Verification kits

Verification kits are used to verify that a network analyzer is operating within its specified performance. Agilent Technologies offers verification kits that include precision airlines, mismatch airlines, and precision fixed attenuators. All verification kits include measurement data and uncertainties which are traceable to the U.S. National Institute of Standards and Technology (NIST).

Verification kits

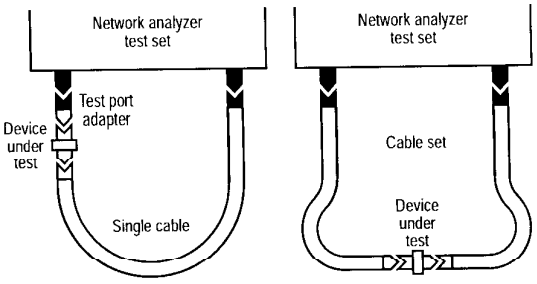
Verification kit	Connector type	Frequency range (GHz)	Description (Contents)
85051B	7 mm	0.045–18	10 cm airline, stepped impedance airline, 20 dB, and 50 dB attenuators
85053B	3.5 mm	0.045–26.5	7.5 cm airline, stepped impedance airline 20 dB, and 40 dB attenuators
85055A	Type-N	0.045–18	10 cm airline, stepped impedance airline, 20 dB and 50 dB attenuators
85057B	2.4 mm	0.045–50	50 Ω airline, stepped impedance airline, 20 dB and 40 dB attenuators
R11645A	WR-28	26.5–40	All contain:
Q11645A	WR-22	33–50	Standard waveguide section
U11645A	WR-19	40–60	Standard waveguide mismatch
V11645A	WR-15	50–75	20 dB attenuator
W11645A	WR-10	75–110	50 dB attenuator

Test port return cables

Test port cables are available in the 7 mm, 3.5 mm, Type-N, 2.4 mm, and 1.0 mm connector types[1]. The configurations and performance for all cables are described in the tables on the opposite page. All cable ends connect directly to the special rugged test port of the network analyzer test set.

Agilent offers two cable designs: semi-rigid and flexible. Semi-rigid cables offer excellent performance and are suitable for applications where the connectors of the DUT are "in-line" or parallel. Flexible cables are ideal for manufacturing environments since they are more rugged and have a tighter bending radius than semi-rigid cables. Semi-rigid cables are warranted for 90 days; flexible cables are warranted for one year.

Either a single long cable or a shorter cable set can connect a coaxial device to the test set. A single cable with an appropriate test port adapter is best for applications where the DUT requires a connection next to the test port for mechanical rigidity. A set of cables offers the flexibility required to position the test devices away from the test set.



Test port adapter sets

The 85130 series test port adapter sets protect the test set port when connecting devices to the test port. These adapters convert the rugged test set port to a connection that can be mated with the device under test. Each set contains a male and a female adapter.

Adapter sets

Adapter set	Connector type (test port to device)	Frequency ($DC–f_{max}$)	Return loss (dB) @ f_{max}
85130C	3.5 mm^2 to Type-N	DC–18 GHz	≥28
85130D	3.5 mm^2 to PSC-3.5 mm (f) or 3.5 mm (m)	DC–26.5 GHz	≥20
85130E	2.4 mm^2 to 7 mm	DC–18 GHz	≥26
85130F	2.4 mm^2 to PSC-3.5 mm (f) or 3.5 mm (m)	DC–26.5 GHz	≥26
85130G	2.4 mm^2 to PSC-2.4 mm (f) or 2.4 mm (m)	DC–50 GHz	≥23
11904S	2.4 mm^2 to 2.92 mm (4)	DC–40 GHz	≥28

Waveguide to 1.0 mm adapter kits

Adapter kit	Frequency range	Description (contents)
V85104A K10	DC–75 GHz	WR-15 to 1.0 mm (f) adapters (4) and 1.0 mm coax cables (2)
W85104A K10	DC–110 GHz	WR-10 to 1.0 mm (f) adapters (4) and 1.0 mm coax cables (2)

85043C racked system kit

85043C racked system kit is a rack standing 132 cm (52 in) high, with a width of 60 cm (23.6 in), and a depth of 80 cm (32 in). Complete with support rails and AC power distribution (suitable for 50 to 60 Hz, 100 to 240 VAC), the kit includes rack mounting hardware for all instruments. Thermal design is such that no rack fan is needed.

Bias networks

The 11612 bias networks apply DC as close to the device as possible, bypassing the test set's internal shunt resistor. These bias networks are especially useful when measuring DC parameters of semiconductor devices.

Model number	Frequency range	Maximum current	Maximum voltage
11612A K10/K20[3]	45 MHz–26.5 GHz	0.5 amps	40 volts
11612A K12/K22[3]	400 MHz–26.5 GHz	2.0 amps	40 volts
11612B K11/K21[3]	45 MHz–50 GHz	0.5 amps	40 volts

1. To measure Type-N devices, use a pair of 7 mm cables and the 7 mm-to-Type-N adapters provided in the 85054B, D calibration kits.
2. Special rugged female connector specifically for connecting to the network analyzer test port, but does not mate with a standard male connector
3. Special option number K1x refers to port 1, K2x refers to port 2