Coaxial Stub Tuners

DATA SHEET / 2G-008

Maury Microwave

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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.

1819C Triple-Stub Tuner

Available Models

STUB CONFIGURATION	FREQUENCY RANGE (GHz)	MODEL (BY CONNECTOR TYPE) TYPE N	SMA	STUB TRAVEL INCHES	(cm)	STUB SPACING INCHES	(cm)
TRIPLE-STUB	0.2 — 0.5	1878G	—	30.0	(76.2)	4.6 (11.7) / 2.0	(5.1)
	0.4 — 1.0	1878A	1819A	15.0	(38.1)	4.6 (11.7) / 2.0	(5.1)
	0.8 — 4.0	1878B	1819B	7.5	(19.1)	1.0 (2.5) / 0.75	(1.9)
	2.0 — 18.0	1878C	1819C	3.0	(7.6)	0.75 (1.9) / 0.5	(1.3)
	4.0 — 18.0	1878D	1819D	1.75	(4.4)	0.75 (1.9) / 0.5	(1.3)

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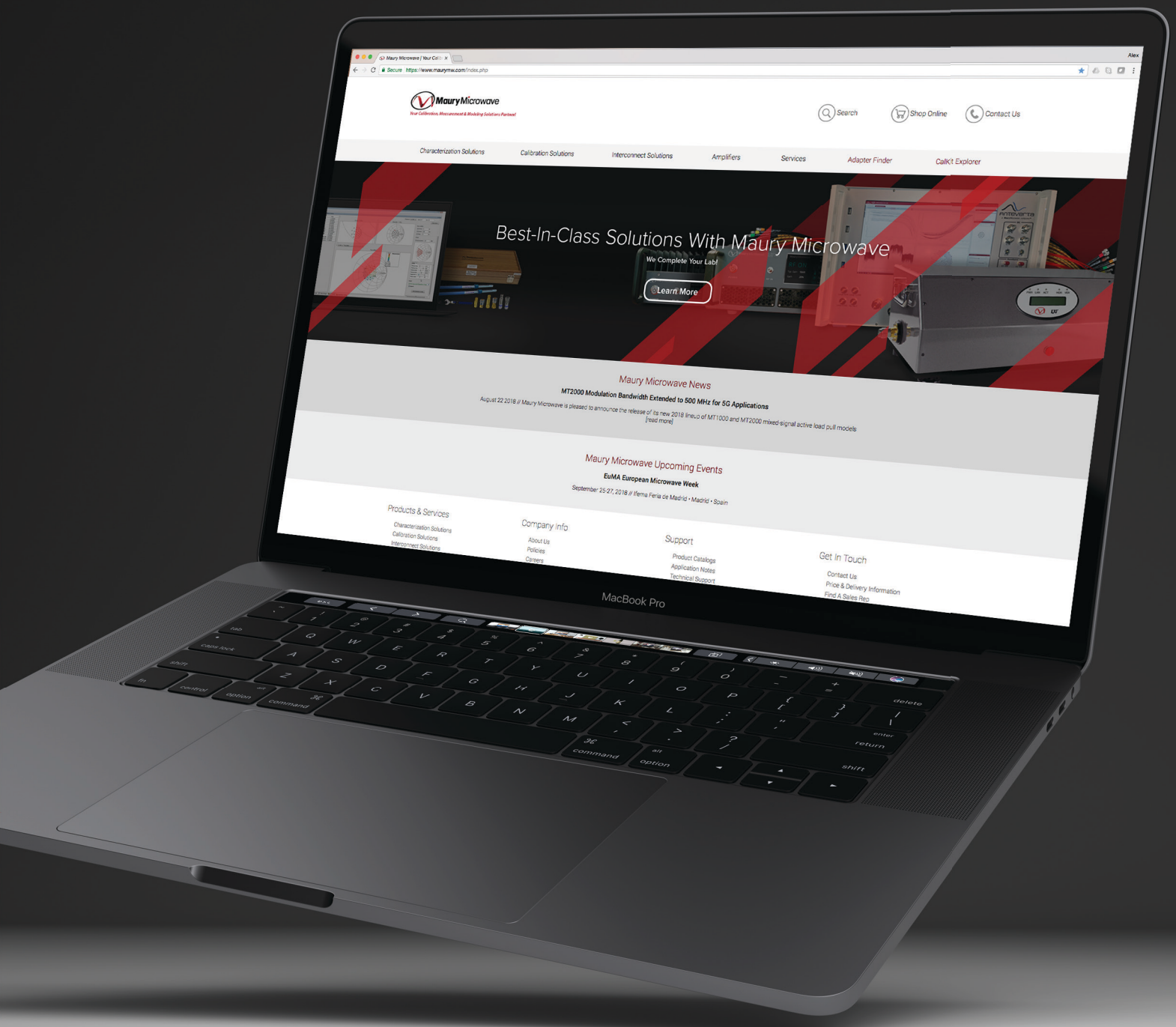

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CONTACT US:
W / maurymw.com
E / maury@maurymw.com
P / +1-909-987-4715
F / +1-909-987-1112
2900 Inland Empire Blvd
Ontario, CA 91764