

# Amphenol® RF



## PSMP Product Series Solutions Guide

Board-to-Board and Board-to-Cable Solutions



# ABOUT AMPHENOL RF

**Amphenol RF, a division of Amphenol Corporation, is the largest manufacturer of radio frequency connectors, coaxial adapters and RF cable assemblies in the world.**

With a global team of experienced engineers, Amphenol RF is able to offer the broadest portfolio of standard RF products on the market today.

As a leader in design and manufacturing of RF interconnect products, our dedicated team of engineers specialize in custom product development to meet the challenges of design-specific constraints.

## GLOBAL PRESENCE

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With a global presence, Amphenol RF has experienced engineers and production capabilities in multiple regions across the globe. Our experienced cross-functional teams oversee the entire process from the initial design through delivery, and beyond.

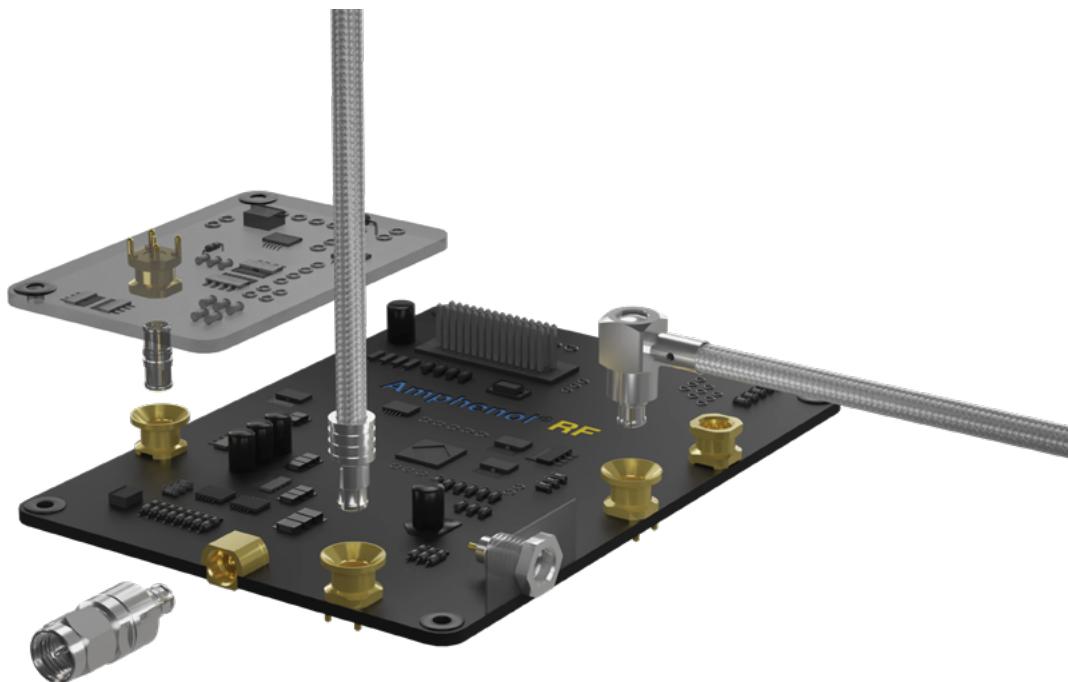
Amphenol RF has a global footprint of operations in North America, Europe and Asia.

# PSMP PRODUCT SERIES



The PSMP series is a compact, high-performance connector system engineered for versatility and reliability across a wide range of RF applications. With a 4.3 mm mated outer diameter, PSMP connectors support frequencies up to 10 GHz and offer excellent electrical performance with options for high-power handling. The series is designed to provide flexibility through multiple interface configurations, including board-to-board, cable-to-board and cable-to-cable solutions.

PSMP connectors are designed for higher power applications than the traditional SMP interface. They are available in limited detent and smooth bore variants, allowing engineers to select the appropriate level of mechanical retention for their application. This adaptability, combined with blind-mate capability, makes the PSMP series an ideal choice for designs that require quick installation, durability and reliable signal integrity. Common applications include wireless infrastructure, test and measurement, military, aerospace and industrial systems.



*The PSMP product is available in a variety of board-to-board and cable-to-board configurations for versatile design capabilities.*

# PSMP PRODUCT SERIES

## FEATURES AND BENEFITS

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- High-frequency capabilities up to 10 GHz
- Minimum board-to-board distance 12.6 mm
- Axial misalignment  $\pm 1$  mm
- Radial misalignment 4°
- High-power capabilities of 200 W @ 2.2 GHz continuous power
- Detent options: smooth bore, limited detent
- Snap-on locking mechanism
- High density mounting potential due to minimum pitch and board-to-board distances
- Radial and axial misalignment using bullets in different lengths

## APPLICATIONS

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- Wireless Infrastructure and Base Stations
- Radios and Communication Equipment
- Filters and Amplifiers
- Handheld/Portable Devices
- Wireless Systems
- Test and Measurement Equipment

## BOARD-TO-BOARD MATING CONFIGURATION

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**Limited Detent**  
Interface allows for radial and axial float



**Bullet Adapter**



**Smooth Bore Interface**

## BOARD-TO-BOARD SOLUTIONS

The PSMP connector series offers a versatile board-to-board solution designed for high-power applications while maintaining excellent RF performance up to 10 GHz. Built on the SMP footprint, PSMP connectors provide an easy upgrade path for applications requiring greater power handling without redesigning the PCB.

This robust mating system features a three-piece configuration with blind-mate capability, accommodating axial and radial misalignment to simplify installation and ensure reliable signal integrity. PCB spacing is determined by the jack design and bullet length, with a minimum achievable nominal spacing of 12.6 mm.



## BOARD-TO-CABLE SOLUTIONS

The PSMP connector series offers cable-to-board solutions designed for high-power RF applications. Cable plugs are available in straight and right-angle configurations with termination options for a variety of semi-rigid and conformable coaxial cable types.

## MATERIALS AND FINISHES

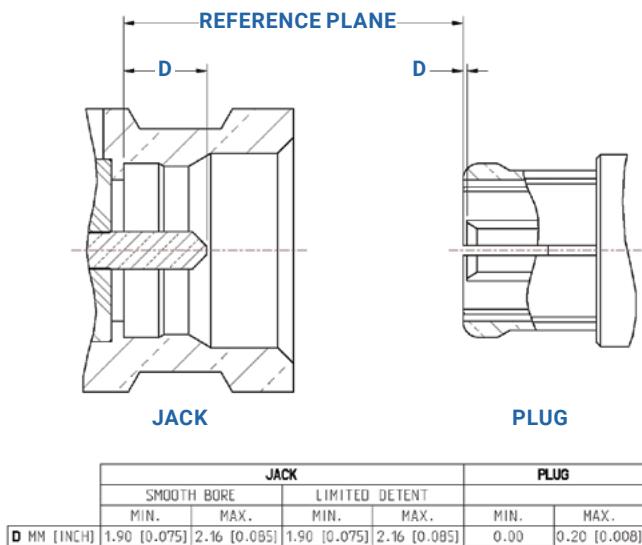
PSMP connectors are manufactured using advanced, high-efficiency production methods to ensure reliability and consistency. Proven design elements include precision-machined contacts, robust bullet adapter bodies, and molded insulator-contact components. Combined with extensive RF engineering expertise, these methods deliver durable, high-performance interconnect solutions capable of supporting high-power and high-frequency applications.

### HFSS PCB OPTIMIZATION MODELS

Amphenol RF strives to provide engineers with the tools they need to design the best applications for our products to work in. Because of the endless number of PCB design options, HFSS 3D component models are available, allowing our users to optimize their board launch designs. Designs are available on our website for many of our PSMP products, with new models being added all the time.

# PSMP PRODUCT SERIES

## INTERFACE DIMENSIONS



## PCB MOUNT CONNECTORS

PSMP PCB mount connectors are offered in straight configurations with smooth bore and limited detent retention options. Available in multiple body styles and termination methods, these connectors provide flexible board-to-board solutions that support blind-mate capability and accommodate both radial and axial misalignment. By eliminating the need for cables between boards, PSMP connectors simplify system design, reduce assembly errors, and support efficient high-density layouts. Components are available in standard packaging options to meet a range of production requirements.

### Connector Body Types

**Limited Detent** – Limited detent is similar to full detent, but requires a lower mating/de-mating force.

**Smooth Bore** – A smooth bore interface does not use an undercut. The female tines compress to ensure a secure connection.

### Straight Jack (Limited Detent)

| Part Number     | Termination Style    | Image |
|-----------------|----------------------|-------|
| PSMP-MSLD-CSB   | Round Post Thread-in |       |
| PSMP-MSLD-PCE   | End Launch           |       |
| PSMP-MSLD-PCS   | Surface Mount        |       |
| PSMP-MSLD-PCT1R | Through Hole         |       |
| PSMP-MSLD-PCT25 | Through Hole         |       |

## Straight Jack (Limited Detent)

| Part Number     | Termination Style | Image   |
|-----------------|-------------------|---|
| PSMP-MSLD-PCT35 | Through Hole      |  |
| PSMP-MSLD-PCTEM | Through Hole      |  |
| PSMP-MSLD-PCSEM | Surface Mount     |  |

## Straight Jack (Smooth Bore)

| Part Number     | Termination Style    | Image   |
|-----------------|----------------------|---|
| PSMP-MSSB-CSB   | Round Post Thread-in |    |
| PSMP-MSSB-PCS   | Surface Mount        |    |
| PSMP-MSSB-PCT1R | Through Hole         |    |
| PSMP-MSSB-PCT35 | Through Hole         |  |

## PSMP BULLET ADAPTERS

PSMP bullet adapters are mated between smooth bore and a detented jack. The detented jack retains the bullet while the smooth bore jack allows for a degree of freedom. The floating bullet provides a link between mated pairs in order to compensate for any radial and axial misalignment.

| Bullet Adapters | Dimension Z (mm) |
|-----------------|------------------|
| PSMP-FSBA-2580  | 25.80 mm         |
| PSMP-FSBA-1000  | 10.00 mm         |
| PSMP-FSBA-1042  | 10.42 mm         |
| PSMP-FSBA-1175  | 11.75 mm         |
| PSMP-FSBA-1755  | 17.55 mm         |
| PSMP-FSBA-1970  | 19.70 mm         |
| PSMP-FSBA-2380  | 23.80 mm         |

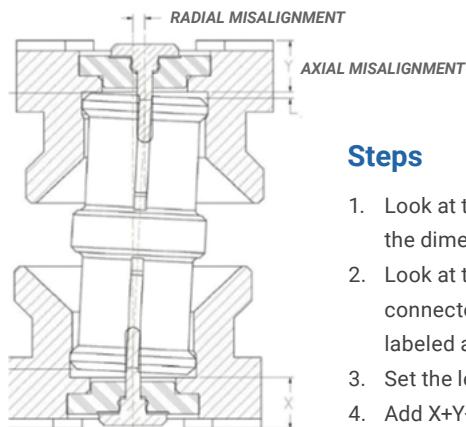


PSMP-FSBA-2580



PSMP-FSBA-1000

## How to Calculate Minimum PCB Spacing



### Steps

1. Look at the product drawing and determine the dimension labeled as "X"
2. Look at the product drawing for the second connector and determine the dimension labeled as "Y"
3. Set the length of the bullet adapter as "Z"
4. Add  $X+Y+Z = \text{Minimum PCB Spacing}$

## CABLE MOUNT CONNECTORS

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PSMP cable-to-board solutions are available in straight and right-angle plug configurations designed to terminate to a range of coaxial cable types and sizes. Mating receptacles are offered in surface mount, through-hole, and end launch styles, providing engineers with flexible options to integrate high-power, high-frequency performance into a variety of PCB layouts.

### Straight Plug (Solder)

| Part Number | Cable Type   | Image   |
|-------------|--|---|
| 915-1000    | 0.141-inch Conformable, RG-402, Times Tflex 402        |  |
| 915-1005    | 0.085-inch Conformable, 0.086-inch Conformable, RG-405 |  |

### Right-Angle Plug (Solder)

| Part Number | Cable Type   | Image   |
|-------------|--|---|
| 915-1001    | 0.141-inch Conformable, RG-402, Times Tflex 402        |  |
| 915-1006    | 0.085-inch Conformable, 0.086-inch Conformable, RG-405 |  |

## ADAPTERS

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PSMP adapters provide a seamless transition between the PSMP interface and other common RF interfaces, such as SMA, without the need for additional cables. This direct connection is ideal for applications with space constraints, enabling compact designs while maintaining reliable electrical performance.

### Between-Series Adapters

| Part Number     | Configuration            | Orientation | Image   |
|-----------------|--------------------------|-------------|---|
| AD-SMAJ-PSMPP-2 | PSMP Jack to SMA Jack    | Straight    |  |
| AD-SMAJ-PSMPJ-1 | PSMP Plug to SMA Jack    | Straight    |  |
| AD-SMAP-PSMPJ-1 | PSMP Plug to SMA Plug    | Straight    |  |
| AD-SMAP-PSMPP-1 | PSMP Jack to SMA Plug    | Straight    |  |
| AD-NJ-PSMPJ-1   | PSMP Plug to N-Type Jack | Straight    |  |

## TERMINATORS

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PSMP terminators are engineered to provide a secure and reliable method for managing unused PSMP ports. Designed to maintain steady impedance and protect system integrity, this component helps to minimize signal reflections and ensure stable electrical performance.

| Part Number | Configuration      | Power (Max Watts) | Image   |
|-------------|--------------------|-------------------|---|
| 915-1007    | Plug without Chain | 2 Watt            |  |

# TECHNICAL SPECIFICATIONS

## Electrical

|                                 |                                 |
|---------------------------------|---------------------------------|
| Impedance                       | 50 Ohm                          |
| Frequency Range                 | DC - 10 GHz                     |
| Voltage Rating                  | 480 Volts RMS Continuous        |
| Dielectric Withstanding Voltage | 1000 VRMS Max                   |
| VSWR (Return Loss)              |                                 |
| DC - 3 GHz                      | 1.052 (-32 dB) Max              |
| 3-6 GHz                         | 1.11 (-26 dB) Max               |
| Insulation Resistance           | 5000 MΩ Min                     |
| Center Contact Resistance       | 3 mΩ Max                        |
| Outer Contact Resistance        | 2 mΩ Max                        |
| RF Leakage (Interface)          | -75 dB Max (DC - 4 GHz)         |
| Insertion Loss                  | .03 √(f(GHz)) dB Max            |
| Passive Intermodulation         | -160 dBc with 2 X 43 dBm inputs |
| Power Handling                  | 200 W @ 2.2 GHz @ 85 °C         |

## Environmental

|                   |   |
|-------------------|---|
| Temperature Range | -65°C to +165°C                                 |
| Thermal Shock     | IEC 60169-1, Subclause 16.4 (-65 °C to +165 °C) |
| Vibration         | IEC 60068-2-64 Random                           |
| Mechanical Shock  | IEC 60068-2-27 (50g, 11 ms, half-sine)          |

## Mechanical

|                             |  |
|-----------------------------|--|
| Mating Cycles               | 100 Min (Detent), 1000 Min (Smooth Bore) |
| Coupling Mechanism          | Push-On                                  |
| Interface Specification     | Rosenberger PSMP                         |
| Engagement Force            |  |
| Limited Detent              | ≤ 45 N                                   |
| Smooth Bore, Catcher's Mitt | ≤ 10 N                                   |
| Disengagement Force         |  |
| Limited Detent              | ≤ 15 N                                   |
| Smooth Bore, Catcher's Mitt | ≤ 2.2 N                                  |
| Mechanical Misalignment     |  |
| Axial                       | ± 1 mm                                   |
| Radial                      | 4°                                       |
| Min Board-to-Board Distance | 12.6 mm                                  |

Note: These characteristics are typical and may not apply to all connectors. Connector configurations may affect performance.

# Amphenol® RF

[www.amphenolrf.com](http://www.amphenolrf.com)



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### Learn More

about our PSMP  
product portfolio

