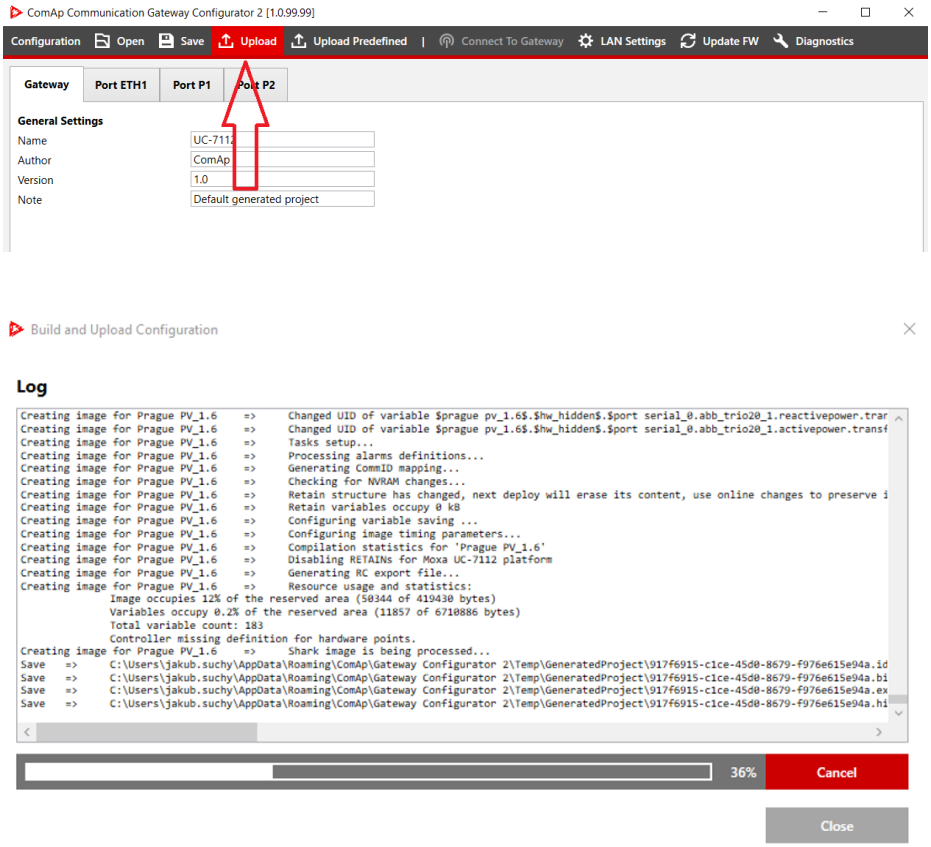


- Configure auxiliary values



3.6 Uploading configuration

Configuration can be uploaded into UC-7112-LX Plus by click on button “Upload” in upper bar and "Build and upload" button.



IMPORTANT: It is highly recommended to save the configuration into a file. It is not possible to download it from UC-7112-Lx Plus device.

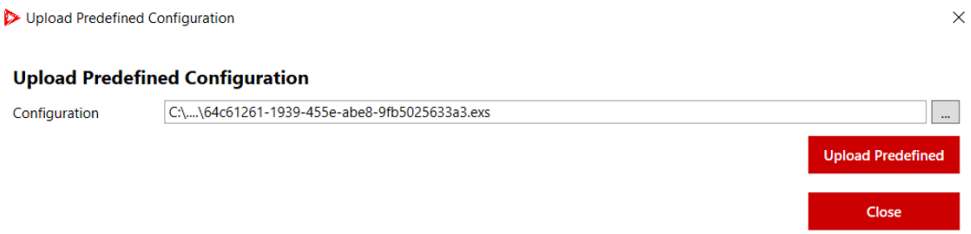
3.7 Uploading predefined configuration

Upload predefined configuration is option for non-standard configuration or for developing support of new devices. The custom predefined configuration can be created by ComAp, for more info, please contact ComAp Technical Support.

Predefined configuration files are available at:

https://www.comap-control.com/products/communications/uc-7112-lx-plus

Click on “Upload Predefined” button in upper bar of ComAp Communication Gateway Configurator 2.

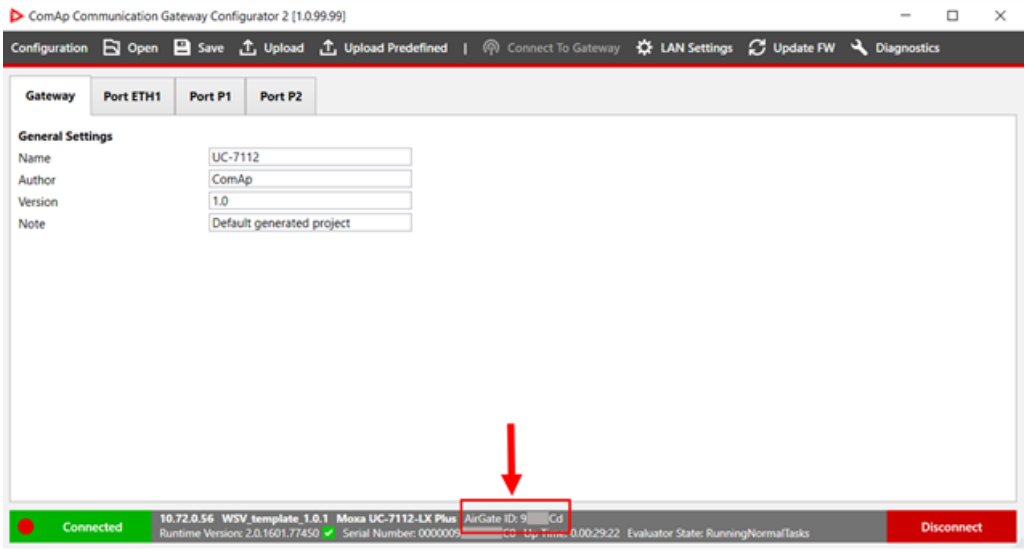


Note: *If you need configuration for device which is not supported, please contact ComAp technical support or your local distributor.*

Configuration file is dependent on target application and contains parameters of communication (eg. Modbus registers for reading and writing).

3.8 Getting AirGate ID

For using www.websupervisor.net it is needed to get the AirGate ID of module. The AirGate ID can be obtained only in case if configuration with WebSupervisor functionality is uploaded in UC-7112-LX Plus. In this case Airgate ID is displayed in the bottom part of “ComAp Gateway Configurator 2” window. Otherwise there will be “N/A” statement.



Note: *WSV configuration is available only as "predefined configuration"*

4 Communication options

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This chapter describes typical usage of UC-7112-LX Plus communication gateway module.

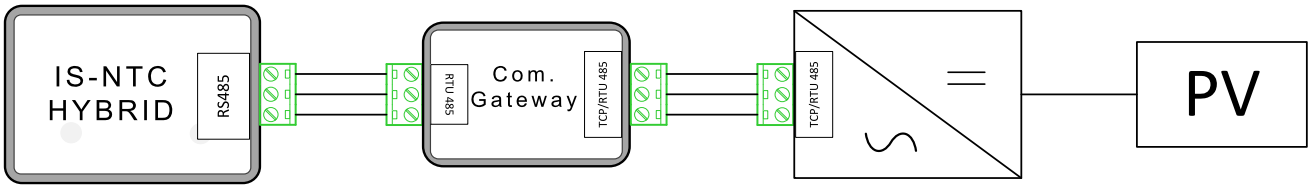
4.1 Communication with PV inverters

With proper configuration UC-7112-LX Plus can manage communication with photovoltaic (PV) inverters and share this data to InteliSys^{NTC} Hybrid controller. Configuration can be crated by selecting devices from list, as described in chapter Creating configuration.

If there are used more PV inverters, the UC-7112-LX Plus will calculate totals from all kind of available values, eg.: sum of all active powers, sum of all reactive powers...

Note: *Available communication for PV inverter is Modbus RTU (RS485, RS422 or RS232) or Modbus TCP (Ethernet).*

Note: *If you didn't find your PV inverter in list of supported inverters, contact your local distributor or ComAp technical support*



4.1.1 Settings InteliSys^{NTC} Hybrid

InteliSys^{NTC} Hybrid needs to be configured properly to establish connection with UC-7112-LX Plus. RS485(2) port is dedicated for connection UC-7112-LX Plus

Recommended settings:

Setpoints - Comms settings	Value
RS232(2) mode	MODBUS-DIRECT
RS232(2)MBCSpd	57600 bps
Contr. address	32

Controlles address and baudrate must match settings from Port P1.

4.2 Communication with 3rd party devices

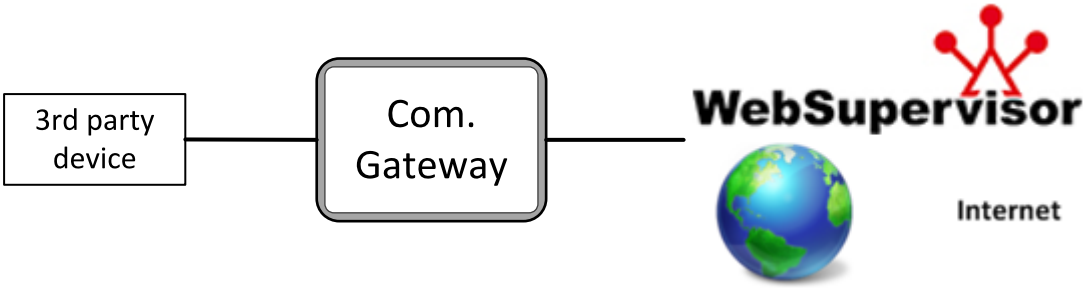
UC-7112-LX Plus can be a communication gateway between 3rd party devices and ComAp WebSupervisor. UC-7112-LX Plus obtains data from Modbus 3rd party device and transfers this data to the WebSupervisor. Communication channel is ethernet connection with RJ45 connector.

For registration the unit at WebSupervisor it is needed to get AirGate ID, Controller address and access code.

AirGate ID	**see Getting AirGate ID on page 14**
Default access code	0
Default Controller address	1

Note: *This feature is available at WebSupervisor Pro paid version.*

Note: *If you didn't find your 3rd party device in list of supported devices, contact your local distributor or ComAp technical support*



4.3 Communication with MTU MIP4000

UC-7112-LX Plus enabling the connection between MTU MIP4000 engine controller and ComAp controller. For more information please refer Electronic Engines Support 05-2017 or newer.

5 Troubleshooting

5.1 Device is not detectable via ComAp Communication Gateway Configurator

- Check the setting of IP address. Module's IP address should be in the same range as computer's IP address. Default IP address of module is 192.168.3.127 with mask 255.255.255.0 for LAN1 port. And 192.168.4.127 for LAN2 port. LAN settings can be changed even if the device is in different sub-network.
- Check the firewall setting in your computer. For detecting the device are used UDP broadcast packets. If the problem remains try to start computer in emergency mode - but have in mind that the computer is not secured by firewall in that time, so it is recommended to disconnect computer from the internet.
- Check the wiring. It is recommended to use direct cross wired cable between computer and UC-7112-LX Plus
- Check the status of "Ready" LED. The LED should flash with 2 seconds period.

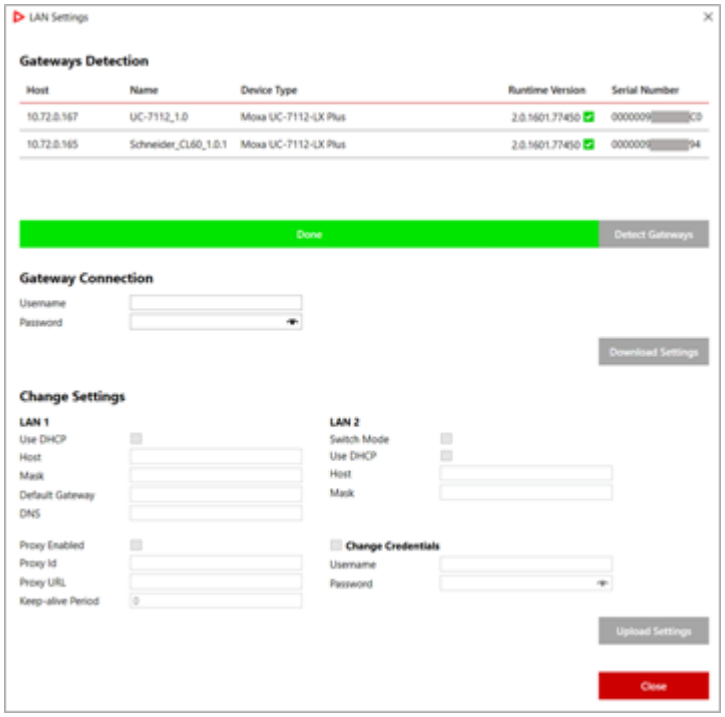
5.2 InteliSys NTC Hybrid displays "WrnConCommErr"

- In case that UC-7112-LX Plus is used for communication with PV inverters the alarm message "WrnConCommErr" can be displayed if the communication between UC-7112-LX Plus and InteliSys NTC Hybrid is not successfully established.
- This message appears every time when the system is started and is active for tens of seconds.
- Check wiring and settings **see Settings InteliSysNTC Hybrid on page 15**
- Check if TX LED at UC-7112-LX Plus is flashing. If TX is flashing and RX not it means that InteliSys NTC Hybrid is not responding and the wrong setting is at InteliSys NTC Hybrid. If the TX LED is not flashing the configuration in UC-7112-LX Plus is not correct, please make sure UC-7112-LX Plus has configuration related to PV inverters.

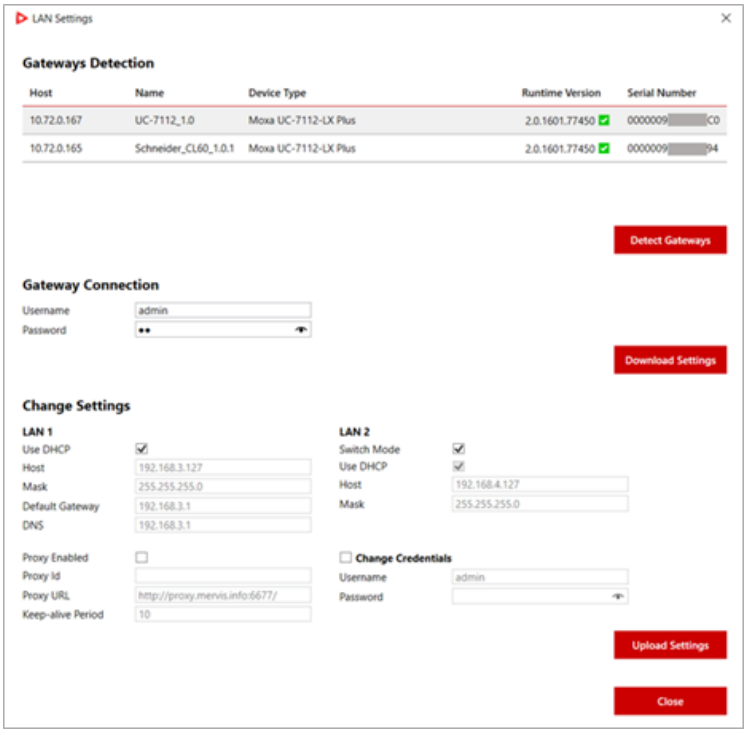
5.3 Not possible to connect

In case you can detect the device, but attempt for connecting is not successful, try to check network settings. To change network settings computer don’t needs to be in the same sub-network as UC-7112-LX Plus, but for connection computer have to be in the same sub-network.

If the UC-7112-LX Plus is connected into network with DHCP server (most of office networks), you can try to set UC-7112-LX Plus to obtain IP address automatically.



After Download is completed, check Use DHCP option and click on “Upload Settings” button.



5.4 Getting data for technical support

You can get “support file” by clicking on “Diagnostics” button in the upper bar of ComAp Communication Gateway Configurator 2 and then “Save Support file”. This file could be useful for troubleshooting with ComAp

technical support.