

TVAC05 series RF cable sets have been designed and constructed specially for use in thermal vacuum chambers for satellite support in the ground testing phase. All the materials used have been selected for low outgassing and special vented connectors are used to achieve the TML and CVCM specifications.

### MATERIALS USED MEET TML/CVCM SPECS

- Imported USA Proprietary Cable with low outgassing
- Imported USA/Europe vented connectors used, meet the low outgassing TML/VCM specifications.
- All other materials meet the low outgassing specifications

### FEATURES

- All materials used meet low outgassing spec with TML <1%, VCM <0.1%
- All soldering and soldering QC done is in accordance to ECSS-Q-ST-70-08C guidelines
- Thermal Stripping, Resistance soldering systems and all other tools used are maintained as per ECSS-Q-ST-70-08C
- 100% manual inspection of each solder joint under high magnification
- No flux used, no rework allowed and 100% cleaning with 99% IPA.



### APPLICATIONS

- Thermal Vacuum Chambers
- Ground testing of satellite components
- Environmental test chambers

### CONFORMANT MIL STANDARDS

- Cable conforms to MIL-C-17
- Connectors conform to MIL-PRF-39012

### Electrical Specifications

Impedance	50 Ohms
Velocity of Propagation	80 %
Shielding Effectiveness	Better than -95dB
Capacitance	25 pF/ft   82 pF/m
Frequency Range	DC ~ 32.9 Ghz
Insulation Resistance	> 5000 M Ohms
Phase Stability Vs Flexures (360° wrap on a mandrel of 49.5mm diameter)	<1°/GHz, Typ.±3.6°@18G
Phase Stability Vs Temp. (parts per million, ppm)	<10 ppm/degree (<1500 ppm in -40 ~ +85°)
Phase Stability Vs Temp. (degree/ meter / GHz)	<1° / m / GHz)
Attenuation Stability Vs Temperature	<0.2 % /°C
Attenuation Stability Vs Bending	± 0.2dB

### Physical & Mechanical Specifications

Dimensions	inches	mm
Outer diameter	0.208	5.2
Bend Radius (min.)	1	25
Weight	0.061 Kg/m	
Temperature Range	-55° ~ + 150°C	
Pressure	1 x 10 <sup>-6</sup> Torr	

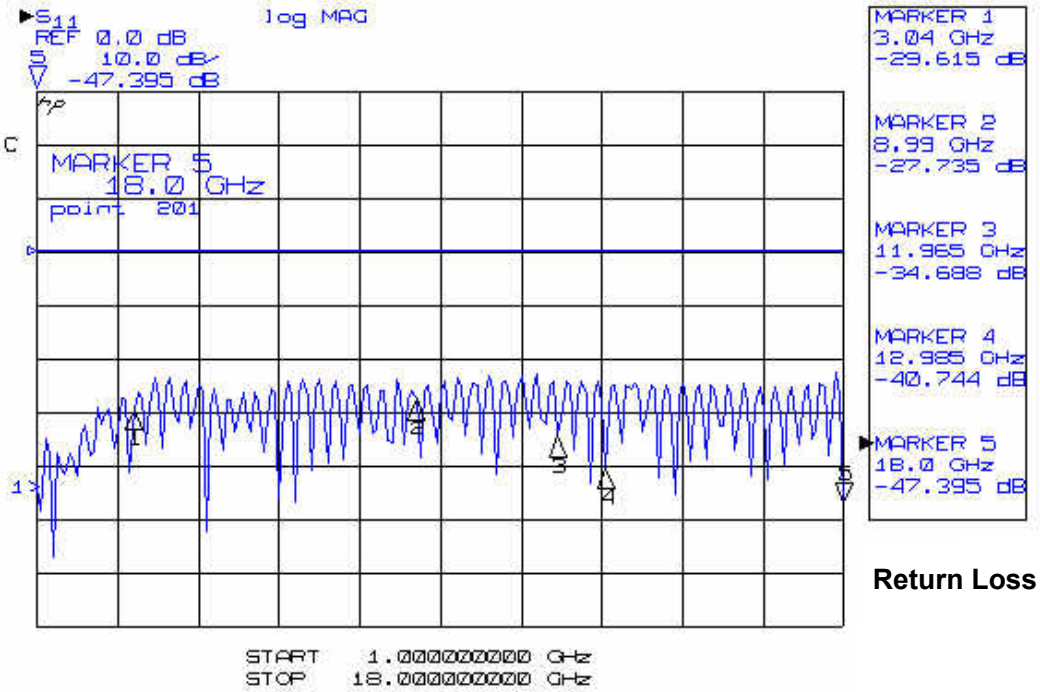
### Attenuation & Power @25 °C at Sea level

Frequency	Insertion Loss		Av Power Watts
	dB/ft	dB/m	
1 GHz	0.08	0.26	715
2 GHz	0.11	0.37	495
3 GHz	0.14	0.45	400
4 GHz	0.17	0.55	350
6 GHz	0.20	0.65	276
8 GHz	0.21	0.70	240
10 GHz	0.23	0.79	210
12 GHz	0.26	0.87	190
18 GHz	0.33	1.12	150

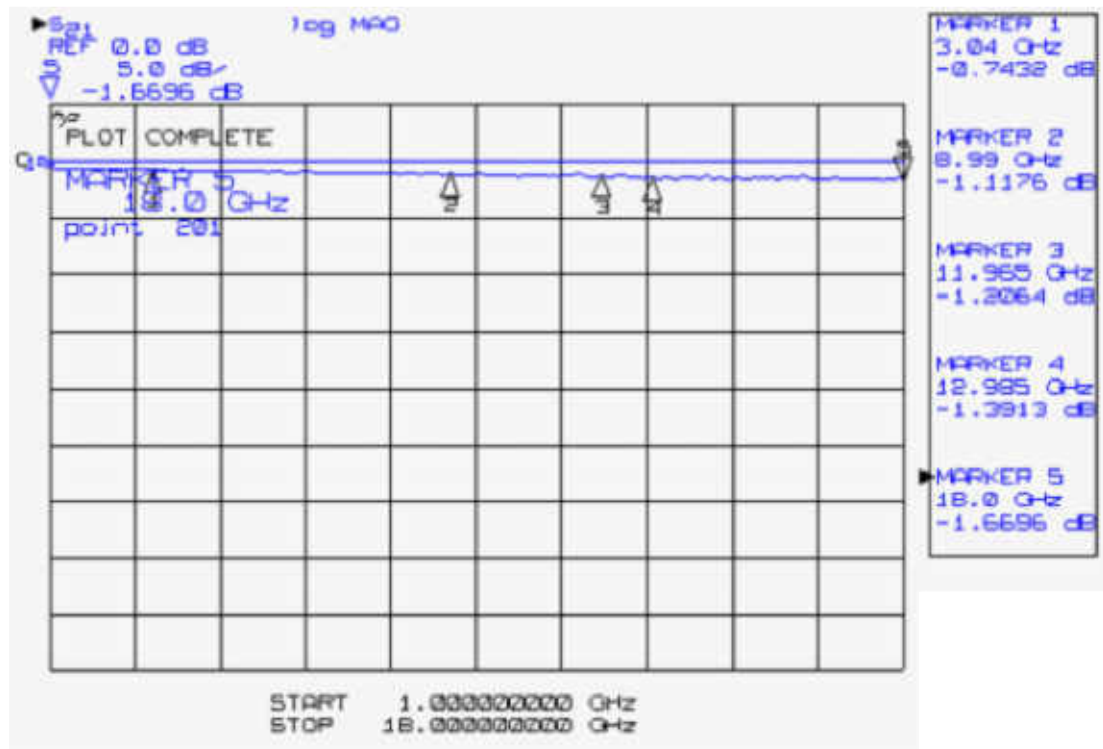
Shown trademarks are property of their respective owners.

While the information contained herein in this catalog, has been carefully compiled to the best of our knowledge, nothing is intended as representation and warranty on our part; and no statement shall be construed as recommendation to infringe any of existing patents. We accept no liability of whatsoever for any faults and errors in the information contained herein. Contents of this catalogue and specifications of the products, are subject to change without notice due to continuous improvements.

**Return Loss of 1 meter TVAC05 cable set with SMA(M) on both sides**



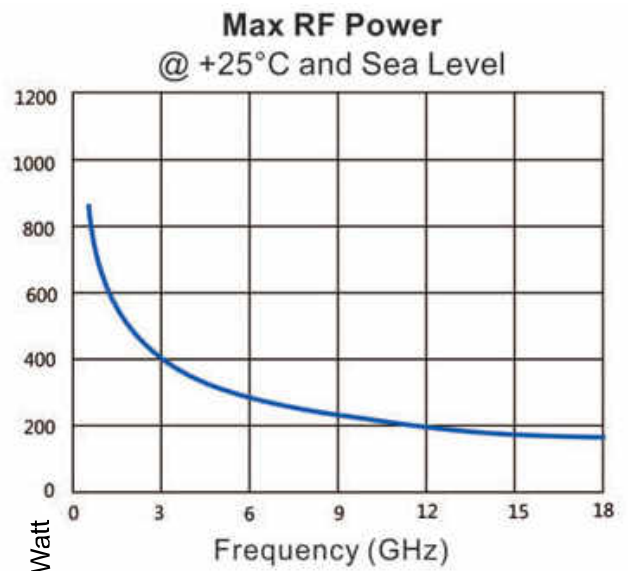
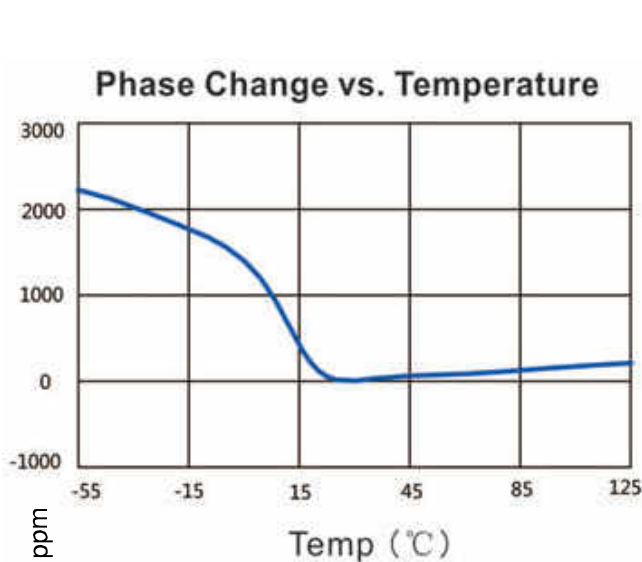
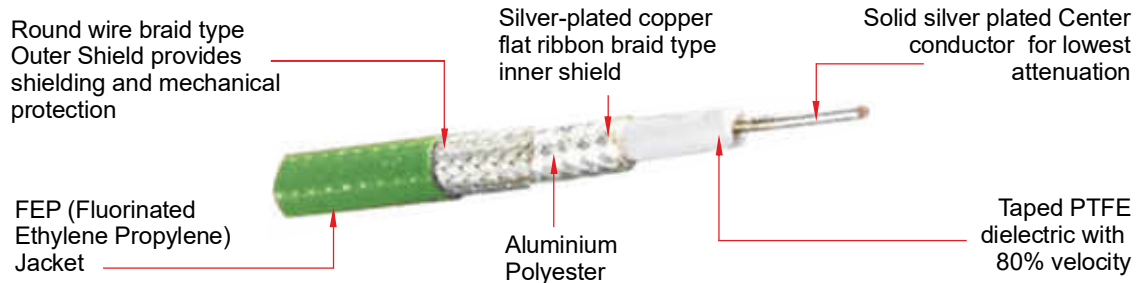
**Insertion Loss of 1 meter TVAC05 cable set with SMA(M) on both sides**



Shown trademarks are property of their respective owners.

While the information contained herein in this catalog, has been carefully compiled to the best of our knowledge, nothing is intended as representation and warranty on our part; and no statement shall be construed as recommendation to infringe any of existing patents. We accept no liability of whatsoever for any faults and errors in the information contained herein. Contents of this catalogue and specifications of the products, are subject to change without notice due to continuous improvements.

### Imported Ultra Low Loss, Triple Shielded Hi-Power Cable details



### Connectors Specifications

Specifications	SMA, N, TNC Connectors
Construction	Solder Cup, Retaining Ring & Front End
Retaining Ring & Front End	Stainless Steel, Passivated
Center Conductor	BeCu, Gold Plated
Design	Vented
Gasket	Low Outgassing compliant
Frequency range	DC~18 GHz
Vibration	As per MIL-STD-202, method 204, test condition D
Mechanical Shock	As per MIL-STD-202, method 213, test condition I
Temperature Cycle	As per MIL-STD-202, method 102A, test condition C

Shown trademarks are property of their respective owners.

While the information contained herein in this catalog, has been carefully compiled to the best of our knowledge, nothing is intended as representation and warranty on our part; and no statement shall be construed as recommendation to infringe any of existing patents. We accept no liability of whatsoever for any faults and errors in the information contained herein. Contents of this catalogue and specifications of the products, are subject to change without notice due to continuous improvements.

## Ordering Codes Description

TVAC05 / □ □ □ □ (Length) / □ □ □ (Connector 1) / □ □ □ (Connector 2)  
L L L L 1 2 3 1 2 3

<b>L L L L</b>	Cable Length	1 meter = 1M, 1 feet = 1F,
<b>1</b>	Connector Series	SMA = SMA, N = N, TNC = TNC
<b>2</b>	Orientation of Connector	ST = Straight
<b>3</b>	Male/Female Designator	M = Male ; F = Female

## Cable Set Ordering Codes

Ordering Code	Conn 1	Conn 2	Length	Insertion Loss (dB) Typical						
				1.5 GHz	3 GHz	6 GHz	9 GHz	12 GHz	18 GHz	
<b>SMA(Male) Straight - SMA(Male) Straight (DC ~ 18 GHz)</b>										
TVAC05-0.5-SMA(M/ST)-SMA(M/ST)-M	SMA(M/ST)	SMA(M/ST)	0.5m	0.28	0.39	0.56	0.69	0.79	1.00	
TVAC05-1-SMA(M/ST)-SMA(M/ST)-M	SMA(M/ST)	SMA(M/ST)	1m	0.46	0.65	0.94	1.17	1.34	1.68	
TVAC05-2-SMA(M/ST)-SMA(M/ST)-M	SMA(M/ST)	SMA(M/ST)	2m	0.84	1.18	1.69	2.11	2.33	2.85	
TVAC05-3-SMA(M/ST)-SMA(M/ST)-M	SMA(M/ST)	SMA(M/ST)	3m	1.21	1.71	2.38	2.75	3.25	3.95	
TVAC05-5-SMA(M/ST)-SMA(M/ST)-M	SMA(M/ST)	SMA(M/ST)	5m	1.96	2.76	3.70	4.45	5.10	6.45	
TVAC05-1-SMA(M/ST)-SMA(M/ST)-F	SMA(M/ST)	SMA(M/ST)	1 feet	0.20	0.28	0.40	0.50	0.57	0.72	
TVAC05-2-SMA(M/ST)-SMA(M/ST)-F	SMA(M/ST)	SMA(M/ST)	2 feet	0.32	0.44	0.64	0.80	0.91	1.15	
<b>N (Male) Straight - N (Male) Straight (DC ~ 18 GHz)</b>										
TVAC05-0.5-N(M/ST)-N(M/ST)-M	N(M/ST)	N(M/ST)	0.5m	0.29	0.40	0.57	0.70	0.80	1.02	
TVAC05-1-N(M/ST)-N(M/ST)-M	N(M/ST)	N(M/ST)	1m	0.47	0.66	0.95	1.18	1.35	1.69	
TVAC05-2-N(M/ST)-N(M/ST)-M	N(M/ST)	N(M/ST)	2m	0.85	1.19	1.70	2.12	2.45	2.90	
TVAC05-3-N(M/ST)-N(M/ST)-M	N(M/ST)	N(M/ST)	3m	1.22	1.72	2.46	2.80	3.30	4.01	
TVAC05-5-N(M/ST)-N(M/ST)-M	N(M/ST)	N(M/ST)	5m	1.98	2.77	3.98	4.50	5.20	6.50	
TVAC05-1-N(M/ST)-N(M/ST)-F	N(M/ST)	N(M/ST)	1 feet	0.21	0.29	0.41	0.51	0.58	0.73	
TVAC05-2-N(M/ST)-N(M/ST)-F	N(M/ST)	N(M/ST)	2 feet	0.33	0.45	0.65	0.81	0.92	1.16	

Shown trademarks are property of their respective owners.

While the information contained herein in this catalog, has been carefully compiled to the best of our knowledge, nothing is intended as representation and warranty on our part; and no statement shall be construed as recommendation to infringe any of existing patents. We accept no liability of whatsoever for any faults and errors in the information contained herein. Contents of this catalogue and specifications of the products, are subject to change without notice due to continuous improvements.