



TVAC Low Power Measurement

To ensure superior performance in space, satellites and space components have to be tested locally in thermal vacuum chambers under the same conditions found in outer space. To run those tests, the space industry requires measurement products such as test cable assemblies that work under simulated conditions found in outer space to be used. During simulation testing, measurement components must be connected to DUT and exposed to vacuum as well as the component itself.



At high frequency, measurements are generally “Low power” levels (< 10 Watts). At this power level it is possible to waive from multipactor consideration. To meet this challenge, Radiall has developed TestPro TVAC assemblies to offer the space industry the perfect solution at a low cost to meet customer needs. The complete TestPro TVAC range offers the same high quality as Radiall’s standard TestPro range, while also being able to perform under thermal vacuum.

Non-outgassing materials

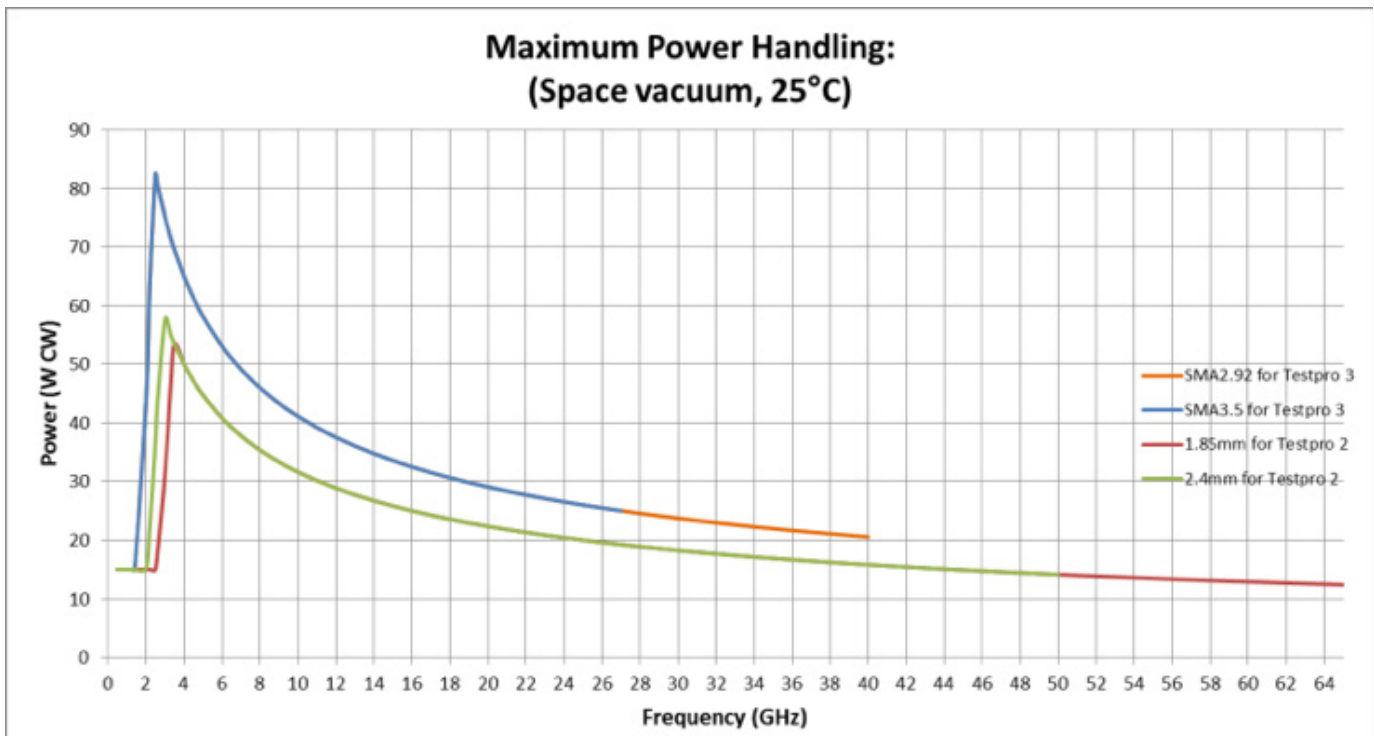
TVAC cable assemblies are manufactured with parts and materials that are compliant with ESA spec ECSS-Q-ST-70-02 and NASA reference publication 1124. Which references to a maximum Total Mass Loss (TML) of 1% or Collectible Volatile Condensable Material Level of 0.1%.

Superior electrical and mechanical characteristics

TVAC test assemblies offer excellent electrical performance and high mechanical endurance. These ruggedized assemblies offer reliability and excellent durability when it matters most. The unique connector attachment system and strong cable structure provides high tensile stress resistance to the entire assembly. Despite high protection resistance, range of TVAC TestPro solutions, remain exceptionally flexible and user friendly with an extended life of more than 20,000 flex cycles.



Note: Depending on the connector interface, power is limited due to multipactor effects up to 1.5 to 3GHz. Higher power is acceptable after 12 hours in a vacuum as shown in the graph below.



Vented connectors

Radiall's TestPro TVAC solutions are also available with vented connectors to guarantee fast pressurization or depressurization cycles. This reduces the wait time after vacuum⁽¹⁾ to zero instead of 12 hours, which is recommended when high power is applied.

TestPro 2 TVAC

- Frequency range up to 67 GHz
- Max power 12 Watts full band (see graph detail)
- Phase stable with bending (6° @ 50GHz – 8° @ 67GHz Typ.)
- Loss stable with bending (0.04dB @ 50GHz – 0.05dB @ 67GHz Typ.)
- 2.4mm and 1.85mm connectors
- High flexible jacket

TestPro 3 TVAC

- Frequency range up to 40 GHz
- Max power 15 Watts full band (see graph detail)
- Phase stable with bending (4.8° @ 40GHz Typ.)
- Loss stable with bending (0.05dB @ 40GHz Typ.)
- N Type, SMA3.5 and SMA2.92 connectors available
- High flexible jacket

⁽¹⁾ Time to wait before use, after that vacuum reaches the outer space condition due to corona effect.