



We-HUB
Low Voltage HUB for WeCo 4K4 and 5K3 Lithium Modules



Note:

This manual is intended for expert installer only

This is an integration for the 4K4 and 5K3 Installation Manual

To install and monitor the We-HUB are necessary two types of converters:

1. USB/RS232 WeCo Code> Ztek232_WeCo
2. USB/CAN WeCo Code>CAN_USB_LV

You can request the WeHUB software by writing to weco@weco.uk.com

USB/232 and USB/CAN are available from WeCo, if you need to purchase them or requests the drivers or Firmware please contact us on service@weco.uk.com

- Launch the WeCo Software
- Select the **Restricted Access**
- Digit the Installer password (in case of lost password, write to weco@weco.uk.com)
- Access to the programmer page



- Select the Module Setting Program and Click to access



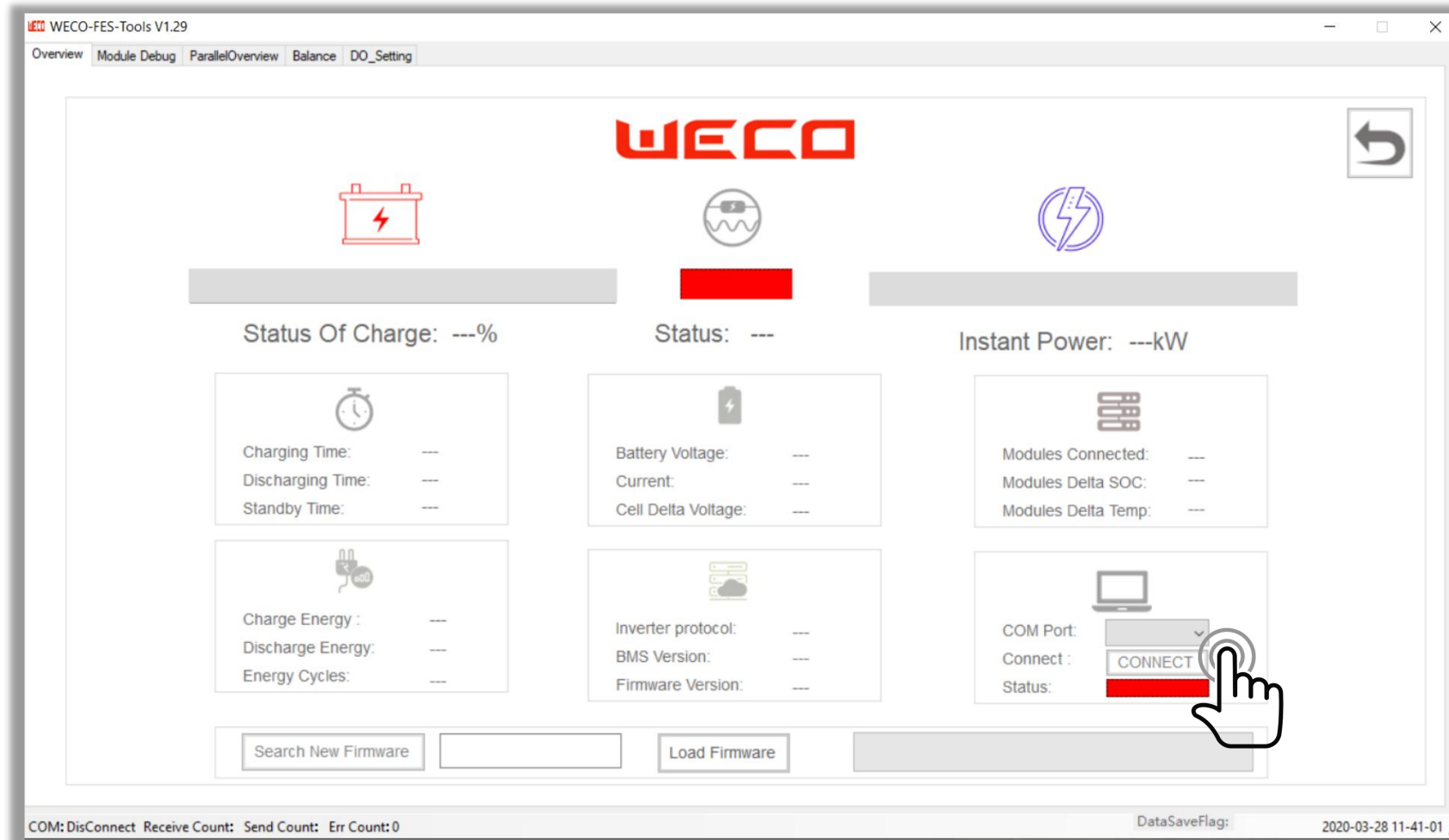


For this setting use only the WeCo ZTEK RS 232 CONVERTER

Order code :CNV-Z-TEK



- Connect the RS 232 WeCo Converter to the RS 232 Port of the each Battery (port Operator Only on the 5K3 model)
 - Select the COM port and wait for the connection and Battery data information.
- For more info about this section please Check the "WeCo Monitor Guide"



- Click on **Module Debug** to know the single module information

The screenshot displays the WECCO-FES-Tools V1.29 software interface. The 'Module Debug' tab is active, showing a 'Cell Information' table and various battery status parameters. A hand cursor is pointing to the 'Module Debug' tab.

Cell Vol/(V)	1	2	3	4	5
1-5	3.309	3.309	3.309	3.311	3.310
6-10	3.311	3.312	3.311	3.307	3.307
11-15	3.306	3.307	3.307	3.304	3.311
16-20	3.309				
Tmp /(°C)	1	2	3		
1-3	10.00	10.00	10.00		

Battery Information

- Total Voltage: 52.94V
- Current: -1.68A
- SOC: 40.8%
- Capacity: 80Ah
- Running Time: 13h.2766s
- Charge-Discharge State: Discharging
- Cell Voltage Difference: 0.008V
- Temperature Difference: 00°C
- Battery Cycle: 0
- Discharge Ah: 0.0Ah
- Charge Energy: 0KWh
- Discharge Energy: 0KWh
- Charge Time: 0h.0min
- Discharge Time: 0h.0min
- Standby Time: 0h.0min

Battery State

- Cell Voltage High Warning: 3.650V
- Cell Voltage High Fault: 3.800V
- Cell Voltage Low Warning: 2.900V
- Cell Voltage Low Fault: 2.500V
- Charge TEMP High Warning: 50°C
- Charge TEMP High Fault: 55°C
- Discharge TEMP High Warning: 55°C
- Discharge TEMP High Fault: 60°C
- Charge TEMP Low Warning: 0°C
- Charge TEMP Low Fault: -5°C
- Discharge TEMP Low Warning: -15°C
- Discharge TEMP Low Fault: -20°C
- Discharge Current High Warning: 80.0A
- Discharge Current High Fault: 0.0A
- Charge Current High Fault: -70.0A
- Battery Voltage High Fault: 0.0V
- Battery Voltage Low Fault: 0.0V

Other State

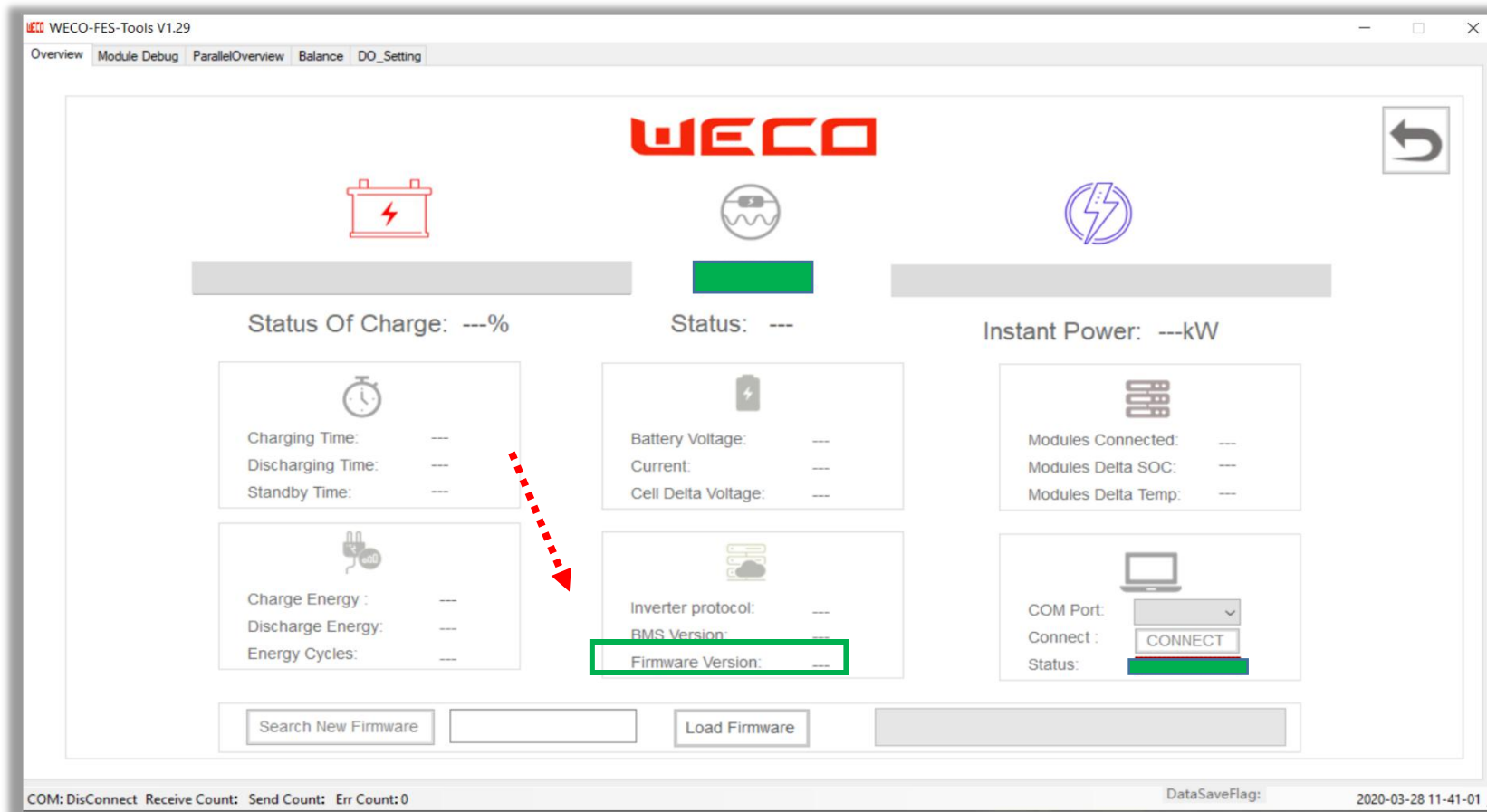
- Cell Voltage Diff Warning:
- Cell Voltage Diff Fault:
- SOC Low Warning:
- Serious Ov_vol warning:
- BMS Internal Fault:
- Pack Vol Imbalance:
- Voltage normal
- Temperature normal
- BMS normal reading
- Conext Inverter Comm
- BMS Send To Inverter
- Charge Vol: 58.4V
- Charge Cur: 20.0A
- Discharge Vol Limit: 42.0V
- Discharge Cur Limit: 100.0A
- Parallel Total Charge Cur: 0.0A
- Parallel Total Limit Cur: 0.0A
- Parallel Total Cur: 0.0A
- Parallel SOC: 0.0%

Parameter

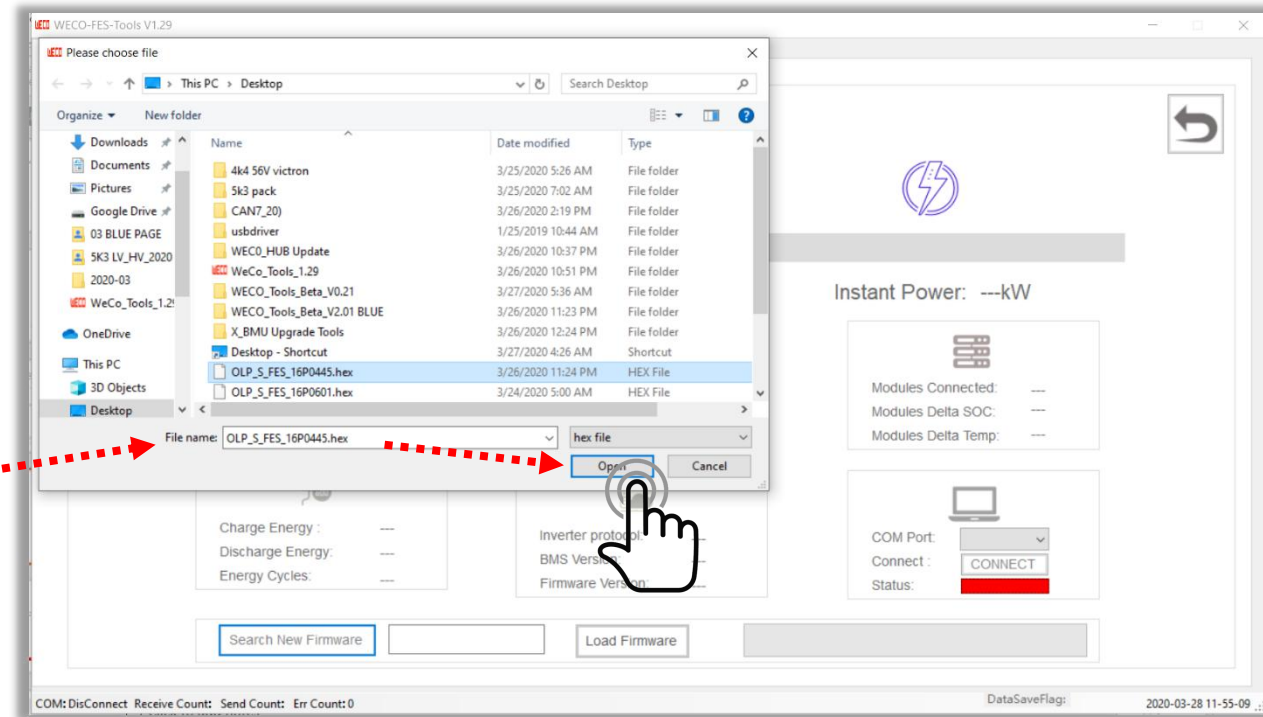
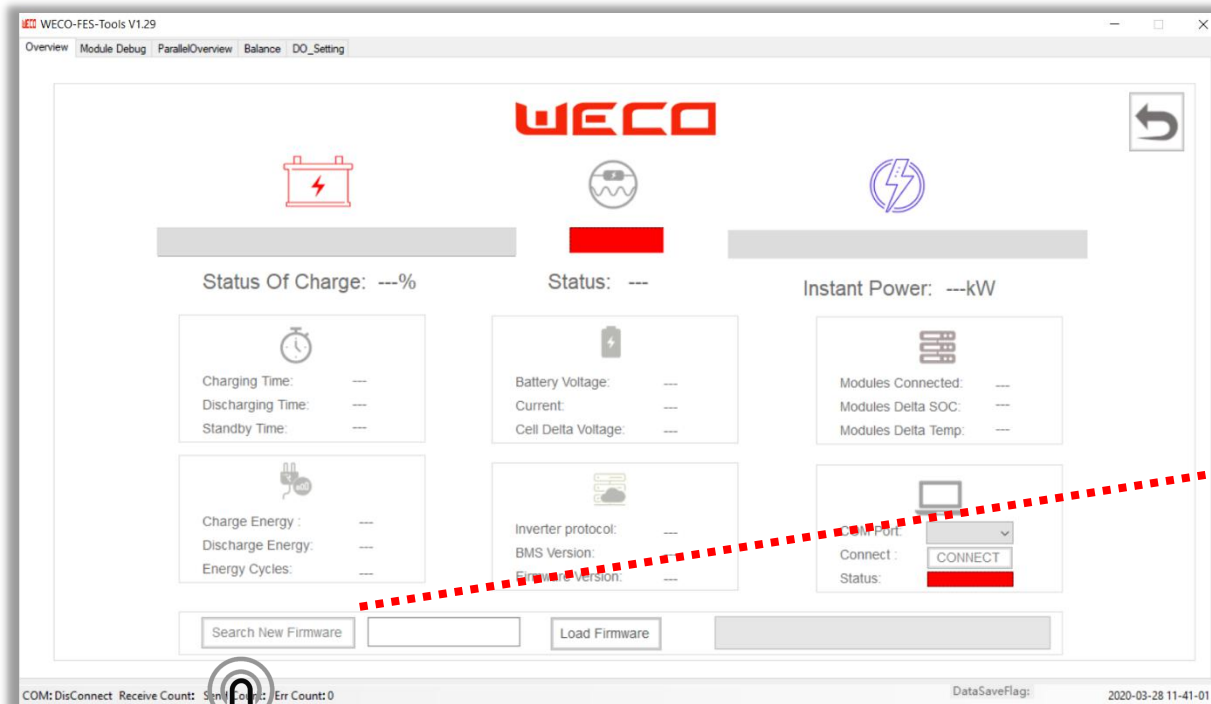
- Battery Model:
- Battery SN:
- Address: 1
- Battery Type: LFP battery
- Cell Number: 16
- Inverter Protocol: ZCSCAN
- BMS Type: S-FES-16P
- BMS SN: 000036
- BMS Date: 2019.6.20
- Firmware Version: 4.45
- PCB(BMS) Version: 0.40
- Bootloader Version: 0.01
- DO1_SOC1: 0%
- DO1_SOC2: 0%
- DO2_SOC1: 0%
- DO2_SOC2: 0%
- Inverter Protocol: ZCSCAN
- SOC: 41%

COM4: Connect Receive Count: 142 Send Count: 152 Err Count: 9 DataSaveFlag:True 2020-03-27 05:22:33

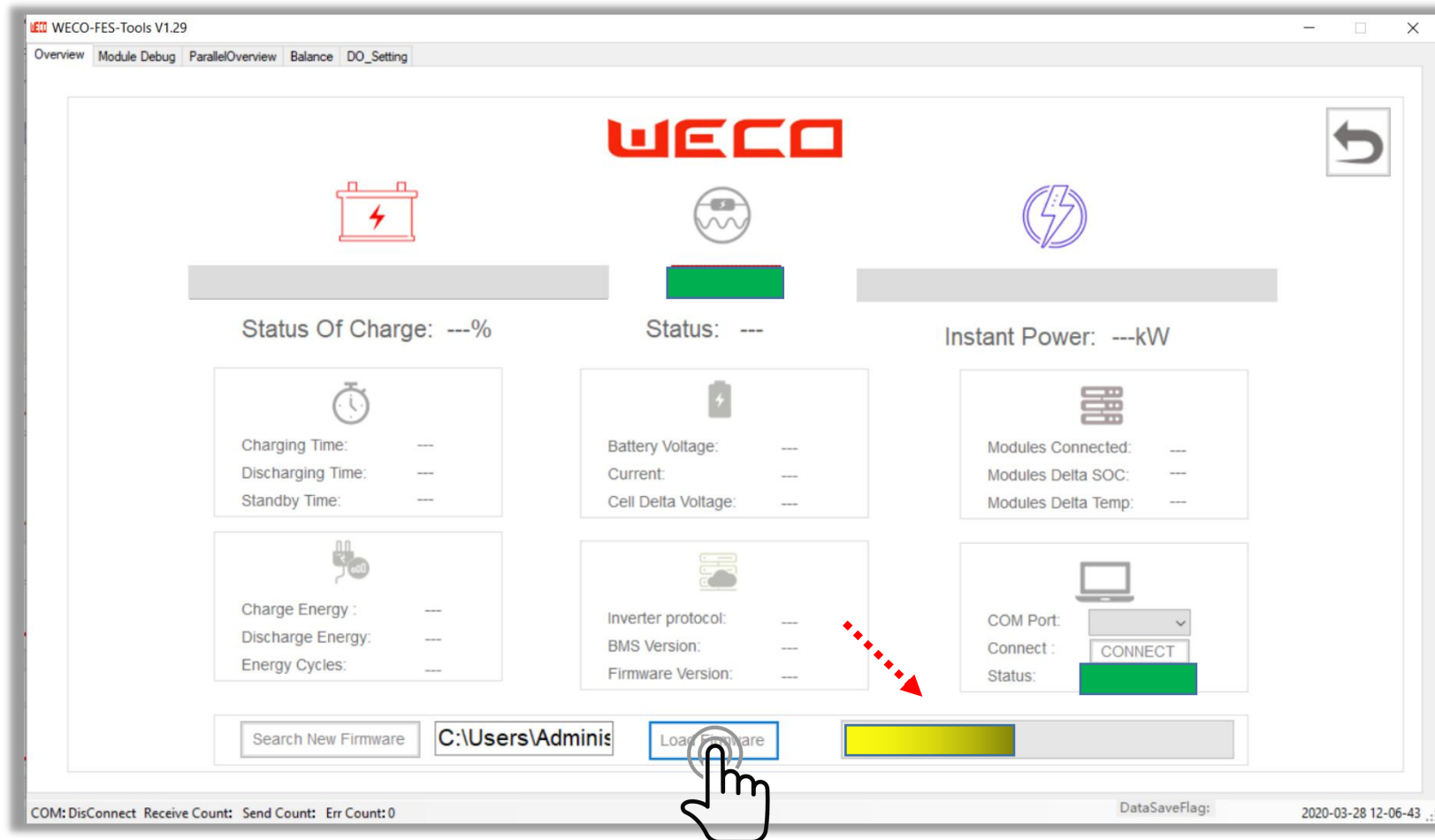
- Check the Firmware Version installed on your Battery
- This inspection must be performed on each module of each cluster
- All the modules of the system **must have the same FW version**
- The Specific FW for the HUB usually is released by email from WeCo to their distributors.
- Any Installer can request for the latest version by writing to service@weco.uk.com



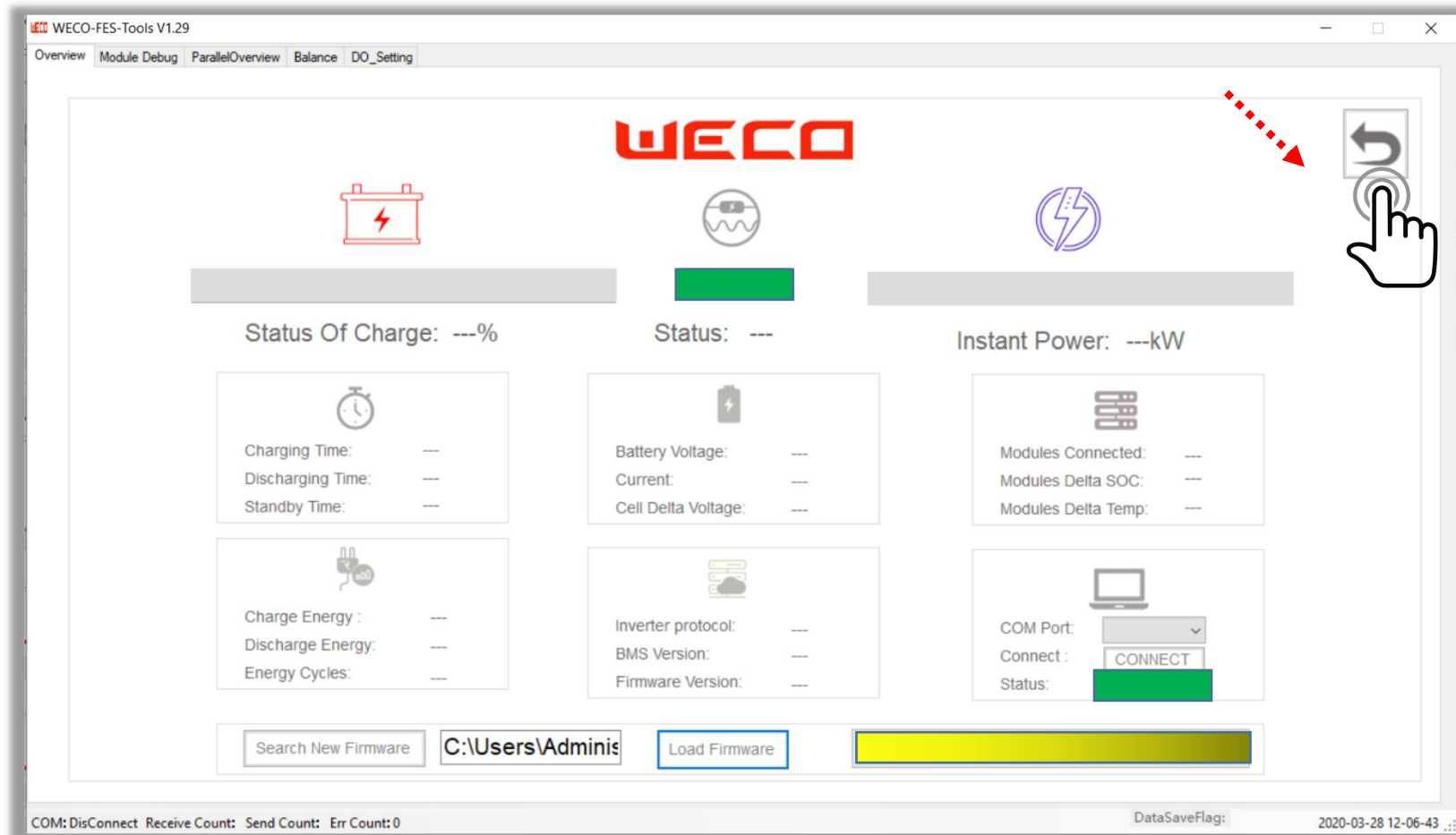
- If you have batteries with FW version antecedents to the 3.57 you must upgrade if you want use the HUB device
- If the battery Firmware is not adequate for the HUB working method it is necessary to upgrade each module of the clusters.
- Press **Search New Firmware**
- Select the HUB Firmware provided by WeCO (in case of necessity write to service@weco.uk.com)
- Select the firmware provided by clicking Open on the Pop Up Window.



- Once the correct Firware has been detected proceed to the upload
- Press **"Load Firmware"** ad wait for the upgrade completion
- The Green Bar will show the upgrading Status.



- Once the correct Firmware has been upgraded proceed with the others modules by repeating the same actions.
- Once all the modules of each cluster have been upgraded pass to the SECTION 02
- Press the Back Arrow to return to the Main Page



- Select the **Cluster Setting Program** and Click to access





For this setting use only the WeCo ZTEK RS 232 CONVERTER

Order code :CAN_NLT



- Unplug and reconnect the USB of the RS232 USB converter
- Connect the 232 converter to the **Master Unit**
- Choose the COM port and press Connect.
- Wait for the each module information

The screenshot displays the WECO Cluster Tools software interface. The window title is "WECO Cluster Tools". The interface is divided into several sections:

- Top Left:** Information panel with an 'i' icon. Fields: Actual ID: --, Online Num: --, Status: --.
- Top Center:** WECO logo and "CLUSTER OVERVIEW" button.
- Top Right:** Connection settings panel. Includes a refresh icon, "CLUSTER ID:" dropdown (set to 1), "COM Port:" dropdown, "Connect:" button, and "Status:" indicator (red).
- Middle:** Three columns of data for Master and Slave units (Slave#1 to Slave#4).
 - Left Column (Firmware):** Master FW Version: ---, Slave#1 FW Version: ---, Slave#2 FW Version: ---, Slave#3 FW Version: ---, Slave#4 FW Version: ---. Below is a red bar "Firmware incoherence" and a warning icon with "UPGRADE TO PROCEED".
 - Middle Column (SoC Status):** Master SoC Status: --, Slave#1 SoC Status: --, Slave#2 SoC Status: --, Slave#3 SoC Status: --, Slave#4 SoC Status: --. Below is a red bar "SOC incoherence" and a warning icon with "CHARGE INDIVIDUALLY".
 - Right Column (Vdc Value):** Master Vdc Value: ---, Slave#1 Vdc Value: ---, Slave#2 Vdc Value: ---, Slave#3 Vdc Value: ---, Slave#4 Vdc Value: ---. Below is a red bar "Voltage incoherence" and a warning icon with "CHARGE INDIVIDUALLY".
- Bottom:** A large red bar labeled "CLUSTER IMBALANCE".
- Bottom Left:** Status bar: "COM: Disconnect Receive Count: Send Count: Err Count: 0 Time".

- Make sure that all the Firmwares version are consistent
 - Make sure that all the SoC are at the same Value * suggested 100%
 - Make sure that the modules voltage are levelled
- If one of the the above values is not aligned with the others, the installer must clear the imbalance by acting indivisually on each module
- When all of the three section are in **Green Status** will be possible to proceed to the next step

WECCO Cluster Tools

Actual ID: CLUSTER ID 1
Online Num: 5
Status: NOT READY

CLUSTER OVERVIEW

COM Port: COM4
Connect: Disconnect
Status: ■

Module	FW Version	SoC Status	Vdc Value
Master	4.45	41%	52.92
Slave#1	4.45	52%	52.90
Slave#2	4.45	52%	52.90
Slave#3	4.45	41%	52.90
Slave#4	4.45	42%	52.90

Firmware Conformity (Green)

SOC Incoherence (Red)

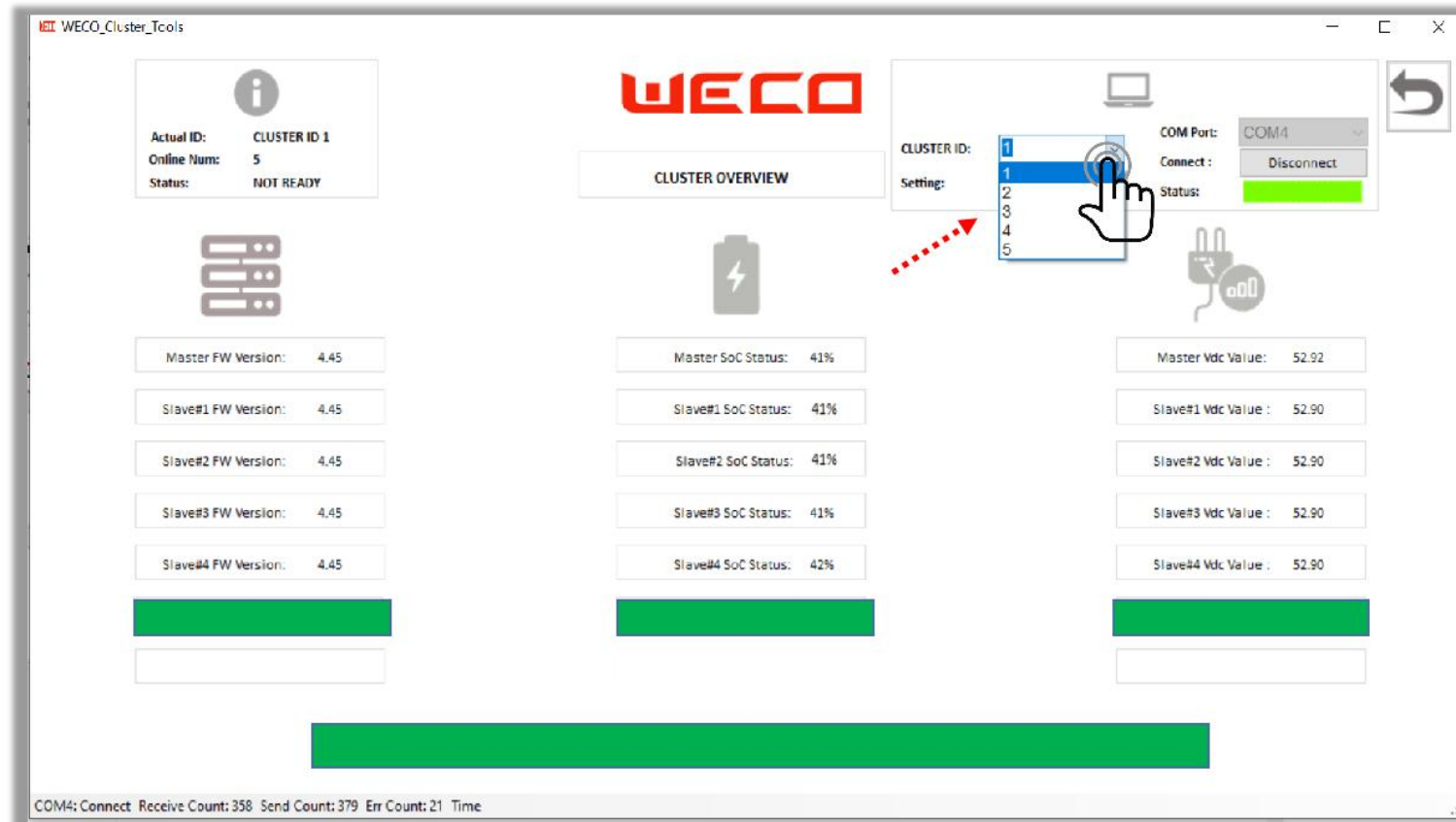
Voltage Conformity (Green)

CHARGE INDIVIDUALLY (Warning)

CLUSTER IMBALANCE (Red Bar)

COM4: Connect Receive Count: 358 Send Count: 379 Err Count: 21 Time

- Select the **Cluster ID** section and Assign the ID 1 at the Master Unit of the Cluster 1
- Press SET to confirm and assign the ID of the 1st Cluster Master Module
- Each master of each cluster must have an ID assigned.



- Repeat this action for all the clusters of the system
- Make sure set the same SOC on each cluster
- WeCo suggest to fully charge each module up to 100%, then proceed to the next step
Set all the modules at 100% at the start up phase will prevents further imbalances

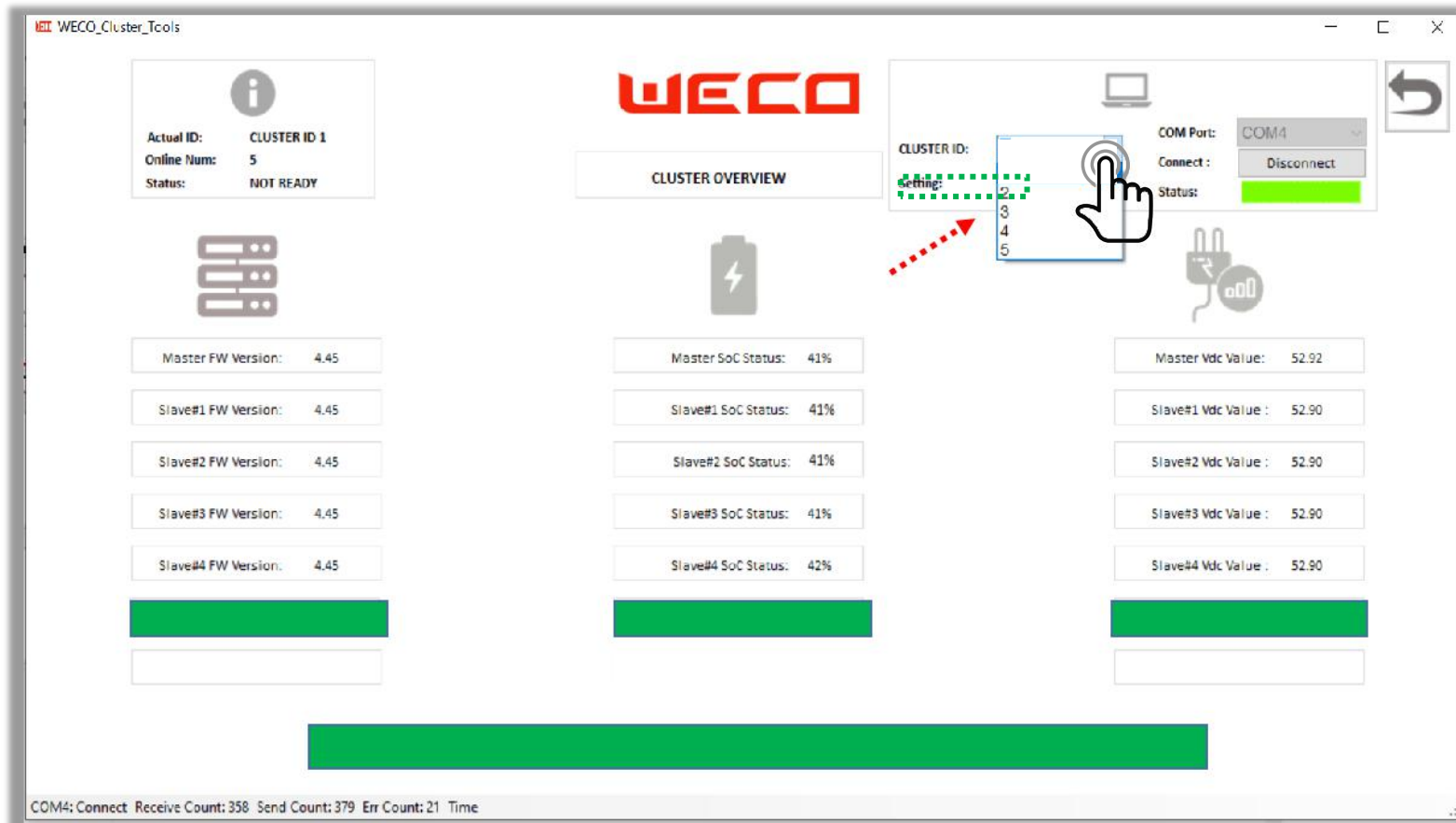
The screenshot displays the WECCO Cluster Tools software interface. The window title is "WECCO_Cluster_Tools". The interface is divided into several sections:

- Information Panel (Left):** Shows "Actual ID: CLUSTER ID 1", "Online Num: 5", and "Status: NOT READY". Below this is a server rack icon with a green checkmark.
- Cluster Overview (Center):** Features the WECCO logo and a "CLUSTER OVERVIEW" section with a battery icon and a green checkmark. It lists the following data:

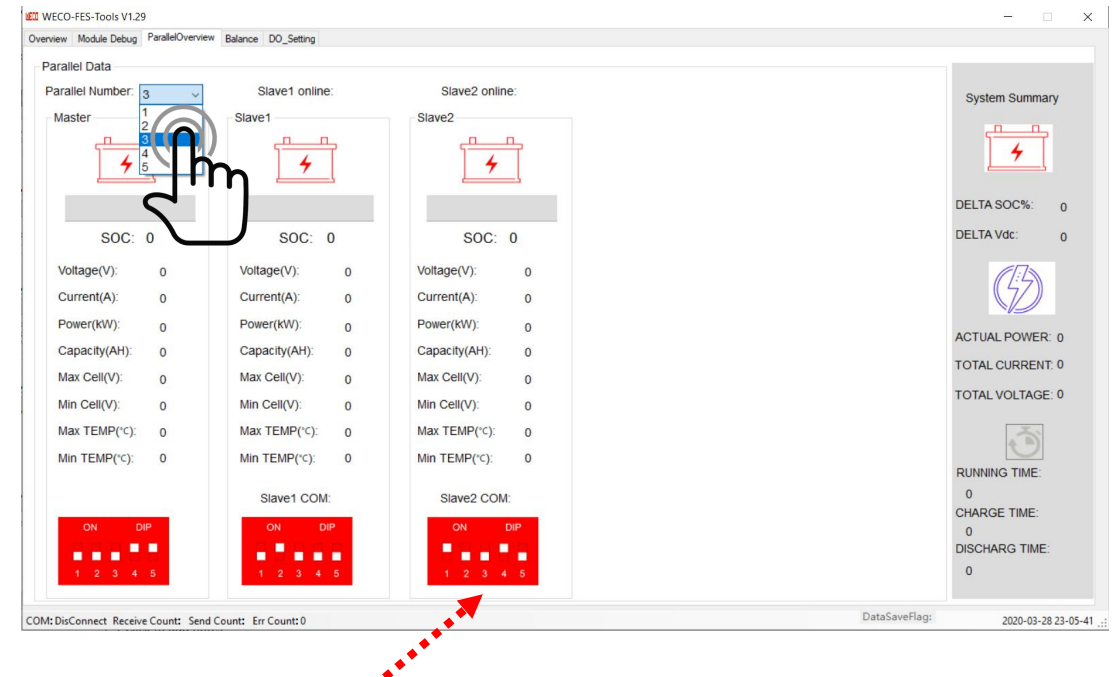
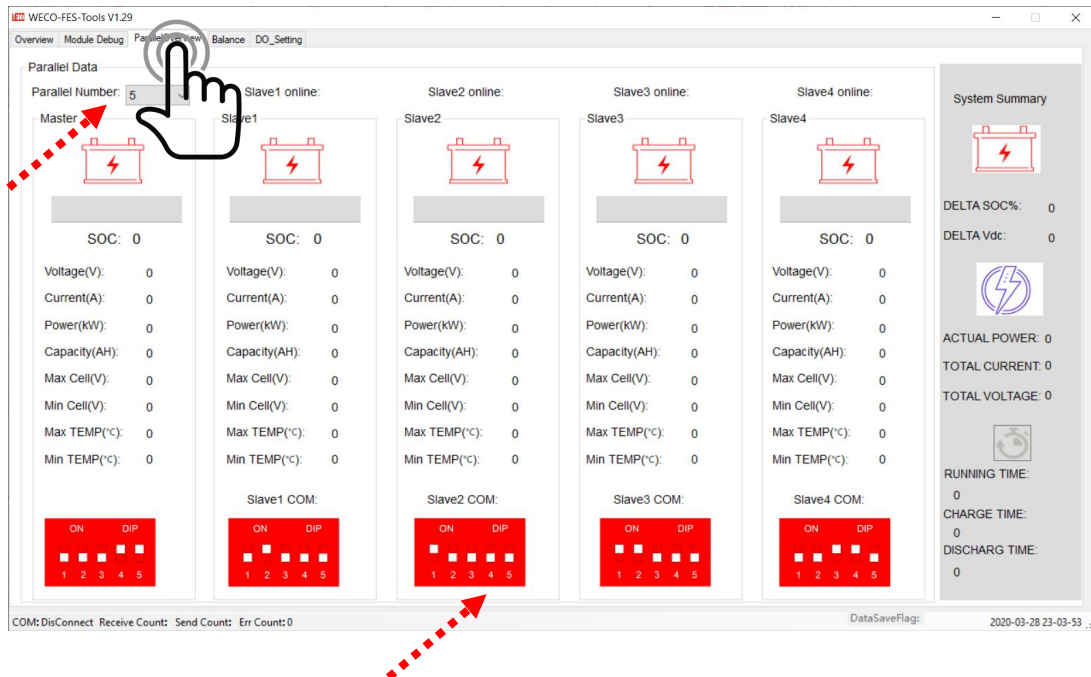
Component	Value
Master SoC Status	41%
Slave#1 SoC Status	41%
Slave#2 SoC Status	41%
Slave#3 SoC Status	41%
Slave#4 SoC Status	42%
- Configuration Panel (Right):** Includes a "CLUSTER ID" dropdown menu (set to 1), a "COM Port" dropdown (set to COM4), a "Connect" button (labeled "Disconnect"), and a "Status" indicator (green bar). Below this is a plug icon with a green checkmark.
- Version and Voltage Data (Bottom):** Lists "Master FW Version: 4.45" and "Slave#1-4 FW Version: 4.45". It also lists "Master Vdc Value: 52.92" and "Slave#1-4 Vdc Value: 52.90".

At the bottom of the interface, there is a status bar: "COM4:Connect Receive Count: 358 Send Count: 379 Err Count: 21 Time".

- Unplug the RJ45 RS 232 from the Master unit of the Cluster 1 and connect the Master Unit of the Cluster 2
- Assign the ID 2 to the Master Unit of the Cluster 2
- Proceed with the same method up the ID 05 of the Cluster 05 (or up to the last cluster if you have less than 5)
- If you have less the 5 Cluster simply stop at your lastest Cluster
- **Make sure not to have clusters with the same ID**
- Installer **MUST** assign the cluster ID to any master module of each cluster



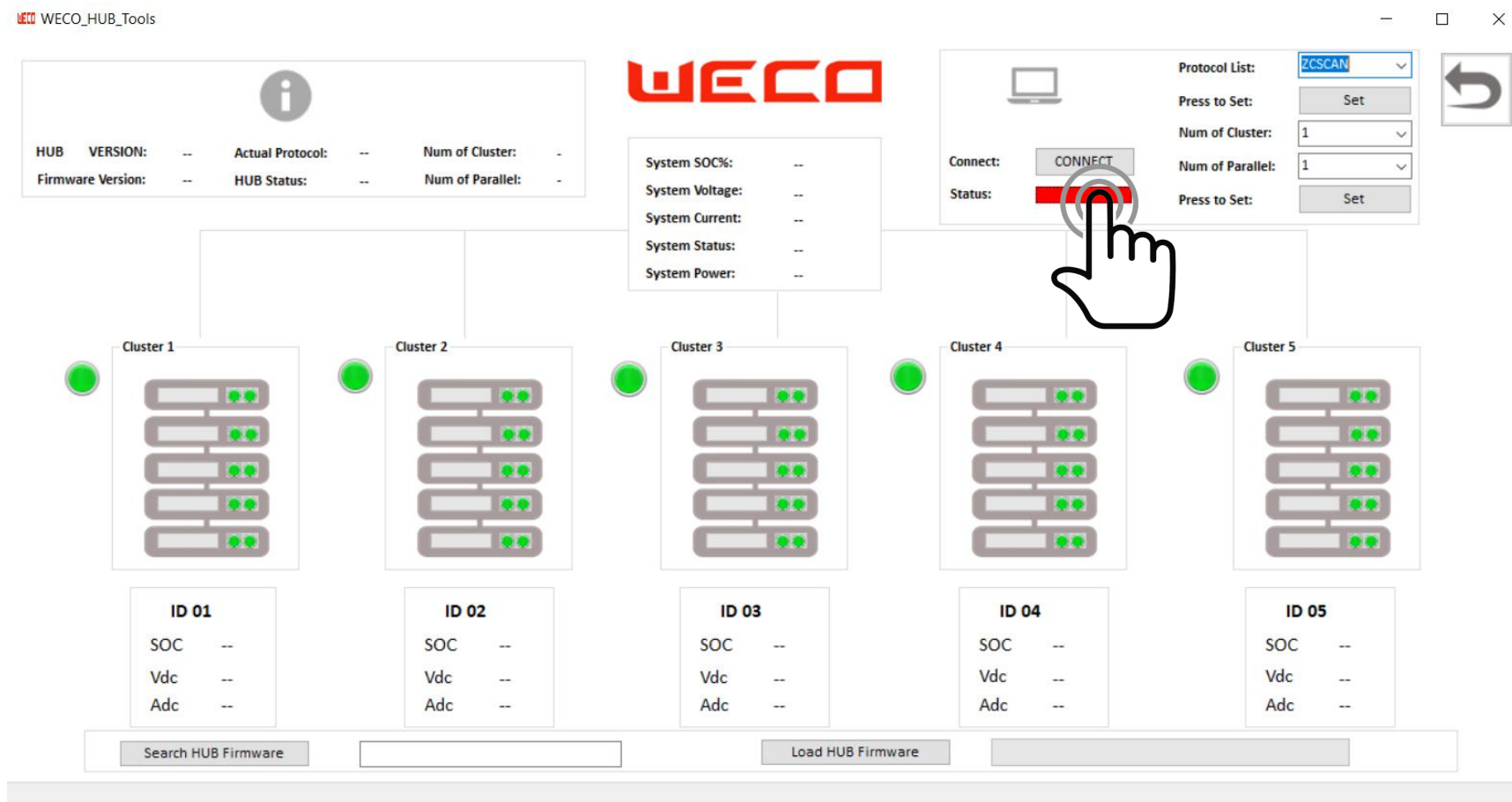
- For each cluster assign the Master and Slave sequence
- Select the number of modules that compose your cluster in order to have the right DIP Sequence
- If you have a cluster of 3 modules MUST SELECT -PARALLEL NUMBER 3- (Example Only)
- The DIP sequences changes according with the number of modules selected.
- Manually set the DIP of each module and restart all the modules after the wiring
- Connect the parallel Communication cable from the Port B of the master as per Daisy Chain method
- For more information follow the Modules Manual



- This section is reserved to Expert installers in possession of the WeCo CAN ANALYST RED VERSION
- Back to the main page and select the **HUB Setting Program**
- To proceed with the next steps the needs a USB/CAN converter
- USB CAN converter can be provided by WeCo if the installer by writing an email to service@weco.uk.com



- Usually the HUB is provided 1`ready to use` as per the installer requirements
- Trough the USB/CAN converter is it possible to upgrade Firmware and Change Inverter protocol or reset the system configuration
- Connect the USB/CAN Converter then press **CONNECT** the status bar will pass from RED to GREEN



- From the Protocol List Select the protocol to match your inverter
- After the protocol has been selected press **SET** and the HUB will open the communication protocol selected.

The screenshot displays the WECO_HUB_Tools software interface. At the top left, there is a status box with an information icon and the following data: HUB VERSION: V0.23, Actual Protocol: ZCSCAN, Num of Cluster: 2, Firmware Version: V1.02, HUB Status: NORMAL, Num of Parallel: 5. In the center, a system status box shows: System SOC%: 48%, System Voltage: 52.8V, System Current: -14.1A, System Status: RUN, System Power: -0.7kW. On the right, a 'Protocol List' dropdown menu is open, showing a list of protocols including OLPCAN, SMACAN, SOLAXCAN, GOODWECAN, STUDERCAN, VICTRONCAN, ZCSCAN (highlighted), INVTCAN, IMEONCAN, VOLTRONICCAN, GROWATTTCAN, KEHUACAN, and CONEXTCAN. A hand cursor is pointing at the 'SET' button below the dropdown. Below the system status, there are five cluster panels labeled Cluster 1 through Cluster 5. Cluster 1 and 2 have green status indicators, while Clusters 3, 4, and 5 have red indicators. Each cluster panel contains a diagram of the cluster components and a data box for its ID (ID 01 to ID 05). The data boxes show SOC, Vdc, and Adc values for each ID. At the bottom, there is a 'Search HUB Firmware' button, a file path 'C:\Users\Administrator\Desktop\OLP-X-', a 'Programmer' button, and a green progress bar. A status bar at the very bottom reads 'SYSTEM : Succeeded Updata, Using Seconds:17'.

- Set the systems specs such how many Clusters and how many modules in parallel are connected on each cluster.
- Set the Number of Clusters connected to the HUB and press **SET**
- Set the Number of Modules connected to the HUB and press **SET**

Cluster Settings



Modules Settings



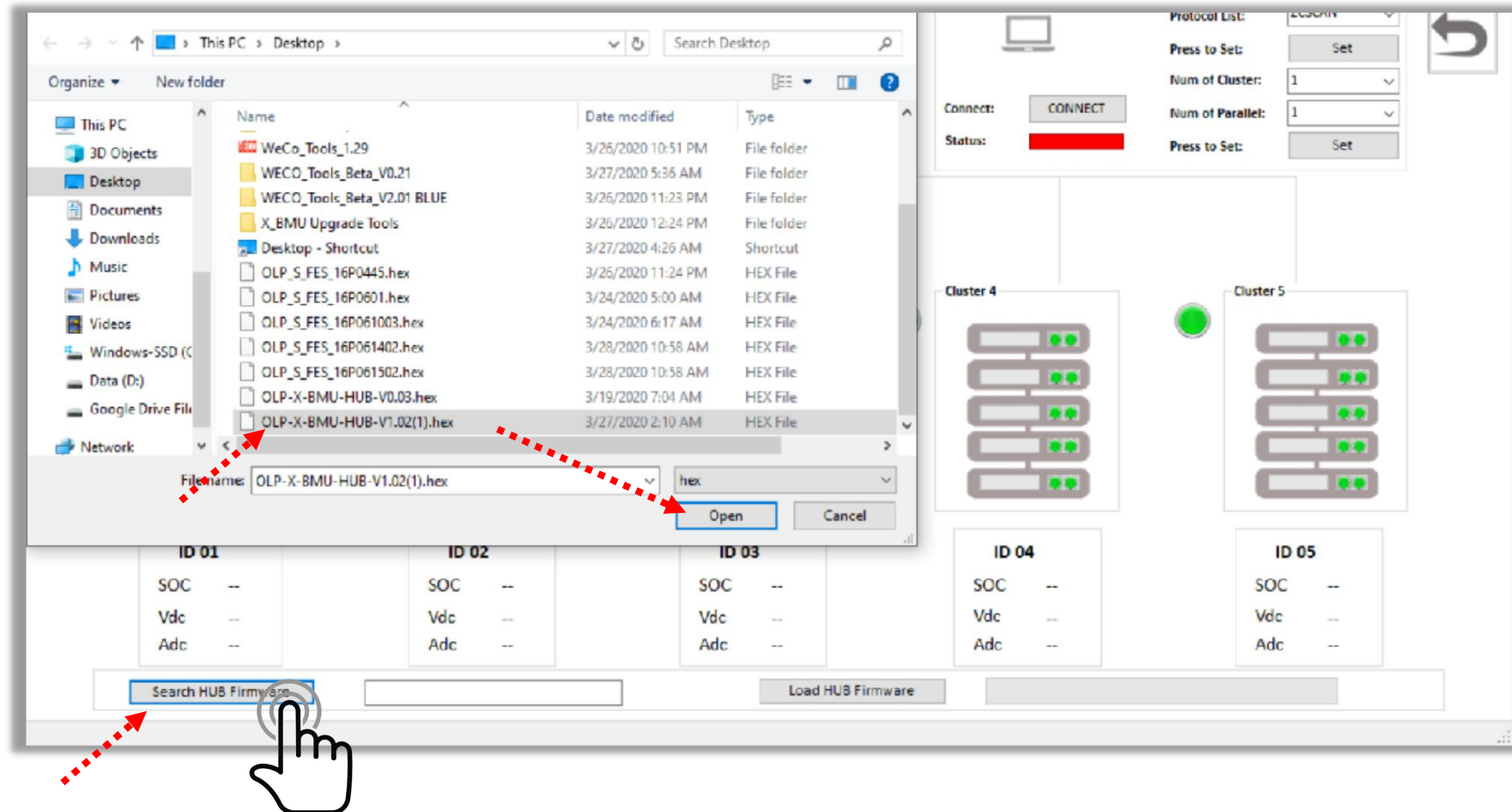
- The results of the previous settings will be displayed in the INFO section
- **Actual Protocol**
- **Number of Clusters**
- **Number of Parallel**

The screenshot displays the WECCO HUB Tools software interface. At the top left, the WECCO logo is visible. The main interface is divided into several sections:

- INFO Section (Top Left):** Displays system information including HUB VERSION (V0.23), Firmware Version (V1.02), Actual Protocol (ZCSCAN), HUB Status (NORMAL), Num of Cluster (2), and Num of Parallel (5). A red dashed arrow points to the 'Actual Protocol' field.
- System Status (Top Center):** Shows real-time metrics: System SOC% (48%), System Voltage (52.8V), System Current (-14.1A), System Status (RUN), and System Power (-0.7kW).
- Connect/Status (Top Right):** Includes a 'DISCONNECT' button and a green status bar.
- Protocol List (Top Right):** A dropdown menu showing various protocols, with 'ZCSCAN' selected. Other protocols include OLPCAN, SMACAN, SOLAXCAN, GOODWECAN, STUDERCAN, VICTRONCAN, INVTCAN, TIMEONCAN, VOLTRONICCAN, GROWATTTCAN, KEHUAQAN, and CONEXTCAN.
- Cluster Configuration (Bottom):** Five clusters are shown, each with a status indicator (green or red) and a detailed data box:

Cluster	ID	SOC	Vdc	Adc
Cluster 1	ID 01	44.8%	52.8V	-7.8A
Cluster 2	ID 02	51.6%	52.8V	-6.3A
Cluster 3	ID 03	--	--	--
Cluster 4	ID 04	--	--	--
Cluster 5	ID 05	--	--	--
- Bottom Bar:** Contains a 'Search HUB Firmware' button, a file path (C:\Users\Administrator\Desktop\OLP-X-), a 'Programmer' button, and a green progress bar.
- Status Bar (Bottom):** Displays the message 'SYSTEM: Succeeded Update, Using Seconds: 17'.

- To upgrade the HUB Firmware press on Search HUB Firmware. (The new Firmware can be requested by email writing to service@weco.uk.com)
- Search for the BMU-HUB Firware and press **OPEN**
- Set the Number of Modules connected to the HUB and press **SET**



- Once the new HUB firmware has been identified and uploaded the SYSTEM will show > Succeeded to Bin File
- Press **Load HUB Firmware** to transfer the Firmware from the PC to the HUB
- The Green Bar will show the upgrade status

