



Walgreens Installation Guide

G-1-2002-2B

5/27/2008

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Revision Record

Document Title:	Walgreens Installation Guide		
Revision	Page(s) Number	Remarks	
2.0 -4/28/08	All	<ul style="list-style-type: none"> Revised for the CMU and MEU III. 	
2A – 5/13/08	1-3 2-7, 2-8 2-8, 2-9 2-42 2-57, 2-59 2-17, 2-44, 2-49 B-2 B-13 B-14 B-16	<ul style="list-style-type: none"> Walgreens Environment page added Example of a 48 port switch added Example of two 24 port switched added Goliath grid label to mark location of MEU power in ceiling. Goliath grid label to mark location of MEU. ATA/ARA added 	
5/15/2008	All	<ul style="list-style-type: none"> Updated contents and quantities of the Hot spare kit. Updated Store Data Form to reflect QB entries. Added Installation Exception for to lists quantities for OBF, Shortages/Overages, Hot Spare Usage Add do not enter pharmacy to Pre-installation Survey checklist. 	
	2-7 to 2-9	<ul style="list-style-type: none"> Replace all references of Tx and Rx in the document with Tx/ATA and Rx/ARA. 	
	2-44	<ul style="list-style-type: none"> Stock images and explanation of 24 and 48 port switches. 	
	2-44	<ul style="list-style-type: none"> Instructions added for revision D, J and 3 of Tx/ATA 	
	B-2	<ul style="list-style-type: none"> List 1 box for drywall screws and 1 box for 1" mounting bases for the Hot Spare Kit. 	
	B-13	<ul style="list-style-type: none"> Add comment on Store Data Form item 13 and record revision level for each Tx//ATA and location. 	

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Document Title:		Walgreens Installation Guide	
Revision	Page(s) Number	Remarks	
2B - 5/27/2008	2-1	<ul style="list-style-type: none"> Update Help Desk phone number to 207-591-1583 	
	1-3	<ul style="list-style-type: none"> Add contact Help desk immediately if an accident occurs during the store installation. 	
	1-3, 2-2, 2-14, 2-16, B-16	<ul style="list-style-type: none"> Update access to Pharmacy Policy. 	
	2-3	<ul style="list-style-type: none"> Wood and sheet rock Ceiling added to issues. 	
	2-5	<ul style="list-style-type: none"> Add to pre-installation survey check if power available by front security screen before surveying CMU location. Add Managers office to Catalina location 	
	2-7, 2-8, 2-9	<ul style="list-style-type: none"> Change item 2 in pre-installation survey to define CMU installation in the Pharmacy instead of the Managers Office. 	
	2-12	<ul style="list-style-type: none"> Add verbiage describing switch 2. 	
	2-13	<ul style="list-style-type: none"> Add verbiage to picture to indentify daisy chain cable. 	
	2-16	<ul style="list-style-type: none"> Update sub-bullets to refer to Catalina and communication cabinet instead of just Catalina Cabinet (bullet 2). 	
	2-30	<ul style="list-style-type: none"> Update picture with installed CMU with clips. 	
	2-32	<ul style="list-style-type: none"> Add Installed CMU picture. 	
	2-33, 2-34, 2-35	<ul style="list-style-type: none"> Update CMU installation for Pharmacy 	
	2-67 thru 2-75	<ul style="list-style-type: none"> Update Sheet Rock, Wood and Concrete ceiling. 	
	2-67	<ul style="list-style-type: none"> Add recommendation to use 2 cordless drills for wood ceilings. 	
6/11/2008	B-2 thru B-5	<ul style="list-style-type: none"> Updated Hot Spare kit with pictures. 	
	B-21	<ul style="list-style-type: none"> Ramset sign added. 	
	vi	<ul style="list-style-type: none"> FCC Compliance note added. 	

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Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

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Chapter 1 - INTRODUCTION:

The *Walgreens Installation Guide* (G-1-2002) defines the standard installation processes and requirements for the installation of the Goliath Solutions System in the Walgreens environment. Walgreens stores will be installed by a contracted Cable Installation Team (CIT). The target audience for this manual is the CIT and the Goliath Solutions Help Desk (Help Desk).

This document will provide a best practices guide for the installation, suggested workflows and the minimum acceptable standards for the installation.

Two other guides are referenced in this document. These guides along with this guide comprise the Walgreens Installation Manual (G-1-1000). The Walgreens Installation Manual documents the complete installation processes and standards for installation of the GOLIATH System at Walgreens. The other guides are:

- *Introduction to Store Installation Processes Guide* (G-1-2001)
- *Walgreens Store Floor Plan Reference Guide* (G-1-2003)

Reminder:

Throughout the installation you will be working in areas of the store that customers and the 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 are working. Be especially careful as any cables that are strewn about the aisles are a hazard to customers, employees and the CIT.

Please be polite and helpful to the Retailer's employees and customers when you are at the store. If asked for assistance by a customer, please kindly refer them to store personnel or find store personnel to help customer.

Prior to Installation:

GOLIATH will ship the Installation Kit to the store. The hardware will be at the store one day prior to the planned installation date. **The CIT will contact the Store Manager or the Executive Assistant Manager approximately seventy-two hours prior to any planned installation activity** and make every effort to accommodate the store's expectations regarding the installation, which may include swapping with nearby stores to accommodate shipments and inventory counts. It is also recommended that the CIT Lead Tech call the store twenty-four hours prior to the installation to accommodate any last-minute circumstances. Any changes to the schedule must be approved by the Help Desk.

Ceiling Tiles:

During the survey and installation you will be handling ceiling tiles in your work area. Be careful when removing and replacing the ceiling tiles so you do not damage or mark the ceiling tiles. **Make sure your hands are clean and free of debris when handling ceiling tiles.** Always remove the ceiling tile when you are standing on a ladder, never use a pole to remove a ceiling tile.

If a ceiling tile is damaged or broken during the installation process, notify the Store Management. Many times the store will have extra ceiling tiles and you can simply replace the damaged tile with a new tile. If the store does not have any extra ceiling tiles, the CIT will replace the tile during a revisit before the end of the week. **If a damaged ceiling tile could be a potential hazard to anyone on the floor do not reinstall it!**

If you damage any ceiling tiles during the installation process update the Help Desk during your store check-out call. The Help Desk will need to know the following information:

- The location of the damaged ceiling tile.
- If the damaged tile was replaced during the installation.
- Is the ceiling is open because the damaged tile was not replaced during the install.
- Will the ceiling tile need to be replaced by the CIT during a revisit.
- If a revisit is required, the scheduled revisit date. (The revisit should occur before the end of the current work week)

Work Orders:

The Cable Installation Vendor (CIV) will provide the CIT with a work order and a floor plan of the store for the installation. The floor plan will show the designated locations for the Goliath equipment. The work order should include but is not limited to the following information:

- Store number
- Store address
- Store contact information
- Scheduled Installation date
- Store floor plan
- Warehouse delivery days

The Help Desk may provide additional information needed for the installation when you check-in with them.

Walgreens Environment:

The installation is taking place in a live store environment with employees and customers. The CIT must at all times be aware of this environment. Goliath Solutions and the CIT are guests of Walgreens and must follow Walgreens vendor policies. The following items are a summary of those policies.

- Always be polite to store employees and customers.
- Follow store safety procedures.
- Follow industry safety procedures.
- Follow the Goliath safety procedures that are documented in the *Introduction to Store Installation Processes Guide*. **If an accident should occur during a store installation, then contact the Goliath Help Desk Immediately.**
- Business casual is the required clothing for the CIT during the install. The CIT should follow these rules regarding dress attire:
 - Wear cotton or denim slacks.
 - Never wear shorts.
 - Always wear the appropriate footwear (work boots, sneakers, etc.) required for working on a ladder.
- Food or beverages may be purchased by the CIT during the install, but the CIT must obey the following policies:
 - The item must be purchased prior to consuming it.
 - Only eat food in the store break room or outside the store.
 - Non-alcoholic beverages can be consumed in the store while the CIT is working. **The Walgreens receipt must be taped to the beverage.** The sales clerk will tape the receipt on the beverage container when requested.
- Access to some areas of the store may be restricted.
 - Store management may require that a store employee is with the CIT in some areas of the store, such as the Managers Office or the Pharmacy.
 - **Only Enter the Pharmacy if all of the following conditions are true in the store:**
 - **There is no Catalina Cabinet in the store** and the network switch is located in the pharmacy.
 - The highest available level of store management is aware that the CIT needs access to Pharmacy.
 - **The CIT must be accompanied by a Registered Pharmacist that is on duty, at all times when working in the Pharmacy. A Pharmacist is the only Walgreens employee that is allowed to escort the CIT while in the Pharmacy.**

Chapter 2 - STORE INSTALLATION PROCEDURES:

Check-In:

Morning installations start at 8 AM local time.

Upon arrival, the following tasks must be completed:

- 1) Locate the highest available level of Store Management (the Store Manager's name is posted near the front door).
 - The Lead Tech must introduce himself and the crew.
 - Explain the installation process of the receivers and transmitters, the approximate amount of time the install will take, and the areas of the store that will require access. Do not attempt to answer any questions on the operation of the system. Please refer any questions to the Customer Services Help Desk listed in the Welcome Package.
 - Ask the store manager if they know the location of the secondary communications cabinet (Catalina cabinet).
 - Locate the Installation Kit that has arrived at the store.
 - Retrieve the Welcome Package from the Installation Kit.
 - Record the serial numbers of the CMU and MEU(s).
 - Give the Store Manager the Welcome Package from the kit. This will give them a point-of-contact for their store and some information on how the system works.
 - Photo I.D. must be displayed by all members of the crew at all times.
- 2) After completing the check-in process with the store, then bring the ladders into the store. The Lead Tech should perform the Pre-installation Survey while the second tech brings in the rest of the installation equipment and then starts the installation prep.
- 3) Call the **Goliath Solutions Help Desk at 207-591-1583** to check-in immediately after the completion of the Pre-installation survey. Provide the Help Desk with the following information:
 - Arrival time at the store.
 - Names of the install team and the cell phone number of the CIT Lead Tech.
 - The CMU and MEU serial numbers.
 - Serial numbers of the CMU and MEU.
 - Any issues found during the survey that will affect the installation.

All installations require a check-in and check-out call with the Help Desk. If needed during the installation, call the Help Desk to resolve installation issues.

Pre-Installation Store Survey:

Introduction:

Using the provided **store floor plan** and the **Pre-installation Survey Checklist** (located In *Appendix B – Support Documents*) perform the Pre-installation Store Survey. The survey will determine the actual location of the Goliath equipment, any exception issues with the installation and the path of the cable pulls. Reference **“Chapter 2” and “Appendix A - Antenna Placement”** of this guide for detailed survey and installation instructions. If the store floor plan has not been provided, contact the Help Desk for further instructions.

The store floor plan has been customized for each store to provide the recommended location for the CMU, MEU, Tx/ATA antennas and Rx/ARA antennas. The actual location may need to be adjusted if issues with the recommended location are found during the Pre-installation Store Survey.

During the Pre-installation Store Survey and the installation you will be collecting data about the installation that the Help Desk will require during your check-in and check-out calls. Record the survey data on the **Store Data Form** (located In *Appendix B – Support Documents*). This form lists all the data you will need to collect during the installation. You will need to provide this data verbally to the Help Desk during either your check-in or check-out call.

Remember, the Pre-installation Store Survey is the key to a successful and efficient store installation.

Only Enter the Pharmacy under all of the following conditions:

- There is no Catalina Cabinet in the store and the network switch is located in the Pharmacy.
- The highest available level of store management is aware that the CIT needs access to Pharmacy.
- **The CIT must be accompanied by a Registered Pharmacist that is on duty, at all times when working in the Pharmacy. A Pharmacist is the only Walgreens employee that is allowed to escort the CIT while in the Pharmacy.**

Minimize the time spent working in the Pharmacy.

During the Pre-Installation Survey the following information will be determined:

- 1) Validate that the provided store floor plan is correct.
- 2) Validate if power is available by the front security screen for the MEU.
- 3) Location and power source for the CMU.
- 4) Location, power source and the mounting method for the MEU.
- 5) Access point into the stock room for cables.
- 6) If a second MEU will be required.
- 7) The actual location for each Tx/ATA and Rx/ARA antennae.
- 8) The cable lengths required for each Tx/ATA and Rx/ARA antennae.
- 9) The sequence and order of each cable pulls.
- 10) The ceiling height and height of roof girders above ceiling.
- 11) Potential installation issues.

Do not contact the Help Desk until the completion of the Pre-installation Store Survey unless the provided floor plan is incorrect.

Potential Installation Issues:

If any of the following conditions are present, contact the Help Desk at the completion of the Pre-installation survey! These issues include, but are not limited to:

- Missing installation kit.
- Missing welcome letter for Store Manager
- Incomplete installation kit
- Damaged installation kit
- Concrete ceilings requiring special tools for installation.
- Wood ceiling.
- Sheet rock ceilings.
- Girder height in excess of 25 feet.
- No roof iron present in the ceiling.

Estimating Cable Lengths:

During the survey you will be estimating the distances between the *GOLIATH* antennas (Tx/ATA and Rx/ARA) and the MEU to determine what length of cables to use for each antenna. You must also verify that distance does not exceed the maximum supported cable lengths listed below.

Maximum supported cable lengths from the MEU	
Power Source	110 foot
Tx/ATA Antennae	110 foot
Rx/ARA Antennae	135 foot

Estimate the distances using any method you prefer. Remember to allow for additional cable length to go from the roof girders to the Goliath Hardware and enough cable length to form minimal service loops. Two methods that have been successfully used to estimate the distances are:

- Walking the floor using a Measuring Wheel.
- Counting Ceiling Tiles. Most stores use 2 foot by 4 foot ceiling tiles. By counting the number of tiles between locations you can estimate distances.

Coaxial cable lengths are 25 foot, 50 foot, 85 foot and 110 foot in the installation kit. Use the appropriate length cable for each Tx/ATA and Rx/ARA. Extra 85 foot cables are provided in the Hot Spare Kit. The 85 foot cables can be substituted for the 110 foot cables during the installation if the shorter cables can be used.

Validate the Store Floor Plan:

The first step in the pre-installation store survey is to validate that the provided store floor plan is correct and matches the actual store floor plan. **If the store floor plan is not correct; go to the Floor Plan Questions section found in the “Walgreens Store Floor Plan Reference Guide”.** Gather the information asked in these questions and then contact the Help Desk. The Help Desk will then help determine the actual floor plan.

Determine if Power is available for the MEU by the Front Security Screen:

The power source for the MEU must be an open uninterrupted 24-hour power source. It can not be plugged into a cube tap, power strip or a UPS used by a LAN cabinet or computer. Check power at this location prior surveying the CMU location.

Determine CMU Installation Location:

- 1) Check the Photo department for the Secondary Communications cabinet (also known as the Catalina cabinet). The cabinet may be mounted on the wall or on the wall inside the yellow storage closet located in the Photo department. If the Catalina cabinet is not found in Photo, then look around the store and try to find the cabinet; most stores have a Catalina cabinet. Other locations where the cabinet may be located are:

- Break room
- Electric room
- Stock room
- Tech room
- Hallways
- Behind a photo machine
- Managers Office

Examples - Wall Mounted Catalina Cabinets in the Photo Department

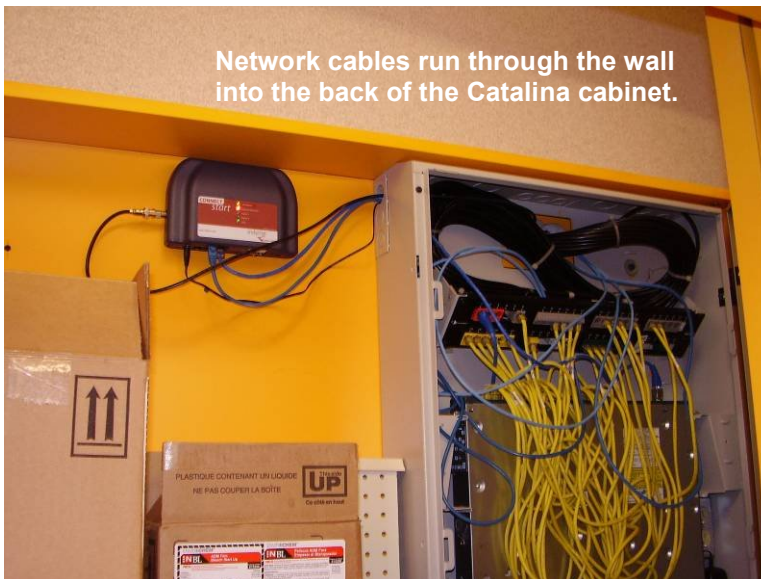


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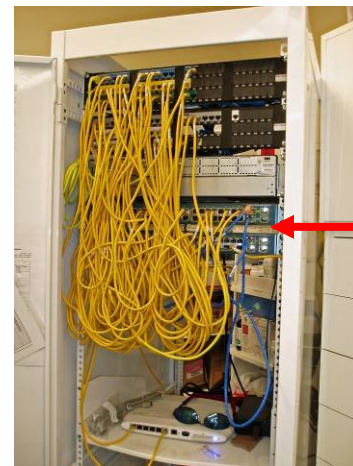
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- 2) **If the store has a Catalina Cabinet then go to step 3**, otherwise the CMU will be located by the Communications Cabinet in the Pharmacy. **Only enter the Pharmacy if there is no Catalina Cabinet in the store. Notify the highest available level of Store Management that you will need access to the Pharmacy. When in the pharmacy the CIT must be accompanied by a Pharmacist that is on duty at all times.**
- a) **Minimize the time spent in the Pharmacy.** Be very careful working in or near the Communications cabinet and do not disconnect any network or power cables. This cabinet is the heart of the stores communications system.
- b) Locate the communications cabinet in the Pharmacy. Frequently the cabinet is located near the entrance into the Pharmacy. The Pharmacist should be able to help the CIT locate the cabinet if you don't see it.



Switches

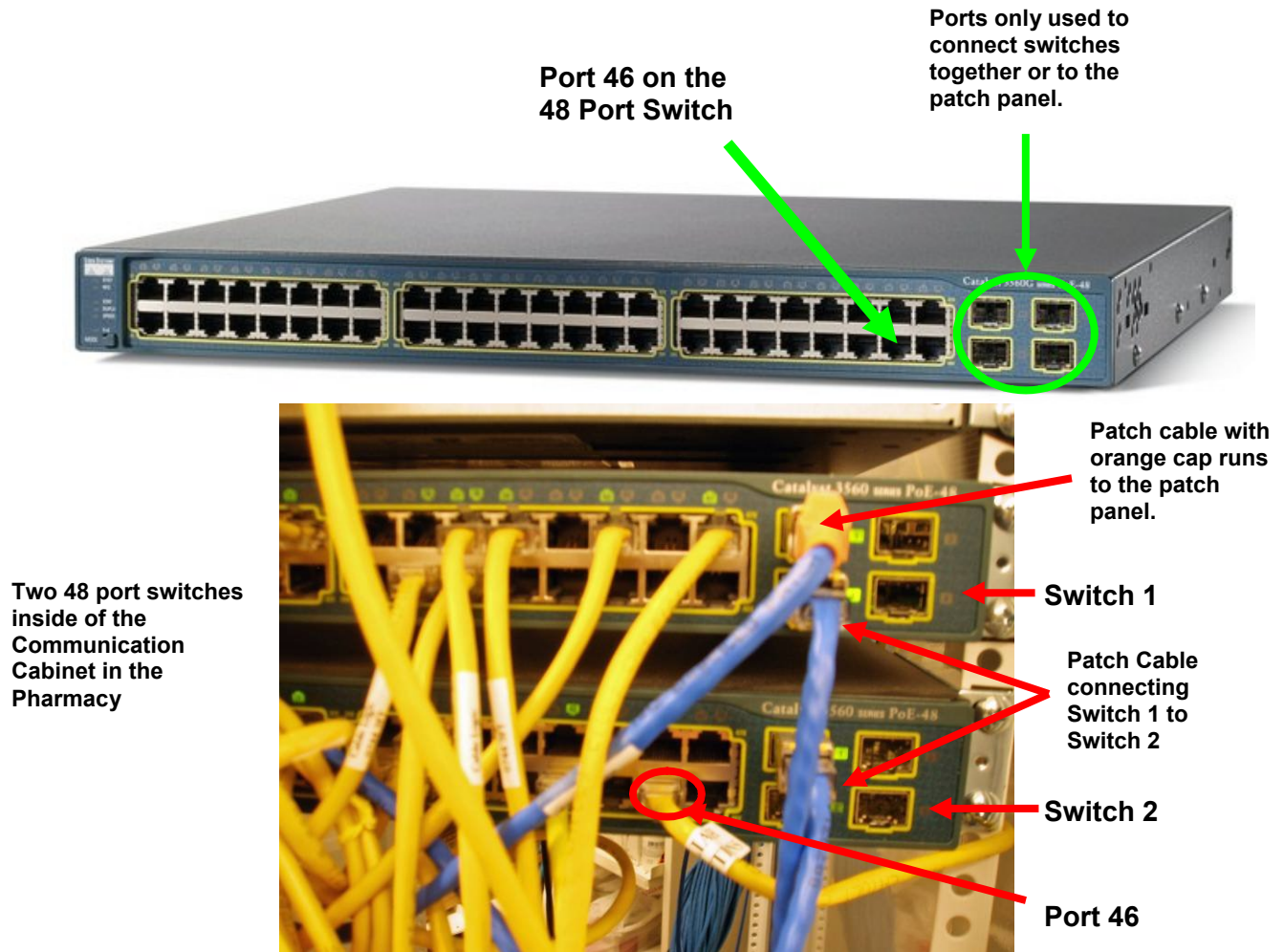
- c) Open the communication cabinet and then locate the network switch or switches. Most of the time the store will have one or two 48 port switches. The following are the designated ports for Goliath:
- If there is only one switch, Goliath will use port 46 on that switch.
 - If there are 2 switches, then Goliath will use port 46 on switch 2.
 - To determine switch 2, look for the orange patch cable running from the patch panel (normally port one on the patch panel) to one of the switches. The patch cable will be plugged into one of the 4 ports highlighted in the picture below. On occasion the cable can be a different color. Only one orange patch cable should be used. The switch that the orange patch cable is plugged into is switch 1. The other switch which would be daisy chained to switch 1 is switch 2. Switch 2 will not be connected to the patch panel. Frequently a red patch cable is used to connect Switch 1 and 2.
 - If there are more than 2 switches or the designated port on the switch is not available, then contact the Help Desk at the completion of the Pre-Installation survey.

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- d) Validate that the port designated for Goliath is available on the switch.



- e) Determine if there is a dedicated uninterrupted 24-hour power source available by the communications cabinet. Do not use power strips or UPS units. The power supply must be able to reach the CMU at its designated location and the power source.

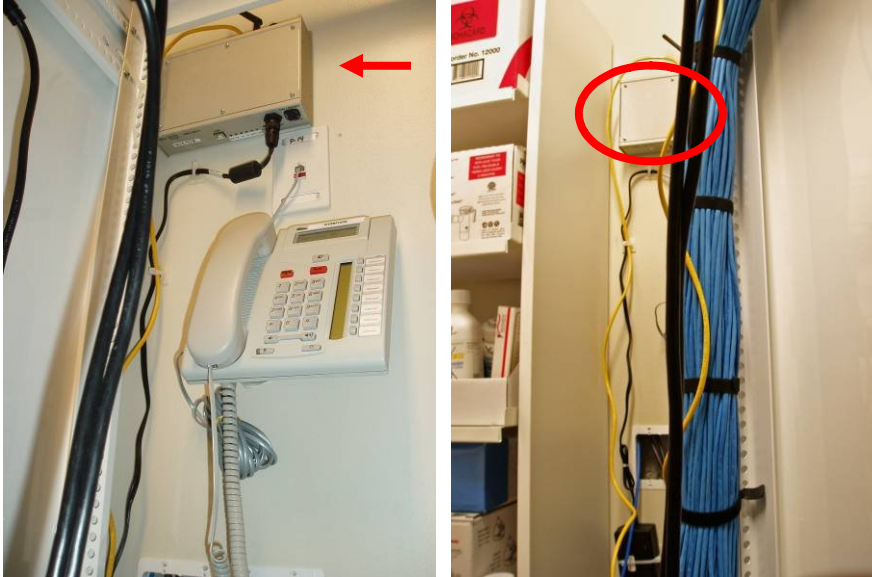
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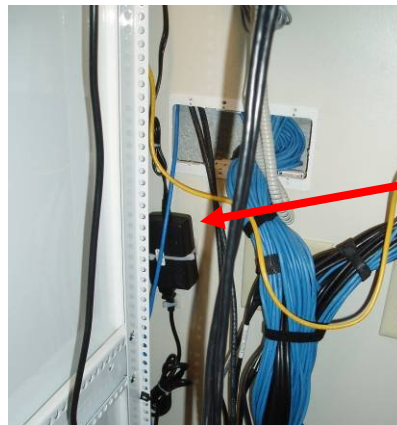
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- f) If the above conditions are present, then determine a location on the wall either inside of the cabinet on the back wall or on the wall next to the cabinet to mount the CMU. **Next to the cabinet is the preferred location.** The CMU should be at eye level or above. If power or a designated port on the patch panel is not available then contact the Help Desk at the completion of the Pre-installation survey.



CMU mounted on the back wall inside of the communications cabinet.



Power Supply mounted on the back wall inside of the communications cabinet.

- g) If power is not available for the MEU by the front security screen, then determine if the 110' power cable can be pulled into the pharmacy. The 110' power cable must use the same entry point and method into the communications cabinet as the network cables.
- h) Proceed to Determine the Primary MEU location.

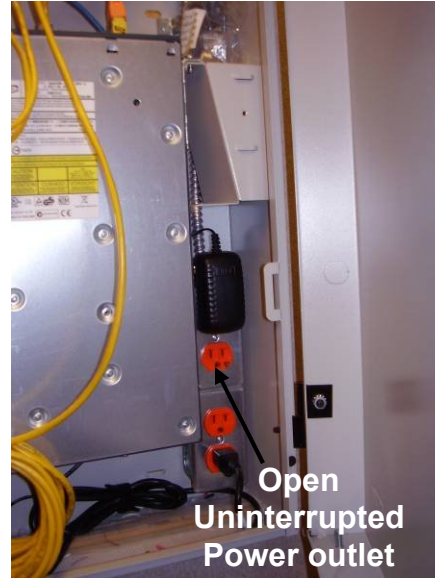
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- 3) Open the Catalina cabinet and validate the following information:
- Determine if the cabinet has either a 48 port switch or two 24 port switches.
 - If the switch is a 48 port, then validate that port 46 is open for Goliath.
 - If there are two 24 port switches, then validate that port 22 on switch 2 is open for Goliath.
 - Is there an open 24-hour uninterrupted power outlet is available in the cabinet?



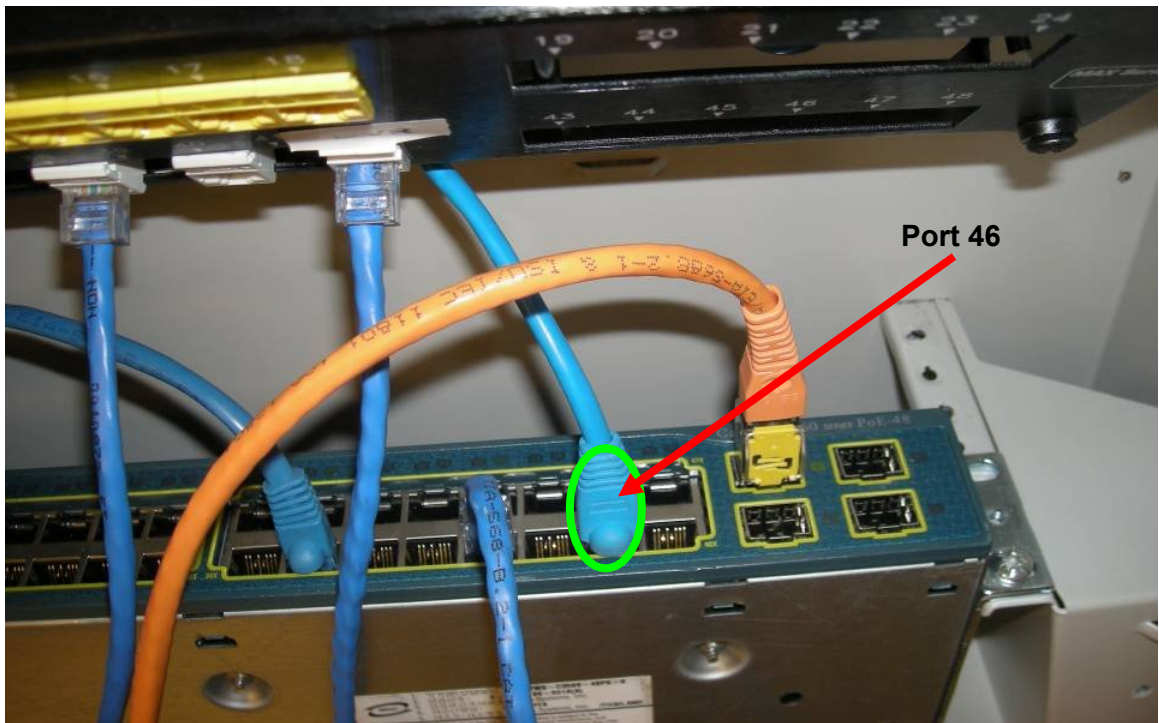
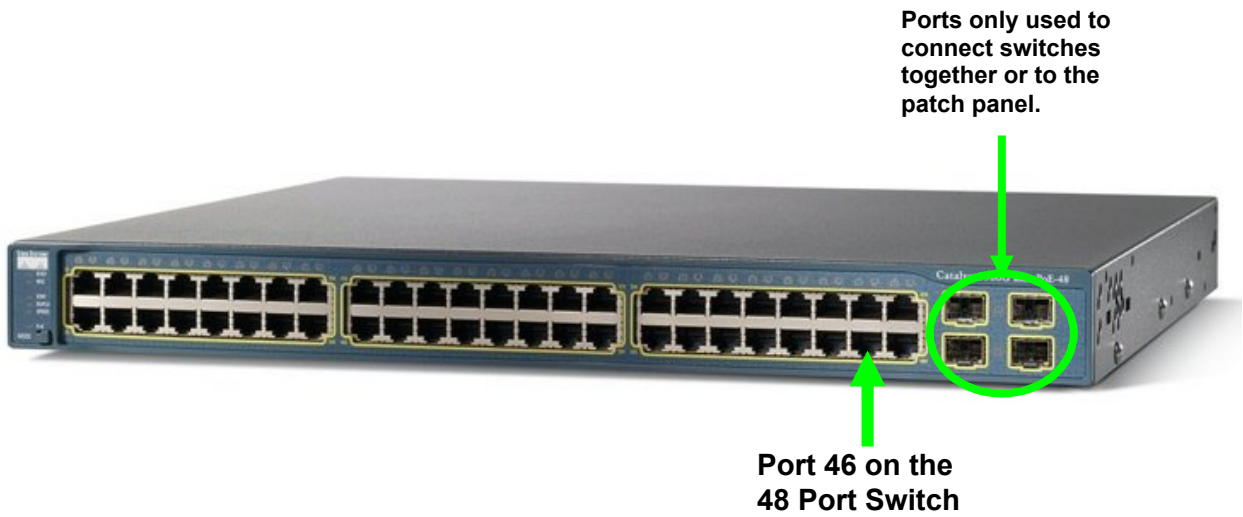
- a) The following pictures show examples of a **48 port switch** in the Catalina Cabinet.



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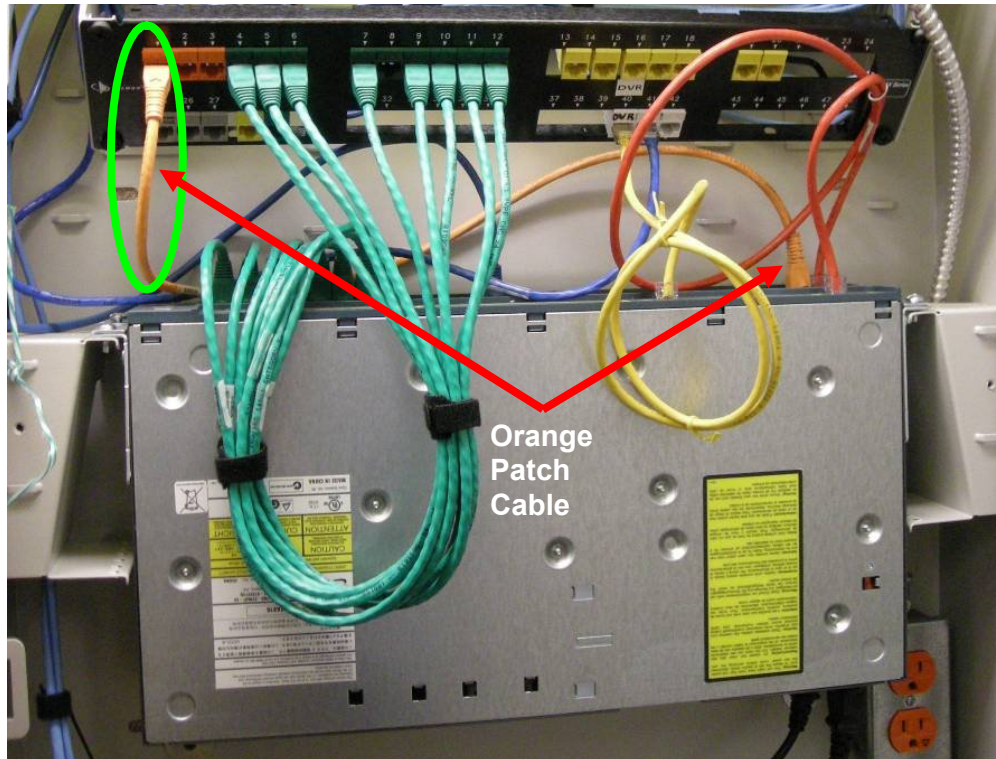
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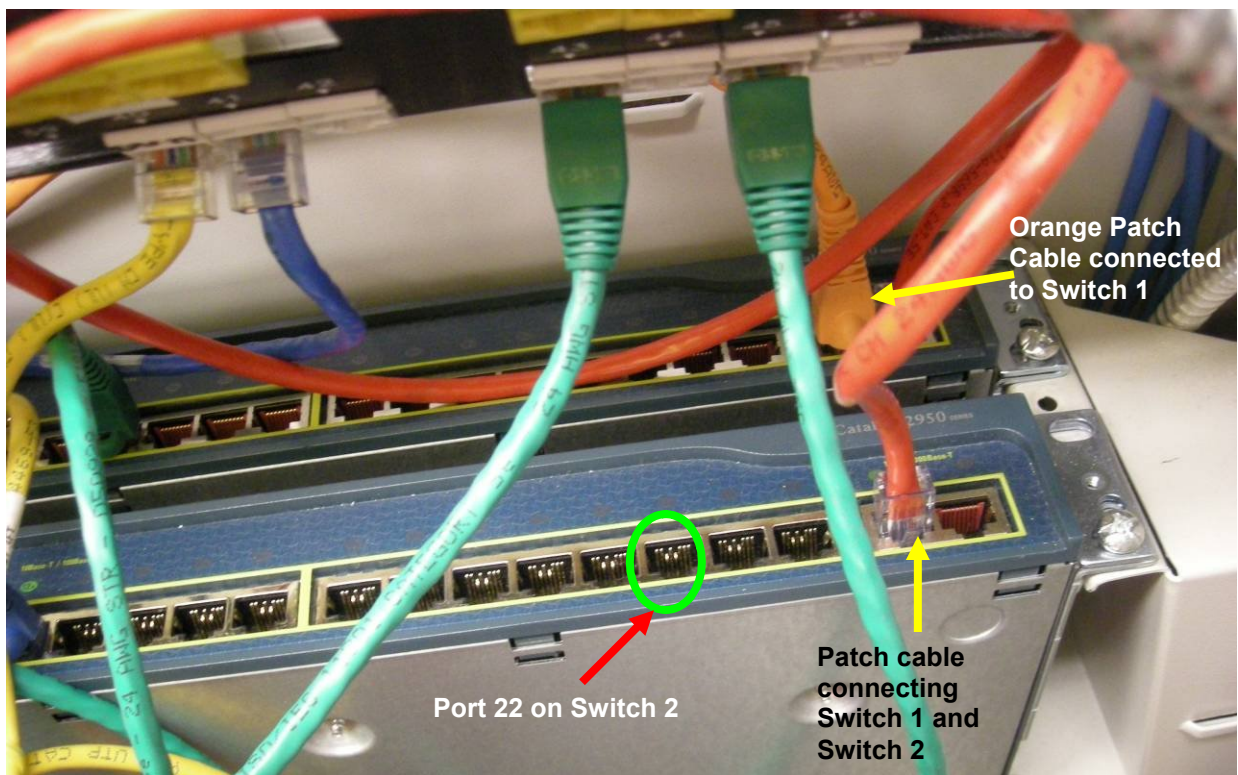
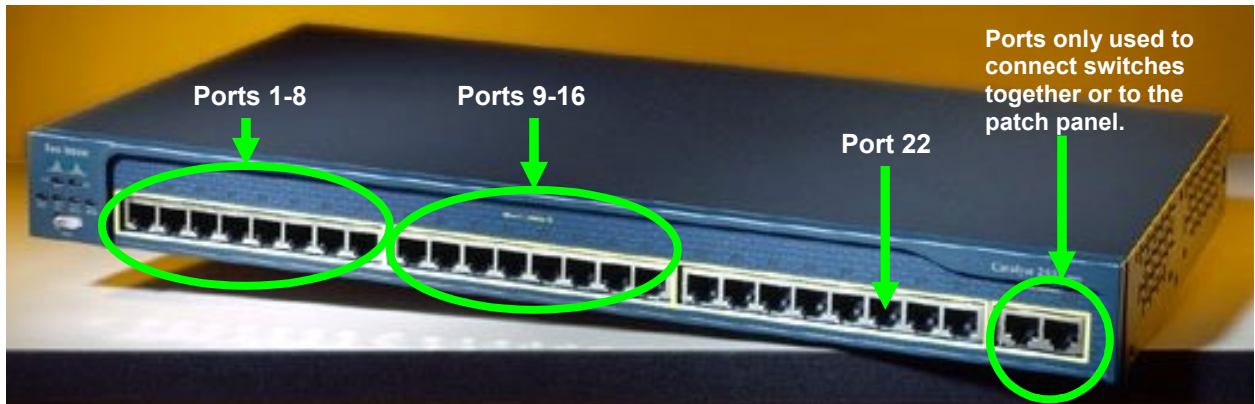
- b) The following pictures show examples of **two 24 port switches** in a Catalina Cabinet. **The CMU patch cable will always plug into port 22 on switch 2.**
- To determine switch 2, look for the orange patch cable running from the patch panel to one of the switches. Sometimes the cable can be a different color. Only one orange patch cable should be used. The switch that the orange patch cable is plugged into is switch 1. The other switch which would be daisy chained to switch 1 is switch 2. Switch 2 will not be connected to the patch panel. Frequently a red patch cable is used to connect Switch 1 and 2.



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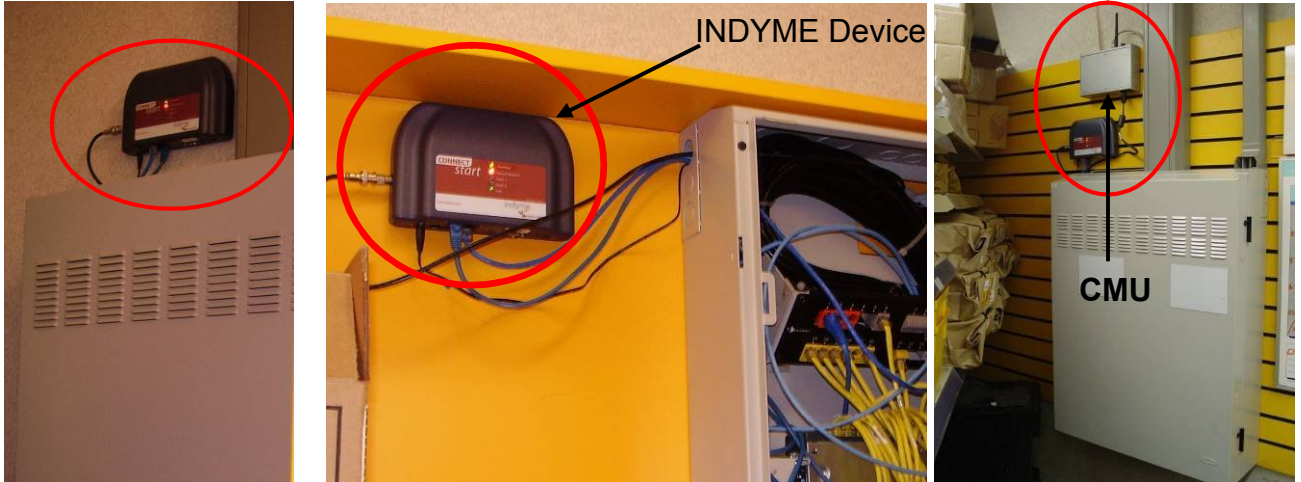
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- 4) Determine the location to mount the CMU on the wall. The CMU will normally be mounted near the INDYME device. Review the following criteria to determine the location.



- The CMU should be mounted about eye level or above the cabinet.
- The CMU should not be mounted over 1 foot higher than the top of the cabinet.
- The CMU/MEU power supply brick must be inside the Catalina cabinet.
- Determine a knock out hole on either side of the cabinet to open. The knock out must be large enough to run the low voltage cable from the power supply, a network patch cable and if needed the CMU/MEU power cable through the hole. The diameter of the knock out hole is 1 1/8 inches.
- The CMU should be 36 inches or less from the knock out hole on the Catalina cabinet. If needed, the 12 foot power extension cable from the Hot Spare Kit can be used.
- The provided network patch cable must reach the designated port on the switch.

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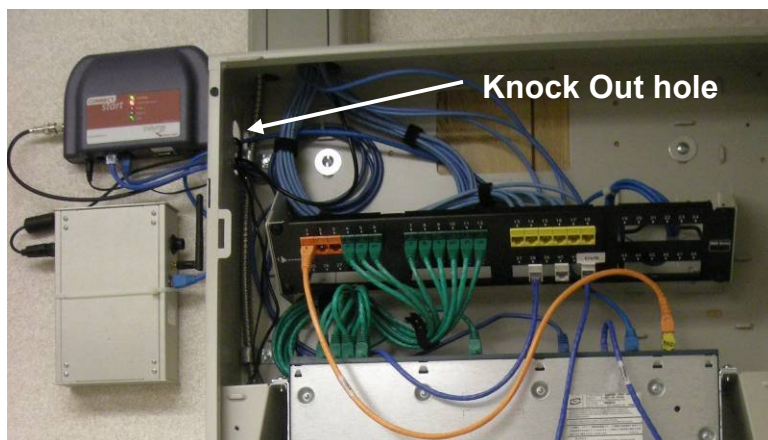
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CMU/MEU
low voltage
cable and
power supply
(Power Brick)

6 foot power
cable for
power supply



REMEMBER: BOTH A DEDICATED UNINTERRUPTED POWER OUTLET AND A NETWORK CONNECTION MUST BE PRESENT AT THE CMU LOCATION!

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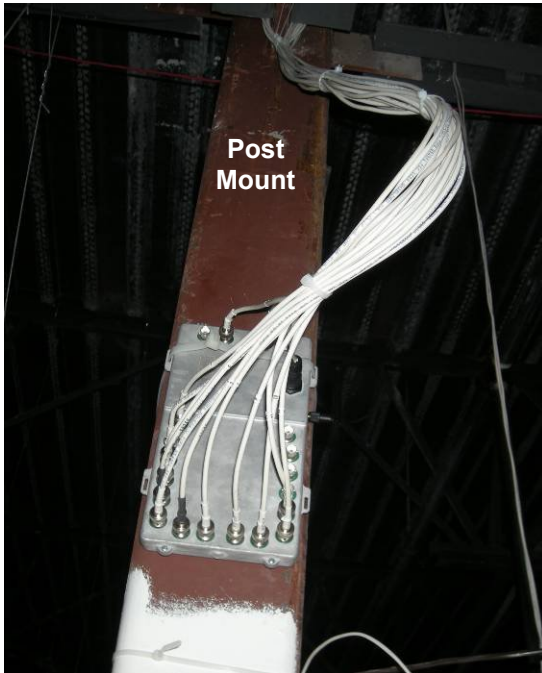
Determine the Primary MEU Installation Location:

The MEU location marked on the store floor plan is only a suggested location. The actual location is determined during the Pre-installation Store Survey by reviewing the following criteria:

- 1) The MEU power source. **The power source for the MEU must be an open uninterrupted 24-hour power source.** It can not be plugged into a cube tap, power strip or a UPS used by a LAN cabinet or computer. The MEU must be able to reach this location with the 110 foot CMU/MEU power cable. The following are the approved locations for the MEU power.
 - The first choice is an open outlet in the ceiling near the security screen that is located by the front entrance of the store. Use this location if it is available. **It is a good idea to check this location for power as the first step in the Pre-installation survey.**
 - The second choice is the output power port on the back of the CMU.
 - Determine if there are any issues that would prevent pulling the CMU/MEU power cable to this location.
 - The CMU/MEU power cable must use the same entry method into the Catalina or Communications cabinet as the network cables.
 - In a Catalina cabinet the 110 foot power cable must exit out of the same knock out hole as the CMU power cable and network patch cable.
 - A second power supply will not be required if the MEU gets power from the output power port on the CMU.
 - The last option is by the Communications area in the store. The store will normally have either a tech room or a phone block located in the stock room. This area normally has open uninterrupted 24-hour power outlets. Only use this area if the first two options are not available. **This location must be approved by the Help Desk prior to beginning the installation.**
- Note:** Tech Rooms are not present in every store. Many stores instead of having a Tech Room will have the main communication cabinet located in the Pharmacy and the phone block located in the stock room. **Do not go into the Pharmacy unless the CMU will be installed in the Pharmacy. Follow the procedures of Pharmacy access defined in the Walgreens Environment section in chapter 1.**
- 2) Determine the location and the mounting method for the MEU. The MEU over the sales floor may be either mounted on a post in the ceiling or suspended from the roof girders in the ceiling. **The preferred mounting method is a post mount.** Normally the posts are located near the center of the sales floor, typically at aisle 4/5 or 8/9 and towards the back half of store.

3) Use the following criteria to determine the MEU location and mounting method.

- The location and distance from the MEU to its power source.
- The distance from the MEU to all of the Tx/ATA and Rx/ARA antennas.
 - Cable length limitations are:
 - 110 foot for the power cable
 - 110 foot for the Tx/ATA
 - 135 foot for the Rx/ARA
- Minimal service loops must be at the MEU and antenna locations.
- Access to the stock room for cables.
- Access in the ceiling to the designated location for the MEU.
- Access in the ceiling for cable pulls from the antennas to the MEU.
- **Do not remove a specialty cut tile if there is a high chance of damaging it.**
- Access to the preferred location may be prevented by obstructions in the ceiling such as AC ductwork or sprinkler heads.
- The designated location must allow for access to the ports on the MEU and reset controls.
- The location for the MEU should never be directly over the Middle aisle or Power aisle.



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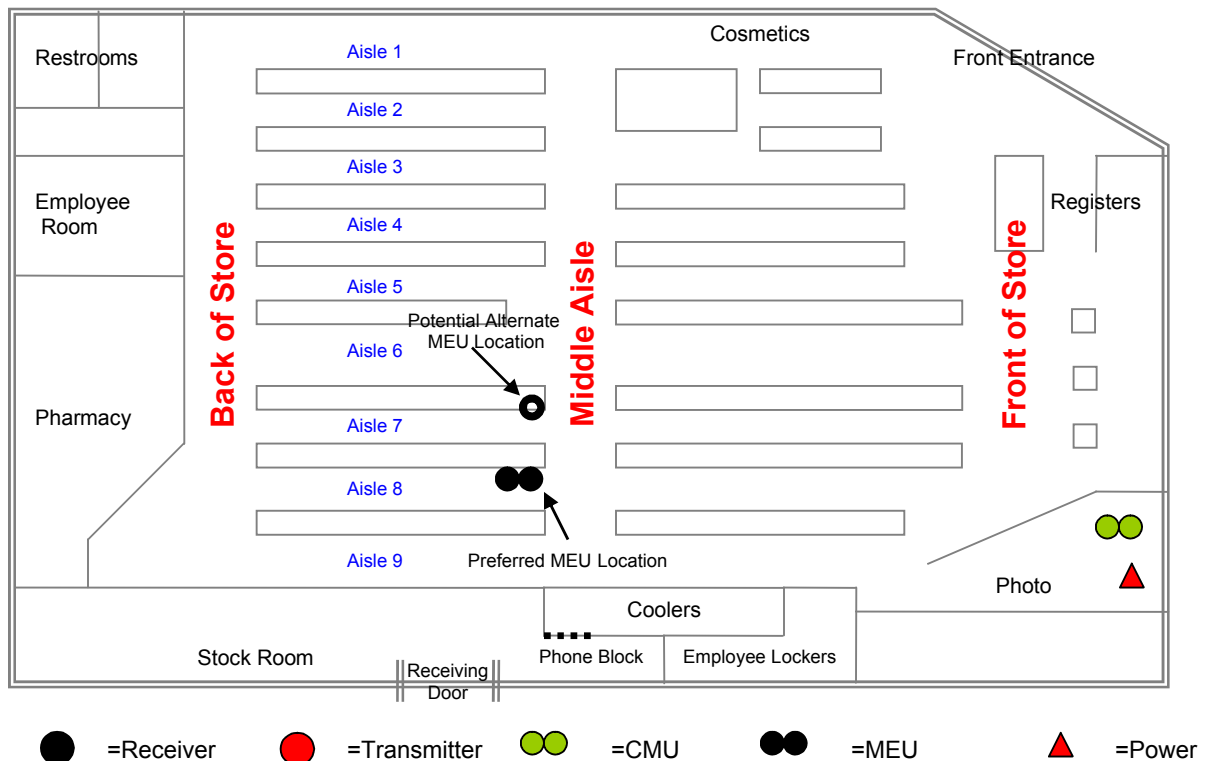
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Please refer to the following table for suggested locations for the MEU. **The primary MEU must always be mounted or suspended in the ceiling near the center of the sales floor, but never directly over the middle aisle.**

MEU Power Location	Mounting Method	Suggested MEU Location near the Middle aisle
Front Security Camera	Post Mount	Post normally found near aisle 4 or 5.
CMU output power port in Photo	Post Mount	Post normally found near aisle 8 or 9.
Communications Area	Post Mount	Post closest to the Communications area.
Front Security Camera	Suspended Mount	Suspended over aisle 4 or 5 near the middle aisle.
CMU output power port in Photo	Suspended Mount	Suspended over aisle 7 or 8 near the middle aisle
Communications Area	Suspended Mount	Suspended near the center of the sales floor skewed towards power location.

- 4) The Following two diagrams show examples of how the MEU location will be adjusted based upon the location of the MEU power source and the distance from each Tx/ATA and Rx/ARA antenna.



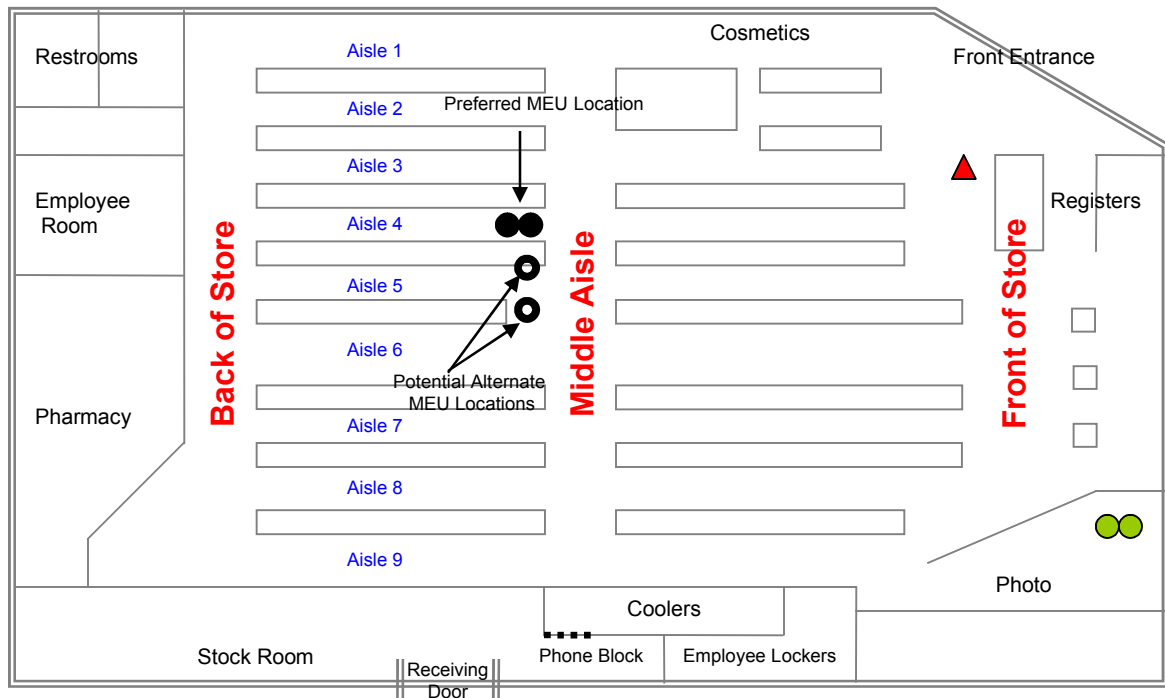
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MEU Location Diagram



- =Receiver ● =Transmitter ● =CMU ● =MEU ▲ =Power
- =Potential Alternate MEU Locations

- 5) Determine the ceiling height of the drop ceiling in the store and the height of the roof iron above the ceiling. Ceiling heights are normally 12', 13' and 14'. You can estimate the ceiling height based on the height of your ladder or use a tape measure to get the exact height. Estimate the approximate height of the roof iron above the ceiling grid. Record this information as it will be required by the Help Desk on your store check-out call.

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Determine if a Second MEU is required:

Most stores will require only one MEU. But some exception stores will require a second MEU. If a second MEU is required it will normally be located in the stock room. Stores with a basement or second floor stock room will frequently require a second MEU. The primary reasons a second MEU will be required are:

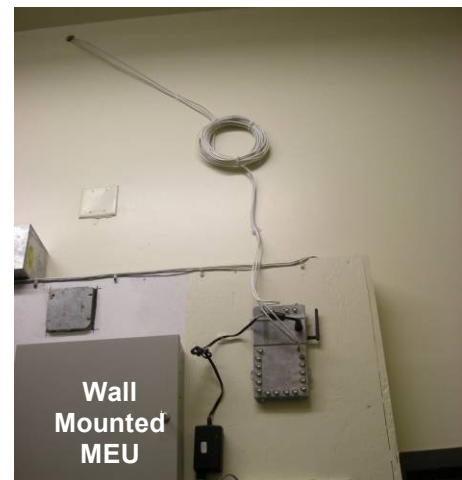
- The coaxial cables will exceed the maximum supported length to reach the designated locations for the Tx/ATA and Rx/ARA in the stock room from the primary MEU.
- There are no access points to pull the cables into the stock room and an access point can not be cut.
- The sales floor is very large or has an unusual store floor plan that prevents the coaxial cables from reaching the primary MEU from all designated Tx/ATA and Rx/ARA antenna locations within the maximum supported cable lengths. A second MEU will be required to complete the sales floor coverage.

A second MEU may be listed on the store floor plan. If a second MEU is listed on the floor plan, then determine during the survey if it is actually required. If it is not required notify the Help Desk at the completion of the Pre-installation survey and they will determine how to proceed with the second MEU.

A second MEU may not be listed on the store floor plan, but if it is determined during the survey that a second MEU is required then notify the Help Desk. The Help Desk will advise the CIT on how to proceed.

If a second MEU is required, use the same criteria as the primary MEU to determine its actual location. The location designated on the store floor plan is only a best guess. The actual location can not be determined without seeing the conditions present in the store.

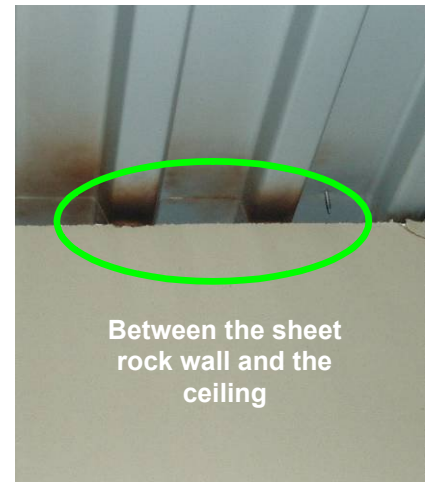
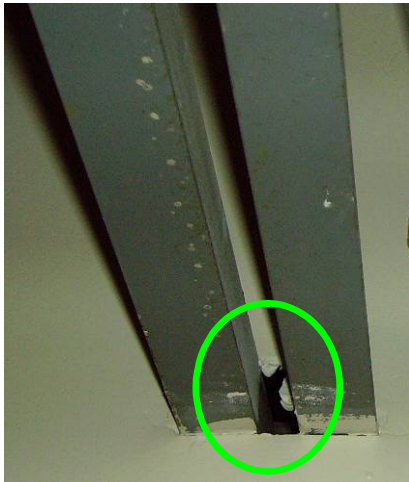
- Dedicated 24-hour uninterrupted power for the second MEU can normally be found in an electric room or by the phone block which is commonly located in the stock room.
- The second MEU must be mounted with one of the following methods:
 - Post mount
 - Suspended mount
 - Wall mounted (only valid in a stock room)



Determine the Tx/ATA and Rx/ARA Antennae Placement:

- 1) Using the “Pre-installation Survey Check-list” and the store floor plan, walk the store and determine the location for the placement of the Tx/ATA and Rx/ARA antennae for both the sales floor and the stock room. Refer to “*Appendix A - Antenna Placement*” of this guide for more detailed information on the placement of each antennae.
- 2) The location for each Tx/ATA and Rx/ARA marked on the floor plan is the recommended location for each antenna. The actual location is determined by issues found at the suggested location during the survey. The actual location normally should not be more than one tile over from the designated location. The following rules must be used to determine the actual antennae placement.
 - The Tx/ATA antenna must have a clean line of sight to the floor. It can not be over shelves or display tables.
 - The Rx/ARA antenna should have a clean line of sight to the floor, but it can be over a display table. It can not be over shelves.
 - Tx/ATA antennas over the sales floor must be installed on a full ceiling tile.
 - Rx/ARA antennas can be installed on a partial tile but the tile must be square or rectangular, it can not be installed on a specialty cut tile. Install on a full tile if possible.
 - Nothing else can be installed on the same tile as a Tx/ATA or Rx/ARA. This includes but is not limited to:
 - A/C vents
 - Sprinkler heads
 - Security cameras
 - Security screens
 - Emergency lighting
 - Speakers
 - **Each antenna must be a minimum of 10 feet from another antenna.**
 - If the location for Rx-5 and Rx-9 must be adjusted, skew it towards aisle 1.
 - If the location for Rx-8 and Rx-12 must be adjusted, skew it towards the last aisle; normally that is aisle 9 or 10.
 - There must be access in the ceiling to install the antenna and to meet the installation requirements for that antenna.
 - If there is a problem determining the location of the antenna, then check with the Help Desk.
- 3) When reviewing the locations of the Rx/ARA antennas along the back wall of the store, look to see if mirrors are present. If mirrors are present; refer to Back Wall Antenna Placement Issues found in **Appendix A - Antenna Placement**. This section describes how mirrors affect the placement of Rx-9, Rx-10, Rx-11 and Rx-12 along the back of the store.

- 4) Mark the location of the Tx/ATA or Rx/ARA antennae on the floor directly below the selected ceiling tile location or the roof iron.
 - Use the assigned antenna number found on the store floor plan for that location when marking the floor.
 - When marking the location on the floor, you **must use painters tape**. Write the antenna's number on the painters tape prior to placing on the floor. You will be required to remove the painters tape from the floor during site clean up. **Never write on the floor. Always use painter tape. Never use electric tape or duct tape to mark the location on the floor.** Electric tape and duct tape will damage the floor. Painters tape does not leave marks.
- 5) Determine the access point to pull the coaxial cables into the stock room from the sales floor. Use existing openings such as may be found around the bottom of the roof girder or over the top of a roof girder. **Never use an existing opening if power conduit or water pipes go through that opening.** You may have to cut a new opening in the wall. If it is not possible to get the cables into the stock room from the sales floor, then a second MEU may be required. If a second MEU is required contact the Help Desk.



- 6) Determine if a firewall is present between the sales floor and the stock room. If a firewall is present then a firewall conduit sleeve is required to pull the cables into the stock room. You must also use Fire Stop (caulk) to seal around the sleeve.