

Test Port Cable Assemblies and Test Port Adapters

Coax-To-Coax and Waveguide-To-Coax Test Port Adapters

Features

- For VNA Applications
- Ruggedized Test Port Connectors
- For Use with 2.4mm, 2.92mm, 3.5mm, and 7mm Test Ports
- Coaxial Test Port to Waveguide Adapters Available

Description

Maury 8944, 8946 and 8948 series test port cable assemblies and test port adapters replace multiple cables in various connector types with versatile and cost-effective alternatives. These cable assemblies extend the test ports of network analyzers, and have a rugged female and male test port connector at each end. They come in standard lengths of 25 or 38 inches and are extremely flexible while maintaining excellent phase and amplitude stability.



The adapters also have a rugged test port connector on one side with a precision 2.4mm, 2.92mm, 3.5mm, 7mm, N, TNC or waveguide connector (EIA WR229 to WR28) on the other side. NMD to NMD adapters are also available. The adapters are sold separately. (See page 2.)

Available Models – Cable Assemblies

KIT MODEL	TYPE	CABLE LENGTH INCHES (CM)	FREQUENCY RANGE (GHz)	CABLE O.D. (NOMINAL) INCHES (CM)	BEND RADIUS (MINIMUM) INCHES (CM)	NOMINAL IMPEDANCE
8946C25	NMD2.4mm	25.0 (63.5)	DC — 50.0	0.6 (1.524)	2.5 (6.35)	50 ohm
8946C38	NMD2.4mm	38.0 (96.5)				
8944C25	NMD3.5mm	25.0 (63.5)	DC — 26.5	0.6 (1.524)	2.5 (6.35)	50 ohm
8944C38	NMD3.5mm	38.0 (96.5)				
8948C25	7mm	25.0 (63.5)	DC — 18.0	0.6 (1.524)	2.5 (6.35)	50 ohm
8948C38	7mm	38.0 (96.5)				

Specifications (25-inch Length Cables)

Maury 8944, 8946 and 8948 series 25-inch test port cables have the following specifications:

Frequency Range:

8946 series	DC – 50.0 GHz
8944 series	DC – 26.5 GHz
8948 series	DC – 18.0 GHz

Insertion Loss (dB):*

8946 series	Typical = $0.05 + 0.30(f)^{1/2} + 0.010(f)$ Guaranteed = $0.25 + 0.35(f)^{1/2} + 0.015(f)$
8944 & 8948 series	Typical = $0.05 + 0.30(f)^{1/2} + 0.010(f)$ Guaranteed = $0.25 + 0.35(f)^{1/2} + 0.015(f)$

Return Loss (dB):

8946 series	15
8944 & 8948 series	18

Overall Phase Stability (degrees):* Typical = 0.05(f)
Guaranteed = $0.5 + 0.08(f)$

Overall Amplitude Stability (dB): Typical ≤ 0.03
Guaranteed ≤ 0.08

Return Loss Stability (dB): ≥ 40

* f = frequency in GHz.

Specifications (38-inch Length Cables)

Maury 8944, 8946 and 8948 series 38-inch test port cables have the following specifications:

Frequency Range:

8946 series	DC – 50.0 GHz
8944 series	DC – 26.5 GHz
8948 series	DC – 18.0 GHz

Insertion Loss (dB):* Typical = $0.044 + 0.47(f)^{1/2} + 0.014(f)$
Guaranteed = $0.290 + 0.51(f)^{1/2} + 0.017(f)$

Return Loss (dB):

8946 series	15
8944 & 8948 series	18

Overall Phase Stability (degrees):* Typical = 0.10(f)
Guaranteed = $0.5 + 0.17(f)$

Overall Amplitude Stability (dB): Typical ≤ 0.05
Guaranteed ≤ 0.15

Return Loss Stability (dB): ≥ 40

Recommended Test Port Adapters

Coaxial to Coaxial Test Port Adapter Specifications

ADAPTER MODEL	ADAPTS		FREQUENCY RANGE AND MAXIMUM VSWR (GHz)				NOMINAL IMPEDANCE	OVERALL LENGTH	
	SIDE A	SIDE B						INCHES	(CM)
7909A1 ¹	NMD2.4mm female	2.4mm female	DC	—	26.5	≤ 1.10	50 ohm	1.48	(3.76)
7909A2 ¹	NMD2.4mm female	2.4mm male	26.5	—	40.0	≤ 1.15	50 ohm	1.51	(3.84)
			40.0	—	50.0	≤ 1.20			
7909B1	NMD2.4mm female	3.5mm female	DC	—	10.0	≤ 1.06	50 ohm	1.26	(3.20)
7909B2	NMD2.4mm female	3.5mm male	10.0	—	20.0	≤ 1.10	50 ohm	1.26	(3.20)
			20.0	—	34.0	≤ 1.12			
7909C	NMD2.4mm female	7mm	DC	—	4.0	≤ 1.05	50 ohm	2.16	(5.49)
			4.0	—	12.0	≤ 1.07			
			12.0	—	18.0	≤ 1.10			
7909D1	NMD2.4mm female	Type N female	DC	—	4.0	≤ 1.05	50 ohm	1.80	(4.57)
7909D2	NMD2.4mm female	Type N female	4.0	—	12.0	≤ 1.07	50 ohm	1.84	(4.67)
			12.0	—	18.0	≤ 1.10			
7909F1	NMD 2.4mm female	2.92mm (K) female	DC	—	20.0	≤ 1.10	50 ohm	1.44	(3.66)
7909F2	NMD 2.4mm female	2.92mm (K) male	20.0	—	40.0	≤ 1.16	50 ohm	1.48	(3.76)
7909H	NMD 2.4mm female	NMD 3.5mm male	DC	—	10.0	≤ 1.06	50 ohm	1.49	(3.79)
			10.0	—	20.0	≤ 1.10			
			20.0	—	34.0	≤ 1.14			
8009A	NMD 3.5mm female	3.5mm female	DC	—	18.0	≤ 1.08	50 ohm	1.45	(3.68)
8009B	NMD 3.5mm female	3.5mm male	18.0	—	26.5	≤ 1.12	50 ohm	1.49	(3.79)
2633C	NMD 3.5mm female	7mm	DC	—	18.0	≤ 1.018 + 0.003f	50 ohm	1.86	(4.72)
8829A	NMD 3.5mm female	Type N female	DC	—	6.0	≤ 1.04	50 ohm	2.04	(5.18)
8829B	NMD 3.5mm female	Type N male	6.0	—	18.0	≤ 1.08	50 ohm	2.20	(5.59)
2433A1	NMD 3.5mm female	14mm (GR900 equiv)	DC	—	8.5	≤ 1.01+0.008f	50 ohm	2.32	(5.89)
8022A1	3.5mm female	7mm	DC	—	4.0	≤ 1.04	50 ohm	1.67	(4.24)
8022B1	3.5mm male	7mm	4.0	—	18.0	≤ 1.08	50 ohm	1.67	(4.24)
2633A	7mm	7mm “female”	DC	—	18.0	≤ 1.004 + 0.003f	50 ohm	1.62	(4.12)
2606C	7mm	Type N female	DC	—	4.0	≤ 1.03	50 ohm	1.51	(3.84)
2606D	7mm	Type N male	4.0	—	9.0	≤ 1.04	50 ohm	1.51	(3.84)
			9.0	—	18.0	≤ 1.07			
2622A1	7mm	TNC female	DC	—	4.0	≤ 1.05	50 ohm	1.68	(4.26)
2622B	7mm	TNC male	4.0	—	18.0	≤ 1.15	50 ohm	1.55	(3.94)
2607A1	7mm	14mm (GR900 equiv)	DC	—	8.5	≤ 1.004 + 0.004f	50 ohm	2.01	(5.10)

Waveguide to Coaxial Test Port Adapter Specifications

ADAPTER MODEL	ADAPTS		FREQUENCY RANGE AND MAXIMUM VSWR (GHz)				EQUIVALENT FLANGE	OVERALL LENGTH	
	SIDE A	SIDE B						INCHES	(CM)
E230K1 ²	NMD3.5mm female	EIA WR229	3.3	—	4.9	≤ 1.10	CPR229F	3.88	(9.86)
G230K1 ²	NMD3.5mm female	EIA WR187	3.95	—	5.85	≤ 1.10	UG149/U	3.88	(9.86)
F230K1	NMD3.5mm female	EIA WR159	4.9	—	7.05	≤ 1.10	CPR159F	3.40	(8.64)
C230K1	NMD3.5mm female	EIA WR137	8.85	—	8.20	≤ 1.10	UG344/U	3.13	(7.95)
H230K1	NMD3.5mm female	EIA WR112	7.05	—	10.0	≤ 1.10	UG51/U	2.98	(7.57)
X230K1	NMD3.5mm female	EIA WR90	8.2	—	12.4	≤ 1.10	UG39/U	2.73	(6.93)
M230K1	NMD3.5mm female	EIA WR75	10.0	—	15.0	≤ 1.10	MPF75	2.63	(6.68)
P230K1	NMD3.5mm female	EIA WR62	12.4	—	18.0	≤ 1.10	UG419/U	2.38	(6.05)
N230K3	NMD3.5mm female	EIA WR51	15.0	—	22.0	≤ 1.20	MPF51	2.00	(5.08)
K230K6	NMD3.5mm female	EIA WR42	18.0	—	26.5	≤ 1.15	UG595/U	1.80	(4.57)
U233E ³	NMD2.92mm female	EIA WR28	26.5	—	40.0	≤ 1.30	UG599/U	1.80	(4.57)

¹ 7909A1 and 7909A2 are phase matched for VNA applications.

³ Mates with the special (K) connector provided on Anritsu 360 VNA.

² These larger waveguide adapters should not be directly connected to test sets without support.