Test Port Cable Assemblies

DATA SHEET / 2Z-002

Stability VNA™
Maury Microwave

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// AUGUST 2020

Test Port Cable Assemblies

Features and Benefits

- Industry's best phase stability with flexure improves measurement accuracy and ensures repeatable and reliable measurements
- Superior flexibility and anti-skid band ensures the cables can be arbitrarily positioned with no spring-back or stress on DUT
- Increased crush resistance and flex cycles enhances longevity and can lead to years of uninterrupted use
- Color-coded connectors reduce potential for connection mistakes
- The best amplitude and phase stability reduces measurement uncertainty and increases confidence in measurements
- Standard lengths and connector configurations in stock; custom lengths and configurations available

Available Models - Cable Assemblies

Connector	Model Number	Connector Type 1	Connector Type 2	Cable Length		Frequency Range (GHz)
				Inches	CM	
2.4mm	SV-24-FM-25	NMD 2.4mm - Female	NMD 2.4mm - Male	25	63.5	DC - 50
	SV-24-FF-25		2.4mm - Female			
	SV-24-FM-38		NMD 2.4mm - Male	38	96.5	
	SV-24-FF-38		2.4mm - Female			
	SV-24-FM-48		NMD 2.4mm - Male	48	121.9	
	SV-24-FF-48		2.4mm - Female			
2.92mm	SV-292-FM-25	NMD 2.92mm - Female	NMD 2.92mm - Male	25	63.5	DC - 40
	SV-292-FF-25		2.92mm - Female			
	SV-292-FM-38		NMD 2.92mm - Male	38	96.5	
	SV-292-FF-38		2.92mm - Female			
	SV-292-FM-48		NMD 2.92mm - Male	48	121.9	
	SV-292-FF-48		2.92mm - Female			
2.4mm to 2.92mm	SV-24292-FM-25	NMD 2.4mm - Female	NMD 2.92mm - Male	25	63.5	DC - 40
	SV-24292-FF-25		2.92mm - Female			
	SV-24292-FM-38		NMD 2.92mm - Male	38	96.5	
	SV-24292-FF-38		2.92mm - Female			
	SV-24292-FM-48		NMD 2.92mm - Male	48	121.9	
	SV-24292-FF-48		2.92mm - Female			
3.5mm	SV-35-FM-25	NMD 3.5mm - Female	NMD 3.5mm - Male	25	63.5	DC - 26.5
	SV-35-FF-25		3.5mm - Female			
	SV-35-FM-38		NMD 3.5mm - Male	38	96.5	
	SV-35-FF-38		3.5mm - Female			
	SV-35-FM-48		NMD 3.5mm - Male	48	121.9	
	SV-35-FF-48		3.5mm - Female			

Stability Specifications

StabilityVNA™ Cable Type	Frequency	Length	Typical Phase Stability with Flexure	Typical Amplitude Stability with Flexure
SV-24	50 GHz	25"	±2.0°	±0.02 dB
		38"	±4.0°	±0.03 dB
SV-292	40 GHz	25"	±2.0°	±0.02 dB
		38"	±3.0°	
SV-35	26.5 GHz	25"	±2.0°	±0.02 dB
		38"		

Electrical Specifications

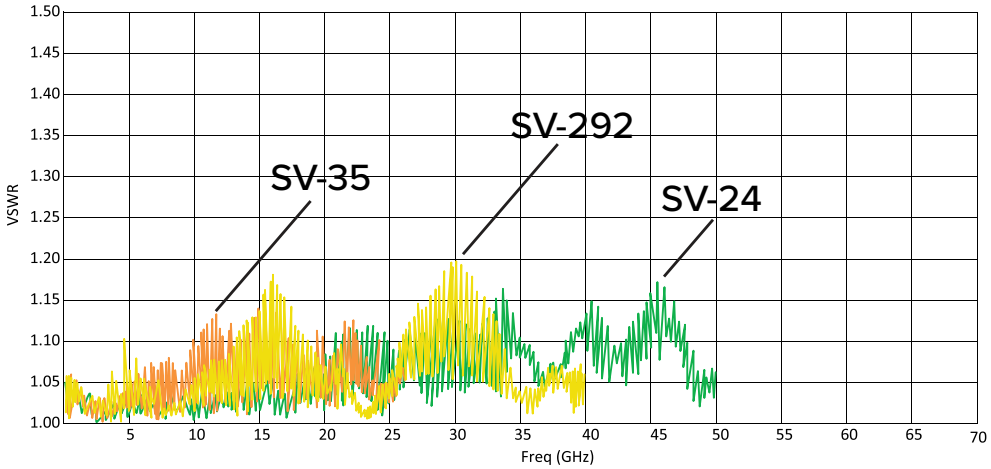
StabilityVNA™ Cable Type	SV-24			SV-292 and SV-24292			SV-35		
Maximum Frequency	50 GHz			40 GHz			26.5 GHz		
Typical Insertion Loss (cable only)	1.00 dB/ft			0.89 dB/ft			0.72 dB/ft		
VSWR (typical)	1.25:1			1.25:1			1.18:1		
VSWR (maximum)	1.35:1			1.32:1			1.25:1		
Cable Length (in)	25	38	48	25	38	48	25	38	48
Typical Insertion Loss (dB)	2.70	3.79	4.62	2.41	3.37	4.11	1.95	2.73	3.32
Max Insertion Loss (dB)	2.98	4.07	4.90	2.66	3.62	4.37	2.16	2.93	3.53
Typical Phase Stability (degree)	2.0	4.0		2.0	3.0		2.0		3.0
Max Phase Stability (degree)	3.5	8.0		3.0	6.0		2.7	5.5	
Typical Amplitude Stability (dB)	0.02	0.03		0.02		0.03	0.02		0.03
Max Amplitude Stability (dB)	0.08	0.10	0.13	0.08	0.10		0.08	0.10	
Impedance (nominal)	50 ohm								
Velocity of Propogation	74% (nominal)								
Shielding Effectiveness	>100 dB (DC - 18 GHz)								
Time Delay (nominal)	1.34 ns/ft (4.5 ns/m)								

Mechanical Specifications

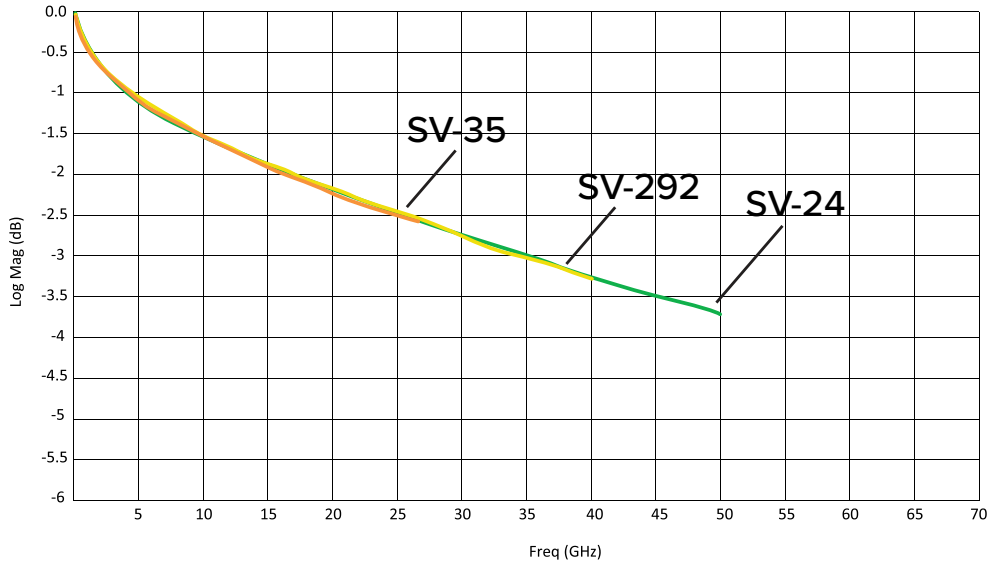
StabilityVNA™ Cable Type	SV-24			SV-292 and SV-24292			SV-35		
Cable Outer Diameter (nominal)	0.6 in (15.1mm)								
Cable Length (in)	25	38	48	25	38	48	25	38	48
Nominal Weight	11.1 oz/ft (315g/m)	13.6 oz/ft (385g/m)	16.1 oz/ft (455g/m)	11.1 oz/ft (315g/m)	13.6 oz/ft (385g/m)	16.1 oz/ft (455g/m)	11.1 oz/ft (315g/m)	13.6 oz/ft (385g/m)	16.1 oz/ft (455g/m)
Flex Life Cycles (typical)	>50,000								
Min. Bend Radius	2.00 in (50mm)								
Crush Resistance	>839 lbsf/in (150 kgf/cm)								
Operating Temperature Range	64.4°F to 82.4°F (18°C to 28°C)								

Maury StabilityVNA™ Cable Assembly Typical Performance

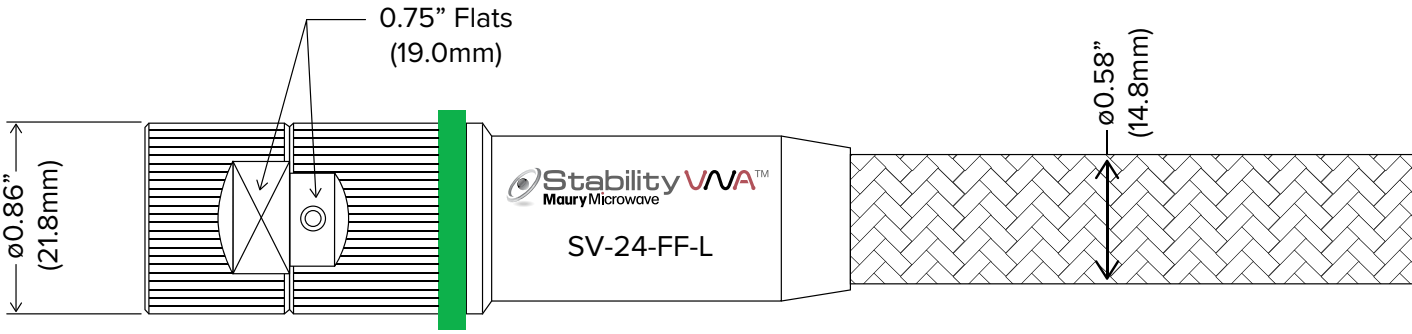
Maury StabilityVNA™ 38" Cable Assembly Typical VSWR

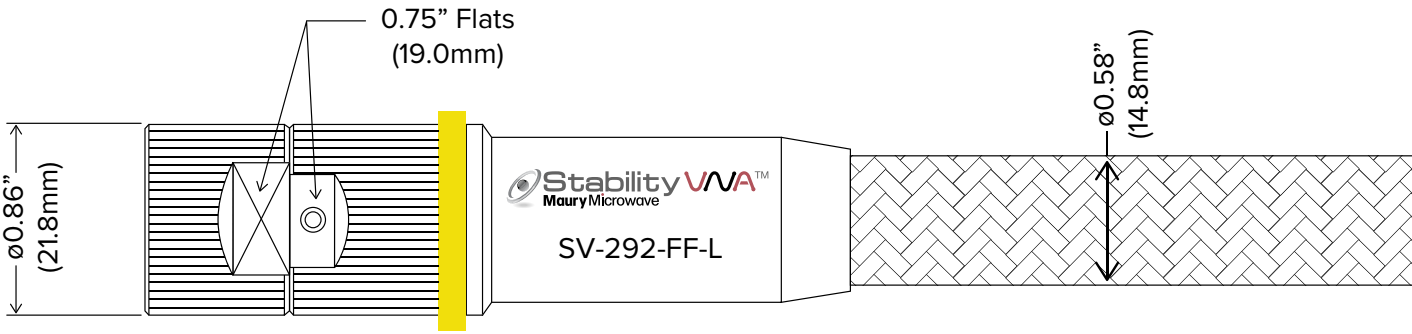


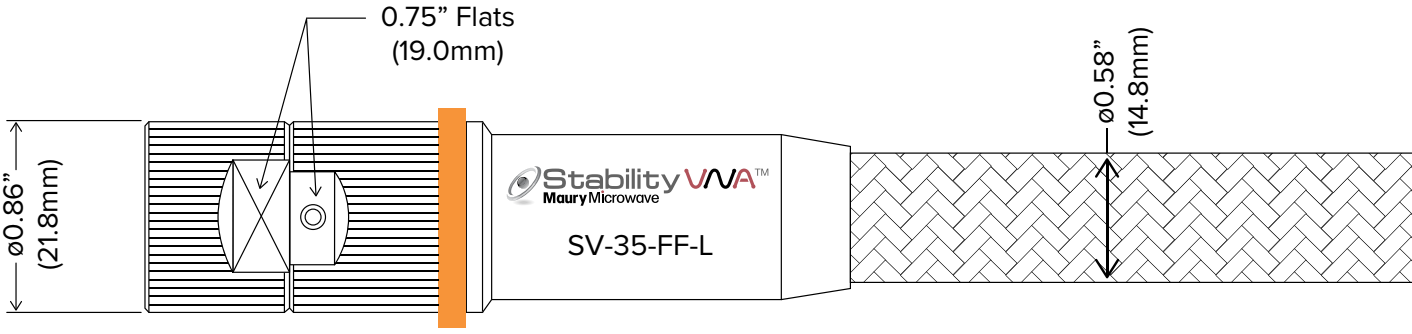
Maury StabilityVNA™ 38" Cable Assembly Typical Insertion Loss



StabilityPlus™
Dimensions





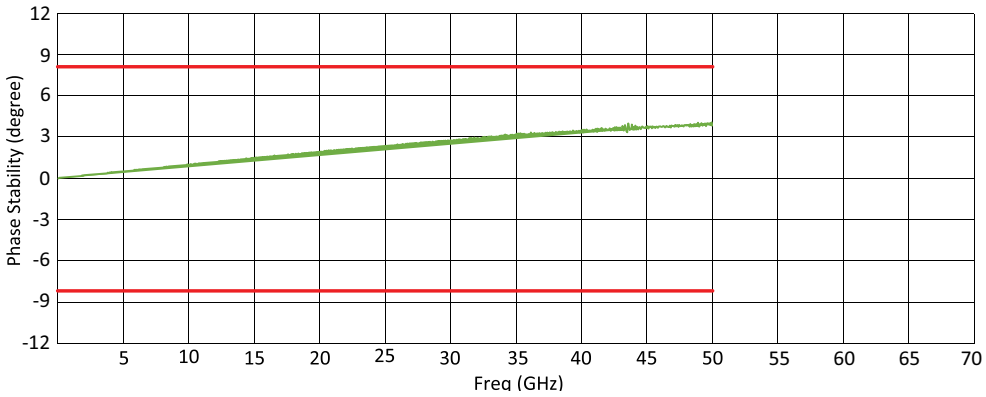


Phase Stability

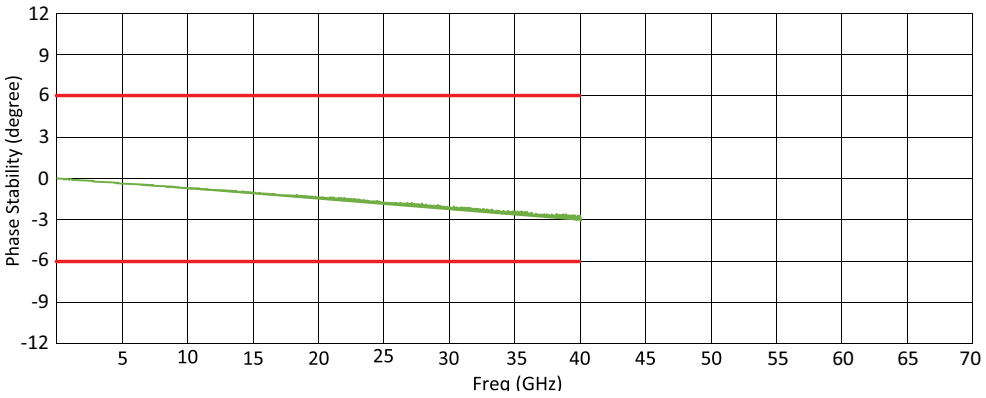
The maximum value for phase and amplitude stability was established using the following method. The cable was terminated with a short. With the cable in a straight position the VNA was normalized. The cable was coiled 180° around a mandrel 4 inches in diameter counter-clockwise and held in position for one sweep. The maximum deviation over the frequency range was recorded. The cable was then coiled 180° around the mandrel clockwise and held in position for one sweep and the maximum deviation was recorded. The cable was then returned to its original position for one sweep and the maximum deviation was recorded.

The plots on the right show the recorded worst-case phase variation.

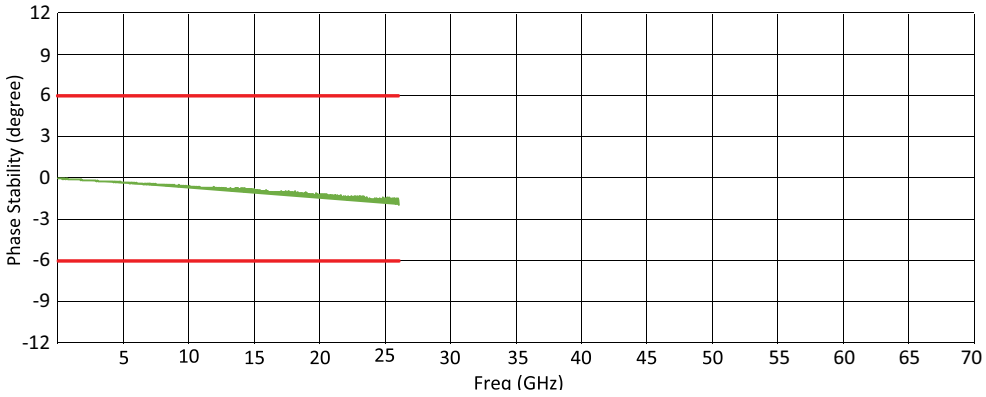
Exemplary data for SV-24-FM-38



Exemplary data for SV-292-FM-38

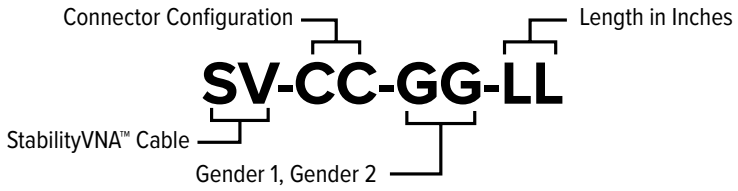


Exemplary data for SV-35-FM-38



Ordering Instructions for StabilityVNA™ Cable Assemblies

Standard StabilityVNA™ Cable Assemblies



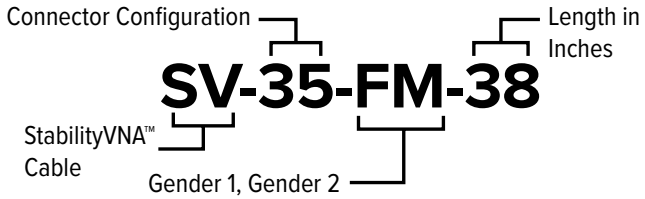
CC	GG	LL (Standard Lengths)
35 (3.5mm) 292 (2.92mm) 24 (2.4mm)	FM (NMD Female to NMD Male) FF (NMD Female to Standard Female)	25 38 48

NOTE: Custom lengths and configurations available

EXAMPLE:

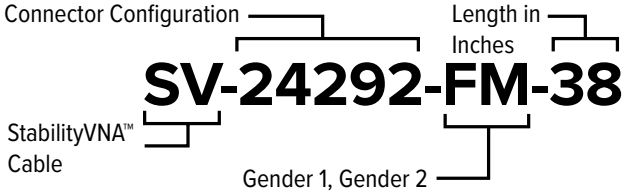
The following is a StabilityVNA™ cable assembly with 3.5mm NMD Female to NMD Male connectors, and 38 inches overall length.

Configuration Sample



EXAMPLE:

The following is a StabilityVNA™ cable assembly with 2.4mm NMD Female connector on one end and 2.92mm NMD Male connector on the other end, and 38 inches overall length.



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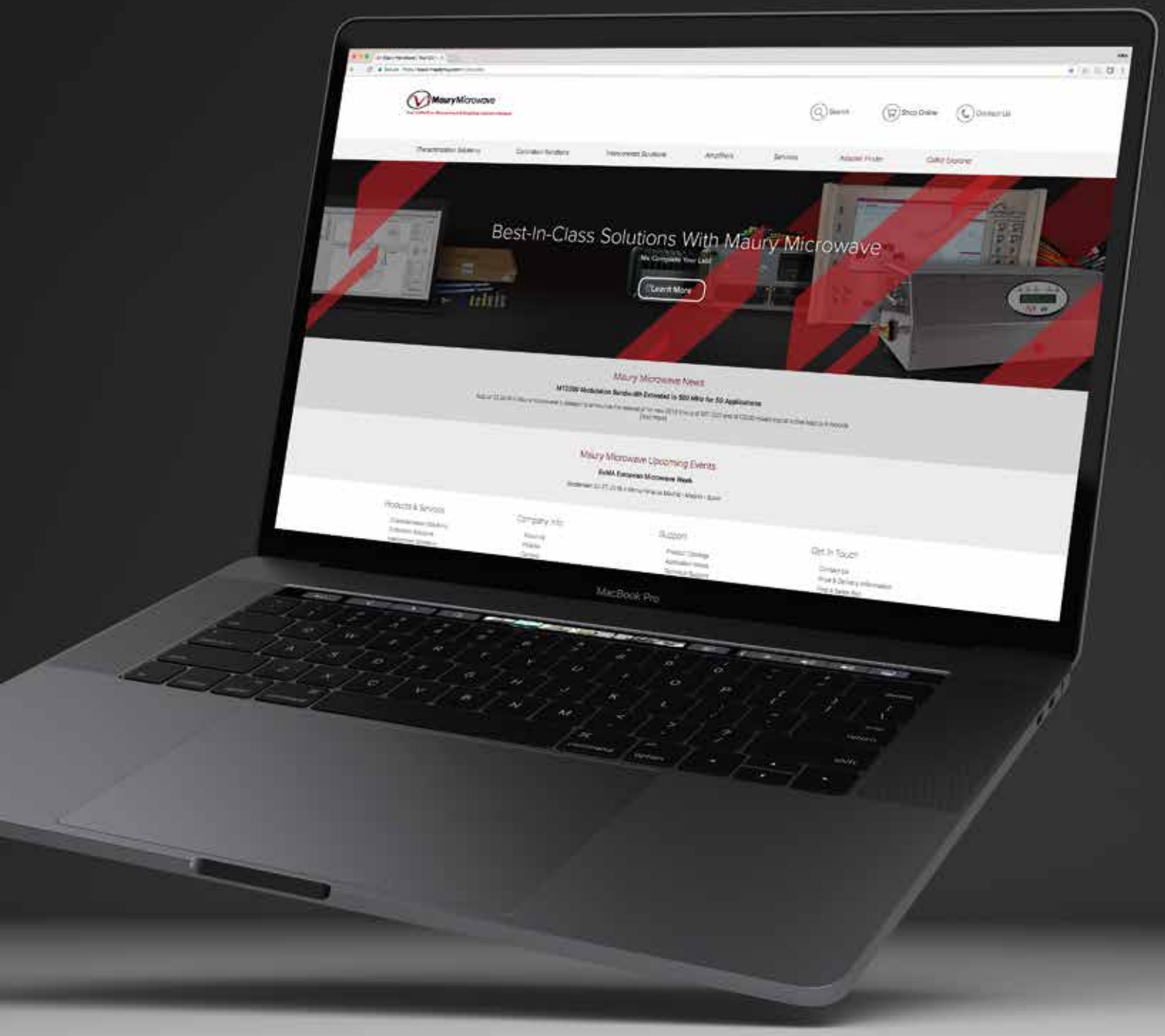

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