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ETH2020 Converter Setup

1. INTRODUCTION

The main function of ETH2020 is to receive instruction from the control PC with an Ethernet cable and forward it to the battery test equipment. At the same time, it obtains real-time voltage and current data from the testers and transmits them back to the computer.



Figure-1

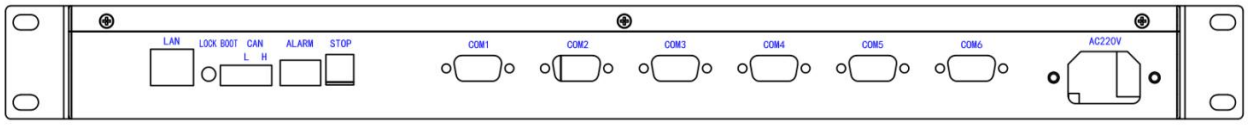


Figure-2

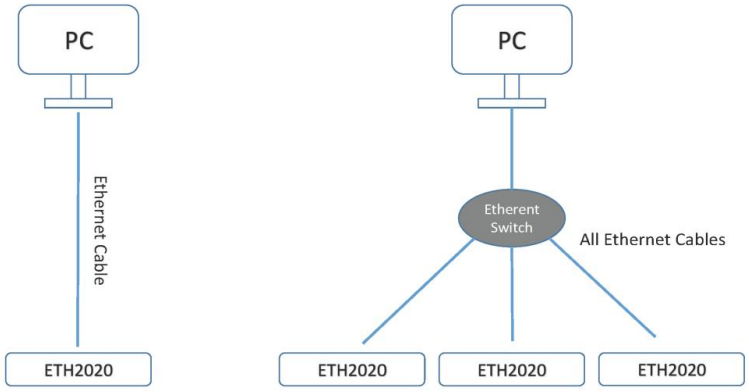
LAN port: connect to the PC (Ethernet Switch) with Ethernet cable CAT5.
LOCK: release the binding between PC and ETH2020 converter.
BOOT: used for programming on the equipment.
CAN: reserved for other uses.
ALARM: for alarm flashlight.
STOP: for emergent stop.
COM1-COM6: connect battery testers with serial cables. Every two testers are connected in series and then share one of the COM ports.

2. QUICK INSTALLATION

2.1 CONNECTIONS

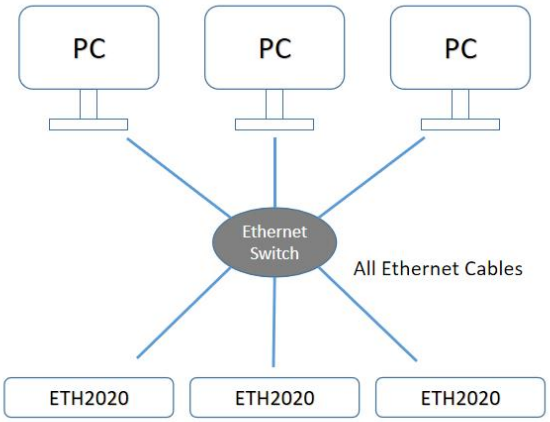
The ETH2020 converter works as an intermediary between the PC and battery testers. The connections are with LAN cables CAT5. If there are several ETH2020 converters, a switch is necessary. Two connections are accepted: direct and local area network (LAN).

a) Direct connection: directly connect the ETH2020 converter to the PC with Ethernet cables. For several ETH2020, use an Ethernet switch. The network doesn't communicate with the outside. Direct connection is suggested as it is simple and reliable.



Single Multiple

b) LAN connection: several PCs and ETH2020 are connected via one or more Ethernet switches. This connection allows devices to be expanded and a large number of battery testers can be managed by the PCs. It requires the IP of each device to be individually assigned.

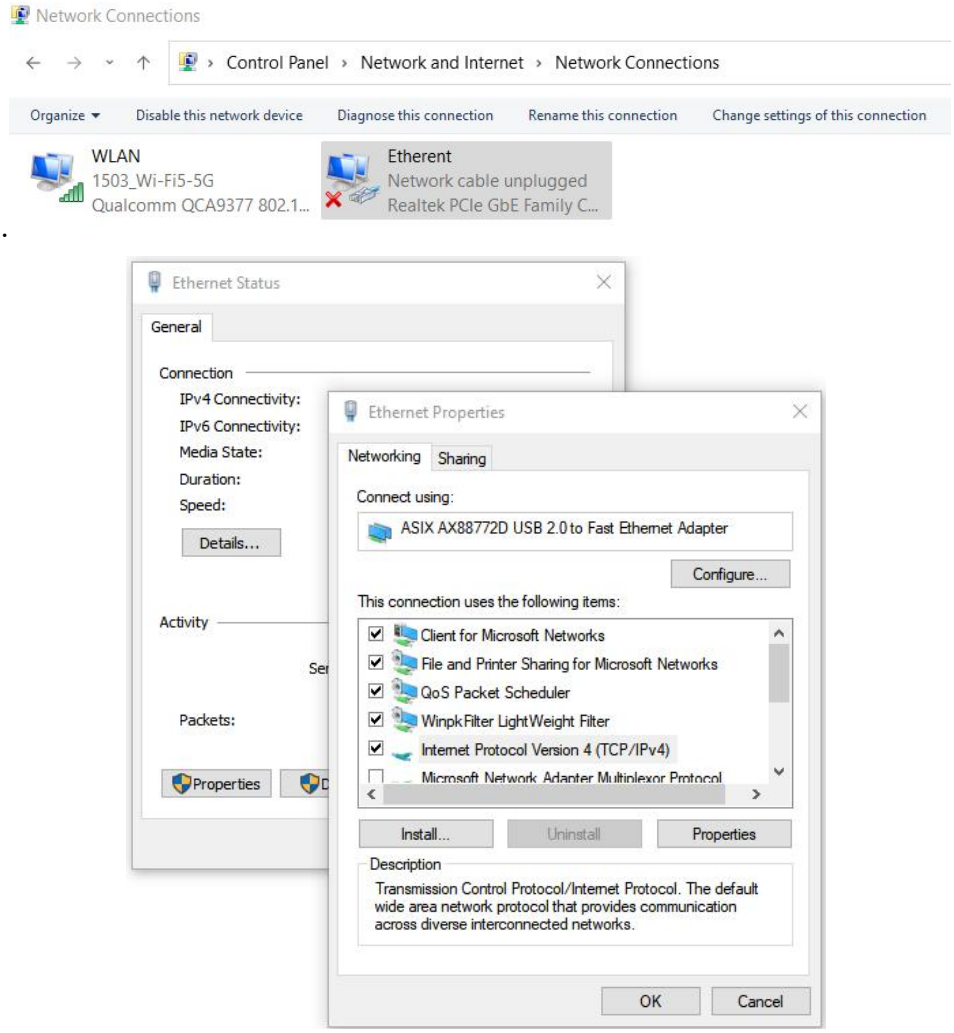


LAN Connections

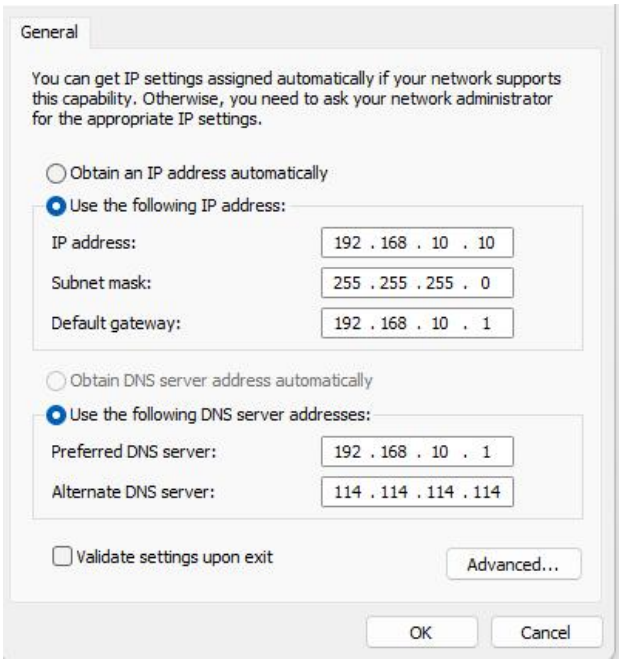
Note: Don't turn on all the ETH2020 simultaneously when they are initially connected, since all the ETH2020 have the same default IP address (192.168.10.100). The ETH2020 should be turned on and set with a IP Address one by one. It is bound to a specific computer. Once the IP address is assigned, turn on another. Note that the IP addressing requires restart of the ETH2020. Repeat the above to assign the IP for all the ETH2020. Pay attention to the IP allocations, and make them in sequence. The region (192.168.10.100~192.168.10.110) is strongly suggested for the ETH2020, and (192.168.10.10 ~ 192.168.10.20) for the PC within the LAN.

2.2 IP ADDRESS OF THE PC

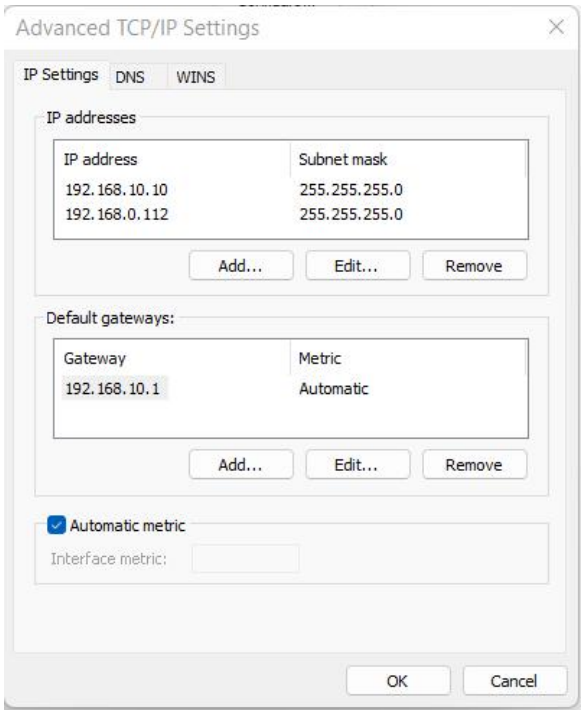
The default IP address for ETH2020 is 192.168.10.100. It requires the IP of the computer to be in the same region. Go to Control Panel\Network & Internet\Network and Sharing Center. Right-click the Ethernet icon, and select "Property". Then double click TCP/IPv4 option.



Modify IP address to be in the region 192.168.10.X. For example 192.168.10.10 is strongly suggested. If there are several PCs in the LAN, assign the IP addresses in sequence (192.168.10.10~192.168.10.20).



If the current IP address needs to be retained, the IP 192.168.10.10 can be used as an additional. Click the “Advanced” button to add this additional IP.

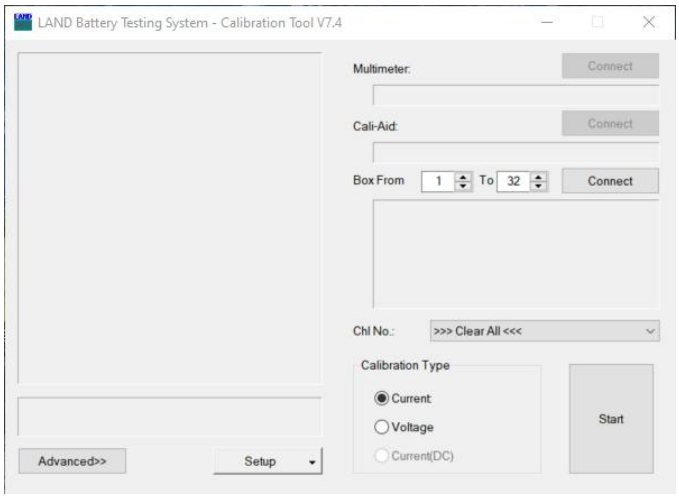


Note: Make sure that the IP of the computer is different from that of the ETH2020 converter. Fill in the subnet mask with 255.255.255.0 and the default gateway with 192.168.10.1. The default gateway can not be used if the computer has dual Ethernet cards or has several IP addresses.

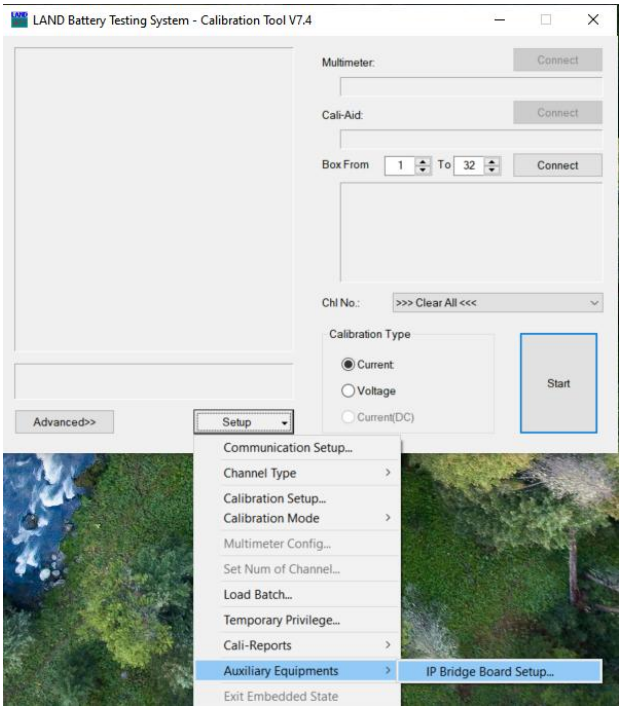
2.3 BIND THE ETH2020 TO THE COMPUTER

Turn on the ETH2020 and start the LANDCali program V7 (\Land\Tools\). The latest software can be downloaded here: www.landtinst.com/download/.

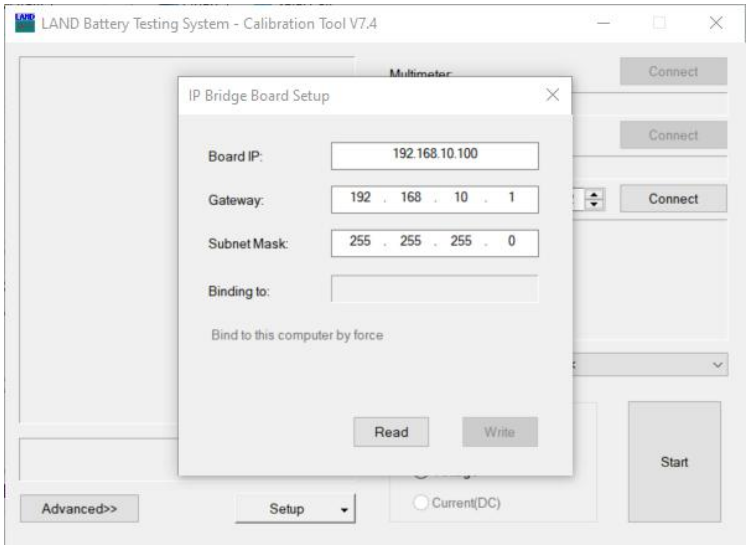




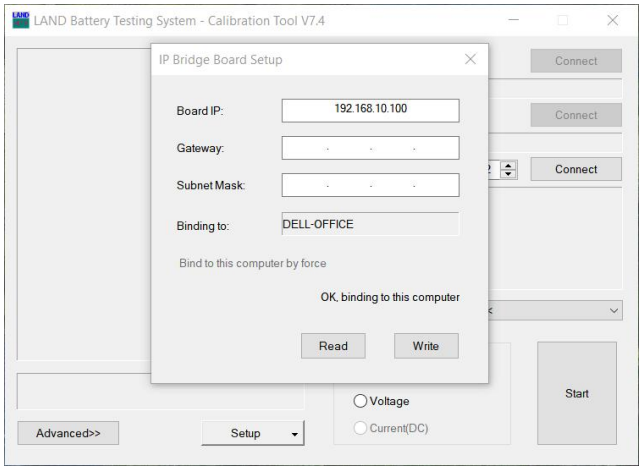
Select Setup > Auxiliary equipment > IP Bridge Board Setup



Fill in the IP address and gateway of the ETH2020 device (default IP 192.168.10.100) and click “Read”.



Click “Bind to this computer by force”. Once the words become gray, the ETH2020 is bound to the computer.



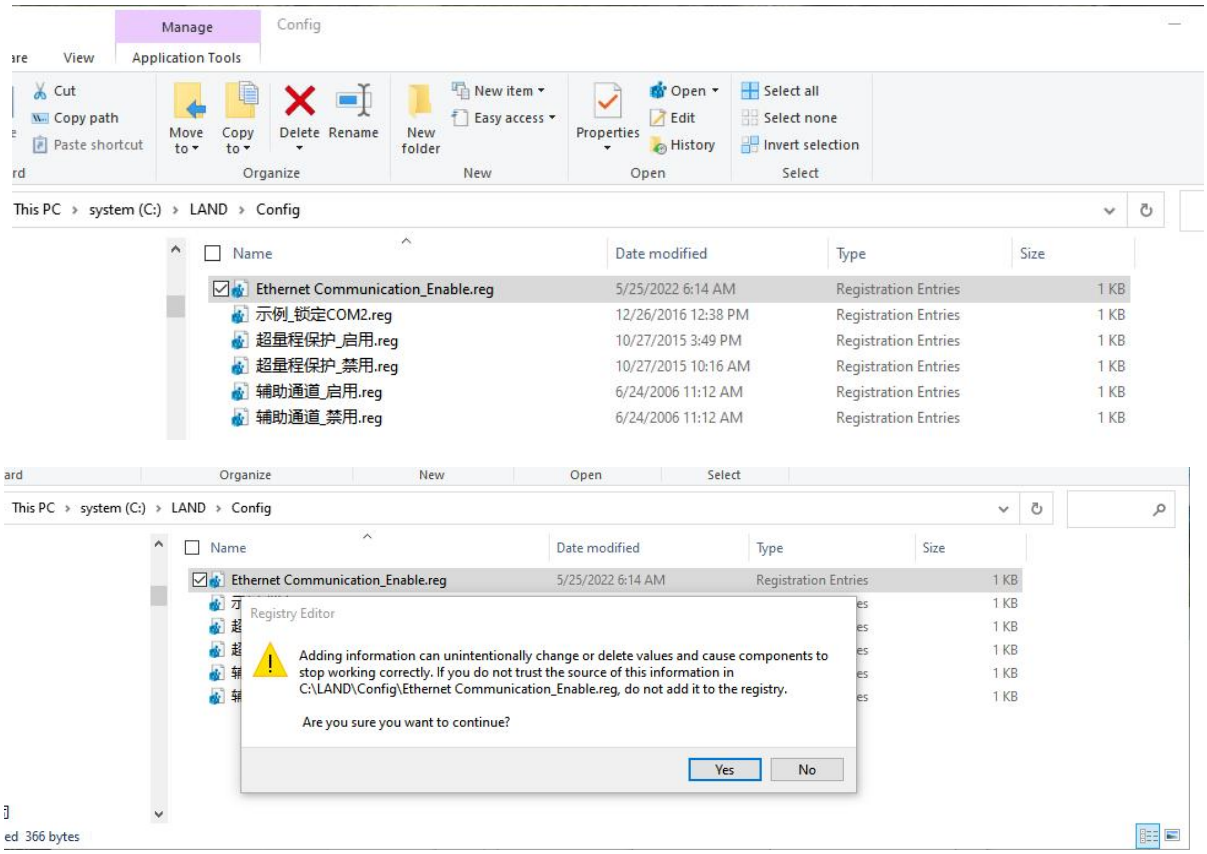
Note: if the ETH2020 was previously bound to another computer, push the LOCK button on the back (right near the LAN port) to reset it. The new binding needs to be completed in 5 min otherwise the reset will be voided.

2.4 Modify the IP ADDRESS OF THE ETH2020

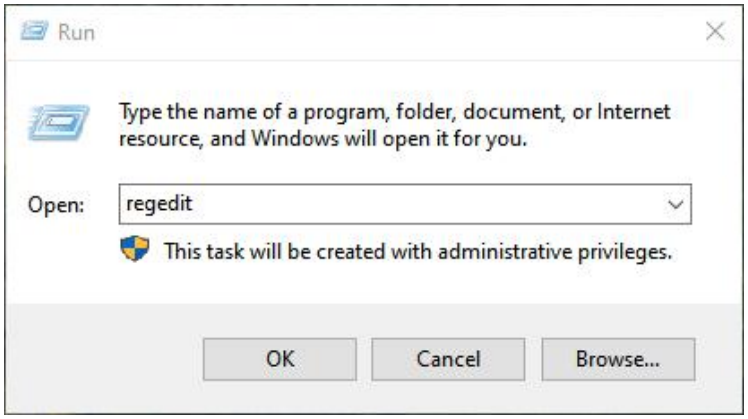
For multiple ETH2020 controllers connected to the same computer, the current IP needs to be modified. Input another IP value, for example, 192.168.10.101, the Gateway and Subnet Mask, and click “Write”. The modification will take effect by turning off the power and restarting it.

2.5 REGISTRY MODIFICATION

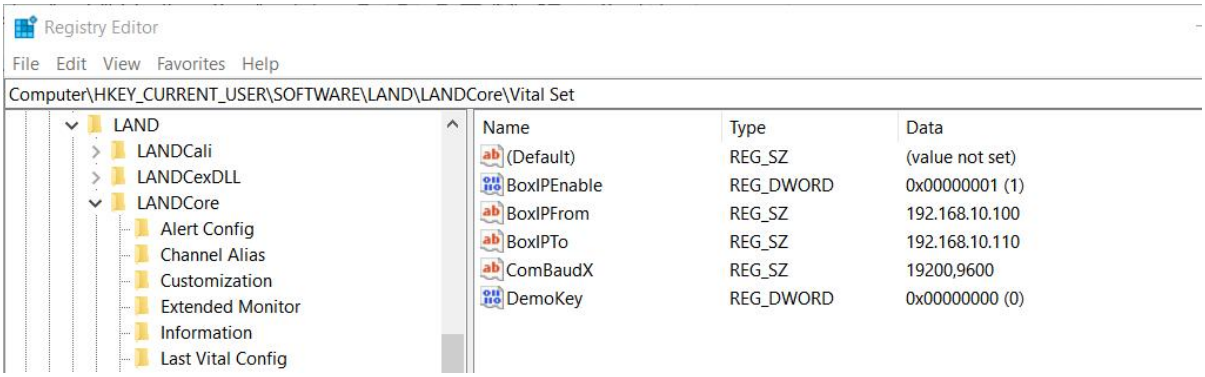
Download the ".reg" file and save it at "\LAND\Config\". (download page: www.landtinst.com/registry-download/). Double click "Ethernet Communication_Enable.reg" and confirm the registry modification.



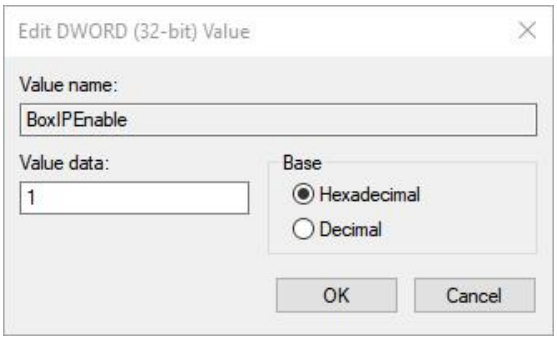
Then press the Windows key + R to get the "Run" box. Type "regedit" and enter to open the Registry Editor.



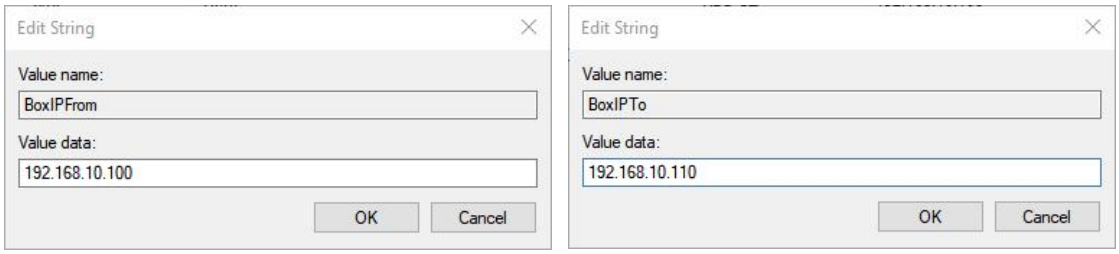
Locate the registry values here:
Computer\HKEY_CURRENT_USER\SOFTWARE\LAND\LANDCore\Vital Set



Double click "BoxIPEnable" and set the value as 1 (0 means disable and we are using serial port communication on the computer).



Modify the values in “BoxIPFrom” and “BoxIPTo”. If there is only one ETH2020, the same value (192.168.10.100) can be used for both. If there are multiple ETH2020, their IP addresses should be within the region defined by “BoxIPFrom” and “BoxIPTo” (192.168.10.100 ~ 192.168.10.110).



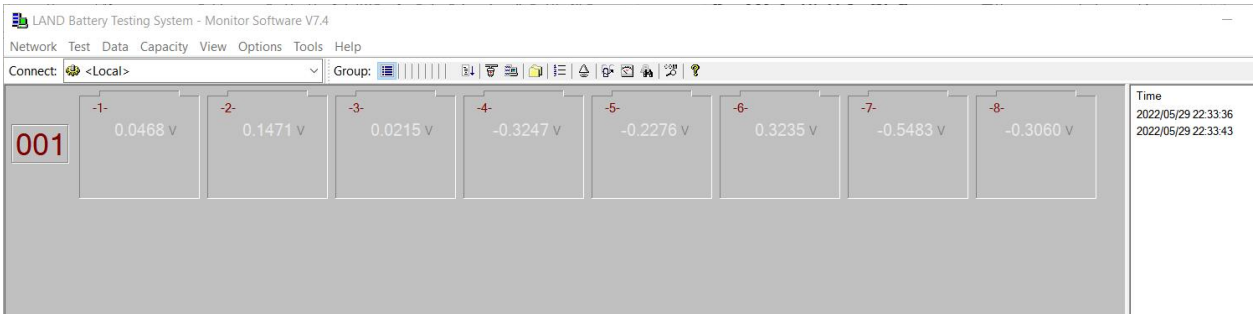
2.5 BATTERY TESTER CONNECTIONS

The CT3002 battery testers are connected to the ETH2020 with serial communications. Each ETH2020 has 6 serial ports. Two battery tester units share one COM port. A maximum of 12 units can be connected to an ETH2020. Once everything is set, start the LANDMon program. All the testers should be found.

If more than two units of the CT3002 testers share one COM port, the sampling rate may be restricted, though the communication still works.







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