RBtec
Perimeter Security Systems

LPU-400
Calibration Software
User Manual

35 Years of Experience in
Outdoor Security Solutions

Field Equipment Installation Guide

The purpose of this guide is to provide field installation instructions for the **LPU-400**.

PLEASE READ **THE ENTIRE** MANUAL BEFORE ATTEMPTING TO INSTALL THE SYSTEM

This handbook includes instructions for:

- Installation of the LPU-400.
- Connecting the LPU-400 processor field control unit.
- System calibration.
- Troubleshooting.

To Receive an extended Warranty of 3 years on the Processor and Cable please Scan the QR code or go to Warranty.rbtec.com

It is recommended to view the PDF power point in full color for clarity

Required Tools For Installation

Must Have for Offline Calibration

USB-A to USB-C Cable

Windows Laptop Only

Additional tools needed if remote support from RBtec is required

Laptop with Anydesk Software (remote desktop)

www.anydesk.com

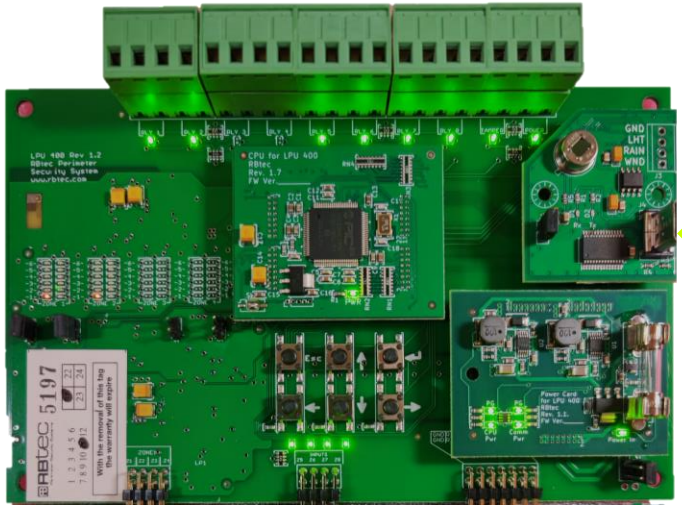
Internet connection

LPU-400 Processor Overview

Important!

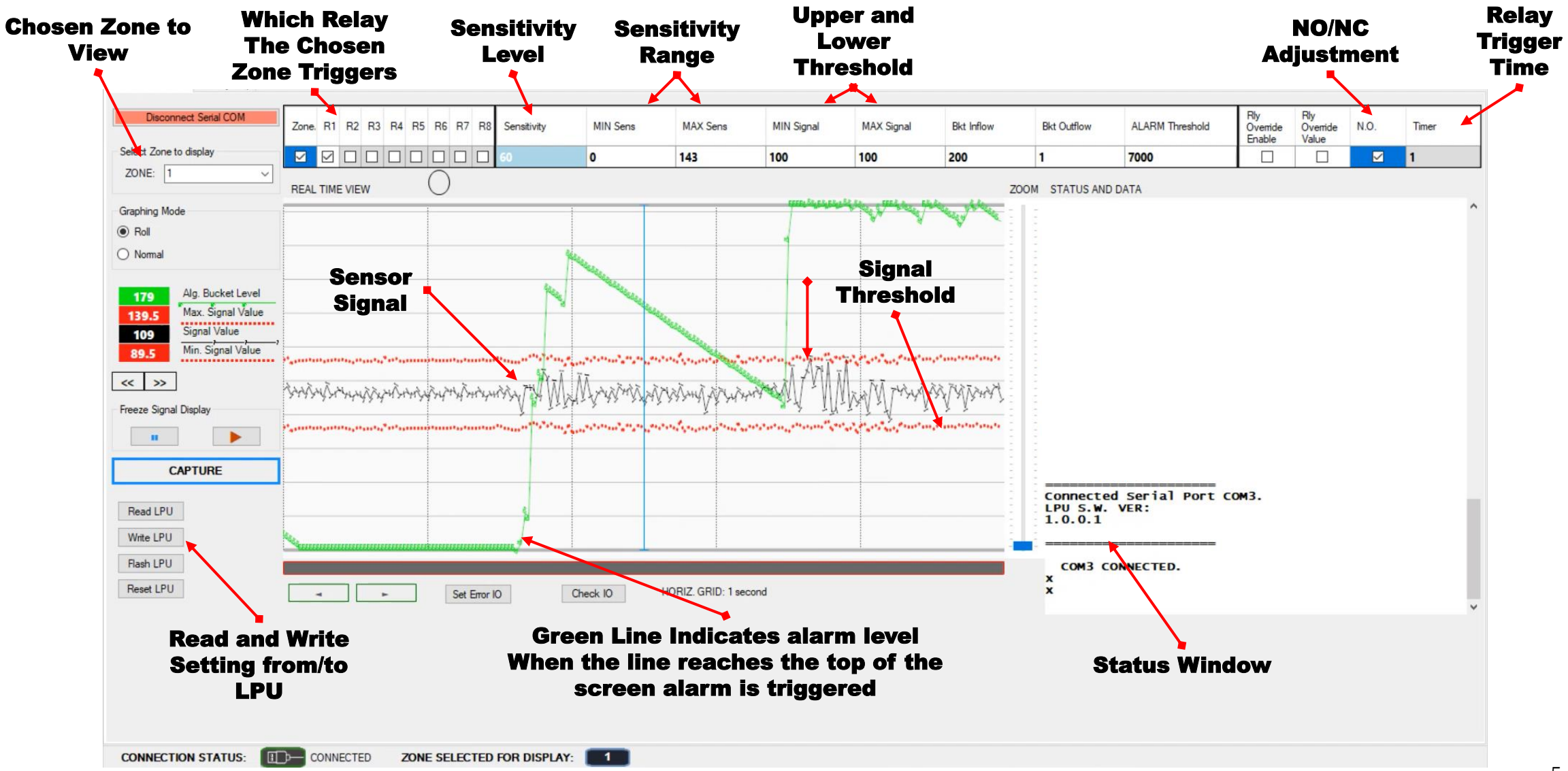
1. The LPU must be powered for the software to be able to connect
2. Each used sensor cable should be connected to the board with an end of line BEFORE calibration starts.

Each Input has a dedicated output. Zone 1 will trigger Relay 1 (RLY1)
By Default the outputs are Normally Closed (NC) but can be changed to Normally Open (NO) In the LPU Calibration software.



USB-C Configuration Board

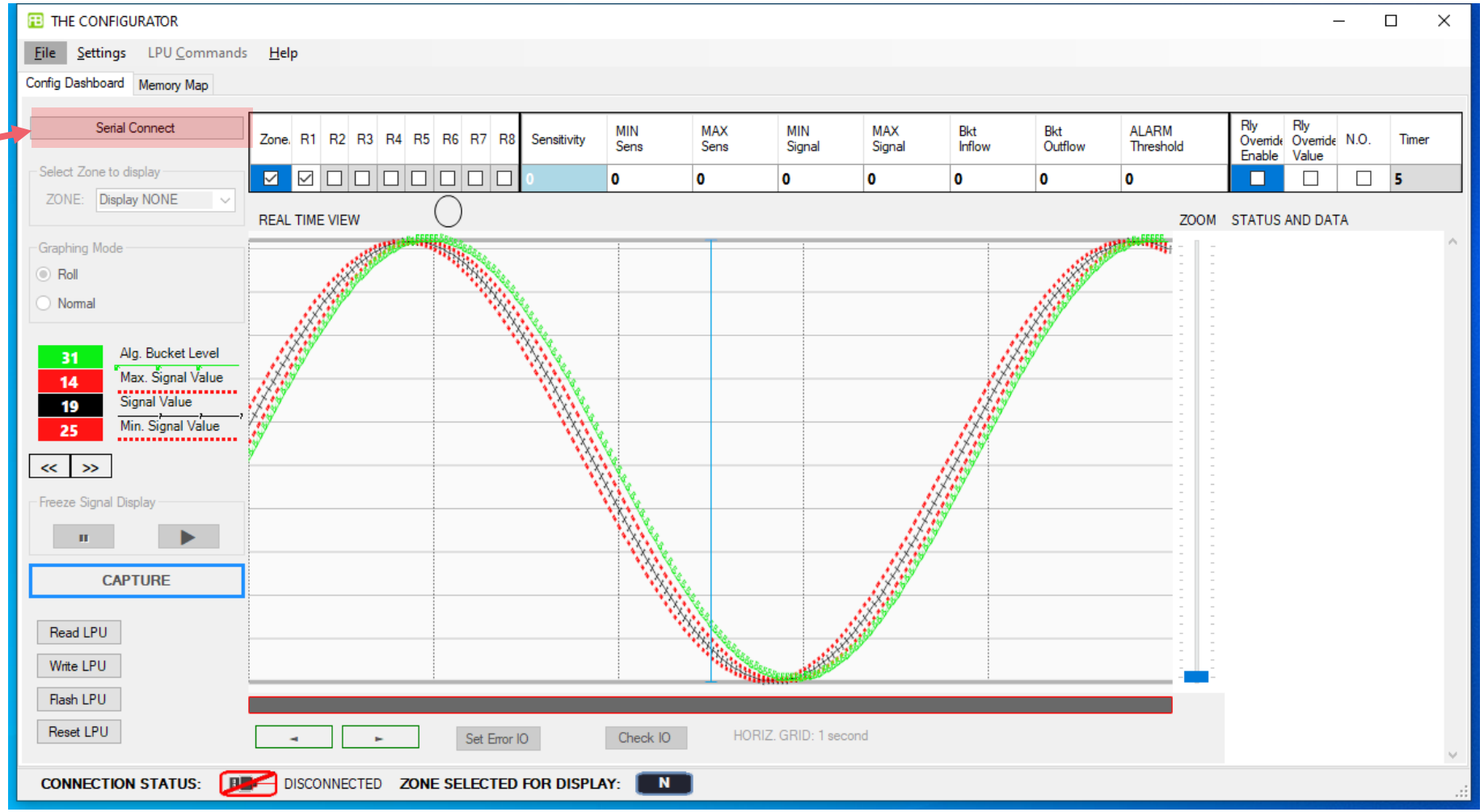
Calibration Software Overview



Calibration Process – Step 1

When loading the software for the first time the window should like the picture to the right

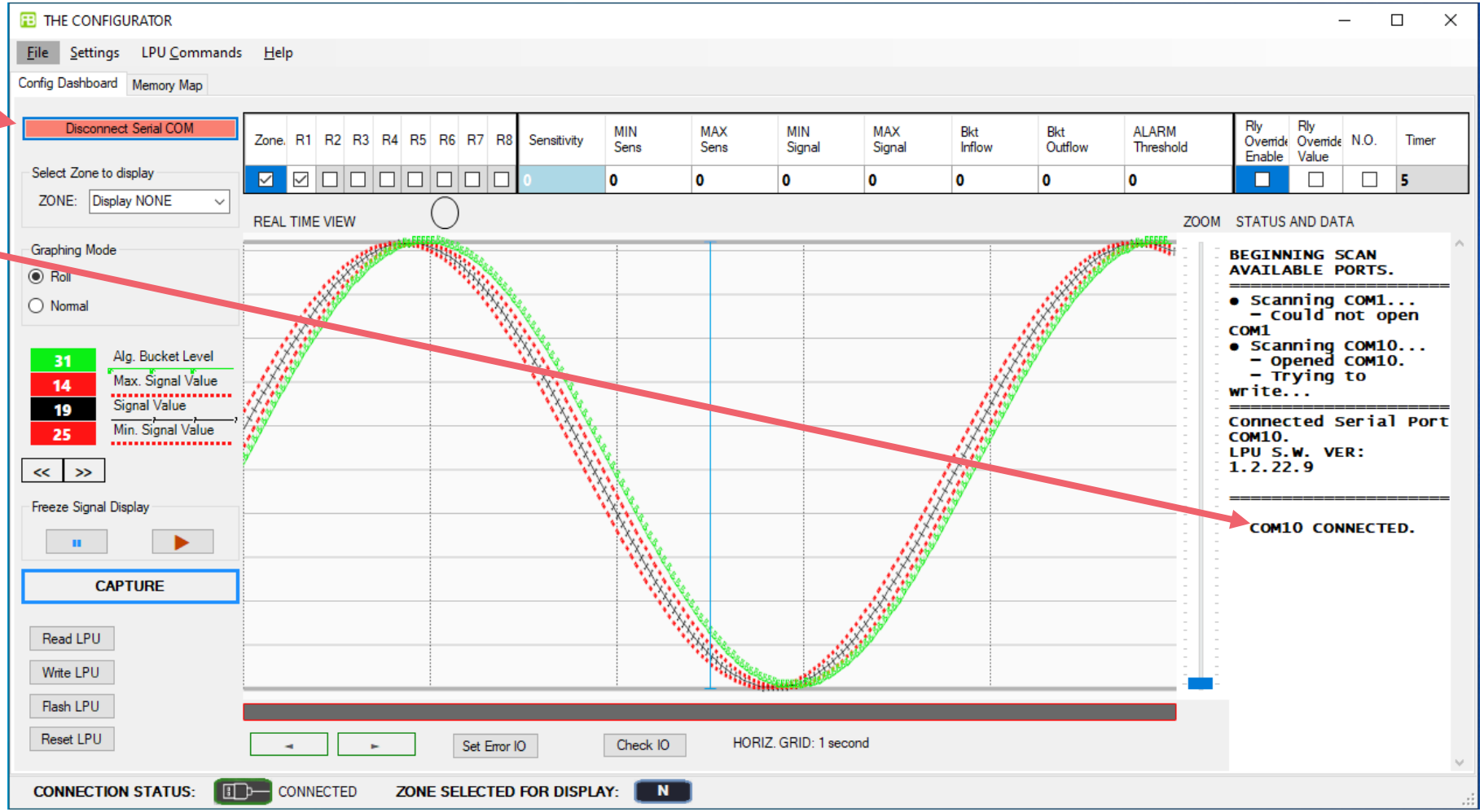
To start the connection to the LPU board please click the “Serial Connect” button



Calibration Process – Step 2

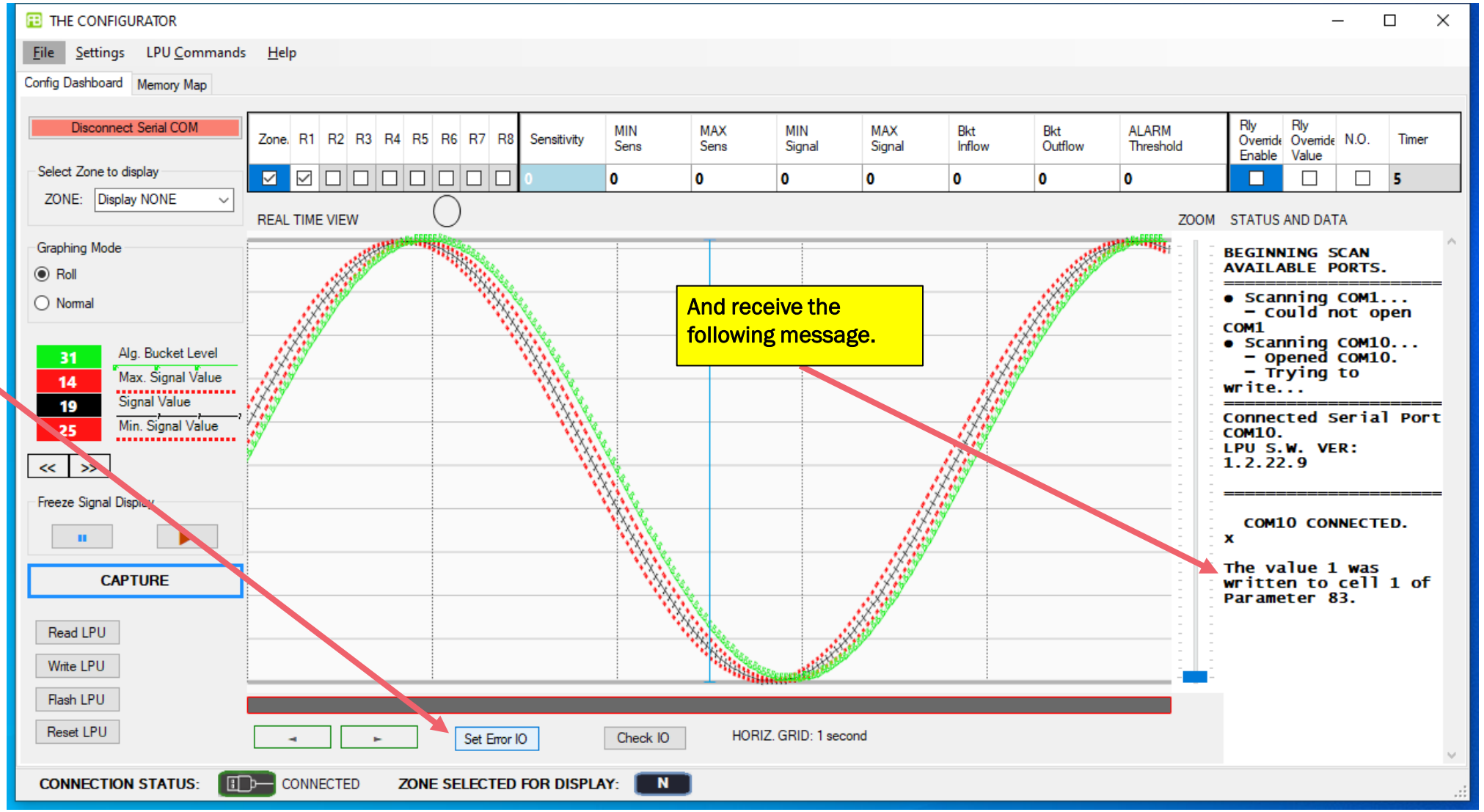
If connection was successful

1. The connect button will turn red
2. Status window will show "COM(X) CONNECTED"



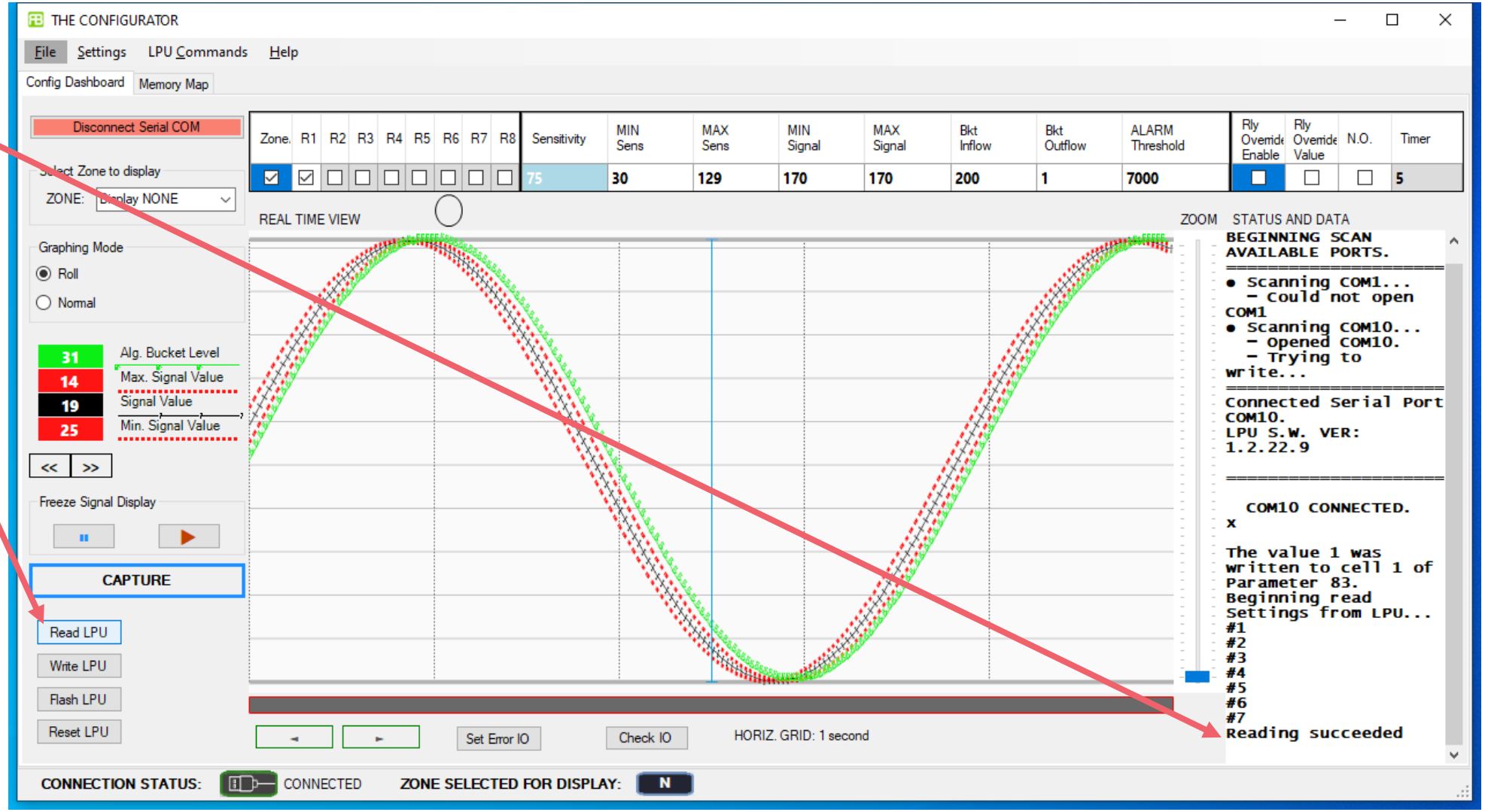
Calibration Process – Step 3

All sensor cables must be installed, connected and terminated with an end-of-line resistor BEFORE clicking the “Set error IO” button to set a baseline.



Calibration Process – Step 4

Click the “Read LPU” to read the current setup from the LPU board.
The reading process can take 1-2 minutes.



Calibration Process – Step 5

1. After reading was successful chose the zone number you would like to view

Sensitivity Adjustment – Step 6

Sensitivity is adjusted under “Sensitivity” The scale is 1-250 but is limited by MIN and MAX Sens (Sensitivity)

To lower “Sensitivity” lower then “Min Sens” you need to first lower the Min Sens and only then change sensitivity.

If “Sensitivity” is lower than “MIN Sens: the zone will be disarmed.

Calibration Process – Step 7

To test the system hit the selected zone.

If the green line rises from the bottom you have detection.

If the green line reached the top of the screen an alarm has been triggered and the relay has changed status.

Calibration Process – Step 8

The default state of the relay is NC to change to NO please add a check mark here

The check mark under "zone" means if the zone is ARM/DISARMED. When it's checked, it means ARMED.

R1, R2.... Mean Relay 1, Relay 2... When a specific Zone is chosen, you can configure which relay latch when it alarms.

By default, zone 1 triggers relay 1, and zone 2 triggers relay 2.

Saving Setting – Step 9

When all done click “Flash LPU” to save all the changes.

Troubleshooting

Attention!

The LPU processor is in the default setting when **ALL** the following are true:

1. **ALL** the power LEDS indicated on slide 17 are turned on.
2. There are no alarms indicated on the **RLY** outputs on the **top** of the board
3. There is **only 1** red LED shown per zone
4. At least 1 green LED is lit on each **active** zone

Sensitivity/Alarm testing

Sensitivity test should **ONLY** be done by tapping on the fence. Pulling, pushing or shaking of the fence is the **INCORRECT** way to test the system. Tapping on the fence should be done in a similar way of knocking on a door.

1. Tap the fence, if detection was made the red LED should be moving up from 1 to 6. Keep lowering the sensitivity until only hard tap on the fence will cause the red LED to reach number 6 and trigger the alarm LED on the top of the board.
2. Once reached a level hard tap triggers an alarm raise the sensitivity 1 levels up to achieve detection level.
3. Test the fence with a person climbing and simulate a cut but tap the fence twice with a heavy metallic tool such as a large screwdriver or wrench.

Periodic Testing Of the System

It's recommended to do a system test monthly to quarterly basis in order to verify proper operation of the system.

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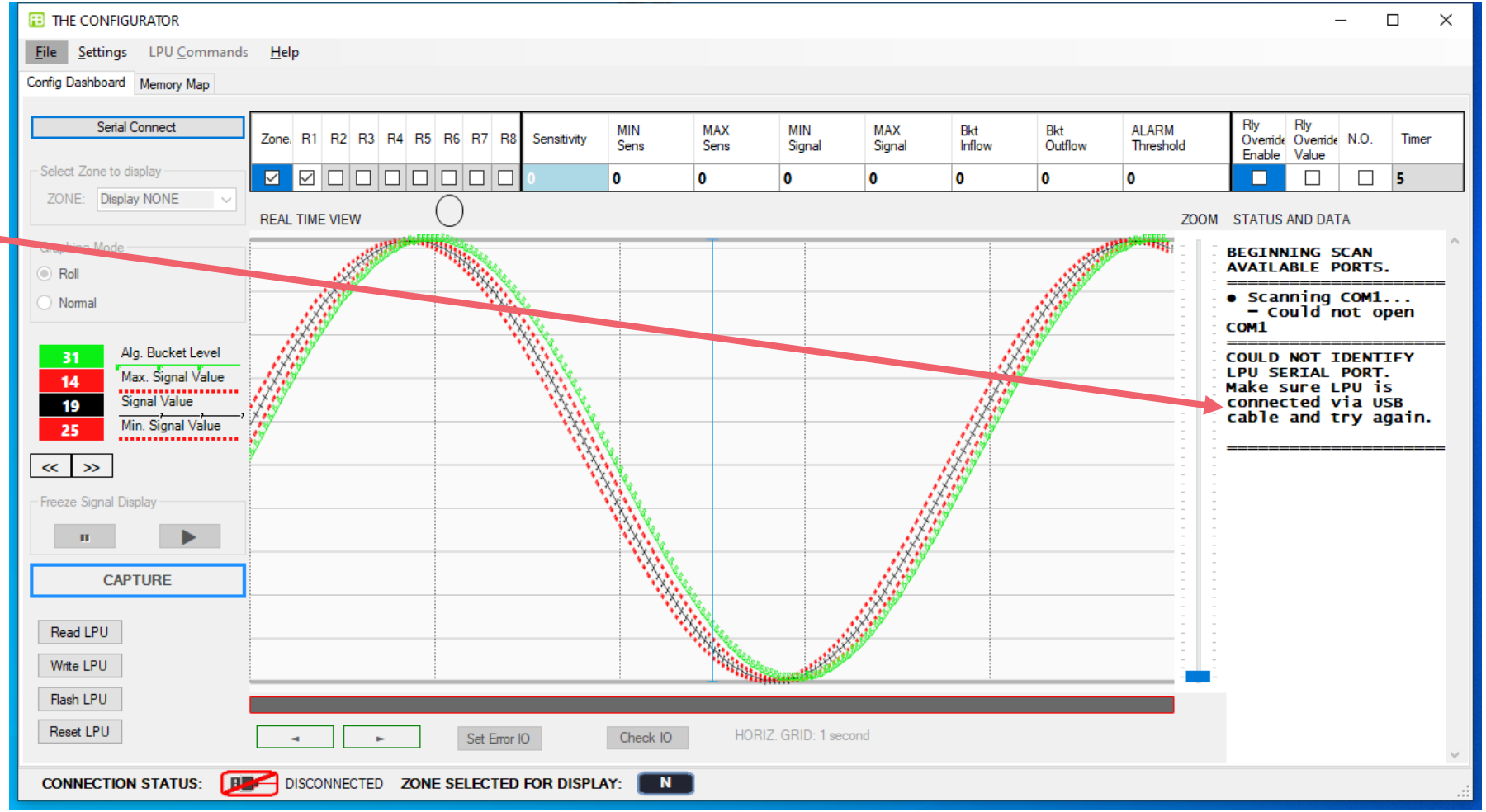
LPU-400 Not Connecting

If when clicking “Serial Connect” you receive the “COULD NOT IDENTIFY LPU SERIAL PORT” Check the following:

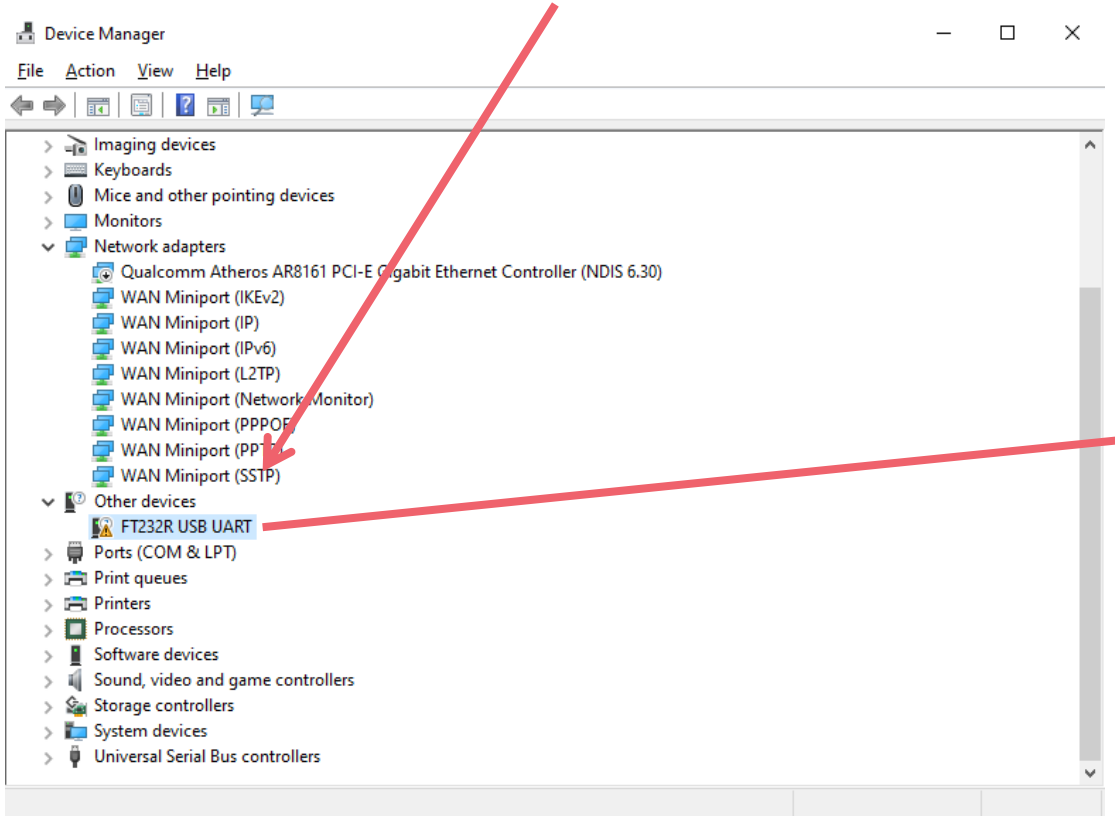
1. LPU is powered
2. USB-C cable is connected to the board and PC
3. Com port is recognized (see next page)

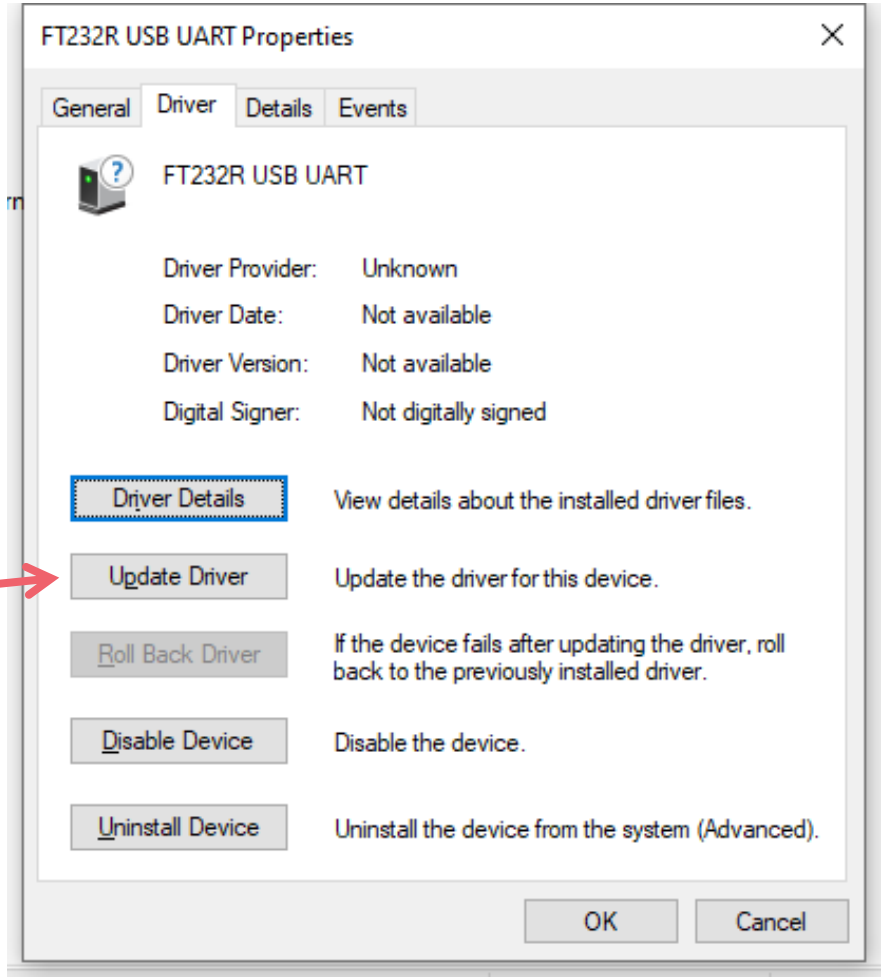


LPU-400 Not Connecting

Open Device Manager through a command prompt or the “Run” window. First, press Windows+R to open a “Run” window. In the “Open:” text box, type **devmgmt.msc** and then click “OK.” Device Manager will appear.

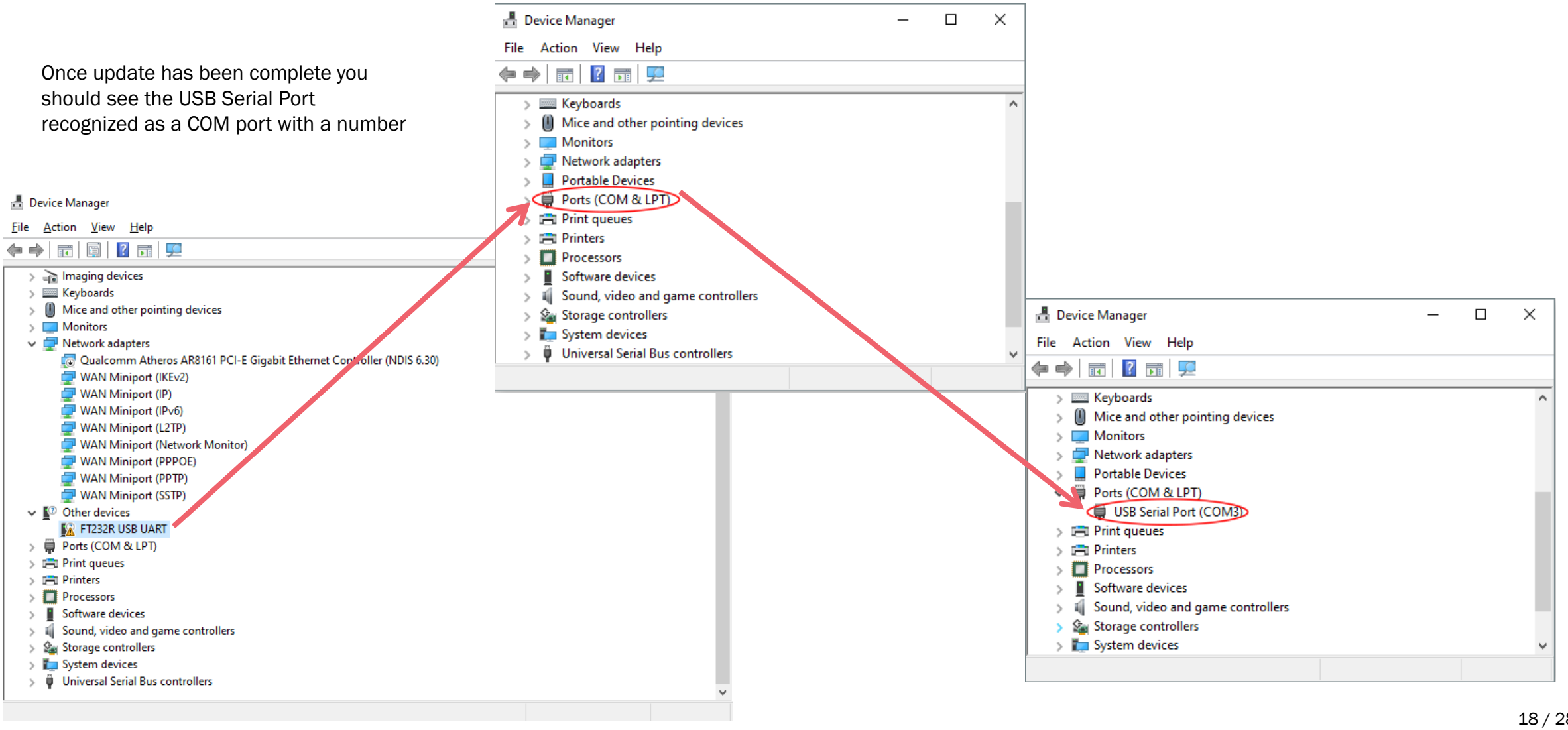
See unrecognized FT232 or USB Serial Port device download the drivers from **https://ftdichip.com/drivers/vcp-drivers/**





LPU-400 Not Connecting

Once update has been complete you should see the USB Serial Port recognized as a COM port with a number



Noise on Sensor Cable

If the signal in the software looks like the picture to the right or similar there is a extreme noise on the sensor cable.

To identify if the noise is coming from the board or the sensor cable please follow the following steps:

1. Disconnect all sensor cables from the LPU board If the noise is gone the noise is from the sensor cable.
2. If noise still exists the noise is from the board/power supply/ground.

If the noise is from the sensor cable check for

1. shorts between the cable wires, cable and fence.
2. Loose connections, gate connectors disconnected or misconnected, broken splice connection, misconnected RG6, water in joints, cable or boxes.

If the noise is from the board check for

1. No ground for the power
2. Noisy power supply
3. Unshielded lead wire

Try to power the board with a 12v battery to see if the noise is from the power source.

Pulsating Noise on Sensor Cable

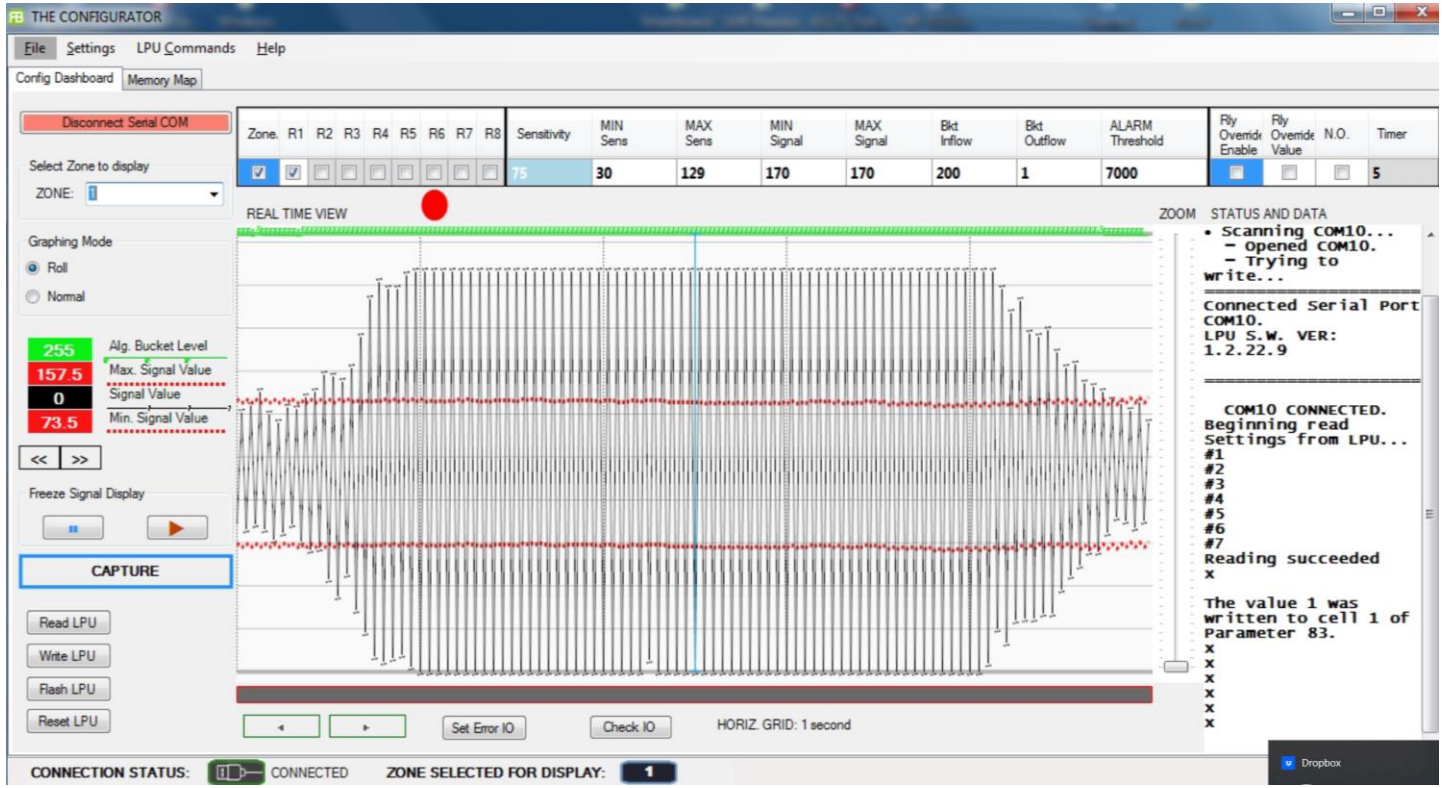
<u>Sensor signal on normal operation should be even line.</u>
If the signal in the software looks like the picture to the right or similar pulses but smaller, there is a grounding issue.

To identify if the noise is coming from the power source of the sensor wire, please follow the next steps:

1. Disconnect all sensor cables from the LPU board. If the noise is gone, the noise is from the sensor cable.
2. If noise still exists, the noise is from the board/power supply/ground.

If the noise is from the sensor cable connect a ground wire and see if the signal goes flat.

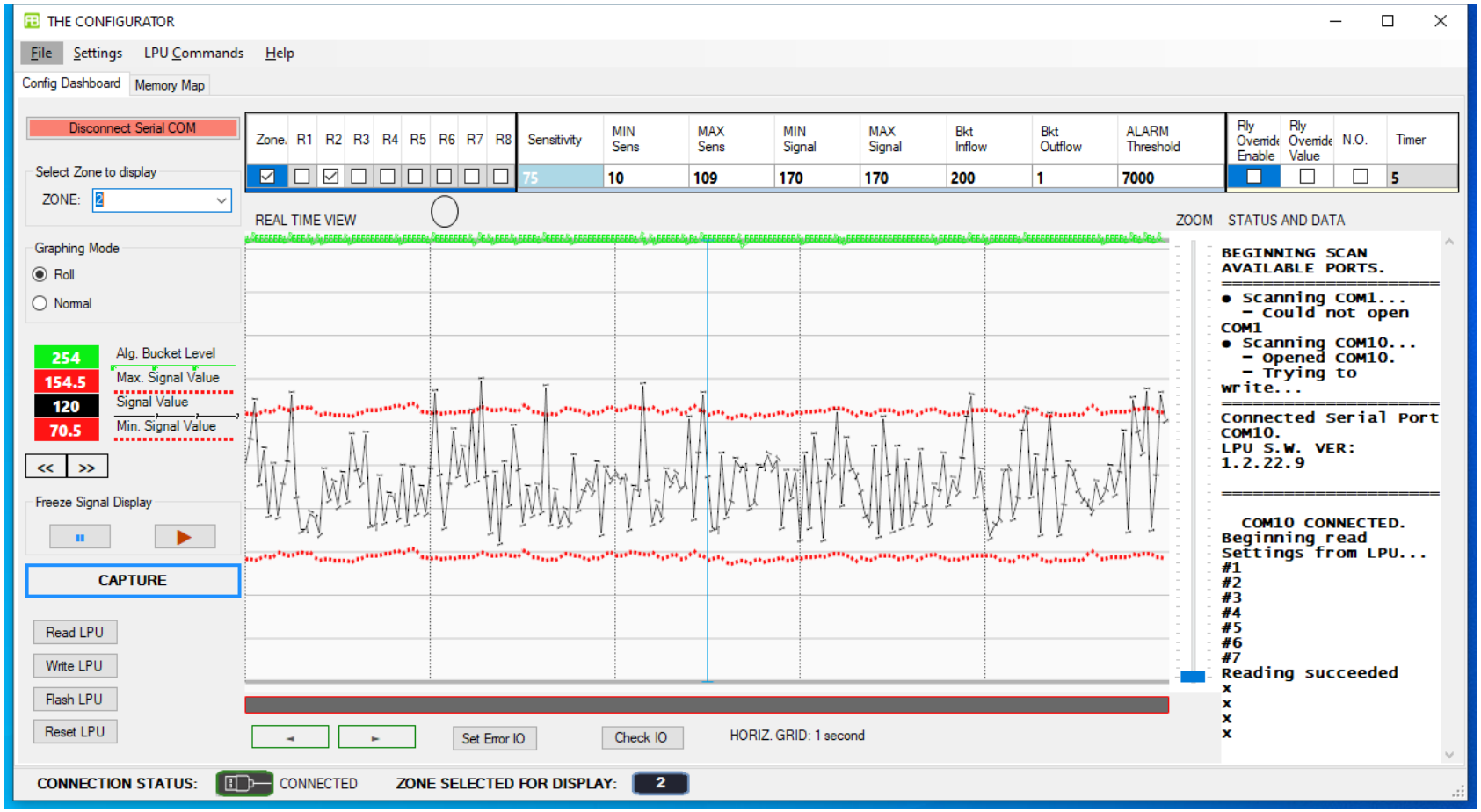
If that does not help ground the NEGATIVE (-) of the DC power (black wire)



Issue with power supply

If the signal in the software looks like the picture to the right or similar there is an issue with the power supply or grounding issues.

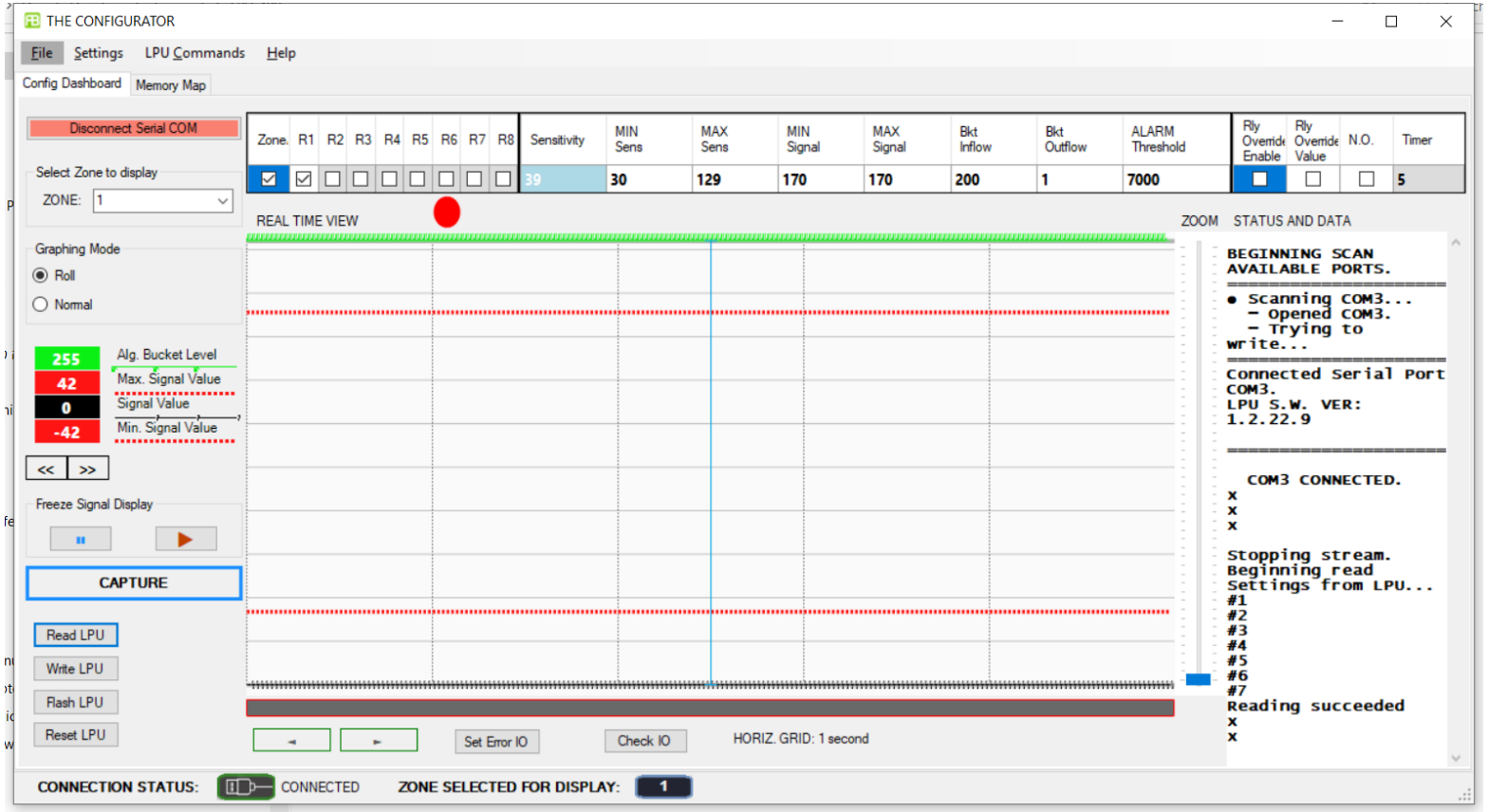
1. Try to lower the voltage to 12vdc if it's anything else.
2. Test the system with a 12v battery to see if the noise is from the power source or ground.
3. Ground the negative terminal of the DC voltage at the LPU board location to a true ground



Faulty CPU or Main Board

If the signal in the software looks like the picture to the right the Main Board or CPU are faulty.

Please contact RBtec.



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