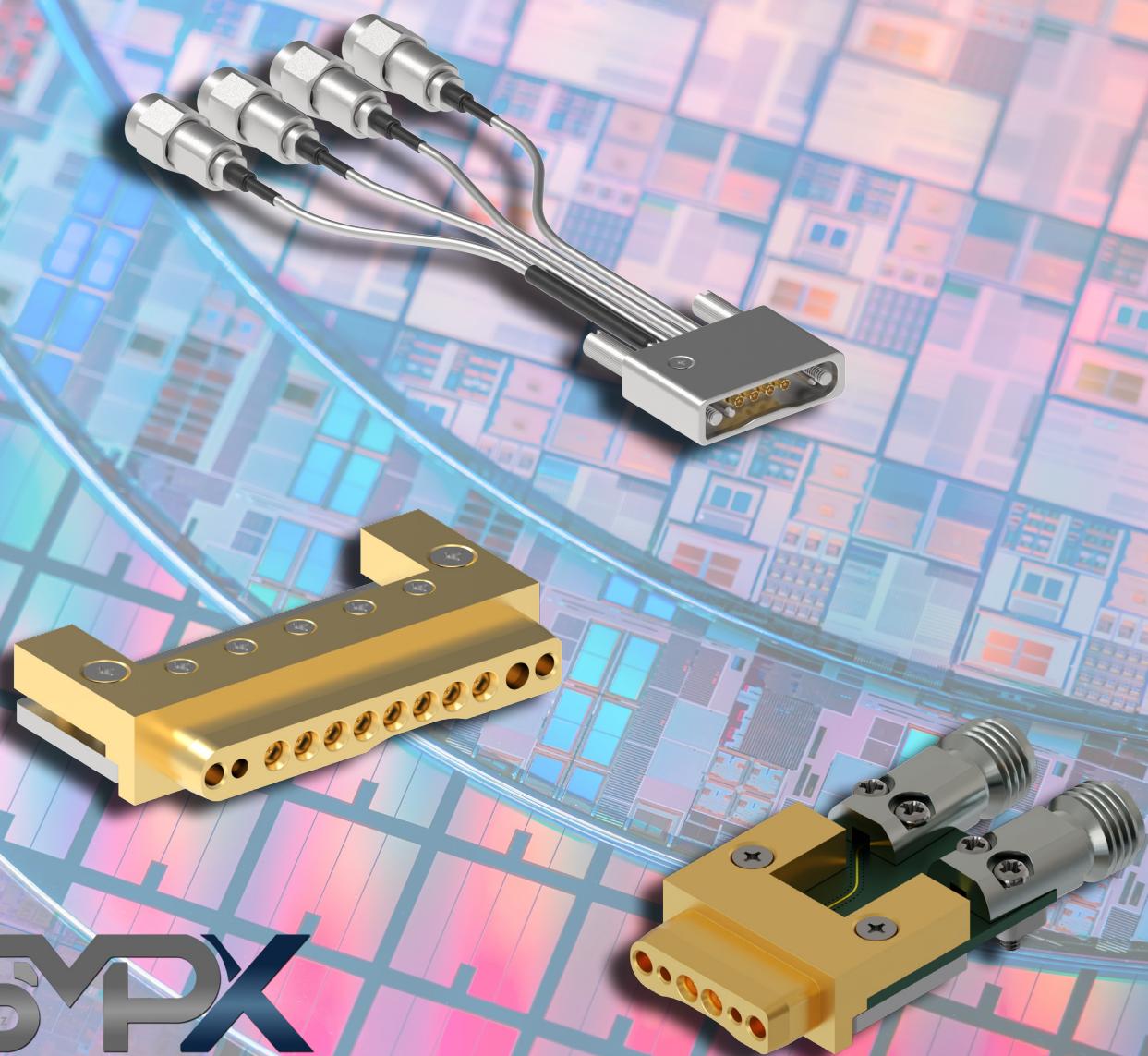


# Rosenberger

Test & Measurement

## SMPX™ Multiport Connectors, Adaptors & Cable Assemblies

ROSENBERGER NORTH AMERICA



**SMPX**  
110GHz  
Solderless Multiport System

# 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 SMPX™ (Sub Miniature Push-On Multiport) connectors are excellent for high frequency applications where design density limitations matter.

## Features and Benefits

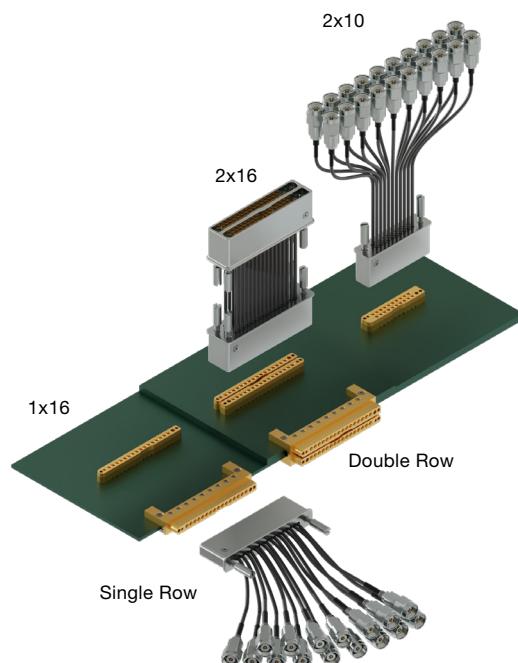
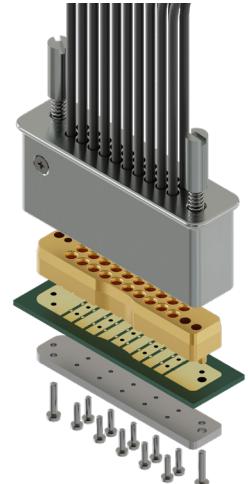
- Excellent RF channel alignment & registration
- Solderless design: Ease of installation and maintenance
- High density with its 2.54 mm pitch
- Coplanar waveguide and stripline transmission lines compatible
- High Performance: 110 GHz (50 ohms)

## Multiple configurations available:

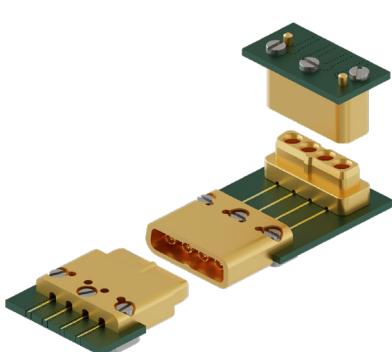
- Single row or double row of: 2, 4, 8 or 16 ports
- Edge launch or vertical mount
- Twinax or coax cable assemblies

## 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

# Compact Interconnects for Maximum System Design Versatility

## Material & Environmental Specifications

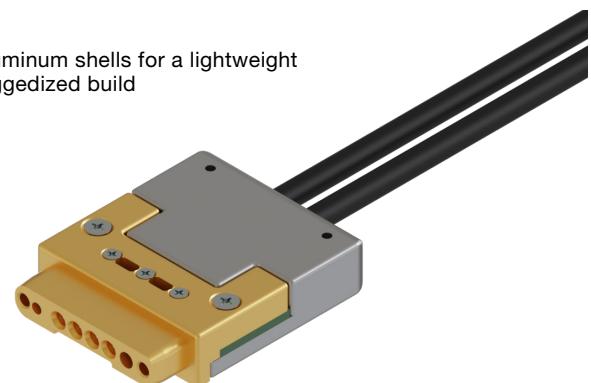
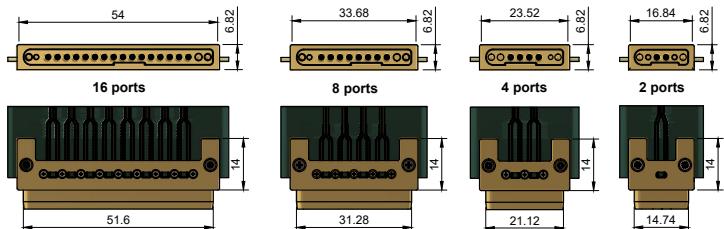
Materials	Connector Body	Brass
	Center Contact	Gold plated BeCu
	Insulators	PCTFE
	Protective Shells	Aluminum
	Twinax Cable Tubing	Nylon
	Coax Cable Type	Flexible ø.047
	Precision RF Cable Connectors	Stainless steel body with BeCu Center Contact
Working Temperature Range		-65°C to +165°C

## Mating Specifications

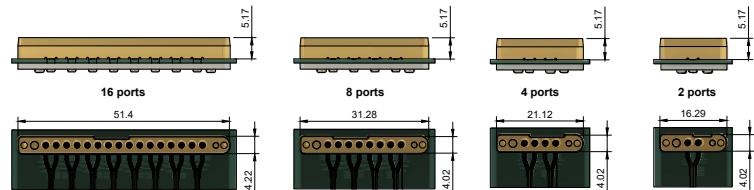
Configurations	Mating Forces per channel		Typical Mating cycles
	Engage	Disengage	
Smooth bore board mount SMPX connector	1.5 lbs	1.0 lbs	>10,000 cycles

Aluminum shells for a lightweight ruggedized build

## Edge Launch SMPX - Male



## Vertical Launch SMPX - Male

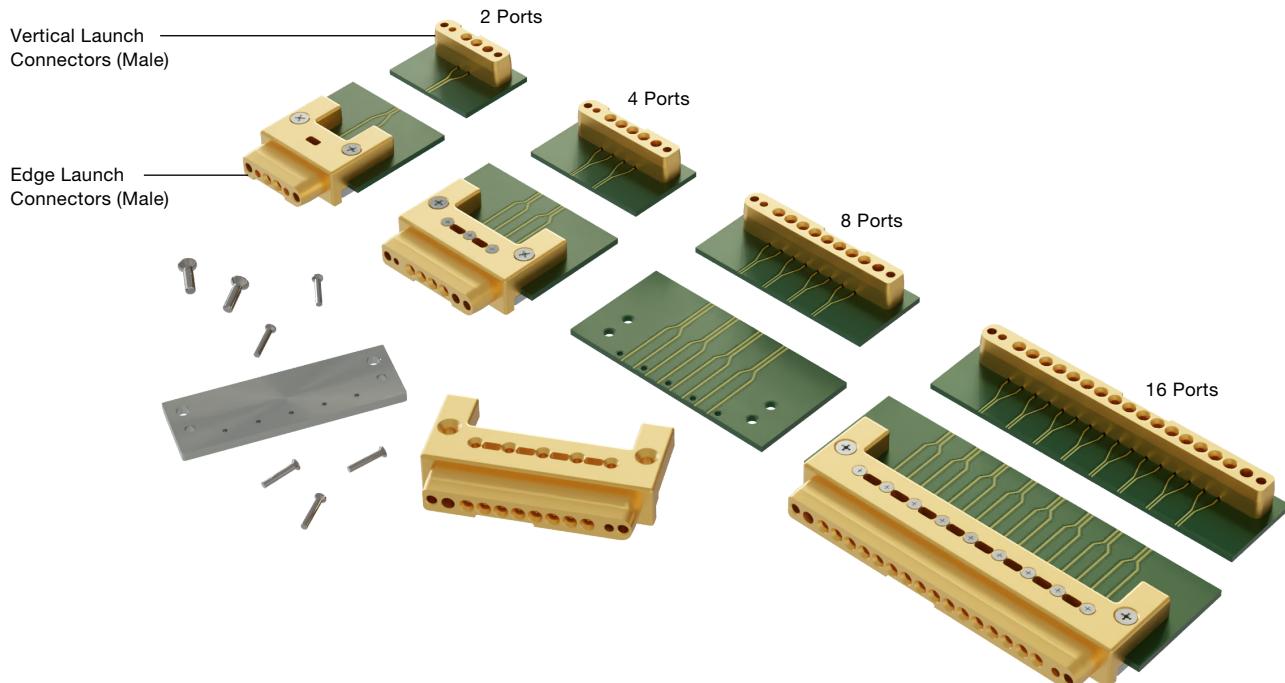


Cable length can go from .15m to 1.00m



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

Multiport SMPX 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.

## SMPX 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.

## SMPX to Precision Adaptors

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



Female SMPX to Precision RF

Male SMPX to Precision RF

1.00 mm to 2.92 mm EMI precision connectors on opposite end

## Vertical Mount PCB Connector

PART NUMBER	DESCRIPTION
W2S101-40ML3-02	SMPX Vertical Mount Connector 1x2
W2S101-40ML3-04	SMPX Vertical Mount Connector 1x4
W2S101-40ML3-08	SMPX Vertical Mount Connector 1x8
W2S101-40ML3-16	SMPX Vertical Mount Connector 1x16

## Edge Mount PCB Connector

PART NUMBER	DESCRIPTION
W2S201-40ML3-02	SMPX Edge Mount Connector 1x2
W2S201-40ML3-04	SMPX Edge Mount Connector 1x4
W2S201-40ML3-08	SMPX Edge Mount Connector 1x8
W2S201-40ML3-16	SMPX Edge Mount Connector 1x16

## Precision Adaptors, Multiport

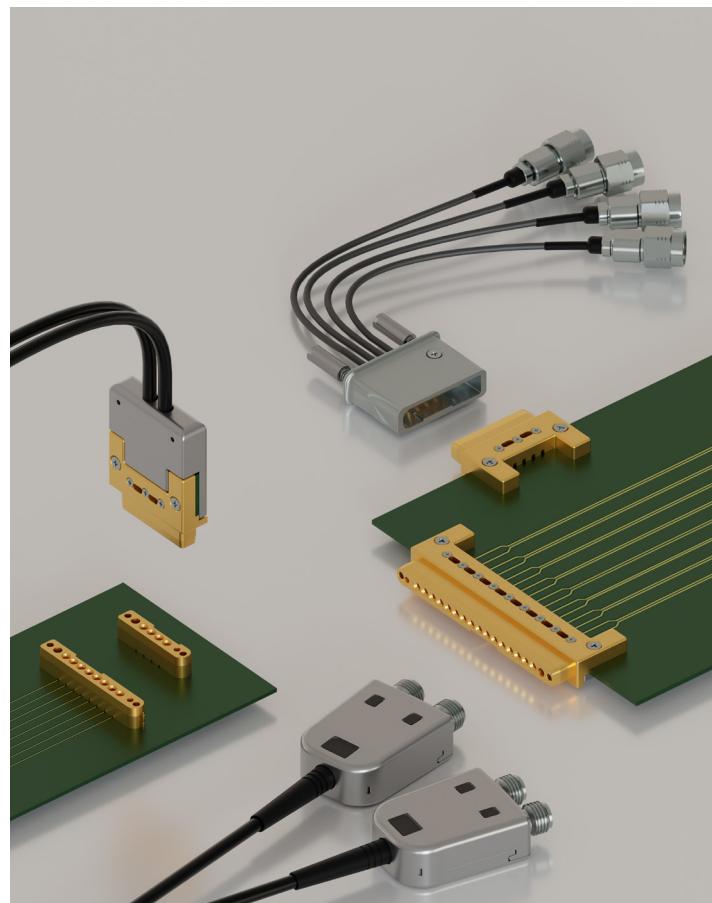
PART NUMBER	DESCRIPTION
W2K102-K00L3-xx*	SMPX Female to RPC-2.92 Female Precision Adaptor, 40 GHz
W2S102-K00L3-xx*	SMPX Male to RPC-2.92 Female Precision Adaptor, 40 GHz
W2K108-K00L3-xx*	SMPX Female to RPC-1.85 Female Precision Adaptor, 70 GHz
W2S108-K00L3-xx*	SMPX Male to RPC-1.85 Female Precision Adaptor, 70 GHz
W2K101-K00L3-xx*	SMPX Female to RPC-1.00 Female Precision Adaptor, 110 GHz
W2S101-K00L3-xx*	SMPX Male to RPC-1.00 Female Precision Adaptor, 110 GHz

\*xx = number of ports (single versions omit 'xx')

## PCB Connector Accessories

PART NUMBER	DESCRIPTION
W2S201-40M/02S-xx*	Stiffener, Edge Launch Connector
W2S101-40M/51S	Screw, M1x4mm (vertical)
W2S201-40M/51S	Screw, M1.6x6mm (edge launch)
W2S201-40M/50S	Screw, M1x6mm (edge launch)

\*xx = number of ports



## Edge Launch Connectors



2 port



4 port



8 port



16 port

## Vertical Mount Connectors



2 port



4 port



8 port



16 port

# Versatility Enabled with SMPX Cable Assemblies

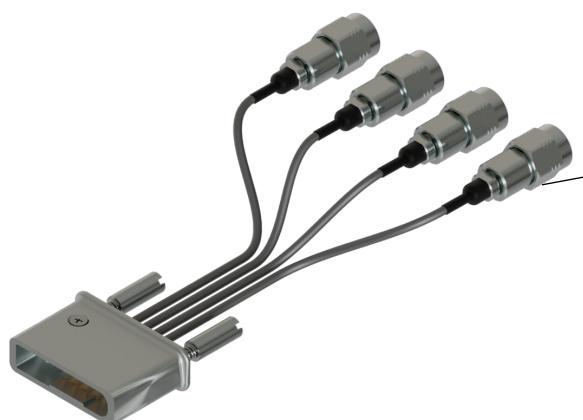
Our standard offering includes the following cable combinations for all 4 connector configurations:  
2 ports, 4 ports, 8 ports, 16 ports, with customization offered upon request.

## Coax Cable Assemblies

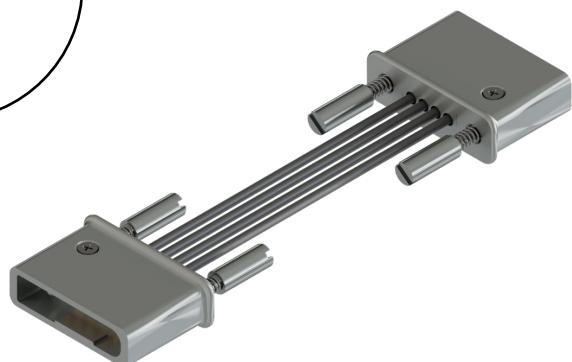
Coax cable assemblies offer a reliable high-performance solution with their very low cable loss. They present an excellent solution for characterization, validation & verification.



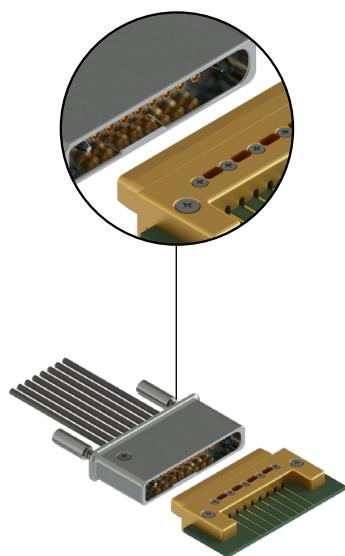
## SMPX to Standard Precision RF



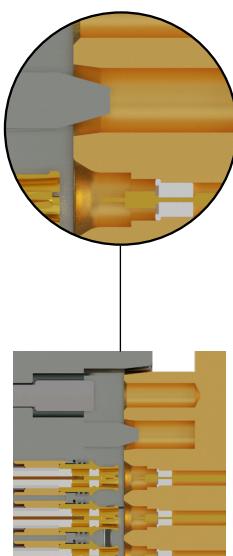
## SMPX to SMPX



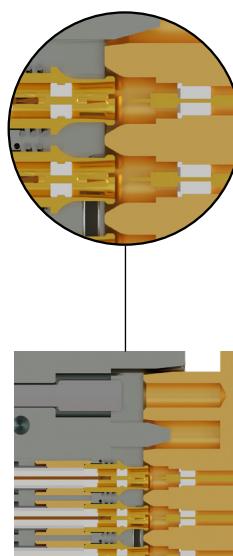
## Sequential Mating Design Enables Blind Mating by Protecting the RF Elements



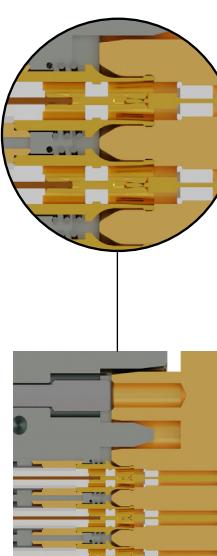
Keying designed in both PCB connector and cable assembly shells ensures proper bodies alignment



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

## SMPX to Precision Cable Assembly

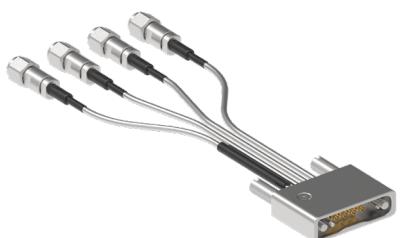
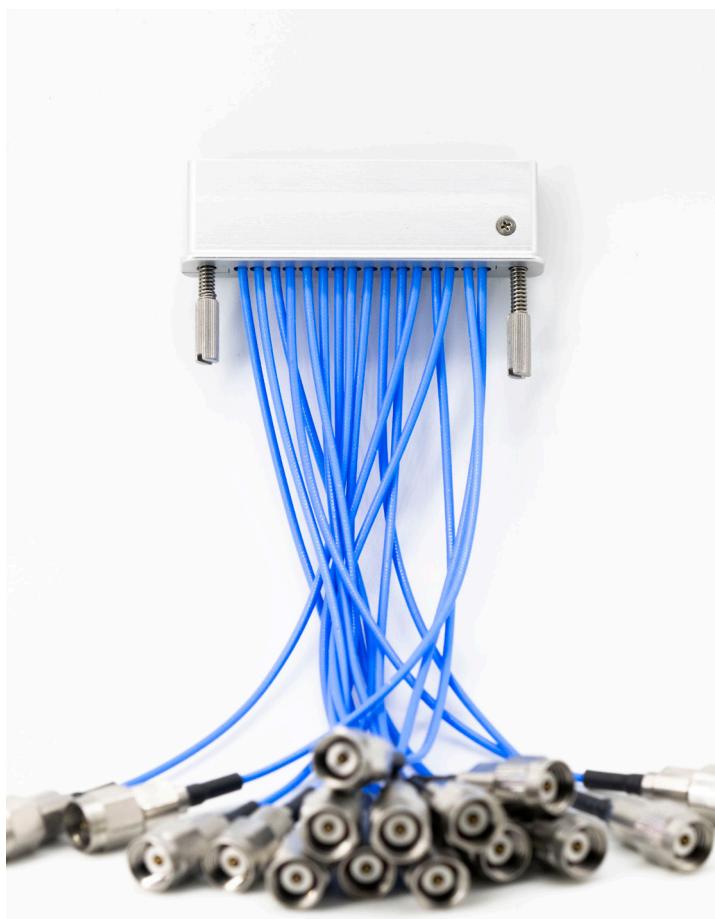
PART NUMBER	DESCRIPTION
H70U-W202-02S1-xxxx*	SMPX to RPC-2.92 male Coax Assembly 1x2, 40 GHz
H70U-W204-02S1-xxxx*	SMPX to RPC-2.92 male Coax Assembly 1x4, 40 GHz
H70U-W208-02S1-xxxx*	SMPX to RPC-2.92 male Coax Assembly 1x8, 40 GHz
H70U-W216-02S1-xxxx*	SMPX to RPC-2.92 male Coax Assembly 1x16, 40 GHz
H70U-W202-09S1-xxxx*	SMPX to RPC-2.40 male Coax Assembly 1x2, 50 GHz
H70U-W204-09S1-xxxx*	SMPX to RPC-2.40 male Coax Assembly 1x4, 50 GHz
H70U-W208-09S1-xxxx*	SMPX to RPC-2.40 male Coax Assembly 1x8, 50 GHz
H70U-W216-09S1-xxxx*	SMPX to RPC-2.40 male Coax Assembly 1x16, 50 GHz
H70U-W202-08S1-xxxx*	SMPX to RPC-1.85 male Coax Assembly 1x2, 70 GHz
H70U-W204-08S1-xxxx*	SMPX to RPC-1.85 male Coax Assembly 1x4, 70 GHz
H70U-W208-08S1-xxxx*	SMPX to RPC-1.85 male Coax Assembly 1x8, 70 GHz
H70U-W216-08S1-xxxx*	SMPX to RPC-1.85 male Coax Assembly 1x16, 70 GHz
H70U-W202-P9S1-xxxx*	SMPX to RPC-1.35 male Coax Assembly 1x2, 90 GHz
H70U-W204-P9S1-xxxx*	SMPX to RPC-1.35 male Coax Assembly 1x4, 90 GHz
H70U-W208-P9S1-xxxx*	SMPX to RPC-1.35 male Coax Assembly 1x8, 90 GHz
H70U-W216-P9S1-xxxx*	SMPX to RPC-1.35 male Coax Assembly 1x16, 90 GHz
H70U-W202-01S1-xxxx*	SMPX to RPC-1.00 male Coax Assembly 1x2, 110 GHz
H70U-W204-01S1-xxxx*	SMPX to RPC-1.00 male Coax Assembly 1x4, 110 GHz
H70U-W208-01S1-xxxx*	SMPX to RPC-1.00 male Coax Assembly 1x8, 110 GHz
H70U-W216-01S1-xxxx*	SMPX to RPC-1.00 male Coax Assembly 1x16, 110 GHz

\*xxxxx = length in mm

## SMPX to SMPX Cable Assembly

PART NUMBER	DESCRIPTION
H70U-W202-W202-xxxx*	SMPX Female to SMPX Female Coax Assembly 1x2, 110 GHz
H70U-W204-W204-xxxx*	SMPX Female to SMPX Female Coax Assembly 1x4, 110 GHz
H70U-W208-W208-xxxx*	SMPX Female to SMPX Female Coax Assembly 1x8, 110 GHz
H70U-W216-W216-xxxx*	SMPX Female to SMPX Female Coax Assembly 1x16, 110 GHz

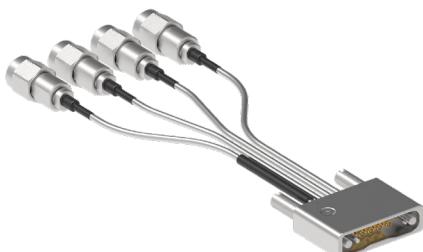
\*xxxxx = length in mm)



SMPX - RPC-1.00



SMPX - RPC-1.35



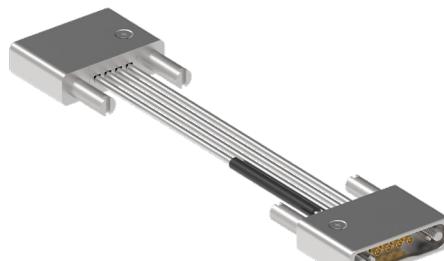
SMPX - RPC-1.85



SMPX - RPC-2.40



SMPX - RPC-2.92



SMPX - SMPX

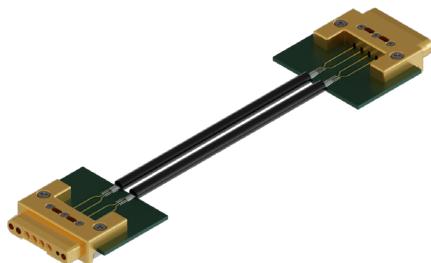
# Twinax Cable Assemblies

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

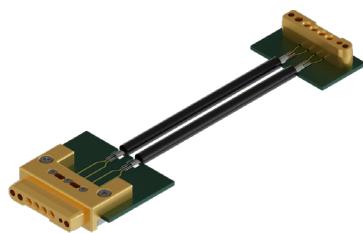
Our line of twinax SMPX cable assemblies answers three of the most prominent industry trends: Cost effectiveness, high density design and high data rate requirements. They are also fully capable of 112Gb/s and 224Gb/s data rates.



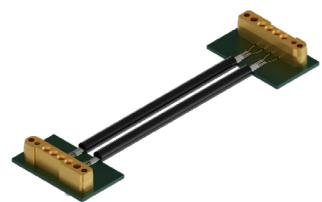
## SMPX to SMPX



Male Straight to Male Straight



Male Straight to Male Right Angle



Male Right Angle to Male Right Angle



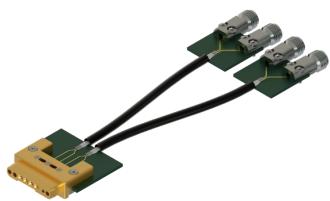
Female Straight to Female Straight



Female Straight to Male Straight

## SMPX to Precision RF

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



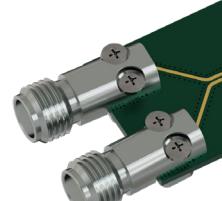
SMPX Male Straight to Standard Precision Connectors



SMPX Male Right Angle to Standard Precision Connectors



SMPX Female Straight to Standard Precision Connectors

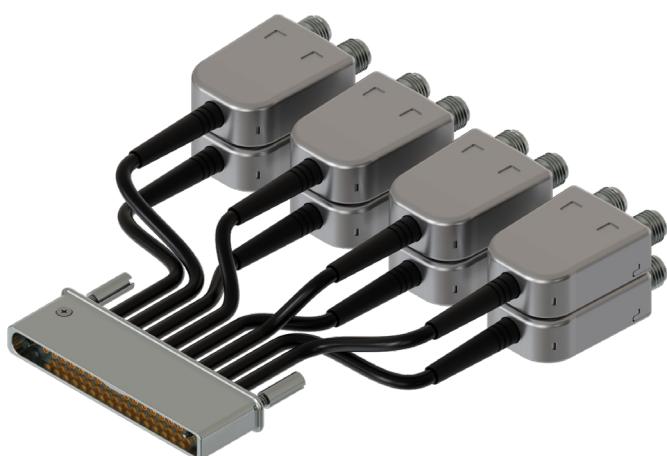


1.00 mm to 2.92 mm EMI precision connectors on opposite end

## SMPX to Twinax Cable Assembly

PART NUMBER	DESCRIPTION
HBXW-W202-02S1-xxxx*	SMPX to RPC-2.92 male Twinax Assembly 1x2, 40 GHz
HBXW-W204-02S1-xxxx*	SMPX to RPC-2.92 male Twinax Assembly 1x4, 40 GHz
HBXW-W208-02S1-xxxx*	SMPX to RPC-2.92 male Twinax Assembly 1x8, 40 GHz
HBXW-W216-02S1-xxxx*	SMPX to RPC-2.92 male Twinax Assembly 1x16, 40 GHz
HBXW-W202-09S1-xxxx*	SMPX to RPC-2.40 male Twinax Assembly 1x2, 50 GHz
HBXW-W204-09S1-xxxx*	SMPX to RPC-2.40 male Twinax Assembly 1x4, 50 GHz
HBXW-W208-09S1-xxxx*	SMPX to RPC-2.40 male Twinax Assembly 1x8, 50 GHz
HBXW-W216-09S1-xxxx*	SMPX to RPC-2.40 male Twinax Assembly 1x16, 50 GHz
HBXW-W202-08S1-xxxx*	SMPX to RPC-1.85 male Twinax Assembly 1x2, 70 GHz
HBXW-W204-08S1-xxxx*	SMPX to RPC-1.85 male Twinax Assembly 1x4, 70 GHz
HBXW-W208-08S1-xxxx*	SMPX to RPC-1.85 male Twinax Assembly 1x8, 70 GHz
HBXW-W216-08S1-xxxx*	SMPX to RPC-1.85 male Twinax Assembly 1x16, 70 GHz
HBXW-W202-P9S1-xxxx*	SMPX to RPC-1.35 male Twinax Assembly 1x2, 90 GHz
HBXW-W204-P9S1-xxxx*	SMPX to RPC-1.35 male Twinax Assembly 1x4, 90 GHz
HBXW-W208-P9S1-xxxx*	SMPX to RPC-1.35 male Twinax Assembly 1x8, 90 GHz
HBXW-W216-P9S1-xxxx*	SMPX to RPC-1.35 male Twinax Assembly 1x16, 90 GHz
HBXW-W202-01S1-xxxx*	SMPX to RPC-1.00 male Twinax Assembly 1x2, 110 GHz
HBXW-W204-01S1-xxxx*	SMPX to RPC-1.00 male Twinax Assembly 1x4, 110 GHz
HBXW-W208-01S1-xxxx*	SMPX to RPC-1.00 male Twinax Assembly 1x8, 110 GHz
HBXW-W216-01S1-xxxx*	SMPX to RPC-1.00 male Twinax Assembly 1x16, 110 GHz

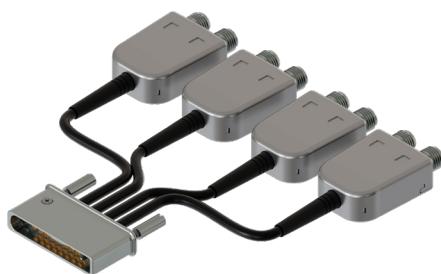
\*xxxx = length in mm



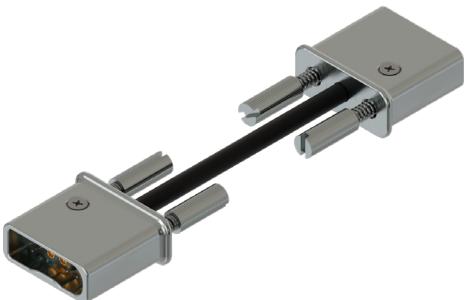
Twinax Cable Assembly 1x16 - Female to Precision RF



1x2 - Female to Precision RF



1x8 - Female to Precision RF



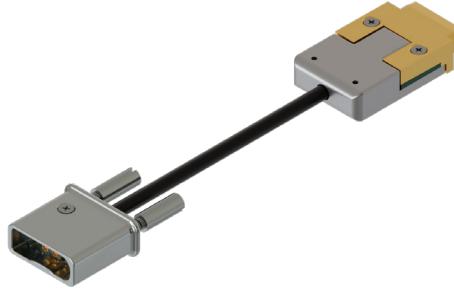
1x2 - Female to Female



1x8 - Female to Female



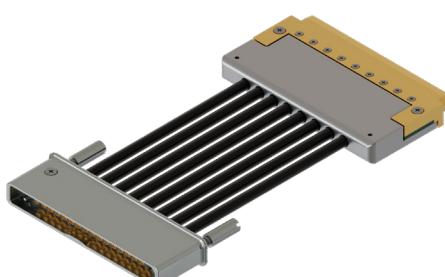
1x16 - Female to Female



1x2 - Female to Male



1x8 - Female to Male



1x16 - Female to Male

# Signal Integrity Prioritized

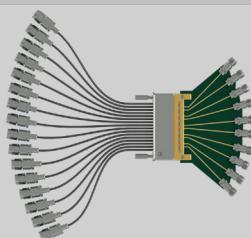
We recognize one of the industry's biggest challenges: consolidating a PCB stack up with the appropriate connector. From connector selection all the way to specific footprint optimization, our facilities and expertise allow us to tailor our connectors to your particular application.

## 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

General Electrical Specifications		Board Mount SMPX 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 > 15 dB @ 40 GHz to 60 GHz > 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

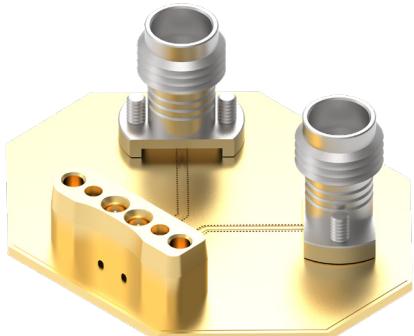
Cable Assemblies Signal Integrity Performance		Test Setup for 6 inch .047 SMPS to 1.85mm Cable Assembly + Edge Launch SMPX Connector + Test PCB to 1.85mm
Nominal Impedance		50 ohms
Frequency Range		DC - 110 GHz
Insertion Loss		< 0.25 dB to 90 GHz
Insulation Resistance		5,000 megohms
DWV (at sea level)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



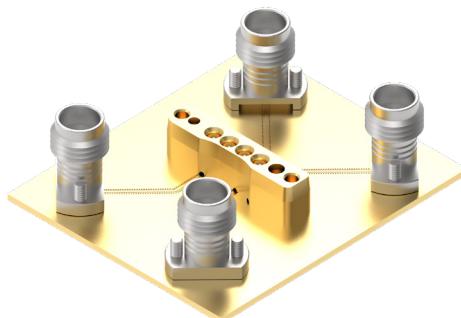
## Multiport Test Boards with Precision Connectors

PART NUMBER	DESCRIPTION
PCB-Y2202-02-SB-xx*	Vertical SMPX Test Board, RPC-2.92 Female Edge Launch Connectors, 40 GHz
PCB-Y2202-08-SB-xx*	Vertical SMPX Test Board, RPC-1.85 Female Edge Launch Connectors, 70 GHz
PCB-Y2202-01-SB-xx*	Vertical SMPX Test Board, RPC-1.00 Female Edge Launch Connectors, 110 GHz
PCB-Y2203-02-SB-xx*	Edge Launch SMPX Test Board, RPC-2.92 Female Edge Launch Connectors, 40 GHz
PCB-Y2203-08-SB-xx*	Edge Launch SMPX Test Board, RPC-1.85 Female Edge Launch Connectors, 70 GHz
PCB-Y2203-01-SB-xx*	Edge Launch SMPX Test Board, RPC-1.00 Female Edge Launch Connectors, 110 GHz

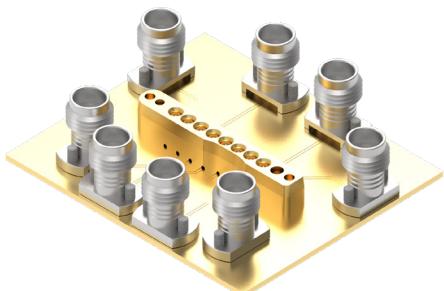
\*xx = number of ports (single versions omit '-xx')



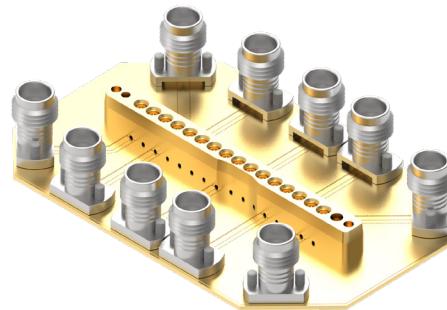
SMPX 1x2 Vertical - RPC-1.85



SMPX 1x4 Vertical - RPC-1.85



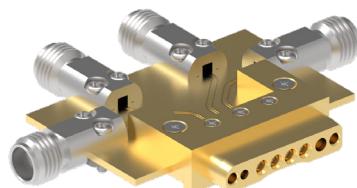
SMPX 1x8 Vertical - RPC-1.85



SMPX 1x16 Vertical - RPC-1.85



SMPX 1x2 Edge Launch - RPC-1.85



SMPX 1x4 Edge Launch - RPC-1.85



SMPX 1x8 Edge Launch - RPC-1.85



SMPX 1x16 Edge Launch - RPC-1.85



## Website

For more information refer to our website:

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

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Certified by ISO/TS 16949 DIN EN 9100 ISO 9001 ISO 14001

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Order #pA 635011

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