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How To Connect iCex model ICX-T245/245

to RealiteQ Project

Basic instructions V1.0

1. Before starting

You need:

iCex model **ICX-T245LTE-CAT4-XX** or **ICX-T255-LTE-NBM1**

Mobile antenna (included) and GPS antennas (optional)

   SIM card

- Standard dimension (not micro or nano)
- Ordinary (no need for static IP)
- Can be open for Data only (no need voice and SMS)
- Recommended data package of 250 MB/month or more
- For TRB245 – SIM supporting LTE (4G) and/or UMTS (3G)
- **ICX-T255** works with RealiteQ <u>only</u> with SIM cards for LTE <u>Cat M1</u>. Despite ICX-T255 supports standard NBIOT, this standard has very narrow band and very long latency. We don't recommend using it with RealiteQ

24 (9-30) V DC power supply – providing at least 0.5 A@24V DC

Computer with LAN connector and Wi-Fi

Standard LAN cable

URL and your username and password.

> **Important:** You must have Administrator's Permissions for your RealiteQ project.

2. Hardware connections

2.1. Insert SIM card

- Unscrew two back panel hex bolts and remove the back panel (point 1).
- Insert your SIM card(s) into the SIM socket(s), which are located on the bottom side of PCB.
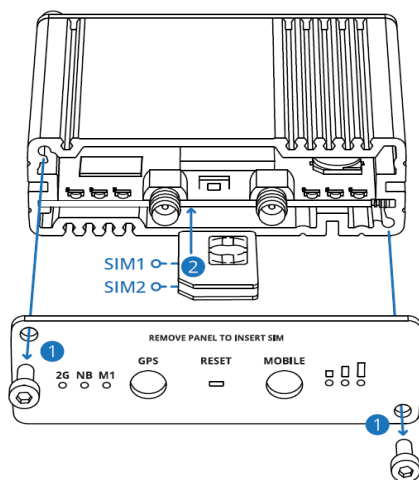- Attach the panel and tighten the hex bolts.
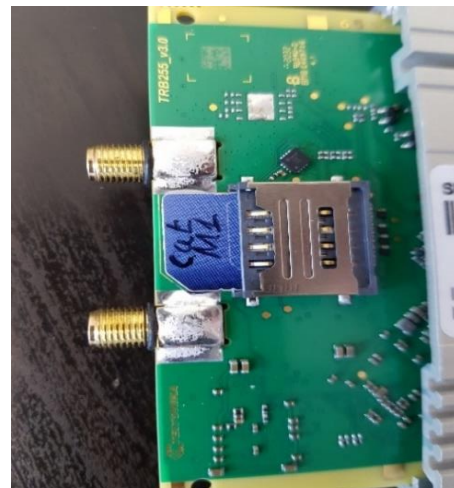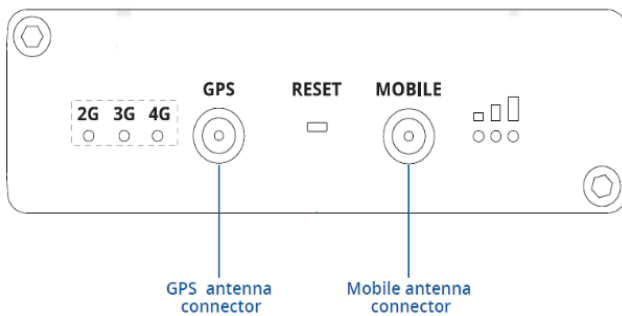

Fig. 1 Remove cover and insert SIM card(s)

Fig. 2 Proper insert SIM card

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Important: If you are inserting only one SIM card, insert it in <u>lower tray</u> (1) – closer to PCB

* XX states for specific area model - EU, US, LA, CN

2.2. Screw mobile and GPS antennas
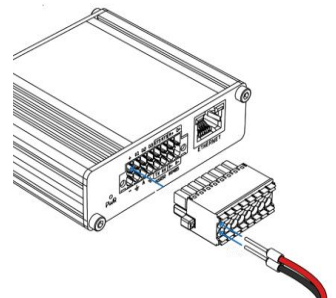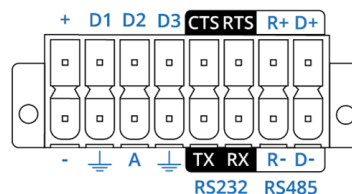
Mobile antenna   GPS antenna

Note: To obtain GPS coordinates in iCex UI and in RealiteQ project (*/status/gps* group), GPS antenna needs to "see" the sky.

2.3. Connect power

Connect:

- + 24 (9-30) V DC to **+** pin of 16 pin connector.
- 0V to **−** pin of 16 pin connector.
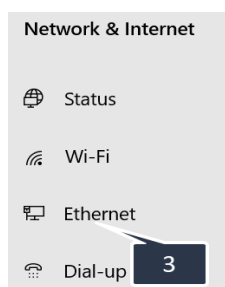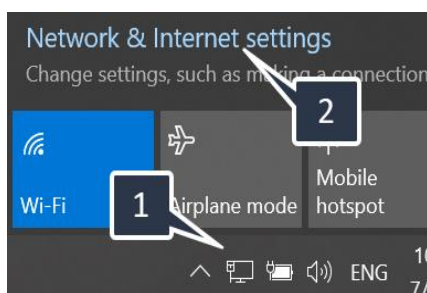- Insert 16 pin connector to iCex

16 PIN CONNECTOR PINOUT

2.4. Connect iCex to your computer with standard Ethernet cable (RJ45 to RJ45)

3. Set manually IP address in your computer (captures are for Windows 10)

- Open ***Network and internet settings*** (points 1 & 2)
- On left side of display, select ***Ethernet*** (point 3)
- Select ***Change adapter options*** (point 4)

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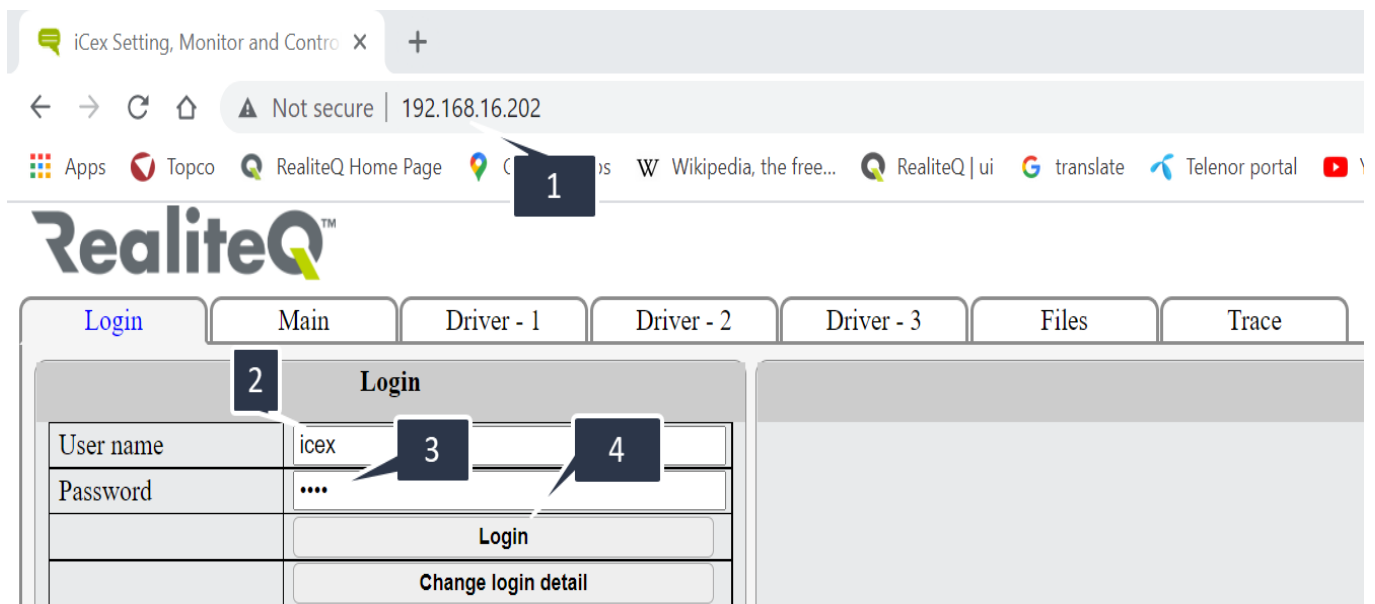
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- Right click on your Ethernet card (point 5) and select **Properties** (point 6)
- Select TCP/IPv4 (point 7) and apply on **Properties** (point 8)
- Select **Use the following IP address** (point 9)
- Type IP address **192.168.16.200** (point 10) and Subnet mask **255.255.255.0** (point 11)
- Confirm with OK and close windows.
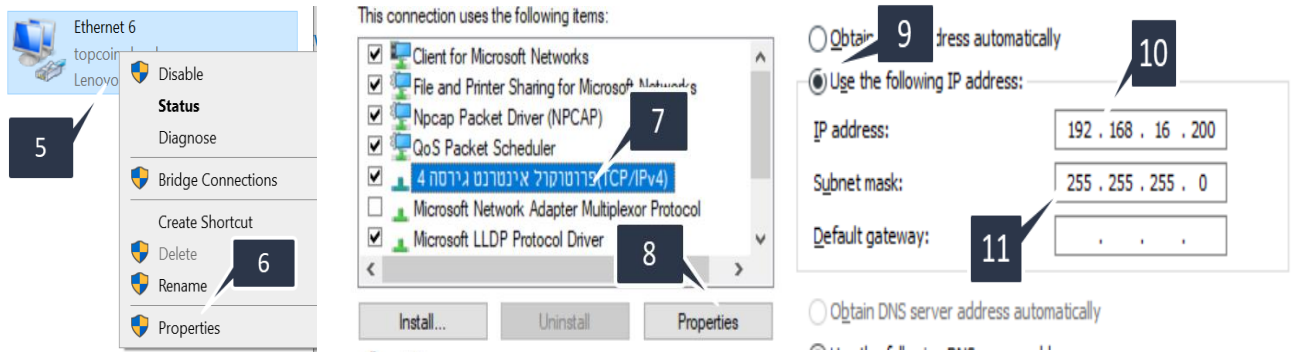
## 4. Open iCex UI and your RealiteQ project in your computer

- Open your browser
- Type default iCex IP address **192.168.16.202** (point 1). You will enter in iCex user interface.
- Login with Username **icex** (point 2) and Password **icex** (point 3)
- Confirm Login (point 4). **Login** sign in right upper corner of display will change from red to green and the tab will switch to **Main**.

Note: in this tutorial we will use RealiteQ project https://tutorial.realiteq.net/.

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5. Set iCex parameters in your RealiteQ project

- Open a new tab in your browser
- Enter the URL of your project and login with your username and password.
- After successful login in your RealiteQ project, apply on **Project configuration and edit** icon in bottom right corner of display.
- Select Nodes
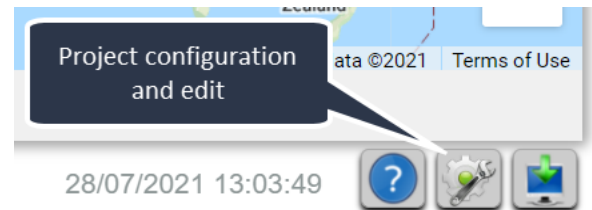
- Add new **Group** **Group +** This group will be iCex.

- Give name of iCex in the project (point 1). Our icex name is **tut_01**

-

Important: Group and Node names must be with English characters, lower case. If group or node name has more than one word, there needs to be underscore sign between words.

- You can add **Tag name** (point 2) and **Description** (point 3) to your group and nodes. Tag name and description can be in any language, with lower and upper case, as long as needed.
- Apply (in red after changing) to save settings

6. Add *Status* group to project tree

- Download *ICX-T245-255 Status* group template from https://www.realiteq.com/ → **Downloads** → **Specs and Manuals Download**.
- Open it in Excel
- Replace **/template** (point 1) with the name of iCex - in example - **/tut_01** (point 2).
- Apply on **Replace all** (point 3).
- Save edited file.
- Upload edited file to your project. In **Nodes** display, apply on **Upload** (point 4), then Chose file (point 5). Select edited *ICX-T245-255 Status.csv* file in your PC and apply on **Submit** (point 6). Now Status group with its sub-groups appears in your project.
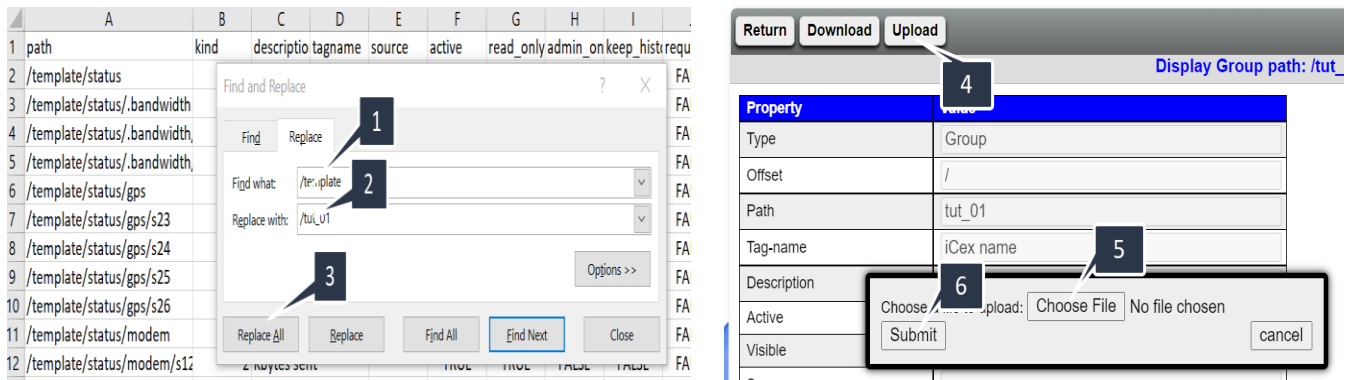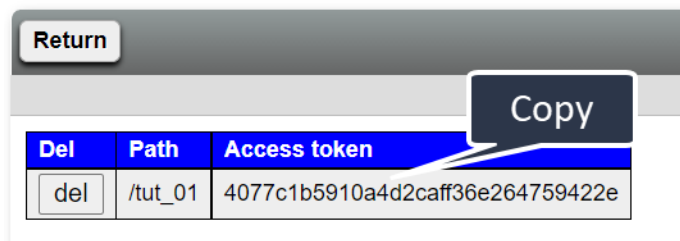
7. Create Access token

- Apply on Return to leave **Nodes** menu and return to **Project configuration and edit** display.
- Select **Access token** (point 1) to give unique 128 bit "password" to protect communication between iCex and COMP.
- Apply on **Create** (point 2), then type the path of icex - **/tut_01** (point 3) and then **Add** (point 4).
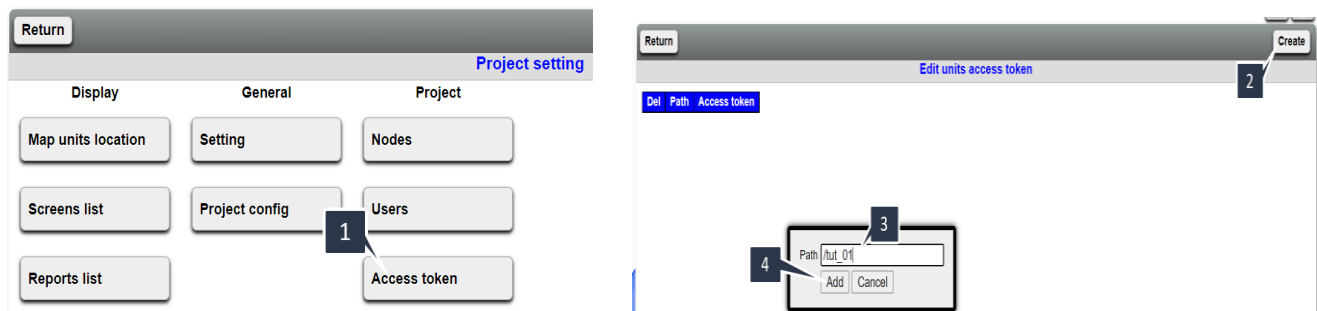
- Copy created by COMP Access token

8. Set parameters in iCex user interface

- Switch back to iCex tab in your browser
- Type icex **Name** – in our case **tut_01** (point 1)
- Type project **URL**, to which iCex will be connected – in our case **tutorial.realiteq.net** (point 2)
- Paste Access token (point 3)
- **Apply** (now in red) to keep settings (point 4).
- **Save to INI File** (switches to red after **Apply**) to save settings in iCex memory (point 5)
- **Restart** iCex (point 6). Connect to RealiteQ after **Restart** takes about 5 – 10 seconds
- In your project tree, you will see your iCex **Connected**

Note: after restarting iCex you will need to log in again.

After you will login again, you can go to **Status** tab to the status of iCex. You will see it also in **Status** group in your project.