Opens

Shielded, coaxial opens are used in the calibration of vector network analyzers to provide a nominal 180° phase offset from a compatible reference short over a wide range of frequencies.

At these frequencies, open circuit terminations are inherently imperfect. Shielding the open essentially eliminates radiation loss, but creates a residual frequency-sensitive capacitance. An accurate knowledge of the open's effective capacitance is essential to an accurate calibration of the analyzer.

Maury opens are characterized for effective capacitance versus frequency by means of a fourth order polynomial curve fit, and the nominal capacitance

coefficients are provided with each unit. We offer several innovative designs that improve the consistency and repeatability of the open's capacitance coefficients resulting in improved effective source match of the calibrated VNA [1].

One design (seen in the 7mm models shown below) uses a beadless captivated dielectric rod in place of the center conductor contact. This rod depresses the spring-loaded contact of the test port connector so that it is flush with the outer conductor mating plane. This creates highly accurate, precisely repeatable open circuit conditions which improve the calibration effectiveness and measurement accuracy of the open.

Another design (seen in most of the sexed models listed below) uses a center contact that is captivated and set at the factory to be essentially flush with the outer conductor mating plane, thereby eliminating dependence on test port connector tolerances and adding a high degree of performance consistency to the open.

The 371N2/P2 and 8585A1/B1 models are designed for limited frequency ranges as determined by their connector types.

In all cases, the specification "Phase Accuracy" is defined as phase deviation from a nominal unit.

Available Models

MODEL	SEX	CONNECTOR TYPE	FREQUENCY RANGE (GHZ)	PHASE ACCURACY	MINIMUM REFLECTION COEFFICIENT
7948A2 7948B2	female male	2.4mm	DC — 50.0	±2.0°	0.98
8773A4 8773B4	female male	2.92mm (K)	DC — 40.0	±1.5°	0.98
8048A6 8048B6	female male	3.5mm	DC — 26.5	±1.4°	0.98
2616D3	—	7mm	DC — 18.0	±0.3°	0.995
8809B2 8810B2	female male	Type N	DC — 18.0	±2.0°	0.99
8609B 8610B	female male	TNC	DC — 18.0	±5.0°	0.98
371N2 371P2	female male	BNC 50Ω	DC — 12.4	±5.0°	0.98
8585A1 8585B1	female male	BNC 75Ω	DC — 12.0	DC — 2.0 = ±1.0° 2.0 — 3.0 = ±2.0° 3.0 — 12.0 = ±6.0°	0.98