Utility™ Microwave/RF Cable Assemblies

DATA SHEET / 2Z-005

MODELS:
UC-N // Type N Utility™ cables
UC-SMA // SMA Utility™ cables

Maury Microwave

// FEBRUARY 2018

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SERIES UC-N AND UC-SMA

Typical Applications

- RF and microwave instruments
- Bench-top testing
- Probe station integrations
- RF production testing
- Component/module testing
- ATE systems

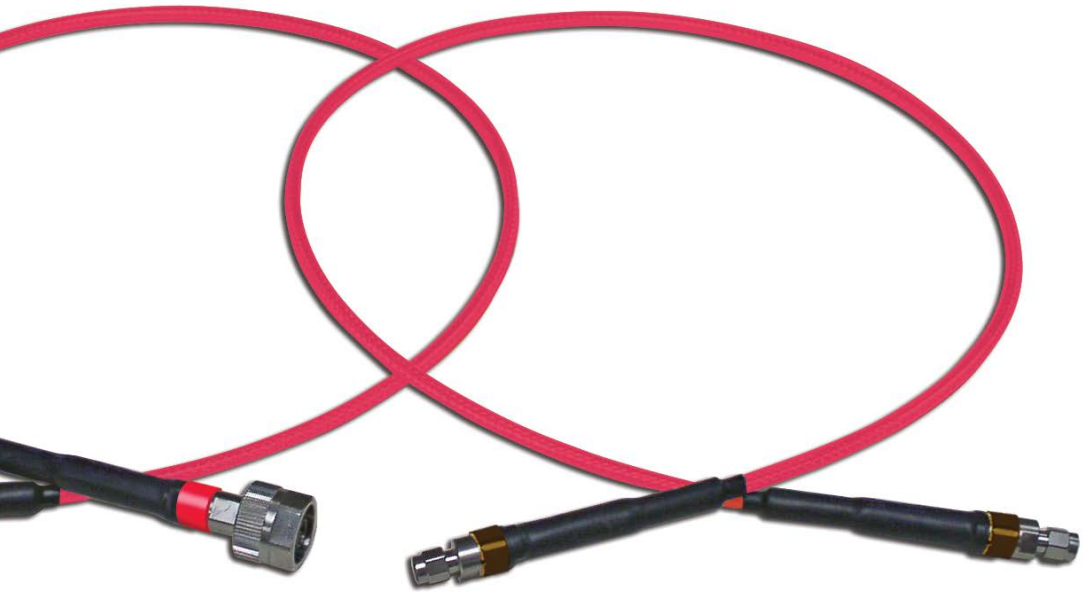
Features and Benefits

- Excellent value
- Low insertion loss
- Reliable and repeatable measurements
- Amplitude and phase stable with flexure
- High mating-cycle durability

Description

Maury Microwave's Utility™ series sets the standard for high-end all-purpose test and measurement cable assemblies. Designed for general testing applications, Utility™ offers excellent value with its low cost, low insertion loss, excellent return loss, flexibility, and amplitude and phase stability. Utility™ is the ideal interconnection for reliable and repeatable measurements when mated with test instruments including bench-top testing, on-wafer characterization and ATE systems.

Utility™ cable assemblies are now part of the ColorConnect™ family! Following the proposed IEEE high-frequency connector/adapter color convention, Utility™ cable assemblies are the first commercially available assemblies to offer clear indications of compatibility and intermatability. ColorConnect™ makes it a simple matter to avoid and eliminate damaged equipment, degraded equipment reliability, degraded performance and lengthy maintenance times due to improper mating (and attempted mating) of incompatible interconnects.



Utility™ UC-N-MM-24 (Left) and UC-SMA-MM-24 (Right) Microwave/RF Cable Assemblies

Cable Assembly Specifications

Electrical Properties

Utility™ Cable Type	SMA	Type N
Maximum Frequency	20.0 GHz	18.0 GHz
VSWR	1.25 max	1.30 max
Typical Insertion Loss (cable only)	0.64 dB/ft	
Impedance (nominal)	50 ohm	
Phase Stability vs Bending[1]	±3.0° typ	
Amplitude Stability vs Bending[2]	±0.015 dB typ	
Velocity of Propagation	71% (nominal)	
Shielding Effectiveness	>100 dB (DC –18.0 GHz)	
Time Delay (nominal)	1.45ns/ft (4.75ns/m)	

[1] Per IEC 60966-1, section 8.6, method 1.
[2] Per IEC 60966-1, section 8.4.

Mechanical/Environmental Properties

Utility™ Cable Type	SMA and Type N
Center Conductor Material	Silver-Plated Copper-Clad Steel
Maximum Outer Diameter	0.190 in (4.81mm)
Nominal Weight	0.65 oz/ft (60g/m)
Min. Static Bend Radius/ Min. Dynamic Bend Radius	1.0 in. (25.4mm)/ 2.0 in. (50.8mm)
Flex Life Cycles[3]	>10,000
Connector Mating Cycles	>5,000
Crush Resistance	>131 lb/inch (23 kN/m)
Operating Temperature Range	–67 ~ +221°F (–55 ~ +105°C)
Fire Resistance[4]	Yes
RoHS/REACH	Yes

[3] Per IEC 60966-1, section 9.3.
[4] Per MIL-DTL-87104C.

Insertion Loss / Attenuation

(1:1 VSWR, 25 C, Sea Level, Cable Only)

Freq. (GHz)	SMA (dB/100 ft)	Type N (dB/100 ft)
1	12	12
2	18	18
4	26	26
8	39	39
12	51	51
18	64	64
20	68	N/A

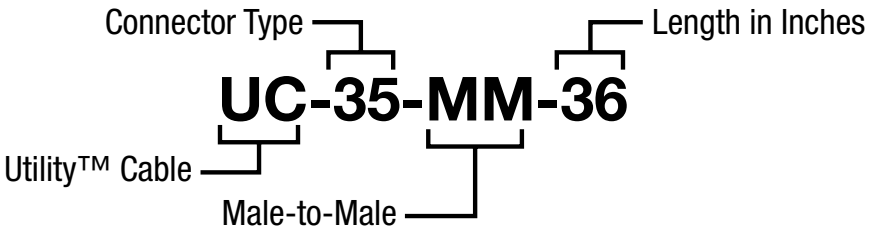
Average Power Handling

(1:1 VSWR, 25 C, Sea Level, Cable Only)

Freq. (GHz)	SMA Watts (max)	Type N Watts (max)
1	550	550
2	295	295
4	210	210
8	150	150
12	120	120
18	95	95
20	80	N/A

Ordering Instructions for Utility™ Cable Assemblies

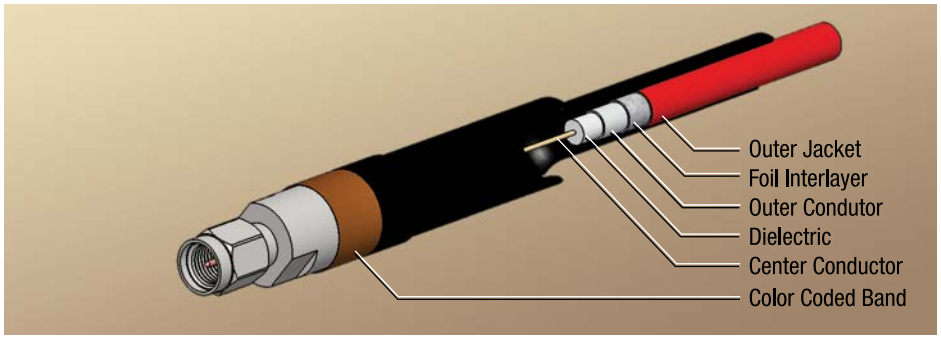
To specify a Utility™ Cable Assembly set, please follow the example below.



Available Connectors

- Type N male
- SMA male and female

Anatomy of UTILITY™ Microwave/RF Cable Assemblies



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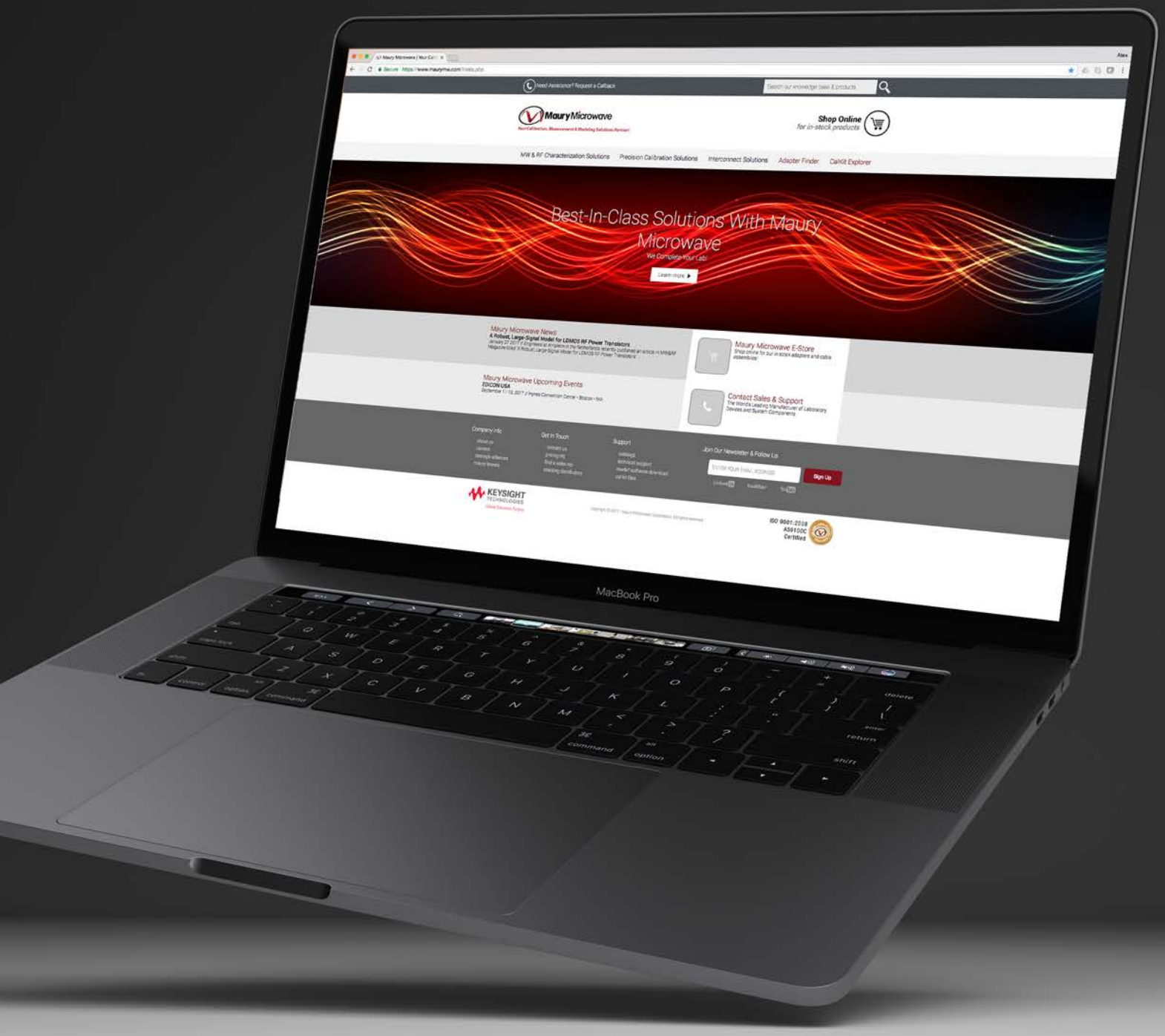

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