Victron GX product range

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:

- Cerbo GX - Our newly released GX product.
- 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.
- Octo GX - The Octo GX is particularly suited to medium size installations which have many MPPT Solar Chargers, as it has 10 VE.Direct ports.
- Maxi GX - Compared to the other GX devices, the Maxi GX has most CPU power and most VE.Direct ports: 25. This is the GX device to use for large systems with many VE.Direct MPPT Solar Chargers.

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.

Comparison table

User interface	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
Appearance							
Display	 GX Touch optional touch display [16] GX Touch 50: 800 x 480 GX Touch 70: 1024 x 600	480 x 272 LCD Display & 7 buttons	no display	no display	4.3“ touch-screen	 2×16 character display	
Remote Console	yes						
Buzzer	yes	yes	yes	no	yes	no	
Documentation	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
Manual	Cerbo GX manual	CCGX manual	VGX manual	OGX manual	CANvu manual	Maxi GX manual	MultiPlus-II GX manual
Product detail page	page	page	page	page	page	page	page
Victron comm. ports	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX[12]**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
VE.Direct ports (always isolated)	3 [1]	2 [1]		10 [1]	3 [1]	25	1
VE.Bus (always isolated)	2 paralleled RJ45 sockets					1 RJ45 socket	2 paralleled RJ45 sockets
VE.Can	yes - non isolated	2 paralleled RJ45 sockets – isolated				no [14]	
Other communication	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
USB	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 [12]	10/100 RJ45 socket	
WiFi	built-in	optional [2]	built-in, but see [3]	built-in, external antenna [11]	optional [2]	no	built-in
Bluetooth Smart	yes [17]	no					
Micro SDcard slot	SDHC cards up to max. of 32GB. [5]				no	yes	no
Second CAN-bus port (also features BMS-Can [18])	no	no	yes - non-isolated	yes - non-isolated	no	no	no
BMS-Can port [15]	yes	no				yes [14]	
Built-in RS485	no	no	no	yes - non-isolated	no		no

User interface	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
IO	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX[12]**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
Programmable relay [7]	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]	1x NO / NC		2x NO / NC [8]	n/a
Resistive tank level inputs	4 [9]	no	3 [9]	no			
Temperature sense inputs	4 [10]	no	2 [10]	no			
Digital Inputs	4 [22]	no	5 [22]	3 [22]	1 [22]	4 [22]	no
Third party compatibility	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
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						
Performance	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
CPU	dual core	single core				quad core	
RAM	1GB	256MB	512MB	512MB	256MB	512MB	512MB
Max. VE.Direct devices [1]	15	5	6	10	4	25	25
Other	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
Supply voltage	8 - 70 VDC				8 - 32 VDC	32 - 70 VDC	powered internally, no external supply
Power draw	2,5 to 5 W [19]	tbd					
Mounting	Wall or DIN rail (35mm)[20]	Panel Integration	Wall mounting	DIN Rail (35mm)	Panel	Wall mount IP65	Built-in
Outer dimensions (h x w x d)	78 x 154 x 48 mm	130 x 120 x 28 mm	45 x 143 x 96 mm	61 x 108 x 90 mm	?	600 x 380 x 210 mm	
Operating temperature	-20 to +50°C				-20 to +70°C	-20 to +50°C	
Battery backupped clock	yes				no	yes	yes
5V output	no		1 A [13]	no			
Standards	**Cerbo GX**	**CCGX**	**Venus GX**	**Octo GX**	**CANvu GX**	**Maxi GX**	**MultiPlus-II GX and EasySolar-II GX**
Safety	tbd	EN 60950		?	?	?	
EMC	tbd	EN 61000-6-3, EN 55014-1, EN 61000-6-2, EN 61000-6-1, EN 55014-2					
Automotive	tbd	E4-10R-053535	In progress	?	?	no	

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, section 1.4.2 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 CCGX Manual, section 1.4.2 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 and Octo 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:
    1. Logging data, see this section in the ccgx manual for details.
    2. Updating firmware, see this section in the ccgx manual for detials.
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 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. At present only Relay 1 is available for use via programming. Relay 2 is only available via manual operation from the Relay menu on the GX.
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).
10. The Cerbo GX has four temperature terminals, and the Venus GX has two. 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 -20C to +70C. Actually it can measure up to 100C, but the sensor is not made to withstand temperatures above 70C long term. Note that this is intended as a crude temperature sensor, and not calibrated. A deviation of +/- 2C is to be expected.
11. Octo GX comes with a small Wifi antenna. You may remove and replace it with any other Wifi antenna having an RP-SMA connector.
12. Requires the CANvu GX IO Extender and wiring kit
13. 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.

14. 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.
15. 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 special cables, and see documentation here. 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.
16. 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.
17. The Bluetooth feature of the Cerbo GX allows to configure its WiFi and Ethernet settings from within VictronConnect.
18. 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.
19. 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
20. DIN rail mounting requires additional accessory - DIN35 Adapter.
21. On the Cerbo GX, the USB socket closest to the HDMI connector can only be used to power a GX Touch. That USB port can not 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.
22. 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 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.