

TEST & MEASUREMENT

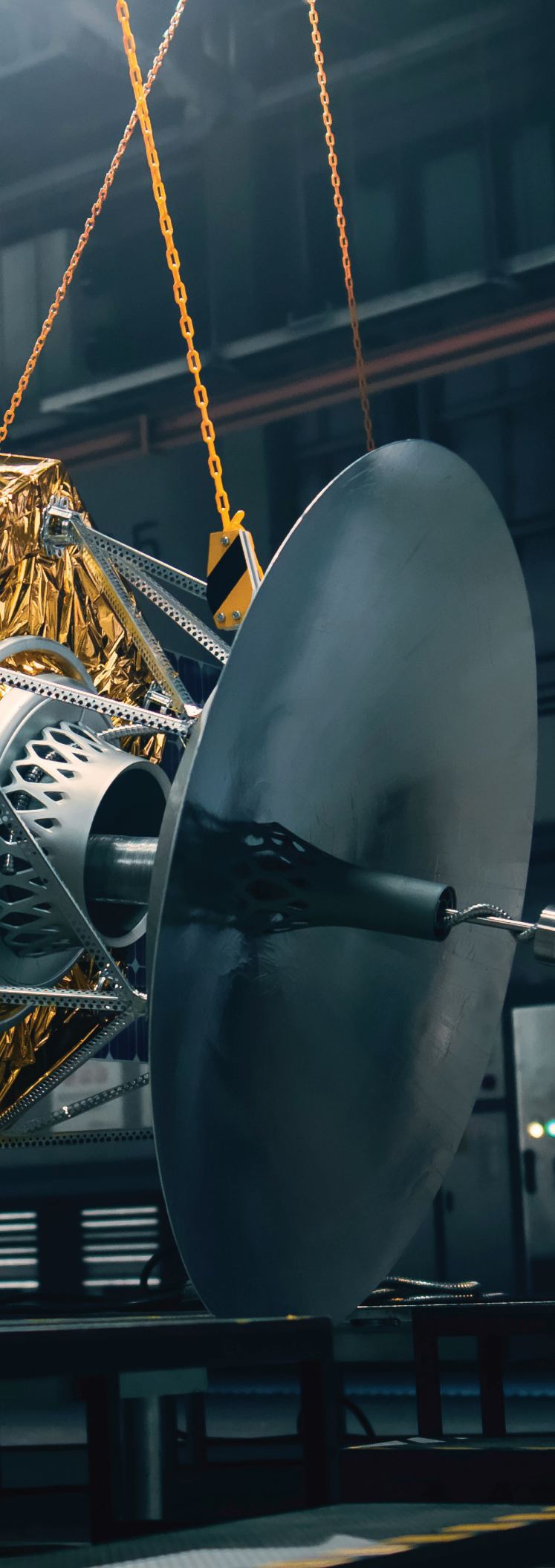
Booklet



SIMPLIFICATION IS OUR INNOVATION



- 
- *Equipment Testing*
 - *Laboratory Testing*
 - *Production Testing*
 - *Environmental & Chamber Testing*



FOREWORD

Radiall is a global leader in the Test & Measurement industry. We are recognized for providing high performance switches and interconnect products at an exceptional quality for a wide range of applications.

Our presence across the globe allows Radiall to support all Test & Measurement manufacturers on a local level.

Radiall has developed a broad and unique product portfolio in:

- *RF & Microwave switches*
- *RF cable assemblies*
- *RF connectors*
- *Microwave components*

EQUIPMENT TESTING

Radial supports test equipment OEM for general-purpose test equipment such as oscilloscopes, signal generators, Vector Network Analyzers (VNA), spectrum analyzers and modular instrumentation. Inside or outside the test equipment, Radial provides high performance interconnect solutions up to 110GHz with a global range of RF switches, cables assemblies, connectors and components to meet the challenge of 5G.



RF & MICROWAVE SWITCHES

Radial has developed and produced a wide range of microwave coaxial switches that are highly reliable products, thanks to the Radial Modular System for Electromechanical Switches (RAMSES). RAMSES is a patented concept that enables a typical operating life of 10 million cycles without suffering decreased contact resistance reliability over time.

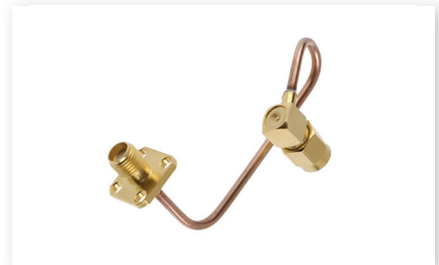
- Frequency up to 110GHz
- Series SPDT, DP3T, DDPDT, SPnT
- High RF performances



TESTPRO CABLE ASSEMBLIES

Radial's full range of test bench cables provides outstanding performances up to 67 GHz, durability and stability. Radial's test cables are the perfect solution for component/ assembly shops, test equipment for test and measurement that require repeated connect/disconnect test procedures and the ability to withstand strenuous movement and continuous flexing.

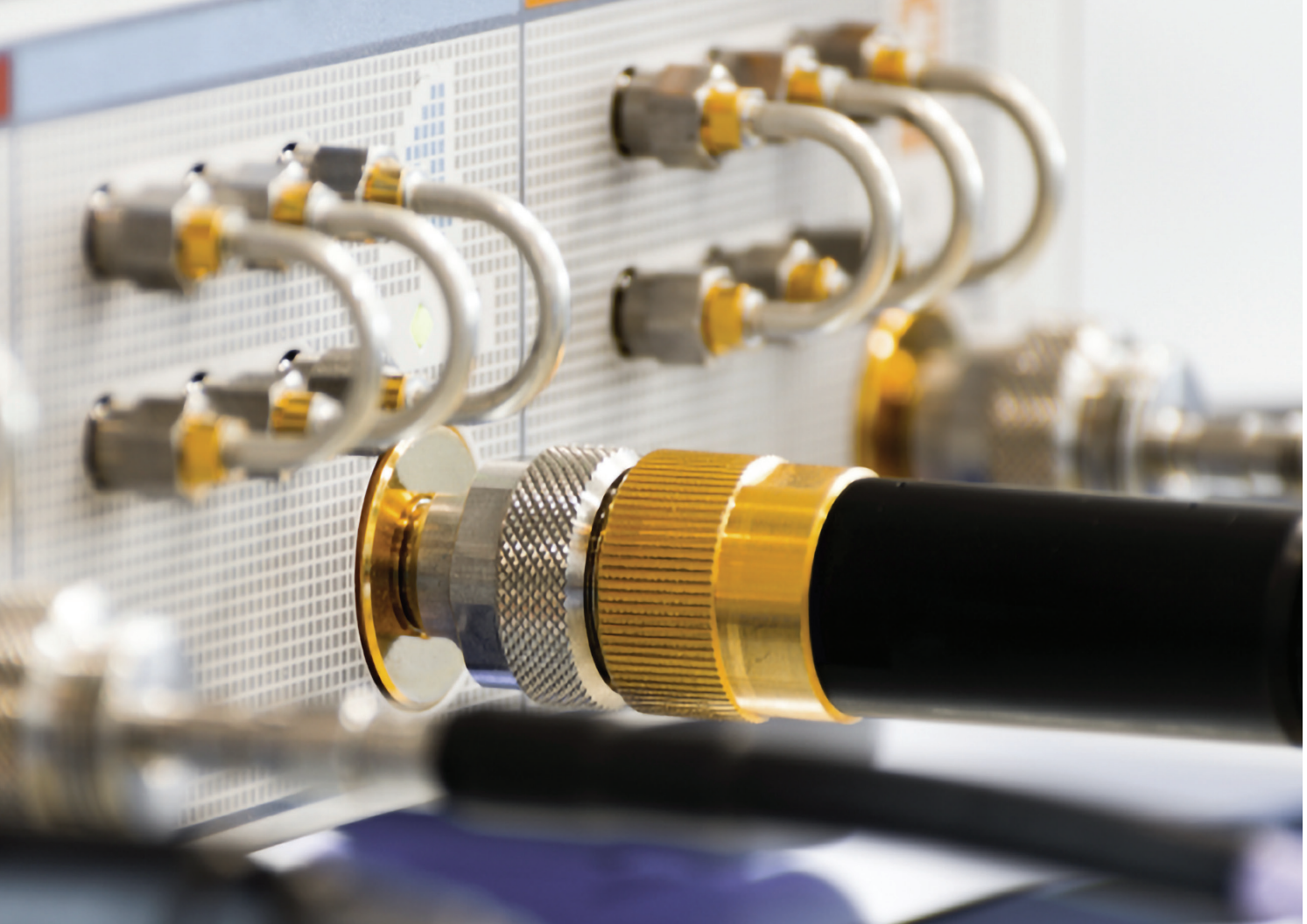
- TestPro Bench test
- SHF Ultra Low Loss
- Custom cable assemblies & lengths available



HAND-FORMABLE & SEMI-RIGID CABLES ASSEMBLIES

Comparable to any other cable and semi-rigid solutions, Radial offers a cost-effective solution that reaches high frequency, low VSWR and high levels of shielding effectiveness.

- Hand-formable
- Semi-rigid frequency up to 50 GHz
- High screening effectiveness



RF CONNECTORS & ADAPTERS

Radiall designs and manufactures a wide range of RF coaxial connectors and adapters. Adapters are used to make reliable transitions from one connector to another and are typically used for Test & Measurement, between mounted equipment and devices under test. The range includes precision series and in-series adapters for measurement and qualification.

- Frequency up to 67 GHz
- Power: 0 to 1,000 W
- Impedance: 50 Ohms



RF MICROWAVE COMPONENTS

Specializing in passive RF microwave components, Radiall develops and manufactures a wide range of coaxial microwave components including terminations, attenuators, couplers, power dividers, filters and other specialized components.

- Frequency up to 67 GHz
- Power range from 0.5 W to 1,000 W



RF CONNECTORS & ADAPTERS

Network Measurement Division (NMD) are perfectly suited for equipment test with superior repeatability and excellent reliability. NMD are precision connector compliant with IEEE standard.

- Support both 67GHz and 110GHz Network Analyzers and Test Equipment
- Ensure stable connection
- Provide design flexibility to customers
- Compatible with test cables with standard 1.0mm and 1.85mm connectors
- Support longer life cycle for customers

LABORATORY TESTING

Test and measurement is critical to developing, designing and manufacturing products. To meet the more complex requirements for qualification and simulations, Radiall's bench top test provides higher performing solutions.



PLATINIUM & TITANIUM SWITCHES

Titanium and platinum switches are optimized to perform at a high level over an extended life cycle, with outstanding RF performance and a guaranteed insertion loss repeatability.

- Series SPDT, DP3T, DPDT, SPnT
- Insertion loss repeatability guaranteed 0.03 dB
- Life span over 10 million cycles



TESTPRO CABLE ASSEMBLIES

Test & Measurement applications require excellent electrical performance up to 67 GHz and high mechanical endurance. To answer these specific needs Radiall has created TestPro, a high performance product range dedicated to laboratory measurement.

- TP4.2S, TP4.2, TP3LP, TP3 TP2
- Phase and loss stable with flexure
- Long service life



VNA TESTPRO CABLE ASSEMBLIES

VNA test cables are the top of the line solution in Radiall's TestPro range. They deliver best-in-class phase and amplitude stability with flexure, movement and tensile stress.

- VNA TestPro grade 40, 50 and 67 GHz
- Amplitude and phase stable
- 2.4 mm, 1.85 mm and SMA 2.9



HIGH FREQUENCY CONNECTORS

High-frequency connectors provide the best electrical performance with superior repeatability and excellent reliability for test and measurement.

- Up to 67 GHz
- High mechanical stability
- Screw-on design



MICROWAVE COMPONENTS

Platinum attenuators & loads provide the lowest VSWR, a main feature for precision applications into Test & Measurement equipment.

- Power range : up to 2W
- Frequency from DC up to 40GHz
- Compatibility with all standard connectors interfaces : SMA, BNC, TNC, N
- up to 30dB



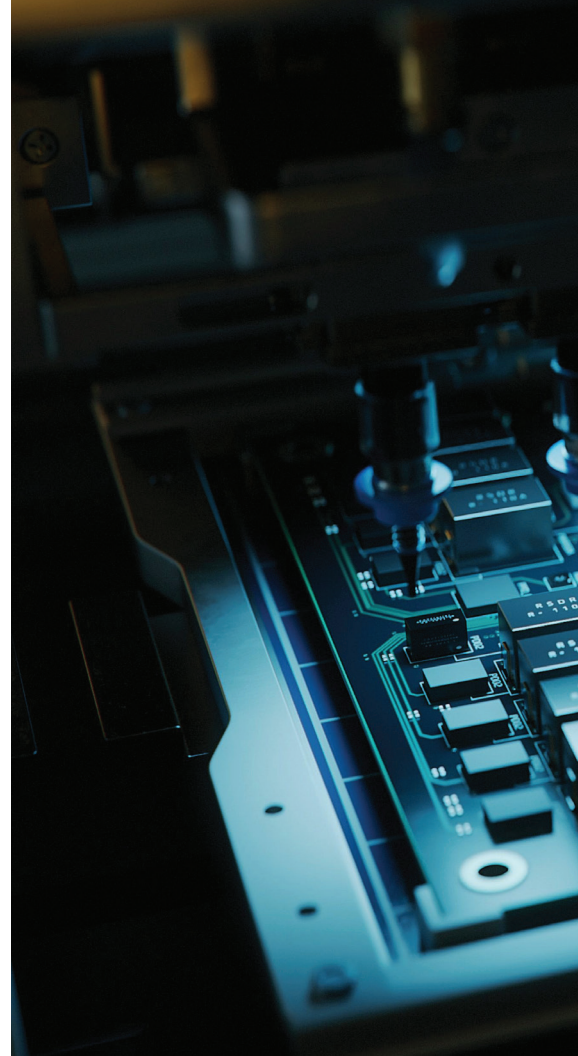
USB COAXIAL SWITCHES

A mini-USB terminal integrated on SP6T and SP8T switches simplifies installation and use, especially in test and lab applications. Simply connect the switch to a computer and install the software.

- Frequency up to 40 GHz
- SMA, SMA 2.9
- Compatible with operating systems such as Windows®

PRODUCTION TESTING

Radiall offers comprehensive solutions to support engineering from design to production for various test and measurement applications such as the telecom, aerospace and space industries. Our solution helps create better and reliable product dedicated such as High Frequency, High speed data testing chips and Optical modules.



SMT QUARTZ RELAY

To overcome the frequency limits of SMT switches, Radiall merged the RAMSES concept with the SLIM LINE technology to develop the Quartz series. This new series is a major evolution when compared to the previous SMT relay as it can work up to 26.5 GHz.

- Small size
- High frequency: 26.5 GHz
- Long life span: 5 million typical cycles



LOW INTERMODULATION SWITCHES

RAMSES Low PIM switches are perfectly suited for RF test systems and test benches requiring excellent passive intermodulation (PIM) performance.

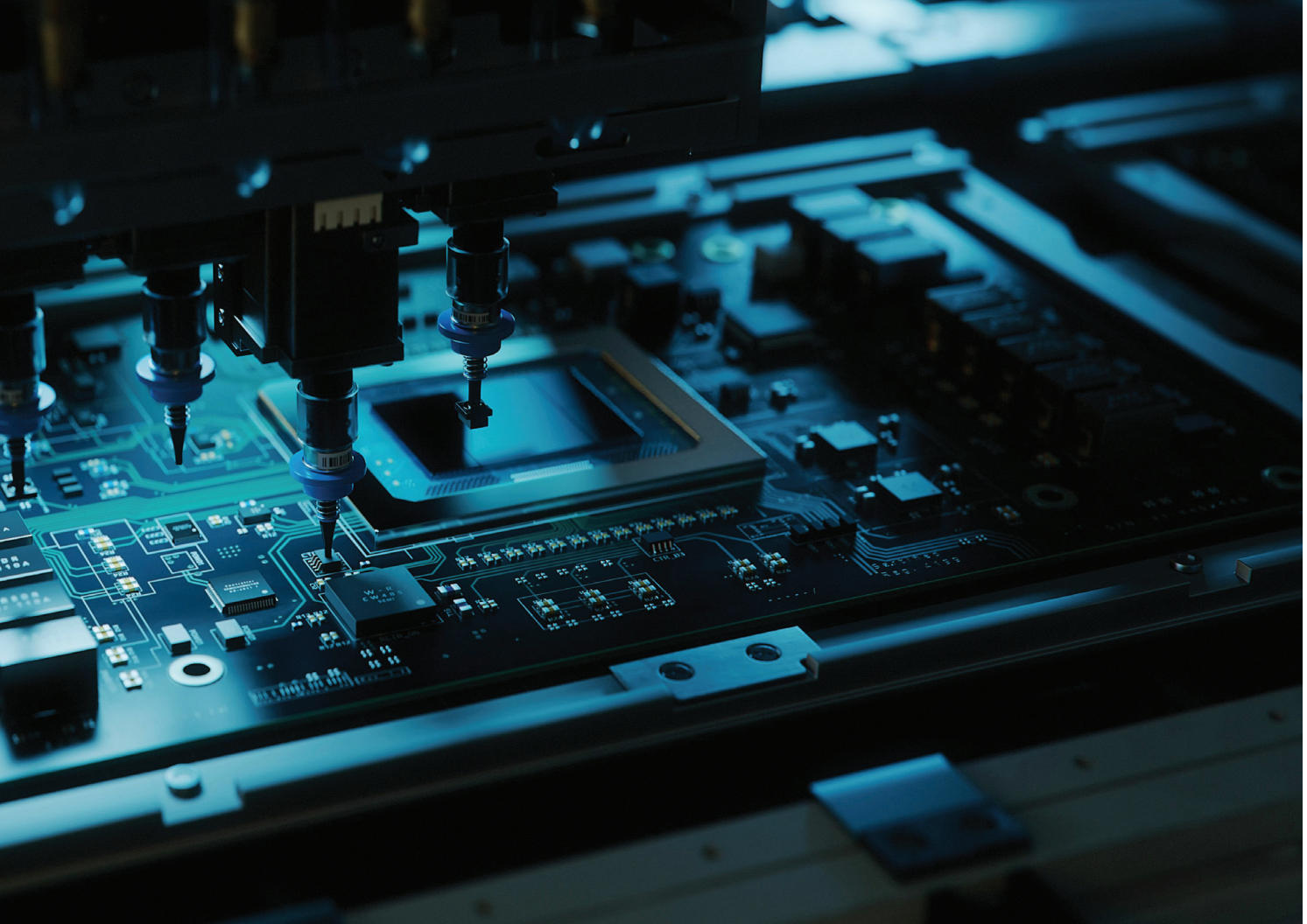
- Up to 18 GHz
- Guaranteed PIM performance
-160 dBc @ +43 dBm
- Life span of 2 million switching cycles



2RTP PRODUCTION TEST CABLE ASSEMBLIES

2RTP Cables assemblies are designed for production test with high precision, reliable connection for testing and characterizing RF products. The product range delivers accurate and repeatable measurement with minimal signal loss and excellent phase stability.

- Frequency up to 67GHz
- VSWR: 1.2 DC-40GHz; 1.3 DC-67GHz
- Mating cycle 5,000cycles
- Flex life 20,000cycles



COAXHD

COAXHD70 is a new multi-line solution with 70GHz signal transmission & 224Gbps data rate, design for technical R&D researchers who require high-speed, reliable and customizable signal transmission solutions. It ensures your measurement system operates accurately, reliability and worry-free.

- DC-70GHz frequency range
- Support data rates up to 224 Gbps PAM4
- SMT receptacle for PCB mounting
- 8 coaxial contacts with a 3mm pitch
- Solderless, spring-loaded contacts
- Secure plug-to-receptacle connection with two jackscrew locks



TEST PROBES & ADAPTERS

Adapters are typically used for Test & Measurement, between equipment mounted connectors and devices under test. Radiall offers a wide range in-series and between series solutions. Test probes are designed to facilitate automatic PCB testing and production bench testing of RF ports on PCB in production. The spring loaded inner and outer contacts combined with a slide-on design provide a very high durability of the probe used for bed of nails test or flying probe tester.

- Coaxial test probes, spring loaded, operating in the range DC-15 GHz
- Connector to test: SMP male, SMP-MAX male, SMA female, MMBX female, SMB male
- Push-on and quick disconnect models for production test
- High frequency, long-lasting, versatile design



QCD (QUICK CONNECT DISCONNECT)

QCD provides a secure, tactical and fast connection system which saves more time for testing and less time in setup and calibration. This guaranteed mating performance will provide longevity for test cables and will reduce the cost because test cables will not need to be replaced as often when using QCD.

- Impedance: 50Ω
- Frequency range: up to 26 GHz
- Durability: 5000 mating cycles

ENVIRONMENTAL & CHAMBER TESTING

Product developments in the space, telecom, aerospace and defense industries require reliable interconnect solutions for testing or simulating environments. Radiall offers a range of high-performance compatible RF switches, RF cables assemblies, connectors and components for various harsh environment tests as thermal vacuum chambers.



TVAC SWITCHES

With more than 25 years of experience in the space industry, Radiall has developed a product offering that emphasizes reliability and performance and operates in thermal vacuum testing environments. Designed in accordance with our standard RAMSES product offering, TVac series switches feature identical configurations with excellent performance.

- SPDT, DPDT, SPnT
- Underterminated and terminated models
- Long life span: up to 10 million cycles



TVAC CABLE ASSEMBLIES

TVac test assemblies offer excellent electrical performance and high mechanical endurance. Additionally, these ruggedized assemblies offer reliability and durability when it matters most. Despite high protection resistance, Radiall's range of TVac TestPro solutions remain exceptionally flexible and user-friendly with an extended life of more than 20,000 flex cycles.

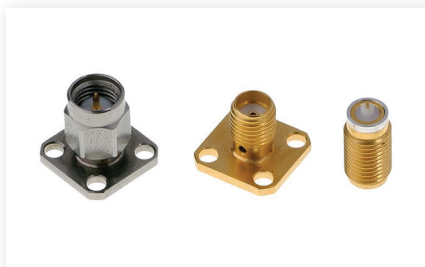
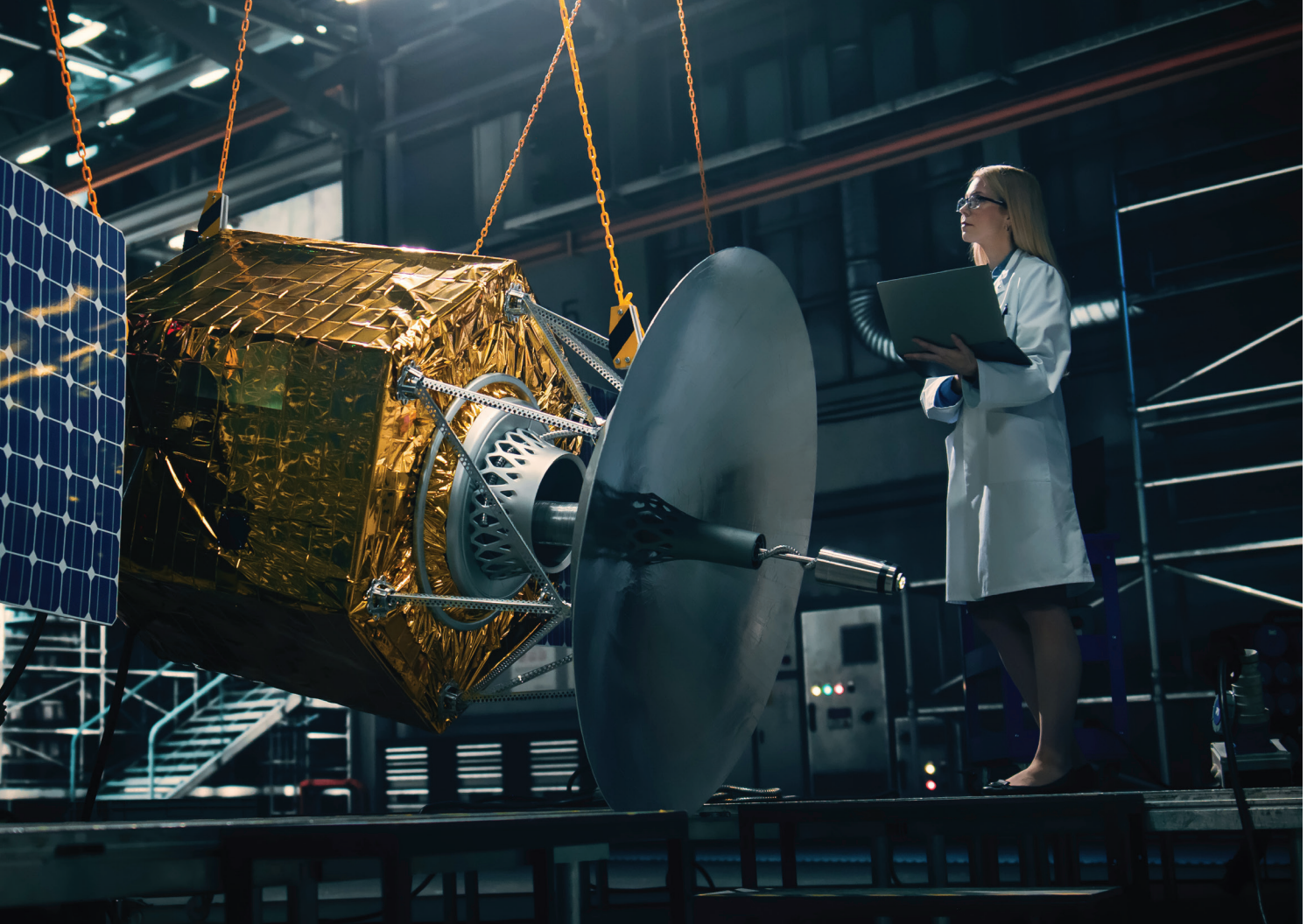
- DC – 67 GHz
- Phase and amplitude stability
- High flexibility and reliability



ULTRA-LOW LOSS CABLE

Designed for Test & Measurement applications that require long length links loss. Ultra-Low Loss TestPro cable assemblies offer the advantages of loss performance from the SHF range and rugged performance from TestPro connectors to ensure an extended life cycle.

- Frequency up to 40 GHz
- Ultra low-density PTFE dielectric
- Lowest attenuation level: 0.68 dB/m @ 18 GHz



HERMETIC CONNECTORS

Hermetic connectors are used for applications requiring an extremely rugged and reliable seal in high-pressure environmental conditions. They are designed with a fused glass-to-metal seal, which is soldered into the connector body and seals the connector internally.

- Available with many interfaces: BMA, SMA, SMP, SMPM
- Leak rate less than 10-8cc/sec of helium at 1 atmospheric differential pressure



SUBMINIATURE SWITCHES

Subminiature switches are the best choice for application where space is limited as modular instrumentation. Their innovative design allows them to be the smallest multiposition.

- SPnT R591
- Exceeding 25 million cycles
- SMA (up to 26.5 GHz), SMA2.9 (up to 40 GHz) connectors



TERMINATION & ATTENUATOR

Radiall offers a wide range of modular attenuators and power loads which can be equipped with various connectors.

- Available with many interfaces: N, TNC, SMA, 4.3-10
- Excellent VSWR performance
- Custom designs available upon customer demand

SIMPLIFICATION is our INNOVATION

We advance the design and engineering process for innovators, ground breakers and pioneers of technology. We reduce weight, improve durability and streamline installation to provide leading-edge connectors that drive product performance.

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GLOBAL PRESENCE