




SPACE

Brochure



SIMPLIFICATION IS OUR INNOVATION

Radiall 



Radiall is the preferred choice across the globe when quality, reliability and performance are mission critical. With space heritage dating back to 1974 and involvement in more than 300 satellite programs, our reliable solutions have established a strong reputation. Our complete range of space-qualified, passive products includes a wide range of coaxial connectors, cable assemblies, microwave components and switches with a frequency range up to Q band. Radiall's offering covers a broad spectrum of market segments, including satellites, launch vehicles and ground systems, making them ideally equipped to fulfill the requirements of diverse space programs such as GEO satellites, LEO constellations and deep space exploration missions.



QUALITY SPACE SOLUTIONS



Radiall space products are designed at our state-of-the-art plant in L'Isle-d'Abeau, France by space engineers who are dedicated to developing high performance, reliable product solutions. To ensure that customers' specific needs for dedicated applications are met, our engineers use the following tools to design and model components:

- ## MANUFACTURING

TEST CAPABILITIES

At Radiall, we understand the importance of being able to determine if our products meet environmental and space specifications. To ensure that customers are receiving high performance and qualified components, the following in-house test equipment is available:

- Vector network analyzers
- Thermal chamber with nitrogen injection
- Thermal vacuum chambers (photo presentation)
- Automatic test benches for electrical switches parameters
- X-ray equipment
- Multipaction and power handling test bench (2000 W peak and 400 WCW L-band)
- Vibration shakers (up to 50 grms)
- Half sine shock machine (up to 4200 g)
- Reverberation chamber for EMC measurements



SPACE HERITAGE



This list of satellites includes many but not all satellites and is thus not fully comprehensive.

Recently, the space market has experienced remarkable growth, fueled by a wave of launches mainly driven by low-orbit constellation projects. This new space race inspired RADIALL to launch Orbix, a new space range, drawing on its deep expertise in space environment to propose a competitive alternative to the traditional space offer.



COAXIAL CONNECTORS

Also available in **NEW SPACE** Version

Includes a wide range of 50 ohms coaxial connectors with a frequency range up to Q band

- ESA QPL SMA interface up to 22 GHz with male, female and adaptors variants
- ESA QPL SMA 2.9 interface also called SMK, up to 40 GHz
- ESA QPL very high power TNC interface up to 8 GHz
- TNC Line providing higher performance with screw-on concept: high power versions up to 8 GHz and high frequency version up to 18 GHz
- SMP microminiature interface for high frequency applications with great misalignment tolerances: 40 GHz/Snap-on (blind mate)
- SMP-LOCK: fully compatible with SMP interface and offers a secure connection due to a robust locking system
- 2.4 mm interface: male, female and adapters up to 50 GHz
- SMPM-LOCK: Secure and quick-lock solution up to 32 GHz



COAXIAL ATTENUATORS

A range of low power coaxial attenuators qualified by ESA (European Space Agency)

- SMA interface available from DC to 22 GHz: 10 dB/0.5 dB, 11-20 dB/1 dB step and dissipated power: 2 W
- SMA 2.9 interface available up to 31.5 GHz: 0-10 dB/0.5 dB step
- SMP-LOCK interface available from DC to 22 GHz: 0-10 dB/0.5 dB step, 15 and 20 dB
- 2.4 mm interface available from DC to 50 GHz: 0-10 GHz/0.5 dB step, 20 dB



COAXIAL TERMINATIONS

Low power coaxial loads qualified by ESA (European Space Agency) and high power versions

- Low power SMA loads up to 2 W: ESA QPL (3403/006) up to 22 GHz
- High power SMA loads: Remote loads / 5 W DC - 18 GHz / 45 W 1 - 6 GHz
- Low power SMA 2.9 loads 1 W: ESA QPL (3403/009) up to 40 GHz
- Low power TNC loads: EPPL Part 2 / 2 W up to 18 GHz
- Low power SMP/SMP-LOCK loads up to 1 W up to 22 GHz
- Low power 2.4 mm loads, 1 W up to 50 GHz



COAXIAL COUPLERS AND DIVIDERS

Passive couplers DC - 22 GHz and power dividers DC - 31 GHz that offer admissible power up to 200 W CW

- Directional coupler with low power SMA connectors (5 to 30 dB) or high power TNC connectors (5 to 32 dB)
- 3 dB hybrid coupler with low power SMA connectors or high power TNC connectors
- 2 - 4 - 8 way dividers with Wilkinson Technology



FLEXIBLE COAXIAL CABLE ASSEMBLIES

Also available in **NEW SPACE** Version

High performance (depending on selected variant), lightweight, low loss, high flexibility and high power - CNES ASF since 2007 (Agrément de Savoir Faire: Capability Approval)

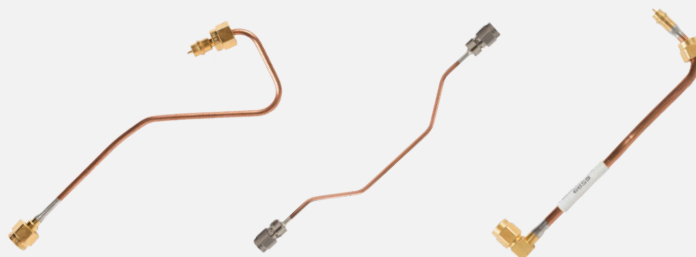
- SHF 2.4MS: with SMA or SMP-LOCK connectors (18 g/m - 2.91 dB/m at 18 GHz)
- SHF 3MS: with SMA connectors (35 g/m - 2.35 dB/m at 18 GHz), SMA 2.9 or SMP-LOCK (35 g/m - 3.19 dB/m at 31 GHz)
- SHF 4.8MS: SMA interface (41 g/m - 1.19 dB/m at 18 GHz) or SHF 4.8MS ULL32 with SMA 2.9 for Ka Band (41 g/m - 1.65 dB/m at 32 GHz), high radiation capability: 120 MRAD
- SHF 5MS: SMA connectors (53.5 g/m - 1.02 dB/m at 18 GHz), SMA 2.9 (53.5 g/m - 1.27 dB/m at 26.5 GHz) or TNC (53.5 g/m - 1.02 dB/m at 18 GHz), high radiation capability: 80 MRAD
- SHF 8MS: with SMA (118 g/m - 0.68 dB/m at 18 GHz), low power TNC (118 g/m - 0.68 dB/m at 18 GHz) or high power TNC (118 g/m - 0.44 dB/m at 8 GHz), high radiation capability: 80 MRAD
- ESA QPL SHF 8MS (3408/001): with very high power TNC (118 g/m - 0.68 dB/m at 8 GHz), high radiation capability: 120 MRAD
- SHF 0.047 with SMPM-LOCK connectors (5 g/m - 5.64 dB/m at 30 GHz)



COAXIAL SEMI-RIGID CABLE ASSEMBLIES

Solid tubing technology that allows definitive and high precision forming: CNES ASF since 2007 (Agrément de Savoir Faire: Capability Approval)

- .085" and .141" with ESCC qualified SMA connectors
- .085" and .141" microporous low loss with ESCC qualified SMA 2.9 connectors
- Customized bending



COAXIAL SWITCHES

Extended life cycle (18 years and more than 100,000 actuations) with high RF performance and excellent repeatability

- Low power SPDT, DPDT and DP3T based on our standard range of switches (RAMSES) with SMA (DC - 22 GHz) or SMA 2.9 connectors (DC - 31 GHz)
- Low power Random or Sequential T switch with SMA, SMP-LOCK connectors (DC - 22 GHz) or SMA 2.9 connectors (DC - 31 GHz)
- High power SPDT, DP3T and Random T switch
- Switch Matrix 2 to 8 units



QUARTZ-S SMT RELAY

Miniature Electro-Mechanical Relay (MEMR) with a high miniaturization and SMT (Surface Mount Technology) compatible.

- Small size, lightweight (10 g)
- High frequency: 32 GHz
- Life span: 1 million guaranteed
- According to ESCC 3603 and 3603/007



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

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