Rosenberger

Test & Measurement

# SMPS Multiport Connectors, Adaptors & Cable Assemblies

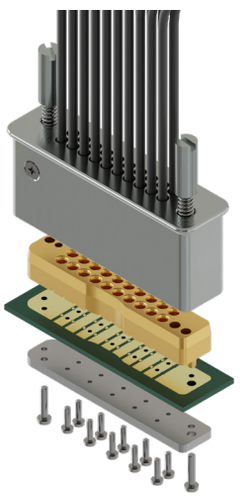
ROSENBERGER NORTH AMERICA

# High Performance Solutions for High Density Applications

Covering a frequency range up to 110 GHz per lane while maintaining a consistent impedance profile with low insertion and return loss, our SMPS (Sub Miniature Push-On Sub-Micro) connectors are excellent for high frequency applications where design density limitations matter.

## Features and Benefits

- Excellent RF channel alignment & registration
- Solderless design: Ease of installation and maintenance
- High density with its 2.54 mm pitch
- Coplanar waveguide and stripline transmission lines compatible
- High Performance: 110 GHz (50 ohms)

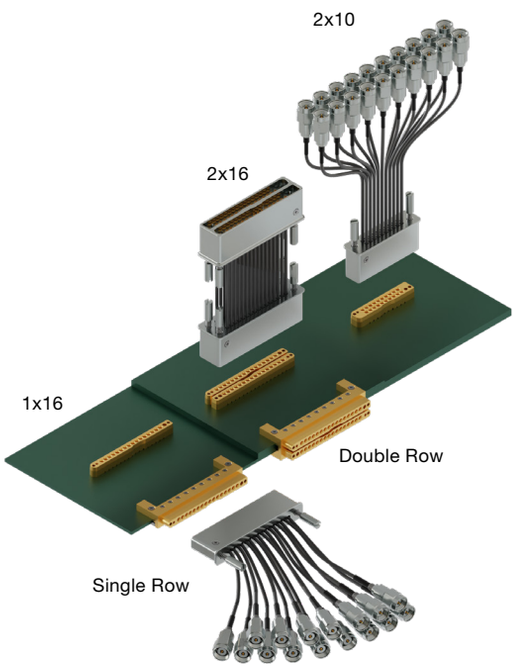


## Multiple configurations available:

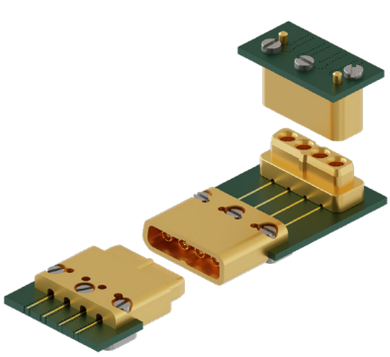
- Single row or double row of: 2, 4, 8 or 16 ports
- Edge launch or vertical mount
- Twinax or coax cable assemblies

## High customization potential:

- Custom number of rows & ports.
  Ex: 2 rows of 10 ports
- Custom cable assemblies configuration.
  Ex: Twinax termination
- Multiple PCB thicknesses compatibility




## Versatile mating configurations:



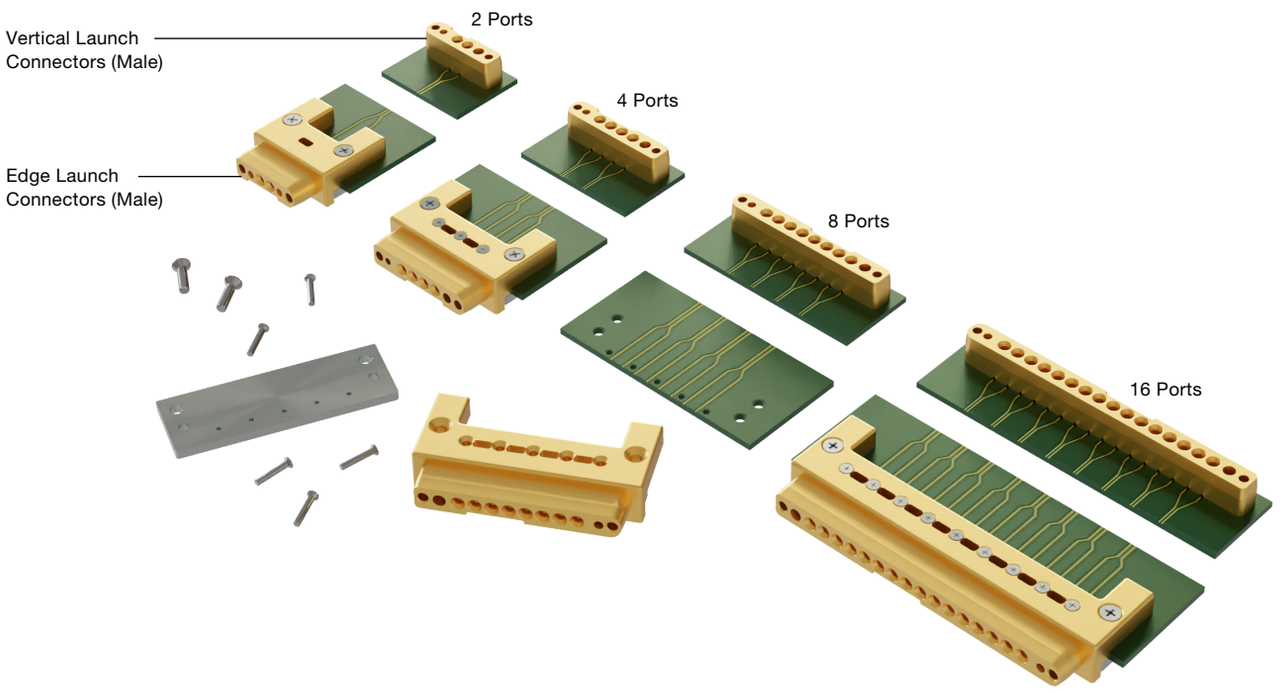
Board to Board

Cable to Board

Cable to Cable

# SMPS Solderless Board Mount Connectors & SMPS to Precision RF Adaptors

Multiport SMPS connectors available in gangs of 2, 4, 8 & 16 conductive pins per single row.  The following configurations are in stock:




## Solderless Connectors

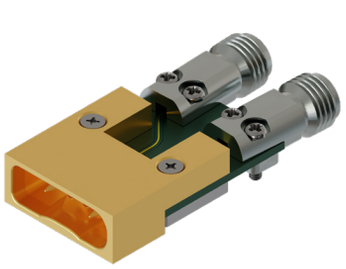
For design and maintenance flexibility ensuring a faster assembly and yield time

## SMPS PCB Connectors

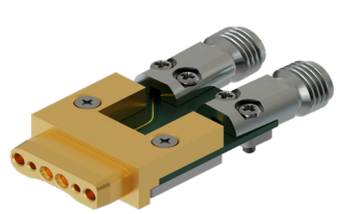
- High Density: 2.54 mm pitch
- Solderless: Easy field installation and replacement for lower cost, fast cycle time and high repeatability
- Compatible with both Coplanar Waveguide & Stripline transmission lines
- Smooth bore for blind mate connection

## SMPS to Precision Adaptors

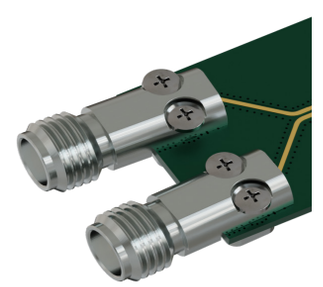
They offer a cost-effective option for effective characterization, validation & verification



Female SMPS to Precision RF



Male SMPS to Precision RF



1.00 mm to 2.92 mm EMI precision connectors on opposite end

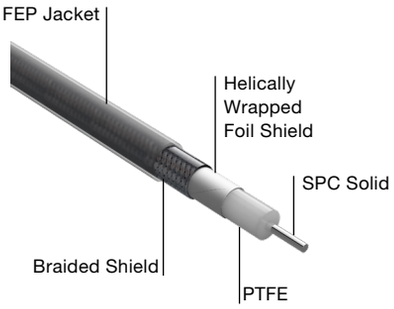
# Versatility Enabled with SMPS Cable Assemblies

Our standard offering includes the following cable combinations for all 4 connector configurations:
2 ports. 4 ports, 8 ports, 16 ports, with customization offered upon request.

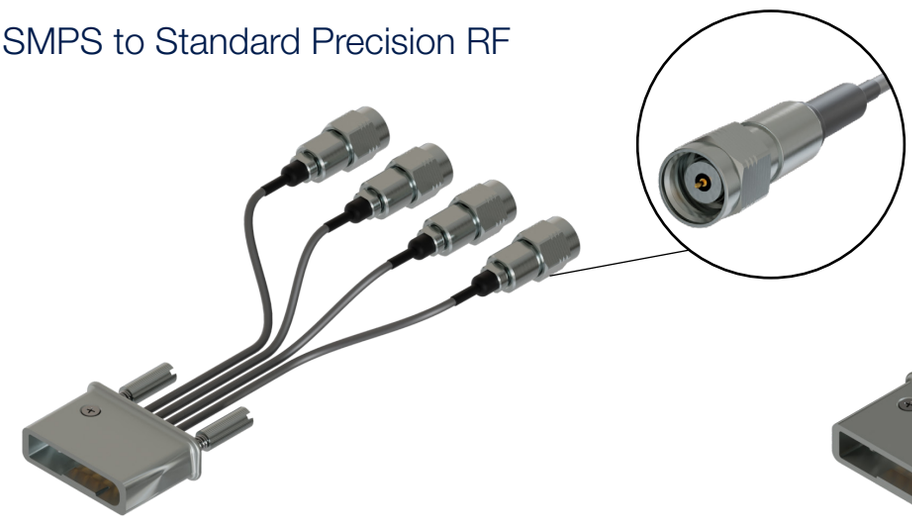
## Coax Cable Assemblies

Coax cable assemblies offer a reliable high-performance solution with their very low cable loss. They present an excellent solution for characterization, validation & verification.

## Flexible ø.047 Coax Cable

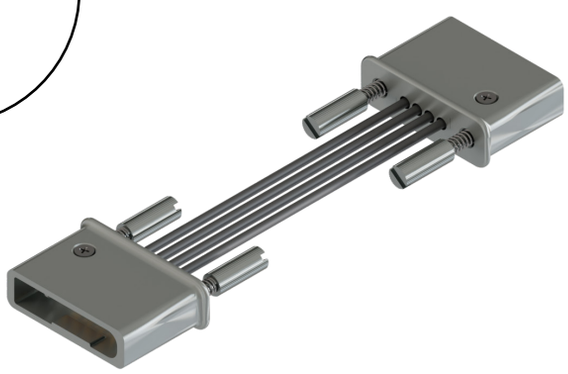



## SMPS to Standard Precision RF



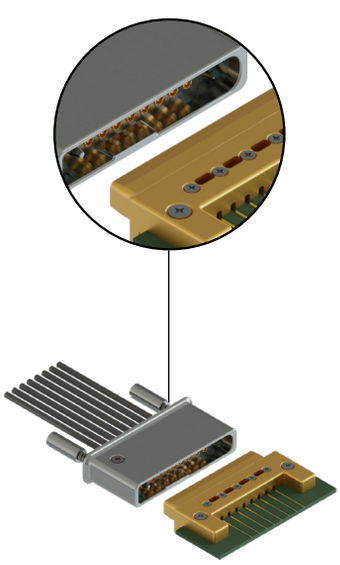
Female Straight to Standard Precision Connectors
with options ranging from 1.00 mm to 2.92 mm

## SMPS to SMPS

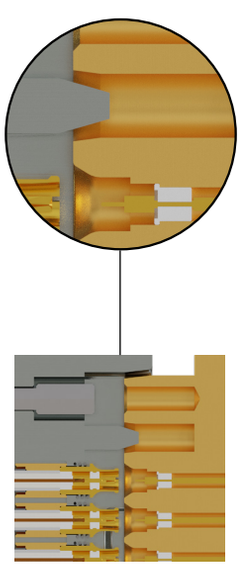


Female Straight to Female Straight

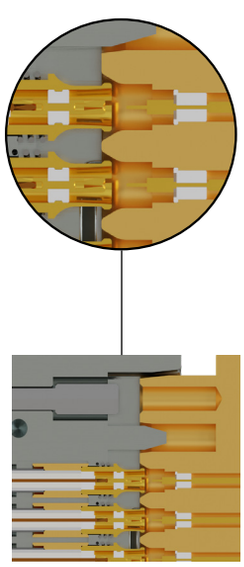
## Sequential Mating Design Enables Blind Mating by Protecting the RF Elements



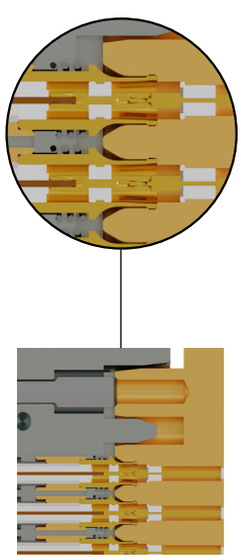
Keying designed in both PCB connector and cable assembly shells ensures proper bodies alignment



Guiding pins enter first the connector body to ensure conductive pins concentricity



Next the female socket body enters floating region to eliminate leaves bending or breaking

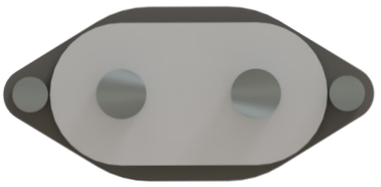


As the female socket enters the mating region springs ensure proper mating at stop position

# Twinax Cable Assemblies

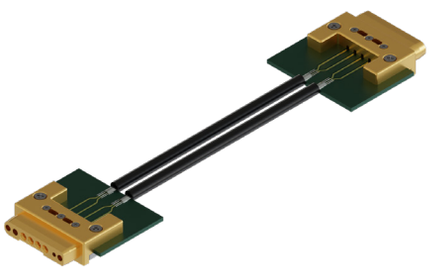
Twinax cables transmit a single signal in differential pairs with very low skew, ensuring extra protection from environmental factors.

Our line of twinax SMPS cable assemblies answers three of the most prominent industry trends: Cost effectiveness, high density design and high data rate requirements. They are also fully capable of 112Gb/s and 224Gb/s data rates.

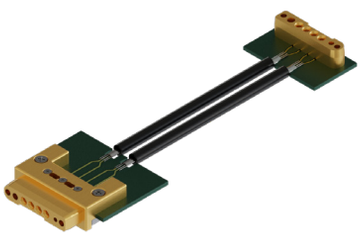


Twin Conductors

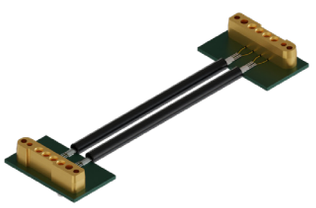
## SMPS to SMPS



Male Straight to Male Straight



Male Straight to Male Right Angle



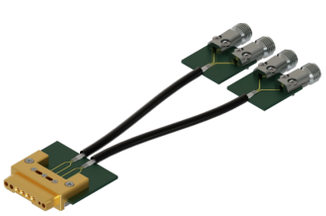
Male Right Angle to Male Right Angle

Female Straight to Female Straight

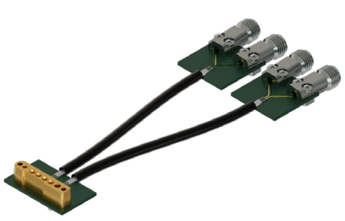
Female Straight to Male Straight

## SMPS to Precision RF

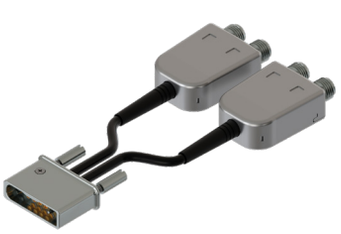
SMPS to Precision Connectors Cable Assemblies offer a cost-effective option for effective characterization, validation & verifaction.



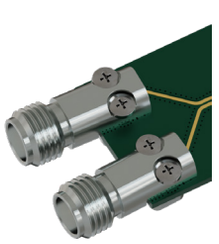
SMPS Male Straight to Standard Precision Connectors



SMPS Male Right Angle to Standard Precision Connectors



SMPS Female Straight to Standard Precision Connectors



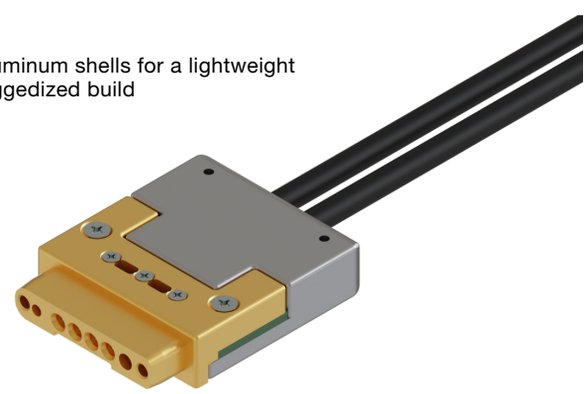
1.00 mm to 2.92 mm EMI precision connectors on opposite end

# Compact Interconnects for Maximum System Design Versatility

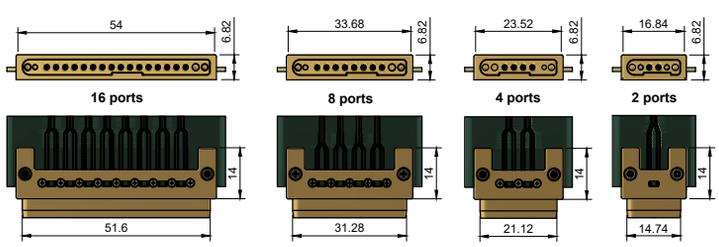
| Material & Environmental Specifications | | |
|---|---|---|
| Materials | Connectors Body | Brass |
| | Centre Contact | Gold plated BeCu |
| | Insulators | PCTFE |
| | Protective Shells | Aluminum |
| | Twinax Cable Tubing | Nylon |
| | Coax Cable Type | Flexible ø.047 |
| | Precision RF Cable Connectors | Stainless steel body with BeCu Center Contact |
| Working Temperature Range | | -65°C to +165°C |

| Material & Environmental Specifications | | | |
|---|---|---|---|
| Configurations | Mating Forces per channel | | Typical Mating cyclest |
| | Engage | Disengage | |
| Smooth bore board mount SMPS connector | 1.5 lbs | 1.0 lbs | >1000 cycles |

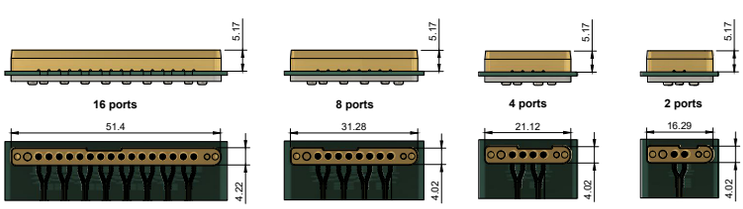
Aluminum shells for a lightweight ruggedized build



## Edge Launch SMPS - Male




## Vertical Launch SMPS - Male




Cable length can go from .15m to 1.00m

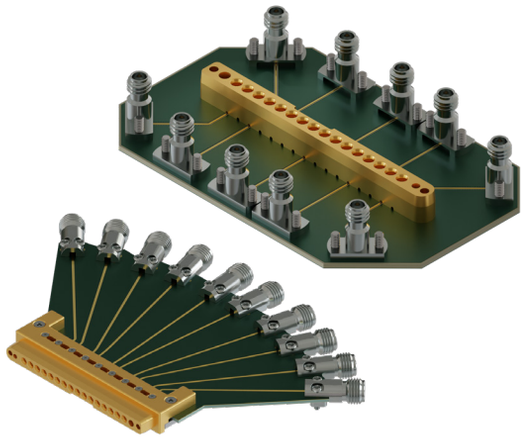
# Signal Integrity Prioritized

We recognize one of the industry's biggest challenges: consolidating a PCB stack up with the appropriate connector. From connector selection all the way to specific footprint optimization, our facilities and expertise allow us to tailor our connectors to your particular application.

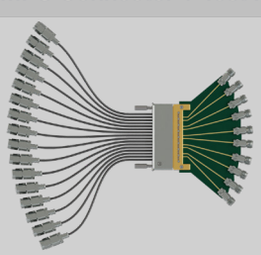
## We Can Provide You With:

- Custom evaluation boards
- 3D & SI simulation files provided for your own testing and design
- Quick turnaround designs: Design, prototyping and validation all done in house

SMPS Test Board
Available for purchase



| General Electrical Specifications | Board Mount SMPS Connectors (224 Gb/s) |
|---|---|
| Nominal Impedance | 50 ohms |
| Frequency Range | DC - 110 GHz |
| Insertion Loss | < 0.25 dB to 90 GHz |
| Return Loss | > 20 dB @ DC to 40 GHz<br>> 15 dB @ 40 GHz to 60 GHz<br>> 10 dB @ 60 GHz to 90 GHz |
| Insulation Resistance | 5,000 megohms |
| DWV (at sea level) | 250 VRMS typical |
| Power Handling (at sea level & ambient temperature) | 16 W @ 1 GHz @ 25°C |
| RF Leakage | > 100 dB |

| Cable Assemblies Signal Integrity Performance | Test Setup for 6 inch .047 SMPS to 1.85mm Cable Assembly + Edge Launch SMPS Connector + Test PCB to 1.85mm |
|---|---|
| |  |
| Nominal Impedance | 50 ohms |
| Frequency Range | DC - 110 GHz |
| Insertion Loss | < 0.25 dB to 90 GHz |
| Insulation Resistance | 5,000 megohms |
| DWV (at sea level) | 250 VRMS typical |

## Vertical Mount PCB Connector

| PART NUMBER | DESCRIPTION |
|---|---|
| W2S101-40ML3-2 | SMPS Vertical Mount Connector 1x2 |
| W2S101-40ML3-4 | SMPS Vertical Mount Connector 1x4 |
| W2S101-40ML3-8 | SMPS Vertical Mount Connector 1x8 |
| W2S101-40ML3-16 | SMPS Vertical Mount Connector 1x16 |

## Edge Mount PCB Connector

| PART NUMBER | DESCRIPTION |
|---|---|
| W2S201-40ML3-2 | SMPS Edge Mount Connector 1x2 |
| W2S201-40ML3-4 | SMPS Edge Mount Connector 1x4 |
| W2S201-40ML3-8 | SMPS Edge Mount Connector 1x8 |
| W2S201-40ML3-16 | SMPS Edge Mount Connector 1x16 |

## SMPS to SMPS Cable Assembly

| PART NUMBER | DESCRIPTION |
|---|---|
| H70U-W202-W202-xxxxx* | SMPS to SMPS Coax Assembly 1x2 |
| H70U-W204-W204-xxxxx* | SMPS to SMPS Coax Assembly 1x4 |
| H70U-W208-W208-xxxxx* | SMPS to SMPS Coax Assembly 1x8 |
| H70U-W216-W216-xxxxx* | SMPS to SMPS Coax Assembly 1x16 |

## SMPS to Precision Cable Assembly

| PART NUMBER | DESCRIPTION |
|---|---|
| H70U-W202-08S1-xxxxx* | SMPS to RPC-1.85 male Coax Assembly 1x2 |
| H70U-W204-08S1-xxxxx* | SMPS to RPC-1.85 male Coax Assembly 1x4 |
| H70U-W208-08S1-xxxxx* | SMPS to RPC-1.85 male Coax Assembly 1x8 |
| H70U-W216-08S1-xxxxx* | SMPS to RPC-1.85 male Coax Assembly 1x16 |
| | |
| H70U-W202-09S1-xxxxx* | SMPS to RPC-2.40 male Coax Assembly 1x2 |
| H70U-W204-09S1-xxxxx* | SMPS to RPC-2.40 male Coax Assembly 1x4 |
| H70U-W208-09S1-xxxxx* | SMPS to RPC-2.40 male Coax Assembly 1x8 |
| H70U-W216-09S1-xxxxx* | SMPS to RPC-2.40 male Coax Assembly 1x16 |
| | |
| H70U-W202-02S1-xxxxx* | SMPS to RPC-2.92 male Coax Assembly 1x2 |
| H70U-W204-02S1-xxxxx* | SMPS to RPC-2.92 male Coax Assembly 1x4 |
| H70U-W208-02S1-xxxxx* | SMPS to RPC-2.92 male Coax Assembly 1x8 |
| H70U-W216-02S1-xxxxx* | SMPS to RPC-2.92 male Coax Assembly 1x16 |

***(xxxxx = length in mm)***

### Website

For more information refer to our website:

www.rosenbergerna.com

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