



EXPERIENCE. **TRU** INNOVATION.

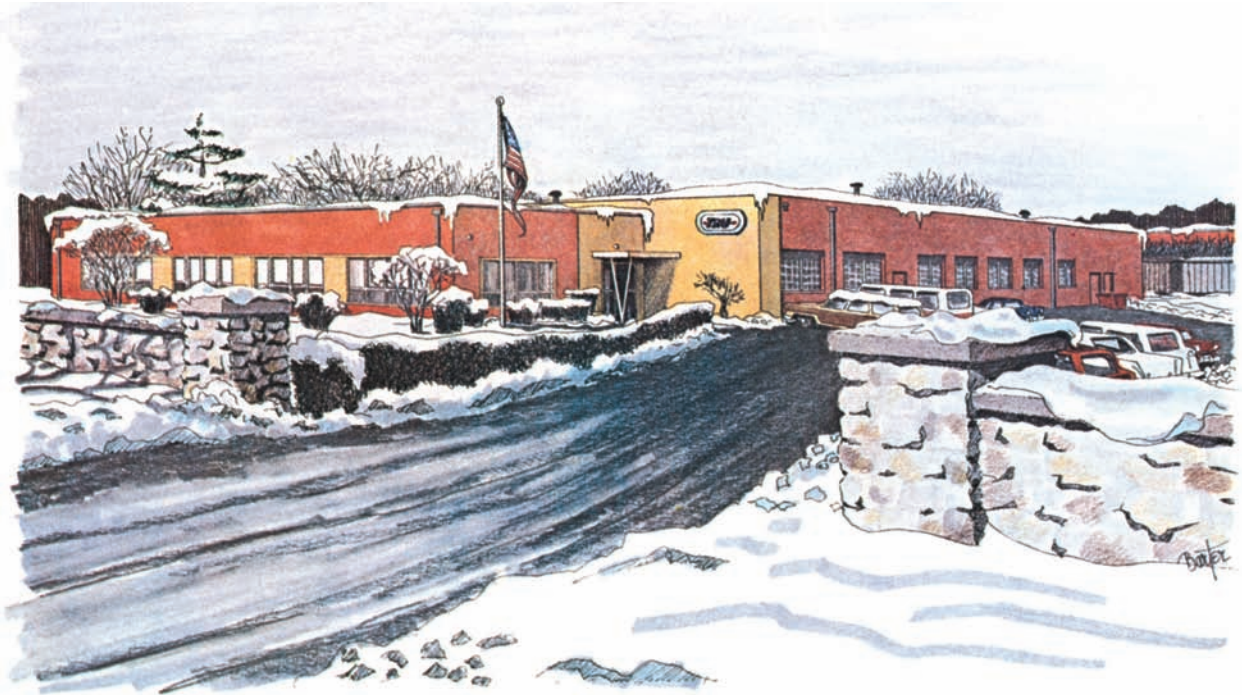


trucorporation.com

RF & Microwave Interconnects



EXPERIENCE. TRU INNOVATION.



The TRU Corporation was founded in 1949 to supply the RF connector marketplace with precision designed and manufactured connectors. At that time, the U.S. government dictated the electrical performance of connectors through tightly held mechanical piece part tolerances. These specifications became the defacto industry standard. Throughout this time, TRU Corporation developed a library of connector designs and interfaces to support the industry. As new coaxial cable designs lowered signal losses, connectors were modified to reduce reflections, and TRU helped set global standards for enhanced performance.

In the late 1990s, TRU Corporation entered the emerging semiconductor capital tool market. Semiconductor wafer manufacturers demanded increased power handling for matched networks used in the building and testing of more densely populated semiconductors and ASICs. TRU developed RF connectors able to handle 50kW.

Elevated power levels led to safety concerns for technicians. TRU developed failsafe quick-connect/disconnect products. Visual indicators alert technicians to unwanted and unsafe disconnections.

Today, TRU offers several patented quick-connect/disconnect products in use worldwide at all the major capital tool processing plants.

Customers recognized weakness and strain on their cable assemblies at the cable/connector junction. TRU Corporation successfully reduced the damage to cable at this juncture by developing patented strain relief attachment methods to lengthen the service life of cable assemblies. However, in many instances less-than-optimum cable negated the benefits of the enhanced strain relief designs.

In conjunction with cable manufacturers, TRU Corporation identified market requirements and developed a line of cables built to their own exacting dimensional, material and construction standards. To ensure optimum electrical and mechanical performance, TRU set up a cable assembly shop to manufacture cable assemblies to the highest industry standards.

Today, TRU Corporation is moving forward with the experience and knowledge gained: higher frequencies, power handling, strain relief cable attachments, and quick-connect/disconnect designs that meet the most demanding standards.

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EXPERIENCE. TRU INNOVATION.

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Cable Assemblies



EXPERIENCE. TRU INNOVATION.

- Strength, reliability and performance
- High power, high performance
- Matched cable designs and connector/cable junctions
- Optimized electrical, mechanical and environmental performance through the expert selection of material, construction and attachment design methods
- Robust axial and torsional strain relief and attachment methods
- Broadband frequency coverage to 18 GHz
- Meets all the challenges of phase/amplitude matched, temperature/altitude/power, environmental and mechanical applications



RF Coaxial Cable Types

Dielectric	Solid PE			Solid PTFE	Controlled Density PTFE			
	TRU RG-214	TRU RG-217	TRU RG-218	TRU RG-393	TRU-200	TRU-350	TRU-450	TRU-500
1-5/8 EIA (female)	—	—	—	—	—	—	—	1.58EIAf
1-5/8 EIA (male)	—	—	—	—	—	—	—	1.58EIAm
7/8 EIA (female)	—	—	—	—	—	—	—	78EIAf
7/8 EIA (male)	—	—	—	—	—	—	—	78EIAm
7-16 (male)	—	716m	—	716m	—	—	—	716m
7-16 (male right angle)	—	716mR	—	716mR	—	—	—	716mR
ATNC (male)	—	—	—	—	ATNCm	ATNCm	—	—
C (male)	Cm	Cm	—	—	—	—	—	—
C (male right angle)	CmR	CmR	—	—	—	—	—	—
HN (male)	HNm	HNm	—	HNm	—	—	—	HNm
HN (male right angle)	HNmR	HNmR	—	HNmR	—	—	—	HNmR
LC (male)	—	—	LCm	LCm	—	—	—	LCm
LC (male right angle)	—	—	LCmR	—	—	—	—	LCmR
MEIA-.875 (male)	—	—	—	—	—	—	—	MEIA87m
MEIA-1.625 (male)	—	—	—	—	—	—	—	MEIA16m
N (male)	Nm	Nm	—	Nm	Nm	Nm	Nm	Nm
N (male right angle)	NmR	NmR	—	NmR	—	—	—	NmR
QDS (male)	—	QDSm	—	QDSm	—	—	—	—
QDS (male right angle)	—	QDSmR	—	QDSmR	—	—	—	—
QDS-UL (male)	—	QDSULm	—	QDSULm	—	—	—	QDSULm
QDS-UL (male right angle)	—	QDSULmR	—	QDSULmR	—	—	—	QDSULmR
QRM (male)	—	QRMm	—	QRMm	—	—	—	QRMm
QRM (male right angle)	—	QRMmR	—	QRMmR	—	—	—	QRMmR
SC (male)	—	—	—	SCm	—	SCm	SCm	SCm
SC (male right angle)	—	—	—	SCmR	—	—	—	—
SMA (female bulkhead)	—	—	—	—	SMAfBHD	—	—	—
SMA (male)	—	—	—	—	SMAm	—	—	—
SQS (male)	—	SQSm	SQSm	SQSm	—	—	—	SQSm
SQS (male right angle)	—	SQSmR	SQSmR	SQSmR	—	—	—	SQSmR
TNC (male)	—	—	—	—	—	TNCm	TNCm	—

See Description Key on next page for assistance in identifying Cable Assemblies.

Cable Properties

Attenuation	High	Moderate	Low
Velocity of Propagation	Low	Moderate	High
RF Shielding	Low	Moderate	High
Flexibility	Lowest	Low	High
Temperature	Lowest	Moderate	High
Crush Resistance	High	Highest	Moderate
Weight	Highest	High	Moderate
Cost	Low	Moderate	High

Notes:

1. TRU standard Test & Inspection QAD-1001 applies.
2. Heat shrink strain relief (1 each end).
3. Wrap-around marker label (1 each end) TRU part number and date code.
4. Cable and connectors to TRU standards. Contact factory for details.
5. All EIA connector designs will have a swivel flange and fixed bullet.
6. Unless otherwise specified, all connectors are clamp attachment.

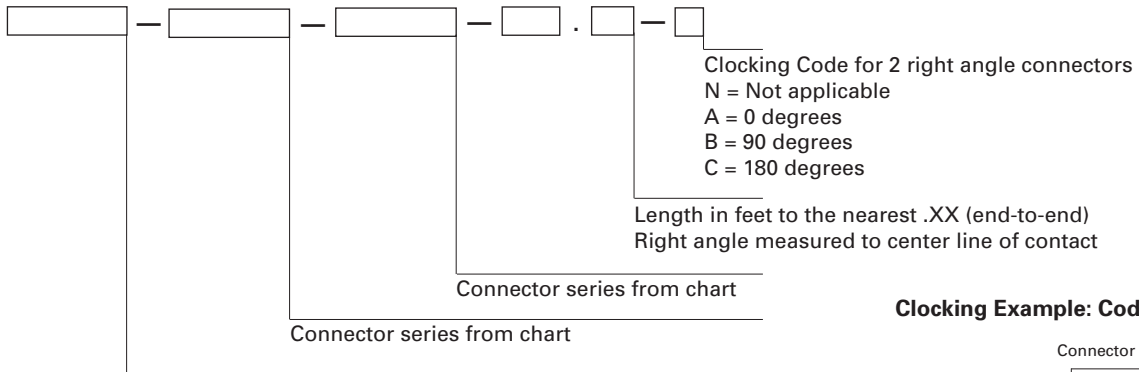
Cable Assemblies



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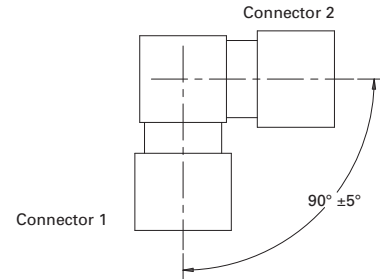
The following description key is provided to assist in the identification of Cable Assemblies. A part number will be assigned upon receipt of order.

Description Key



- Cable Type:
- | | |
|-----------------------------|------------------------|
| TRURG214 (TRU RG-214 cable) | TRU200 (TRU-200 cable) |
| TRURG217 (TRU RG-217 cable) | TRU350 (TRU-350 cable) |
| TRURG218 (TRU RG-218 cable) | TRU450 (TRU-450 cable) |
| TRURG393 (TRU RG-393 cable) | TRU500 (TRU-500 cable) |

Clocking Example: Code B (90°)

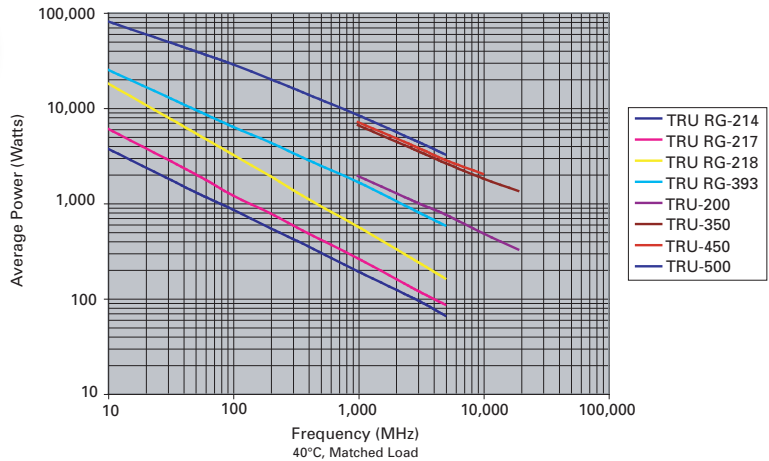


Description Example: TRURG214-HNmR-Nm-3.25-N

- | | |
|-------------|----------------------------|
| Cable | TRU RG-214 cable |
| Connector 1 | HN male right angle |
| Connector 2 | N male |
| Length | 3.25 feet |
| Clocking | Clocking is not applicable |



RF Cable Power Handling



cintru® Flexible Commercial Cable Assemblies



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- cintru low loss and superior shielded cable assemblies
- Land mobile radio and wireless applications
- Cost-effective 50 ohm coaxial solution
- Operation to 6 GHz
- Closed micro-cell foam dielectric for superior bend performance and protection against moisture migration into the dielectric
- Snap-in right angle design for ease of assembly and low VSWR



RF Coaxial Cable Types

Connector Series	cintru 195	cintru 240	cintru 400	cintru 600
BMA (male bulkhead)	—	BMAm	—	—
BMA (female bulkhead float)	—	BMAf	—	—
SMA (male)	SMAm	SMAm	SMAm	—
SMA (male right angle)	SMAmR	SMAmR	—	—
SMA (female bulkhead)	—	SMAfBH	—	—
TNC (male)	TNCm	TNCm	TNCm	TNCm
TNC (male right angle)	—	TNCmR	TNCmR	—
TNC (female bulkhead)	—	TNCfBH	—	—
N (male)	Nm	Nm	Nm	Nm
N (male right angle)	—	—	NmR	NmR
N (female bulkhead)	NfBH	NfBH	NfBH	NfBH
QDS (male)	—	—	—	QDSm
SC (male)	—	—	SCm	—
7/16 (male)	—	—	716m	716m

See Description Key on next page for assistance in identifying cintru Flexible Commercial Cable Assemblies.

Mechanical Properties

	Crimp	Crimp	Clamp	Clamp
Connector Attachment	Crimp	Crimp	Clamp	Clamp
Inner Conductor Dia.	0.037 inch (0,94 mm)	0.056 inch (1,42 mm)	0.108 inch (2,74 mm)	0.176 inches (4,47 mm)
Dielectric Dia.	0.113 inch (2,87 mm)	0.150 inch (3,81 mm)	0.285 inch (7,24 mm)	0.455 inch (11,56 mm)
Outer Conductor	0.118 inch (3,00 mm)	0.155 inch (3,94 mm)	0.291 inch (7,39 mm)	0.461 inch (11,71 mm)
Overall Braid Dia.	0.141 inch (3,58 mm)	0.178 inch (4,52 mm)	0.320 inch (8,13 mm)	0.490 inch (12,45 mm)
Jacket Dia.	0.195 inch (4,95 mm)	0.240 inch (6,10 mm)	0.405 inch (10,29 mm)	0.590 inch (14,99 mm)
Center Conductor Type	BC	BC	BCCAI	BCCAI
Minimum Bend Radius	0.50 inch (12,7 mm)	0.75 inch (19,1 mm)	1.00 inch (25,4 mm)	1.50 inch (38,1 mm)
Operating Temp.	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C	-40° C to +85° C
Weight	0.021 lb./ft. (0,03 kg/m)	0.034 lb./ft. (0,05 kg/m)	0.068 lb./ft. (0,10 kg/m)	0.131 lb./ft. (0,20 kg/m)

Electrical Properties

	DC to 6	DC to 6	DC to 6	DC to 6
Frequency (GHz Max.)	DC to 6	DC to 6	DC to 6	DC to 6
Velocity of Propagation	80%	84%	85%	87%
Voltage Withstanding (VDC)	1000	1500	2500	4000
Peak Power (kW)	2.5	5.6	16	40
Capacitance (pF/ft.)	24.3	24.2	23.9	23.4
Phase Stability (ppm/°C)	<10	<10	<10	<10
Shielding Effectiveness (dB)	>90	>90	>90	>90
Attenuation (at any frequency)	K1 = .33445	K1 = .24010	K1 = .12028	K1 = .07556
K1 x √F(MHz) + K2 x F (MHz)	K2 = .00047	K2 = .00033	K2 = .00026	K2 = .00026

Notes:

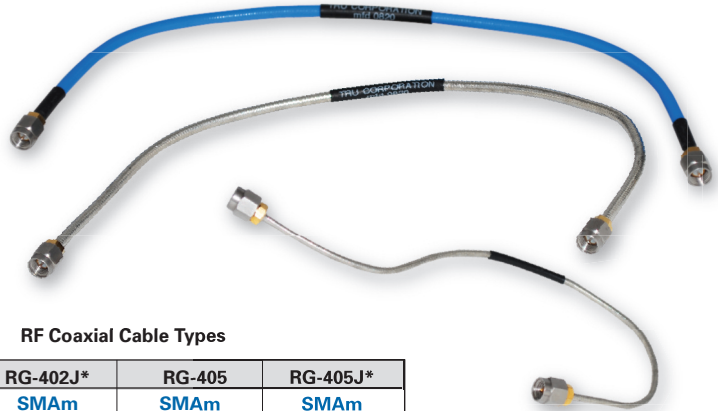
1. TRU standard Test & Inspection QAD-1001 applies.
2. Heat shrink strain relief (1 each end).
3. Wrap-around marker label (1 each end) TRU part number and date code.
4. Cable and connectors to TRU standards. Contact factory for details.

Conformable Cable Assemblies



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- Hand formable to final shape
- Tin copper or FEP jacket
- 100% continuity and voltage test
- 100% VSWR tested
- Phase matching available
- Robust stainless steel coupling nut
- Nickel/gold plated brass body
- Anti-torque nut on SMA
- Solder attachment



RF Coaxial Cable Types

Connector Series	RG-402	RG-402J*	RG-405	RG-405J*
SMA (male)	SMAm	SMAm	SMAm	SMAm
SMA (male right angle)	SMAmR	SMAmR	SMAmR	SMAmR

* With FEP jacket.

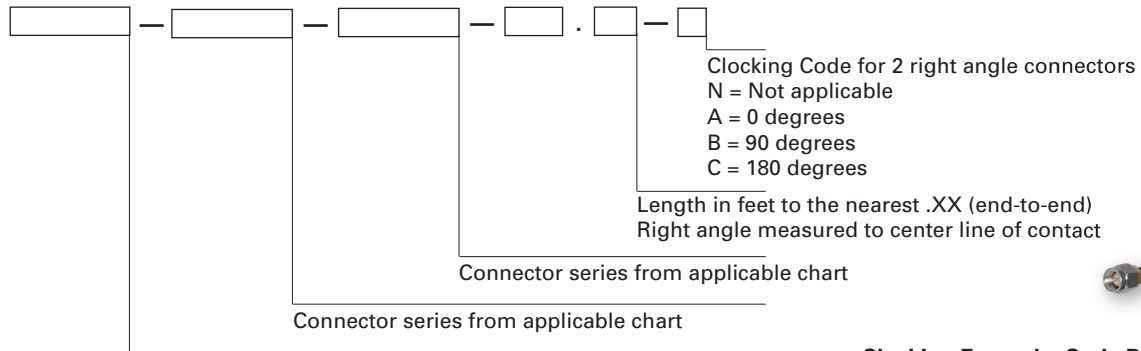
See Description Key below for assistance in identifying Conformable Cable Assemblies.

Electrical Properties

Frequency	DC to 18 GHz (10 GHz SMA right angle)		
Impedance	50 Ohms nom.		
Insertion Loss	0.4 dB + 0.065 x L (inches) typ.	0.6 dB + 0.065 x L (inches) typ.	
VSWR	1.35:1 typ.		
Velocity of Propagation	70% nom.	70% nom.	

The following description key is provided to assist in the identification of cintru and Conformable Cable Assemblies. A part number will be assigned upon receipt of order.

Description Key for cintru and Conformable Cable Assemblies



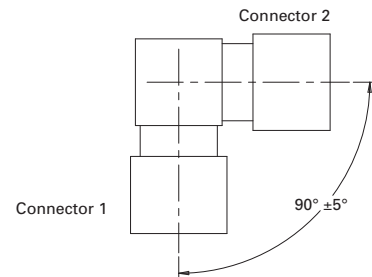
Cable Type:

CTR195 (cintru 195 cable)	RG402 (RG-402 cable)
CTR240 (cintru 240 cable)	RG405 (RG-405 cable)
CTR400 (cintru 400 cable)	RG402J (RG-402J cable)
CTR600 (cintru 600 cable)	RG405J (RG-405J cable)

Description Example: CTR195-SMAm-Nm-3.25-N

Cable	cintru 195 cable
Connector 1	SMA male
Connector 2	N male
Length	3.25 feet
Clocking	Clocking is not applicable

Clocking Example: Code B (90°)



General Purpose Test Cable Assemblies



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These test cables combine MIL standard test-grade interfaces with flexible and durable cable construction to provide repeatable, reliable performance and long service life. The robust design construction and materials feature stainless steel connectors utilizing our unique cable/connector attachment technology.

- Matched performance to 18 GHz
- Repeatable, stable performance
- 100% RF tested
- Low insertion loss and low VSWR
- MIL-STD-348 test interfaces
- Standard lengths
- Flexible, robust cable construction
- Stainless steel connectors
- Excellent cable/connector retention
- Torque resistant
- Flex life >100K cycles
- Ideally suited for production test stations and engineering labs

Connector Series	TRU Test Cable
SMA (male)	SMAm
SMA (female)	SMAf
3.5 mm (male)	3.5m
3.5 mm (female)	3.5f
Type N (male)	Nm
Type N (female)	Nf

See Description Key on next page for assistance in identifying General Purpose Test Cable Assemblies.

Electrical Properties

Frequency	.050 to 18 GHz depending on connectors
Impedance	50 Ohms nom.
Velocity of Propagation	80% nom.
VSWR	1.35:1 max.
Attenuation	0.40 dB/ft + 0.4 dB @ 18 GHz
Shielding Effectiveness	>-95 dB

Mechanical Properties

Cable/Connector Retention	50 lb. min. (tested IAW MIL-C-87104) Positive shoulder mechanical captivation
Torque	IAW MIL-C-87104
Flexure	100K cycles min. (IAW MIL-C-87104)
Min. Bend Radius	1.0 inch (25,4 mm)
Cable Outer Diameter	0.20 inch (5,08 mm)
Connector Outer Diameter (IAW-STD-348 test)	Type N: .80 inch (20,3 mm) nom. SMA/3.5 mm: 0.35 inch (8,9 mm) nom.
Mating Durability	500 cycles min.
Cable Materials	Silver plated, copper center conductor Expanded PTFE dielectric Silver plated, copper shielded layers Extruded FEP jacket
Connector Materials	Stainless steel outer bodies Gold plated beryllium copper contacts TPX, Fluoroloy, PTFE insulators

Environmental Properties

Temperature	-55 to +120°C
Phase Stability	<2500 PPM (-40 to +120°C)
4-quadrant bending @ min. bend radius	±10° at 18 GHz

Notes:

1. TRU standard Test & Inspection QAD-1001 applies.
2. Heat shrink strain relief (1 each end).
3. Wrap-around marker label (1 each end) TRU part number and date code.
4. Cable and connectors to TRU standards. Contact factory for details.



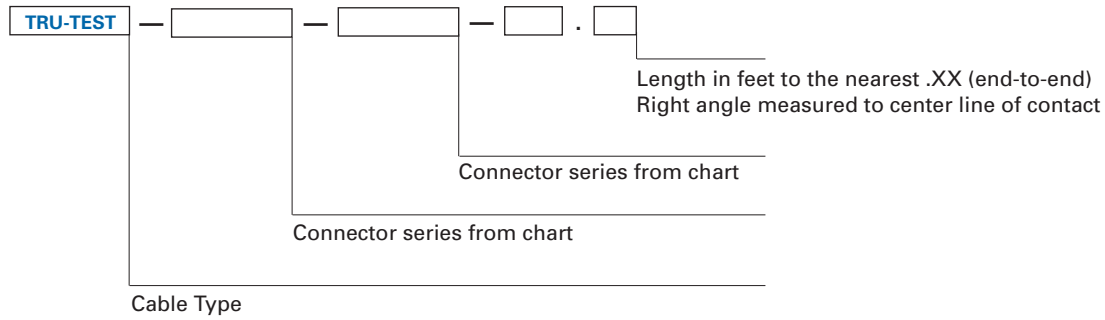
General Purpose Test Cable Assemblies



EXPERIENCE. TRU INNOVATION.

The following description key is provided to assist in the identification of General Purpose Test Cable Assemblies. A part number will be assigned upon receipt of order.

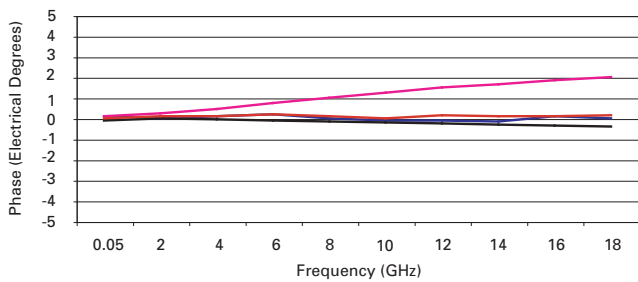
Description Key



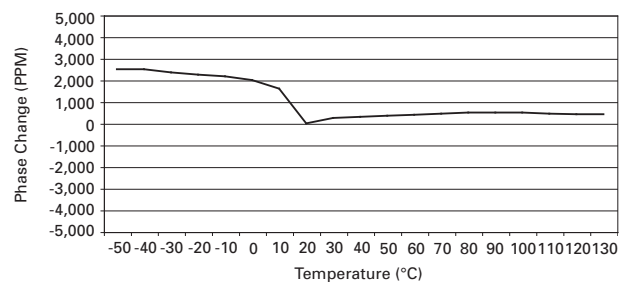
Part Number Example: TRU-TEST-SMAm-3.5f-2.75

Cable	TRU Test
Connector 1	SMA male
Connector 2	3.5 mm female
Length	2.75 feet

Typical Phase Change vs. Flex



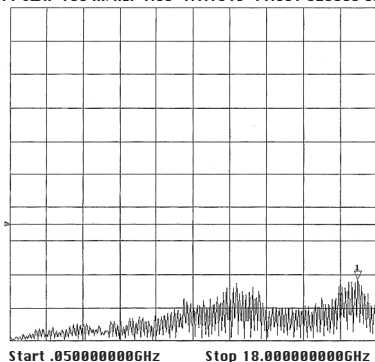
Phase Temperature Profile



Typical VSWR

3.5 mm male to 3.5 mm male
30 inches (.762 meter) long

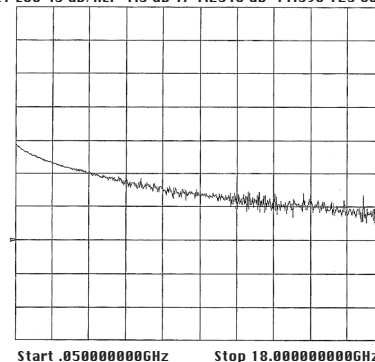
S11 SWR 100 m/REF 1.35 1:1.1848 17.057 625000 6Hz



Typical Insertion Loss

3.5 mm male to 3.5 mm male
30 inches (.762 meter) long

S21 LOG .5 dB/REF-1.5 dB 1:-1.2540 dB 17.596 125 000 6Hz



Precision Test Adapters



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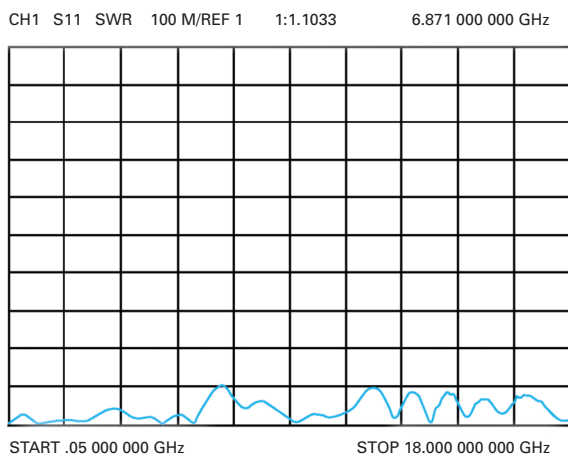
Precision Adapters feature a variety of MIL-STD-348 test grade interfaces such as Type N, SMA, ATNC, 7 mm, 3.5 mm, 2.9 mm and 2.4 mm. These adapters are ideal for lab and production test applications, where measurement accuracy, repeatability, and optimum electrical performance are critical.

The unique modular design provides various configuration options without sacrificing VSWR and phase matched performance from DC to 18 GHz. Gold-plated, six-slot center contacts on the 7 mm and Type N interfaces ensure precise interconnections. Electrically matched Noryl insulators are designed to mechanically captivate the center contacts and operate over temperatures ranging from 0° to 85° C. The gold-plated, durable stainless steel body and sleek, stainless steel coupling nut will provide long-lasting and reliable performance life.

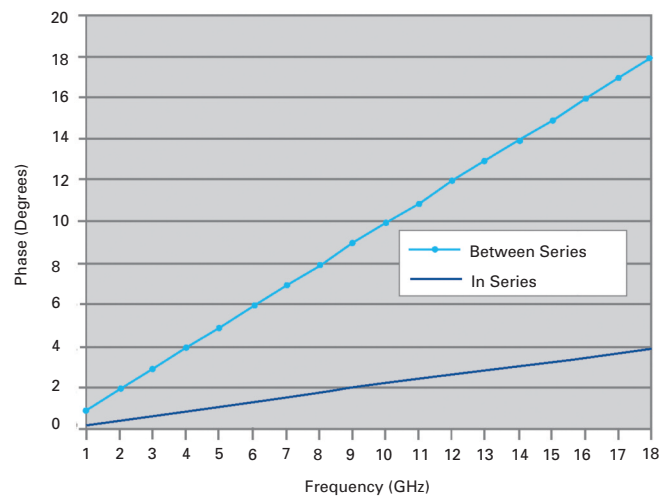
- MIL-STD-348 test interfaces
- Gold-plated, durable BeCu and CRES construction
- Sleek, low-profile coupling
- 6-slot center contact design
- Matched VSWR performance to 18 GHz
- Phase matched in-series and between-series for VNA measurements
- Various configurations
- Ideal for lab and production test environments
- Economically priced



Typical VSWR Performance (mated pair)



Typical Phase Match



Precision Test Adapters



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		Interface 2										
18 GHz		Interface	3.5mm (male)	3.5mm (female)	SC (female)	SC (male)	ATNC (male)	ATNC (female)	SMA (male)	SMA (female)	N (male)	N (female)
Interface 1	Interface	Description	3.5m	3.5f	SCf	SCm	ATNCm	ATNCf	SMAm	SMAf	Nm	Nf
	7mm	7mm	.	.	.	.	.	.	.	.	.	.
	N (female)	Nf	.	.	.	.	.	.	.	.	.	.
	N (male)	Nm	.	.	.	.	.	.	.	.	.	.
	SMA (female)	SMAf	.	.	.	.	.	.	.	.	.	.
	SMA (male)	SMAm	.	.	.	.	.	.	.	.	.	.
	ATNC (female)	ATNCf	.	.	.	.	.	.	.	.	.	.
	ATNC (male)	ATNCm	.	.	.	.	.	.	.	.	.	.
	SC (male)	SCm	.	.	.	.	.	.	.	.	.	.
	SC (female)	SCf	.	.	.	.	.	.	.	.	.	.
	3.5mm (female)	3.5f	.	.	.	.	.	.	.	.	.	.
	3.5mm (male)	3.5m	.	.	.	.	.	.	.	.	.	.

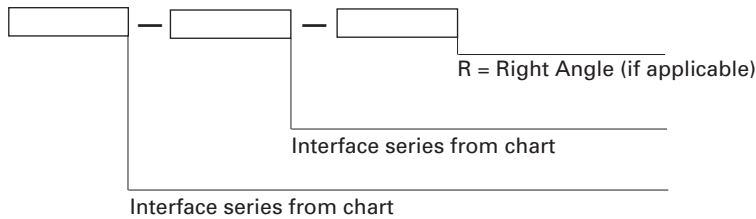
See Description Key for assistance in identifying Precision Test Adapters.

		Interface 2			
		Interface	3.5mm (female)	2.4mm (female)	2.92mm (female)
Interface 1	Interface	Description	3.5f	2.4f	2.92f
	3.5mm (male)	3.5m	.	.	.
	2.4mm (male)	2.4m	.	.	.
	2.92mm (male)	2.92m	.	.	.

See Description Key for assistance in identifying Precision Test Adapters.

The following description key is provided to assist in the identification of Precision Test Adapters. A part number will be assigned upon receipt of order.

Description Key



Description Example: Nm-SMAf

Interface: N male
Interface: SMA female

High Power Test & Measurement RF Cable Kit



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The versatility of TRU-560 flexible test and measurement cable can address the full range of testing needs for high power, high current requirements across a variety of RF and microwave applications. Ideally suited for S-parameter measurements, calibrations and preventive maintenance in engineering and production test labs, flight-lines, fab clean rooms and equipment carts.

- Broadband frequency performance
 - Low insertion loss, low VSWR
 - Phase matched
 - Phase stability vs. temperature and flexure
- Robust, durable construction
 - 100K cable flex life
 - Stainless steel connector construction
- Easy-to-use, interchangeable head
 - Easy, reliable, repeatable mating
 - Quick disconnect interfaces
 - Interchangeable front ends
- High-power, high-voltage design
 - High-temperature materials
 - Overlap dielectric constructions
- Versatility across applications and environments
 - Fabs, field test kits, calibration and preventive maintenance carts, lab, flight line, environmental test chamber interconnects



Electrical Properties

Frequency	DC – 2.5 GHz
Impedance	50 Ohms nom.
Velocity of Propagation	77% nom.
VSWR	1.25:1 @ 2.5 GHz (typical for any cable assembly configuration)
Insertion Loss	0.2 dB + 0.05 dB/ft. @ 2.5 GHz (typical for any cable assembly configuration)
Phase Match/Stability	≤ 3° @ 2.5 GHz (between all connector front ends)
	≤ 1.5° @ 2.5 GHz (when subjected to 4 quadrant bend/flex)
Power Handling	see graph next page

Mechanical Properties

Outer Diameter	0.565 inch (14,3 mm) nom.
Bend Radius	2.8 inches (71,1 mm) min. Dynamic 1.7 inches (43,1 mm) min. Static
Mating Durability	500 cycles min.
Cable/Connector Retention	100 lb.
Temperature	-55° C to +105° C

Ordering Information

Description	Part Numbers ²	Description	Part Numbers ²
Test Cable Kit	TRU-10968	Base Cable Assembly 3 ft. (1 m)	TRU-10882-03
Carrying Case	N/A ¹	SQS (female) Interchangeable Head	TRU-10918
Preset Torque Wrench	N/A ¹	QRM (female) Interchangeable Head	TRU-10920
Open End Wrench	N/A ¹	QDS (female) Interchangeable Head	TRU-10919
Base Cable Assembly 6 ft. (2 m)	TRU-10882-06 ¹	7-16 (female) Interchangeable Head	TRU-10921
SQS (male) Interchangeable Head	TRU-10759 ¹	HN (female) Interchangeable Head	TRU-10923
QRM (male) Interchangeable Head	TRU-10761 ¹	LC (female) Interchangeable Head	TRU-10922
QDS (male) Interchangeable Head	TRU-10760 ¹	N (female) Interchangeable Head	TRU-11434
7-16 (male) Interchangeable Head	TRU-10872 ¹	N (male) Interchangeable Head	TRU-11433
HN (male) Interchangeable Head	TRU-10874 ¹		
LC (male) Interchangeable Head	TRU-10873 ¹		

Notes:

¹ Quantity of 1 each included as part of kit: TRU-10968.

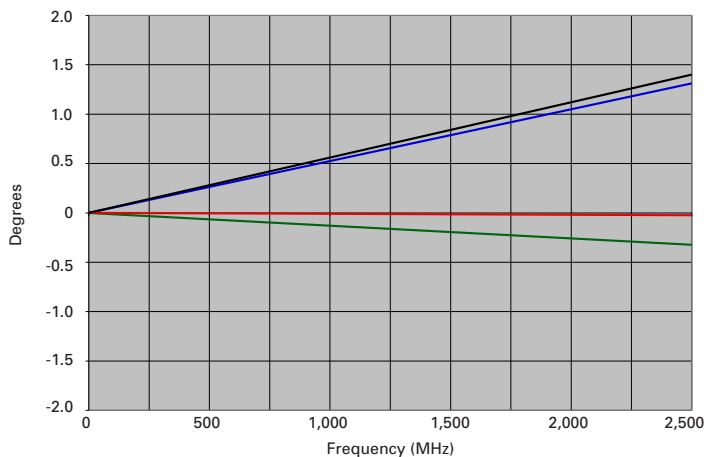
² All TRU part numbers may be purchased separately.

High Power Test & Measurement RF Cable Kit

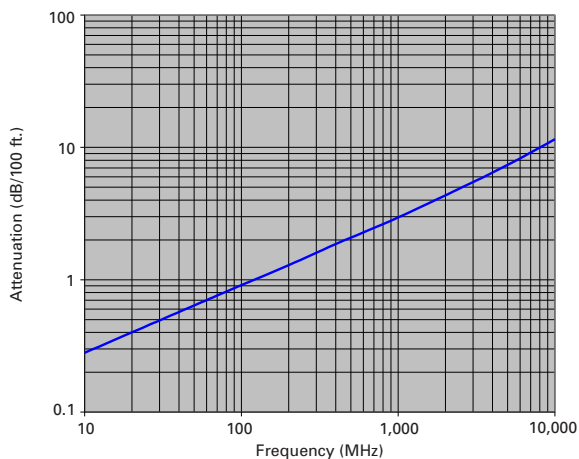


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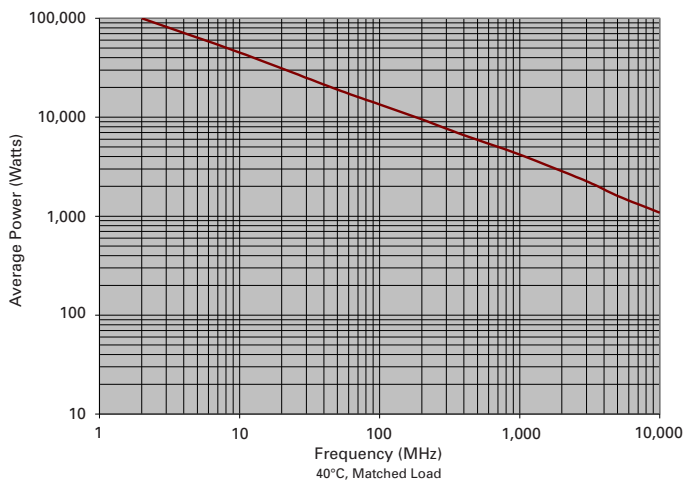
Phase Stability – 4-Quadrant Bend



TRU-560 Maximum Attenuation



TRU-560 Power Handling



Interchangeable-Head Test Adapter Kit



EXPERIENCE. TRU INNOVATION.

The versatility of the Interchangeable-Head Test Adapter Kit can address the full range of testing needs for high power, high current requirements across a variety of RF and microwave applications. Ideally suited for S-parameter measurements, calibrations and preventive maintenance in engineering and production test labs, flight-lines, fab cleanrooms and equipment carts.

- Broadband frequency performance
 - Low insertion loss, low VSWR
 - Phase matched
- Robust, durable construction
 - Stainless steel construction
 - Heat-treated, gold plated, beryllium copper contacts
- Easy-to-use, versatile
 - Reliable, repeatable mating
 - Quick disconnect interfaces
 - Multiple combinations, configurations
- High-power, high-voltage design
 - High temperature materials
 - Overlap dielectric constructions
- Versatility across applications and environments
 - Lab, flight line, environmental test chambers, fabs, field test kits, calibration and preventive maintenance carts



Electrical Properties

Frequency	DC to 2.5 GHz
VSWR	1.25:1 @ 2.5 GHz typ. for any combination
Insertion Loss	0.15 dB @ 2.5 GHz typ. for any combination
Phase Match	≤ 3° @ 2.5 GHz between all combinations
Impedance	50 Ohms nom.

Mechanical Properties

Mating Durability	500 cycles min.
Intermediate Interface	Per TRU Standards
Primary Interfaces	Per TRU Standards / MIL-STD-348

Material and Finishes

Insulators	PTFE
Center Contacts	Gold plated beryllium copper, brass
Coupling Nuts and Bodies	Passivated stainless steel

Environmental Properties

Temperature	-65°C to +165°C
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Ordering Information

Description	Part Numbers ²	Description	Part Numbers ²
Test Adapter Kit	TRU-10985	7-16 (male) Interchangeable Head	TRU-10872
Carrying Case	N/A ¹	7-16 (female) Interchangeable Head	TRU-10921
Preset Torque Wrench	N/A ¹	HN (male) Interchangeable Head	TRU-10874
Open End Wrench	N/A ¹	HN (female) Interchangeable Head	TRU-10923
Anti-Roll Bracket	N/A ¹	LC (male) Interchangeable Head	TRU-10873
Interlink	TRU-10881 ¹	LC (female) Interchangeable Head	TRU-10922
SQS (male) Interchangeable Head	TRU-10759 ¹	N (male) Interchangeable Head	TRU-11433
SQS (female) Interchangeable Head	TRU-10918 ¹	N (female) Interchangeable Head	TRU-11434
QRM (male) Interchangeable Head	TRU-10761 ¹	Interchangeable (female)	TRU-11454
QRM (female) Interchangeable Head	TRU-10920 ¹	Panel Mount, Solder Pot	
QDS (male) Interchangeable Head	TRU-10760 ¹	Interchangeable (female) to	
QDS (female) Interchangeable Head	TRU-10919 ¹	QC Quick Change (male) Adapter	TRU-10986

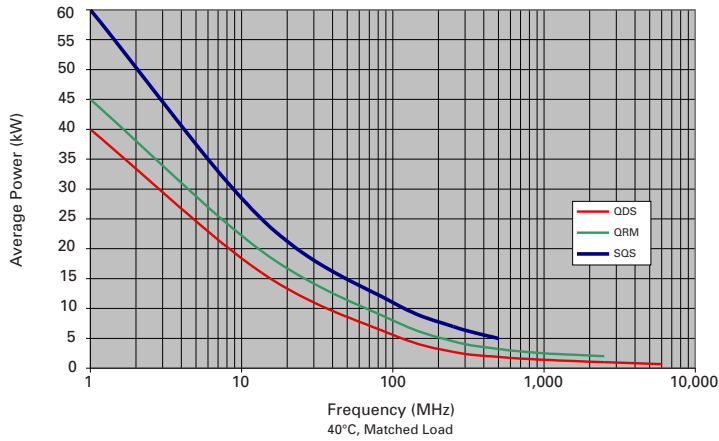
Notes: ¹ Quantity of 1 each included as part of kit: TRU-10985. ² All TRU part numbers may be purchased separately.

Interchangeable-Head Test Adapter Kit

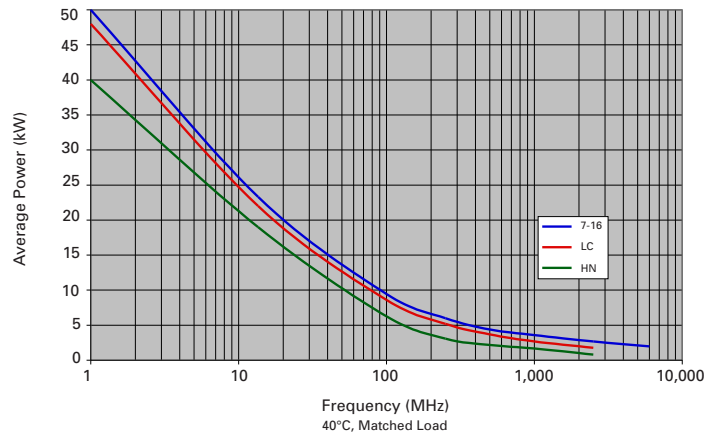


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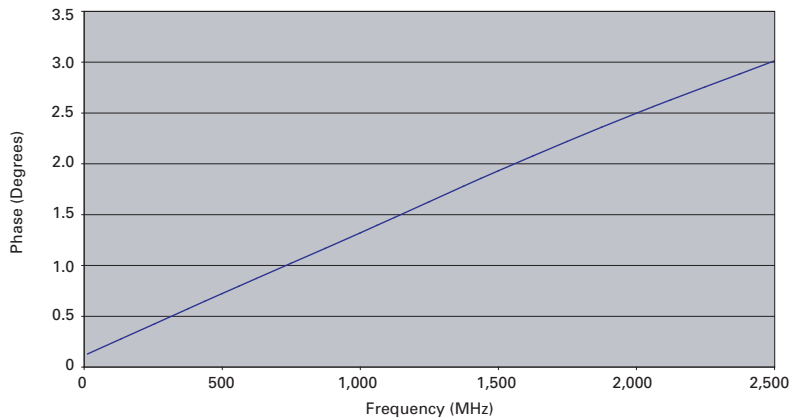
RF Power Handling



RF Power Handling



Typical Phase Match (Between Interchangeable Heads)



Quick Change Adapters



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TRU Corporation offers Quick Change (QC) Adapters for military and commercial customers with a wide array of custom and standard RF coaxial solutions. These quick-change RF adapters are designed for use with high-power testing and monitoring equipment as well as specialty altimeters. With these adapters, on-site connector changes are accomplished simply by removing the screws from the base plate and attaching the connector style that matches the equipment you're testing. Through use of the consistent QC end, changes can be made without affecting the consistency of test results. They represent a quick and easy way to match your testers and equipment without performance-degrading adapters.

Standard mounting panel: 1.25 inch (32 mm) square.

The following specifications are typical and may vary depending upon interface combination:

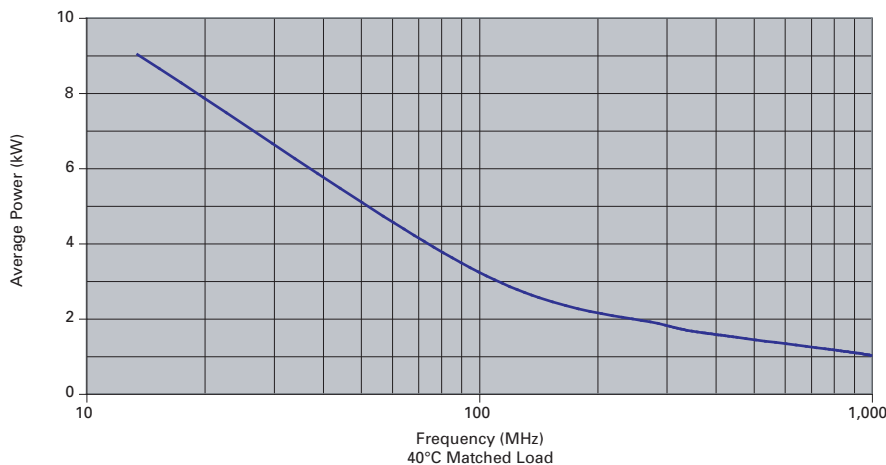
Electrical Properties

Frequency	DC to 7 GHz
Impedance	50 Ohms nom.
Voltage Rating	2700 Volts RMS
Insulation Resistance	10,000 Megohms

Material/Finish Properties

Body	Brass, silver or nickel plated
Inner Contact – Female	Beryllium copper, silver or gold plated
Inner Contact – Male	Brass, silver or gold plated
Outer Contacts – Female	Brass, silver or nickel plated
Outer Contacts – Male	Beryllium copper, silver or nickel plated
Slotted Contacts	Silver or gold plated
Insulators	PTFE
Gaskets/Seals	Silicone rubber

Power Handling



Quick Change Adapters



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Build Your Own Adapter

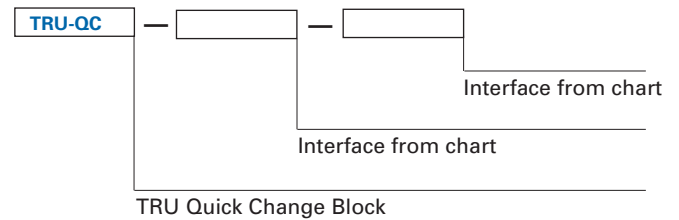
Description	Interface
BNC (female) to QC (male)	BNCf
TNC (female) to QC (male)	TNCf
UHF (female) to QC (male)	UHFf
N (male) to QC (male)	Nm
N (female) to QC (male)	Nf
HN (male) to QC (male)	HNm
HN (female) to QC (male)	HNf
C (male) to QC (male)	Cm
C (female) to QC (male)	Cf
SC (male) to QC (male)	SCm
SC (female) to QC (male)	SCf
7-16 (male) to QC (male)	716m
7-16 (female) to QC (male)	716f
QRM (male) to QC (male)	QRMm
QRM (female) to QC (male)	QRMf
QDS (male) to QC (male)	QDSm
QDS (female) to QC (male)	QDSf
QDS-UL (male) to QC (male)	QDSULm
QDS-UL (female) to QC (male)	QDSULf
SQS (male) to QC (male)	SQSm
SQS (female) to QC (male)	SQSf
LC (male) to QC (male)	LCm
LC (female) to QC (male)	LCf
EIA 7/8-50 (female) to QC (male)	78EIAf
EIA 1-5/8-50 (male) to QC (male)	1.58EIAm

See Description Key for assistance in identifying Quick Change Adapters.



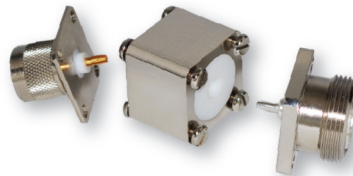
The following description key is provided to assist in the identification of Quick Change Adapters. A part number will be assigned upon receipt of order.

Description Key



Description Example: TRU-QC-716m-BNCf

Quick Change Block
 Connector 1 7-16 male
 Connector 2 BNC female



QC Adapters

Part Number	RoHS Compliant	Description Adapters to QC male
TRU-4454	TRU-15007	N (male)
TRU-4453	TRU-15010	N (female)
TRU-4995	TRU-15013	HN (male)
TRU-4996	TRU-15022	HN (female)
TRU-4998	TRU-15011	C (female)
TRU-6857-SNT	TRU-15000	SC (male)
TRU-6852	TRU-15016	7-16 (male)
TRU-6813	TRU-15018	7-16 (female)
TRU-1210-GNX	TRU-15012	QRM (male)
TRU-1209-GNX	TRU-15017	QRM (female)
TRU-7948	TRU-15001	QDS (male)
TRU-6933	TRU-15009	QDS (female)
TRU-8027-SNT	TRU-15015	QDS-UL (female)
TRU-7844	TRU-15002	SQS (male)
TRU-6934	TRU-15020	SQS (female)
TRU-7958	TRU-15014	SQS (female) (m-p)
TRU-4491	TRU-15019	LC (female)
TRU-15008	TRU-15008	LC (male)
TRU-8414-SNT	TRU-15003	LC (female) right angle
TRU-6854	TRU-15004	EIA 1-5/8-50 (male) to QC (female)
TRU-7812K	TRU-15006	QC (female) Panel Receptacle
TRU-6858	TRU-15021	QC (female) to QC (female) BLOCK

Part Number	Description Adapters to QC male
TRU-5202	BNC (male)
TRU-5898	BNC (female)
TRU-4459	TNC (female)
TRU-3486	UHF (female)
TRU-7945	N (female) right angle
TRU-8413-SNT	HN (female) right angle
TRU-4456	C (male)
TRU-5517	SC (female)
TRU-8160	QDS-UL (male)
TRU-1211-GNX	QRM (female) (m-p)
TRU-1212-GNX	QRM (male) (f-p)
TRU-9855-SNX	SQS (female) right angle
TRU-8919	LC LARGE (male)
TRU-6850	LC LARGE (female)
TRU-5201	LT (male) to QC (male)
TRU-6851	EIA 7/8-50 (female)
TRU-6856-SNT	EIA 1-5/8-50 (male)
TRU-6853	#10-32 Screw Terminal

RF Receptacles



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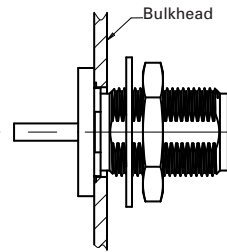
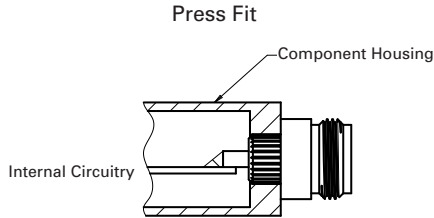
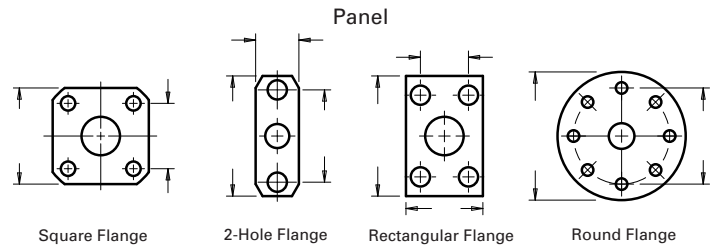
One of the greatest varieties of elements for choice is to be found in the selection of receptacle styles. The basic configurations are shown below. Whether you wish for flange mount, single-hole bulkhead mount, or your receptacle to be direct soldered or inserted into a heat-treated female basket, we have a style for your application and packaging needs. Please use the following Interface, Mounting and Terminal descriptions in describing your application needs. TRU will do its best to use existing designs and will also build to your request.

Connector Interfaces:

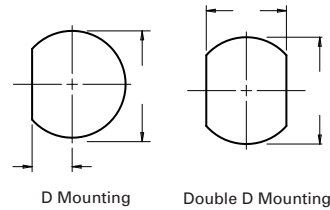
Standard			Quick Disconnect	Subminiature
EIA	HN	TNC	SQS	BMA
MEIA	SC	BNC	QRM	BMMA
7-16	C	LC	QDS	SMA
N	LT	13-30	QDM	

Mounting Options:

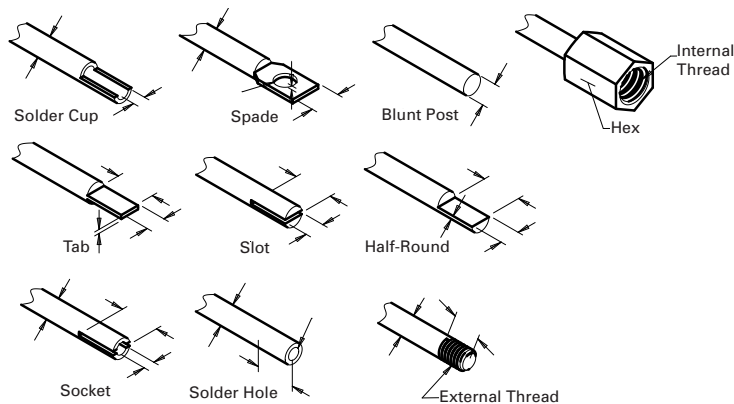
- Bulkhead
- Panel
- Press



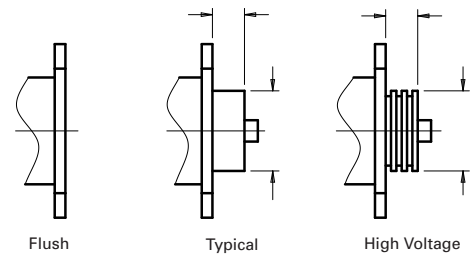
Bulkhead Feedthrough



Terminal Contact/Insulator Options:



Insulator Geometry Features



Quick-Connect/Disconnect Cable Assemblies



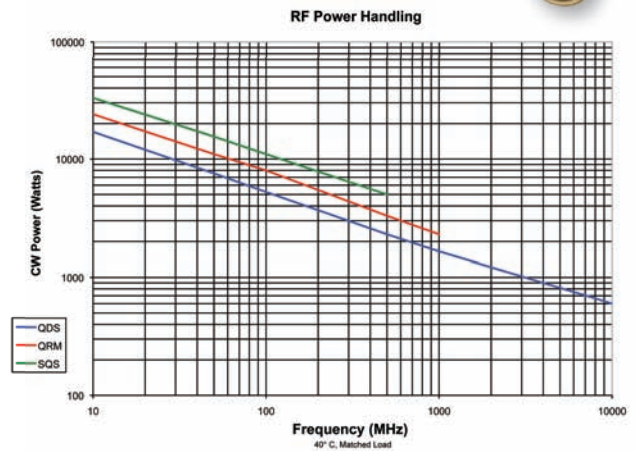
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TRU Corporation Quick-Connect/Disconnect RF interfaces provide reliable mating with fast connect/disconnect capability. These interfaces feature a positive locking mechanism employing a spring-loaded sleeve on the male plug that is drawn back to let self-contained bearings "click" into grooves on the corresponding female and then slide forward. A fully mated condition is visually obvious, eliminating any guesswork. Not only does this design provide an easy and safe connection, it creates a highly reliable connection that will not vibrate loose.

Quick-Connect/Disconnect interfaces are available as plus, jack and receptacle with straight and right angle configurations:

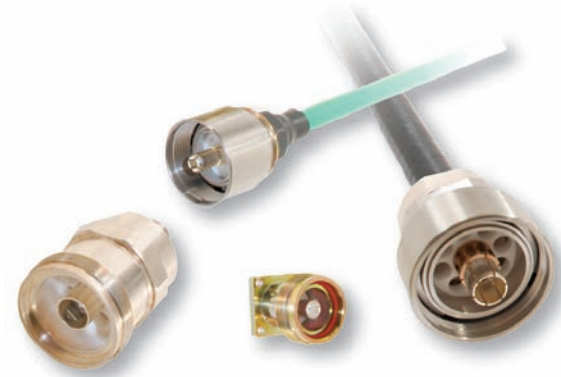
- SQS (similar to 7-16, but with higher power and voltage design features)
- QRM (smaller version SQS)
- QDS (exhibits the same electrical performance as C and SC types)
- QDM (equivalent to BNC and TNC line sizes)

See pages 2 and 3 for assistance in identifying Quick Disconnect Cable Assemblies.



Application-Driven Designs

TRU Corporation has the unique ability to combine outstanding program management, engineering design and leading edge in-house machining capability with highly trained assemblers to produce the best RF interconnect solution for your application. TRU designs and tests proprietary, high-performance TRU-brand coaxial cables meeting or exceeding all your application needs when off-the-shelf cable assemblies will not meet your specifications. Let TRU design the perfect RG interconnect solution for your application needs.



Electrical

- Impedance matched
- Broadband to 26.5 GHz
- Low VSWR
- Phase matching
- High power/high voltage

Mechanical

- Design to fit
- Lightweight materials
- Robust axial and torsional strain relief
- Low profiles
- Custom configurations
- MIL-STD_348

Environmental

- Environmental test
- Moisture resistance/sealed designs
- 55° to +200°C cable types
- ASTM plating
- MIL-STD-202
- RoHS



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