# AUTOBOSS CONNECTIVITY TROUBLESHOOTING PROCEDURES

The following procedures will help to determine the causes of connectivity difficulty between the Android App and the Autoboss PLC. These procedures have been created in a logical sequence so they should be followed in a step-by-step fashion. If the results of any of these steps are not consistent with the expected results, then the corresponding corrective measures should be followed.

## PREREQUISITES

Some of the trouble shooting steps require the following Android and iPhone apps to be installed. Please install prior to attempting to troubleshoot:

| | | |
|---|---|---|
| Android Ping Network Utility |  | Ping<br>LipinicTools |
| Android MODBUS Utility |  | Industrial Communication<br>Yaacov Milshtein |
| | | |
| iOS Ping Network Utility |  | Ping Network Utility<br>Iurii Mozharovskyi |
| iOS MODBUS Utility |  | TCP Modbus<br>ТПУ |

If these series of tests all pass with the expected results, then the Autoboss has no obvious faults and the cause of the connectivity problems are likely the Android phone, phone settings or conflicting applications. Please ensure the following:

- The phone is AGM A9 or A10 Ruggedized Android phone
- Android operating system is version 8.1.0 or later.
- The phones wifi setting must have DHCP (Dynamic Host Configuration Protocol) selected.

Some android apps have been known to interfere with the Autoboss control app. It is recommended to keep a dedicated AGM A9 Ruggedized Android phone for this application with minimal App's installed. The PING and MODBUS apps mentioned above have been tested and are compatible with the Autoboss app.

## Contents



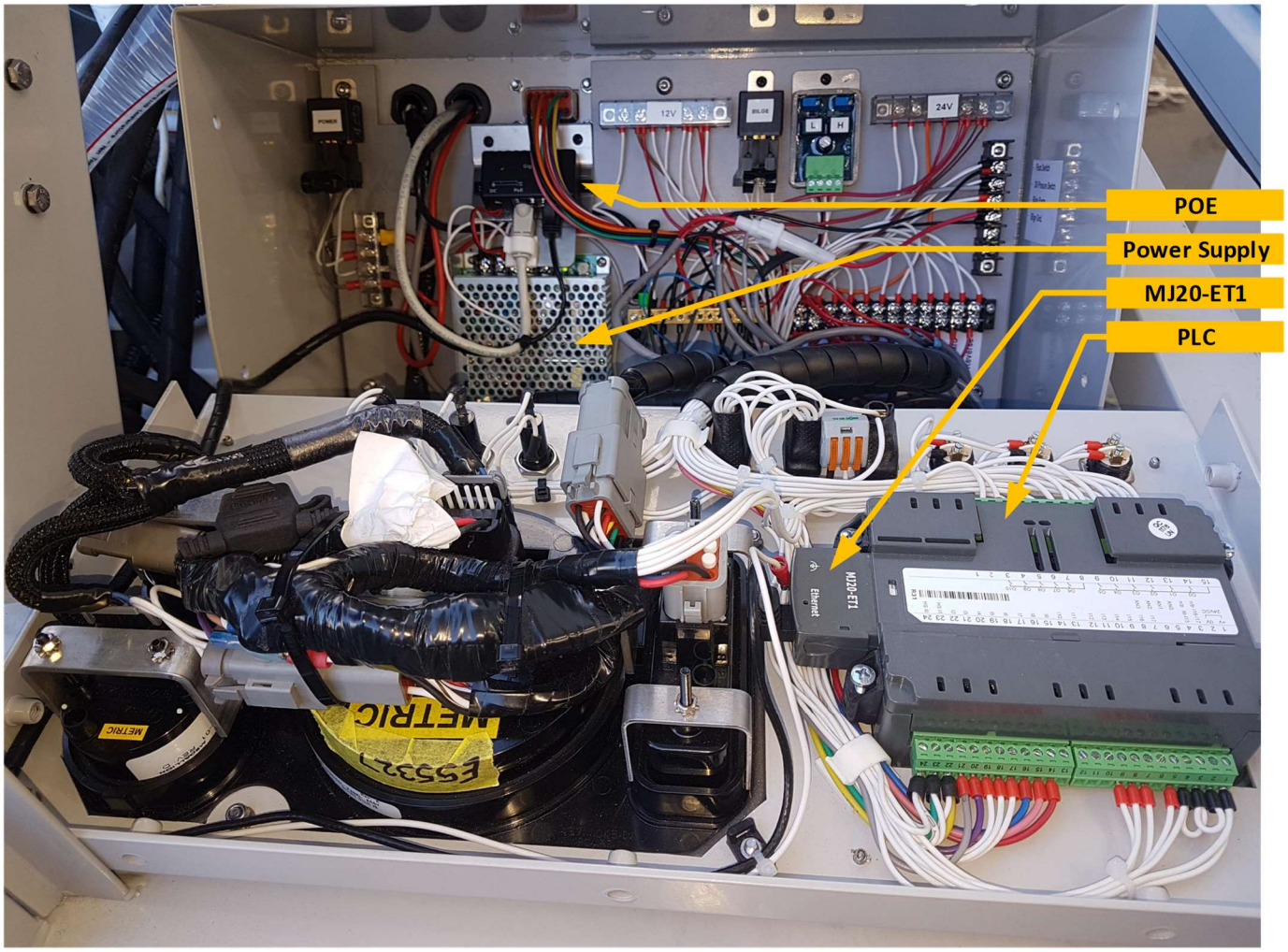



**Figure 1 – Control Panel Equipment Location**

## STEP – 1 System Voltage

Measure the DC voltage in the Autoboss control panel. This voltage should be between 23-24.5VDC. If the voltage is outside these limits carefully adjust the DC-DC converters potentiometer (indicated by the RED arrow) to bring the voltage within these limits.


**Figure 2 - DC-DC converter adjustment potentiometer**

**IMPORTANT**

The WIFI radio can perform erratically or become faulty if the DC voltage is above 24.5VDC.

## STEP – 2 LED Status

The LED status of the POE, WIFI and MJ20-ET (PLC ethernet adapter) provide an indication of the physical and datalink connectivity between the two devices. Normal operation LED status is shown in the table.

| Device | LED | Normal | Notes | Trouble Shooting if LED is Abnormal |
|---|---|---|---|---|
| POE Injector | Power | Steady Green | POE has 24VDC Power | Check PoE power |
| Bullet WIFI | Power | Steady Green | Power to WIFI is OK | Check both Ethernet cables from PoE to Wifi and PoE to PLC |
| Bullet WIFI | Link | Green (intermittently flashing) | Physical & Ethernet link to PLC is OK | |
| Bullet WIFI | Signal Strength | | No LED's illuminated indicates that no Wifi clients are connected to the bullet.<br>LEDS 1-4 indicates the average signal strength of any connected clients | |
| MJ20-ET1 | Ethernet | Steady Green | Physical & Ethernet link to WIFI is OK | Check both Ethernet cables from PoE to Wifi and PoE to PLC |

**TABLE 1 –LED status**

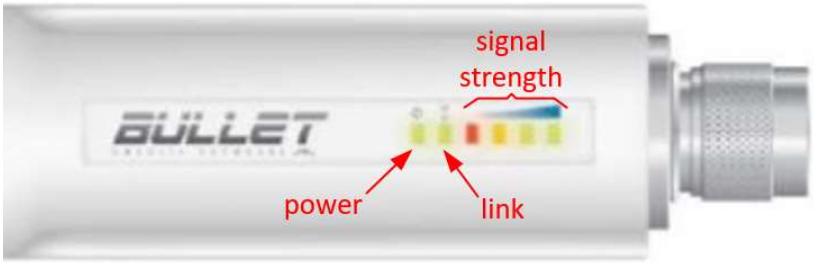


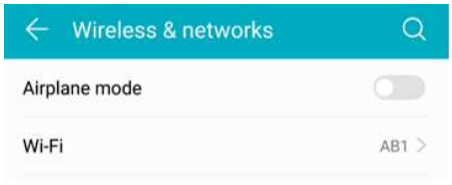
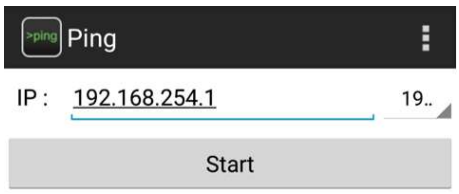
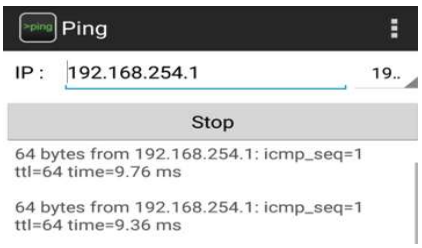
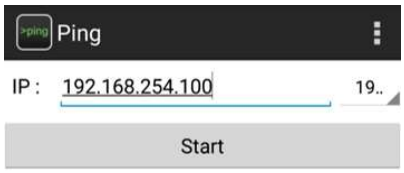
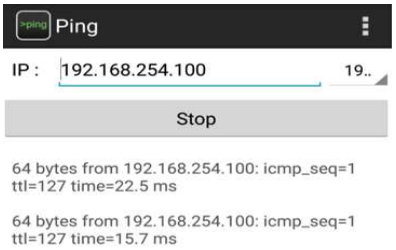

**Figure 3 – Bullet WIFI LED's**


**Figure 4 – MJ20-ET1 Link LED**

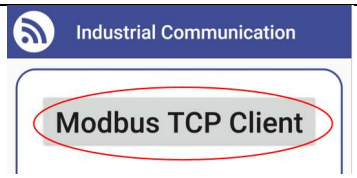
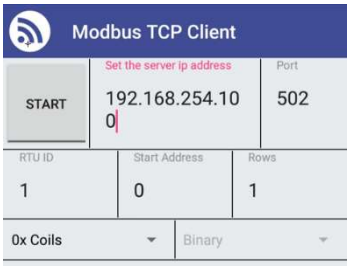
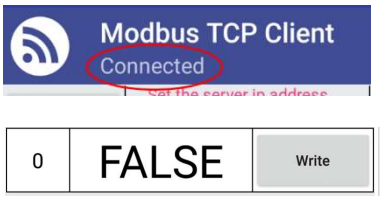
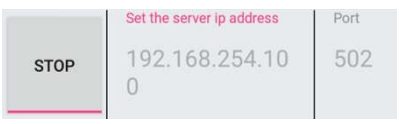

**Figure 5 – POE Injector**

## STEP – 3 Network Connectivity with *ANDROID PHONE*

This procedure checks the network connectivity between Wifi Client, Wifi Access Point and PLC.

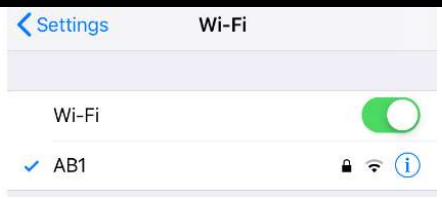
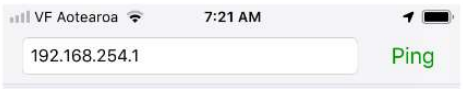
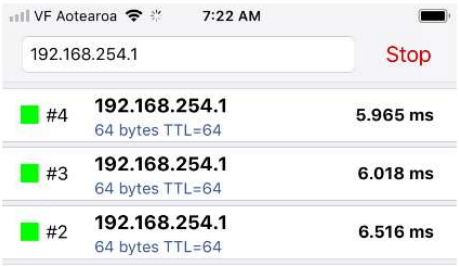
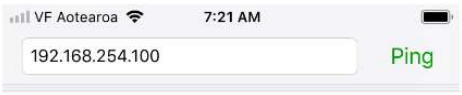
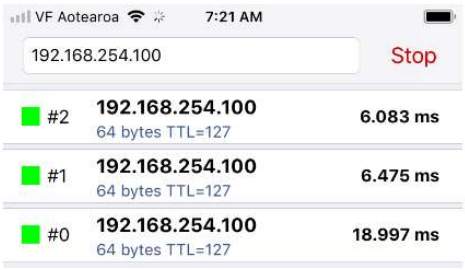
| No. | Action | Screen | Notes | Actions if Abnormal results |
|---|---|---|---|---|
| 1 | Connect Android Phone to Autoboss Wifi Access Point using default password |  | Check the Signal Strength LED's on the Bullet. They should be 4 BAR | **If unable to connect:**<br>- Check Phone Wifi is ON<br>- Connect Phone to another Wifi access point to verify the phone Wifi is working.<br>- Check phone wifi settings is DHCP<br>- If above checks are all successful the possibly faulty Wifi Bullet. Replace with new pre-configured unit. |
| 2 | Start the PING application. Enter "**192.168.254.1**" into the text entry box at the top of the screen. Push the **START** button |  | This will ping the **WiFi Access Point** Management IP Address | Check you have entered the correct IP Address of the Wifi - **192.168.254.1**<br><br>If the IP address is entered correctly then the Management IP address has been changed from Factory setting. Other settings might have been changed also. Replace Wifi with another unit with Factory settings. |
| 3 | Wait for results of the PING test. |  | Ping results should start immediately as shown. Ping reply should all be sub 50mS as shown. There should be no "Request Timeout" results. | |
| 4 | Push the **STOP** button | | Ping test will stop | |
| 2 | Enter "192.168.254.100" into the text entry box at the top of the screen. Push the **START** button |  | This will ping the **PLC** IP Address | Check you have entered the correct IP Address of the PLC - **192.168.254.100**<br><br>If the IP address is entered correctly then the IP address has changed, or Ethernet module / PLC is faulty. Replace ethernet module and/or PLC |
| 3 | Wait for results of the PING test. |  | Ping results should start immediately as shown. Ping reply should all be sub 50mS as shown. There should be no "Request Timeout" results. | |
| 4 | Push the **STOP** button | | Ping test will stop | |
| 5 | Close application | | | |

# STEP – 4 Modbus Connectivity with *Android Phone*

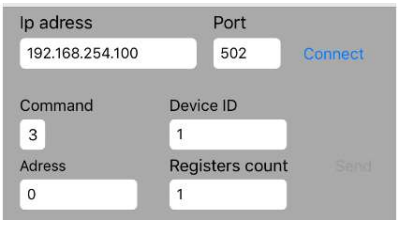
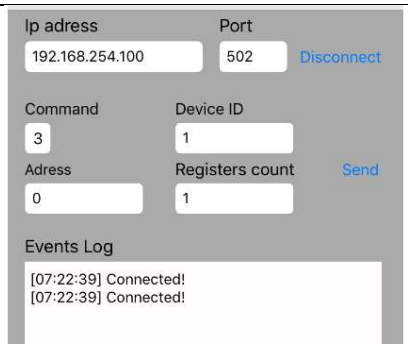
| No. | Action | Screen | Notes | Actions if Abnormal results |
|---|---|---|---|---|
| 1 | Navigate to the WIFI screen on the HMI but pressing “1” from the main screen. Check MODBUS connection status on PLC WIFI screen displays “LINK : NO”. |  | The PLC will only accept one device connection, so this step is to ensure no other device is connected when doing this test. | If the HMI is displaying “LINK : YES” then press key “6” to reset the communications. The display should reset to “LINK : NO” after a few seconds. If the display still shows “LINK : YES” then is indicates another ROGUE device is connecting to the PLC. Find the ROGUE device and disable before proceeding. |
| 1 | Connect Android phone to Autoboss Wifi Access Point | | | |
| 2 | Start the TCP Modbus application and press “MODBUS TCP CLIENT |  | | |
| 2 | Enter “**192.168.254.100**” into IP address entry box at the top of the screen and “502” into the Port entry box. All other settings can remain default. Press the **START** button |  | This will initiate a Modbus client connection to the PLC | |
| 3 | Check connection status. |  | The status on the top ribbon should read “Connected” This indicates that the app has started a Modbus session with the PLC. | Check you have entered the correct IP Address of the PLC - **192.168.254.100.**<br><br>If the IP address is entered correctly then the Ethernet module or PLC is faulty. Replace ethernet module and/or PLC and repeat this test. |
| 4 | Verify connection to the PLC by checking screen 1 on the PLC. |  | With the Android Phone connected the PLC’s Wifi Information screen LINK should indicate “YES” | |
| 4 | Push the **STOP** button |  | Modbus connection will be terminated, and the PLC’s Wifi Information screen LINK should indicate “NO” | |
| 5 | Close application | | | |

## STEP – 5 Network Connectivity with *iPhone*

**NOTE –** Step 5 & 6 are iPhone alternatives to steps 3 & 4. If you have already performed steps 3 & 4 successfully there is no need to continue with step 5 & 6

| No. | Action | Screen | Notes | Actions if Abnormal results |
|---|---|---|---|---|
| 1 | Connect iPhone to Autoboss Wifi Access Point using default password |  | Check the Signal Strength LED's on the Bullet. They should be 4 BAR | If unable to connect then the bullet Wifi may be faulty. Replace bullet Wifi with a new pre-configured unit. |
| 2 | Start the PING application on iPhone. Enter "**192.168.254.1**" into the text entry box at the top of the screen. Push the **Ping** button |  | This will ping the **WiFi Access Point** Management IP Address | Check you have entered the correct IP Address of the Wifi - **192.168.254.1**<br><br>If the IP address is entered correctly then the Management IP address has been changed from Factory setting. Other settings might have been changed also. Replace Wifi with another unit with Factory settings. |
| 3 | Wait for results of the PING test. |  | Ping results should start immediately as shown. All results should be Green and there should be no RED "Request Timeout" results. Ping reply should all be sub 50mS. | |
| 4 | Push the **STOP** button | | Ping test will stop | |
| 2 | Enter "**192.168.254.100**" into the text entry box at the top of the screen. Push the **Ping** button |  | This will ping the **PLC** IP Address | Check you have entered the correct IP Address of the PLC - **192.168.254.100**<br><br>If the IP address is entered correctly then the IP address has changed, or Ethernet module / PLC is faulty. Replace ethernet module and/or PLC |
| 3 | Wait for results of the PING test. |  | Ping results should start immediately as shown. All results should be Green and there should be no RED "Request Timeout" results. Ping reply should all be sub 50mS. | |
| 4 | Push the **STOP** button | | Ping test will stop | |
| 5 | Close application | | | |

# STEP – 6 Modbus Connectivity with iPhone

| No. | Action | Screen | Notes | Actions if Abnormal results |
|---|---|---|---|---|
| 1 | Navigate to the WIFI screen on the HMI but pressing “1” from the main screen. Check MODBUS connection status on PLC WIFI screen displays “LINK : NO”. |  | The PLC will only accept one device connection, so this step is to ensure no other device is connected when doing this test. | If the HMI is displaying “LINK : YES” then press key “6” to reset the communications. The display should reset to “LINK : NO” after a few seconds. If the display still shows “LINK : YES” then is indicates another ROGUE device is connecting to the PLC. Find the ROGUE device and disable before proceeding. |
| 1 | Connect iPhone to Autoboss Wifi Access Point | | | |
| 2 | Start the TCP Modbus application on iPhone. Enter “192.168.254.100” into Ip address entry box at the top of the screen and “502” into the Port entry box. All other settings can remain default. Press the **Connect** button |  | This will initiate a Modbus client connection to the PLC | |
| 3 | Wait for results of the connection attempts in the event log. |  | Event Log should show “Connected”. This indicates that the iPhone can start a Modbus session with the PLC. | Check you have entered the correct IP Address of the PLC - **192.168.254.100.**<br><br>If the IP address is entered correctly then the Ethernet module or PLC is faulty. Replace ethernet module and/or PLC and repeat this test. |
| 4 | Verify connection to the PLC by checking screen 1 on the PLC. |  | With the iPhone connected the PLC’s Wifi Information screen LINK should indicate “YES” | |
| 4 | Push the **Disconnect** button | | Modbus connection will be terminated, and the PLC’s Wifi Information screen LINK should indicate “NO” | |
| 5 | Close application | | | |