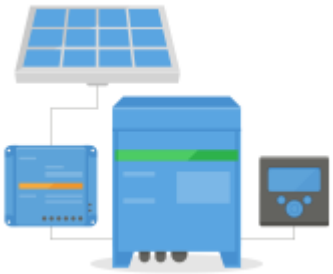
ESS Quick Installation Guide

UNDER CONSTRUCTION

This quick installation guide lists all the steps that are needed to install and configure a Victron Energy ESS system. It briefly explains each step. It also provides links to locations where more in depth information about each step can be found. The full ESS manual can be found here: design-installation-manual



Step 1 - Understand how a Victron Energy ESS system works.

Familiarize yourself with the Victron Energy ESS system.
A good place to start is to watch this video:



Step 2 - Decide what type of ESS

There are a few different ways to set an ESS system up. A combination of these are possible as well:

- DC coupled ESS
- AC coupled ESS
- Energy meter is used
- Grid parallel
- Essential loads are used

These are the basic wiring diagrams for each type:

Fix Me! insert images Fix Me!

Step 3 - Select the system hardware

Please see below lists. links are provided to the relevant equipment product pages

You will need:

- Victron inverter/charger(s): https://www.victronenergy.com/inverters-chargers
- Victron Interface MK3-USB: https://www.victronenergy.com/accessories/interface-mk3-usb
- Victron CCGX or Venus GX: https://www.victronenergy.com/panel-systems-remote-monitoring
- RJ45 UTP cable(s): https://www.victronenergy.com/cables/rj45-utp-cable
- Batteries

For a DC coupled ESS you will also need:

- Victron MPPT solar chargers: https://www.victronenergy.com/solar-charge-controllers
- Victron VE.direct cable(s): https://www.victronenergy.com/cables/ve.direct.cable
- Solar panels

For an AC coupled ESS you will also need:

- Grid tied inverter
- Solar panels

If the ESS needs an energy meter you might need:

- Victron Power meters: https://www.victronenergy.com/accessories/energy-meter
- Victron ASS030572018 - RS485 to USB interface 1.8m
- Victron Zigbee to USB and RS485 converter: https://www.victronenergy.com/accessories/zigbee-converters
- Victron Current transformer: https://www.victronenergy.com/accessories/current-transformer-for-multiplus-ii

To measure PV from an non Fronius , SMA or Solar edge you might need:

- Victron Current sensor: https://www.victronenergy.com/accessories/ac-current-sensor
- Victron Power meters: https://www.victronenergy.com/accessories/energy-meter

To equip a CCGX or Venus GX with WiFi you will need:

- Victron WiFi module: BPP900100200 or BPP900200200

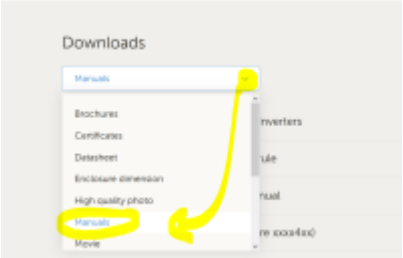
In case of a smart battery you might need:

- VE.Can to CAN-bus BMS cable: https://www.victronenergy.com.au/cables/ve-can-to-can-bus-bms

Step 4 - Install all equipment

- Install and wire all system parts according to their manuals.
- Do not connect communication cables between the various parts, this will be done at later stage

To find the applicable installation manuals see the links in the prevision steps. These links will direct you to the relevant product section. Then click on a the applicable product. On the product page scroll down to “Downloads”, and then select “manuals” from the drop down box.



Step 5 - Update firmware of all Victron EES equipment

- Update Victron equipment to the most recent firmware version

Instructions on how to update:

CCGX or Venus GX
The easiest way is to let the CCGX or Venus GX do an automatic update. This can be selected from its menu, once it is connected to the internet. Alternatively update via a SD card For instructions how to update see: How to update a GX device

MPPTs
MPPT solar charger - Via VictronConnect For instructions how to do a firmware update with VE.Connect this link: firmware_updates

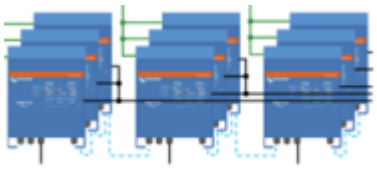
VE.bus
Firmware files and firmware change logs can be found on Victron professional Instructions how to update firmware:



Step 6 - Set up parallel and/or 3 phase inverter/chargers

(skip this step if only a single inverter/charger is used)

If the ESS system contains multiple inverter/chargers, they first will need to be set up to run in parallel and/or 3 phase.



For instructions on how to do that see this manual: Parallel, split- and three-phase VE.Bus systems

Step 7 - Configure the inverter/charger(s)

The inverter needs to be configured

- Download and install the VE.configuration tools software package from here:
- Connect computer via MK3 interface to the inverter/charger



The following settings are important:

- Battery monitor settings
- Charger settings
- AC input limit settings
- Grid settings
- Fix Me! add more? Fix Me!

See this video on how to use VE.Configure:



Video

- Add ESS assistant to the Inverter/charger(s)
- If more assistants are needed, like …. add these as well, after the ESS assistant

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Step 8 - Connect all communication cables

- Connect CCGX to inverter/chargers use RJ45 cable
- Connect MPPT to CCGX use VE.direct cable
- Connect energy meters to CCGX use USB to RS485 interface or Zigbee units
- Connect current sensor or current transformer to inverter/charger use regular signal cables
- Connect smart battery to CCGX, use special RJ45 cable
- Connect CCGX to internet via Ethernet cable or WiFi module

Step 9 - Make CCGX settings

- Go to ESS settings on CCGX, make ESS settings
- Go to CanBus, select smart battery
- Find Fronius, SMA or Solar edge on CCGX. assign correct role
- Find current sensor on CCGX, assign correct role
- Find Energy meter(s) on CCGX, assign correct role

Step 10 - Set up VRM

- Go to Victron VRM
- Make account (in case you do not yet have account)
- Add CCGX to account
- Check if logging is correct

Step 11 - Commissioning

- Comission system, see ESS manual
- Consider limiting access to end-user
- consider turning automatic firmware updates off

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