Amphenol® RF



Product Overview

www.amphenolrf.com

STANDARD PRODUCT SERIES

1.85 MM



67 GHz

50 Ohm

Precision-engineered interface designed for applications that require millimeter-wave performance, ideal for advanced test and measurement and RF systems.

2.4 MM



50 GHz

50 Ohm

Robust, precision connectivity for demanding test and measurement, instrumentation and microwave applications that require high-frequency performance.

2.92 MM



40 GHz

50 Ohm

High-frequency interface designed for applications that require low VSWR, excellent return and insertion loss and high power-handling capabilities.

3.5 MM



34 GHz

50 Ohm

Durable and versatile RF interface designed for RF testing, telecommunications and high-frequency electronic systems.

AFI



6 | 3 GHz

50 | 75 Ohm

High-float board-to-board solution for compact and blind-mate applications.

AFI-DART



18 | 12 GHz

50 | 75 Ohm

High-isolation, high-density connector series designed to be modular and scalable, and can be color coded to eliminate mismating.

AMC



6 GHz

50 Ohm

Micro-miniature coaxial connector with a low profile (2.5mm) and a small footprint (3mm x 3mm).

AMC4



6 GHz

50 Ohm

Micro-miniature coaxial connector with an extremely low profile (1.3mm) and a small footprint (2mm x 2mm).

AMMC



6 GHz

50 Ohm

Micro-miniature coaxial connector with an ultra-low profile (1.4mm) and an extremely small footprint (2mm x 2mm).

AUTOMATE® MINI-FAKRA TYPE A & B



15 GHz

50 Ohm

Compact, durable multi-port interconnect solution supporting high-bandwidth applications.

AUTOMATE® MINI-FAKRA TYPE C



9 GHz

50 Ohm

Compact, high-performance solution designed for the demanding requirements of industrial applications.

BNC



3 GHz

50 | 75 Ohm

Features a bayonet coupling system for quick connect/disconnect in a full range of PCB and cable mount configurations.

FAKRA



6 GHz

50 Ohm

Designed for the automotive market, this series utilizes SMB connectors in color-and key-coded housings to prevent mismating.

F & G TYPE



1 GHz

75 Ohm

Durable interconnect series commonly used in CATV applications and featuring threaded or slide-on coupling respectively.

HD-AFI



3 | 12 GHz

75 Ohm

The HD-AFI interface utilizes a proprietary configuration that allows for a very stable RF signal over the full axial range of the connector system.

HD-BNC



12 GHz

50 | 75 Ohm

Familiar bayonet coupling and cable termination procedures as the traditional BNC with a footprint 4x smaller.

HD-EFI



6 GHz

50 Ohm

Micro-miniature interface design allowing for large board tolerance stack ups, blind mating and multiple RF lines.

HSD



2 GHz

100 Ohm

High speed data connectors used for digital applications in vehicles such as head units and infotainment modules.

MCX



6 | 12 GHz

50 | 75 Ohm

Secure and easy snap-on/snap-off coupling with low reflection and broadband capabilities.

MINI-SMB



2 GHz

75 Ohm

Quick connect/disconnect snap-on coupling design; commonly used in broadband applications.

MMCX



6 GHz

50 Ohm

Micro-miniature interconnect featuring secure snap-on/snap-off coupling system.

N TYPE



18 GHz

50 Ohm

Durable medium-sized RF interconnect with threaded coupling mechanism used in high-power antenna applications.

NDX®



18 GHz

75 Ohm

Dual-shielded, snap-on interface for CATV applications up to 18 GHz.

NEX10



6 GHz

50 Ohm

Compact, low PIM interface designed for wireless connectivity in 5G/LTE applications.

PSMP



10 GHz

50 Ohm

Compact three-piece board-to-board connector for high-power wireless applications.

QMA



18 GHz

50 Ohm

Quick-disconnect version of the SMA interface; often used in antenna and base station applications.

QN



11 GHz

50 Ohm

Quick-disconnect version of the N Type interface, often used in base station and data communications applications.

RF MICROSWITCH



6 GHz

50 Ohm

Used as test points or for external antennas and available in multiple interfaces such as MCX and MMCX.

SMA



26.5 GHz

50 Ohm

High-performance series featuring a threaded, compact design; ideal for antenna and base station applications.

SMB



4 GHz

50 Ohm

Snap-on coupling mechanism; ideal for GPS, LAN and broadband applications.

SMC



10 GHz

50 Ohm

High-performance, compact design; ideal for telecommunications and instrumentation applications.

SMP



40 GHz

50 Ohm

Dependable, high-frequency interconnect commonly used in board-to-board applications.

SMPM



65 GHz

50 Ohm

Micro-miniature, high-performance board-to-board and cable-to-board interconnect solution.

SMZ



4 GHz

75 Ohm

75 ohm version of the SMB with a slightly larger form factor; ideal for instrumentation applications.

TNC



11 GHz

50 Ohm

Versatile miniature, threaded and waterproof interconnect available in standard and reverse polarity.

TRIAX



0.5 GHz

50 | 75 Ohm

Threaded or bayonet coupling mechanisms; often used in applications where maximum RF shielding is required.

TWINAX



0.5 GHz

78 | 95 Ohm

Threaded or bayonet coupling mechanisms with dual center contacts; ideal for applications such as computer networking.

UHF & MINI-UHF



300 MHz & 2.5 GHz

50 Ohm

Low-cost, threaded interface ideal for low-frequency applications such as PA and ham radio.

1.0-2.3



10 | 4 GHz

50 | 75 Ohm

Push-pull coupling system for quick installation and positive locking.

2.2-5



20 GHz

50 Ohm

Compact version of the 4.3-10 interface with a smaller footprint and lightweight, robust design; ideal for low PIM applications.

4.3-10



6 GHz

50 Ohm

Same excellent electrical and mechanical performance as the 7-16 interface with a smaller footprint and lighter design.

7-16



7.5 GHz

50 Ohm

Robust, stable and weather resistant interconnect solution engineered for low PIM wireless applications.

BETWEEN-SERIES ADAPTERS



50 | 75 Ohm

Commonly used in applications requiring two dissimilar RF interfaces to be connected together.

IN-SERIES ADAPTERS



50 | 75 Ohm

Designed for applications requiring two of the same RF interfaces to be connected together.

TEE ADAPTERS



50 | 75 Ohm

Engineered to allow for three RF interfaces to be connected together.

FIXED LENGTH CABLE ASSEMBLIES



50 | 75 Ohm

Pre-configured cable assemblies featuring common connector and cable configurations available in standard lengths.

PHASE STABLE TEST CABLES



20 GHz

50 Ohm

High-performance RF test cables designed for benchtop laboratory and production-level testing.

ATTENUATORS



6 GHz

50 Ohm

N Type and SMA fixed attenuators are available in straight plug to jack configurations and offer flat attenuation.

LEGEND

Max Frequency

Impedance

SOLUTIONS FOR ALL APPLICATIONS AND REQUIREMENTS:

- Waterproof IP-Rated
- Non-Magnetic
- QPL Military Approved
- 12G SDI
- Ruggedized
- Low-PIM
- High Frequency
- Extreme Exposure
- Quick Locking
- Tamper Resistant
- Ultraminiature Connectors
- PFAS-Free

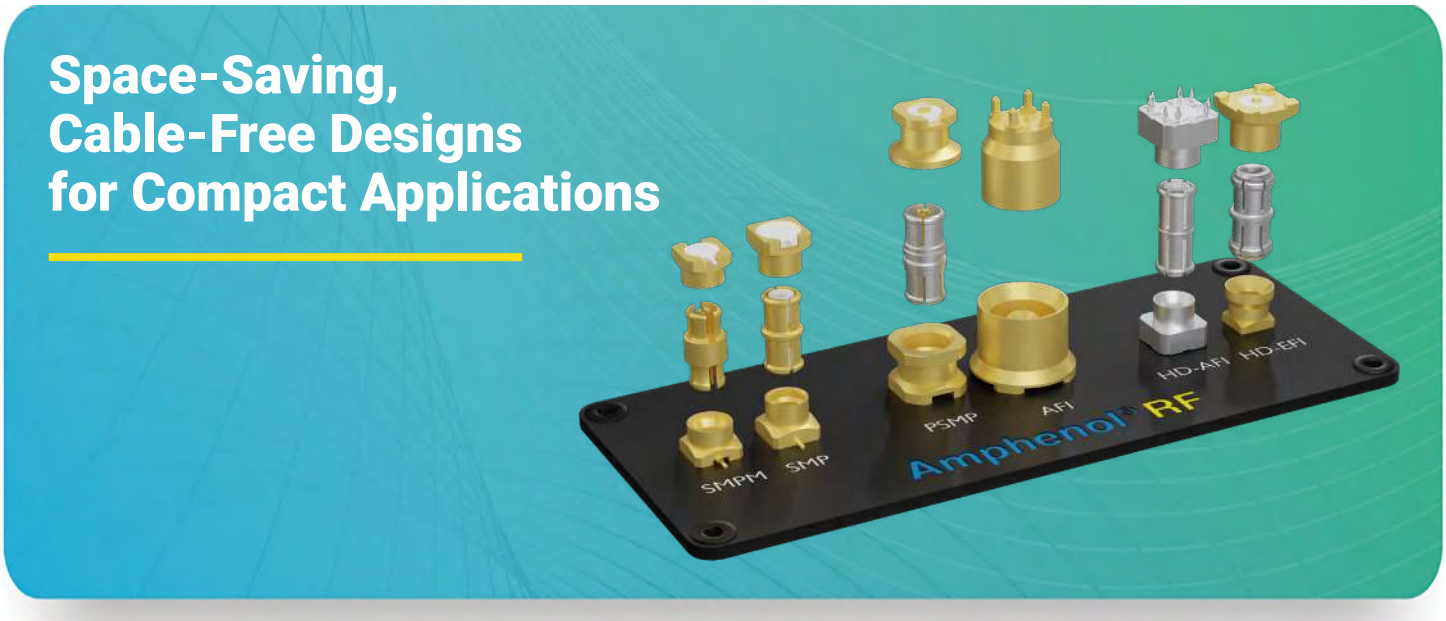
BOARD-TO-BOARD SOLUTIONS

Amphenol RF offers a variety of board-to-board solutions engineered to maximize radial and axial float, eliminating the need for cables between boards and simplifying designs to eliminate assembly errors. These RF connector designs typically include three pieces, utilizing a bullet adapter mated between smooth bore and detent PCB jacks. Application needs can be met based on the special features of each series: AFI Plugs contain an embedded bullet. PSMP products are designed for high-power and HD-EFI products are exceptionally suited for blind mating. Proprietary interfaces like the HD-EFI and HD-AFI are designed with closed-entry contacts, reducing the risk of mismating or crashing interfaces.

Amphenol RF provides engineering resources and technical support to help you select the right connector series: 3D and HFSS component models are conveniently located on our website, as well as technical support to answer questions about PCB launch optimization.

	High-Frequency		High-Power		High-Float	
	SMPM	**SMP**	**PSMP**	**AFI**	**HD-AFI**	**HD-EFI**
Impedance	50 Ohm	50 Ohm	50 Ohm	50 | 75 Ohm	75 Ohm	50 Ohm
Max Frequency	65 GHz	40 GHz	10 GHz	6 | 3 GHz	18 GHz	6 GHz
Min PCB Spacing	6.6 mm	9.1 mm	12.6 mm	12.7 mm	1.5 mm	18.9 mm
Power Handling	50 W @ 2.2 GHz @ 25°C	30 W @ 2.2 GHz @ 25°C	200 W @ 2.2 GHz	200 W @ 2.2 GHz @ 85°C*	10 W @ 2 GHz @ 25°C	40 W @ 2.5 GHz @ 85°C
Axial Misalignment	0.25 mm	0.25 mm	2.00 mm	1.00 mm @ 85°C	2.00 mm*	1.40 mm
Radial Misalignment	0.51 mm	0.51 mm	1.32 mm	0.80 mm	0.80 mm	0.7 mm

**applies to 50 ohm AFI products only*
Note: Technical specifications are typical and may vary by specific part number



CUSTOM SOLUTIONS







When standard products do not meet specific design requirements, Amphenol RF provides custom-engineered interconnect solutions tailored to electrical, mechanical and environmental performance needs. Our experienced engineering teams collaborate with customers to optimize RF connectivity for demanding applications across a broad range of industries.

With a global presence, Amphenol RF has experienced engineers in North America, Europe and Asia, and production capabilities in China, Mexico, Vietnam and the United States. Our quality team oversees the process from initial design through delivery to ensure consistent quality and performance.



SEMI-RIGID CABLE ASSEMBLIES

Amphenol RF offers a comprehensive range of semi-rigid and conformable cable assembly solutions, including standard configurations, precision custom-bent designs and flexible semi-rigid alternatives such as T-Flex from Amphenol Times Microwave Systems. Engineered for reliable RF performance, these assemblies provide excellent shielding, consistent electrical performance and versatile routing options. Available in multiple cable diameters and connector configurations, these solutions support demanding RF and microwave applications where space constraints, mechanical stability and signal integrity are critical.

OUR ENGINEERING SERVICES INCLUDE:

- Ganged Connector Solutions
- Custom Cable Assemblies
- Mixed Signal Applications
- Modifications of Existing Designs
- Application-Specific Return Loss Optimization
- PCB Launch Optimization
- CAD and Simulation Capabilities

OUR ENGINEERING TOOLBOX INCLUDES:

- PTC Creo 3D Mechanical Design
- ANSYS HFSS 3D RF Analysis
- ANSYS 3D Mechanical Analysis
- Keyence Digital Microscopes
- Instron Testing Machines
- Measurement Capabilities: S-Parameter Analysis, PIM Analysis, RF Power Withstanding, Shielding Attenuation, Transfer Impedance

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Learn More
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