

# TECHNICAL Bulletin

## Generator Communication Troubleshooting

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Product: FTS-370  
Brand(s): Flash  
Effective Date: January 25, 2024  
Part Affected: PCB4 Smart Power Supply  
Issued By: Joshua Crowne, Manager, Systems and Solutions Engineering

This bulletin is issued to guide our customers of the correct procedure to troubleshoot Generac and Kohler generator monitoring on the Flash brand monitoring equipment that utilize Smart Power Supply PCB4.

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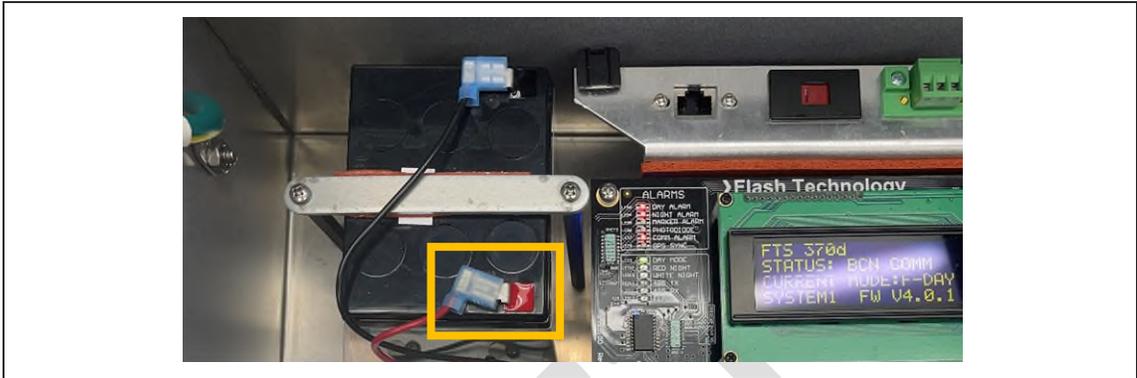
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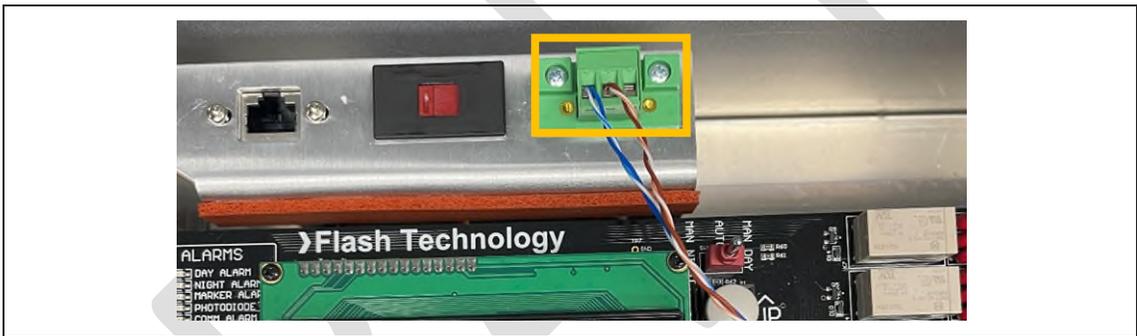
DRAFT

1. VERIFY 120VAC POWER ON PCB4

1.1. REMOVE RED LEAD FROM BACKUP BATTERY



1.2. REMOVE AUX POWER CONNECTION FROM GENERATOR BRACKET

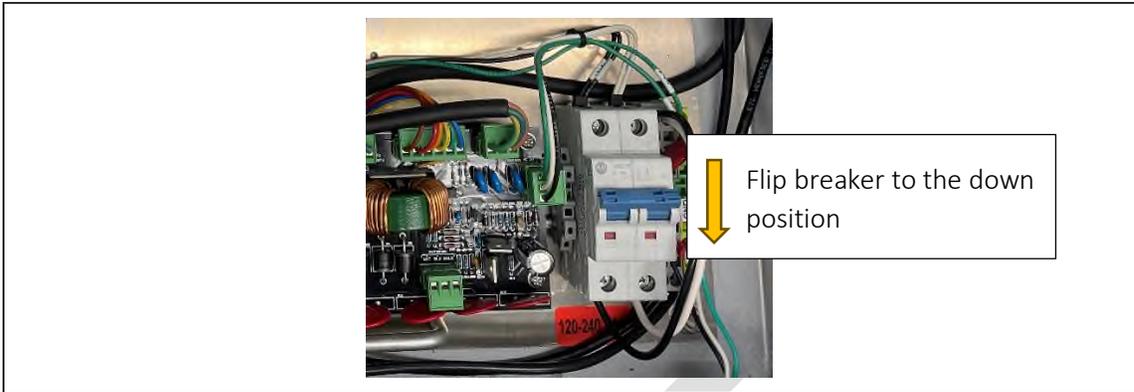


1.3. IS THE LCD DISPLAY POWERED ON?

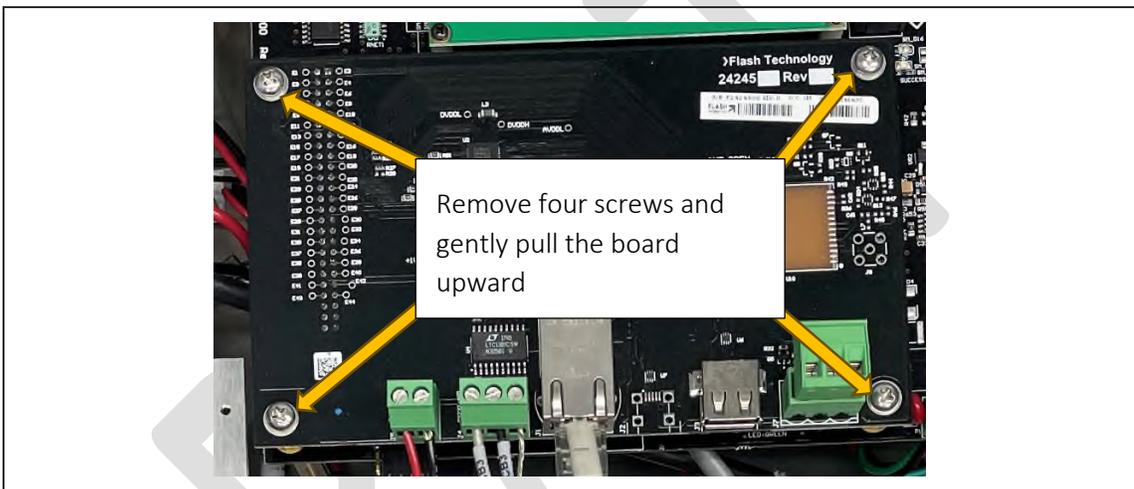


|     |                                |
|-----|--------------------------------|
| YES | Go to <a href="#">Step 2</a>   |
| NO  | Go to <a href="#">Step 1.4</a> |

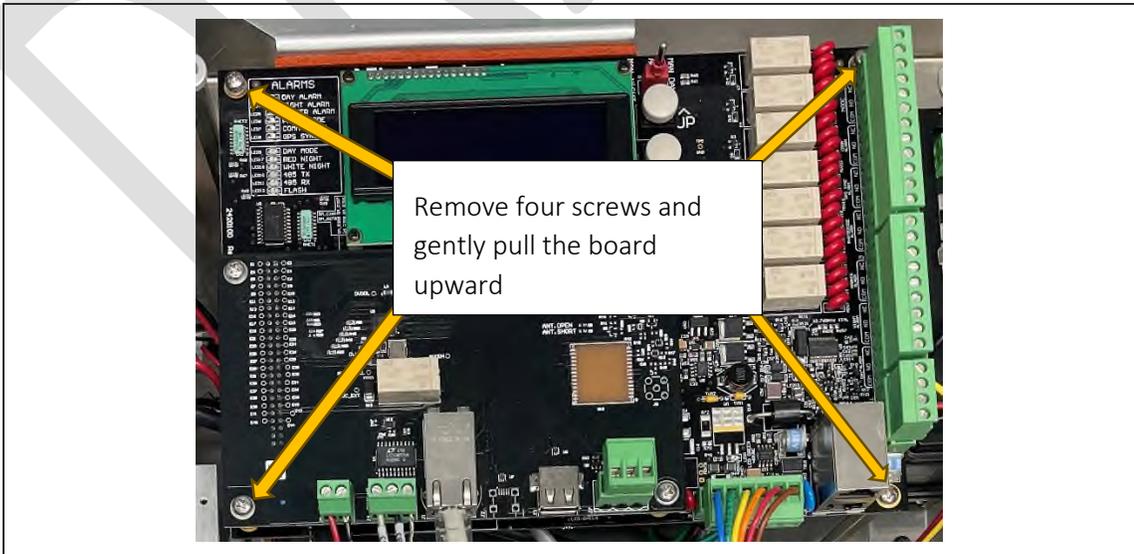
1.4. TURN OFF THE MAIN POWER TO THE CONTROLLER USING THE INTERNAL BREAKER



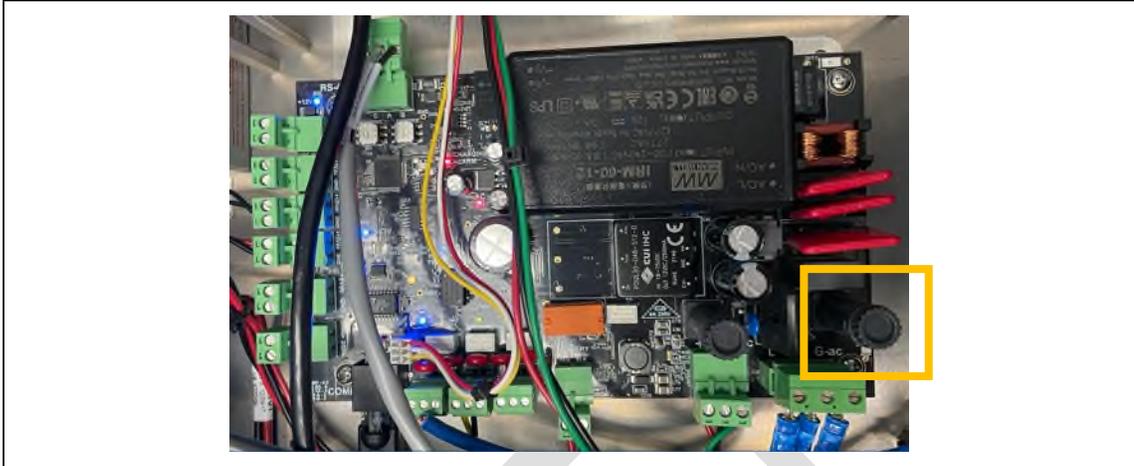
1.5. REMOVE THE SMART CARD FROM THE DISPLAY BOARD AND SAFELY SET ASIDE



1.6. REMOVE THE DISPLAY BOARD AND SAFELY SET ASIDE



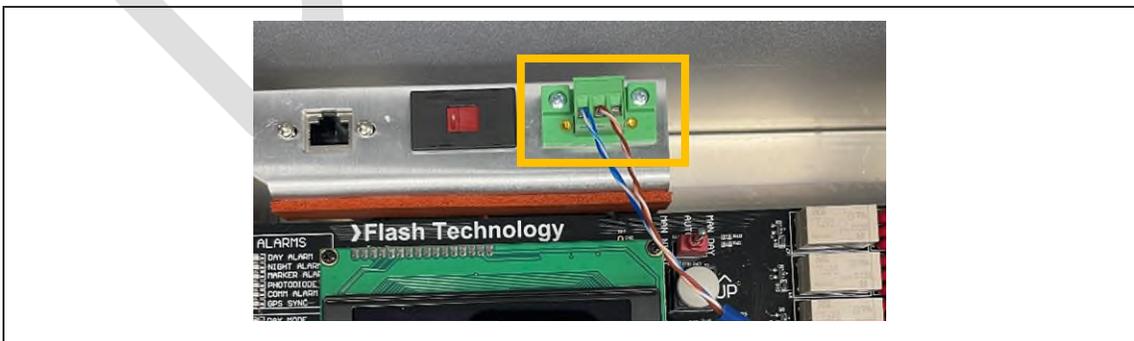
1.7. REMOVE FUSE F1 FROM PCB4 AND VERIFY IN OHMS WITH A VOLTMETER. DOES THE FUSE MEASURE LESS THAN 5Ω?



|                   |   |
|-------------------|---|
| <p><b>YES</b></p> | <p>Replace PCB4.<br/>Reinstall Display Board<br/>Reinstall Smart Card<br/>Turn on the main power to the Controller<br/>Go back to <a href="#">Step 1.3</a></p>    |
| <p><b>NO</b></p>  | <p>Replace Fuse F1.<br/>Reinstall Display Board<br/>Reinstall Smart Card<br/>Turn on the main power to the Controller<br/>Go back to <a href="#">Step 1.3</a></p> |

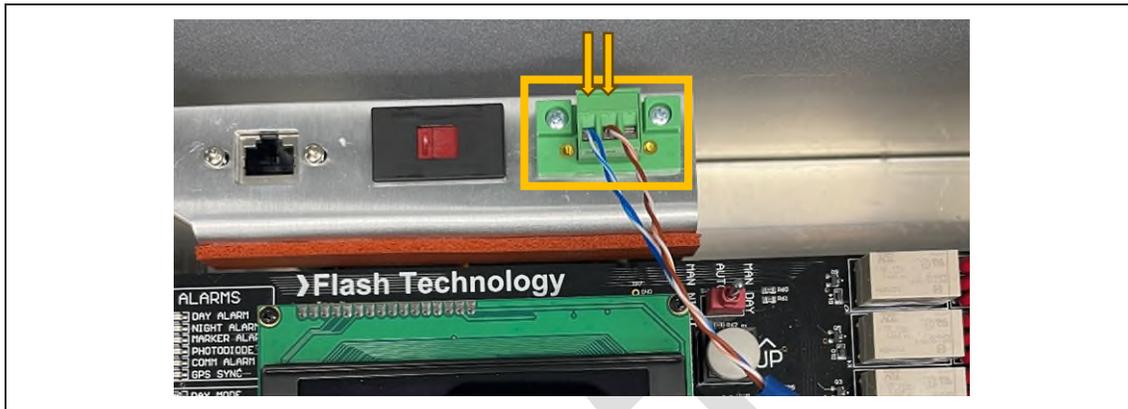
2. VERIFY POE POWER ON PCB4

2.1. IS THE POE CAT5 CABLE FROM THE GENERATOR WIRED CORRECTLY AS SHOWN BELOW?



|                   |   |
|-------------------|---|
| <p><b>YES</b></p> | <p>Continue to <a href="#">Step 2.2</a></p>                         |
| <p><b>NO</b></p>  | <p>Correct the wiring then continue to <a href="#">Step 2.2</a></p> |

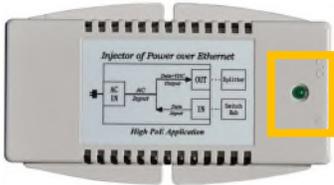
2.2. MEASURE + AND – THE POE INPUT POWER WITH A METER IN DC VOLTAGE. DOES THE METER READ GREATER THAN 20VDC?



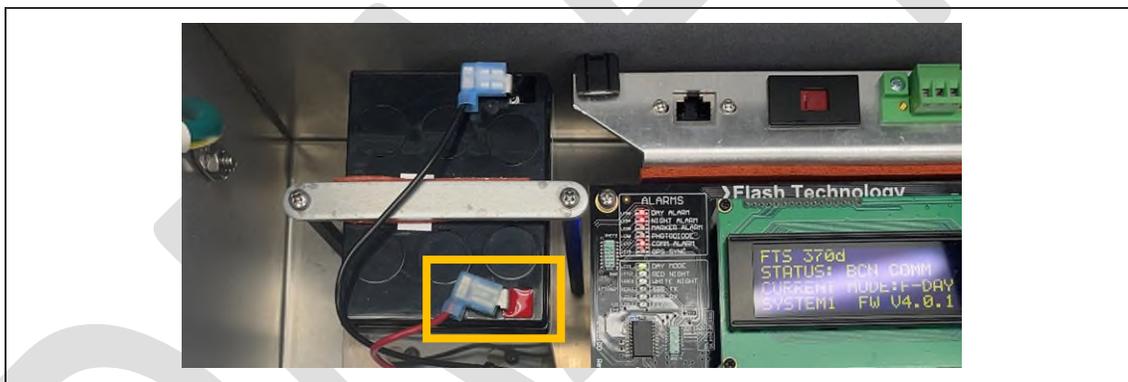
|     |                                      |
|-----|--------------------------------------|
| YES | Continue to <a href="#">Step 2.4</a> |
| NO  | Continue to <a href="#">Step 2.3</a> |

DRAFT

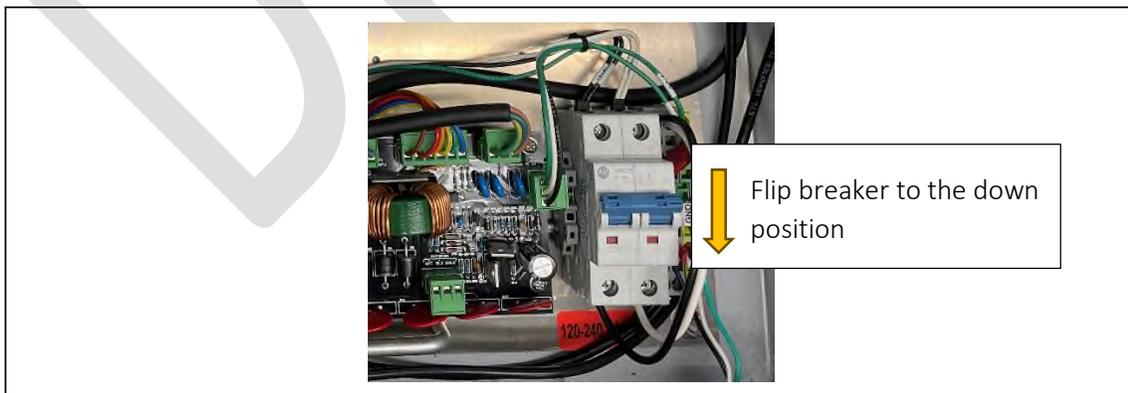
2.3. LOCATE THE POE INJECTOR THAT IS INSTALLED IN THE GENERATOR. IS THE GREEN POWER LED ON SOLID ON THE INJECTOR?

|  |  |
|--|--|
|  |  |
| <b>YES</b>   | <p>Likely cause is bad CAT5 cable.<br/>Use a known good cable to verify.<br/>This can temporarily be run above ground for this test.<br/>Go Back to <a href="#">Step 2.2</a></p> |
| <b>NO</b>  | <p>Replace POE injector.<br/>Go Back to <a href="#">Step 2.2</a></p>   |

2.4. REMOVE RED LEAD FROM BACKUP BATTERY



2.5. REMOVE MAIN POWER TO CONTROLLER

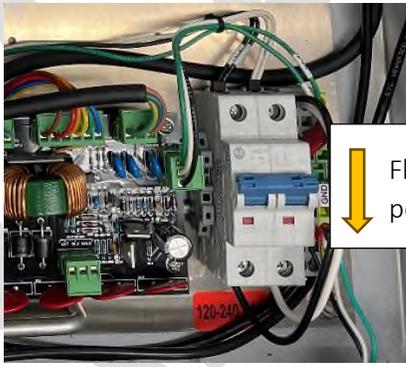


2.6. IS THE LCD DISPLAY POWERED ON?



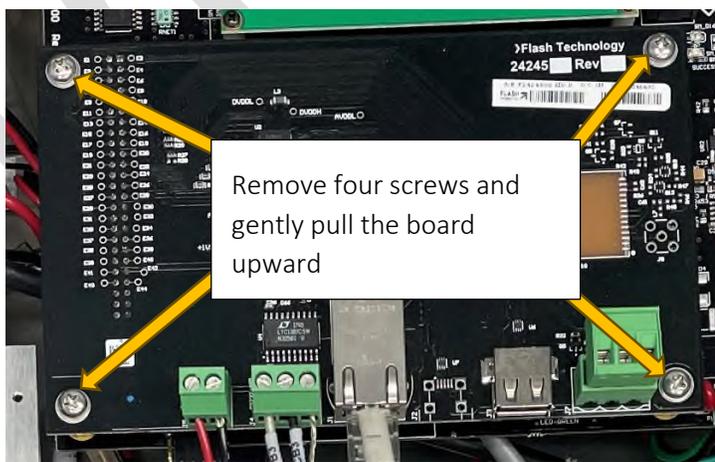
|     |                                |
|-----|--------------------------------|
| YES | Go to <a href="#">Step 3</a>   |
| NO  | Go to <a href="#">Step 2.7</a> |

2.7. TURN OFF THE MAIN POWER TO THE CONTROLLER USING THE INTERNAL BREAKER



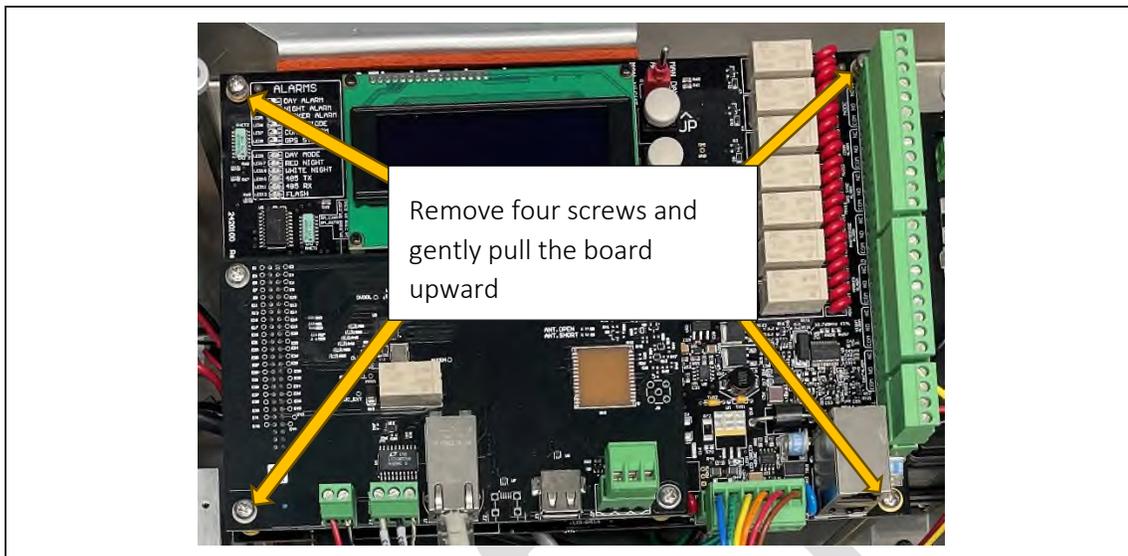
Flip breaker to the down position

2.8. REMOVE THE SMART CARD FROM THE DISPLAY BOARD AND SAFELY SET ASIDE

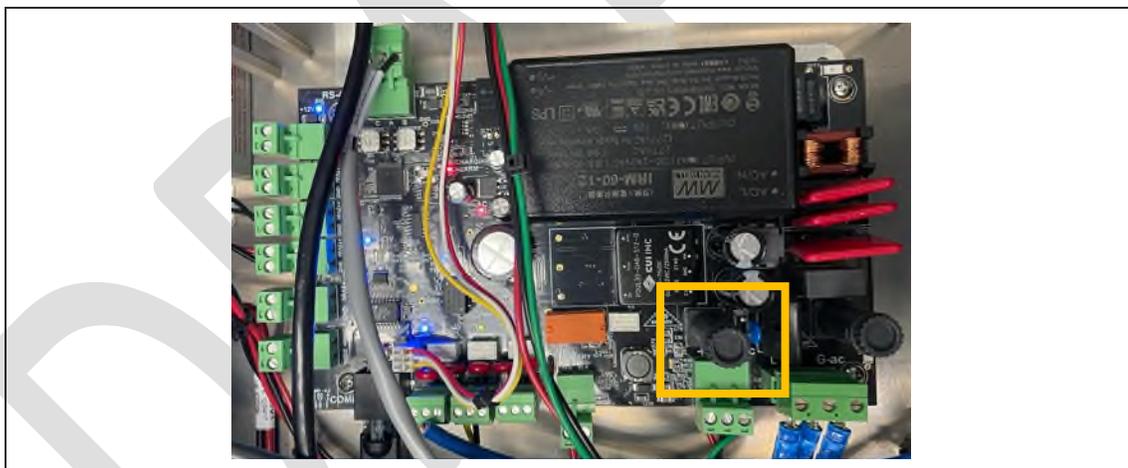


Remove four screws and gently pull the board upward

2.9. REMOVE THE DISPLAY BOARD AND SAFELY SET ASIDE



2.10. REMOVE FUSE F2 FROM PCB4 AND VERIFY IN OHMS WITH A VOLTMETER. DOES THE FUSE MEASURE LESS THAN 5Ω?



|                   |   |
|-------------------|---|
| <p><b>YES</b></p> | <p>Replace PCB4.<br/>Reinstall Display Board<br/>Reinstall Smart Card<br/>Reconnect AUX Power to Generator Bracket<br/>Go back to <a href="#">Step 2.6</a></p>    |
| <p><b>NO</b></p>  | <p>Replace Fuse F2.<br/>Reinstall Display Board<br/>Reinstall Smart Card<br/>Reconnect AUX Power to Generator Bracket<br/>Go back to <a href="#">Step 2.6</a></p> |

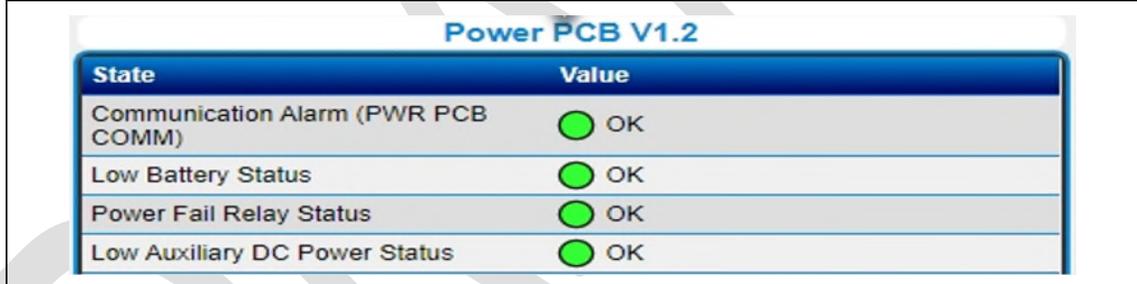
3. VERIFY 'CONTROLLER POWER SUPPLY PCB MODEL' IS SET TO 'SMART' ON THE TOWER LIGHTING CONFIGURATION WEBPAGE (COMPLETED BY THE NOC)

3.1. IS THIS SETTING SET TO 'SMART' AS SHOWN?



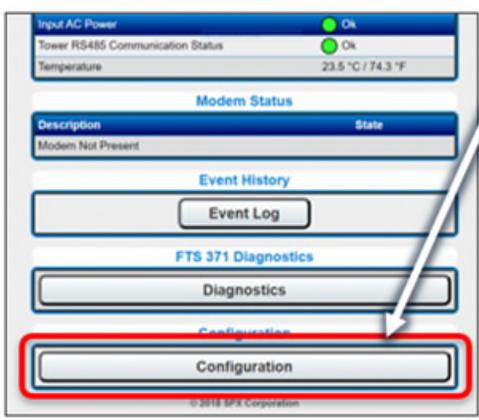
|            |   |
|------------|---|
| <b>YES</b> | Continue to <a href="#">Step 3.2</a>  |
| <b>NO</b>  | Set this value to 'Smart'<br>Click the 'Commit Settings' button<br>Click the 'Power Supply PCB Reboot' button<br>Continue to <a href="#">Step 3.2</a> |

3.2. CLICK ON THE DIAGNOSTICS BUTTON ON THE HOME PAGE AND NAVIGATE TO THE BOTTOM OF THE PAGE. ARE ALL THESE ALARM VALUES GREEN?

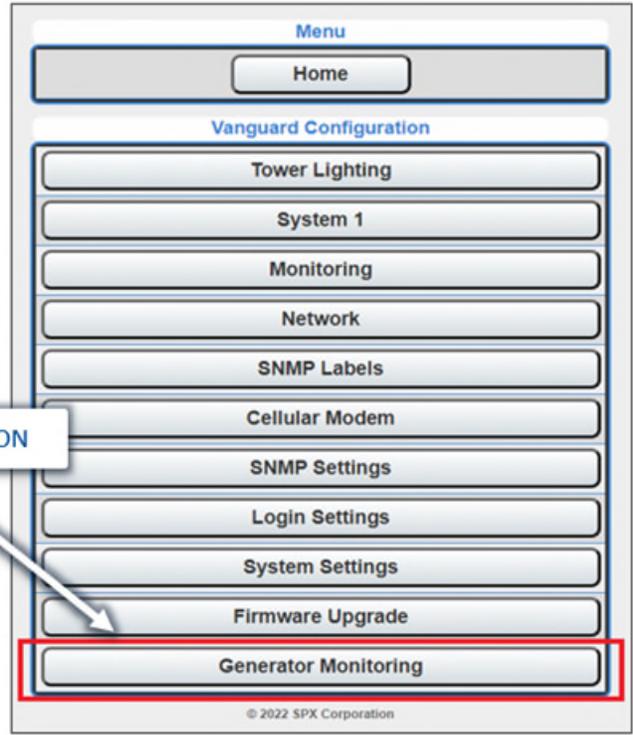


|            |  |
|------------|--|
| <b>YES</b> | Continue to <a href="#">Step 4</a>   |
| <b>NO</b>  | Likely cause is PCB4 or PCB3.<br>Please contact SPX AtoN Technical Support before replacement. |

4. VERIFY GENERATOR MONITORING IS ENABLED (COMPLETED BY THE NOC)

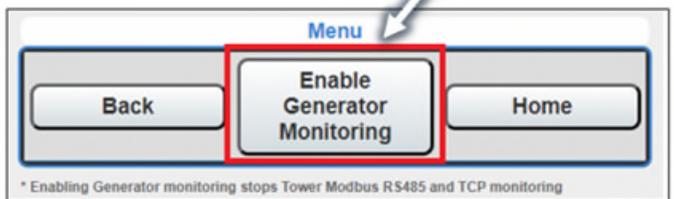


**3.1 CLICK "CONFIGURATION" BUTTON ON THE HOME PAGE**



**3.2 CLICK "GENERATOR MONITORING" BUTTON**

**3.3 CLICK "ENABLE GENERATOR MONITORING" BUTTON**



5. VERIFY GENERATOR CONTROL PANEL MODEL (COMPLETED BY THE NOC)

Menu

Back Disable Generator Monitoring Home

\* Enabling Generator monitoring stops Tower Modbus RS485 and TCP monitoring

Generator Monitoring Configuration

| Description  | Current Value   | Set Value             |
|--|---|-----------------------|
| Changing this setting could prevent further communications to the system |   |                       |
| Generator Control Panel Model  | Disabled  | Disabled              |
| Generator Name   | Generac   |                       |
| H-Panel IO alarms  | Disabled  | <input type="radio"/> |
| Transfer Switch Model  | Disabled  | Disabled              |
| HTS Count  | 0   | 0                     |
| HUIO 1 CFG 12  | HUIO 1 CFG 12   |                       |
| HUIO 1 CFG 13  | HUIO 1 CFG 13   |                       |
| HUIO 1 CFG 14  | HUIO 1 CFG 14   |                       |
| HUIO 1 CFG 15  | HUIO 1 CFG 15   |                       |
| HUIO 2 CFG 16  | HUIO 2 CFG 16   |                       |
| HUIO 2 CFG 17  | HUIO 2 CFG 17   |                       |
| HUIO 2 CFG 18  | HUIO 2 CFG 18   |                       |
| HUIO 2 CFG 19  | HUIO 2 CFG 19   |                       |
| HUIO 3 CFG 20  | HUIO 3 CFG 20   |                       |
| HUIO 3 CFG 21  | HUIO 3 CFG 21   |                       |
| HUIO 3 CFG 22  | HUIO 3 CFG 22   |                       |
| HUIO 3 CFG 23  | HUIO 3 CFG 23   |                       |
| HUIO 4 CFG 24  | HUIO 4 CFG 24   |                       |
| HUIO 4 CFG 25  | HUIO 4 CFG 25   |                       |
| HUIO 4 CFG 26  | HUIO 4 CFG 26   |                       |
| HUIO 4 CFG 27  | HUIO 4 CFG 27   |                       |
| Generator PCB Model  | <input type="radio"/> Standard (PCB8)<br><input type="radio"/> Smart (PCB4)<br><input checked="" type="radio"/> Standard (PCB6) |                       |

Commit Settings Cancel Home

**4.1 VERIFY GENERATOR CONTROL PANEL MODEL**

This must match the model at the site.

Note:  
 Generac 232 => H100 Panel w/o Grid Connect Converter Installed  
 Generac 485 => H100 Panel with Grid Connect Converter Installed

Generator Control Panel Model dropdown menu:

- Generac 232
- Select ---
- Disabled
- Generac 232
- Generac 485
- Kohler DEC3000/AMP402
- Kohler DEC550

**4.2. IF THE MODEL WAS CHANGED, CLICK "COMMIT SETTINGS". A POP UP WILL DISPLAY – CLICK "OK" TO CONFIRM**

AFTER CONFIRMING SELECTION, MAKE SURE THE GENERATOR CONTROL PANEL MODEL IS UPDATED ON THE WEBPAGE. IF THE CURRENT VALUE IS NOT UPDATED TO THE GENERATOR MODEL SELECTED THEN REFRESH THE WEBPAGE ONCE BEFORE RETRYING.

POP UP AS MENTIONED – CLICK "OK"

Changing this setting could prevent further communications to the system. Are you sure?

OK Cancel

Menu

Back Disable Generator Monitoring Home

6. VERIFY RS485 OR RS232 LEDS ON PCB4

6.1. IS THE RED RS485 LED OR BLUE RS232 LED LIT ON PCB4?

The best way to see these are from the left side by the battery under PCB1 as shown

|            |   |
|------------|---|
| <p>YES</p> | <p>Continue to <a href="#">Step 7</a></p>   |
| <p>NO</p>  | <p>Likely cause is bad PCB4.<br/>Replace PCB4 and go back to <a href="#">Step 6</a></p> |

7. WHICH CONTROL PANEL MODEL HAS BEEN SELECTED?

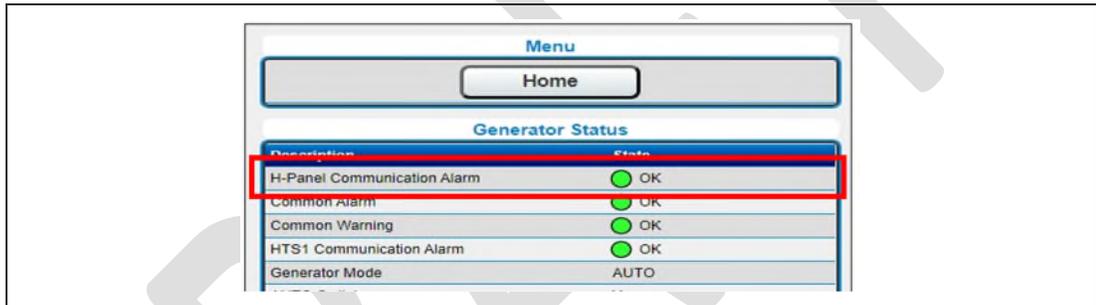
- [Generac 232 Comm Verification](#)
- [Generac 485 Comm Verification](#)
- [Kohler DEC3000/AMP402 Comm Verification](#)
- [Kohler DEC550 Comm Verification](#)

8. GENERAC 232 COMM VERIFICATION

8.1. VERIFY TERMINATION JUMPER P1 IS OPEN/OFF/UN-SHUNTED FOR GENERAC GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE LEFT POSITION.



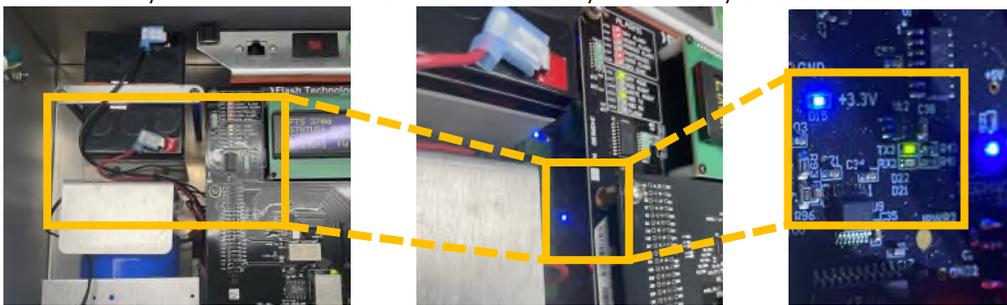
8.2. IS THE 'COMMUNICATION ALARM' INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)



|     |                                       |
|-----|---------------------------------------|
| YES | Comms are working verify ATS settings |
| NO  | Continue to <a href="#">Step 8.3</a>  |

8.3. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

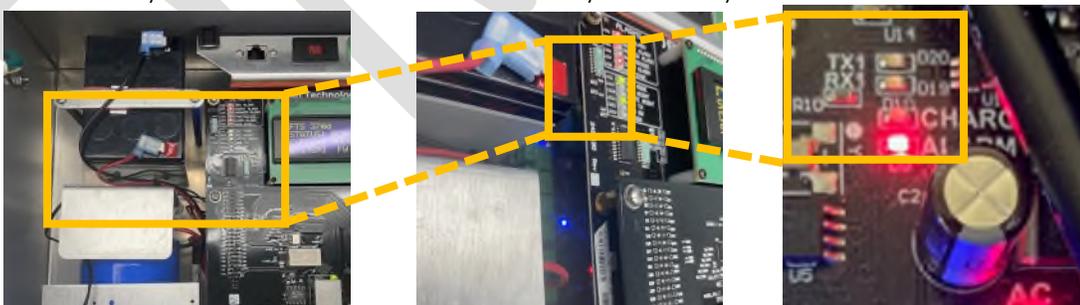
The best way to see these are from the left side by the battery under PCB1 as shown



|                           |  |
|---------------------------|--|
| YES                       | Continue to <a href="#">Step 8.4</a>   |
| NO – TX2 is not flashing  | Likely cause is bad PCB4.<br>Replace PCB4 and go back to <a href="#">Step 8.2</a>  |
| NO – Only TX2 is flashing | #1<br>Likely cause is bad CAT5 cable or RJ45 to DB9 converter.<br>Use a known good cable and convertor to verify.<br>These can temporarily be run above ground for this test.<br>Once a known good cable and converter are installed go back to <a href="#">Step 8.2</a><br>#2<br>Replace PCB4<br>Go back to <a href="#">Step 8.2</a><br>#3<br>Contact AtoN Technical Support for more in depth troubleshooting. |

8.4. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

The best way to see these are from the left side by the battery under PCB1 as shown.



|     |  |
|-----|--|
| YES | Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting. |
| NO  | Likely cause is bad PCB3.<br>Replace PCB3 and go back to <a href="#">Step 8.3</a>                            |

9. GENERAC 485 COMM VERIFICATION  
(GRIDCONNECT MUST BE INSTALLED IN THE GENERATOR AS SEEN IN STEP 8.3)

9.1. VERIFY TERMINATION JUMPER P1 IS OPEN/OFF/UN-SHUNTED FOR GENERAC GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE RIGHT POSITION.



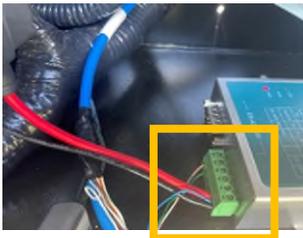
9.2. IS THE 'H-PANEL COMMUNICATION ALARM' INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)

| <div style="border: 1px solid gray; padding: 5px;"> <p style="text-align: center; margin: 0;">Menu</p> <p style="text-align: center; margin: 0;">Home</p> <p style="text-align: center; margin: 0;">Generator Status</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">State</th> </tr> </thead> <tbody> <tr style="border: 2px solid red;"> <td>H-Panel Communication Alarm</td> <td>● OK</td> </tr> <tr> <td>Common Alarm</td> <td>● OK</td> </tr> <tr> <td>Common Warning</td> <td>● OK</td> </tr> <tr> <td>HTS1 Communication Alarm</td> <td>● OK</td> </tr> <tr> <td>Generator Mode</td> <td>AUTO</td> </tr> </tbody> </table> </div> |                                       | Description | State | H-Panel Communication Alarm | ● OK | Common Alarm | ● OK | Common Warning | ● OK | HTS1 Communication Alarm | ● OK | Generator Mode | AUTO |
|---|---------------------------------------|-------------|-------|-----------------------------|------|--------------|------|----------------|------|--------------------------|------|----------------|------|
| Description   | State                                 |             |       |                             |      |              |      |                |      |                          |      |                |      |
| H-Panel Communication Alarm   | ● OK                                  |             |       |                             |      |              |      |                |      |                          |      |                |      |
| Common Alarm  | ● OK                                  |             |       |                             |      |              |      |                |      |                          |      |                |      |
| Common Warning  | ● OK                                  |             |       |                             |      |              |      |                |      |                          |      |                |      |
| HTS1 Communication Alarm  | ● OK                                  |             |       |                             |      |              |      |                |      |                          |      |                |      |
| Generator Mode  | AUTO                                  |             |       |                             |      |              |      |                |      |                          |      |                |      |
| YES   | Comms are working verify ATS settings |             |       |                             |      |              |      |                |      |                          |      |                |      |
| NO  | Continue to <a href="#">Step 9.3</a>  |             |       |                             |      |              |      |                |      |                          |      |                |      |

9.3. MAKE SURE THE BLUE CABLE IS SECURELY CONNECTED FROM THE RS-232 CONNECTION ON THE MOD-RS485-CNV-10XN AND THE GENERATOR.



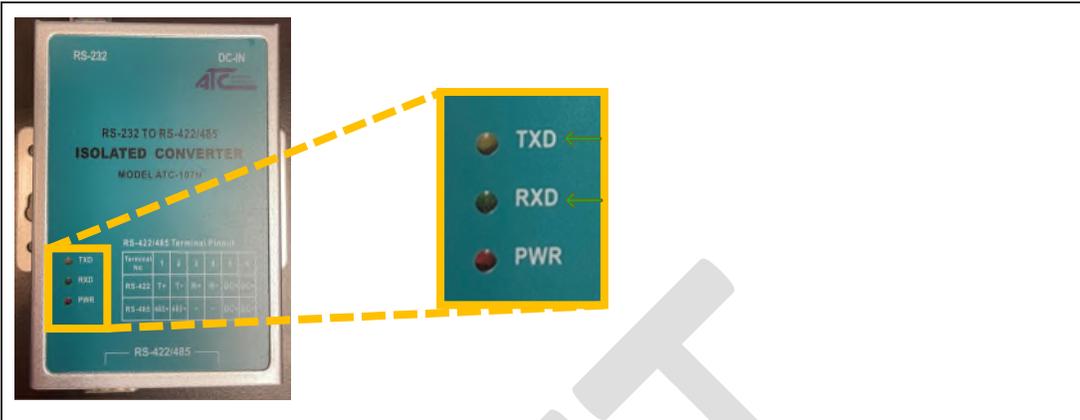
9.4. IS 9VDC-30VDC SUPPLIED TO THE MOD-RS485-CNV-10XN ON THE DC+ AND DC- CONNECTIONS? (MEASURE THE WITH A MULTIMETER)

|   |     |  |
|---|-----|--|
|  | YES | Continue to <a href="#">Step 9.5</a>   |
|   | NO  | Replace the inline fuse.<br>Verify the power wiring is correct.<br>Go back to <a href="#">Step 9.2</a> |

9.5. IS THE RED PWR LED ON THE MOD-RS485-CNV-10XN ON?

|  |   |
|--|---|
|  |   |
| YES  | Continue to <a href="#">Step 9.6</a>                                  |
| NO   | Replace the MOD-RS485-CNV-10xN<br>Go Back to <a href="#">Step 9.2</a> |

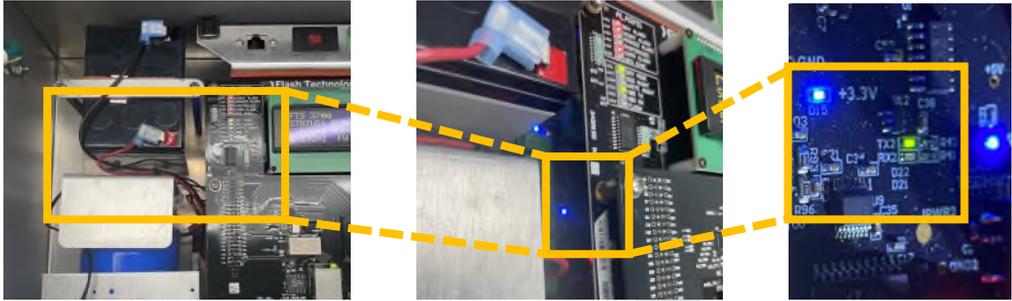
9.6. ARE THE GREEN RXD LED AND YELLOW TXD LED ON THE MOD-RS485-CNV-10XN FLASHING ONCE PER SECOND?



|     |  |
|-----|--|
| YES | Continue to <a href="#">Step 9.7</a>   |
| NO  | <p>#1<br/>Likely cause is bad CAT5 cable.<br/>Use a known good cable to verify.<br/>This can temporarily be run above ground for this test.<br/>Once a known good cable is installed go back to <a href="#">Step 9.6</a></p> <p>#2<br/>Likely cause is bad MOD-RS485-CNV-10xN.<br/>Replace the MOD-RS485-CNV-10xN.<br/>Go back to <a href="#">Step 9.6</a></p> <p>#3<br/>Likely cause is bad PCB4 board.<br/>Replace the PCB4 board.<br/>Go back to <a href="#">Step 9.6</a></p> |

9.7. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

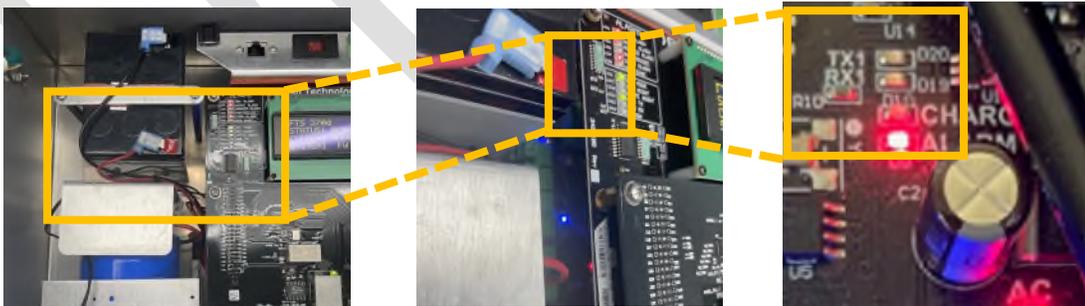
The best way to see these are from the left side by the battery under PCB1 as shown



|                           |  |
|---------------------------|--|
| YES                       | Continue to <a href="#">Step 9.8</a>   |
| NO – TX2 is not flashing  | Likely cause is bad PCB4.<br>Replace PCB4 and go back to <a href="#">Step 9.2</a>  |
| NO – Only TX2 is flashing | #1<br>Likely cause is bad CAT5 cable or RJ45 to DB9 converter.<br>Use a known good cable and convertor to verify.<br>These can temporarily be run above ground for this test.<br>Once a known good cable and converter are installed go back to <a href="#">Step 9.2</a><br>#2<br>Likely cause is bad PCB4 board.<br>Replace PCB4.<br>Go back to <a href="#">Step 9.2</a><br>#3<br>Contact AtoN Technical Support for more in depth troubleshooting. |

9.8. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

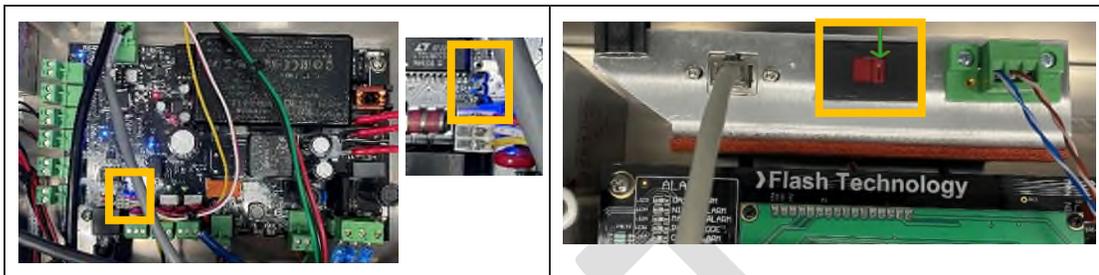
The best way to see these are from the left side by the battery under PCB1 as shown.



|     |  |
|-----|--|
| YES | Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting. |
| NO  | Likely cause is bad PCB3.<br>Replace PCB3 and go back to <a href="#">Step 9.2</a>                            |

10. KOHLER DEC3000/AMP402 AND DEC550 COMM VERIFICATION

10.1. VERIFY TERMINATION JUMPER P1 IS CLOSED/ON/SHUNTED FOR KOHLER GENERATOR AND THE RS232 / RS485 SELECTOR SWITCH IS SET TO THE RIGHT POSITION.



10.2. IS THE 'COMMUNICATION ALARM' INDICATING A GREEN OK STATE ON THE GENERATOR STATUS PAGE? (COMPLETED BY THE NOC)

|            |                                       |
|------------|---------------------------------------|
|            |                                       |
| <b>YES</b> | Comms are working verify ATS settings |
| <b>NO</b>  | Continue to <a href="#">Step 10.3</a> |

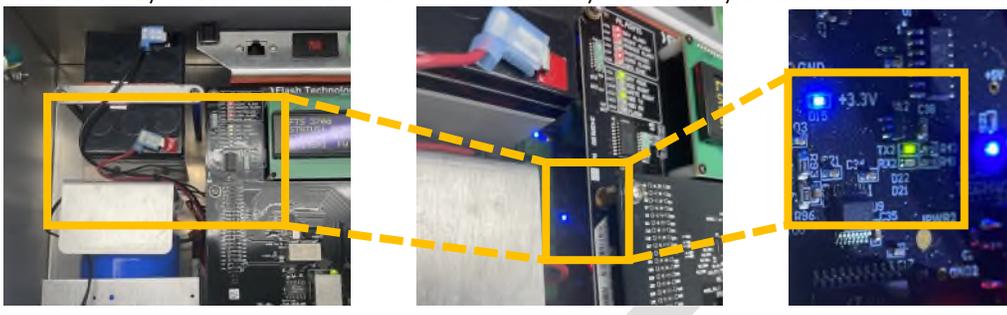
10.3. DO TX2 AND RX2 ON PCB4 FLASH TOGETHER?

The best way to see these are from the left side by the battery under PCB1 as shown.

|                                  |  |
|----------------------------------|--|
| <b>YES</b>                       | Continue to <a href="#">Step 10.6</a>  |
| <b>NO – TX2 is not flashing</b>  | Likely cause is bad PCB4.<br>Replace PCB4 and go back to <a href="#">Step 10.2</a> |
| <b>NO – Only TX2 is flashing</b> | Go to <a href="#">Step 10.4</a>  |

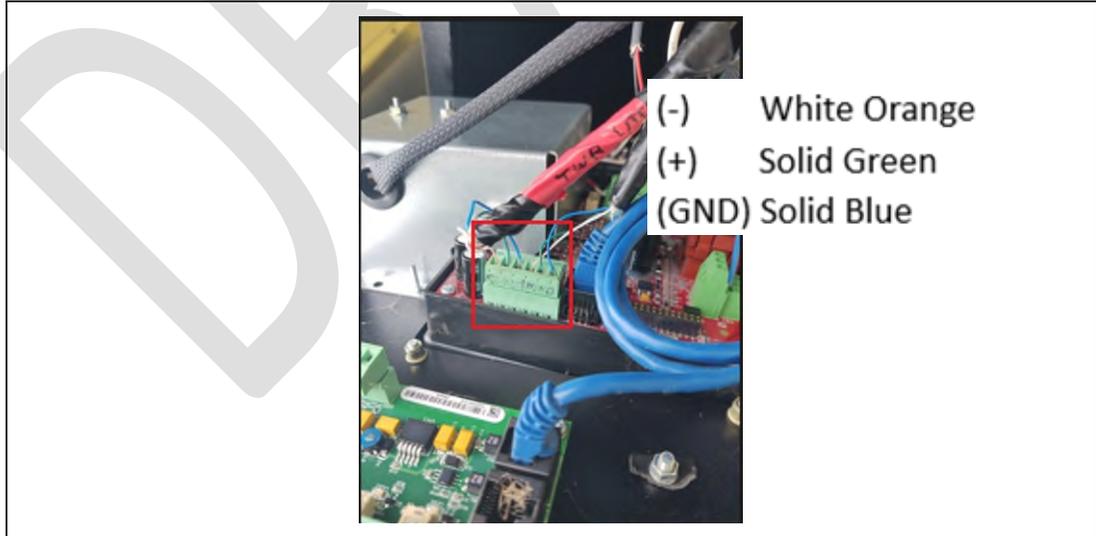
10.4. IS TX2 FLASHING AND RX2 SOLID ON ON PCB4?

The best way to see these are from the left side by the battery under PCB1 as shown.



|     |   |
|-----|---|
| YES | Swap the RS485 wiring in the Kohler generator panel on <a href="#">Step 10.5</a>  |
| NO  | <p>#1<br/>Likely cause is bad CAT5 cable.<br/>Use a known good cable and converter to verify.<br/>These can temporarily be run above ground for this test.<br/>Once a known good cable and converter are installed go back to <a href="#">Step 10.2</a></p> <p>#2<br/>Replace PCB4<br/>Go back to <a href="#">Step 10.2</a></p> <p>#3<br/>Contact AtoN Technical Support for more in depth troubleshooting.</p> |

10.5. DOES THE RS485 WIRING IN THE KOHLER GENERATOR MATCH THE PICTURE BELOW?

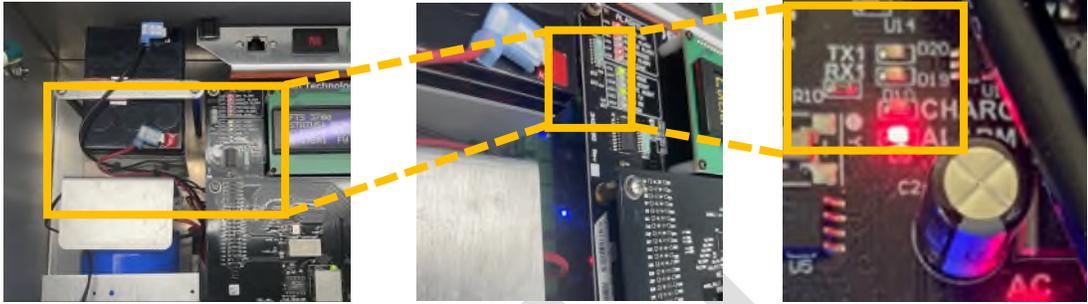


|     |  |
|-----|--|
| YES | Swap the RS485 wiring in the Kohler generator panel on <a href="#">Step 10.2</a>       |
| NO  | <p>#1<br/>Fix the wiring in the Kohler back to <a href="#">Step 10.2</a></p> <p>#2</p> |

|   |
|---|
| Contact AtoN Technical Support for more in depth troubleshooting. |
|---|

10.6. DO TX1 AND RX1 ON PCB4 FLASH TOGETHER?

The best way to see these are from the left side by the battery under PCB1 as shown.



|     |  |
|-----|--|
| YES | Communication should be up. If not, please contact AtoN Technical Support for more in depth troubleshooting. |
| NO  | Likely cause is bad PCB3.<br>Replace PCB3 and go back to <a href="#">Step 10.2</a>                           |

DRAFT