

Product Standards and Specifications

Cable Tray System

1. Cable tray shall consist of continuous, rigid, welded steel wire mesh cable management. Any sections shall be ground straps together. Tray shall be grounded system with continuous Safe-T-Edge T welded top side to protect cable insulation.
 - a. Cable tray composition Carbon Steel wire, ASTM a 510, Grade 1008.
 - b. Acceptable product line: Equivalent to Cablofil

LOCAL AREA NETWORK (LAN) INFRASTRUCTURE

Category 6+ Horizontal Cable:

1. Superior Essex DataGain® Cable
 - a. UL listed CMP or CMR as required by installation location
 - b. Equivalent to Superior Essex Part Numbers:
 - Plenum Rated Blue Cable is 66-240-2B
 - Riser Rated Blues Cable is 66-240-2A

Category 3 IntraBuilding Backbone:

1. Quantities and pair count for all copper backbone cabling shall be provided as required to Complete cabling system as shown on the drawing schematic diagrams.
 - a. UL listed CMP or CMR as required by installation location
2. Equivalent to Superior Essex Part Number.

Pair count	CMP	CMR
25	18-475-36	18-475-33
50	18-579-36	18-579-33
100	18-799-36	18-789-33
200	18-A99-36	18-A99-33
300	18-B99-36	18-B99-33
400	18-C99-36	18-C99-33

3. All pairs of copper backbone cables shall be terminated at both ends on 110 blocks.

Optical Fiber Backbone Cable:

1. Equivalent to Superior Essex TeraGain® 10G-300
 - a. UL listed OFNP or OFNR as required by installation location; AQUA jacket
 - b. Cable jacket color shall be approved by JIS
Cable shall be reinforced with Aramid yarn and contain no metallic elements.
MM fiber, armored jacket backbone
 - c. Optical fiber cable shall have an attenuation value not to exceed 3.5 dB per kilometer at 850 nm and 1.5 dB per kilometer at 1300 nm. Minimum Bandwidth 1500 MHz per kilometer at 850 nm and 500 MHz per kilometer at 1300 nm.
 - b. Equivalent to Superior Essex Part Numbers:
 - Plenum Rated 12-Strand 44012BG01
 - Riser Rated 12-Strand 43012BG01

Communication Outlets: Where indicated on drawings,

Category 6 Outlets: Provide typical 3 position – 3 conductor non-keyed Outlets wired in accordance with ANSI/TIA T568B PIN configuration standard to terminate Category 6 UTP cables as specified herein.

JIS Typical new construction requires 2 data RJ45 blue /1 voice white

a. Category 6 Outlet, color: fog white: Equivalent to Ortronics Part Number: OR-TJ600

Flush Mounted Outlets:

a. Faceplate, color: fog white: Equivalent to Ortronics Part Numbers:

2-Gang OR40300548

3-Gang OR40300547

4-Gang OR40300546

6-Gang OR40300545

b. Category 6 Outlet, color: fog white: Equivalent to Ortronics Part Number: OR-TJ600

c. Blank Outlets as needed, color: Equivalent to Ortronics Part Number: OR-42100002
(10 pack)

Surface Mount Outlets: (Should be avoid as possible)

a. Provide surface mount outlet box, color: fog white Equivalent to Wiremold Part Number: NM2048FW

b. 6-Port Faceplate, color: fog white: Equivalent to Part Number: OR-40300545

Wireless LAN Outlets

a. Provide two-port recessed mounted interface box in color fog white: Equivalent to Cisco or Ortronics product. Surface mounted if necessary and no other option

4-Port Modular Furniture Outlets: 2 Pieces

a. Faceplate with Bezel Adapter for Herman Miller Beltline, color: fog white or other JIS furniture systems: Equivalent to Ortronics Part Number: OR-40300577.

b. Category 6 Outlet, color: fog white: Equivalent to Ortronics Part Number: OR-TJ600

c. Blank Outlets as needed, color: fog white: Ortronics Part Number: OR-421000024 (10 pack)

Flush Floor box Outlets:

a. Equivalent to TracJacks Device Bezel: Walker # MAB6TJ.

b. RJ-45 CAT 6 Outlet: Equivalent to Ortronics Part Number: OR-TJ600

c. Blank Outlets as need Equivalent to: Part Number: OR-42100002, 10 pack

d. Mount in floor box flange.

e. **Systems furniture outlet plate** is typical 2 data blue and 1 voice white plate is **LEVITON 49910-S14 for steel-case brand system furniture**

Equipment Mounting Racks: Equip as detailed on the Drawings and as follows:

Racks for Patch Panels and Multi-Port Switches:

a. Provide racks as indicated on Drawings or as approved by JIS, for rack mounted connecting hardware and JIS furnished equipment. Racks shall be assembled as a 19" width x 7' tall.

Channel depth 16.25" ideal for MDF, 6" channel is an option for IDF

Equivalent to Ortronics Part Number: OR-MM10716

Racks for Servers, Monitors, and Keyboards:

a. Provide racks as indicated on Drawings for JIS -furnished servers and related equipment.

Racks shall be two or four post as determined by JIS, aluminum frame assembled at 19 inches wide x 7'-2" tall. Racks shall have adjustable steel EIA rails and shall be supplied with 50 #12-24 cage nuts and screws. Equivalent to Ortronics Mighty Mo series Part Number: OR-MM 67 or 68 series 6.5" to 16.25" channel, JIS to define requirements

Cable management horizontal and or vertical channels

a. Vertical cable management panel: Equivalent to Ortronics Part Number: OR-MM10VMD712

b. Horizontal cable management panel: Equivalent to Ortronics Part Number: OR-808004867

Shelves: Provide rack mounted shelves as indicated on Drawings.

a. Equipment Shelf:

19-inch rack, Equivalent to Ortronics Part Number: OR-60400404

b. CPU Shelf:

19-inch rack, Equivalent to Ortronics Part Number: OR-604045681.

c. Keyboard/Monitor Shelf:

19-inch, Equivalent to Ortronics Part Number: OR-60400550

with rear support bracket, Part Number: OR-60400606

d. Vented Equipment Shelf:

Equivalent to Ortronics Part Number: OR-604045401.

Equipment Bracing Accessories

a. Provide 5 sets of the server bracing kit in the MC, Equivalent to Ortronics Part Number: OR-60400523. Equivalent to

b. Provide 3 sets of the monitor bracing kit in the MC Equivalent to, Ortronics Part Number: OR-70700126.

Concrete Floor Mounting Kit: Equivalent to Ortronics Part Number: OR-CA-93

Secure racks to concrete floor. Typical Provide two for each rack in the MC and IDF enclosure

Distribution Rack Grounding: Equivalent to Ortronics Part Number: OR-GL2014; Used to bond rack back to TGB (Telecom Grounding Busbar) or TMGM (Telecom Main Grounding Busbar). Furnish ground terminal block for each rack. Racks shall be grounded using solid #6 green AWG. Furnish all required bonding hardware in accordance with EIA/TIA 607-B.

Cable Runway: Equivalent to Ortronics Part Number: OR-TR10-12B (black). Equip each rack with a ladder style cable runway installed between the backboard and the equipment rack. Securely attach to backboard and rack in accordance with manufacturer's written instructions.

Cable Runway Bend Radii: Equivalent to Ortronics Part Number: OR-TRTC-12B (black); equip each 19-inch rack at the MC with one each.

Wall Angle Support Kit: Equivalent to Ortronics Part Number: OR-WRTRT-12B

Cable Management Straps: Equivalent to Ortronics Part Number.: OR-70700079

Category 6 Patch Panels:

1. High Density – low mounted profile, angled patch panel compatible with standard 110 tool termination practices, rear cable support bar.

a. 24 port 1 rack unit Equivalent to, Ortronics part number; OR-PHA66U24

b. 48 port 2 rack unit, Equivalent to Ortronics part number; OR-PHA66U48

2. High-Density discrete individual jack panels. Panels are unloaded. Panels accept high density copper jacks (OR-HDJ6) and/or fiber modules. Provides flexibility for mixed use media and future upgrades. Up to 48 ports in 1 rack unit.

a. 24 port angled panel. 1 rack unit. Equivalent to Ortronics Part number; OR- PHAHJU24

b. 48 port angled panel. 1 rack unit. Equivalent to Ortronics Part Number: OR-PHAHJU48

c. 72 port angled panel. 2 rack units. Equivalent to Ortronics Part number: OR- PHAHJU72

Furnish quantities and port configurations required to terminate cables indicated on the Drawings i.e. for the MC and HCs as applicable.

Optical Fiber Enclosures: Provide rack mounted modular enclosure units complete with connector couplings mounted adapter panels for interconnection of optical fiber cables as specified herein. Units shall be sized to terminate all optical fibers indicated on the Drawings in the MC.

1. In the MC provide:

a. Standard Density

1. Enclosure - Rack mount fiber enclosure for patching and splicing:
Equivalent to Ortronics Part Number: OR-FC03U-C
2. Adapter Panels –
 - a. LC Quad – 24 fiber, multimode with ceramic alignment sleeves Equivalent to Ortronics Part Number: OR-OFP-LCQ24LC
 - b. MPO- 8 MPT®/MPO multimode Type A. Equivalent to Ortronics Part Number OR-OFP-MPA72LA
3. Blank adapter panels: Equivalent to Ortronics Part Number: OR-OFP-BLANK
4. Splice Trays with hinged transparent cover.
12 fiber tray Equivalent to Ortronics part number: OR-FST2F012

b. High Density

1. Enclosure – Rack Mount Fiber Enclosure for Patching and Splicing.
Equivalent to Ortronics part number: Available in 1-4 rack units. Equivalent to Ortronics 1 to 4 rack unit
enclosure part number: OR-FC03U-M
2. Adapter Panels-
 - a. LC Quad – 6 LC Quad, 24 fiber, multimode, ceramic alignment sleeves. Equivalent to Ortronics part number: OR-HDFP-LCQ24LC
 - b. MPO- 6 MPT®/MPO, multimode, Type A Equivalent to. Ortronics Part# OR-HDFP-MPA72LA
3. Blank adapter panels – Equivalent to OR-HDFP-BLANK
4. Splice Trays – 48 splice tray (recommend OR-205000337 heat shrink splice sleeves). Tray is transparent with a hinged cover and Mylar insert.
Equivalent to Ortronics part number: OR-FST3-F048

Multi-mode Optical Fiber Connectors: for termination on 900 micron buffered optical fiber.

1. LC Pre-polished Connectors: ceramic ferrule, OptiMO, LC multimode connector.
Equivalent to Ortronics Part Number: OR-205KAS9GA-50T

Category 6 Patch Cords:

1. Provide blue category patch cord to Lengths and Quantities as listed on the drawings
Equivalent to Ortronics Part Number: OR-MC6xx-06
xx = Length: (03), (05), (07), (09), (15), (20) or (25) feet.

Category 3 voice Intra-building Backbone Wiring Blocks as applicable:

1. Provide wiring blocks constructed of fire-retardant molded plastic with color-coded horizontal index strips that secure and organize 25-pairs each. The wiring blocks shall accommodate 22 through 26 AWG cable size conductors and shall be suitable for
Installation on terminal backboards as shown on the drawings. Provide 110-blocks as shown on drawings. Use five (5) C-4 clips and one (1) C-5 clip on station 110-blocks for terminating.
2. At the MC provide 110 series connecting hardware and wire management for horizontal cabling interconnects and cross-connects.
 - a. Provide 300 pair block with legs, Equivalent to Ortronics Part Number: OR-1, 110ABC6300, voice
 - b. Provide 110 jumper troughs with legs, Equivalent to Ortronics Part Number: OR-30200140
 - c. Provide 4-pair 110C connecting blocks, Equivalent to Ortronics Part Number: OR-30200109 (10 pack)
 - d. Provide 5-pair 110C connecting blocks, Equivalent to Ortronics Part Number: OR-30200110 (10 pack), voice
 - e. Provide designation kit with strip holders for horizontal cabling,

Equivalent to Ortronics OR-70400646

Optical Fiber Patch Cords, as applicable

1. Provide fiber optic patch cords: Lengths and Quantities as listed on the drawings
Duplex LC -LC Space Saver Cord, 0.5dB Max, 2.4mm Round
Equivalent to Ortronics Part Number: OR-P1RF6LPAZAZxxxM
xxx = length in meters.

Pre-wired Floor Boxes, as applicable typical in courtrooms

1. 6-inch Evolution for two power receptacles and one gang spacing for telecom , and audio visual (houses up to Equivalent to 8 TracJacks). Equivalent to Wiremold part number: 6ATCBK Includes Equivalent to power receptacles and plates for Equivalent to TracJacks, Series II or Wiremold communication
Typical floor box in court room at min. will contain 2 shield RJ45 video solution CAT-6 cables, with spare cap. and active elec. duplex outlet. One of these boxes per attorney table

Firestop Device

1. Provide UL System for firestop device at time of submittal. Device must have systems That are rated up to 4 hours for fire rated walls and 3 hours for floors. Firestop device must be made of steel with intumescent blocks for rapid expansion with heat. The doors on the device must be able to be closed to secure the passage when empty or completely full. Equivalent to Wiremold part number: WM-FS2R-RED (2 inch), WM-FS4R-RED (4 inch).

Court room Shielded CAT-6 wiring

1. Site specific, typical as listed below
2. (2) shielded STP blue CAT-6 to each lawyer table
 - (1) shielded STP to Jury box, then daisy chained as needed for future monitors
 - (1) shielded STP to Clerks desk
 - (1) shielded STP to wall for flat screen
 - (1) shielded adjacent to Judge's PCAll shielded STP home rum back to 24 port patch panel under Judges bench
 - (1) UTP CAT 6-routed from 24 port patch panel back to closest IDF patch panelEach STP location shall have 120 v outlet adjacent to support a monitor