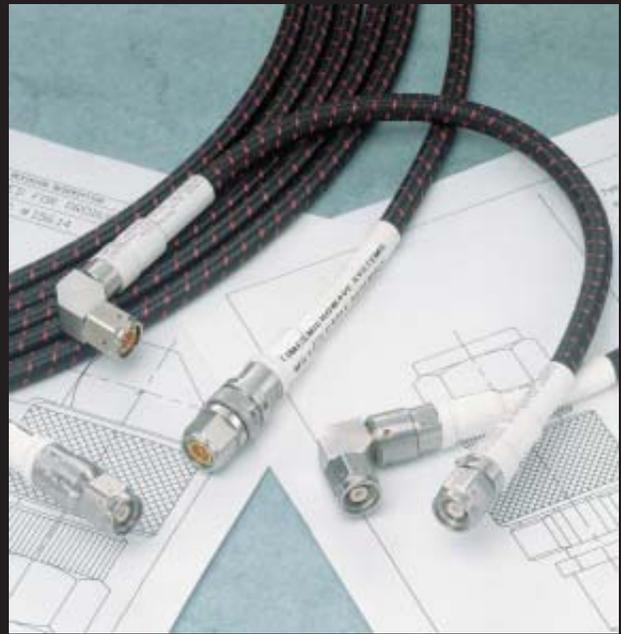
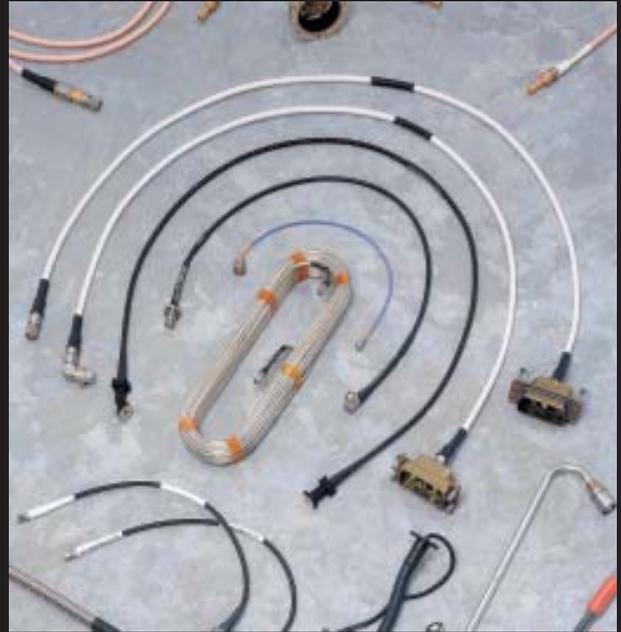


COAXIAL CABLE ASSEMBLIES PRODUCTS & CAPABILITIES



TIMES MICROWAVE SYSTEMS



TIMES MICROWAVE SYSTEMS, Inc. has been designing and manufacturing coaxial cables and cable subsystems for more than fifty years. From its inception, TIMES (TMS) continues to be in the forefront of this industry, pioneering a wide range of coaxial cable and connector developments. TMS cable assemblies are used to interconnect microwave transmitters, receivers, and antennas on commercial and military airframes, missiles, ships, satellites, and ground based communications systems. TMS cable assemblies are also used as test leads for test and instrumentation applications.

TIMES MICROWAVE SYSTEMS is a technically oriented coaxial cable manufacturer that has been able to continually meet and exceed the challenges for specialty engineered transmission lines for both the commercial and military sectors, drawing upon:

- Thousands of cable and connector designs
- Material and process controls
- ISO 9001 Certification
- RF and microwave design capability
- Unique in-house testing capabilities including RF shielding/leakage, vibration, moisture/vapor sealing, phase noise, flammability, etc.
- MIL-T-81490, MIL-C-87104, and MIL-PRF-39012 experience
- FAA, FAR25, DO-160



Customized solutions to meet the system interconnect needs of our customers that you can count on day in and day out is our business. We invite you to put TIMES MICROWAVE SYSTEMS to the test:

***The test of experience,
innovation, and support!***

TMS QUALIFICATIONS & CAPABILITIES

QUALIFICATIONS

TIMES MICROWAVE SYSTEMS products are qualified for service on the following airframes and platform applications:

A-10
AGM-129A (ACM)
AH-IS COBRA
AH-64 APACHE
AIRBUS A300
AIRBUS A319
AIRBUS A320
AIRBUS A321
BAe 146
AWACS
B-52

B-717
BAe 125
BAe 146
BOEING 727
BOEING 737
BOEING 747
BOEING 757
BOEING 767
BGM-109
(TLAM & TASM)
C-17

C-130
C-160
CANADAIR
CL-600
CG-47
CESSNA 208
CN 235
CP-140
DD-963
DDG-51
DDG-91
E-2C
EA-6H
EF-111
EH-101
EH-IX
F-14
F-15

F-16
F-18
F-22
F-111
F-117
GRIPEN
HARRIER
JSF
L-159
LAMPS
LOCKHEED L-1011
LYNX
McDONNELL DC-8
McDONNELL DC-9
McDONNELL DC-10
McDONNELL MD-10
McDONNELL MD-11
McDONNELL MD-80

McDONNELL MD-81
McDONNELL MD-82
McDONNELL MD-83
McDONNELL MD-87
McDONNELL MD-88
MH-47
MH-60
MIRAGE 2000-5
NIMROD MR4A
OH-X
OV-10
OV-1D

P-3C
PILATUS PC-12
PPG-7
S-3
SOCATA
TBM-700
SEA KING
SH-60
BLACK HAWK
TA-4
TORNADO
V-22



MARKETS SERVED



CAPABILITIES

TIMES MICROWAVE SYSTEMS is a vertically integrated organization, allowing us to maintain complete control over all aspects of our business.



ENGINEERING:

- Complete in-house design, development, prototyping and trouble-shooting capabilities
- Four CAD stations
- Twelve network analyzers
- Degreed engineers comprise over 25% of Times Microwave Systems' workforce



TESTING:

- Complete parametric testing of all assemblies performed on state-of-the-art Network Analyzer equipment
- Assemblies sealed per MIL-T-81490 and MIL-C-87104 are verified by advanced Helium mass spectrometer equipment



QUALITY:

- Manufacturing managed by the most advanced SPC techniques
- Quality system per MIL-I-45208
- Soldering per MIL-STD-2000

TIMES QUALIFIED MILTECH™ CABLE ASSEMBLIES



Starting on page 5

MILTECH Qualified Cable Assemblies

- Manufactured to the requirements of MIL-C-87104 and MIL-T-81490, FAA FAR25 and DO-160
- Fully vapor sealed for system longevity
- Highly ruggedized for severe environments
- Used on the most advanced commercial and military platforms



Starting on page 18

Special Products

- Phase matched/Amplitude matched cable assemblies
- Phase adjustable trimmers
- Equalized cable assemblies
- Millimeter wave cable products
- 18 GHz test leads
- Test adapters
- Tools



Starting on page 22

MILTECH Qualified Cable Assemblies

- Standard interface for the F-22
- 1.2:1 VSWR per mated pair through 20 GHz
- Available for flexible and semi-rigid cables from 0.086"/2.18 mm through 0.340"/8.64 mm OD
- Many sizes available
- Redundant gasket seals
- Qualified for high vibration environments
- Simple field replacement of individual cables

TIMES QUALIFIED MILTECH™ CABLE ASSEMBLIES

The Times Qualified *MILTECH* family of hermetically sealed flexible RF and microwave transmission line assemblies are optimized and qualified for commercial, military and other demanding applications. The proprietary application of a spiral flat strip braid results in a cable assembly with superior phase coaxial cables without sacrificing flexibility! There are now three versions of the popular *MILTECH* 340 cable, all providing the same electrical performance, but allowing a choice of cable weights – ideal for applications where both low loss and reduced weight are required. These *MILTECH* cable assemblies exhibit extremely long life in the rigorous environments found in airborne, shipboard and ground based applications.

TMS distinguishes itself by designing and manufacturing the cable, the connectors, and the cable/connector junction. This engineered integration of cable and connectors makes TMS cable assemblies unique. The integration optimizes the electrical and mechanical performance and includes a 1×10^{-5} cc/sec/ft vapor seal that ensures longevity. This control of the cable/connector interface guarantees the right mix of electrical and mechanical characteristics, strength and durability, resulting in a broadband transmission line perfectly suited for severe environments.

Cable Characteristics



Cable materials – typical

- A Center conductor – Solid silver-plated copper*
- A Dielectric – Taped polytetrafluoroethylene
- C First shield – Silver-plated copper strip
- D Interlayer – Aluminum backed tape
- E Second shield – Silver plated copper braid
- F Vapor shield – composite tapes/extruded FEP
- G Outer jacket – Nomex ®

*Solid silver-plated copper covered steel on *MILTECH* 210
Stranded silver-plated copper on *MILTECH* 480

Times qualified *MILTECH* flexible RF and microwave transmission line assemblies described here meet the following performance criteria:

| Cable Type | Recommended Cable Clamp |
|--------------------|-------------------------|
| <i>MILTECH</i> 210 | MS2919-4 |
| <i>MILTECH</i> 230 | MS2919-4 |
| <i>MILTECH</i> 265 | MS2919-5 |
| <i>MILTECH</i> 340 | MS2919-7 |
| <i>MILTECH</i> 480 | MS1919-8 |

Times Qualified *MILTECH* Cable

| Times Qualified Assembly Type | Cable Diameter (In./mm.) | Loss@ 18 GHz (dB/ft.) | TMS Specification | Minimum Bend Radius (In./mm.) | Mass |
|-------------------------------|--------------------------|-----------------------|----------------------|-------------------------------|---------------------|
| <i>MILTECH</i> ™ 210 | 0.21/5.3 | 0.48 | <i>MILTECH</i> 210 | 1.00/25.4 | 0.035lb/ft (52g/m) |
| <i>MILTECH</i> ™ 230 | 0.23/5.8 | 0.38 | <i>MILTECH</i> 230 | 1.15/29.2 | 0.045lb/ft (68g/m) |
| <i>MILTECH</i> ™ 265 | 0.265/6.7 | 0.32 | <i>MILTECH</i> 265 | 1.30/33.0 | 0.065lb/ft (97g/m) |
| <i>MILTECH</i> ™ 340 | 0.34/8.6 | 0.22 | <i>MILTECH</i> 340 | 1.90/48.3 | 0.105lb/ft (157g/m) |
| <i>MILTECH</i> ™ 340XL | 0.34/8.6 | 0.22 | <i>MILTECH</i> 340XL | 1.90/48.3 | 0.080lb/ft (120g/m) |
| <i>MILTECH</i> ™ 340EL | 0.34/8.6 | 0.22 | <i>MILTECH</i> 340EL | 1.90/48.3 | 0.070lb/ft (105g/m) |
| <i>MILTECH</i> ™ 480 | 0.46/12.2 | 0.13 (@ 10 GHz) | <i>MILTECH</i> 480 | 2.25/57.2 | 0.200lb/ft (303g/m) |