TROMPETER CENTRAL OFFICE PRODUCTS – DS3

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

TRUE 75 OHM DS3 COAXIAL BNC PLUGS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

INTRODUCTION

Trompeter Electronics, founded in 1960, is a designer/manufacturer of point of termination equipment, connectors, and cross connects for the DS3 coaxial wireline in the telco central office. The company is ISO 9001 registered and enjoys an international presence in the Telecommunications Industry. Most Trompeter telco products are NEBS tested and approved.

ISO 9001 REGISTRATION

Trompeter has been ISO 9001 since 1994. The main value of being an ISO 9001 registered company is in the assurance to our customers that we have a solid quality system in place, and that it is well documented. DET Norske Veritas (DNV), our ISO Registrar, has certified that we are in compliance with established systems and policies. ISO 9001 Quality System Standard is a document outlining twenty elements of quality that Trompeter addressed in order to meet registration requirements. An accredited ISO 9001 auditor must verify, through on-site audits, that a company has a well documented quality system in place that meets the requirements of ISO 9001, and that the company is working in accordance with the documented system. Trompeter's Quality System is also certified by numerous other accredited agencies. ISO 9001 registration makes Trompeter more competitive in the global market by giving customers the assurance that they are dealing with a company dedicated to meeting their quality expectations.

DNV

DET NORSKE VERITAS
QUALITY SYSTEM CERTIFICATE

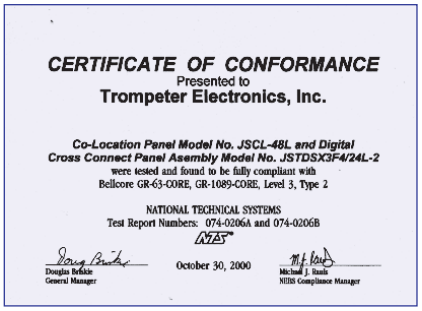
TROMPETER ELECTRONICS, INC.

ISO 9001, 1994

THE DESIGN AND MANUFACTURE OF RF CONNECTORS, CABLE ASSEMBLIES, PATCH PANELS, LOOPING PLUGS, AND PATCH CORDS FOR THE TELECOMMUNICATIONS, MILITARY/AEROSPACE, BROADCAST AND OTHER INDUSTRIES

NEBS LEVEL 3 TYPE 2 COMPLIANT AND TEST CERTIFIED

NEBS stands for the Network Equipment-Building Systems and has several levels and types. The most stringent level is Level 3 and the type that involves the central office DS3 coaxial transmission line is Type 2. The Bellcore specifications that define this testing are contained in GR-63-CORE, Issue 1, October 1995 and GR-1089-CORE, Issue 2, Revision 1, December 1999.



CERTIFICATE OF CONFORMANCE
Presented to
Trompeter Electronics, Inc.

Co-Location Panel Model No. JSCL-48L and Digital Cross Connect Panel Asembly Model No. JSTDSX3F4/24L-2
were tested and found to be fully compliant with
Bellcore GR-63-CORE, GR-1089-CORE, Level 3, Type 2

NATIONAL TECHNICAL SYSTEMS
Test Report Numbers: 074-0206A and 074-0206B

Douglas Behnke
General Manager

October 30, 2000

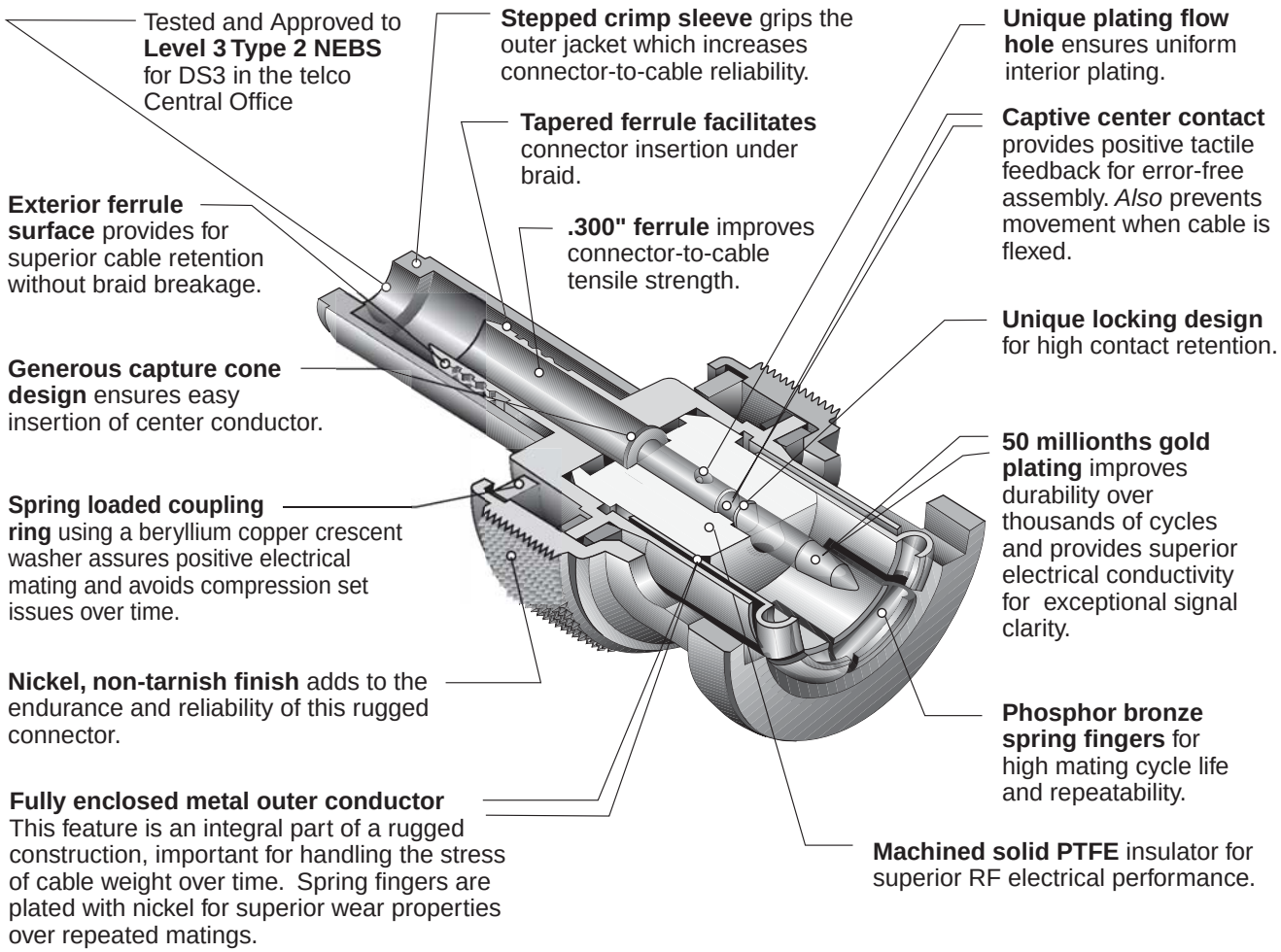
Michael J. Hanis
NEBS Compliance Manager

The NEBS standard is now in place as a condition of selling equipment into the public network, particularly the central office, where high reliability is so key to uninterrupted service levels for data and digitized voice.

A partial list of the testing includes airborne particulates, earthquake vibration, low temperature exposure, open flame, high relative humidity, altitude, heat dissipation, fire propagation, mixed flow gas airborne contaminates, acoustic noise emissions, office and shipping vibration and drop, and illumination clarity in addition to all the stringent electrical and data rate signal requirements.

The Trompeter BNC connector is NEBS Level 3 Type 2 approved for the central office DS3 line.

18 REASONS WHY OUR BNC CONNECTORS OUTPERFORM THE COMPETITION EVERY TIME!



BNC COAX CONNECTORS

Trompeter BNC's are designed to accommodate specific manufacturer cable models. Our tool crimp BNC cable plug has over 30 cable groups to match over 2000 cables! Cable samples are carefully analyzed and connectors physically tested to ensure that you are receiving the most reliable termination in the industry. Trompeter's superior mechanical design ensures mechanical integrity by incorporating features you may not see in other connector designs.

TELCO CENTRAL OFFICE BNC STANDARD FEATURES

Continuous improvement ensures that you will always get the best BNC in the telco industry. We build our BNC's to Trompeter tough standards with extremely close tolerances. Connector bodies are made of top quality brass with a bright nickel plating. Our patented, outer conductor springs are fully-enclosed. Heat-treated, beryllium-copper female center socket and brass male contacts have 50 millionths inch gold plating and all dielectrics are made of machined or molded solid Teflon™.

BNC means "bayonet Neill-Concelman"; named for Paul Neill, who developed the N series connector at Bell Labs, and Carl Concelman, who developed the C series connector.

TRUE 75 OHM DS3 COAXIAL BNC PLUGS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

NEBS Level 3 Type 2 Compliant and Test Certified

STRAIGHT, 45° AND 90° BNC'S...

Trompeter's 45° and 90° BNC's provide the ultimate combination for routing and cable management in tight spaces.

TROMPETER INNOVATION...

Only Trompeter offers 45° and 90° BNC's with superior designs at considerable cost savings over other brands. The convenience of standard cable stripping dimensions and tooling (same as our straight BNC's!) gives you the connecting edge.

APPLICATION NOTE...

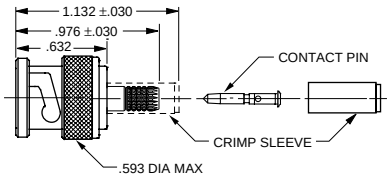
Trompeter designed the 45° and 90° BNC connectors specifically for DSX applications where large quantities of cable are routed through, in and around tight areas. Telecom cabling typically requires a bend radius of more than two and a half times the cable's outer diameter. Over-bending can cause cable damage, signal degradation and change a cable's electrical characteristic. Combinations of straight, 45° and 90° connectors allow for minimal cable bending, leading to decreased cable replacement cost and increased system reliability. See bend radius tutorial in Appendix.

THE BNC INTERFACE...

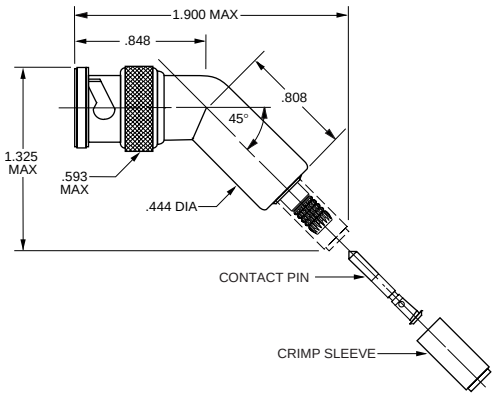
Provides easy engagement and disengagement using a bayonet coupling.

THE TOOL CRIMP TERMINATED BNC...

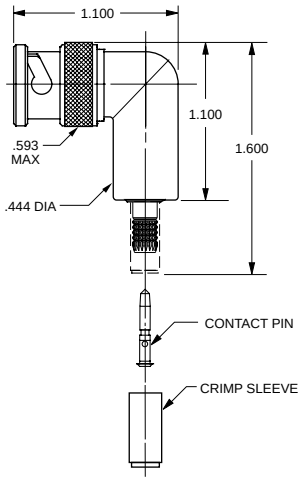
Consists of three pieces: a body, center contact and crimp sleeve. The contact pin is crimped onto the coax conductor and jacket/braid is secured by crimping the crimp sleeve.



UPL220-XXX
Straight, 75 Ohm BNC Cable Plug, Tool Crimp



UPLFF220-XXX
45° Angle, 75 Ohm BNC Cable Plug, Tool Crimp



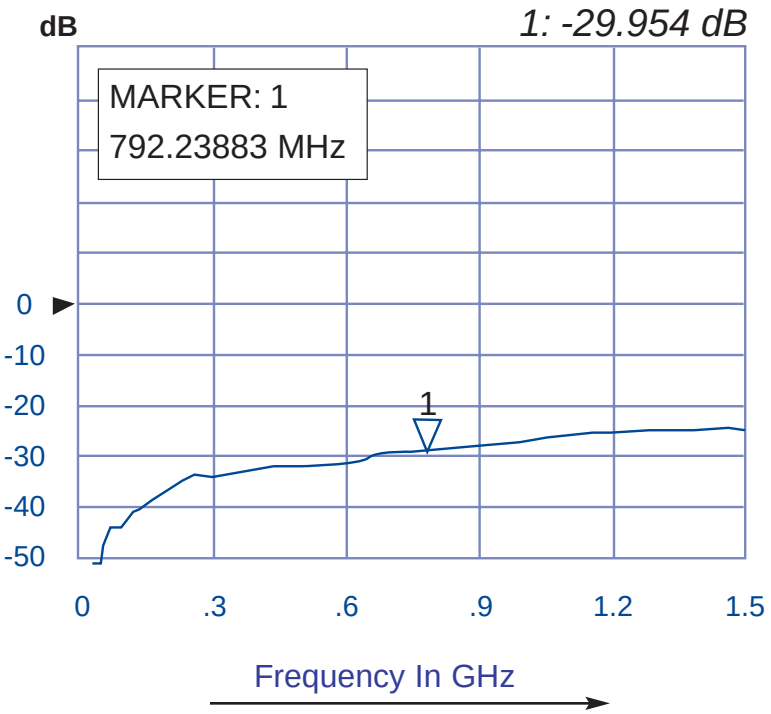
UPLR220-XXX
90° Right Angle 75 Ohm BNC Cable Plug, Tool Crimp

XXX - Refer to pages 6-7 for Cable Groups.

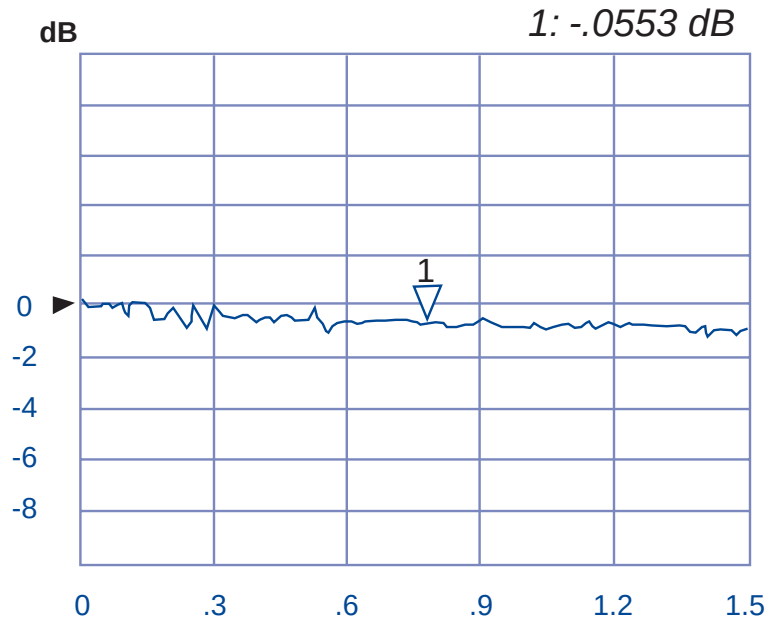
Article under test is UPL220-026 (BNC Plug) on
Lucent-735A Cable (10 inches in length)

SUPERIOR RF PERFORMANCE

RETURN LOSS



INSERTION LOSS



The DS3 coax telco central office transmission line runs @ 44 Mbps as a data rate. Using the 7th harmonic and AMI coding, this converts to a bandwidth need of 154 Mhz, an upper end frequency requirement of 200 MHz. As shown above, the Trompeter BNC performs well even at 10x that level.

TRUE 75 OHM DS3 CABLE GROUP TABLE

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

Cable	Cable Group #	Hand Held Stripper Crimp Tool	Cutter head**	12 pt. Center Contact	Crimp Die
AT&T/Lucent					
734 Type					
2734A	**105-1313***	ST1/STC-F	C26T3D	010-0098	CD3-19
734A/D	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
1735A	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
2735A	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
2735B	**105-1684***	ST1/STC-F	C26T3I	010-0098	CD3-19
735A/C	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
728	**-016**	ST1/STC-F	C26T3D	010-0098	CD3-2
KS-19224L2	**-027**	ST1/STC-F	C26T3I	010-0098	CD3-19
Belden					
734 Type					
1809A	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D1	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D6	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D1T	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D2	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D2T	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
735A1	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A3	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A6	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A8	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A9	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A12	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A16	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A24	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A1T	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A2	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A2T	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
Additional Types					
YR28314	**-009**	ST1/STC-F	C26T3I	010-0098	CD3-19
YR39667	**-009**	ST1/STC-F	C26T3I	010-0098	CD3-19
9231	**-016**	ST1/STC-F	C26T3D	010-0098	CD3-2
CommScope					
734 Type					
734C1	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734C12	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734C1H	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734C1P	**105-1313***	ST1/STC-F	C26T3C	010-0098	CD3-19
734S1	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734S1H	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734S6	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734ST	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
73501P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
73502H	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
73503P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
73506P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
73509P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
73512P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T1	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T1H	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T1P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T2	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T2H	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735T2P	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
Helix/Hi-temp					
734 Type					
7340101	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
735201	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19

TRUE 75 OHM DS3 CABLE GROUP TABLE

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

Cable	Cable Group #	Hand Held Stripper	Cutter head**	12 pt. Center Contact	Crimp Die Crimp Tool
JUDD					
734 Type					
C1401053	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
C1401064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1403064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1406064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1408064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1409064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1412064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1416064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1424064	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
P1402001	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
P1403001	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
P1403011	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1403002	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1406002	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1408002	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1409002	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
M1412002	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
Montrose/CDT					
734 Type					
CBL 1233	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
CBL 1235	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
CBL 2108	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
CBL 2109	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
CBL 1288-1	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-3	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-6	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-8	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-9	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-12	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-16	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
CBL 1288-24	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
Norcom/CDT					
734 Type					
734A	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734D	**-025**	ST1/STC-F	C26T3D	010-0098	CD3-19
734T	**105-1439***	ST1/STC-F	C26T3D	010-0098	CD3-19
735 Type					
735	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19
735A	**-026**	ST1/STC-F	C26T3I	010-0098	CD3-19

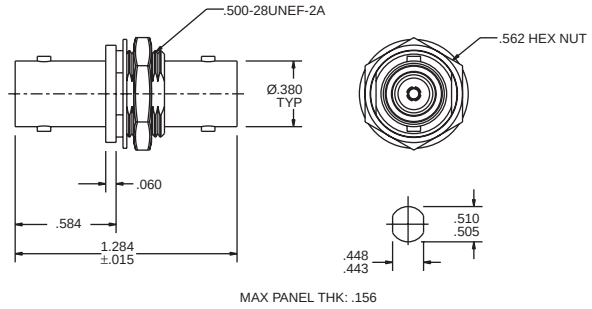
Dialogue Box

Run lengths vary in the telco central office (CO). Cable needs to be sized to accommodate this so that attenuation limits are not exceeded. Typical 734-type cable is usually capable of run lengths up to 450 feet and 735-type cable is usually capable of run lengths up to 225 feet. Cable attenuation expectations is provided by the cable manufacturers and is usually expressed in dB per 100 feet at various frequencies. For the DS3 coaxial line in the telco CO, we recommend using 200 MHz as the upper frequency limit for the typical DS3 line.

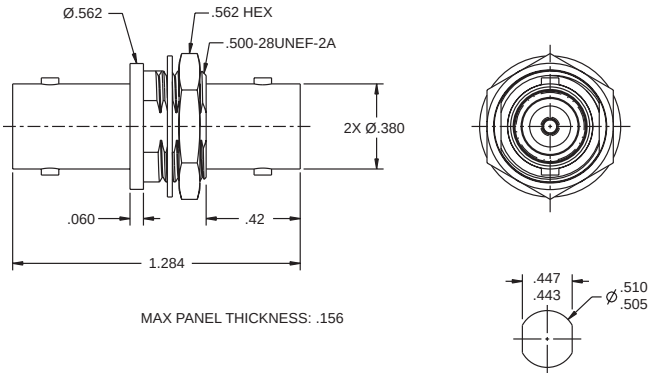
Cable Group Table Notes: ** Cutter head used with Powered Cable Stripper (BCWS or AWS)
* Call Factory, Dash number is model specific. For more information on the tools, refer to the Tools of the Trade portion of this catalog.

TRUE 75 OHM COAXIAL WITHIN SERIES BNC ADAPTERS

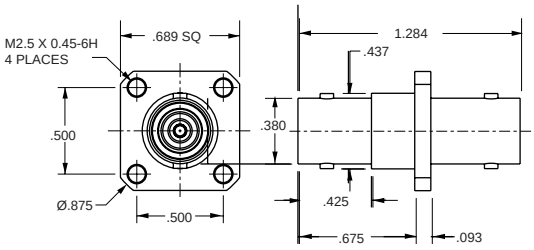
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



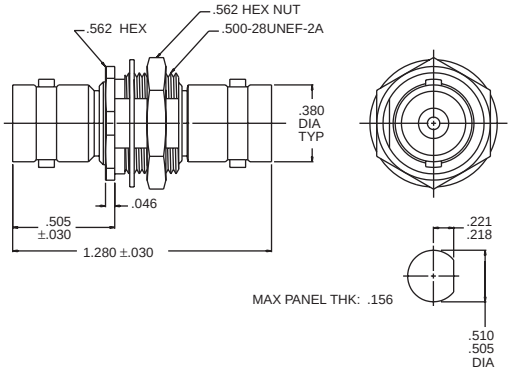
UBJ24
Bulkhead Cable Jack
Feed-Through, Non-Insulated, 75 Ohm



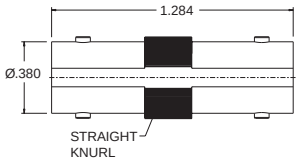
UBJ228
Socket Contact Coaxial BNC Type Insulated Feed Through Bulkhead Jack, 75 Ohm



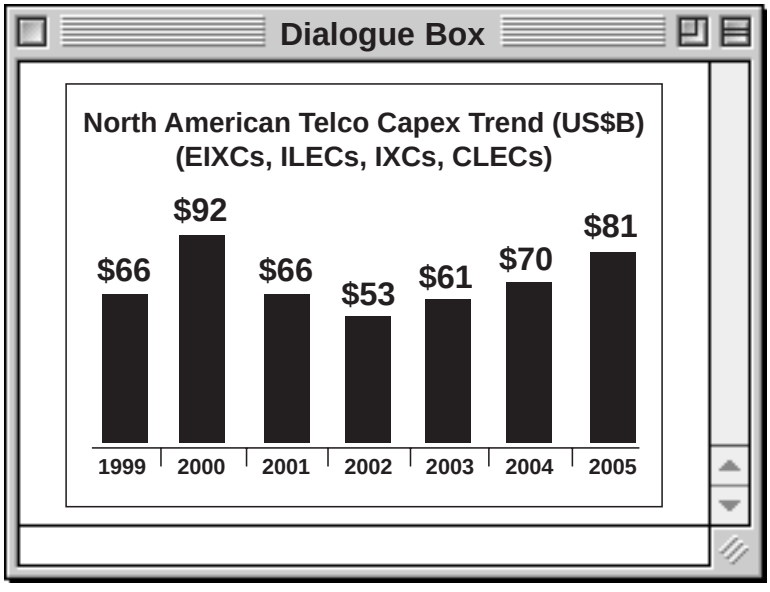
UBJ24F
BNC Double Jack with Mounting Flange
• Comes with Four 6mm Long Pan Head Screws, 75 Ohm

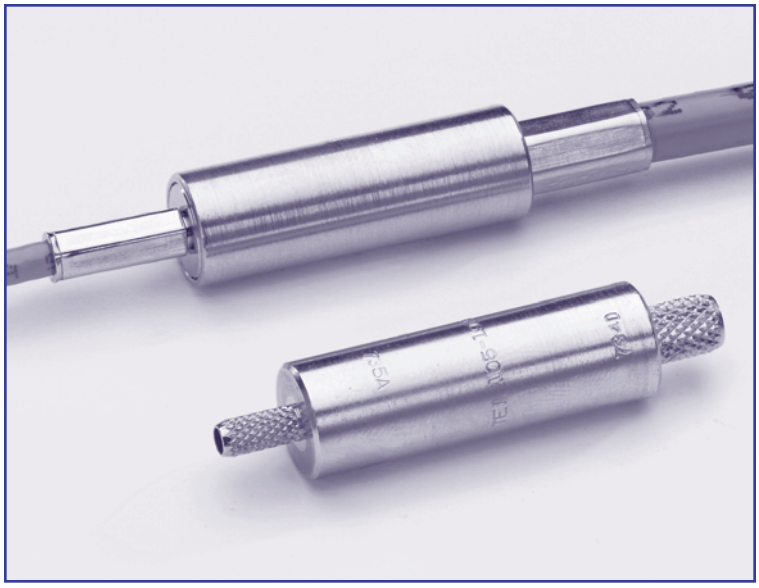


UBJ28
Bulkhead Jack
Feed-Through, Insulated, 75 Ohm



UAD228 (replaces UAD28)
Within Series Female
BNC Feed Thru Adapter, 75 Ohm





TROMPETER SPLICE CONNECTOR

This cable splice incorporates Trompeter's industry standard crimp sleeves and center pins ensuring the same quality cable retention found in our BNC products. A splice is available with pin and crimp sleeve sizes to accommodate all current telephony coax cables.

The splice was designed to facilitate the connection of two cable runs of different sizes when mating two different size cables in the same wire-line cable run. It can also be used to connect a cable run that has been cut, broken or extending the cable run.

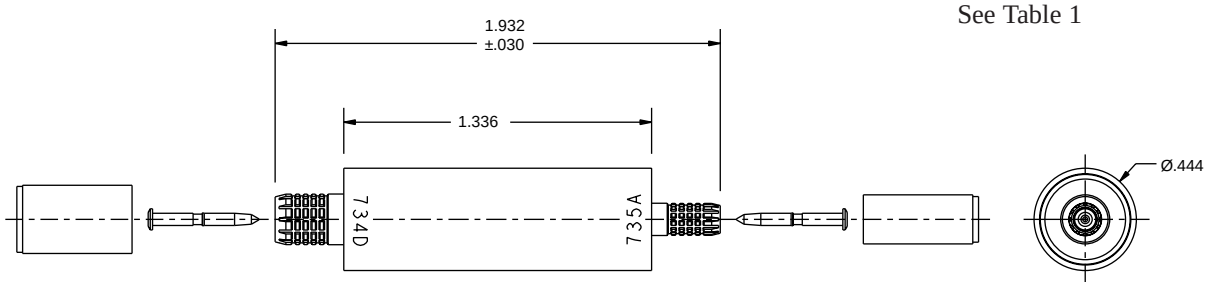
Insertion and return loss data is available by contacting the factory.

Table 1 *Dash Number*	*Cable*
-025 -026	734D-734A
-026 -026	735A to 735A
-025 -025	734D to 734D

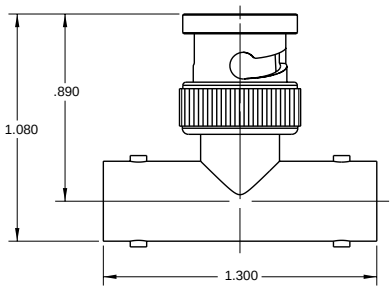
Example of Complete Part Number:

UCCS - 025 - 026

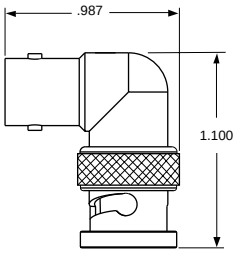
- UCCS — Basic Part Number
- 025 — Lower Cable Group Number See Table 1
- 026 — Lower Cable Group Number See Table 1



UCCS-XX-XX
75 Ohm, Tool Crimp Cable Adapter (Splice)
Replace XX With Cable Group Numbers From Table 1)



UBN23
BNC "T" Adapter
75 ohm



UADRMF220
BNC Adapter
Right Angle
75 ohm

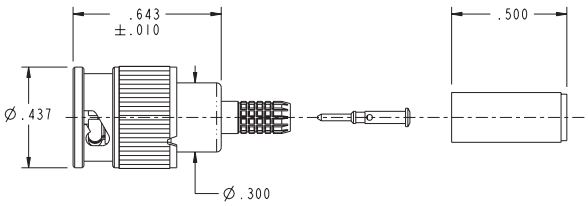
75 OHM COAXIAL MINI-BNC SERIES

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

The mini-BNC 250 RF connector series from Trompeter was designed specifically for DS3 telco coaxial central office applications to allow higher interconnect density while preserving the positive characteristics of the Trompeter full size BNC. In fact, the 250 series provides for higher density of interconnects in a given area.

Alternative products such as the SMB, while sometimes offered in true 75 ohm, do not have bayonet locking features. Some have no interface locking feature at all and some use "posilock" technology, which is quite expensive and not nearly so well known in the telco space as the bayonet locking system. Also, SMB connectors were not typically designed to be field-terminated while the BNC was and this smaller version 250 series, the Mini-BNC is.

In researching this next-generation RF connector series, Trompeter canvassed many of the mainstream service providers and visited several central office facilities to determine clear goals for this new connector. The design objective became very clearly one of maintaining all the characteristic of the Trompeter BNC while allowing higher density. At Trompeter, we rank the importance of trained and well-equipped installers at least equal in value to the connector itself with the Mini-BNC there is no need for retraining field installers and no need for new tooling for those installers.



The elements of the Trompeter design that were specifically targeted for inclusion are:

1. **Same crimp/crimp design** – the Trompeter BNC and the Trompeter miniature BNC are field terminated with the exact same cable strip tools, contact crimp tools, and crimp sleeve crimp tools. The effectiveness of a crimp/crimp connector has been proven over 30 years of use in the telco DS3 application involving an estimated 50 million connectors.

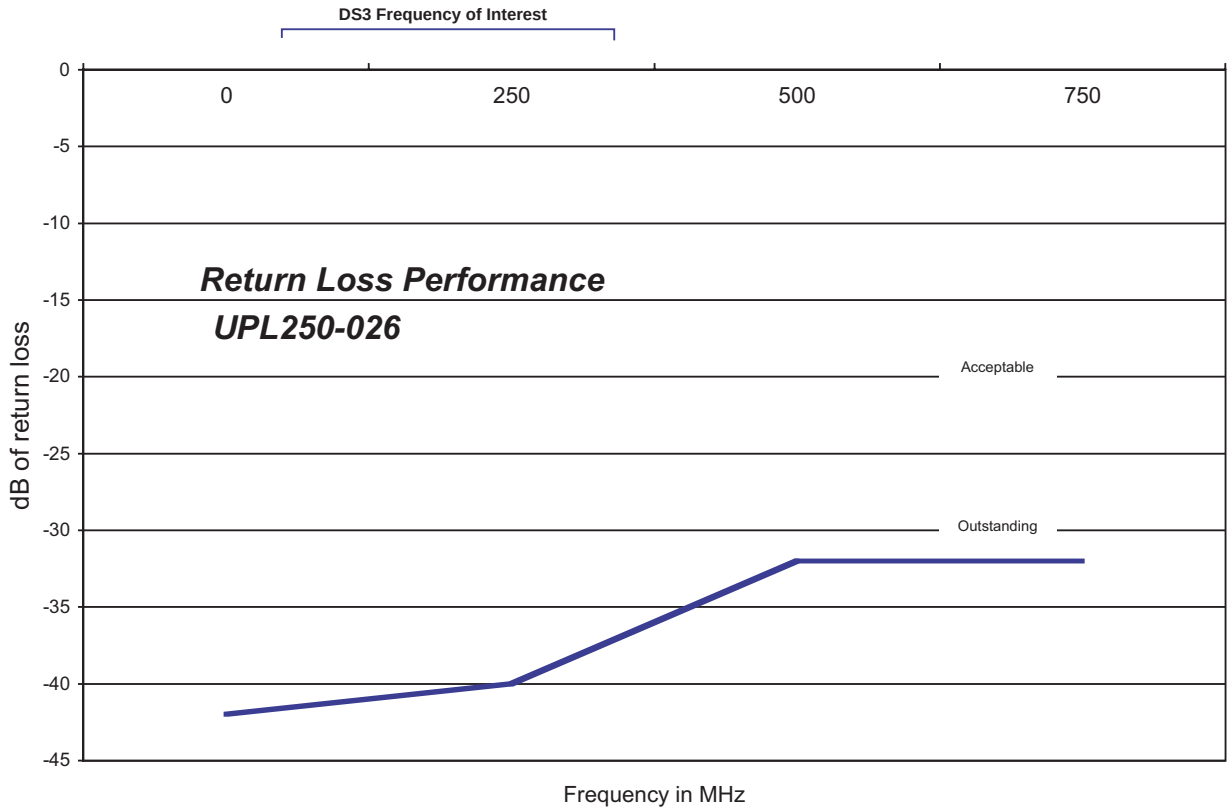
2. **Same installation tooling** – the Trompeter tooling for the telco DS3 cable termination assignment is truly best-in-class and is widely used by the wide base of trained telco installers. With field tooling already deployed and installers already trained, the use of the UPL250-xxx will be easily implemented. The tools are the same, the strip dimensions are the same and the installation is the same.

3. **Same footprint on the jack side** – since many high density applications such as routers use SMB or SMZ jacks to achieve interconnect density, the 250 series jacks have been carefully designed to use the same footprint on the printed circuit board, allowing easy implementation of this innovative technology.

4. **75 ohm** – the DS3 line in the telco central office is 75 ohm and the mini-BNC is as well. Further, this characteristic is tightly designed and manufactured to stay at this impedance over the frequencies of interest and beyond. This allows RF "head room" and presents a matched impedance condition to the electromagnetic field that is so important to return loss performance.

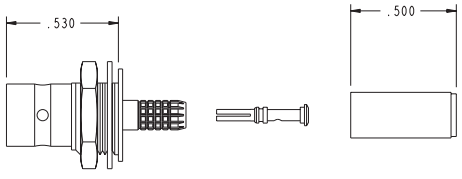
5. **Bayonet locking coupling mechanism** – the primary advantage of the BNC over threaded alternatives is a quick-connect feature enabled by the pair of lugs on the jack side interface and the J-slots on the plug side interface. This mechanism is positive and can be sensed to be fully mated when engaged. In the case of the Trompeter product, the bayonet is held in a positive force condition under load for the life of the part (typically 30 or 40 years) by a beryllium copper wave washer that does not deform over time (lower cost connector products now available on the market may use alternative materials in lieu of beryllium copper for this function.)

6. **Visual inspection** – because the mated condition is so important to flawless signal processing over long periods of time, the bayonet coupling can be visually inspected to determine if the plug is fully engaged to the jack. This is unique to the BNC and mini-BNC product since threaded parts do not have a positive stop representing full engagement. The Trompeter design facilitates this inspection process by a mark on the plug coupling sleeve that can be aligned and shown to be fully engaged.



7. **Mate/De-mate tool** – Trompeter has designed and manufactured a removal tool that is uniquely fitted to enable installation and removal of the mini-BNC in tight spaces without resorting to pulling on the cable itself. This tool is modeled after the BNC-removal tool and uses the same materials and design.

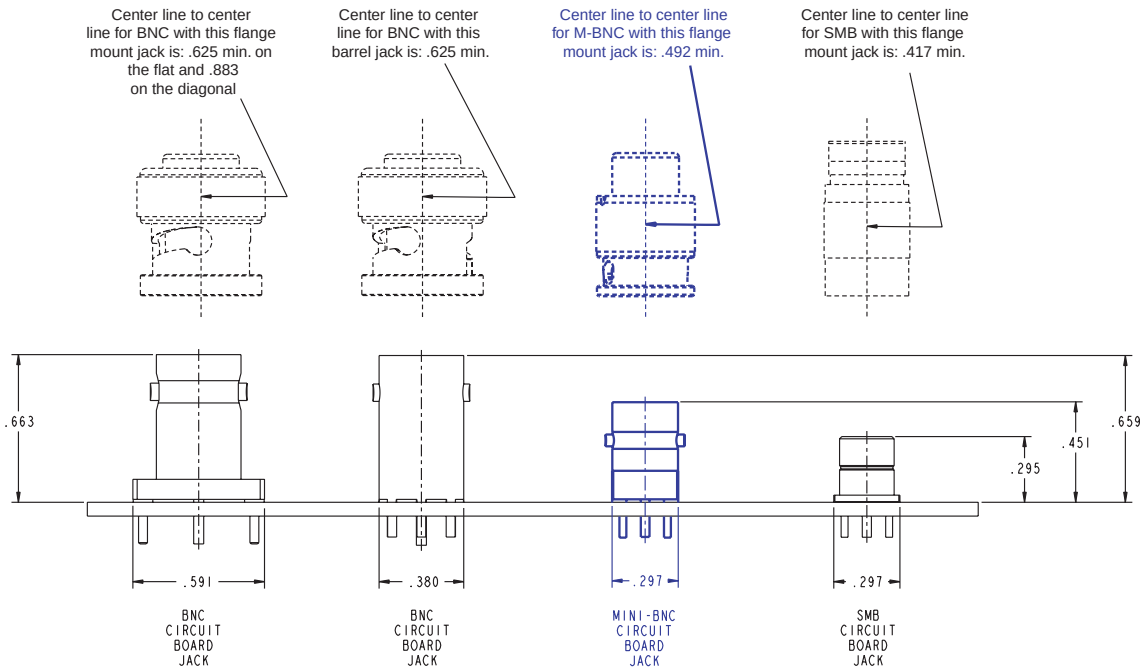
8. **Attention to long term signal quality** – the 250 series mini-BNC maintains the same high attention to quality in design and materials that the Trompeter BNC is famous for including:
   - Fully enclosed spring fingers
   - 50 millionths of gold plating on the center contact, with a nickel barrier layer as well
   - Solid PTFE (Teflon™) dielectric material
   - Identical proven ferrule design for maximum cable retention
   - Tapered lead in for the center wire into the rear of the center contact
   - Tapered lead end to allow positioning the braid over that the foil under the ferrule itself
   - Lot traceability on each part
   - Plating weep hole in center contact
   - Nail head feature in center contact
   - Center contact engages dielectric with positive tactile snap



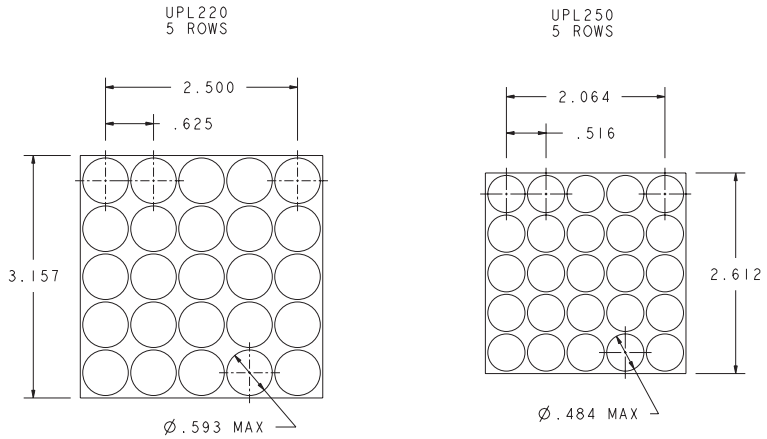
75 OHM COAXIAL MINI-BNC SERIES

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

All products in the M-BNC 250 series are 75 ohm		final plate	bulkhead mount
UPL250-026	Straight plug M-BNC series	ni	n/a
UPL250-025	Straight plug M-BNC series	ni	n/a
UPL250-014	Straight plug M-BNC series	ni	n/a
UPL250-009	Straight plug M-BNC series	ni	n/a
UPLR250-026	Right angle plug M-BNC series	ni	n/a
UPLR250-025	Right angle plug M-BNC series	ni	n/a
UBJ250-026	Bulkhead cable jack	ni	yes
UBJ250-025	Bulkhead cable jack	ni	yes
UAD258	M-BNC jack to M-BNC jack adapter Barrel adapter	ni	yes



Spacing Comparison BNC vs M-BNC



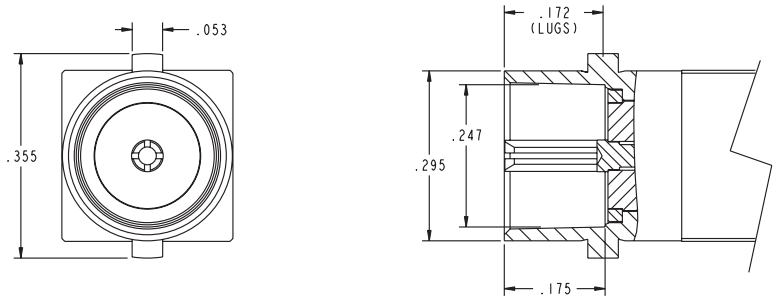
Same as the telco standard BNC except smaller. This allows 40% more interconnects in the same area.

Introducing the Trompeter 6-pack

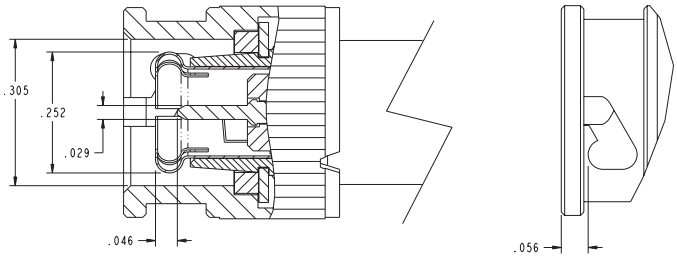
- UPL250-xxx in a terminal block configuration.
- Using push-on design - coupling sleeves removed.

Interface Dimensions:

Jack



Plug



Dialogue Box

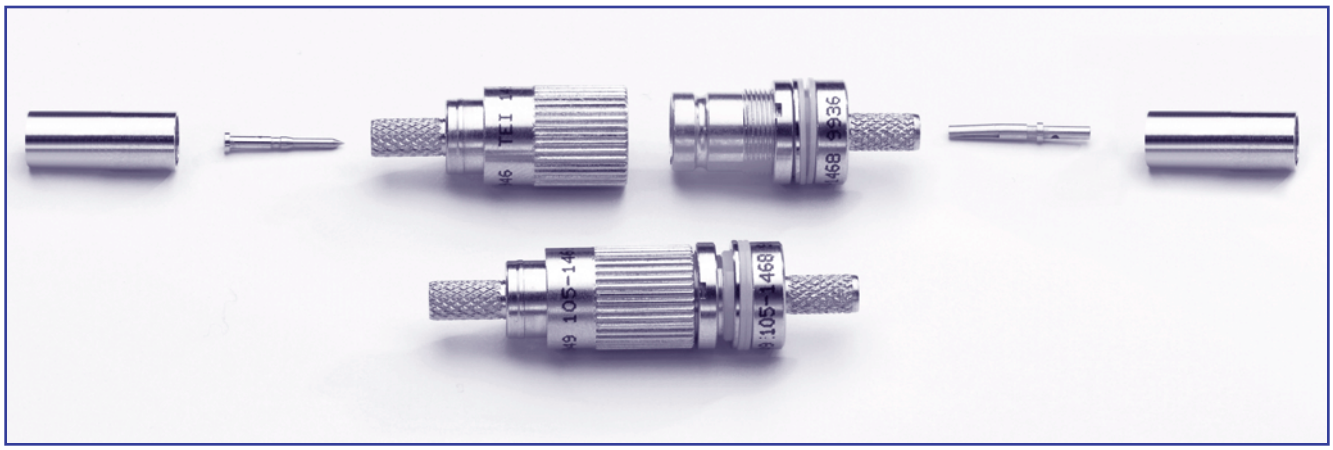
DS3 (Digital Service Level 3)

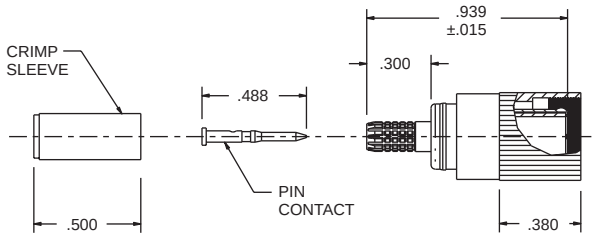
44.736Mb/s. A DS3 is a circuit that is provided to customers by telephone companies. It is a transport for 28 T1 circuits, which adds up to 672 DS0 circuits (voice channels). Telecommunications customers use DS3 circuits as private lines to connect data devices from one geographical place to another or to transport large amounts of dial tone to the premises. DS3 circuits are also used to connect directly to a long-distance company for broad-band WAN service.

Telecommunications companies also use DS3 circuits to provide more telephone service where a shortage of twisted pairs is in their cable plant. Sometimes it is less expensive for a telephone company to install the DS3 electronics in areas, rather than long feeds of large twisted copper-pair cables.

TRUE 75 OHM COAXIAL 1.6/5.6 DIN CONNECTORS

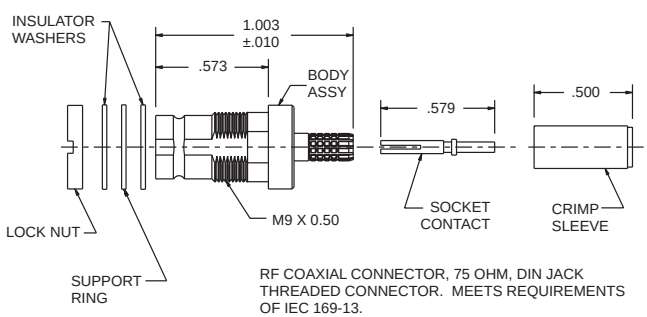
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM





RF COAXIAL 75 OHM DIN THREADED FULL CRIMP CABLE PLUG

UPL110-XXX*



RF COAXIAL CONNECTOR, 75 OHM, DIN JACK THREADED CONNECTOR. MEETS REQUIREMENTS OF IEC 169-13.

UBJ110-XXX*

Time is money and so is space when you're talking about working area in a central office, CLEC or Co-location space. These applications are looking for more equipment in a small compact working space. Being able to provide more throughputs in a given panel or bay is becoming more important to OEM designers of telco hardware. Trompeter's 110 series connectors are made to the DIN 1.6/5.6 interface specification. This connector style is used in the European and South American Telecom Central Offices for DSX cross connects and beginning to be used and requested in the North American market.

Trompeter's 110 series connectors are 30% smaller than the standard BNC currently used for the Coax Central Office termination. With this space savings 72 interconnects can be placed in the same 1 rack unit panels as 52 BNCs.

The 110 series of connectors is available as a cable plug, cable jack, a U-Link for connecting two jacks, a right angle circuit board jack, and BNC to DIN adapters.

Trompeter's 110 series works with all the cables currently in use in the central office environment and, just as all Trompeter connectors, can be manufactured to accommodate any coax cable changes.

The 110 series 1.6/5.6 DIN connectors have the same superior quality performance are 220 series of telco standard BNCs. Tooling for the Trompeter DIN series is the same as used for the Trompeter 220 series - see installer tooling section of this catalog.

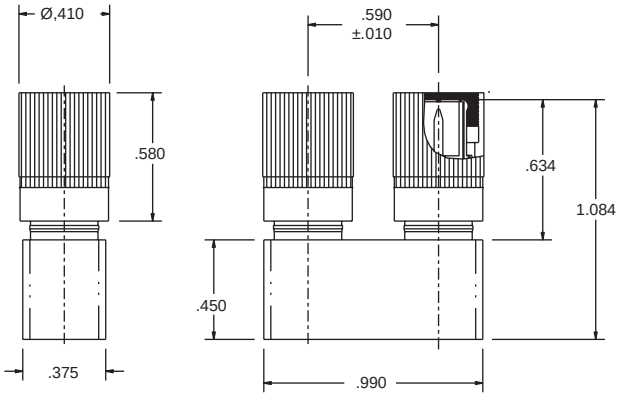
***Note: ** = For specific cable manufacturer and model number cable group information please see the cable group table in this catalog.*

XXX - Refer to pages 6-7 for Cable Groups.

TRUE 75 OHM COAXIAL 1.6/5.6 DIN CONNECTORS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

U-Link : 105-1496



DUAL COAXIAL DIN CONNECTOR
"U-LINK" 75 OHM WITH TWO PLUGS
BASED ON THE 169-13
SPECIFICATION

U-Link : 105-1496

DIN CONNECTOR SPECIFICATIONS:

Electrical Data:

Characteristic Impedance	75-ohm
Frequency Range	0-3Ghz
VSWR	1.22
Working Voltage	1,500 VRMS at sea Level 300VRMS at 65,000 feet
Temperature Range	-40C to +85C
Insulation Resistance	10,000 MegaOhm Min
Contact Resistance	4.0 milliohms

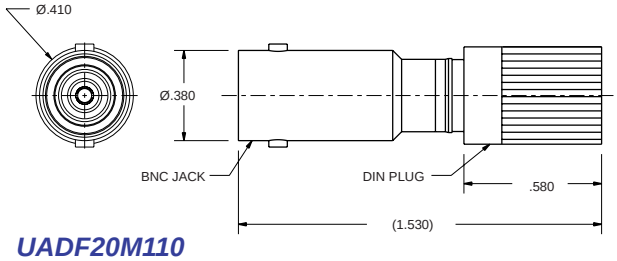
Mechanical Data:

Spring Finger Engagement Force	1.5 lbs min, 5 lbs max
Spring Finger Withdrawal Force	12 oz min
Crimp Strength	50 pounds minimum average for 735 type cable and 70 pounds minimum average for 734 type cable.
Durability	500 mating

Material:

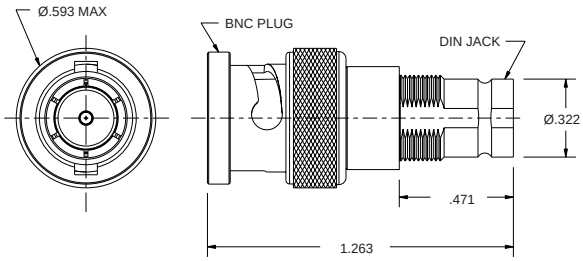
Jack Body	Brass per ASTM-B16
Male Body	Brass per ASTM-B16
Crimp Sleeve	Brass per ASTM-B16
Socket Contact and Spring Fingers	BeCu per ASTM-B196,197
Pin Contact	Brass per ASTM-B16
Dielectric	PTFE

BNC TO 1.6/5.6 DIN BETWEEN SERIES ADAPTERS



UADF20M110

Adapter 75 ohm BNC Jack to 75 ohm Din Plug



UADM20F110

Adapter 75 ohm BNC Plug to 75 ohm Din Jack

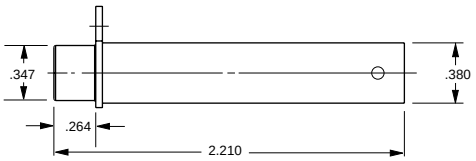
MINI-WECo PATCHING

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

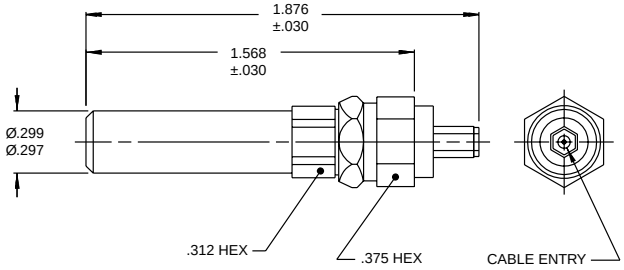
Trompeter Recommended Mainstream Telco Patch Cords:

Trompeter has standardized our default patchcord Mini-WECo connector to the version with a gold plated barrel and a plastic tipped entry bushing. We have found that this combination gives higher electrical and mechanical performance than other combinations and, with the additional volume we generate by standardizing on a single recommendation, we are able to achieve this without an increase in cost. Obviously, we will continue to build other customer specified versions on the connectors and patch cord assemblies but we urge you to consider first the official Trompeter recommendation for these applications.

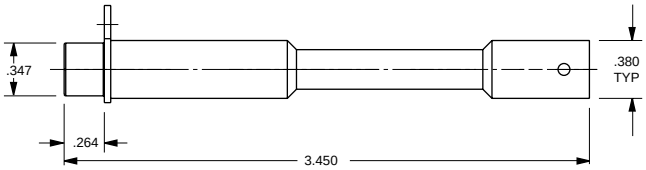
The telco Trompeter recommended patch cord Mini-WECo connector is the PCMWTL-D-L (L = length in inches) and has a locking tab feature built in as well as a tracer wire (the TL in the part name stands for "tracer lead", not "tab locking"). It is usually specified as a pair (transmit and receive) and may have a clip that holds the two leads at each end. It is also available as a single cable as part number PCMWTL-S-L (L = Length in inches) with no clip. Unless otherwise specified, the cable used is Trompeter's 735 which is specially built for Trompeter by Judd. As you can likely guess, the "PC" stands for patch cord and the "MW" stands for Mini-WECo.



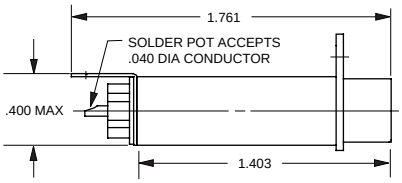
J11B
Miniature Patch Jack
Mini-WECo Type, BNC Rear Interface



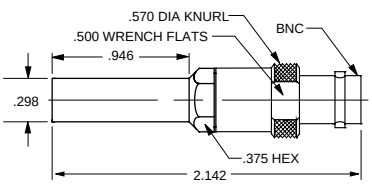
PL1MWLT-XXX
Mini-WECo DSX Digital Patch Plug with Locking Tab
PL1MW-XXX
Mini-WECo DSX Digital Patch Plug, No Locking Tab



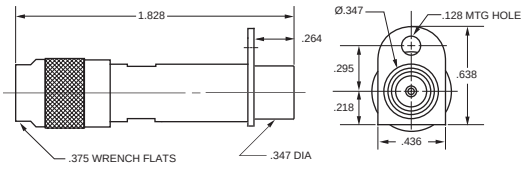
J11BL
Miniature Patch Jack
Mini-WECo Type, BNC Rear Interface



J11D
Miniature Patch Jack
Solder Pot, Mini-WECo Type



ADMW12
Adapter: 75 ohm Miniature Patch Plug (Mini-WECo) to 75 ohm BNC



J12-XXX
Miniature Patch Jack
Cable Entry, Field Serviceable, Mini-WECo
Minimum .64" centers

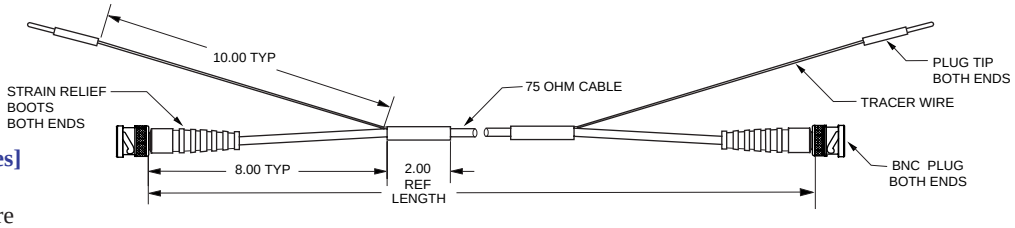
Replace XXX with Cable Group Number from the Cable Group Table on pages 6-7.

CROSS CONNECT PATCHING

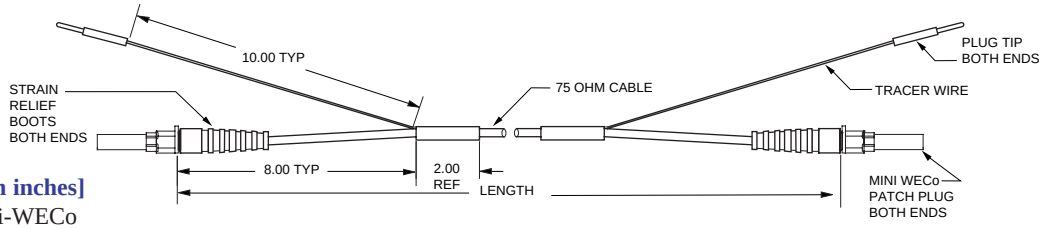
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

CROSS CONNECT PATCHING FEATURES

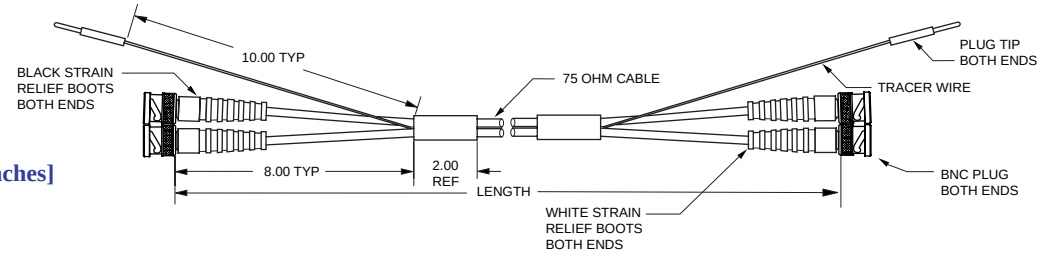
- Stranded center conductor
  24 AWG stranded silver coated copper (.024 Nom Dia)...
- Flexible cable design
  Gray fire retardant, non-migrating PVC jacketed
  (.185 Nom. Dia, .028 thick)...
- Tracer lead
  22 AWG tinned copper with gray PVC jacket
  (.104 Nom Dia)...
- Polypropylene foam dielectric
  Fire retardant (.108 Nom Dia)...
- Braid-Tinned copper over aluminum/polyester
  90% tinned copper braid over longitudinal
  aluminum/polyester shield tape, (.001 Nom thickness)
  20% min. overlap (100% shield coverage)...
- CM rated
  Meets UL1581 test for vertical tray flame
- Available in single or dual configurations



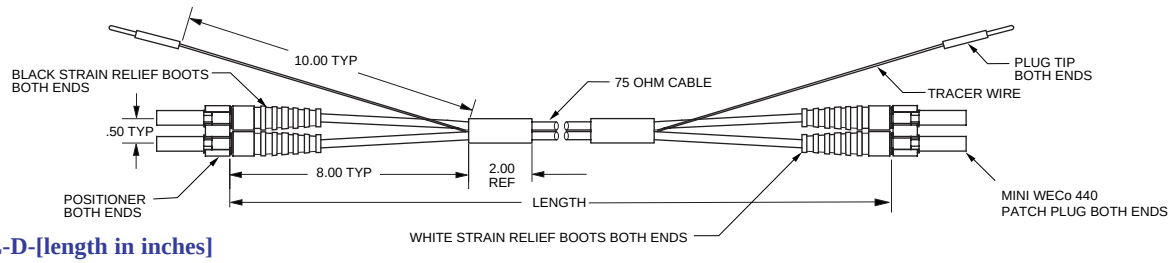
PCBTL-S-[length in inches]
Single Patch Cord:
BNC Plugs with Tracer Wire



PCMWTL-S-[length in inches]
Single Patch Cord: Mini-WECo
Plugs with Tracer Wire



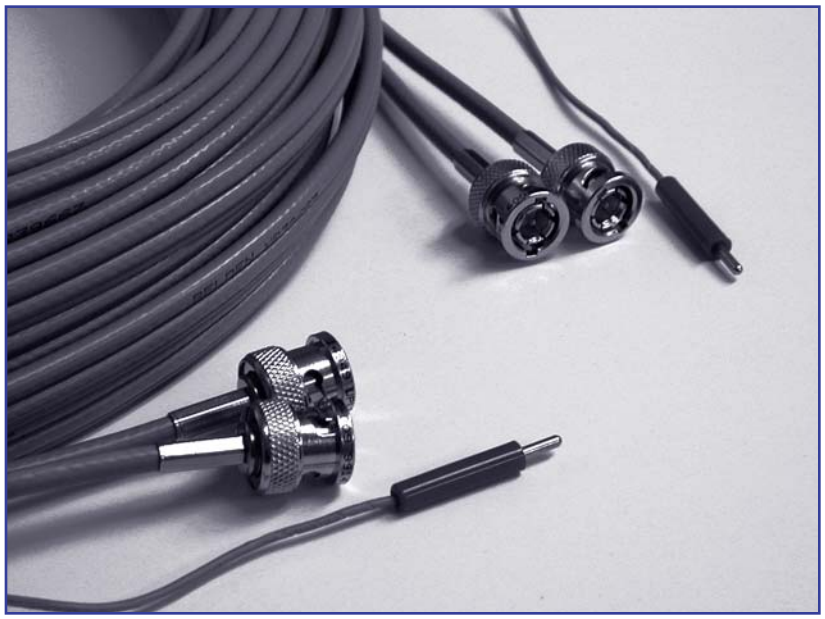
PCBTL-D-[length in inches]
Dual Patch Cord: BNC
Plugs with Tracer Wire



PCMWTL-D-[length in inches]
Mini-WECo Plugs
with Tracer Wire

CUSTOM CABLE ASSEMBLIES

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



CUSTOM CABLE ASSEMBLIES

Trompeter provides all the flexibility and response of a small cable shop, with the quality system and design control of a major connector manufacturer. For over 35 years, Trompeter has been producing high quality cable assemblies, and currently provides over 500,000 different configurations using a broad range of RF connectors and cable types.

CAPABILITIES

Trompeter can provide coax, twinax and triax cable assemblies using any cable attached connector. This includes panel mount, data bus, multi-pin, D-Subs, SMA connectors, and patching products. Special marking (ID sleeves, tags, hot stamping, colored cable jacket, etc...) is available. Trompeter offers 24-48 hour turnaround on many standard products with full capabilities for sustained volume delivery. Deliveries can be adjusted to meet your specific needs. Trompeter's assemblies are 100% electrically tested for continuity, shorts, and Hi-Pot. (Voltage Standing Wave Ratio (VSWR), Isolation Resistance (IR), Insertion/Return Loss test capabilities, SPC data available on request).

Dialogue Box

The Telco Copper Transmission Line

- DS0 - 64k data rate, one digitally sampled voice channel, 24 of which are "channel bank" multiplexed into a single
- DS1 - 1.544 Mbps data rate, still twisted pair, also called a T1 line, 28 of which are multiplexed (MUX) into a single
- DS3 - 44 Mbps data rate, the coax line that is carrying 672 voice channels simultaneously.

CROSS CONNECT NETWORKS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

It's All About Reliability:

NEBS Level 3 Type 2 Compliant and Test Certified

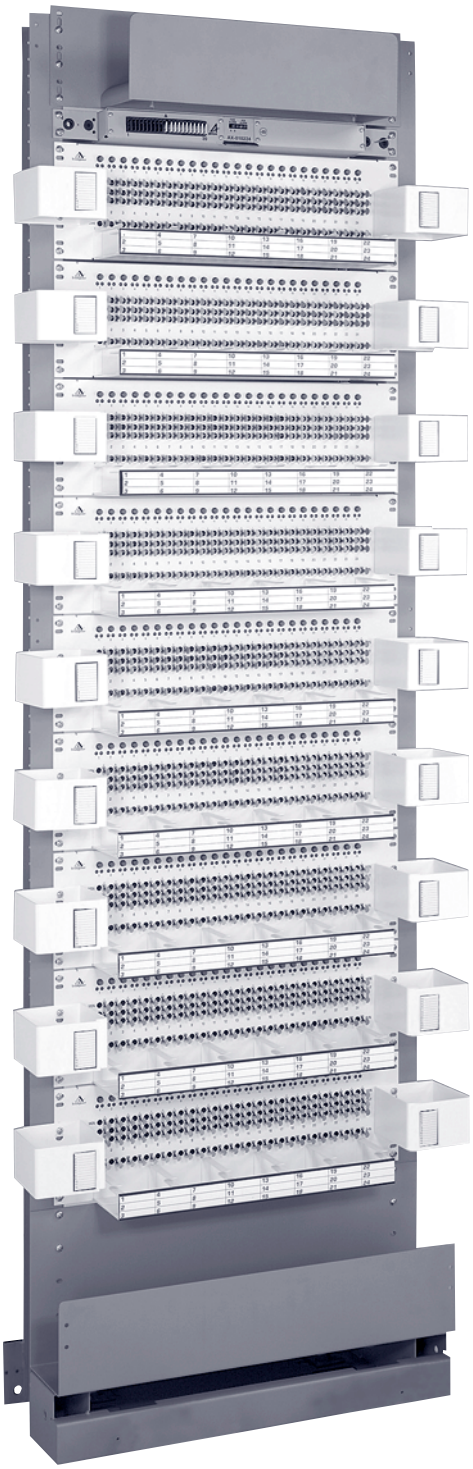
Trompeter offers a full line of DS3 transmission line components and interconnects that have been tested and certified to Bellcore requirements.

Many Trompeter telco central office products have been tested and approved by National Technical Systems as fully tested and compliant to the rigorous demands of NEBS (Network Equipment Building Systems) Level 3 Type 2 per Bellcore GR-63-CORE and Bellcore GR-1089-CORE. NTS is headquartered in Calabasas, California and is a NRTL (Nationally Recognized Test Lab).

The PBTDSX3F4 Digital Cross Connect System is the latest element in Trompeter's growing line of Central Office (CO) NEBS-approved products. We are proud of our close association with service providers around the globe and our reputation for meeting and exceeding the signal clarity and high reliability standards of this demanding market. Trompeter's extensive list of customers includes virtually every North American telephone service providing company, along with their OEM suppliers such as Nortel, Lucent and Alcatel.

Like other telephony products upon which we have built our reputation, the PBTDSX3F4 was designed from the ground up to deliver uncompromising quality and reliability, and employs only industry standard and accepted components.

A special insertion/removal tool is included with each bay shipped to enable trouble-free patching on the Mini-WECo side of the equipment.



Each 24 module PBTDSX3F4 bay consists of the following standard items:

- Trompeter **JSTDSX3F4** Series Cross Connect Panels loaded with 216 **TDSX3F4** Cross Connect Modules
- Rear Cable Management Bar (p/n: **TPA-CMR**)
- Verticle Cable Manager (p/n: **TPA-CMS**)
- Upper Cable Trough (p/n: **150-0149**)
- Lower Cable Trough (p/n: **150-0150**)
- Apex Fuse Panel w/ Cable Harness (p/n: **150-0151-9**) (pre-wired to all panels)
- Tracer Lamps

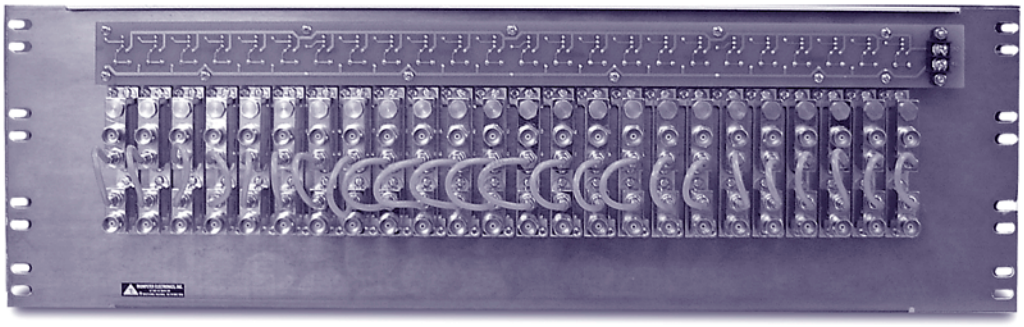
Optional network bay accessories available:

- 24" Network Bay Extender (p/n: **150-0146-24**)
- 54" Network Bay Extender (p/n: **150-0146-54**)
- 2.5" Network Bay Spacer (p/n: **150-0147-2**)
- 5" Network Bay Spacer (p/n: **150-0147-5-84**)
- Network Bay Power Strip (p/n: **150-0148**)
- Network Bay End Guard Spacer Kit (p/n: **150-0144**)
- Bottom Spacer (p/n: **150-0145**)

FRONT CROSS CONNECT NETWORK SYSTEM

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

Loaded DS3 Front Cross Connect Panel



Trompeter Front Cross Connect Products

Standard Network Bays

PBTDSX3F4/24-2	19" rack and 1 fuse panel loaded with 9 JSTDSX3F4/24-2 panel
PBTDSX3F4/24-4	19" rack and 1 fuse panel loaded with 9 JSTDSX3F4/24-4 panel
PBTDSX3F4/24L-2	23" rack and 1 fuse panel loaded with 9 JSTDSX3F4/24L-2 panel
PBTDSX3F4/24L-4	23" rack and 1 fuse panel loaded with 9 JSTDSX3F4/24L-4 panel
PBTDSX3F4/32-2	23" rack and 1 fuse panel loaded with 9 JSTDSX3F4/32-2 panel
PBTDSX3F4/32-4	23" rack and 1 fuse panel loaded with 9 JSTDSX3F4/32-4 panel

Custom Size Network Bays

PBTDSX3SP-1	9' tall bay, 23" rack and 1 fuse panel unloaded bay
PBTDSX3SP-2	11'6" tall bay, 23" rack and 1 fuse panel unloaded bay
PBTDSX3SP-3	9' tall bay, 23" rack and 1 fuse panel unloaded bay
PBTDSX3SP-4	11'6" tall bay, 23" rack and 1 fuse panel unloaded bay

Front Cross Connect Panels

JSTDSX3F0/24*	Panel only (19") without modules
JSTDSX3F0/24L*	Panel only (23") without modules
JSTDSX3F0/32*	Panel only (23") without modules
JSTDSX3F4/24-2	Panel (19"), clips to the right, loaded with 24 TDSX3F4 modules
JSTDSX3F4/24-4	Panel (19"), clips to the left, loaded with 24 TDSX3F4 modules
JSTDSX3F4/24L-2	Panel (23"), clips to the right, loaded with 24 TDSX3F4 modules
JSTDSX3F4/24L-4	Panel (23"), clips to the left, loaded with 24 TDSX3F4 modules
JSTDSX3F4/32-2	Panel (23"), clips to the right, loaded with 32 TDSX3F4 modules
JSTDSX3F4/32-4	Panel (23"), clips to the left, loaded with 32 TDSX3F4 modules

Front Cross Connect Module

TDSX3F4	Front cross connect module

Loaded DS3 Front Cross Connect Panel

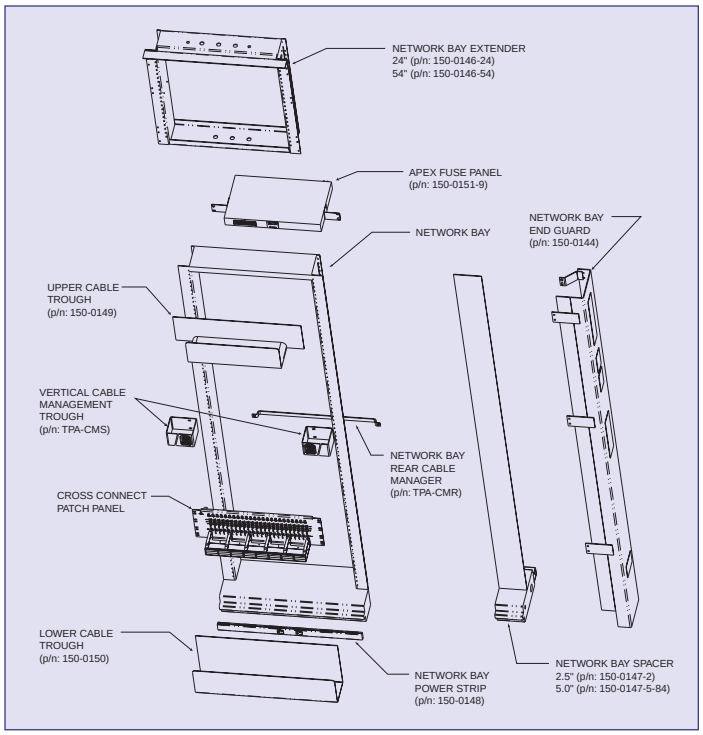
p/n JSTDSX3F4/24-2 AND JSTDSX3F4/24-4

***JSTDSX3F4/24-2** - locking tabs on right (facing the panel).*

***JSTDSX3F4/24-4** - locking tabs on left (facing the panel).*

Uses field proven Trompeter TDSX3F4 cross connect modules with automatic loopback. (Rear View Shown)

NEBS LEVEL 3 TYPE 2 COMPLIANT AND TEST CERTIFIED

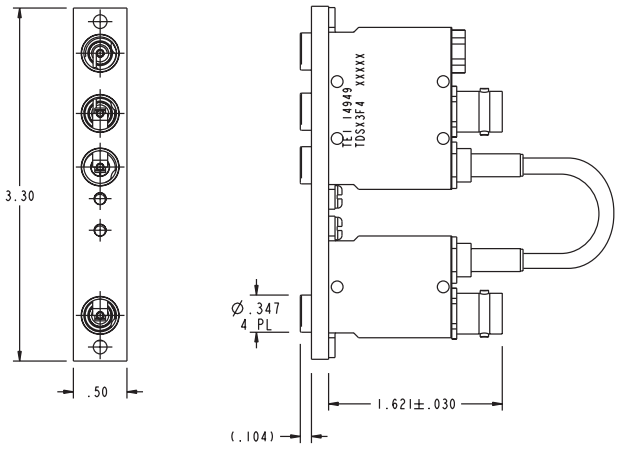


*Add clips to end of part number:
-2 clips to the right
-4 clips to the left

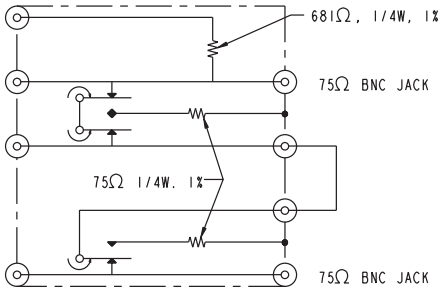
NEBS Level 3 Type 2 Compliant and Test Certified

Front Cross Connect Module: **TDSX3F4**

The Trompeter DS3 front cross connect bay (PBTDSX3F4/24) uses 216 modules of TDSX3F4 cross connect modules with auto loopback.



CIRCUIT SCHEMATIC



Dialogue Box

Digital Signal Cross Connect (DSX) technology is employed to interconnect various devices in the telco central office (CO). Using the DSX in a central location in the CO allows enormous flexibility for rearranging and restoring circuits, providing ease of testing access as well. DSX technology can be applied to both DS1 and DS3 lines in the telco CO.

NEBS LEVEL 3 TYPE 2 COMPLIANT AND TEST CERTIFIED

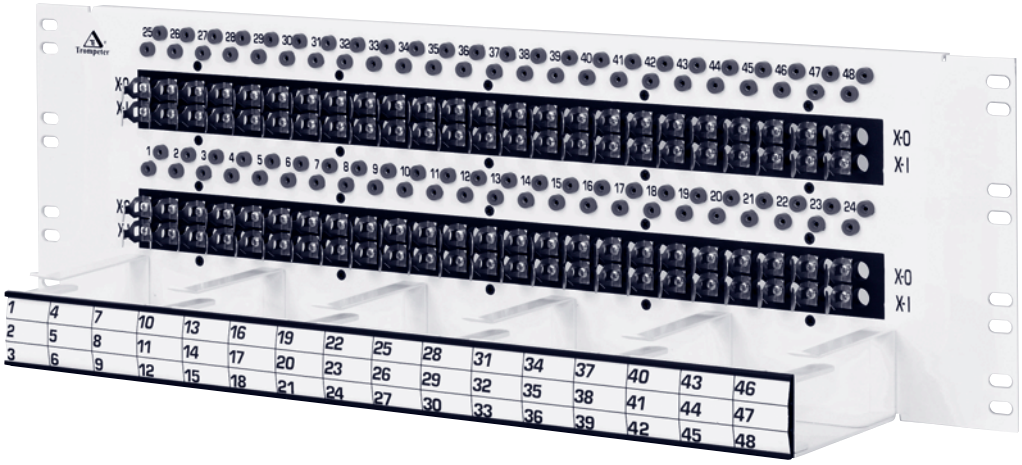
JSTDSX TIE Panels

*p/n **JSTDSX-TIE***

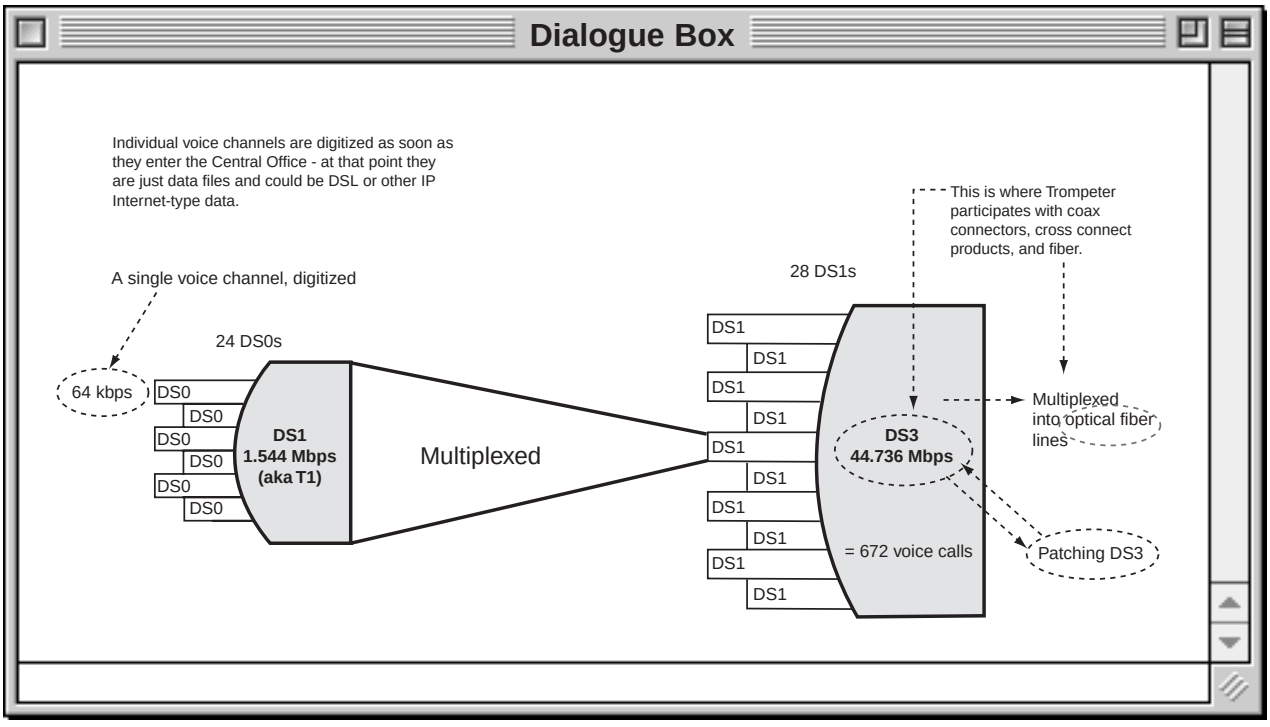
TIE panels are used to join multiple lineups or frames of cross connects allowing very flexible management and control of the DS3 coaxial wireline in a larger telco central office.

Features:

- 2 Rows of 24 DS3 single IN/OUT circuits in one panel, Mini-WECo jack to BNC jack
- Integral cable management shelf is identical in form, fit and function to the JSTDSX3F4/24 panel
- Accepts standard Mini-WECo 440 patch cords with locking clips on left side of part facing panel.
- Cross connect tracer circuits for all DSX modules
- Rear monitoring available when used in conjunction with monitor assembly p/n:105-1497-1.
- Also available in 32 position configurations in a 23 inch panel (p/n: ***JSTDSX32-TIE***)



Module face plate available with and without lateral tabs, depending on spacing and number of modules per panel.

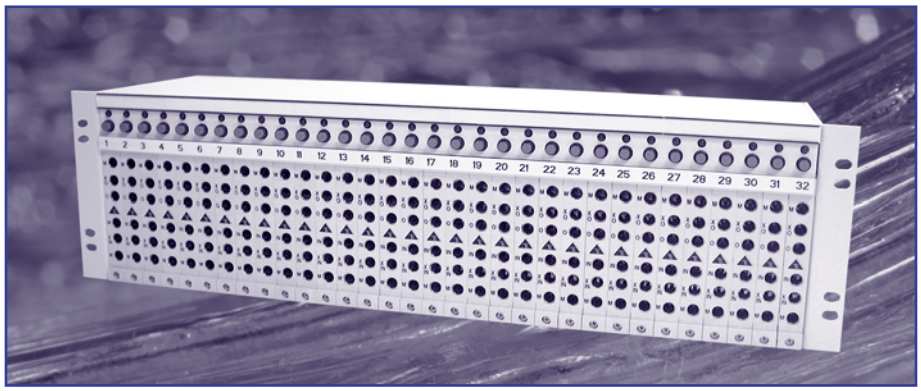


REAR CROSS CONNECT NETWORK SYSTEM

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

NEBS LEVEL 3 TYPE 2 COMPLIANT AND TEST CERTIFIED

The rear cross connect family of products designed and manufactured by Trompeter Electronics is a direct offshoot of our 30 years of supplying connectors for the telco central office DS3 coaxial wireline. These products are engineered for a combination of high density, ease of use, and high reliability for the patching activity.



Front view of Trompeter rear cross connect (Mini-WECo port side)

High density:

- The Trompeter design allows for 32 modules in a 23" rack, an increase in lateral interconnect density of 33% over the 24 module versions of our competitors.

Ease of Use:

- Port positions are clearly label in high contrast lettering numbering one through 32 both front and back.
- When tracer ports are connected and the "location detect" switch is depressed, a red light goes on at both the signal sending and signal interconnect ends. This light first blinks for approx. 60 seconds, then goes to a solid "on" condition for longer term identification.
- Oversized designation strips for ease of module identification by central office (CO) operators.
- Front designation strip.
- Clearly labeled monitor, input, and output ports on the front and input/output on the rear.

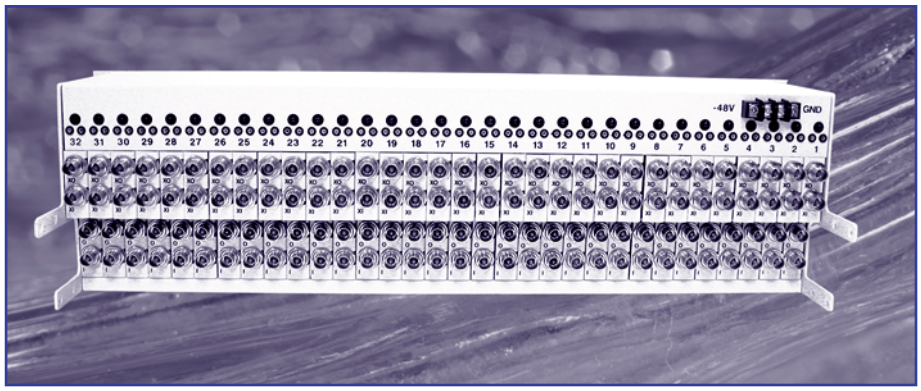
Dialogue Box

Rear cross connect modules have mini-WECo jacks for easy access and convenience in temporary patching in the front of the equipment and provide BNC jacks for semi-permanent and permanent patching in the rear of the equipment. Front cross connects are designed to allow all patch needs to be satisfied using patch cables in the front of the equipment.

High reliability:

- NEBS racks and fuse panels are specified and fully NEBS approved for full compliance to Bellcore specifications and environmental standards.
- Trompeter cable jacks are built-in and feature solid PTFE dielectric insulators.
- Engineering excellence features design separation of active and passive elements of the Trompeter cross connect module itself, allowing use of PCB technology to provide high reliability of mounting/interconnecting the lights and switches.

DSX devices typically have an "IN" port, an "OUT" port, and "MONITOR" ports for testing. The in/out ports allow a new circuit to be placed in the line, breaking the existing electrical path between network elements that are being cross connected and allowing the operator to patch the active signal to another device. The monitor ports are wired to the adjacent through port using high impedance bridge network design, allowing non-intrusive test access of the through port for each interconnected network element.



Rear view of Trompeter rear cross connect (BNC jack side)

REAR CROSS CONNECT NETWORK SYSTEM

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

NEBS Level 3 Type 2 Compliant and Test Certified

Part numbers for rear cross connect components and configurations:

The Trompeter rear DSX cross connect module comes with a white faceplate (standard) or a black faceplate. The way that is specified in the module number is as follows.

Part number	Configuration
TDSX3R6	6 front ports in a rear DSX module, white faceplate in the front.
TDSX3R6B	6 front ports in a rear DSX module, blackface plate in front.
TDSX3R4	4 front ports in a rear DSX module, white faceplate in the front.
TDSX3R4B	4 front ports in a rear DSX module, black faceplate in the front.

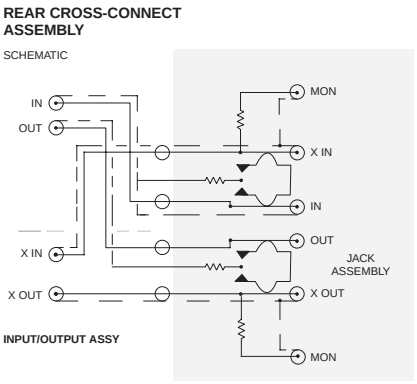
Putting a JS in front of this module number indicates that you are specifying a panel or "jack strip" configuration. Putting a PB in front of the module number indicates that you are specifying a "patch bay" configuration, which consists of 10 panels plus a fused power panel.

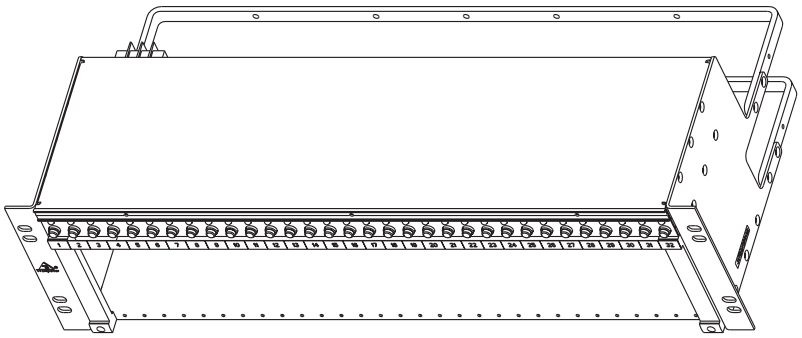
At the end of the part number, designate the number of modules in a panel by a slash, followed by the number, either 24 or 32. The standard count for a 19 inch panel is 24 and for a 23 inch panel is 32. If you want 24 modules in 23 inch panel, use the "L" designator at the end of the module count.

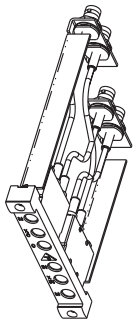
Example one: JSTDSX3R4B/24L is a loaded 23 inch panel of 24 rear cross connect 4-port modules with black face fronts.

Example two: PBTDSX3R6/32 is a loaded 23 inch bay loaded with 10 panels of 32 each rear cross connect 6-port modules with white face fronts, including fuse panel.

We have found it is a common practice for some users to purchase an unloaded panel and then to load it with DSX modules 2 at a time or whatever fits their build-out need for capacity. In that case, the module part numbers above would apply and the panel itself can be purchased as a JSTDSX3R0/32 for a 32 module version of a 23 inch panel, a JSTDSX3R0/24 for a 24 module version of a 19 inch panel, and a JSTDSX3R0/24L for a 24 module version of a 23 inch panel.





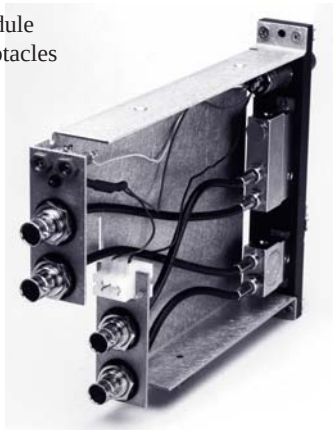


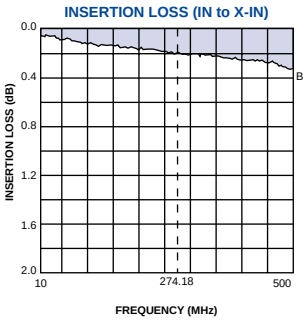
TDSX-3/4 REAR CROSS CONNECT "BELL" REPLACEMENT MODULES

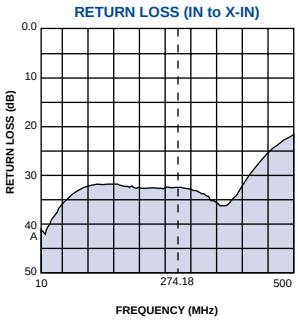
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

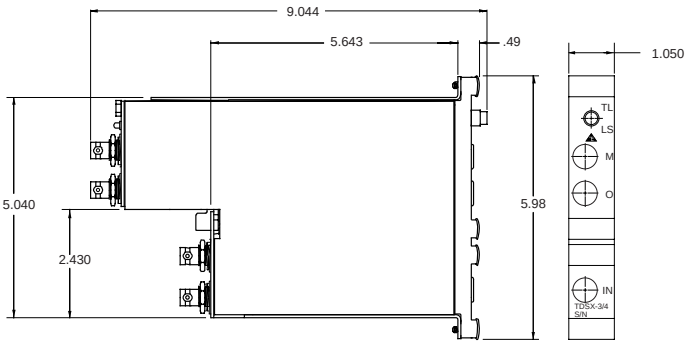
TDSX-3/4
Rear Cross Connect Module
with 75 ohm BNC Receptacles

TDSX-3/4H
Rear Cross Connect Module
with 75 ohm TNC Receptacles









PRODUCT FEATURES

The TDSX-3/4 module is designed for accessing and cross-connecting the following DS transmissions:

DS-4.....274 Megabits
DS-4E.....139 Megabits
DS-3.....45 Megabits

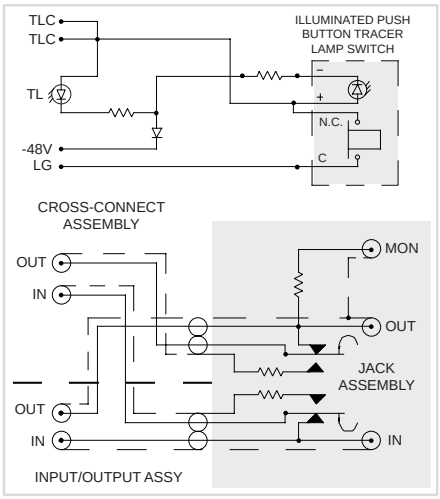
Design Features:

- Tracer lamp on front and rear of module
- 180º tracer lamp on front
- 50 mil gold plated contacts
- Contacts designed with wiping action
- Module enclosed on all sides
- 23" chassis available
- Extended bandwidth: 400 MHz performance

Transmission Characteristics:

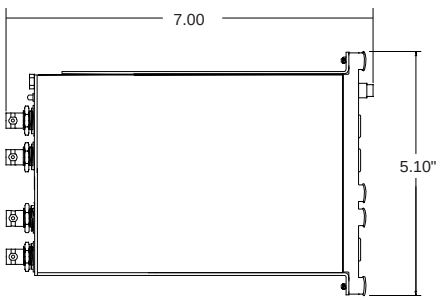
Insertion Loss:	0.3 dB typical. Less than 1 dB, (DC through 400 MHz all ports)
Return Loss:	22 dB typical. Greater than 25 dB, (DC through 175 MHz) Greater than 20 dB (175 MHz through 400 MHz)
Monitor Level:	75Ω monitor termination, (21 dB±1.5 dB below signal level from DC to 400 MHz)
Cross Talk:	Better than 60 dB isolation to 400 MHz
Connectors (Rear):	Input/output and cross-connect jacks require 75Ω BNC or TNC plugs as specified

TDSX-3/4 SCHEMATIC

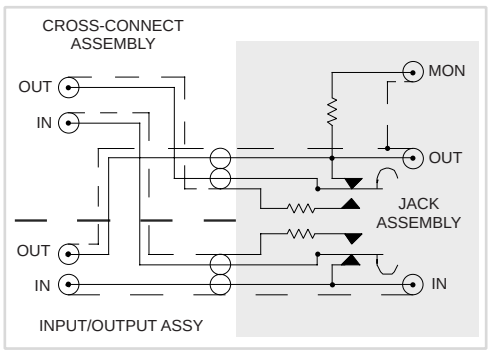


TDSX24-3/4 MODULE ASSEMBLY

MODULE ASSEMBLY:
TDSX24-3/4
High Density
Rear Cross Connect
Module Assembly
with 75 ohm
BNC Receptacles

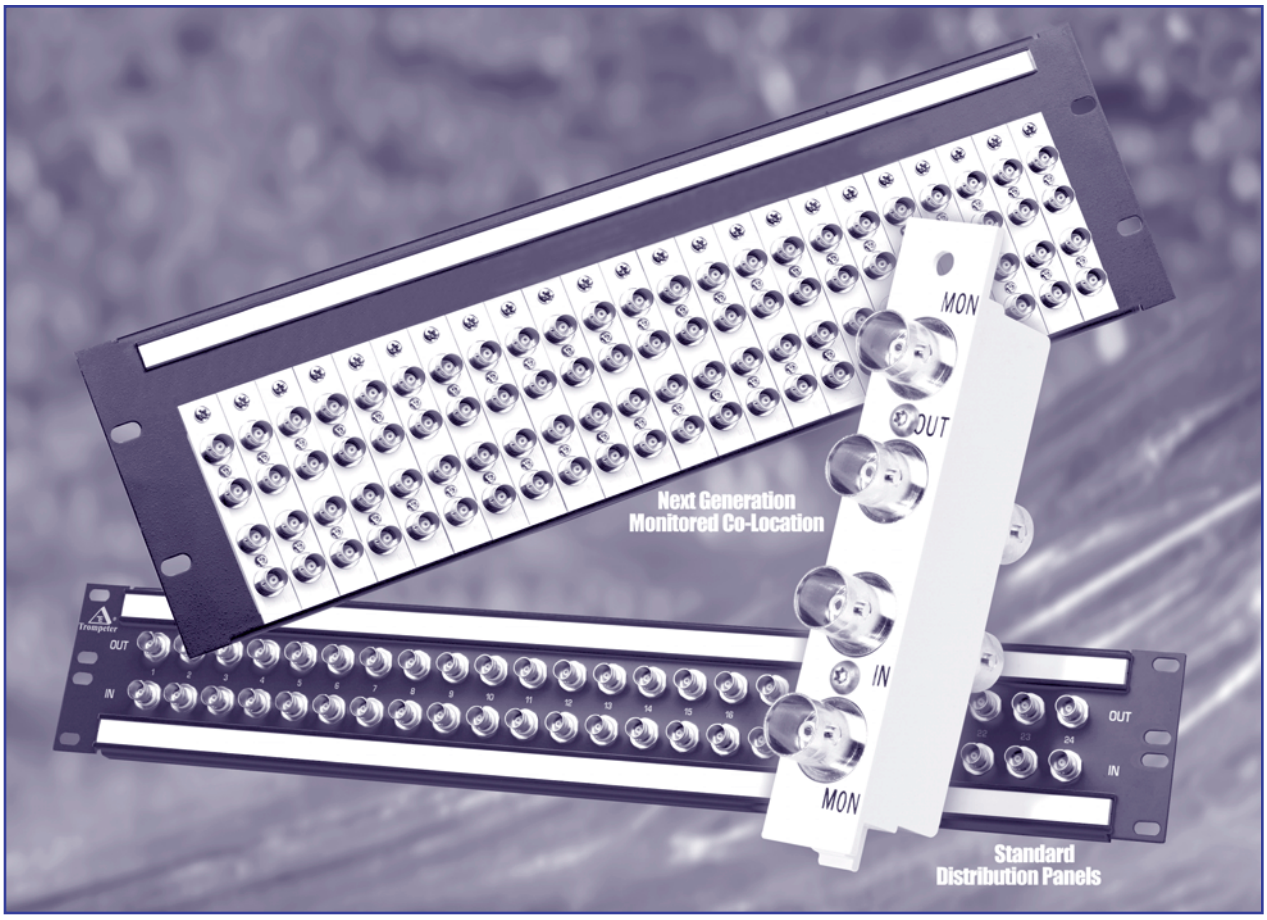


TDSX24-3/4 SCHEMATIC



DS3 POINT OF TERMINATION (POT) CO-LOCATION PANELS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



CLEC and IP Service Provider to Network (POT) Solutions

With multiple service providers co-locate in the same space, today's central office requires a new level of accountability. Trompeter now offers a full line of Point of Termination (POT) products designed where the CLEC or IP Service Provider interconnects with the Public Network. These products deliver the highest level of connectivity available with a monitoring function for managing signal to noise clarity in the network.

The new JSDDF2-24 Dual Monitored Co-Location Distribution Panels are constructed with Trompeter's industry standard 75 ohm BNC connectors and provide a cost efficient interconnect between DS3/4-rated equipment.

- Monitoring jacks allow for sampling or electronic signal screening for digital wave attributes and overall signal clarity. Digital or hand copy records can be maintained to isolate line trouble at the co-location boundary.
- Excellent return loss performance for the thru-ports and nominal signal strength compensation for monitor function.
- Jacks feature locking bayonet mechanism for tactile closure and full pull strength.
- Front and rear designation strips allow installers to work independently.
- Optional cable management bars allow for strain relief on the panel from either or both sides.

DS3 POINT OF TERMINATION (POT) CO-LOCATION PANELS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

The Trompeter 75 ohm Digital Distribution Panel (JSDDF2-24) contains 24 Dual Monitored Co-Location Distribution Performance Modules (DDPM-2) and functions as a co-location distribution panel between the Competitive Local Exchange Carrier (CLEC) and the Local Exchange Carrier (LEC) or Regional Bell Operating Company (RBOC) providing service to access equipment involved in the interconnection to the Internet Service Provider (ISP). These devices are also known as Shared Point of Termination (SPOT) or Point of Termination (POT) panels.

The Trompeter co-location monitor panel is 3 rack units high and features designation strips on the front and rear for port marking and easy identification. Module locations are numbered front and back.

The panel is available with optional cable management bars which can be mounted to the front or rear of the panel via the rack channels.

The signal from the monitor port can be readily attached to a dB millivolt (dBMV) meter to determine power level, or to an oscilloscope to check the noise floor under the primary signal stream.

FEATURES / BENEFITS:

Monitor Jack: Allows for sampling or electronic screening of the signal for digital wave attributes and overall signal clarity. Depending on the equipment that the monitor is connected to, a digital record or hard copy can be maintained to isolate line trouble at the co-location boundary.

Electrical Signal Clarity: Excellent overall return loss performance for the thru-ports.

BNC Jacks: Locking bayonet mechanism for tactile closure and cable retention. All ports are conventional telephony coax jacks designed to handle 44 Mbs with signal return loss.

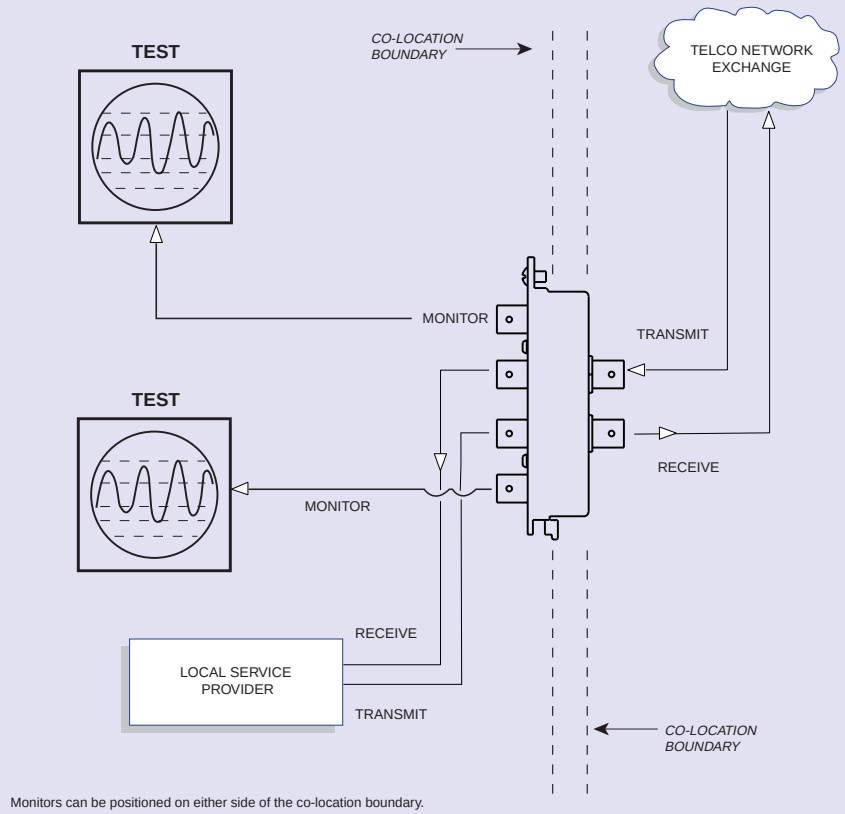
A Designation Strip on Both Sides: This feature allows the installer to position BNC plugs in the proper port without having to go to the rear of the bay, sometimes quite distant - allowing an installer to work alone.

(Optional) Cable Management Bars: Allows for strain relief on the panel and BNC jacks, while keeping cables neat and organized.

Port Markings: The ports are clearly numbered 1-24 or 1-32 front and back for clear identification.

DUAL MONITORED CO-LOCATION MODULE APPLICATION

MONITORING TRANSMISSION SIGNAL IN BOTH DIRECTIONS



Monitors can be positioned on either side of the co-location boundary.

DS3 POINT OF TERMINATION (POT) CO-LOCATION PANELS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

TROMPETER PART NUMBERS:

JSDDF2-24
19" Panel, 24 Modules

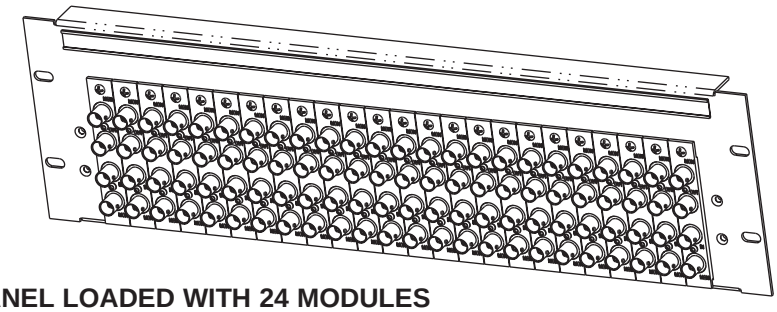
JSDDF2-24CM
19" Panel, 24 Modules, Cable Management Bar

JSDDF2-24L
23" Panel, 24 Modules

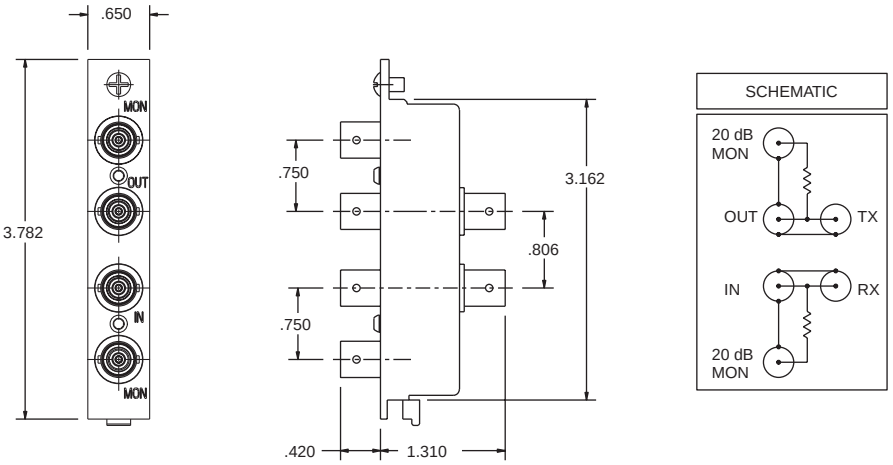
JSDDF2-24LCM
23" Panel, 24 Modules, Cable Management Bar

JSDDF2-32
23" Panel, 32 Modules

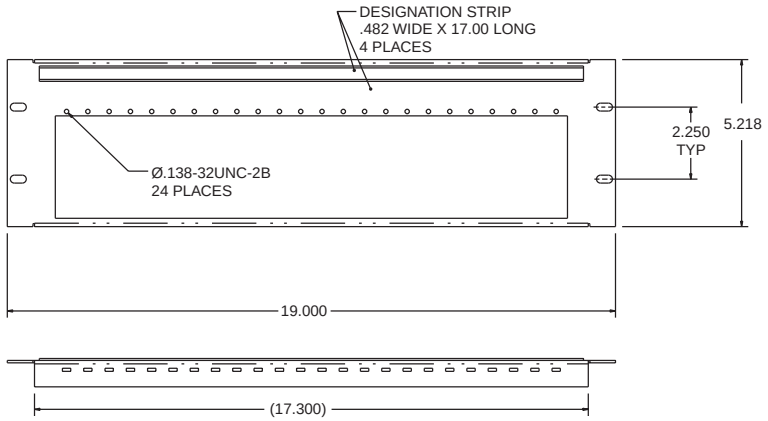
JSDDF2-32CM
23" Panel, 32 Modules, Cable Management Bar



PANEL LOADED WITH 24 MODULES



MODULE PART NUMBER: DDPM-2

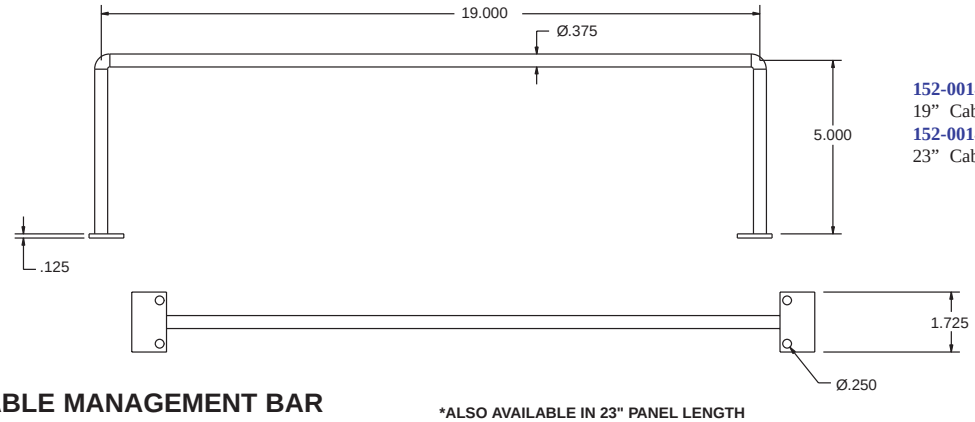


PANEL MOUNT HOLES CAN BE ORDERED AS WECo OR EIA COMPATIBLE

***ALSO AVAILABLE IN 23" PANEL LENGTH**

155-1012-1
19" Panel to Accommodate 24 Modules
155-1012-2
23" Panel to Accommodate 24 Modules
155-1012-3
23" Panel to Accommodate 32 Modules

PANEL WITHOUT MODULES LOADED



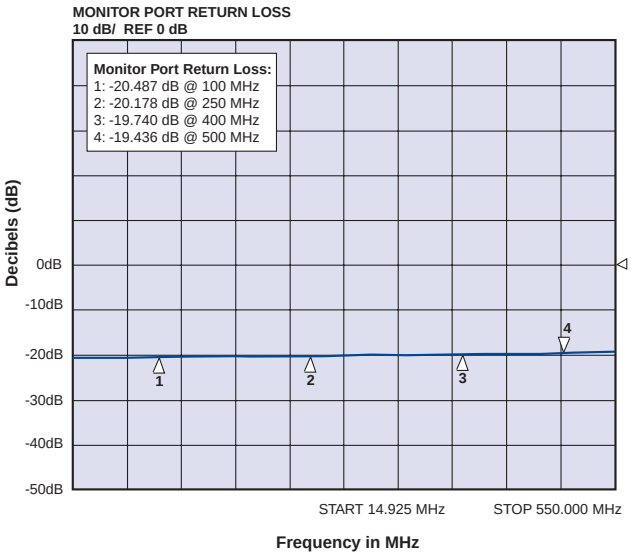
152-0014-1
19" Cable Manager
152-0014-2
23" Cable Manager

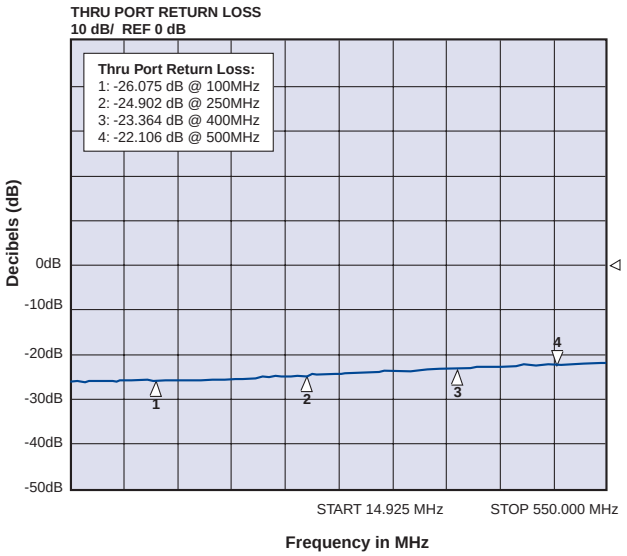
OPTIONAL CABLE MANAGEMENT BAR

***ALSO AVAILABLE IN 23" PANEL LENGTH**

ELECTRICAL SPECIFICATIONS

Nominal Impedance (0-500 MHz)	75 Ohm
Performance Monitor Level (0-500 MHz)	-20 dB ±0.5 dB
Thru Port Insertion Loss (0-500 MHz)	Better than -0.34 dB
Thru Port Return Loss (0-500 MHz)	Better than -22 dB
Isolation (0-500 MHz)	60 dB min

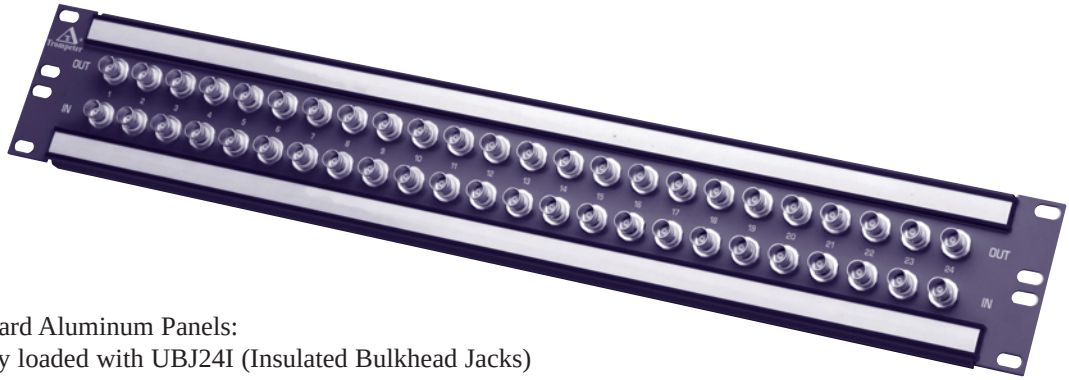




19" AND 23" STANDARD DISTRIBUTION PANELS

Trompeter Part Numbers:

JSCL-48 (19 inch panel, 48 BNC bulkhead jacks)
JSCL-48CM (19 inch panel, 48 BNC bulkhead jacks, cable management bar)
JSCL-48L (23 inch panel, 48 BNC bulkhead jacks)
JSCL-48LCM (23 inch panel, 48 BNC bulkhead jacks, cable management bar)



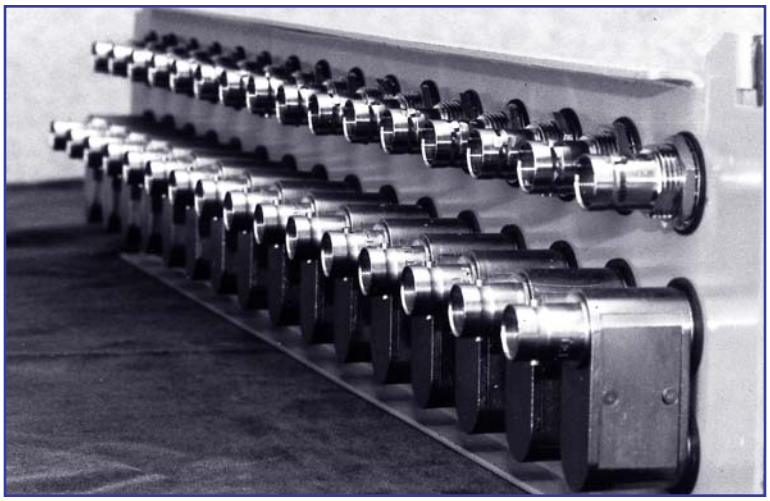
Standard Aluminum Panels:
- Fully loaded with UBJ24I (Insulated Bulkhead Jacks)
- Cable management bars are also available.

PARALLEL NETWORK WITH 20 dB MONITOR PORT

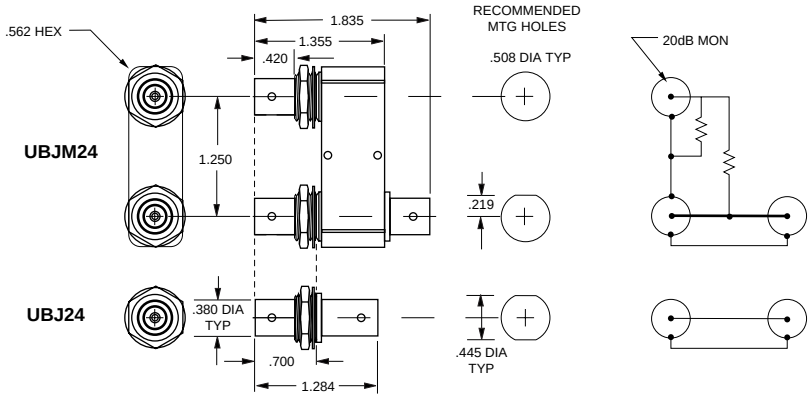
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

The parallel network serves as an equal level cross -connect point for coax signals conforming to the following signal formats.

- 2.048 Mbits
- 8.448 Mbits
- 34.048 Mbits
- 139.264 Mbits CEPT 1,2,3 and 4
- 155.520 Mbits STM 1



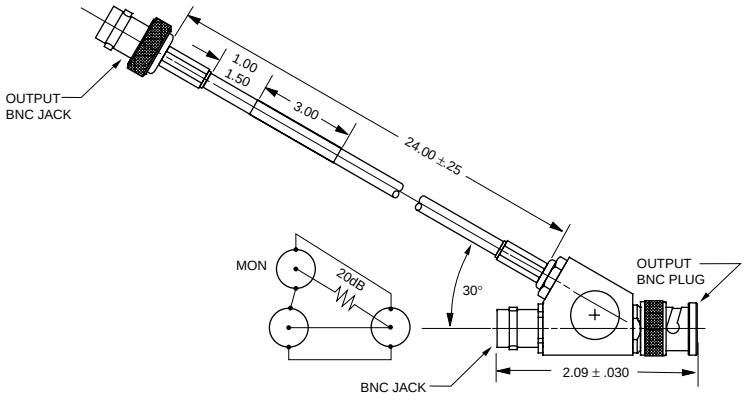
This 75Ω network permits access to all equipment terminated at the DDF frame. The network mounts to various configurations (both horizontal and vertical), serves as an easy access to circuit rearrangements and provides for cross connects on the front or the rear.



75Ω PARALLEL NETWORK

UBJM24 BNC Panel Mount with 20dB Monitor Port

UBJ24 BNC Panel Mount, Feed-Through



75Ω PARALLEL NETWORK

105-1513 Dual Monitor Interconnect Module with 20dB Monitor Ports

TROMPETER INSTALLER TRAINING PROGRAM

INSTALLER TRAINING

For over 30 years, Trompeter has been a leader in RF interconnect products for Telecom. We have developed a training program (a first of its kind) specifically for installers of Central Office.

TELECOM APPLICATIONS

Utilization of coax cables and connectors has increased with the decision to utilize Hybrid Fiber/Coax platforms and the introduction of SONET, Frame Relay and ATM. Regional Bell Operating Companies have reported up to 33% of DS3 transmission failures are due to improper assembly of BNC/TNC interconnects. Our training is designed to accomplish the following:

* Reduce transmission noise
* Reduce system downtime in the field
* Increase installer productivity and the reliability/consistency of terminations.
* Lower installation costs

This course is customized to your application and covers correct cable preparation techniques, proper selection and use of tools, and high quality methodology for terminating cable assemblies. Each attendee receives training materials, certificate of completion as well an I.D. card.

For additional information, contact your local Trompeter Sales Representative or contact our Technical Support Department at (800) 982-2629 and ask for Training Information Package.

Trompeter has also produced a 13 minute BNC Assembly Video and CD which outlines the major features of our BNC design, describes tools for reliable installation and gives step-by-step assembly instruction. The BNC Assembly Video and CD are available at no cost to Trompeter customers. Instructions and this catalog are also available on CD.

24 HOUR SHOPPING ON OUR WEBSITE!

Trompeter now offers you e-commerce on the web at: http://www.trompeter.com. This site allow you to place quotes, view top level drawings, and place orders 24 hours a day! Simply click on the part number that you want to order and add it to your shopping cart.

We have over 5,000 end items and over 20,000 configurations, proof of our engineering and manufacturing capabilities. We offer our “most frequent requested guide ship parts” available to you for purchase via the internet.

Take advantage of our website today!

TOOLS OF THE TRADE – OVERVIEW OF BEST-IN-CLASS TOOLS

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

Manual Cable Cutter
700-0024

Powered Cable STripper
BCWS DC Driver
AWS AC Driver
(Cutter Heads are Sold Separately)

Center Pin Crimp Tool
010-0098 12 pt

Crimp Tool
CT4L
(Crimp Die Sold Separately)

BNC Cable Assembly Tester
010-0133

UPL220 BNC PLUG
BNC BULK PACKAGING

Bulk packaging for UPL220 Series BNC Plugs. Trompeter offers Tool Crimp BNCs bulk packed in convenient vacuum-formed plastic trays to the Telecom industry. Bulk packaging is perfect for OEM and high-volume, on-site installations. (Bulk BNC Plug Packaging in bags also available - call factory)

- 50 Body Assemblies
- 51 Crimp Sleeves
- 52 Center Contact Pins
- Assembly Instructions Included

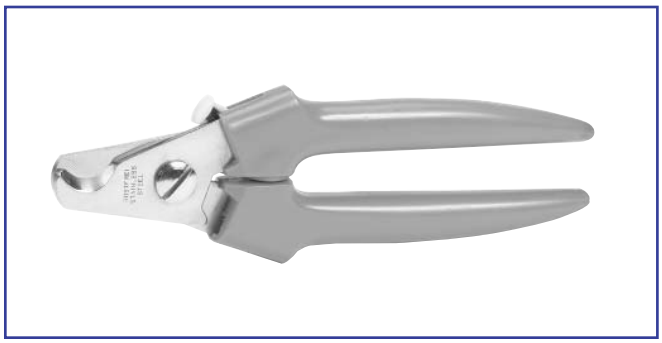
Order Bulk Packaging using the following format:
Example: **UPL220-025/T50**

BNC Removal Tool
RT1L 12” in length

* Refer to the Tools Section of this catalog for a complete list of tools and kits.

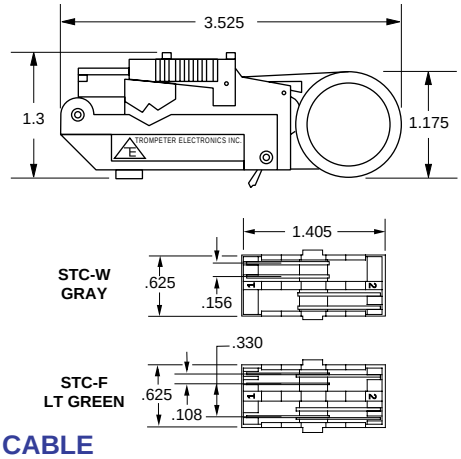
TOOLS OF THE TRADE – PREPARE THE CABLE END

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



CABLE CUTTING TOOL

700-0024
Designed to cut Coax cables without compressing dielectric or damaging center conductor



MANUAL CABLE STRIPPING TOOL

ST1	Tool only - Requires blade cassette listed
STC-F	Cassette (For Tool Crimp BNC Connectors)

Either / or

POWERED CABLE STRIPPER

Picture Shown: Cable Stripper Unit (left), Driver (middle), Rapid Charger/Reconditioner (right).

This powerful, low-cost, portable hand-held (less than 2.25 lbs.) cable stripper delivers, production quality performance, and gives you up to 250 strips per charge (7.2V Ni-Cad battery without memory effect). The replaceable, 3-level cutter head, is preset to strip your coax cable for Trompeter's 220 Series, Tool Crimp BNC Connectors. The cutter head has adjustable depth cutter blades for precision tuning. Precision ground, tool steel blades (hardened to Rockwell 64) give you up to 15,000 strips! Rapid Charger/Reconditioner recharges your Ni-Cad in only 1.5 hours! 1 Year Warranty.

CUTTER HEAD GUIDE

Cable Outside Diameter Cut	3-Blade Cut
.070-.110	**C26T3A**
.160-.215	**C26T3B**
.190-.230	**C26T3C**
.235-.270	**C26T3D**
.300-.430	**C26T3E**
.110-.160	**C26T3I**
.271-.305	**C26T3U**

POWERED CABLE STRIPPER KITS

Comes with: 1 Drive, 1 Ni-Cad Battery Pak, 1 Cutter Head, 1 Rapid Charger/Reconditioner and 1 Carrying Case. Part Number Example:

	Stripper/Cutter Head
For Cables: 728 / 734A / RG-59	**BCWS/C26T3D**
For Cables: 735A / KS19224L2	**BCWS/C26T3I**

ADDITIONAL ACCESSORIES

AC Driver and Power Unit Only (no cutters)	**AWS**
Rapid Charger / Reconditioner:	**BWCC-NSA**
Gear Train Assembly Only	**BWS-DT**
Ni-Cad Battery Pak:	**EBP-NSA**
AC Power Converter:	**AWC-NSA**
AC Charger Cord:	**BWC-NSA**
End Cap For Driver:	**AWS-BWS-EC**
Battery Only:	**BWS-EB**

TOOLS OF THE TRADE – INSTALLING THE CONNECTOR

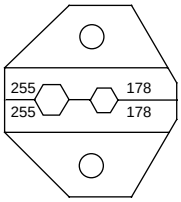
CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

CENTER CONTACT CRIMP TOOL

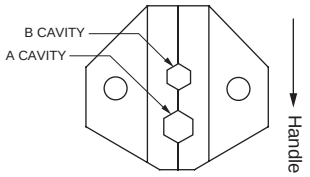
12-Point Crimp Tool
BNC/TNC/Patch Plug
(Green/Yellow Handle) **010-0098**

CRIMP TOOL AND CRIMP DIES

CT4L
Ergonomic Frame only
(Die not included, for crimp dies see chart)



CD3-19
Preferred Crimp Die



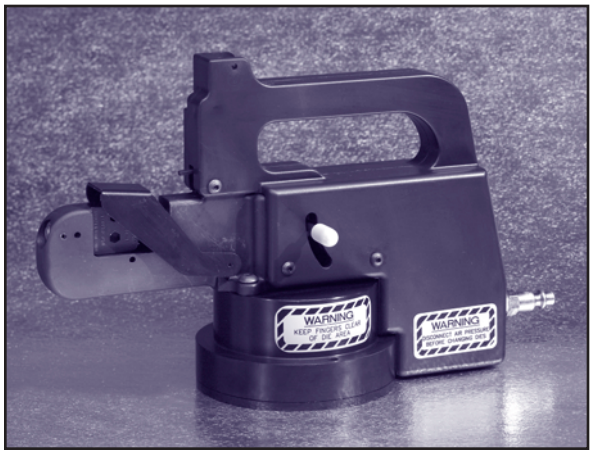
CRIMP DIES

75 Ohm Outer Sleeve

	A	EMBOSSES	B	EMBOSSES
CD3-19	.178	178	.255	.255

* Note: Dies imprint either cavity (A/B) or hex size onto crimp sleeve. Custom dies are available for special imprints.

Initialized Embossed Dies....
Trompeter offers a personalized embossed CD3-19 die. One side of the die face embosses 734 and 735 respectively. The other die face embosses up to 4 pre-selected letters/numbers of your choosing. The base part number is 010-0129-xx* and is accompanied by your personalized "dash number". Call factory for availability. (xx = replace with dash number) Requires a one time setup charge.



BENCHTOP CRIMP TOOL

CTB-1/CD5A-1
Manufactured to Trompeter engineering specifications. It is designed for production crimping assignments for coaxial cable connectors such as the BNC series. The base unit include a footswitch and one pair of self-aligning parallel hex dies as standard equipment. Ships with our CD5A-1.

DIE

CD5A-1
Manufactured to Trompeter engineering specifications and is designed for crimp hex sleeve connectors; .178" and .255".

BNC COAX CABLE ASSEMBLY TESTER

BNC COAX ASSEMBLY TESTER

Designed to test for the proper assembly of BNC plugs with coax cables. Tests for center contact pin height and continuity (short or open). Mini-WECo continuity test adapter can be ordered (sold separately).

* Compact Design
* Pass/Open/Short LED indicators
* One test required for testing remote cable runs
* Easy to follow instructions
* Complete with terminators, case and 9V battery

010-0133
Coax Cable Assembly Connector Test Set
75 Ohm BNC Plugs

105-1885
Mini-WECo Adapter: Continuity Test
(Sold Separately)

BNC PLUG PIN HEIGHT GAUGE

010-0158
Mitutoyo mechanical pin height gauge for BNC plugs.

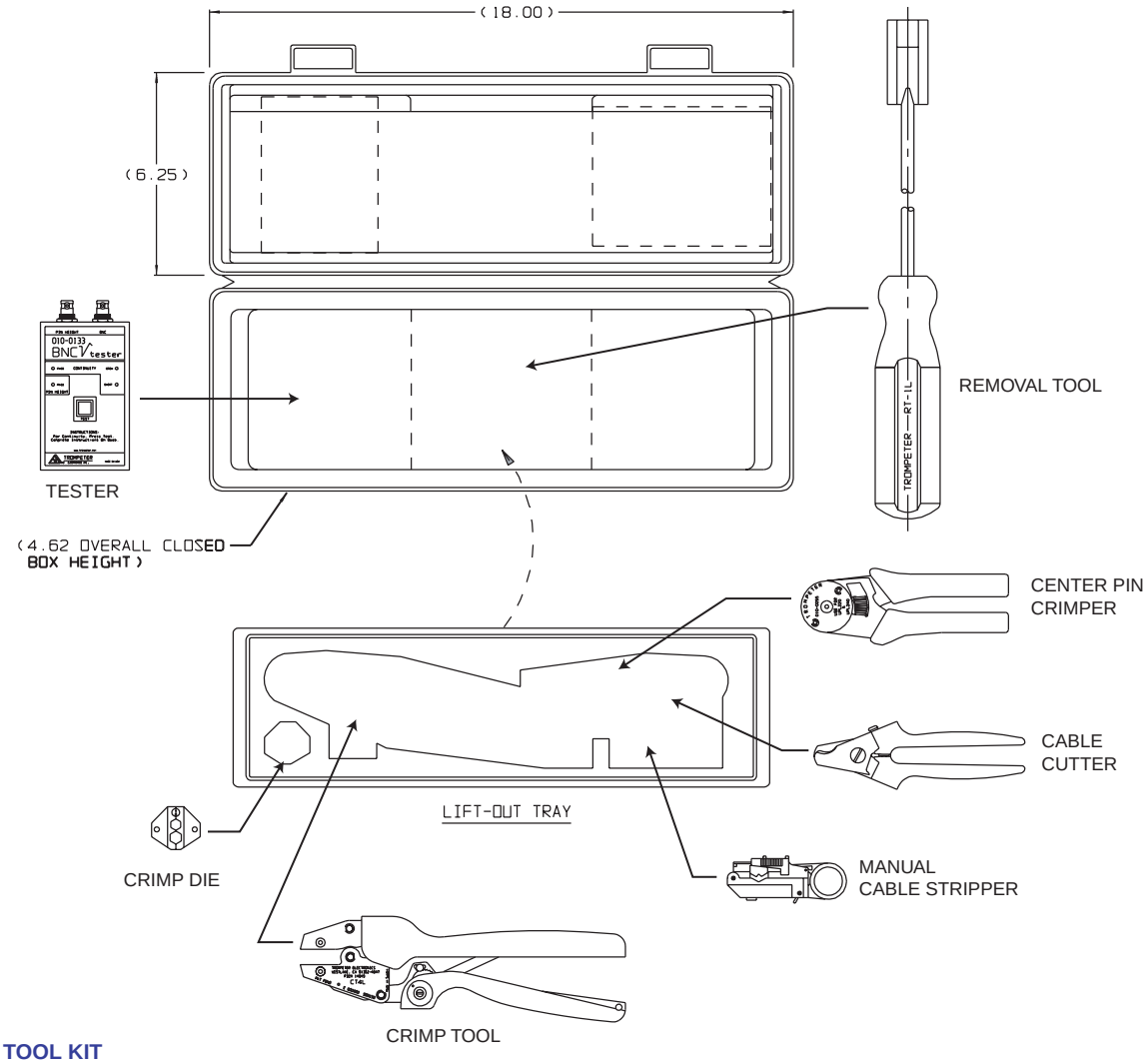
BNC/TNC REMOVAL TOOLS

CONNECTOR REMOVAL TOOLS

BNC/TNC CABLE PLUG TYPE		LENGTH
RT1XL	STRAIGHT	22.00”
RT1L	STRAIGHT	12.00”
RT1RL	RIGHT ANGLE	12.00”
RT1S	STRAIGHT	6.00”
RT1SS	STRAIGHT	3.75”

CUSTOM TOOL KITS – SMALL TOOL KIT

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



SMALL TOOL KIT

Prefix TS	Crimp Die		Crimp Die Selection	Manual Cable Stripper	Center Pin Crimper	Manual Cable Cutter	Pin Gauge or Tester	Removal Tool
	Empty	=	**0**	**1** = ST1/STC-F **0** = Empty	**A** = 010-0088 **B** = 010-0097 **C** = 010-0098 **D** = 010-0055 **E** = 010-0080	**1** = 700-0024 **0** = Empty	**1** = 010-0108 **2** = 010-0133	**A** = RT1L **B** = RT1S **C** = RT1SS **D** = RTR1-L
	CD3-1	=	**A**					
	CD3-2	=	**B**					
	CD3-3	=	**C**					
	CD3-5	=	**D**					
	CD3-19	=	**E**					
	CD3-21	=	**F**					
	CD3-22	=	**G**					
	CD3-23	=	**H**					

Small Tool Kit Part Number Configurator: **(Choose Number or Letter From Above Chart)**

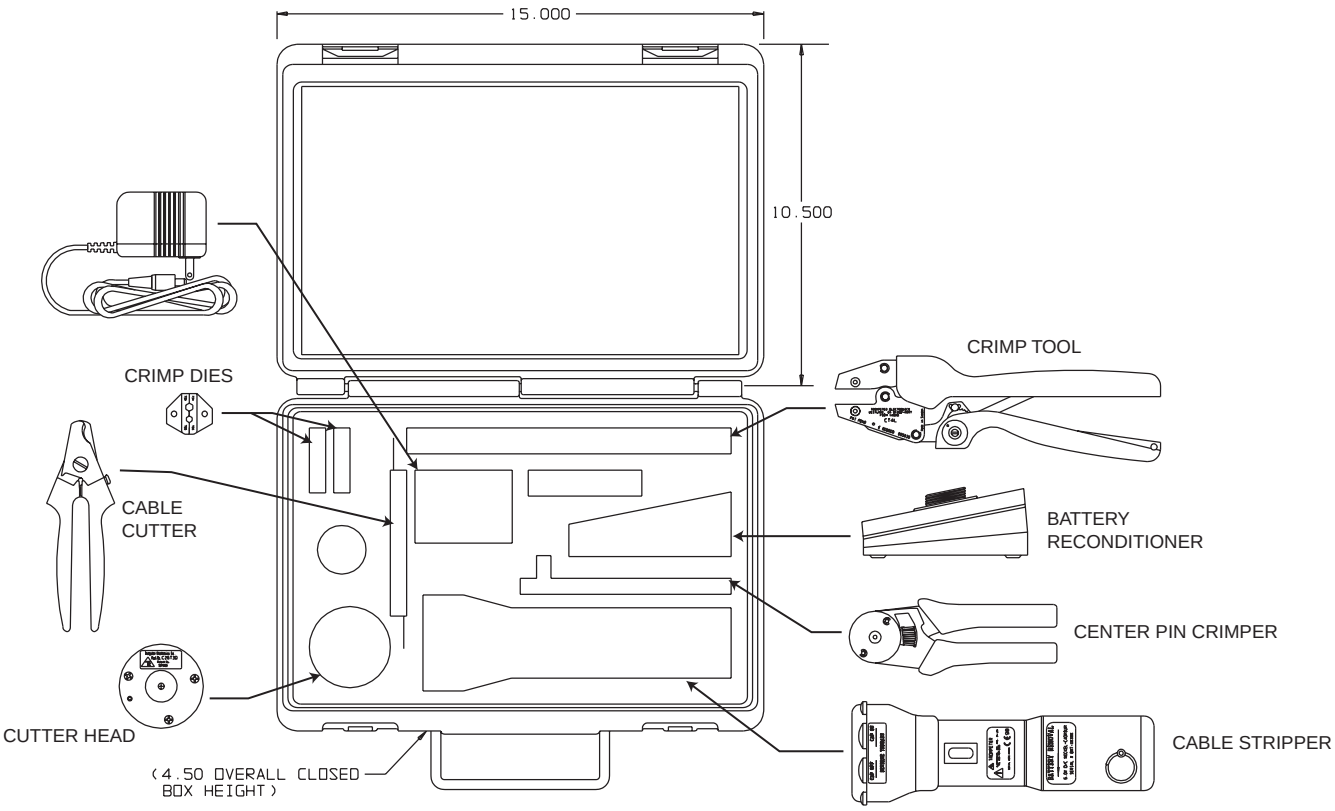
	Crimp Die #1	Crimp Die #2	Crimp Die #3	Crimp Die #4	Manual Cable Stripper	Center Pin Crimper	Manual Cable Cutter	Pin Gauge or Tester	Removal Tool
TS									
Example: TS	E	F	0	0	1	B	1	1	A
	CD3-19	CD3-21	Empty	Empty	ST1/ STC-F	010-0097	700-0024	010-0108	RT1L

CT4L INCLUDED IN KIT, BUT NOT SHOWN IN PART NUMBER.

Only the number 0 (zero) is to be used. The letter "O" is not to be used in this part number system.
The letter "Z" can be used in any position to specify item not included above.
This custom addition must be ordered as a separate line item.

CUSTOM TOOL KITS – MEDIUM TOOL KIT

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



MEDIUM TOOL KIT

Prefix TM	Crimp Die		Crimp Die Selection	Battery Power Cable Stripper	Cutter Head	Center Pin Crimper	Manual Cable Cutter
	Empty	=	**0**	**1** = BCWS **0** = Empty	**A** = C26T3A **B** = C26T3B **C** = C26T3C **D** = C26T3D **E** = C26T3E **I** = C26T3I **U** = C26T3U	**A** = 010-0088 **B** = 010-0097 **C** = 010-0098 **D** = 010-0055 **E** = 010-0080	**1** = 700-0024 **0** = Empty
	CD3-1	=	**A**				
	CD3-2	=	**B**				
	CD3-3	=	**C**				
	CD3-5	=	**D**				
	CD3-19	=	**E**				
	CD3-21	=	**F**				
	CD3-22	=	**G**				
	CD3-23	=	**H**				

Medium Tool Kit Part Number Configurator: **(Choose Number or Letter From Above Chart)**

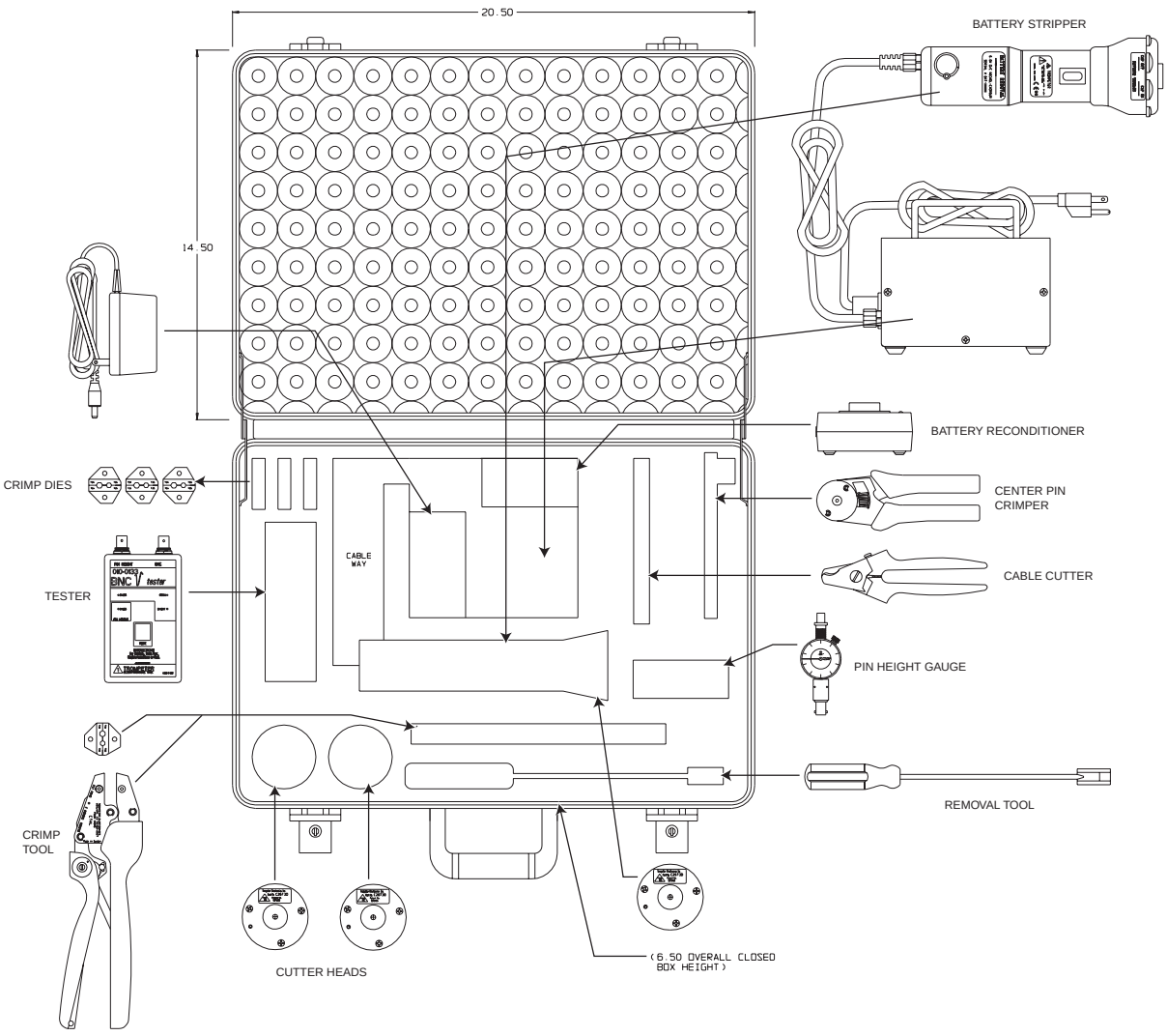
	Crimp Die #1	Crimp Die #2	Crimp Die #3	Battery Power Cable Stripper	Cutter Head #1	Cutter Head #2	Center Pin Crimper	Manual Cable Cutter
TM								
Example: TM	E	F	0	1	I	U	C	1
	CD3-19	CD3-21	Empty	BCWS	C26T3I	C26T3U	010-0098	700-0024

CT4L INCLUDED IN KIT, BUT NOT SHOWN IN PART NUMBER.

Only the number 0 (zero) is to be used. The letter "O" is not to be used in this part number system.
The letter "Z" can be used in any position to specify item not included above.
This custom addition must be ordered as a separate line item.

CUSTOM TOOL KITS – LARGE TOOL KIT

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



LARGE TOOL KIT

Prefix TL	Crimp Die	Crimp Die Selection	Battery Power Cable Stripper	Cutter Head	Center Pin Crimper	Manual Cable Cutter	Removal Tool	Tester	Gauge
	Empty = **0**		**1** = AWS **2** = BCWS **3** = BWS	**A** = C26T3A **B** = C26T3B **C** = C26T3C **D** = C26T3D **E** = C26T3E **I** = C26T3I **U** = C26T3U	**A** = 010-0088 **B** = 010-0097 **C** = 010-0098 **D** = 010-0055 **E** = 010-0080	**1** = 700-0024 **0** = Empty	**A** = RT1L **B** = RT1S **C** = RT1SS **D** = RTR1-L	**1** = 010-0108 **2** = 010-0133	**1** = 010-0158 **0** = Empty
	CD3-1 = **A**								
	CD3-2 = **B**								
	CD3-3 = **C**								
	CD3-5 = **D**								
	CD3-19 = **E**								
	CD3-21 = **F**								
	CD3-22 = **G**								
	CD3-23 = **H**								

Large Tool Kit Part Number Configurator: **(Choose Number or Letter From Above Chart)**

	Crimp Die #1	Crimp Die #2	Crimp Die #3	Crimp Die #4	Battery Cable Stripper	Cutter Head #1	Cutter Head #2	Cutter Head #3	Center Pin Crimper	Manual Cable Cutter	Removal Tool	Tester	Gauge
TL													
Example: TL	E	F	G	G	2	I	U	0	C	1	A	1	1
	CD3-19	CD3-21	CD3-22	CD3-22	BCWS	C26T3I	C26T3U	Empty	010-0098	700-0024	RT1L	010-0108	010-0158

CT4L INCLUDED IN KIT, BUT NOT SHOWN IN PART NUMBER.
Only the number 0 (zero) is to be used. The letter "O" is not to be used in this part number system.
The letter "Z" can be used in any position to specify item not included above.
This custom addition must be ordered as a separate line item.

BNC Crimp Tool Standard and Calibration Technique/Criteria

Trompeter crimp sleeve tool calibration, testing for tool capability, and recalibration.

Trompeter is a "world class" supplier of crimped RF connectors to the telephone central office market segment. Many of the Trompeter crimp designs involve crimp sleeves to secure the connectors to the coaxial cable. These crimp sleeves must be crimped with a tool that is in calibration. Whether a tool is in calibration or not is determined by time or test.

Extensive testing by Trompeter has proven that a tool which does not meet a minimum crimp force criteria can cause a significant reduction in the retention of a connector. This is particularly true on cable whose diameter is less than .150 inches. We propose that anyone using Trompeter tooling and connectors follow our recommended basic guidelines regarding the calibration of the tooling to ensure its optimum reliability.

Time Calibration – in the event that an installer does not have a proper die set to perform the test method to determine whether a CT4L is in proper calibration, the default is a time calibration (12 months from last "factory" calibration). Factory calibrations can be done at Trompeter or at a licensed and certified 3rd party calibration facility. Currently, Trompeter has authorized only one other calibration house and that business is Micron Inspection & Calibration Services. MICS 4308 North George Street, Manchester, PA 17345. Contact: Avyayam Dave Ph: 717-266-5775.

Test calibration – at any time, a Trompeter CT4L tool may be tested for proper calibration by inserting a CD3-19 die in the tool and crimping the UPL220-026 BNC connector sleeve. The connector must be on 735 cable for the test to be valid. After crimping, the measurement of the flat in all three places must be a maximum of 0.187 inches. If this is true, the tool may be used for another 500 crimps, after which time the test shall be repeated. If, after any of the test crimps, the tool is discovered to not pass the dimensional test, the tool is considered to be non-compliant and shall be removed from service. The tool can be then sent to Trompeter or the Trompeterapproved third party for adjustment and calibration, after which time the cycle is restarted.

Excessive Die Wear

Excessive die wear, while rare, can also reduce the closure force that the crimp tool can deliver. To determine whether a die is excessively worn, refer to figure 1. The dimension is applicable for all dies. Both die faces should be measured. If the measurement on either die face is at, or below .235, then the entire die should be replaced.

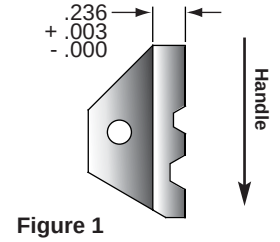


Figure 1

Trompeter center contact tool calibration, testing for tool capability, and re-calibration.

Trompeter 8 point and 12 point multi-point indenters are designed to provide gas tight contact points by deforming the metal of the center pin being crimped.

Multi-point indenters should be inspected every 6 months for proper operation. The procedure for inspecting the tool is Trompeter Gage Specification, TGS-15 (Calibration Procedure for Trompeter Center Contact Crimp Tool). This procedure requires the Trompeter gage 010-0101. If the tool fails to meet the minimum criteria under the test, then the tool is to be discarded (there is no adjustment mechanism).

Inspection Criteria – If a visual inspection with the naked eye indicates that there are the appropriate number of contact points in the exterior sidewall of the center pin contact after crimping (metal must be moved), the crimp is considered good.

DS3 CABLE BEND RADIUS TUTORIAL

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

The conventional copper based wiring of today's telephony central office is a substantial user of BNC connectors for the termination of coaxial cable transmission lines. Usage of copper based coaxial cable still carries significant advantages in cost, ease of use, high data rate signal clarity, and bandwidth. Despite the huge capacity available in fiber optic technology and continued attempts (such as xDSL) to utilize the enormous installed based of twisted pair copper, coax is still a favorite and proven technology with very low risk and extremely low line failure rates.

However, as line density has gone up, so has the amount of cable that is attached to the backs of these bays. There are two problems with this that are the topic of this brief article.

First, the weight of the cable itself acts as a lateral force on the BNC connector. If a low cost connector is used (usually manifested by the substitution of inferior materials), the constant lateral downward pressure can, over time, deform the coupling wave washer, which provides the positive mating force so unique to the BNC style connector.

Using a high quality BNC connector eliminates this risk. This downward lateral force on a straight BNC connector is more significant the greater the cable "fall" and cable diameter, and top bay equipment is more subject to this simple gravity impact than is the lower bay equipment.

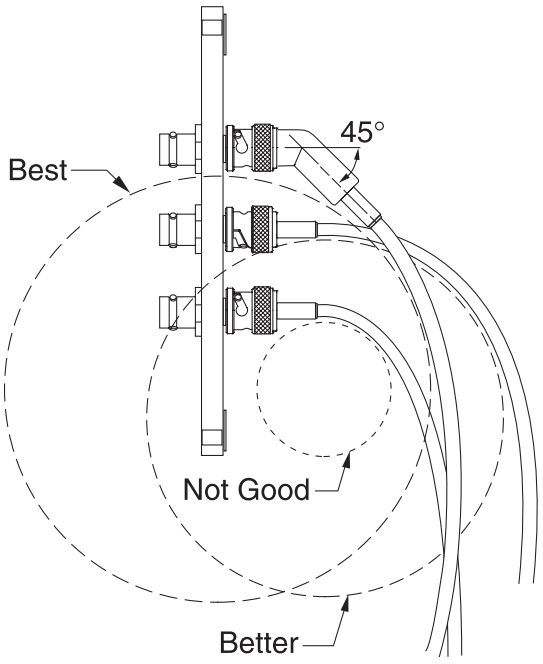
While the bundles of hanging wire may be cable tied, this usually is done for neatness and not for weight-relief. Another consideration is the weight on the jack module and the panel front itself.

The second issue is the radius or bend that the cable itself takes in making the transition from horizontal (in line with the BNC jack) to the vertical (gravity). To the extent that the cable deforms over time, this radius reduction can damage the critical dielectric spacing in the cable at the bend and negatively alter transmission line performance. The higher the frequency, the more pronounced this effect becomes. See Cable Bend Radius Examples illustration. All of the above-mentioned problems are exasperated by the increasing use of lower loss cable for longer runs or higher bandwidth and frequency capabilities. This all translates into more weight.

One simple solution is to utilize a 90° or 45° connector to solve the issue of degrading cable bend radius due to weight. Bent relief "boots" to help contain the lower radius limit can also help.

Yet another result of this density problem is the "curtain effect" or blockage of airflow circulating in the rack units. This blockage of proper airflow has potentially serious service life-reducing impact on sensitive electrical equipment. Thermal degradation of electrical equipment due to insufficient air movement and radiant cooling is well documented. Suffice it to say air movement is good, and blockage of air movement from a curtain of hanging cable is not.

Perhaps a more elegant solution to the issues raised here involves the use of 45° BNC's (see "Best" in visual side view example below), which typically cost the same as a 90° BNC. Using 45° connectors, each plug can be nested over the next, directing the associated cable horizontally to the side of the rack unit. From there, the cable can be tied off to the rack, which removes the weight strain, regardless of the height of the equipment in the bay. Most importantly, the approach allows maximum uninterrupted airflow throughout the cabinet, allowing full radiant cooling.



Cable Bend Radius Examples

GLOSSARY

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

ACRONYMS

ANSI	American Nation Standards Institute
BNC	Bayonet-Neil-Concelman
CDMA	Code-Division-Multiple-Access
DACS	Digital Access Cross-Connect System
DSP	Digital Signal Processing
DSX	Digital Signal Cross-Connect
EDI	Electronic Data Interchange
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
FCC	Federal Communications Commission
FDMA	Frequency Division Multiple Access
GPS	Global Positioning System
GSM	Global System For Mobile Communications
GUI	Graphical User Interface
ISDN	Integrated Services Digital Network
ISO	International Standards Organization
N-AMPS	Narrowband Advanced Mobile Phone System
NEBS	National Equipment Building Systems
PCS	Cellular / Personal Communications Services
PIN	Personal Identification Number
POP	Point of Presence
POT	Point of Termination
POTS	Plain Old Telephone Service
RBOC	Regional Bell Operating Company
RF	Radio Frequency
TCP/IP	Transmission Control Protocol / Internet Protocol
TDMA	Time-Division-Multiple-Access
TIA	Telecommunications Industry Association
VSWR	Voltage Standing Wave Ratio

TELCO DS3 GLOSSARY

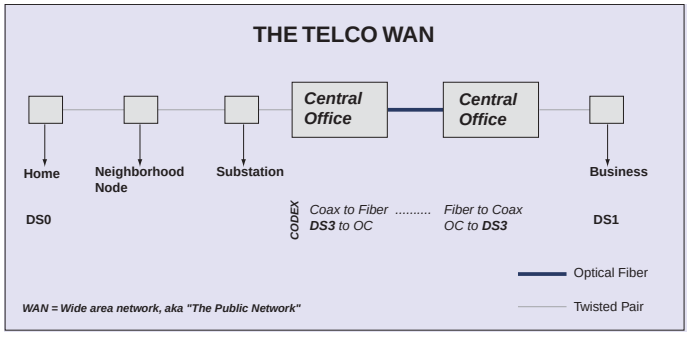
440-TYPE PLUG/JACK	Standard 0.3 inch diameter plug/jack, also known as Mini-WECo coaxial jack
AMPLIFIER	A device used to increase the operating level of an input signal. Used in a cable system's distribution plant to compensate for the effects of attenuation caused by coaxial cable and passive device losses.
ATTENUATION	The difference between transmitted and received power due to loss from lines, electronic components, or other transmission devices; usually expressed in decibels (dB).
BNC	Bayonet-locking connector for slim coax cables. BNC is an acronym for Bayonet-Neil-Concelman, the inventors.
BODY	Main or largest portion of a connector to which other components are attached.
BRAID	Weave of metal fibers used as a shield covering for an insulated conductor or a group of insulated conductors.
BULKHEAD	Term used to define a mounting style of connectors. Bulkhead connectors are designed to be inserted into a panel cutout from the front or the rear of the panel, and typically secured with a jam nut.
COAX CABLE	Cable composed of an insulated central conducting wire, wrapped in another cylindrical conducting wire or braid. Coax cable has great capacity to carry high speed data typically used in Cable TV, connecting computers and central office switching.
CO LINES	Lines connecting your office to the telephone company's Central Office which in turn connects you to the nationwide telephone system, which is a WAN (Wide Area Network)
COMMUNICATION PANEL	Piece of auxiliary DSX equipment that provides various voice communication circuits that are used in DS maintenance operations.
CONTACT	Electrically conductive component designed for use in a multi-circuit connector.
CONTACT ENGAGING and SEPARATING FORCE	Force required to either engage or separate contacts.
CONTACT RESISTANCE	Measurement of electrical resistance of mated contacts when assembled in a connector under typical service use.
CROSS TALK	Magnetic or electromagnetic coupling which causes unwanted signal transfer from one circuit to another circuit.

GLOSSARY

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM

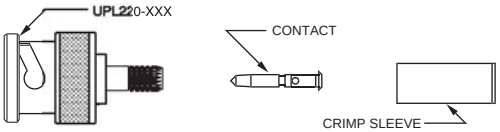
DECIBEL (dB)	A unit of measurement which expresses the ratio of two power levels on a logarithmic scale. It is used in cable systems to specify losses,k gains, and other ratios of power. The decibel is one-tenth of a Bel.
DIGITAL ACCESS CROSS CONNECT SYSTEM (DACS)	Electronic cross-connect system that has the ability to rearrange the digital components of a particular transmission T-1 rate.
DS3	28 T-1 lines multiplexed together. Usually coaxial.
DIGITAL SIGNAL CROSS-CONNECT (DSX)	Centralized termination, interconnection, and test point for digital equipment at a particular digital signal bit rate.
GROUND	Connection, intentional or accidental, between an electrical circuit and the earth or some conducting body (i.e. chassis) serving in place of earth.
HIT	Temporary interruption of service lasting 90 msec (milliseconds) maximum; that causes reframming of digital equipment.
IMPEDANCE	Resistance to the flow of AC current. In the telco CO and CATV system, the characteristic impedance is 75 ohms. If all cable and devices are equal to the characteristic impedance, maximum signal will be transferred with little or no reflection.
IMPEDANCE MISMATCH	A situation that results when two components are connected, each having a different characteristic impedance. This generally results in adverse attenuation and return loss.
INSERTION LOSS	That property between the input and output of a device causing a predictable signal loss.
INTERMODULATION	Beats and harmonics creating interference due to the mixing of more than one carrier in an amplifying device. Usually to non-linear.
JUMPER	Manually placed wire connection between two terminations, usually on some form of a distributing frame (DF). A jumper is also called a cross-connect.
LOOP BACK	Connecting the two directions of digital transmission, thereby looping the signal back to its origin. It is used to test the continuity of the line.
MATCHED IMPEDANCE	Coupling of two components or systems in such a way that the impedance of one system equals the impedance of the other system.
MONITOR JACK	Allows access to a DSX output signal without disturbing the signal. The MON jack is typically used for testing and “hitless” patching of signals
MONITOR LEVEL SIGNAL	Signal that is typically 20dB below the standard signal level.
NETWORK ANALYZER	Known in the industry as a bench sweep, this test equipment is used to test return loss, impedance match, and frequency response of active and passive devices in the system.
OHM’s LAW	The relationship between voltage, current, and resistance in an electronic circuit. The third quantity can be found if two are known.
PASSIVE DEVICE	A device used in a cable system not requiring electrical power to operate. It normally represents loss to signals passing through it. Examples of passive devices are splitters, directional couplers, pads, and equalizers.
PRIVATE BRANCH EXCHANGE (PBX)	A business phone system that is private but connected to the public telephone network. Performs a variety of in-house routing and switching. User usually dials 9 to get outside the system to local lines.
PULSE CODE MODULATION (PCM)	The form of modulation in which the information signals are sampled at regular intervals and a series of pulses in coded form are transmitted representing the amplitude of the information signal at that time. The most common modulation technique involved in telephone work.
PULSE MODULATION	The modulation of a series of pulses that represent information-bearing signals. Typical methods involve modifying the amplitude (PAM), width or duration (PWM), or position (PPM).
REGENERATION	The process of receiving distorted signal pulses and, from them, recreating new pulses at the correct repetition rate, pulse amplitude, and pulse width.
RETURN LOSS	The value (in decibels) of the ratio of the power or voltage loss between the forward (transmitted) wave and the reflected wave, as a result of impedance mismatch.

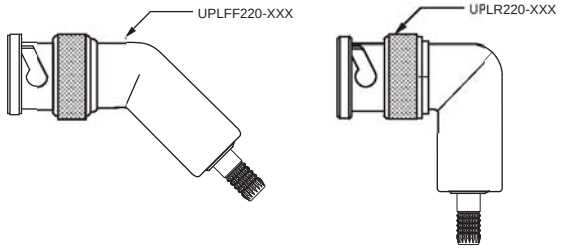
RETURN PATH	The band of frequencies used to return signals to the cable headend either as control data or for redistribution on the forward path.
RF	Abbreviation for “radio frequency”. Typically between 300KHz through 3GHz.
RG/U	(R-radio frequency, G-government approval number, U-universal specification). Symbol for Government specified coaxial cable.
SIGNAL-TO-NOISE RATIO (SNR)	Ratio of the signal power to the noise power in a specified bandwidth, usually expressed in dB.
SPECTRUM ANALYZER	A test instrument used to evaluate amplitude vs. frequency over the pass band of interest.
SPECTRUM RETURN LOSS (SRL)	Periodic discontinuities found in cable causing both impedance changes and attenuation in cables. SRL is caused by either manufacturing impurities at the factory or mishandling before, during, or after delivery. In connectors, return loss is caused by poor design, inferior materials and/or plating, or improper installation.
T-1 LINE	24 voice channels digitized at 64K, combined into a single 544 Mbps digital system (8,000 bps signaling), and carried over two pairs of regular copper telephone wires. Used primarily by telephone companies for dedicated local access to long distance facilities, long-haul private lines, and for regular local service. Today, most 1.544 Mbps digital streams are called T-1, regardless of its makeup or what the transmission medium is.
TCP/IP	Transmission Control Protocol/Internet Protocol. The two open protocol standards used among computers connected to the Internet. Allow different computer systems and platforms to share data seamlessly.
TIME DOMAIN REFLECTOMETER (TDR)	A test instrument that sends a signal down a length of cable and measures the reflected signal, allowing the distance to a fault to be measured based on the time differential between the incident and reflected signals.
TIP	The side of a two-wire telephone circuit that is connected to the positive side of a battery at the telco central office. Color-coded green. Similar to the ground side of a residential lighting circuit.
TRACING LAMP	Lamp or Light emitting Diode (LED) provided as part of a standard DSX patch and cross-connect circuit that aids in locating the two ends of a cross-connect. Inserting a plug into the MON jack at one end of a cross-connect caused the tracing lamps at both ends of the cross-connect to illuminate.
TRUNK	A telephone circuit or path between two switches, at least one of which is usually a telephone company central office or switching center. Regular local central office circuits are called PBX trunks, because there is a switch at both ends of the circuit.
VELOCITY OF PROPAGATION	The velocity of signal transmission in a cable relative to the speed of light in free space.
VERTICAL THROUGH	Jumper pathway that is provided between adjacent DSX bays to allow jumpers to run vertically on the frame one panel location to another, or between a panel and the upper or lower express through.
VOICE FREQUENCY	Any of the frequencies in the 300-to-3,400-Hz band used to transmitted voice with reasonable fidelity.
VOICE GRADE	An access line suitable for voice, low-speed data, facsimile, or telegraph service. Generally has a frequency range of about 300 to 3,000 Hz.
VOLTAGE DROP	The voltage developed across a component or conductor by the flow of a current through the resistance or impedance of that component or conductor.
VSWR	Abbreviation for Voltage Standing Wave Ratio, a measure of return loss of a transmission circuit.
WATERFALL CABLING	Method of routing cables between overhead cable racks and the DSX panels that employs the full width of the rear of the DSX frame.

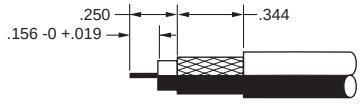


75 OHM COAXIAL BNC PLUG ASSEMBLY INSTRUCTION

CENTRAL OFFICE PRODUCT SOLUTIONS - ALL TRUE 75 OHM



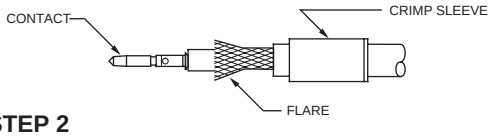




CABLE STRIPPING DIMENSIONS
(SHOWN AS ACTUAL SIZE: USE AS STRIPPING TEMPLATE)

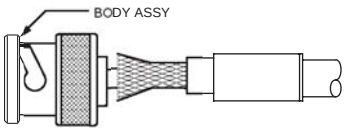
STEP 1

1. CUT CABLE TO LENGTH



STEP 2

1. PLACE CRIMP SLEEVE ONTO CABLE WITH STEP LOCATED AS SHOWN.
2. STRIP CABLE AS SHOWN AND FLARE BRAID.
3. CRIMP CONTACT IN POSITION SHOWN (SEE CHART)



STEP 3

1. PUSH CABLE ASSEMBLY INTO BODY ASSEMBLY UNTIL CONTACT SNAPS INTO PLACE.
2. SLIDE CRIMP SLEEVE FORWARD OVER BRAID UP AGAINST BODY ASSEMBLY AND CRIMP IN PLACE (SEE CHART).

"Full Crimp" True 75Ω Connectors to Flexible Coaxial Cable

CABLE GROUP DASH NO	CRIMP SLEEVE		CENTER CONTACT
	HEX SIZE	DIE NO/ CLOSURE	
-001	.178	-19/A	USE TROMPETER PIN CONTACT **CRIMP TOOL** NO. **010-0098**
-002	.197	-5/B	
-003	.178	-1/B	
-004	.178	-19/A	
-005	.197	-5/B	
-006	.197	-5/B	
-007 *	.178	-19/A	
-008	.178	-19/A	
-009	.178	-19/A	
-010	.178	-19/A	
-011	.213	-1/A	
-012	.213	-1/A	
-013	.255	-19/B	
-013A	.255	-19/B	
-014	.255	-19/B	
-015	.290	-3/B	
-016	.324	-2/A	
-017	.344	-3/A	
-018	.255	-19/B	
-019	.255	-19/B	
-020	.290	-3/B	
-021	.213	-1/A	
-023	.255	-2/B	
-024	.290	-3/B	
-025	.255	-19/B	
-026	.178	-19/A	
-027 *	.178	-19/A	

TOOL: TROMPETER CRIMP TOOL **CT4L** WITH DIE SET NO. **CD3-(See Above)**

Note: Revision level changes periodically. Please check with factory for latest revision on these instructions.