

**Field Service Manager
Cable Installation & MEU Activation
Manual
Revision 1.B
10/23/2006**



FSM Cable Installation & MEU Activation

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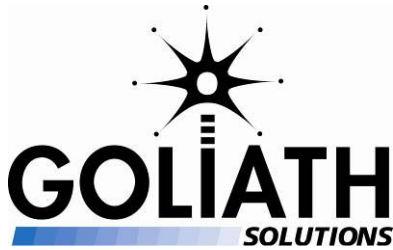
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RF Exposure:

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Introduction:

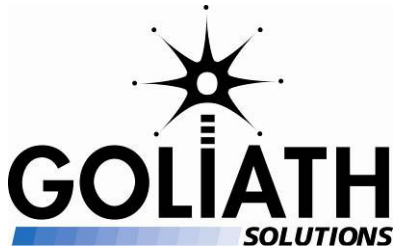
The purpose of this manual is to document the responsibilities of the Field Service manager during the Cable and MEU Activation and Installation. The FSM will be the project manager of this process when on site.

This manual is a supplement to Cable Installation & MEU Activation Manual that is provided to the Cable Venders. Have you copy of that manual available during the installation. This manual has the detailed steps for the store installation. You need to be familiar with this manual.

Reminder:

Throughout the installation you will be working in areas of the store that customers and Walgreen's employees need to access. Always be aware of the space you occupy and limit the need for tools and material to be in the aisles where customers are shopping and employees working. Be especially careful as any cables that are strewn about the aisles are a hazard which customers may trip over.

Remember to always be polite and helpful to the Walgreens employees and customers when you are on site.

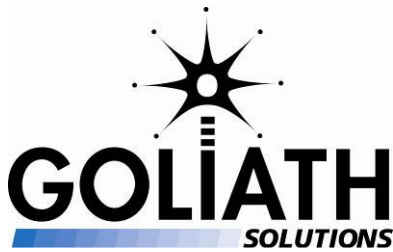


The Role and Responsibilities of the FSM in the installation process:

- 1) You are the project manager for this installation.
- 2) You are the primary interface between the Retailer, the Cable Vendor and the Goliath Solutions Help Desk.
- 3) You are there to deal with any potential problems that may occur during an installation.
- 4) You will designate the installation location for all of the Goliath Solutions equipment.
- 5) You will either install or verify the installation of test tags in the store. And you will make sure that they are entered into SYSMON.
- 6) You will install the current campaign tags on the displays in the store.
- 7) You will configure and activate the MEU after it has been installed.
- 8) You will test the installed system with the Help Desk.
- 9) You will act as Quality Assurance to validate that the install is completed to the required installation/cabling standards for Goliath Solutions and the Retailer. A sample of the QA Survey is found in Appendix H. The actual QA Survey document is found on the swap drive with the file name QA Survey 1A.doc.
- 10) Document any issues or problems that took place during the install.
- 11) Make sure the store is clean after the installation. Any mess or garbage from the installation must be cleaned up before you leave the store.

12) Do what it takes to have a successful installation. A successful installation includes the following items:

- *The hardware installed correctly and according to the standards of Goliath Solutions and the retailer.*
- *The system functioning and configured correctly.*
- *The store management is happy with the installation.*

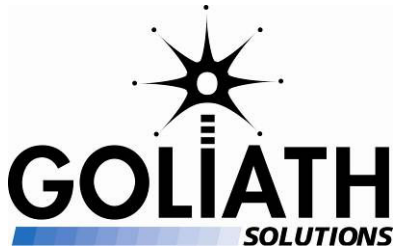


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Prior to Installation:

Prior to your installation visit the Goliath Solutions Help Desk and the Cable Installation Vendor will have scheduled the installation with the Retailer. Your responsibility prior to the installation is the following tasks:

1. Print a copy of the Pre-Installation Survey from QuickBase. A sample report is found in Appendix G.
2. Review the Pre-Installation Survey.
3. If the store has an exception floor plan, print and review that floor plan.
4. If the store has a standard floor plan the store floor plans are listed in Appendix G – Store Layouts in the Cable Installation & MEU Activation Manual.
5. Print a current copy of the Campaign List for the tags to be installed at the store.
6. Go to SYSMON and verify if Test Tags have been entered for the store. If test tags are installed in the store print this information. (You will need this to verify if the test tags are still present in the store.) If test tags are installed in the store go to step 9.
7. Prepare 18 RFID Test tags with batteries for the store. As you prepare the test tags record the tag information in the Test Tag Inventory Sheet. (This is found in Appendix D of this document.) 11 RFID test tags will be used in the store and 7 RFID test tags will be used in the stock room.
8. Enter the test tag information into SYSMON.
9. A store will initially have about 30 active campaigns that we are tracking. Make sure that you have enough of the following items for the store for these campaigns:
 - a) RFID Tags
 - b) Batteries
 - c) Tag envelopes
 - d) Goliath Tag Installation Report (This is found in Appendix E of this document.)
10. Always have extra RFID Tags, Batteries and Tag envelopes with you.
11. Verify that you have the equipment listed in Appendix A of this manual.



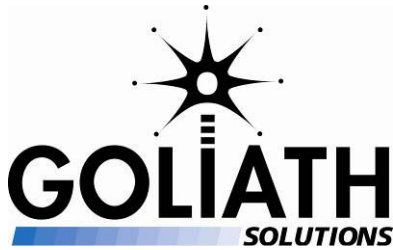
In Store Procedures:

Check-In:

Upon arrival at the store the following activities must take place:

- 1) If possible arrive at the store prior to the scheduled arrival time of the Cabling Vendor.
- 2) Review the pre-installation survey detail prior to the install.
- 3) Locate the store manager.
 - a) Introduce yourself to the store manager. If the Cable Vendor is on site make sure that they were introduced to the manager. (**Please note: A photo ID will be required.**)
 - b) Explain the reason you are on-site, the approximate length of the installation and the areas of the store where the installation team will be working.
- 4) When the Cabling Vendor arrives at site introduce yourself and update the cable vendor the current status of the install and introduce them to the manager.
- 5) Locate the equipment shipped to the store and verify that you have the correct number of boxes. Check the invoice for the MEU serial number (You may have to open the MEU box to get the serial number). The equipment is normally shipped in three cartons. They are:
 - Cable – one carton containing the 110' BNC ended plenum rated cables, 85' BNC ended plenum rated cables and 25' BNC ended plenum rated cables.
 - MEU – One carton containing the MEU, Power Supply, 75' or a 110' power cable.
 - ATA/ARA Kit – One carton containing 12 ARA – Receivers and 3 ATA – Transmitters. You may receive up to 14 receivers based upon store configuration.
- 6) Use your notebook PC with the Verizon Air Card and update the store record in QuickBase with the following information:
 - a) MEU Serial Number.
 - b) Start Time (The time is entered in a 24 hour format).

If you do not have internet access or there are other issues that could prevent a successful installation then call the Goliath help desk at 866-378-9956 and update them on the situation.



Store Installation:

During the installation process make sure to document any issues that may occur during the install and record them in QuickBase after the installation. **(Do not forget to enter the MEU information, the start time, and the end time of the install, and the MEU Mount into QuickBase).**

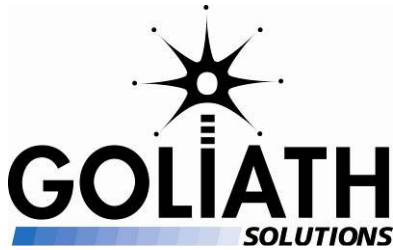
After completing the store check-in procedures you will conduct a store survey. The store survey is separated into two parts. They are the MEU Survey and the Equipment Survey. The purpose of the MEU survey is to determine the location of the MEU. The purpose of the Equipment Survey is to determine the location of all the transmitters and receivers in the store and stock room.

MEU Survey:

This is your top priority after checking into the store. You must determine the location for the MEU to be installed in the store. The location of the MEU is critical to the success of the install.

With the floor plan and pre-install survey walk through the store and determine the location of the following:

- 1) The MEU location. (This may be marked by either 2 black push pins or 2 green dots that were placed in the early pre-installation surveys). You will be marking the location of all MEUs and antennae with a mark placed on the floor. Use a wet erase marker found in the tool kit to mark the floor with antenna locations the mark should be as follows R1 R2 R3to the final receiver on the floor and T1, T2, T3 for the transmitter locations. This mark should be on the floor directly below the spot of the antenna
- 2) The location of the LAN cabinet.
- 3) The location of the power by the front TV.
- 4) The location of the stock room.
- 5) The location of the furthest receivers (ARA) and transmitters (ATA) from the proposed MEU location. You will be marking the location of all MEUs and antennae with a mark placed on the floor. See note above in #1



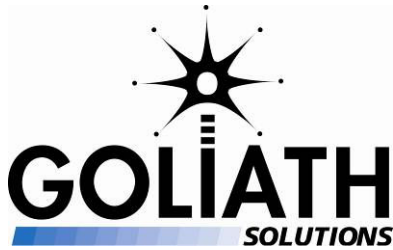
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- 6) After you determine the location of the MEU the Cable Vendor can start the installation process for the MEU.

(Work with your Cable Vendor to determine the power availability.)

You must consider the following factors when determining the best location of the MEU.

- 1) **Location of the power for the MEU.** The power will either come from an outlet by the TV at the front entrance of the store or from the LAN Cabinet. The LAN Cabinet is normally located in the Pharmacy or the Electric room. The MEU currently comes with a 75' power cable, but in the future will come with a 100' cable. The MEU has to be placed where it can reach to one of these power sources. The power location choice should be made in the following sequence:
 - a) An open outlet by the TV. (This may be documented in the Pre-Install Survey)
 - b) The LAN Cabinet.
 - c) If the outlets are filled by the TV and the extension cord is not long enough to reach the LAN Cabinet, then the Cable vendor will have to modify the power outlet by the TV to add another outlet. **This should only be done if options 1 or 2 will not work. This is an extra cost for the install and will take extra time.**
 - d) The location of where the MEU is plugged into the power should be documented in your installation site report. If the Cable Vendor had to modify the power outlet by the TV, make sure to document what they did in detail.
- 2) When determining the availability of power work with your Cable Vendor. We are limited by the length of the power extension cord, either 75' or 110', but this cord can go directly from the MEU to the power location. It does not have to run the length of the girders. **(Appendix F will give you examples on how to estimate the distance from the MEU to the power location.)**
- 3) The location of the posts in the center of the store. In an 8 aisle store this is normally aisle 3, in a 9 aisle store this is normally aisle 4, and in a 10 aisle store this is normally aisle 5. Consider will the cables reach all the locations for the transmitters and receivers from this location?
- 4) The preferred mounting method for the MEU is mounting it on a central post. This is the standard, but there are exceptions when the MEU will have to be Suspended from the ceiling. This should only be done if the post mount location will not work for this store. **(The Suspended Mount instructions are found in Appendix C of this document.)**



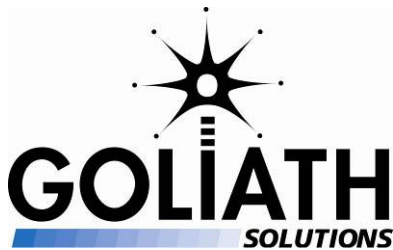
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- 5) The location of the Stock Room. Two receivers (ARA) and one transmitter (ATA) will be placed on the girders in the stock room. You are limited by 110' cables for the TX and 135' for RXes to reach the stock room. Will the cables reach from the MEU to the stock room? (It is possible we may not be able to install transmitters and receivers in some stock rooms.) Since stockrooms must be cabled, the MEU may have to be located closer to the stockroom than to electrical power in the Pharmacy area. This is an example where electrical work is authorized.
- 6) The location of the furthest receivers (ARA) from the proposed MEU location. (A 135' cable can be made using a B&C plus 110' plus 25' cables.) Please be sure to insulate the connector with electrical tape.

Equipment Survey:

After the MEU location has been determined, then walk through the store, with the floor plan to determine the exact positions of the transmitters (ATA) and the receivers (ARA). It is best to include one of the cable team members while you do this so they can see the process and know where the marks on the floor are placed. During this time the other cable team member can be numbering the cables.

- 1) If a detailed pre-install survey was done the proposed locations for the transmitters and receivers are marked by either colored dots or pushpins on the ceiling tiles. Verify that these are the best locations for the transmitters (ATA) and receivers (ARA).
 - a) (A blue dot or pushpin indicates an ATA, a green dot or black push pin indicates the location for ARA, and either 2 green dots or 2 black push pins indicate the MEU Location.
- 2) If the location of the transmitters (ATA) and receivers (ARA) were not documented when the pre-install survey was done, then you will have to mark the location for the Cable Installation Vender. Use a Wet erase marker and mark the location on the floor. **(Test your marker to verify that it can be erased on an area of the floor that can't be seen).** After the equipment is installed the marks have to be erased from the floor. You can alternately use adhesive dots.



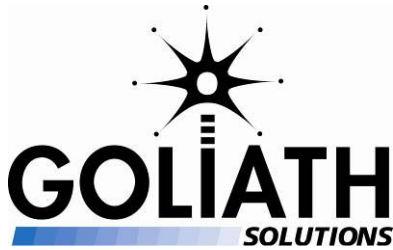
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- 3) Walk thru the Stock Room to determine the best location for one ATA (Transmitter Antennae) and two ARA (Receiver Antennae). If the complete Pre-Install survey was done the location is marked by a Yellow Dot for the ATA and Green Dots for the ARA. Remember the restrictions in the stock room are the length of the cable from the MEU and limited locations on the girders due to the conduit mounted on them. Transmitters and Receivers should be a minimum of 8' apart.
- 4) Verify the phone number for phone line 2. (This is the number that the MEU uses to call out)
- 5) Review with the Cable Installation Vender the selected location for all of the equipment to be installed and the location of the phone block and the MEU. If done during your walk through this may be able to be eliminated.
- 6) Verify that you have the correct equipment for the installation of this store. This means verify that you have the correct number of ATA, ARA, and cables for this store. If not notify the Help Desk immediately. You will have provisions in your hot spare kit but this will need to be replenished
- 7) Give the Cable Installation Vender the phone number for phone line 2. Make sure they know they can not touch the primary phone number for the store.

Quality Assurance:

During the installation process it is your responsibility to perform the following QA tasks:

- 1) Verify that the work area is kept as clean as possible. Make sure that it is not a hazard to the Stores employees or customers.
- 2) Verify that the Cable Install Vender is compliant with Goliath Solutions' and the Retailers wiring standards.
- 3) Verify that work areas are cleaned up after the Cable Install Vendor is complete in that area of the store.
- 4) Verify that push pins, dots and dry erase marks are removed from the ceiling or the floor of the store and replaced with the labels provided by Goliath Solutions. Examples are found in the Cable Installation & MEU Activation Manual.
- 5) Keep the Store Management informed during the install.



Test Tags:

You will be placing Test tags in the store during the installation process if they were not installed during the Pre-Installation survey. **(Appendix D provides information on the placement of the test tags.)**

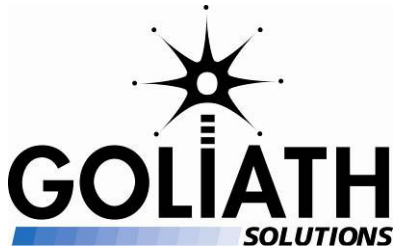
- 1) Check SYSMON and verify to see if the test tags were entered for this store.
- 2) If test tags are not in SYSMON and were not installed in the store then go to step 4.
- 3) If test tags were entered in SYSMON verify that they are still present in the store. If any of the test tags are missing, replace them with new ones and then update SYSMON with the new tags. Go to step 6.
- 4) Using the Test Tag Inventory Sheet place 11 test tags in the store at their designated location and 7 test tags in the stock room.
- 5) Enter the Test Tag information into SYSMON.
- 6) You are now complete with the installation of Test Tags.

NOTE: It is best to have the test tags entered into SYSMON prior to the initial MEU dial in from that store. This will allow the test tags to update properly and be visible in Sysmon after the first cycle of the MEU. Otherwise you will have to allow for a second scan and data dump before you will see your tags.

Display Tags:

During the install process you will be placing RFID tags on the displays for the current campaign list. This should be about 25 to 30 campaigns. You will need the current campaign list, tags, batteries, envelopes, tape, and the Goliath Tag Installation Report (Found in Appendix E.)

- 1) Walk through the store finding displays for the current campaign list.
- 2) Place a tag on the display at the designated location and record the information in you Goliath Tag Installation Report.



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- 3) When you have gone through the whole store and tagged the designated displays you are done with the store part of this process. You may not find all the displays in the current campaign list, because the store did not put out all of their displays.
- 4) If you have time during the installation input the Display Tag information into SYSMON.
- 5) Input the Display Tag information as soon as possible into SYSMON.

Note: You may have a FST, a DST or a DSM present during the install. Train and work with them on the placement of the Display Tags for the store. You can give them the responsibility of inputting the tag information into SYSMON. But keep a copy of the Goliath Tag Installation Report and verify that they have input the Tag information correctly and in a timely basis.

MEU Activation and Configuration:

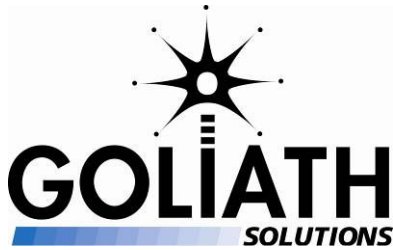
This is the process of configuring and then activating the MEU for this store. This process is done after the Cable Installation Vendor has completed the hardware installation. **The Cable Vendor can't leave until you have configured and activated the MEU and tested it. They need to stay until you are done.** This process won't include a call to the help desk unless there is an issue. The FSM will check MODEMBANK prior to leaving and then verify all antennas have reported in. You can also check Sysmon to verify this info.

The MEU comes configured with a standard configuration of 3 Transmitters, 12 Receivers for the store and 1 Transmitter and 2 Receivers for the Stock Room. The configuration in the MEU may have to be changed to match the configuration of the store you are installing.

Please refer to Appendix I – MEU Configuration for this process. The information you will need is the number and location of the receivers installed in the store. For example if you have an extra receiver in the Pharmacy (RX14) this has to be configured into the MEU.

- 1) Connect your PC to the MEU.
- 2) Configure the MEU for your store configuration.
- 3) Disconnect Your PC.
- 4) Go to the Complete Installation Process section of this manual.

Note: Transmitter 4 (TX 4) and Receivers 15 and 16 (RX15, RX16) will always be in the stock room.

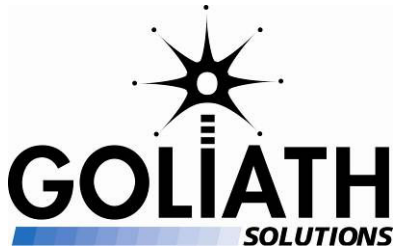


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Complete the Installation Process:

- 1) Call the Goliath help desk 847-387-8796 or complete the installation report in QB using your laptop. Email the completed report to Bill Black in lieu of the checkout call. We encourage you to use QB and reserve calling the help desk unless you need help to ensure that you receive prompt assistance when help is required
- 2) Report that the system has been installed and configured.
- 3) Report any issues that will require a revisit to correct or to report any h/w over ships that have been stored with the MEU.
- 4) Report if you had to change the location of the MEU from what you originally reported to them.
- 5) The Goliath help desk will be able to verify that the MEU was able to communicate outbound and determine if any component is not functioning.
- 6) Depending on the nature of the problem, h/w diagnosis will be confirmed and corrected by the installation crew on site or a separate maintenance call will be scheduled. Unless the MEU is OBF, most issues should be related to a cable or connector type issue.
- 7) Site will be classified as complete with outstanding issues.
- 8) Walk through the store and verify that:
 - a) The store has been cleaned up from the installation.
 - b) All ceiling tiles are in place.
 - c) Push pins and dots have been removed.
 - d) Dry erase marks are erased.
 - e) The labels provided by Goliath have been affixed to the ceiling grids pointing to the location of the receivers and the MEU.
- 9) Notify the Store manager that the install is complete and sign out.
- 10) When you get home that night update QuickBase with your installation report.

The Goliath help desk may be called during the installation for expert assistance is required or to report hardware OBFs (out of box failures), antenna placement questions, Phone/Wan issues, or other issues.



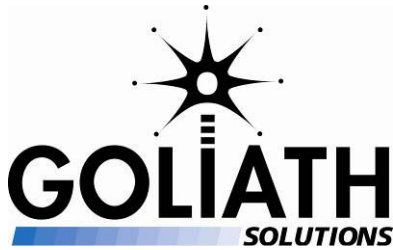
Appendices

Appendix A – Required equipment and supplies for an FSM during installs

- 1) Notebook computer.
- 2) PC Interface cable for MEU
- 3) RS 232 Dongle (PC Interface)
- 4) Cell Phone
- 5) Digital Camera.
- 6) Pre-install survey for the site.
- 7) Cable Installation & MEU Activation Manual
- 8) Field Service Manager - Cable Installation & MEU Activation Manual
- 9) Spider Installation Manual
- 10) Measuring Wheel (used for calculating distances from the MEU)



- 11) Tool Kit – You tool kit should contain the following items:
 - a) Clear Packing tape.
 - b) Dry erase Marker
 - c) LED Flashlight
 - d) Label making kit.



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e) Digital Multi meter



f) Laser measuring tool



g) 6-1 Screwdriver (A multipurpose screw drive that is not magnetized)



h) Diagonal wire cutter.



12) RFID Tags

13) Batteries for Tags

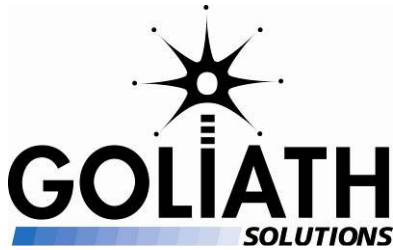
14) Envelopes for Tags

15) Current Campaign List for the Displays.

16) Blank Goliath Tag Installation Report

17) Test Tag Inventory Sheet

18) Calculator



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19) Supplies for suspending an MEU:

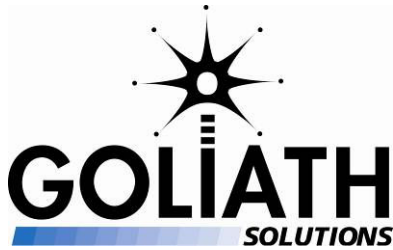
- a) Roll of plastic pipe hanger (can be purchased at Home Depot or at a plumbing supply a 100' roll if available).



- b) 4" zip-ties (minimum of 2 used per site).
- c) Appropriate device for sending plastic pipe hanger over girder (currently 3 methods in use: Unger "gripper", ball with string, or 5' length of PVC pipe of sufficient diameter to accommodate plastic pipe hanger).



- d) An item of sufficient weight to attach to the end of the plastic pipe hanger.



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Appendix B – Installation Check List

<u>Task</u>	<u>Status</u>
1) Complete the pre- installation tasks.	
2) Verify that you have all the supplies listed in Appendix A available for the store installation.	
3) Checked in with the Store Manager.	
4) Checked in with the Goliath Help Desk.	
5) Verified the location of the Goliath equipment package and its contents.	
6) Performed the MEU Survey and determined the location of the MEU.	
7) Performed the Equipment survey and determined the location of all the transmitters and receivers	
8) Verified that test tags were installed during the pre-installation survey and are still present in the store or installed the Test Tags for the Store	
9) Input the test tag information in SYSMON.	
10) Placed the tags on the displays in the current campaign.	
11) Recorded the information on the Goliath tag Installation Report.	
12) Configured and activated the MEU.	
13) Test the MEU with the Goliath Help Desk.	
14) If the system is functioning ok, Check out with Goliath Help Desk	
15) Walk through store and verify all the supplies from the installation have been cleaned up.	
16) Check out with the Store Manager and verify there are no issues with the store	
17) Leave the store.	
18) When you get home update QuickBase with the installation information.	
19) Update SYSMON with the store information from the Goliath Tag Installation Report or verify that it has been updated by an FST, a DST or a DSM if they were on-site during the install.	



Appendix C – MEU Suspension

MEU SUSPENSION

This is a simple process and the method of getting the plastic hanger over the girder can vary according to your particular situation. It is recommended that you utilize the 5' PVC pipe for applications where the girder height above the ceiling makes access with big blue difficult.

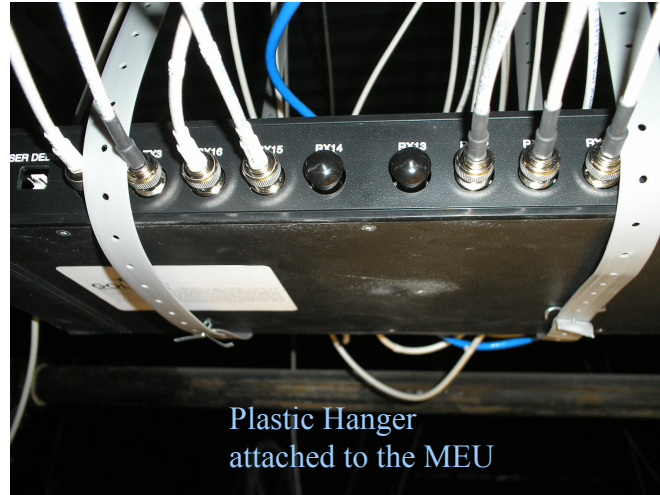
1. Access MEU in ceiling.
2. Locate the girder overhead nearest to the MEU. Select girder or cross-beam orientation that will put the least amount of stress on the MEU cables and ports AND allow for easiest access.
3. Based on ceiling to girder height, select proper tool set. For a low ceiling to girder height, use Unger or ball and string.
4. Using Unger or ball and string, pass one end of the plastic hanger over the lower metal piece of the ceiling girder.
5. Pull the end of the plastic hanger down far enough so you can create a loop of appropriate length (at the time of this writing a set height off of the ceiling tile has not been established. Use good judgment that allows for MEU suspension off-tile, but does not interfere with MEU access by DST and Goliath personnel using big blue).



6. Once you have chosen your preferred length, cut the plastic hanger to size and close the loop by matching up the pre-punched holes at the end of each side and zip-tying them together.
7. Repeat steps 4 thru 6 with another length of plastic hanger.
8. You will now have two loops of equal length which you can rest your MEU in.

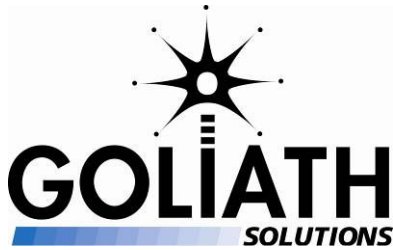


9. Make sure the MEU is turned off and carefully disconnect the end cables on either side of the MEU. You will also need to remove the phone and power cords as well.
10. Slide one strap over the left end and the other over the right end of the MEU. Position them between the last two antenna ports on either side of the MEU.
11. Carefully re-attach the antenna cables to their correct ports while keeping the strap situated between them. Make sure you reconnect the phone and power.



If you prefer, or get into a situation where the ceiling height above the girder is difficult to access, you can select the PVC pipe installation method:

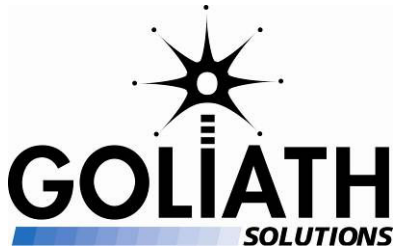
1. Thread plastic pipe hanger up thru the bottom of 5' PVC pipe until it appears at the top.
2. Attach your selected item of weight to the protruding end of the pipe hanger at the top of the 5' PVC pipe section. Metal fasteners (nut and bolt) have been used with success.
3. Extend PVC pipe up to bottom metal piece of girder you are going to suspend the MEU from.
4. Carefully continue to thread plastic hanger thru PVC so that the end in the ceiling goes over the girder and comes down on the other side.
5. Pull the end of the plastic hanger down far enough so you can create a loop of appropriate length (at the time of this writing a set height off of the ceiling tile has not been established. Use good judgment that allows for MEU suspension off-tile, but does not interfere with MEU access by DST and Goliath personnel using big blue).
6. Once you have chosen your preferred length, cut the plastic hanger to size and close the loop by matching up the pre-punched holes at the end of each side and zip-tying them together.
7. Repeat steps 1 thru 6 with another length of plastic hanger.
8. You will now have two loops of equal length which you can rest your MEU in.



FSM Cable Installation & MEU Activation

9. Make sure the MEU is off and carefully disconnect the end cables on either side of the MEU. You will also need to remove the phone and power cords as well.
10. Slide one strap over the left end and the other over the right end of the MEU. Position them between the last two antenna ports on either side of the MEU.
11. Carefully re-attach the antenna cables to their correct ports while keeping the strap situated between them. Make sure you reconnect the phone and power.

As the final step, please verify the power to the MEU is switched on and then push the reset button.



Appendix D - Test Tags

Suggested Test Tag Locations for Store

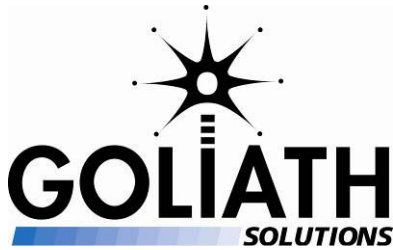
Test Tag Number	Store Location	10 Aisle Store	9 Aisle Store	8 Aisle Store	Location
TT1	Front	1	1	1	Side of store, above beginning of cosmetics.
TT2	Front	2	2	2	Middle of the B10 display in cosmetics, on bottom lip of display
TT3	Front	5 - 6	5 - 6	4-5	End cap
TT4	Front	8-9	7-8	6-7	End cap
TT5	Middle	1-2	1-2	1-2	End cap
TT6	Middle	5 - 6	5 - 6	4-5	End cap
TT7	Middle	8-9	7-8	6-7	End cap
TT8	Back	1-2	1-2	1-2	End cap
TT9	Back	5 - 6	5 - 6	4-5	End cap
TT10	Back	8-9	7-8	6-7	End cap
TT11	Back	Pharmacy	Pharmacy	Pharmacy	Behind signs or under counter.

Note: The store will always get 11 test tags. The test tags are normally taped to the back of signs on the end caps in the above listed aisles. Sometimes they may be installed in a permanent display such as the battery display.

Suggested Test Tag Locations for Stock Room

Test Tag Number	Location
SR1	Mounted on the wall next to the loading dock door. It is mounted on the side of the door where the loading ramp is located.
SR2 – SR7	Sequentially counter clockwise from the location of SR1 covering the circumference of the room. Normally mounted near doors.

Note: The stock room will always get 7 test tags. The other 6 test tags (SR2 – SR7) are placed in a counter clockwise sequence around the stock room. Place tags above or near doors. Don't place on shelves below where a liquid is stored. The test tags are normally taped on the wall or on a wood area on a stock shelf.



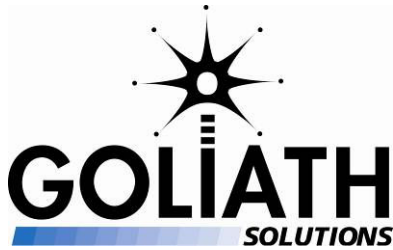
FSM Cable Installation & MEU Activation

Test Tag Inventory Sheet:

Store Number:
Test Tag Bag #:

Date:

Test Tag ID	Test Tag Serial Number	Test Tag Campaign Key
TT1 (Test Tag)		00-001 Test - Cosmetics Primary - A10A
TT2		00-002 Test - Cosmetics Primary - Valley B10A
TT3		00-003 Test - Cashier - L10
TT4		00-004 Test - Photo - Y10
TT5		00-005 Test - Middle Store - Cos. Sec. A40
TT6		00-006 Test - Middle Store - L40
TT7		00-007 Test - Middle Store - Y40
TT8		00-008 Test - Rear Store - Cos. Sec - A99
TT9		00-009 Test - Rear Store - Center - L99
TT10		00-010 Test - Rear Store - Y99
TT11		00-011 Test - Pharmacy Pick Up - Low Ceiling
SR1 (Stock Room)		00-131 TEST TAG - Back Room 1
SR2		00-132 TEST TAG - Back Room 2
SR3		00-133 TEST TAG - Back Room 3
SR4		00-134 TEST TAG - Back Room 4
SR5		00-135 TEST TAG - Back Room 5
SR6		00-136 TEST TAG - Back Room 6
SR7		00-137 TEST TAG - Back Room 7



Appendix F – Estimating distances from the MEU

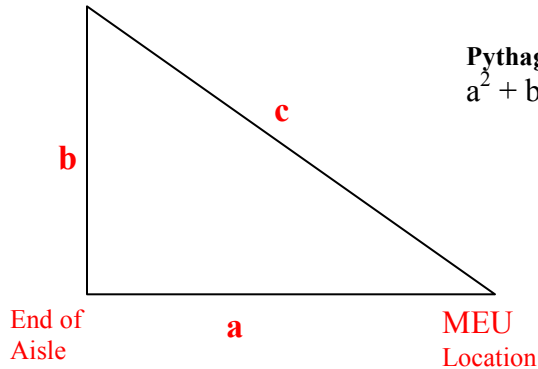
When you are estimating the distance from the MEU to any of the transmitters (ATA) or receivers (ARA) you can estimate this by using a Measuring Wheel or counting ceiling tiles. (Standard Ceiling tiles are 2' by 4'). You should check the distance of the furthest ATA and ARA from the selected MEU Location. The cables to the ATA and ARA are normally run along the length of the ceiling girders in a straight line. You don't normally go straight from the MEU to the ATA or ARA.

During the install process during the MEU Survey you must estimate the distance from the MEU to the power location. This is the one case where you can do a straight line for the shortest distance. One way you could estimate this would be use the Pythagorean Theorem. You will measure the distance from the MEU to the end of the aisle. Then you would measure the distance from the end of the aisle to as close as possible to the LAN Cabinet location, basically forming a right angle triangle. Then put the distances in the formal below.



FSM Cable Installation & MEU Activation

Location of
LAN Cabinet



a = distance from MEU to the End of Aisle.
b = distance from end of aisle to the Location of the LAN Cabinet
c = distance from MEU to LAN Cabinet

Pythagorean Theorem
 $a^2 + b^2 = c^2$

The following is an example on how to use the above formula

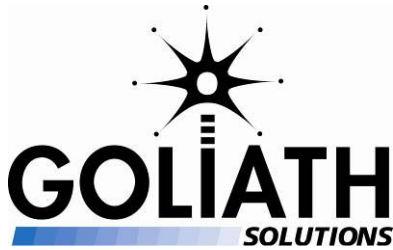
a = distance from the MEU to end of aisle = 40'

b = distance from end of aisle to LAN Cabinet = 35'

$$40*40 + 35*35 = 1600 + 1225 = 2825$$

The square root of 2825 = 53.15, so the value of c = 53.15

So the distance from the MEU to the LAN cabinet is 53.15'. Now you have to add in an additional 10'. This is the estimate for the power cable to go from the ceiling to the LAN Cabinet. The net result is the LAN Cabinet is about 63.15' from the MEU. In this example you could power from the LAN Cabinet using the 75' cable. **110' ft cables are expected at the end of September.**



FSM Cable Installation & MEU Activation

Appendix G – Sample Pre-Installation Survey Report

GOLSOL Masterdeploy -

<https://www.quickbase.com/db/00y8vna//a=print&rid=2314&all...>

ticket 4916

Store Info

Str_nbr	Retailer	City	Street Address	State	Zip5	Zip4
4916	Walgreens	JUPITER	1448 N US HWY 1	FL	33469	3235

Store Demographic Info

Store Type	Store Hours open.close If 24 only, 24 hr store	Manager Name	Str_Phone_Nbr	Close Date if Applicable
FREE-STANDING	0.024	Mr. Chuck BAYERLEIN	(561) 744-3447	

District Information

District Name	District Phone Number	District Manger
JUPITER WAREHOUSE	(561) 688-2877	JONES

Cluster

Miami

Team

2

Site Visit Input

Site Specs

Floor Plan Type

W4BPRD9

Floor Plan Attachment

If Telxon is
910MHZ ship SA
version of MEU
915 MHz

Ceiling HT
rounded up.
13

Girder hgt
over
Ceiling
4'6"

Store
Ladder
Avail
Both

Lift
Y/N
no

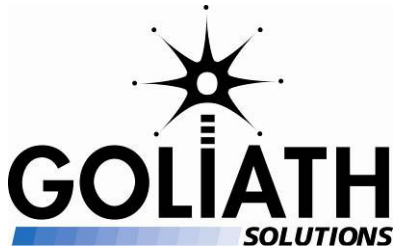
Warehouse Day

Mon/Thurs

Remodel Date ONLY if Store is to be remodeled

Distance from MEU to Wiring closet in Pharmacy or Punch block for WAN

65



FSM Cable Installation & MEU Activation

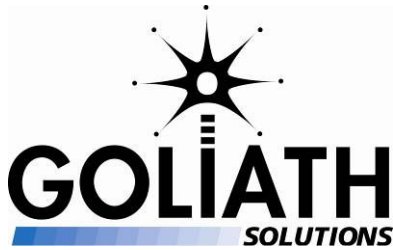
GOLSOL Masterdeploy -

<https://www.quickbase.com/db/bblysvna/?a=print&ru=2314&ui...>

Store Modem Share Phone Nbr				
561-744-3448				
Round Pole				
Pole Circumference				
Square Pole				
Drywall Above Suspended Ceiling				
Power available				
N				
Enter Survey comments for installer				
[JUN-25-06 Greg Carner] The store has a liquor store next door. W4 is the closest configuration, but the store room is behind the liquor store and the office area is extended. The pharmacy also has a larger waiting area where the store room in W4 would be. I placed an additional receiver in the area since it was so large. Store room height 18' 6". Tags and location of transmitter location. Could not mark the location of receivers since they were receiving an order. Both receivers should be placed on girder above inventory door at opposite ends. Outlet near TV already has both outlets filled.				
Surveyor Name				
Carner				
Store H/W Order Section				
QTY of Standard Store install kit	QTY Modem MEU	Qty WAN MEU		
1	1			
Quantity of Extra H/W required				
Extra ARA	Extra TX	Extra 85 ft coax	Extra 25 ft Coax	Extra 110 ft Coax Kit
1	0	0		2
Extra Cat5 Requirements				
QT 50 Ft Cat5 Extension cables. Order if more than 100 ft of CAT5 is needed to reach phone or Hub.				
QTY BRTs need if BRT site				
Key Milestone Dates				

2 of 5

8/31/2006 8:26 PM



FSM Cable Installation & MEU Activation

GOLSOL Masterdeploy -

<https://www.quickbase.com/db/bbiy8vhd7?a=printr&rid=2314&dt...>

Planned Survey Date	Actual Survey Date	Order Lockdown Date	Planned Install Date	Install Order	Actual Int Dt
06-30-2006	06-25-2006	08-30-2006	09-06-2006	1	

Order Tracking

Requested Ship Date From Staging	Actual Ship Dt	UPS Tracking number	Expedite	Shipping Co.
08-26-2006	08-28-2006	1Z004VX00244786439	Y	UPS 2nd day

Shipment Tracking

Requested H/W Delivery Date 09-01-2006
Actual Delivery Dt
Proof of Delivery Y/N no

Post Install Status

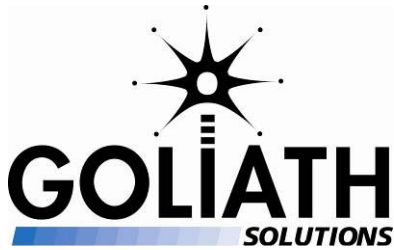
Move to Production	BIOS	MEU Location
no		
Plan Q/A Date	Actual Q/A Date	Producton Dt
09-06-2006		
Time to correct install issues	Site ADT Type	
	1	
QA Issue		
QA Comments		
Act comments		
Act Stat		
Planned Correction Date		

Personel Assignment

FSM	DST	DSM
Carner		

3 of 5

8/31/2006 8:26 PM



FSM Cable Installation & MEU Activation

GOLSOL Masterdeploy -

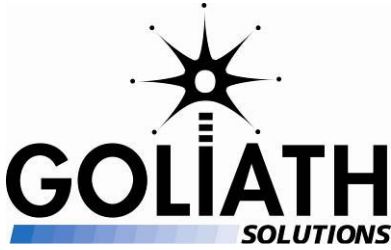
<https://www.quickbase.com/db/bby8vnd/?a=print&rid=2314&on...>

update date
Rollouts wk order#
Golsol Contact Number 8663769956
Rollouts Inv date
POD Confirmation Date
POD Contact
AP Type Arlan 630
Shut Down Date
Shut Down Reason
Shut Down Comments
Returned to Service Date
Returned to Service Comments
Timer Installed?
MEU Secured
Q TAP Removed
Start Time
End Time

Owner: Holmes, Mark
Created: MAR-24-2006 1:33 PM (PDT)
Last Modified: AUG-30-2006 4:23 PM (PDT) by Holmes, Mark

4 of 5

8/31/2006 8:26 PM

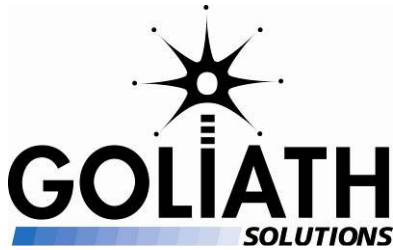


FSM Cable Installation & MEU Activation

Appendix H – QA Checklist

The QA Checklist is on the following two pages. The actual document is on the Goliath Swap drive. The document is called:

QA Survey 1A.doc



FSM Cable Installation & MEU Activation



Walgreens Installation QA Survey

Install Date:	Start Time:	Install Order:
Store #:	Store Name:	
Address:		
Manager:	Store Phone:	Modem #:
Technician (s)		
Document your time below:		
Arrival Time: _____	Departure Time: _____	QA Check Complete: Y N

Manager QA Questions:

Are there issues you need addressed immediately?

- | | | |
|-----|-------|---|
| YES | NO | Was the installation team courteous and professional to your staff and customers? |
| YES | NO | Did the installation team introduce themselves to you at the beginning of the installation? |
| | _____ | How would you rate the installation team of this product on a scale of 1-10 |
| YES | NO | Did the installation team clean their work area and replace all ceiling tiles? |

What improvements can you suggest on the future installation and upgrades to this product? _____

Cable QA Check:

- | | | |
|-----|----|--|
| YES | NO | RJ11/ RJ45 Biscuit Jack Installed at MEU |
| YES | NO | Were the unused conductors at the phone jack tightly wrapped? |
| YES | NO | Are any cables touching water pipes or connected to water pipes? |
| YES | NO | Are any cables connected to any type of threaded rod? |
| YES | NO | Are any cables draped over or touching HVAC ductwork? |
| YES | NO | Are any cables connected to AC conduit? |
| YES | NO | Any cables touching the ceiling tiles or light fixtures? |
| YES | NO | Is excess cable neatly coiled at the MEU end and dressed properly? |
| YES | NO | Was there trash left in the ceiling? |
| YES | NO | Were all RX/TX cable ends identified and components identified? |
| YES | NO | Were all RX/TX cables correctly connected to MEU port? |
| YES | NO | Were all TX and RX antennae place in the specified locations? |
| YES | NO | Were any cables connected to wire supporting the ceiling grid? |
| YES | NO | Were all pushpins/ Dots removed from the ceiling? |
| YES | NO | Were the labels indicating the location of the TX and MEU placed on the ceiling grids? |

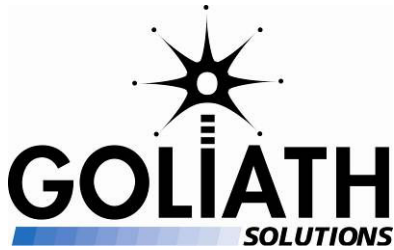
Pictures Required:

- | | |
|----------------------------------|--------------------------------------|
| _____ MEU & Cables Close-up | _____ Phone board and Cable Close-up |
| _____ Cable Run to power source | _____ Cable run to front of store |
| _____ Cable run to right of MEU | _____ Cable run to left of MEU |
| _____ Cable run to rear of store | |

_____ Site Contact (sign)	_____ Site contact (print)	_____ Date
_____ Technician (sign)	_____ Technician (print)	_____ Date

Page 1 of 2 Rev. 1A, Rev. Date 8/31/2006

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FSM Cable Installation & MEU Activation



Walgreens Installation QA Survey

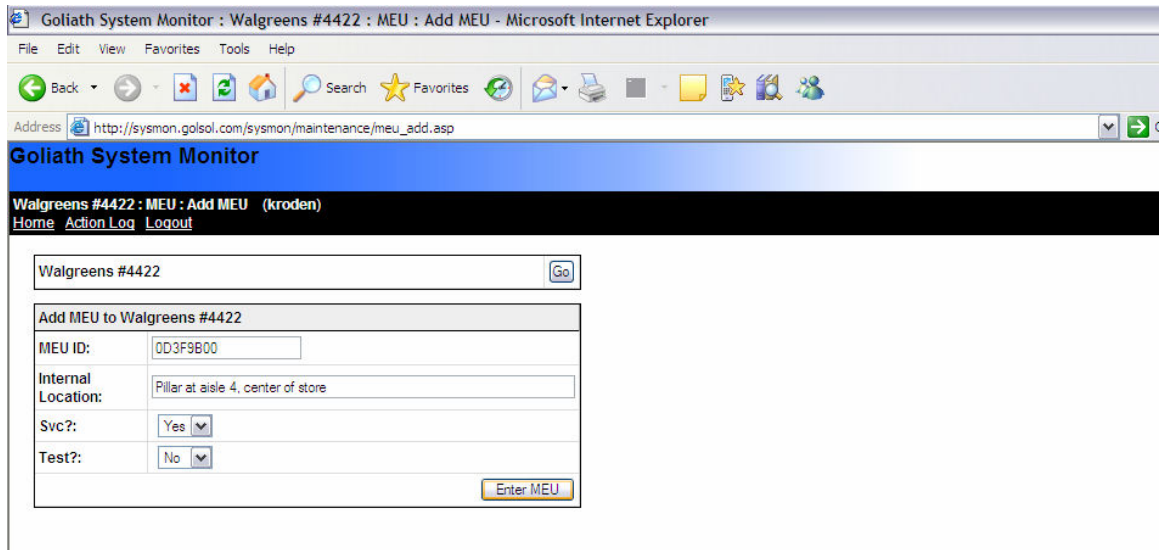
Install Date:	Start Time:	Install Order:
Store #:	Store Name:	
Address:		
Manager:	Store Phone:	Modem #:
Site Survey Information		
Girder Height Over:	50 ft. Cat5 Ext:	
Store Ladder Available:	Extra 110 ft. Coax:	
Store Modem Share #:	Extra 25 ft. Coax:	
Telxon Type:	Extra 85 ft. Coax:	
Shipping Company:	Extra TX:	
MEU to LAN Cabinet:	Extra ARA:	
Warehouse Day:	WAN MEU Kit:	
Ceiling Height Ft:	Phone MEU Kit:	
Req. Deliver Date:	Store Install Kit:	
UPS Tracking #:	SR Sqr Ft:	
Lift:	SS Sqr Ft:	
Survey Comments:		
Issues/Notes:		
Trunk Stock Items		
Please indicate below how many trunk stock items you used at this site, if any.		
MEU: _____	BNC F to F connectors: _____	
Receivers: _____	3 to 2 prong adapters: _____	
Transmitters: _____	Orange cable label booklets: _____	
85' Cables: _____		
25' Cables: _____		



Appendix I – MEU Configuration

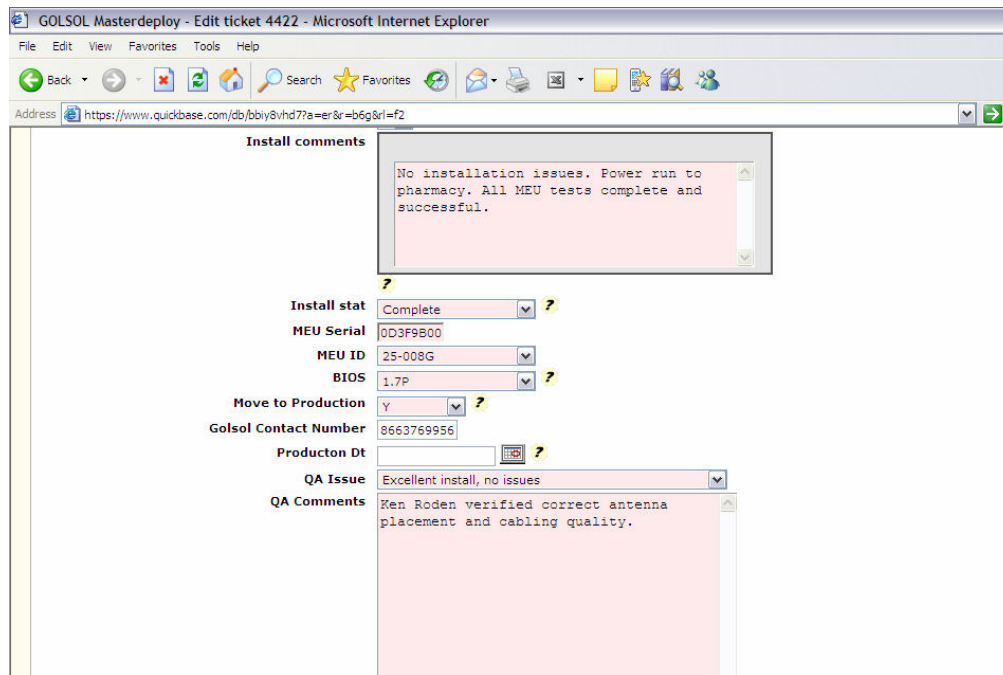
To configure and active the MEU you must be online with your Notebook PC using the Verizon Air card. You will need access to online Goliath Solutions applications. The activation and configuration of the MEU consists of the following steps:

1. Enter the MEU Information into SYSMON.
 - a) Prior to starting the MEU, the FSM must add the MEU serial number to the store’s record in SYSMON.
 - b) Login to SYSMON and bring up the store’s record in SYSMON. Scroll down on the screen to the “MEUs” section.
 - c) Click the *Add MEU* button.
 - d) Enter the MEU information as shown in the following picture and click the *Enter MEU* button.



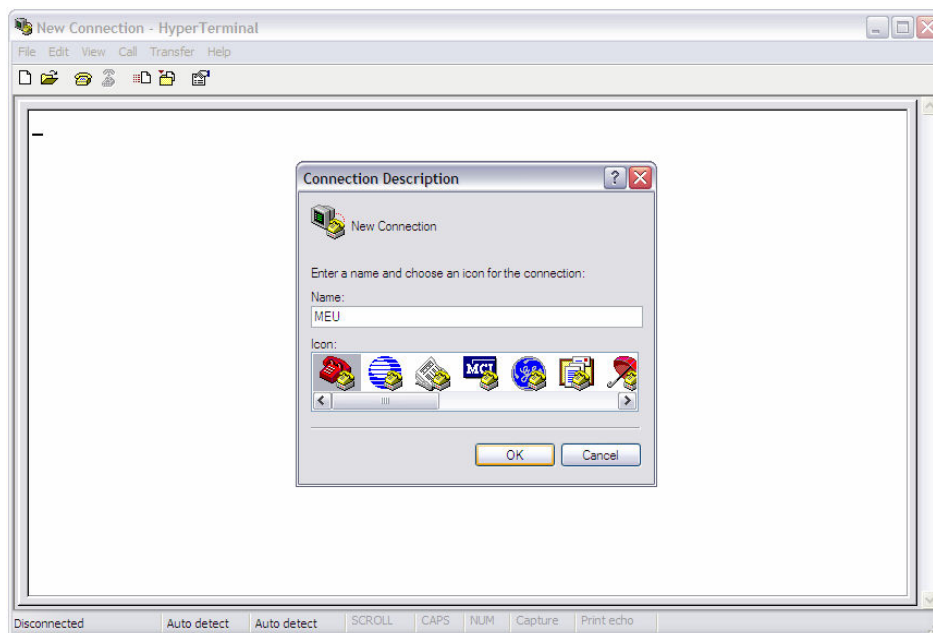
- e) Once the MEU is added to the store’s record, the user may click the *Go* button to return to the store’s detail.

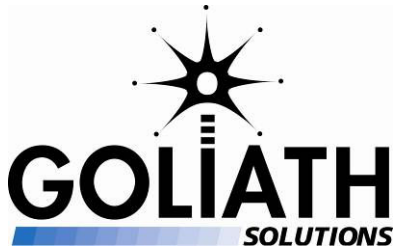
2. Enter the MEU Information Into QuickBase.
 - a) Login to QuickBase.
 - b) Click to open the “GOLSOL Masterdeploy” database from the “My QuickBase” screen.
 - c) In the “Views” menu at left, click the “site – view specific site” link to retrieve a store’s QuickBase record.
 - d) Click the *Edit* button at left.
 - e) Scroll down the screen to “Install Comments”.
 - f) Fill in the information as necessary for the specific site as shown in the following picture.



- g) You may or may not wish to flag ‘Y’ in the “Move to Production” drop-down. This depends on having an auditor that is able to visit the site twice per week. You may wish to wait and correct any staffing issues before flagging this.
- h) Once all of the information is entered for the site, you may click the *Save* button at top or bottom-left.

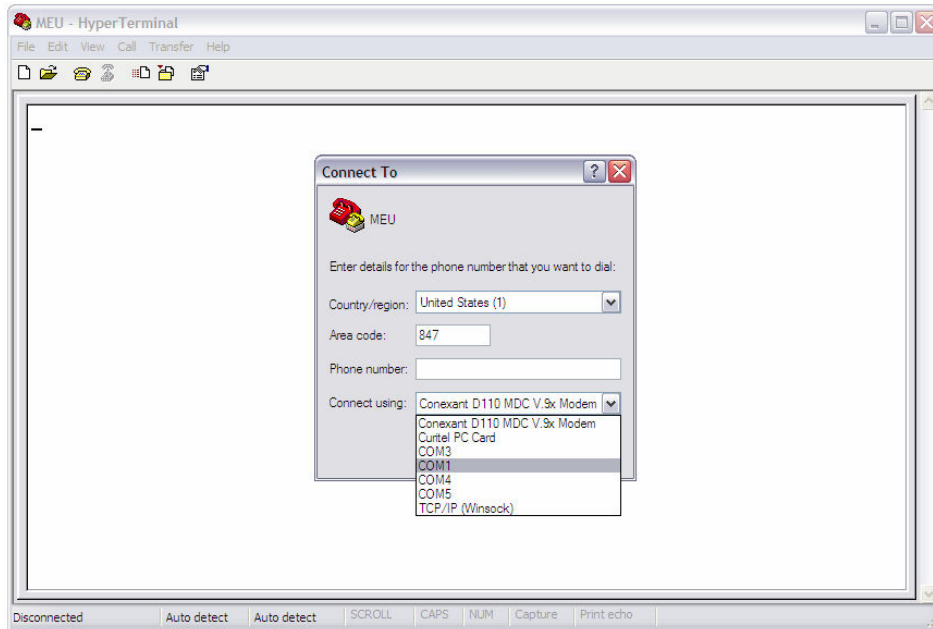
3. Configure the HyperTerminal for Interfacing the Notebook PC with the MEU
(Hyper Terminal must be configured properly in order to interface properly with the MEU).
 - a) Open Hyper Terminal on the notebook PC.
 - b) Type a name for the connection that is to be created and click *OK*. See the following picture.

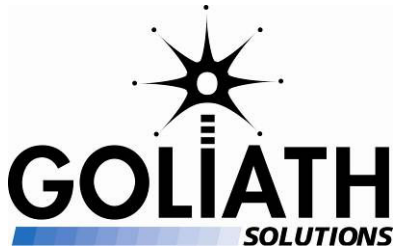




FSM Cable Installation & MEU Activation

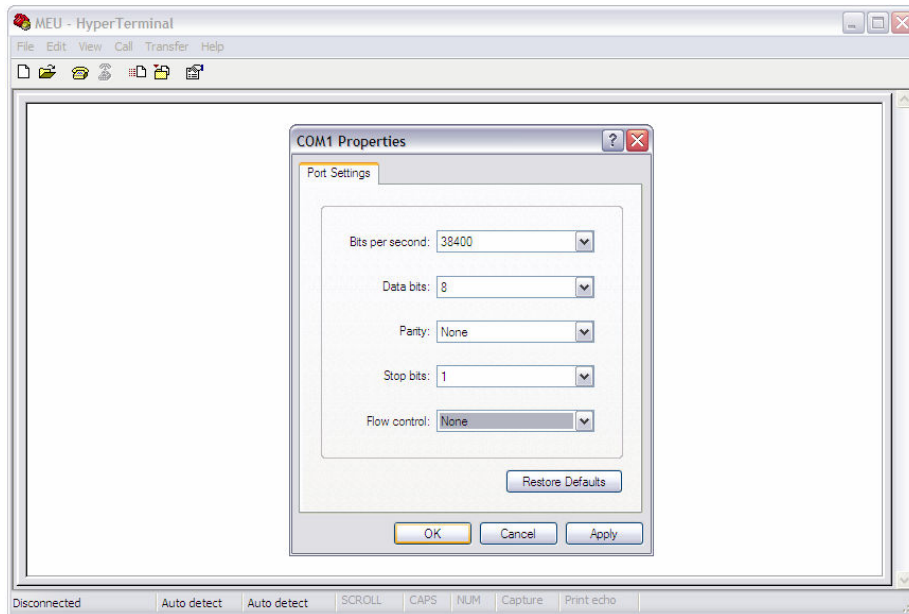
- c) Select “COM1” in the “Connect Using” drop-down and click *OK*. *See following picture.*

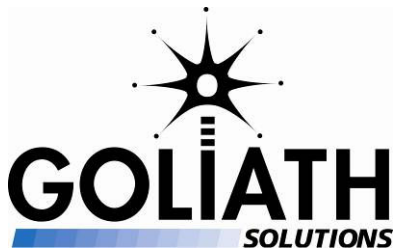




FSM Cable Installation & MEU Activation

- d) In the following picture is the proper configuration for interfacing with a 1.7G+ MEU.





FSM Cable Installation & MEU Activation

4. Initial MEU startup in the following picture.

```
MEU Code Ver. 1.7P
Copyright Goliath Solutions Inc. 2002,2003,2004,2005,2006
Use VT100 emulation for best results
Type '?' for help
Random Hopping: 1      Sleep mode: 1      Ant. Cycle: 1
                    Power: 150
Pause
P0: 150
Alternate ID: 86694654
DS18S20 Scratchpad= 100D3F9B00080059
TPWM: 150

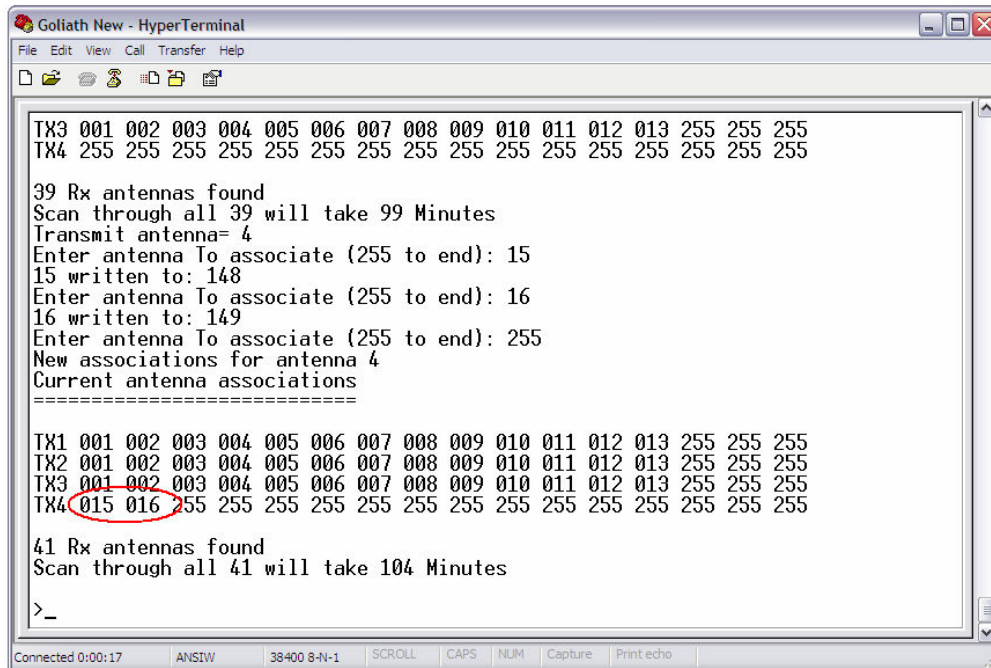
Current phone number is: 8669465428
Summary of EEPROM status: 1 k blocks
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Number of records: 0 Number of Blocks: 32
Attempting to initialize modem
Modem initialized
Hit * to enable command input
Commands will be accepted
-
```

- Note the firmware version code and phone number are present and correct (red underline).
- Note the MEU serial number is shown on-screen (thicker red underline). The number starts directly after the '10' and extends 8 characters.
- When the MEU is turned on or RESET, you will have 10 seconds to press the '*' key. This will cause the MEU to enter Command Mode. The timer will be increased in later releases of Spider.

5. MEU Antenna Configuration

- It is very important that the FSM perform an auto-configuration before performing any manual configuration that may be necessary.
 - SHIFT + 'Y' = 3-Tx & 12-Rx auto-configuration
 - SHIFT + 'T' = 3-Tx & 13-Rx auto-configuration
- Performing an auto-configuration reprograms the MEU with the appropriate sleep time & phone number as well as facilitating less typing.
- Manual configuration is done by pressing the 'K' key and typing the number of the TX they wish to configure followed by the ENTER key. Then the FSM types the

- number of each receiver they wish to associate with that TX followed by the ENTER key each time.
- d) The FSM may verify the overall stored antenna configuration by pressing SHIFT + 'K'.
 - e) In all stores, the FSM must manually configure the MEU to accept the 4th TX and 15th & 16th Rx's in the stockroom (Pic_5).



```

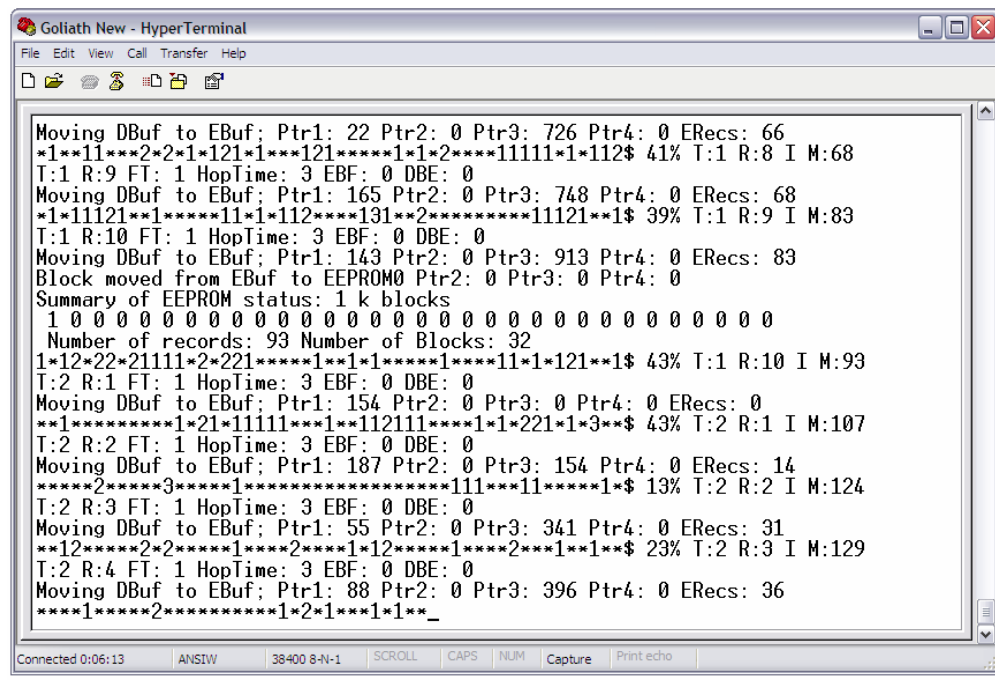
Goliath New - HyperTerminal
File Edit View Call Transfer Help
[Icons]
TX3 001 002 003 004 005 006 007 008 009 010 011 012 013 255 255 255
TX4 255 255 255 255 255 255 255 255 255 255 255 255 255 255 255 255

39 Rx antennas found
Scan through all 39 will take 99 Minutes
Transmit antenna= 4
Enter antenna To associate (255 to end): 15
15 written to: 148
Enter antenna To associate (255 to end): 16
16 written to: 149
Enter antenna To associate (255 to end): 255
New associations for antenna 4
Current antenna associations
=====
TX1 001 002 003 004 005 006 007 008 009 010 011 012 013 255 255 255
TX2 001 002 003 004 005 006 007 008 009 010 011 012 013 255 255 255
TX3 001 002 003 004 005 006 007 008 009 010 011 012 013 255 255 255
TX4 015 016 255 255 255 255 255 255 255 255 255 255 255 255 255 255

41 Rx antennas found
Scan through all 41 will take 104 Minutes
>_
Connected 0:00:17  ANSIV  38400 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
  
```

- f) If a store layout calls for a 14th Rx, then that must be manually configured for TX's 1-3 via the procedure outlined above.

6. Running the Dot Animation process.



- a) Once the MEU is properly configured for the specific location, the FSM must run a “Dot Animation” sequence.
- b) This sequence is basically a quick-cycle. It will send and receive a signal on each of the 52 channels utilizing each TX & Rx combination individually.
- c) Each character that appears represents 1 of the 52 channels that the MEU scans with each TX & Rx combination.

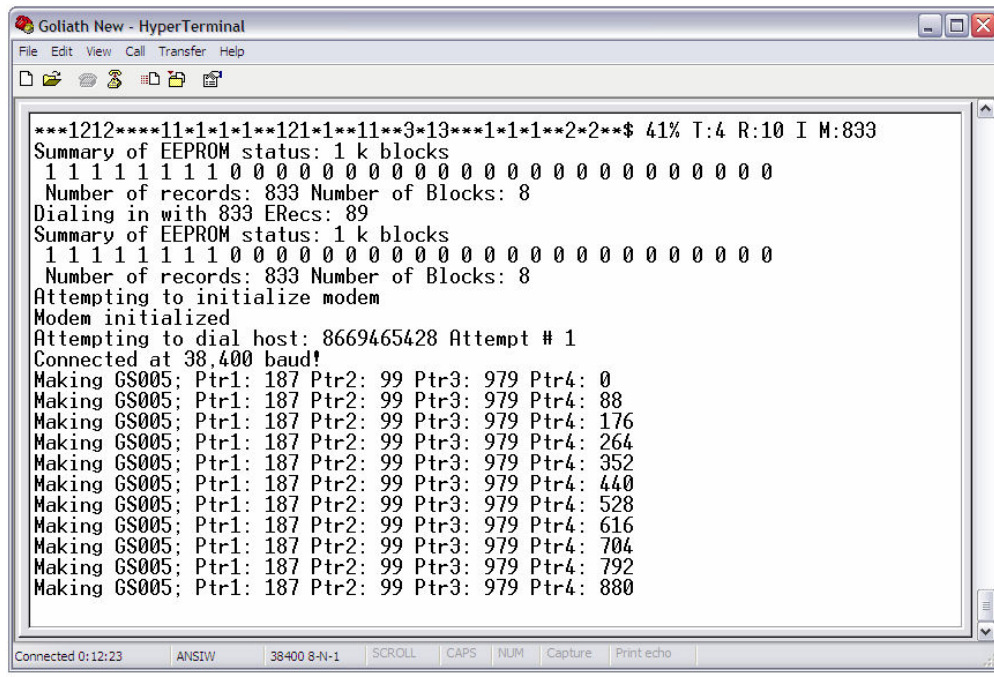
*1**11***2*2*1*121*1***121*****1*1*2****11111*1*112\$ 41% T:1 R:8 I M:68

- d) The asterisk indicates that no tags were read on that channel using a specific TX & Rx combination.
- e) A single-character number indicates the number of tags that were read on that channel using a specific TX & Rx combination.
- f) At the end of each line, the ‘34% T: 1 R: 1’ tells the user that a tag was read on 34% of the 52 channels tested using the Tx-1 & Rx-1 antenna combination.
- g) Any combination that displays 0% must be looked into. This could be a symptom of incorrect antenna configuration, incorrect cabling, incorrect port usage, or defective

equipment. Troubleshooting procedures should be implemented to narrow the problem down.

- h) If an antenna combination does not appear despite the equipment being present and plugged-in, then an incorrect antenna configuration is the cause.

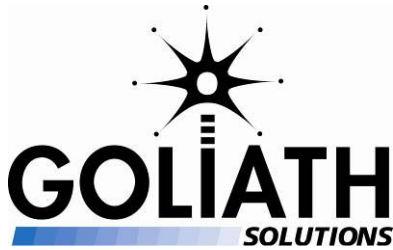
7. Dialing Out.



```

Goliath New - HyperTerminal
File Edit View Call Transfer Help
***1212****11*1*1**121*1**11**3*13***1*1**2**$ 41% T:4 R:10 I M:833
Summary of EEPROM status: 1 k blocks
1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Number of records: 833 Number of Blocks: 8
Dialing in with 833 ERecs: 89
Summary of EEPROM status: 1 k blocks
1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Number of records: 833 Number of Blocks: 8
Attempting to initialize modem
Modem initialized
Attempting to dial host: 8669465428 Attempt # 1
Connected at 38,400 baud!
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 0
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 88
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 176
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 264
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 352
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 440
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 528
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 616
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 704
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 792
Making GS005; Ptr1: 187 Ptr2: 99 Ptr3: 979 Ptr4: 880
  
```

- a) Once the “Dot Animation” sequence is complete, the MEU will attempt to dial out and dump its data to the Modem Bank server via the telephone line.
- b) If the MEU functions as it should, the user will see the modem initialize and after a few seconds, see the line, “Connected at 38,400 baud!” This indicates a successful connection to the Modem bank server.
- c) The user will then see incomprehensible lines of code scroll upward on the screen. This indicates the MEU is dumping its data to the server.
- d) Once the data dump is complete, the user will see a summary line.
- e) After a minute or so, the user should see, “140 minutes to go”, or something similar. This indicates that the MEU is counting down to its next full-cycle.
- f) If the display shows, “No Carrier” or “No Dial Tone” more than 3 times, troubleshoots the phone line.
- g) If the display shows, “Busy” more than 2 times, check the phone line for activity.



FSM Cable Installation & MEU Activation

- h) In some cases, brand new MEU's may take 2-3 attempts to dial out before successfully doing so.
8. Resetting the MEU
- a) After performing the above tasks, the user will have successfully configured and tested the MEU.
 - b) The MEU **must** be reset via the RESET button located next to the "SER DEBUG" port on the front of the MEU.
 - c) The RESET button **must** be depressed for 3 seconds.
 - d) Failure to reset the MEU may result in abnormal function and reporting.