EXTREME PERFORMANCE
RF INTERCONNECTS

5G

アンフェノール
SV offers a variety of millimeter wave (mmWave) coaxial cable assemblies and connectors for 5G mobile communication development and production. Our high frequency (26 GHz and beyond) push-on and threaded RF connectors offer industry leading signal fidelity in the 5G frequency spectrum and unique packaging designs for high density requirements. Let SV Microwave be your partner in 5G product development.

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SV Microwave’s high speed RF/coaxial solderless edge launch connectors are ideal for high frequency PCB applications where precision is key.

These rugged, durable and reusable connectors are adjustable to accommodate multiple PCB thicknesses and do not cause damage to the printed circuit board.

Current interface configurations include our high frequency SMA, 2.92mm, 2.4mm and 1.85mm series.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>SMA</th>
<th>2.92mm</th>
<th>2.4mm</th>
<th>1.85mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPEDANCE</td>
<td>50 Ω</td>
<td>50 Ω</td>
<td>50 Ω</td>
<td>50 Ω</td>
</tr>
<tr>
<td>MAX FREQUENCY</td>
<td>26.5 GHz</td>
<td>40 GHz</td>
<td>50 GHz</td>
<td>67 GHz</td>
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<tr>
<td>INTERMATEABILITY</td>
<td>3.5mm, 2.92mm</td>
<td>SMA, 3.5mm</td>
<td>1.85mm</td>
<td>2.4mm</td>
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<tr>
<td>MATING TORQUE*</td>
<td>7-10 in-lb</td>
<td>7-10 in-lb</td>
<td>5-7 in-lb</td>
<td>5-7 in-lb</td>
</tr>
<tr>
<td>PCB MOUNTING TORQUE*</td>
<td>12 in-oz</td>
<td>12 in-oz</td>
<td>12 in-oz</td>
<td>12 in-oz</td>
</tr>
</tbody>
</table>

*Recommended

Plots shown represent full path VSWR measurements (connector to connector) on a 1” trace, 10 mil thick Rogers 3003 microstrip stackup.

**FEATURES AND BENEFITS**

- Solderless compression mount for fast and easy installation
- Cost effective solutions for testing
- Durable and rugged design
- Customized PCB footprint design through simulation optimization
- Adjustable for multiple PCB thicknesses

**APPLICATIONS**

- RF test and measurement boards
- Rapid prototyping
- High speed digital component test
LITETOUCH SOLDERLESS PCB CONNECTORS

As printed circuit board substrates become thinner to support higher operating frequencies, coaxial connectors need to evolve as well. To support frequencies above 30 GHz, low dielectric constant PCB substrates are trending thinner than .010” to transmit successfully.

Conventional ‘compression style’ solderless coaxial connectors depend on compressing the trace/substrates to make electrical contact. This compression becomes increasingly impactful on the impedance of the transition from coaxial connector to PCB as the substrates get thinner.

SV Microwave developed the proprietary LiteTouch connector series to address this issue by significantly reducing the contact force on the trace required for a good electrical connection.

FEATURES AND BENEFITS

- Solderless compression mount for fast and easy installation (available with screws)
- Conforms to flexible circuit boards
- Non-destructive engagement on soft or thin (<.010”) dielectric substrates
- Custom optimized PCB footprint design through simulation

APPLICATIONS

- Precision thin substrate mounting
- High speed digital test

SMA Solderless LiteTouch Connector
Stripline P/N: SF2921-61507
CPW/Microstrip P/N: SF2921-61506*

2.92mm Solderless LiteTouch Connector
Stripline P/N: SF1521-60124
CPW/Microstrip P/N: SF1521-60115*

2.4mm Solderless LiteTouch Connector
Stripline P/N: SF1621-60049
CPW/Microstrip P/N: SF1621-60048*

Plots shown represent full path VSWR measurements (connector to connector) on a 1” trace, 10 mil thick Rogers 3003 microstrip stackup.

*Images and plot shown for CPW/Microstrip version

Specifications Table:

<table>
<thead>
<tr>
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<th>SMA</th>
<th>2.92mm</th>
<th>2.4mm</th>
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<tr>
<td>Impedance</td>
<td>50Ω</td>
<td>50Ω</td>
<td>50Ω</td>
</tr>
<tr>
<td>Max Frequency</td>
<td>26.5GHz</td>
<td>40GHz</td>
<td>50GHz</td>
</tr>
<tr>
<td>Intermateability</td>
<td>3.5mm, 2.92mm</td>
<td>SMA, 3.5mm</td>
<td>1.85mm</td>
</tr>
<tr>
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<td>7-10 in-lb</td>
<td>5-7 in-lb</td>
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*Recommended

Unmated and mated standard solderless compression on thin (<0.10”) dielectric PCB

Unmated and mated LiteTouch solderless compression on thin (<0.10”) dielectric PCB
MINI-D RF HIGH PERFORMANCE SYSTEM

SV's Mini-D RF Connection System has industry leading .110" port-to-port spacing for high mating cycle applications without damaging the cable assembly.

SV's low profile edge and surface mount PCB connector options are available with excellent RF performance through 67 GHz.

FEATURES AND BENEFITS
- High density design (.110" port-to-port spacing)
- SMPS interface recessed from D-Sub housing to protect from damage
- Rugged lightweight aluminum housing
- High Frequency RF performance to 67 GHz (1.85mm)

APPLICATIONS
- Automated Test Equipment (ATE)
- Product Evaluation Board
- Test and Instrumentation

SPECIFICATIONS

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<tr>
<td>MAX FREQUENCY</td>
<td>26.5 GHz</td>
<td>40 GHz</td>
<td>50 GHz</td>
<td>65 GHz</td>
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<tr>
<td>INSERTION FORCE</td>
<td>9 lbs (nominal)</td>
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<td>WITHDRAWAL FORCE</td>
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</table>

Gated VSWR measurement was generated using time domain gating at RP1 and RP2 as shown in the below image. Image consists of Mini-D RF Cable Assembly (7038-0240) and mating connector (9311-60112) plus ~.25" PCB after launch transition.

Mini-D RF to 2.92mm Cable Assembly

Mini-D RF PCB Edge Launch

Mini-D RF PCB Surface Mount

Gated VSWR measurement in below image consist of Mini-D RF Cable Assembly (7038-0240) and mating connector (9311-60112) plus ~.25" PCB after launch transition.

7038-0240 MATING END HALF

7038-0240 P/N: 7038-0240

9311-60112 P/N: 9311-60112

9311-60128 P/N: 9311-60128
SV’s complete line of coaxial PCB connectors meet the industry need for high performing, high frequency threaded and push-on designs. Current configurations include single and multiport, edge launch, surface mount and through hole variations. Additionally, SV can customize PCB footprint design to optimize connector to PCB transitions.

We partner with the premier raw coaxial cable suppliers in the industry, including our Amphenol sister division, Times Microwave systems to offer a large variety of standard and custom flexible and semi-rigid cable assemblies. We specialize in high frequency (DC-67 GHz) and extreme environment coaxial cables and mixed signal harnesses. All of our solderers are J-STD certified, so our cables are consistently among the highest quality in the industry. Above is just a sampling of some of the many types of cables we have to offer. Speak to one of our cable experts today for all your RF cable needs.

SV Microwave manufactures a large variety of standard solderless coaxial PCB connectors in high frequency bands including millimeter wave. These connectors are available with multiple screw lengths to accommodate any board thickness. These precision PCB connectors are ideal for mobile communications (including 5G), high speed digital environments and test & instrumentation.

Amphenol SV Microwave manufactures a large variety of coaxial high frequency adapters. SV’s ‘in series’ RF adapters are available as a right angle, bulkhead, flange mount and more. SV’s ‘between series’ RF enables a conversion between two different RF interconnect series and between different connector genders (i.e. male to female, male to male and female to female) and orientation transformations (i.e. straight to right angle).

Additionally, SV offers waterproof, hermetic adapters designed to withstand rigorous environments and harsh elements. Ingress Protection ratings are used to specify the environmental protection of enclosures and casings around electronic products.
SV offers a wide range of SMP, SMPM, and SMPS connectors, cable assemblies and adapters that are designed for high-density, high-frequency application.

These unique push-on connectors offer progressively increased (higher bandwidth) electrical performance as the density decreases.

Our standard product offering includes multiport, PCB mount, components, adapters, cable connectors & assemblies, and more.

SV Microwave manufactures a complete line of standard and custom-designed attenuators including fixed coaxial, QPL, Hi-Rel, and Chip versions. Attenuators are circuits that reduce the power level of a signal to a certain level with little or no reflection and are typically used for test and measurement, satellite payloads, circuits and circuit boards where space is at a premium.

Additionally, SV’s terminations are available in power handling values from ¼ watt up to 5 watts and attenuation values from .5 dB through 20 dB.

SV Microwave’s high frequency, high performance millimeter wave product line has the precision, quality and frequencies needed for the millimeter wave spectrum.

STANDARD PRODUCT OFFERING INCLUDES:
- 2.92 mm: DC – 40 GHz bandwidth
- 2.4 mm: DC – 50 GHz bandwidth
- 1.85 mm: DC – 67 GHz bandwidth
- 1.0 mm: DC – 110 GHz bandwidth