# **Cables & Adapters**

#### **Ordering Information** 557

## **Ordering Information**

<b>Cable Assemblies</b> HP 10501A 112 cm 50 Ω Coax with One UG-88C/U BNC (m) Connector HP 10502A 23 cm 50 Ω Coax with UG-88C/U BNC	6 P
(m) Connector	
<b>HP 10503A</b> Like HP 10502A, but 122 cm <b>HP 8120-1838</b> 30 cm 50 Ω Coax with Two BNC	6 C C C C C C C C C C C C C C C C C C C
(m) Connectors	
HP 8120-1839 Like HP 8120-1838, but 61 cm HP 8120-1840 Like HP 8120-1838, but 122 cm	60
HP 11000-60001 112 cm 50 $\Omega$ Coax with Dual Banana Plugs HP 11001-60001 112 cm 50 $\Omega$ Coax, UG-88C/U BNC (m) to Dual Banana Plug	ଥି ଥି ସି
HP 1103A Test Leads: 152 cm, Probe and Alligator Clip to Dual Banana Plug	6
HP 18182A 152 cm WECO 310 to 2 Alligator Clips HP 92219Z Centronics Cable 1 M	
HP 92224F Female Gender Converter HP 92224M Male Gender Converter	
HD Frequency Inc	

HP model no.	Frequency range (GHz)	Length cm (in)	Connectors	SWR	lns. loss (dB)	Price
11500A	dc to 12.4	183 (72)	N(m) (2)	_	_	<b>₽</b>
11500B	dc to 12.4	61 (24)	N(m) (2)	_		5 C
11501A	dc to 18	183 (72)	N(m)-N(f)	_		
11500C	dc to 18	61 (24)	Precision N(m) (2)	1.4	1.5	
11500D	dc to 18	152 (60)	Precision N(m) (2)	1.4	3.0	5 S
11500E	dc to 26.5	61 (24)	APC-3.5 (m) (2)	1.4	2.0	
11500F	dc to 26.5	152 (60)	APC-3.5 (m) (2)	1.4	4.0	

#### Adapters, 2.4 mm

(See page 564 for technical description and performance) HP 11900A 2.4 mm (m) to 2.4 (m) HP 11900B 2.4 mm (f) to 2.4 (f) HP 11900C 2.4 mm (m) to 2.4 (f) HP 11901A 2.4 mm (m) to APC-3.5 (m) HP 11901B 2.4 mm (f) to APC-3.5 (f) HP 11901C 2.4 mm (m) to APC-3.5 (f) HP 11901D 2.4 mm (f) to APC-3.5 (m) HP 11902A 2.4 mm (m) to APC-7 HP 11902B 2.4 mm (f) to APC-7 HP 11903A 2.4 mm (m) to Type N (m) HP 11903B 2.4 mm (f) to Type N (f) HP 11903C 2.4 mm (m) to Type N (f) HP 11903D 2.4 mm (f) to Type N (m) HP 11904A 2.4 mm (m) to K (m) <sup>5</sup> HP 11904B 2.4 mm (f) to K (f) <sup>5</sup> HP 11904C 2.4 mm (m) to K (f) HP 11904D 2.4 mm (f) to K (m) HP 11904S 2.4 mm (f) to K adapter set Adapters Type N, Standard 50  $\Omega$ 

HP E9621A N (f) to BNC (m)	6
HP E9623A N (m) to BNC (m)	6
HP 1250-0176 N (m) to N (f) Right Angle (use < 12 GHz)	6
HP 1250-0559 N tee, (m)(f)(f)	6
HP 1250-0777 N (f) to N (f)	6
HP 1250-0778 N (m) to N (m)	6
HP E9635A N (m) to BNC (f)	6
HP 1250-0846 N tee (f)(f)(f)	6
HP 1250-1250 N (m) to SMA (f)	6
HP 1250-1404 N (f) to SMA (f)	6
HP 1250-1636 N (m) to SMA (m)	6
HP 1250-1741 SMA Right Angle, (f) (m)	<b>6</b>
Adapters Type N, Precision 50 $\Omega^1$	
	_
HP 1250-1472 N (f) to N (f)	60
HP 1250-1473 N (m) to BNC (m)	6
HP 1250-1474 N (f) to BNC (f)	6
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HP 1250-1472 N (f) to N (f)	<b>⊸</b>
HP 1250-1473 N (m) to BNC (m)	<b>6</b>
HP 1250-1474 N (f) to BNC (f)	6
HP 1250-1475 N (m) to N (m)	<b>6</b>
HP 1250-1476 N (m) to BNC (f)	6
HP 1250-1477 N (f) to BNC (m)	<u>ا</u>

### Adapters APC-3.5

HP 1250-1743 APC-3.5 (m) to N (m) HP 1250-1744 APC-3.5 (f) to N (m) HP 1250-1745 APC-3.5 (f) to N (f) HP 1250-1746 APC-3.5 (m) to APC-7 HP 1250-1747 APC-3.5 (f) to APC-7 HP 1250-1748 APC-3.5 (m) to APC-3.5 (m) HP 1250-1749 APC-3.5 (f) to APC-3.5 (f) HP 1250-1750 APC-3.5 (m) to N (f)

#### Adapters Subminiature, SMA

HP 1250-1158 SMA (f) to SMA (f) HP 1250-1249 SMA Right Angle (m) (f) HP 1250-1397 SMA Right Angle (m) (m) HP 1250-1462 SMA (m) to SMA (f) HP 1250-1698 SMA tee (m) (f) (f) HP E9631A BNC (f) to SMA (m) HP E9632A BNC (m) to SMA (f) HP E9633A SMA (m) to BNC (m) HP E9634A SMA (f) to BNC (m)

#### Adapters APC-7

HP 11524A APC-7 to N (f) HP 11525A APC-7 to N (m) HP 11533A APC-7 to SMA (m) HP 11534A APC-7 to SMA (f)

Adapters BNC, Standard 50  $\Omega$ HP 1250-0069 BNC (m) to UHF (f) HP E9620A Right Angle BNC (UG-306/D) HP E9622A BNC (f) to BNC (f) (UG-914/U) HP E9624A BNC (m) to BNC (m) HP 1250-0591 BNC (f) to WECO Video (m) HP 1250-0595 BNC (f) to BNC Triaxial (m) HP E9625A BNC tee (m) (f) (f) HP E9627A BNC (m) to Single Banana Plug HP 10110B BNC (m) to Dual Banana Plug HP 1250-1830 BNC (f) to BNC Triaxial (f) HP E9637A BNC (f) to Dual Banana Plug HP 1250-1236 BNC (f) to SMB (f) HP 1250-1200 BNC (f) to SMA (m) HP 1250-1899 BNC (f) to SMA (m)

#### Adapters BNC, Standard 75 $\Omega$

HP 1250-1286 Right Angle BNC (m)(f) HP E9628A BNC (f) to BNC (f) HP E9629A BNC (m) to BNC (m)

#### Adapters Subminiature, SMB, SMC<sup>4</sup>

HP 1250-0670 SMC tee (m) (m) (m)
HP 1250-0671 SMB (m) to N (m)
HP 1250-0672 SMB (f) to SMB (f)
HP 1250-0675 SMC (m) to SMA (f)
HP 1250-1023 SMC (m) to N (m)
HP 1250-1236 SMB (f) to BNC (f)
HP 1250-0674 SMB (m) to SMA (f)
HP 1250-0832 SMC (f) to BNC (f)
HP 1250-1391 SMB tee (f) (m) (m)
HP 1250-1857 SMB (f) to BNC (m)
HP 1250-1152 SMC (f) to N (m)
HP E9636A SMC (m) to BNC (f)

'"Precision": typically ≥36 dB return loss to 1.3 GHz

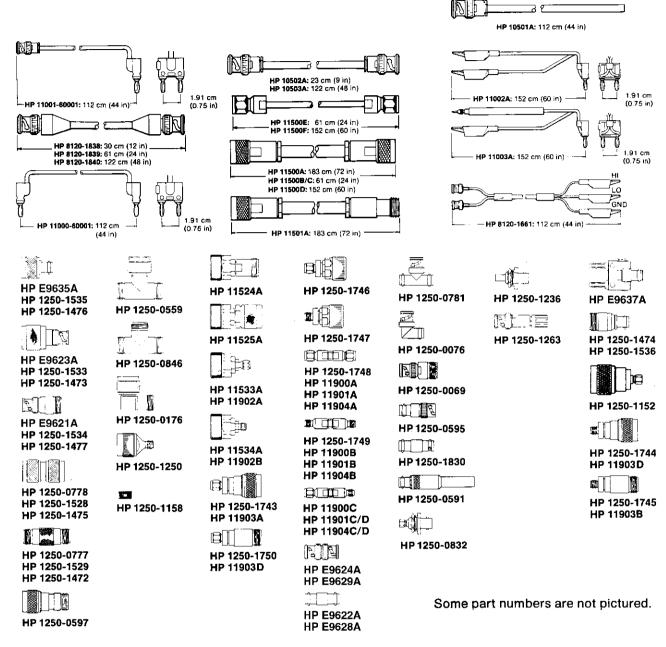
- Type N outer conductor; center pin sized for 75  $\Omega$  characteristic <sup>3</sup>BNC outer conductor; center pin sized for 75  $\Omega$  characteristic <sup>4</sup>SMB and SMC are used often inside HP instruments for intermodule RF connections.
- SMB is snap-on configuration; SMC is screw-on configuration.

<sup>5</sup>The K-connector is developed and manufactured by the Wiltron Co., Morgan Hill, California.

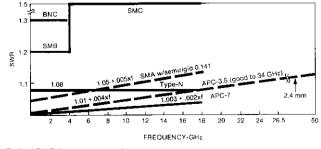
Indicates QuickShip availability.

# **Cables & Adapters**

558 **Cables, Adapters, and Typical SWR Performance** 



### **Coaxial Connector and Adapter Performance**



Typical SWR for connector pairs

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The performance curves in the graph will help you in choosing and applying HP cables, connectors, and adapters. SWR curves show design specifications for mated pairs of connectors of the type indicated. You can expect typical performance in that range.

For cross-series adapters, use the curve with the highest SWR in each case. For applications of Tee-adapters such as HP 1250-0559, 1250-0846, and 1250-0781, be sure to consider the extra shunt capacitance of the Tee.

Of course, when HP mounts various connectors onto RF and microwave products, the product specification predominates and SWR is often far superior to that shown in these utility curves. For example, the HP "precision" type-N adapters shown on these pages are for high accuracy use dc to 1.3 GHz where SWR <1.03.

For more information on history and performance of various coax connectors, see HP's Microwave Test Accessories Catalog (p/n 5952-2843 (D)).