

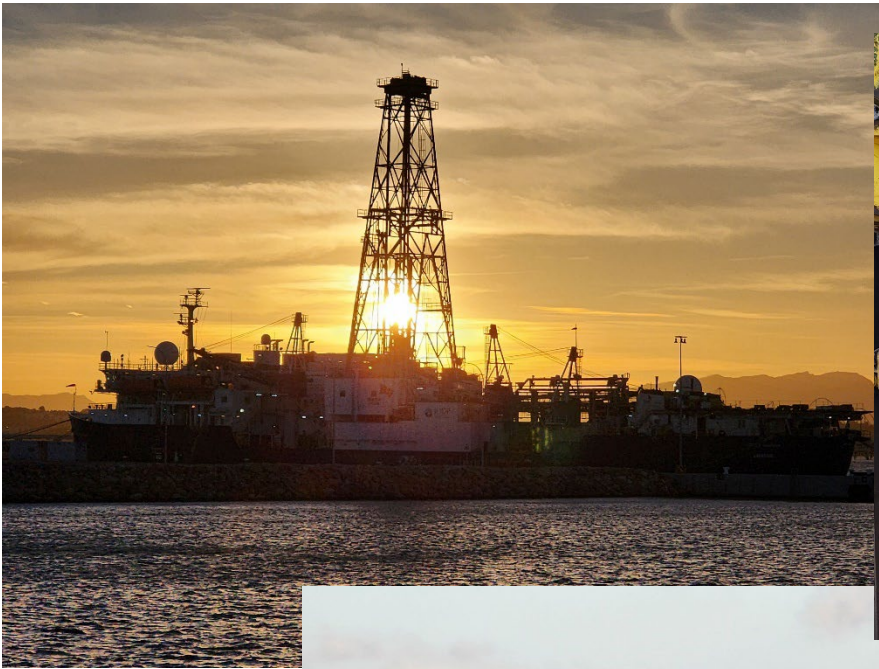
Expedition 398P/T

10 February–12 April 2023

(Heraklion, Greece → Tarragona, Spain → Ponta Delgada, Azores,
Portugal)

Expedition Engineering Report

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iRIS

a) iRIS Drillers' Interface User's Manual

During Expedition 398T one of the primary objectives was to follow the continuing development of the iRIS Driller's Interface as it moved into the deployment stage of the project. The User's manual at the time of this report, is approximately fifty per cent completed. Completion of the manual will be done over expedition 399.

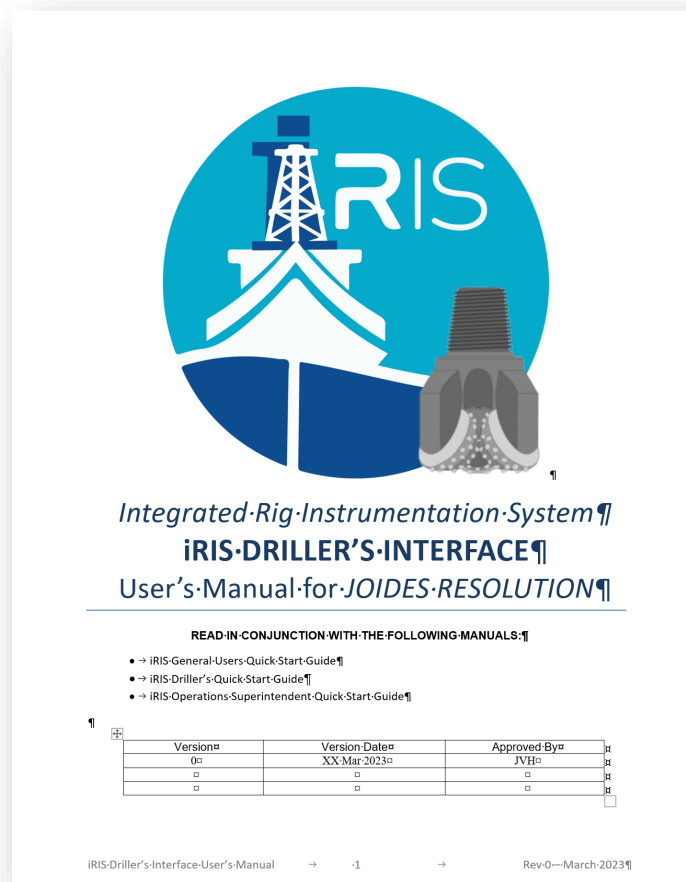


Figure 1. iRIS Driller's Interface User's Manual Cover

b) Rigwatch → iRIS Junction Box Swap

JRSO contracted a former electronics engineer, Dean Ferrell, to prepare the two (2) existing rig instrumentation system (RIS) junction boxes (j-boxes) in the subsea shack for promoting the iRIS j-box FROM secondary TO primary data collection system and demoting the RigWatch j-box FROM primary TO secondary data collection system. In this move, the j-boxes are now ready when the RigWatch rig instrumentation system is completely removed from service, currently scheduled following JRSO expedition 395 in Fall 2023. At that point, iRIS will be fully implemented, tested, deployed, and integrated into the JRSO's Laboratory Information Management System (LIMS) used to collect all coring, drilling, and lab processing data for all recovered core samples.

Figures below show the original layout of each j-box installed in the subsea shack



Figure 2. iRIS and RigWatch J-boxes

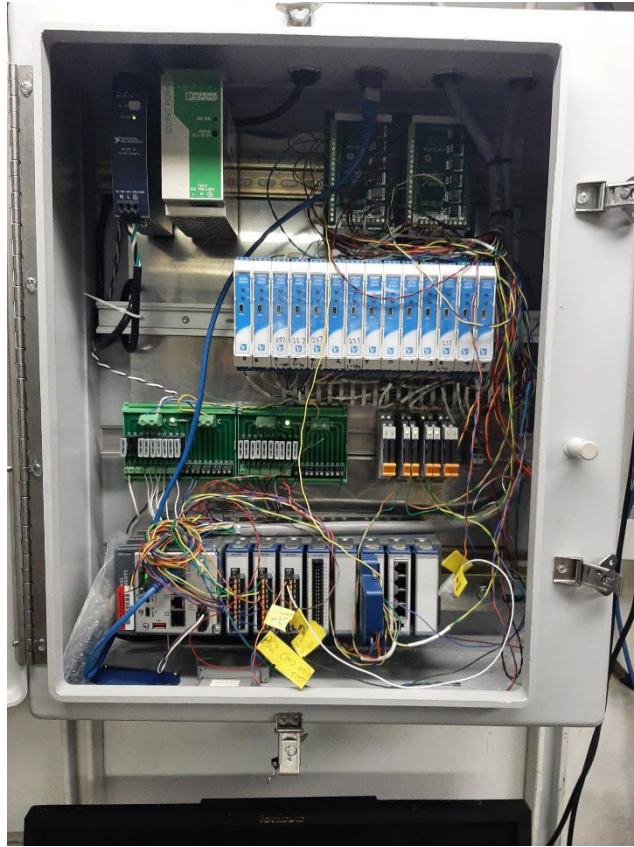


Figure 3. iRIS J-box Prior to Promotion to Primary Data J-Box

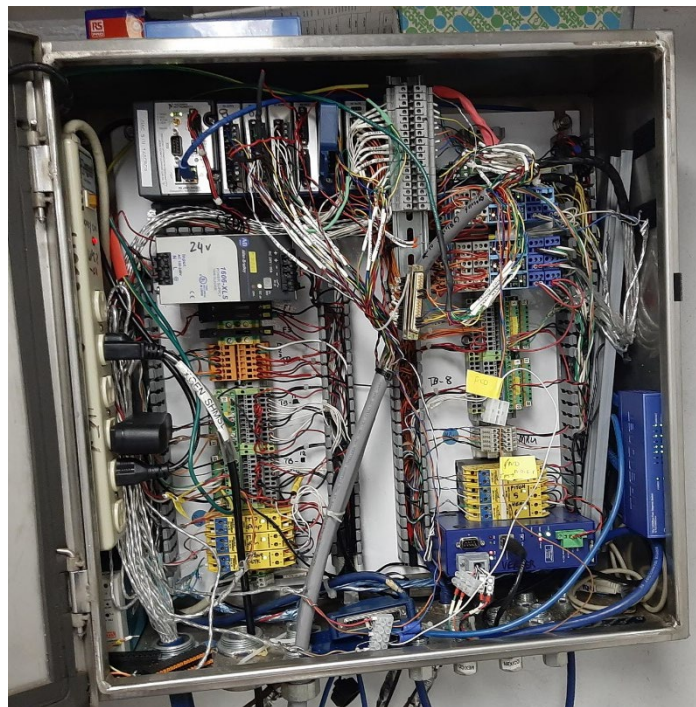


Figure 4. RigWatch J-box Prior to Demotion to Secondary Data J-Box

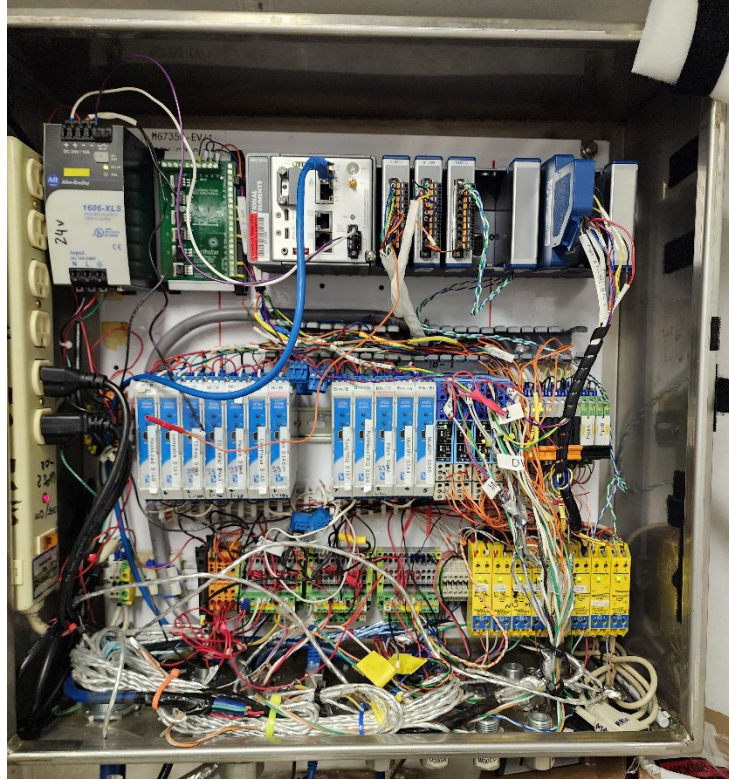


Figure 5. iRIS J-box After Promotion to Primary Data J-Box

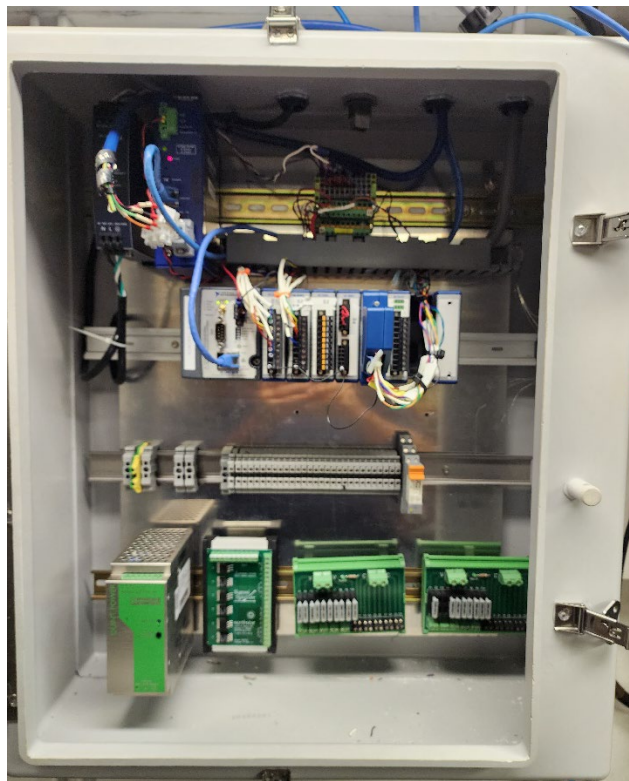


Figure 6. RigWatch J-box After Demotion to Secondary Data J-Box

While the scope of this project was to not only relocate major components of each RIS system to prepare for the eventual decommissioning of the RigWatch RIS, the scope also included a general

cleanup of the wiring components to improve the general organization of the iRIS j-box. However, due to a logistics issue at the start of the expedition, the wiring components were not available until late in the port call portion of the expedition. Because of this, the work will be scheduled at a later tie up period, tentatively scheduled for Expedition 400T (Oct-Dec 2023, Amsterdam)

c) iRIS Schematics Updated

Following the relocation of components in each RIS j-box, all circuits were traced and verified, test signals were applied to each signal line and verified at both RigWatch and iRIS user interfaces. Then all rig equipment was cycled as practicable and data measurement and collection were verified for each input. Once complete, new schematics were revised. Copies of the schematics are stored at the following locations

- Confluence: <http://confluence.ship.iodp.tamu.edu:8090/display/LMUG/Downhole+Logging> (PDF)
- JR Network Shares: [M:\2-Engineering\2 iRIS\iRIS Schematics \(PDF & SCH files\)](M:\2-Engineering\2 iRIS\iRIS Schematics (PDF & SCH files))
- Hard Copy inside the door of the iRIS J-box in Subsea Shack
- General User's Interface Installer software is uploaded to Confluence: [http://confluence.ship.iodp.tamu.edu:8090/download/iRIS General Users Installer.exe](http://confluence.ship.iodp.tamu.edu:8090/download/iRIS%20General%20Users%20Installer.exe)

NOTE: IT IS REQUESTED THAT ANY CHANGES MADE TO THE IRIS SCHEMATICS BE SENT BACK TO JR SO OFFICE FOR REVISION WITH CHANGE REQUEST(S), AND PROPERLY REVISED VERSIONS ARE THEN TRANSMITTED BACK THE JR FOR UPDATING. PROPER DRAWING NUMBERS WILL BE ASSIGNED TO THESE DRAWINGS FOR CONTROL.

Figure 7. iRIS J-Box Schematic Rev 09Apr23



Figure 8. iRIS Functional Components Block Diagram

d) iRIS User Interface Development

Driller User Interface

The iRIS Drillers Interface is currently under development, with first version to be released at the beginning of Expedition 399.

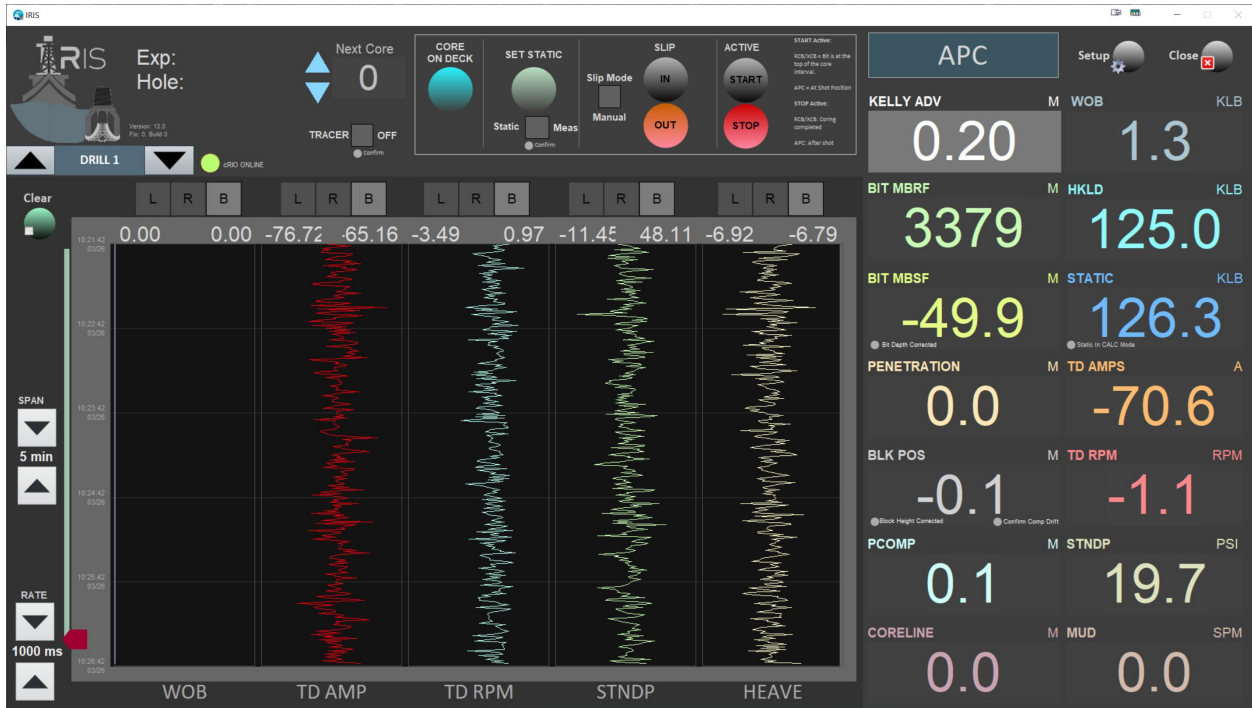


Figure 9. iRIS Drillers User Interface

iRIS General Users Interface

The iRIS General Users Interface is released and ready for initial testing on Expedition 399.



Figure 10. iRIS General Users Interface

Operations Superintendent (Ops) Interface

The Ops interface is currently under development and will be deployed at the beginning of Expedition 399

Assistant Driller's Interface

The Assistant Driller's interface is ready for deployment and testing, and will be released by Bill Mills during Expedition 399

1. ETBS Communication Software

The Extended Temperature Borehole Sensor (ETBS) was readied for use on Expedition 399 during this leg. However, it was determined that the software used to communicate with the datalogger (SmartData® by MicroSmart Systems) loaded on the desktop computer used in the DownHole Measurements Lab (DHML) was unable to communicate with the datalogger unit.

The first step to alleviate this problem was to download and install the latest version of SmartData® (version 23.3.6) from the supplier. This was not successful, and we began communications with the supplier to determine the cause of the errors. New software, including new drivers were downloaded and began the install process again. Once again, this was unsuccessful.

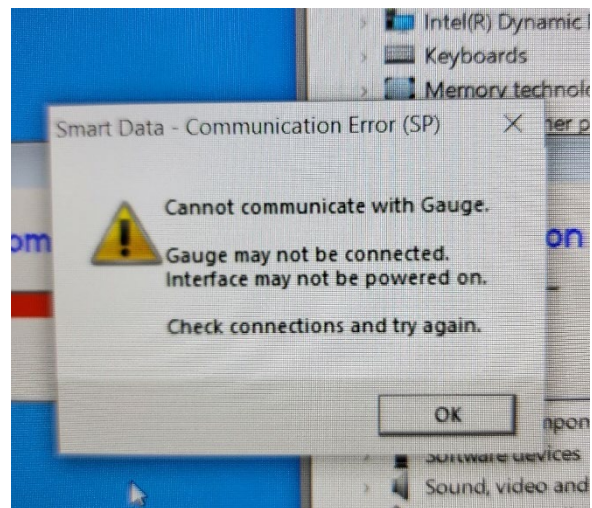


Figure 11. SmartData Comm Error

Working with the JR MCS staff, a fresh laptop was provisioned, and the step-by-step guide supplied by MicroSmart was run. The original driver errors were not observed,

The corrected drivers had to be installed using admin privileges and suppressing the Windows “installation of unsigned drivers” security settings to allow the COM ports to be installed and assigned. With these now installed, communications were restored, and the tool was able to communicate.

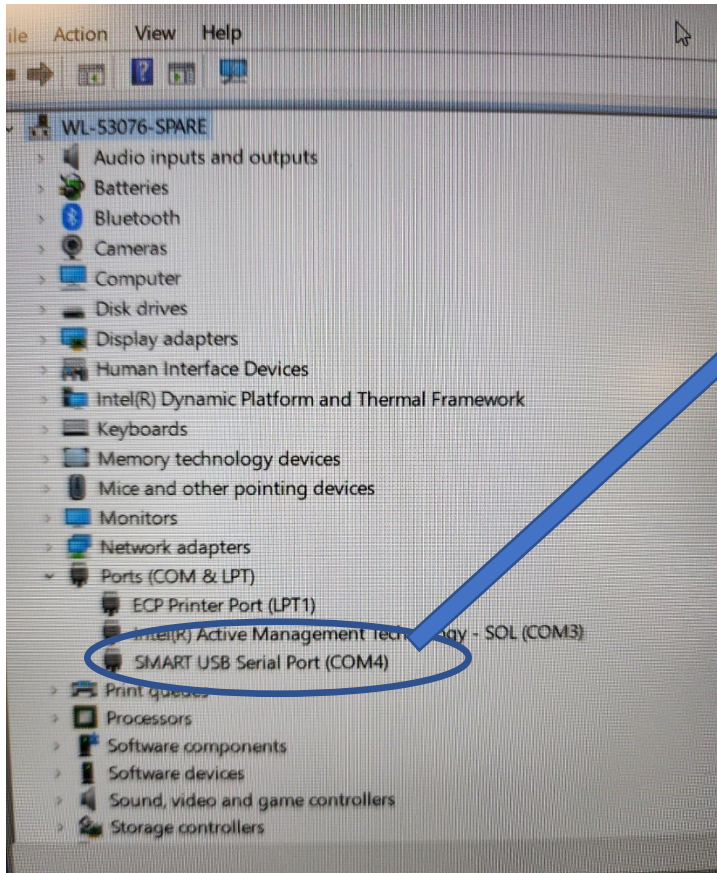


Figure 13. Smart USB → Serial Driver

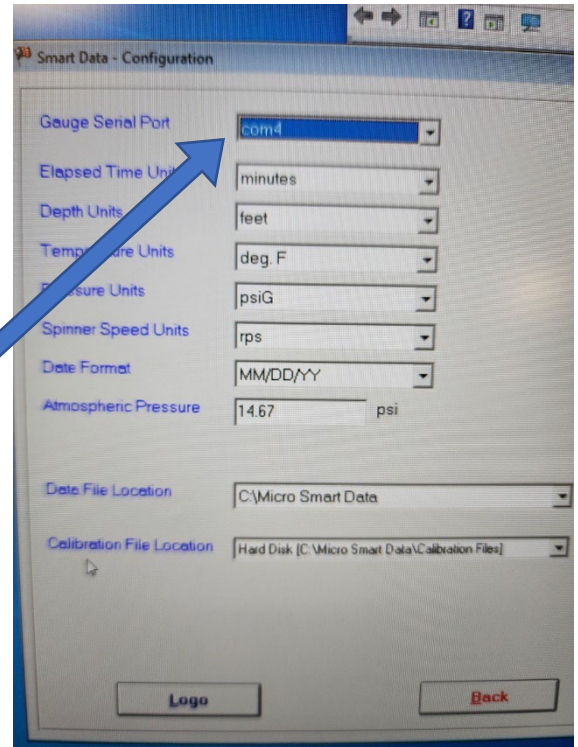


Figure 12. SmartData Gauge COM Port Setup

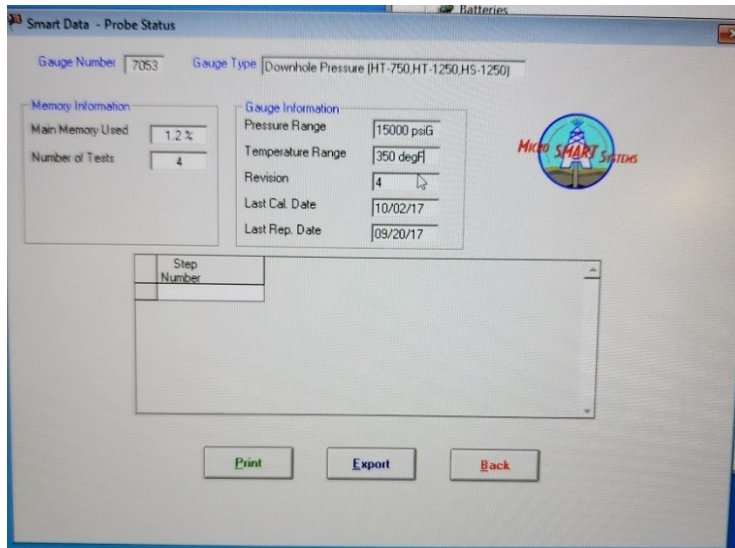


Figure 15. SmartData ready to go

Next a series of DLL errors were found, one of which caused a fatal error in the SmartData program.

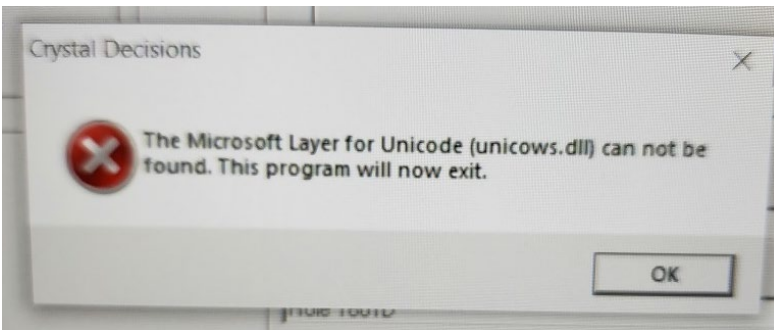


Figure 14. Fatal DLL Error

The cause of which was found to be another set of DLL's that needed to be installed with elevated privileges. The last error is not a fatal error, and has not found to cause any errors, but simply a notice that can be cleared.

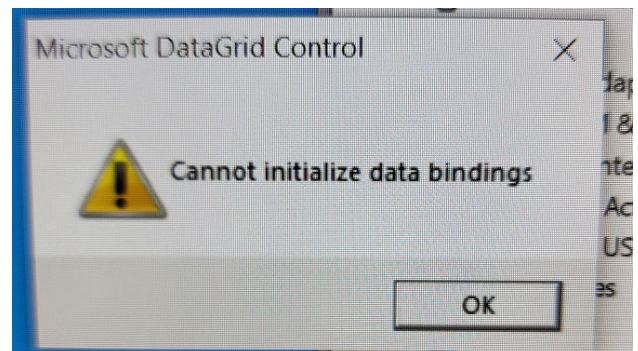


Figure 16. Clearable Error

As of this report, all functions are tested and confirmed while using the ETBS datalogger Serial Number 7053. Real time test and reports were generated.



A quote for a spare USB – Serial interface has been requested from MicroSmart. However, there are similar interfaces stored in the other MicroSmart tool kits located in the DHML, but there was insufficient time to test these with the ETBS tool for functionality.

2. VIT ROSYS Light Communications Issues

On Expedition 398P IODP Engineers (Billy Miller & John Van Hyfte, but mostly Billy Miller) worked on resolving issues with the new VIT lights. The new Remote Ocean Systems (ROS, ROSYS) [SeaStar](#) LED Lights by ROS were purchased in August 2021 to replace the existing/old ROS LED Lights. The new lights were ordered to the same electrical specifications as the old/legacy lights (same pin out, 24V, 2wire RS485) plug and play with a slight change in software.

- Legacy lights: ROS LED Lights 10-20075-A1FCCS-SP
- New lights: SeaStar 5507-1508BRC-SS

a) New Light Issues:

Left Light – Have intensity control via software, but experience intermittent loss of communication.

Right Light – No intensity control at all.

Center Light - Long control latency (12 second delay from software command to change in light).

b) Light Orientation:

VIT

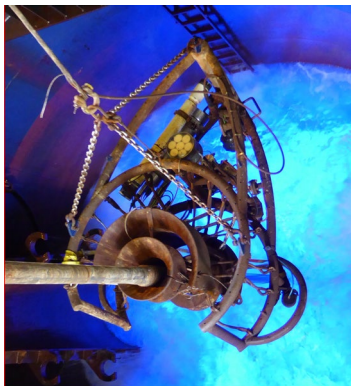
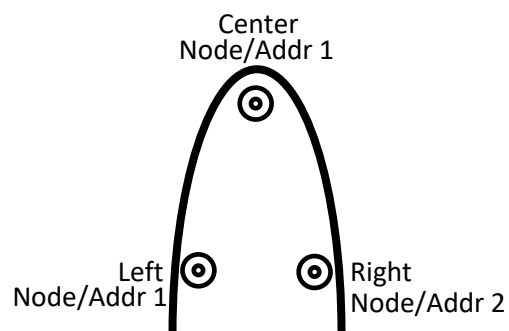
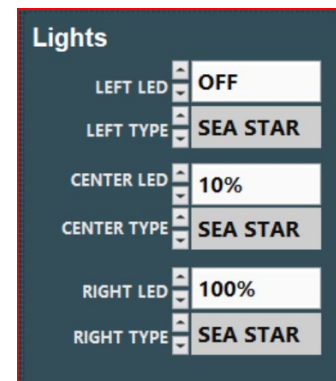


Figure 17. VIT Light Orientation

VIT Light Location



IRIS VIT Software



c) Subsea Cabling

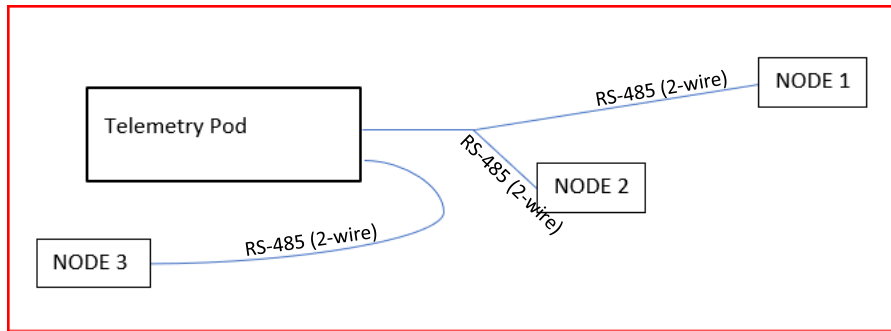


Figure 18. VIT in situ Cabling Diagram

d) Right and Left Light Findings

- There is a communication issue with right and left lights that share the same comm lines. It appears that both lights try to transmit at the same time resulting in framing errors. As a result, only one light can communicate with IRIS and is capable of intensity adjustments.
- On the bench, we setup two lights sharing the same comm lines and saw the same problems.
 - Using the ROSYS EosCore141 software we experienced the same comm problem on the bench.
 - Using a custom LabVIEW program, we experienced the same comm problem on the bench.
 - Used Realterm program, with the following settings we experienced the same comm problems.
- Unsuccessful attempts to fix the problem on the bench:
 - Using the LabVIEW program we tried 1, 20, 30, 50ms delay between each byte transmitted to the light, in between byte transmittal the serial port was read every millisecond for the echo byte that was not sent by the light.
The only response from the light came after the full command was issued.
Per section 3.3 of the ROS RS-485 Communication Protocol (Document 21-30022W), their end devices do not have an incoming serial buffer so the master slave communication must use the echo method handshake to control comm flow for each byte transmitted.
 - Added a balance 630K ohm resistor (comm line impedance match) between the comm lines
 - Added a bias 1M ohm resistor between the negative comm line and ground
 - Added both bias and balance resistors
 - Tried different USB to 485 converters using both the ROS and LV program
 - Tried issuing multiple node intensities in a single command using ROS software
 - Setup modem in 485 two-wire with echo on
 - Tried different address, tried the same address, tried issuing a blanket cmd using address 0
 - When sending SetIntensity cmd the light responds 9060 02FF when documentation states it should be 9051 FF

e) Center Light Findings

- The center light does have a 10 to 12ms response time issue.
- The center light will also default back to it's factory default settings; comm address 1, powerup intensity of 0%, and max intensity of 100%.
- These problems don't seem to be attributed to the light for the following reasons:
 - A new light was installed at the center location and had the same 10-12ms response time.
 - The new light lost its preprogramed settings and reverted back to the factory default settings.

- The left light responds to commands from IRIS within 500ms yet goes through the same distance and equipment as the center light.
 - All indications suggest that the problem resides in the subsea pod, which at this time can't be opened for inspection.
- f) Common to All Lights
- On power up, all three lights power up to the “powerup intensity level” which was preprogrammed to 60%.
 - If all the lights stop communicating with IRIS, cycling the power off and on will bring all the lights back up the powerup intensity level of 60% (unless the memory is lost)
 - Communication response time from light on VIT to the DP computer was between 152ms to 167ms
 - Communication response time from light to computer on the bench was between 70ms to 80ms

g) Solutions/Changes

1. Change center light address to 1 in IRIS software to align with the factory default address when/if the center light loses memory and resets back to the factory default values.
2. Added the ability to set the Powerup Intensity in the IRIS VIT software
3. Added the ability to read the lights Powerup Intensity level in the IRIS VIT software
4. The added functionality to the IRIS VIT is enabled/disabled with a hidden button (easter egg). Click words “Power Up Intensity Level” on the Configuration tab to enable/disable the new controls.
5. Change the default lights in IRIS to SeaStar
6. ROS admitted that their lights were not designed to be multi-dropped on the same comm lines. They have committed to updating the light firmware to accommodate the ability to multidrop. In the meantime, we are relegated to only turning the lights on and off at the predetermined powerup intensity level.

h) Things to Try

1. Install old lights and see if they have multidrop capability.
2. Switch the Center Light to a spare line. There are three spares available on the subsea telemetry pod, C1, C5 and C7. Connector C7 is tied to the same serial port as center light (C6) so don't switch to C7. Depending on which spare you use, you will need to change the following:

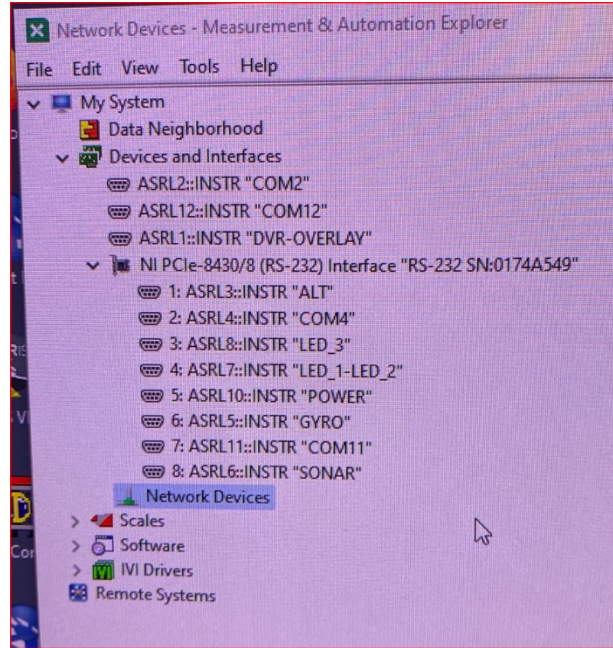
a) Switch to C1

- a. Move the center light harness on the telemetry pod from C6 to C1
- b. In the VIT cabinet in the DP room, switch the NI 8ch Serial cable P3 from A3 to B6
- c. No need to redirect the comm ports in NI Max because “LED_3” points to P3 which was moved to B6. (see pics below)
- d. Bill Mills thinks there might be some dip switches on the NI 8ch Serial card that might need switching so check with him.

b) Switch to C5

- e. Move the center light harness on the telemetry pod from C6 to C5
- f. In the VIT cabinet in the DP room, switch the NI 8ch Serial cable P3 from A3 to A7
- g. No need to redirect the comm ports in NI Max because “LED_3” points to P3 which was moved to A7. (see pics below)
- h. Bill Mills thinks there might be some dip switches on the NI 8ch Serial card that might need switching so check with him.

3. Determine a way to communicate with the SeaView multiplexer to verify comm port settings, error status, read status registers, run any diagnostic routines it might have...
4. Open subsea pod to diagnose the center light response time and memory loss.
 - i) Center Light Channel Swap



VIT SERIAL COMMUNICATION - FROM PC TO MULTIPLEXER

✓ NI PCIe-8430/8 (RS-232) Interface "RS-232 SN:0174A549"
 1: ASRL3::INSTR "ALT"
 2: ASRL4::INSTR "CAM_RE-ENTRY"
 3: ASRL8::INSTR "LED_3"
 4: ASRL7::INSTR "LED_1-LED_2"
 5: ASRL10::INSTR "POWER"
 6: ASRL5::INSTR "GYRO"
 7: ASRL11::INSTR "COM11"
 8: ASRL6::INSTR "Sonar"

USE PORT/CABLE NUMBERS
 SHOWN ON THE DB CONNECTOR
 (BLUE) AT THE END OF THE CABLE

DO NOT USE!

Use the NI MAX program to assign the alias names as shown above by the cable number, not the comport numbers. Also, use the appropriate serial setting values for the device you are connecting too. NI MAX is an application installed with LabVIEW and is used to manage communication resources. Make sure that the alias names are the exact same as shown below.

The alias names are used in the IRIS VIT program to route communications to the correct comms cable from the PCIe serial interface board to the multiplexer deck box.

CABLE No.	Alias Name	Connection on the Deck Box	Com Settings
1	ALT	A4	9600,8,N,1
2	CAM_RE-ENTRY	B7	9600,8,N,1
3	LED_3	A3	9600,8,N,1
4	LED_1-LED_3	B3	9600,8,N,1
5	POWER	A6	9600,8,N,1
6	GYRO	B5	38400,8,N,1
7	Not used	Not used	Not used
8	Sonar	A8	115200,8,N,1

Figure 19. Serial Cable Swap Testing

j) Information

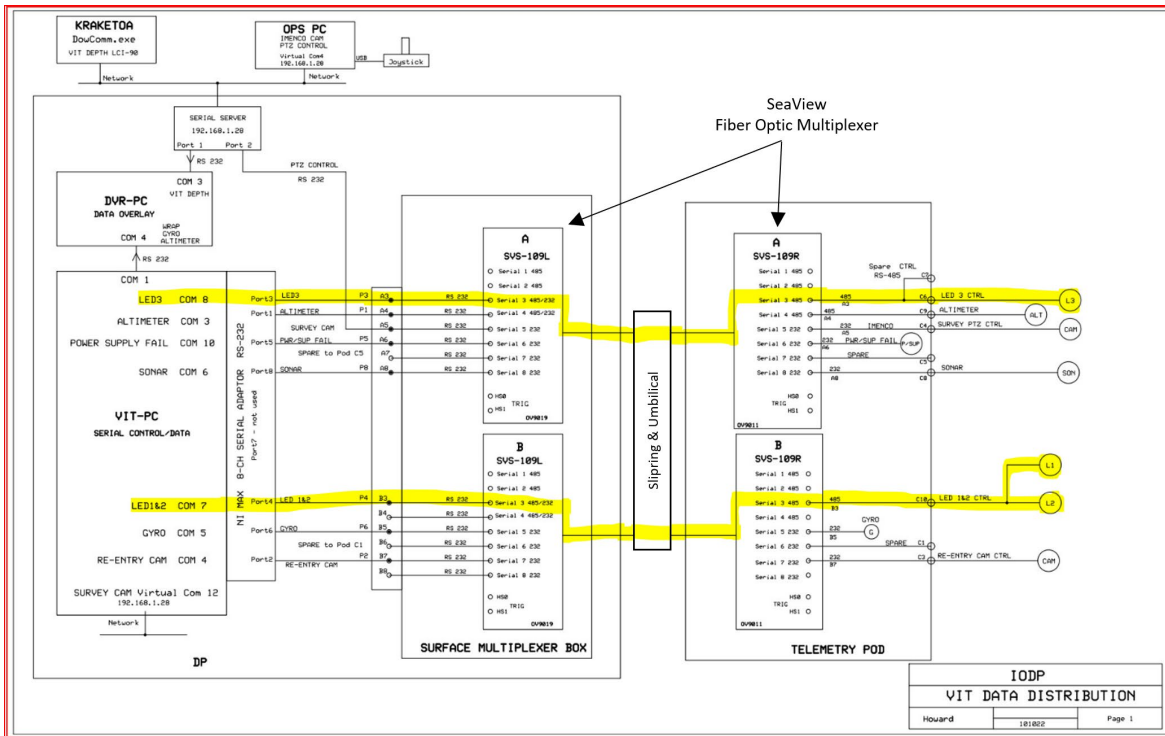


Figure 20. VIT Lighting Communication Path

The lights communicate via 2-wire RS-485 (half duplex) pins 1 & 2 and are powered on pins 5/6 & 7/8.

The pin-out for the light:

1. RS485 T/R+ (A)
2. RS485 T/R- (B)
3. N/C (X)
4. N/C (X)
5. +24VDC (P)
6. +24VDC RTN (R)
7. +24VDC (P)
8. +24VDC RTN (R)

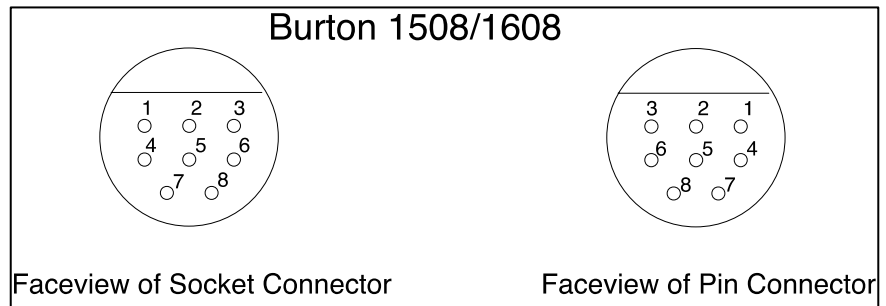


Figure 21. Burton Connector Pinout Diagram

The RS485 communication setup for each light is:

- Left Light: Address 1, 9600 baud, 8/1/none
- Right Light: Address 2, 9600 baud, 8/1/none
- Center Light: Address 1, 9600 baud, 8/1/none

k) ROS Light Commands/Responses

Table 1. ROYS SeaStar Light Serial Commands/Responses

Command	CMD	Description	Notes	Type
Acknowledged	0x81 0x4y 0xff	z = address + 8 y = socket (default 1)	Returned when a command that cannot be executed instantaneously is accepted and begun.	Response
Command Cancelled	0x81 0x6y 0x04 0xff	z = address + 8 y = socket (default 1)		Response
Command Not Executable	0x81 0x6y 0x41 0xff	z = address + 8 y = socket (default 1)	Returned when a command cannot be executed due to current conditions or because a request would put the unit outside of limits.	Response
Completed	0x81 0x5y 0x 0xff	z = address + 8 y = socket (default 1)	Returned when a command that can be executed instantaneously is completed	Response
Syntax Error	0x81 0x60 0x02 0xff	z = address + 8	Returned when the command format is incorrect or when a command with illegal command parameters is accepted.	Response
Clear buffer	0x81 0x01 0x00 0x01 0xff	Returns 88 01 00 01	Not implemented	Command
Command Cancel	0x81 0x2y 0xff	Returns Command cancelled response x = address y = socket (default 1)	Cancels the current command and locks the positioner at it's current position	Command
Set Address	0x81 0x30 0x0x 0xff	x = address 1 - 7 Returns 88 30 0y y = x + 1	Set the address of the node. Only one positioner may be connected when this command is sent to avoid collisions.	Command
Set Max Light Intensity	0x81 0x01 0x10 0x03 0xyy 0xff	x = address yy = Intensity (0x00 - 0x64 hex, 0 - 100 decimal) Returns Command Completed if successful		Command
Set Power Up Intensity	0x81 0x01 0x10 0x02 0xyy 0xff	x = address yy = Intensity (0x00 - 0x64 hex, 0 - 100 decimal) Returns Command Completed if successful		Command
Set Intensity	0x81 0x01 0x10 0x01 0xyy 0xff	x = address yy = Intensity (0x00 - 0x64 hex, 0 - 100 decimal) Returns Command Completed if successful		Command

Get Error Status	0x81 0x09 0x10 0x06 0xff	x = address Returns y0 10 10 06 0y ff y = 4 bits: bit 0 = MOSFET over-current true/false bit 1 = Driver Output over-voltage true/false bit 2 = LED over-current true/false bit 3 = 0		Inquiry
Get Max Intensity	0x81 0x09 0x10 0x07 0xff	x = address Returns y0 10 10 07 yy ff yy = Light intensity percent (0x00 - 0x64 hex, 0 - 100 decimal)		Inquiry
Get Power Up Intensity	0x81 0x09 0x10 0x05 0xff	x = address Returns y0 10 10 05 yy ff yy = Light intensity percent (0x00 - 0x64 hex, 0 - 100 decimal)		Inquiry
Get Intensity	0x81 0x09 0x10 0x04 0xff	x = address Returns y0 10 10 04 yy ff yy = Light intensity percent (0x00 - 0x64 hex, 0 - 100 decimal)		Inquiry
Get Temperature	0x81 0x09 0x10 0x03 0xff	x = address Returns y0 10 10 03 0y 0y 0y ff yyy = Hexadecimal temperature in Kelvin		Inquiry
Get Factory Info	0x81 0x09 0x06 0x50 0xff	X = address Returns z0 50 [ascii_string] ff ascii_string = 40,[unit pn:11],[unit rev:3],[unit sn:5],[cca pn:11],[cca rev:3],[cca sn:5],[firmware pn:11],[firmware rev:3]		Inquiry

l) Additional Information

EosCore141 software logs showing a parsing error on multidrop line

```
Log
2023-04-09 14:42:18 Settings loaded from C:\Users\Billy.Miller\Documents\_Tools\VT\EosCore141\Settings.dat.
2023-04-09 14:42:18 Scanning for comports
2023-04-09 14:42:18 Found 5 ports. COM3, COM2, COM3, COM4, COM5
2023-04-09 14:42:18 Added COM3
2023-04-09 14:42:18 Added COM2
2023-04-09 14:42:19 Added COM3
2023-04-09 14:42:19 Added COM4
2023-04-09 14:42:19 Added COM5
2023-04-09 14:42:19 Scan for visca nodes
2023-04-09 14:42:19 Requested GetFactoryInfo on COM3 node 1 at B9600
2023-04-09 14:42:19 C:\Users\Billy.Miller\Documents\_Tools\VT\EosCore141\SetPoints.dat not found.
2023-04-09 14:42:19 Tx: 81 09 06 50 ff on COM3.
2023-04-09 14:42:19 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:19 No node responded on COM3 node 1.
2023-04-09 14:42:19 Requested GetFactoryInfo on COM3 node 2 at B9600
2023-04-09 14:42:19 Tx: 82 09 06 50 ff on COM3.
2023-04-09 14:42:19 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:19 No node responded on COM3 node 2.
2023-04-09 14:42:19 Requested GetFactoryInfo on COM3 node 3 at B9600
2023-04-09 14:42:19 Tx: 83 09 06 50 ff on COM3.
2023-04-09 14:42:19 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:20 No node responded on COM3 node 3.
2023-04-09 14:42:20 Requested GetFactoryInfo on COM3 node 4 at B9600
2023-04-09 14:42:20 Tx: 84 09 06 50 ff on COM3.
2023-04-09 14:42:20 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:20 No node responded on COM3 node 4.
2023-04-09 14:42:20 Requested GetFactoryInfo on COM3 node 5 at B9600
2023-04-09 14:42:20 Tx: 85 09 06 50 ff on COM3.
2023-04-09 14:42:20 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:20 No node responded on COM3 node 5.
2023-04-09 14:42:20 Requested GetFactoryInfo on COM3 node 6 at B9600
2023-04-09 14:42:20 Tx: 86 09 06 50 ff on COM3.
2023-04-09 14:42:21 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:21 No node responded on COM3 node 6.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM3 node 7 at B9600
2023-04-09 14:42:21 Tx: 87 09 06 50 ff on COM3.
2023-04-09 14:42:21 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:21 No node responded on COM3 node 7.
2023-04-09 14:42:21 Scan for visca nodes
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 1 at B9600
2023-04-09 14:42:21 Tx: 81 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (131 ms)
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 2 at B9600
2023-04-09 14:42:21 Tx: 82 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (75 ms)
2023-04-09 14:42:21 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:21 Invalid response (0x00) on COM2 node 2.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 3 at B9600
2023-04-09 14:42:21 Tx: 83 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (69 ms)
2023-04-09 14:42:21 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:21 Invalid response (0x00) on COM2 node 3.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 4 at B9600
2023-04-09 14:42:21 Tx: 84 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (68 ms)
2023-04-09 14:42:21 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:21 Invalid response (0x00) on COM2 node 4.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 5 at B9600
2023-04-09 14:42:21 Tx: 85 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (69 ms)
2023-04-09 14:42:21 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:21 Invalid response (0x00) on COM2 node 5.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 6 at B9600
2023-04-09 14:42:21 Tx: 86 09 06 50 ff on COM2.
2023-04-09 14:42:21 Close character on COM2 (69 ms)
2023-04-09 14:42:21 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:21 Invalid response (0x00) on COM2 node 6.
2023-04-09 14:42:21 Requested GetFactoryInfo on COM2 node 7 at B9600
2023-04-09 14:42:21 Tx: 87 09 06 50 ff on COM2.
2023-04-09 14:42:22 Close character on COM2 (69 ms)
2023-04-09 14:42:22 Failed to parse FactoryInfo 90 60 02 ff.
2023-04-09 14:42:22 Invalid response (0x00) on COM2 node 7.
2023-04-09 14:42:22 Scan for visca nodes
2023-04-09 14:42:22 Requested GetFactoryInfo on COM3 node 1 at B9600
2023-04-09 14:42:22 Tx: 81 09 06 50 ff on COM3.
2023-04-09 14:42:22 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:22 No node responded on COM3 node 1.
2023-04-09 14:42:22 Requested GetFactoryInfo on COM3 node 2 at B9600
2023-04-09 14:42:22 Tx: 82 09 06 50 ff on COM3.
2023-04-09 14:42:22 Scanning for comports
2023-04-09 14:42:22 Found 5 ports. COM3, COM2, COM3, COM4, COM5
2023-04-09 14:42:22 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:22 No node responded on COM3 node 2.
2023-04-09 14:42:22 Requested GetFactoryInfo on COM3 node 3 at B9600
2023-04-09 14:42:22 Tx: 83 09 06 50 ff on COM3.
2023-04-09 14:42:22 Timed out (250 ms) with no bytes received on COM3.
2023-04-09 14:42:22 No node responded on COM3 node 3.
2023-04-09 14:42:22 Requested GetFactoryInfo on COM3 node 4 at B9600
```

Figure 22. EosCore 141 Parsing Error Logs

Log

```

2023-04-09 14:42:26 Timed out (250 ms) with no bytes received on COM15.
2023-04-09 14:42:26 No node responded on COM15 node 4.
2023-04-09 14:42:26 Requested GetFactoryInfo on COM15 node 5 at B9600
2023-04-09 14:42:26 Tx: 85 09 06 50 ff on COM15.
2023-04-09 14:42:27 Timed out (250 ms) with no bytes received on COM15.
2023-04-09 14:42:27 No node responded on COM15 node 5.
2023-04-09 14:42:27 Requested GetFactoryInfo on COM15 node 6 at B9600
2023-04-09 14:42:27 Tx: 86 09 06 50 ff on COM15.
2023-04-09 14:42:27 Timed out (250 ms) with no bytes received on COM15.
2023-04-09 14:42:27 No node responded on COM15 node 6.
2023-04-09 14:42:27 Requested GetFactoryInfo on COM15 node 7 at B9600
2023-04-09 14:42:27 Tx: 87 09 06 50 ff on COM15.
2023-04-09 14:42:27 Timed out (250 ms) with no bytes received on COM15.
2023-04-09 14:42:27 No node responded on COM15 node 7.
2023-04-09 14:42:27 Comports released
2023-04-09 14:42:43 Tx: 81 09 10 04 ff on COM12.
2023-04-09 14:42:43 Close character on COM12 (75 ms)
2023-04-09 14:43:09 Tx: 81 01 10 01 01 ff on COM12.
2023-04-09 14:43:09 Close character on COM12 (64 ms)
2023-04-09 14:43:20 Tx: 81 01 10 01 37 ff on COM12.
2023-04-09 14:43:21 Close character on COM12 (80 ms)
2023-04-09 14:43:31 Tx: 81 09 10 04 ff on COM12.
2023-04-09 14:43:31 Close character on COM12 (75 ms)
2023-04-09 14:43:44 Tx: 81 01 10 01 05 ff on COM12.
2023-04-09 14:43:44 Close character on COM12 (66 ms)
2023-04-09 14:44:39 Tx: 81 09 10 04 ff on COM12.
2023-04-09 14:44:39 Close character on COM12 (71 ms)
2023-04-09 14:44:49 Tx: 81 01 10 01 00 ff on COM12.
2023-04-09 14:44:49 Close character on COM12 (71 ms)
2023-04-09 14:47:14 Tx: 81 09 10 05 ff on COM12.
2023-04-09 14:47:14 Close character on COM12 (66 ms)
2023-04-09 14:47:48 Tx: 82 09 10 05 ff on COM12.
2023-04-09 14:47:48 Close character on COM12 (67 ms)
2023-04-09 14:48:03 Tx: 83 09 10 05 ff on COM12.
2023-04-09 14:48:03 Close character on COM12 (73 ms)
2023-04-09 14:48:12 Tx: 81 09 10 05 ff on COM12.
2023-04-09 14:48:12 Close character on COM12 (74 ms)
2023-04-09 14:48:42 Tx: 82 01 10 01 00 ff on COM12.
2023-04-09 14:48:43 Close character on COM12 (158 ms)
2023-04-09 14:49:08 Tx: 82 01 10 01 37 ff on COM12.
2023-04-09 14:49:08 Close character on COM12 (63 ms)
2023-04-09 14:49:17 Tx: 82 01 10 01 00 ff on COM12.
2023-04-09 14:49:18 Close character on COM12 (72 ms)
2023-04-09 14:49:28 Tx: 81 01 10 01 37 ff on COM12.
2023-04-09 14:49:28 Close character on COM12 (77 ms)
2023-04-09 14:49:40 Tx: 83 01 10 01 37 ff on COM12.
2023-04-09 14:49:40 Close character on COM12 (69 ms)
2023-04-09 14:49:54 Tx: 83 01 10 01 37 ff on COM12.
2023-04-09 14:49:55 Close character on COM12 (72 ms)
2023-04-09 14:50:03 Tx: 81 01 10 01 37 ff on COM12.
2023-04-09 14:50:03 Close character on COM12 (66 ms)
2023-04-09 14:50:09 Tx: 82 01 10 01 37 ff on COM12.
2023-04-09 14:50:09 Close character on COM12 (73 ms)
2023-04-09 14:50:15 Tx: 82 01 10 01 00 ff on COM12.
2023-04-09 14:50:15 Close character on COM12 (74 ms)

```

Com Mode: IP Serial

Address: 1

Com Port: COM12

Baud Rate: 9600

Sent to node 1

```

81 09 10 04 ff
81 01 10 01 01 ff
81 01 10 01 37 ff
81 09 10 04 ff
81 01 10 01 05 ff
81 09 10 04 ff
81 01 10 01 00 ff
81 09 10 05 ff
82 09 10 05 ff
83 09 10 05 ff
81 09 10 05 ff
82 01 10 01 00 ff
82 01 10 01 37 ff
82 01 10 01 00 ff
81 01 10 01 37 ff
83 01 10 01 37 ff

```

Response from node 1

```

90 10 10 04 00 ff (87.670 ms)
90 51 ff (73.657 ms) (Completed)
90 51 ff (89.278 ms) (Completed)
90 10 10 04 37 ff (84.521 ms)
90 51 ff (75.238 ms) (Completed)
90 10 10 04 05 ff (81.015 ms)
90 51 ff (80.048 ms) (Completed)
90 10 10 05 00 ff (75.299 ms)
90 60 02 ff (76.244 ms)
90 60 02 ff (81.728 ms)
90 10 10 05 00 ff (83.860 ms)
b0 71 ff (167.220 ms)
a0 51 ff (71.942 ms) (Completed)
a0 51 ff (81.288 ms) (Completed)
a0 60 02 ff (86.082 ms)
a0 60 02 ff (78.617 ms)

```

EosCore141 software diagnostics screen showing communication completed “good” communication and the commands that were sent that don’t indicate completed which is “bad” communication.

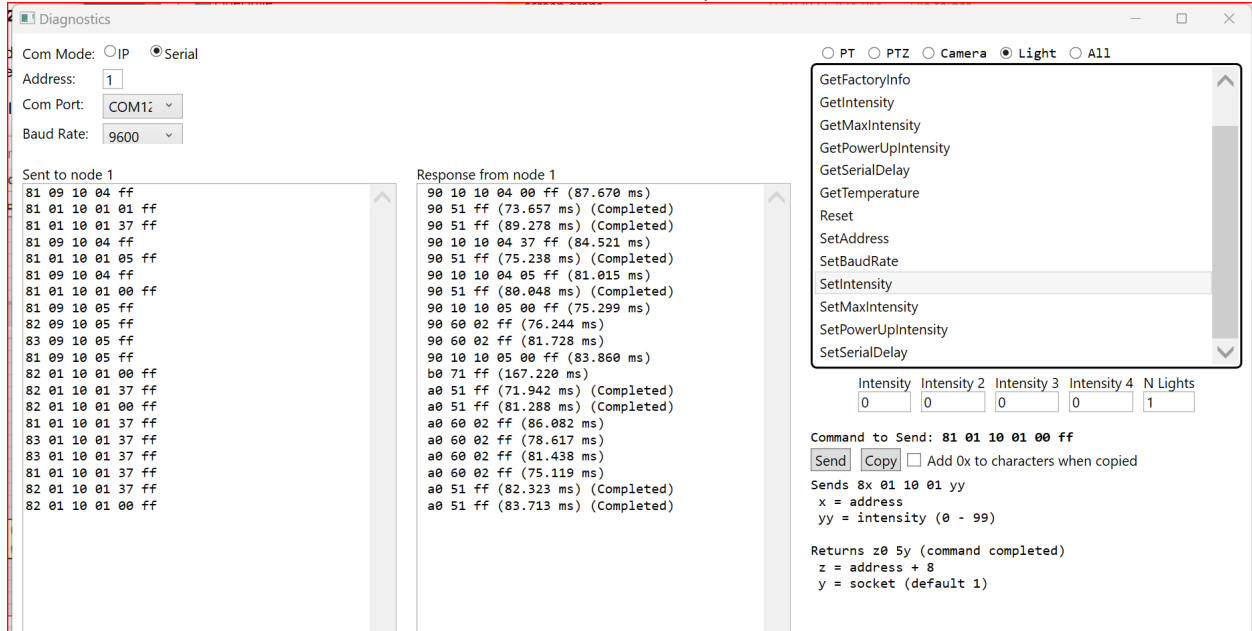


Figure 23. EosCore141 Diagnostics Screen