



User manual for CloudScaleLink modules management



<https://cloudscalelink.com>
[https://stimag.nl/scale-
monitor/](https://stimag.nl/scale-monitor/)



<https://www.youtube.com/@ScaleMonitor>

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1. Description

This manual describes usage of management software which is simple software for configuration and testing/debugging communication between serial device and third party software eg. ERP, Cloud, TCP server etc..

You can manage CloudScaleLink modules through the CSLTools which is Windows desktop application intended for local management of CloudScaleLink modules.

If you want to manage your modules remotely with central management, you shall use Cloud Management Platform (CMP). CMP enables management of all your modules from anywhere in the world and from any device that is connected to the internet.

With CSLTools and CMP you can fully configure all module settings:

- General settings
- Ethernet settings (only for interfaces with Ethernet)
- WIFI settings (only for interfaces with WIFI)
- TCP server/client settings
- MQTT settings
- Common settings (variables and DNS)
- Serial interface settings
- Modbus settings

2. CSLTools requirements

CSLTool is Windows desktop application.

Requirements:

- Windows 8/10/11 or later
- Windows Server 2016 or later
- Operating system must have .NET 4.8 or later installed
- Space requirements: 50 Mb or more
- No installation needed
- Access to network or direct connection with CSL with UDP broadcast allowed

3. CMP requirements

CMP can be used on any device that is connected to the internet and has a web browser (Android, Windows, iPhone/iPad, Mac, Linux, Unix, ChromeOS, etc.).

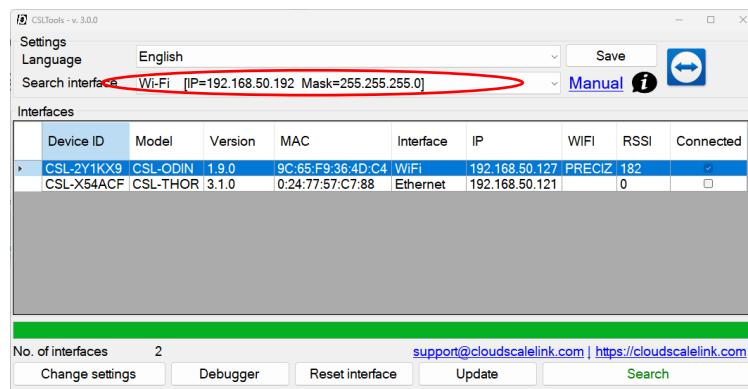
CMP does not require any installation or configuration. All you need is to have registered account – see section - Cloud management platform (CMP)

4. Search interface

For CSLTools to work we have to first select search interface – this is interface over which CSLTools will try to find all available interfaces.

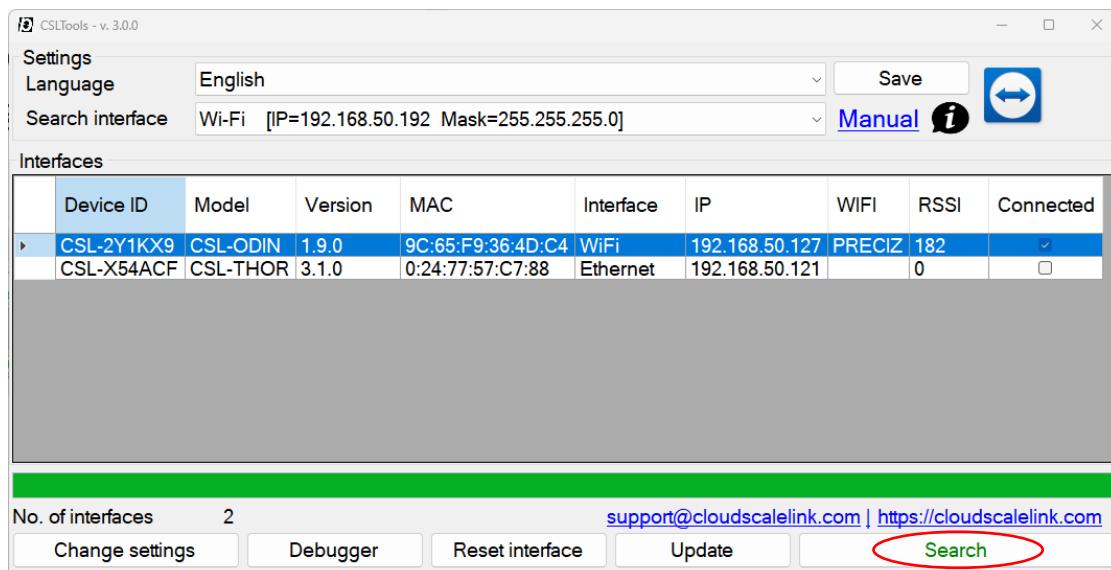
For instance, if you have desktop PC you usually have only one Ethernet card so there will be only one option. If you have a laptop you usually have WIFI and Ethernet interface – but with laptop we usually use WIFI so in that case we have to selected WIFI interface as search interface.

Please note that only working interfaces (this are interfaces with active connection) are shown.

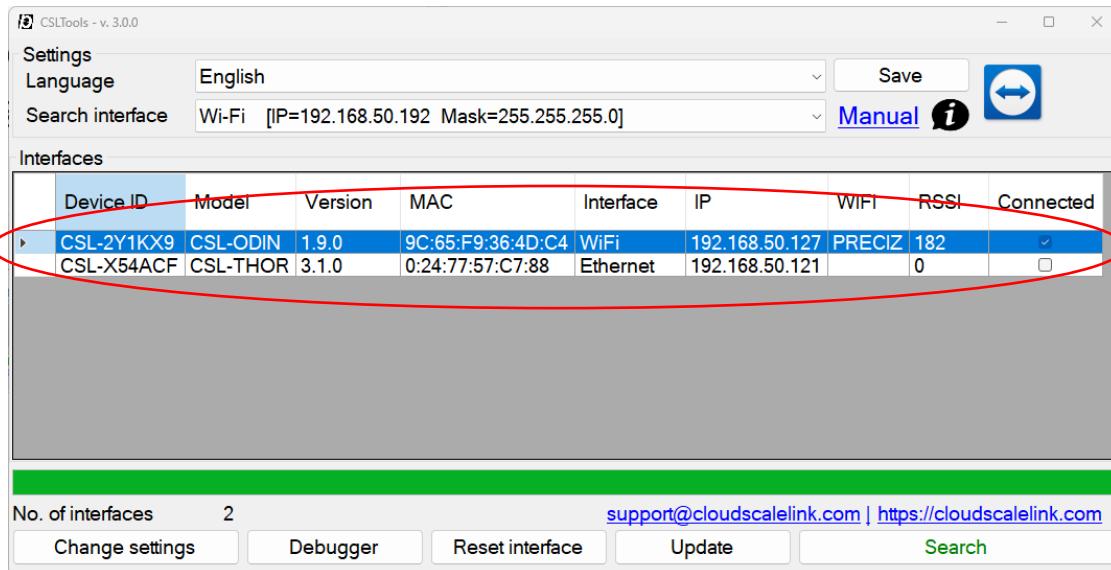


5. Searching for interfaces

After you selected interface on which you wish to perform search you should press Search button.



After that search process will start and progress is shown in a progress bar. All found interfaces are displayed under interfaces:

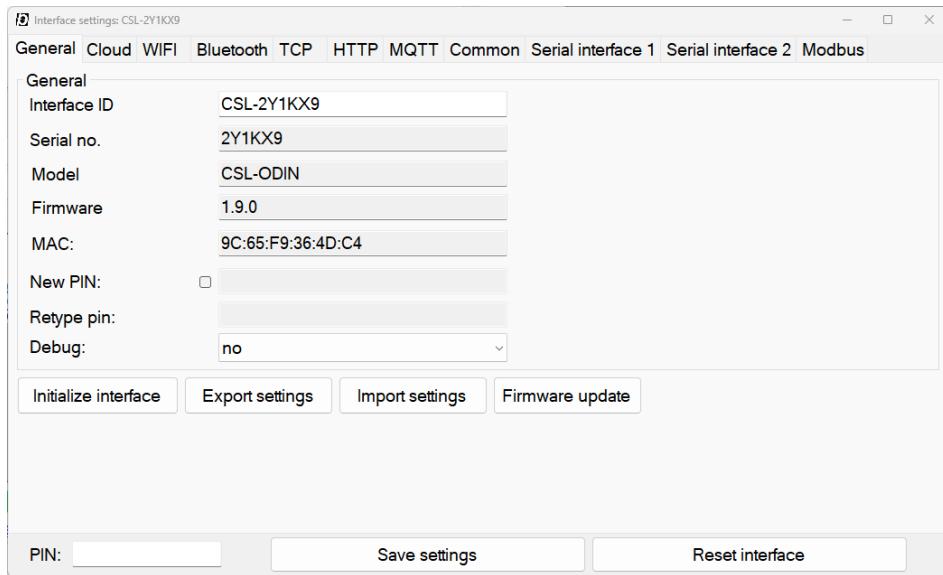


Where also common data of interface are displayed:

1. Device name
2. Ser. Number of interface
3. Firmware version
4. MAC of interface
5. Interface over which device was found (Ethernet or WIFI)
6. Ethernet IP
7. SSID
8. WIFI IP
9. RSSI – signal strength for WIFI
10. And status, there is active connection on the interface (TCP or MQTT)

6. Configuration

After you see interface which you would like to configure click on it and selected device will be blue. After that you can press Change settings button and new window will open where you can configure dedicated settings.



6.1. Saving settings

Please note that when saving settings only settings of currently selected tab are saved.

6.2. General settings

In General setting tab we can set the following settings:

- Device ID: name/id of device to easier distinct different devices.
NOTE: that this ID is also used for DHCP where device id will have suffix -E for Ethernet and -W for WIFI.
NOTE: device id is also used in JSON response for HTTP/REST
`{"deviceid":"CSL-THOR","data":""}`
- SERIAL NUMBER: We can set the serial number manually.*
- Model of interface.
- Firmware version
- MAC: the MAC address of interface
NOTE: MAC address is different for every interface so for Ethernet is different than for WIFI interface.
- PIN setting
- Debug – if you want to enable debugging you must set this option to yes and save settings. After saving settings green light on interface will blink – the interface will wait until you connect with debugger to proceed with starting DNS and MQTT service so you will be able to debug also both services. Please follow instruction in chapter 6. Communication and debugging.

6.2.1. PIN protection of interface

By default, all interfaces CSL-THOR (before name PCS-232) since firmware 2.9.0 and CSL-ODIN (since firmware 1.4.0) have factory default PIN. PIN is printed on the label of interface, and it is marked CSL.



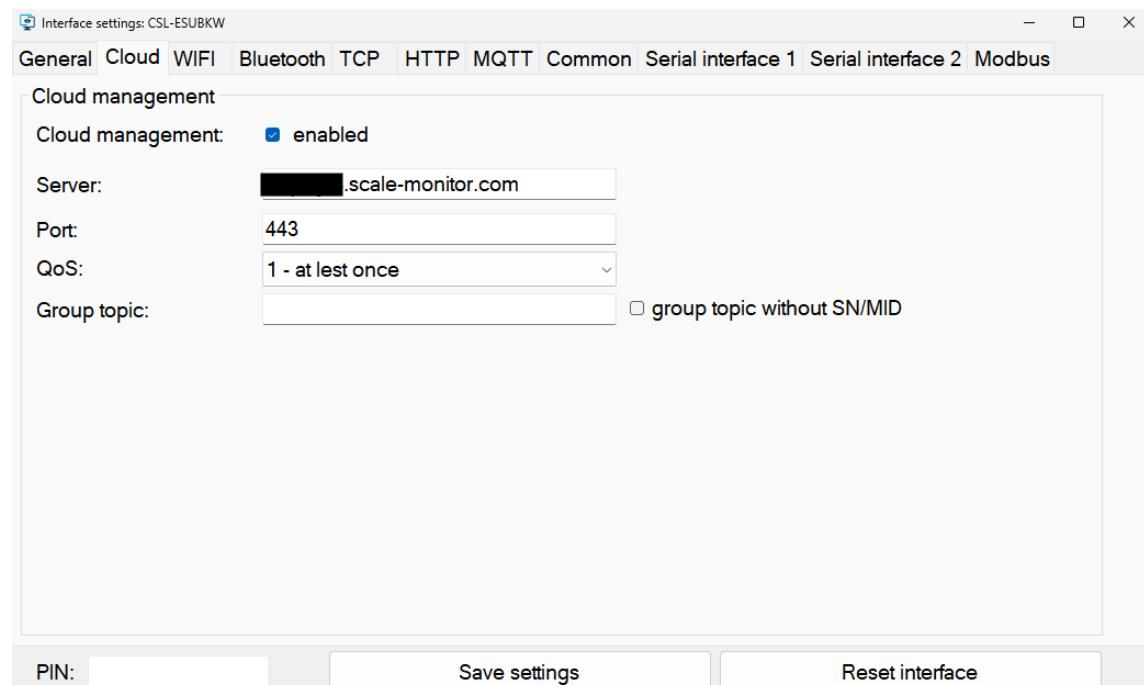
If you want to change PIN, you must check box right to new pin and enter new PIN. In PIN in left corner, you must enter current PIN in order to change settings.

You can always view all interface settings, but you cannot change settings, if PIN is set and not entering correct PIN.

If you initialize interface (factory reset) PIN will be reset to factory PIN.

6.2.2. Enable Cloud Management Platform (CMP)

Cloud management platform is enabled by default.



When you want to use cloud management of your module cloud management must be enabled.

Since we have multiple servers, you have possibility to change server and port to which module will connect to.

IMPORTANT: you can not use MQTT and Cloud at the same time. Module can connect to only one MQTT broker. Since CSL-Tools version 3.2 you will be notified that enabling both is not possible.

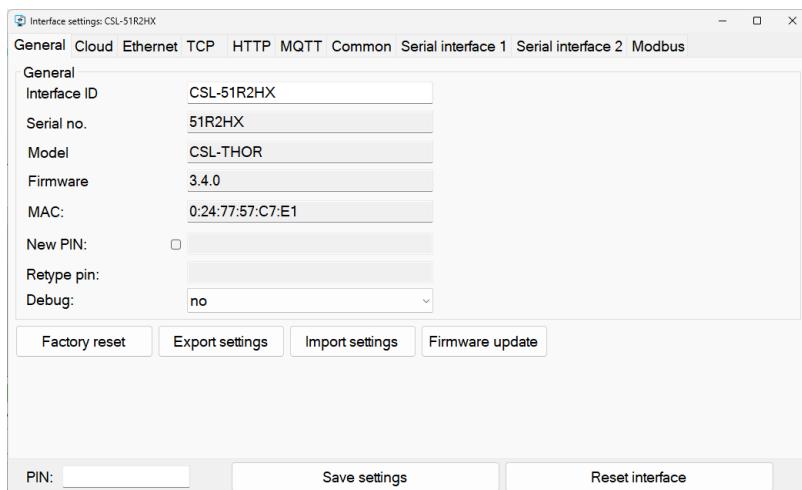
6.2.2.1. *Group topic*

If you want to communicate with multiple modules, you should enter group topic name. If you do not want MID in topic then check group topic without SN/MID.

Group topic is further explained in our CSL API documentation.

6.2.3. Factory reset – initialization of default settings

If needed we can always factory reset interface by clicking on Factory reset button in CSLTools or via CMP platform. Factory reset can be performed also by button – see Button functions.



6.2.4. Import/export settings

Via CSLTools program you can export and import configuration settings.

If you want to save your settings, you just click on Export save settings button in General tab and save dialog will open where you can specify file name and path where to store it.

NOTE: All settings except WIFI and MQTT password are saved.

If you want to import settings click on Import button and open file dialog will open. Select XML file from which you would like to import settings.

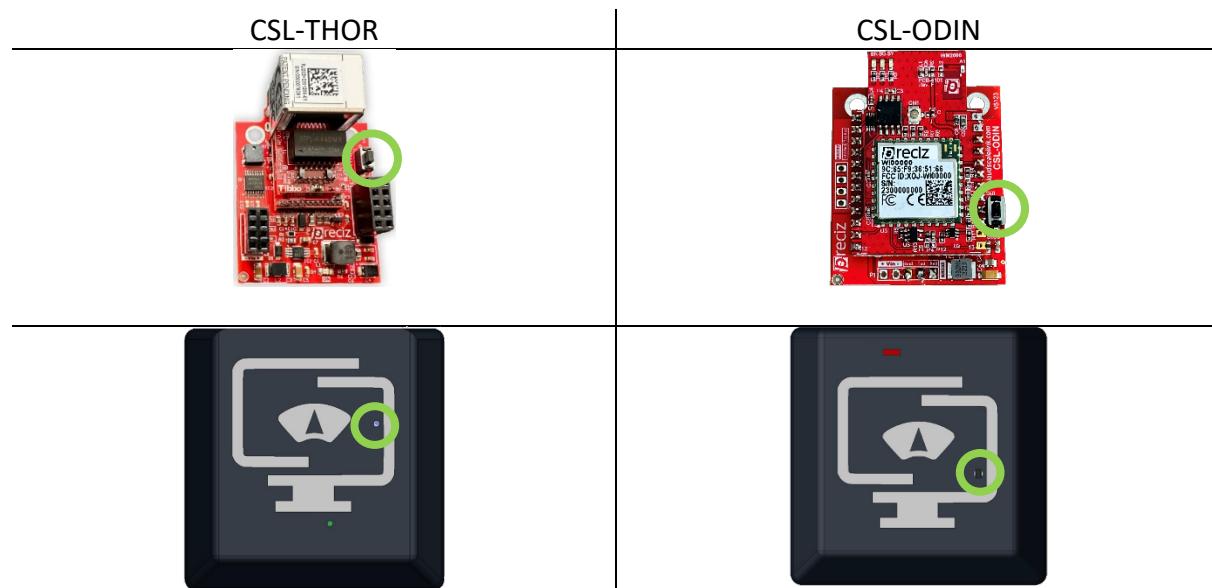
NOTE: Settings are not automatically sent to interface. To save settings on interface you must click on button Save settings in every tab you want to save settings to interface.

6.2.5. Reboot – reset of interface

Interface can be rebooted via app by pressing button reboot in CSLTools or in CMP platform. You can reboot interface also by pressing button - see Button functions.

6.3. Button functions

Buttons are located on PCB of interface.



Version up to: Odin 2.0, Thor 3.3 the button had following functionality:

- Press between 2 and 4 second – reboot
- Press over 5 seconds – factory default

In latest versions button has the following functionality:

- 1 x press – reboot
- 2 x presses – disable DHCP
- 3 x presses – factory reset

Every time you press button interface will blink with yellow/red led to confirm press was detected.

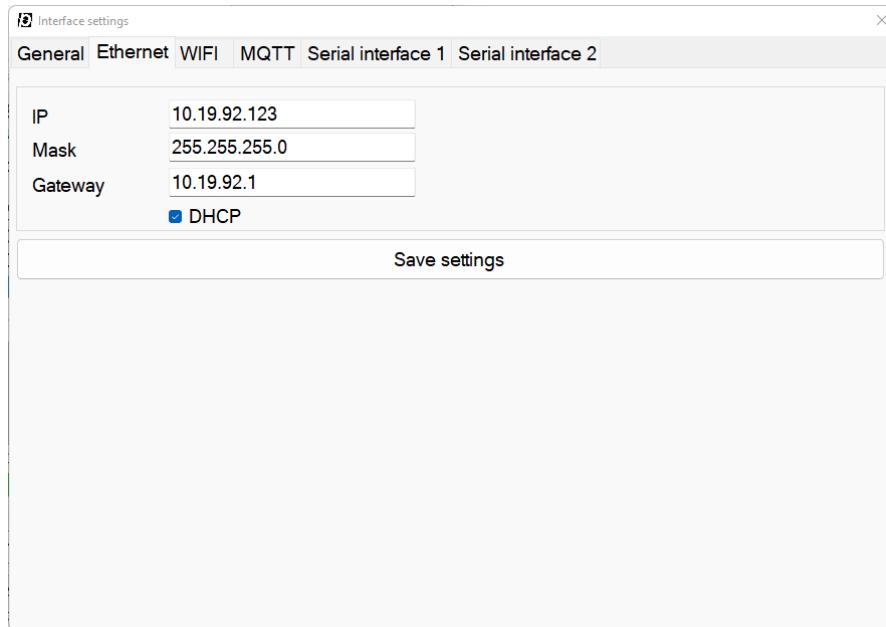
6.4. Ethernet configuration

Under the Ethernet tab we can set:

- IP address,
- Mask
- Gateway

or we can enable DHCP.

To apply changes, you must click on Save settings button. Interface will be automatically rebooted.



6.5. Disable DHCP on THOR

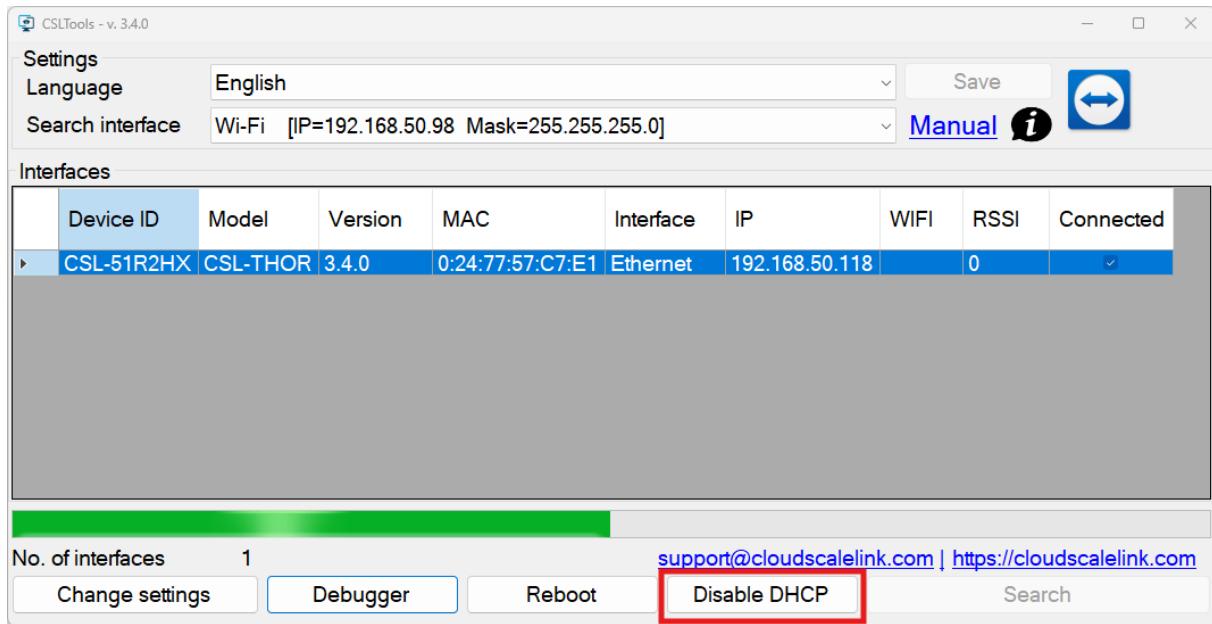
By default Thor interface has DHCP enabled. In case you want to connect Thor to the local network without DHCP server you will need to disable DHCP on Thor in order to be able to configure it.

If you have Thor with version up to 3.3:

In this case you have two options – first is to wait around 60 seconds and then you will hear four beeps – this means DHCP service has been stopped and now you will be able to find interface with CSLTools. Second option is that you disconnect interface from power and connect it back with Ethernet cable unplugged from PC. After you hear two beeps you can plug in cable, and you will be able to find interface.

If you have Thor with version 3.4 or later:

In that case we advise you to connect Thor directly to your computer or to the same switch as your computer. Then you can disable DHCP with button – see Button functions or you can click Disable DHCP in CSLTools which must be also version 3.4 or later.



6.6. WIFI configuration

Under the WIFI tab we can set static or dynamic IP:

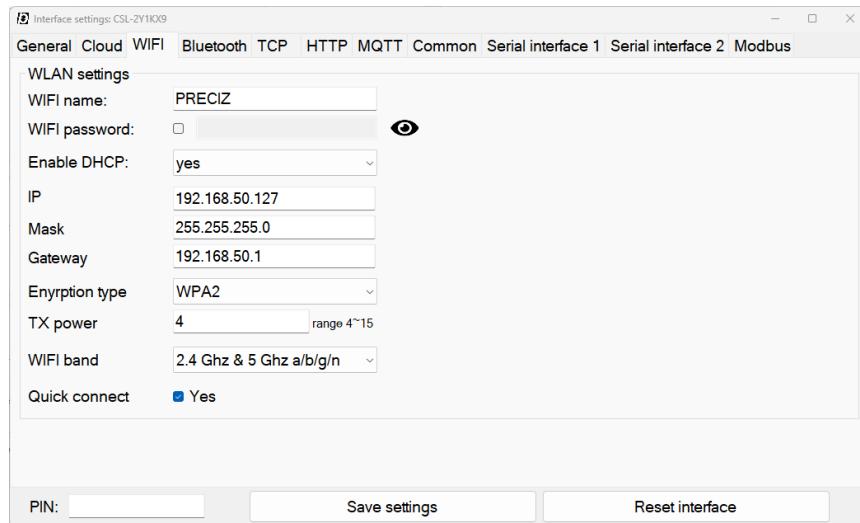
- IP address
- Mask
- Gateway

or we can enable DHCP for dynamic IP.

For WIFI we must enter:

- SSID
- Select encryption type, if WIFI is not OPEN
- Enter key/password

To apply changes, you must click on Save settings button.



NOTE: if WIFI name is left blank the WIFI will not be enabled.

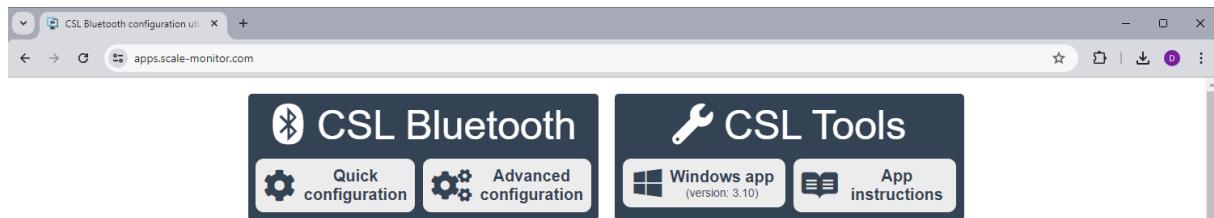
NOTE: if you want to change password you have to check checkbox before input field.

NOTE: CSL-THOR does not support WIFI since version 3.2.0. WIFI was replaced by CSL-ODIN.

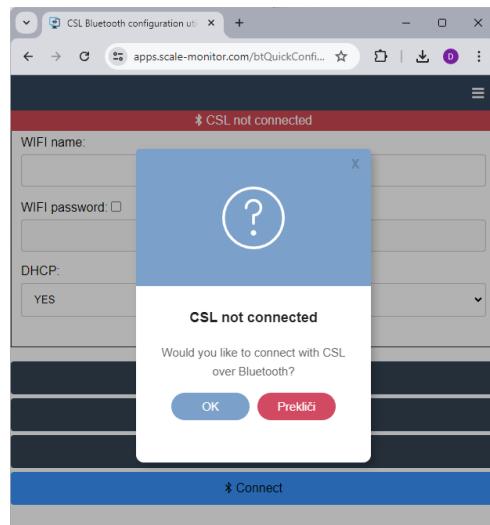
6.6.1. CSL-ODIN – first time WIFI connection - <https://apps.scale-monitor.com>

Since CSL-ODIN does not have ethernet connection therefore you must setup WIFI parameters for first time via Bluetooth.

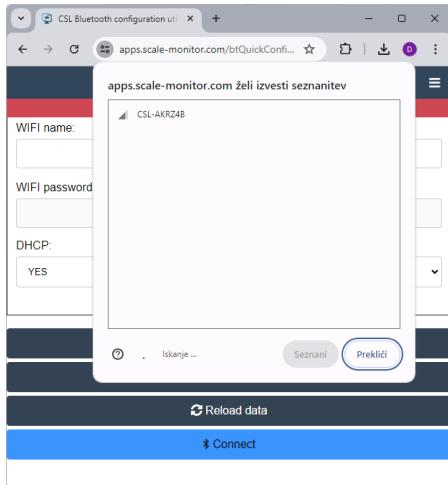
In order to do that please visit: <https://apps.scale-monitor.com>



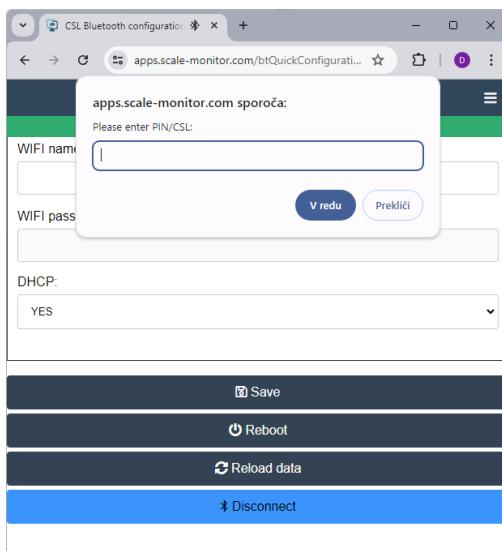
1. Click on Quick configuration



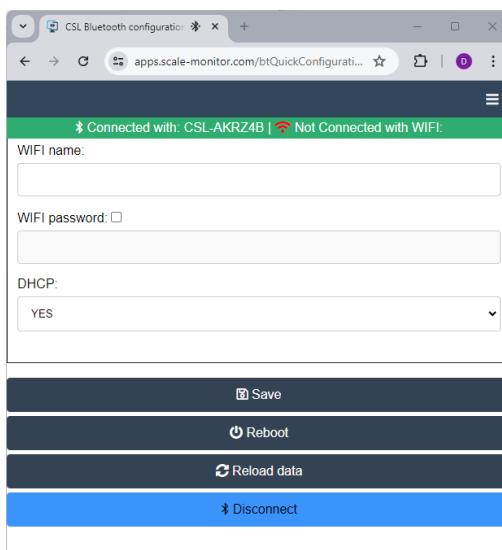
2. Click OK – new window will appear and there you will see your CloudScaleLink module. Select your module and click Pair



3. Enter module CSL (pin) which is printed on the label of module – see chapter 5.2.1.



4. After that current settings of module will be loaded.



5. Into field WIFI name enter name of your WIFI and tick WIFI password check box, if your wifi requires password.
OPTIONAL: if you want to have static IP set DHCP to No and enter IP settings.
6. After entering WIFI data press Save button and after that reboot in order to connect CSL-ODIN to WIFI.

Once your module is connected to WIFI you will be able to manage it also via CSLTools application or via Cloud Management platform CMP – see chapter 5.2.3.

If you need more possibilities for settings click advanced setup. Here all menus will open up.

6.6.2. WIFI encryptions

You can choose between four types of encryption:

1. Open – encryption disabled
2. WEP64
3. WEP128
4. WPA – tkip algorithm
5. WPA2 – aes algorithm

We strongly advise to use WPA2 encryption.

In case you use WEP64 you must enter passphrase in hexadecimal format which must be 10 characters long.

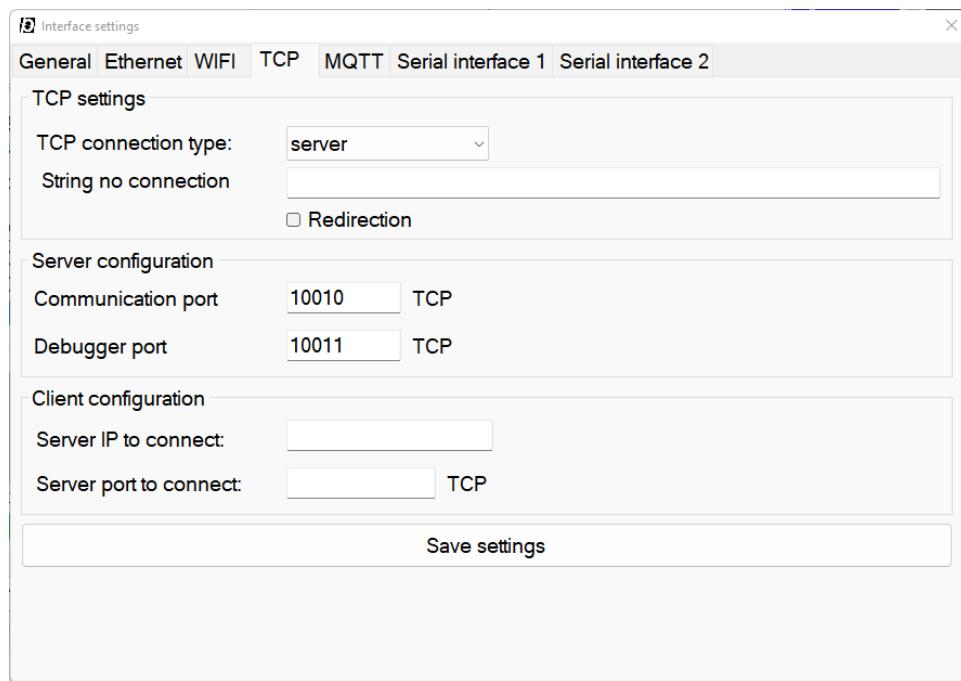
In case you use WEP128 you must enter passphrase in hexadecimal format which must be 26 characters long.

Please note that WEP64/128 encryption will only work with one static key (not dynamic where keys are changed).

6.7. TCP configuration

Under the TCP tab we can configure TCP settings. First, we have to define TCP type of connection.

Interface can present itself as server (programs establish connection with interface) or as client – interface establish TCP connection with program.



6.7.1. TCP mode (server or client)

For server mode we must specify TCP port on which interface will be listening – by default this is 10010.

If we want that interface establish TCP connection, we have to first select type of connection which can be client (Ethernet) or client (WIFI) – if we select client (Ethernet) connection will be established over Ethernet interface or if we selected client (WIFI) connection will be established over WIFI interface.

In client mode we have to enter IP and TCP port to which interface will connect.

Interface also monitors connection so, if connection is lost for instance WIFI signal is lost or server is down – interface will automatically try to reconnect until connection is established again.

6.7.2. TCP bridge to MQTT

In case you want to redirect TCP connection you can enable on some interfaces TCP bridge to MQTT. In that case all data received on TCP port (server or client) will be send to MQTT.

This is very useful for instance, if you want to connect your label printer like Zebra directly to MQTT broker.

TCP to MQTT bridge is further explained in our CSL API documentation.

6.7.3. String no connection

Interface is monitoring connection status over TCP and MQTT. In case connection is lost it will send over serial interface string to device so device will be notified that connection was lost.

6.7.4. Redirection TCP/serial

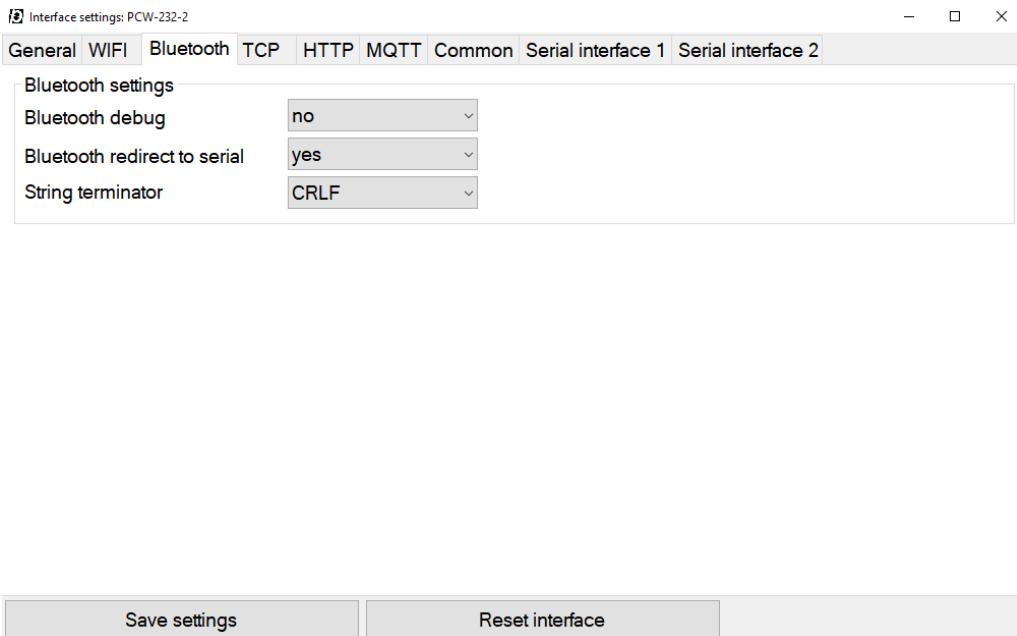
We can enable redirection which is meant to directly pass data received on socket to serial interface and data received on serial interface to socket. This is useful for heavy duty applications to reduce time for processing data.

By default, this option is disabled. If you enable this option debugger mode where you can monitor traffic between serial interface and socket will not work as CPU does not process data.

When you enable MQTT this option is automatically disabled in interface because MQTT does not support redirection.

6.8. Bluetooth

For interfaces which support Bluetooth one can set Bluetooth debugging to debug over Bluetooth or to use Bluetooth for communication instead of Ethernet or WIFI.



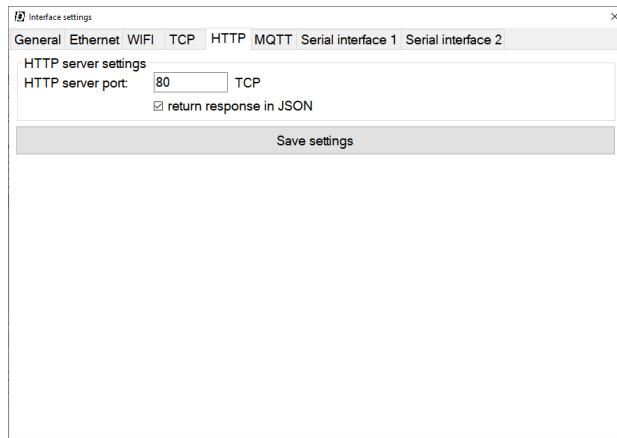
Note: Bluetooth can be used also for configuration of interface.

If your module has Bluetooth you can use also Bluetooth to configure your module by visiting <https://apps.scale-monitor.com/>

6.9. HTTP configuration

Under HTTP tab we can configure HTTP server port and response format where you can set that response will be changed to JSON format.

In case you set response to be in JSON format the format will be:
{“deviceid”:“your_device_id_set_in_genral_tab”, “data”:“response”}



NOTE: Since Odin version 2.3. and Thor version 3.4 by default HTTP server is disabled. In order to enable it you must change port in between 1 and 65535. If it is set to 0 it will disable HTTP server.

6.9.1. REST with GET method

To execute REST call with GET method you must call CloudScaleLink with command in an URL.

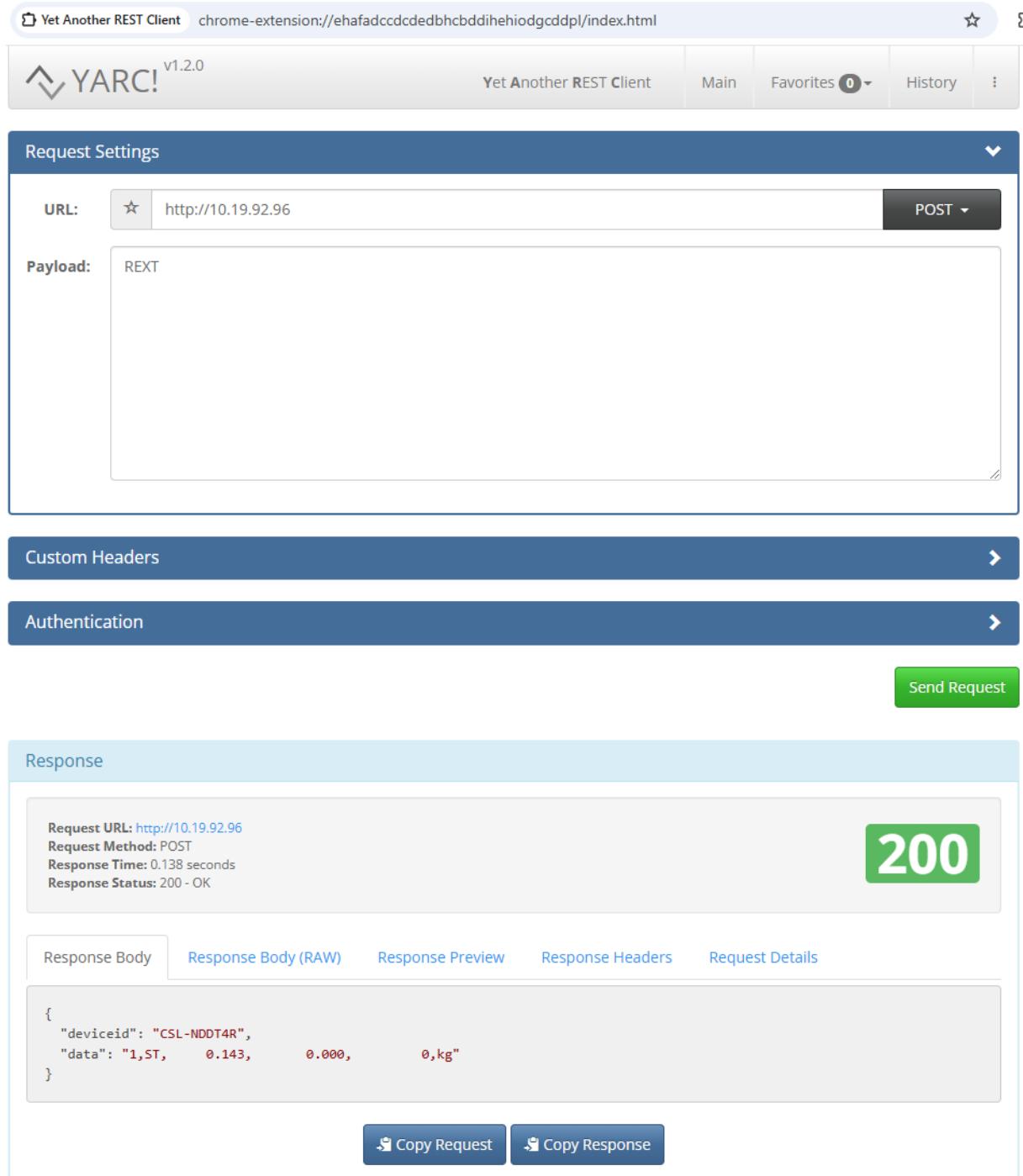
Example: CloudScaleLink IP is: 10.19.92.96 and command we want to send via RS-232 is REXT



You can easily test GET method by entering <http://10.19.92.96/?REXT> where you must replace IP and command you would like to execute.

6.9.2. REST with POST method

You can send command via POST method. If you want to test this from browser you can for Chrome install Yet Another REST Client - <https://chromewebstore.google.com/detail/yet-another-rest-client/ehafadcccdcdedbhcddihehiogcddpl>



Request Settings

URL: <http://10.19.92.96> POST

Payload: REXT

Custom Headers

Authentication

Send Request

Response

Request URL: <http://10.19.92.96>
 Request Method: POST
 Response Time: 0.138 seconds
 Response Status: 200 - OK

200

Response Body (RAW)

```
{
  "deviceid": "CSL-NDDT4R",
  "data": "1,ST, 0.143, 0.000, 0,kg"
}
```

Copy Request Copy Response

6.9.3. SSL Encrypted REST

If you need to access data from CloudScaleLink via SSL connection then you will have to use ScaleWebLink - <https://scale-monitor.com/scaleweblink/>

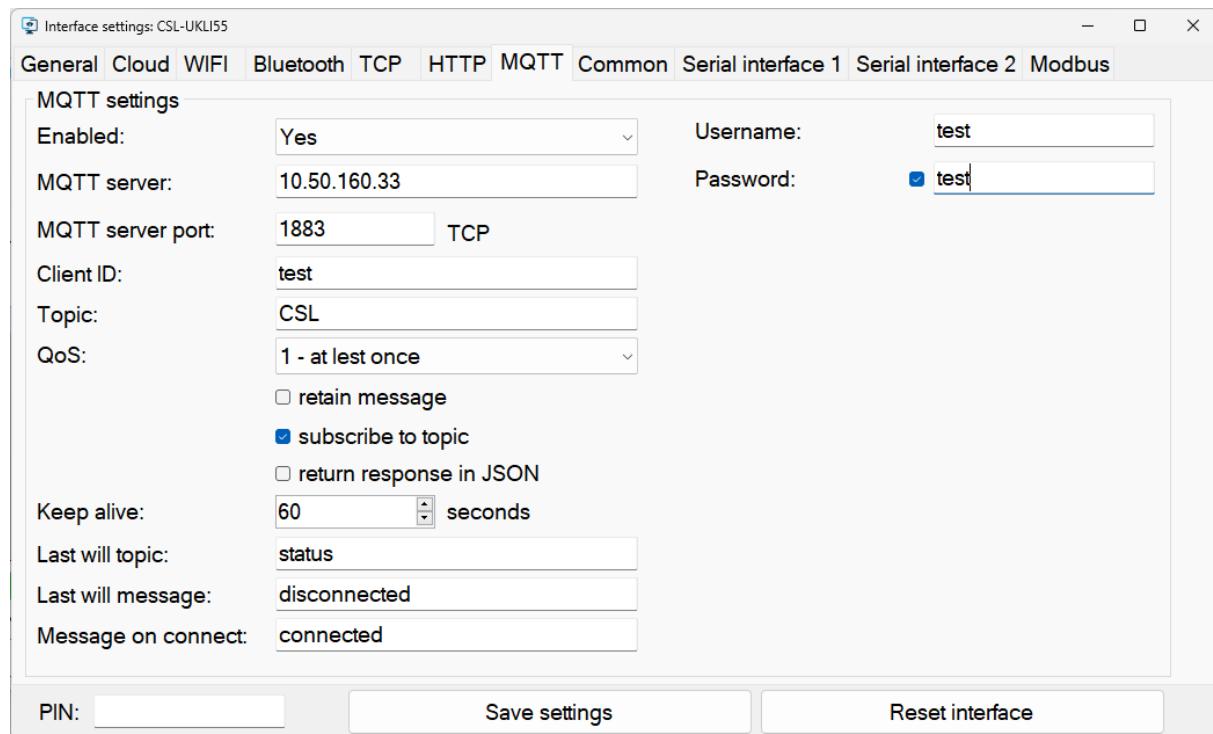
6.10. MQTT configuration

Under the MQTT tab we can configure interface to connect to MQTT server/broker.

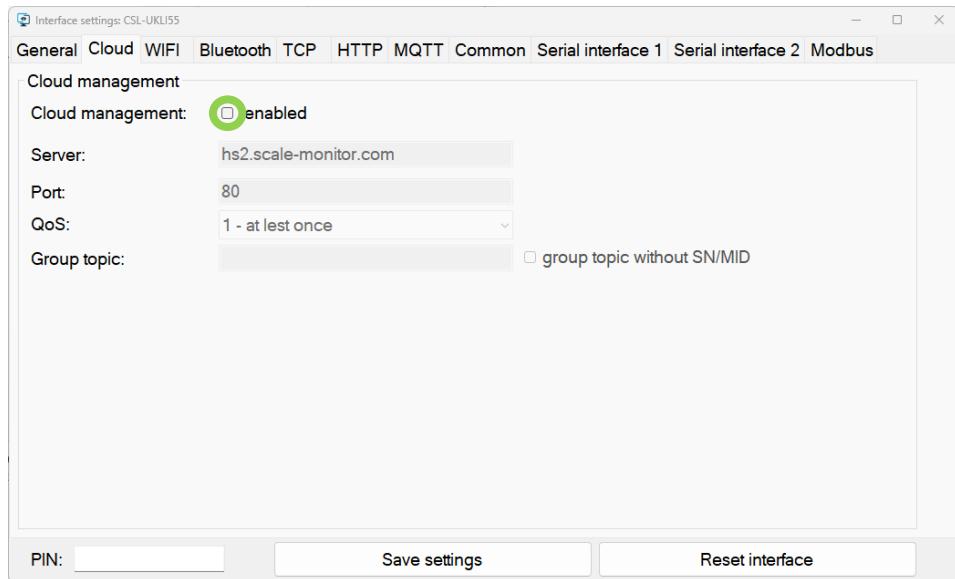
First, we must select interface over which connection should be performed this can be Ethernet or WIFI.

Then we must enter:

- MQTT broker/server IP/host/url
- TCP port
- Client ID
- Topic
- QoS – quality of service
- Retain message – if checked broker will get instruction to retain messages.
- If you want to receive messages on topic, you have to check checkbox subscribe to topic.
- If you want that interface encapsulate returned string into JSON format you must check checkbox return response in JSON – returned response will be: {"deviceid":"your_device_id", "data":"response"}
- Keep alive – set period (seconds) when to client should send keep alive message.
- Last will topic and message – when client disconnects or lose connection broker will publish his last will message on set topic.
- Message on connect – if you enter message client will publish this message on last will topic when connection with broker will be established.
- If broker/server you are connecting to require authentication you have to enter also username and password.



IMPORTANT: if you want to use MQTT you must disable Cloud.



6.11. Common (variables and DNS)

In tab common you can set specific DNS – if you enter under MQTT server url interface detects automatically that it needs to resolve it to IP therefore DNS specified will be used. If not, DNS is specified and URL is entered interface uses Google DNS 8.8.8.8 to resolve IP.

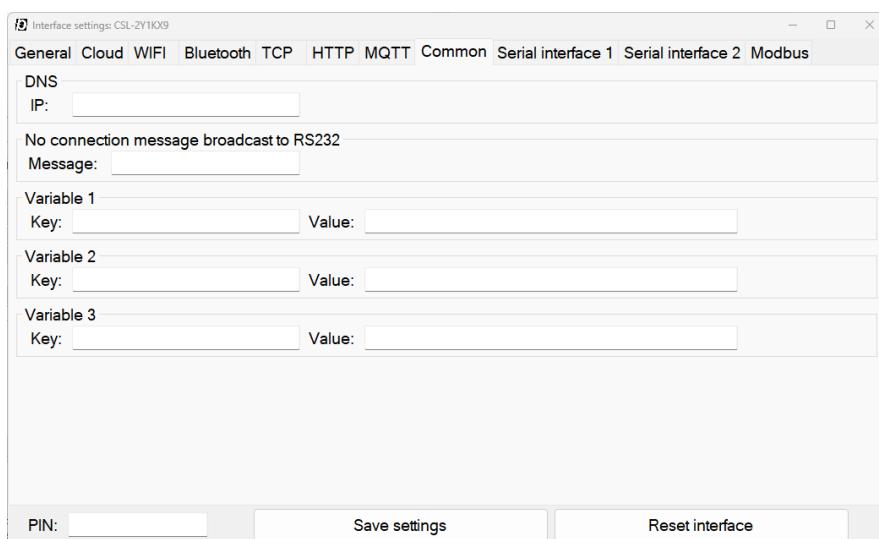
If you need to send additional data with string you can use variables. There are three variables available where you can specify key and value.

NOTE: maximum length of key is 24 characters and maximum length of value is 48 characters.

If key is specified than variable is automatically included in JSON response.

NOTE: you must check return response in JSON in MQTT or HTTP tab so data from RS-232 device are automatically converted into JSON.

Example:



Returned response in JSON:

```
{  
  "deviceid": "Mettler Toledo SICS",  
  "data": "SIX1 S 2 N N R 0 0 0 1 M 1.0996 1.0200 0.0794 kg",  
  "deviceUUID": "13a33eec-cec4-11ed-afa1-0242ac120002",  
  "msgPath": "preciz/test",  
  "originID": "pcs-232"  
}
```

NOTE: maximum length of JSON response is 220 characters.

6.12. Serial interface configuration

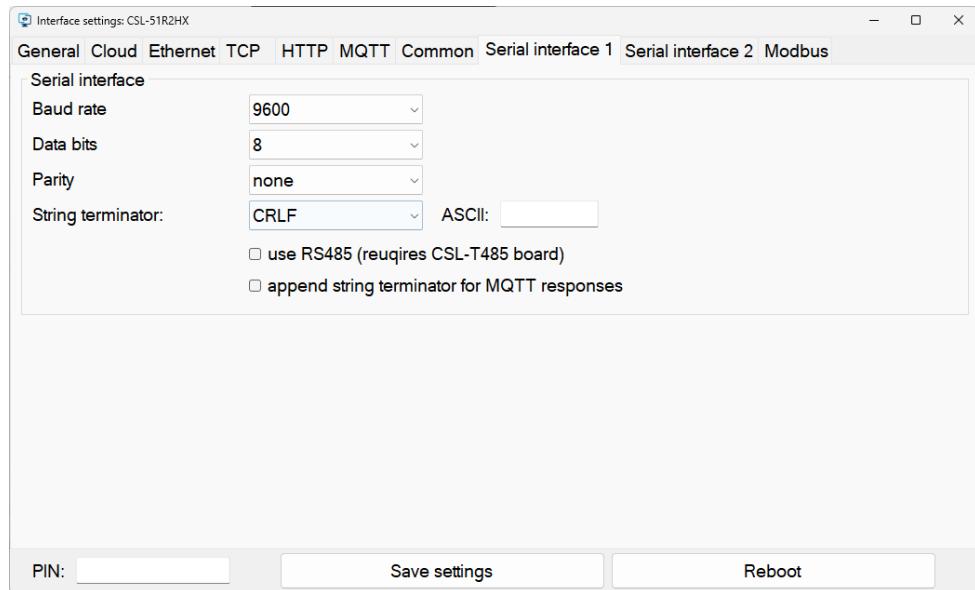
CloudScaleLink modules have two RS-232 interfaces. From version Odin 2.3 and Thor version 3.4 second serial interface can be used for connecting additional equipment such as barcode reader, label printer, thermal printer to cloud via MQTT or it can be used as TCP bridge.

6.12.1. Serial interface 1

Under the serial interface tab, we can configure the following serial interface settings:

- Baud rate
- Data bits
- Parity
- String terminator
- On Thor only – use RS485 – this requires additional CSL-T485 board to be used in order to work. In that case instead of RS-232 you can use serial port 1 as RS-485 port with A and B line. Under modbus tab you can specify interface address.
- Append string terminator for MQTT responses – if you want to receive in MQTT messages also string terminator you must opt out this. Please note that, if you are using Virtual printer in Scale Monitor you must enable this feature.

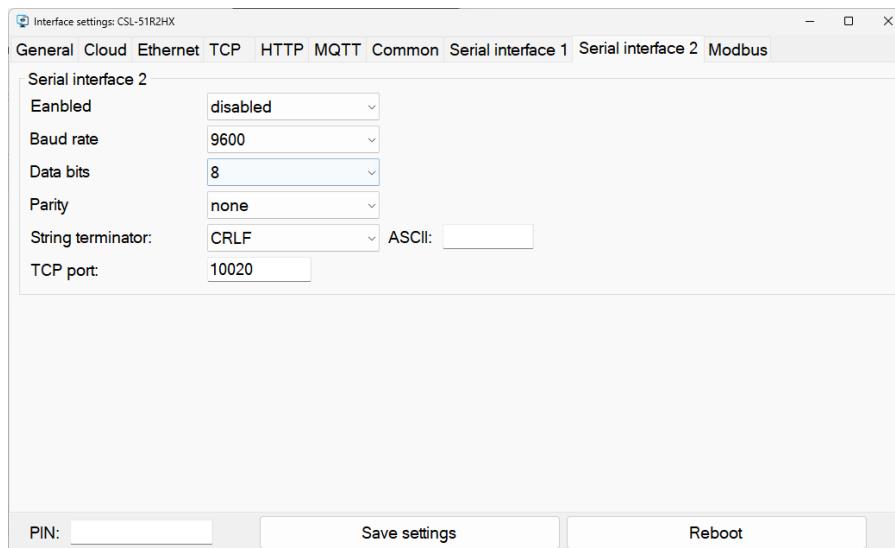
String terminator is used to determine end of data so it can correctly show data in debugger mode. Usually, serial device has string terminator set to CR (carriage return) and LF (line feed) which is also default value. In case your device uses different terminator, you can insert ASCII character in decimal form for instance for ETX – which is ASCII 3 you should enter 3.



6.12.2. Serial interface 2

Second serial interface has following modes:

- Disabled – serial port 2 is not used
- TCP – communication with serial port 2 working over TCP/IP server. Port is specified under TCP port. This means serial port 2 traffic is redirected to TCP port and TCP traffic coming on port specified is redirected to serial port 2.
- MQTT – redirects traffic to MQTT and vice versa. Please see CMP API for further instruction to which topic traffic is redirected.
- Redirect from serial 1 – in cases you need to redirect traffic from serial port 1 to serial port 2 you must select this mode.



6.13. ModBus

Some interfaces support ModBus communication. If you set ModBus mode to RTU than you can communicate via TCP/IP or MQTT with ModBus device.

Please note that string you send to device must be in HEX format and must include string terminator. When you send command to ModBus device you do not have to calculate CRC checksum as interface does automatically check, if response checksum is valid, if not you will not get any response.

Example of command to be sent to device:

01030000000A

Byte	Value	Description
1	01	Modbus device address
2	03	Modbus function
3	00	Starting register MSB
4	00	Starting register LSB
5	00	No. of registers MSB
6	0A	No. of registers LSB

In above example we send command to ModBus device with address 1, we execute function 03 to read holding register AO from register 40001 and we want 10 registers (#0A).

Response will be like this:

0103140000202B0000202B0004030F00000000000000000000

7. Default settings

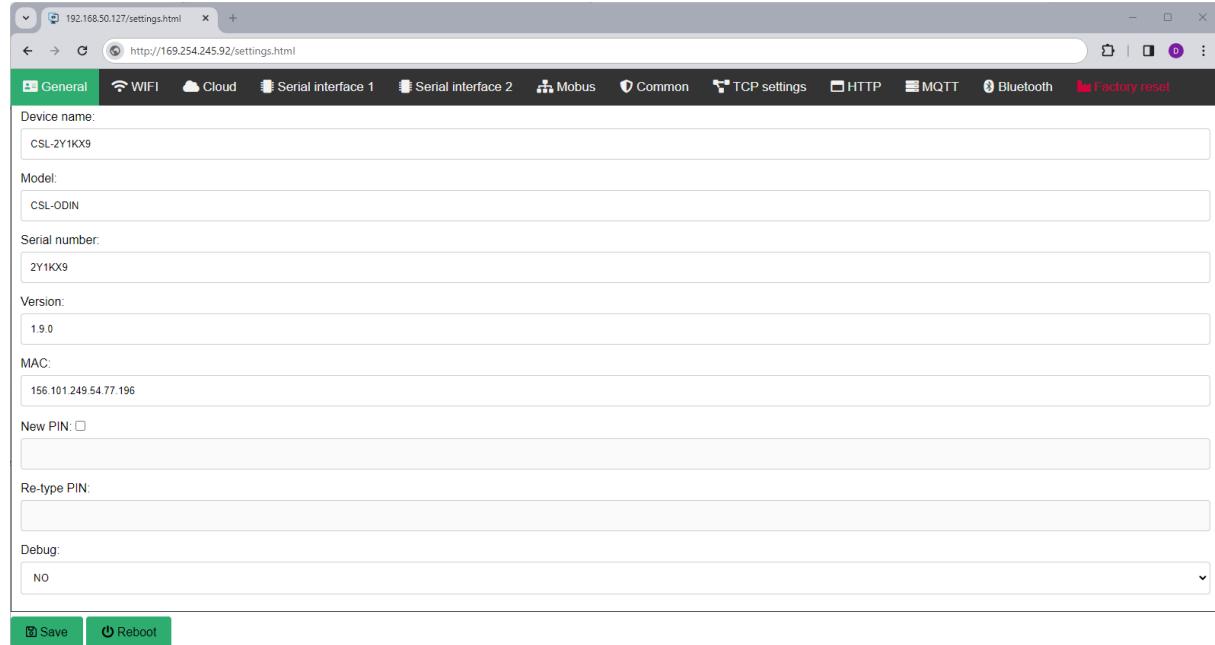
7.1. Ethernet interface default settings

Ethernet IP:	169.254.245.92
Subnet:	255.255.0.0
DHCP:	Enabled
TCP Server port:	10010
TCP Debugger port:	10011
DNS	1.1.1.1
Redirection:	disabled
Baudrate:	9600
Databits:	8
Parity:	None
String terminator:	CRLF (ASCII 13 and 10)

By default, Ethernet interface has IP: **169.254.245.92** which is APIPA – automatic private IP addressing.

You can configure interface also via web browser by visiting (HTTP server has been disabled by default in Thor 3.4 and later – see HTTP configuration how to enable it):

<http://169.254.245.92/settings.html>



The screenshot shows a web browser window with the URL <http://169.254.245.92/settings.html>. The page is titled 'General' and contains the following fields:

- Device name: CSL-ZY1KX9
- Model: CSL-ODIN
- Serial number: 2Y1KX9
- Version: 1.9.0
- MAC: 156 101 249 54 77 196
- New PIN:
- Re-type PIN:
- Debug: NO

At the bottom are two buttons: 'Save' (green) and 'Reboot' (green).

7.2. WIFI interface default settings

WIFI IP:	169.254.245.192
Subnet:	255.255.0.0
DHCP:	Enabled
TCP Server port:	10010
TCP Debugger port:	10011
DNS	1.1.1.1
Redirection:	disabled
Baudrate:	9600
Databits:	8
Parity:	None
String terminator:	CRLF (ASCII 13 and 10)

You can configure interface also via web browser by visiting (HTTP server has been disabled by default in Thor 2.3 and later – see HTTP configuration how to enable it):

<http://169.254.245.192/settings.html> if you connected over WIFI.

NOTE:

You can also connect interface directly to computer via Ethernet cable. In CSLTools you select ethernet interface to which you connected, and press Save and after that Search button which is the easiest and fastest method.

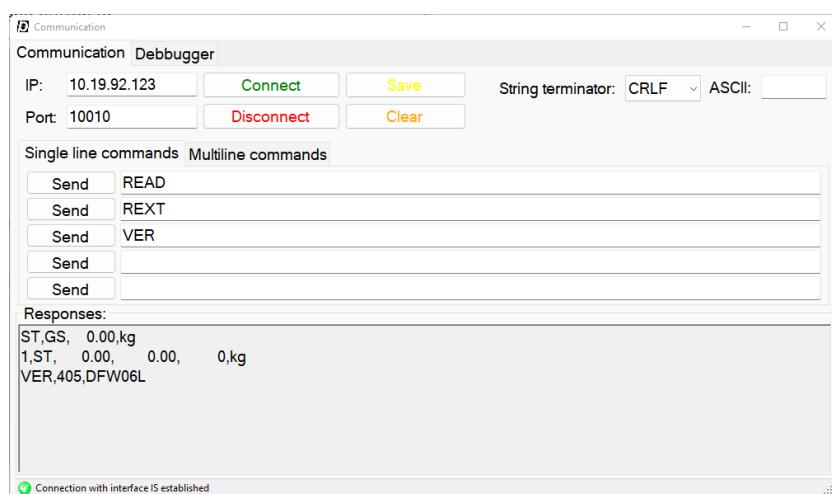
8. Communication and debugging

8.1. Communication

Communication/debugging is used to quickly test, if interface is working – you just select interface and click Debugger button. After that new window is opened where you have two tabs:

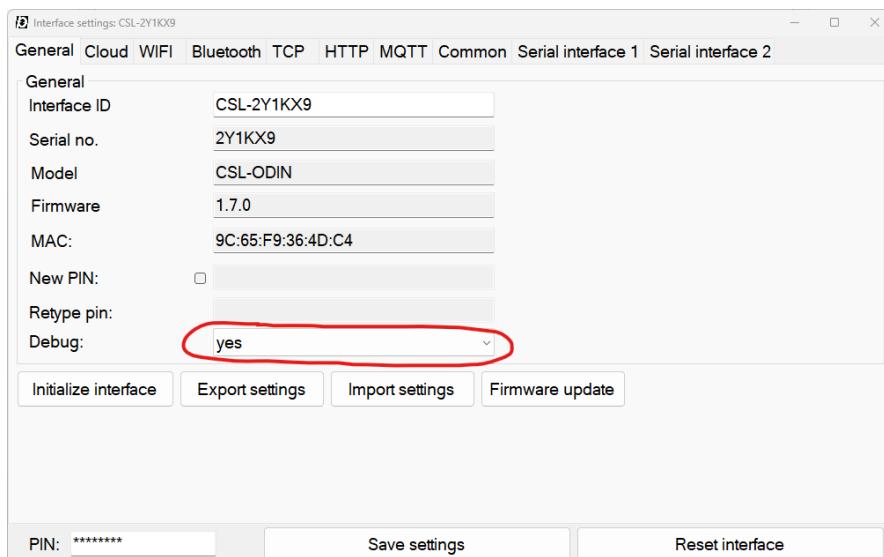
- Communication – it is used to test and simulate commands.
- Debugger – it is used to monitor traffic between interface/device and program – please see How to debug.

If you wish to send command, you first press Connect (status of connection is shown in bottom left corner). After connection is established, you can put into textbox command and press Send button or press Enter. Responses are shown in response field. If device is continuously sending data, they will be immediately shown in responses field after connection is established.



8.2. How to debug with CSLTools

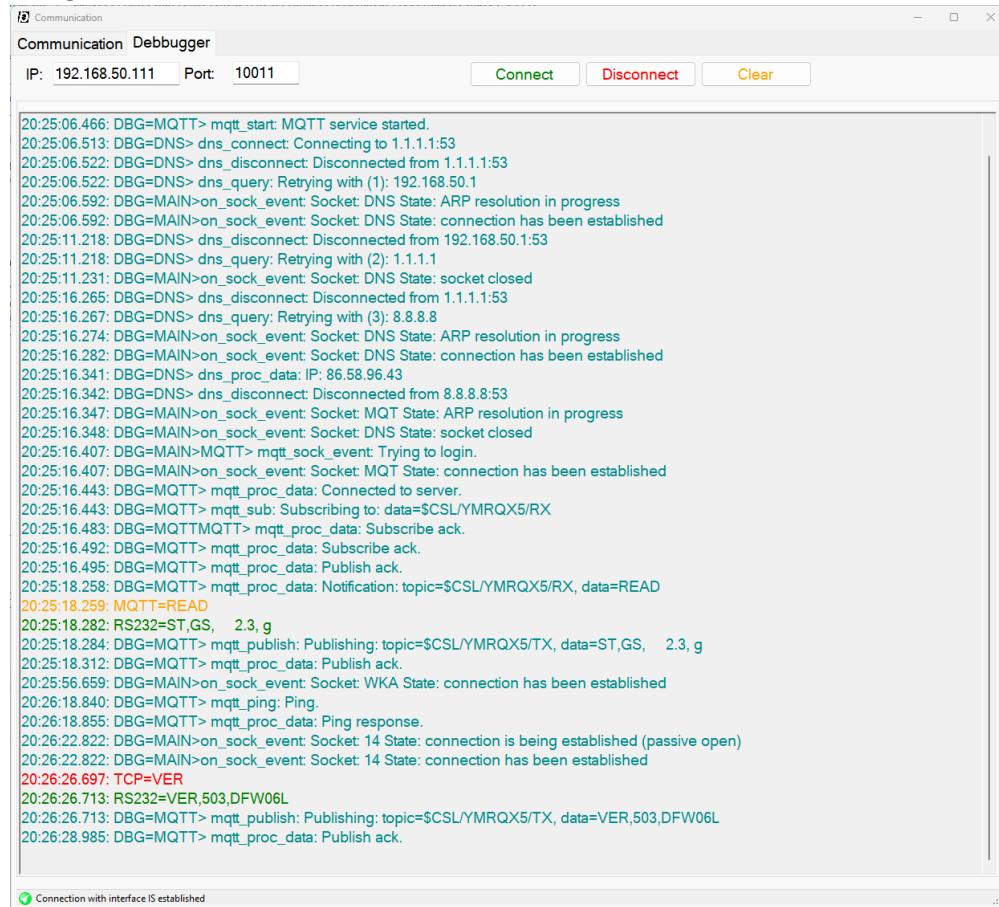
If you wish to monitor traffic you must first enable debugging in module settings:



After you saved settings, you must reboot module. When module is rebooted, it will wait that you establish connection with debugger and after that it will proceed with starting services as DNS and MQTT so you will be able to see information and status from these services too.

You will see which data was send and over which socket was it send.

RS232 is the response from the device while all other data TCP, HTTP and MQTT are received string to interface.



The screenshot shows a window titled 'Communication Debugger'. At the top, there are fields for 'IP: 192.168.50.111' and 'Port: 10011', and buttons for 'Connect' (green), 'Disconnect' (red), and 'Clear' (yellow). The main window displays a log of messages in a monospaced font. The log starts with '20:25:06:466: DBG=MQTT> mqtt_start: MQTT service started.' and continues with various log entries related to DNS resolution and MQTT connections. At the bottom of the log, a green checkmark icon indicates 'Connection with interface IS established'.

```

20:25:06:466: DBG=MQTT> mqtt_start: MQTT service started.
20:25:06:513: DBG=DNS> dns_connect: Connecting to 1.1.1.1:53
20:25:06:522: DBG=DNS> dns_disconnect: Disconnected from 1.1.1.1:53
20:25:06:522: DBG=DNS> dns_query: Retrying with (1): 192.168.50.1
20:25:06:592: DBG=MAIN>on_sock_event: Socket: DNS State: ARP resolution in progress
20:25:06:592: DBG=MAIN>on_sock_event: Socket: DNS State: connection has been established
20:25:11.218: DBG=DNS> dns_disconnect: Disconnected from 192.168.50.1:53
20:25:11.218: DBG=DNS> dns_query: Retrying with (2): 1.1.1.1
20:25:11.231: DBG=MAIN>on_sock_event: Socket: DNS State: socket closed
20:25:16.265: DBG=DNS> dns_disconnect: Disconnected from 1.1.1.1:53
20:25:16.267: DBG=DNS> dns_query: Retrying with (3): 8.8.8.8
20:25:16.274: DBG=MAIN>on_sock_event: Socket: DNS State: ARP resolution in progress
20:25:16.282: DBG=MAIN>on_sock_event: Socket: DNS State: connection has been established
20:25:16.341: DBG=DNS> dns_proc_data: IP: 86.58.96.43
20:25:16.342: DBG=DNS> dns_disconnect: Disconnected from 8.8.8.8:53
20:25:16.347: DBG=MAIN>on_sock_event: Socket: MQTT State: ARP resolution in progress
20:25:16.348: DBG=MAIN>on_sock_event: Socket: DNS State: socket closed
20:25:16.407: DBG=MAIN>MQTT> mqtt_sock_event: Trying to login.
20:25:16.407: DBG=MAIN>on_sock_event: Socket: MQTT State: connection has been established
20:25:16.443: DBG=MQTT> mqtt_proc_data: Connected to server.
20:25:16.443: DBG=MQTT> mqtt_sub: Subscribing to: data=$CSL/YMRQX5/RX
20:25:16.483: DBG=MQTTMQTT> mqtt_proc_data: Subscribe ack.
20:25:16.492: DBG=MQTT> mqtt_proc_data: Subscribe ack.
20:25:16.495: DBG=MQTT> mqtt_proc_data: Publish ack.
20:25:18.258: DBG=MQTT> mqtt_proc_data: Notification: topic=$CSL/YMRQX5/RX, data=READ
20:25:18.259: MQTT=READ
20:25:18.282: RS232=ST,GS, 2.3, g
20:25:18.284: DBG=MQTT> mqtt_publish: Publishing: topic=$CSL/YMRQX5/TX, data=ST,GS, 2.3, g
20:25:18.312: DBG=MQTT> mqtt_proc_data: Publish ack.
20:25:56.659: DBG=MAIN>on_sock_event: Socket: WKA State: connection has been established
20:26:18.840: DBG=MQTT> mqtt_ping: Ping.
20:26:18.855: DBG=MQTT> mqtt_proc_data: Ping response.
20:26:22.822: DBG=MAIN>on_sock_event: Socket: 14 State: connection is being established (passive open)
20:26:22.822: DBG=MAIN>on_sock_event: Socket: 14 State: connection has been established
20:26:26.697: TCP=VER
20:26:26.713: RS232=VER,503,DFW06L
20:26:26.713: DBG=MQTT> mqtt_publish: Publishing: topic=$CSL/YMRQX5/TX, data=VER,503,DFW06L
20:26:28.985: DBG=MQTT> mqtt_proc_data: Publish ack.

```

NOTE: if you wish to use debugger – redirection must be disabled otherwise connection is refused.

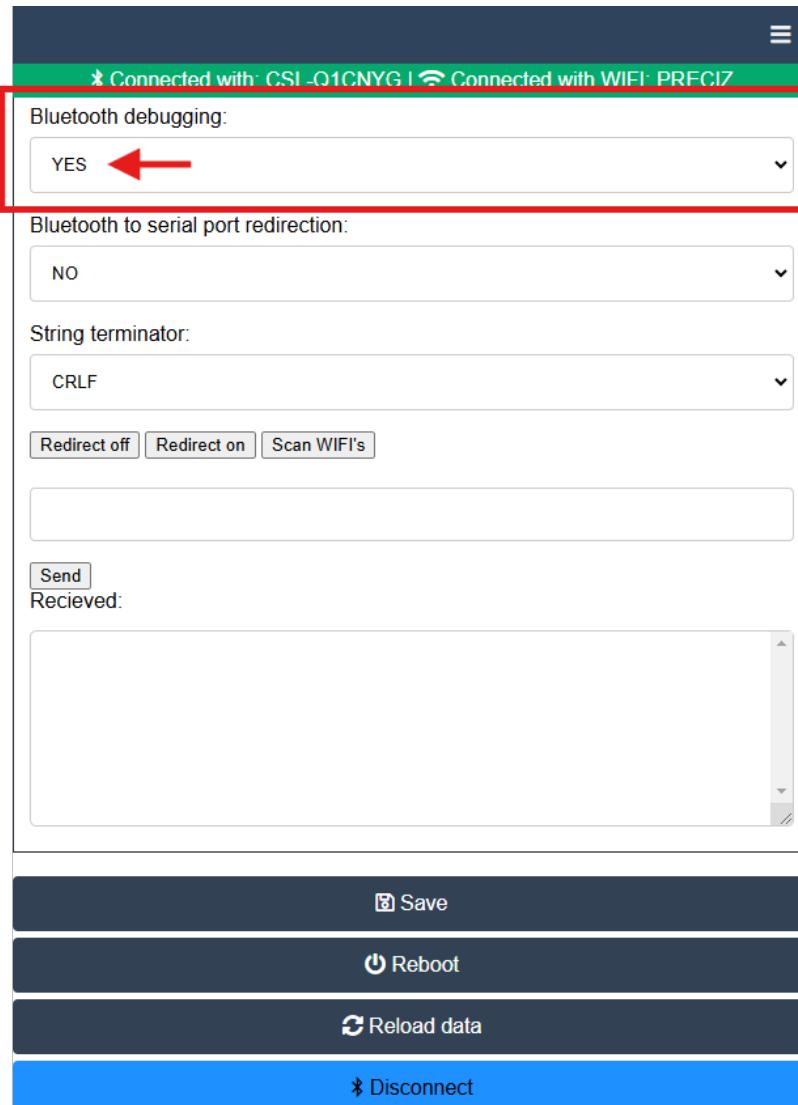
NOTE: debugging must be set to yes in general settings tab otherwise connection is refused.

8.3. How to debug via Bluetooth (CSL-ODIN only)

To configure Bluetooth interface and perform debugging visit: <https://apps.scale-monitor.com> and click on CSL Bluetooth→Advanced configuration.

Then click on Connect button and select from the list of available modules the one that you wish to debug click Pair and after that enter PIN.

After connection with module is established go Bluetooth tab enable debugging:



Please note that after you enabled debugging you must reboot CloudScaleLink module.

After reboot CloudScaleLink module will wait to connect via Bluetooth first. During wait for connection green led will blink every approx.. 2 seconds (from firmware 2.5.0 onwards).

After that it will start WIFI connection, DHCP process, RS-232 communication etc.. so you will be able to retrieve all messages.

Note: if you want to debug WIFI connection you must disable quick connect in tab WIFI.

When debug mode is active all messages will be shown in Received box in Bluetooth tab:

* Connected with: CSL-Q1CNYG | Connected with WIFI: PRECIZ

Bluetooth debugging:

 Bluetooth to serial port redirection:

 String terminator:

Received:

```
17:22:37:973BLE is now ready. MAC= 5.38.82.59.180.144
17:22:37:973Settings OK
17:22:37:973WLN boot OK
17:22:37:973WIFI STARTED SEARCHING FOR: PRECIZ
17:22:39:174WIFI PRECIZ FOUND (bssid: 198.173.52.145.90.235 channel: 9)
17:22:41:937WIFI STARTED ASSOCIATION WITH PRECIZ (bssid: 198.173.52.145.90.235 channel: 9)
17:22:41:937WIFI TASK COMPLETED: active scan
17:22:41:937WIFI TASK COMPLETED: idle
17:22:41:937WIFI TASK COMPLETED: set wpa
17:22:47:866DHCP (SYS) succeeded. IP: 192.168.50.110 Gateway:192.168.50.1 Mask:255.255.255.0 lease time:1800
17:22:50:264WIFI CONNECTED WITH PRECIZ (bssid: 198.173.52.145.90.235 channel: 9)
17:22:50:265INIT>Total buffer:153 Free buffer:127
17:22:50:267WIFI TASK COMPLETED: associate
17:22:50:267Socket (DNS): 5 Simple state: 1 State: 32 ARP resolution in progress
17:22:50:267Socket (DNS): 5 Simple state: 4 State: 129 connection has been established
17:22:50:273DNS OK
17:22:50:273Socket (MQT): 6 Simple state: 1 State: 32 ARP resolution in progress
17:22:50:273Socket (DNS): 5 Simple state: 0 State: 17 socket closed
17:22:50:275Socket (MQT): 6 Simple state: 3 State: 96 connection is being established (active open)
17:22:50:276Socket (MQT): 6 Simple state: 4 State: 129 connection has been established
17:22:50:314MQTT connected - topic=$CSL/Q1CNYG/RX
17:22:50:318MQTT subscribed to topic=$CSL/Q1CNYG/RX
17:22:50:319MQTT subscribed to topic=$CSL/Q1CNYG/RX
```

* Disconnect

9. How to connect printer and scale to Scale Monitor

To connect scale and printer to Scale Monitor it is enough to have only one CloudScaleLink module.

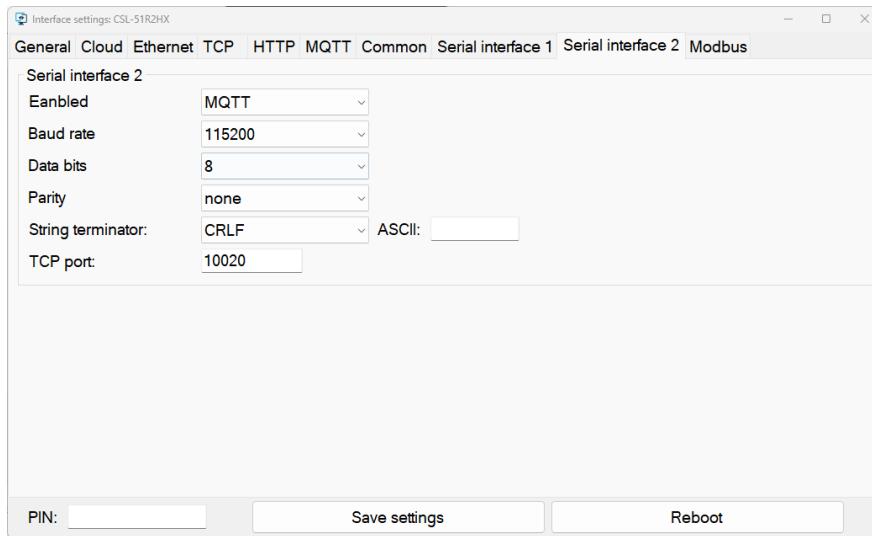
How to connect printer to Scale Monitor depends on type of printer connection you have. You can connect RS-232 printer or printer that is connected to your local network via Ethernet cable or WIFI.

9.1. How to connect RS-232 label printer to Scale Monitor

To use one CloudScaleLink module and connect both scale and label printer over RS-232 to Scale Monitor you must setup serial port 2.

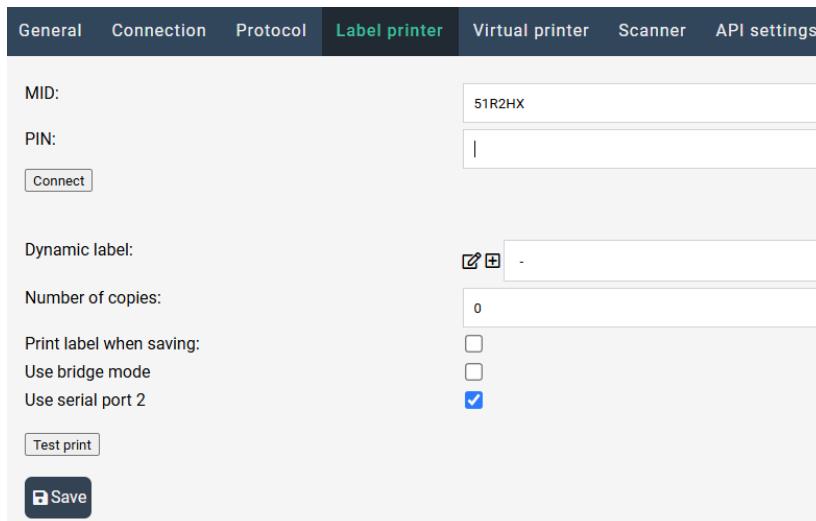
In serial port 2 you must set proper baudrate, data bits and parity – we advise you to use 115200 bps especially if you will be printing labels with photos as this will significantly speed up label printing.

Serial port 2 must have Enabled set to MQTT.



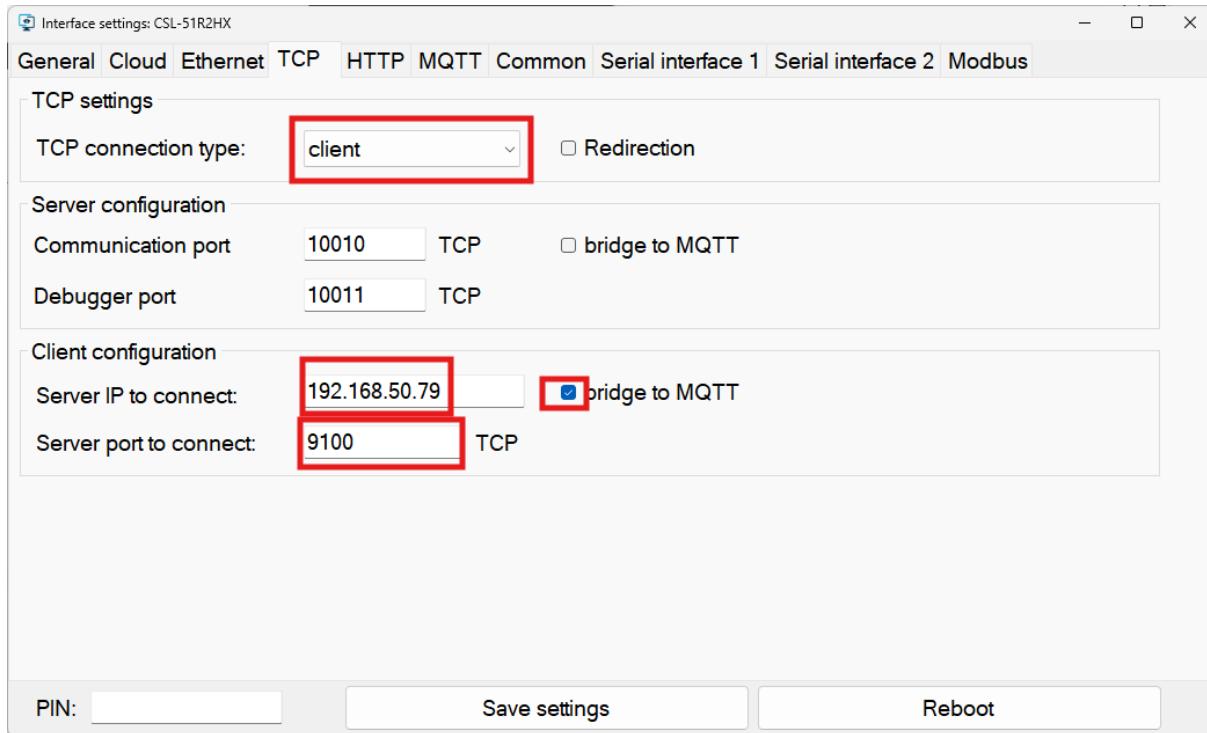
Inside Scale Monitor you must under Settings->Label printer tick option **Use serial port 2**.

When you use the same CloudScaleLink module for scale and label printer you must enter into MID and PIN the same data as you set up for scale connection.



9.2. How to connect Ethernet or WIFI label printer to Scale Monitor

To connect Ethernet or WIFI label printer to Scale Monitor you must go under TCP settings and set mode to client. Under client you must enter printer IP and port (usually port is 9100).

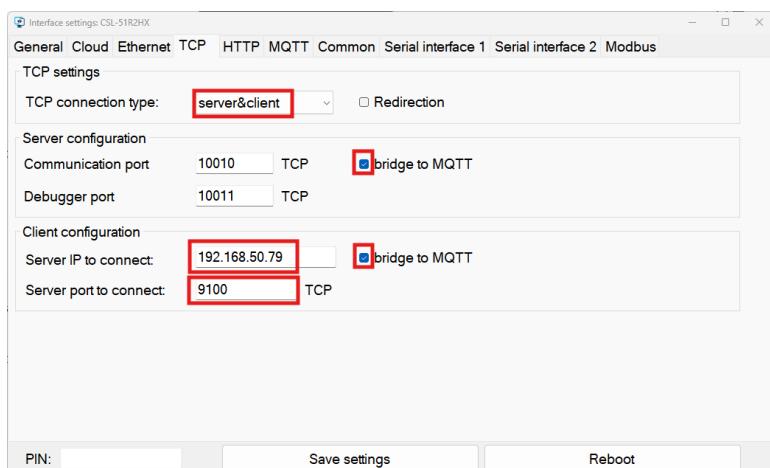


Inside Scale Monitor you must under Settings->Label printer tick option **Use bridge mode**.

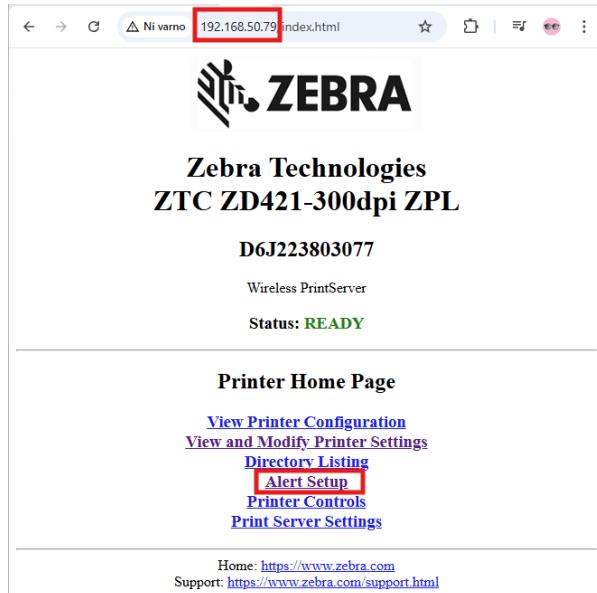
When you use the same CloudScaleLink module for scale and label printer you must enter into MID and PIN the same data as you set up for scale connection.

9.2.1. Zebra alert setup

In case you want to also receive confirmation message inside Scale Monitor that label was printed successfully you must set TCP type to server&client and check bridge to MQTT also under server – the rest is the same.



The next thing you must do is go to the Zebra printer setup (enter IP of printer into web browser) and printer page will open:



Click on Alert setup:

Alert Messaging System							
Condition	Destination	Sgd Name	SET	CLR	Address	Port	Actions
(0) COLD START	(F) SNMP	None	Y	N	255.255.255.255	162	Delete
(K) PQ JOB COMPLETED	(A) SERIAL	None	Y	Y	None	0	Delete
Add Alert Message							

Click on Add Alert Message and select destination TCP and under address enter IP of CloudScaleLink module and under Port port of TCP server – by default this is 10010. Then click on Add Alert message (note you will have to enter also password – by default this is 1234)

Add Alert Message

Condition:	<input type="button" value="ALL MESSAGES"/>
Destination:	<input type="button" value="TCP"/>
Sgd Name:	<input type="text"/>
SET:	<input type="button" value="YES"/>
CLR:	<input type="button" value="YES"/>
Address:	<input type="text" value="192.168.50.118"/>
Port:	<input type="text" value="10010"/>
<input type="button" value="Add Alert Message"/>	
Password <input type="text" value="....."/>	
Alert Setup	

After that confirmation window will show. It is important that you click on Save Printer settings otherwise settings will be lost when printer is rebooted.

Add Alert Message

The Add Message command has been queued for processing

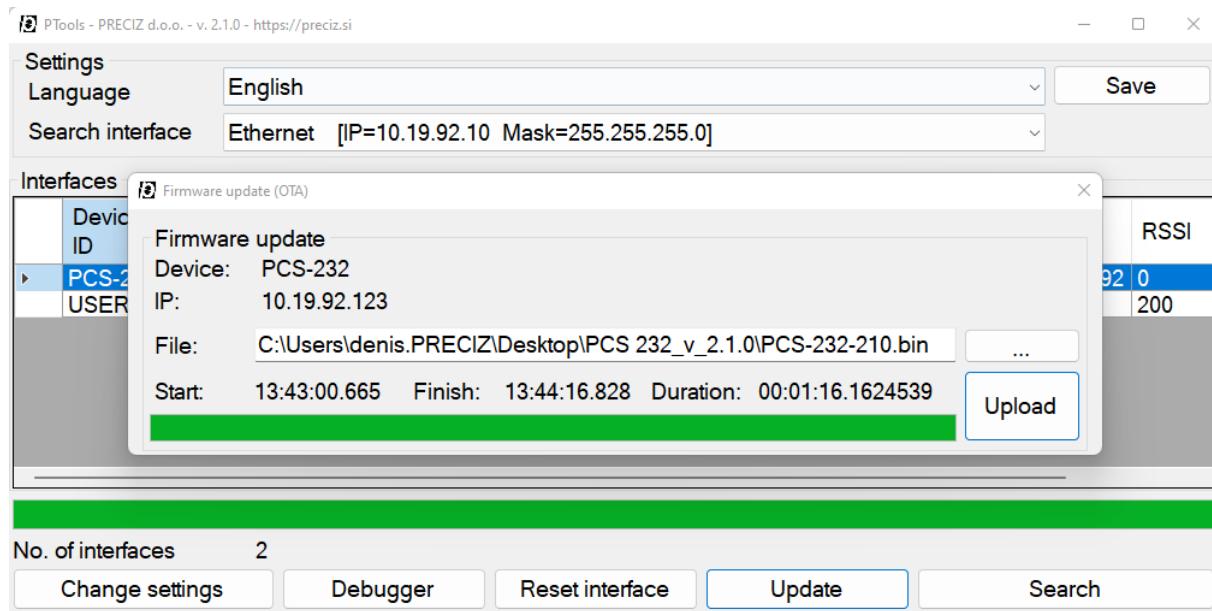
[Save Printer Settings](#)
[Alert Setup](#)

Now Zebra printer will send also confirmation messages back to Scale Monitor.

10. Firmware update (OTA-Over The Air)

You can update firmware by selecting interface and after that pressing button update. You have to select file with new firmware and after that press upload button to start process.

After update process is finished you will get message with information if process was finished successfully or not. If process failed (eg. WIFI signal lost) you can restart process.

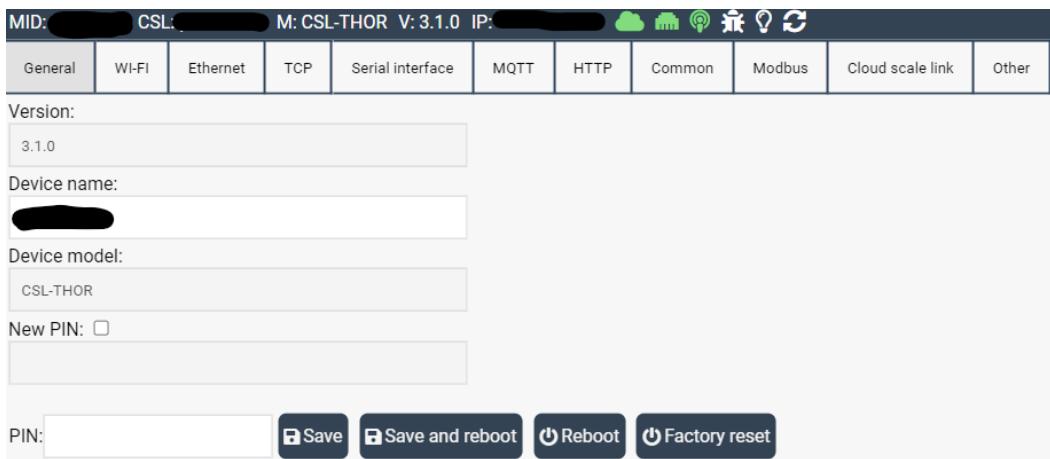


11. Cloud management platform (CMP)

If you register at <https://register.scale-monitor.com> you will be able to manage and monitor all your modules via **Cloud Management Platform – CMP**.

CMP gives you same possibilities as CSLTools directly from your browser where you can monitor all your interfaces that have enabled Cloud management and are connected to internet from anywhere in the world via any device you want.

CMP gives you possibility to see connection status, you can see WIFI signal strength, you can test connectivity, you can blink lights on your module to identify module in case you multiple modules nearby, you can remotely reboot your module and change all settings like IP, WIFI connection etc. and you can even debug your communications remotely.



MID: [REDACTED] CSL: [REDACTED] M: CSL-THOR V: 3.1.0 IP: [REDACTED]      

General	Wi-Fi	Ethernet	TCP	Serial interface	MQTT	HTTP	Common	Modbus	Cloud scale link	Other
---------	-------	----------	-----	------------------	------	------	--------	--------	------------------	-------

Version: 3.1.0

Device name: [REDACTED]

Device model: CSL-THOR

New PIN:

PIN: [REDACTED]

11.1. List of modules

In CMP you will see all your modules that you activated in CMP.

Through CMP you will be able to manage all your modules. You can modify any setting of the module such as change IP, disable, or enable DHCP and so on. Basically, you can do everything you can do with CSLTools.

Module ID	Module PIN	Device name	Model	Date created	Ethernet mac address	Wi-fi mac address	Note	Customer	Branch	Department	Status	
U	*****		CSL-ODIN	15.11.2024 12:13:59	[REDACTED]	[REDACTED]	6				   	
2	*****		CSL-Raspberry	09.11.2024 20:27:59	[REDACTED]	[REDACTED]	20				   	
F	*****		CSL-RPI-5	09.11.2024 20:03:47	[REDACTED]	[REDACTED]	F1				   	
B	*****		CSL-RPI-5	30.10.2024 18:25:30	[REDACTED]	[REDACTED]	03				   	
N	*****	[REDACTED]	CSL-ODIN	11.10.2024 08:19:00	[REDACTED]	[REDACTED]	2				   	

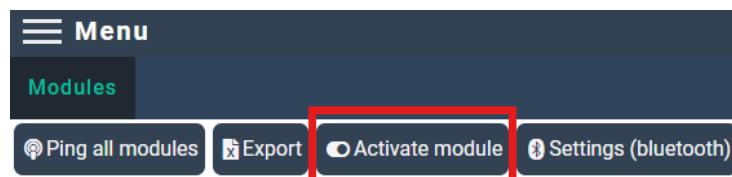
CMP allows you to manage and monitor all your modules centrally. If you click on the button Ping all modules, you will receive statuses of all modules in the real-time. In case any module is off-line you will be able to see immediately.

You can also test and debug connection with your module – see Debugging via CMP

11.2. Module activation

To see and manage module you must activate module in CMP. Please note that, if you add scale in Scale Monitor module will be automatically activated in CMP.

To activate module after login, go to Menu → CloudScaleLink → Modules → Activate module



Into form enter MID and PIN of the module which are printed on the label of the module:

Module ID:

Module PIN:

Activate module

After entering module press Activate module and module will be added to the list of modules:



The screenshot shows a table with the following data:

Module ID	Module PIN	Device name	Model	Date created	Ethernet mac address	Wi-fi mac address	Note	Customer	Branch	Department	Status	Settings
LC- [REDACTED]	*****	CSL- ODIN	19.12.2024 15:21:01		9C- [REDACTED]							    

IMPORTANT: when you activate module inside your CMP nobody else will be able to activate this module inside their CMP until you deactivate it in your CMP.

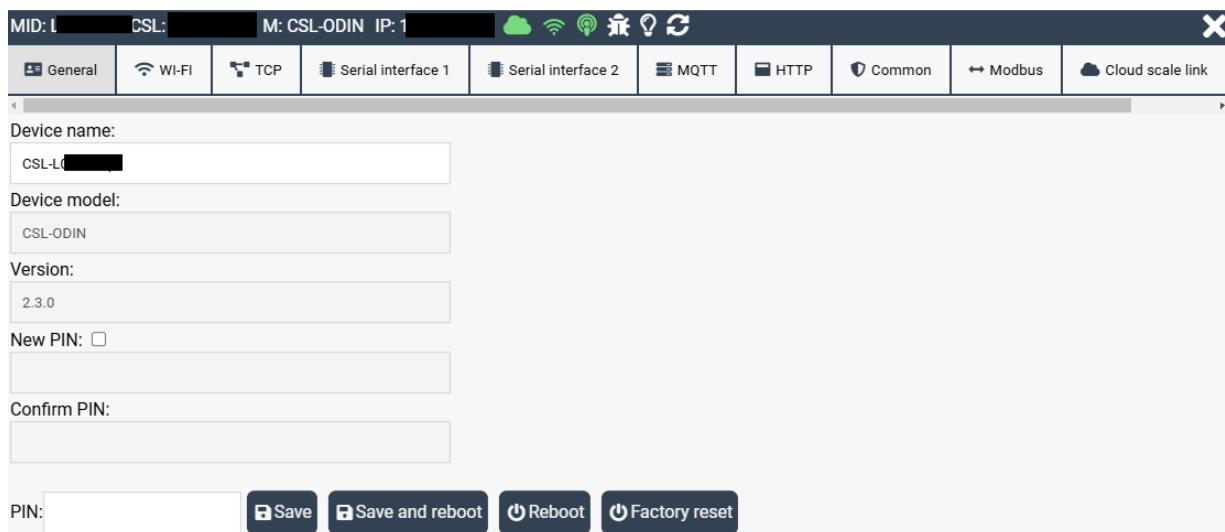
11.3. Module deactivation

To deactivate module, click on deactivate module button and in the window enter module data and confirm deactivation by clicking Deactivate module button.

After deactivation module will be deleted from list of modules.

11.4. Settings

If you click on Settings a settings window will open and connection with module if it is connected to the internet will be established:



The screenshot shows a settings window with the following fields:

- MID: L
- CSL: [REDACTED]
- M: CSL-ODIN IP: 1
- Device name: CSL-ODIN-
[REDACTED]
- Device model: CSL-ODIN
- Version: 2.3.0
- New PIN:
- Confirm PIN: [REDACTED]
- PIN: [REDACTED]
- Buttons: Save, Save and reboot, Reboot, Factory reset

11.5. Top bar buttons and statuses

In top bar you will see also several statuses:



 - cloud icon represents cloud connection status. Cloud status tells if connection with the cloud is established. If connection is established cloud icon will be green otherwise it will be red.

 - WiFi icon shows the signal strength with colours (green excellent, orange good and red poor) and if module is not connected to cloud a crossed red WiFi icon will appear . In Ethernet version it shows green ethernet icon , if ethernet is connected or red  if there is no connection with the module.

 - ping button – by clicking ping button a ping request will be sent to module. In this way you can try if module is active and responsive.

 - identification button – if you click on light icon, it will turn green which means that on the module there will be green light blinking. In this way in case, you have multiple modules on the same location you can distinguish them by turning LED light on or off. If you click again on the button, it will turn green led off.

 - reload data button – if you click on the button module data will be reloaded.

 - debug button – if you click on the debug button a debug window will open – see Debugging via CMP

11.6. Debugging via CMP

Built-in debugger gives you possibility to see real-time communication between RS-232 device and cloud or any program that device is connected to.

DEBUG

Error messages <input checked="" type="checkbox"/>	Event messages <input type="checkbox"/>	Sent commands <input checked="" type="checkbox"/>	Received messages <input checked="" type="checkbox"/>
19:00:47:064 SD 213.79 g			<input checked="" type="checkbox"/> SI <input type="button" value="Send"/>
19:00:47:196 SI			<input checked="" type="checkbox"/> SIX1 <input type="button" value="Send"/>
19:00:47:263 SD 213.77 g			<input checked="" type="checkbox"/> @ <input type="button" value="Send"/>
19:00:47:377 SI			<input checked="" type="checkbox"/> SI <input type="button" value="Send"/>
19:00:47:445 SD 213.78 g			<input checked="" type="checkbox"/> TI <input type="button" value="Send"/>
19:00:47:997 SI			<input checked="" type="checkbox"/> TAC <input type="button" value="Send"/>
19:00:48:066 SS 213.80 g			<input type="button" value="Add"/>
19:00:48:561 SI			
19:00:48:625 SS 213.81 g			
19:00:50:092 TI			
19:00:50:195 TIS 213.81 g			
19:00:53:081 TAC			
19:00:53:150 TAC A			

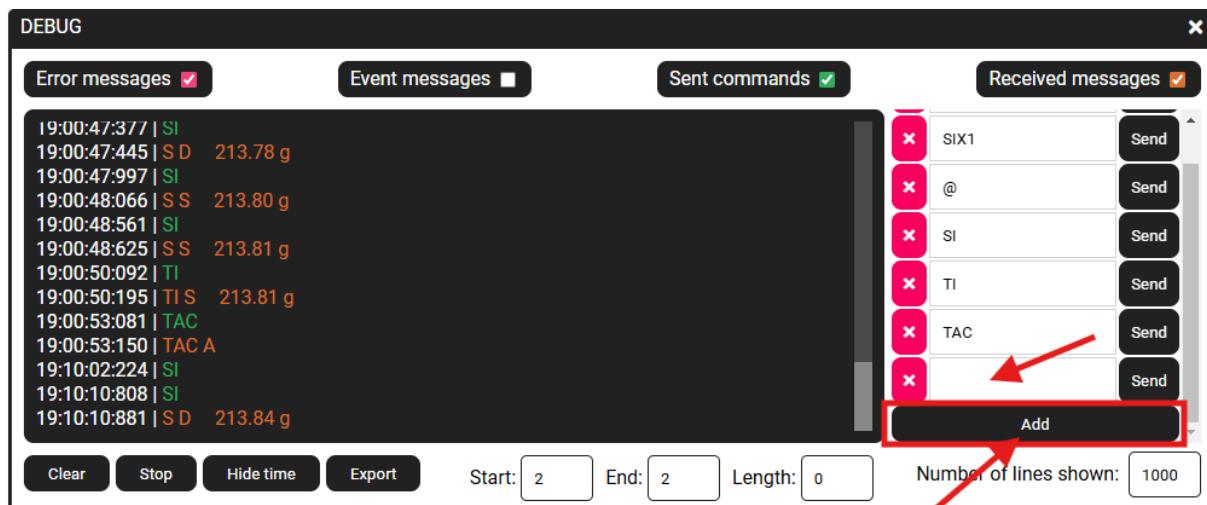
Number of lines shown:

In the debug window you will see sent commands (green colour), received messages (orange colour) which can be also responses to commands you will send and any error messages (pink colour) that might occur during the communication.

Built-in debugger allows you test your device by adding your commands and sending them to device. Any response received will be displayed in the window. Command panel is on the right side of the debug window.

11.6.1. Managing commands in debug windows

To add command, click on add button and new field will appear:



Into new field write new command and then you can send this command to device by clicking Send button next to the field into which you entered command.

To delete command, you just click on X button in front of the field.

12. Troubleshooting

12.1. Interface not found in CSLTools

If you cannot find interface with CSLTools there can be several reasons:

1. If you are not in same network (subnet) than UDP broadcast is probably disabled. In this case, please connect interface into same network so that interface and computer are in the same LAN.
2. If you are connected directly to Ethernet interface via PC and your DHCP is enabled than you will not be able to find interface as DHCP disables UDP broadcast. See chapter how to [Disable DHCP on THOR](#).
3. Firewall is blocking communication – in that case either allow UDP port 3108 or disable firewall.

12.2. CSL-ODIN not discoverable via Bluetooth

Problem: CSL-ODIN is not visible via Bluetooth after setting up WIFI name and password although both are correct, and you can see CSL-ODIN is connected to router.

In that case there shall be a problem with DHCP on the server which usually in such cases is not enable or it is disabled.

In that case either enable DHCP server on your access point or factory reset module and after connection via Bluetooth set up static IP and disable DHCP.