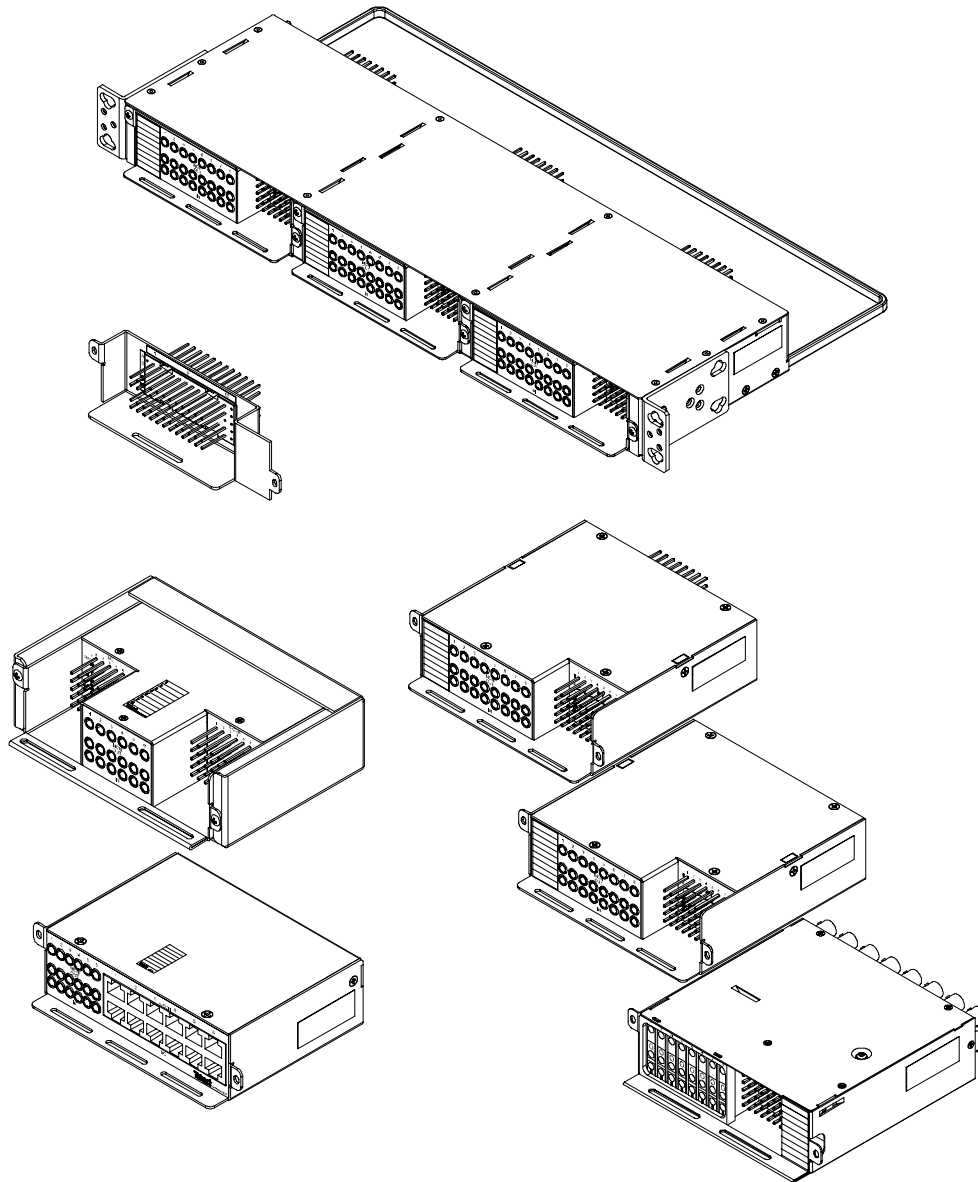




ELF DSX USER MANUAL

124317-5 A0

ELF DSX User Manual
Document Number 124317-5 A0
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Technical Support (USA):

By e-mail: getinfo@telect.com

By phone: 888-821-4856 or 509-921-6161

Note:

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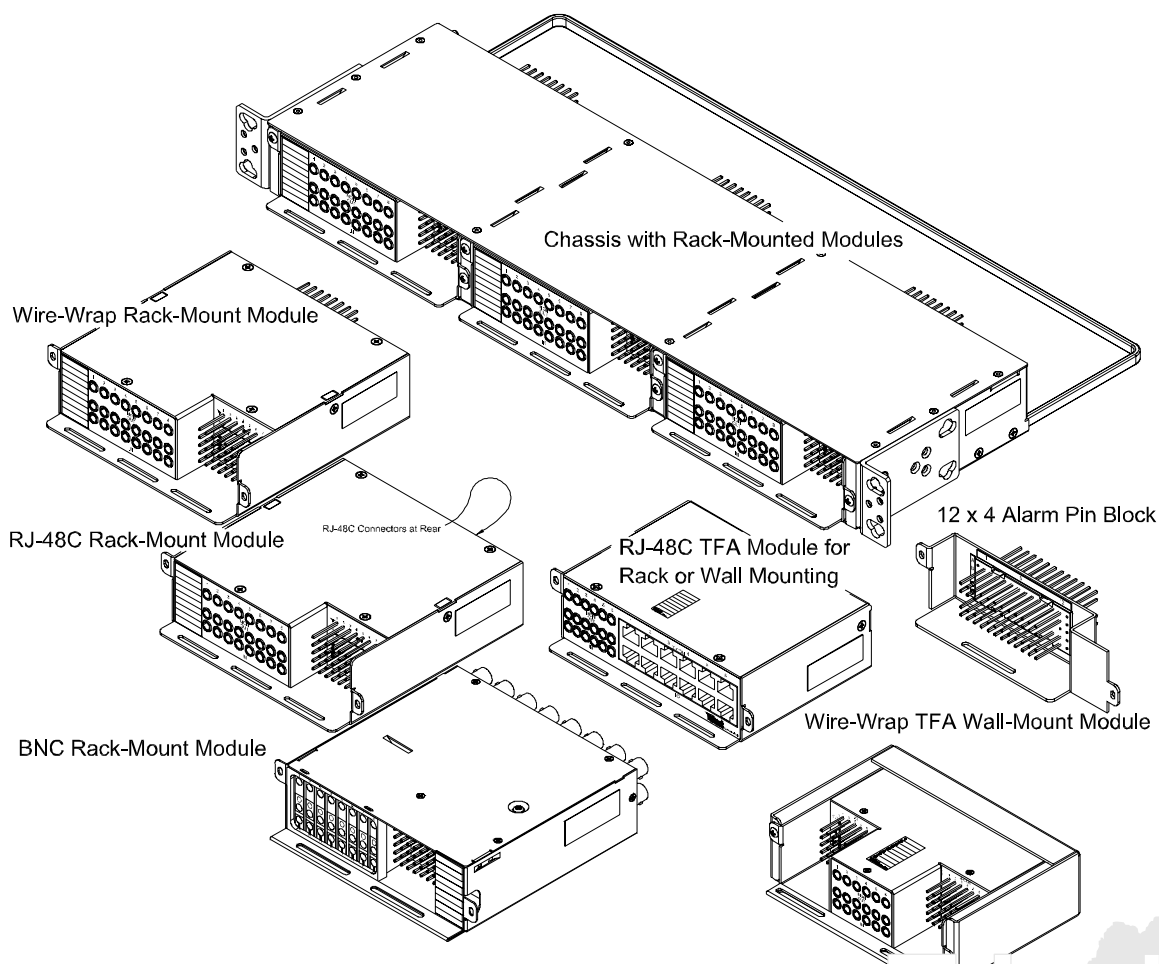
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1

Descriptions

ELF DSX

Telect's ELF DSX serves as a small, "edge" connection device in locations where equipment density is important.



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Telect's T1/E1 low-profile front cross connect (FXC) rack- and wall-mount ELF panels are designed to fit on the edge of a 3G wireless network, at the base transceiver station (BTS). The panel's compact front access allows maximum density and simplified monitoring.

Capabilities

- Expandable system—up to three ELF modules per chassis
- T1/E1 signal rates

Features

- Wire-wrap, BNC I/O, or RJ-48C connections.
- Front cross-connect, including a shield ground pin for ITU G.703 compliance.
- Universal rack mount—19" (48.3 cm) or 23" (58.4 cm), using 1 EIA rack unit (RU) of space. Also mounts in an equipment cabinet.
- Total Front Access (TFA) versions can be mounted in the standard ELF chassis or in an optional wall bracket.

Part Numbers

- ELF-1008-1100 8-termination module, wire-wrap I/O
- ELF-1008-1200 8-termination module, BNC I/O
- ELF-1008-1800 8-termination module, RJ-48C
- ELF-3006-1100 6-termination module, wire-wrap TFA
- ELF-3006-1800 6-termination module, RJ-48C TFA
- ELF-0000-2400 3-module chassis for all ELF modules
- ELF-0000-0600 Wall bracket for ELF-3008-1100 & ELF-3006-1800
- ELF-0005-0001 12 x 4 Alarm Pin Block

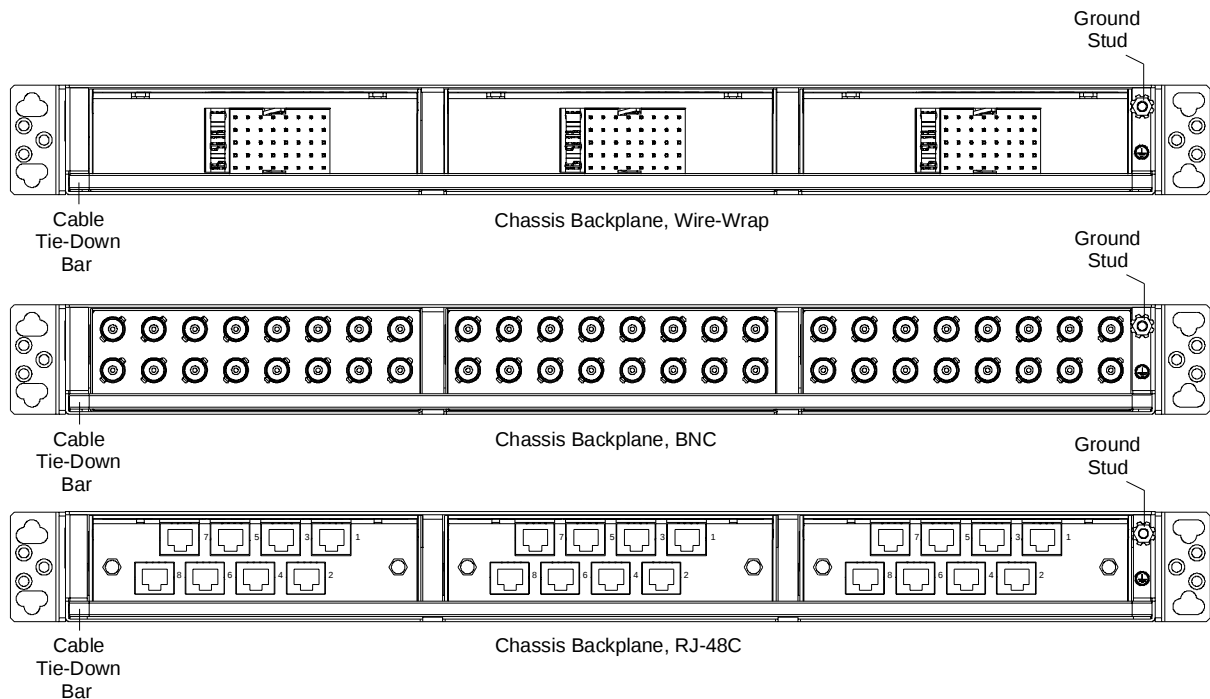
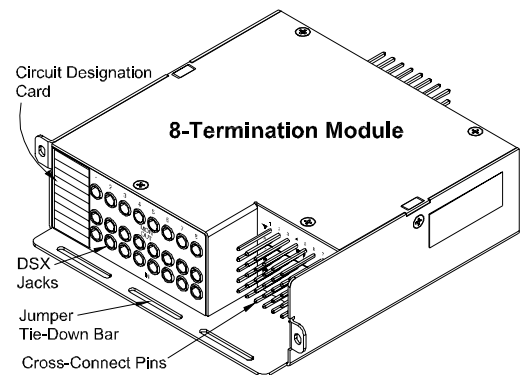
SYSTEM-LEVEL APPLICATIONS

- Wireless base transceiver station (BTS)
- Customer premises
- Controlled environment vault
- Co-location

MAIN ASSEMBLIES

Rack Mount Systems

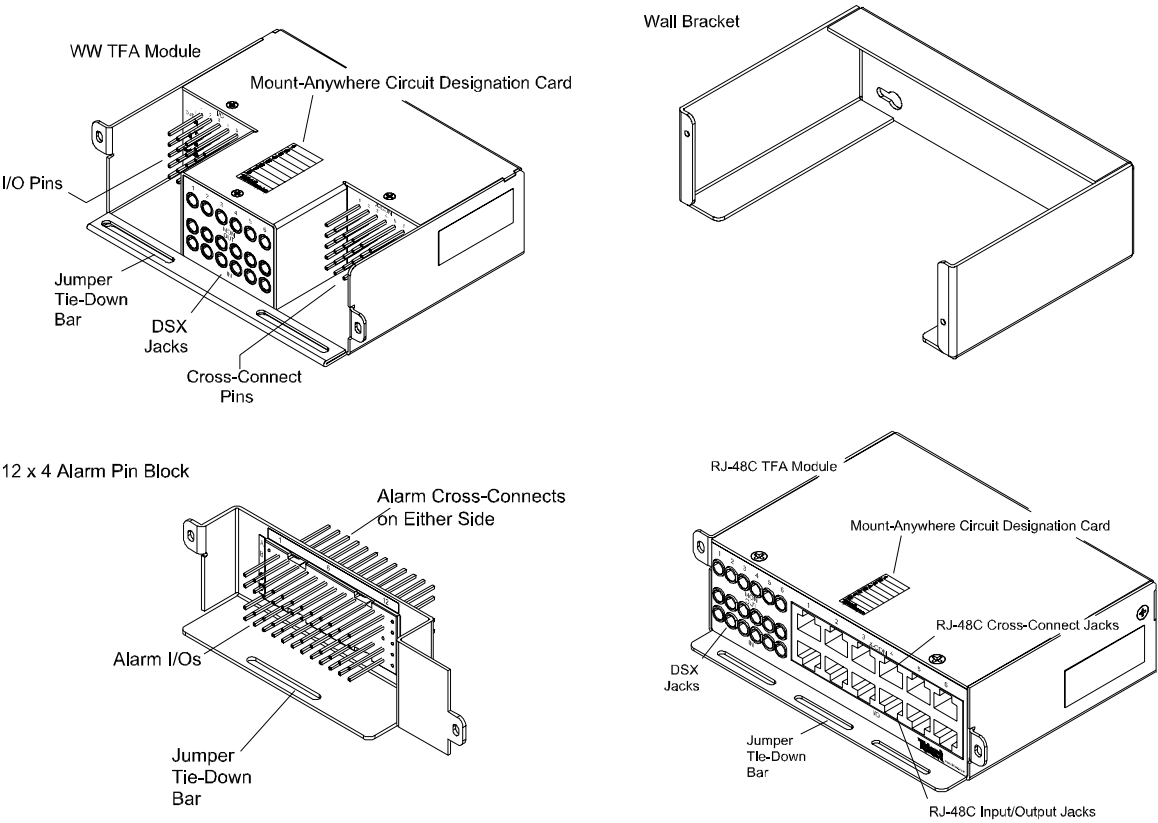
The chassis holds up to three 8-termination modules, 6-terminal-TFA modules, or 12x4 alarm pin blocks for an expandable system. The backplanes of 8-termination modules hold either wire-wrap pins, BNC connectors, or RJ-48C connectors for I/O connections.



Wall-Mount Systems

The optional wall-mounted bracket holds one 6-termination, total front access (TFA I/O & X-CON) wire-wrap or a 12 x 4 alarm pin block.

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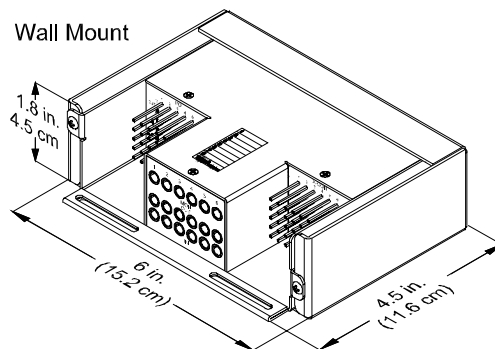
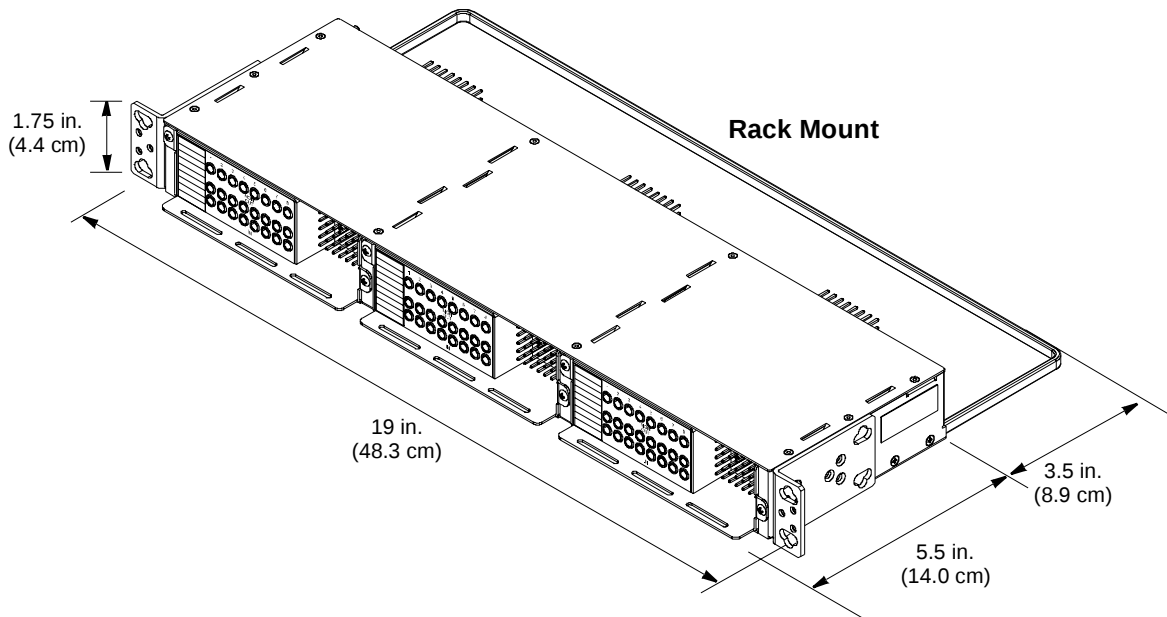


SPECIFICATIONS

Electrical

	E1	T1
Return Loss	12 dB 51 kHz to 102 kHz 18 dB 102 kHz to 2048 kHz 14 dB 2048 kHz to 3073 kHz	26 dB 772 kHz
Interchannel Crosstalk	-60 dB at bit rate (2.048 Mbps)	-60 dB at bit rate (1.544 Mbps)
Adjacent Channel Crosstalk	-60 dB at bit rate (2.048 Mbps)	-60 dB at bit rate (1.544 Mbps)
Insertion Loss	0.5 dB at bit rate (2.048 Mbps)	0.5 dB at bit rate (1.544 Mbps)
Monitor Level	-20 dB ± 1.5 dB at bit rate (2.048 Mbps)	-20 dB ± 1.5 dB at bit rate (1.544 Mbps)

Physical



2

Installation

INSTALLATION CONSIDERATIONS



CAUTION

CAUTION! This product must be installed and maintained only by qualified technicians.

VORSICHT! Nur von qualifizierten Technikern installiert werden und instand gehalten werden.

PRECAUCIÓN! Ser instalado y ser mantenido solamente por los técnicos autorizados.

ATTENTION! Ce produit doit être installé et entretenu uniquement par des techniciens qualifiés.



ALERT

ALERT! These instructions presume you have verified that the Telect equipment being installed is compatible with the rest of the system, including power, ground, circuit protection, signal characteristics, equipment from other vendors, and local codes or ordinances.

Location and Space

- The ELF DSX chassis mounts in a 19" (48.3 cm) or 23" (58.4 cm) equipment rack (EIA or WECCO) or inside an equipment cabinet. On an EIA rack, it takes up one RU of space (1.75"/4.4 cm).
- The ELF DSX wall bracket requires 6" (15.2 cm) by 1.8" (4.5 cm) of wall space.

Tools and Equipment

- Standard and wire-wrap tools
- A chassis ground wire—14 AWG minimum with ring terminal.

Use listed components (UL-recognized, CSA, ETL, TUV agency) and crimping tools.

Technical Support (USA)

By e-mail: getinfo@telect.com

By phone: 888-821-4856 or 509-921-6161

INSPECTION

Compare the contents of the ELF DSX shipping container with the packing list. Call Telect if you are missing anything.

NOTE

Telect is not liable for shipping damage.

If the shipping container is damaged, keep it for the carrier's inspection. Notify the carrier and call Telect's Customer Service Department:

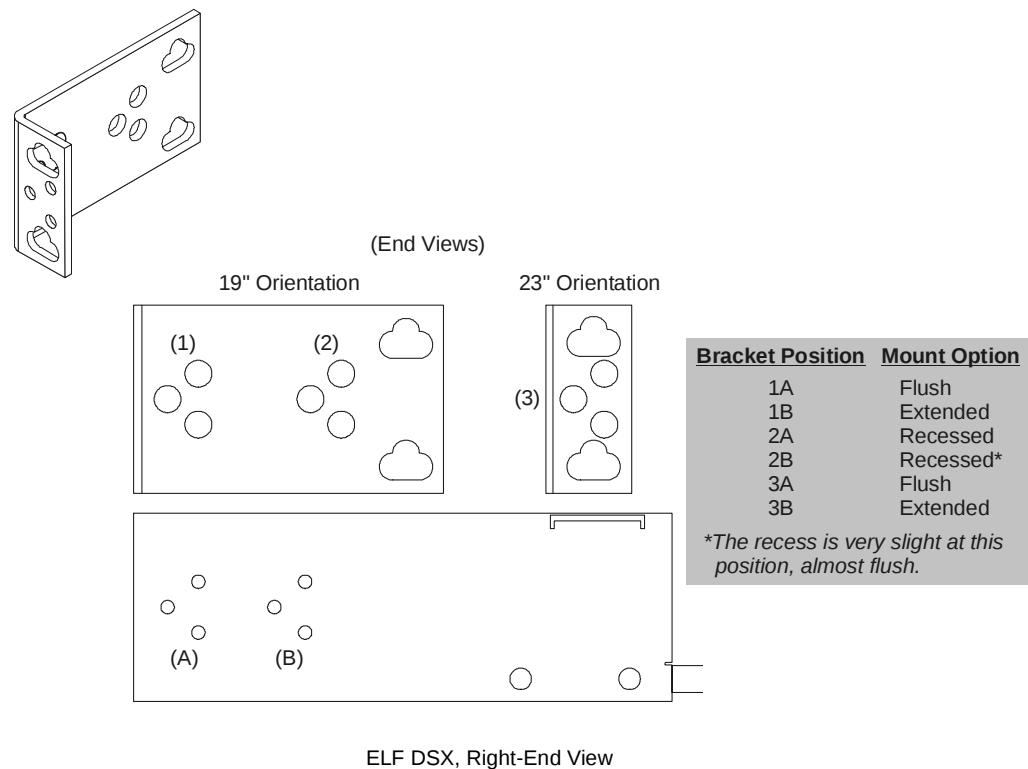
1-800-551-4567 or 1-509-926-6000

Keep the container until you have checked equipment operation. If you experience any kind of problem, call Telect's Customer Service Department. Use the original, undamaged container if you are instructed to return the ELF DSX to Telect.

INSTALLATION PROCEDURE FOR RACK-MOUNT ELF DSX

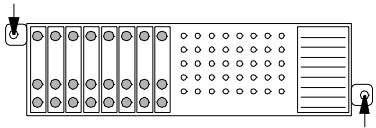
Rack-Mount Options

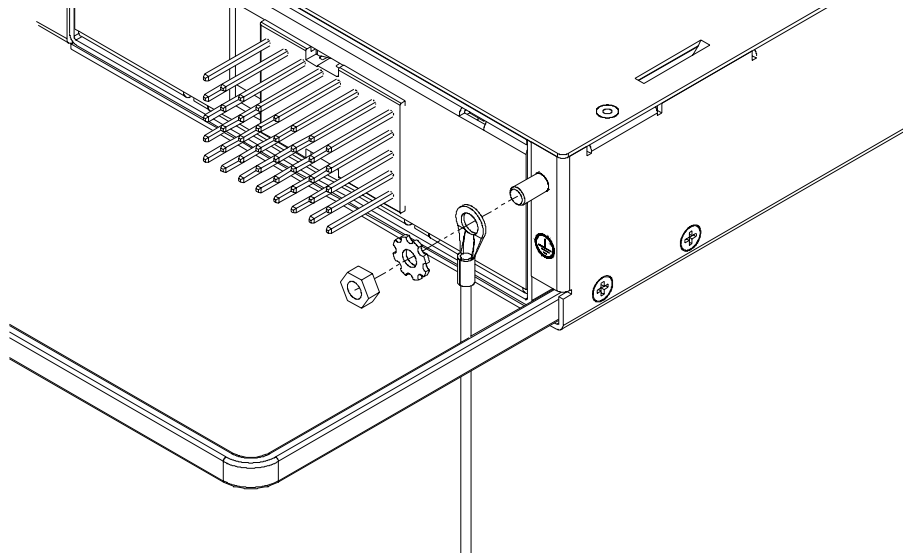
You can leave the mounting brackets in their default location on the chassis for 19" (48.3 cm) flush mounting. Or you can remove and reposition the brackets for a number of different mounting options:



Rack Mounting and Cabling Procedure

Step	Action
1.	Insert one to three ELF DSX modules into the chassis. Secure each module to the chassis faceplate with two screws (provided).
2.	Mount the ELF DSX with four screws (#12 or M6, both sets are provided).
3.	Attach a 14 AWG ground wire with a ring lug to the 8-32 ground stud on the rear panel. Connect the opposite end to a ground point on the rack.

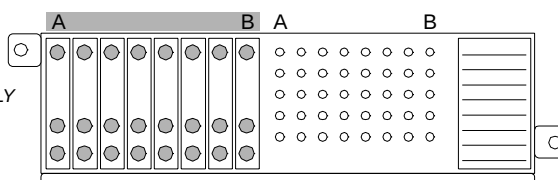




4. Attach in/out (I/O) cables (at the rear for chassis systems; at the front for TFA DSX modules used in chassis). Connectors are labeled. Use cable ties and the tie-down bar to manage the cables.
5. Make cross-connects at the front of the panel. If required, secure jumpers to the front tie-down bar using cable ties inserted through the slots in the bar and then wrap the tie around the jumpers.

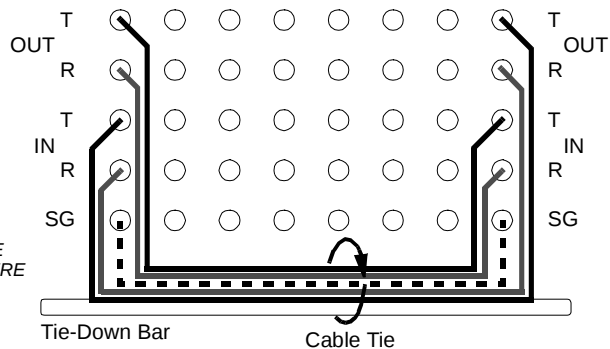
Wire Wrap

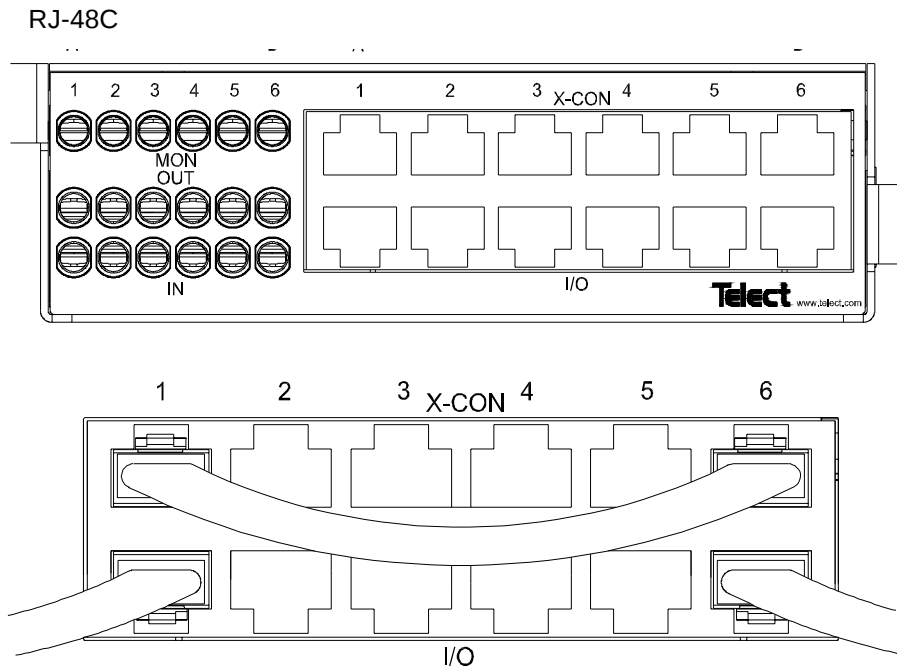
A TO B IS EXAMPLE ONLY



Out T "A" to In T "B"
Out R "A" to In R "B"
In T "A" to Out T "B"
In R "A" to Out R "B"
SG to SG (E1)

JUMPER ROUTING SCHEME
BETWEEN PINS SHOWN HERE
IS EXAMPLE ONLY



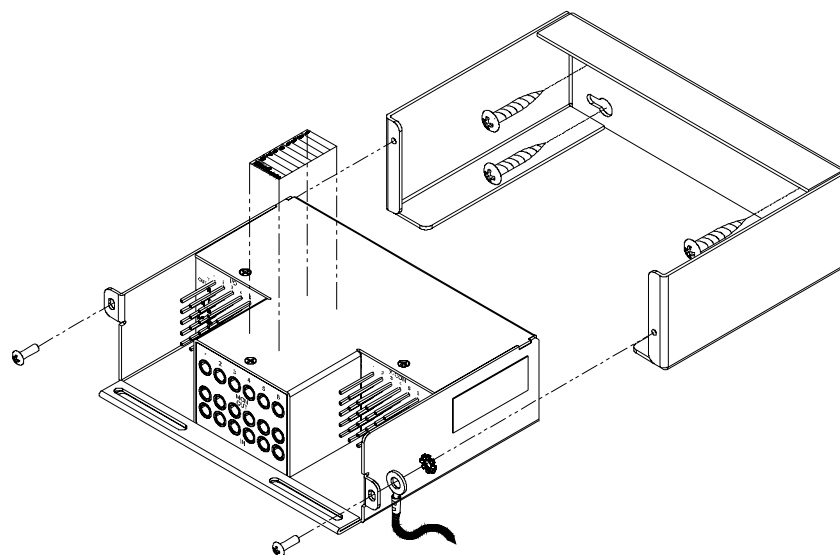


NOTE

There are no LEDs and therefore no tracer lamp (TL) connections to make. A shield ground cross-connect pin is provided for cross-connecting shield ground with the drain wire.

6. Record the circuits on the front designation card.

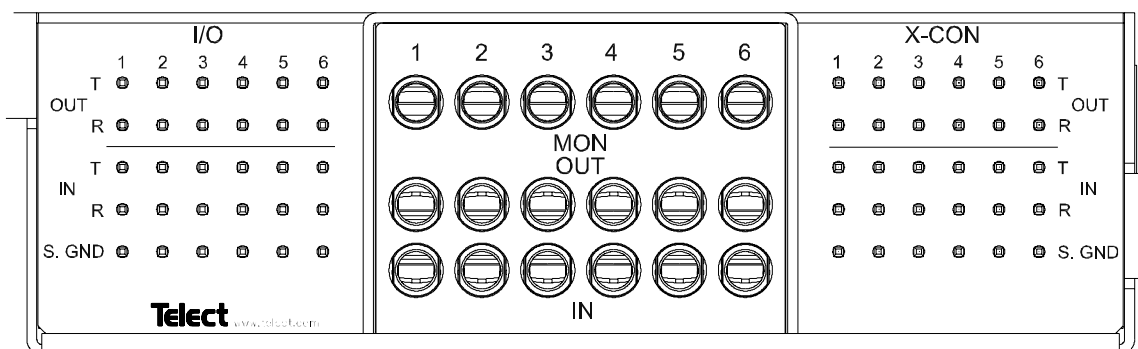
INSTALLATION PROCEDURE FOR WALL-MOUNT ELF DSX



Step	Action
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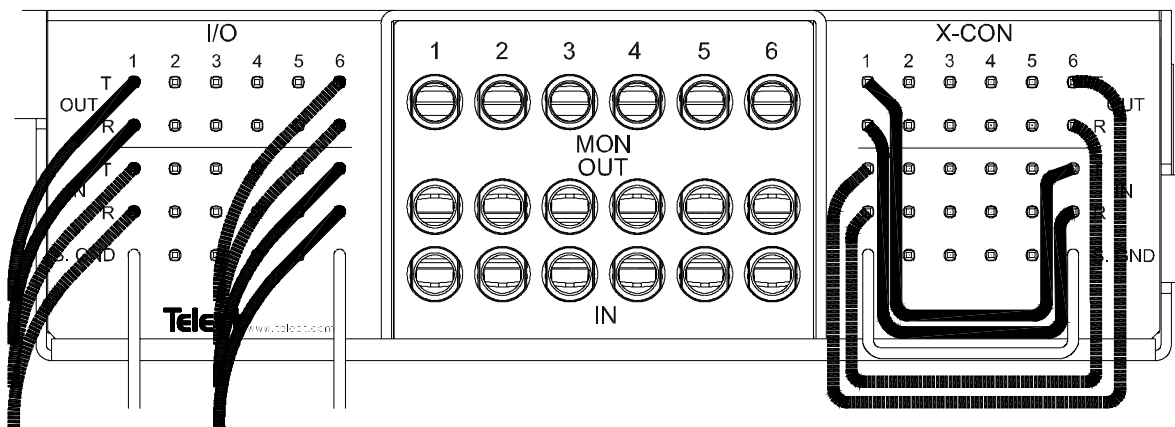
- | | |
|----|---|
| 1. | Use four, suitable panhead screws to secure DSX bracket to wall. Screws are not included. |
| 2. | Mount the ELF DSX in bracket using two M3 screws provided.

The away-facing surfaces of the mounting ears on the module are stripped of paint to ensure a good electrical ground. For grounding, use the ring lug and star lockwasher provided along with a #14 AWG (min.) copper wire. |
| 3. | For TFA Wire-Wrap DSX modules, <ol style="list-style-type: none"> Wire-wrap in/out (I/O) cables to the left of the patch area. Use cable ties and the tie-down bar to manage cables. |



- Make cross-connects at the right of the patch area. Again, use cable ties and tie-down bar to manage cables.

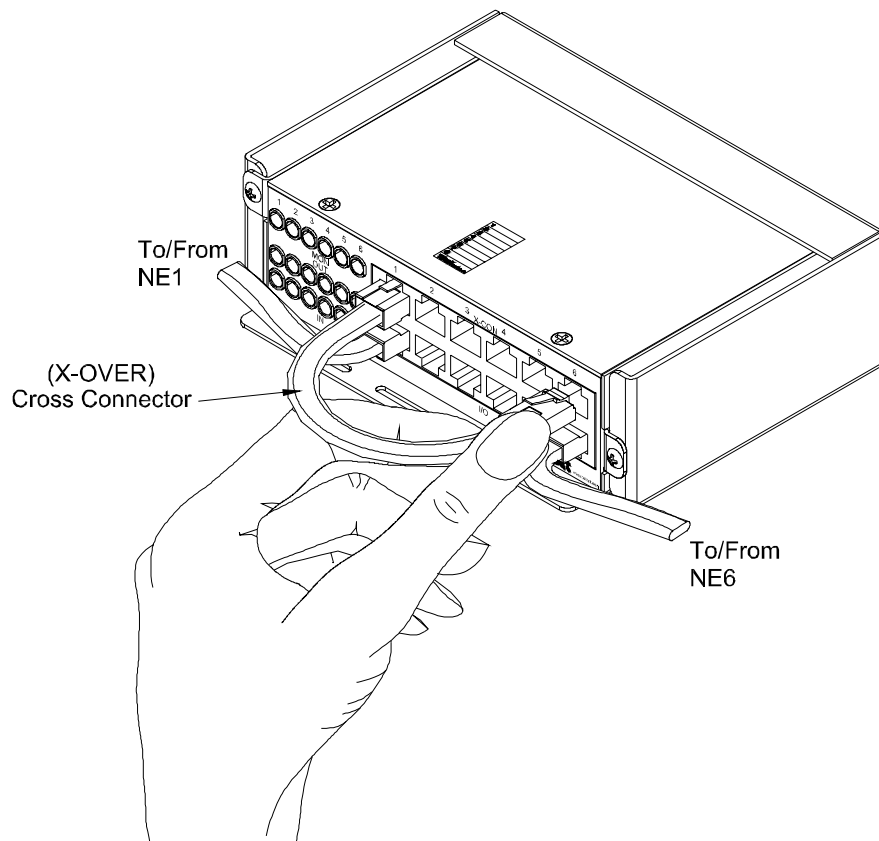
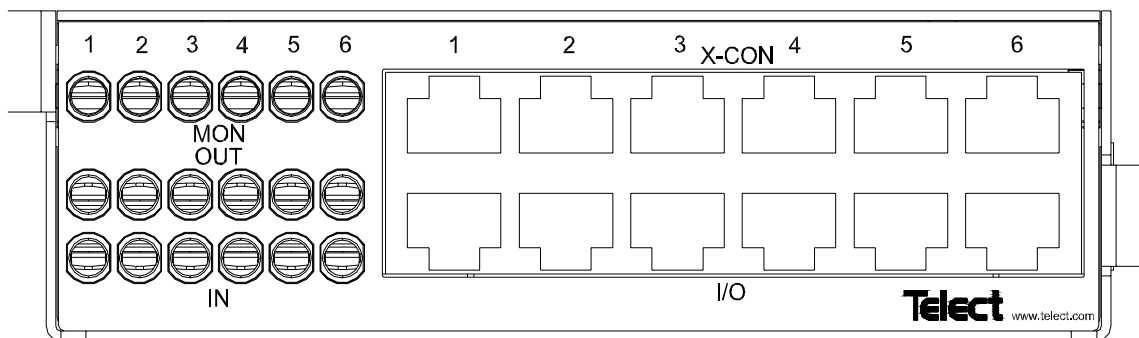
The example below shows network element 1 (NE 1) cross-connected to NE 6.



NOTE

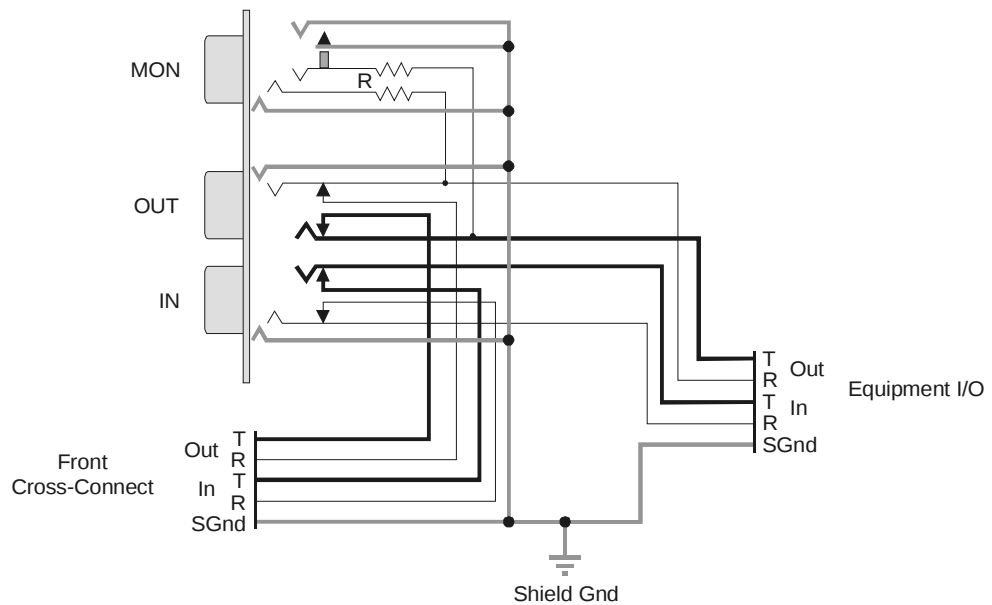
There are no LEDs and therefore no tracer lamp (TL) connections to make. A shield ground cross-connect pin is provided for cross-connecting shield ground with the drain wire.

- c. Record the circuits on the designation card and affix anywhere.
4. For TFA RJ-48C DSX modules, make input/output (I/O) interconnections along the bottom row of RJ connectors and cross connections along the top row, as shown in the following illustration. Record the circuits on the designation card and affix anywhere.

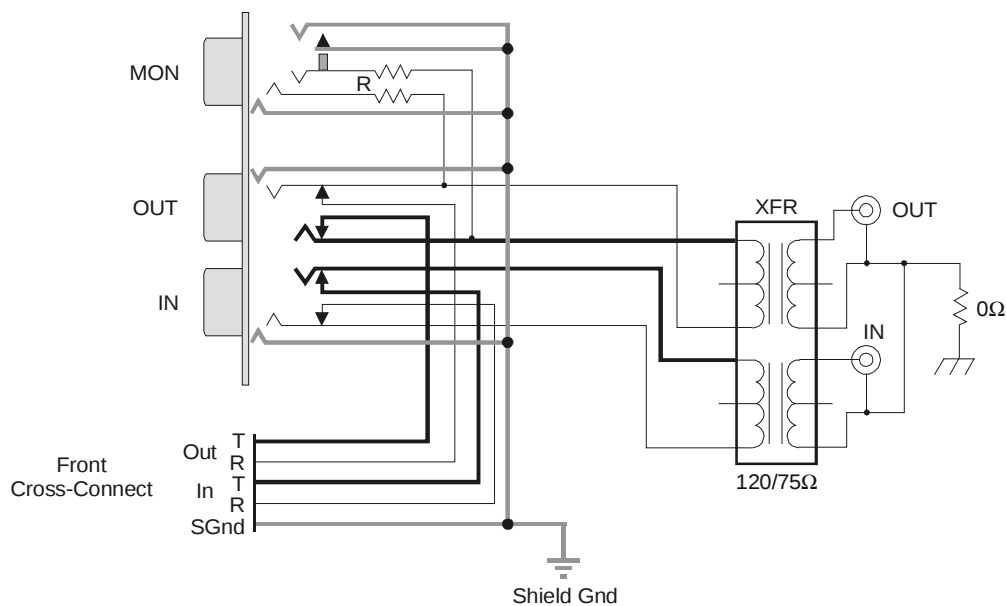


3 *Electrical Operation*

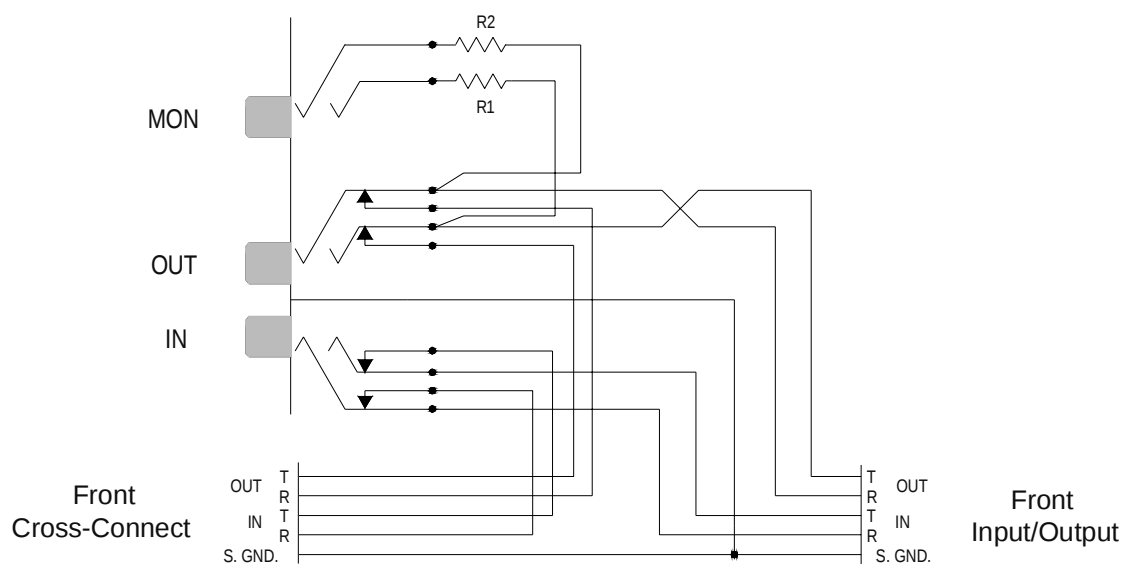
SCHEMATIC, RACK-MOUNTED WIRE-WRAP



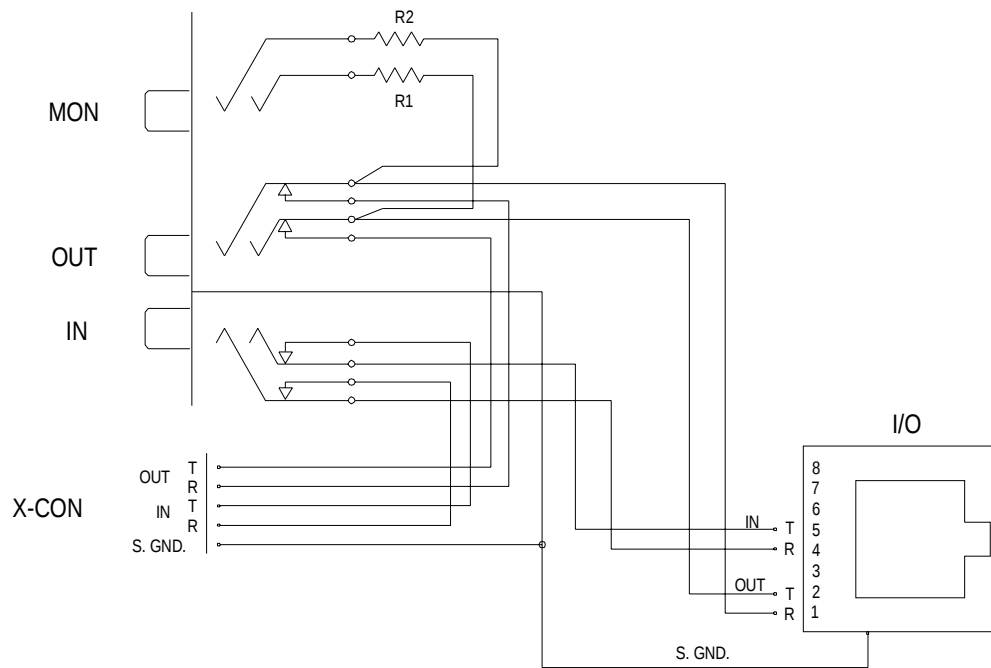
SCHEMATIC, RACK-MOUNTED BNC



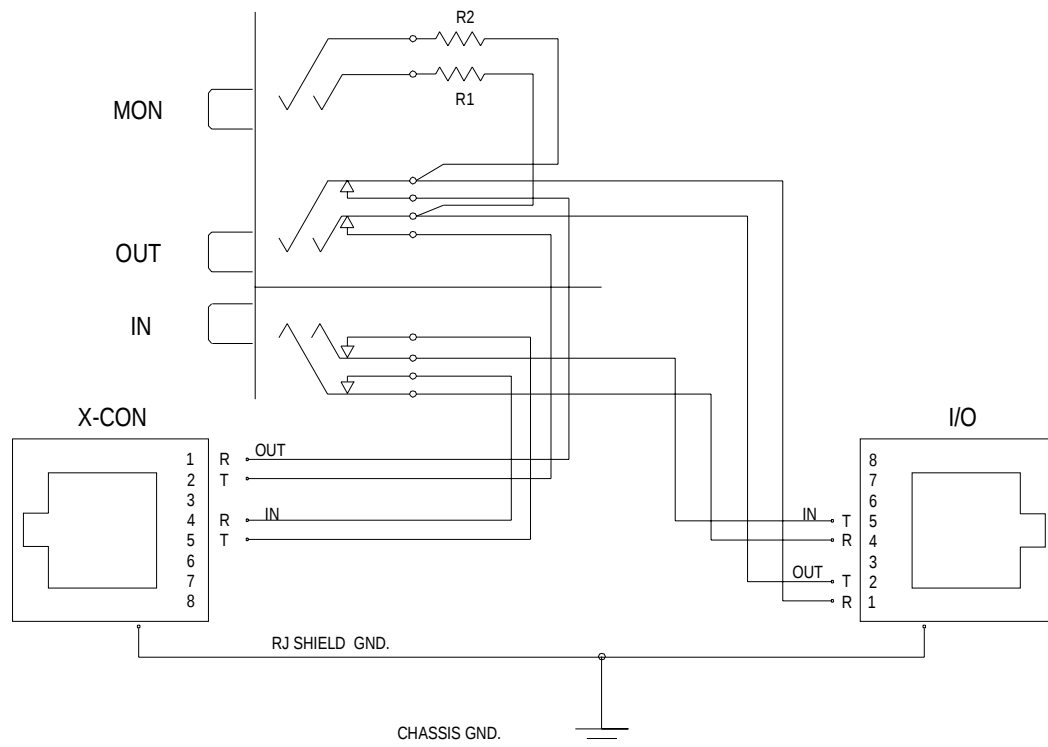
SCHEMATIC, TFA WIRE-WRAP



SCHEMATIC, RACK-MOUNTED RJ-48C



SCHEMATIC, TFA RJ-48C



4

User Functions

MONITORING

To monitor the OUT signal from an ELF DSX module, plug one end of a single patch cord into the MON port and the other end into the monitoring equipment. The MON port connection is nonintrusive.

PATCH AND ROLL

Patching maintains a circuit by temporarily cross-connecting to back-up equipment so that technicians can repair or test the lines of the permanent connection. Patching and rolling allows a circuit to be moved from an existing facility to a new or spare facility, including new permanent cross-connects.

NOTE

If you use a dual patch plug, remember to twist the plug on one end of the cord so that it is reversed (i.e., turned upside down) from the other end.

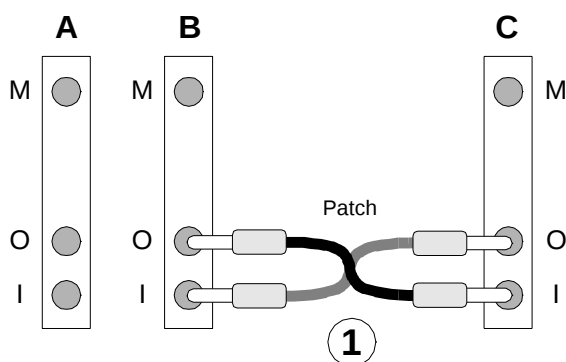


Step	Action
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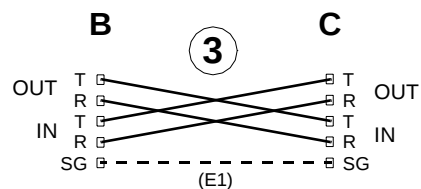
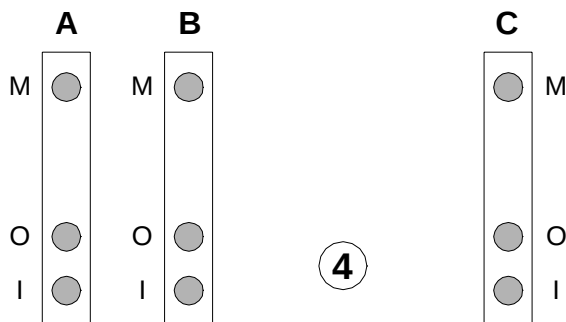
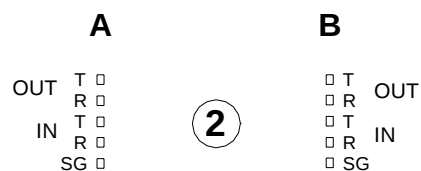
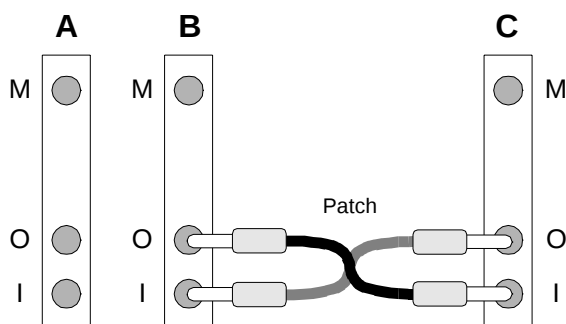
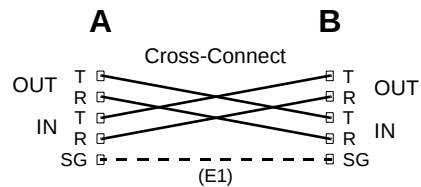
1. Patch B to spare facility C. Insert patch cords in C, then in B.
2. Remove the cross connects between the A and B facilities.

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3. Install cross-connects between B and C.
4. Remove the patch cords between B and C. Service is established through the new cross-connects.



NOTE:
CROSS-CONNECTS ARE SHOWN
IN DIAGRAM FORM.



5

Service



CAUTION

CAUTION! This product must be installed and maintained only by qualified technicians.

VORSICHT! Nur von qualifizierten Technikern installiert werden und instand gehalten werden.

PRECAUCIÓN! Ser instalado y ser mantenido solamente por los técnicos autorizados.

ATTENTION! Ce produit doit être installé et entretenu uniquement par des techniciens qualifiés.

OWNER MAINTENANCE

Telect's ELF DSX does not need preventive maintenance.

IN CASE OF DIFFICULTY

If problems occur after initial installation, check cable connections and grounding as described in the installation instructions in Chapter 2.

Technical Support (USA)

By e-mail: getinfo@telect.com

By phone: 888-821-4856 or 509-921-6161

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IN-WARRANTY SERVICE

Contact your Telect equipment distributor, or call a Telect Customer Service Representative:

1-800-551-4567

1-509-926-6000

Telect will repair or replace defective products within the limits of the warranty. See “Repacking for Shipment” in this section.

NOTE

Call a Customer Service Representative for a Return Material Authorization (RMA) before returning any equipment.

OUT-OF-WARRANTY SERVICE

The procedure for out-of-warranty service is the same as for in-warranty service, except that Telect charges a processing fee, and you must submit a Purchase Order along with a Return Material Authorization (RMA) before returning equipment. Call a Customer Service Representative for help getting these forms.

The processing fee guarantees a repair estimate and is credited against actual material and labor costs.

REPACKING FOR SHIPMENT

Step	Action
1.	Tag the equipment showing owner's name, address, and telephone number, together with a detailed description of the problem.
2.	Use the original shipping container if possible. If you do not have it, package the equipment in a way to prevent shipping damage. Include the RMA inside the container and legibly print the RMA number on the outside of the package, near the shipping address.
3.	Insure the package.

NOTE

Telect is not liable for shipping damage.

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