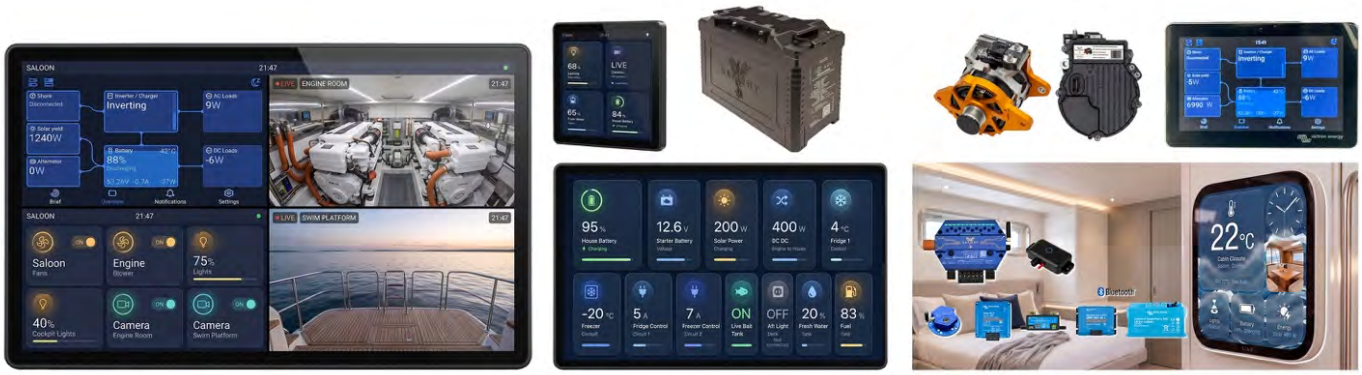
FIFTEEN SAFIERY PRODUCTS FOR VICTRON BUYERS.



Native integration with Victron

1. **Quasar Glass Bluetooth (only).** 4 in, 10 in and 13.3 in.
2. **Quasar Glass Power and Vision.** 4 in, 10 in and 13.3 in, with IP camera video streaming.
3. **Apple HomeView integration.**
4. **Tank monitoring.** Fresh, grey and black water, now gasoline and diesel, with STAR-Tank Release X.
5. **Digital switching.** The STAR range, with CAN, Bluetooth, Quasar Glass, Home Assistant, Matter and Wi-Fi control.
6. **LIN Nodes with individual switches.** RGB indicator ring, auto dim and pre-check.
7. **CAN rubberised keypads and Bluetooth wall mount switches.**

Every Item Priced in USD, EUR or AUD with Tax

Apply your purchasing Discount for Volume buyers

Compatible and shows in Cerbo GX/Ekrano

8. **DC-DC converters.** 12 V to 800 V.
9. **Belt motor generators.** 48 V alternators.
10. **Solid state lithium.** Remote switch and remote discharge MOSFET control, up to 7.5 kW per 48 V battery.
11. **High density solid state lithium.** Electrochemical impedance spectroscopy and 26 BMS logic functions, selectable and configured by the user.

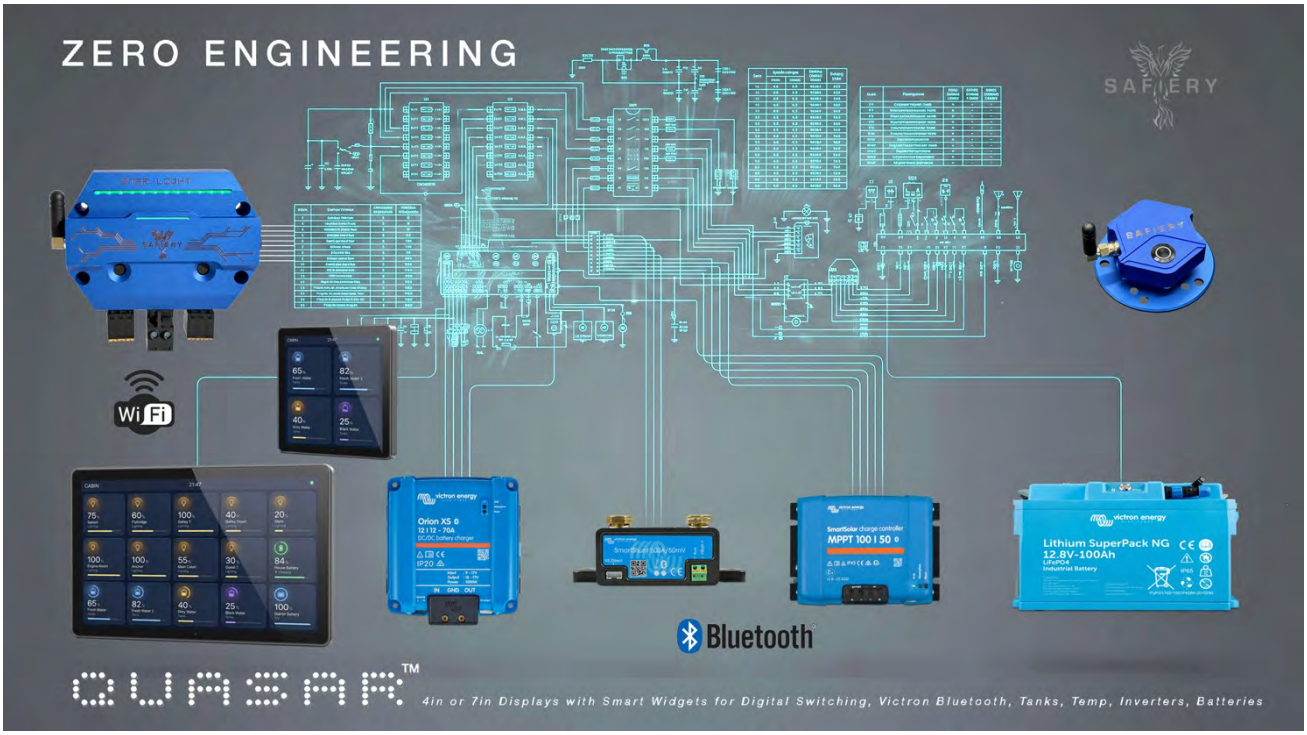
Expanded integration that unlocks AI services and adds Home Assistant

12. **Quasar ONE.** Built-in modem router and onboard eSIM. Unlocks Quasar Care.
13. **Quasar Master.** Built-in modem router and onboard eSIM, plus a CM5 compute module, NVMe and a native Home Assistant stack. Unlocks Quasar Concierge and Quasar Care.
14. **NVIDIA Jetson** on a 12 to 32 V powered carrier board, connected by Ethernet to Quasar Master, for the sailing experience additions that use lidar, phase coherent radar and cameras.
15. **Safiery WRI modem router.** Runs OpenWrt for automated onboarding, remote management access and software updates.

Victron is a trade mark of Victron Energy B.V. Safiery, STAR and Quasar are trade marks of Safiery Pty Ltd.

1. Quasar Glass Bluetooth.
ZERO engineering with 4 in, 10 in and 13.3 in displays

Quasar Glass puts the Victron system, the tanks, the switching and the cameras on real glass, in three sizes, with the same tiles on the free Quasar Glass App. Two platforms, the same glass. Each option adds a page, and nothing is thrown away as the boat grows.



RELEASE: 1 December 2026, globally.

> *"The lowest installed cost with quality products and ZERO engineering."*

Zero data wires and zero engineering. The glass reads every Victron Bluetooth device on board, the STAR-Tank radar sensors and the Ruuvi temperature and air sensors, and switches the STAR range, all over the air. 12 V to each device, nothing else. The Victron encryption key for each device is added once to the Quasar Glass and the readings appear. The keys stay in place through power cycling and firmware updates. Victron read over Bluetooth is monitoring only.

Victron devices read over Bluetooth. Safiery has built two-level widgets that pop up automatically when the associated device is connected over Bluetooth: SmartSolar MPPT, SolarSense 750, SmartShunt, BMV-712 Smart, Smart Battery Sense, Lithium Battery Smart, Lynx Smart BMS, Smart BMS 12-200 and CL, Orion-Tr Smart, Orion XS, Inverter Smart, Sun Inverter, Inverter RS, Multi RS, MPPT RS, Smart BatteryProtect, Blue Smart IP22 and IP65 chargers, and MultiPlus, Quattro and BlueSolar with a Victron Bluetooth dongle.

Victron Dealers packaging with Victron Devices. As a guide, for kits shipped from Safiery that include the Victron devices, the kit is powered up at Safiery and its pairing codes entered before it ships. The customer then simply mounts the panel, runs 12 V and ground, and every device appears. No PC tool, no configuration file, no return visit.

All displays have CE, UKCA and FCC approvals. All have OTA updatable firmware.

VICTRON INTEGRATION: Reads Victron over Bluetooth on either platform. Monitoring only; control needs the Cerbo GX on Power and Vision.

KEY NUMBERS

- **4** glass sizes: 4, 7, 10 and 13.3 in
- **20+** widgets on every screen, pre-built for Victron devices, switching, temperatures, tanks and cameras
- **0** data wires on Quasar Glass Bluetooth
- **Double tap** a widget for a detailed function, like dimming

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Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Quasar Glass 4 in panel	US$295	€254	A$464
Quasar Glass 7 in panel	US$540	€463	A$849
Quasar Glass 10 in panel	US$590	€507	A$927
Quasar Glass Bluetooth bundle: 4 in display plus STAR-Light, switching 12 channels	US$915	€785	A$1,413
26ft Centre Console – all Bluetooth, no Cerbo, no data wiring: **Victron Lithium SuperPack 12.8 V 200 Ah NG**, Orion DC DC, smart Solar 100/50, 12 switch channels 6 x 30A and 6 x 10A dimmable, 4in Quasar Glass. Price includes Victron products at local RRP	US$2,926	€2,591	A$4,598
Boat Monitoring to Quasar Glass, Add local modem 4G with SIM needs 2.4Ghz WiFi access point. Safiery WRI router includes prepaid SIM.			
• Shore power disconnect detect: Shelly EM Gen3, 50 A clamp pack. Bluetooth	US$70	€62	A$110
• Door/Hatch detection battery Bluetooth	US$38	€34	A$59
• Occupancy with Time of Flight battery Bluetooth	US$79	€70	A$125
• Bilge alarm sensor IP68 Bluetooth	US$48	€43	A$76
• Tender removal with movement tag from boat Bluetooth	US$26	€23	A$41
• Temperature and Humidity Bluetooth	US$64	€56	A$99

2. Quasar Glass Power and Vision.
4 in, 10 in and 13.3 in displays with IP camera video streaming

RELEASE: 1 January 2027, globally.

NEEDS: Safiery WRI router.

> *"Connect to your Cerbo/Ekrano by WiFi or ethernet. Upgrade the Venus GX screens, or add more screens. Integrate video streaming cost effectively. Multiple screens at different sizes, one uniform display format."*



Power and Vision adds the Safiery WRI Wi-Fi modem router (2.4 GHz for the STAR controllers, 5 GHz for the glass and cameras, and optional 4G), full Victron data and control through the Cerbo GX with the remote console on the glass, IP cameras with live video and a 360 degree birds-eye view, and app access on board with no internet. The connection to the Cerbo GX or Ekrano GX is Ethernet or Wi-Fi. Two taps on the remote console turn on Modbus TCP, and that is the set-up. Remote access is over the router's 4G. The owner switches the MultiPlus on, off or to charger only and sets the shore current limit from the glass or the phone. Every panel shows the same widget pages: the 4 in pages through them, perfect for cabins; the 10 in or 13.3 in shows tanks, power, shore and health on one page. Safiery has built two-level widgets that pop up automatically when the associated devices are found connected.

The remote console is a standard display page on the 10 in and 13.3 in models, so a separate Victron touch screen is not needed.

The free app. Scan the QR code, tap Join, and the same tiles are on the phone. No internet needed on board. Away from the boat the app runs through the router's 4G.

Integrating video. IP cameras are required. Safiery has tested up to six cameras on one WRI router. The cameras connect by Ethernet, and they can be powered over Ethernet by adding your own PoE switch and connecting it to the WRI router. The router streams the video to the Quasar Glass displays over 5 GHz Wi-Fi, and the video opens by touching a camera widget tile. Quasar Glass displays run the Bluetooth and Wi-Fi channels at the same time.

All displays have CE, UKCA and FCC approvals.

VICTRON INTEGRATION: Reads Victron over Bluetooth on either platform. Full data and control through the Cerbo GX on Power and Vision. The switching pages also stay on the GX Touch, so the owner can use either screen.



KEY NUMBERS

- **4** glass sizes: 4, 7, 10 and 13.3 in
- **20+** widgets on every screen, pre-built for Victron devices, switching, temperatures, tanks and cameras
- **6** IP cameras tested on one Safiery WRI router
- **1 hour** of AI configuration for a 300 point boat

2. Quasar Glass Power and Vision. Communicates with Cerbo/Ekrano.

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Quasar Glass 4 in panel	US$295	€254	A$464
Quasar Glass 7 in panel	US$540	€463	A$849
Quasar Glass 10 in panel	US$590	€507	A$927
Quasar Glass 13.3 in touch display	US$890	€765	A$1,399
Safiery WRI router, 2.4 and 5 GHz Wi-Fi, 4G USA Model modem is FCC compliant and a higher cost than other regions	US$425	€271	A$495
IP camera, each	US$149	€128	A$234



TYPICAL SYSTEM, COSTED

36 ft cabin centre console, twin outboards, 400 Ah house bank

Line totals in US$ RRP ex tax, EUR ex VAT and AUD with GST

VICTRON POWER	QTY	US$	€	A$
Lithium SuperPack 12.8 V 200 Ah NG	2	2,400	2,064	3,772
MultiPlus-II 12/3000 2x120V	1	1,045	899	1,642
Cerbo GX MK2	1	278	239	437
Orion XS 12/12-70 A, one per engine	2	840	722	1,320
SmartSolar MPPT 100/30	1	144	124	226
Victron power		**4,707**	**4,048**	**7,397**

GLASS, ROUTER, CAMERAS	QTY	US$	€	A$
Quasar Glass 4 in, under hardtop	1	295	254	464
Quasar Glass 10 in panel, cabin	1	590	507	927
Safiery WRI router, 2.4 and 5 GHz Wi-Fi, 4G	1	425	271	495
IP camera, aft deck and anchor winch	2	298	256	468
Quasar Glass, router and cameras		**1,608**	**1,288**	**2,354**

STAR SWITCHING	QTY	US$	€	A$
STAR-Power, 100 A, main loads	1	643	553	1,010
STAR-Light, 40 A, cabin lighting	1	630	542	990
LIN Master Node, 6 buttons, CAN bridge	1	145	124	220
LIN Node, 6 button ports, IP67	3	375	321	588
Stainless RGB push button, icon	24	386	332	607
Cable, node to switch	24	151	130	238
NMEA 2000 5 pin cable, master and nodes	4	88	76	140
STAR switching, 24 switches		**2,418**	**2,078**	**3,793**

TANKS, SENSORS, SHORE	QTY	US$	€	A$
STAR-Tank, fresh water	1	240	206	377
Ruuvi temperature and humidity, cabin	3	192	168	297
Bilge alarm sensor IP68, Bluetooth	2	96	86	152
Door and hatch sensor, Bluetooth	2	76	68	118
Shore power disconnect, Shelly EM Gen3, 50 A	1	70	62	110
NMEA 2000 backbone estimate, 5 drops	1	250	215	393
Tanks, sensors, shore, backbone		**924**	**805**	**1,447**

	US$	€	A$
System total, remote included	**9,657**	**8,219**	**14,991**

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3. Apple HomeView integration



RELEASE: 13 November 2026, globally, as Apple HomeView ships. Safiery will publish a full video.

NEEDS: Safiery WRI router.

> *"Incredible value for a 7 in screen with integrated multi-media and a true Apple ecosystem."*

Apple HomeView does not have an app store and supports only Apple certified devices. STAR controllers are Matter and Apple certified and connect natively. STAR-Rover contains 14 Matter and Apple certified electrical clusters that show the Victron connected devices when a Venus GX is used. Apple HomeView supports all Matter devices directly, around 2,000 of them, and scenes can be set combining devices.

Two ways in. One set of tiles.

- **Victron over Bluetooth.** STAR-Rover reads SmartSolar, SmartShunt, Orion XS and the rest of the Victron Bluetooth range directly. No GX, no data wires. Monitoring only. The data is written into the Matter clusters inside STAR-Rover, which keeps the Victron device data on the Matter fabric.
- **Wi-Fi to the Cerbo GX.** STAR-Rover joins the boat Wi-Fi and takes the whole system from the Cerbo GX: every VE.Direct and VE.Can device, shore power, AC loads and totals, with on and off control. The data is written into the Matter clusters inside STAR-Rover, which keeps the Victron device data on the Matter fabric.

Pair once by QR code in the Home app. Battery, solar, inverter, lights and fans appear as native tiles on Apple HomeView, with Siri, scenes and automations, and no Safiery app in the loop. Victron readings land in 14 standard energy endpoints beside STAR-Rover's own lights and fans: energy meters for each solar charger and inverter, energy storage devices for the house and second bank, energy transfer devices for the DC-DC converters and the BMG, aggregators for the whole boat, and a charging tile for shore or tender charging. Standard clusters only, no custom clusters.

Which Victron device feeds which tile. Solar: SmartSolar MPPT, MPPT RS, SolarSense 750. Battery: SmartShunt, BMV-712 Smart, Smart Battery Sense, Lithium Battery Smart, Lynx Smart BMS, Smart BMS 12-200 and CL. DC-DC: Orion XS, Orion-Tr Smart, Smart BatteryProtect. Inverter: Inverter Smart, Sun Inverter, Inverter RS, Multi RS. Charging: Blue Smart IP22 and IP65 chargers. Through the Cerbo GX: MultiPlus, Quattro and everything on VE.Direct and VE.Can, plus shore power, AC loads and system totals. The Victron encryption key for each Bluetooth device is added once to STAR-Rover.

VICTRON INTEGRATION: Apple HomeView needs Matter. STAR-Rover gives the Victron system a Matter face: Matter 1.4 certified by the Connectivity Standards Alliance and validated for Apple Home. CAN, NMEA 2000, Bluetooth and MQTT traffic stays inside the boat and is not exposed to Matter.

KEY NUMBERS

- **14** Matter electrical endpoints in STAR-Rover for Victron energy
- **0** data wires: Bluetooth, or Wi-Fi to the Cerbo GX
- **1** QR code pairing in the Home app, no Safiery app in the loop
- **2,000** Matter devices Apple HomeView works with

Apple, Apple Home and HomeView are trade marks of Apple Inc. Matter is a trade mark of the Connectivity Standards Alliance.

3. Apple HomeView integration. Images and website links with pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
STAR-Rover, 30 A, 4 x 15 A, RGBW, Matter node, Victron WiFi interface – ONLY one needed for many HomeView units.	US$284	€244	A$447
Safiery WRI router, 2.4 and 5 GHz Wi-Fi, 4G USA Model modem is FCC compliant and a higher cost than other regions – ONLY one needed for many HomeView units.	US$425	€271	A$495
Apple HomeView, sold by Apple, at launch	US$299	Apple regional price	A$449

Standard clusters. Native tiles.

One Matter 1.4 node, 20 endpoints, standard device types and clusters only. ● on this path, ◐ on this path, read only.

Apple HomeView tile and what the owner sees	STAR-Rover endpoint	Matter device type	Victron Bluetooth	Cerbo GX Wi-Fi
SWITCHING, STAR-ROVER'S OWN CHANNELS				
Lights, one tile per channel: on, off, dim	1 to 4	Dimmable Light	●	●
Colour light: colour and brightness of the RGBW group	5	Extended Color Light	●	●
Fan: on, off, speed	1 to 4, set to fan	Fan	●	●
ENERGY METERS				
Solar, one tile per charger: live watts, energy today [1]	6 to 8	Energy Meter	●	●
Inverter, one tile per inverter: live watts, energy today [1]	9, 10	Energy Meter	●	●
Sixth meter, assigned at setup: shore or alternator [1]	11	Energy Meter	●	●
BATTERIES				
House battery: state of charge, charging or discharging	12	Energy Storage Device	●	●
Second bank: start, thruster or tender battery	13	Energy Storage Device	●	●
DC-DC AND MOTOR GENERATOR				
DC-DC converter 1 and 2: power flow, on or off [2]	14, 15	Energy Transfer Device	◐	●
BMG belt motor generator: power flow, on or off	16	Energy Transfer Device	●	●
WHOLE BOAT				
Solar plus battery: total in, total out	17	Aggregator	●	●
All inverters: total out	18	Aggregator	●	●
Whole system: total in, total out [3]	19	Aggregator	●	●
CHARGING				
Shore or tender charging: charge state, on or off [2]	20	EVSE	◐	●
COMMISSIONING				
Pairing by QR code, diagnostics, software update over the air [4]	0	Root node	●	●

[1] Lights, fans and battery state of charge show in every version of the Home app; the Energy Meter, Energy Transfer and Aggregator tiles show where the Home app draws the Matter energy clusters.

[2] Victron over Bluetooth is monitoring only; on and off for DC-DC converters and chargers needs the Cerbo GX path.

[3] Over Bluetooth the totals cover the devices STAR-Rover can see; the Cerbo GX path adds shore power and AC loads.

[4] Apple HomeView needs a Wi-Fi router on board to operate, with STAR-Rover on the same network. Safiery can supply the Quasar WRI Router for this.

The Descriptor cluster sits on every endpoint. CAN, NMEA 2000, Bluetooth and MQTT traffic stays inside the boat and is not exposed to Matter. STAR-Rover is Matter 1.4 certified by the Connectivity Standards Alliance and validated for Apple Home. Apple, Apple Home and HomeView are trade marks of Apple Inc. Victron is a trade mark of Victron Energy B.V. Matter is a trade mark of the Connectivity Standards Alliance. STAR and Quasar are trade marks of Safiery.



Air-conditioning/heating control on the HomeView tile. Its possible to bring up any air-conditioning system that has an RS485 or LIN bus interface. Discuss the application with us.

4. Tank monitoring: fresh, grey and black water, and now gasoline and diesel, with STAR-Tank Release X



RELEASED: 2024. CE and FCC certification. DAME Award nominee 2024.

> *"The new programming App makes this the easiest to install tank monitor, with accurate results. Pairs directly to the Victron GX Touch displays. Now also paired with a phone app for set up and firmware upgrades."*

One battery radar sensor sits on top of each tank. Nothing is wired to it and nothing is cut into a plastic tank. STAR-Tank is a 60 GHz phased coherent radar: one reading every 60 seconds, 1 mm repeatability, and the tank temperature is reported with the level. It glues on top of plastic or thick GRP, any wall thickness, and bolts to the SAE 5 hole pattern machined into its base on a metal tank. Fresh, grey and black water with foam, and now gasoline and diesel. Battery CR2477, 3 to 5 years, user replaceable. Billet aluminium, IP66.

Release X firmware adds phone connectivity for setting up tanks from 200 mm to 8,000 mm high. It also includes firmware upgrades and the ability to switch a sensor from water to either gasoline or diesel fuel. One sensor covers every tank, so there are no depth variants to stock.

VICTRON INTEGRATION: STAR-Tank is a native Bluetooth sensor in Venus OS. Enable Bluetooth sensors on the Cerbo GX, switch each one on, and the tanks appear on the GX Touch, the Victron app and VRM with level, temperature and sensor battery voltage. No tank module, no analogue input, no CAN drop. A Nano USB Bluetooth adapter on the Cerbo is recommended, because the Cerbo's internal Bluetooth switches off when the processor runs hot.

With Quasar Glass. When paired directly with Quasar Glass over Bluetooth there is no need for Victron Venus integration. A 4 in Quasar Glass Bluetooth panel reads the sensors itself, with no GX device and no NMEA 2000 backbone, and the levels are also in the free Quasar Glass App. Any number of tanks.

For the dealer. No loom to every tank, which is where the labour goes. Bluetooth range is about 40 m through metal skins in a typical build. Warranty 5 years on non-metal tanks, excluding the battery, and 1 year on the SAE metal fit.

KEY NUMBERS

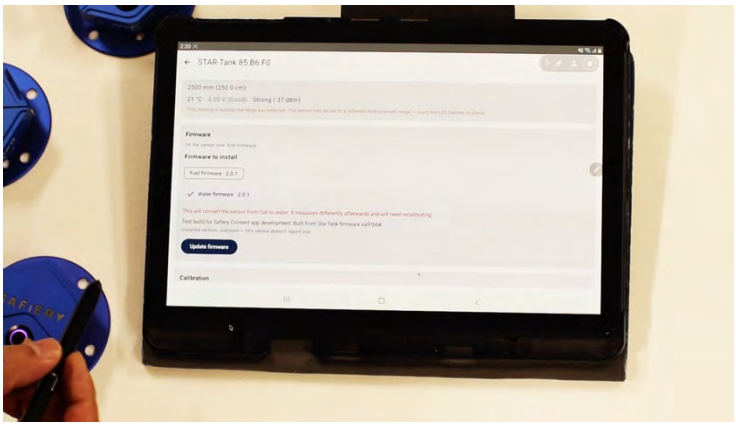
- **0** wires to the tank: battery and Bluetooth only
- **1 mm** repeatability from a single one shot radar reading
- **3 to 5 years** on one battery
- **200 mm to 8,000 mm** tank height with Release X

4. Tank monitoring. Images and website links with pricing

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
STAR-Tank, fresh, grey or black water, each	US$240	€206	A$377
STAR-Tank, diesel or gasoline firmware, each	US$240	€206	A$377
Nano USB Bluetooth adapter for the Cerbo GX	US$15	€13	A$24
Quasar Glass 4 in Bluetooth monitoring panel	US$295	€254	A$464
Four tanks on a Cerbo GX already on the boat: Four sensors Bluetooth direct to Cerbo GX	US$975	€839	A$1,532
Four tanks with no Victron Cerbo GX: Four sensors plus a 4 in Quasar Glass panel	US$1,255	€1,079	A$1,972

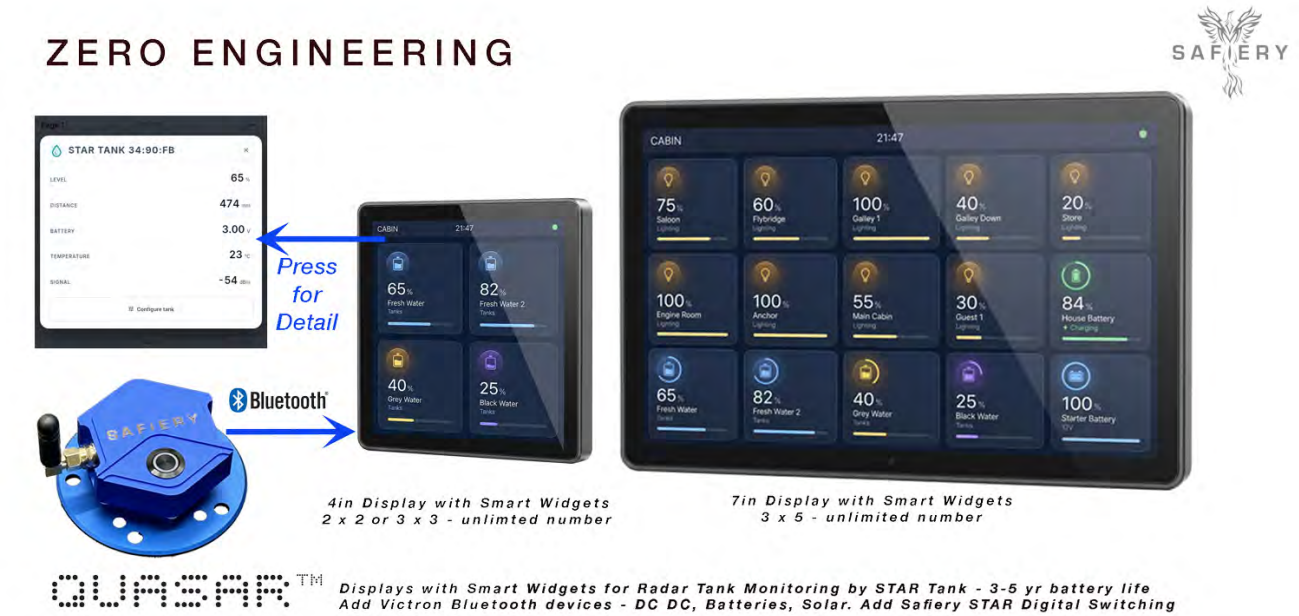
New App arriving soon for STAR-Tank



Firmware Updates. The App checks the current version and if required will identify a new app as available. The user can move between the water and fuel firmwares easily.

No Victron. No Problem. Quasar Glass:

When paired directly with Quasar Glass over Bluetooth there is no need for Victron Venus integration. A 4 in Quasar Glass Bluetooth panel reads the sensors itself, with no GX device and no NMEA 2000 backbone, and the levels will also in the free Quasar Glass Tank App.



5. Digital switching. The STAR range

RELEASED: 2024. CE, UKCA, RoHS, FCC and eMark certification for vehicles. DAME Award nominee 2024.

> *"The most certified switching product on the market. There are nine ways to execute a switch output, and one of them is from the Victron GX Touch displays."*



Operates:

- With Bluetooth to Quasar Glass Bluetooth.
- With CAN connected to Venus OS, switched from the Victron display or from any Quasar Glass display running Power and Vision.
- With Wi-Fi, using the Safiery WRI router and Matter, with no Victron system connected.

Fuseless digital switching and dimming for 12 and 24 V boats and RVs. One NMEA 2000 or VE.Can cable to the Victron system and it is plug and play: STAR controllers are listed natively in Venus OS, so the switching pages appear on the Cerbo GX touch screen and the remote console with nothing to configure. Every output is cut off by hardware in 80 millionths of a second on a short, so there are no output fuses to fit. No hub and no master: each switch talks straight to its controller, and a controller or a switch can be added without reprogramming the rest. Every controller carries backup buttons on the unit that drive its outputs directly, so the circuits work at the controller with no CAN, no Quasar and no display.

Three controllers, one family. All 12 to 24 V, fuseless, Bluetooth and CAN, NMEA 2000 connector.

- **STAR-Power.** 6 x 30 A plus 6 x 10 A dimmable, 100 A total, positive switching, anodised aluminium, 12 backup buttons on the face, 163 x 122 x 28 mm.
- **STAR-Light.** 12 x 10 A with 8 dimmable, 40 A total, positive or negative, up to 2 RGBW lights, anodised aluminium, 121 x 105 x 28 mm.
- **STAR-Rover.** 4 x 15 A, all dimmable, 30 A total, positive or negative, 1 RGBW light, ABS IP65, compact crimp and seal, 101 x 66 x 27 mm. Also the Matter node for Apple HomeView.

Nine ways to switch any STAR controller channel.

1. The Victron GX Touch display and remote console.
2. Quasar Glass and the Quasar Glass App.
3. Bluetooth wall switches.
4. CAN keypads.
5. LIN Node stainless push buttons.
6. An NMEA 2000 multi-function display.
7. Your own switches, through STAR-Switch Custom.
8. Apple HomeView and Siri, through Matter.
9. The backup buttons on the STAR-Power controller.

Up to six switches can work each channel, and the state is confirmed wherever it was switched.

AI configurator. Use Quasar Concierge to lay out the boat or RV online and get the channel plan, wiring and parts list.

VICTRON INTEGRATION: Native in Venus OS. One VE.Can or NMEA 2000 cable. Switching pages on the GX Touch and the remote console: dimming, colour, scenes and confirmed state.

KEY NUMBERS

- **12** channels on STAR-Power and STAR-Light
- **100 A** STAR-Power total, 6 x 30 A plus 6 x 10 A
- **80 µs** hardware cut-off on a short circuit
- **12 or 24 V** systems, one range

5. Digital switching. Images and website links with pricing



This is the helm station of a new McConaghy 86GT power catamaran.
The customer wanted an all open source operating system with 30in screens that can move between navigation (using TimeZero) Multi-media, Netflix, facetime calls and 20 other apps they listed. There is no traditional MFD at the helm.

It is being handed over on November 5th and once Apple HomeView is released and available, the owner wants each cabin upgraded. Why? HomeView has intercom capability as well as all the seamless Apple apps. This is only possible because of the open Matter system and STAR controllers certification with Apple.

It has 12 x STAR-Powers, 6 STAR-Lights and 4 x STAR-Rovers. There is a total of 300 I/O. The power system is Victron.

The digital switching was configured, labelled on screens and tested in around 1 hour using Safiery's Quasar Concierge AI configurator. The input was the engineering table of terminations in an excel spreadsheet.
Why can this be done with STAR controllers but not with Garmin Empirbus nor CZone?
Because the STAR controllers operate on Matter as well as CAN to Victron. Matter is an open source framework. The AI agents just chew through it in around 10 seconds per output. The file is saved and the documentation published.

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
STAR-Power, 100 A, 6 x 30 A plus 6 x 10 A, Matter node, Victron Native Switching	US$643	€553	A$1,010
STAR-Light, 40 A, 12 x 10 A, 8 dimmable, 2 x RGBW, Matter node, Victron Native Switching	US$630	€542	A$990
STAR-Rover, 40 A, 4 x 15 A, RGBW, Matter node, Victron Native Switching	US$284	€244	A$447
STAR-Switch Custom, six wired inputs, synchronises with Victron Switching	US$173	€148	A$271

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6. LIN Nodes with individual switches: RGB indicator ring, auto dim and pre-check

DIGITAL SWITCHING ADD-ON: for the STAR range, and beside CZONE.



RELEASED: Shipping Q1 2027. IP67 case. Buttons sealed to IP67, vandal resistant to IK09 and rated for one million presses. Built to the automotive LIN silicon standard: AEC-Q100, minus 40 to plus 125 °C, ISO 7637-2 transient immunity. Auto brightness and Pre-check: patents applied for.

> *"LIN goes straight to CAN. Smart buttons anywhere. State you can trust. No panel, no cut-outs, no stickers."*

LIN was developed by the automotive industry as a low cost CAN interface. The result is a LIN node cost near one tenth of CAN, which is why every modern car carries CAN for the drivetrain and chassis and LIN for the hundreds of small things on the body. A steering wheel is a LIN cluster; so is a door, a seat and a mirror. A button bit on LIN becomes a bit in a CAN message with no protocol translation, just packaging

Six sealed stainless push buttons plug into each LIN Node, which sits out of sight behind the helm. Each lit ring shows the checked state of the circuit, not just the position of the button, including trips and changes made from the MFD or the Victron GX. Icons are laser annealed into the stainless cap, so nothing peels, fades or has to be fitted at commissioning. Drill any 19 or 22 mm hole where the helm wants it and plug the button into the node: no template, no custom fascia, no label sheet. Replacing a button or a node is plug and play, with no reprogramming.

One bus. The first node in the chain is the LIN Master Node. It carries its own six buttons and is the LIN master for up to seven more nodes, 48 circuits on one bus, and the CAN bridge to the STAR controllers and the NMEA 2000 backbone. The nodes share one 12 V and LIN feed on standard NMEA 2000 5 core cable. Button assignment is set from a ten minute spreadsheet.

Auto dim. Full RGB rings with 12-bit dimming, 4,096 steps per channel, holding steady down to 1 percent for night watch. High, Medium and Dim presets are set once for all nodes, and a small plug-in ambient light sensor on any button port dims the rings automatically (patent applied for). Rings are always a colour, never white: 5 to 30 mA at full daylight brightness, 5 mA at the Dim night preset, and 24 circuits draw 24 mA idle with the rings dark.

Pre-check. One button runs every STAR circuit in turn, compares the measured current with the value learned at commissioning, and alarms on the ring of the affected button (STAR only, patent applied for).

Beside CZONE. Keep CZONE on the MFD. The circuits you put on LIN buttons run on STAR controllers alongside it and are shown on the MFD. Circuit state is published on NMEA 2000 (PGN 127501 and 127502) for any MFD, with no partner programme needed.

VICTRON INTEGRATION: STAR output state drives the rings over CAN, so the button ring, the Victron GX switching page and the MFD always show the same state.

KEY NUMBERS

- **560 ft** (171 m) less wire on a 24 circuit boat
- **54 lb** (24 kg) less copper
- **40%** fewer install hours, about 5.7 hours saved
- **15%** lower installed cost on average

Comparison for a 24 circuit installation: 12 circuits at 25 A and 12 circuits at 10 A. Savings vary with the boat, the layout and the number of circuits. CZONE is a registered trade mark of its owner and is not affiliated with this product.

6. LIN Nodes. Images and website links with pricing

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
LIN Node, six button ports, IP67	US$125	€107	A$196
LIN Master Node, six buttons plus LIN master and CAN bridge, first in the chain	US$145	€124	A$220
Stainless RGB push button with laser annealed icon, each	US$16.10	€13.85	A$25.30
Cable, node to switch, each	US$6.30	€5.42	A$9.90
NMEA 2000 5 pin cable, 3 ft, each	US$22	€19	A$35
Example switch layer: one LIN Master Node, three LIN Nodes, 24 buttons and cables			



Layout for pricing table below

APPLICATION NOTE / QUASAR LIN SWITCH NOD

24 buttons on one bus.

Line totals in US$ RRP ex tax, EUR ex VAT and AUD with 10% GST

24 point switching: LIN switch layer

ITEM	QTY	US$	€	A$
LIN Master Node, 6 button, CAN bridge, IP67 case	1	145	124	220
LIN Node, 6 button, IP67 case	3	375	321	588
Cable, node to switch	24	151	130	238
Stainless RGB push button, laser annealed icon	24	386	332	607
NMEA 2000 5 pin cable, 3 ft	4	88	76	140
Switch layer, with LIN master		**1,145**	**983**	**1,793**

STAR switching for the 24 points

ITEM	QTY	US$	€	A$
Switch layer, with LIN master, from above		1,145	983	1,793
STAR-Power, 6 x 30 A + 6 x 10 A	1	643	553	1,010
STAR-Light, 12 x 10 A, 8 dimmable	1	630	542	990
LIN Node + STAR, 24 point switching, Pre-check included		**2,418**	**2,078**	**3,793**

Same 24 points on CZONE, for reference

ITEM	QTY	US$	€	A$
CZONE 6 Way Waterproof Keypad, fixed 2 x 3, 52 mm cut-out	4	1,080	928	1,696
CZONE Combination Output Interface (COI), 4 x 25 A + 12 x 10 A	1	1,850	1,591	2,907
CZONE Contact 6 Plus, 6 outputs	1	650	559	1,021
CZONE, 24 point switching (22 outputs)		**3,580**	**3,078**	**5,624**

The benefit

ITEM	QTY	US$	€	A$
CZONE, 24 point switching (22 outputs)		3,580	3,078	5,624
LIN Node + STAR, Pre-check included		2,418	2,078	3,793
Saving with LIN Node + STAR, about 32% off		**1,162**	**1,000**	**1,831**

US$ is RRP ex tax; EUR is ex VAT; AUD includes 10% GST. Safiery items at the RRP in the Works Natively with Victron brochure (LIN Master Node US$145, LIN Node US$125; the v7 note showed US$159 provisional and US$126.30). CZONE prices approximate, from published retail listings, converted at 0.86 to the US$ for EUR and at 0.70 to the US$ plus 10% GST for AUD; confirm with your distributor. Both columns exclude the MFD, cable runs and freight. Line totals rounded to whole units.

Copyright 2026 Safiery Pty Ltd Twenty Patents filed

7. CAN rubberised keypads and Bluetooth wall mount switches

DIGITAL SWITCHING ADD-ON: for the STAR range.

> *"Switch it your way. Up to six switches can work each channel, and every one of them shows the real state."*

- **CAN keypads.** 8 or 12 backlit rubber buttons with interchangeable icons, on the CAN or NMEA 2000 cable. The LEDs follow the channel, however it was switched. Press once, twice or three times for one channel, the other or both, in white, amber or gold. Any button can be a master or sub-master for a group of channels.
- **Bluetooth wall switches.** STAR-Switch SP4 backlit and battery Quad switches on a coin battery. No wiring, place anywhere, and the screen shows every press. Up to 80 wireless switches, each locked to its own ID. Range up to 100 m line of sight and about 40 m in a typical cabin or RV.
- **Your own switches.** STAR-Switch Custom takes six wired inputs, read high above 8 V or low below 3 V, each set as momentary, toggle or latched. Every input becomes a virtual switch that works any STAR channel, with AND, NAND, OR and NOR logic, interlocks such as pump off when the engine starts, CAN for safety logic and MQTT over Wi-Fi.

VICTRON INTEGRATION: Every switch, however it is pressed, updates the switching page on the Victron GX Touch and the remote console, and the GX can switch the same channel back.

KEY NUMBERS

- **6** switches can work each channel
- **80** Bluetooth switches, each locked to its own ID
- **100 m** Bluetooth range line of sight, about 40 m in a cabin
- **6** wired inputs on STAR-Switch Custom, with logic and interlocks

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7. CAN rubberised keypads and Bluetooth wall mount switches. Images and website links with pricing

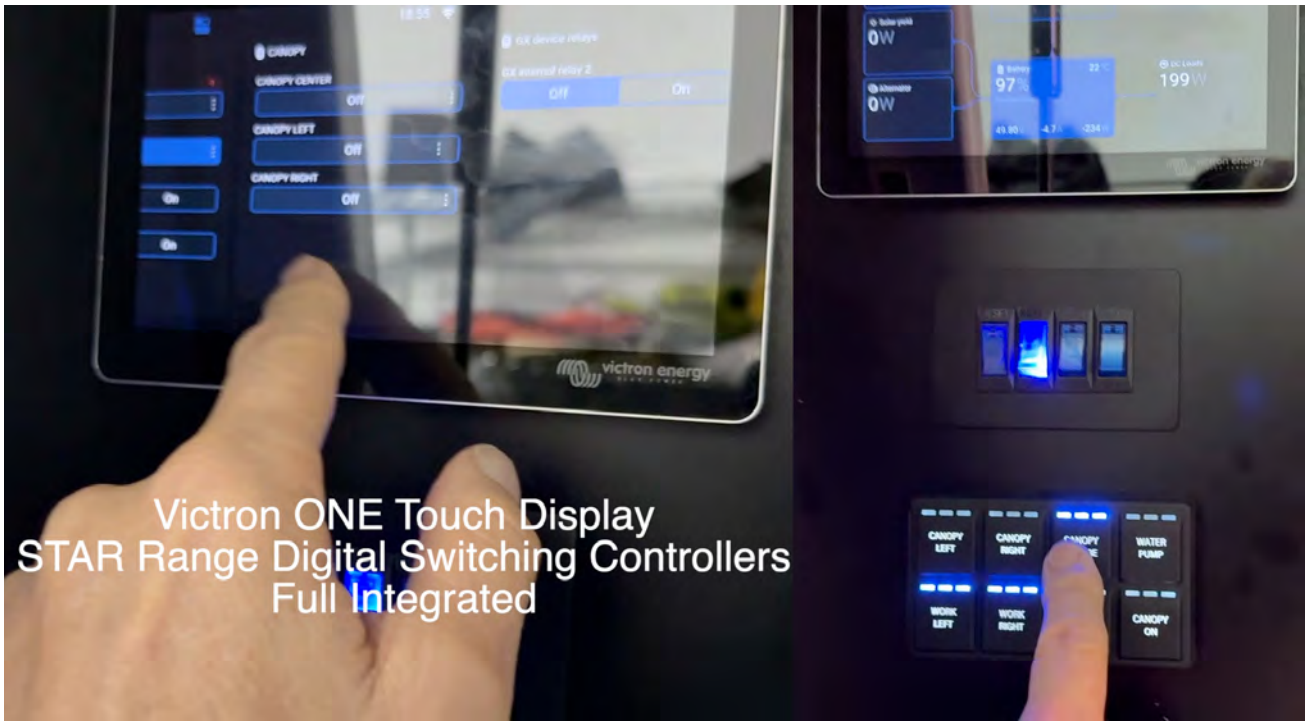
Website











Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
CAN keypad, 8 button, rubberised engravable IP67	US$142	€121	A$223
CAN keypad, 12 button, interchangeable buttons IP67	US$309	€265	A$487
STAR-Switch SP4 Bluetooth wall switch	US$163	€139	A$233
STAR-Switch Quad battery wall switch	US$64	€55	A$100
STAR-Switch Custom, six wired inputs	US$125	€107	A$196

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8. DC-DC converters, 12 V to 800 V







RELEASED: 2023. Scotty AI V3 is the current model. Scotty AI 3000 holds E-Mark type approval under UNECE Regulation No. 10 (vehicle EMC). IP66 enclosure. DAME Award nominee 2023.

> *"100% protects the alternator. Variable power from 100W to 3000W in either direction, between 12, 24, 36 and 48 V. Keep the alternator, upgrade the storage, and watch it on the Victron GX."*

Scotty AI is a high power bidirectional DC-DC converter: up to 3 kW in either direction, with a 1.5 kW model for smaller loads. One voltage pair per unit. Auto-precharge works without a high side battery present or active.

- **Scotty AI 1500.** 12 V to 24, 36 or 48 V, 1.5 kW.
- **Scotty AI 3000 / 12 V.** 12 V to 24, 36 or 48 V, 3 kW.
- **Scotty AI 3000 / 24 V.** 24 V to 48 V, 3 kW.

NEW RANGE COMING IN 2027:

- **Scotty AI 10 kW 48 / 48 V.** 24 to 96 V on side A, 40 to 60 V on side B, built for high energy hydrogeneration. Q3 2027.
- **Scotty AI 10 kW 48 / 400 V.** 40 to 60 V on side A, 260 to 420 V on side B. Q3 2027.
- **Scotty AI 10 kW 48 / 800 V.** 40 to 60 V on side A, 560 to 1,000 V on side B. Q3 2027.

Nine ways to use it.

1. Charge the 48 V battery bank while the alternator is spinning, and discharge to 12 V while it is off.
2. Run 12 V loads from 48 V storage with no 12 V battery.
3. Run two on dual engines as master and slave, in perfect sync.
4. Power 24 V equipment from a 48 V bank.
5. Still have a 12 V inverter but moving up to 48 V? Run the 12 V inverter through Scotty AI, up to 3,000 W.
6. Three voltages, 12 V, 24 V and now 48 V? No problem. Scotty AI has 3 CAN ports.
7. Charge a 36 V bank through an outboard or an existing 12 V charger.
8. Control BMG charging over CAN while supplying 12 or 24 V services from the 48 V bank.
9. Run the BMG and Scotty AI at the same time, for up to 11 kW continuous.

Above 48 V. Three 10 kW Scotty AI models arrive in Q3 2027: 48 / 48 V to 96 V, 48 / 400 V and 48 / 800 V. Until then, for high voltage builds Safiery supplies and integrates a 20 kW isolated bidirectional DC-DC between the 48 V house bank and a 600 to 800 V DC link, water cooled, IP67, controlled over CAN from Quasar.

VICTRON INTEGRATION: Wi-Fi setup and auto-tune from the Scotty AI app. Compatible CAN BMS integration and Victron GX display integration, so the Scotty AI shows in Victron GX devices beside the Victron chargers and inverters on the same bank.

Batteryless and direct-motor set-ups need controlled start-up, specified pre-charge and load sizing. Match the model and voltage pair. Ratings are up to, in either direction; output depends on current limits, temperature, source capacity and battery or load requirements.

KEY NUMBERS

- **3 kW** in either direction
- **1.5 kW** model also available
- **IP66** enclosure, E-Mark type approved, UNECE R10
- **Auto-precharge** without a high side battery present or active

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8. DC-DC converters.





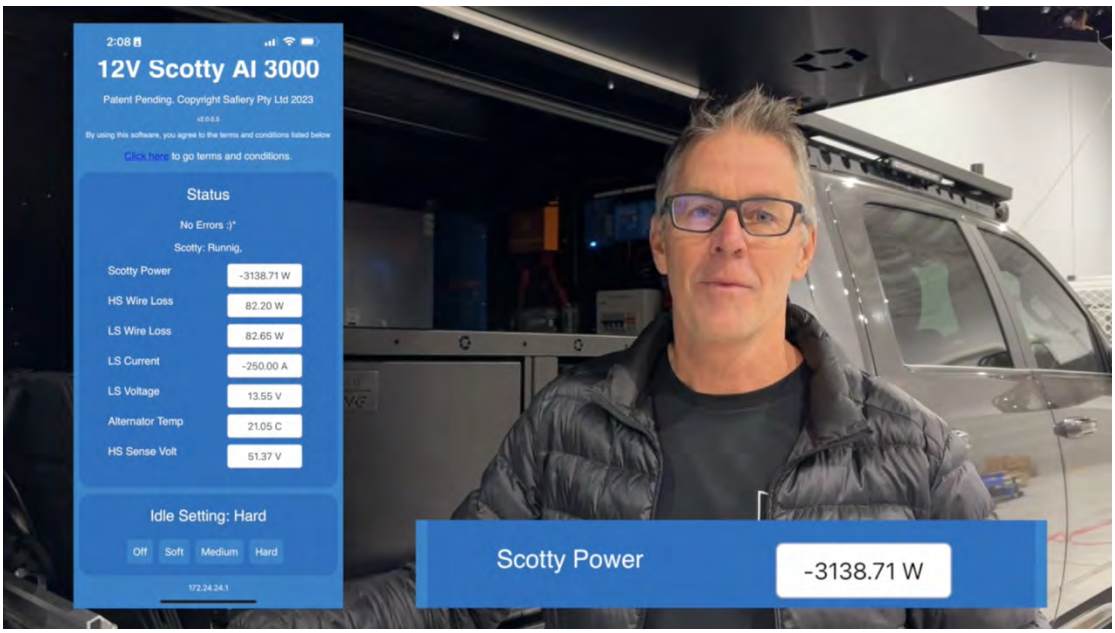




Scotty AI is eMark Certified for both the 12V and 24V models

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Scotty AI 1500, 12 V	US$1,382	€1,184	A$2,171
Scotty AI 1500, 12 V in square case that fits solid state lithium battery with connecting straps to terminals.	US$1,382	€1,184	A$2,171
Scotty AI 3000, 12 or 24 V	US$2,580	€2,211	A$3,685
Scotty AI 10 kW models, 48 / 48 V, 48 / 400 V and 48 / 800 V, Q3 2027	TBA	TBA	TBA



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9. Belt motor generators (48 V alternators)



RELEASED: 2025. Automotive platform: ISO 26262 ASIL B, IP6K9K. Appears natively as an alternator in Victron GX displays.

> *"No genset. 5 kW at idle and 10 kW peak from the main engine, with the inverter inside, and the BMG shows in the Victron GX as an alternator."*

The BMG is a 48 V bidirectional belt motor generator. Think of it as an advanced alternator with rare earth magnets and an inverter built in, instead of diodes or a remote regulator. One unit, 7.3 kg, on a J180 mount, so there is no separate rectifier or regulator to mount and wire. Hybrid excitation combines permanent magnet efficiency with adjustable field control, and dual three-phase hairpin windings give high power density in a compact machine. It holds output at low engine speed and is limited by temperature, not rpm: 5 kW at engine idle, about 7.5 kW continuous at high idle and above, and 10 kW peak for 20 seconds. 85 percent net efficiency, generator 90 percent and inverter 94 percent, against 50 to 60 percent for a hot alternator.

Set up without a DC-DC. The BMG with the Scotty BMG controller has no DC-DC and delivers 48 V to any CAN or non-CAN 48 V battery, up to a 58 V maximum charge profile.

Power that responds. Torque sensing backs off on engine overload, so the BMG can run on a 30 hp motor. Output is regulated as motor and inverter temperatures change. Compatible CAN BMS integration and stop-charge input. Integrated load dump protection. Dual windings give half power on a fault.

Any battery. Charges any 48 V battery safely, on CAN or not, with an open source interface. Scotty AI takes over BMG control and supplies the 12 or 24 V house from the 48 V bank, so the separate BMG controller is not needed when a Scotty is fitted.

Fitment. Two sizes in the J180 mount, with mounting options for selected Yanmar, Volvo Penta and Cummins engines, single and twin, and fitment confirmed for each engine. N62 mount for the Mercedes Sprinter.

Why 5 kW at idle matters. A cruising couple with an electric galley and hot water uses about 10 kWh a day. About 85 minutes motoring puts that back. A 48 V alternator with an external regulator gives 0.2 kW at idle, so the boat keeps a generator or runs the engine hard.

Predictive maintenance with Quasar CARE. The BMG is also a sensor on the engine itself. There are six sensor elements in the table below. The BMG has a re-purposed exhaust temperature sensor. Each is a feature the agents compute, a baseline they learn for this engine.

Function	Feature computed	Drift means
Run profile	Hours run, starts, cold vs hot starts, idle fraction, rpm histogram, over-rev and reverse events	Service due by real hours and load; excessive idling on DPF diesels; failed-start pattern
Idle quality	Idle rpm mean and scatter by warm-up state; exhaust temp at idle	Rising scatter: injectors, air leak, idle control; rising idle exhaust temp: fuelling or back pressure
Load acceptance	Rpm dip and recovery time per Nm of crank torque applied; exhaust temp rise per kW	Larger dip or slower recovery: lost capacity (compression, fuel delivery, filters, turbo)
Starting	Cranking speed, time to first fire, time to stable idle, attempts, cranking torque, all by temperature	Slower start at same temperature and battery: glow plugs, fuel, compression, friction
Cooling and engine bay	Temperature rise per kW at a given ambient; derating onset load	Rising rise per kW: radiator, fan, ventilation; derating at moderate load is the early warning
Energy share	Mechanical power into the BMG as a share of engine output; exhaust temp per kW charged	Charging scheduled onto efficient rpm and load points; overload avoided

VICTRON INTEGRATION: The BMG appears natively as an alternator in Victron GX displays, and the BMG temperature also displays in Victron. Scotty AI app set up and monitoring, with Victron GX display integration.

KEY NUMBERS

- **10 kW** peak output, 20 seconds
- **7.5 kW** approximate continuous output
- **5 kW** at engine idle
- **85%** peak net efficiency, generator plus inverter

Peak rating 20 seconds at 105 °C and above 5,000 BMG rpm. BMG rpm is not engine rpm. Output varies with engine, pulley ratio, temperature and battery acceptance.

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9. Belt motor generators. Competitive information and pricing

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
BMG on J180 billet mount, 10 kW inverter to 48 V No DC DC Includes NEW BMG controller, phone app, 2 CAN ports **This has no DC DC and is competitive comparison to others.**	US$4,248	€3,643	A$6,675
BMG with 12 V house: BMG plus Scotty AI 1500 DC DC integrated	US$5,274	€4,520	A$8,288
BMG with 24 V house: BMG plus Scotty AI 3000 DC DC integrated	US$6,814	€5,840	A$10,708

POWER AGAINST ENGINE SPEED

What each machine gives, and when

48 V, hot	Safiery BMG	APS 48 V 170 A + WS500	Integrel E-Power 9	Integrel E-Drive
Load Dump that may destroy system.	100% not possible. Inverter on rear and response is 25 ms.	Needs 2 sec advance warning to avoid. Not uncommon.	Controlled Power. Highly unlikely.	Controlled Power. Highly unlikely.
At engine idle	5 kW	0.2 to 0.5 kW Needs high idle for any power.	2 to 3 kW at 700 rpm, up to 4 kW on some engines	About 2 kW
Continuous	Minimum of 7.5 kW at high idle and above. Typically 8-8.5kW.	3.6 kW at 3,000 alt rpm, 5.2 kW at 4,000	7 to 8 kW at cruise, well ventilated	About 11 kW at 1,900 to 2,200 rpm
Peak	10 kW for 20 s	170 A, about 9 kW, full speed	9 kW, 170 A, temperature limited	15 kW stated
Conversion efficiency	Generator 90%, integrated inverter 94%, Combined is 85% net	Alternator 50 to 60% hot External Regulator not published.	External bridge rectifier; efficiency not published	Inverter drive; 4.1 to 4.7 kWh per litre on trials
Weight	7.3 kg, inverter included	Alternator plus regulator box	11.9 kg plus 5.4 kg controller	In the driveline
Fitment	J180 mount; Yanmar, Volvo Penta, Cummins	Stock position, plus regulator harness and shunt	Large frame on the engine front	Yanmar JH 40 to 110 hp, factory fit
Network	Published CAN to Scotty AI, Victron GX, Quasar	Published CAN, NMEA 2000, Victron	Proprietary Argo CAN	Proprietary Argo CAN

APS figures from its published UPI 100 °C comparison sheet May 2025, in alternator rpm; engine idle of 750 to 850 rpm is 2,250 to 2,550 alternator rpm on a 3:1 pulley. Integrel figures from the E-Power datasheet 1.8, the E-Power and E-Drive user guides and the Integrel FAQ. BMG peak is 20 s at 105 °C above 5,000 BMG rpm; BMG rpm is not engine rpm.

PROTECTION AND CONTROL

What keeps the engine and the bank safe

	Safiery BMG	APS alternator + WS500	Integrel E-Power and E-Drive
Engine load	Torque sensed; backs off on engine overload. Can operate with a 30 hp motor	No torque sensing; field limit set by installer	Load management in controller
Temperature	Motor and inverter sensed, output regulated	Alternator sensor to regulator	Air cooled; output falls when hot
Battery	CAN BMS integration, stop charge input	V, A and temperature targets; CAN to BMS	Proprietary CAN to own BMS
Load dump	Integrated, 100% protected	External protection needed	In the controller
Redundancy	Dual three phase windings, half power on a fault	Single winding	Single winding
Standards	Automotive platform, ISO 26262 ASIL B, IP6K9K	No functional safety rating	Marine rated

US$ RRP, October 2026, excluding battery, house inverter, installation, freight and tax. Competitor figures from published datasheets, user guides and retail listings; brand names belong to their owners and none is affiliated with this product.

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10. Solid state lithium. The 48V 3C

38TH AMERICA'S CUP NAPLES, ITALY

SAFIERY

OFFICIAL BATTERY

RELEASED: 2026. IEC 62619, UN38.3, CE with EMC. Design patent registered for the interlocking case and integrated straps.

> *"The battery used by the America's Cup. Tested to 1 m under-water for 30 minutes, then back up and the power turned on. That is a capsize in an AC boat. Stack them, strap them, switch every pack from the helm or over CAN, and let Victron DVCC run the charging."*

Semi-solid state lithium iron phosphate, 48 V 3C: 150 A continuous from a 20 kg pack, 160 A for 2 seconds, 2,788 Wh (53.4 Ah at 48 V), and 6,000 cycles at 80 percent depth of discharge at 0.2C. IP67. Packs lie flat at 150 mm or stand 250 mm high on edge, lock into each other and join with power straps down the side: no battery boxes, no cable runs, up to 20 packs in one bank. Charge 0 to 55 °C, discharge minus 20 to 65 °C. The cells have been tested by nail penetration, 200 kN crush, 130 °C heat and extended short circuit.

WHAT VICTRON BATTERIES CAN'T DO, AND WHY THIS IS USED BY THE AMERICA'S CUP:

- **3C discharge. 150 A. 7,500 W per battery.**
- **Switchable charge and discharge MOSFETs on every pack:** controlled by CAN.
- **Remote battery on/off:** a push button with LED on every pack, and one remote button at the helm switches all connected packs.
- **The Bluetooth app:** shows every connected battery as one system, not as individual batteries.

Add a heater. Batteries can be ordered with the heater option. The heater runs on the charge MOSFETs only and cannot discharge the battery.

Charge it three ways. From a mother ship's 12 or 24 V system through Scotty AI at 1,500 or 3,000 W, both ways, with the tender in the water. Fast 48 V DC shore charging, with the charge limits set over CAN. Or up to 10 kW from the BMG on the engine. Two packs run a 10 kW tender motor, four packs run 30 kW.

VICTRON INTEGRATION: Victron ready, with a CAN BMS on Victron protocols, NMEA 2000 output and a wired stop charge signal. Select DVCC on the Cerbo GX: the battery then sends its charge voltage limit over VE.Can and drops it to float when the pack is full, so the Victron chargers cannot overcharge. Set the MultiPlus or Phoenix inverter low voltage cut-off in the inverter as usual; DVCC does not set it.

WARRANTY: 5 years on CAN control, 3 years with no CAN control.



KEY NUMBERS

- **150 A** continuous at 3C, to 5% SOC
- **2,788 Wh** per pack, 53.4 Ah at 48 V
- **20 kg** per pack, 420 x 252 x 150 mm
- **6,000** cycles at 80 percent depth, 0.2C discharge

Output varies with temperature, installation and battery state.

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10. Solid state lithium. Pick the propulsion motor. Read off the batteries.

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
12V 1C pack, 2,788 Wh, 20 kg, ex works Arundel	US$1,867	€1,601	A$2,935
24V 1C pack, 2,788 Wh, 20 kg, ex works Arundel	US$1,867	€1,601	A$2,935
48V 3C pack, 7.5kW power, 2,788 Wh, 20 kg, ex works Arundel	US$1,867	€1,601	A$2,935
Heater option, per pack	US$92	€81	A$140
Remote helm switch button	US$26	€23	A$42
Power straps and interlocks	US$40	€38	A$63

A 3C battery changes how a propulsion bank is sized. Two batteries answer the power question. Everything after that is range, and range is a number you choose. The same batteries serve a house bank, a thruster or a windlass, and stack into whatever space the boat has.

SIZING FOR ELECTRIC PROPULSION

With conventional lithium the number of batteries is set by the current the motor needs. With a 3C battery, two carry 15 kW continuously, so the count is set by how far you want to go. Both answers for each motor size:

MOTOR	LIGHTEST BANK FOR THE POWER	LARGER BANK FOR RANGE
10 kW	2 batteries · 5.6 kWh · 42 kg	3 batteries · 8.4 kWh · 63 kg
15 kW	2 batteries · 5.6 kWh · 42 kg	4 batteries · 11.3 kWh · 84 kg
20 kW	3 batteries · 8.4 kWh · 63 kg	5 batteries · 14.0 kWh · 105 kg
25 kW	3 batteries · 8.4 kWh · 63 kg *	6 batteries · 16.7 kWh · 126 kg
30 kW	4 batteries · 11.2 kWh · 84 kg	8 batteries · 22.6 kWh · 168 kg

* Three batteries give about 22.5 kW continuous. Suits a 25 kW motor that reaches full power only in bursts.

STACKING

Each battery is 150 mm deep, so it lies flat or stands on edge and takes the same footprint either way. Batteries lock to each other and the positive and negative power straps bolt straight across, so a stack wires itself. Two stacks either side of an engine room hold 45 kWh. Each battery has its own push button with an LED; one remote button at the helm switches every connected battery.

CHARGING, THREE WAYS

— **From the inverter charger.** Standard CAN BMS. Each battery accepts up to 50 A and asks the charger for 30 A over CAN.

— **From the house bank.** A 1,500 W or 3,000 W DC-DC moves power between the 12 V or 24 V house circuits and the 48 V bank, in either direction. Low voltage, safe to plug in while afloat.

— **From the engine.** A bidirectional motor generator on a second bracket charges at 10 kW DC, at about 90 percent efficiency. It looks like an alternator. It is not one.

WHY SEMI SOLID STATE

Most of the electrolyte in a conventional lithium cell is liquid, and the liquid is what burns. A semi solid state cell replaces most of it with a solid, so there is less to ignite, the separator can be thinner, and the cell runs cooler under load. Cycle life roughly doubles. The cells here are automotive EV grade A lithium iron phosphate, 3.2 V and 53.4 Ah, and the whole cell temperature range is visible in the app and over CAN.

HOW IT CONNECTS

VICTRON
CAN BMS in Victron's protocol. The inverter, chargers and GX see every battery and take charge voltage and current limits from it.

NMEA AND ABYC
NMEA output puts the bank on the boat network. A wired stop-charge output meets the ABYC requirement to halt charging sources.

BLUETOOTH APP
One app, every connected battery comes into the one status screen: state of charge, current, and each cell's minimum and maximum temperature.

ONE BUTTON
A push button with LED on each battery. One remote button at the helm turns every connected battery on or off.

Cells	**LFP semi solid state, EV grade A**
Configuration	**16S, 3.2 V 53.4 Ah cells**
Nominal voltage	**51.2 V**
Capacity	**53.4 Ah, 2,788 Wh**
Continuous discharge	**150 A, 3C**
Peak discharge, 2 s	**160 A**
Maximum charge	**50 A, CAN requests 30 A**
Charge voltage, cut-off	**57.8 to 58.4 V, 40 V**
Internal resistance	**Under 16 mΩ**
Cycle life to 80 percent	**10,000 at 0.2C**
Weight and size	**20 kg, 420 × 252 × 150 mm**
Enclosure	**ABS case, IP67**
Parallel	**Up to 20 units**
Charge temperature	**0 to 65 °C, below 0 with heater**
Discharge temperature	**−20 to 65 °C**
Protection	**Voltage, current, temperature, short**

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11. High density solid state lithium with electrochemical impedance spectroscopy. HiBlade



STATUS: Orders open. IP67 marine enclosure. 8 patents filed on the Quasar BMS and the HiBlade battery.

> *"6,750 Wh in 29 kg. Then it tests every cell every day and tells you weeks before a fault. VIRTUALLY 100% SAFE. This battery reports 70 sensor values every day from new. This means 100% assurance on Quality."*

HiBlade is a 48 V hybrid solid state battery with the Quasar BMS. 42 thin cells stand on edge like blades, and heat leaves up the tabs into a billet aluminium heat sink. Most of the liquid electrolyte is replaced by solid material, so there is much less to burn. 235 Wh/kg at pack level, 150 A continuous, 200 A for 20 minutes subject to heat transfer, and 250 A for 2 seconds, 135 Ah at 50 V nominal, 100 A charge, 1,500 cycles to 80 percent, 400 x 300 x 188 mm. 26 BMS logic functions, selectable and configured by the user. [confirm: the HiBlade sheet lists 25 functions]

The Quasar BMS looks ahead. Most lithium safety systems wait for something to go wrong, then react. The Quasar BMS runs electrochemical impedance spectroscopy (EIS) on board, on every cell group, every day: a small, harmless signal from 0.1 Hz to 1 kHz, measured to 10 µΩ on an automotive grade NXP chipset. Above 1 kHz it reads the metal (welds, busbars, joints, compression), 100 Hz to 1 kHz the coating, 1 to 100 Hz the reaction, where safety faults show first, and below 1 Hz the structure. Every weld and joint is tested at the factory and the result is signed and sealed as the battery's birth certificate; every later reading is judged against it. Fifteen fault types from one daily measurement: plating, soft shorts, weak welds, dryout, lost compression and more.

When it finds something. Advisory: logged and trended, the owner and the dealer can see it. Caution: charge trimmed, with the named cell, the named cause and the weeks left. Warning: charge and discharge gently reduced, dealer notified. Protect: the pack limits itself, without waiting for anyone. Protection lives in the battery and works with no network.

Built into every pack. Banks that share: up to 128 in parallel, the pack doing too much is limited and the weakest pack charges first. Charger lock-out: a wrong or mis-wired charger is found and refused within a tenth of a second. Longer life: a gentler charge window that narrows with age, resting at 75 percent on shore power.

VICTRON INTEGRATION: BMS CAN, plug and play with Victron, with a native Victron CAN interface and DVCC as for the 48V 3C. NMEA 2000 port. The record stays with the battery and no subscription is needed to read it. Add a Quasar ONE and the bank appears in the Quasar Twin, each pack green, amber or red.

WARRANTY: 3 years, extended to 5 years with a continuous Quasar subscription.

KEY NUMBERS

- **235 Wh/kg** at pack level
- **150 A** continuous, 200 A for 20 minutes, 250 A for 2 s
- **1,500** cycles to 80 percent
- **4 to 8 weeks** early warning, typical

Early warning windows are typical estimates against each cell's factory baseline, with field validation under way. HiBlade, Heartbeat and Quasar are trade marks of Safiery.

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10. HiBlade.

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
HiBlade 48 V, 6,750 Wh, 29 kg	US$4,553	€3,903	A$7,155
Price in currency per Wh	US$0.674	€0.578	A$1.06

Key Engineering Advantage for new Electric Propulsion: 100% Automatic Solid-State Commissioning

Installers ***never*** need to wire external pre-charge resistors, hold manual bypass push-buttons, or replace sacrificial inrush fuses. Pressing the HiBlade ON button initiates an automated pre-charge and impedance diagnostic sequence that tames a **5,000 A prospective capacitor surge** into a controlled 80 A ramp before closing the main solid-state power path.

Quasar BMS Logic Functions

25 functions in one page. Revision 2, installed in Ver 2.1, 25 September 2026. Safiery have filed 8 patents covering many of these features.

HARDWARE SAFETY

0 **Hardware protection against electrical abuse.** A comparator, dual MOSFET stack, redundant current sense and a pyro fuse act in microseconds on their own, so no software function has to be the last line of defence.

CHARGE SOURCE CONTROL

1 **Over-voltage charger detection and lock-out.** On any new charge source the BMS briefly opens the path, reads the charger's true setpoint, and refuses a wrong one within a tenth of a second.

2 **Alternator soft-off sequencing.** 48 V alternators must be under BMS CAN control so their output is wound down before the charge path opens, avoiding a load dump.

3 **Electrochemical Impedance Spectroscopy (EIS).** A daily sweep of every cell group measures four resistance values and compares them with the cell's factory birth certificate to give weeks of warning across 15 failure modes.

4 **Charge taper verification.** A good charger tapers current near the voltage limit; one that keeps pushing full current is identified within seconds and refused.

5 **Graduated escalation.** Confirmed deviations step through Advisory, Caution, Warning and Protect, acting on the trend before an event rather than waiting for a trip.

6 **Matched-condition measurement across the bank.** Every pack is swept in the same rested window at the same temperature and state of charge, clear of mains ripple, so pack-to-pack comparison is valid.

MECHANICAL AND STATE OF CHARGE

7 **Heartbeat pressure-informed charge control.** Four stack pressure sensors, cross-checked against impedance, stop charging when pressure and cell temperature together reach the mechanical limit.

8 **Low-current measurement.** A 10 mA floor with 0.5 mA resolution means standby loads of a few watts are counted, so the SOC reading stays honest instead of sitting at 100%.

9 **Low state-of-charge dwell monitoring.** Time spent sitting at low SOC is counted and flagged, catching calendar ageing that is not a fault and would otherwise go unseen.

PARALLEL BANK MANAGEMENT

10 **Impedance-informed load sharing.** A pack drawing more than its share is rested from discharge for part of the cycle, so the lowest-resistance pack is no longer overworked and cooked.

11 **Staircase charging on limited supply.** On a poor solar day all charge current goes to the lowest pack first, while every pack keeps discharging to the boat.

12 **Cell-group discharge isolation.** One cell group at its limit opens only its own battery's discharge path until the next charge rebalances it; the rest of the bank keeps the vessel powered.

13 **Joining packs at different states of charge.** A new or replacement pack is held open and joins by itself when the voltages come into a safe window; the installer matches nothing.

INTERFACES

14 **Native inverter and charger CAN interface.** Standard BMS CAN is plug-and-play with Victron, other protocols are selected by a button sequence, and NMEA 2000 is monitoring only.

15 **Auxiliary power for independent MOSFET control.** A protected low-current output keeps a supervisory device alive after load-shed so charge and discharge can be switched remotely; a 6,750 Wh pack stands by for 9 months at 1.5 W.

DIGITAL TWIN AND DIAGNOSTICS

16 **Automatic digital twin.** Adding Quasar ONE builds the model of the battery bank and runs two independent AI agents, one checking the other, to judge the EIS results.

17 **Nyquist plots on board.** Per-cell-group impedance plots and a green, amber, red status are shown on the local display with nothing to set up.

LONGER LIFE

18 **Longevity operating window.** Default limits of 4.15 V charge and 2.835 V discharge give 30 to 50% more cycles for about 7% less capacity, and the window tightens itself as the cells age.

19 **AC shore-power relax.** The BMS hears a mains charger in the current ripple, tells shore power from a genset, holds 100% for 24 hours after arrival, then rests the pack at 75% on the dock.

20 **Active bus-side impedance.** A short extra sweep with the switch closed measures the capacitors, cables and joints on the DC bus, so a drying converter or a loosening connection is trended.

21 **Passive spectral listening.** The battery's own current is turned into a spectrum every second and each line is matched to a known device, so alternators, chargers, pumps and compressors are watched without a sensor on any of them.

SCALE AND RECORDS

22 **Inter-pack communications and concurrent start-up.** Up to 128 packs coordinate over 1 Mbit/s CAN and each runs its own start-up checks, so start time does not grow with bank size.

23 **On-pack data retention.** Compressed impedance history lives on the pack for its whole service life, so a buyer, surveyor or insurer can read it later.

24 **Fleet scanning with AI agents.** A thousand vessels produce 95 million values a month; AI agents read and trend them and route issues to an engineer, with the first year included with the Quasar module.

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12. Quasar ONE, with built-in modem router and onboard eSIM. Unlocks Quasar Care



RELEASE: Order now, shipping January 2027. Billet anodised aluminium case, IP65. 10 to 60 V DC. Quasar ONE with AI onboarding is a DAME Award nominee for 2026.

> *"Know before you go. Not after the alarm."*

Quasar ONE is a stand-alone device that connects to a Victron Cerbo GX or Ekrano GX over Wi-Fi or Ethernet, to NMEA 2000 on one of its two CAN ports, and to RS485 and Modbus. Quasar Care finds every device on each network and onboards it automatically to the Quasar Twin in the cloud, over an AI harness. There is an onboard modem and eSIM. The first year of service with the 4G connection is included with the device; after that it is a subscription for the state of health.

Unlocks Quasar Care. At the other end of the AI harness is the Quasar Twin, which provides state of health, predictive and pre-check maintenance, and remote control from the phone. One AI model advises, a second from another vendor checks, and both can be replaced.

Quasar Care

> *"The boat you trust is the boat that tells you what is about to break. Found at the dock, not at six in the evening offshore. Pre-check the day before a big weekend on the water with one press on the phone."*

Quasar Care watches the digital twin of the boat, the Quasar Twin, in the cloud every day. The agents assess every signal against the boat's own history: predictive maintenance with weeks of warning instead of an alarm offshore, a pre-check the day before every trip so faults are found at the dock, and a vessel log that keeps every issue from first report to final fix, time stamped, for the life of the boat. Resale value rises with the log: a sea trial against the current vessel log proves the boat.

Works across all brands. Quasar Care reads Victron GX, NMEA 2000, Bluetooth sensors and the STAR and Quasar range through Quasar ONE. One twin, one log, whatever is fitted.

Remote control from the phone. The owner switches STAR circuits, turns the MultiPlus on, off or to charger only, and sets the shore current limit from the Quasar Glass App, aboard or away. Remote switching asks for local permission once per trip, and the owner decides what can be controlled remotely. Gensets and watermakers have no remote command path at all.

For the dealer and the builder. Log in remotely and read the history before you go aboard, so visits are shorter and the fix is recorded and re-checked. Every warranty issue is logged with its data and closed with the fix. Fleet performance by device shows a weak part across every boat you have delivered before it shows up in your inbox. And a share of every Quasar Care renewal on the boats you sell: 25 percent of each renewal from year 2, for the life of the plan. [confirm the dealer share]

VICTRON INTEGRATION: Reads the Cerbo GX or Ekrano GX over Wi-Fi or Ethernet, and the Victron devices appear in the Quasar Twin beside the engines, tanks and switching. Victron settings are read and written over Modbus TCP.

KEY NUMBERS

- **15 min** between health checks on every device
- **Weeks** of warning before a breakdown, not an alarm offshore
- **25%** of each renewal paid to the builder, from year 2
- **Year 1** of Quasar Care and the eSIM included with Quasar ONE

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12. Quasar ONE pricing

Pricing

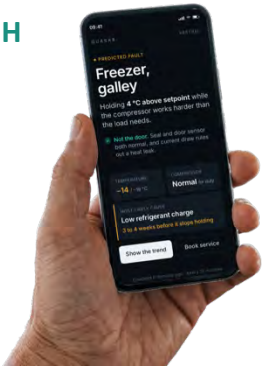
Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Quasar ONE with modem and eSIM, first year of cloud, eSIM and Quasar Care included	US$495	€426	A$778
Quasar Care subscription, from year 2	TBC		

HOW QUASAR CARE WORKS / FROM SENSOR VALUE TO STATE OF HEALTH

One million sensor values a month.

100% health monitoring is reading one million sensor values a month on a 50 ft power cat in use.

Safiery gives 100% assurance that there will be no false results, through a structured process that brings together the data from multiple sensors and understands the relationship between sensor values.



STATE OF HEALTH, ANALYSED EVERY 15 MINUTES

19 equipment classes, 154 failure modes, count per class

Propulsion engine 14	Bilge 6	Generator set 11	Lithium battery 15	12, 24, 48 V buses 18	Inverter/charger 9
Shore power 5	Solar 6	DC-DC converter 6	Windlass, thrusters 8	Lighting, exterior 4	Electric drive 9
Steering, actuators 8	Air conditioning 12	Refrigeration 7	Watermaker 5	Pumps 7	Tanks 4

Every device that may fail is in the semantic model and vessel log, and each failure mode is written in eleven fields:

ASSURANCE LADDER: THE EVIDENCE BEHIND A FINDING

A0 Uncorroborated trigger only
Logged, no notification, unless the mode is a local safety alarm or has an hours horizon (the trigger is the alert).

A1 Suspected one corroborator
Suspected. Shown in the health view; no alert on its own.

A2 Corroborated high assurance
Likely. On the diagnostic path the second host reviews it before anyone is told; a confirmation test is offered where the mode names one.

A3 Confirmed evidence plus proof
Confirmed. The write-back re-confirms the node and moves the mode toward validated in service.

ONLY AFTER THE DATA IS VALIDATED

Diagnosis only at validated data
Looks at the model relationships and the end points. Runs what-if scenarios and reverse logic on the streamed data.

Prediction a second agent reviews
To avoid undesired outcomes. Looks at the model relationships and end points, runs what-if scenarios and reverse logic on the streamed data.

Service work captured.

Patent applied for.

When a service agent records the action performed, the model updates itself. The finding closes in the vessel log. The node's baseline resets, so the new part is not judged against the old part's history. The hours counter restarts for the next service interval. The part, the date and the warranty record are logged against the node. The failure mode's warning time is marked as proven on this boat. Nothing is retyped. The technician's reply is the record, and the model is better for the next time.

The model holds all the data needed

Place	What feeds it, what it feeds, what drives it, what it cools and where it sits.
Sensors	Which sensors watch it, which are missing, and what each missing one would add.
Baselines	Normal, learned under stated conditions and reset after every repair.
Failure modes	What can go wrong, the evidence that confirms it, and how much warning to expect.
History	Every finding, every fix, who did it and what they found, for the life of the boat.

For the builder.

Commission once. Learn across the fleet.

One model per class. Failure modes and their evidence are written once per equipment class and bind to each hull by its wiring and plumbing. A new layout needs no new rules.

Known coverage. The model tells you which failures the standard fit can catch and which sensor would raise the rest. Decide at the drawing board, not after a call back.

Fleet learning. A fix recorded on one boat improves the warning for every boat you have built with that part.

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13. Quasar Master, with built-in modem router and onboard eSIM. Unlocks Quasar Concierge and Quasar Care

RELEASE: Order now, shipping January 2027.

> *"Home Assistant on board, native and pre-configured. Matter, Apple Home and Google Home, with scenes and automations that run with no internet."*

Quasar Master is the same hardware as Quasar ONE, with a CM5 compute module and NVMe storage added and a native Home Assistant stack pre-configured. The Victron integration loads directly into Home Assistant. Home Assistant brings Matter plus 50 or more integrations, Apple Home and Google Home natively, and scenes and automations stored locally: departure, arrival, bedtime and storage, which keep working with no internet.

Unlocks Quasar Concierge for the personal 3D screen. An AI portal that lets the user personalise the 3D display of a generic boat, camper or truck on the Quasar 10 in or 13.3 in touch screen. Add personalised buttons and widgets. Add animation. Upload photographs and describe how the screen should appear. Available in 12 languages. The service fee is based on the number of points and photographs uploaded, and the service can be extended or revisited for changes.

Unlocks Quasar Concierge for Victron and STAR range programming from a spreadsheet. An AI portal that programs the connected Victron system and the STAR range digital switching from an uploaded spreadsheet. The service fee is based on the number of points and devices to program, and the service can be extended or revisited for changes.

Unlocks Quasar Care. As for Quasar ONE: Quasar Care finds every device on each network, onboards it to the Quasar Twin over the AI harness, and provides state of health, predictive and pre-check maintenance with remote control from the phone. The first year of service with the 4G connection is included; after that it is a subscription. The service is identical.

Quasar Concierge

> *"Fill in one spreadsheet. The whole system, including the Victron products, is configured, checked and documented before the kit ships."*

Quasar Concierge is the common onboarding tool for every Safiery system, including the Victron products. The dealer or builder fills in one spreadsheet: circuits, loads, tanks, sensors, panel names, Victron serial numbers, the battery. The AI turns it into the STAR channel settings, the Quasar Glass pages and the Victron settings. It names every channel, places every tile, sets every charge voltage over the air, and powers up every Bluetooth device so its pairing code is already in the panels. A second AI checks the result before switch-on. It builds the engineering files in minutes for any size of system; a 300 point catamaran took about an hour. Then it answers as the boat's operating manual, in 12 languages.

3D displays. Concierge generates the 3D model of the boat for the Quasar Twin and the display, from the builder's CAD file or from photos of the boat. ZERO keyboard onboarding on the boat: take photos of the devices and talk it through, and Quasar learns the boat itself, with no typing and no set-up screens.

What it removes from the build sheet. A digital switching configuration day. A Cerbo GX set-up session. A pairing step per device at handover. The instance number clash when a second battery monitor appears. The service call when the owner's phone cannot find the boat.

VICTRON INTEGRATION: The Victron integration loads directly into Home Assistant, so the Cerbo GX system appears as Home Assistant entities beside the STAR circuits, tanks and sensors. Concierge sets the Victron charge voltages and settings over the air from the spreadsheet.

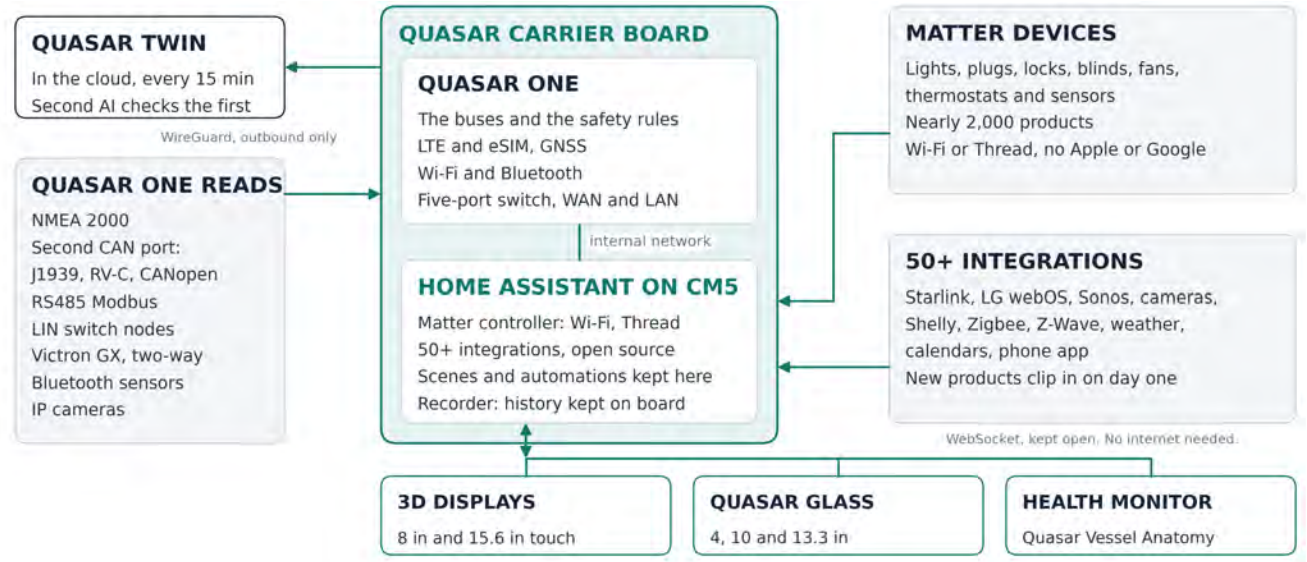
KEY NUMBERS

- **50+** integrations through Home Assistant on the CM5
- **12** languages in Quasar Concierge
- **1 hour** to program a 300 point catamaran from one spreadsheet
- **0** internet needed for local scenes and automations

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Matter on board. Set up on board. Stored on board.

Quasar Master is Quasar ONE with a Raspberry Pi Compute Module 5 slotted into the same carrier board, running Home Assistant. Matter devices, 50+ integrations and every Quasar signal come together in one open system that lives on the boat. No Apple or Google account is needed to add a device or make it do something, and all of it keeps working with no internet.



Quasar ONE electronics plus the CM5 puck running Home Assistant. Every device lands in Home Assistant as an entity; the displays and the health monitor each hold one WebSocket to it, kept open.

One carrier board, two products. The new Quasar Carrier board carries the Quasar ONE electronics: two processors, NMEA 2000, a second isolated CAN port for J1939, RV-C or CANopen, RS485 Modbus, the LIN switch bus, LTE with a global eSIM, GNSS, Wi-Fi, Bluetooth and a five-port managed switch with WAN and LAN ports. Without the CM5 puck it is a Quasar ONE. Slot the puck in and it is a Quasar Master. Home Assistant runs on the CM5, on the internal network behind the switch. Quasar ONE keeps the buses, the safety rules and the link to the Quasar Twin. Home Assistant brings the open world in.

Matter devices join the boat directly. Home Assistant is the Matter controller on board. Scan the Matter code on a new light, plug, lock, blind, fan, thermostat or sensor and it joins Home Assistant's own Matter network, over Wi-Fi or over Thread with the Thread radio fitted. Nearly 2,000 products carry the Matter mark. No Apple Home or Google Home hub, no Apple or Google account, and nothing sent to their cloud to pair it. The device belongs to the boat, not to a phone ecosystem.

Automations written on board and kept on board. Departure, arrival, bedtime and storage are scenes. Set them up on the display or the phone, or ask Quasar by voice, and Home Assistant stores them on the CM5. They run at anchor, in a marina with no signal and after a long lay-up, with no account or subscription to keep alive. If the owner later wants Siri or Google voice, Home Assistant can share the boat with Apple Home or Google Home. That is a choice, not a step.

Open source, so it keeps growing. Home Assistant is open source, run by the Open Home Foundation and thousands of contributors. On top of Matter it brings the 50+ integrations that count on a boat: Starlink dish status, LG webOS screens, Sonos and Spotify, ONVIF and RTSP cameras, Shelly shore power kits, Zigbee and Z-Wave with a USB stick, Bluetooth temperature and humidity sensors, weather and tides, calendars, and the phone app with push alerts and location. New products clip in the day they ship, with no wait for a Safiery driver.

Live displays and live health, one open connection each. The 8 in and 15.6 in 3D touch displays, the Quasar Glass panels and the Quasar health monitor each hold a persistent WebSocket to Home Assistant. State is pushed the instant it changes, commands and confirmations travel on the same connection, and none of it leaves the boat. The 3D displays spin, roll and switch to X-ray view to show tanks, batteries, pumps and wiring inside the hull. What the connection gives, and how health uses it, is overleaf.

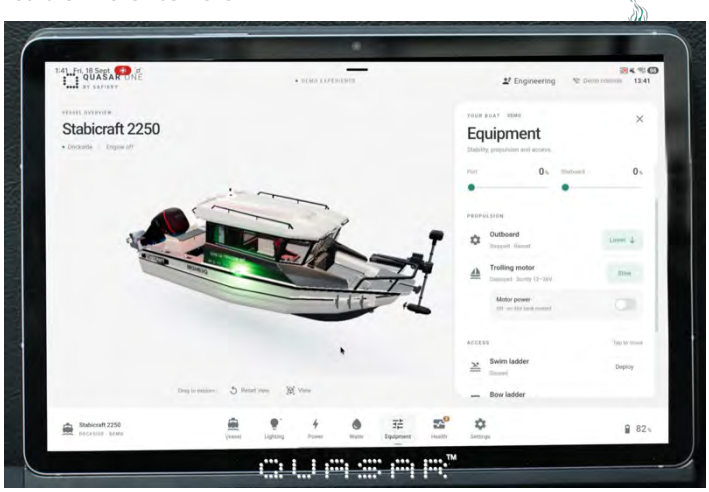
2,000	50+	0	15.6 in	15 min	10 to 60 V
MATTER PRODUCTS, NEARLY	BOAT INTEGRATIONS BEYOND MATTER	APPLE OR GOOGLE ACCOUNTS NEEDED	3D TOUCH DISPLAY, AND 8 IN	BETWEEN QUASAR TWIN CHECKS	SUPPLY

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Everything on board becomes an entity.

In Home Assistant every device is an entity: a named thing with a state and a history. A STAR circuit, a Matter light, a Victron inverter, an air handler on Modbus and a Starlink dish all look the same to a display or to the health model. Quasar ONE publishes every bus and sensor signal into Home Assistant, and Home Assistant hands every Matter device and integration back, so one open list describes the whole boat, and that list is held on the boat.

Quasar master enables a 3D display on the 7in, 10in, 13.3in displays. Quasar Concierge allows the user to customise the display to whatever they want.



THE PERSISTENT WEBSOCKET

Opened once, kept open. Each display and the health monitor log in to Home Assistant once, with a token, and keep the connection open. No polling, no refresh.

Push, not poll. Home Assistant sends each change the moment it happens, over the local network. A light switched from the 4 in Glass in a cabin shows on the 15.6 in saloon display at once.

Only what is on screen. A display subscribes to the entities it shows, so a small 8 in panel and the 15.6 in 3D view each get exactly the traffic they need, through the same interface Home Assistant's own dashboards use.

Command and confirmation on one path. A button press is a service call. The confirmed state comes back on the same connection, and the 3D view moves to the zone and settles on it to show the result.

History on the same connection. The recorder on the CM5 keeps history and long-term statistics. A trend for the health model or a display is one request away, with no cloud call.

No internet needed. Reconnects by itself. The connection never leaves the boat. If a display reboots or Wi-Fi drops, it reconnects and asks for current states once.

3D DISPLAYS

The 8 in and 15.6 in touch displays show the boat as a 3D model built from the builder's CAD file. Spin it, roll it, or switch to X-ray view to see tanks, batteries, pumps and wiring inside the hull. Controls sit in a flat button row under the model. Press one and the camera moves to that zone; when it settles, the change is confirmed. The buttons control. The twin confirms.

HEALTH MONITORING

The Quasar health monitor subscribes to the whole state stream over its own WebSocket. Every Matter device and every integration becomes a signal in the Quasar Vessel Anatomy, next to the NMEA 2000, Victron, STAR, LIN and Bluetooth data Quasar ONE already reads. The recorder on the CM5 keeps the history, so the evidence stays on the boat and local alarms work with no link. When the link is up, the Quasar Twin in the cloud checks the model every fifteen minutes and a second AI checks the first. The AI proposes. The boat decides.

OPTION: NVIDIA JETSON ORIN 16 GB

Adds voice and vision AI on board with no internet: conversation in twelve languages, vision AI notifications and a perimeter alarm ("Hey Quasar, who's outside?"), and edge AI such as auto docking where cameras are used. In vehicles: OBD-II, CAN TPMS to 14 points, CarPlay and Android Auto.

WHAT MASTER ADDS TO QUASAR ONE

Home Assistant on the CM5 puck
Matter plus 50+ integrations, open source, running on the boat.

Scenes and automations stored locally
Departure, arrival, bedtime, storage. Built on board, kept on board, no internet needed.

Apple Home and Google Home, native
When the owner wants Siri or Google voice. Never required to add a device.

8 in and 15.6 in 3D touch displays
Spin, roll, X-ray view. Controls in a button row, confirmation on the model.

Everything in Quasar ONE
Predictive health and the Quasar Twin on the AI harness, vessel log, trip log, ZERO keyboard onboarding, LIN switch nodes to 48 switches, LTE and eSIM, and the 4, 10 and 13.3 in Quasar Glass displays.

SPECIFICATION

Carrier board	**Quasar Carrier board, shared with Quasar ONE**
Compute module	**Raspberry Pi Compute Module 5 puck, running Home Assistant**
Marine networks	**NMEA 2000, RS485 Modbus RTU**
Second CAN port	**Isolated: J1939, RV-C or CANopen**
Switching bus	**LIN, up to 48 switches**
Matter	**Home Assistant controller; Wi-Fi devices, Thread with the radio option**
Victron	**Two-way Modbus TCP via the GX**
Ethernet	**5-port managed switch, WAN and LAN**
Radios	**LTE and eSIM, GNSS, Wi-Fi, Bluetooth, one antenna**
Displays	**Quasar Glass 4, 10 and 13.3 in; 3D touch 8 and 15.6 in**
Cloud	**Quasar Twin, checked every 15 minutes**
Security	**WireGuard tunnel, outbound only. Home Assistant on the internal network only**
Supply	**10 to 60 V DC**

STANDING. Quasar Glass itself does not use Matter; Matter and the consumer ecosystems come through Home Assistant on Quasar Master, with scenes and automations stored and run locally. Home Assistant is open source software and a trade mark of the Open Home Foundation. Matter is a trade mark of the Connectivity Standards Alliance. Apple Home, Google Home, Starlink, Sonos, Shelly and webOS are trade marks of their owners. Victron is a trade mark of Victron Energy B.V. Quasar is a trade mark of Safiery. Confirm pricing, case dimensions and power draw before print.

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13. Quasar Master. Images and website links with pricing

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Quasar Master with CM5, NVMe, modem and eSIM	US$595	€527	A$990
Quasar Concierge, personal 3D screen: fee by points and photographs uploaded	US$63	€56	A$95
Quasar Concierge, Victron and STAR programming from a spreadsheet: fee by points and devices	US$126	€112	A$195
Quasar Care subscription, from year 2	TBC	TBC	TBC

Quasar Concierge

Your boat set up by an expert, from your phone, in about an hour. No installer visit. No laptop. No manuals.

1

Scan the code on your router

Point your phone at the QR code. The Concierge opens in your browser. Nothing to install, no account to create.

2

Tell it what you want

Photograph your serial numbers or your switch list. Say which light is which. The Concierge asks the rest in plain English.

3

Approve. We do the rest.

You see exactly what will be set and tap Approve. Your system is configured remotely and you get a report to keep.

- Works with Apple Home, Google Home and Victron
- A Safiery engineer checks anything to do with batteries
- Your own operating manual, written for your boat, as a PDF on your phone
- Data SIM included, up to 5 years, nothing to pay
- Come back any time: changes, faults and updates, same QR code
- Have Victron with Venus OS? We program that too, through your Cerbo GX

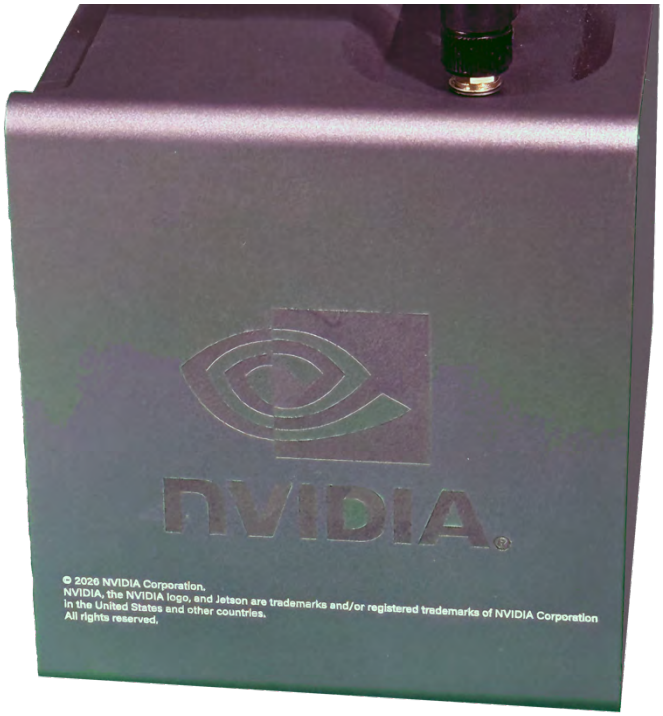
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14. On Board AI Harness with LLM running in NVIDIA Jetson on a 12 to 32 V powered carrier board

RELEASE: [confirm].

> *"Vision and voice AI on board, with no internet. The compute for cameras, lidar and radar, in a box that connects to Quasar Master by Ethernet, This is used for Auto-sailing and Auto-docking. "*

The NVIDIA Jetson sits on a Safiery carrier board powered from 12 to 32 V DC and connects to Quasar Master by Ethernet. It is required for the sailing experience additions that use the lidar and phase coherent radar sensors and the cameras: auto sailing to a waypoint, auto docking with cameras and radar, and the vision AI that watches the boat.



What it adds to Quasar Master. Conversational voice and vision AI on board, with no internet, in 12 languages. Vision AI notifications and a perimeter alarm, so the owner can ask who is outside. In vehicles: the OBD-II bus, CAN tyre pressure monitoring to 14 points, CarPlay and Android Auto.

Safety by design. The AI proposes and the boat decides. A separate processor hears a spoken stop and acts within 250 ms, outside the reach of the AI. Gensets and watermakers have no remote command path.

VICTRON INTEGRATION: Through Quasar Master. The Jetson adds compute for the cameras and sensors; the Victron system is read and controlled by Quasar Master as before.

KEY NUMBERS

- **12 to 32 V** DC powered carrier board
- **12** languages for voice and vision AI on board, no internet
- **250 ms** spoken stop, on a separate processor
- **360 degree** cameras and radar for auto docking

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14. On Board AI Harness with LLM running in NVIDIA Jetson on a 12 to 32 V powered carrier board

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
NVIDIA Jetson Orin 16 GB on the Safiery 12 to 32 V carrier board	US$2,500	€2,214	A$3,928
Lidar and phase coherent radar module	US$495	€426	A$778

This is used in conjunction with Auto Sailing and Auto Docking

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15. Safiery WRI modem router

RELEASE: Dec 2026

NEEDED BY: Quasar Glass Power and Vision, Apple HomeView, and STAR switching over Wi-Fi and Matter.

> *"One router for the whole kit: automated onboarding, remote management and software updates. Seamless and frictionless for the owner and the dealer."*



The Safiery WRI modem router runs OpenWrt. It is the Wi-Fi host for every Quasar Glass kit: 2.4 GHz for the STAR controllers, 5 GHz for the glass panels and the IP cameras, and an optional 4G modem. It connects to the Cerbo GX or Ekrano GX by Ethernet or Wi-Fi, carries the camera streams to the glass, and gives the Quasar Glass App its connection aboard with no internet.

Why it matters to the dealer. Automated onboarding: the kit arrives on one network with every device already found. Remote management access: Safiery can reach the kit for support and for the AI configuration service without a site visit. Software updates: the glass, the STAR controllers and the router itself update over the air. That is what makes the system seamless and frictionless for the user.

Cameras. Up to six IP cameras tested on one router. Power them with your own PoE switch connected to the WRI router.

VICTRON INTEGRATION: Ethernet or Wi-Fi to the Cerbo GX or Ekrano GX. Two taps on the remote console turn on Modbus TCP, and the Victron system is on the glass with full control.

KEY NUMBERS

- **2.4 + 5 GHz** Wi-Fi, 4G optional
- **6** IP cameras tested on one router
- **1** network for the whole kit, found automatically
- **OTA** updates for the glass, the STAR controllers and the router
- **500Mb** data included with 5 year horizon

Feature	What the customer gets
Dual band Wi-Fi, 2.4 GHz and 5 GHz	STAR controllers run on 2.4 GHz for range through partitions. Quasar Glass panels and cameras run on 5 GHz with 300 Mbps or more of real throughput on a fixed channel, so they join as fast as the STARs do. Quasar Glass Vision runs wirelessly: a camera appears on every screen in under two seconds, and STAR traffic never competes with video.
Simpler, cheaper installation	One 12 V feed to each panel, camera, STAR and the router. No Ethernet run to any screen, no PoE switch, no injector. A panel goes where it looks best, not where a cable can reach. Less installation time for the dealer.
One board for every market	The 4G modem is a plug-in Mini PCIe card (Quectel brand selected by region) fitted at Safiery's bench with the Safiery 1NCE SIM. The card carries its own regional approvals and can be swapped in service through a hatch without removing the board. Australia, Europe and the United States are quoted from one product.
Works with or without a data SIM	The router answers the "is there internet" check that phones, tablets and panels make, so the panels never report no internet on a boat or vehicle without a data plan. The customer adds the Safiery SIM for remote support and the AI Configuration Service when they want it.
Five Gigabit Ethernet ports	The Cerbo GX plugs into one. Four are spare for a wired camera, a commissioning laptop or a future device. No external switch.
Position for the vehicle log	The cellular card includes GNSS, so the router gives Quasar Cloud and the vehicle log a position fix without another device.
Built for the boat and the vehicle, not the desk	Safiery's anodised aluminium case matches Quasar ONE. 9 to 36 V input with transient and reverse polarity protection, so it runs from the house bank on 12 V or 24 V systems. The case is the heatsink: no fan, no vents. Labelled antenna connectors, a QR label with the Wi-Fi name and key, flat or DIN mount.
Proven hardware, certified as sold	The MediaTek MT7621 platform has been in mainline OpenWrt for years, and this unit has proven CE, FCC and RoHS approvals, which gives supply continuity. 512 MB of memory and 32 MB of flash leave room for future services such as the camera relay and an MQTT bridge, delivered as updates to routers already in the field. RCM, and CE RED for Europe, is tested on the assembled product with the Safiery image frozen, so the mark on the label applies to the router exactly as sold.

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15. Safiery WRI modem router. Images and website links with pricing

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Safiery WRI router, 2.4 and 5 GHz Wi-Fi, 4G USA Model modem is FCC compliant and a higher cost than other regions	US$425	€271	A$495
PoE switch for cameras	Customer supplied	Customer supplied	Customer supplied

Every Quasar Glass Power and Vision bundle ships with a 4G router. It hosts the bundle Wi-Fi, links the Cerbo GX, and carries remote support and the AI Configuration Service. This note gives the benefits of building that router on open source OpenWrt firmware rather than buying a proprietary router.

An open source OpenWrt router versus a proprietary router

OpenWrt is the open source Linux operating system used on well over a thousand router models, maintained by a worldwide community and kept current with the Linux kernel.

Safiery writes the software for the Quasar Glass WRI Router, so it sets itself up, survives a reset, stays secure, works with or without a SIM, and puts the cameras on every screen with no cable to the screen.

Benefit	Proprietary router	Quasar Glass Router on OpenWrt
Set up for Quasar out of the box	A general purpose router. Someone configures Wi-Fi, addresses and the Cerbo GX link on site, or Safiery pays the vendor to bake its settings in.	Configures itself as a Quasar Glass Router at first boot from its serial number: Wi-Fi names, a fixed address for every STAR, panel and the Cerbo GX, firewall and remote support. Plug and play for the installer.
Fixes and features when the customer needs them	A change means asking the vendor, waiting weeks and paying, or being told no. The vendor's release cycle sets the pace.	Safiery makes the change and releases a signed update over the air. Sales can commit to a fix date because Safiery controls the software.
Security that stays current	Often ships an old Linux kernel that the vendor stops patching within a year or two. A known hole stays open for the life of the boat.	Tracks a current Linux kernel with security fixes from the OpenWrt project, released by Safiery on its own schedule. The router stays secure for the life of the vessel or vehicle.
A factory reset never breaks the system	Holding the reset button wipes the configuration. The bundle goes dark until someone re-provisions it.	Per-unit settings and keys live in a protected part of flash. Holding reset restores the Quasar Glass Router, not a stock router. Fewer support calls and no dark boats.
Remote support that works	An undocumented management interface, and remote access usually means opening ports on the mobile connection.	Standard SSH and JSON-RPC behind an encrypted WireGuard tunnel that dials out to Safiery. Nothing listens inbound on the mobile side. The AI Configuration Service uses the same path.
No lock-in, no orphaned product	If the vendor changes the board, stops updates or closes, the product is orphaned and the customer's investment with it.	The firmware is Safiery's. If a board maker changes, the same image moves to another supported board. No vendor cloud, no hidden traffic. The customer does not depend on a third party staying in business.
Transparency for fleet and government buyers	Closed code. A tender question about what the firmware does and where its traffic goes cannot be answered.	Open code that can be inspected and audited. Safiery can state exactly what runs on the router and where every connection goes.
One product worldwide	A different router variant per region, each with its own firmware quirks and support history.	One image everywhere, with the region set at Safiery's bench. Same features, same manual, same training in every market.
Value for money	The price carries the vendor's software margin, and any custom work is extra.	No licence fees and no paying a vendor for firmware. The money goes into hardware the customer can see: dual band Wi-Fi, more memory, a metal case.

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Five wireless sensors for the spaces a power system cannot see

Five battery powered Bluetooth sensors bring the fridge, the bilge, the hatches, the cabins and the appliances into Quasar. Each sensor broadcasts over Bluetooth Low Energy and is received directly by Quasar Glass, Quasar ONE or Quasar Master. There is no hub, no data cable and no pairing app on board.
Each sensor has a unique Bluetooth address and is added to the vessel's Quasar setup once. Readings and alerts then appear on the Quasar Glass display, in the Quasar app and in the Quasar ONE vessel health record. Alerts are raised on the boat itself, so they work with no internet connection.

- Fridge and freezer temperature: a sealed tag inside the cabinet
- Equipment status: off, standby or running, with no wiring into the appliance
- Hatch and door: open or closed, with a tamper alarm
- Bilge water: a probe that reports water at the level you choose
- Cabin occupancy: occupied or vacant, with no camera so there is absolute privacy.

Fridge and freezer temperature sensor

A sealed tag sits inside the fridge or freezer and broadcasts the temperature. It is rated IP67, so frost, condensation and wash-downs do not affect it. Accuracy is ±0.3 °C or better between -30 and 40 °C, and the sensor meets EN 12830, the standard for temperature recorders used with chilled and frozen food.
Quasar shows the current temperature on the display and raises an alert when a fridge warms past a set limit or a freezer starts to thaw. One tag per cabinet is enough; fit a second to a separate freezer or an icebox.
The tag runs for about 2 years at default settings on a sealed coin cell and is replaced as a unit when the battery is spent. It weighs about 7 g and measures roughly 49 × 30 × 5 mm. Operating range is -30 to 60 °C.

Equipment status sensor

A stick-on sensor tells Quasar whether an appliance is off, on standby or running, with no wiring into the appliance. It reads the electromagnetic field a motor, compressor or transformer gives off when it works, and an accelerometer confirms movement and vibration. Fit it to the watermaker, the air conditioning compressor, a washing machine, a galley appliance or any pump that is not already switched by STAR.
From the on and off states Quasar can count starts and run hours, so service intervals follow actual use rather than the calendar. A sudden stop, or a machine that keeps running when it should have stopped, raises an alert on the display. A tamper alarm reports if the sensor is pulled off its machine.
The sensor runs about 3 years at default settings on a sealed 1,000 mAh lithium battery, reporting every 30 seconds and on every change of state. It has a buzzer and a status LED, a sealed wipe-clean housing for interior use, and mounts with an adhesive pad. Operating range is -20 to 60 °C.

Hatch and door sensor

A two-piece magnetic contact reports open or closed for hatches, lockers, the companionway and the engine room door. The sensor body fixes to the frame and a small magnet to the moving part; a gap of 10 to 20 mm is reliable and 25 mm is the limit. The magnet has no electronics, so it can go on the wet side of a hatch.
The sensor broadcasts the moment a hatch opens or closes and sends a periodic heartbeat in between. Quasar uses it for a hatch-open warning before leaving the berth, a fridge or freezer door left ajar, an engine room access record, and security alerts when nobody is aboard. A tamper alarm reports if the sensor is removed from its mounting, and the last 2,048 events are kept on the sensor.
It runs about 13 months at default settings on a replaceable coin cell, weighs 27 g including the battery and mounts with adhesive pads. The sensor body is for interior, dry locations. Operating range is -20 to 60 °C.

Bilge water sensor

A probe on a 1 m lead reports water at the height you fix it, while the sensor body mounts high and dry. Detection is on or off, not a depth reading: when water bridges the two probe contacts the sensor broadcasts a water alarm within a second, and clears it when the probe dries. Salt and fresh water both trigger it; oil and fuel do not.
It is an independent second line behind the float switch and bilge pump. Set the probe a little above the normal pump-on level and Quasar warns of a rising bilge before the pump has lost the race. The same sensor suits a shower sump, the chain locker, the space under a water heater or watermaker, and the bilge of a tender.
The probe is rated IP67 and fixes with a screw or adhesive. The body has a buzzer and LED, runs about 5 years at default settings on two replaceable AAA cells, and reports its state and battery level every second. Operating range is -20 to 60 °C.

Cabin occupancy sensor

The occupancy sensor tells Quasar whether a cabin, the heads or the saloon is occupied, with no camera and no microphone. A passive infrared (PIR) detector picks up movement, then a time-of-flight distance sensor confirms that someone is still there. A person asleep in a berth reads as present, which a PIR sensor alone cannot do.
One sensor is paired to the Quasar Glass display in its cabin. Quasar uses occupancy to run the air conditioning and lighting for the people actually aboard, to show a heads-occupied indicator, and to set an empty cabin back to an economy setting. The distance channel also works as a plain level gauge for a dry-goods locker or a tank you can see into from above.
PIR range is 3 m across a 100° by 20° field; the distance sensor reads to 2.5 m (5 m on request) within ±10 mm. The head tilts through 150° so the PIR and distance sensors can face different ways. It runs about 5 years on a replaceable 2,700 mAh lithium battery, has a tamper alarm, and mounts with an adhesive pad or the supplied magnetic bracket. It measures 110 mm by 34 mm diameter, weighs 72 g, and is for interior use at -10 to 45 °C in non-condensing conditions.

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Installation and Bluetooth coverage on board

Bluetooth reaches 100 to 150 m in open air, but on a boat allow 10 to 20 m through timber or composite bulkheads and none through steel or aluminium. Every Quasar Glass display, Quasar ONE and Quasar Master is a receiver, so coverage grows with each display fitted. Place each sensor within reach of the nearest receiver, with line of sight where possible.
All five sensors arrive ready to broadcast and are added to the vessel's Quasar setup by their unique address. Battery level is reported with the readings, and Quasar warns when a battery is low. Four of the five take replaceable batteries; the fridge tag is replaced as a unit.

- Fridge tag: on a shelf or the cabinet wall, away from the evaporator plate and the door
- Equipment sensor: flat on the appliance casing, close to the motor or compressor
- Hatch sensor: body on the frame, magnet on the moving part, 10 to 20 mm gap when closed
- Bilge sensor: probe at the alarm level, body above the highest water you expect
- Occupancy sensor: on the headlining or bulkhead at the head of the berth, facing the cabin

Specification summary

All five sensors use Bluetooth Low Energy 5.0 and are received by Quasar Glass, Quasar ONE and Quasar Master. Battery life figures are at default reporting settings.

	Fridge and freezer temperature	Equipment status	Hatch and door	Bilge water	Cabin occupancy
Reports	Temperature	Off, standby, running	Open, closed	Water present, none	Occupied, vacant, distance
Sensing method	Digital temperature sensor, ±0.3 °C	Electromagnetic field plus accelerometer	Magnetic contact, 25 mm max gap	Conductive probe on 1 m lead	PIR 3 m plus time-of-flight 2.5 m (5 m option)
Reporting	Periodic reading	Every 30 s and on change	On change plus heartbeat	Every 1 s	On movement, then distance check
Battery	Coin cell, sealed	1,000 mAh lithium, sealed	Coin cell, replaceable	2 × AAA, replaceable	2,700 mAh lithium, replaceable
Battery life	2 years	3 years	13 months	5 years	5 years
Operating temperature	-30 to 60 °C	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C	-10 to 45 °C
Ingress protection	IP67	Sealed wipe-clean housing, interior	Interior, dry location	IP67 probe, body in dry location	Interior, non-condensing
Alarm on the sensor	None	Buzzer and LED	None	Buzzer and LED	None
Tamper alarm	No	Yes	Yes	No	Yes
Standards	EN 12830				

Pricing

Item	US$ RRP, ex tax	RRP EUR, ex VAT	RRP AUD, GST included
Fridge and freezer temperature	US$22	€20	A$35
Equipment status	US$58	€51	A$91
Hatch and door	US$38	€34	A$60
Bilge water	US$48	€42	A$75
Cabin occupancy	US$80	€70	A$126

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WHO WE ARE: Gold Coast, Australia.

We own the whole stack. Safiery designs and makes the electrical system of modern boats and vehicles: the power conversion, the battery, the switching, the controllers and the software that ties them together, with AI on top. We believe in hybrid cloud architectures.

Partnering with Victron Energy. STAR-Tank and STAR controllers have native access to Victron's GX ecosystem. Scotty AI, the BMG and Solid State Lithium are all compliant products, with direct visibility in Victron's GX devices.

OUR MISSION: Predictive maintenance of boats/vehicles, using a digital twin & AI agents. Control of the whole system, with voice and local AI.

KEY NUMBERS

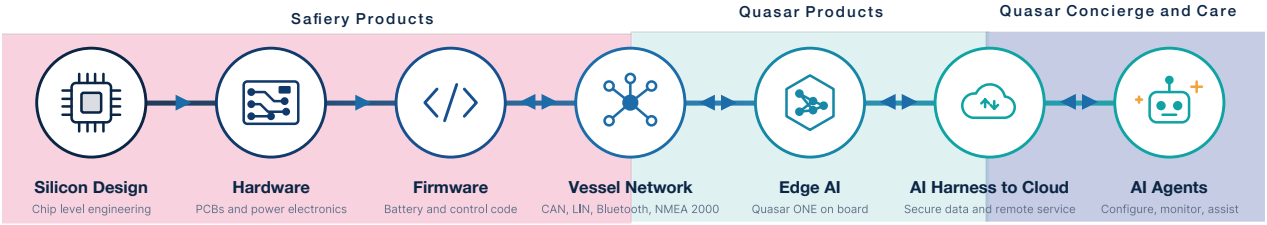
- **20+** countries we ship to
- **11** engineers on the Gold Coast
- **20** patents filed
- **8 yrs** trading, since 2018

Proof on the water.

- **Official Battery, America's Cup.** Extensive testing of the IP67 rated lithium battery, which delivers up to 30 kW within a second.
- **McConaghy MC86GT.** 300 digital switching points and integrated screens on an 86 ft power catamaran, on the water since August 2026.
- **Panther Electric 56.** Full Quasar system and lithium batteries on order, for delivery in May 2027.
- **Sail-by-wire.** A partnership with McConaghy to develop the first sail-by-wire on the open Quasar framework.
- **Agents at work.** Since mid 2026, AI agents run our own ERP and ISO 9001 system. The same skills now watch over boats.
- **Auto docking.** Edge AI reads 360 degree cameras and radar to dock the boat.

AWARDS: Nominated for the DAME Award at METSTRADE Amsterdam, 2023 and 2024. Quasar ONE with AI onboarding nominated for 2026.

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