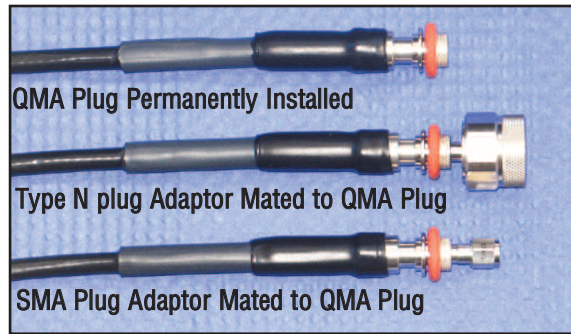


SilverLine™ Specifications:

SilverLine™-QMA Changeable Interface System



NEW! 18GHz QMA r/a with Quick Release

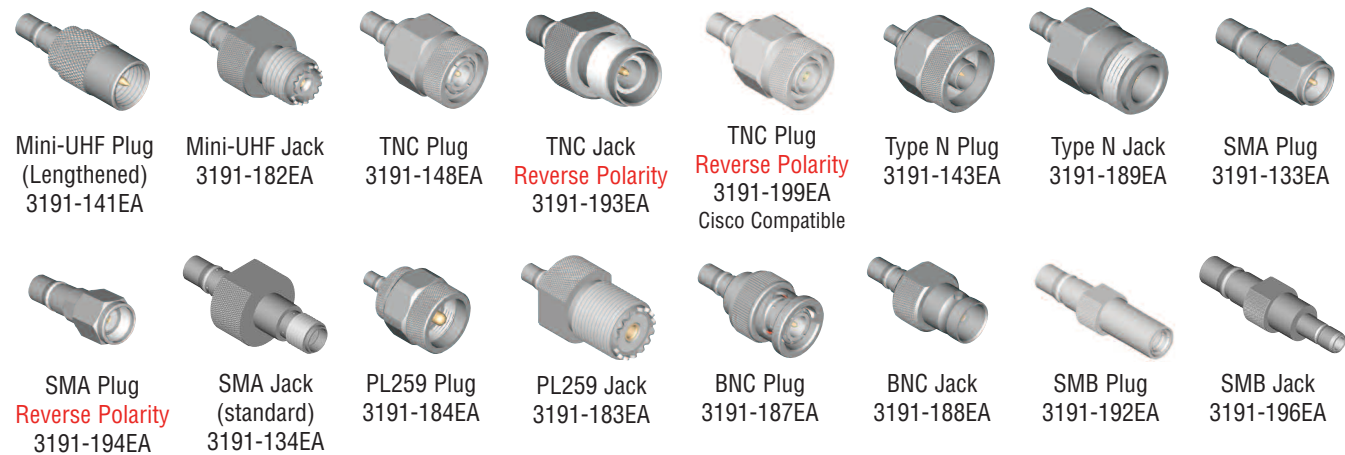
Specifications:

- Frequency response: DC-18.0 GHz (QMA, QMA r/a, Type N, SMA and TNC)
- VSWR: 1:35:1 Maximum, 1:25:1 Typical (Cable Assembly with Mated Adaptor)

Features & Benefits:

- High Frequency Operation
- 5000 Mate Life
- SureGrip™ Coupling Nut
- Smooth, Fast Retraction for Quick Changes
- Large Interface Selection
- Between Series & Reverse Polarity Interfaces

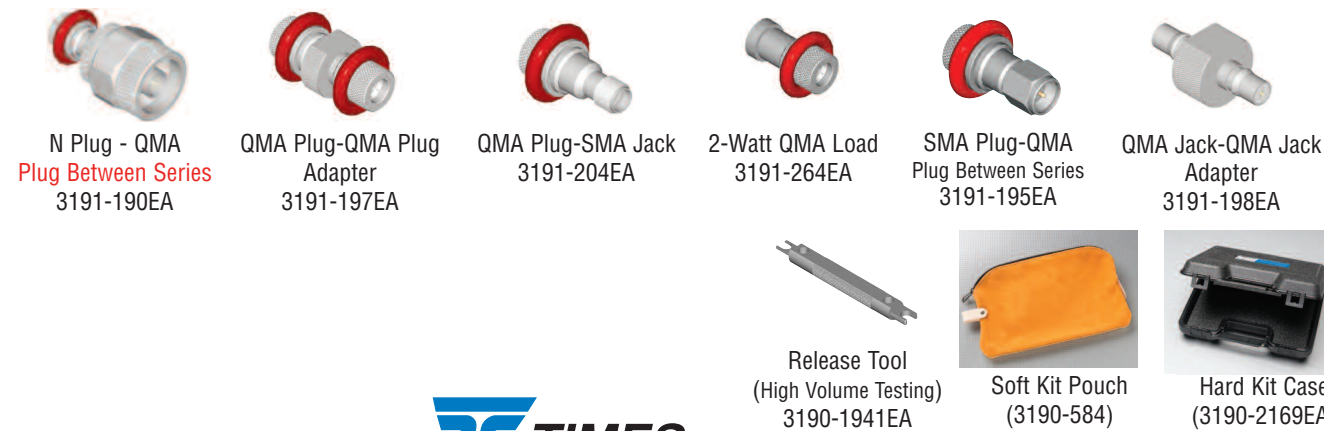
Adaptors From QMA Jack To:



Mini-UHF Plug (Lengthened) 3191-141EA Mini-UHF Jack 3191-182EA TNC Plug 3191-148EA TNC Jack Reverse Polarity 3191-193EA TNC Plug Reverse Polarity 3191-199EA Cisco Compatible Type N Plug 3191-143EA Type N Jack 3191-189EA SMA Plug 3191-133EA

SMA Plug Reverse Polarity 3191-194EA SMA Jack (standard) 3191-134EA PL259 Plug 3191-184EA PL259 Jack 3191-183EA BNC Plug 3191-187EA BNC Jack 3191-188EA SMB Plug 3191-192EA SMB Jack 3191-196EA

Between & Within Series Adaptors and Termination



N Plug - QMA Plug Between Series 3191-190EA QMA Plug-QMA Plug Adapter 3191-197EA QMA Plug-SMA Jack 3191-204EA 2-Watt QMA Load 3191-264EA SMA Plug-QMA Plug Between Series 3191-195EA QMA Jack-QMA Jack Adapter 3191-198EA

Release Tool (High Volume Testing) 3190-1941EA Soft Kit Pouch (3190-584) Hard Kit Case (3190-2169EA)



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Test Cables

Coax Test Cables for:

- High Volume Production Test Stations
- Research & Development Labs
- Environmental & Temperature Test Chambers
- Replacement for OEM Test Port Cables
- Field RF Testing
- Cellular Infrastructure Site Testing



SilverLine™ Test Cables are cost effective, durable, high-performance cable assemblies designed for use in a broad range of test and interconnect applications. Fabricated from rugged, solid PTFE dielectric cable with stainless steel connectors and a proven strain relief system, these cables provide long life and excellent stability in applications where they are repeatedly flexed and mated/unmated. SilverLine™ test cables are ideal for use in production, field and laboratory test environments. They are also economical enough to be used as interconnects in test systems.

Features & Benefits:

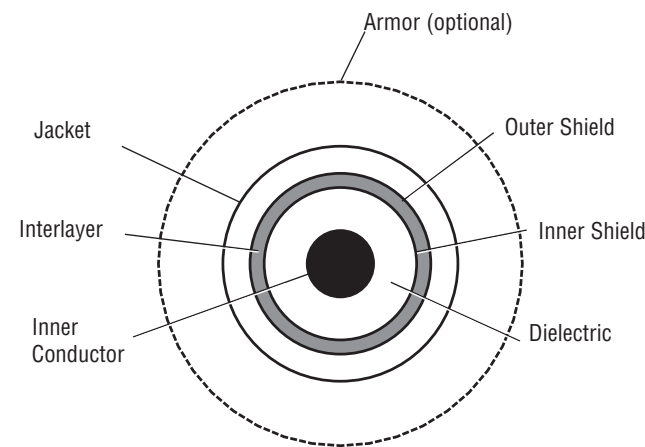
- Phase & Loss Stable
- Long Flex Life
- Triple Shielded Cable
- High Mating Cycle, Stainless Steel Connectors
- Rugged, Solder-Clamp Attachment
- Redundant, Long Life Strain Relief System
- ROHS Compliant

Time's Silverline™ Product Guarantee

Times will repair or replace your SilverLine test cable at its option if the connector attachment fails within four months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.



SilverLine™ Specifications:



Cable Construction

Inner Conductor: Solid Silver Plated Copper Clad Steel

Dielectric: Solid PTFE

Shield: Silver-Plated Copper Flat Ribbon Braid Aluminum-Polyimide Tape Interlayer 36 GA Silver-Plated Copper Braid (90%k)

Jacket: Clear FEP

Armor (Optional): Steel wire reinforced, thick wall, high flex life clear PVC

Connectors

- Passivated stainless steel finish (Complete QMA right angle and QMA straight coupling nut only are nickel plated brass)
- QMA SureGrip™ coupling nut design
- Captive contact
- Thick wall interface (SMA)
- Gold plated beryllium copper center contacts
- PTFE dielectric
- Type N & SMA OneTurn™ (1 full rotation to mate)
- High temperature 7mm
- Knurl/hex coupling nut (Type N and TNC)
- Precision grade 7-16

Connector Attachment/Strain Relief

- Rugged, solder-clamp to braid. 175 lb pull force. Additional crimp system on armored version.
- Redundant triple layer strain relief system (Dual layer on armored version)

Physical & Mechanical Specifications		
Dimensions	in	mm
Inner Conductor	0.037	0.94
Dielectric	0.116	2.95
Inner Shield	0.126	3.20
Interlayer	0.132	3.35
Outer Shield	0.154	3.91
Jacket	0.195	4.95
Armor (optional)	0.450	11.50
Weight lbs./ft (kg/m)	Cable: 0.043 (0.064)	Armor: 0.066 (0.098)
Armor Crush Resistance	1200 lbs. per linear inch	
Bend Radius: minimum	1	25
Connector Retention	Unarmored & Armored > 175 lbs	
Mating Life Cycle	SMA, Type N: > 5000* QMA: > 2500*	
Length Tolerances	≤ 2 ft. or 0.75m, -0, +0.50" (12.7mm) > 2 ft. or 0.75m, -0, +2% of length	
Temperature Range	-67°/+221°F	-55°/+105°C

Electrical Specifications					
VSWR Max		4 GHz	6 GHz	18 GHz	26.5 GHz**
	BNC		1.20:1		
7-16 DIN, QMA SMA, QMA 2.4mm, 3.5mm, Type N, TNC			1.25:1		
			1.20:1	1.30:1	1.35:1
				1.35:1 (R/As)	(SMA, 2.4mm, 3.5mm)
	7mm		1.25:1	1.35:1	

Impedance	50 ohms	
Velocity of Propagation	70 %	
Shielding Effectiveness	>100 dB	
Capacitance	29.4 pf/ft = 96.4 pf/meter	
Phase Stability (ten, 4" radius, 180° reverse bends)	DC to 10 GHz: +/- 1.1° 10 to 18 GHz: +/- 2.0°	

Attenuation Max @ +77°F (+25°C)			
Attenuation (GHz)	dB/100 ft	dB/100 m	
1	12.2	40.0	
2	18.0	59.0	
6	34.2	112	
12	52.5	172	
18	68.4	224	
26.5	88.7	290	

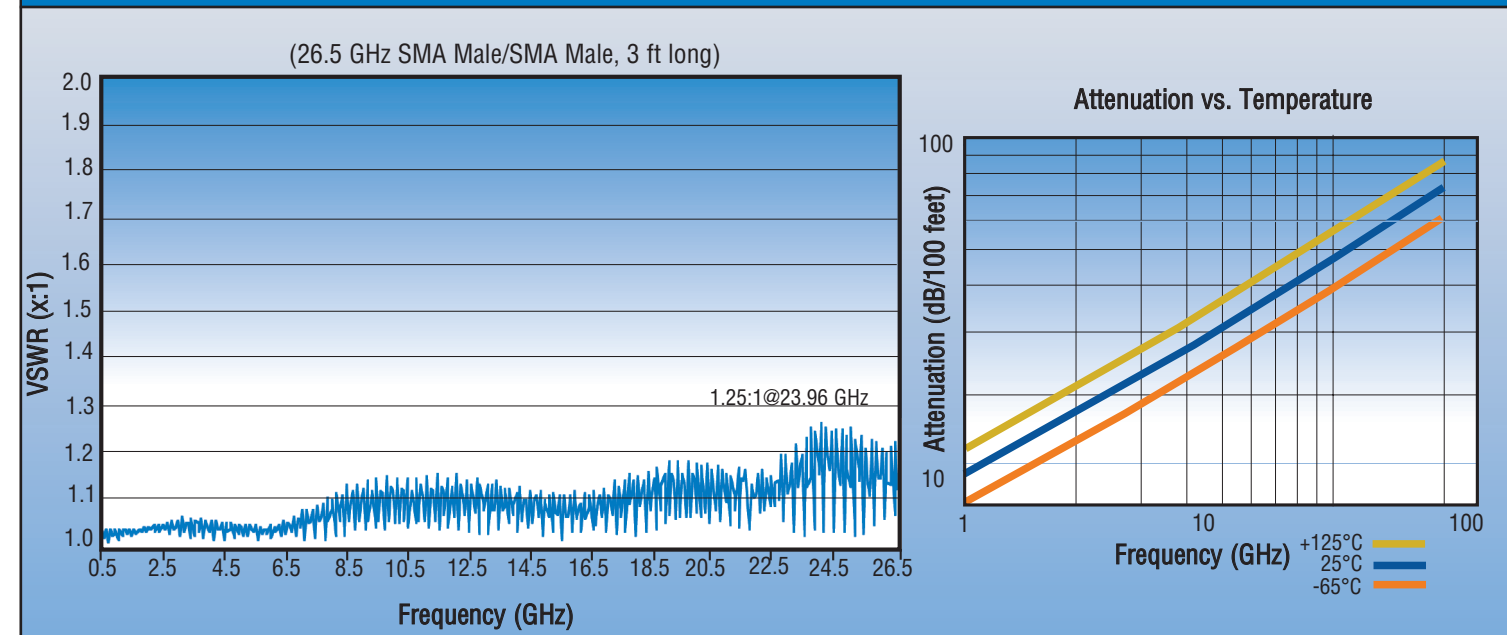
Attenuation at Frequency (A=K1 FMHz + K2 FMHz)		
	K1	K2
	0.348	0.0012

Power Handling @ +77°F (+25°C) (Sea Level) (Cable Only***)	
Power Handling (GHz)	Watts (max.)
0.4	891
1	539
2	363
6	180
12	117
18	88
26.5	65

* SMA Male & Type N: Assumes use of calibrated torque wrench, proper care and cleaning of interface and mated connector is within mil spec limits. = QMA: Assumes proper use, care and cleaning.
 ** All 26.5 GHz cables are RF characterized on a production basis through 20.0 GHz.
 *** Connector configuration may limit cable assembly maximum power handling capability.
 Specifications subject to change without notice.



Silverline Test Cables



Ordering Information

U = Unarmored
A = Armored

SLXXX-XXXXXX-XX.XXX

Maximum Frequency

- 04 = 4.0 GHz (BNC equipped only)
- 06 = 6.0 GHz
- 18 = 18.0 GHz
- 26 = 26.5 GHz (SMA, 2.4mm, 3.5mm only)



Labels on unarmored assemblies under 1.5 feet long are left loose to increase flexibility.

Some connector combinations and/or lengths may be unavailable. Please contact Times or your Times authorized representative.

Feet: 0.50 ft Increments
Example: -04.50F = 4.50 ft
Meters: 0.25 m increments
Example: -00.75M = 0.75 m

Connector Codes (2 or 3 Characters)

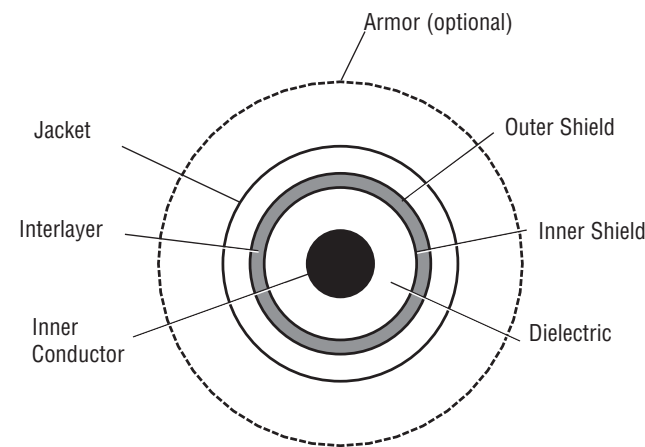
- BM = BNC Male
- SM = SMA Male
- S1T = SMA Male OneTurn™
- SF = SMA Female
- SMR = SMA Right Angle
- 35M = 3.5mm Male
- 35F = 3.5mm Female
- 3RM = 3.5mm Ruggedized Male
- 3RF = 3.5mm Ruggedized Female
- 2RF = 2.4mm Ruggedized Female
- NM = Type N Male
- N1T = Type N Male OneTurn™
- NF = Type N Female
- NMR = Type N Right Angle
- 70M = 7mm
- 76M = 7-16 DIN Male
- 76F = 7-16 DIN Female
- TM = ETNC Male (Extended range)
- TF = ETNC Female (Extended range)
- QMM = QMA Male (changeable interface see pg. 4)
- QMR = QMA Right Angle (changeable interface see pg. 4)

First Connector
Second Connector

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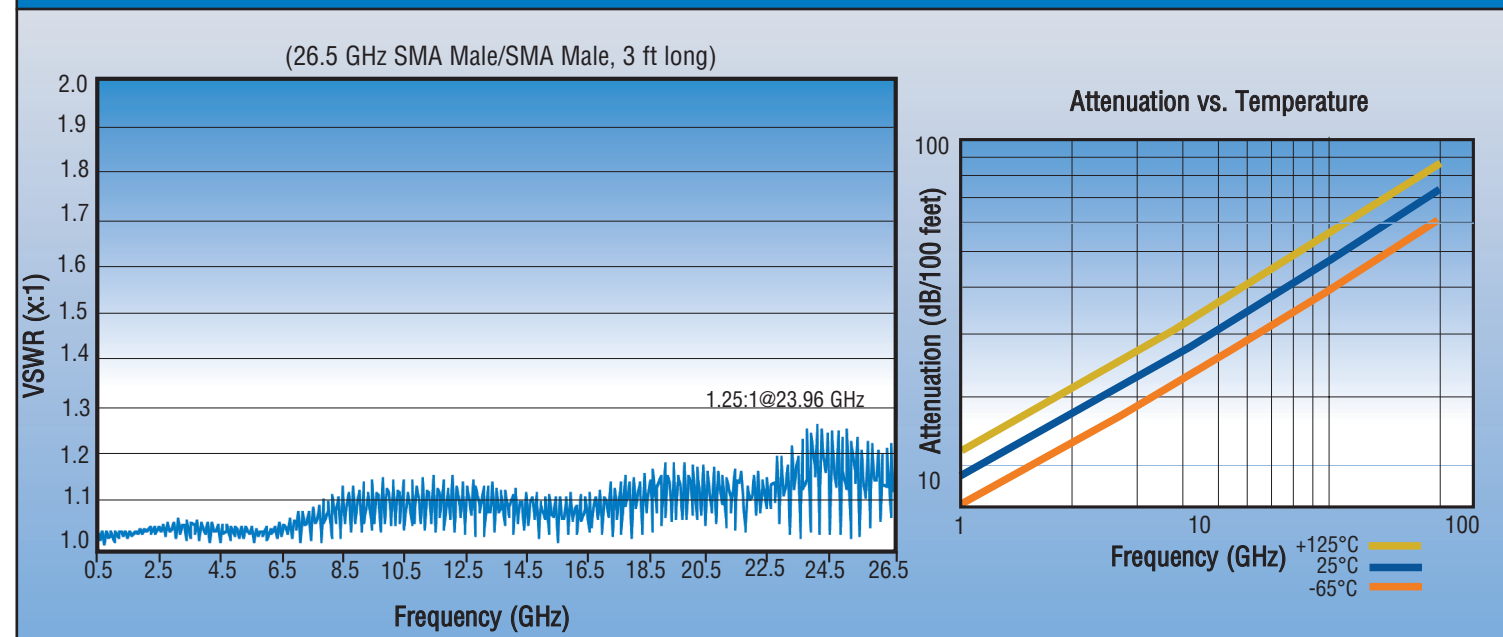
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Feet: 0.50 ft Increments
Example: -04.50F = 4.50 ft
 Meters: 0.25 m increments
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F = Feet M = Meters

3.5mm Female (L), Ruggedized 3.5mm Female (R)

3.5mm Male (L), Ruggedized 3.5mm Male (R)

First Connector

Second Connector

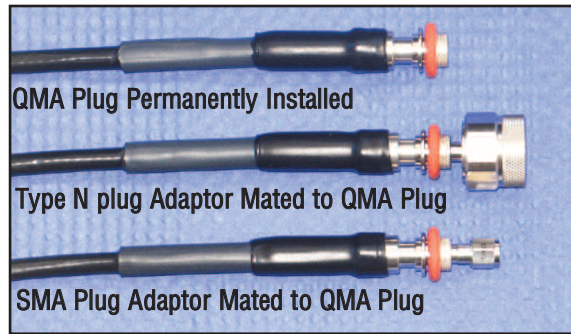
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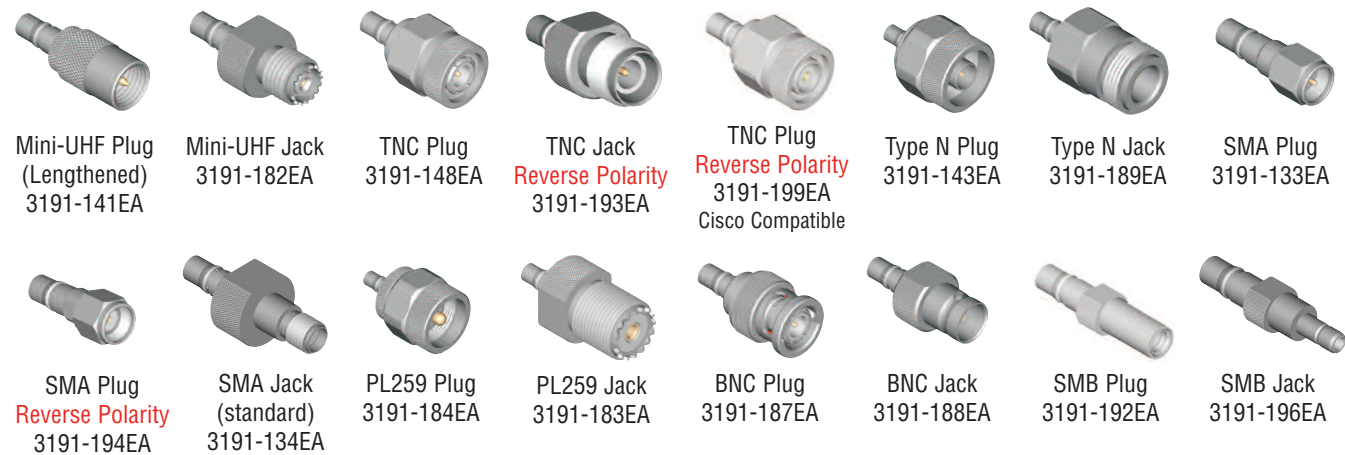
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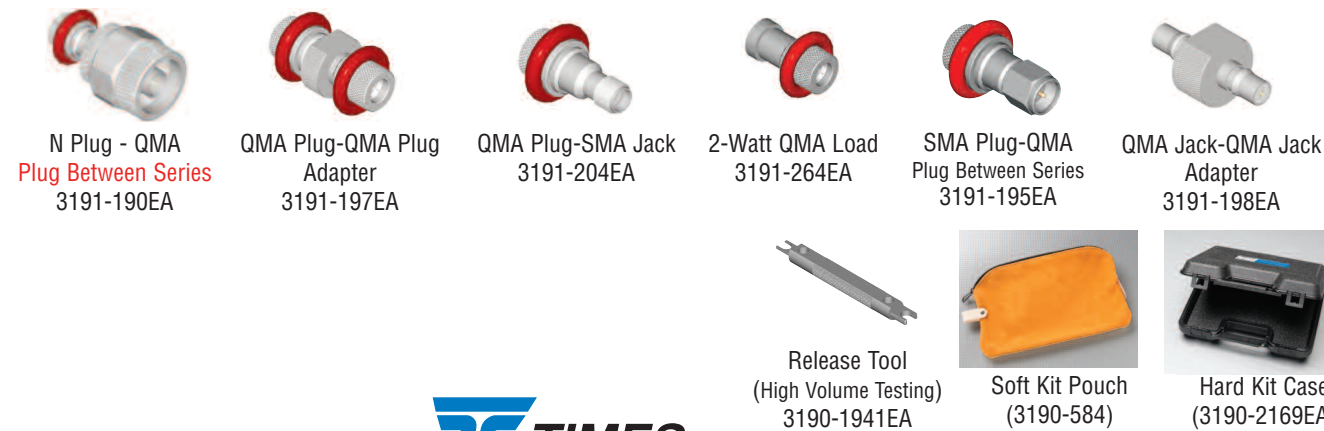
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Adaptors From QMA Jack To:



Between & Within Series Adaptors and Termination



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