GX Product Range Comparison Table

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Introduction:

GX products are Victron's state-of-the-art monitoring solution. The family consists of the different GX products, and their accessories.

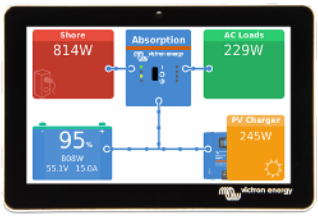
The GX-device lies at the heart of the system - providing monitoring, and operating as the communication-centre of your installation. All the other system-components - such as inverter/chargers, solar chargers, and batteries - are connected to it. Monitoring can be carried out locally and remotely - via our free-to-use Victron Remote Management portal (VRM). The GX-device also provides Remote firmware updates and allows inverter/charger settings to be changed remotely.

The GX Family consists of these models:

- Ekrano GX - Our latest GX product with integrated 7 inch touchscreen.
- Cerbo GX - Most commonly used GX product.
- Cerbo GX MK2 - Most commonly used GX product - Hardware revision 2 with two VE.Can ports, 3 USB host ports and digital input pulse counting.
- Cerbo-S GX - Lower cost version, same as normal Cerbo GX but without BMS-Can port, Tank- and Temperature monitoring inputs.
- Color Control GX - Our first released GX product, the CCGX has a display and buttons.
- Venus GX - The Venus GX has more analog and digital IO, no LCD and is more cost effective than the CCGX.
- CANvu GX - The CANvu GX is best for harsh environments - when its IP67 rating and touch LCD is a must.
- Lastly, there is a GX device built into our MultiPlus-II GX and EasySolar-II GX Inverter/chargers.

Available Accessories:

GX Touch - Touch screen display accessory for the Cerbo GX
GX GSM - A 2G and 3G cellular modem. It connects to GX device via USB, and takes a simcard
GX LTE 4G - A 2G, 3G and 4G cellular modem. It connects to GX device via USB and takes a simcard
WiFi USB sticks
Energy Meters - Measures PV Inverter Output where PV Inverters cannot be read-out directly. Also used as a grid meter in an Energy Storage System (ESS).
VE.Can resistive tank sender adapter - Allows a standard resistive tank-level sender to be connected to the GX device. Note that some GX Devices feature resistive tank-level inputs themselves.
GX Touch adapter for CCGX cut-out - An adapter that fits in a cut-out made for a CCGX, into which fits a Cerbo GX. For when upgrading a CCGX system to a Cerbo GX. More details available asap.

User Interface	Ekrano GX	Cerbo GX	Cerbo GX MK2	Cerbo-S	CCGX	Venus GX	CANvu GX	MultiPlus-II GX & EasySolar-II GX
Appearance								
Display	1024 x 600 LCD built-in 7” touchscreen	GX Touch  optional Display *(15) GX Touch 50: 800 x 480 GX Touch 70: 1024 x 600		GX Touch  optional Display *(15) GX Touch 50: 800 x 480 GX Touch 70: 1024 x 600	480 x 272 LCD Display & 7 Buttons	No Display	4.3” Touch-Screen	 2 X 16 Character Display
Remote Console	Yes							
Buzzer	Yes							No

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Victron comm. ports								
VE.Direct Ports (always isolated)	3 *(1)				2 *(1)		3 *(1)	1
VE.Bus (always Isolated	2 Paralled RJ45 Sockets							
VE.Can	yes - VE.Can 1 isolated VE.Can 2 non-isolated	Yes - Non isolated	yes - VE.Can 1 isolated VE.Can 2 non-isolated	Yes - Non isolated	2 Paralled RJ45 Sockets - Isolated			Depends *(13, 22)
Other Comm. Ports								
USB	2 USB Host Ports	2 USB Host Ports & 1 power only port *(20)	3 USB Host Ports	2 USB Host Ports & 1 power only port *(21)	2 USB Host Ports		1 USB Host Port	
Ethernet	10/100 RJ45 socket - Isolated except shield						10/100 RJ45 socket *(11)	10/100 RJ45 Socket
WiFi	Built-in				Optional *(2)	Built-in but see *(3)	Optional *(2)	Built-in
Bluetooth Smart	Yes *(16)				No			depends *(22)
Micro SDcard slot	SDHC Cards up to max. of 32GB. *(5)						No	
Second CAN-bus port (also features BMS-Can *(17))	Yes - see VE.Can	No	Yes - see VE.Can	No	No	Yes- Non-isolated	No	
BMS-Can Port *(14)	No	Yes	No	No				depends *(13, 22)
Built-in RS485	No							
IO								
Programmable relay *(7)	2 x NO / NC *(8) DC up to 30VDC: 3A AC: 1A, 125VAC	2 x NO / NC *(8) DC up to 30VDC: 6A DC up to 70VDC: 1A AC: 6A, 125VAC			1 x NO	1 x NO / NC *(8)	1 x NO / NC	N/A
Resistive Tank level Inputs	3 *(9)	4 *(9)		0	No	3 *(9)	No	
Temperature sense Inputs	2 *(10)	4 *(10)		0	No	2 *(10)	No	
Digital Inputs	2 *(21)	4 *(21)			No	5 *(21)	1 *(21)	No

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Performance								
CPU	Quad Core	Dual Core			Single Core			Quad Core
RAM	1GB				256MB	512MB	256MB	512MB
Max. VE.Direct Devices *(1)	25	15			5	6	4	25
Other								
Supply Voltage	8 - 70 VDC						8 - 32 VDC	Powered internally, no external supply
Power Draw	2.6 to 7.4 W *(24)	2.5 to 5 W *(18)			tbd			
Mounting	Flush panel mounting or blind hole mounting	Wall or DIN rail (35mm) *(19)			Panel Integration	Wall Mounting	Panel	Built-in
Outer Dimensions (h x w x d)	124 x 187 x 29.8 mm	78 x 154 x 48 mm			130 x 120 x 28 mm	45 x 143 x 96 mm	?	
Operating Temperature	-20 to +50 °C						-20 to +70 °C	
Battery Back-upped Clock	Yes						No	Yes
5V Output	No					1 A *(13)	No	
Standards								
Safety	IEC 62368-1				EN 60950		IEC 62368-1	IEC 62109-1, IEC62109-2, IEC62040-1
EMC	EN 301489-1, EN301489-17							
Automotive	ECE R10-6				E4-10R-053535	ECE R10-6		No

Third Party Compatibility

* Notes on following Page

- Canbus-BMS batteries - Many battery brands. See here for details
- Fronius PV Inverters - See here for details
- SMA PV Inverters - See here for details
- ABB/FIMER PV Inverters - See here for details
- SolarEdge PV Inverters - See here for details
- Marine MFD App Support - Generic MFD Manual, Navico, Garmin, Raymarine, Furuno
- Mopeka Pro Check LPG & Water Bluetooth tank sensor *(23) - See here for details
- RuuviTag Bluetooth temperature sensor *(23) - See here for details

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*Notes

1. The listed maximum VE.Direct devices on the `Performance` section in above table is the total connected VE.Direct devices such as MPPT Solar Charge controllers. Total means all directly connected devices plus the devices connected over USB. The limit is mostly bound by CPU processing power. In relation to that, note that (a) connecting solar chargers over VE.Can is more efficient than connected over VE.Direct - and besides more efficient also makes for better communication wiring. For example, a Cerbo GX can perfectly handle 25 pieces of VE.Can Solar Charger, combined with 6 pieces of Fronius three phase PV Inverter and of course a three phase Victron system. And note (b) that CPU load is not only caused by connecting VE.Direct devices; there are also other factors. Connecting multiple PV Inverters increases the CPU load, especially when they are three phase. Enabling ModbusTCP increases the CPU load as well. Up to three or four three phase inverters can typically be monitored on a CCGX. Higher power CPU devices can monitor more.
2. Though the CCGX has no built-in WiFi that functionality can easily be added by attaching a USB-WiFi dongle. See CCGX Manual, WiFi section for details.
3. The built-in WiFi in the Venus GX has a very low signal strength - unfortunately. It is strong enough to connect to a phone, tablet or laptop in order to access setup and monitoring. But to connect the Venus GX to the internet either use the built-in Ethernet port or add a USB-WiFi dongle. See Venus GX Manual, WiFi section for details. Make sure the Venus GX is running v2.06 or later - early shipments of Venus GX units ran v2.05.
4. The hardware of the Venus GX includes a built-in Bluetooth Smart chipset which hasn't proved satisfactory. Bluetooth Smart for GX devices is coming soon but will not use built-in chipsets.
5. Larger SD memory cards (SDXC) are not supported. SD cards can be used for two purposes:
   a. Logging data, see the Datalogging to VRM chapter in the GX manual for details.
   b. Updating firmware, see the Firmware update chapter in the GX manual for details.
6. The second CANbus port is accessible via the GND, CAN-H and CAN-L terminals. Note that the port is not isolated. See Settings → Services in the GX device menu for configuring that port.
7. The programmable relay can be set to act as an alarm relay, automatic genset start stop, or an on/off switch, and is controlled via the GUI and/or ModbusTCP.
8. In the Venus and Cerbo GX hardware there are two relays. Currently, Relay 1 can be used for programming as an alarm relay, generator start/stop, tank pump, temperature controlled relay or manual operation. Relay 2 is available for programming as a temperature controlled relay or manual operation in the Relay menu of the GX (requires firmware 2.80 or higher).
9. The tank level inputs are resistive and should be connected to a resistive tank sender. Victron does not supply tank senders. The tank level ports can each be configured to work with either European (0 - 180 Ohm); or US tank senders (240 - 30 Ohm); or to configure a custom Ohm resistance range between 0 Ohm and 300 Ohm.
10. The Ekrano GX has two, the Cerbo GX four and the Venus GX has two temperature terminals. They can be used to measure & monitor all kinds of temperature-inputs. Temperature senders are not included. The required sensor is ASS000001000 - Temperature Sensor QUA/PMP/Venus GX. (Note that this is not the same as the BMV temperature accessory.). Temperature range is -20°C to +70°C. Actually it can measure up to 100°C, but the sensor is not made to withstand temperatures above 70°C long term. Note that this is intended as a crude temperature sensor, and not calibrated. A deviation of +/- 2°C is to be expected.
11. Requires the CANvu GX IO Extender and wiring kit
12. The 5V output on the Venus GX can be used to power, for example, a USB hub. Note that its output is not current limited or otherwise protected, and it shares the internal power supply in the Venus GX: overdrawing from it will result in shutdown(s) of the Venus GX. It is recommended to install a fuse for prevention.
13. The CAN-Bus port of the Maxi GX, MultiPlus-II GX and EasySolar-II GX is a BMS-Can port. It can only be used to connect to managed batteries such as Freedomwon, BYD, Pylontech, BlueNova, MG Energy Systems and others, at 500kbps. Note that some early production batches had a labelling mistake: the port was labelled VE.Can. Which -unfortunately- is wrong. The hardware does not meet the requirements for a VE.Can port; and therefor is BMS-Can only.
14. A BMS-Can port is a port dedicated to be used for connecting managed batteries, such as Freedomwon, BYD, Pylontech, BlueNova, MG Energy Systems and others, only. It is not possible to connect Victron VE.Can products to that port. To connect such managed battery, use our VE.Can to CAN-bus BMS cable, and see **Battery Compatibility documentation**. Connect the side labelled 'VE.Can' into the BMS-Can/VE.Can port on the GX Device. And connect the other side to the battery. The baudrate of a BMS-Can port is fixed to 500kbps.
15. The GX Touch connects to the Cerbo GX using a single cable; fixed permanently to the GX Touch, which on the other end splits into a USB and a connector for the video signal. Both need to be inserted into the Cerbo GX, taking one of the three USB ports. The USB part of the cable is used to power the GX Touch. The cable is 2 meters in length; and can not be extended in length.
16. The Bluetooth feature of the Cerbo GX allows to configure its WiFi and Ethernet settings from within VictronConnect. Even though it can be used for wireless temperature monitoring, we recommend to use a USB Bluetooth adapter instead: the Bluetooth function in the Cerbo GX stops working when the internal temperature is too high. This applies for Cerbo GX units built up to and including serial number HQ2207. Units manufactured later (HQ2208 and later) do not require an additional USB Bluetooth adapter. Also note that this limitation does not apply to the Cerbo-S GX.
17. The secondary CAN port, available on some GX devices as per table above, can be configured to be used as a BMS-Can port, as well as other profiles. For details, see manual.
18. Cerbo GX power draw without GX Touch mounted: around 2.8W. With GX Touch connected, and backlight off: 3.8W. Backlight at max intensity: 4.8W
19. DIN rail mounting requires additional accessory - DIN35 Adapter.
20. On the Cerbo GX, the USB socket closest to the HDMI connector can only be used to power a GX Touch. That USB port cannot be used for any data related functions such as VE.Direct to USB cables, USB-sticks, USB-GPS-es, or other common USB usages. It's a power port only, no data. Future versions of Venus OS will disable all data related features of this port, so it should not be used for anything other than powering the GX Touch screen. Attempting to use this port for data purposes may lead to corrupted VRM data on USB sticks or unreliable communication to for example a Solar Charger when using a VE.Direct to USB cable.

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*Notes

21. The digital inputs can be used for open/closed monitoring of alarms, for example doors, or fire- or bilge alarms. The digital inputs on the Ekrano GX and Venus GX can also be used for pulse counting. The digital inputs on the Cerbo GX and other devices are not able to do pulse counting. See product manual for electrical specifications of the digital inputs.
22. Late 2021 / early 2022, the hardware of the MultiPlus-II GX and EasySolar-II GX product range has been updated. The update adds Bluetooth and changes the CAN-communications port from a limited 500kbps BMS-Can only type to a full featured VE.Can port (non-isolated). Status per model, updated 2022-10-04:

a. MultiPlus-II GX 24 3kVA; per HQ2231. Not shipping yet
b. MultiPlus-II GX 48V 3kVA; per HQ2124, Ships from Australia, Spain, Netherlands and South Africa warehouses.
c. MultiPlus-II GX 48V 5kVA; per HQ2220. Not shipping yet.
d. EasySolar-II GX 24V 3kVA; introduced per HQ2203. Ships only from the Dutch warehouse
e. EasySolar-II GX 48V 3kVA; per HQ2229. Ships only from Spain and SA warehouses
f. EasySolar-II GX 48V 5kVA; per HQ2220. Ships from all warehouses.

23. Non-Bluetooth GX devices require a USB Bluetooth dongle to enable the Bluetooth sensors
24. Ekrano GX power draw in detail: Display on 6.2W @ 12V I 6.6W @ 24V I 7.4W @ 48V Display off 2.6W 12V I 3.0W @ 24V I 3.7W @ 48V