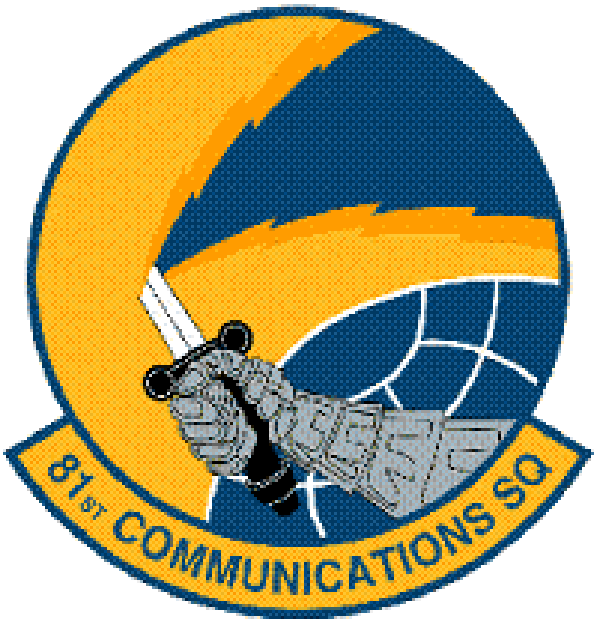


PREMISE WIRING GUIDANCE

Revision G, August 2023

This guide is supplemental in nature and not all inclusive.

GENERAL

1. The purpose of this document is to supplement Telecommunications Industry Association/Electronic Industry Alliance (TIA/EIA) commercial standards for premise wiring (Local Area Network cabling) on Keesler AFB.

2. New construction or renovations programming premise wiring work requires coordination with the 81 CS/SCXP Plans and Programs Office, contact # 377-7500 prior to implementation.

3. All premise wiring installed on Keesler AFB will conform to TIA/EIA wiring standards listed at the end of this document and the supplemental guidance contained in the attachments within this document.

4. Any deviations from the attached standards and this supplement should be coordinated and approved by the 81 CS/SCXP.

5. Contractual responsibilities:

5.1 Contractors selected to complete premise wiring work must have at least one experienced\technically certified Building Industry Consulting Service International (BICSI) technician on site.

5.2 Provide as-built drawings for the premise wiring work accomplished identifying installation/relocation work.

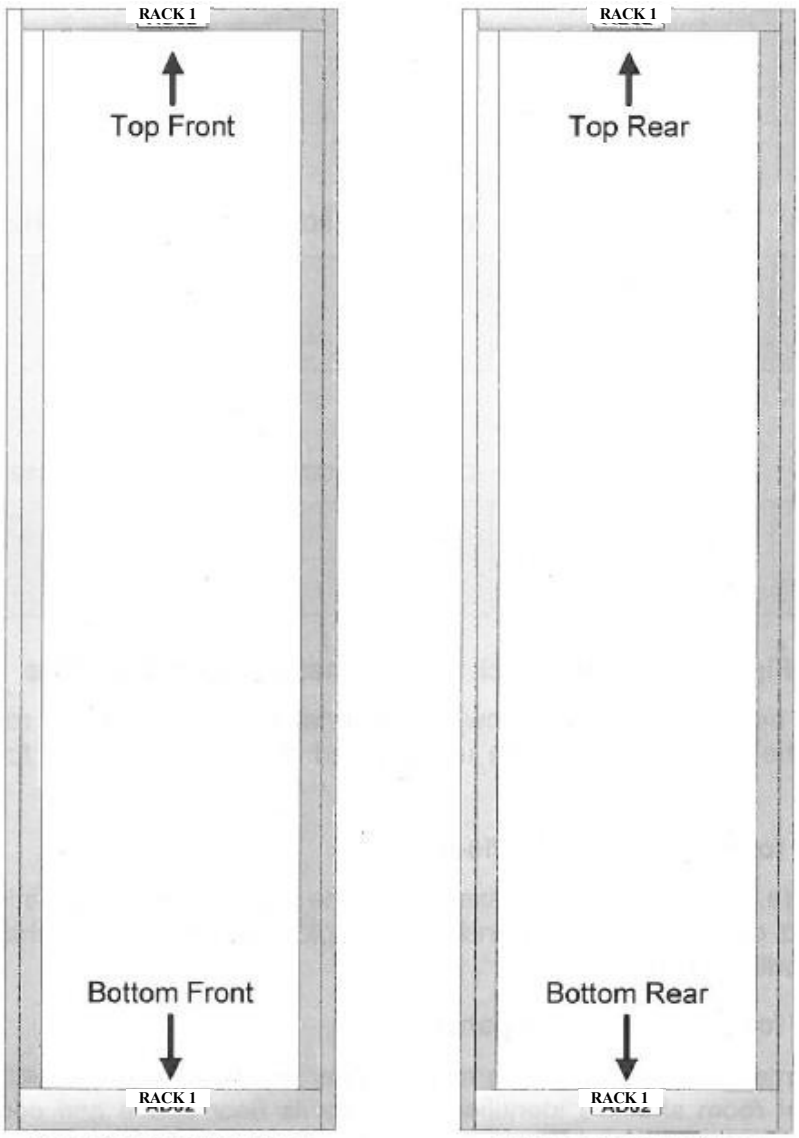
5.3 Provide test results for new\relocated premise wiring work accomplished.

5.4 Contractors shall be responsible for restoring work areas to original condition.

5.5 81 CS quality assurance office 81 CS/SCQ will be the approving authority for premise wiring work accomplished in new construction or renovations.

RACKS/CABINETS *(If installed)*

Cabinets/Racks will be labeled on the front and rear at the top and bottom on a permanent part of the cabinet/rack. Text on labels shall be machine printed without serifs, uppercase and large enough to be read while standing near the cabinet/rack. The label color will contrast with surface upon which it is affixed (white on a dark surface, black on a light surface)(ANSI/TIA/EIA-606-A-1 section 11).



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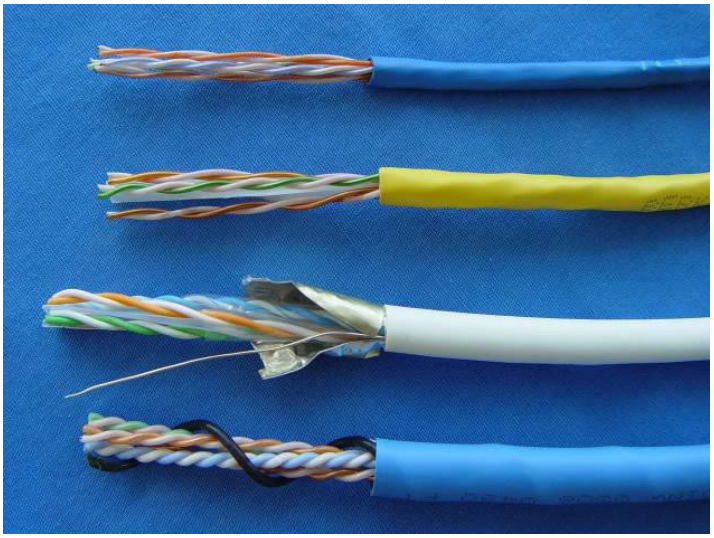
Premise Power Requirements

SWITCH TYPE	POWER REQUIREMENT
Cisco 9600, 9400 type	Two NEMA Locking L6-30 female Plug connectors. NEMA L6-30 Female
Cisco 9200, 9300 type	Four NEMA 5-20R NEMA 5-20R

* Coordinate with 81 CS/SCXP to determine switch requirement.

CABLING

All copper cables, connectors, ports, jacks, outlets, and patch panels shall be TIA/EIA Category 6 rated and must be compatible with Panduit Mini-Com UTP RJ45 TG Jack Modules.



Cat 5e UTP

Cat 6 UTP OK!

Cat 6 FTP OK!

Cat 6A UTP OK!

CABLE COLOR CODING

All installations and renovations will use the following cable color code:

DOES NOT APPLY TO SCIFS

Cameras – purple

Public Address (PA) Systems – gray

Secure Comm (encrypted) – red

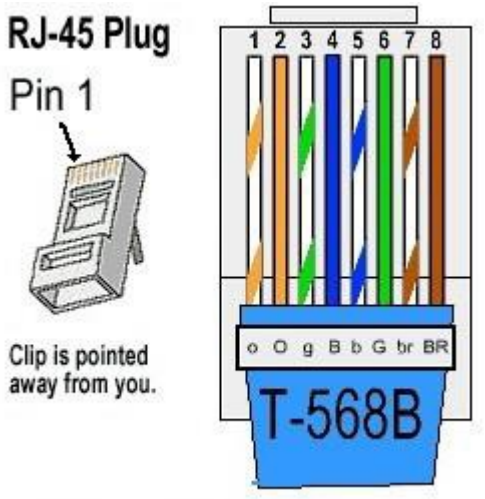
Data/Voice - blue

Keesler Technical Training Environment (KTTE) - yellow

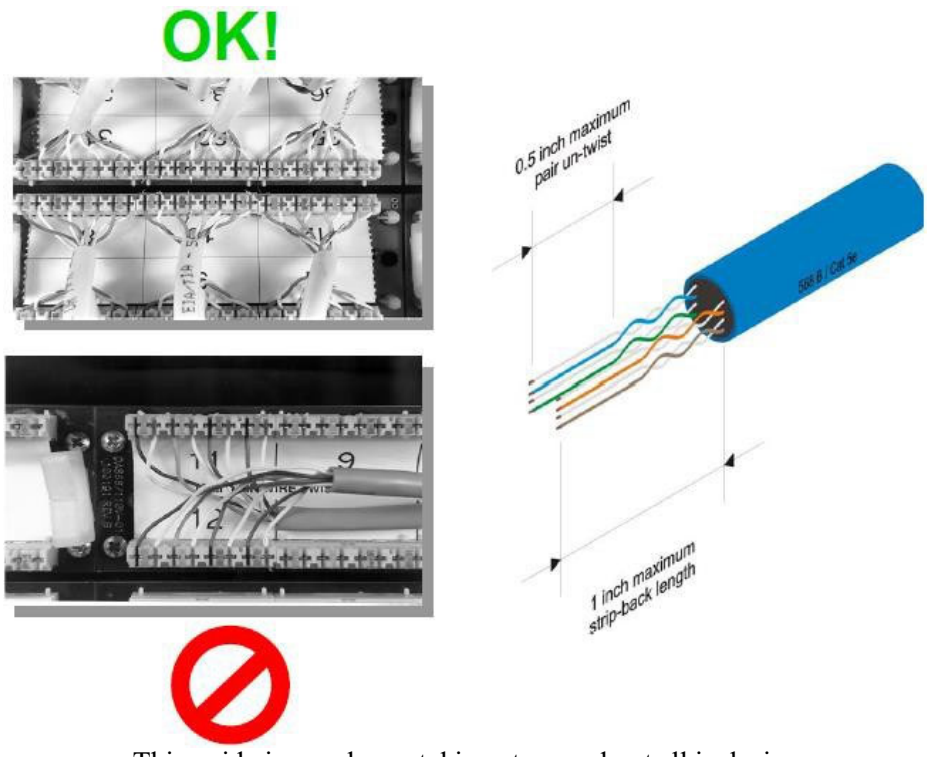
AWAKEN (LWS) - Pink

TERMINATIONS

All premise cabling supporting a Local Area Network will be terminated using **568B** standards. Terminations will be made to available patch panel slots using the standard outlined below and appropriate labeling applied. If no patch panel slots are available a new patch panel will be installed. Deviation from this requirement will be considered on a case-by-case basis i.e., where space for a patch panel is not available.



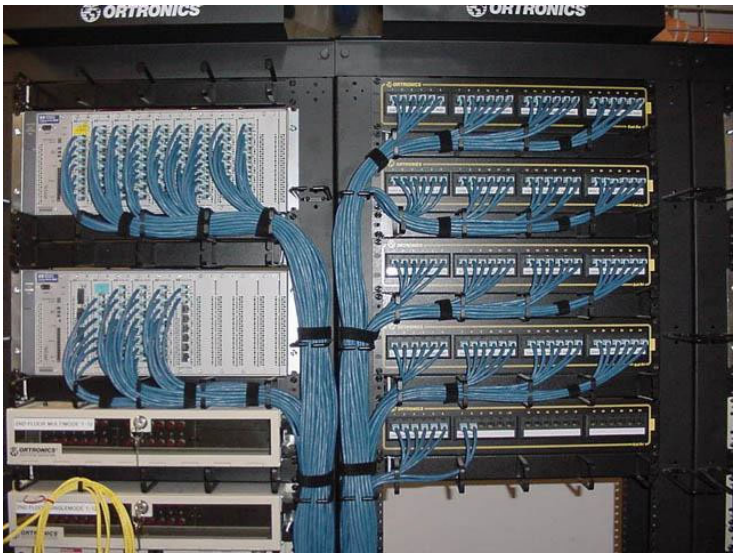
Pairs will not be untwisted more than .5 inch. Cable jacket will not be stripped back more than 1 inch. No nicks on the inner conductors.



This guide is supplemental in nature and not all inclusive.

CABLE MANAGEMENT

The Contractor shall ensure a neat and orderly installation utilizing proper cable management IAW current applicable standards. Data drops shall be routed in a manner to ensure the cables are protected and aesthetically pleasing along the cable path. Metal raceways (cable ladder or wire basket) shall be installed and/or utilized in all communication rooms.



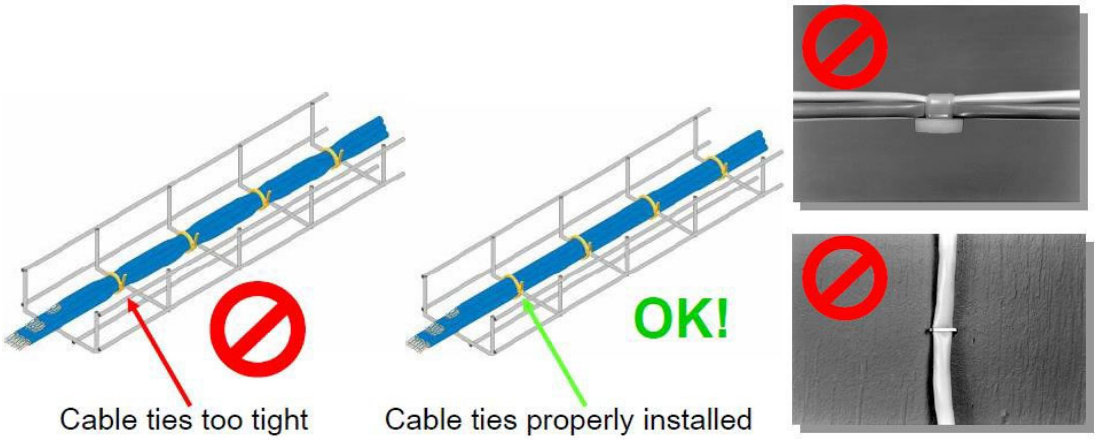
- Cable trays shall be installed and/or utilized in all communication rooms.

- Cables will be independently supported off the ceiling with supports no more than 60 inches apart.

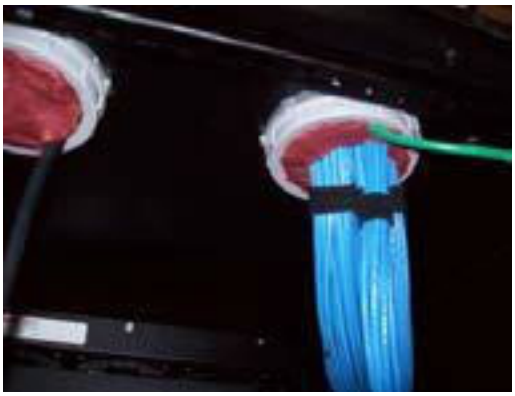
- Cable route should avoid fluorescent light ballasts, electrical cables and motors.

CABLE MANAGEMENT (continued)

- Cable jackets must not be distorted. Velcro or nylon are acceptable – **Velcro is better at protecting cable geometry**. Staples will not be used.



- Any building penetrations (to include wall, ceiling, or floor), shall be in compliance with National Fire Protection Agency (NFPA) regulations and coordinated with CSC's structural office and fire department.

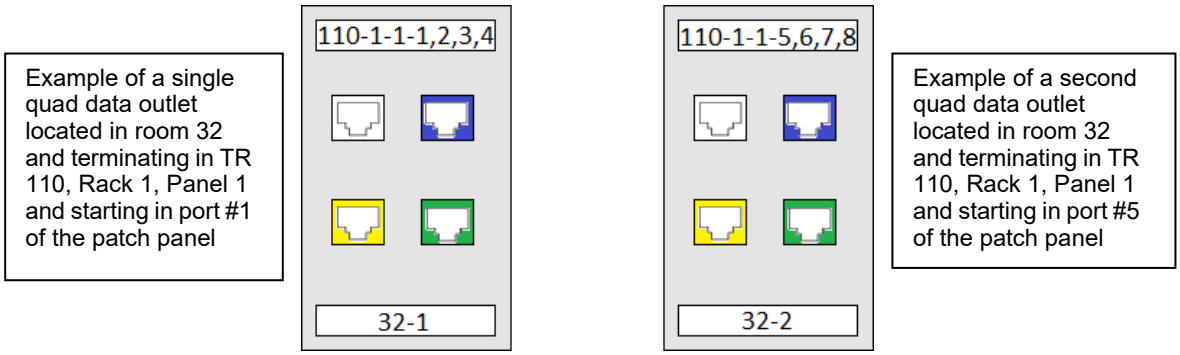


LABELING

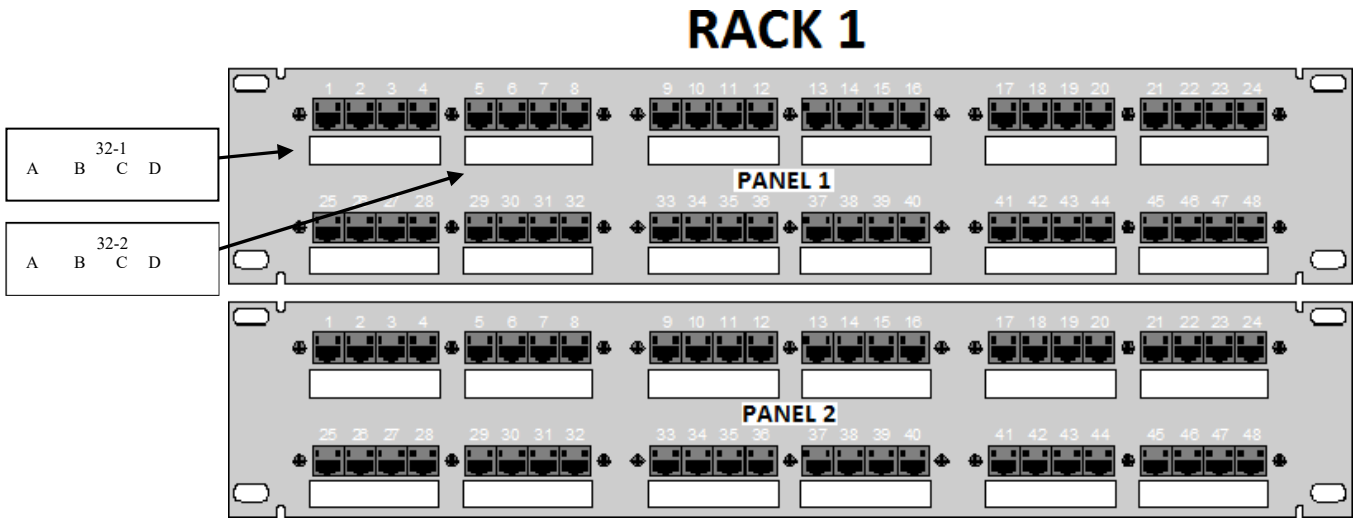
All labeling shall be machine generated, without serifs, uppercase and large enough to be easily read (ANSI/TIA/EIA-606-A-1 section 11).

The naming scheme shall also be coordinated with the 81st Communications Squadron (81 CS/SCXP).

- Outlet(s)



- Patch Panel(s)

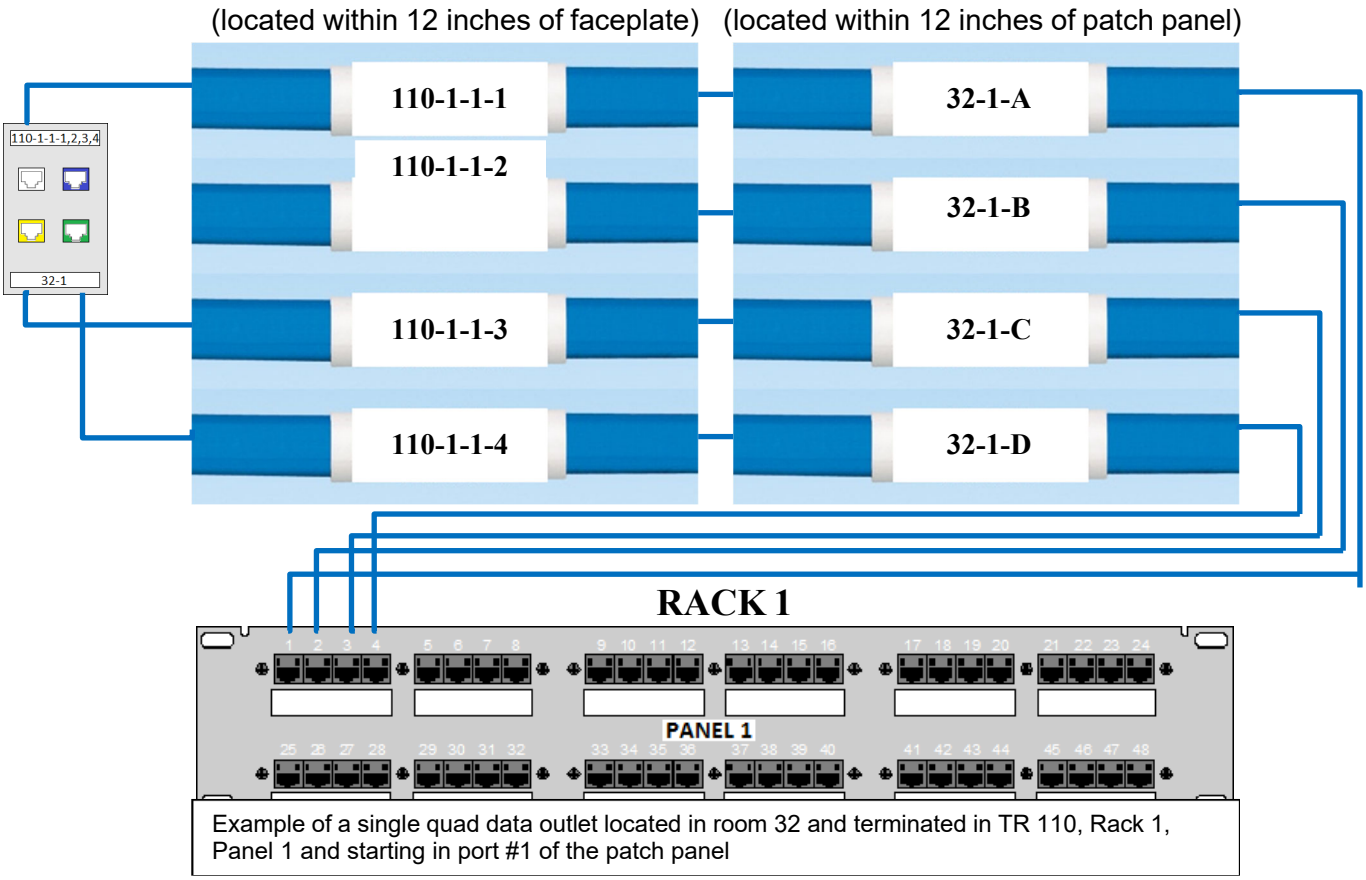


Example of RACK 1 PANEL 1 located in TR 110 and connecting to Room 32 Outlets 1 and 2.

This guide is supplemental in nature and not all inclusive.

LABELING (continued)

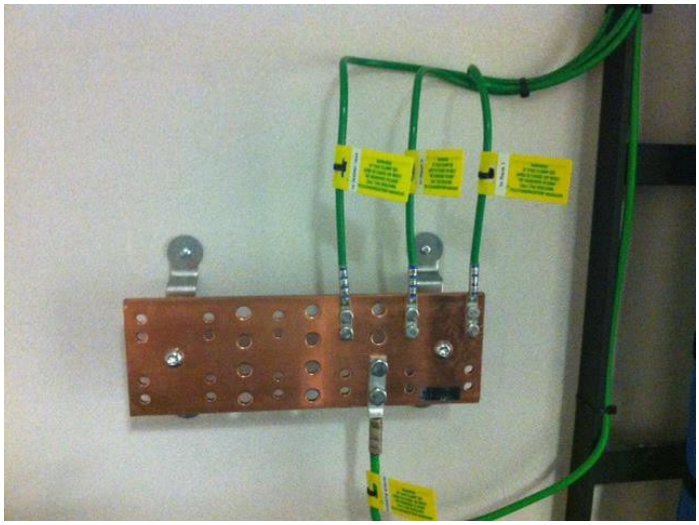
- Cables - All cables will be labeled on both ends with encoded identifiers per (ANSI/TIA/EIA-606-A-1 section 11).



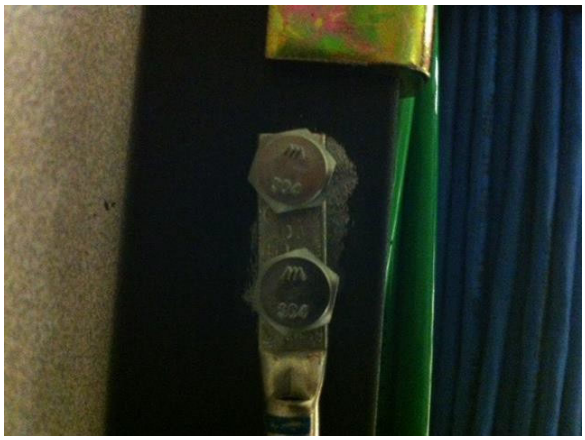
Example of a single quad data outlet located in room 32 and terminated in TR 110, Rack 1, Panel 1 and starting in port #1 of the patch panel

GROUNDING (TIA-607-B) *(If installed)*

All grounds will be labeled (ANSI/TIA-607-B para 7.8) (if installed).



All ground connections will have a clear margin of bare metal-to-metal contact (ANSI/TIA-607-B para 7.6).



Cabinets, racks and other enclosures shall not be bonded serially, each shall have their own dedicated bonding conductor (ANSI/TIA-607-B para 7.1.4).

Premise Wiring References

NUMBER	TITLE	WEBSITE OR LOCATION
BICSI TDM Manual	Building Industries Consulting Services International (BICSI) Telecommunications Distribution Methods (TDM) Manual	http://www.bicsi.org/
NFPA 70 (2008)	National Fire Protection Association (NFPA), National Electric Code (NEC)	http://www.nfpa.org/
29 CFR 1910.268	Occupational Safety and Health Standards, Telecommunications	http://www.osha.gov
ANSI	American National Standards Institute (ANSI) and Internet Standards Resources	http://www.ansi.org/
TIA	Telecommunications Industry Association (TIA): TIA Standards See Commodity Specific Appendices and Individual Task Orders	https://tiaonline.org/
TIA-526-7 (Jul 2015)	Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-568.0 (Mar 2020)	Generic Telecommunications Cabling for Customer Premises	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-568 SET (Mar 2020)	Commercial Building Telecommunications Cabling Standard	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-568.2 (Sep 2018)	Balanced Twisted-Pair Telecommunications Cabling and Components Standard	http://www.tiaonline.org/
TIA-568.3 (Oct 2016)	Optical Fiber Cabling and Components Standard	https://global.ihs.com/csf_home.cfm?&csf=TIA
ASTM D4566-20	Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable	http://webstore.ansi.org/
TIA-569 (May 2019)	Telecommunications Pathways and Spaces	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-570 (Jul 2018)	Residential Telecommunications Cabling Standard	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-598 (Jul 2014)	Optical Fiber Cable Color Coding	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA-606 (Oct 2021)	Administration Standard for Telecommunications Infrastructure	https://global.ihs.com/csf_home.cfm?&csf=TIA

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TIA-607 (Jul 2019)	Commercial Building Grounding and Bonding Requirements for Telecommunications	https://global.ihs.com/csf_home.cfm?&csf=TIA
TIA/EIA-758 (Mar 2012)	Customer-Owned Outside Plant Telecommunications Infrastructure Standard	https://global.ihs.com/csf_home.cfm?&csf=TIA
EIA/ECA-310 (Dec 2005)	Racks, Panels and Associated Equipment	https://standards.globalspec.com/std/195405/EIA/ECA-310
ICEA S-80-576 (2002)	Category 1 & 2 Individually Unshielded Twisted Pair Indoor Cables for Use in Communications Wiring Systems	https://www.techstreet.com/icea/searches/33123596
ICEA S-83-596-2016	Fiber Optic Premises Distribution Cable	https://www.techstreet.com/icea/subgroups/54441
GR-409, Issue 2 (Nov 2008)	Generic Requirements for Indoor Fiber Optic Cable	https://telecom-info.njdepot.ericsson.net/site-cgi/ido/docs.cgi?ID=215531315SEARCH&DOCUMENT=gr
GR-20, Issue 4 (July 2013)	Generic Requirements for Optical Fiber and Optical Fiber Cable	https://telecom-info.njdepot.ericsson.net/site-cgi/ido/docs.cgi?ID=215531315SEARCH&DOCUMENT=gr
NEMA TC 2-2020	Electrical Polyvinyl Chloride (PVC) Conduit	http://www.nema.org/stds/tc2.cfm
NEMA TC 6&8-2020	PVC Plastic Utilities Duct for Underground Installations	http://www.nema.org/stds/tc6_8.cfm
NEMA TC 9-2020	Fittings for PVC Plastic Utilities Duct for Underground Installation	http://www.nema.org/stds/tc9.cfm
RUS Bulletin 1751F-643	Underground Plant Design	https://www.rd.usda.gov/sites/default/files/UTP_Bulletins_1751F-643.pdf
RUS Bulletin 1751F-644	Underground Plant Construction	https://www.rd.usda.gov/sites/default/files/UTP_Bulletins_1751F-644.pdf
RUS Bulletin 1753F-801(PC-5A)	RUS Standard for Service Installations at Customer Access Locations	https://www.rd.usda.gov/sites/default/files/UTP_Bulletins_1753F-801.pdf
RUS Bulletin 1753F-401 (PC-2)	RUS Standards for Splicing Copper and Fiber Optic Cable	https://www.rd.usda.gov/sites/default/files/UTP_Bulletins_1753F-401.pdf
RUS Bulletin 1753F-601a	RUS Specifications for Fiber Optic Cables (PE-90a)	https://www.rd.usda.gov/files/UTP_Bulletins_1753F-601a.pdf