

Coaxial Stub Tuners

Description

Maury stub tuners are basic laboratory tools used for matching load impedances to provide for maximum power transfer between a generator and a load, and for introducing a mismatch into an otherwise matched system. Typical applications include power and attenuation measurements, tuned reflectometer systems and providing a DC return for single-ended mixers and detectors. Maury stub tuners are available in double- and triple-stub configurations with frequency ranges extending from 0.2 to 18.0 GHz.

Stub tuners work as impedance transformers to introduce a variable shunt susceptance into a coaxial transmission line. They consist of one or more short-circuited, variable length

lines (stubs) connected at right angles to the primary transmission line. To provide all possible shunt susceptances, each stub must be movable over 1/2 wavelength at the lowest frequency of operation; therefore, the lower frequency limit of a tuner is determined by the frequency at which the maximum stub travel equals 1/2 wavelength. The upper frequency limit for a stub tuner is established by its connectors.

The inter-stub spacing of multiple-stub tuners determines the range of impedances that can be matched and the ease of tuning. Triple-stub tuners are more convenient to use since tuning sensitivity is relatively independent of stub spacing.



2612C2



1819A



1719A

Available Models

STUB CONFIGURATION	FREQUENCY RANGE (GHz)	MODEL (BY CONNECTOR TYPE)			STUB TRAVEL		STUB SPACING	
		TYPE N	7mm	SMA	INCHES	(cm)	INCHES	(cm)
DOUBLE-STUB	0.2 — 0.5	1778G	2612B7	—	30.0	(76.2)	4.6	(11.7)
	0.4 — 1.0	1778A	2612B1	1719A	15.0	(38.1)	4.6	(11.7)
	0.8 — 4.0	1778B	2612B2	1719B	7.5	(19.1)	2.0	(5.1)
	2.0 — 12.0	1778C	2612B3	1719C	3.0	(7.6)	0.75	(1.9)
	2.0 — 18.0	1778E	—	—	3.0	(7.6)	0.5	(1.3)
	4.0 — 18.0	1778D	2612B4	1719D	1.75	(4.4)	0.5	(1.3)
TRIPLE-STUB	0.2 — 0.5	1878G	2612C7	—	30.0	(76.2)	4.6 (11.7)	/ 2.0 (5.1)
	0.4 — 1.0	1878A	2612C1	1819A	15.0	(38.1)	4.6 (11.7)	/ 2.0 (5.1)
	0.8 — 4.0	1878B	2612C2	1819B	7.5	(19.1)	1.0 (2.5)	/ 0.75 (1.9)
	2.0 — 18.0	1878C	2612C3	1819C	3.0	(7.6)	0.75 (1.9)	/ 0.5 (1.3)
	4.0 — 18.0	1878D	2612C4	1819D	1.75	(4.4)	0.75 (1.9)	/ 0.5 (1.3)