Equipment Note

Alpha EMS 4.0

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Contents

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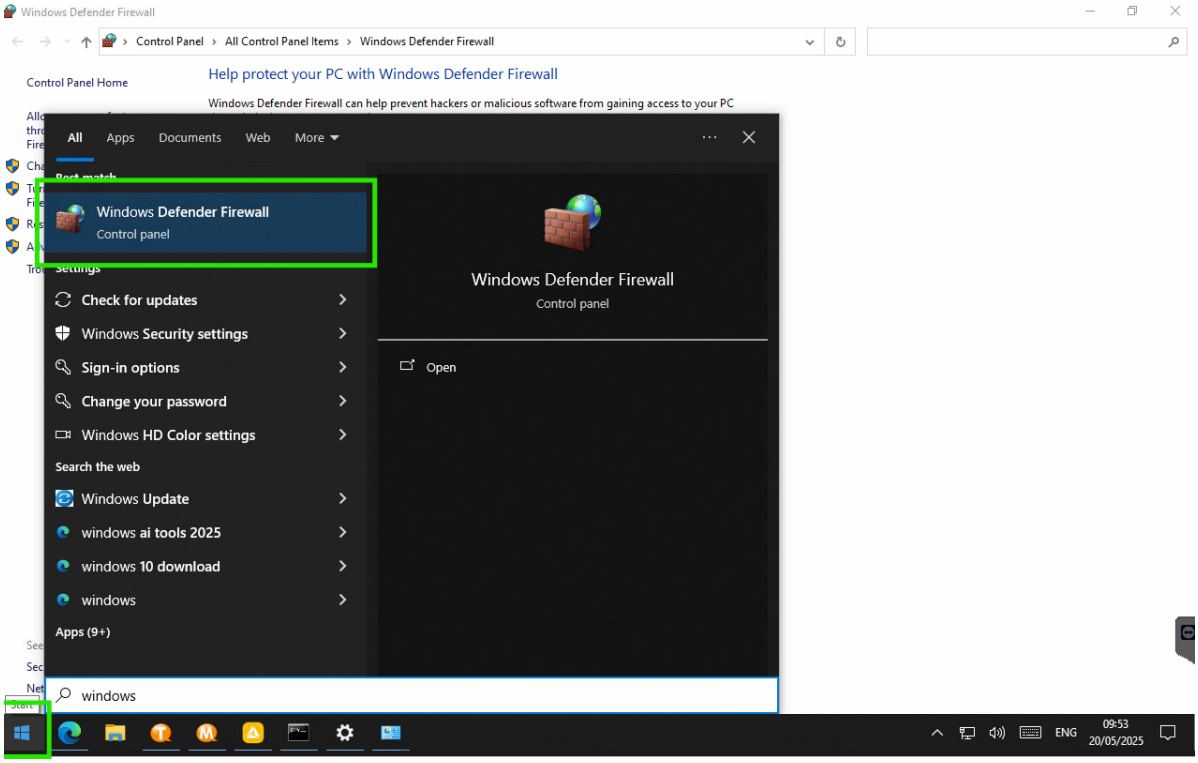
1 Networking

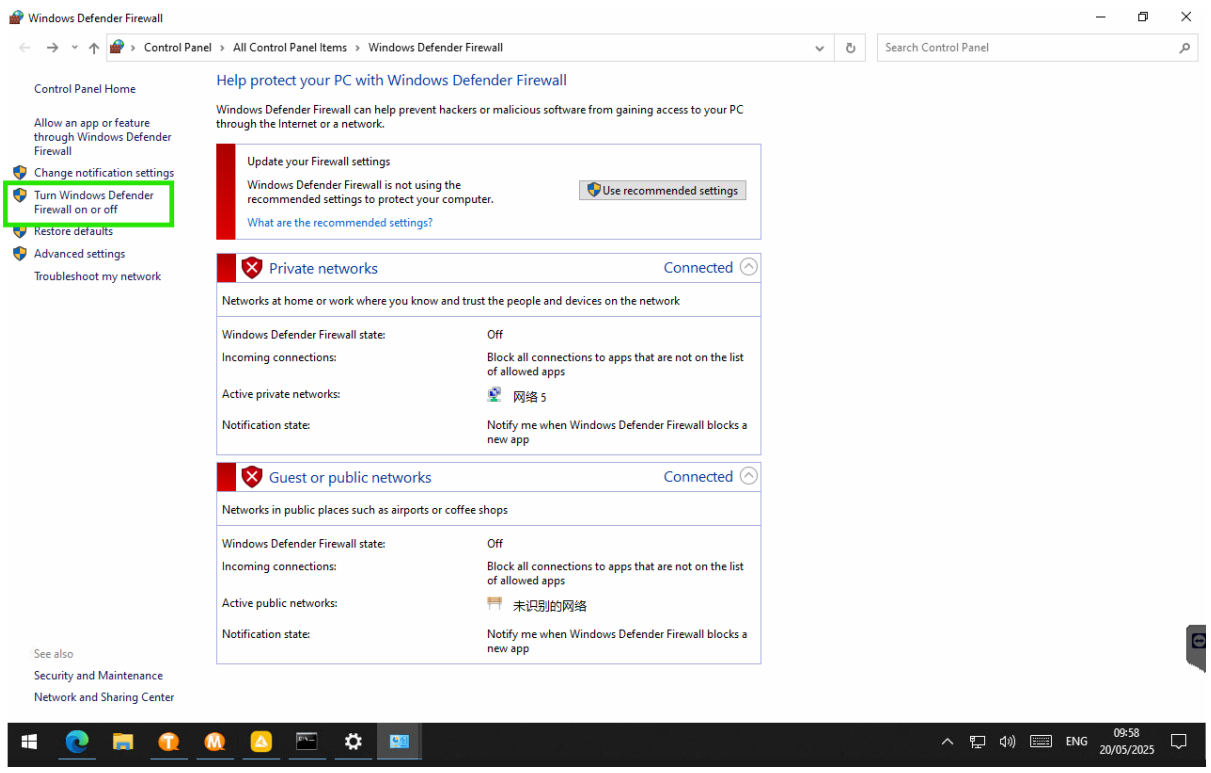
The Alpha EMS 4 and impHub need to be connected in the same subnet, this is normally achieved by connecting both the impHub and Alpha system to the same network switch.

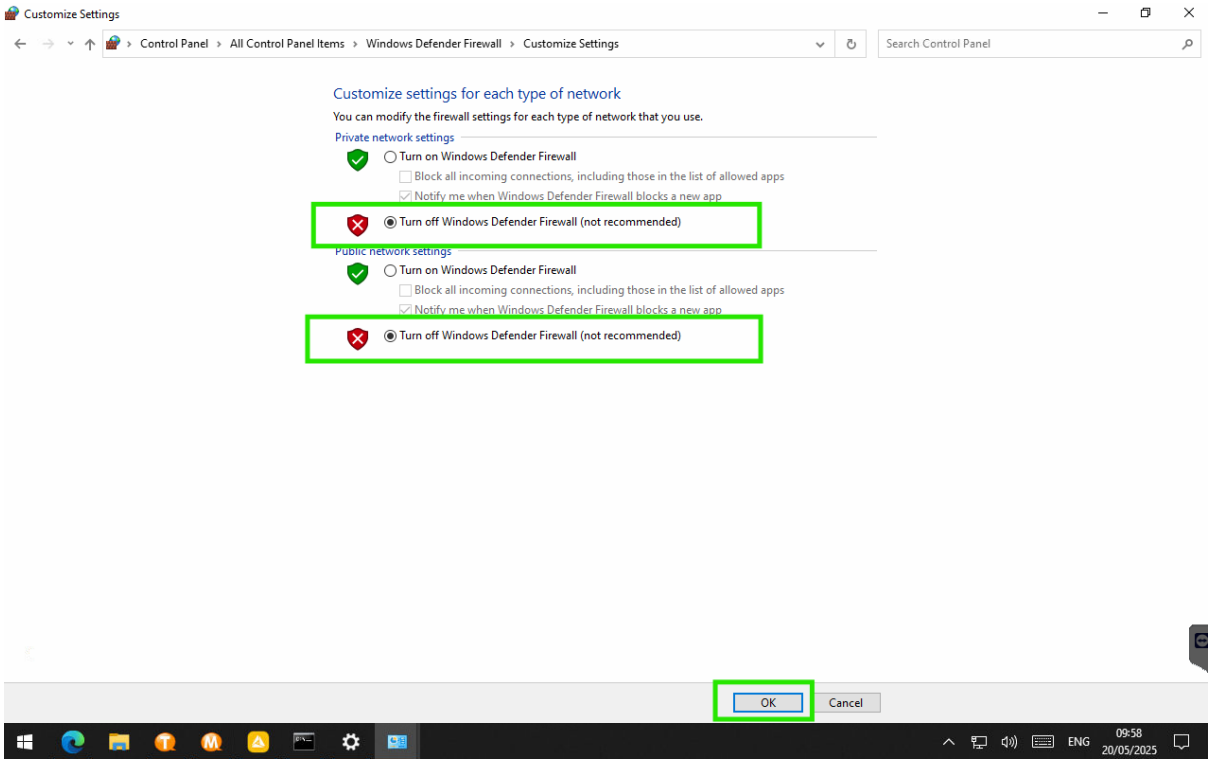
1.1 SCADA PC Firewall

To enable communications between the ImpHub and Alpha SCADA PC, the firewall on the SCADA PC needs to be disabled.

To do this, click on the Windows button and search for Windows Defender Firewall, select “Turn Windows Defender Firewall on or off” , select “Turn off windows Defender firewall” and then click “OK”







1.2 Finding and setting the system IP

The battery system must have a fixed IP for it to operate correctly. To do so you should ensure with your network engineer that an IP has been assigned to the system, and that you know the gateway.

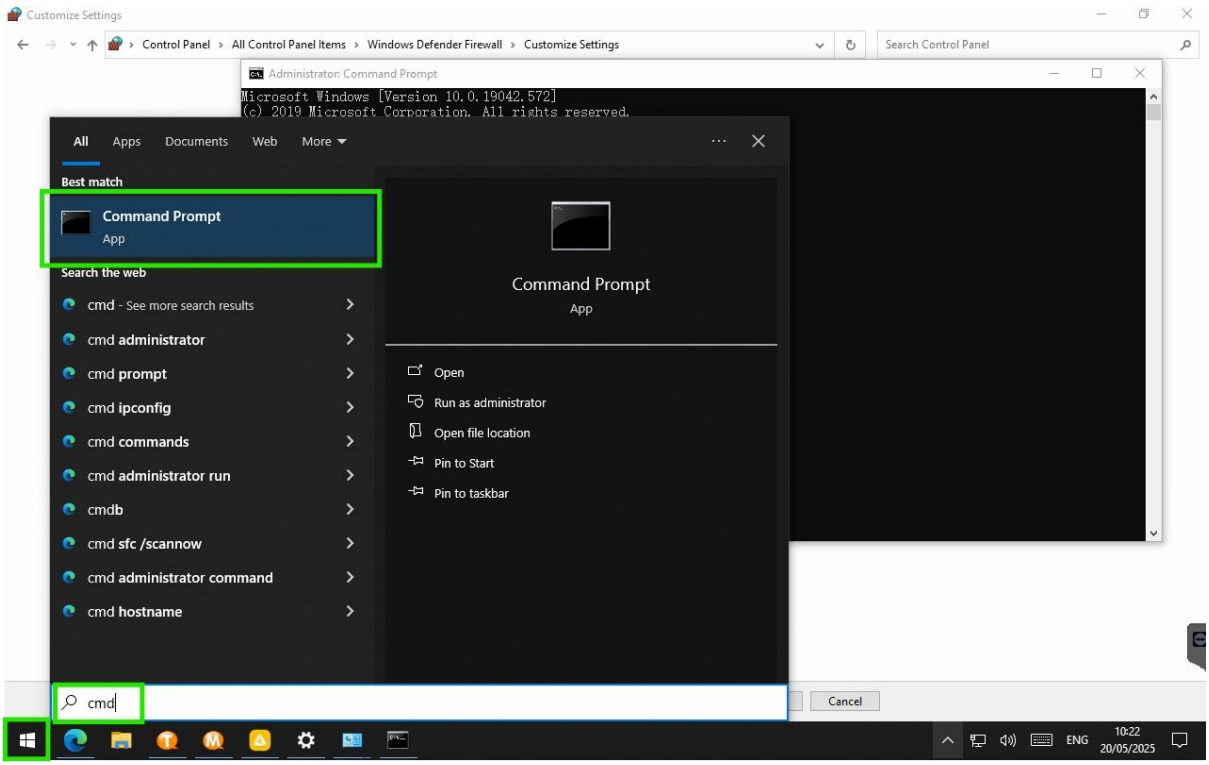
1.2.1 You have an IP to use from your network engineer

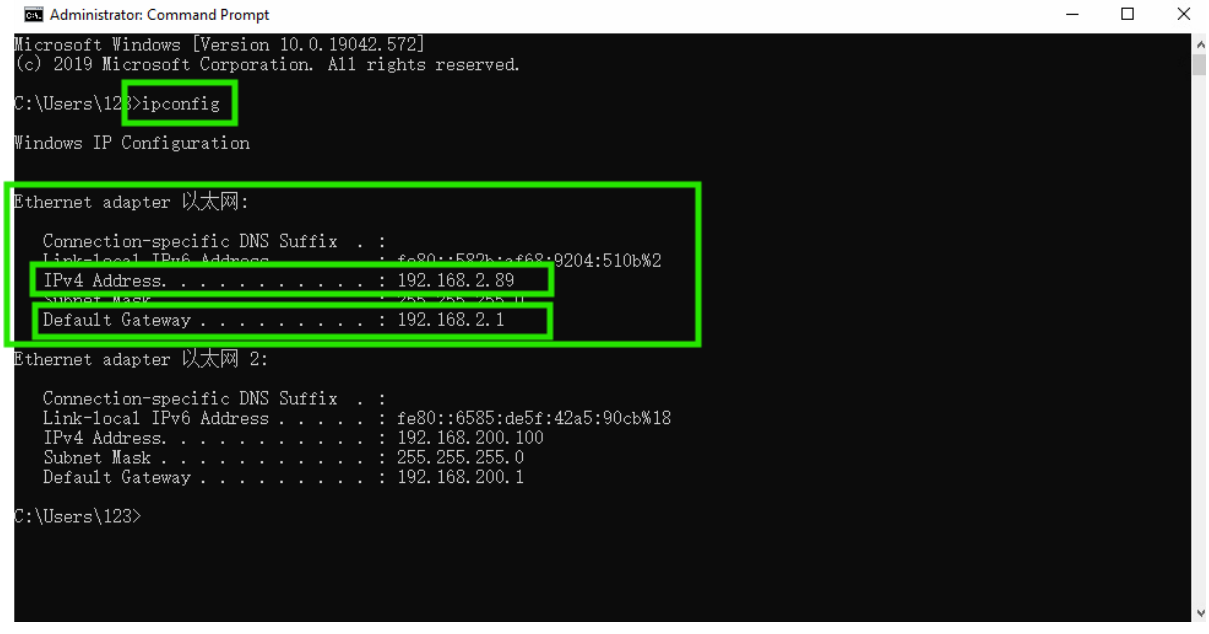
Make a note of the IPv4 to set for the system, and the gateway to use then skip to 1.2.3

1.2.2 You do not have an IP dedicated by your network engineer

You can use the DHCP Ip the system has been assigned, however you will have to notify the network engineer to ensure that the address is reserved afterwards. To get the existing IP address of the system follow these steps:

- Click on the windows icon
- Type ‘cmd’ to get the command propmpt
- Type ‘ipconfig’ into the command line, then press enter
- Make a note of the IPv4 address for the ethernet adapter 以太网.
- Make a note of the default gateway

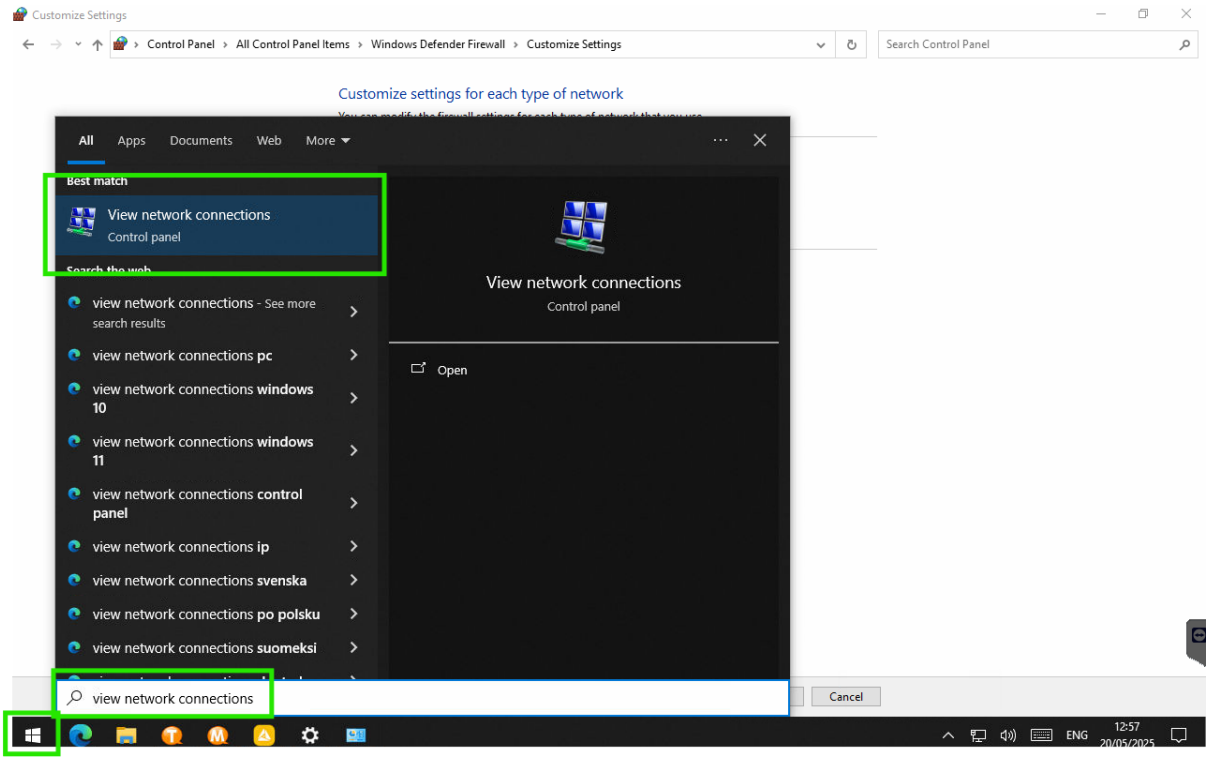


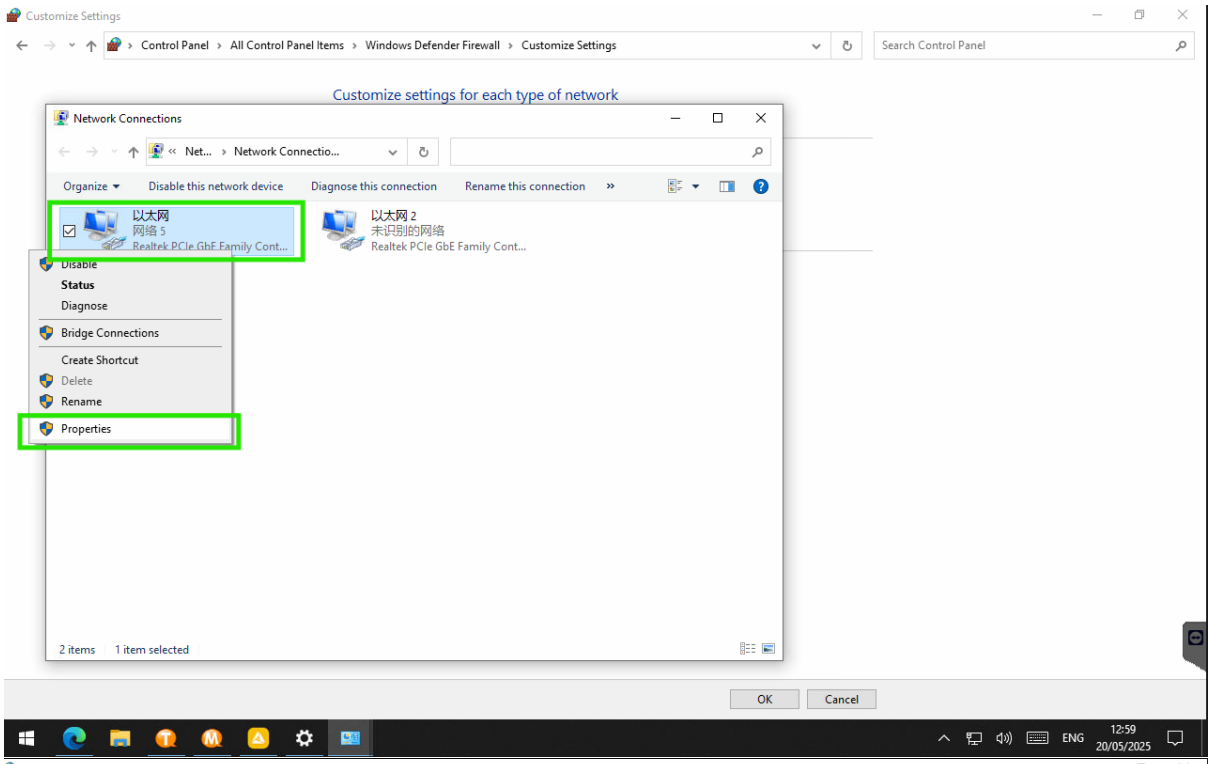


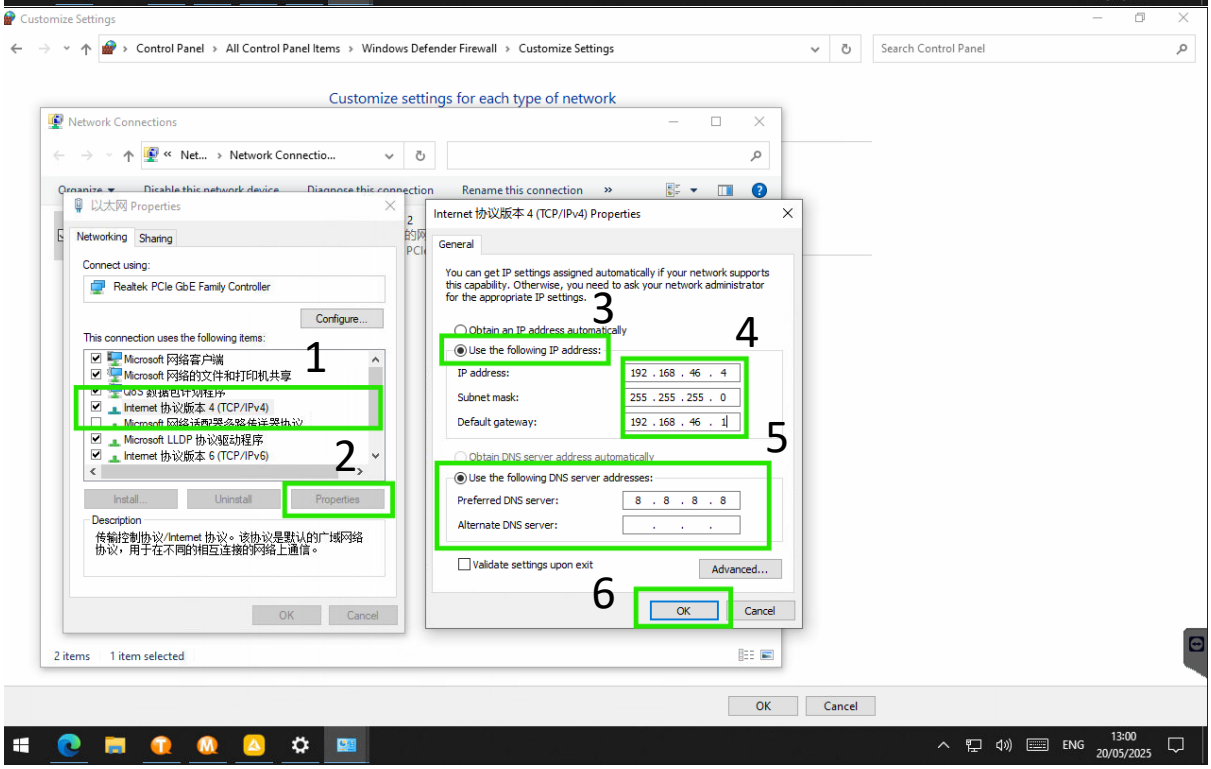
1.2.3 Setting the static IP of the system

Once you have an IP and default gateway, the machine must now be configured with it. To do this you must:

- Click on the windows button
- Navigate to “View network connections”,
- Right-click on 以太网.
- Select “properties”
- From the properties menu Left-click on (TCP/IPv4)
- Click on “properties”
- Select “use the following address”
- WARNING: Ensure you are on adapter 1 (以太网), STOP if you see 192.168.200.xxx and ensure you are modifying the correct adapter
- Type in the ip and gateway you fetched prior, the subnet mask will be 255.255.255.0 unless stated otherwise
- Enter your DNS provider, If you do not have one, you can enter 8.8.8.8, which is Google's DNS resolution
- Press OK







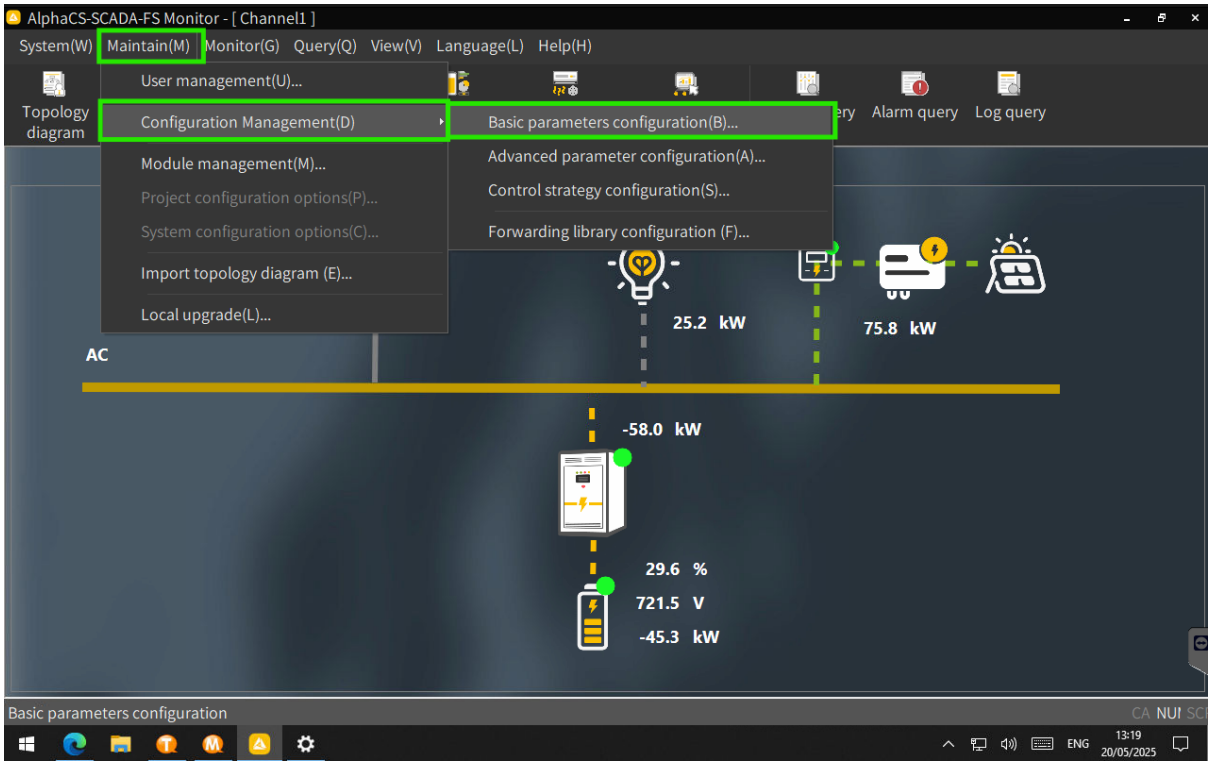
2 Setting up SCADA program

2.1 Mode configuration

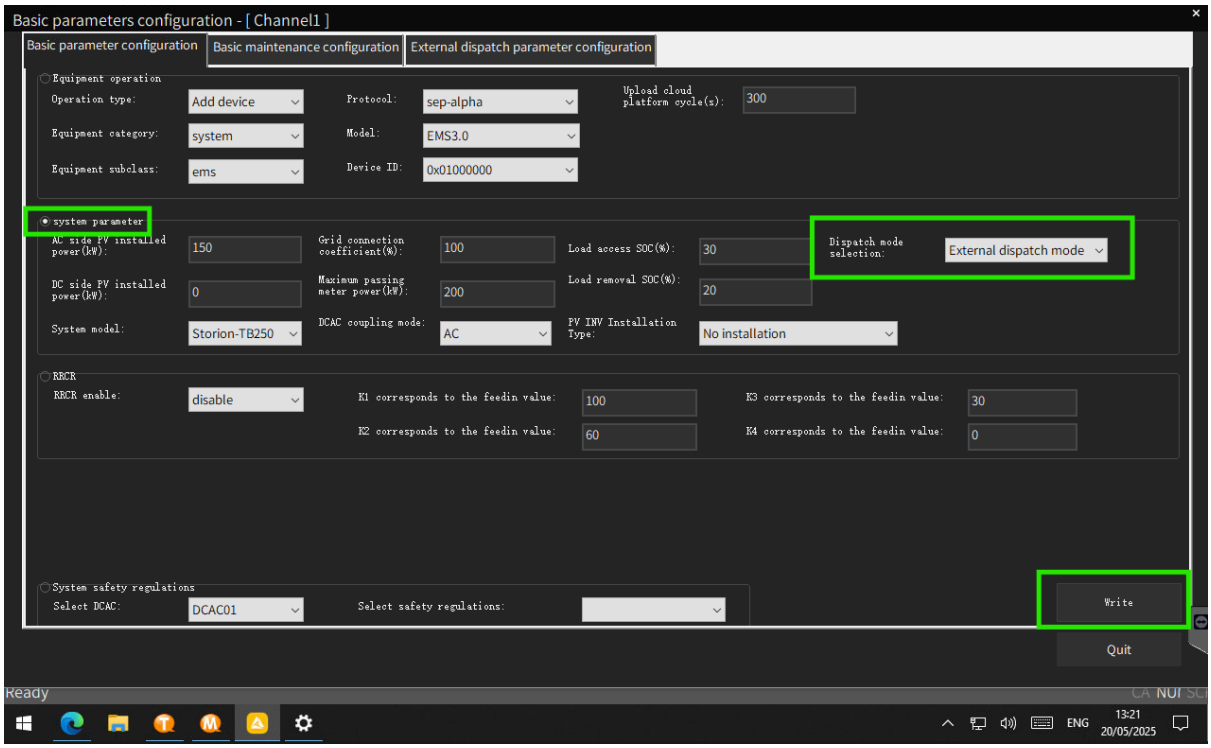
The impHub communicates with the Battery system by using Modbus over Ethernet. The SCADA program must be configured to allow routing from external requests to the internal battery system.

To do this you must navigate to the basic parameters.

These are located at “Maintain” -> “Configuration Management” -> “Basic Parameters Configuration”

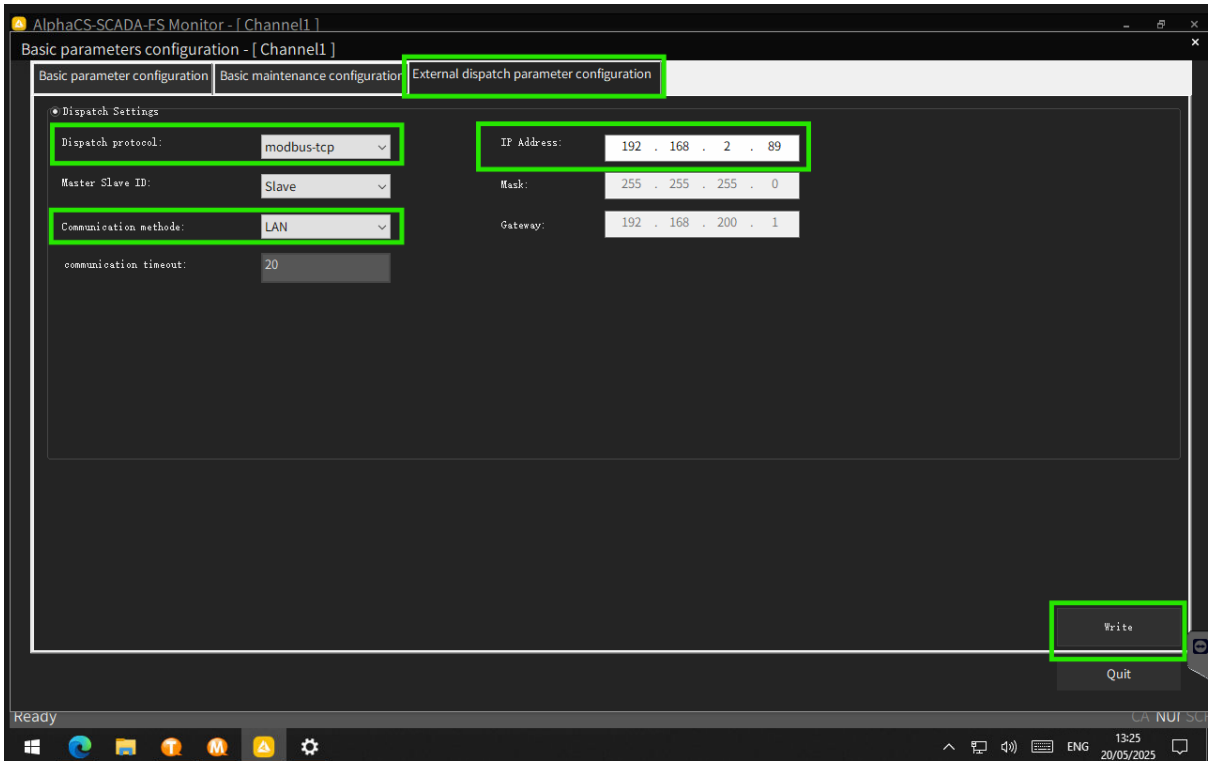


On the basic parameters page, select the radio button for “system parameter” Then change the setting “Dispatch mode selection” to “External dispatch mode” Then click “Write”



Now switch to “External dispatch parameter configuration”, on this page set the dispatch protocol to “modbus-tcp”, and change the communication method to “LAN”. Finally, set the IP address to the address of this machine you set in step 1 of this document. NOTE: If you are unable to set any of

these options , it is likely that your firmware version is out of date. Contact Alpha support in this case.



2.2 Configuring the routing libraries

NOTE: you will need a USB stick to complete this step

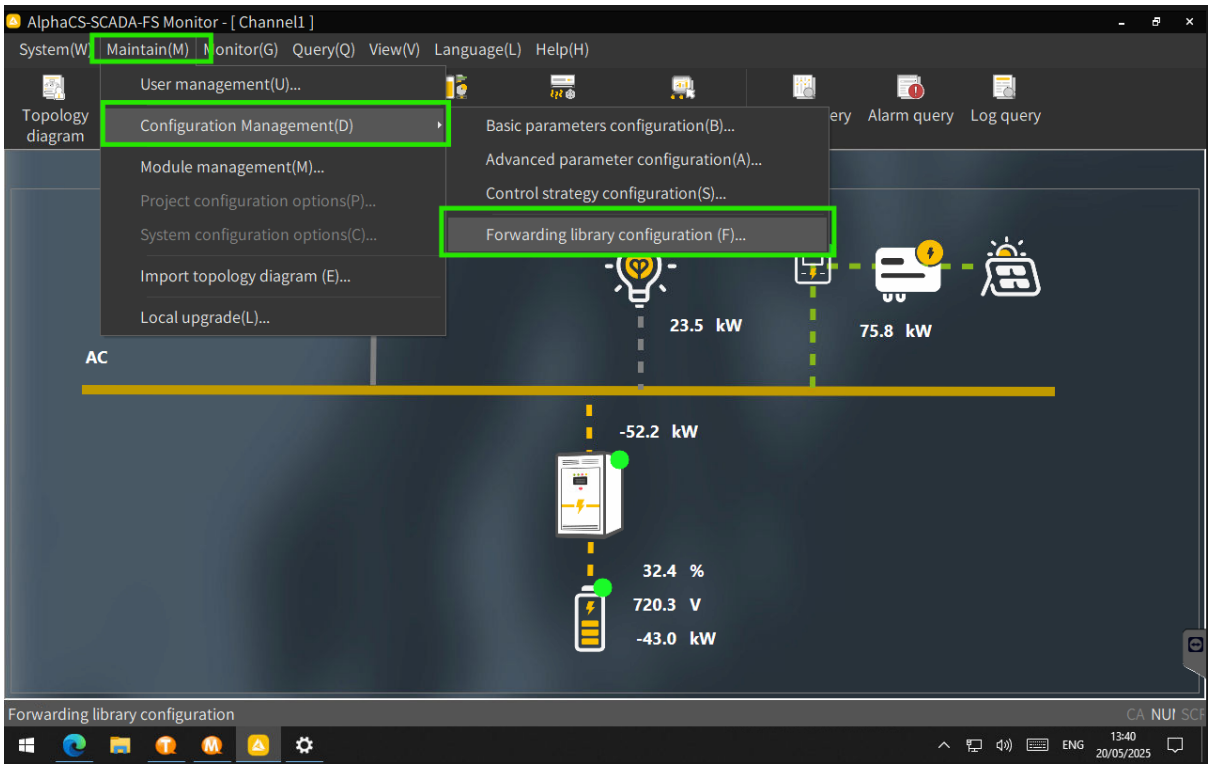
Ems4 modbus SCADA.csv

The SCADA program acts as a Modbus routing program for our communication and it must be configured.

First, download the .csv file attached to this step of the document, use a USB stick to transfer the file to the SCADA pc by plugging it in the USB port at the bottom of the machine.

With the file uploaded you need to navigate to the libraries on the SCADA machine found at “Maintain” -> “Configuration Management” -> “Forwarding Library Configuration”

NOTE: If you are unable to see this option, it is likely that your firmware version is out of date. Contact Alpha support in this case.



On the library page click on the “Import” button and import the .csv file you have placed on the machine. When it has finished Importing click the “save” button.

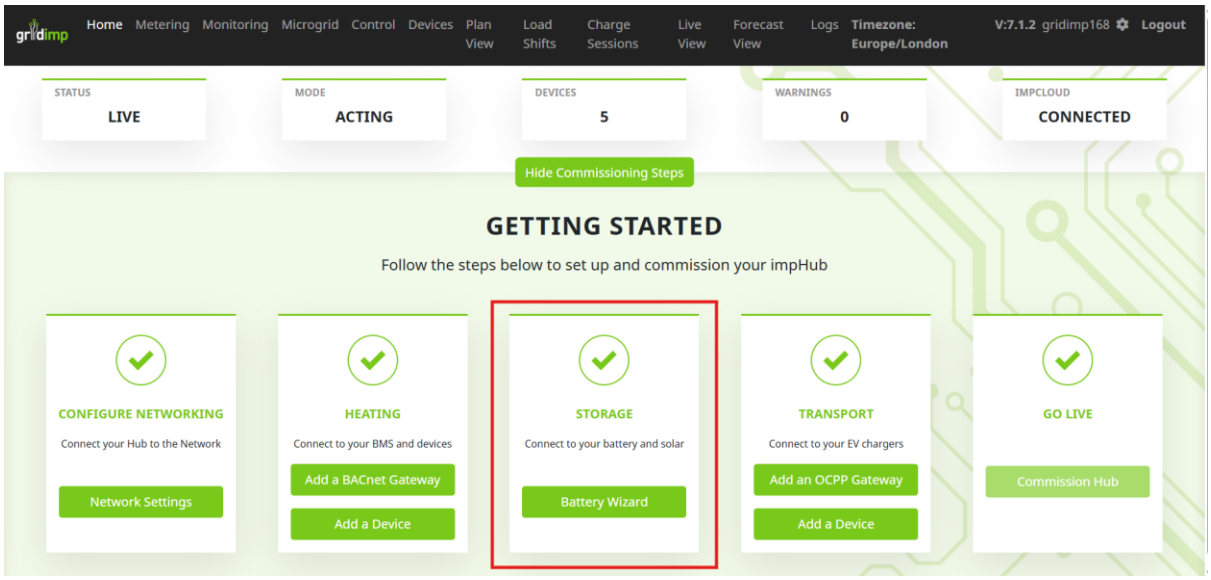
3 Configuring the ImpHub

3.1 Running the wizard

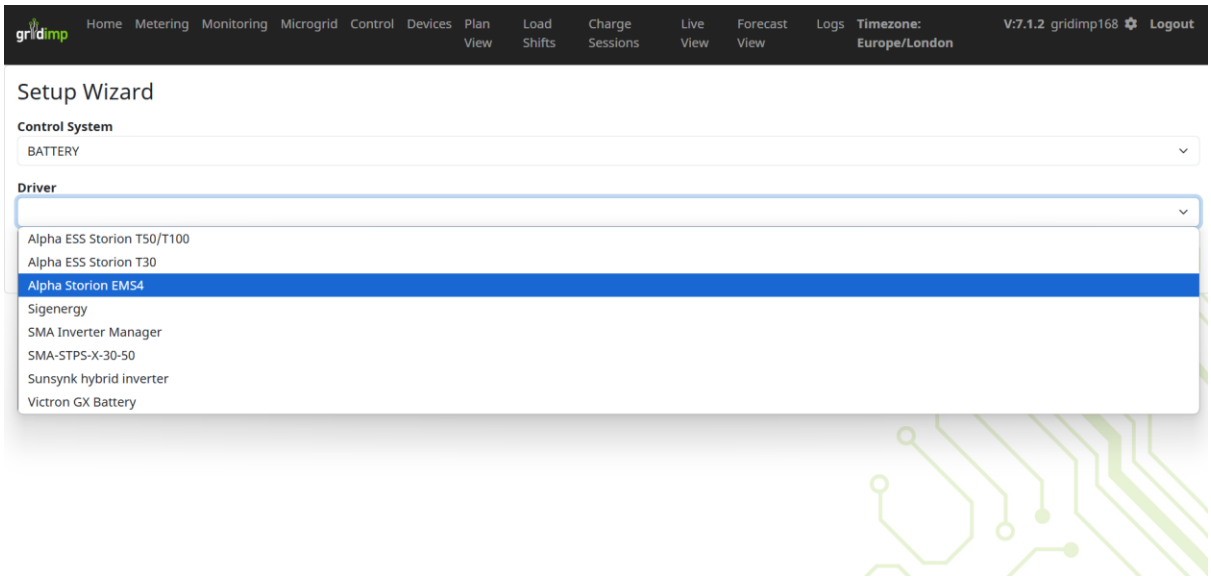
To configure the ImpHub to communicate with the Alpha EMS 4.0, first navigate to the Engineering console. You can do this by either connecting to port 1 on the hub and navigating to 192.168.1.1 or connecting to the same network as the hub and typing in its designated IP.

Log in to the hub using the credentials printed on the side of the hub.

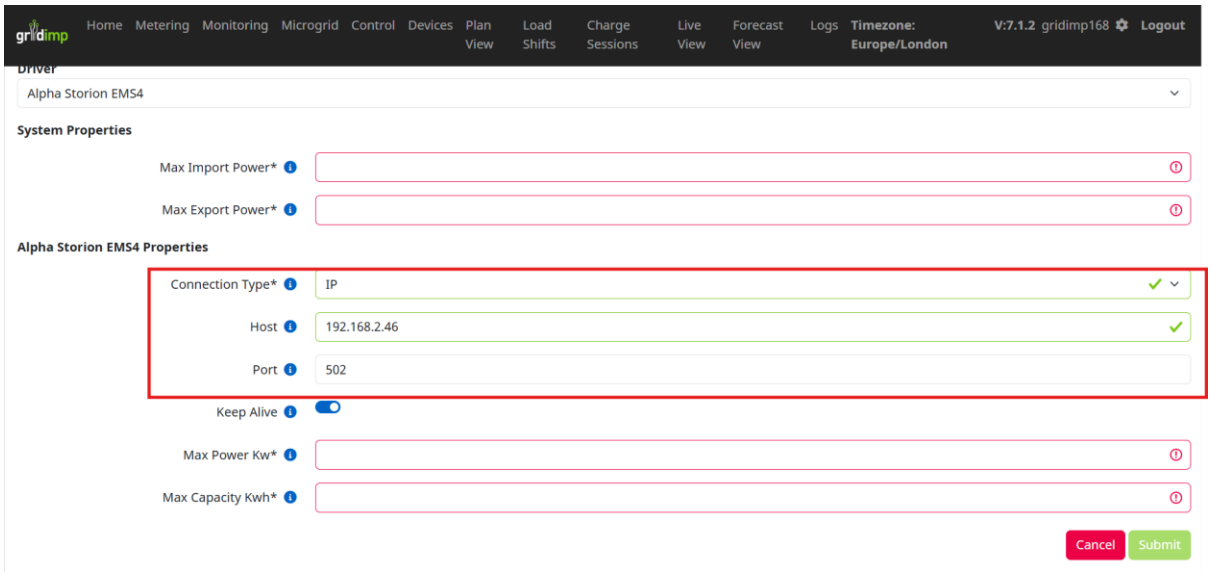
On the Home page, select the “Battery wizard” from under the storage section of the commissioning steps



Select the Driver “Alpha Storion EMS4”



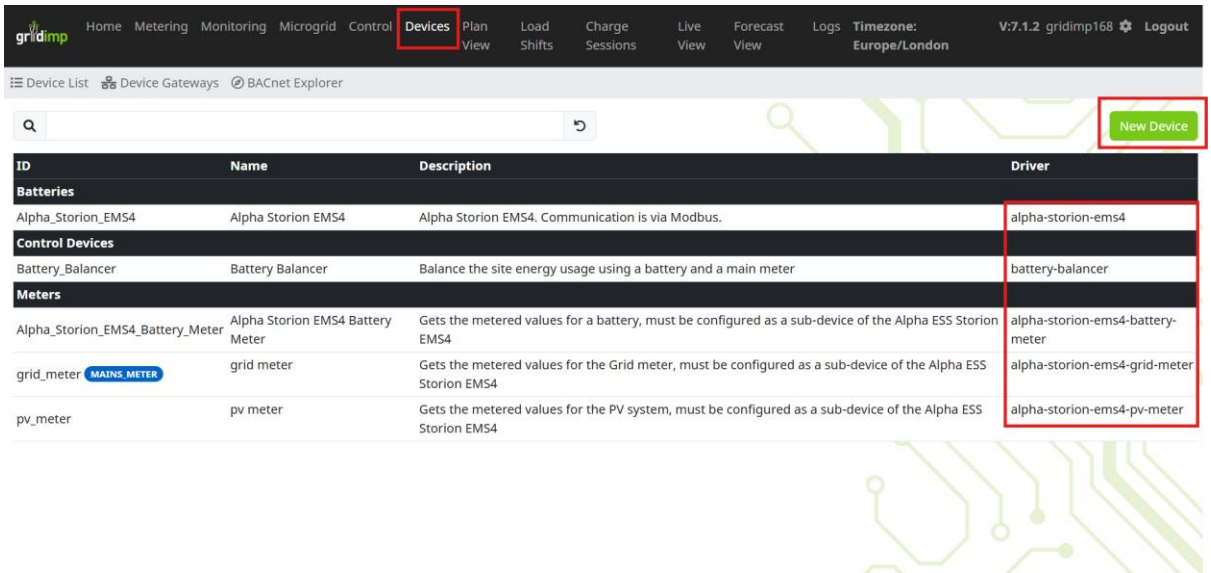
Fill the mandatory parameters with the properties of your site, and of the battery’s capabilities, Select “IP” as the connection type, and type the IP of the battery you configured in step 1.



Press submit, wait about 5 – 10 seconds for the system to populate the devices then

3.2 Check the device configuration

The battery wizard should generate 5 devices for this system. You can verify these by clicking the "Devices" tab on the top bar. If you do not see 5 devices as per the screenshot, they will need to be manually created, you can create these by pressing "new device" and searching for the driver name.



Once you have created any missing drivers, check that the "Battery balancer" has a property "Balancing meter" set with the id of your configured grid meter.

After checking the "Battery Balancer", click on "Control" from the top bar and select The battery Block, then ensure that The "Meter" field is set to the battery meter, the "Balancing Meter" field is set to the grid meter, and the Balancer device is set to the battery balancer