



Trouble Shooting Initial Startup for MICAD

This document is intended to assist a non-technical person with trouble-shooting problems that might occur with the MICAD System, at the time of initial startup, and during the beginning of operation.

This document will cover:

- 1. Checking the Power connections**
- 2. Checking the Software installation by operating the Software**
- 3. Checking the Hardware (Controllers, MICAD Net Transmission link, and Network Router)**

If all of these steps are checked, with the notes following, the system will be running, and should continue to run properly. MICAD is set up to automatically re-start when the power is lost.

During the installation of the system, this “re-start” feature was tested and re-tested to ensure that the system would re-start when interrupted power resumed.



I. Checking the Power

- a. MICAD provides all of its own AC and DC power. The vessel supplies only a 15 AMP 240 VAC circuit to the MICAD Equipment, which powers the Inverter / Charger, Which manages all of the MICAD Power?**

If that circuit is interrupted, turned-off or in any way disconnected, the MICAD system will operate for about two ~ four hours (possibly more, in some cases), and then it will automatically shut off.

When that circuit again delivers its 240 AC power to the MICAD Equipment, the MICAD System should automatically re-start, and begin operating normally.

b. To Check the Power:

- 1. There is a round button (about 1/2" – 12mm) on the face on the face of the computer. There is also an indicator LED on the face of the computer that shines BLUE.**

- a. If the system is off, and there is no BLUE indicator LED, then press the round button.**
- b. The computer should begin its starting process, and the BLUE LED should be ON.**

c. If this fails:

- 1. The computer is connected to a power strip. The power strip has an ON/OFF Switch. Push it to change its position, and then try to re-start the computer**

Also, there is an indicator light on the power strip. If it is ON, the power strip has AC power, and the switch on the power strip is lighted.

If it is OFF, no AC power is being received by the power strip, and none of the electronics plugged into the power strip will operate.



Trouble Shoot the Loss of Power to the Strip

- a. **The source of power is the cable from the MICAD Inverter / Charger. The inverter / charger will invert DC Batteries and create AC Power. If the batteries fail, the circuit from the vessel will pass through the Inverter/Charger, and power the power strip.**
 1. **Check the cable connecting the power strip to the Inverter Charger (“MASTERVOLT” Electronics).**
 2. **If the cable is good, check the circuit breaker and check the indicator light on the MASTERVOLT to see if AC is being received.**

One of these two reasons will be the solution of no power to the power strip.

2. **If all of the above fail, then the MASTERVOLT Inverter/Charger is broken, and a service call and replacement is necessary**

Now that we are sure there is power, Check the software.

1. **Startup the computer as described above. If there is no BLUE LED and you know that there is power in the power strip**
 - a. **Check the power cord in the back of the computer. It may have come out. Check it carefully, and re-seat it if necessary.**
 - b. **Check the other end of the power cord to be sure that it is plugged into the power strip.**



If the computer fails to start the BLUE LED, and you are sure that the power cable is plugged in properly, the computer has failed, and a service call and replacement are required.

2. If the computer is running properly, the software will load properly, because software does not wear out or change. Sometimes files do get corrupted, but that analysis is for another step.

3. **Checking the monitor**

There is a pilot light on the monitor, and an ON/OFF button on the silver tab, on the bottom metal face of the monitor.

If the indicator LED is OFF, press one of those buttons (the one labeled: "C "). That will turn the monitor ON or OFF.

If the indicator LED fails to light, then check the power cord. Snug it up on both ends. If it still fails to light the LED, then the monitor is broken, and a replacement is required.

a. **Monitor Computer cable**

There is a 15 pin computer cable connecting the monitor to the computer. If there is no computer image, then this cable may be loose. Carefully re-seat both ends on the cable into their respective connectors.

If there is still no computer picture, and the computer has been restarted, re-start the computer again. If it still fails to display an image, then the monitor needs to be replaced.

b. **Monitor Touch Screen cable**

Some, not all, systems have a touch screen.

This means that touching the screen acts like clicking a mouse on a specific location.

After the image is displayed, touch the center of the screen, and the mouse-pointer should jump to your finger. This indicates that the touch screen is working.



If it doesn't, then place a service call and get assistance in further diagnosing this problem.

Now, the software is running, the monitor is working, and the MICAD toolbar is displayed at the bottom of the screen. At this point, all is well.

Trouble Shooting the Operation of the MICAD System

We will now complete a first level check of three items. If these checks are successful, the system is working perfectly.

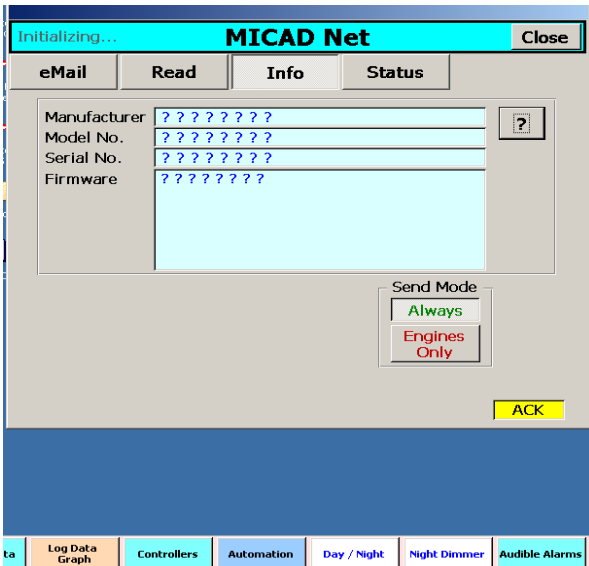
1. **MICAD Net**

a. **Press the following buttons on the MICAD Tool Bar:**

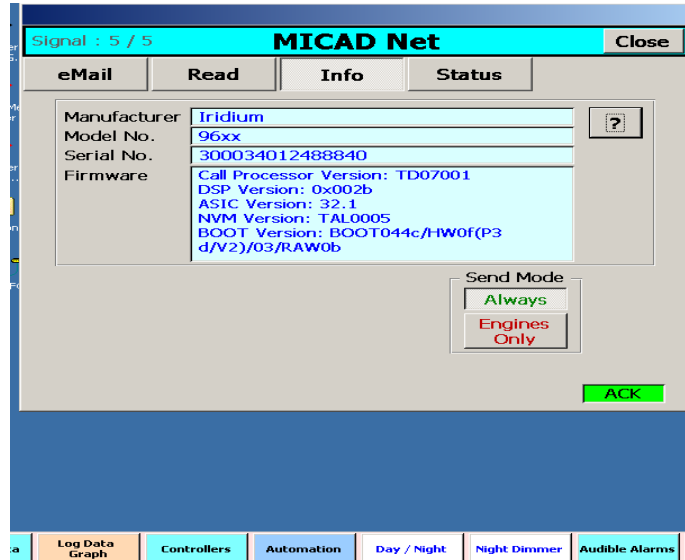
1. **MENU button exposes a list which included the SYSTEM DISPLAY button**

Select the "SYSTEM DISPLAY" button

2. **The new tool bar will display a MICAD NET selection on the tool bar, at the far left of the tool bar. Click this button and you will see the status of the MICAD Net Modem.**



No SAT Connection



Good SAT Connection

If the upper left corner (Signal Strength is positive (2/5, or 3/5, 4/5, 5/5) it means that MICAD Net is working, and it sees that number of satellites out of a total of 5 possible. (0/5 indicates working and looking for a satellite)

The GREEN ACK button should be lit on the lower right corner of the screen as well.

If this fails, that means:

- a. The modem is bad ... or
- b. The Antenna is gone or
- c. The Antenna Cable is cut or
- d. The Antenna Cable is disconnected at one end or both. or

b. No power to the modem

2. We have never had a modem fail. I doubt that this is the problem – check the other possibilities.



2. Visually inspect the antenna on the roof of the helm.
 - a. Is it properly installed? It was, when MICAD Engineers left the vessel
 - b. Is the cable connected?
 - c. Is the cable free from cuts, tears, or other abuse?
3. The antenna connects into the Tan Modem box. (In the helm with the computer)
 - a. If there is power to the modem, the LED will be ON. If not, the DC power needs to be checked.
 - b. If the LED is ON, then check the antenna cable connection. Does it appear free from harm?

c. **Modem Connection to MICAD**

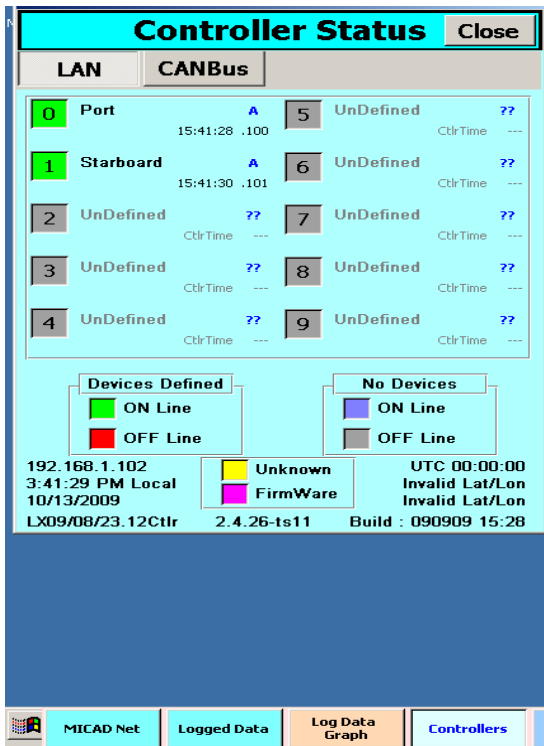
1. There is a thin cable connecting the MODEM box to the MICAD Computer.
 - a. There is a special COMM card in the computer with 4 or 8 cables extending outside and to the rear of the MICAD Core Processor. That cable bundle is called an "Octopus Cable". One of those legs is connected to a thin cable that connects to the modem box.

Check both of those connections to be sure that they are secure.

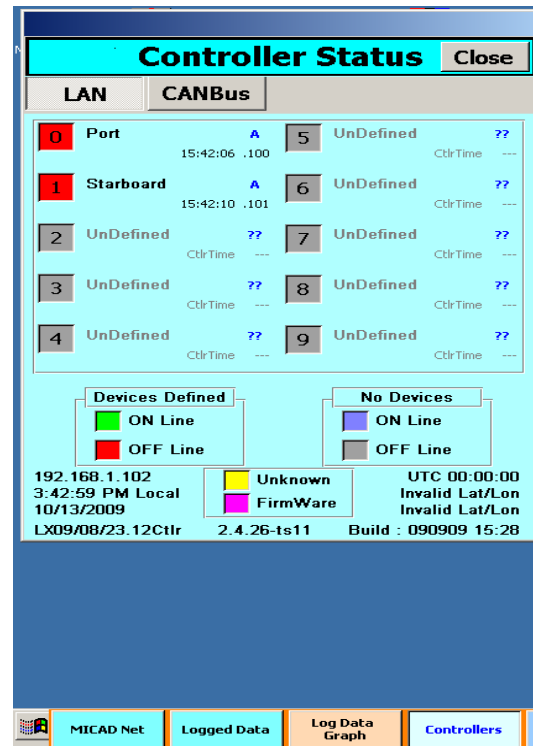
If all of these connections and LED indicators are working properly, and the MICAD Net Screen still shows no satellites in view, please call MICAD Marine Systems Service Center for assistance, and to set up a service call.

2. MICAD Controllers

To check the Controllers the Controllers button is on the same toolbar as the one used to check the Satellite, the fourth button from the left (“CONTROLLERS”) will cause one of the following displays to appear when the button is selected.



CONTROLLERS GOOD



Controllers not seen by MICAD Core Processor

If the controllers are “RED” indicating not connected, then the following need to be checked:

- a. Is there DC Power to each controller?
- b. Is the LAN Cable securely fastened to the Controller, and also to the Router
- c. Is the router powered up?
- d. Is the computer connected to the Router?



The Flashing lights on the front of the controller have several sequences. It is important to see what series of flashing lights appears:

- a. **RED Led OFF means no power on the Controller power cable Or, there is a failure with the controller**
- b. **RED and GREEN Flashing slowly (1 time every 5 seconds),**
 - a. **Fault connection with Router**
 - b. **Router has loss power**
- c. **RED LED flashing Rapidly (5 times per second), and GREEN flashes very slowly (1 time every ten seconds), the Controller is operating properly but there is one of the three problems below:**
 - 1. **The MICAD Core Processor is OFF**
 - 2. **MICAD Software is not Running on Core Processor**
 - 3. **Faulty Connection or connection problem between the MICAD Core Processor and the Router.**

When all of these systems are operating properly, as described, and there are still problems, please call the MICAD Marine Systems Service Center.