

Installation of Rx/ARA Antennae in the Stock Room:

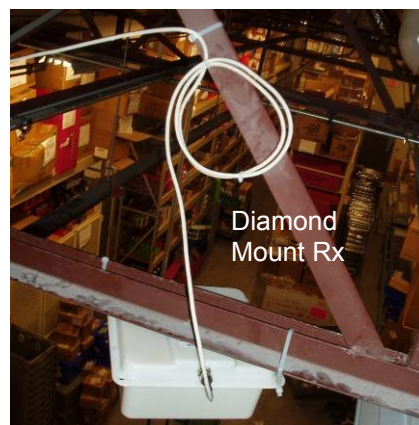
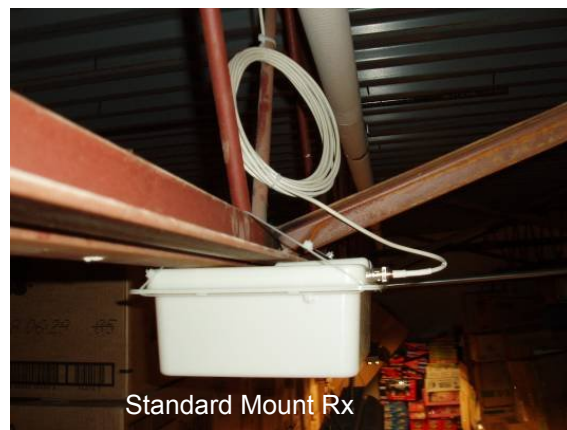
- 1) Two Rx/ARA antennas will be installed in a standard Stock Room. Verify that the cables will reach the designated antenna location. In an exception site more than two Rx/ARA antennas could be installed in a stock room.
- 2) Mount the Rx/ARA to the roof girder at the designated location using cable ties. **The bottom of the Rx/ARA must always be facing the floor.**
 - The Rx/ARA must be mounted to the girder with the top of the antenna casing touching the girder. The top is designated by a label showing the Rx/ARA model number. The flat area on the top of the antennae, not the raised edge should be touching the girder.
 - To mount an Rx/ARA with cable ties, one must insert a tie through the hole in one corner of the top of its casing. Insert a second tie into the hole at the opposite corner of the casing.
 - Attach the Rx/ARA to the roof girder so that the antenna is configured on the girder as shown in the examples below.
 - Be careful to mount the Rx/ARA so that it is level (parallel to the floor) and NOT angled in any way.
 - The Rx/ARA and cable should not touch any power conduit or any other pipes.
 - The Rx/ARA must have a clear line of site to the floor. There can not be any pipes or conduit between the Rx/ARA and the floor.
 - Do not mount the Rx/ARA over liquids. Beverages are normally kept next to the shelving unit near the receiving door. This is close to the designated position for RX16.
 - There can not be any obstructions between the Rx/ARA and floor.
- 3) Power conduit or other pipes on or below the roof girder at the designated location for an Rx/ARA may prevent the mounting of the Rx/ARA on the roof girder at that location. In this case look for an alternate location on the girders close (within a few feet) to the designated location or use the suspended mount method to hang the Rx/ARA. If you suspend the Rx/ARA make sure the Rx/ARA has no obstructions between the bottom of the antenna and the floor.
- 4) Create the service loop per the previously stated standard and then connect the coaxial cable to the antenna.
 - The excess cable at the antenna point of termination must be looped (coil should be no less than ten (10) inches in diameter) and secured to itself using cable ties. Be very careful not to kink or bend the cables.
 - The loop must then be placed on top of the roof girder, directly above the antenna and secured to the girder via a cable tie.
 - Be careful not to tighten the cable tie to the point where the cable is pinched or kinked.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Correct Rx/ARA Installation in Stock Room:



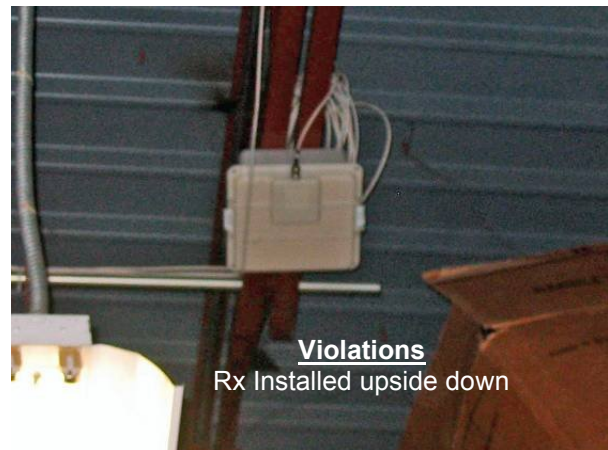
Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



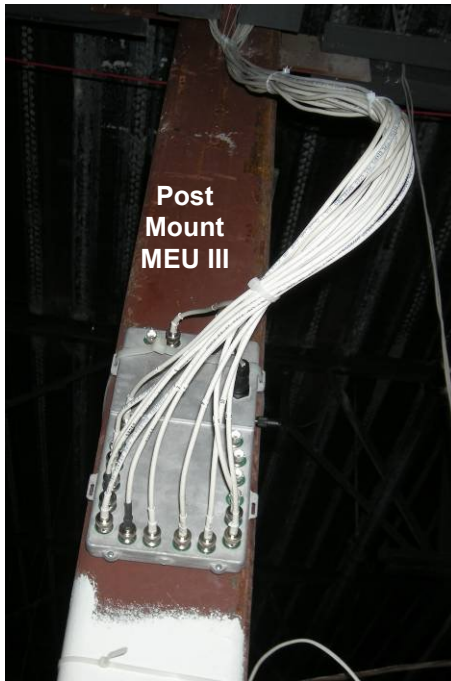
In-Correct Tx/ATA Installation in Stock Room (Violations):



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

MEU Installation at Permanent Location:

- 1) The MEU can be mounted at its permanent location at the completion of the system test by the Help Desk.
- 2) Mount the MEU at its permanent location.
 - The following pictures are examples of the approved mounting methods:



Wall Mounted MEU's can only be used in stock rooms and exception stores with an exposed ceiling. If this method is used over a sales floor it must first be approved by the Help Desk.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



The MEU should be mounted to the side of the post or suspended from the roof girders.

- Count all Rx/ARA and Tx/ATA antennas to be installed. Upon completion of the cable installation the cables should be connected to the MEU according to the following table.
- **Ensure that the MEU is powered off. Never connect the coaxial cables to the MEU when it is powered on.**

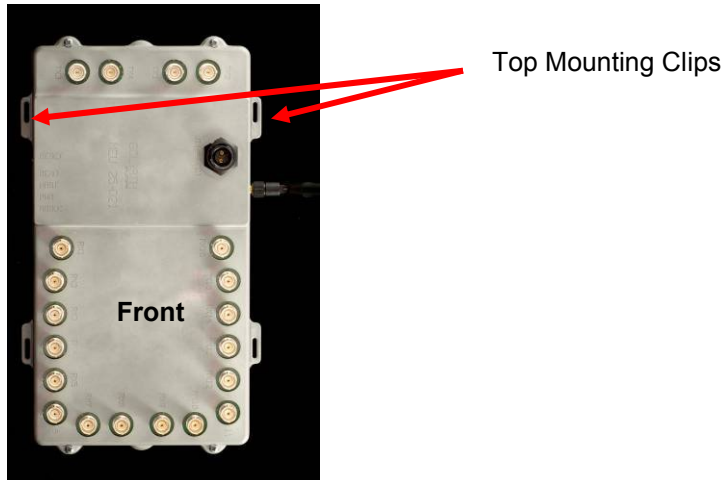
Description	MEU Port	Label
Receiver	Rx-1	1
Receiver	Rx-2	2
Receiver	Rx-3	3
Receiver	Rx-4	4
Receiver	Rx-5	5
Receiver	Rx-6	6
Receiver	Rx-7	7
Receiver	Rx-8	8
Receiver	Rx-9	9
Receiver	Rx-10	10
Receiver	Rx-11	11
Receiver	Rx-12	12
Receiver	Rx-13	13
Receiver	Rx-14	14
Receiver	Rx-15	15
Receiver	Rx-16	16
Transmit	Tx-1	21
Transmit	Tx-2	22
Transmit	Tx-3	23
Transmit	Tx-4	24

- 3) Connect the power cable to the MEU and then turn on the power switch on the MEU. MEU III versions do not have a power switch and should automatically power up once the power cord is connect.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Post Mount Procedures:

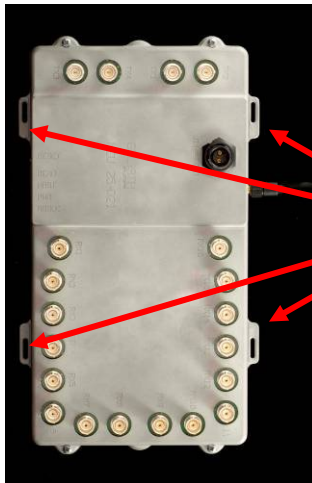
- 1) Run the 36 inch cable tie through the top mounting clips on the MEU. The front of the MEU with the ports must be facing away from the post.



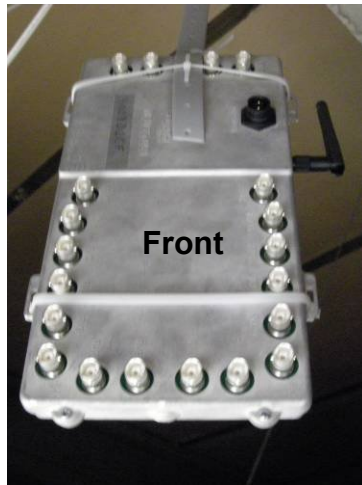
- 2) Secure the 36 inch cable tie around the post. If the post is larger than 36 inches then use two 36 inch cable ties attached together to mount the MEU on the post. After the MEU is mounted, trim off the excess part of the cable tie.
- 3) Attach the coaxial cables to the MEU. All excess cable should be secured in a minimal service loop using cable ties.
- 4) After all of the coaxial cables are connected to the MEU and all of the Tx/ATA and Rx/ARA are installed connect the power cable to the MEU.
- 5) The bottom of the MEU with coaxial cables attached should be about 6 inches above the ceiling grid.
- 6) Attach a Goliath Solutions grid label sticker on the drop ceiling grid to indicate the location of the MEU.

Suspended Mount Procedures:

- 1) Use either two 7" cables ties together or one 14" cable tie a place through the top mounting clips on the MEU and going around the MEU forming a belt. Repeat the same process with the bottom mounting clips.



Mounting Clips



- 2) Attach the end of the plumbers strap to the front of the MEU as shown in the picture above. Use a 4" cable tie to secure the plumbers strap to the cable tie belt at the top of the MEU. Only have about 2 inches of the plumbers strap on the front of the MEU.
- 3) Run the plumbers strap around the roof girders and through both the top and bottom cable tie belt on the MEU. Secure the plumbers strap to both the top and bottom belt with a 4" cable tie.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



- 4) Attach the coaxial cables to the MEU. All excess cable should be secured in a minimal service loop using cable ties.
- 5) After all of the coaxial cables are connected to the MEU and all of the Tx/ATA and Rx/ARA antennas are installed connect the power cable to the MEU.
- 6) The bottom of the MEU with coaxial cables attached should be about 6 inches above the ceiling grid.

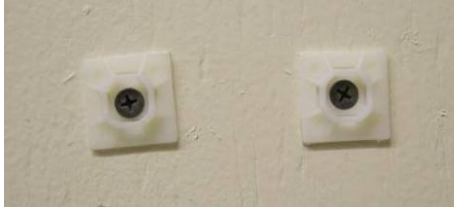


- 7) Attach a Goliath Solutions grid label sticker on the drop ceiling grid to indicate the location of the MEU.

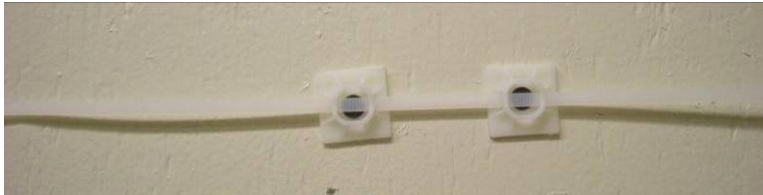
Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Wall Mounted Procedures:

- 1) Attach two self-adhesive 1" by 1" mounting bases on the wall about 2 inches apart at the designated location for the MEU on the wall. Then insert a 1 1/4" drywall screw in the center of the mounting base.



- 2) Place one 7" cable tie through the opening on the mounting base.



- 3) Place open side of the cable tie through a mounting clip on the MEU.

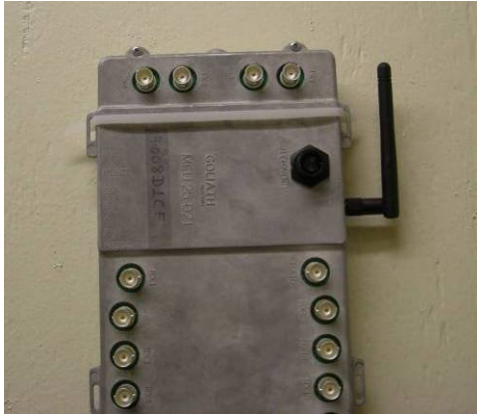


Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



- 4) Place a second 7" cable tie through the other mounting clip on the MEU. Then connect the cable ties together like a belt holding the MEU securely to the wall.



- 5) Secure the power supply to the wall using a Velcro strip.



- 6) Attach the power supply cables to the wall using additional 1" mounting bases and a 4" cable tie.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



- 7) Attach all the coaxial cables and then the power cable to the MEU. Secure the excess cable into a service loop above the MEU.



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Exception Stores:

When an exception store is found, then discuss with the Help Desk the proper method to install the store. Some stores that will require special handling to install are stores with sheet rock, wood and concrete ceilings. The following pictures are examples of how some of these exception stores may have to be installed.

Sheet Rock or Wood Ceilings

Sheet rock or wood ceiling may be found over the sales floor and/or stock room. The following examples show approved methods that have been used to install these stores. In stores with sheet rock or wood ceiling the wall mount method for the MEU may be required. Please refer to that section of this guide for more detail.

With a sheet rock or wood ceiling attach a 1" mounting base to the ceiling or wall about every 5 feet. Attach it with the self adhesive strip and a 1 ¼ inch drywall screw. Then run a cable tie through the mounting base to run the cable through. The cable tie should be loose enough that the cables can be adjusted.

To suspend either a Tx/ATA or Rx/ARA install four mounting bases to the ceiling in the shape of a square. Use a drywall screw for each mounting base. For an Rx/ARA form a square with the outside dimensions about 7". For a Tx/ATA form a square of about 3" with the mounting bases.

Only with a sheet rock or wood ceiling all of the service loop can be placed at the MEU location if needed.

It is highly recommended that the CIT has a cordless drill with the correct bits for each member of the installation team when installing a wood ceiling. This will substantially reduce the installation time of a mounting base and screw into a wood beam. Do not use the drill to install the screw in a sheet rock ceiling unless the screw is also going into a stud.

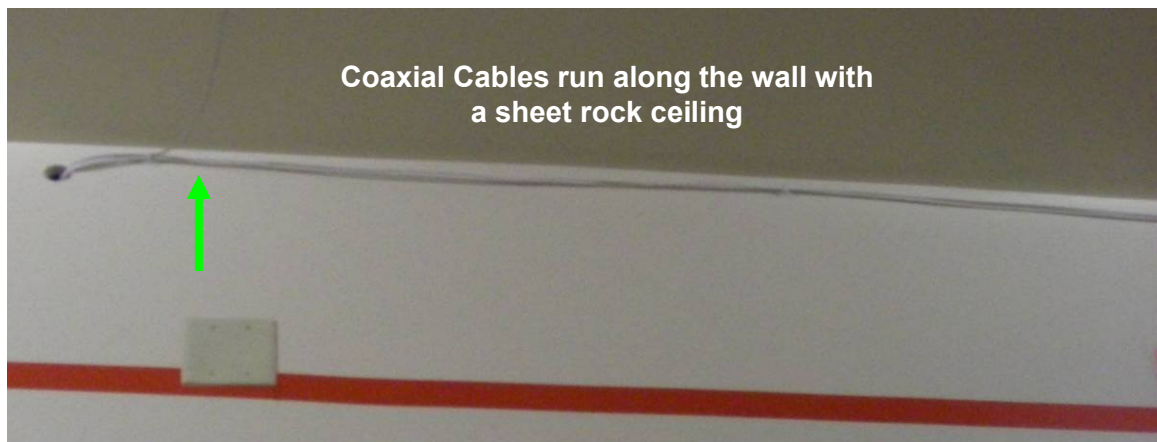
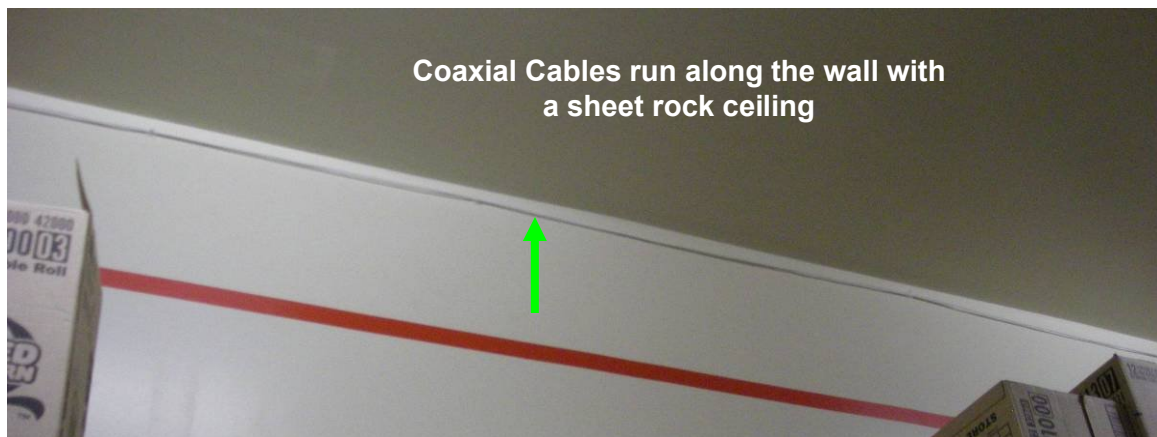
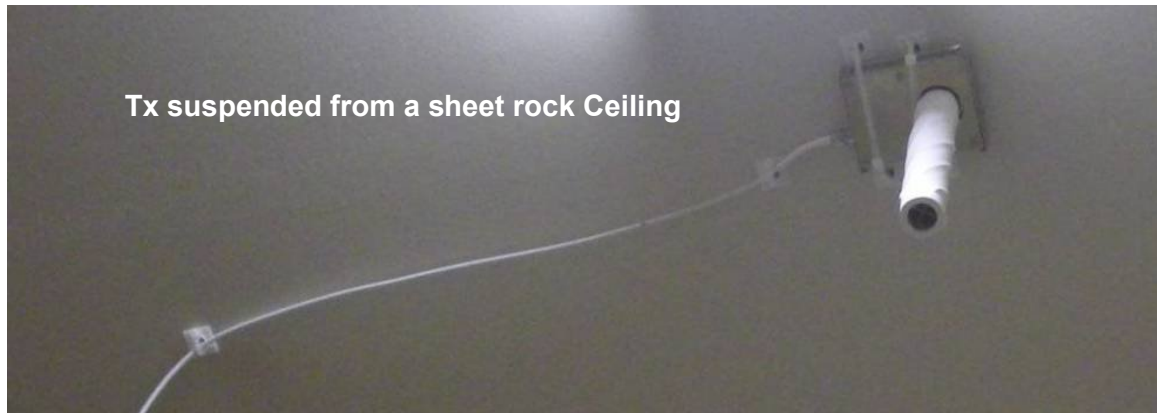
Examples of Sheet Rock Ceiling Installation:



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



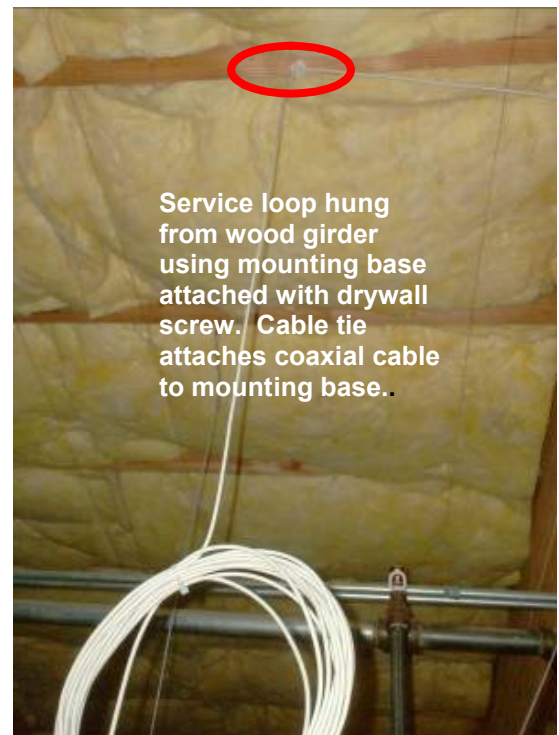
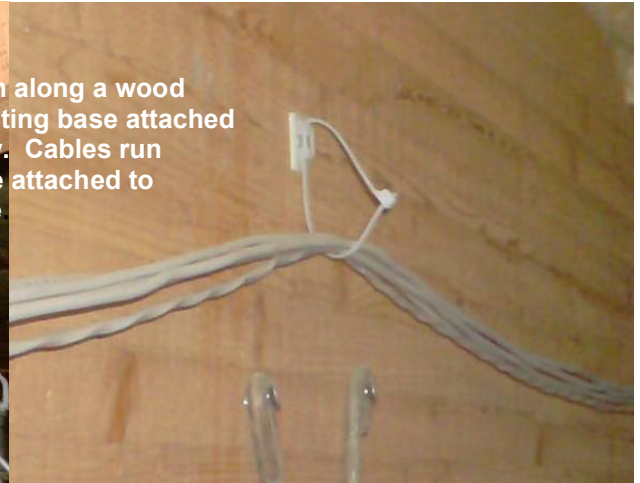
Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



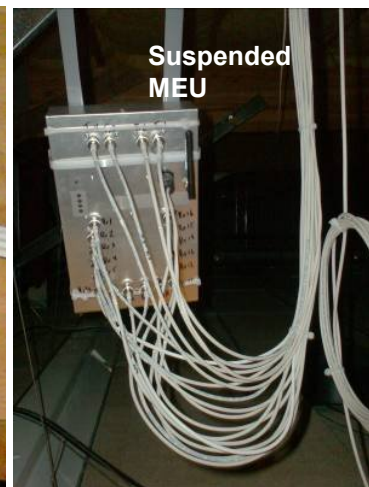
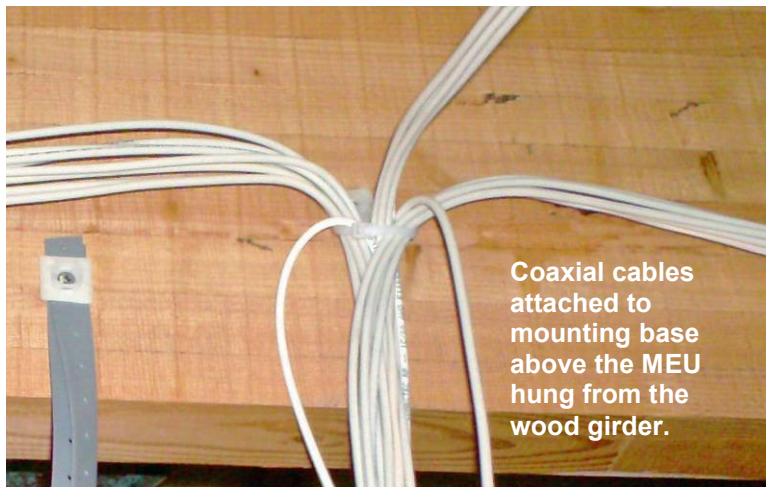
Examples of Wood Ceiling Installation:



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

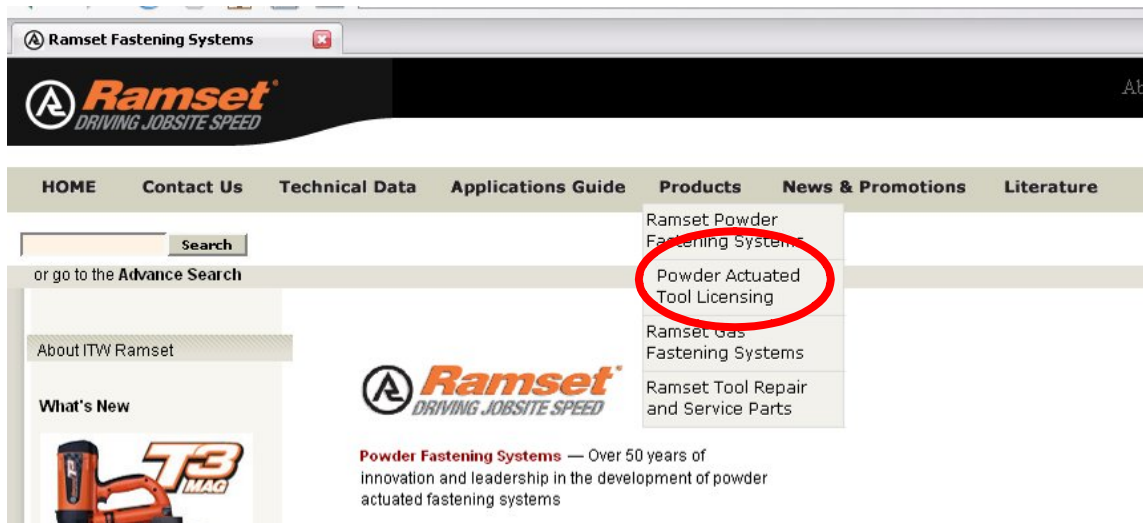
Concrete Ceilings:

Most concrete ceiling will require the use of a Ramset or an equivalent product to install anchors and J hooks into the concrete. Some sites may have wires installed in the ceiling for suspending data cable. These cables can be used if they are not being used for anything else. Please see the following examples. The first example shows how a store was installed using existing wires. The second example shows how a store was installed using a ram set.

Ramset Safety:

If a **Ramset (Powder Actuated)** or equivalent tool is used during the installation, the following safety procedures are required:

- The installer must be licensed to use the product. Licensing takes about 20 minutes online at the web site www.ramset.com.

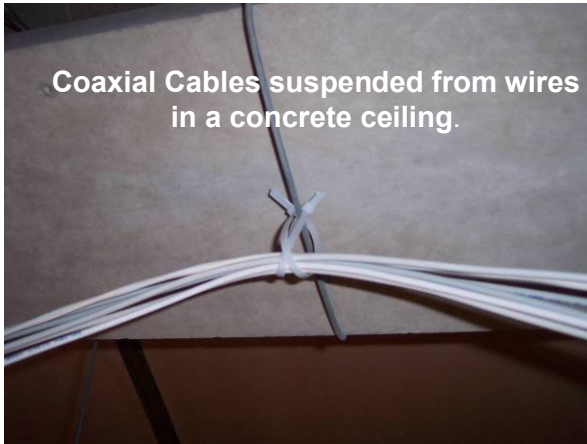


- Follow all of the safety requirements from the tools manufacturer.
- Post at the front entrance of the store the warning sign provided by the tools manufacturer. A full size sample is found in Appendix B.



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

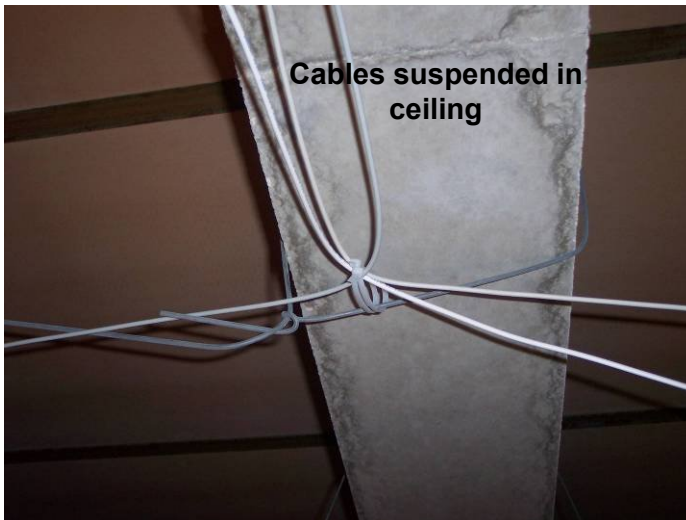
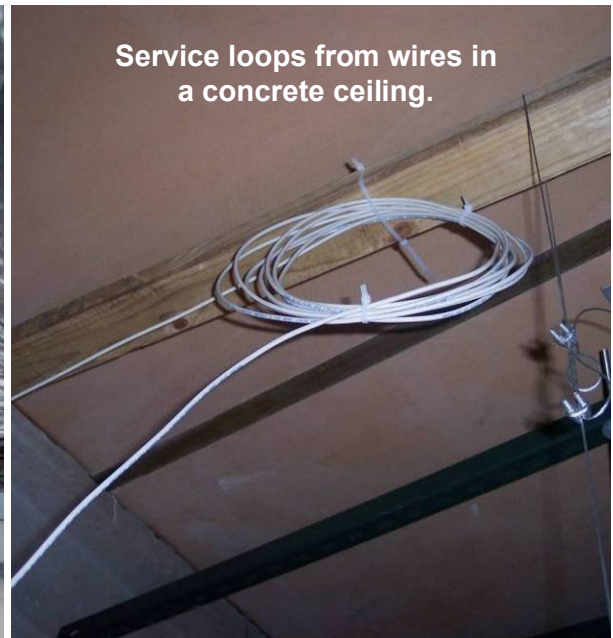
Example 1 – Concrete Ceiling (Cables Suspended from Wires):



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

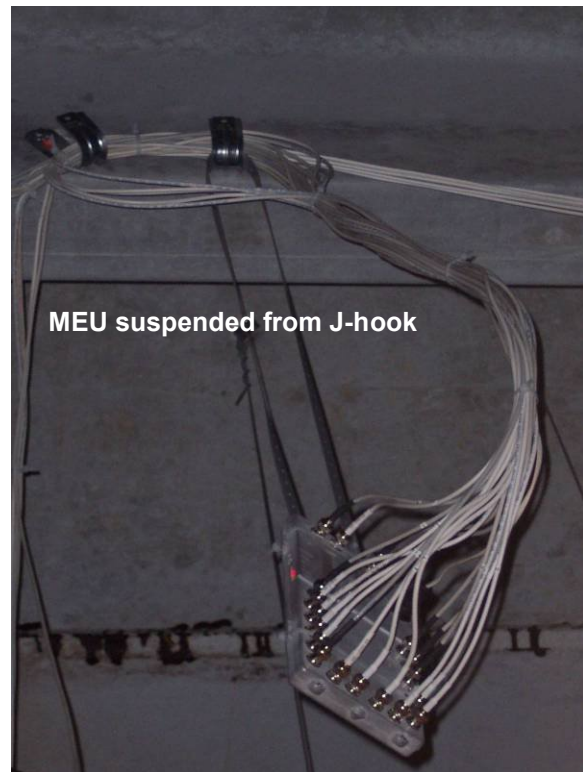
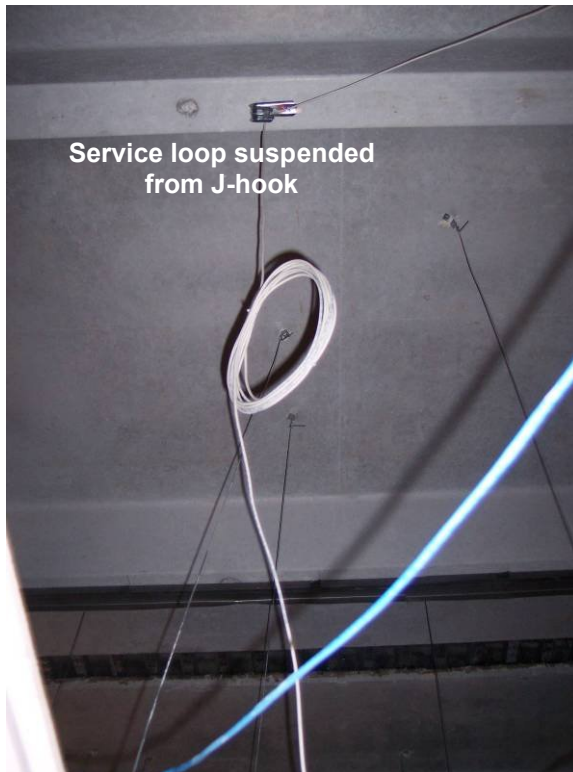
Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Example 2 – Concrete Ceiling (J hooks installed with a Ramset):



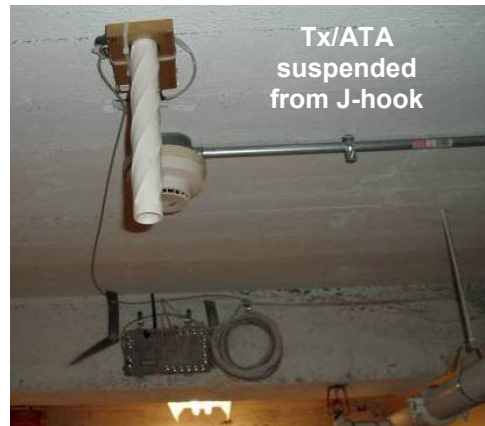
Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Example 3 – Concrete Ceiling – Stock Room (J hooks installed with a Ramset):



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Chapter 3 - INSTALLATION COMPLETION:

Installation Completion:

- 1) Verify that all cables are securely connected to the MEU at the corresponding ports.
- 2) Power the MEU on and verify that the green power indicator is lit.
- 3) Call the Help Desk to begin the system tests (approximately ten minutes).
- 4) Document the store installation with a digital camera.
- 5) The Lead Technician must inspect the entire store, including the Stock Room, for any installation debris left by the Crew.
- 6) Remove any debris from the drop-ceiling around the MEU including, but not limited to, port caps, cable tie fragments, electrical tape fragments, hand tools, etc.
- 7) The Lead Technician is responsible for inspecting the entire store, including the Stock Room, once more to ensure that all traces of the installation have been removed.
- 8) The Lead Technician is also responsible for verifying that all ceiling tiles are properly replaced in their original condition.

Documenting the Store Installation:

At the completion of the installation the CIT must document the installed Goliath System with a digital camera. The following pictures are required.

- 1) A picture of the installed MEU
- 2) A picture of the installed power source for the MEU.
- 3) A picture of the installed CMU.
- 4) A picture from the stock room of the entry point of the cables into the stock room.
- 5) A picture of the installed Tx/ATA and Rx/ARA antennas in the stock room. The picture must clearly show the service loops. A second picture may be required if all the devices can not be included in one picture.

Store Check-out:

- 1) Upon completion of the system tests, the Help Desk will call the Lead Technician and will advise whether the tests were successful, or if there are installation issues that need immediate attention.
- 2) Upon receiving good test results from the Help Desk, please provide the information found on the store data sheet that you have collected during the pre-installation store survey and during the installation.

Upon Completion of Successful System Test:

- 1) Replace the ceiling tile at the MEU.
- 2) Gather all remaining installation equipment and remove it from the store.
- 3) Any Out of Box Failures (OBF) equipment should be boxed up, taken with you from the store and notify the Help Desk of which piece of equipment was OBF. They will inform you what will be needed to be done with the equipment.
- 4) Gather all installation debris and trash, and place it all into the large shipping box.
- 5) The final task is checking-out with Store Management:
 - The Lead and Second Technicians should address the highest available level of Store Management as to the disposal of the installation debris and trash.
 - The Second Technician should dispose of the installation debris and trash as instructed.
 - While the Second Technician is disposing of debris, the Lead should check-out with the Manager to obtain any feedback about the process.

(Walgreens has requested the CIT to use a Walgreens PC to check out. This process must be defined.)

Note: The check-out time of the CIT is presumed to be ten minutes from the time of the Help Desk callback. This is intended to allow the crew time to complete the post-callback tasks.



If there is an unsuccessful system test:

- 1) Troubleshooting instruction will be provided by the Help Desk as necessary.
 - According to the agreement between GOLIATH and the CIV, the Crew will be expected to remain on-site to trouble shoot any identified issues for no more than one hour, beginning at the time of the Help Desk callback.
 - If any identified issue cannot be resolved within one hour, GOLIATH personnel will be dispatched for further trouble shooting.
- 2) At the completion of Trouble Shooting procedures follow the Check-out Procedures in the Successful System Test section.

Quality Assurance Survey:

Shortly after the completion of the installation a GOLIATH Employee or a designated representative of GOLIATH Solutions will visit the installed store and perform a Quality Assurance Survey. The Surveyor will use the QA Checklist found in Appendix B – Support Documents during this visit. The purpose of this visit is to complete the following tasks:

- 1) Verify that the Store Management was satisfied with the installation and the performance of the CIT team. This would include but is not limited to:
 - The Store Management's evaluation of the installation and the CIT team.
 - The quality of the installation.
 - Did the CIT team clean up all the debris from the installation?
 - Were all ceiling tiles reinstalled correctly after the completion of the installation?
 - If ceiling tiles were damaged during the installation, were they replaced promptly?
- 2) Inspect the installation and verify that it has been completed to the standards defined in the Walgreens Installation Guide. This would include but not limited to:
 - Equipment has been installed in the correct locations.
 - Were any antennas placed over fixtures or display tables and don't have a clear line of site to the floor.
 - The coaxial cable has been run through the ceiling according to the defined standards.
 - The cables are not attached to or touching any structures in the ceiling, such as threaded support rods and water pipes that are violations.
 - Service loops are present at the defined locations and meet the required standards.
 - Antennae have been installed correctly according to defined standards.
 - The ceiling grid in the store has been correctly labeled with the location of the Rx/ARA antennae.
 - Cables have been labeled appropriately.
 - The MEU is installed correctly and securely at the correct location.
 - The system is functioning correctly.
 - Verify that installation debris in the ceiling has been cleaned up.
- 3) Document any installation violations. Pictures to document the violations will be taken if possible.

APPENDIX A - Antenna Placement

Introduction

This Appendix only applies to the installation of GOLIATH antenna hardware for Walgreens installations. This appendix provides detailed placement instructions for all GOLIATH antenna hardware to be installed in store ceilings. This document is intended to be used with the store floor plans that are provided with each install. In the event that the store floor plan does not match the actual store layout found on-site due to undocumented remodeling or movement of store fixtures, these antennae placement instructions may be used to help determine exact placement of hardware.

The provided store floor plans have the recommended locations for all the GOLIATH antenna hardware. The actual location can vary depending upon what issues you find during your Pre-installation Store Survey. For example some issues that can alter the location of the equipment are obstructions in the ceiling, security cameras, sprinkler heads and emergency lighting. This Appendix will help you determine the best location for the GOLIATH antenna hardware.

Glossary

In order to understand these instructions, common store fixture attributes have been used to assist the installer in the placement of hardware. Since some installers may not be familiar with the names of the retail fixtures used in this document to describe the location of fixtures, the following glossary is a description of these store features.

Aisle Numbering An aisle is the walking path between either two rows of shelving units or a wall and a shelving unit. Aisles normally run from the front entrance to the back of the store. Aisle 1 in a store will always be between the Cosmetics Wall and the first shelving unit. The aisles are numbered sequentially. Count the aisles from the middle aisle to the back of the store. The header signs present in the stores are not always numbered sequentially.

Bismark The large display table located at the end of the interior cashier station. It is usually filled with bulk food items.



Walgreens Installation Guide

G-1-2002-2B

Walgreens Installation Guide 2B.doc



Cosmetics Counter

Counter located in the center of the cosmetics section of the store. The counter displays merchandise and has one cash register.



Cosmetics Valley

The area of low fixtures between the Cosmetics wall and the higher fixtures opposite the Cosmetics wall. This is normally located on the entrance side of a store.



Cosmetics Wall

The wall that runs the length of aisle one through the cosmetics section of the store. With left-door and right-door entrances this aisle is always on the entrance side of the store. In exception stores with either a center or side entrance the Cosmetics Wall could be on either side of the building.



Display Tables

Display tables are normally located in the Center Aisles, Power Aisles and the Front of the Store. The size of the display tables can vary.



End cap

A set of shelves on the end of an aisle, usually highly visible to consumers. Due to its visibility, it is prime retail real estate and is usually occupied by higher-end merchandise displays or advertised merchandise.



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



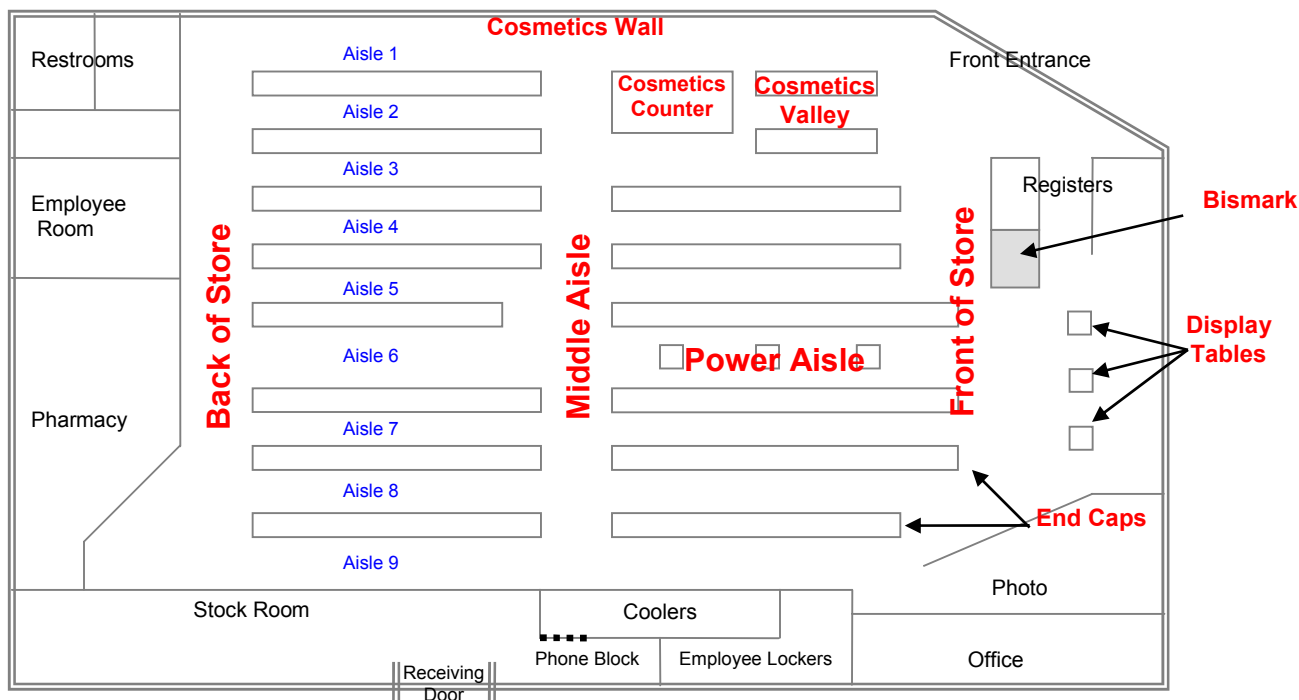
Middle Aisle The large aisle that divides the front and back sections of shelving. The aisle bisects the sales floor from the Cosmetics wall to the opposite wall.



Power Aisle A wider aisle, usually in 10-aisle configurations, that is placed between aisles 6 & 7, and consists of large display tables. In a 9 aisle store it is placed between aisle 5 & 6, and has display tables. The aisle usually extends front the front of the store to the Middle Aisle, but can extend to the back of the store.



Sample Floor Plan showing Glossary Definitions



The above diagram shows the normal locations in a 9 aisle store for the terms defined in the glossary of this Appendix.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Antenna Placement:

Description of Hardware

The transmitter (Tx/ATA) is the backbone of our in-store infrastructure. The Tx/ATA transmits a radio signal in circular polarity downward. In other words, imagine a cone of radio waves coming down from the Tx/ATA to the floor. The signal then proceeds to reflect around the environment in random patterns based on the contents of that environment. Water and metal, for example, are main affecting factors for radio waves.

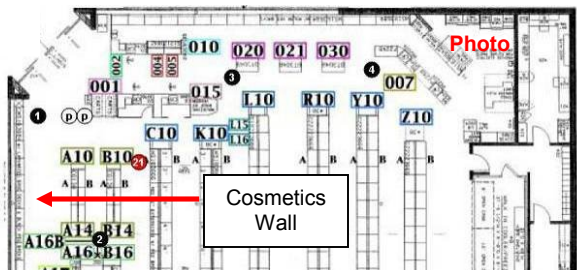
The receiver (Rx/ARA) is the slave to the Tx/ATA; without the Tx/ATA, the Rx/ARA would be useless. The Rx/ARA receives radio signals in circular polarity, just opposite of a Tx/ATA. The Rx/ARA receives signals from the floor upward, although radio waves can come in from all directions. It has the same environmental limitations as the Tx/ATA.

Both types of antennae must have a clear line-of-sight from the center of the antenna directly to the floor. They cannot, and must not, be placed over metal fixtures or liquids for any reason. An Rx/ARA can be installed over a display table, but a Tx/ATA can never be installed over a display table.

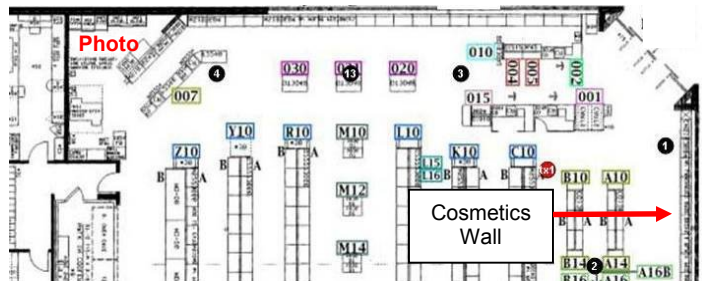
A quick reference table that assumes that the installer is familiar with the terms in the glossary has been included. A more detailed installation description for each antenna follows the table.

Please note that all named antennae are installed in the exact same locations relative to the fixtures or aisles described. For example Tx-1 will always be installed in the front of the store by the cosmetics wall. The cosmetics wall may be on the right or left side of the store depending on where the entrance to the store is located. We have provided examples where RX-1, 2, 3 and 4 are installed along the front of the store in the left door configuration and where the RX-4, 13, 3, 2, and 1 are installed along the front of the store in the right door configuration to illustrate these configurations. To clarify this a little more Rx-1 will be located closest to the door in most store settings while Rx-4 is located to the opposite side of the store near photo.

Left Door, 9 Aisle



Right Door, 10 Aisle

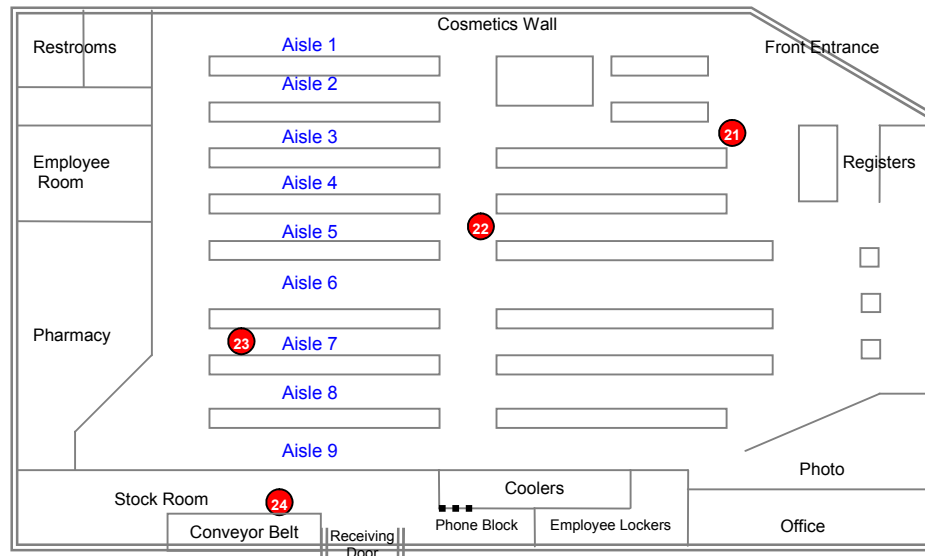


Antenna Placement within the Walgreens Environment

In the typical single MEU configuration, four Tx/ATA antennas are to be installed. The first three Tx/ATA antennas are typically installed in a diagonal pattern from the front door to the opposite corner of the sales floor environment. The fourth Tx/ATA is to be installed in the Stock Room. See the table and picture below for specific Tx/ATA placement instructions.

TX/ATA Number	Cable Number	MEU Port Identifier	9 Aisle Environment	10+ Aisle Environment
1	21	Tx 1	Front of store, aisle 3, in-line with the first section of shelving, centered over aisle.	Front of store, aisle 3, in-line with the first section of shelving, centered over aisle.
2	22	Tx 2	Center of store, aisle 5.	Center of store, between aisles 5 & 6.
3	23	Tx 3	Back of store, aisle 7, in-line with the last section of shelving, centered over aisle.	Back of store, aisle 8, in-line with the last section of shelving, centered over aisle.
4	24	Tx 4	Centrally located in the Stock Room between Rx-15 & 16, skewed toward, and parallel to, the conveyor belt and over the natural walkway.	Centrally located in the Stock Room between Rx-15 & 16, skewed toward, and parallel to, the conveyor belt and over the natural walkway.

Sample Rx/ARA Locations



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



In the typical single MEU configuration, fourteen to sixteen Rx/ARA antennas are to be installed. Two of them are located in the Stock Room with the balance located on the sales floor.

RX/ARA Number	Cable Number	MEU Port ID	9 Aisle Environment	10+ Aisle Environment
1	1	Rx 1	Front of store, aisle 1, skewed towards the Cosmetics wall, in-line with end cap of aisle 3.	Same
2	2	Rx 2	Center of Cosmetics Department centered between the Cosmetics Counter and Cosmetics Valley low fixtures.	Same
3	3	Rx 3	Front of store, placed even with the Bismark table, but between the two cashier stations.	Same
4	4	Rx 4	Front of store, placed in front of the Photo Lab counter, in-line with RX 3.	Same
5	5	Rx 5	Center of store, over the middle aisle between aisles 1 & 2.	Same
6	6	Rx 6	Center of store, over the middle aisle where it intersects aisle 4.	Center of store, between aisles 4 & 5.
7	7	Rx 7	Center of store, over the middle aisle where it intersects aisle 6.	Center of store, aisle 7.
8	8	Rx 8	Center of store, over middle aisle between aisles 8 & 9.	Center of store, between aisles 9 & 10.
9	9	Rx 9	Back of store, between aisles 1 & 2.	Same
10	10	Rx 10	Back of store where it intersects aisle 4.	Back of store, between aisles 4 & 5.
11	11	Rx 11	Back of store where it intersects aisle 6.	Back of store, aisle 7.
12	12	Rx 12	Back of store, between aisles 8 & 9.	Back of store, between aisles 9 & 10.
13	13	Rx 13	Front of store evenly spaced between and in-line with Rx-3 and Rx-4. This antenna is only required for stores with a Power Aisle. Only some 9 aisle stores have a Power Aisle.	Front of store, in-line with center of Power Aisle. When Power Aisle is not present, aisle 5.
14	14	Rx 14	Pharmacy, needed only in stores with new pharmacy layout ¹ , centrally located in the "low ceiling" area.	Same
15	15	Rx 15	Stock Room, located on the opposite end of the Stock Room from the receiving door, skewed toward the conveyor belt of the natural walkway.	Same
16	16	Rx 16	Stock Room, located over the roll-up receiving door, skewed toward the conveyor belt over the natural walkway.	Same

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

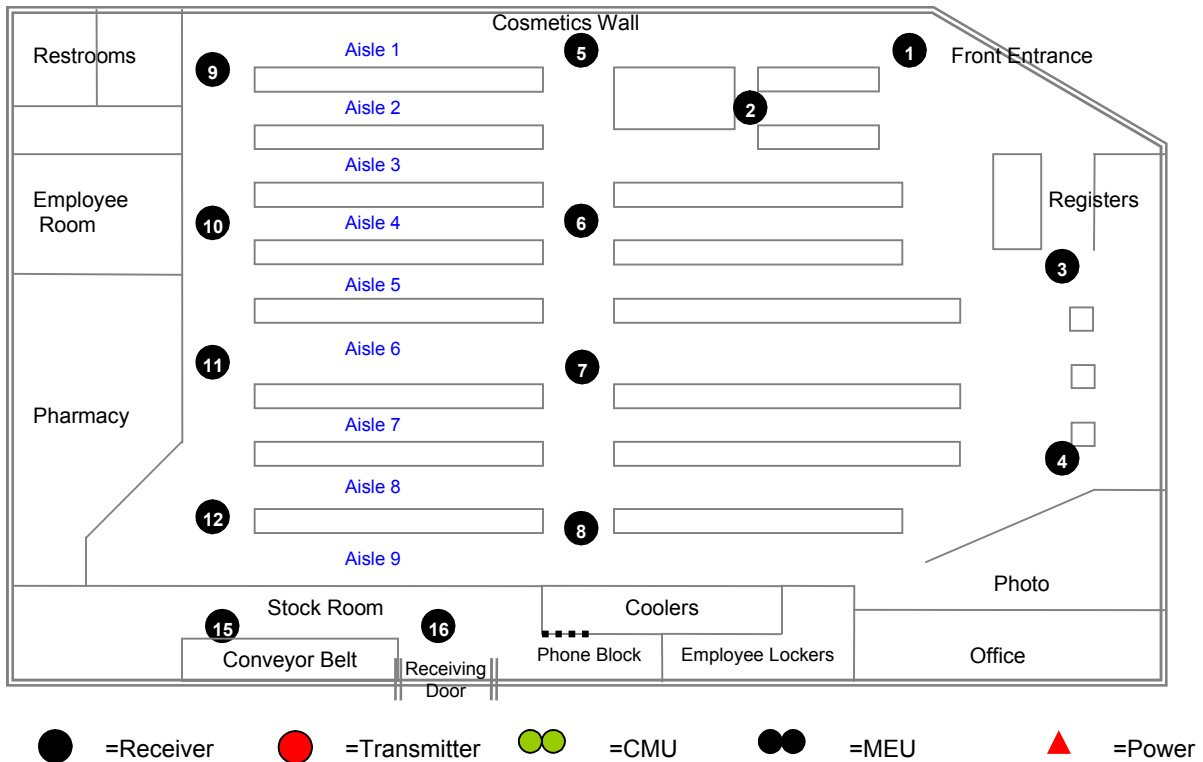
Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



¹ The new format pharmacies consist of one large “low ceiling” area in a back corner of the sales floor. Both the prescription drop-off and pick-up areas are present in the “low ceiling” area. It is most commonly identifiable by vinyl wood grain flooring.

Sample Tx/ATA Locations 9 Aisle Store



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Antennae Placement Issues over the Sales Floor

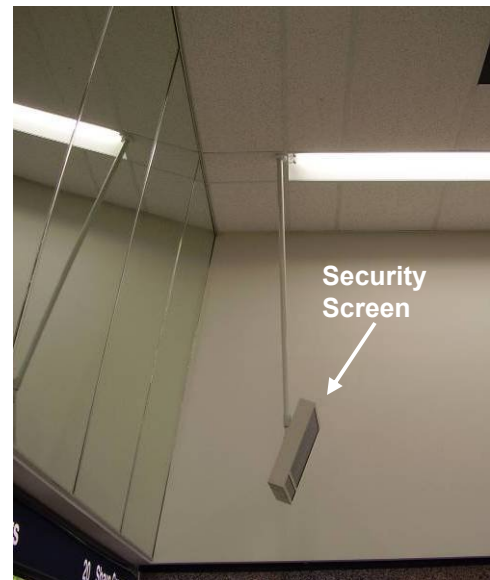
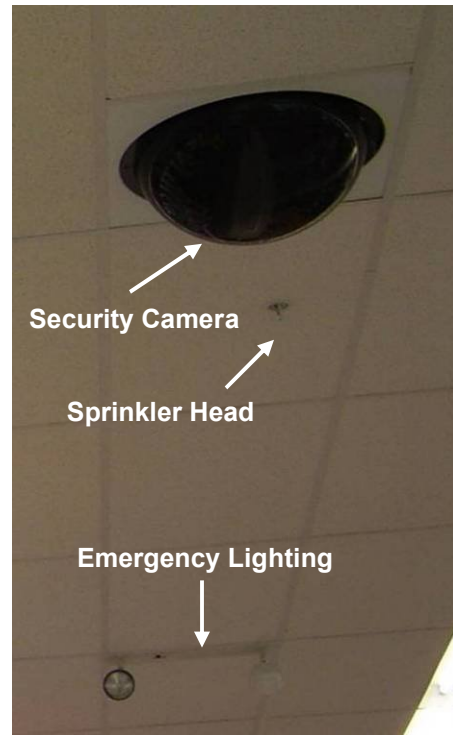
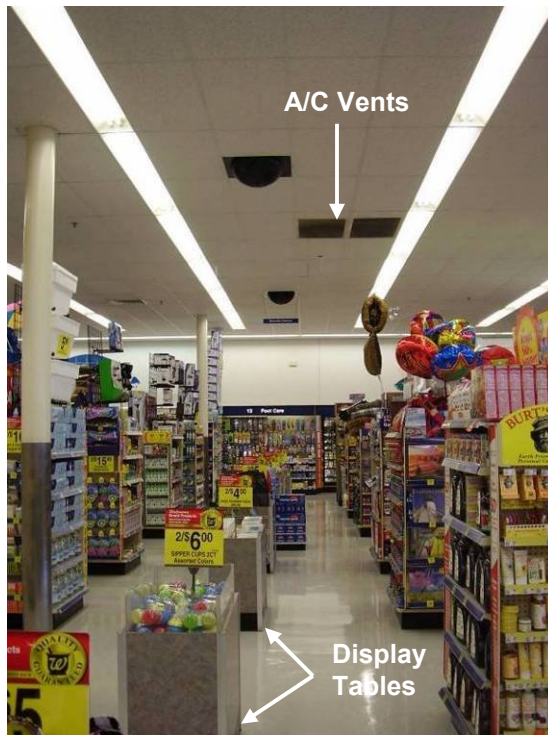
When determining the placement for both the Tx/ATA and Rx/ARA Antenna you may have to slightly adjust the designated location from the store floor plan because of obstructions existing within the store. The antenna should be placed on a ceiling tile as close as possible to the designated location, normally within one tile. **Follow the rules listed below to determine the correct location for the antenna placement because of obstructions.**

- 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 the 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.
- Refer to "Back Wall Rx/ARA Antennae Placement Issues" in this Appendix for more detail on the placement of the Rx/ARA antennas along the back wall of the store.

On the following pages are examples of obstructions that affect antenna placement.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



The Hallmark sign in the following pictures may cause issues with the installation of Rx-6. Rx-6 is normally installed over the middle aisle where it intersects with aisle 4. This is the same location as the Hallmark sign. The Rx/ARA normally can be installed on a tile at its designated location since it ends up in the center of this sign. Be very careful with the ladder and opening ceiling tiles not to damage or drop the Hallmark sign. If there are issues with the location discuss it with the Help Desk.



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Transmitter Placement over Sales Floor

Transmitters are placed in a diagonal manner from the front of the store to the back of the store. There are typically three Tx/ATA antennas placed on the sales floor and one Tx/ATA placed in the stockroom. This may change due to exception floor plans but will be the standard for most installations.

Tx-1

Tx-1 is located at the front of the store, generally at the head of aisle 3. As one stands at the front of the store, facing the back of the store, in-line with aisle 3 (where aisle 3 is closest to Cosmetics), and between the B10 & C10 end caps, one will notice that they are standing between two sets of shelving. To the right (to the left in Right Door stores), one will see the low fixture of the Cosmetics department and to the left (to the right in Right Door stores), one will see a higher fixture. Pivot to the left (to the right in Right Door stores) to face the higher fixture. Locate the end cap that is attached to the higher fixture and is facing the front of the store. Locate the first four-foot section of shelving behind the end cap. Look up and locate the first full-size ceiling tile that is perpendicular to the aforementioned section of shelving. The identified ceiling tile must be free of any obstructions including, but not limited to, fire sprinkler heads, fire/smoke detection equipment, security camera(s), or any HVAC equipment. The antenna must be centered, or as centered as possible, over the tile flooring of the aisle. The antenna must also have a clear line-of-sight to the floor.

Tx-2

Tx-2 is located in the center of the store, centered over the Middle Aisle. From the front of the store, walk along the Cosmetics wall toward the back of the store. One will notice the Middle Aisle on the left (on the right in Right Door stores). One should stop and pivot to the left (to the right in Right Door stores). Walk down the center of the Middle Aisle, toward the wall opposite the Cosmetics wall, until the fifth aisle from the Cosmetics wall is reached. In a 9-aisle configuration, one should be standing in the center of the intersection of aisle 5 and the Middle Aisle. In a 10-aisle configuration, one should walk down the center of the Middle Aisle, toward the wall opposite the Cosmetics wall, counting end caps, beginning with the first one encountered (between aisles 1 & 2 on the backside of the store). One should stop at the fifth end cap. Look up and locate the first full-size ceiling tile over the center of the Middle Aisle. The identified ceiling tile must be free of any obstructions including, but not limited to, fire sprinkler heads, fire/smoke detection equipment, security camera(s), or any HVAC equipment. The antenna must be centered, or as centered as possible, over the tile flooring of the Middle Aisle. The antenna must also have a clear line-of-sight to the floor.

Tx-3

Tx-3 is located at the back of the store, near the corner opposite the front door. In a 9 or 10-aisle configuration, one should begin in the Back Aisle, at the wall opposite the Cosmetics wall. One should walk toward the Cosmetics wall and count the aisles. Once the third aisle from the wall opposite the Cosmetics wall is reached, stop. Pivot to the right (to the left in Right Door stores). One should then walk up the aisle, toward the front of the store, stopping at the division between the first and second set of four-foot shelving. Look up and locate the first full-size ceiling tile that is perpendicular to the aforementioned section of shelving. The identified ceiling tile must be free of any obstructions including, but not limited to, fire sprinkler heads, fire/smoke detection equipment, security camera(s), or any HVAC equipment. The antenna must be centered, or as centered as possible, over the tile flooring of the aisle. The antenna must also have a clear line-of-sight to the floor.

Receiver Placement over Sales Floor

Rx-1

Rx-1 is located near the front door along the Cosmetics wall. One should locate the first merchandised section on the Cosmetics wall. Then, locate the seam between the first and second merchandised sections of the Cosmetics wall. Look up and locate the closest ceiling tile to the aforementioned seam. If the ceiling tile is a partial one and the Rx/ARA will fit comfortably on top of it, then the tile is suitable. If the identified ceiling tile is not suitable, locate a suitable tile closest to it.

Rx-2

Rx-2 is located in the Cosmetics Valley between the two low fixtures and the Cosmetics counter. One should locate the two low fixtures in Cosmetics and walk between them toward the back of the store. Once the Cosmetics counter is reached, stop. Look up and locate a ceiling tile that is in-line with an imaginary line running between the low fixtures from the front of the store to the back. The antenna is to be placed over the tile flooring that creates a "T" shape between the low fixtures and the Cosmetics counter.

Rx-3

Rx-3 is located at the front of the store near the cashier stations. One should begin by standing between the two cashier stations, walking toward the wall opposite the Cosmetics wall. Locate the first aisle on the right (on the left in Right Door stores), just past the Bismark. Look up and locate the ceiling tile that is in-line with the identified aisle. In a 10-aisle configuration, go one ceiling tile back toward the Cosmetics wall.

Rx-4

Rx-4 is located at the front of the store, next to the Photo department. The antenna must be placed in-line with Rx-3. In a 9-aisle configuration, the antenna should be placed in front of the second end cap from the wall opposite the Cosmetics wall. In a 10-aisle configuration, the antenna should be placed in front of the first end cap from the wall opposite the Cosmetics wall. The majority of stores will locate the Photo department in a "low ceiling" area. The antenna must be placed in the "high ceiling", even if the placement needs to be adjusted slightly.

Rx-13

Rx-13 is located at the front of the store, as needed. If needed, the antenna must be placed in-line with, and equally between Rx-3 & Rx-4. Usually this will place the antenna directly in front of the Power Aisle.

Rx-5

Rx-5 is located in the Middle Aisle closest to the Cosmetics wall. The antenna should be placed over the center of the Middle Aisle and in-line with the first end cap from the Cosmetics wall; usually end cap A40.

Rx-6 & Rx-7

Prior to placing **Rx-6 & Rx-7**, please see the instructions for placing Rx-8. After consulting the instructions for Rx-8, count number of ceiling tiles between Rx-5 & Rx-8. Divide that number in half twice. For example, if the number of tiles between Rx-5 & Rx-8 is 10, then $10 / 2 = 5$ and $5 / 2 = 2.5 = 3$. Then, utilizing the final calculation, count that many ceiling tiles from Rx-5 inward (toward the center of the store) to Rx-6, and from Rx-8 inward to Rx-7. The count should begin with the ceiling tile just adjacent to the tile that Rx-5 or Rx-8 is to be placed on. One must be very careful when placing Rx-6 & Rx-7. These antennae must be at least eight to ten feet from Tx-2. These antennae must also be positioned over the center of the Middle Aisle and in-line with Rx-5 & Rx-8.

Rx-8

Rx-8 is located in the Middle Aisle closest to the wall opposite the Cosmetics wall. The antenna should be placed over the center of the Middle Aisle and in-line with the first end cap from the wall opposite the Cosmetics wall; usually end cap Z40.

Rx-9

Rx-9 is located at the back of the store, closest to the Cosmetics wall. The antenna should be placed over the center of the Back Aisle and in-line with the first end cap from the Cosmetics wall; usually end cap A99. The antenna should be in-line with Rx-5.

Rx-10

Rx-10 is located at the back of the store, inline with Rx-6.

Rx-11

Rx-11 is located at the back of the store, inline with Rx-7.

Rx-12

Rx-12 is located at the back of the store, inline with Rx-8.

Back Wall Rx/ARA Antennae Placement Issues (Rx-9, Rx-10, Rx-11 and Rx-12)

Determine if mirrors are installed on the back wall of the store. Most stores will have mirrors installed on part of or the entire back wall. If the mirrors are installed on the back wall and are angled above the sales floor at the designated Rx/ARA location, the antenna should be centered on the ceiling tile closest to the mirror. The mirrors can enhance the properties of the Rx/ARA antenna. Otherwise the Rx/ARA antenna should be centered over the aisle in the back of the store. If the mirror is recessed over the shelving units, the Rx/ARA antenna should be centered over the aisle in the back of the store at its designated location.

Please see following pictures for examples

Rx Antenna should be centered on tiles closest to the mirror



Mirrors angled over sales floor



Mirrors recessed over shelving unit

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Recessed Mirrors



Rx Antenna should be centered over the sales floor dependant upon restrictions in the ceiling.

Rx-14 (only required in stores with the new Corner Pharmacy layout)

Rx-14 is located in the “low ceiling” of the new Pharmacy. The antenna is to be placed as centrally as possible within the “low ceiling”.

Examples of a new Corner Pharmacy



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Stock Room Antenna Placement

The antennas in the stock room are normally aligned parallel along the path of the conveyor belt starting in front of the receiving door. There must be a minimum of 10 feet separating each antenna from the next closest antenna.

Tx-4

Tx-4 is located in the Stock Room equally spaced between Rx-15 & Rx-16. The antenna should be placed skewed toward, and parallel to, the conveyor, yet over open floor. The antenna should be centralized or evenly spaced between shelves on the open floor. Make sure there are no obstructions between the antenna and floor. The antenna must be fastened to a roof girder or to a cross-member thereof. The section of girder or cross-member, where the antenna is to be placed, should be free of any surface-mounted obstructions. Obstructions could include, but are not limited to, electrical hardware, HVAC hardware, threaded support rods, or any data wiring. See the Receiver Section of this document for specific placement of Rx-15 & Rx-16. Also, see the Exception section of this document for instructions based upon some of the differing Stock Room layouts.

Rx-15

Rx-15 is located in the Stock Room at the opposite end of the space from the receiving door. The antenna should be placed skewed toward, and parallel to, the conveyor, over open floor. The antenna must be fastened to or suspended from a roof girder or to a cross-member thereof. The section of girder or cross-member, where the antenna is to be placed, should be free of any surface-mounted obstructions. Obstructions could include, but are not limited to, electrical hardware, HVAC hardware, threaded support rods, or any data wiring. Rx-15 should never be placed closer than two feet from HVAC ductwork. Please call the Goliath Solutions Helpdesk if the previous guideline cannot be adhered to. See the Exception section of this document for instructions based upon some of the differing Stock Room layouts.

Rx-16

Rx-16 is located in the Stock Room directly in front of the receiving door. The antenna should be placed skewed toward, and parallel to, the conveyor, yet over open floor. The antenna must be fastened to or suspended from a roof girder or to a cross-member thereof. The section of girder or cross-member, where the antenna is to be placed, should be free of any surface-mounted obstructions. Obstructions could include, but are not limited to, electrical hardware, HVAC hardware, threaded support rods, or any data wiring. Rx-16 should never be placed closer than two feet from HVAC ductwork. Please call the GOLIATH Solutions Helpdesk if the previous guideline cannot be adhered to. See the Exception section of this document for instructions based upon some of the differing Stock Room layouts.

Stock Room Antenna Placement Issues

When selecting the location of the antennae in the Stock Room, be aware of unique problems that exist only in the stock room. The problems are caused by the high metal shelves with inventory stacked to the ceiling, narrow pathways, conduit installed on the roof girders, roof girders not in the ideal location for the antenna placement, the location of the inventory, the location of liquids and other issues.

The inventory in the Stock Room is in constant change. Most of the inventory will be on shelves but many times it will be stacked on the floor or on the conveyor belt. This is an issue with beverages and other liquids. For example beverages are normally stacked near the "roll-up" receiving door. But because this is a fast moving item it may not be there during your installation and you could place Rx-16 over the location where the store normally keeps beverages and this would prevent Rx-16 from working correctly.

A good rule of thumb on the placement of the antennae in the stock room is to place each antenna at the locations recommend in this manual, but make sure the antenna location is centrally located over the natural walking path in that area that is free from potential obstructions. This minimizes the possibility the store will place inventory under the antenna and the other natural obstructions that exist in the stock room that would effect the antennae performance.

Remember never place antennae over shelves (metal or wood), liquids, the trash compactor and other natural obstructions; it should always be over an open area on the floor. Never let the antennae or the coaxial cable touch conduit or other cables on the roof girder. This could damage the antenna.

There are exceptions when Rx-15 and Rx-16 may have to be suspended from the roof girder to avoid contact with other cables and conduit on the roof girder or if a pipe is obstructing the line of sight from the antenna to the floor. Never suspend Tx-4 from a roof girder. It must be mounted to the roof girder.

If you have any questions, concerns or issues with the location of the antennae in the Stock Room contact the Help Desk immediately.

Antenna Placement Exceptions

Expanded Cosmetics Department

Some stores have converted their closed liquor departments into expanded Cosmetics departments. This area is most notably identified by the presence of five low fixtures as opposed to two.

Rx-1

Rx-1 is located, in this case, near the Cosmetics wall next to the first low fixture. One should locate the center of the first low fixture in Cosmetics on the side facing the Cosmetics wall. Then, look up and locate the closest ceiling tile that is directly over the tile flooring. If the ceiling tile is a partial one and the Rx/ARA will fit comfortably on top of it, then the tile is suitable. If the identified ceiling tile is not suitable, locate a suitable tile closest to it.

There are also stores where the low fixtures are at a forty-five degree angle to the front door. In this case, one should stand at the front door, walk toward the Cosmetics wall and locate the second four-foot section of merchandise from the corner. Then, look up and locate the closest ceiling tile that is directly over the tile flooring. If the ceiling tile is a partial one and the Rx/ARA will fit comfortably on top of it, then the tile is suitable. If the identified ceiling tile is not suitable, locate a suitable tile closest to it.

Rx-2

Rx-2 is located, in this case, over the Cosmetics Valley. One should locate the center of the intersection of the four low fixtures. Look up and locate a ceiling tile that is directly above the aforementioned intersection. The antenna is to be placed over the tile flooring that creates the intersection.

There are also stores where the low fixtures are at a forty-five degree angle to the front door. In this case, locate the second low fixture from the front door. Then, locate the end cap on the Cosmetics wall side of the fixture. Locate the center-point between the end cap and the Cosmetics counter. Look up and locate the closest ceiling tile that is directly over the tile flooring.

Rx-5

Rx-5 is located, in this case, in the Middle Aisle closest to the Cosmetics counter. The antenna should be placed over the center of the Middle Aisle and in-line with Tx-1.

Walgreens Installation Guide

G-1-2002-2B
Walgreens Installation Guide 2B.doc



Examples of Expanded Cosmetics Departments



Non-Standard Stock Room Configurations

In the Walgreens environment, there are five basic Stock Room configurations: rectangular with middle shelving, rectangular without middle shelving, "L" shaped, upper-level, and lower-level. The only non-standard Stock Rooms are the upper-level and lower-level and, if encountered, the Help Desk should be contacted for further direction.

MEU installation location
CMU installation location
Power installation options

All of the above topics are being covered elsewhere in this document.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

APPENDIX B - Support Documents

Standard Installation Kit Contents:

The standard store Installation Kit contains the following items:





Quantity	Description
1	Welcome Package
1	CMU
1	MEU
1	Velcro Strip
1	36" Cable Tie
2	MEU/CMU power supplies
2	6' MEU/CMU power cable.
1	110' MEU/CMU power cord
1	5" Gender Changer Cable for power
1	12' Cat-5 patch cable
1	36" cable tie
4	Transmitter (Tx/ATA) Antennae
4	Rubber Collars/Gaskets
14	Receiver (Rx/ARA) Antennae
14	Plastic mounting clip for the Rx/ARA (Xmas tree fastener)
8	110' Coaxial Cable
6	85' Coaxial Cable
2	50' Coaxial Cable
2	25' Coaxial Cable
1	Sheet of ceiling grid labels
1	Sheet of cable labels

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Hot Spare Kit:

Item Number	Description	Part Number	Image	Quantity
1	MEU3+	25-021A		2
2	36" Cable Ties	N-36-175-9-C		25
3	Velcro	90081/BLACK		25
4	110' Power Cable	45-015A		10
5	Power Supply	45-006D		2
6	CMU	25-017F		2

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Item Number	Description	Part Number	Image	Quantity
7	Gender Bender	45-021A		1
8	Patch Cat 5 4'	MC5-85-04-B02CB		5
9	RX/ARA	9ARA01		5
10	Finned (Xmas Tree) Fastener	PF832003		50
11	TX/ARA-D	25-006D		3
12	TX/ARA-J	25-006J		2
13	Gasket/Collar (white)	30-030A		5
14	110' Coaxial Cable	45-002C2-110		5

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Item Number	Description	Part Number	Image	Quantity
15	85' Coaxial Cable	45-002C2-85		5
16	50' Coaxial Cable	45-002C2-50		5
17	25' Coaxial Cable	45-002C2-25		5
18	BNC	CAD1000		12
19	Grid Labels	LAT-47-707		10
20	Wire Markers	44-103		10

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Item Number	Description	Part Number	Image	Quantity
21	Patch Cat 5 20'	MC5-85-20-B02CB		5
22	Hanger Strap 100'	Oatey #33927		2
23	Drywall Screws			2 Boxes
24	1" by 1" Mounting Base			2 Packages
25	Wet Erasable Markers			2
26	Painters Tape			2
27	Return Labels			10
28	Walgreens Installation Manual			1

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Minimum Tools and Materials Required for Installation:

GOLIATH recommends the following tools and materials be provided by the Contract Installation Team (CIT) for installation. **This list is not complete; it is intended to be a minimal overview.**

- 25' Extension Cord – If corded electric drill is used.
- Electric Drill – Cordless is preferred.
- 5/16 drill bit
- Drywall Saw
- 1-3/8" Hole Saw
- Caulk to seal fire walls
- Jet Line
- Fish Stix
- Telescoping Fish Pole (Gopher Pole)
- Electrical Tape
- Flashlights
- Ladders – Based on ceiling height. The Minimum requirements are:
 - 8' Fiberglass Stepladder for the Store Installation
 - 12' Fiberglass Stepladder for the Store Installation (2 required)
 - 14' Fiberglass Stepladder for the Store Installation
 - 24' – 28' Extension Ladder for the Stock Room Installation
- Package of assorted cable ties. The cable ties must be white or clear.
- Conduit for firewall



Sample Store Data Sheet:

The CIV will provide the CIT with a store data sheet or work order for each installation. The format will vary by each CIV, but the work order will include at least the following information:

- Store Name
- Store Number
- Store Address
- Store Phone Number
- Store Managers Name
- Store Floor plan – The CIT will be provided the appropriate floor plan for the store being installed. It is important to view this floor plan prior to starting the install to determine if areas of concern have been reviewed during the survey process.
- Standard Floor Plan
- Special Instructions (if applicable)
- Warehouse Delivery Dates



CIT Installation Checklist:

It is not a requirement by GOLIATH for this checklist to be filled out by the CIT, it is only provided as a courtesy for reference. The items listed on this checklist are many of the primary tasks that GOLIATH Solutions will use to evaluate the installation during the QA Store Survey.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



CIT Installation Check List		
Install Date:	Start Time:	End Time:
Store #:	Store Name:	
Address:		
Manager:		Store Phone:
Install Technicians:		

Tasks Completed	Installation Tasks
	Check-In with Store Management and GOLIATH Help Desk.
	Store Survey has been completed.
	All cables have been labeled with the appropriate number at both ends of the cable.
	CMU installed according to defined standards.
	The port where the patch cable for the CMU is plugged into on the network switch is clearly labeled for GOLIATH Solutions.
	The MEU is installed according to defined standards and easily accessible with ladder.
	Power for the CMU and MEU is plugged into a dedicated, uninterrupted 24-hour power supply.
	All cables are correctly connected to the appropriate MEU port.
	Cables run through the roof girders or properly suspended from roof girders.
	Cables should not be touching ceiling tiles, light fixtures, power conduit, water lines, cables that support ceiling grids, threaded support rods, and AC ductwork.
	Excess cable in an accessible self supporting service loop above all antennae using cable ties.
	The ceiling grids labels identifying the Rx/ARA locations have been installed on ceiling grid. The label should be pointing to the Rx/ARA and the back of the store.
	All Tx/ATA and Rx/ARA antennae are installed at the correct location.
	All debris from the installation has been cleaned up (including in ceiling).
	All ceiling tiles have been put back into place.
	System test has been completed successfully.
	Any OBF failures are boxed up and left with Store Management for GOLIATH Solutions.
	Check-out with GOLIATH Help Desk.
	Check-out with Store Management.
Comments:	
Note: Any item which is not applicable, place N/A in the box.	

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



GOLIATH QA Checklist

QA Date:	Corrections Start Time:	Corrections End Time:
Store #:	Store Name:	
Address:		
Manager:		Store Phone:
GOLIATH Technician:		

Tasks Completed	Pictures Taken	QA Tasks
		All cables have been labeled with the appropriate number at both ends of the cable.
		CMU installed according to defined standards.
		The port where the patch cable for the CMU is plugged into on the network switch is clearly labeled for GOLIATH Solutions.
		The MEU is installed according to defined standards and easily accessible with ladder.
		Power for the CMU and MEU is plugged into a dedicated, uninterrupted 24-hour power supply.
		All cables are correctly connected to the appropriate MEU port.
		Cables run through the roof girders or properly suspended from roof girders.
		Cables should not be touching ceiling tiles, light fixtures, power conduit, water lines, cables that support ceiling grids, threaded support rods, and AC ductwork.
		Excess cable in an accessible self supporting service loop above all antennae using cable ties.
		The ceiling grids labels identifying the Rx/ARA locations have been installed on ceiling grid. The label should be pointing to the Rx/ARA and the back of the store.
		All Tx/ATA and Rx/ARA antennae are installed at the correct locations.
		All debris from the installation has been cleaned up (including in ceiling).
		All ceiling tiles have been put back into place.
		System test has been completed successfully.
		Were OBF failures reported to the Help Desk and removed from the store?
		Ask the Store Manager to rate the store installation experience 1 to 5. (1 is poor, 5 is excellent) y issues and comments
		If the store installation process is not a 5 document why?
		Update QuickBase and SysMon and verify they are accurate.

Document any issues with the installation on the following page.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.



GOLIATH QA Comments/Issues

Comments:

Issues:

Revisit Issues:

Best Practices Do's and Don'ts:

Do	Keep all cable runs to a maximum of 135 foot for the Rx/ARA and 110 foot for the Tx/ATA.
Do	Maintain the twists of the pairs all the way to the point of termination, or no more than 0.5" (one half inch) untwisted.
Do	Make gradual bends of the cable, where necessary. No sharper than a 10" radius. About the size of a Volley ball.
Do Not	Allow the cable to be sharply bent, or kinked, at any time.
Do	Dress the cables neatly with cable ties and trim excess from the cable tie. Use low to moderate pressure.
Do Not	Over tighten cable ties.
Do Not	Use excessive force when pulling cable.
Do Not	Tie cables to electrical conduits, or lay cables on electrical fixtures, or have cables touch water pipes, or tie cables to ceiling grid wire or threaded pipe supports, or touch ceiling tiles, or AC duct work.
Do	Install proper cable supports, spaced no more than 5 feet apart.
Do Not	Install cable that is supported by the ceiling tiles (this is unsafe, and is a violation of the building codes).
Do	Always label each cable correctly according to the floor plan. Use a unique number for each cable segment. The idea here, is to make moves, adds, changes, and troubleshooting as simple as possible.
Do Not	Never install cables taunt in the ceiling, or elsewhere. A good installation should have the cables loose, but never sagging.
Do	Always use grommets to protect the cable where passing through metal studs or anything that can possibly cause damage to them.
Do Not	Use staples on cables.
Do	Always obey all local, and national, fire and building codes. Be sure to "fire stop" all cables that penetrate a firewall.

Store Data Form:

The information in the following table will be required on your check-out call with the Help Desk.

Description	Data
1) Store Number:	
2) CMU Serial Number:	
3) MEU Serial Numbers:	
4) Number of MEU's used:	
5) CMU location:	
6) MEU locations:	
7) MEU mounting method:	
8) MEU power source location:	
9) Sales Floor Ceiling Height:	
10) Height of roof girder above ceiling:	
11) Stock room ceiling height:	
12) Available Store Ladders (Platform, 10' or 12' step ladder)	
13) Number of Tx/ATA installed in the store. Record the revision level installed at each location.	
14) Number of Rx/ARA installed in the store	
15) Was there a firewall between the store and stock room?	
16) Were there any Out-of-Box failures? (Yes or No)	If Yes, please list quantities on Installation Exception Form.
17) Were there any Shortages? (Yes or No)	If Yes, please list quantities on Installation Exception Form.
18) Were parts were used from the Hot Spare Kit? (Yes or No)	If Yes, please list quantities on Installation Exception Form.
19) Were any ceiling tiles broken during the install?	
20) Do any ceiling tiles have to be replaced with a follow up visit? If Yes when is the revisit scheduled?	
21) Were there any other installation problems or issues? (Please Document)	

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Installation Exception Form:

On the following form enter quantities for any parts related to Out of Box Failures (OBF), Shortages/Overages in the Installation Kit or Hot Spare Usage with the installation. For Shortages/Overages use a (+) to indicate overages or (–) to indicate shortages.

Part	Out-of Box Failure (OBF)	Shortages/Overages Installation Kit	Hot Spare Kit Usage
MEU III			
CMU			
Power Supply			
Gender Changer Cable		N/A	
Tx/ATA (D)			
Tx/ATA (J)			
Tx/ATA (3)			
Rx/ARA			
Coaxial Cable 25'			
Coaxial Cable 50'			
Coaxial Cable 85'			
Coaxial Cable 110'			
Power Cable 110'			
BNC Connectors		N/A	
Cat 5 Patch Cable 4'			
Cat 5 Patch Cable 20'	N/A	N/A	
Cable Labels	N/A		
Grid Labels	N/A		
Plastic Strap	N/A	N/A	
Velcro	N/A		
36" Cable Tie	N/A		

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Store Cable Length Form:

ITEM	MEU PORT	Cable Lengths	LABEL
Rx-1	RX1		1
Rx-2	RX2		2
Rx-3	RX3		3
Rx-4	RX4		4
Rx-5	RX5		5
Rx-6	RX6		6
Rx-7	RX7		7
Rx-8	RX8		8
Rx-9	RX9		9
Rx-10	RX10		10
Rx-11	RX11		11
Rx-12	RX12		12
Rx-13	RX13		13
Rx-14	RX14		14
Rx-15	RX15		15
Rx-16	RX16		16
Tx-1	TX1		21
Tx-2	TX2		22
Tx-3	TX3		23
Tx-4	TX4		24

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Pre-Installation Survey Checklist:

During the Store Survey the CIT installation team will be provided a store floor plan with the suggested locations for the Goliath equipment. The CIT team needs to verify that the store floor plan is correct and then determine the location to install the Goliath Equipment. **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.**

The suggested locations for the Goliath equipment must be validated during the store survey. Conditions found in the store during the survey will determine the actual location of the Goliath equipment. During the check-in call with the Goliath Help Desk notify them of any changes to the equipment location from the floor plan and any exception issues. Some of the factors that affect the actual location of the equipment are access to the suggested location, A/C ductwork and vents, security screens and cameras, emergency lighting, water pipes, sprinkler heads and mirrors.

Once the location of the equipment has been determined, use painters tape to mark the designated Rx/ARA or Tx/ATA number on the sales floor below the desired location. Only use painters tape on the floor in the stock room. The mark or the tape must be removed prior to the completion of the installation.

The following table highlights exceptions or issues that must be verified during the store survey. The table is divided by the area of the store and the piece of Goliath Equipment. Refer to chapter 2 and appendix A – Antenna Placement in the Walgreens Installation Guide (G-1-2002) for detailed installation and survey instructions. **Remember the power source for the CMU and MEU must be a dedicated 24 hour uninterrupted power outlet. Power strips and power cubes can not be used.**

Only enter Pharmacy if there is not Catalina Cabinet. Follow policies defined in Walgreens Environment for access.

Area/Equipment	Issues
CMU	<ul style="list-style-type: none"> Check in the Photo Department for the secondary communications (Catalina) cabinet. It may be located in the yellow storage closet. If the cabinet is not located in Photo ask the Store Manager for its location. If the store does not have a Catalina cabinet, then use the Communications cabinet in Pharmacy. Review Walgreens Environment on policies for entrance into Pharmacy. Validate the following information inside the cabinet: <ul style="list-style-type: none"> An available dedicated available 24-hour uninterrupted power outlet. An open network port on the switch. Validate an available location to mount the CMU on the wall near the communications cabinet.

Primary MEU	<ul style="list-style-type: none"> • Determine the location of the dedicated 24 hour uninterrupted power source for the MEU. <ul style="list-style-type: none"> ○ The first choice is by the Security Screen by the front entrance. Always use this location if available. ○ The second choice is the output power port on the back of the CMU. If this location is to be used, determine any issues that would occur pulling the power cable to this location. ○ The third choice would be the Communications Area normally located in the tech room or the stock room. ○ If the first two choices are not available call the Goliath Help Desk to help determine the location of an alternate the power source. • Determine the location for the Primary MEU. <ul style="list-style-type: none"> ○ The first choice for the location is on a post near the middle aisle of the store normally around aisle 4 or 8. ○ The second choice is suspending the MEU from a roof girder near the center of the store on the sales floor and the middle aisle. Only suspend the MEU if a post location can't be used. ○ The actual location is determined by the distance of the MEU from the following locations: <ul style="list-style-type: none"> ▪ MEU power source (maximum cable length 110 feet) ▪ Rx/ARA antennae (maximum cable length 135 feet) ▪ Tx/ATA antennae (maximum cable length 110 feet) • Determine any obstructions in the ceiling and from the ceiling tiles that affect access to the MEU. • Specialty cut tiles around posts and other obstacles should not be removed to access the MEU location if they can easily be broken. • Determine any obstructions in the ceiling that would affect the path of your cable pulls.
Secondary MEU	<ul style="list-style-type: none"> • A secondary MEU will only be used in exception stores. Normally a secondary MEU will be used in a stock room. The primary reasons to use a second MEU would be no access for cables to enter the stock room or the distance of the antennae is too far from the primary MEU. • Determine the location for the 24 hour uninterrupted power outlet. This would normally be by the phone block. • Determine the location for the Secondary MEU. <ul style="list-style-type: none"> ○ The first choice is on a post. ○ The second choice is suspended from a roof girder. ○ The actual location is determined by the distance of the MEU from the following: <ul style="list-style-type: none"> ▪ MEU power source (maximum cable length 110 feet) ▪ Rx/ARA antennae (maximum cable length 135 feet) ▪ Tx/ATA antennae (maximum cable length 110 feet)

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Cable Pulls	<ul style="list-style-type: none">• Determine the path of your cable pulls to the front, middle and back of the store from the MEU location.• Determine how the cables will enter the stock room and what pull they will be with.• Determine any issues in the ceiling that would affect your cable pulls. They would include but are not limited to:<ul style="list-style-type: none">○ Obstructions in the ceiling (HVAC, ductwork, water pipes, conduit).○ No roof girders.○ Roof girders that is too high above the drop ceiling for access from the ladders.• Determine the length of the cables required to go from the MEU to the designated location of each antennae.
Tx/ATA and Rx/ARA Antenna Placement over the Sales Floor	<p>Validate that the designated location meets the following requirements:</p> <ul style="list-style-type: none">• Clean line of site to the floor. It can not be located over shelves, signs or display tables.• A Tx/ATA must be installed on a full tile.• An Rx/ARA should be installed on a full tile, but can be installed on a partial tile if needed. The partial must be either square or rectangle and can not have any custom cuts.• Nothing else is installed on the tile such as:<ul style="list-style-type: none">○ A/C intake or outtake vents.○ Sprinkler heads.○ Security cameras or screens.○ Emergency lighting.○ Speakers○ Any other equipment.• There is access in the ceiling to install the antenna.• All antennae must be a minimum of 10 feet from each other.• 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. <p>If the designated location does not meet these requirements locate the antenna to the closest tile that meets these requirements. Normally this would only be one tile over. If it is more than one tile notify the Goliath Help Desk. If any antenna appears to be in the incorrect location on the floor plan validate that location with the Goliath Help Desk.</p>

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Front of Store Antenna Placement exceptions Tx/ATA (21) Rx/ARA (1, 3, 4, 13)	<ul style="list-style-type: none">• The Tx/ATA should be centered over the aisle.• The Tx/ATA should be no more than 3 feet from the end cap. None
Middle Aisle Antenna Placement exceptions Tx/ATA (22) Rx/ARA (2, 5, 6, 7, 8)	None None
Back of Store Antenna Placement exceptions Tx/ATA (23) Rx/ARA (9, 10, 11, 12, 14)	<ul style="list-style-type: none">• The Tx/ATA should be centered over the aisle.• The Tx/ATA should be no more than 3 feet from the end cap.• If there are mirrors along the wall in the back of the store that are over the sales floor and not recessed over shelves the Rx/ARA should be installed on the tile closest to the mirror at the designated location.• Mirrors may run the length of the back wall or only over part of the back wall.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Walgreens Installation Guide

G-1-2001-2B
Walgreens Installation Guide 2A.doc



Stock Room	
Access	<ul style="list-style-type: none">• Determine if there is an existing access point to the stock room from the store. This access point can not be shared with water pipes, electric conduit or A/C ductwork.• If there is not an existing access point, then determine if one can be cut. Use the appropriate tools (drywall saw or hole saw) to cut the hole. If it is a firewall, firewall conduit is required to be installed according to the manufactures' specifications.• If there is no access is available to the stock room a second MEU will be required. Contact the Goliath Help Desk.
Tx/ATA (24)	<p>Validate that the designated location meets the following requirements:</p> <ul style="list-style-type: none">• Clean line of site to the floor. It can not be over pipes, shelves or merchandise stacked on the floor.• The Tx/ATA must be attached to a roof girder using cable ties.• The Tx/ATA can not touch conduit or pipes.• Tx/ATA (24) should be located about half way between Rx15 and Rx16 next to the loading belt.• The Tx/ATA should be centered as best as possible on the aisle between the loading belt and the shelves and over the natural walking path.• The Tx/ATA should be a minimum of 10 feet from each Rx/ARA.
Rx/ARA (15, 16)	<p>Validate that the designated location meets the following requirements:</p> <ul style="list-style-type: none">• Clean line of site to the floor. It can't be over pipes, shelves or merchandise stacked on the floor.• The Rx/ARA can be attached to a roof girder using cable ties or suspended from the roof girder using plastic plumber's strap. Preferably cable tied.• The Rx/ARA can not touch conduit or pipes.• Rx (16) should be located near the start of the loading belt near the receiving door.• Rx (15) should be located at the opposite end of the receiving belt furthest from the receiving door.• The Rx/ARA antenna should be centered as best as possible on the aisle between the loading belt and the shelves and over the natural walking path.

Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.

Ramset Warning Sign:



Use or disclosure of this document is covered under the Non-Disclosure Agreement executed between the reader and Goliath Solutions, LLC. This document and the information contained herein are privileged and should only be viewed by expressly authorized parties.