

Raymarine MFD Integration

1. Introduction

This document explains how to connect to Raymarine MFDs using an Ethernet connection. Also, the last chapter explains the Raymarine specifics when connecting on NMEA2000.

The integration technology used is called [LightHouse Apps](#) by Raymarine.

Make sure to also study the [Marine MFD Integration by App chapter in the manual](#).

Note that there is an alternative method to connect, which is NMEA2000. See the [NMEA2000 chapter in the main manual](#), as well as the last chapter in this manual.

2. Compatibility

The MFD integration is compatible with the Axiom, Axiom Pro and Axiom XL MFDs running on LightHouse 3. The eS & gS Series multifunction displays which have been upgraded to LightHouse 3 are **not** compatible.

Raymarine MFDs need at least LightHouse v3.11 for compatibility, which was released in November 2019.

From Victron side, all GX devices (Cerbo GX, CCGX, Venus GX, and so forth) can be used and are compatible. For details on detailed product compatibility with regarding to inverter/chargers and other components, see the [main Marine MFD App chapter in the GX Manual](#).

3. Wiring

The MFD needs to be connected to the [GX device](#) using ethernet. It is **not** possible to connect over Wi-Fi. For the ethernet connection, a RayNet adapter is required.

The RayNet adapters can be purchased from Raymarine:

- A62360 - RayNet (F) to RJ45 (M) - 1m
- A80151 - RayNet (F) to RJ45 (M) - 3m
- A80159 - RayNet (F) to RJ45 (M) - 10m
- A80247 - RayNet (F) to RJ45 (F) Adapter
- A80513 - RayNet male to RJ45 adaptor cable

To connect the [GX device](#) to the internet as well, use Wi-Fi. If the Axiom MFD is connected to internet (using Wi-Fi), it will automatically share its connection with the GX device over ethernet.



Connecting a Axiom MFD to a network router over Ethernet leads to IP address conflicts, due to

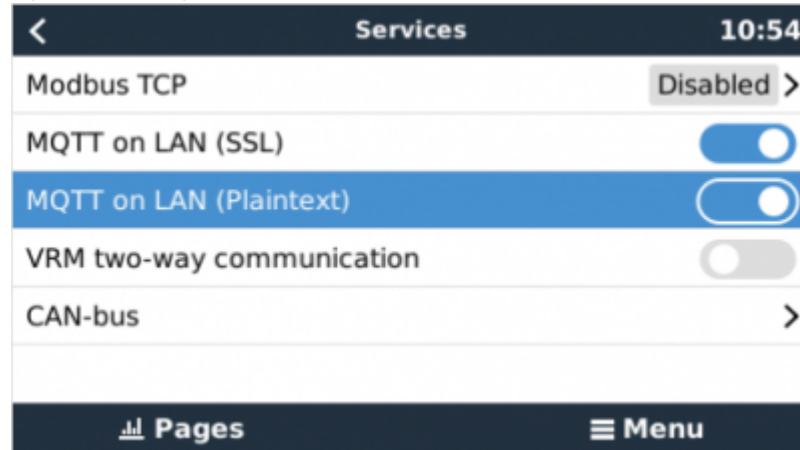
the integrated DHCP server in the Axiom MFD.



It is not possible to use a [GX GSM](#), due to the integrated DHCP server in the Axiom MFD.

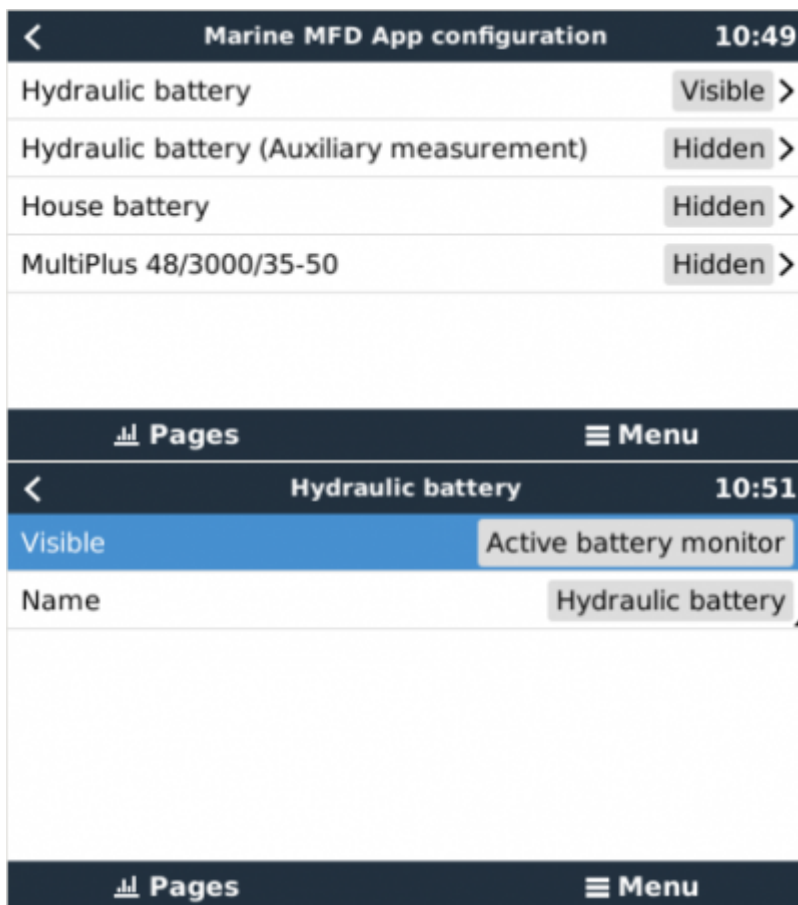
4. Configuration

On the Victron GX Device, go to *Settings* → *Services*, and there enable both *MQTT on LAN (SSL)* and



MQTT on LAN (Plaintext).

Next, go to *Settings* → *System Setup* → *Scroll to the bottom* → *Marine MFD App configuration*. And there set up what batteries you want to see on the MFD; and by what name.



No other settings, such as IP addresses or similar are required, since the Axiom MFDs have an integrated DHCP server.

5. Configuring Multiple Battery Measurements

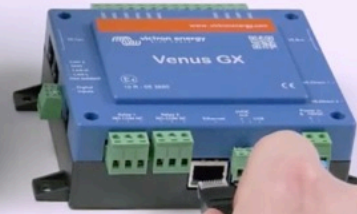
This video explains how to setup multiple battery measurements, and naming them.



Video

6. Step by Step





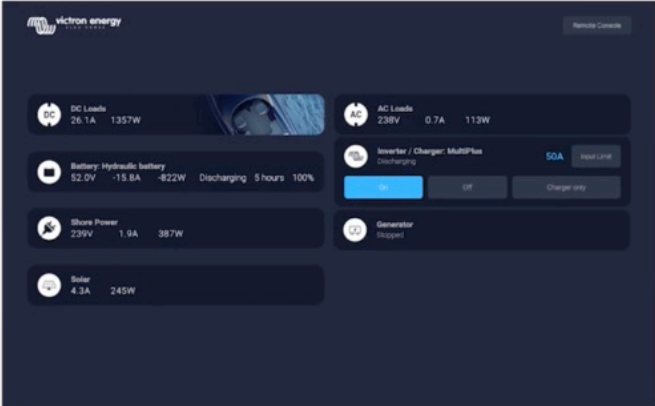
Step 2: Connect RJ45 into Victron Venus GX, Color Control GX or Octo GX.



Then go to Apps and select the Victron logo.







The screenshot shows the Victron Energy remote control interface with the following data:

- DC Loads:** 26.1A, 1357W
- AC Loads:** 230V, 0.7A, 113W
- Battery:** Hydraulic battery, 52.0V, -15.6A, -822W, Discharging 5 hours, 100%
- Inverter / Charger:** MultiPlus, Discharging, SOA, Test Link, ON, Charge only
- Shore Power:** 230V, 1.9A, 387W
- Generator:** Stopped
- Solar:** 4.3A, 245W

Labels on the left side of the interface:

- DC Loads →
- Battery information →
- Shore Power →
- Solar →

Labels on the right side of the interface:

- ← AC Loads
- ← Inverter Control
- ← Generator

All information can now be viewed on one screen.



Video

After connecting the Ethernet cable the GX device receives an IP number (10.x.x.x) from the Axiom DHCP. If you start the Victron App on the Axiom and it shows “hardware devices not found”, just restart the Axiom and see... it works!

7. NMEA 2000

A Raymarine MFD can also be connected to the Victron system using NMEA 2000. If you're new to NMEA2000 & Victron, start with reading the [Marine Integration Guide](#).

This chapter explains the specifics of NMEA2000 when connecting Victron to a Raymarine MFD.

If there are more than 1 (for example) SmartShunt in the NMEA2000 network then you change the Data instances of the Victron PGNs to make the 2nd device can be seen too. See here for how to do

that: [Changing NMEA2000 Instances](#), section Data instances.

To setup the data sources on the Raymarine, go to *Settings > Network > Sources > Advanced...*

If you have more than 1 battery be sure to adjust the settings of the Axiom to the correct amount of battery(banks).

The following Victron related PGNs are supported:

- 127505 - Fluid level (tank levels)
- 127506 - DC Detailed Status (State-of-charge, Time-to-go)
- 127508 - Battery Status (Battery Voltage, Battery Current)

When the NMEA2000/STNg network has GPS data the GX device sees this as a GPS source and is able to use the GPS position in VRM.

Below list of Victron related PGNs are not supported by the Raymarine, ie. in our tests we could not get such data to show on the MFD using NMEA2000 (use the Marine MFD App instead to see the same data!):

- J1939 - AC data

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