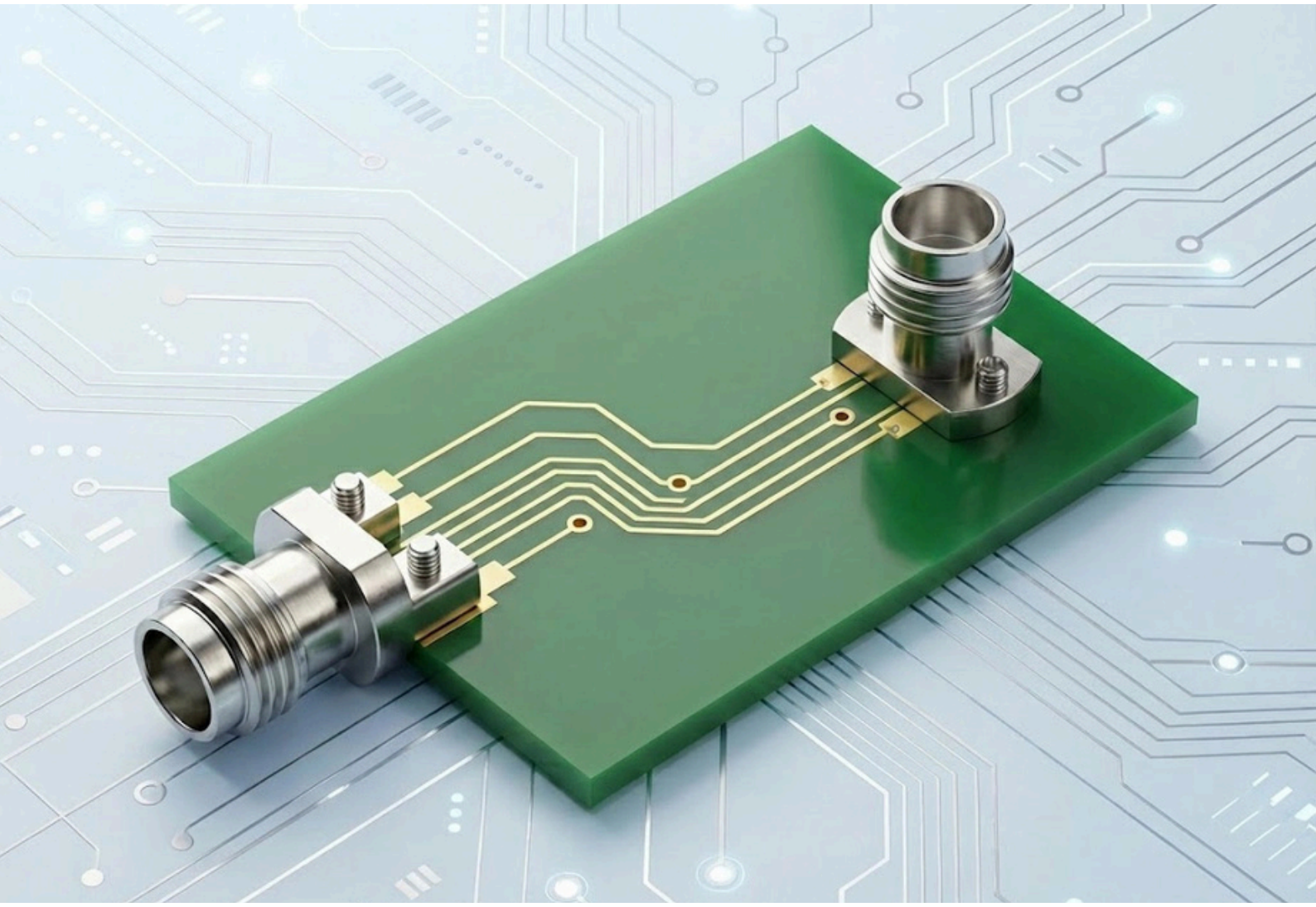


SOLDERLESS PCB CONNECTOR CATALOG

Precision Solderless **PCB Connectors**

Vertical & End Launch Interconnects | DC to 110 GHz

DC to 110 GHz precision connector solutions for PCB launch, solderless validation, fixtures, panels and advanced microwave / millimeter-wave test structures.

110 GHz
HIGHEST INTERFACE COVERAGE

Solderless
COMPRESSION-MOUNTED TRANSITION

Vertical / End
Z-AXIS AND BOARD-EDGE OPTIONS

500+ Cycles
SELECTED HIGH-FREQUENCY SERIES

WHAT IT IS

What Are Solderless PCB Connectors?

Reusable compression-mounted RF interfaces for high-frequency PCB characterization.

Solderless PCB connectors use controlled mechanical compression to create a repeatable RF transition without soldering. They are designed for high-frequency PCB test, prototype validation and board-level characterization where signal integrity, repeatability and substrate protection are critical.

> Compared with soldered launches, solderless connectors reduce assembly variation, avoid thermal stress on expensive RF substrates and allow the same connector to be reused across multiple board iterations.



No Solder Reflow

Protects Rogers, Megtron and other RF substrates from heat exposure, rework damage and solder-related variation.

Repeatable RF Transition

Torque-controlled mounting supports consistent contact pressure and more repeatable high-frequency measurements.

Reusable Test Interface

The connector can be removed and reused across multiple prototype boards, reducing validation cost per test cycle.

High-Frequency Coverage

Available interface families support applications from SMA and 2.92 mm up to 1.0 mm configurations for DC to 110 GHz testing.

Typical use cases: Semiconductor validation / 112G & 224G SerDes / 800G & 1.6T networking / RF test fixtures / mmWave PCB characterization

TRANSITION ARCHITECTURE

Solderless Interconnect Technology

Controlled compression mounting for repeatable high-frequency PCB transitions.

A solderless connector replaces solder fillets with a controlled mechanical contact interface. The connector is fixed to the PCB with defined mounting hardware and torque, allowing the signal transition to be created through mechanical compression rather than solder reflow.

> This approach reduces solder-related impedance discontinuities, protects sensitive RF substrates and improves repeatability between prototype builds.



Vertical Launch

Best for center-of-board and Z-axis RF access.
Used when the RF path must be accessed from internal PCB locations, dense test areas or multilayer board structures where edge access is not available.

End Launch

Best for board-edge and collinear RF transitions.
Used for high-speed evaluation boards, optical module test boards, SerDes channels and RF fixtures where the signal path exits through the PCB edge.

LAUNCH TYPE	BEST FOR	TYPICAL APPLICATIONS
Vertical Launch	Center-of-board / Z-axis access	Multilayer PCB characterization, dense test layouts, internal signal access
End Launch	Board-edge / collinear transition	SerDes validation, optical module evaluation, RF board test fixtures

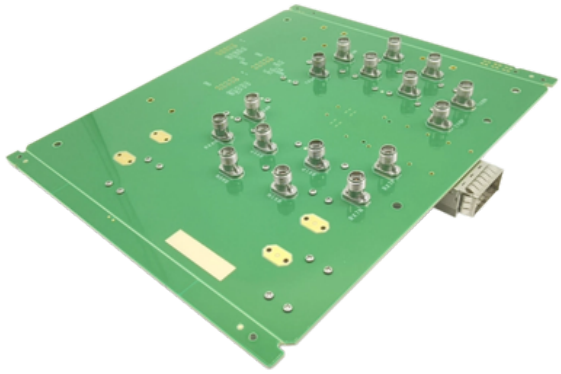
Frequency	Interfaces	Mounting	Durability	Support
DC to 110 GHz depending on interface family	1.0 mm / 1.85 mm / 2.4 mm / 2.92 mm / SMA	Torque-controlled solderless compression	500+ mating cycles on selected series	Footprint and drawing review upon request

WHERE IT IS USED

Application Areas

Solderless RF interfaces for high-speed validation and board-level characterization.

Vinstronics solderless PCB connectors are designed for applications where RF transition quality, installation repeatability and board-level flexibility directly affect measurement confidence. They are commonly used in prototype validation, high-speed digital characterization and mmWave test environments.



Semiconductor & ATE Validation

For IC validation boards, load boards, probe-card evaluation and dense RF test layouts.
Vertical launch configurations support center-of-board access where edge-mounted connectors cannot reach the required signal location.

800G / 1.6T Networking

For switch ASIC evaluation, optical module test boards and 112G / 224G SerDes channel characterization.
End launch configurations support board-edge transitions for high-speed signal paths and repeatable lab validation.

RF & mmWave Instrumentation

For calibration fixtures, evaluation boards, RF modules and repeatable connectorized PCB interfaces.
Solderless mounting helps reduce assembly variation during high-frequency test setup development.

Aerospace, Radar & Advanced R&D

For wideband prototype boards, phased-array module evaluation and advanced RF research platforms.
Reusable connector mounting supports repeated design iterations without unnecessary solder rework.

Model selection depends on interface, launch style, PCB stack-up, mounting hardware and target frequency range.

VERTICAL LAUNCH SERIES

Vertical Launch Selection Matrix

Solderless Z-axis connectors for center-of-board RF access and multilayer PCB characterization.



Vertical launch solderless connectors are used when the RF transition must access an internal or center-of-board signal path. They are suitable for dense multilayer evaluation boards and RF test layouts where board-edge access is not available.

INTERFACE	FREQUENCY	PART NUMBER (P/N)	VSWR (MAX)	RETURN LOSS (TYP.)	MOUNTING HARDWARE
1.0 mm Series | DC - 110 GHz					
1.0 mm	DC – 110 GHz	VST-CPM10F-01	1.40	≥15 dB	2x #0-80 UNF-2B
1.0 mm	DC – 110 GHz	VST-CPM10F-03	1.40	≥12.7 dB	2x M1.6 Thru
1.0 mm	DC – 110 GHz	VST-CPM10F-04	1.40	≥15 dB	2x #0-80 UNF
1.0 mm	DC – 110 GHz	VST-CPM10F-05	1.40	≥15 dB	2x M1.6
1.0 mm	DC – 110 GHz	VST-CPM10F-06	1.40	≥15 dB	2x M1.6
1.85 mm Series | DC - 67 GHz					
1.85 mm	DC – 67 GHz	VST-CPM185F01	1.45	≥15 dB	2x #0-80 UNF-2B
1.85 mm	DC – 67 GHz	VST-CPM185F02	1.45	≥15 dB	2x #0-80 UNF-2B
1.85 mm	DC – 67 GHz	VST-CPM185F-03	1.35	≥15 dB	M7x0.75-6g
1.85 mm	DC – 67 GHz	VST-CPM185F-04	1.30	≥18 dB	2x #0-80 UNF-2B
1.85 mm	DC – 67 GHz	VST-CPM185F-05	1.35	≥15 dB	M7x0.75
2.4 mm Series | DC - 50 GHz					
2.4 mm	DC – 50 GHz	VST-CPM24F-01	1.30	≥18 dB	M7x0.75
2.4 mm	DC – 50 GHz	VST-CPM24F-02	1.30	≥18 dB	M7x0.75
2.4 mm	DC – 50 GHz	VST-CPM24F03	1.20	≥20 dB	M0.75x0.75-6g
2.4 mm	DC – 50 GHz	VST-CPM24F04	1.25	≥19 dB	2x M2.5
2.4 mm	DC – 50 GHz	VST-CPM24F-05	1.30	≥18 dB	M7x0.75
2.4 mm	DC – 50 GHz	VST-CPM24F-06	1.30	≥18 dB	M7x0.75
2.4 mm	DC – 50 GHz	VST-CPM24F-07	1.30	≥18 dB	M7x0.75
2.4 mm	DC – 50 GHz	VST-CPM24F-08	1.30	≥18 dB	M7x0.75
2.92 mm Series | DC - 40 GHz					
2.92 mm	DC – 40 GHz	VST-CPM292F01	1.25	≥19 dB	2x #0-80 UNF
2.92 mm	DC – 40 GHz	VST-CPM292F02	1.25	≥19 dB	2x #0-80 UNF
2.92 mm	DC – 40 GHz	VST-CPM292F05	1.25	≥19 dB	1/4-36UN-2A
SMA Series | DC - 18 GHz					
SMA	DC – 18 GHz	VST-CPMSMAF02	1.30	≥18 dB	1/4-36UNS-2A

Selection note: Choose the interface according to the required frequency range, then confirm VSWR, return loss, PCB footprint and mounting hardware against the model-specific drawing.

END LAUNCH SERIES

End Launch Selection Matrix

Solderless edge-mount connectors for collinear RF transitions and high-speed PCB evaluation.

End launch solderless connectors provide a removable board-edge RF transition for high-speed evaluation boards, optical module test boards, SerDes channels and RF test fixtures.



INTERFACE	FREQUENCY	PART NUMBER (P/N)	VSWR (MAX)	MATERIAL / FINISH	MOUNTING HARDWARE
1.85 mm Series | DC - 67 GHz					
1.85 mm	DC – 67 GHz	VST-CPM185RF-P	1.05 + 0.005f	Brass / Gold	2x M1.6 Hex
1.85 mm	DC – 67 GHz	VST-CPM185RF-01	1.25	Stainless Steel	2x M2x8
1.85 mm	DC – 67 GHz	VST-CPM185RF-02	1.25	Stainless Steel	2x M2x8
2.4 mm Series | DC - 50 GHz					
2.4 mm	DC – 50 GHz	VST-CPM24RF01-P	1.30	Stainless Steel	2x M1.6 Hex
2.92 mm Series | DC - 40 GHz					
2.92 mm	DC – 40 GHz	VST-CPM292RF-01	1.25	Brass / Gold	M2x8 Screws
2.92 mm	DC – 40 GHz	VST-CPM292RF-02	1.25	Brass / Gold	M2x8 Screws
2.92 mm	DC – 40 GHz	VST-CPM292RF-03	1.25	Stainless Steel	2x M1.6 Hex
2.92 mm	DC – 40 GHz	VST-CPM292RF-03M	1.25	Stainless Steel	2x M1.6 Hex
2.92 mm	DC – 40 GHz	VST-CPM292RF-03P	1.25	Stainless Steel	2x M1.6 Hex
2.92 mm	DC – 40 GHz	VST-CPM292RF-04	1.30	Stainless Steel	0-80 UNF-2A
2.92 mm	DC – 40 GHz	VST-CPM292RF-04[T]	1.30	Brass / Nickel	0-80 UNF-2A
2.92 mm	DC – 40 GHz	VST-CPM292F03	1.15	Stainless Steel	2x M2x8
SMA Series | DC - 18 GHz					
SMA	DC – 18 GHz	VST-CPMSMARF01	1.15	Brass / Gold	2x M2x8
SMA	DC – 18 GHz	VST-CPMSMARF-02	1.30	Brass / Gold	2x M2x8
SMA	DC – 18 GHz	VST-CPMSMARF-03	1.30	Brass / Gold	2x M2x8
SMA	DC – 18 GHz	VST-CPMSMARF-04	1.30	Brass / Gold	2x M2x8

Selection note: Choose the interface according to the required frequency range, then confirm VSWR, return loss, PCB footprint and mounting hardware against the model-specific drawing.

Technical Notes

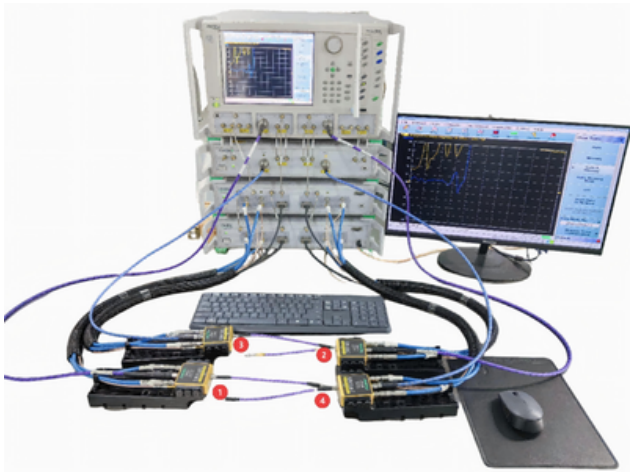
- Center contacts: gold-plated beryllium copper
- Body materials vary by model
- Durability: >=500 mating cycles with calibrated torque
- Torque reference is model-dependent; confirm by datasheet or installation drawing
- Operating temperature: model-specific, see individual datasheet
- For formula-style VSWR entries, confirm frequency variable definition in the model drawing.

TEST EVIDENCE

Validation & Test Evidence

Thermal aging and high-frequency characterization for solderless RF interfaces.

Selected Vinstronics 1.0 mm and 1.85 mm solderless connector series are subjected to 500 hours of continuous high-temperature aging at +105°C. Post-aging characterization confirms stable VSWR, insertion loss and impedance behavior across high-frequency test conditions.



Validation focus: mechanical contact integrity, RF transition repeatability and impedance consistency after extended thermal exposure.

500 h

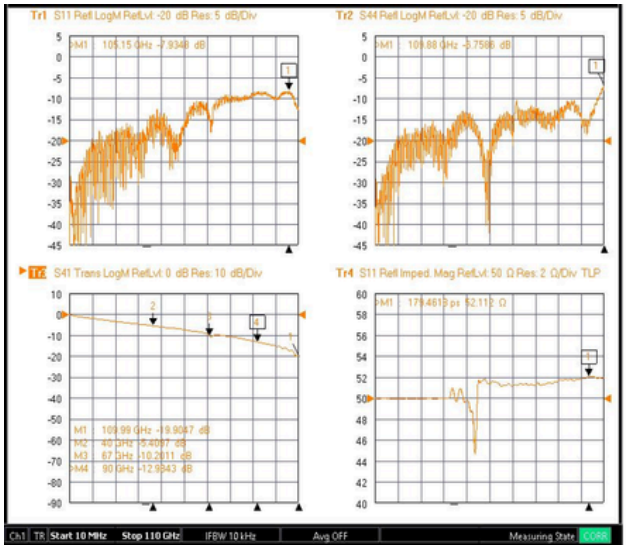
High-temperature aging at +105°C

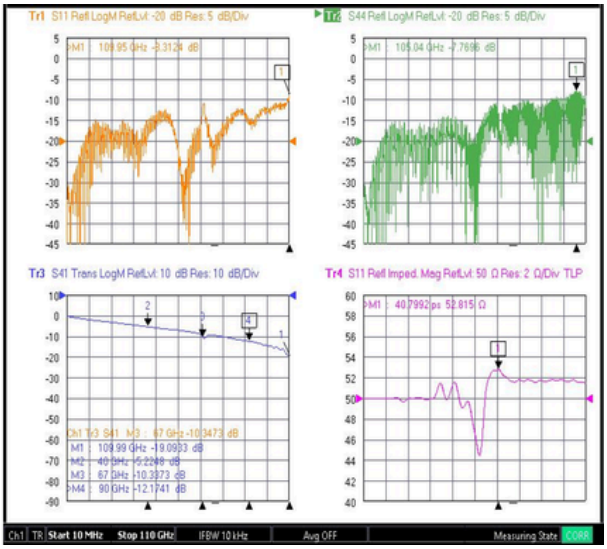
Up-110 GHz

High-frequency characterization range

≤1.40 VSWR

Stable performance after aging test





SELECTION WORKFLOW

How to Select & Order Solderless PCB Connectors

Interface, launch style, frequency range and mounting configuration.

1. **Choose Interface**

Select SMA, 2.92 mm, 2.4 mm, 1.85 mm or 1.0 mm according to required frequency range.

2. **Select Launch**

Use vertical launch for Z-axis access; use end launch for board-edge transitions.

3. **Confirm PCB**

Check board thickness, stack-up, signal layer, ground reference and mounting area.

4. **Verify Mechanics**

Confirm mounting hardware, torque reference, material and footprint compatibility.

5. **Request Support**

Send target frequency, launch style, PCB information and preferred part number.

Representative Part Number Structure

Vinstronics solderless connector part numbers indicate the product family, interface type, launch style and mechanical configuration. Part number format may vary by interface series and model structure. Always confirm the model-specific drawing before final design-in.

SEGMENT	EXAMPLE	MEANING
Brand Prefix	VST	Vinstronics standard product family
Series	CPM	Compression Precision Mount / solderless connector series
Interface	10 / 185 / 24 / 292 / SMA	1.0 mm / 1.85 mm / 2.4 mm / 2.92 mm / SMA interface family
Launch Style	F / RF	F: Vertical launch; RF: End launch / right-angle configuration
Configuration Code	01 / 02 / 03 / P / M	Model-specific mechanical structure, footprint or mounting configuration

Engineering Support Available

- 2D drawings and mechanical dimensions
- PCB footprint and launch transition guidance
- Stack-up review for Rogers, Megtron and RF substrates
- HFSS / CST simulation model support for selected models
- Application support for dense RF and mmWave validation boards

Recommended Quotation Information

- Target frequency range and preferred interface
- Vertical or end launch style
- PCB thickness, stack-up and signal layer
- Preferred part number, if already selected
- Required quantity and application scenario

Need help selecting a solderless connector? Send your PCB stack-up, target frequency and preferred launch style to sales@vinstronics.com.

Precision RF Interconnect Solutions

Vinstronics

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