

FIELD OPERATIONS HANDBOOK

The Church Meraki Refresh Project

Vendor Installation & Quality Standards Guide

SITE ASSESSMENT • CABLING • RACK INSTALL • CNM CONFIGURATION • TESTING • NETSPOT • DELIVERABLES • CLOSEOUT

DISCLAIMER

NO TOBACCO ON CHURCH PROPERTY

NO SMOKING IN THE PARKING LOT (GO TO THE SIDEWALK)

NO DIP • NO SPIT CUPS

NO COFFEE • NO TEA OF ANY KIND, HOT OR COLD, ON CHURCH PROPERTY

Version 10.10 — Enhanced Field Operations Edition

Revision Date: September 14, 2026

Prepared for: CompuCom Vendors | Church Facilities Network Refresh Program

Note — Opening the Embedded PDFs

- ▶ This handbook has several PDFs embedded directly inside the file (Meraki guide, CommScope SYSTIMAX guide, SL Jack Tool Kit instructions, CommScope Copper Testing reference). Double-click any icon to open its PDF.
- ▶ If double-clicking does nothing, the document is most likely still in Protected View (common when it arrives by email, Teams, or a download). Click "Enable Editing" in the yellow bar at the top of the window, then try the icon again.
- ▶ Still not working after Enable Editing? Close the document, right-click the .docx file in File Explorer → Properties → check "Unblock" near the bottom of the General tab → OK, then reopen the file.

Table of Contents

Quick Reference

Project Workflow

Phase 1 — Site Assessment

Phase 2 — Cabling & Rack Installation Standards

Phase 3 — Standard Cable Runs

Phase 4 — Labeling

Phase 5 — Testing

Phase 6 — CNM Configuration

Phase 7 — NetSpot Validation

Phase 8 — Demolition

Phase 9 — Deliverables

Old Equipment Handling

Church-Provided Quality Acceptance Checklist

Technician Notes

Material Usage Log

Final Site Closure Checklist

Technician Signature

Appendix A — HVAC / BMS Examples

Appendix B — AV System Document

Appendix C — Acceptable Work Document (Statement of Work)

Appendix D — Meraki MX & Switch Installation Guide (Reference Summary)

Appendix E — CompuCom & Graybar Contacts

Appendix F — Rack Elevation Diagram

Appendix G — SL Jack Tool Kit Installation Instructions

Appendix H — CommScope Copper Testing (NVP Cable Selection)

Appendix I — Church Reference Links

Appendix J — Misc Photos

Document Control

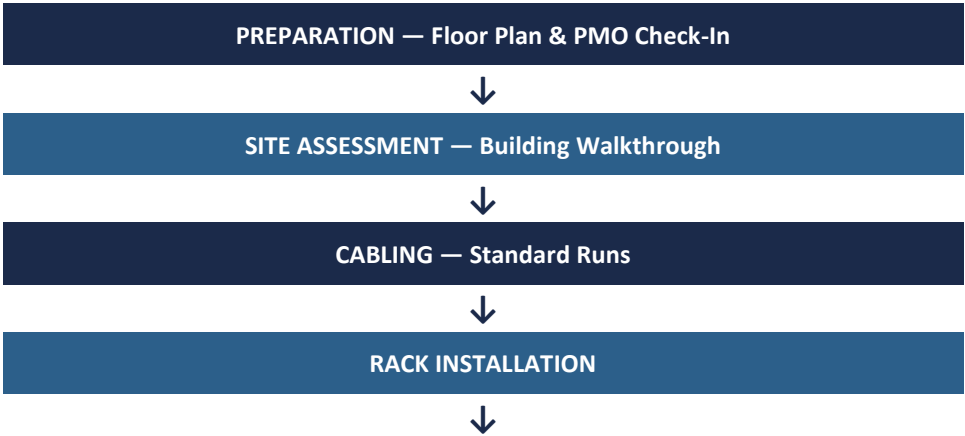
Quick Reference

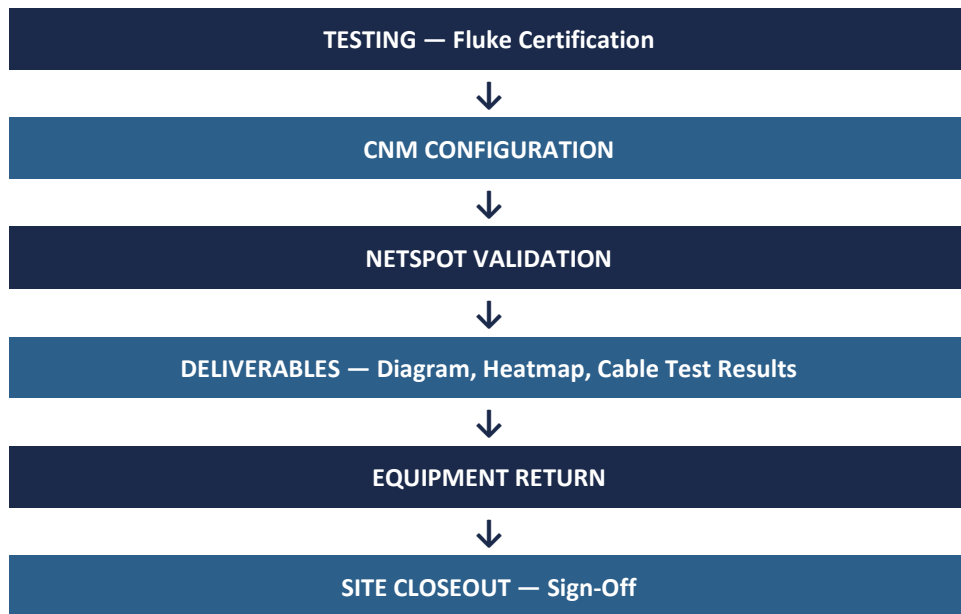
One-page technician summary — see the full section for complete requirements.

Area	Key Rule
Site Assessment	Job Start walkthrough — floor plans, access, ceilings, rack/AV location, HVAC, fire panel, FamilySearch
Rack Installation	Open frame vs. enclosed lockable rack; relocation approvals
Access Points	New Cat6A run to every AP; both ends blue
AV Systems	MS130 switch standard; SFP on replacement; QSC drops
HVAC	New Cat6A even on short runs; distributed systems get no drop
Fire Panel	Conditional — Yes, if present.
Security	Pull only if networked door system exists
Chapel Camera	Always pull new Cat6A; coil for future camera if none exists
Testing	Fluke set to CommScope Systimax; >1dB headroom, target 3.0dB+
NetSpot	-75dBm minimum; Android/laptop only; zig-zag survey pattern
Deliverables	Diagram, Heatmap, Cable Test Results (FLW + PDF) to PMO
Equipment Return	Remove SFPs, no repackaging needed, UPS drop-off
Technician Sign-Off	Complete signature and closeout checklist before leaving site

Project Workflow

End-to-end sequence for a standard meetinghouse network refresh:





Phase 1 — Site Assessment

Floor Plans & Building Access

Critical Requirement

- ▶ You **MUST** have the proper floor plan before starting cabling. If you do not, contact the CompuCom PMO to obtain the proper floor plan for your building.

- Floor plans provided are NOT exact matches, however they should be very close. We do not have floor plans per address — you will receive a generic floor plan for the floor plan style of the building you have. (Example: if you are at 1234 SW Johnson Drive, and that address is a “Sage 3” floor plan style, you will receive a generic Sage 3 floor plan, not one specific to 1234 SW Johnson Drive.)
- If the floor plan you received does not match the building you are in (generically), contact the CompuCom PMO.
- Contact PMO to get building access information / check in.

Building Walkthrough (first 1–2 hours on site)

- Spend the first 1–2 hours on site familiarizing yourself with the building layout, access to attics/mezzanines, crawl spaces, etc.
- Ceiling types — not just in hallways but look in rooms; a room may have a different kind of ceiling that can be used to run cable more easily.
- Take Photos of any Damage to building where you will be working (as to not get blamed for damage)
- Locate current network equipment.
 - Take Photos of current install. (this is for your reference later)
- Can the new rack be installed where the existing equipment is located?
- **Does it have a locking door? If yes = open rack. If no = enclosed rack.**
 - **Materials Center is considered Public Space (Enclosed Rack always in Materials Center)**
- Does the rack fit the space? Can the door open when mounted, etc.?
- Located current AV rack or racks (for cable pull knowledge).

- Take Photos of front and back of rack (if possible)
- Is there room next to the AV rack to locate next too? Rack If rack Relocation is necessary. Relocating near the AV rack (Especially if the AV rack is in the Materials Center) is ideal.
 - What about power?
- Does the building have a centralized or de-centralized HVAC system? (Look for a Honeywell or Pelican box that's Cat5-cabled today — for cable pull knowledge.) (Honeywell is typically a small black box with red on it)
- A building may or may not have a Fire Panel. If it has sprinklers, it has a fire panel. If it has fire alarms, it may or may not have a fire panel. Locate the Fire Panel (usually a red box on the wall with antennas on top, sometimes located in the vestibule) or inset/surface-mounted fire control box. If a Fire Panel is present, it gets a new pull.
- If the building has sprinklers, it has a fire box — you must locate it. It gets a new pull.
- Suggest opening every single door in the building — look for doors inside of doors (inside of rooms), including an exterior walk looking for doors and access ways. Sometimes you have to go outside to get to attic spaces. Sometimes equipment is located in outside electrical rooms (should be moved).
- Some doors will be locked and inaccessible — most likely the Bishop's office, Clerk's office, President's office, to name a few. If the key you have does not open one of these doors, contact the CompuCom PC group and have them contact the FM (Facilities Manager) for the building to find out where the **true master key is kept**.
- Look for a placard designating a Family Search Center. If FamilySearch is found, it does NOT get a dedicated cable run or switch — see the FamilySearch dongle policy below. Other clues: PMO/CompuCom tells you the building has a FamilySearch center.
- FamilySearch gets a new wireless dongle/adaptor for every computer. Leave the proper number of Dongles behind matching the count of computers



FamilySearch Center placard — bright green wall sign. Presence of this placard (or a bright-green QR placard) means the site gets the FamilySearch dongle policy below — not a dedicated cable run.

Phase 2 — Cabling & Rack Installation Standards

Critical Cabling Requirements

- ▶ **All structured cabling is to be Cat6A, including all patch cables.**
- ▶ Reuse of existing patch cable is strictly NOT permitted.
- ▶ Cables will be tested to submit for warranty — all cables MUST be installed to CommScope specifications for SYSTIMAX cable.
- ▶ Testing is NOT to TIA (Telecommunications Industry Association) standards, but well beyond that, to CommScope's standard.

Required Tools — CommScope SL Jack Termination Kit

- The CommScope Modular Jack Termination SL Tool Kit with Lacing Fixture is REQUIRED for this project. It is designed to terminate all AMP-TWIST and SL series modular jacks — it strips the cable, marks the foil, and terminates and cuts all eight conductors at once while maintaining twisted-pair integrity.



Commscope_172515
0-6_Modular_Jack_Te

Reference Document — SL Jack Tool Kit Installation Instructions (408-8858)

- ▶ CommScope's official instruction sheet for Tool Kit part number 1725150-[], covering setup, cable termination for unshielded and shielded cable, and maintenance.
- ▶ The full PDF is embedded in Appendix G — double-click the icon to open it directly.

Reference: [CommScope SYSTIMAX GigaREACH XL Infographic](#)

Link:

<https://webresources.commscope.com/download/assets/Infographic%3A+SYSTIMAX%C2%AE+GigaREACH%E2%84%A2+XL/76ede76a3bd511f0acd93e67199c332c>

If at any time you question the step you are on, escalate to the PCs and have them get support to define the situation correctly.



CommScope
Systimax Termination I

Cabling Support & Rack Location

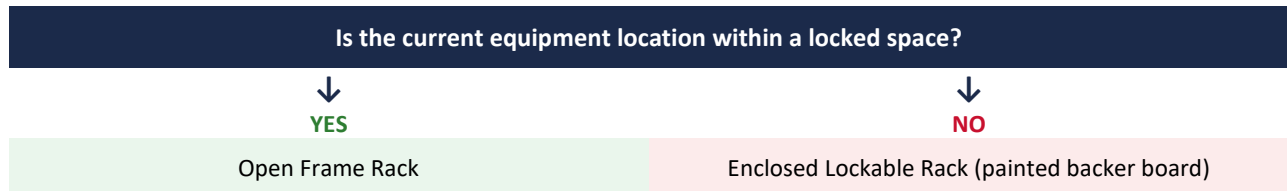
- Where a bundle of cables penetrates a ceiling (such as into the rack), a vertical sleeve must be in place. If a single cable penetrates a ceiling, use a small 1" sleeve with fire putty — there should be very few of these in any given installation.
- All structured cabling must be supported every 5' with j-hooks.
- All cable runs must have 1 foot of separation from any other type of cable (such as audio or fire panel cable).
- Do not use mechanical systems to support cables.
- No cables should be resting on sprinkler systems, HVAC, or high-voltage electrical. Never use building systems to support cables (such as a sprinkler pipe).
- Service loops must be hung from a J-hook.
- Locate existing equipment location (identified by MX Firewall and MS Switch).
- Is it currently located behind a locked door, or is it in a publicly accessible space? (A janitor closet is a publicly accessible space.)
- Does the rack need to be relocated to a different space due to space constraints, not ideal location, etc.?
- If the rack needs to be relocated, contact the CompuCom PMO, who will contact the FM (Facilities Manager) to approve.

Rack Relocation Priority

- **Option 1** — Keep the rack within 3–5 feet of the current network gear location. This is the default, preferred option.

- **Environmental exception** — The only thing that should change this is an environmental factor: a hot space, a dirty space, a wet space, or a location with an outside entrance. Any of these dictate a location change.
 - **If relocating — ALL Relocations MUST be cleared with compucom PMO**
 - Before contacting PMO have scouted 1-2 options of relocation
 - **If relocating** - the Materials Center is the first option. A clean, non-hot/non-dirty mezzanine is an equal second option.
- If the rack is relocating — will the internet access device (modem) need to be relocated by the Telco? Or can you just use a structured cable run to extend the demark (a jack-to-jack run)?
- Backer board in public space should be painted white. Raw wood is fine in non-public spaces.

Rack Selection



Phase 3 — Standard Cable Runs

All cable runs are expected to be supported every 5 feet (when possible) with j-hooks. Service loops are ideally hung by a j-hook. All jacks are to be placed in biscuits and secured to the surface with a drywall screw or self-tapping screw.

There are 4–5 standard runs within a church: AV (1–2 drops), HVAC, Fire, Security/Door, and PTZ (Chapel) Camera. Not all buildings have all of these runs — some may have all, some may have only a couple. But these are considered standard runs, and if they are not run, you will be asked why.

Cable Matrix

System	Pull New Cat6A?
Access Points (AP)	Always — patch cable both ends MUST be blue
AV	Yes — 1–2 drops depending on equipment; see AV System Document
HVAC	Yes, (if present) even if short run (gets structured cable run) (unless distributed system — see below)
Fire Panel	Conditional — Yes, if present.
Security / Door	Conditional — only if networked door system exists
Chapel (PTZ) Camera	Always — new drop even if no camera currently exists
FamilySearch	NO, Dongles Left for number of PC's
IP Phone	Always — new Cat6A required (do not reuse old/black work cable). Mission offices almost always have an IP phone.
Printer	Conditional — Sanctioned FamilySearch new Cat6A required (do not reuse old/black work cable). Missionary Office new Cat6A Required, Seminary Office new Cat6A Required
“Black Work”	Old network runs – Re-terminated on black Jacks (shoot(test) for pair mapping only)

Jack/Patch Cable Color Code Standard

Cable Purpose	Color
Access Points (AP)	Blue
AV	White
HVAC	White
Fire Panel	White
Security / Door	White
Chapel (PTZ) Camera	White
IP Phone	White
Printer	White
“Black Work”	Black (Separate Patch Panel – Bottom Patch Panel)

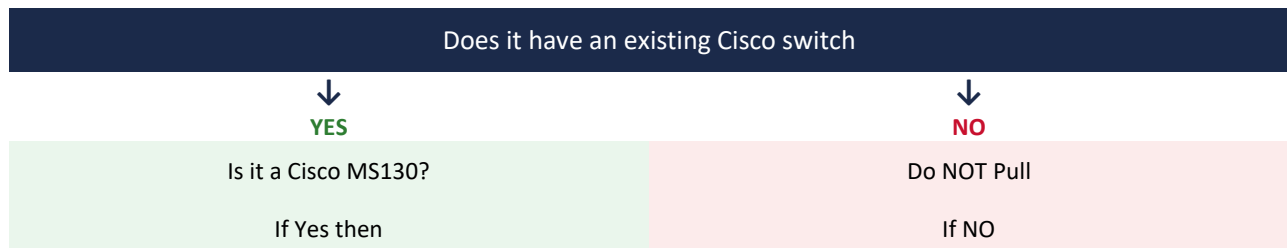
- Given the issues with obtaining product (Cable, Jacks, Patch Cables) the above color code can be bypassed. However, it can NOT be willy nilly. If you cannot adhere to the above standard due to unavailability of product there are certain exceptions that can be made.
- A site can be done in all Blue.
- A site can be done in Blue for AP’s and White for all other cables. (light gray patch cables are acceptable on white jacks if no white cables are available)
- Green jacks and patch cables can be bypassed if you do not have them. Use White.
- The above are the exceptions. Beyond that Approval needs to be obtained from the Compucom PMO.

Access Points (AP)

- All APs get a new Cat6A cable run. Patch cable — both ends MUST be blue.
- All AP’s are allowed a 3ft variance, however if it is in a room on the map it needs to stay in the room if at all possible.
- AP’s should avoid line of sight to each other. You should not be able to stand at one and see another. That is why they are in rooms and tucked around corners.

AV

- Identify the AV rack (there may be 2 in some buildings). Identify the AV equipment in the rack.



No Touch. Cable to it and patch to it
If it's a MS120 then replace with MS130.

Does it have Any Networked Switch back to the main network switch?
If no cable to rack and leave jack/patch cable
If it is networked Patch to the switch even if it's a netgear type switch.

- Does it have an existing Cisco switch? If yes, is it an MS130? If it is a Cisco switch but a lower model than an MS130, it gets replaced with an MS130 with a new cable run. If replacing a Cisco switch in the AV rack, use SFP at both ends. Refer to the Church CNM document (see CNM Configuration, below) for instructions.
- The MS130 in the AV rack must show green (healthy) in CNM — this requires an SFP link at both ends. If no SFP is available, a standard port on the main switch is also an acceptable connection.
- If there is a networked switch of any kind in the AV rack. Could be a Cisco, could be a Netgear, if it's plugged into a network cable that goes back to the network switch. **YOU MUST** plug your ran cable into that same port on the switch in the AV rack as the old one was.
- BSS Contrio: leave the existing unmanaged switch alone; leave a drop at the rack for the Contrio controller.
- Ivy: leave a drop at the rack and leave all existing cat cable for it alone.
- QSC: leave a drop at the rack and leave the existing QSC cabling and configuration alone — do not touch it beyond providing the new drop.

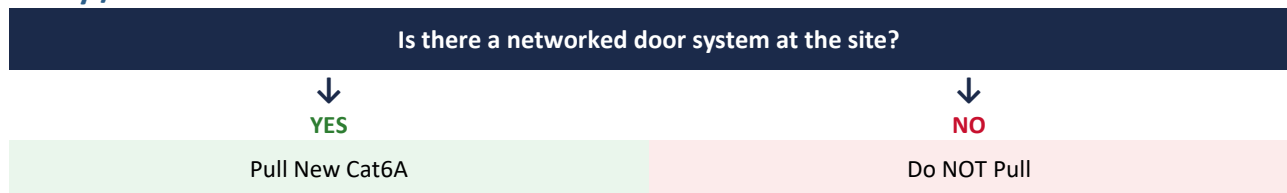
HVAC

- New Cat6A cable run, even if it's a short run.(see appendix A for details)
- There may be a closet that has all the Honeywell devices gathered together — place a drop in this location; this will be a white Cat6A patch cable on both ends.
- If no networked device or single cluster of devices is found, and all HVAC controllers have the Honeywell unit in their own closets, this is considered a distributed system and does not get a drop.

Fire Panel



Security / Door



Chapel (PTZ) Camera

- Pull new Cat6A cable to the camera. If no camera exists, pull a new run to the chapel, on the side closest to the network equipment location. This run gets a Jack, a service loop (hung on J hook), LEAVE A Patch cable.
- **Patch to camera** (Plug it in) if it is a **Clear Touch Model RL400 or RL500**. If it is any other model, pull to it and leave your pull coiled on a j-hook, secure jack and leave patch cable.

- Church-provided AV cameras are Clear Touch or Sony only — *any other camera brand found on-site is member-purchased and out of scope. We do not touch. We cable to location and that's it.*
- If old coax is still connected to the camera, pull a new drop — coil enough cable to be able to place the camera in the center of the chapel. Secure the biscuit jack on the side closest to the network equipment — out of sight, or in the mezzanine if you have access to one — and leave the patch cable coiled for the new camera (for future installation).

IP Phones and Printers

- If there are IP phones in the building, they get a new Cat6A run (White) (look for these in offices)
- Printer cabling is conditional by office type, not automatic for every printer — see the Cable Matrix in Phase 3: Sanctioned FamilySearch, Missionary Office, and Seminary Office printers each get a new Cat6A run (White); other printers are out of scope unless directed by the FM.
- IP Phones in FamilySearch get a new Cat6A run like other offices — FamilySearch no longer receives a dedicated switch.

“Black Work” (Old network cables) Bottom Patch Panel

- If the Rack was relocated. There will be NO black work. Relocating the rack abandoned all existing network cabling.
- If rack stayed in same or near-by location (and existing cables will reach) it is our job to re-terminate the old network runs (no matter there cable type) on to black jacks/patch panel that will locate in the bottom of the rack (above PDU).
- If cables will not reach, we consider them abandoned. However, if they will reach we re-terminate them for the church. No testing is required. No labeling. Just re-termination.
- All black work is on Black Jacks and uses black patch cables ONLY.

“Second Switch Required (If)

- If Rack relocated, the likelihood of needing a 2nd switch in the main network rack is slim.
- If the rack did not relocate and we have a lot of black work that is getting re-terminated, it is possible you will need a 2nd network switch. You should have a spare network switch in your truck stock. If you do not, contact compucom PMO ASAP.
- A 2nd switch is required if the 22nd port is going to be used on the first switch — in other words, once 22 or more ports are in use. CNM instructions show how to add a 2nd switch.

Phase 4 — Labeling

All patch panel ports and AP drops must be clearly labeled so cable test labels can be matched during certification (see Testing, below). Reference examples:

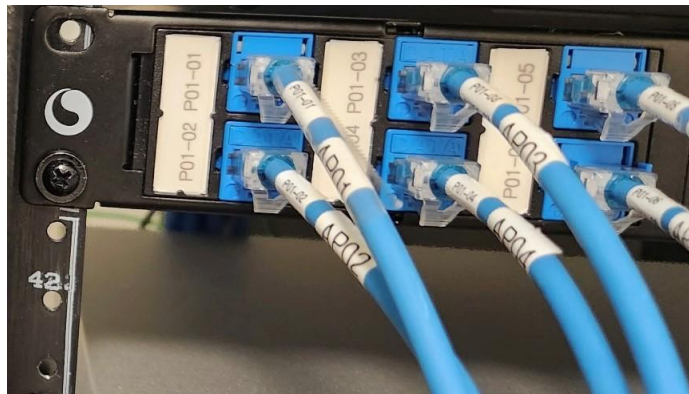
- Label all patch panels, jacks, patch cables, and devices.
- Every jack must be labeled with its Function and patch panel port number.
- Patch cables must be labeled on both ends. Example (Patch Panel Side – AP-01 P01-01 SW01 -01) (showing it goes to AP01 Patch Panel 01 position 01 in the patch panel)
 - Far end label = AP-01 P01-01 SW -01-01 (So that anyone that finds that patch cable knows it goes to patch panel 1 position 1 and to switch 1 port 1)

See Sample Photos

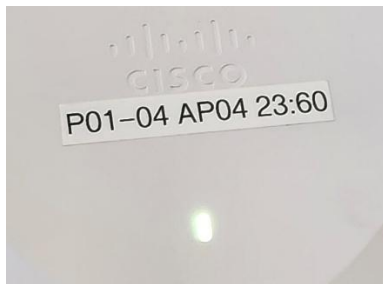
- Jacks that are not immediately used (such as for a camera) **must** be left with a patch cable.



Patch cable labeling example **near end – fair end** (with device) —labeled by system (AV-1, AV-2/Carrier, HVAC).



Patch cable labeling example near end – fair end (with device) — **Patch Panel label example**



AP label example — device tagged with patch panel port – position AP# last 4 of MAC (23:60).

Phase 5 — Testing

- Set Fluke to CommScope Systimax under the manufacturer's setup and select the type of cable listed on the box — it will typically be 1091 for non-plenum and 2091 for plenum.
- On the Fluke tester, set the Test Limit to Category 6A and the Cable Type to 1091 — no further selections are required.
- **Tests must include both patch cables in line with the structured cabling.**
- All cables must have a headroom better than 1dB. Ideally, we'd like to see a headroom of 3.0dB or higher.
- All cable test labels need to match cable labels (HVAC, AV1, AV2, AP-04, etc.).

- FLW and PDF files of testing MUST be provided to CompuCom PMO.
- Black work is not tested — no Fluke testing, no punch/connectivity check, no labeling. Just re-termination (see the Black Work section under Demolition for the full requirement).

Phase 6 — CNM Configuration

Background: meetinghouse networks are maintained jointly by the ward/stake Technology Specialist (TS), who monitors and troubleshoots day-to-day connectivity, and the Facility Management Group (FMG), who purchases, installs, and upgrades equipment (including this refresh project). See the Church's official Networking Overview:

<https://www.churchofjesuschrist.org/tools/help/networking-overview?lang=eng>



Meraki_MX_and_Switch_Installation_guide_

- **Take a snapshot of CNM for the site prior to doing any work in CNM.**
 - This will ensure you get things back for the AV system correctly.
- Make the AV ports look the same post-CNM work as they were prior.
- Utilize the Church's CNM manual for all CNM configuration.
- Before closing out, verify in CNM that all old APs, switches, and firewalls have been removed — confirm by serial number, not just by device name.
- Switch-to-switch connections should be SFP-to-SFP. The only exception is when a second switch is added as a secondary main switch — in that case, Port 22 to Port 22 is used instead. Always verify the correct configuration in CNM.
- **All ports need to be labeled in CNM.** You should have at a minimum 2 AP ports labeled AP1 AP2, etc. BMS, AV, Fire, Chapel Cam, FS (FamilySearch — if a printer or IP/VoIP phone run exists there; FamilySearch no longer has its own switch or uplink)
- **Uplink ports to AV switch Must be in Link zone or AV switch will show yellow in CNM**

Reference Document — Meraki MX & Switch Installation Guide

- “Meetinghouse Meraki Firewall and Switch Installation Guide, 2025–2026” — the Church's official hardware install and CNM configuration reference (MX firewall models, MS switch models, port/SFP wiring, and CNM port setup, including switch “LINK” configuration).
- The full PDF is embedded above — double-click the icon to open it directly.

CNM Troubleshooting

- A device showing yellow in CNM indicates a problem — this is often a cable issue (a bad punch, incorrect length, or the link negotiating at 100Mbps instead of 1000Mbps).
- Troubleshoot starting at Layer 1 (physical): test the cable and confirm it passes, and check the cable length in CNM.
- If a switch is showing yellow, it can also mean an SFP is not in use where one is expected.

Audio & AV Systems Testing

- Raise and Lower Podium. If it functions up and down, that test is good. If it does not go up and down then the AV run needs to be patched into the network switch in the AV cabinet.
- To test AV audio, play church-appropriate music (Enya is a good option) through the mic at the pulpit, turn on the system at the pulpit pedestal typically behind the pulpit.

- To test audio in the overflow area, open the sliding divider past the infrared sensor. When the sliding divider is past the sensor, you should hear audio in the overflow area.
- Repeat for the Cultural Center (Gym) — open the divider past the infrared sensor to ensure audio is present in the Cultural Center.
- Walk to the Relief Society room and the Primary room to confirm you can hear the music (system set to chapel; ensure it's set to chapel in that room). To test in Primary and Relief rooms you may find controls like this (below). Set them to chapel and your music should come through.



Phase 7 — NetSpot Validation

Requirement

- ▶ A NetSpot heatmap must be produced after cutover is done in CNM. The requirement is -75dBm throughout the building.
- ▶ Vendors are responsible for purchasing the NetSpot Pro (paid) license required for lead technicians and charging it to the project as an expense.
- ▶ This MUST be done on an Android or laptop device. iOS devices can run NetSpot, but they will NOT produce the proper output we need.

- To do a proper NetSpot survey you need to walk the entire chapel, taking readings in various areas of the chapel including the pulpit.
- Walk to every room you can access around the building and take a reading in every room.
- NetSpot is required for final wireless validation, coverage verification, and project deliverables.
- When performing wireless surveys, keep the laptop or survey device as stationary as possible while collecting measurements. Excessive movement may affect signal readings and survey accuracy.
- Maintain a consistent testing environment whenever possible. Environmental changes, including opening doors or windows, may impact wireless signal measurements.
- When conducting a site survey, start in one corner of the area and move methodically through the building using a zig-zag pattern until all required areas have been surveyed.
- Ensure all accessible rooms, hallways, offices, and common areas are included in the survey.
- Review survey results before leaving the site to verify complete coverage and identify any areas requiring additional validation.
- If surveying an area that cannot be reached with a standard wireless adapter, an external Wi-Fi adapter with a higher-gain antenna may be used. Verify that all equipment complies with local regulations and company requirements before use.

NetSpot Training Video: [watch on YouTube](#)

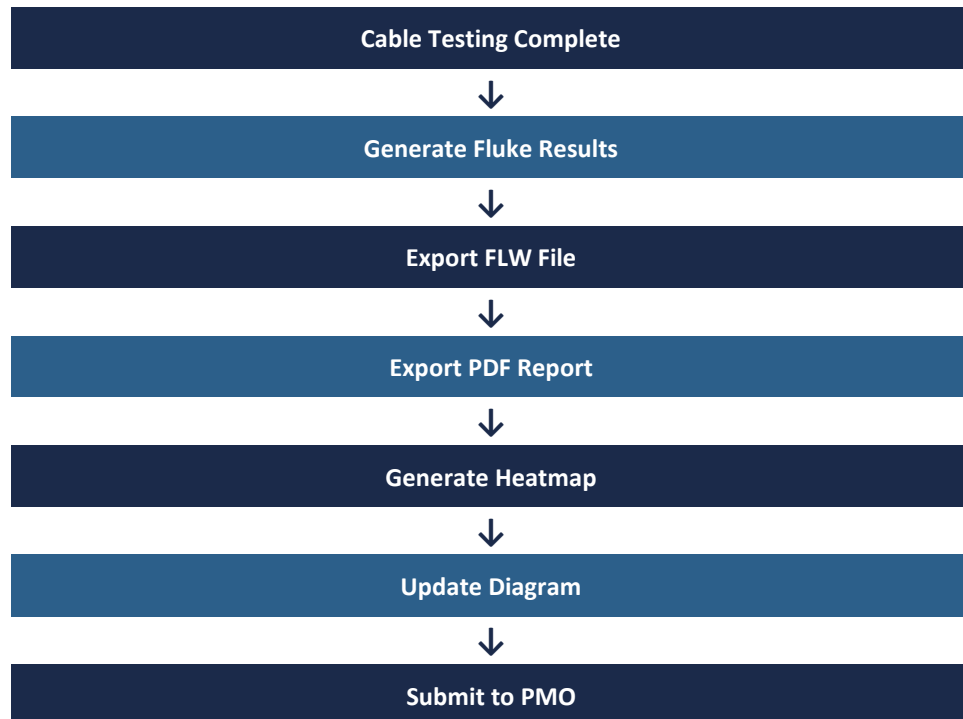
Link: <https://www.youtube.com/embed/iUU3Ak8dAlw?si=nSjxp7TldBAMcgir>

Phase 8 — Demolition

- All cable pulls for old APs get removed as far back as possible — preferably all the way back to the closet.
- **If rack location has moved. Remove all cables that went to old network location!**
 - **Black work** (existing/old cabling) does not need to be replaced, but it may need to be toned and traced to identify it.
- **IP phones and printers must always be run on new Cat6A** — do not terminate them onto black work- they are White jacks (new non-AP runs)
- If Rack is staying the original location
 - Relocate existing cables into the new bottom patch panel (old work/**black work**). Any existing cables that do not reach the patch panel will not be re-pulled and should be removed if it will not damage other building systems or infrastructure.
- Remove from the network any small switches and cables from the clerk's office and FamilySearch.
- Install blank faceplates in locations that have had network cables removed.
- Any old cable that ran to the old switch or patch panel and is being removed gets a blank faceplate installed at the jack; if you need to identify which cable is which, tone it first.
- If the rack is relocating, all old cables that ran to the original equipment location must be removed fully — to the fullest extent possible. Cutting the cable and leaving it in place is not an option.

Phase 9 — Deliverables

Deliverables reorganized so FLW files and PDF reports fall under Cable Test Results:



Closeout Photos

All Photos MUST BE LABELED (especially photos of AP's) (we need to know the AP we are looking at)
Photos of Every terminated drop — including drops provisioned for future use (e.g., BMS/HVAC, Fire Control, A/V)
— MUST have a patch cord attached when photographed.

- Front of the rack
 - Showing labels on rack and labels of patch cables
- Each AP
 - Close up of label on AP
 - Distance photo showing Ceiling to floor
- Each additional drop (VMS, AV, FamilySearch Printer, FamilySearch IP Phone, printer, VoIP phone) (Showing mounted jack and patch cable both labeled)
 - Photo of each Jack/service loop, each jack labeled and that a patch cable was left or is plugged in
- The trunk(s) run photos, showing J-hooks/cable supported every 5 ft (minimum)

Updated Building Diagram

Dated with upgrade date. An updated diagram of the building with markers identifying locations of the network rack and APs, including full serial numbers of the APs. (Example: AP-01 = 00:00:AF:5F:C2:00)

You can use your floor plan heat map for this or snap a photo of a fire escape plan at the site (often found in the custodial closet)

- AP locations
- Rack location
- AP serial numbers (full)

NetSpot Heatmap

Dated with upgrade date. An image of your new heatmap showing minimum -75dBm Wi-Fi coverage throughout the building.

- Dated
- Coverage verified -75dBm throughout the building

Cable Test Results

Dated with upgrade date. The cable test results — all cable terminations must pass Fluke testing (Fluke set to CommScope Systimax under the manufacturer's setup, cable type 1091 non-plenum or 2091 plenum as applicable).

- Headroom better than 1dB; ideally 3.0dB or higher
- Label matching — cable test labels match cable labels (AP01, Fire, BMS, for example)
- SYSTIMAX compliance
- PDF File and FLW file are required.

Required Attachments

- ☐ FLW File
- ☐ PDF Test Report

Old Equipment Handling

- Each Monday when Meraki equipment arrives, there is a return packing slip in the bubble envelope for the old equipment return.
- Old equipment does not need to be packaged — it can simply be thrown in the box and sent.
- Before sending back old equipment, remove any and all SFPs and retain for re-use.

- Attach the return label to the box with the equipment in it and drop it at a UPS location. There is no promptness needed — this can be done whenever time permits.
- All old Cisco equipment (e.g., from the AV rack) follows the same process — box it up, attach a return label, and drop it at a UPS location.
- Old personal equipment (e.g., unmanaged hubs) that is removed — only applicable when it sits at the end of a cable run being demolished — should be boxed and left near the network rack location rather than returned.
- For decommissioned equipment without a pre-supplied return label, seal it up, request a label from the CompuCom PCs, and follow their instructions.

Church-Provided Quality Acceptance Checklist

Complete this checklist on-site prior to closeout. This is the Church's official acceptance checklist, unchanged from the source Vendor Guide.

Acceptance Item	Yes	No
1. The network rack is installed in the appropriate location and is up to code.	☐	☐
2. The network rack is in a locked room or, if not, it has a lockable faceplate.	☐	☐
3. The cables are dressed and supported according to IAW standard (e.g., sleeves for wall penetrations, J-hooks).	☐	☐
4. Cables in the patch panel are clearly labeled (APs, HVAC, AV, etc.).	☐	☐
5. The rack area is clean (there are no loose spare parts or garbage lying around).	☐	☐
6. The network equipment is installed correctly (e.g., firewall is not stacked on other equipment).	☐	☐
7. All holes in the ceiling are patched.	☐	☐
8. The sound system is working. Turn the sound system on and speak into the pulpit microphone. Move the pulpit up/down.	☐	☐
9. Audio is working in the overflow and cultural hall. Play audio through the pulpit microphone (e.g., with a smartphone playing music). Open and close the first folding partition. Does audio overflow to cultural center/overflow?	☐	☐
10. Touch panel audio systems (if applicable) are working. These are usually at the pulpit, cultural hall, or in the equipment rack. Ensure the panel is functional.	☐	☐
11. Systems with BSS Contrio Panels (if applicable) are working. Panels are usually located in the Relief Society Room, Primary Room, and at the video equipment rack.	☐	☐
12. ListenWIFI (if applicable) is working. Open the ListenWIFI app and verify connection to the server.	☐	☐
13. Audio system with Bluetooth modules (if applicable) are working. Press the button on the module until it flashes. Open Bluetooth settings on your smartphone and select the room. Play an audio file (one that is not inappropriate to play in a church setting).	☐	☐
14. Clear Touch PTZ camera (if applicable) is set up properly. Log on to the camera and ensure the controls work.	☐	☐

Acceptance Item	Yes	No
15. Audio systems with HDMI video distribution (if applicable) are working properly. Connect a laptop to at least one input and verify distribution to at least one output.	☐	☐

Technician Notes

Site Notes

Use the space below for general site notes.

Escalations

Date	Contact	Discussion

Cabling Notes

Run ID	Installed	Notes
AP-01	☐	
AP-02	☐	
AP-03	☐	
AP-04	☐	
AP-05	☐	
AP-06	☐	
AP-07	☐	
AP-08	☐	
AP-09	☐	
AP-10	☐	
AP-11	☐	
FamilySearch Printer	☐	
FamilySearch IP Phone	☐	

Run ID	Installed	Notes
HVAC	☐	
AV-01	☐	
AV-02	☐	
Fire Panel	☐	
Door/Security	☐	
Chapel Camera	☐	
IP Phone	☐	
Networked Printer	☐	

Material Usage Log

Status: **OPTIONAL**

Material	Quantity
Cat6A Cable	
J-Hooks	
Biscuit Jacks	
Patch Cables	

Final Site Closure Checklist

Site Survey

- ☐ Building surveyed
- ☐ Floor plan verified
- ☐ Rack verified
- ☐ FamilySearch verified

Installation

- ☐ Rack installed
- ☐ AP's complete
- ☐ HVAC complete
- ☐ AV complete
- ☐ Security complete
- ☐ Camera complete
- ☐ Fire, Door, BMS, FamilySearch Printer, FamilySearch IP Phone, IP Phone, Printer

Configuration

- ☐ CNM complete
 - All Ports Labeled in CNM
 - All is Green in CNM
- ☐ Connectivity verified

Validation

- ☐ Fluke testing complete (to 1091 standard, see appendix H)
- ☐ NetSpot complete
 - Minimum -75dBm verified

Deliverables

- ☐ Photos - See Phase 9 Above (Closeout Photos) (all labeled)
- ☐ Updated diagram complete
- ☐ Heatmap complete
- ☐ Cable tests complete
- ☐ FLW attached
- ☐ PDF attached
- ☐ Submitted to PMO

Equipment Return

- ☐ SFPs removed
- ☐ Return label attached
- ☐ UPS scheduled

Closeout

- ☐ Work area cleaned
- ☐ Ceiling restored
- ☐ Faceplates installed
- ☐ Technician sign-off complete
- ☐ Site Cleaned up/Vacuumed

Technician Signature

- ☐ **Lead Technician**
- ☐ **Name** _____
- ☐ **Company** _____
- ☐ **Phone** _____

- ☐ Email _____
- ☐ Signature _____
- ☐ Date _____
- ☐ **Secondary Technician**
- ☐ Name _____
- ☐ Signature _____
- ☐ Date _____

Appendix A — HVAC / BMS Examples

Here is one type of HVAC/BMS you may find:

Honeywell [LGW1000](#)

Link: <https://prod-edam.honeywell.com/content/dam/honeywell-edam/hbt/en-us/documents/manuals-and-guides/installation-guides/31-00130.pdf?download=false>



Honeywell LGW1000 gateway — unit exterior.



Honeywell LGW1000 installed in an HVAC/BMS closet with network patch connection.



Pelican installed in an HVAC/BMS closet with network patch connection.

Appendix B — AV System Document

[Network Connections for Meetinghouse AV Systems.pdf](#)

(If it looks corrupted when opening, try again.)

Link: https://tech.churchofjesuschrist.org/wiki/images/b/bc/Network_Connections_for_Meetinghouse_AV_Systems.pdf

Appendix C — Acceptable Work Document (Statement of Work)

Source: “Meeting House Scope of Work — Acceptable Work.pdf” (embedded in the original Vendor Guide). Full text reproduced below.

Included for Reference from Church. Not the Compucom deliverables requirements.

1. Introduction

This Statement of Work (SOW) outlines the requirements and scope of the global network refresh project for thousands of meetinghouse networks. The objective of this project is to enhance the network infrastructure by replacing outdated equipment and installing new, advanced networking components to improve performance, reliability, and security.

2. Scope of Work

The scope of work includes the following tasks:

- **Removal of Old Equipment:** Technicians will remove the existing network equipment, including firewalls, switches, and wireless access points (APs).
- **Installation of New Equipment:** Technicians will install new firewalls, switches, APs, and rack (where necessary) in each meetinghouse. The new equipment will be installed according to the technical specifications and locations defined below.
- **Cable Replacement:** All cables connecting to APs will be replaced with Cat6A cables. Technicians will ensure that the new cables meet the required standards for performance and reliability. Any new raceway shall be

concealed, and any exceptions — including surface raceway and their proposed pathway — must be approved by the FM.

- **Patch Panel Installation:** A new patch panel that matches the brand of the installed cables will be installed for the APs. Patch cables will also be replaced with Cat6A cables of the same brand as the patch panel.
- **Reconnection of Network Cables:** Technicians will reconnect all other network cables to wall plates, including those in clerk offices, printers, and other networked devices, into the new patch panel.
- **Other Network Services:** Technicians will run new cables to connect any Building Management Systems, Audio/Visual equipment, and networked physical access systems.
- **AP Installation:** APs will be installed according to the technical specifications provided and locations. Where predictive heatmaps are available, APs will be installed within 3 feet of the identified locations. In the absence of predictive heatmaps, technicians will recommend the number and placement of APs based on existing heatmaps with similar building materials and square footage. If there are no comparable heatmaps or buildings, request assistance from the Church Field Network Engineering team.
- **Additional Cable Installation:** An additional cable is to be run from the switch to the back of the chapel of each meetinghouse — exact position yet to be determined — for future use.
- **Repair Construction Damages:** Repair any damage done in the process of installation; the location should look as good as or better than previous.

3. Technical Specifications

The following technical specifications must be adhered to during the installation process:

- Cable specifications as defined in Appendix A (of the SOW).
- APs mounted on the ceilings (not above) in the orientation specified by the manufacturer for best signal propagation.
- All devices are labeled with the manufacturer serial number in capital letters, in a dark font, on a white background label.

4. Project Timeline

- Work will be divided into the existing Church Areas. Timelines for each area will be defined.
- The first phase of this project will include about 1,500 locations, generally located within Utah (75%+), Idaho, Arizona, or in close proximity to those borders.

5. Deliverables

The following deliverables are expected upon completion of the project:

- A fully functional and upgraded network infrastructure for each meetinghouse network.
- Documentation of the installation process, including diagrams and configurations.
- A final report summarizing the cable and wireless network signal strength.

6. Acceptance Criteria

The project will be considered complete when the following criteria are met:

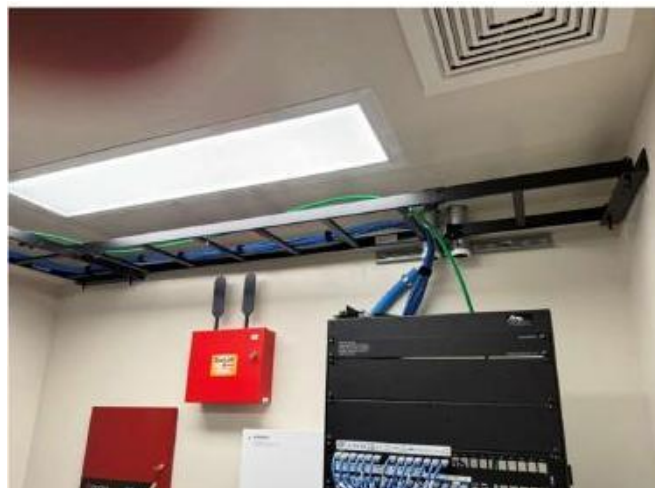
- All old network equipment has been successfully removed.
- New firewalls, switches, and APs have been installed and racked as shown below, and configured according to the heatmaps or approved AP placement.



SOW reference photo — open-frame rack installed in an A/V closet with patch cabling dressed to the panel.



SOW reference photo — wall-mounted enclosed rack with switches and patch panel installed.



SOW reference photo — ceiling cable tray routing into a wall-mounted patch panel, adjacent to fire panel.

SOW reference photo — Cat6A cable run supported through a mezzanine space with wood blocking.

Editorial notes from the original SOW document (retained for completeness): “Add photo of ideally configured rack in A/V closet” and “Also include riser diagrams, room layouts, etc. from new builds.”

Appendix D — Meraki MX & Switch Installation Guide (Reference Summary)

This appendix organizes the full working content of the Church's “Meetinghouse Meraki Firewall and Switch Installation Guide, 2025–2026” (embedded in the CNM Configuration section) so every spec, port assignment, and step is available in-line without opening the PDF. It is a complete technical summary, not a substitute for the source PDF — open the embedded file for original screenshots and diagrams.

THIS IS A SUMMARY ONLY! USE THE ACTUAL GUIDE FOR CONFIGURATION

Meraki Managed Firewall

- The MX67 is the currently recommended firewall model for meetinghouses.
- Sites running an MX64, MX65, or MX68 should have their firewall replaced with an MX67.
- Sites already running an MX75, MX85, MX95, MX105, MX250, or MX450 are supported as-is and do not need to be swapped.
- Firewall Port 2 connects to SFP port 25 on the Meraki switch via an SFP module. Ports 3, 4, and 5 are disabled after installation (Port 3 may be used temporarily during install to reach CNM).
- If no SFP module is available, connect to a switch access port instead and set that port's role to “Link” in CNM.

Meraki Managed Switches — General Requirements

- Read the full guide before starting a switch install; label every cable before disconnecting it from an existing switch.
- Every meetinghouse worldwide must have at least one Meraki managed switch installed.
- All MS120 switches are removed as part of this refresh. Existing MS130 switches may remain in service.
- Unmanaged (non-Meraki) switches are no longer permitted after the refresh — all devices on them must move to properly configured ports on a Meraki managed switch.
- A mobile computer or iPad with independent internet access is required on-site to activate and configure switches in CNM.
- All wireless APs must connect directly to a Meraki managed switch — never to a legacy Cisco switch. Legacy Cisco APs must be upgraded to Meraki APs, not connected to a Meraki switch.
- Order one SFP module per switch; a second switch needs two additional SFP modules (one for each end of the inter-switch link).
- Two technicians make the cable-identification process significantly easier, especially for AP drops.
- Switches are logically tied to the site's Meraki firewall inside Meraki Cloud/CNM.
- The 48-port switch is reserved for sites with 22 or more in-use Ethernet drops at a single location, and must be separately purchased by the FM group — it is not included in the standard 2025–2026 refresh kit.

SFP Modules

- Approved optics: 1000BASE-T SFP transceiver for Category 5e/6 copper.

- SFP port locations: SFP 25 on the 24-port switch, SFP 9 on the 8-port switch, SFP 49 on the 48-port switch (this is where the firewall connects).
- When a second switch is added, install a second SFP module in Port 26 of the first 24-port switch (Port 10 on an 8-port, Port 50 on a 48-port) to link the two switches together.
- To install: open the SFP lock, insert the module, then close the lock — this secures the module in the switch. Only connect the data cable once the lock is closed.
- To remove: open the lock first, then withdraw the module.

Pre-Installation Prep — Cable Labeling

Before disconnecting anything, tag every cable coming into the closet by destination:

- AP — Wireless Access Points
- Clerk / BP / SP — Clerk's and unit leaders' offices
- HVAC / Locks / FAC — HVAC, door locks, and other facility devices
- AV — Webcast equipment and audio/video distribution
- FHC — Family History Center (if present)
- ~~S&I — Seminary & Institute teacher offices and classrooms (if present)~~
- FM / Mission — FM office, mission office, etc. (if present)
- Everything else (all remaining rooms) is Public zone.
- This is a good moment to identify unused classroom drops — leave them disconnected to cut down on needed switch ports, and label the faceplate “disconnected.”
- Photograph the existing configuration before changing anything, for troubleshooting reference, and leave a port-mapping sheet next to the switch for future techs.

Switch Configuration Diagrams — Connection Steps

Single 24-Port Switch

- Connect firewall Port 2 to SFP 25 on the new switch (SFP module pre-installed).
- Connect all Meraki APs to the switch starting at Port 1, using as many ports as needed.
- Move any Facility-zone devices (HVAC, door locks, etc. — normally remotely managed or needing inter-building comms) to the highest-numbered ports, working down from Port 24.
- Move everything remaining off any unmanaged switch onto the new Meraki switch — most of these become Public-zone ports (unit leader/clerk offices, material center, podium, classrooms). Any port can be set to AP, Link, Public, Facility, IoT, or Workforce, or left disabled.

Two Switches

- Connect firewall Port 2 to SFP 25 on the first switch.
- Connect APs to the first switch starting at Port 1.
- Install an SFP module in Port 26 of the first switch and link it to Port 9 (SFP) on the second switch. No unmanaged switches may remain after this step.
- Connect facility devices (HVAC, door locks, etc.) to any available port on either switch and set the role to Facility in CNM.
- This layout applies to any two-switch meetinghouse, including when the switches sit in different rooms.

Three Switches

- Same base steps as the two-switch layout for the first and second switches.
- If a third switch is needed, connect its SFP 9 port to SFP 27 on the first switch — never to the second switch (no daisy-chaining).

Replacing an Existing Firewall with an MX67 in CNM

Only needed if the site is not already on an MX67 (or MX75/85/95/105) — otherwise skip straight to switch activation.

- Unbox the new MX67 and note its serial number (Cloud ID).
- Log into CNM at <http://cnm.churchofjesuschrist.org> with your Church Account.
- Search for the meetinghouse, open its Properties, then the Network that contains the current firewall's serial number.
- From the Network Details menu, choose “Replace (RMA)” and enter the new MX67's serial number, then Save Changes.
- Once CNM completes the swap, disconnect the ISP and switch cabling from the old firewall, connect the ISP line to the new MX67's Internet port, and power it on. Wait for a solid white status light before continuing.

Adding Switches / Access Points in CNM

- Unbox the new device and note its serial number (switch SNs are on the back panel).
- In CNM, open the site's Menu → “Add Devices,” enter the serial number and a descriptive label (add multiple rows at once with “+Add” when adding several APs together), then click Add Devices.
- Wait for the device to appear in the Switches or Wireless list for the property.
- Physically cable the new device to the firewall/switch per the applicable diagram above, and wait for a solid status light before moving on.
- APs are currently model CW9172I.
- Repeat for each additional switch or AP being installed.

Status Light Reference

Device	Light	Meaning
Firewall	Orange	Booting up, or no internet access if it stays orange
Firewall	Rainbow cycle	Communicating with the Meraki cloud
Firewall	Blinking white	Functional, updating firmware
Firewall	Solid white	Online and ready
Switch	Orange	Booting up, or no internet access if it stays orange
Switch	Rainbow cycle	Communicating with the Meraki cloud
Switch	Blinking white	Updating firmware (will reboot to orange once installed)
Switch	Solid white	Complete and ready
AP	Orange	Booting (permanently orange suggests a hardware issue)
AP	Rainbow	Initializing / scanning

Device	Light	Meaning
AP	Blinking blue	Upgrading
AP	Green	Ready, no clients connected
AP	Blue	Ready, clients connected
AP	Blinking orange	Can't find an uplink to the switch
Switch	Yellow	Trouble — often a cable issue (bad punch, wrong length, or linking at 100Mbps instead of 1000Mbps); can also mean an SFP is not in use. Start troubleshooting at Layer 1 (physical): test the cable and check length in CNM.

Note: switch/firewall lights can sit on solid orange for several minutes before settling to solid white — that's expected. If a light never reaches blinking/solid white, consult the Meetinghouse Network Troubleshooting guide.

Configuring Switch Port Roles in CNM

Set each port's role from the switch's Ports menu (three-dot menu → Ports):

Role	Use
AP	Meraki Wireless Access Points only
Disabled	Unused port, or a port that should not be used without authorization
Facility	Remotely-managed or inter-building facility devices (HVAC, door locks, AV systems). Never leave these on the firewall's old Port 4 after the switch install.
IoT	Cloud-managed devices needing only simple internet access — no local management permitted
Link	Only for connecting a second switch when SFP ports aren't available
Public	Clerk's/unit leaders' offices, material center, podium, chapel, and all classrooms
Workforce	Seminary & Institute teacher offices, FM offices, Family Services offices, or any port used by a Church employee

Testing the Network After Install

- Confirm all AP status lights are green or blue (see Status Light Reference above).
- Both the wireless guest network and wired clerk computers should be able to reach ComeUntoChrist.org (wireless clients must accept the Terms of Service splash page first).
- If anything isn't working, consult the Meetinghouse Network Troubleshooting guide before escalating.

When Is a Second or Third Switch Needed?

- A 24-port switch with 22 or more in-use ports (including APs) needs a second switch — every wired device must land on a Meraki switch.
- A third switch should connect to SFP 27 on the first switch when possible; if no SFP is free, use any available port on the first switch configured as “Link.” Never connect a third switch to the second switch.

- Multiple network closets each need their own switch, but every closet switch must trace back to the first switch, which connects to the firewall.

Heat & Stacking Guidance

- Do not stack other electronics on top of or underneath the MX67 firewall.
- Avoid stacking the 8-port switch under or on top of other devices where possible — both the 8-port switch and the MX67 need open airflow around them.
- Stacking directly against other devices restricts heat dissipation and can lead to failures.
- The 24-port switch has an internal fan, so other switches can be safely stacked on top of it.

Post-Installation Cleanup

- Remove old MS120 switches from both the physical network and CNM (three-dot menu → red “Remove” button).
- Remove old APs (MR32, MR33, MR36 models) from the Wireless tab in CNM the same way.
- Photograph the finished racks and equipment, then upload them to the property's Documents in CNM via “Manage Documents” (see the Church's file-upload guide, “Uploading_Files_to_CNM.pdf,” on the tech wiki).

Appendix E — CompuCom & Graybar Contacts

Project contacts and material will-call locations for the Church Meraki Refresh Project.

CompuCom Contacts

- **Hector Gonzalez — Project Manager** — Hector.gonzalez@compucom.com
- **Jose Zapata — Project Coordinator** — Jose.zapata@compucom.com
- **Kristin Thayer — Project Coordinator** — Kristin.Thayer@compucom.com | 612-642-2002
- **Vince Carter — Technical Escalations and Quality Control** — Vincent.carter@compucom.com | 816-694-2595
- **Adam Murphy — Lead Engineer** — Adam.murphy@compucom.com | 816-529-0284
- **Don Bilotta — Vendor Management** — Donald.bilotta@compucom.com | 612-812-6077
- **Johnny Whitesell — Program Director** - Johnny.Whitesell@compucom.com | 336-970-8902

Graybar Contacts

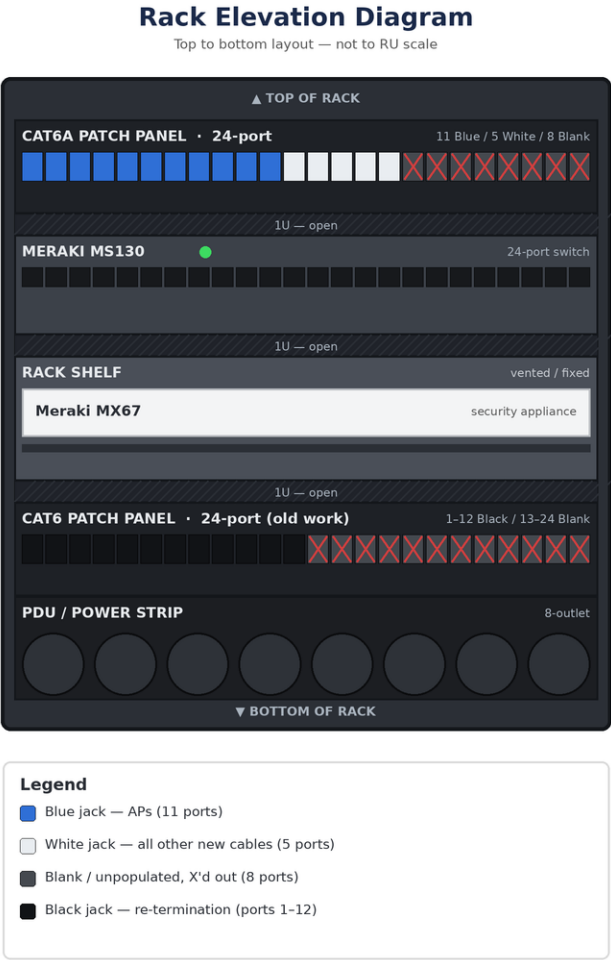
- **Traci Clark — Process Orders** — Traci.clark@graybar.com | 763-898-5604
- **John Bauer — Sales and Parts Contact** — John.bauer@graybar.com | 763-898-5617

Graybar Will-Call Locations

- Dallas Area Service Center — 2700 Regent Blvd Ste 300, Dallas TX 75261 | 214-702-5900
- Oklahoma City — 103 NE 44th St, Oklahoma City OK 73105 | 405-523-4400
- Tulsa — 12535 E 52nd St, Tulsa OK 74146 | 918-461-3200
- Amarillo — 1900 SW First Ave, Amarillo TX 79106 | 806-379-5600

Appendix F — Rack Elevation Diagram

Reference layout for standard rack elevation and patch panel port color-coding, top to bottom.



Rack elevation — CAT6A patch panel, Meraki MS130 switch, MX67 on shelf, old-work CAT6 patch panel, and PDU.

- Port color-coding: Blue = APs. White = all other new cables. Black = re-termination (old work, ports 1–12). Blank (X'd out) = unpopulated.

Appendix G — SL Jack Tool Kit Installation Instructions

CommScope's official instruction sheet (408-8858) for the Modular Jack Termination SL Tool Kit with Lacing Fixture — required for terminating AMP-TWIST and SL series modular jacks on this project.



CommScope SL Jack Tool Kit Installation

[SL Jack Tool Kit Installation Instructions \(408-8858\)](#)

- The full PDF is embedded above — double-click the icon to open it directly.

Appendix H — CommScope Copper Testing (NVP Cable Selection)

CommScope reference on Nominal Velocity of Propagation (NVP) and why selecting the correct CommScope cable type on the Fluke tester — not a generic category — matters for accurate test results.

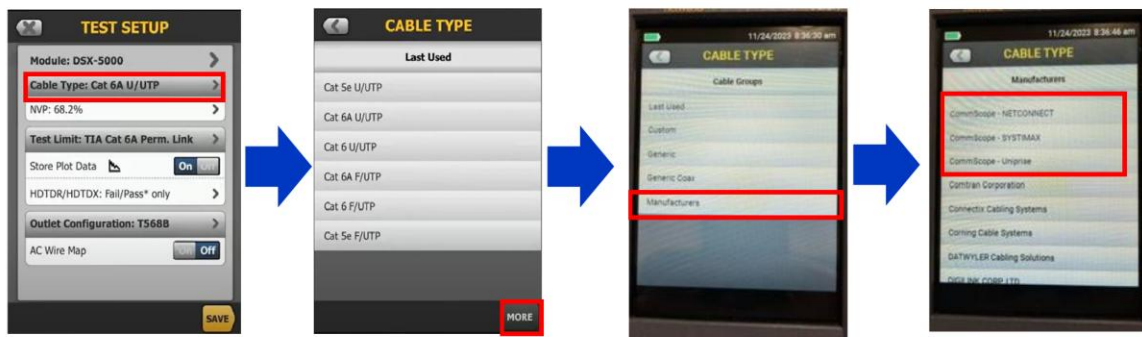
- On the Fluke tester: Test Setup → Cable Type (Category 6A) → More → Manufacturers → select CommScope cable (SYSTIMAX,) Cable Type to 1091



CommScope Copper Testing
- NVP Cable Selection

- The full PDF is embedded above — double-click the icon to open it directly.

Selecting the correct cable



Ensure to select the correct CommScope Cable, not a generic category type!

3 | © 2026 CommScope, Inc.

COMMScope

Fluke tester — selecting the correct cable (CommScope Copper Testing reference, p.3).

Appendix I — Church Reference Links

Official Church TechWiki references for meetinghouse networking, Church Network Manager (CNM), and firewall/switch troubleshooting.

- [Meetinghouse Networking — TechWiki](#)
- [Church Network Manager — TechWiki](#)
- [What is Church Network Manager — TechWiki](#)
- [Troubleshooting Firewalls — TechWiki](#)
- [Uploading Files to CNM \(PDF\)](#)
- [Replace Existing Firewall \(PDF\)](#)
- [Lehi and Liahona Wireless Networks — TechWiki](#)
- [Troubleshooting Meraki switches — TechWiki](#)

Appendix J — Misc. Photos

Sample reference photos for common site conditions and correct installation practices.

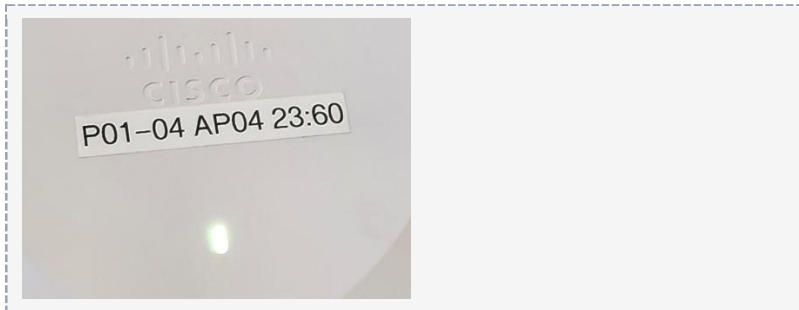
Sample: Correctly Labeled Rack (Front View)



Shows rack labeling, port numbering, and patch cable labels per the Labeling requirements.

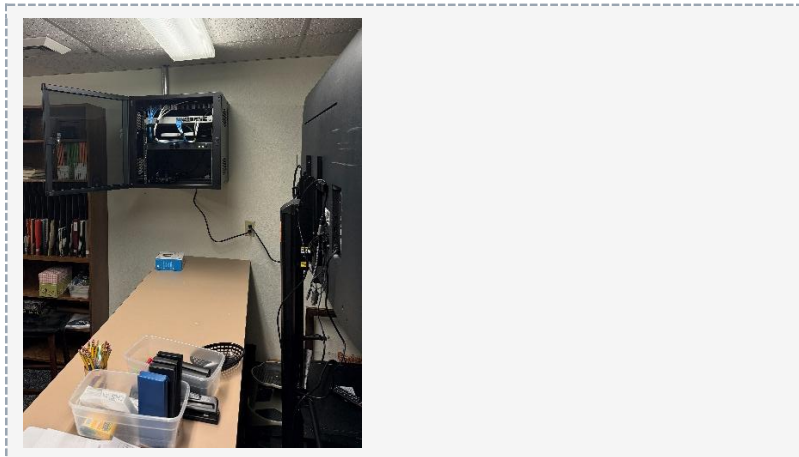
As well as Patch Cable Labeling (near end - far end)

Sample: AP Close-Up with Label



Close-up of an AP showing its label and, where required, distance from ceiling to floor.

Sample: Good rack location in materials center



Out of the way next to power. Good location in materials center

Sample: J-Hook Cable Support Trunk run



Trunk run supported every 5 ft (minimum) with J-hooks. 1ft distance between other cable runs

Sample: Terminated Drop with Patch Cord Attached

[Insert photo here]

Every terminated drop — including future-use drops (BMS/HVAC, Fire Control, A/V) — must show a patch cord attached when photographed.

Sample: Building Damage / Pre-Install Condition

[Insert photo here]

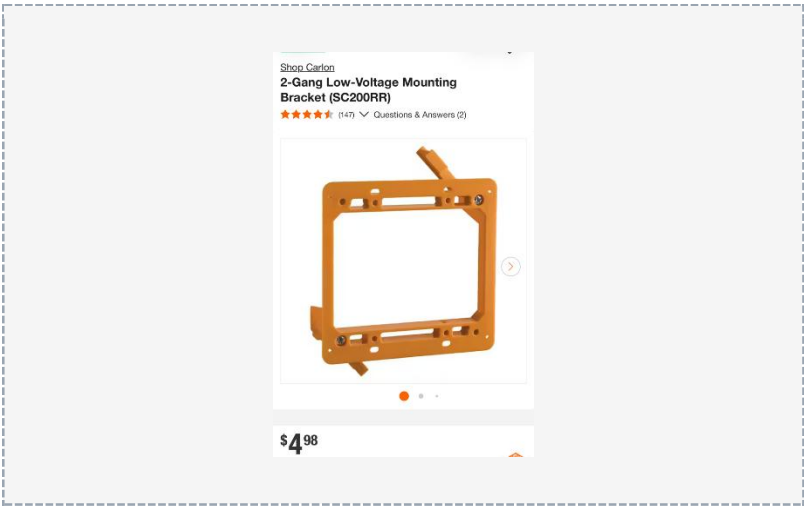
Pre-existing damage documented before work begins, per the Building Overview photo requirement.

Sample: AV Jacks in Chapel

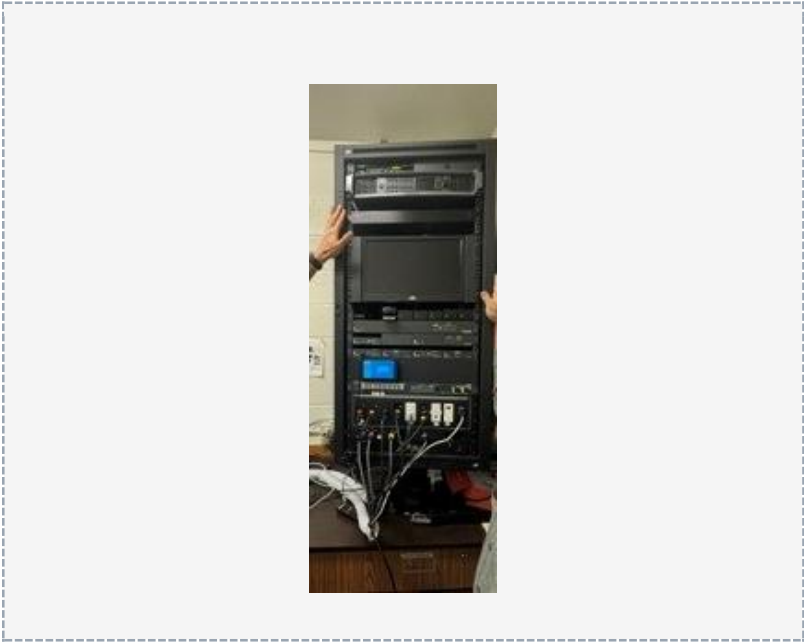


Camera Run should run to the side where these are found.

Sample: AP Mount Idea (Not required)



Sample: ¾ AV Rack (Upgraded system)



Sample: Full AV Rack (Upgraded system)





Sample: Old Satellite rack (Often found in materials center) (Prime location for rack re-location if required) Decom rack and put up new lockable rack in its place.



Sample: Old Pedestal Controls



Sample: Fire Panel



Sample: Clear Touch RL400/RL500 (Church Sanctioned Camera)



Sample: Good Install of a BMS Run



Properly supported cable run, Service loop on j-hook - Jack is mounted security, it is labeled BMS Then labeled P01-06 (telling us it goes to patch panel 01 position 6)

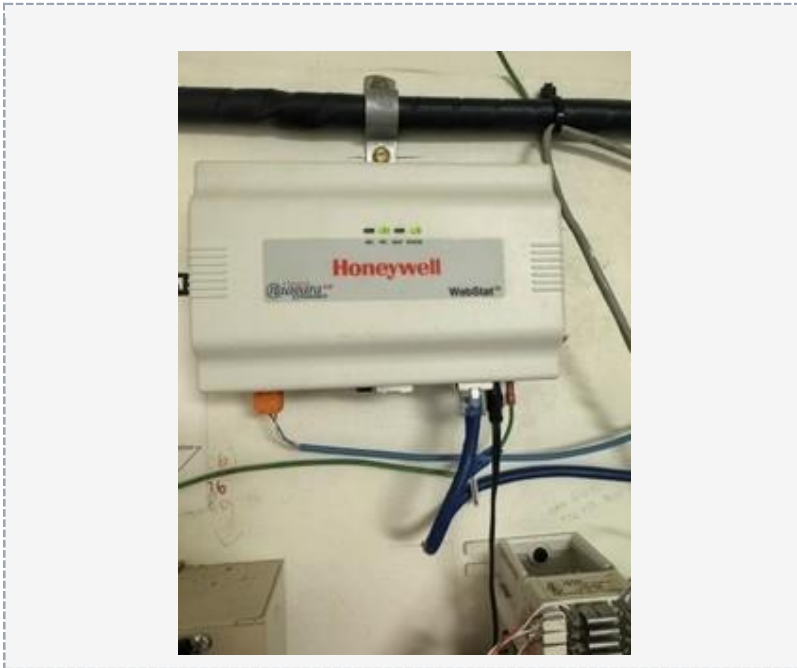
Sample: Testing AV - Infrared Sensors



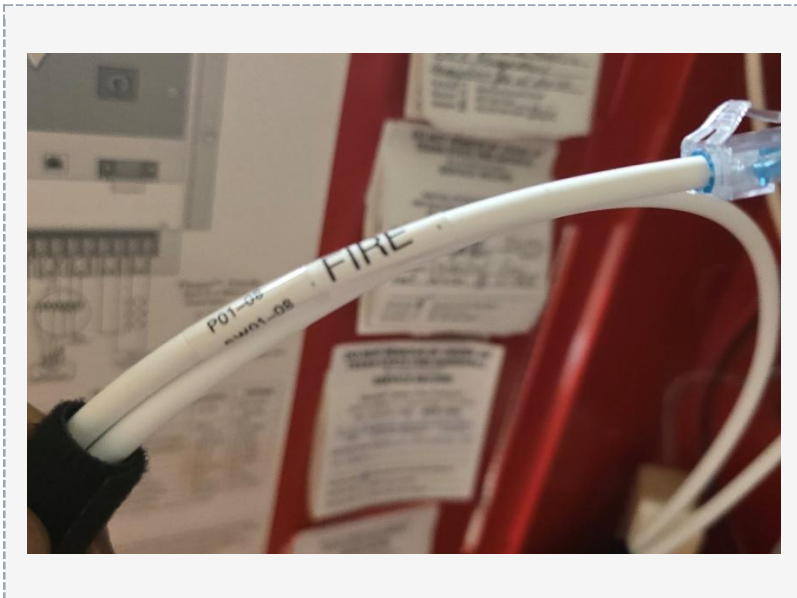
Sample: Networked Printer



Sample: Honeywell BMS



Sample: Great Example of Far End Labeling



Cable has the device/function on it (FIRE) then it has P01-08 (telling us it goes to patch panel 1 position 8 in the patch Panel) then it has SW01-08 (telling us it goes to Switch 01 on port 8) Anyone who finds this far end will know exactly where it goes.

Document Control

Version	Date	Description
1.0	Original	Vendor Guide — original field install guide as issued by CompuCom PMO.
2.0	Enhanced — Aug 4, 2026	Field Operations Handbook. Content fully restructured for technician usability (workflow diagrams, decision trees, cable matrix, technician notes, sign-off, closeout checklist). 100% of source requirements, notes, exceptions, checklist items, hyperlinks, and images preserved.
3.0	Updated — Aug 12, 2026	Field updates from vendor notes: expanded Phase 1–3 (rack placement variance, sprinkler/fire box, locked-door escalation), new Tools Required and AV Hands-Off Equipment guidance, AV testing procedure, expanded Demolition and Old Equipment Handling, CNM Configuration additions (serial-number verification, SFP/port-22 exception) and new CNM Troubleshooting section, Cable Matrix IP Phone/Printer rows, and new Appendix F (Rack Elevation Diagram) and Appendix G (SL Jack Tool Kit Installation Instructions).
4.0	Updated — Aug 12, 2026	Field updates round 2: workflow flowchart reorder (Testing before CNM Configuration), rack relocation priority decision tree, sprinkler/Fire Panel logic refined, HVAC indicator (Honeywell or Pelican), outside electrical room note, cable separation and mechanical/building-system support rules, AV audio testing for overflow and Cultural Center, mandatory J-hook service loops and jack fastening, expanded Labeling (port-number and both-ends labeling, unused jacks), Testing additions (black work punch-only, patch cables in line), Demolition additions (decommission unused cables, clerk's office/FamilySearch cleanup), FamilySearch MS130/dongle rule, decommissioned-equipment labeling fallback, and new Closeout Photos checklist.
5.0	Updated — Aug 20, 2026	Field technician edits (manual, direct in Word): building-damage/pre-install photo requirements, Materials Center clarified as Public Space, expanded rack-relocation guidance (PMO clearance, scout options first), Critical Cabling Requirements update (no reuse of existing patch cable), Cable Matrix Black Work row, AV rack existing-switch port-matching rule, Clear Touch camera model patch-in exception, new formal "Black Work" bottom-patch-panel subsection, and a substantially expanded Closeout Photos checklist (labeling requirements, AP close-up/distance photos, per-jack photos).
5.1	Updated — Aug 20, 2026	Field technician edit: added "Second Switch Required (If)" guidance near CNM Configuration — reinforces the 22-port threshold rule with truck-stock/PMO escalation guidance.
6.0	Updated — Aug 20, 2026	New Appendix H — CommScope Copper Testing (NVP Cable Selection). Embeds the CommScope reference PDF on Nominal Velocity of Propagation and correct Fluke tester cable-type selection (NETCONNECT/SYSTIMAX/Uniprise, not a generic category).
6.1	Updated — Aug 20, 2026	Field Fluke settings clarified: Test Limit = Category 6A, Cable Type = 1091 — no further selections required. Same guidance added to Testing section and Appendix H. Appendix H now also includes the reference image of the Fluke cable-selection screen sequence (CommScope Copper Testing PDF, p.3).
7.0	Updated — Aug 20, 2026	New Appendix I — Church Reference Links. Official TechWiki links for Meetinghouse Networking, Church Network Manager (CNM),

Version	Date	Description
		Troubleshooting Firewalls, Uploading Files to CNM, Replace Existing Firewall, Lehi and Liahona Wireless Networks, and Troubleshooting Meraki switches.
7.1	Updated — Aug 20, 2026	Added a Note callout near the front of the document explaining how to open the embedded PDF appendices if double-clicking the icon does nothing.
7.2	Updated — Aug 20, 2026	Closeout Photos: added requirement that every terminated drop — including drops provisioned for future use (BMS/HVAC, Fire Control, A/V, etc.) — must have a patch cord attached when photographed.
7.3	Updated — Aug 20, 2026	Revised the front-matter Note: the fix for unresponsive embedded-PDF icons is clicking “Enable Editing” to exit Protected View (file Properties → Unblock is now listed as a fallback). Reordered Testing → CNM Configuration → NetSpot Validation → Demolition → Deliverables in the body to match the Project Workflow flowchart and Table of Contents (Demolition had been misplaced before CNM Configuration).
8.0	Updated — Aug 20, 2026	Renamed Labeling, Testing, CNM Configuration, NetSpot Validation, Demolition, and Deliverables to Phase 4 through Phase 9 respectively (continuing the Phase 1–3 numbering used for Site Assessment, Cabling & Rack Installation Standards, and Standard Cable Runs), in both the body headings and the Table of Contents.
9.0	Updated — Aug 21, 2026	Field technician edits (manual, direct in Word): added Jack/Patch Cable Color Code Standard table (FamilySearch = Green) with product-shortage exceptions, a Cisco-switch decision-tree table in the AV section, and CNM port-labeling requirements (AP1/AP2/BMS/AV/Fire/Chapel Cam/FS labels, AV switch uplink Link-zone rule). New Appendix J — Misc Photos: placeholder template for sample field photos (rack labeling, AP close-up, color coding, J-hook service loops, patch-cord-attached drops, pre-install damage).
10.0	Updated — Aug 21, 2026	Field technician edits (manual, direct in Word): new IP Phones and Printers section (Cat6A White, FamilySearch IP phones excepted), jack/patch-cable labeling examples (Function + port number, near-end/far-end patch cable format), Closeout Photos and Final Site Closure Checklist enrichments (CNM port-labeling verification, Fluke 1091 cross-reference, Site Cleaned Up/Vacuumed), and Appendix J filled in with real sample photos (AV Jacks in Chapel, AP Mount, AV racks, old satellite rack, old pedestal controls, Fire Panel, Clear Touch camera, BMS run, AV infrared testing, Networked Printer, Honeywell BMS, far-end labeling example). Added a bright-red Disclaimer box to the cover page (no tobacco/smoking/dip/coffee/tea on Church property).
10.1	Updated — Aug 24, 2026	Field technician edit: clarified the “Each additional drop” closeout photo bullet (mounted jack and patch cable both labeled), renested the per-jack photo requirement under it, and added a Final Site Closure Checklist cross-reference to the Closeout Photos requirements in Phase 9.
10.2	Updated — Aug 25, 2026	Reconciled against a third-party edited copy (independently based on an earlier version): restored the Secondary Technician signature block (Name/Signature/Date) that had been dropped from the

Version	Date	Description
		Technician Signature section in an earlier manual-edit round. No other content from the third-party copy was merged in — it predated Phases 4–9, Appendices H/I/J, and other current sections, and its remaining differences were older phrasing already superseded here.
10.3	Updated — Aug 25, 2026	Formatting fix: corrected 8 explanatory bullets that had been mis-tagged with Heading 2 paragraph style instead of normal list formatting — 5 under Jack/Patch Cable Color Code Standard (the product-shortage exceptions) and 3 under “Second Switch Required (If)” (the 22-port threshold guidance). These no longer render as bold oversized headings or clutter the document outline/navigation view; no wording changed.
10.4	Updated — Aug 25, 2026	FamilySearch switch policy updated (per current field practice, confirmed against the third-party copy): FamilySearch no longer receives a dedicated MS130 switch above a computer-count threshold — every FamilySearch computer now gets its own wireless dongle/adaptor, with the proper number left behind matching the computer count. Removed the now-obsolete “receive 2 switches” detection clue in Site Assessment and updated the IP Phones and Printers section (FamilySearch IP phones now get a new Cat6A run like other offices, since there is no longer a FamilySearch switch to hang off of).
10.5	Updated — Aug 25, 2026	Appendix H: consolidated the two Fluke cable-selection bullets (Manufacturers navigation path + Test Limit/Cable Type 1091) into a single streamlined bullet describing the full Test Setup → Cable Type (Category 6A) → More → Manufacturers → CommScope SYSTIMAX → Cable Type 1091 sequence.
10.6	Updated — Sep 1, 2026	Audio & AV Systems Testing: added a new first-slot bullet — raise/lower the podium as a quick pass/fail check; if it does not move, the AV run needs to be patched into the network switch in the AV cabinet.
10.7	Updated — Sep 14, 2026	Cable Matrix updates (field technician edits): Printer pull now conditional by office type (Sanctioned FamilySearch, Missionary Office, and Seminary Office each require new Cat6A); FamilySearch no longer gets a new cable run — leave wireless dongles/adapters matching the PC count instead; Fire Panel guidance simplified to Conditional — Yes, if present; HVAC clarified (applies if present, even on short runs, and gets a structured cable run) unless it is a distributed system; and the Black Work row now notes old runs are re-terminated on black jacks and shot/tested for pair mapping only.
10.8	Updated — Sep 14, 2026	Field technician clarifications (Aaron Salo / Broadband America scope-clarification thread, Sep 14, 2026): removed stray “requires a cable run” language for FamilySearch in Site Assessment (two spots) that conflicted with the dongle-only policy; removed the now-vestigial FamilySearch/Green row from the Jack/Patch Cable Color Code Standard table; synced the Quick Reference Fire Panel row to match the Cable Matrix (Conditional — Yes, if present); updated the IP Phones and Printers narrative so Printer wording matches the Cable Matrix conditional-by-office-type rule instead of implying all printers are in scope; added a vertical-sleeve requirement for ceiling penetrations (1-inch sleeve and fire putty for single-cable

Version	Date	Description
		penetrations) under Cabling Support & Rack Location; and added a note that vendors purchase and expense the NetSpot Pro license.
10.9	Updated — Sep 14, 2026	Second-pass contradiction sweep (same Aaron Salo scope-clarification thread): clarified the CNM port-labeling section so the FS (FamilySearch) port label refers to a FamilySearch printer or IP/VoIP phone run, not a dedicated FamilySearch switch/uplink (none exists); split the Cabling Notes Run ID checklist's single "FamilySearch" row into "FamilySearch Printer" and "FamilySearch IP Phone" rows; updated the Final Site Closure Checklist and Closeout Photos wording the same way; and changed the Fire Panel rule (Phase 1 narrative and Phase 3 decision tree) from "only if an existing network cable is already run to the panel" to "if a Fire Panel is present", matching the corrected Cable Matrix/Quick Reference wording.
10.10	Updated — Sep 14, 2026	Third-pass sweep (same Aaron Salo scope-clarification thread): corrected the cover page Revision Date, which had been stuck at Sep 1, 2026 through three rounds of Sep 14 edits (10.7-10.9) — now reads September 14, 2026; and resolved a self-contradiction in the Second Switch Required guidance, which said both "reach 22" and "more than 22" ports in the same paragraph. Confirmed threshold: a 2nd switch is required once the 22nd port is going to be used (22 or more ports in use) — updated the Second Switch Required section and the two matching Appendix D thresholds (48-port switch reservation, 24-port second-switch trigger) to match.

This handbook supersedes Version 1.0 for field use. If any conflict is found between this handbook and the original Vendor Guide, contact the CompuCom PMO to confirm the correct requirement before proceeding.