RF/PRECISION RF

CABLE ASSEMBLIES

8-31
Precision RF 50 Ω (18 GHz to 110 GHz)

32-45
Standard RF 50 Ω & 75 Ω (Sub-6 GHz & 12G-SDI)

CABLE CONNECTORS

12-25
Precision RF 50 Ω (18 GHz to 110 GHz)

34-44
Standard RF 50 Ω & 75 Ω (Sub-6 GHz & 12G-SDI)

BOARD CONNECTORS

12-25
Precision RF 50 Ω (18 GHz to 110 GHz)

34-45
Standard RF 50 Ω & 75 Ω (Sub-6 GHz & 12G-SDI)

ADAPTORS

26-27
Precision RF 50 Ω (In-Series & Between-Series)

ORIGINAL RF SOLUTIONS

11
Precision RF

45
Low Frequency

Magnum RF™ Solutions for Ganged Cable-to-Board or Board-to-Board Applications ................................................................. 20-21
Bulls Eye® Solutions for 40 GHz, 50 GHz, 70 GHz & 90 GHz ................................................................................................. 28-30
Flexible Waveguide Technology for Frequencies up to 90 GHz (E-band) ................................................................. 31
Customs & Tech Support ................................................................................................................................................... 46
As bandwidth, scale and power requirements continue to challenge conventional engineering methods, we want to help optimize the landscape of your entire system – and develop solutions, together.

Samtec’s industry-leading signal integrity expertise, full system optimization strategies and, innovative products and technologies help address the challenges of next gen data transmission for a path to 224 Gbps and beyond.

Samtec's integrated approach provides high-level design and development of advanced interconnect systems and TECHNOLOGIES, along with industry-leading expertise that allows us to offer effective strategies and support for optimizing the entire signal channel of high-performance systems.

Samtec is structured like no other company in the interconnect industry. We work in a fully integrated capacity that enables true collaboration and results in uniquely innovative PRODUCTS because our technology teams are not limited by the boundaries of traditional business units.
Samtec’s Sudden Service® provides unmatched global service, free access to data and industry leading tools, along with engineering support, to help you design, develop, test and deliver the best solution for any complex application.

Samtec has been consistently rated as the #1 connector company in North America, Europe and Asia. This is the highest overall rating in the Bishop & Associates’ U.S., Europe and Asia Customer Surveys of the Electronic Connector Industry.
Samtec is the Electronics Industry’s Service & Technology Leader.

**Reserve**

**SHIPS TOMORROW**

This designation allows customers to quickly and easily identify availability of over 200,000 of Samtec’s most popular connectors and cables - guaranteed to ship in 1-day.

Look for the Reserve badge throughout samtec.com to quickly determine if your part number is eligible, along with current availability, quantity breaks and pricing. Hundreds of part numbers are being added daily!

**24/7 WORLDWIDE ACCESS**

Samtec is the Electronics Industry’s Service & Technology Leader.

**24 HOUR**

**SUDDEN SAMPLE**

Free product samples, shipped in 24-hours or less have been a cornerstone of Samtec Sudden Service® since the company was founded. Visit samtec.com to quickly request your sample.

**2 DAYS**

**WORLD DIRECT™**

An innovative shipping program that bridges the gap between manufacturing facilities and customers, allowing for manufacturing flexibility without increased costs, and with even faster lead-times. Contact ecustomerservice@samtec.com to learn more.

**Technical Support**

Signal Integrity Group: sig@samtec.com

Application Support Group: asg@samtec.com

Interconnect Processing Group: ipg@samtec.com

**Supply Chain Support**

MySamtec™ Real-Time Account Access: account.samtec.com

Personal Account Managers & CSRs: ecustomerservice@samtec.com

Upfront, Aggressive 24-Hour Quotes: pricing@samtec.com
Samtec offers complete RF interconnect solutions supporting traditional sub-6 GHz frequencies to 110 GHz microwave/mmWave frequencies (sub-Terahertz spectrum). Products include end-to-end RF cable assemblies, board connectors, cable connectors, adaptors and Samtec Original RF solutions.

Technical Support

High-level design and development of advanced interconnect systems, along with industry leading expertise, allows us to offer effective strategies and support for optimizing the entire signal channel.

RF technical support includes launch optimization, simulation and testing. Customization of products, both quick-turn modifications or new designs, is also available.

Applications

- Test and Measurement
- Military, Aerospace, Satellite, Radar
- 5G/6G, Low Latency Wireless Communications
- Automotive, Telematics
- Broadcast & 12G-SDI
- Industrial, Monitoring, Instrumentation

IEEE FREQUENCY BANDS

<table>
<thead>
<tr>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MHz</td>
</tr>
<tr>
<td>10 MHz</td>
</tr>
<tr>
<td>100 MHz</td>
</tr>
<tr>
<td>1 GHz</td>
</tr>
<tr>
<td>10 GHz</td>
</tr>
<tr>
<td>100 GHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface</th>
<th>1.00 mm</th>
<th>1.35 mm</th>
<th>1.85 mm</th>
<th>2.40 mm</th>
<th>2.92 mm</th>
<th>3.50 mm</th>
<th>SSMA</th>
<th>SMA</th>
<th>Ganged SMPM</th>
<th>SMPM</th>
<th>SMP</th>
<th>N Type</th>
<th>TNCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>110 GHz</td>
<td>90 GHz</td>
<td>65 GHz</td>
<td>50 GHz</td>
<td>40 GHz</td>
<td>34 GHz</td>
<td>34 GHz</td>
<td>18/26.5 GHz</td>
<td>65 GHz</td>
<td>65 GHz</td>
<td>40 GHz</td>
<td>18 GHz</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface</th>
<th>MHF</th>
<th>SMA</th>
<th>MCX</th>
<th>MMCX</th>
<th>TNC</th>
<th>BNC (50 Ω)</th>
<th>SMB (50 &amp; 75 Ω)</th>
<th>Ganged (50 &amp; 75 Ω)</th>
<th>BNC (75 Ω)</th>
<th>HD BNC (75Ω)</th>
<th>DIN 1.0/2.3 (75 Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>6 GHz</td>
<td>6 GHz</td>
<td>6 GHz</td>
<td>6 GHz</td>
<td>4 GHz</td>
<td>4 GHz</td>
<td>5 GHz</td>
<td>12 GHz</td>
<td>12 GHz</td>
<td>12 GHz</td>
<td>12 GHz</td>
</tr>
</tbody>
</table>

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
CABLE ASSEMBLIES

- Precision, high frequency or standard, low frequency
- Assemblies available with the following cable types:
  - Low-loss microwave/millimeter wave from .047 to .277, semi-flexible
  - Orange Cable! Phase and insertion loss stable, high-performance cable assemblies optimized for next gen frequency targets
  - RG type (316, 174, 178, 58, 179, 6)
  - 12G-SDI optimized
  - 0.81 mm and 1.13 mm Micro High Frequency (MHF)
- Discrete and ganged solutions
- Cable lengths standard up to 10 meters (> 10 meters as custom RSP)
- Phase matching in pairs down to 1 ps
- Cable management available
- Mix & Match Solutions for Any Application: Samtec offers a variety of end options for each product series; this blends application-specific customization with the simplicity and lead-time efficiencies of an off-the-shelf assembly

BOARD CONNECTORS, CABLE CONNECTORS & ADAPTORS

- Precision, high frequency or standard, low frequency solutions
- Board-to-board or cable-to-board applications
- Threaded, bulkhead, push-on or bayonet coupling
- Solderless compression mount: vertical & edge launch
- Soldered: through-hole, surface mount, edge mount or mixed technology
- Balanced connectors for high-volume pick-and-place automation
- 12G-SDI optimized broadcast video solutions (BNC, high-density BNC, DIN 1.0/2.3)
- Cable connectors for use with industry standard cables: offer the flexibility to terminate to an industry-standard cable specified for your application
- Adaptors for 50 Ω precision RF applications: in-series and between-series
The Samtec RF product line includes 18 to 110 GHz High Frequency, Precision RF solutions for microwave and mmWave applications, including full cable assemblies, cable connectors and board level interconnects. Our focus is on delivering high-quality RF products that meet precision and performance expectations, blended with industry-leading system-level signal integrity expertise.

Vertical Integration = Full System Support

**CABLES**
- Design & Fabrication of Raw Cable
- Cable Assemblies

**CONNECTORS**
- Design & Fabrication
- Cable Connectors
- Board Connectors

**TECH SUPPORT**
- Launch Optimization
- Simulation & Testing
- Full System Optimization
ORANGE IS THE NEW CABLE!

PHASE & INSERTION LOSS STABLE HIGH FREQUENCY CABLE ASSEMBLIES

Samtec’s next generation of RF coaxial cable offers improved stability with temperature and flexure over time. The coaxial structure—with an outer jacket colored in distinctive Samtec orange—is designed to meet increased demands placed on the aerospace, defense, datacom, computer/semiconductor and instrumentation markets. Performance is optimized at frequencies that go beyond traditional industry targets to support emerging applications.

LOW-LOSS CABLE CONSTRUCTION (VS. TYPICAL PTFE CABLES)

<table>
<thead>
<tr>
<th>Series</th>
<th>LL018</th>
<th>LL030</th>
<th>LL043</th>
<th>LL071</th>
<th>LL095</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance (Ω)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Max Frequency (GHz)</td>
<td>18</td>
<td>30</td>
<td>43.5</td>
<td>71</td>
<td>95</td>
</tr>
<tr>
<td>Outer Dia. (inches)</td>
<td>0.306</td>
<td>0.192</td>
<td>0.143</td>
<td>0.096</td>
<td>0.078</td>
</tr>
<tr>
<td>Min Static Bend Radius (to inside of cable) (inches)</td>
<td>1.25</td>
<td>0.375</td>
<td>0.25</td>
<td>0.25</td>
<td>0.125</td>
</tr>
<tr>
<td>Velocity of Propagation (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Min Shielding Effectiveness (dB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-90</td>
</tr>
<tr>
<td>Temp Range (˚C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-65 ºC to +125 ºC</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>See Chart Below</td>
</tr>
</tbody>
</table>

FREQUENCY FOR EMERGING APPLICATIONS

18 GHz, 30 GHz, 43.5 GHz, 71 GHz, 95 GHz
## 50 Ω μWAVE/mmWAVE CABLE SPECIFICATIONS

### STANDARD OFF-THE-SHELF ASSEMBLIES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RF047-A, GC47</th>
<th>RF25S</th>
<th>RF405</th>
<th>RF085</th>
<th>RF086, GC86</th>
<th>RF23C</th>
<th>RF23S</th>
<th>RF402</th>
<th>RF180</th>
<th>RF280</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>.047 (29 AWG), low loss flexible</td>
<td>Samtec 25 AWG, flexible</td>
<td>RG 405, .086, (24 AWG), semi-flexible</td>
<td>.085 (24 AWG), low loss flexible</td>
<td>.086 (23 AWG), low loss flexible</td>
<td>Samtec 23 AWG, flexible, copper shield</td>
<td>Samtec 23 AWG, flexible</td>
<td>RG 402, .141 (19 AWG), low loss flexible</td>
<td>.178 (16 AWG), low loss flexible</td>
<td>.277 (11 AWG), low loss flexible</td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Max. Frequency (GHz)</th>
<th>65</th>
<th>40</th>
<th>20</th>
<th>50</th>
<th>65</th>
<th>50</th>
<th>35</th>
<th>20</th>
<th>27</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Insertion Loss (dB/m)</td>
<td>1 GHz</td>
<td>1.21</td>
<td>0.79</td>
<td>0.72</td>
<td>0.69</td>
<td>0.65</td>
<td>0.68</td>
<td>0.72</td>
<td>0.40</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>26 GHz</td>
<td>7.43</td>
<td>3.80 @ 20 GHz</td>
<td>4.26 @ 20 GHz</td>
<td>4.28</td>
<td>3.90</td>
<td>4.27</td>
<td>3.71 @ 20 GHz</td>
<td>2.30 @ 20 GHz</td>
<td>1.23 @ 18 GHz</td>
</tr>
<tr>
<td></td>
<td>40 GHz</td>
<td>9.68</td>
<td>–</td>
<td>5.59</td>
<td>5.06</td>
<td>5.59</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>50 GHz</td>
<td>11.14</td>
<td>–</td>
<td>6.47</td>
<td>5.81</td>
<td>6.46</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

### PROPAGATION DELAY (ns/m)

| Propagation Delay (ns/m) | 4.76 | 4.79 | 4.75 | 4.20 | 4.76 | 4.72 | 4.79 | 4.79 | 4.17 | 4.02 |

### VELOCITY OF PROPAGATION

| Velocity of Propagation | 70% | 80% | 70% | 70% | 80% | 83% | 80% | 80% | 83% |

### CAPACITANCE (pF/m)

| Capacitance (pF/m) | 95.00 | 96.80 | 104.97 | 88.20 | 83.37 | 97.80 | 95.45 | 98.07 | 82.00 |

### CONSTRUCTION

#### CENTER CONDUCTOR

<table>
<thead>
<tr>
<th>AWG (mm²/sq.)</th>
<th>Material</th>
<th>Solid Silver Plated Copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 (.2870 / .0113)</td>
<td>PFA</td>
<td>–</td>
</tr>
<tr>
<td>25 (.4570 / .0180)</td>
<td>Solid FEP</td>
<td>–</td>
</tr>
<tr>
<td>24 (.5100 / .0200)</td>
<td>PTFE</td>
<td>–</td>
</tr>
<tr>
<td>23 (.5740 / .0226)</td>
<td>Solid PTFE</td>
<td>–</td>
</tr>
<tr>
<td>19 (.6600 / .0362)</td>
<td>Foam FEP</td>
<td>–</td>
</tr>
<tr>
<td>16 (1.3000 / .0512)</td>
<td>Solid FEP</td>
<td>–</td>
</tr>
<tr>
<td>11 (2.2600 / .0889)</td>
<td>PTFE</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>PTFE Tape</td>
<td>–</td>
</tr>
</tbody>
</table>

#### DIELECTRIC

<table>
<thead>
<tr>
<th>Dia. (mm/sq.)</th>
<th>Material</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>Spiral Strip Ag Plated Cu</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>2) Cu Tape</th>
<th>3) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Flat Ag Plated Cu</th>
<th>2) Al Polyester</th>
<th>3) Round Ag Plated Cu</th>
</tr>
</thead>
</table>

#### SHIELD

<table>
<thead>
<tr>
<th>Dia. (mm/sq.)</th>
<th>Material</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>2) Cu Tape</th>
<th>3) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Flat Ag Plated Cu</th>
<th>2) Al Polyester</th>
<th>3) Round Ag Plated Cu</th>
</tr>
</thead>
</table>

#### OUTER BRAID

<table>
<thead>
<tr>
<th>Dia. (mm/sq.)</th>
<th>Material</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>2) Cu Tape</th>
<th>3) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Flat Ag Plated Cu</th>
<th>2) Al Polyester</th>
<th>3) Round Ag Plated Cu</th>
</tr>
</thead>
</table>

#### JACKET

<table>
<thead>
<tr>
<th>Dia. (mm/sq.)</th>
<th>Material</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Ag Plated Cu</th>
<th>2) Ag Plated Cu</th>
<th>2) Cu Tape</th>
<th>3) Ag Plated Cu</th>
<th>Tinned Cu</th>
<th>1) Flat Ag Plated Cu</th>
<th>2) Al Polyester</th>
<th>3) Round Ag Plated Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMA, SMP, SMPM, Ganged SMPM (Magnum RF™)</td>
<td>SMA, SMP</td>
<td>2.92 mm, 2.40 mm</td>
<td>1.85 mm, 2.40 mm, 2.92 mm, SMA, SMP, SMPM, Ganged SMPM (Magnum RF™)</td>
<td>2.40 mm, 2.92 mm, SMA, SMP, SMPM</td>
<td>3.50 mm</td>
<td>SMA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### MECHANICAL

<table>
<thead>
<tr>
<th>Operating Temp</th>
<th>-65°C to 125°C</th>
<th>-40°C to 200°C</th>
<th>-40°C to 125°C</th>
<th>-55°C to 125°C</th>
<th>-65°C to 125°C</th>
<th>-65°C to 125°C</th>
<th>-40°C to 200°C</th>
<th>-65°C to 125°C</th>
<th>-40°C to 200°C</th>
<th>-55°C to 200°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. Bend Radius</td>
<td>5.00 mm</td>
<td>9.00 mm</td>
<td>6.35 mm</td>
<td>13.20 mm</td>
<td>8.90 mm</td>
<td>3.18 mm</td>
<td>8.89 mm</td>
<td>10.90 mm</td>
<td>24.80 mm</td>
<td>38.10 mm</td>
</tr>
</tbody>
</table>

### CONNNECTION OPTIONS

| Connector Options | SMA, SMP | 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMA, SMP, SMPM, Ganged SMPM (Magnum RF™) | SMA, SMP | 2.92 mm, 2.40 mm | 1.85 mm, 2.40 mm, 2.92 mm, SMA, SMP, SMPM, Ganged SMPM (Magnum RF™) | 2.40 mm, 2.92 mm, SMA, SMP, SMPM |

For complete specifications, visit samtec.com or contact RFGroup@samtec.com
# ORIGINAL SOLUTIONS
## PRECISION RF

### PRECISION ALIGNMENT FEATURES
- Eliminates misalignment that can occur during board assembly
- Ensures repeatable peak connector performance
- Available on 135, 185, 240, 292 & GPPC Series

### DIFFERENTIAL PAIR TEST & MEASUREMENT
- Two-port SMPM ganged solution (GPPC Series)
- Solderless compression mount design
- Saves board real estate (2x the spacing savings)
- Cable-to-board or board-to-board

### RIGHT-ANGLE, LOW PROFILE, GANGED SMPM
- Extremely low profile, high-density, right-angle connector (GPPC Series, -RA-SM option)
- Belly-to-belly, surface mount PCB connection for maximum density
- Body height: 3.94 mm (.155")

### COUNTERWEIGHT SOLUTIONS
- Enables efficient board assembly (eliminates hand soldering)
- Balanced for automated, high-volume pick-and-place automation
- Edge mount SMA (26.5 GHz) or 2.92 mm (40 GHz)

### ANALOG OVER ARRAY™ CONNECTORS
- Enhanced open-pin-field arrays simultaneously run analog, digital, and power signals
- Reference designs and evaluation kits
- Industry-leading crosstalk and return loss performance

---

<table>
<thead>
<tr>
<th>SERIES</th>
<th>135/185/240/292/GPPC</th>
<th>GPPC (-CMM)</th>
<th>GPPC (-RA-SM)</th>
<th>RSP (SMA/2.92 mm)</th>
<th>ANALOG OVER ARRAY™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Precision Alignment</td>
<td>Differential Pair Testing</td>
<td>Extremely Low Profile</td>
<td>Balanced Edge Mount</td>
<td>Analog, Digital &amp; Power</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://samtec.com/alignment">samtec.com/alignment</a></td>
<td><a href="http://samtec.com?GPPC">samtec.com?GPPC</a></td>
<td><a href="http://samtec.com?GPPC">samtec.com?GPPC</a></td>
<td><a href="mailto:RFGroup@samtec.com">Contact: RFGroup@samtec.com</a></td>
<td><a href="http://samtec.com/AOA">samtec.com/AOA</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCT FAMILY</th>
<th>BULLS EYE®</th>
<th>FLEXIBLE WAVEGUIDE</th>
<th>VNX+</th>
<th>MAGNUM RF™</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td><a href="http://samtec.com/BullsEye">samtec.com/BullsEye</a></td>
<td><a href="http://samtec.com/Waveguide">samtec.com/Waveguide</a></td>
<td><a href="http://samtec.com/VNX-plus">samtec.com/VNX-plus</a></td>
<td><a href="http://samtec.com/magnumRF">samtec.com/magnumRF</a></td>
</tr>
</tbody>
</table>
### 1.00 mm Cable Assemblies

**RF047-A**

**RF047-A**
- (1.2 mm) .047" overshield DIA
- 29 AWG millimeter wave cable

**-10BJ**
- 1.00 mm Bulkhead Straight Jack

**-10SP**
- 1.00 mm Straight Plug

**OVERALL LENGTH**
- “XXXX”
  - Overall Length in millimeters
  - 0100 (100 mm) 3.94" minimum

**ALSO AVAILABLE**
- 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm,
- SMPM, SMP, SMA = RF047-A

**VSWR**
- 1.40 max. (DC to 90 GHz)
- 1.50 max. (90 GHz to 110 GHz)

### 1.00 mm Cable Connectors

**PRF10**

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF10-J-VP-047D-SS</td>
<td>.047</td>
<td>Semi-Rigid</td>
</tr>
<tr>
<td>PRF10-P-VP-047D-SS</td>
<td>.047</td>
<td>Semi-Rigid</td>
</tr>
</tbody>
</table>

For a complete list of 1.00 mm cable connectors, visit [www.samtec.com?PRF10](http://www.samtec.com?PRF10)

**INTERFACE STANDARD**

- J-C = Cable Jack
- P-C = Cable Plug
- VP = Plating (75 µ" Gold center contact, passivated outer contact)
- SS = Straight, Solder Clamp
**1.35 mm Cable Assemblies**

**RF047-A**

- **SERIES**
  - RF047-A
- **END 1 CONNECTOR**
  - -13BJ = 1.35 mm Bulkhead Straight Jack
- **END 2 CONNECTOR**
  - -13SP = 1.35 mm Straight Plug
- **OVERALL LENGTH**
  - –“XXXX” = Overall Length in millimeters
  - –0100 (100 mm) 3.94” minimum

**ALSO AVAILABLE**

1.00 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMPM, SMP, SMA = RF047-A

**VSWR**

RF047-A: 1.40 max.

---

**1.35 mm Board Connectors**

**RF047-A**

**Cable Mates:**

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF13.P-C.VP-047A-SS Temp-Flex 1000671047</td>
<td>5.80 2.282 DIA (5.70) 2.244</td>
</tr>
<tr>
<td>PRF13.J-C.VP-047A-BS Temp-Flex 1000671047</td>
<td>3.490 1.374 DIA (3.475) 1.368</td>
</tr>
</tbody>
</table>

For a complete list of 1.35 mm cable connectors, visit www.samtec.com/PRF13

- **GENDER**
  - -J = Jack
  - -P = PCB Mount
- **TYPE**
  - -VP = 50 µ” Gold center contact, Passivated outer contact
- **PLATING**
  - -ST = Straight
  - -CM = Compression Mount Stripline
  - -CMM = Compression Mount Microstrip
- **ORIENTATION**
  - -1 = Without screws
  - -2 = With screws
- **TERMINATION**
  - -1 = Without screws
  - -2 = With screws
- **OPTION**
  - Leave blank for individually bagged.
- **PACKAGING**
  - -B = Bulk packaged

---

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
1.85 mm TO 65 GHz

**1.85 mm Cable Assemblies**
RF047-A, RF086

- **SERIES**
  - **RF047-A** = (1.2 mm) .047" overshield DIA 29 AWG millimeter wave cable
  - **RF086** = (2.18 mm) .086" overshield DIA 23 AWG millimeter wave cable

- **END 1 CONNECTOR**
  - **-18SJ** = 1.85 mm Straight Jack

- **END 2 CONNECTOR**
  - **-18SP** = 1.85 mm Straight Plug

- **OVERALL LENGTH**
  - **"XXXX"** = Overall Length in millimeters
    - -0100 (100 mm) 3.94" minimum

**ALSO AVAILABLE**
- 1.00 mm, 1.35 mm, 2.40 mm, 2.92 mm, SMPM, SMP, SMA = RF047-A
- 2.40 mm, 2.92 mm, SMPM, SMP, SMA = RF086

**VSWR**
- RF047-A: 1.40 max.
- RF086: 1.40 max.

**1.85 mm Board Connectors**
185

**Cable Mates:**
- RF047-A, RF086

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF18-J.C-EP-085-BS</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRF18-P.C-EP-085-SD</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRF18-P.C-EE-085-SD</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRF18-J.C-EP-086-SS</td>
<td>Temp-Flex 1001935086</td>
</tr>
<tr>
<td>PRF18-J.C-EP-047A-SS</td>
<td>Temp-Flex 1000671047</td>
</tr>
<tr>
<td>PRF18-P.C-EP-047A-SS</td>
<td>Temp-Flex 1000671047</td>
</tr>
<tr>
<td>PRF18-P.C-EE-047D-SD</td>
<td>.047 Semi-Rigid</td>
</tr>
<tr>
<td>PRF18-P.C-EE-047H-SD</td>
<td>EZ.47-LA Semi-Rigid</td>
</tr>
<tr>
<td>PRF18-P.C-EP-070-SD</td>
<td>EZ.70-LA Semi-Rigid</td>
</tr>
<tr>
<td>PRF18-J.C-EP-405-SD</td>
<td>RG 405 Semi-Rigid</td>
</tr>
<tr>
<td>PRF18-P.C-EP-405-SD</td>
<td>RG 405 Semi-Rigid</td>
</tr>
<tr>
<td>PRF18-P.C-EP-086E-SS</td>
<td>Dynawave DF165</td>
</tr>
</tbody>
</table>

**Leaving blank for individually bagged.**
- **-B** = Bulk packaged

**1.85 mm Cable Connectors**
PRF18

**VSWR**
- RF047-A: 1.40 max.
- RF086: 1.40 max.

**PRF18**
- **185 GENDER TYPE PLATING ORIENTATION TERMINATION OPTION PACKAGING**
- **-J** = Jack
- **-P** = PCB Mount
- **-EP** = 50 µ" (1.27 µm) Gold center contact, Passivated outer contact
- **-ST** = Straight
- **-CM** = Compression Mount Stripline
- **-CMM** = Compression Mount Microstrip
- **-EL** = Edge Launch
- **-1** = Without Screws (–CM & –CMM only)
- **-2** = With Screws (–CM & –CMM only)
- **-01** = .040” to .100” PCB thickness (–EL only)
- **-CM** = Compression Mount Stripline
- **-CMM** = Compression Mount Microstrip
- **-EL** = Edge Launch
- **-1** = Without Screws (–CM & –CMM only)
- **-2** = With Screws (–CM & –CMM only)
- **-01** = .040” to .100” PCB thickness (–EL only)

**INTERFACE STANDARD**

- **P.C = Cable Plug**
- **J.C = Cable Jack**
- **EE = Plating (50 µ" gold center contact, & outer contact)**
- **EP = Plating (50 µ" gold center contact, passivated outer contact)**
- **SS = Straight, Solder Clamp**
- **SD = Straight, Direct Solder**
- **BS = Bulkhead, Solder Clamp**

**samtec.com/185**

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
**2.40 mm TO 50 GHz**

**2.40 mm Cable Assemblies**
RF047-A, RF085, RF086, RF23C

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF047-A</td>
<td>24SJ</td>
<td>24SP</td>
<td>–“XXXX”</td>
</tr>
<tr>
<td>= (1.2 mm) .047” overshield DIA 29 AWG millimeter wave cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF086</td>
<td>= 2.40 mm Straight Jack</td>
<td></td>
<td></td>
</tr>
<tr>
<td>= (2.18 mm) .086” overshield DIA 23 AWG millimeter wave cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF085</td>
<td>= 2.40 mm Straight Plug</td>
<td></td>
<td></td>
</tr>
<tr>
<td>= (2.16 mm) .085” overshield DIA 24 AWG millimeter wave cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF23C</td>
<td>–ST</td>
<td>–CM</td>
<td></td>
</tr>
<tr>
<td>= MWC-2350CU-01 millimeter wave cable with copper foil shield</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ALSO AVAILABLE**
1.00 mm, 1.35 mm, 1.85 mm, 2.92 mm, SMPM, SMP, SMA = RF047-A
1.85 mm, 2.92 mm, SMPM, SMP, SMA = RF086
2.92 mm = RF085
2.92 mm, SMPM, SMP, SMA = RF23C

**VS/VRW**
RF047-A: 1.35 max.
RF086: 1.40 max.
RF085: 1.40 max.
RF23C: 1.40 max.

**2.40 mm Board Connectors**
240

**Cable Mates:**
RF047-A, RF086, RF085, RF23C

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>OPTION</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>= Jack</td>
<td>= PCB Mount</td>
<td>= 50 μ” (1.27 μm) Gold center contact, Passivated outer contact</td>
<td>= Straight</td>
<td>= Compression Mount Stripline</td>
<td>= Without Screws (–CM &amp; –CMM only)</td>
<td>= Individually bagged</td>
</tr>
<tr>
<td>= Compression Mount Microstrip</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= with Screws (–CM &amp; –CMM only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Edge Launch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF24-J-C-EP-085-SS</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRF24-J-C-EP-085-SD</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRF24-J-C-EP-120A-SS</td>
<td>Semflex HP120</td>
</tr>
<tr>
<td>PRF24-J-C-EP-160-SS</td>
<td>Semflex HP160</td>
</tr>
<tr>
<td>PRF24-J-C-EP-140B-SS</td>
<td>IW 1401</td>
</tr>
<tr>
<td>PRF24-J-C-EP-150B-SS</td>
<td>IW 1501</td>
</tr>
<tr>
<td>PRF24-J-C-EP-140B-SS</td>
<td>Dynawave DF150</td>
</tr>
<tr>
<td>PRF24-J-C-EP-150-SS</td>
<td>Temp-Flex 1001935086</td>
</tr>
<tr>
<td>PRF24-J-C-EP-086-SS</td>
<td>Temp-Flex 1001935086</td>
</tr>
</tbody>
</table>

**INTERFACE STANDARD**

For a complete list of 2.40 mm cable connectors, visit www.samtec.com/PRF24

P.C = Cable Plug
J.C = Cable Jack
EE = Plating (50 μ” gold center contact & outer contact)
EP = Plating (50 μ” gold center contact, passivated outer contact)
SS = Straight, Solder Clamp
SD = Straight, Direct Solder
BS = Bulkhead, Solder Clamp

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2.92 mm TO 40 GHz

2.92 mm Cable Assemblies
RF047-A, RF086, RF085, RF23C

- **SERIES**
  - **RF047-A** = (1.2 mm) .047" overshield DIA.
  - **RF086** = (2.18 mm) .086" overshield DIA.
  - **RF085** = (2.16 mm) .085" overshield DIA.
  - **RF23C** = MWC-2350CU-01 millimeter wave cable with copper foil shield.

- **END 1 CONNECTOR**
  - **92SJ** = 2.92 mm Straight Jack.
  - **92SP** = 2.92 mm Straight Plug.

- **END 2 CONNECTOR**

- **OVERALL LENGTH**
  - “XXXX” = Overall Length in millimeters.
  - **RF047-A**, **RF086**: 3.94" minimum.
  - **RF085**, **RF23C**: 5.984" minimum.

- **ALSO AVAILABLE**
  - 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, SMPM, SMP, SMA = RF047-A.
  - 1.85 mm, 2.40 mm, SMPM, SMP, SMA = RF086.
  - 2.40 mm = RF085.
  - 2.40 mm, SMPM, SMP, SMA = RF23C.

2.92 mm Cable Connectors
PRF92

- **2.92 mm** Board Connectors
292

- **GENDER**
  - **J** = Jack
  - **P** = PCB Mount

- **TYPE**
  - **EP** = 50 µ" (1.27 µm) center contact, passivated outer contact.
  - **ST** = Straight
  - **CM** = Compression Mount Stripline
  - **CMM** = Compression Mount Microstrip
  - **EL** = Edge Launch

- **PLATING**
  - **EE** = Plating (50 µ" Gold center contact & outer contact).
  - **EP** = Plating (50 µ" Gold center contact, passivated outer contact).
  - **SS** = Straight, Solder Clamp
  - **SD** = Straight, Direct Solder
  - **BS** = Bulkhead, Solder Clamp
  - **4S** = 4-hole flange, Solder Clamp

- **ORIENTATION**
  - **1** = Without Screws (-CM & -CMM only).
  - **2** = With Screws (-CM & -CMM only).

- **TERMINATION**
  - **CM** = Compression Mount Stripline
  - **CMM** = Compression Mount Microstrip

- **TERMINATION**
  - **ST** = Straight

- **OPTION**
  - **-** = Leave blank for individually bagged.
  - **B** = Bulk packaged

- **PACKAGING**

- **CONNECTORS FOR INDUSTRY STANDARD CABLES**

- **INTERFACE STANDARD**

- **VSWR**
  - **RF047-A**: 1.35 max.
  - **RF086**: 1.40 max.
  - **RF085**: 1.40 max.
  - **RF23C**: 1.40 max.

For a complete list of 2.92 mm cable connectors, visit www.samtec.com/PRF92

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[Samtec's website link]
### 3.50 mm TO 34 GHz

#### 3.50 mm Cable Assemblies

**RF235**

- **SERIES**
  - **RF235**
  - MWC-2350-01 microwave cable with 23 AWG solid FEP Dielectric

- **END 1 CONNECTOR**
  - **-355JP**
  - 3.50 mm Straight Jack

- **END 2 CONNECTOR**
  - **-355PP**
  - 3.50 mm Straight Plug

- **OVERALL LENGTH**
  - “XXXX”
  - Overall Length in millimeters
  - ~0100 (100 mm) 3.94” min.

- **VSWR**
  - **RF235**: 1.30 max

#### 3.50 mm Cable Connectors

**PRF35**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF35-P-C-EP-405-SS</td>
<td>RG 405, Semi-Rigid</td>
</tr>
<tr>
<td>PRF35-J-C-EP-402-BS</td>
<td>RG 402.141, Semi-Rigid</td>
</tr>
<tr>
<td>PRF35-P-C-EP-402-BS</td>
<td>RG 402.141, Semi-Rigid</td>
</tr>
<tr>
<td>PRF35-P-C-EP-120A-SS</td>
<td>Semflex HP120</td>
</tr>
<tr>
<td>PRF35-J-C-EP-160-SS</td>
<td>Semflex HP160</td>
</tr>
<tr>
<td>PRF35-P-C-EP-160-SS</td>
<td>Semflex HP160</td>
</tr>
<tr>
<td>PRF35-P-C-EP-210A-SS</td>
<td>Micro-Coax UFA210A</td>
</tr>
</tbody>
</table>

For a complete list of 3.50 mm cable connectors, visit www.samtec.com/PRF35

P.C = Cable Plug
J.C = Cable Jack
EP = Plating (50 µ” Gold center contact, passivated outer contact)
SS = Straight, Solder Clamp
BS = Bulkhead, Solder Clamp

#### SSMA TO 34 GHz

#### SSMA Cable Connectors

**PRFS1**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRFS1-J-C-EE-405-BD</td>
<td>RG 405, Semi-Rigid</td>
</tr>
<tr>
<td>PRFS1-P-C-EE-405-SD</td>
<td>RG 405, Semi-Rigid</td>
</tr>
<tr>
<td>PRFS1-P-C-EP-141A-SS</td>
<td>Harbour SS402</td>
</tr>
</tbody>
</table>

For a complete list of SSMA cable connectors, visit www.samtec.com/PRFS1

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
### SMA TO 26.5 GHz

#### SMA Cable Assemblies
- **RF047-A, RF086, RF23C, RF25S, RF402, RF405, RF180, RF280**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RF047-A</strong></td>
<td>-01SP1*</td>
<td>= SMA Straight Plug</td>
<td><strong>“XXXX”</strong> = Overall Length in millimeters</td>
</tr>
<tr>
<td>= (1.2 mm) .047&quot; overshield DIA</td>
<td>= SMA Right-angle Plug</td>
<td>= 0100 (100 mm) 3.94” minimum</td>
<td></td>
</tr>
<tr>
<td>29 AWG millimeter wave cable</td>
<td>(RF047-A, RF086, RF23C &amp; RF25S not available)</td>
<td>= 0152 (152 mm) 5.98&quot; minimum</td>
<td></td>
</tr>
<tr>
<td><strong>RF086</strong></td>
<td>-01RP1*</td>
<td>= SMA Bulkhead Jack</td>
<td>= 0200 (200 mm) 7.87” minimum</td>
</tr>
<tr>
<td>= (2.18 mm) .086&quot; overshield DIA</td>
<td>(RF402 &amp; RF405 not available)</td>
<td>(RF280)</td>
<td></td>
</tr>
<tr>
<td>23 AWG millimeter wave cable</td>
<td><strong>ALSO AVAILABLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RF23C</strong></td>
<td>-01BJ1*</td>
<td>= Straight Bulkhead Jack, Sealed</td>
<td>-0100SP1* = SMA Straight Plug</td>
</tr>
<tr>
<td>= MCW-2350CU-01 millimeter wave cable with copper foil shield</td>
<td>(RF402 &amp; RF405 &amp; RF23C only)</td>
<td>-0100RP1* = SMA Right-angle Plug</td>
<td></td>
</tr>
<tr>
<td><strong>RF25S</strong></td>
<td>-01SB</td>
<td>= Straight Bulkhead Jack, Sealed</td>
<td>(RF047-A, RF086, RF23C &amp; RF25S not available)</td>
</tr>
<tr>
<td>= MWC-2550-01 microwave cable with 22 AWG solid FEP dielectric</td>
<td>(RF402 &amp; RF405 &amp; RF23C only)</td>
<td><strong>“XXXX”</strong> = Overall Length in millimeters</td>
<td></td>
</tr>
<tr>
<td><strong>RF402</strong></td>
<td>-01SP1*</td>
<td>= SMA Straight Plug</td>
<td>= 0100 (100 mm) 3.94” minimum</td>
</tr>
<tr>
<td>= RG 402 (.141&quot;) 19 AWG semi-flexible microwave cable</td>
<td>= SMA Right-angle Plug</td>
<td>= 0152 (152 mm) 5.98” minimum</td>
<td></td>
</tr>
<tr>
<td><strong>RF405</strong></td>
<td>-01RP1*</td>
<td>= SMABulkhead Jack</td>
<td>= 0200 (200 mm) 7.87” minimum</td>
</tr>
<tr>
<td>= RG 405 (.080&quot;) 24 AWG semi-flexible microwave cable</td>
<td>(RF402 &amp; RF405 not available)</td>
<td>(RF280)</td>
<td></td>
</tr>
<tr>
<td><strong>RF180</strong></td>
<td>-01BJ1*</td>
<td>= Straight Bulkhead Jack, Sealed</td>
<td>-0100SP1* = SMA Straight Plug</td>
</tr>
<tr>
<td>= (5.42 mm) .178&quot; overshield DIA, 16 AWG microwave cable</td>
<td>(RF402 &amp; RF405 &amp; RF23C only)</td>
<td>-0100RP1* = SMA Right-angle Plug</td>
<td></td>
</tr>
<tr>
<td><strong>RF280</strong></td>
<td>-01SB</td>
<td>= Straight Bulkhead Jack, Sealed</td>
<td>(RF402 &amp; RF405 &amp; RF23C only)</td>
</tr>
<tr>
<td>= (7 mm) .277&quot; overshield DIA, 11 AWG microwave cable</td>
<td>(RF402 &amp; RF405 &amp; RF23C only)</td>
<td><strong>“XXXX”</strong> = Overall Length in millimeters</td>
<td></td>
</tr>
</tbody>
</table>

**VSWR**
- RF047-A: 1.30 max.
- RF086: 1.30 max.
- RF23C: 1.30 max.
- RF180: 1.35 max.
- RF280: 1.35 max.

Additional connector options available. Contact RFGroup@samtec.com

#### SMA Board Connectors
- **SMA-TH, SMA-SM, SMA-MT, SMA-EM**

**Cable Mates:**
- RF047-A, RF086, RF23C, RF25S, RF402, RF405, RF180, RF280

#### SMA Cable Connectors
- **PRF01**

- **CONNECTORS FOR INDUSTRY STANDARD CABLES**
  - **PRF01-P-C-EP-120C-SS Harbour LL120**
  - **PRF01-P-C-EP-142-SS Harbour LL142**
  - **PRF01-J-C-EP-142-SS Harbour LL142**
  - **PRF01-P-C-EP-142-RS Harbour LL142**
  - **PRF01-P-C-EP-142A-SS Harbour LL142**
  - **PRF01-P-C-EP-335-SS Harbour LL335**
  - **PRF01-P-C-EP-335A-SS Harbour LL335i**
  - **PRF01-P-C-EP-190-SS Semflex HP190**
  - **PRF01-P-C-EP-190-RS Semflex HP190**
  - **PRF01-P-C-EP-290-SS Semflex LA290**

**INTERFACE STANDARD**

For a complete list of SMA cable connectors, visit www.samtec.com/PRF01

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SMPM TO 65 GHz

SMPM Cable Assemblies
RF047-A, RF086, RF23C

 SERIES END 1 CONNECTOR END 2 CONNECTOR OVERALL LENGTH
RF047-A = (1.2 mm) .047" overshield DIA = SMPM Straight Plug, Full Detent = SMPM Straight Plug, Full Detent = “XXXX” = Overall Length 29 AWG millimeter cable = SMPM Straight Jack = SMPM Straight Jack in millimeters RF086 = (2.18 mm) .086" overshield DIA = SMPM Right-angle Jack (RF047-A only) = SMPM Right-angle Jack = SMPM Straight Bulkhead Jack (RF047-A only) 23 AWG millimeter cable (RF047-A only) (RF086) RF23C = MWC-2350CU-01 millimeter wave = SMPM Straight Bulkhead Jack cable with copper foil shield (RF23C)

VSWR
RF047-A: 1.40 max.
RF086: 1.40 max.
RF23C: 1.20 max. (DC to 26.5 GHz)
1.40 max. (26.5 GHz to 50 GHz)

ALSO AVAILABLE
1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMP, SMA = RF047-A
1.85 mm, 2.40 mm, 2.92 mm, SMP, SMA = RF086
2.40 mm, 2.92 mm, SMP, SMA = RF23C

SMPM Board Connectors
SMPM-SM, SMPM-TH, SMPM-RA, SMPM-MT, SMPM-EM

Cable Mates:
RF047-A, RF086, RF23C

SMPM CONNECTORS FOR INDUSTRY STANDARD CABLES

<table>
<thead>
<tr>
<th>CONNECTORS</th>
<th>INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRFMO-J-C-EE-085-BD</td>
<td>Harbour SS405</td>
</tr>
<tr>
<td>PRFMO-J-C-EE-047A-BD</td>
<td>Temp-Flex 1000671047</td>
</tr>
<tr>
<td>PRFMO-J-C-EE-047A-SD</td>
<td>Temp-Flex 1000671047</td>
</tr>
<tr>
<td>PRFMO-J-C-EE-047A-RD</td>
<td>Temp-Flex 1000671047</td>
</tr>
<tr>
<td>PRFMO-P-C-HG-047A-SD</td>
<td>Temp-Flex 1001935047</td>
</tr>
<tr>
<td>PRFMO-J-C-EE-047B-SD</td>
<td>Temp-Flex 1001935047</td>
</tr>
<tr>
<td>PRFMO-J-C-EE-086-SD</td>
<td>Temp-Flex 1001935086</td>
</tr>
<tr>
<td>PRFMO-P-C-EE-086-SD</td>
<td>Temp-Flex 1001935086</td>
</tr>
</tbody>
</table>

INTERFACE STANDARD (CATCHER’S MITT)

For a complete list of SMPM cable connectors, visit www.samtec.com?PRFMO

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
**SMPM TO 65 GHZ**

**SMPM Ganged Cable:**
GC47, GC86

**Mates With:**
GPPC

**SMPM Ganged Block:**
GPPC

**Mates With:**
GC47, GC86

**Notes:**
- Some sizes, styles and options are non-standard, non-returnable.

**Notes:**
- Cable lengths longer than 1000 mm (39.37") are not supported with S.I. test data.
- Some sizes, styles and options are non-standard, non-returnable.

---

**SMPM Ganged Cable:**

**GC47**
- Ganged SMPM with (1.2 mm) .047" overshield DIA 29 AWG millimeter wave cable
- **NO. OF ROWS** = 1
- **NO. OF POSITIONS** = -02, -04, -06, -08, -10
- **ASSEMBLY LENGTH** = Assembly Length in millimeters
  - "XXXX" = Assembly Length in millimeters
  - 0100 (100 mm) 3.94" minimum

**GC86**
- Ganged SMPM with (2.18 mm) .086" overshield DIA 23 AWG millimeter wave cable

---

**SMPM Ganged Block:**

**GPPC**

**GENDER** = 1

**NO. OF POSITIONS**
-02, -04, -06, -08, -10

**PLATING**
-EG = 50 µ (1.27 µm) heavy Gold center contact, 10 µ (0.25 µm) extra Gold outer body

**ORIENTATION**
-ST = Straight

**TERMINATION**
-SM = Surface Mount

**1N**

---

**Notes:**
- Leave blank for -SL & -SM

---

**ALSO AVAILABLE**

Other RF options for end 2
Contact RFGroup@samtec.com

---

**Notes:**
- Some sizes, styles and options are non-standard, non-returnable.

---

**Other RF options for end 2**
Contact RFGroup@samtec.com
**SAMPM TO 65 GHz**

**SAMPM Ganged Block:**
- **GPPB**

**Mates With:**
- PRFIA

**Specifications:**
- **GENDER**
  - -PF = Plug Full Detent
  - -PS = Plug Smooth Bore
  - -PC = Catcher’s Mitt

- **NO. OF ROWS**
  - -02
  - -04
  - -06
  - -08
  - -10

- **NO. OF POSITIONS**
  - -02
  - -04
  - -06
  - -08
  - -10

- **PLATING**
  - -EG = 50 µ" (1.27 µm) heavy Gold center contact, 10 µ" (0.25 µm) Gold outer body

- **ST**
  - -1N = 3.56 mm (.140") Pitch

- **SM**
  - -1N = 3.56 mm (.140") Pitch

- **CHANNEL PITCH**
  - -1N = 3.56 mm (.140") Pitch

**ALSO AVAILABLE**
- (8.33 mm) .328” Pitch
- (5.08 mm) .200” Pitch

Edge Mount termination

Contact RFGroup@samtec.com

---

**DUAL POSITION SOLDERLESS COMPRESSION MOUNT**

**SAMPM Ganged Block:**
- **GPPC**

**Mates With:**
- GC47, GC86, PRFIA

**Specifications:**
- **GPPC**

**NO. OF POSITIONS**
- -02
- -04
- -06
- -08
- -10

**PLATING**
- -EP = 50 µ" (1.27 µm) heavy Gold center contact, Passivated outer body

**ORIENTATION**
- -ST = Straight

**TERMINATION**
- -CMM = Compression Mount

**PACKAGING**
- -B = Bulk Package

**Leave blank for Individually bagged**

**Contact RFGroup@samtec.com**

---

**samtec.com/SAMPM**

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
### SMP TO 40 GHz

#### SMP Cable Assemblies
- **RF047-A, RF086, RF23C, RF25S, RF405**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RF047-A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= (1.2 mm) .047&quot; overshield DIA 29 AWG millimeter wave cable</td>
<td>-00SJ = SMP Straight Jack (RF047-A, RF086 &amp; RF23C only)</td>
<td>-“XXXX” = Overall Length in millimeters</td>
<td></td>
</tr>
<tr>
<td><strong>RF086</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= (2.18 mm) .086&quot; overshield DIA 23 AWG millimeter wave cable</td>
<td>-00MJ = SMP Right-angle Jack (RF047-A, RF086 &amp; RF23C only)</td>
<td>-0100 (100 mm) 3.94&quot; minimum (RF047-A, RF086, RF23C)</td>
<td></td>
</tr>
<tr>
<td><strong>RF23C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= MWC-2350CU-01 millimeter wave cable with copper foil shield</td>
<td>-00BF = SMP Bulkhead Jack, Full Detent (RF086 &amp; RF23C only)</td>
<td>-0152 (152 mm) 5.984&quot; minimum (RF23C)</td>
<td></td>
</tr>
<tr>
<td><strong>RF25S</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= MWC-2550-01 microwave cable with 25 AWG solid FEP dielectric</td>
<td>-00BL = SMP Bulkhead Jack, Limited Detent (RF086 &amp; RF23C only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RF405</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= RG 405 (.086&quot;) 24 AWG semi-flexible microwave cable</td>
<td>-00BS = SMP Bulkhead Jack, Smooth Bore (RF086 &amp; RF23C only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ALSO AVAILABLE
- Available in 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, 1.85 mm, 2.40 mm, 2.92 mm, 2.40 mm, 2.92 mm, 3.61 mm, 3.18 mm, 3.61 mm, 3.18 mm, 2.79 mm, 3.14 mm, 2.79 mm, 3.14 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm, 1.40 mm.

#### SMP Cable Connectors
- **PRF00**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF00 J-C-EE-047A-RD</td>
</tr>
<tr>
<td>PRF00 J-C-EE-085A-SD</td>
</tr>
<tr>
<td>PRF00 J-C-KK-047D-RD</td>
</tr>
</tbody>
</table>

For a complete list of SMP cable connectors, visit [www.samtec.com/PRF00](http://www.samtec.com/PRF00)

**J-C** = Cable Jack  
**EE** = Plating (50 µ" Gold center contact & outer contact)  
**KK** = Plating (100 µ" Gold over Nickel center contact, passivated outer contact)  
**BD** = Bulkhead, Direct Solder  
**SD** = Straight, Direct Solder  
**RD** = Right-angle, Direct Solder  

**VSWR**
- **RF047-A**: 1.50 max.  
- **RF086**: 1.50 max.  
- **RF23C**: 1.50 max.  
- **RF25S**: Contact Samtec  
- **RF405**: Contact Samtec

**Interface Standard (Full Detent)**

- Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.

**SMP TO 40 GHz**

**SMP Board Connectors**
SMP-TH, SMP-EM, SMP-MT, SMP-SM

**Cable Mates:**
RF047-A, RF086, RF23C, RF405, RF25S

<table>
<thead>
<tr>
<th>SMP</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-PF</td>
<td>= Plug, Full Detent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-PL</td>
<td>= Plug, Limited Detent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-PS</td>
<td>= Plug, Smooth Bore</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-PC</td>
<td>= Plug, Catcher’s Mitt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-P</td>
<td>= PCB Mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-HG</td>
<td>= 30 µ” (0.76 µm) Gold center contact, 10 µ” (0.25 µm) Gold outer body</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ST</td>
<td>= Straight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-SM</td>
<td>= Surface Mount (Not available with PS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-TH”X”</td>
<td>= Through-hole (Specify “X” from chart)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-MT”X”</td>
<td>= Mixed Technology (Specify “X” from chart)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>-EM</td>
<td>= Edge Mount (–PL &amp; –PS only)</td>
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<td></td>
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</table>

**SMP Bullet Adaptor**
SMP-B

<table>
<thead>
<tr>
<th>SMP</th>
<th>J</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>BULLET LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>-B</td>
<td>= Bullet Adaptor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-HG</td>
<td>= 30 µ” (0.76 µm) Gold center contact, 10 µ” (0.25 µm) Gold outer body</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ST</td>
<td>= Straight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0591</td>
<td>= (5.91 mm) .233”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0645</td>
<td>= (6.45 mm) .254”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0690</td>
<td>= (6.90 mm) .272”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0795</td>
<td>= (7.95 mm) .313”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0896</td>
<td>= (8.96 mm) .353”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1305</td>
<td>= (13.05 mm) .514”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1450</td>
<td>= (14.50 mm) .571”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Also available:
Low Frequency options.
Contact RFGroup@samtec.com

samtec.com/SMP
N Type to 18 GHz

**N Type Cable Assemblies**
RF180, RF280

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF180</td>
<td>-06SP</td>
<td>N Type Straight Plug</td>
<td>“XXXX” = Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td>-06RP</td>
<td>N Type Right-angle Plug</td>
<td>-0152 (152 mm) 5.984” minimum (RF180)</td>
</tr>
<tr>
<td></td>
<td>-06BJ</td>
<td>N Type Straight Bulkhead Jack</td>
<td>-0200 (200 mm) 7.87” minimum (RF280)</td>
</tr>
<tr>
<td>RF280</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**VSWR**

RF 180:
1.35 max. (-06SP & -06BJ)
1.45 max. (-06RP)

RF 280:
1.35 max. (-06SP & -06BJ)
1.35 max. (DC to 14 GHz) (-06RP)
1.50 max. (14 GHz to 18 GHz)

**N Type Cable Connectors**
PRF06

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF06-P.C-EP-141A-SS Harbour SS402</td>
<td></td>
</tr>
<tr>
<td>PRF06-J.C-EP-142-BS Harbour LS421</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-142-SS Harbour LS421</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-142-RS Harbour SB421</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-142A-SS Harbour LS421</td>
<td></td>
</tr>
<tr>
<td>PRF06-J.C-EP-355-BS Harbour LS335</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-355-SS Harbour LS335</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-355-RS Harbour LS335</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-355A-SS Harbour LS335i</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-355A-SS Harbour LS335</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-355A-SS Harbour LS335i</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-120A-5S Semiflex HP120</td>
<td></td>
</tr>
<tr>
<td>PRF06-J.C-EP-190-BS Semiflex HP190</td>
<td></td>
</tr>
<tr>
<td>PRF06-J.C-EP-190-SS Semiflex HP190</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-190-RS Semiflex LA290</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-290-SS Semiflex LA290</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-290-RS Semiflex LA290</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-305-SS Semiflex HP305</td>
<td></td>
</tr>
<tr>
<td>PRF06-J.C-EP-402-4S RG 402, .141, semi-rigid</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-300A-SS Times Max Gain 300</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-180B-5S IW 1801</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-135-5S Dynawave DF440W</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-270A-5S Dynawave DF218</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-160B-5S ATM CF-210</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-135B-5S Lab-Flex 160S</td>
<td></td>
</tr>
<tr>
<td>PRF06-P.C-EP-284-5S Micro-Coax UFB311A</td>
<td></td>
</tr>
</tbody>
</table>

**For a complete list of N Type cable connectors, visit www.samtec.com?PRF06**
TNCA TO 18 GHz

TNCA Cable Assemblies
RF180, RF280

RF180
= (4.52 mm), 17/8" overshield DIA, 16 AWG microwave cable

RF280
= (7 mm), 277" overshield DIA, 11 AWG microwave cable

VSWR
RF180: 1.35 max. (-04SP & -04BJ)
1.45 max. (-04RP)
RF280: 1.35 max. (-04SP & -04BJ)

CONNECTORS FOR INDUSTRY STANDARD CABLES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th>INTERFACE STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF180</td>
<td>PRF04-P-C-EP-142-SS Harbour LL142</td>
<td>P-C = Cable Plug</td>
</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-142-BS Harbour LL142</td>
<td>J-C = Cable Jack</td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-142-SS Harbour LL142</td>
<td>EP = Plating (50 u&quot; Gold center contact, passivated outer contact)</td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-335-SS Samflex LA290</td>
<td>SS = Straight, Solder Clamp</td>
</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-190-BS Semflex HF190</td>
<td>BS = Right-angle, Solder Clamp</td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-190-SS Semflex HF190</td>
<td>4S = 4-Hole Flange</td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-335A-BS Harbour LL335i</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-335A-BS Harbour LL335i</td>
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</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-300A-SS Times Max Gain 300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-135-SS Dynamawave DF440W</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PRF04-P-C-EP-127-4S Storm VSR150</td>
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</tr>
<tr>
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<td>PRF04-P-C-EP-210A-SS Micro-Coax UFB311A</td>
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<td>PRF04-P-C-EP-200-SS Times Max Gain 200</td>
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<td>PRF04-P-C-EP-160A-SS Harbour LL160</td>
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<tr>
<td></td>
<td>PRF04-P-C-EP-200A-SS Times Max Gain 300</td>
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<td>PRF04-J-C-EP-200A-SS Times Max Gain 300</td>
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<tr>
<td></td>
<td>PRF04-J-C-EP-270A-BS Dynamawave DF218</td>
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</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-210A-BS Micro-Coax UFB311A</td>
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</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-284-SS Micro-Coax UFB311A</td>
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</tr>
<tr>
<td></td>
<td>PRF04-J-C-EP-127-4S Storm VSR150</td>
<td></td>
</tr>
</tbody>
</table>

For a complete list of TNCA cable connectors, visit www.samtec.com/PRF04

TNCA Cable Connectors
PRF04

ALSO AVAILABLE

SMA, N Type = RF180
SMA, N Type = RF280

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.
**IN-SERIES PRECISION RF ADAPTORS**

1.85 mm, 2.40 mm, 2.92 mm In-Series Adaptors

<table>
<thead>
<tr>
<th>PRFIA</th>
<th>CONNECTOR</th>
<th>END 1 GENDER</th>
<th>END 2 GENDER</th>
<th>ORIENTATION</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>-240</td>
<td>= 2.40 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-292</td>
<td>= 2.92 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VSWR**

- **-185**: 1.30 max.
- **-240**: 1.20 max.
- **-292**: 1.15 max.

**SMPM In-Series Adaptor:**

Mates With: SMPM, GPPB, GPPC

**VSWR**

1.15 max. (DC to 26.5 GHz)
1.35 max. (26.5 GHz to 40 GHz)
1.50 max. (40 GHz to 65 GHz)

---


VSWR

1.15 max. (DC to 26.5 GHz)
1.35 max. (26.5 GHz to 40 GHz)
1.50 max. (40 GHz to 65 GHz)

---

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Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
BETWEEN-SERIES PRECISION RF ADAPTORS

1.00 mm to 1.85 mm Adaptors

PRFBA

CONNECTOR

END 1 GENDER

CONNECTOR

END 2 GENDER

ORIENTATION

–100

–185

–P

–P

= 1.00 mm

= 1.85 mm

= Plug

= Plug

–J

= Jack

= Jack

–S

= Straight

= Straight

VSWR

1.12 max. (DC to 26.5 GHz)

1.25 max. (26.5 GHz to 40 GHz)

1.30 max. (40 GHz to 50 GHz)

1.35 max. (50 GHz to 67 GHz)

PRFBA-100-P-185-J-S

PRFBA-100-J-185-J-S

PRFBA-100-P-185-P-S

PRFBA-100-J-185-P-S

PRFBA-292-J-SMPM-J-S

PRFBA-292-P-SMPM-J-S

PRFBA-292-J-SMPM-PF-S

PRFBA-292-P-SMPM-PF-S

2.92 mm to SMPM Adaptors

PRFBA

VSWR

1.00 mm to 1.85 mm Adaptors

PRFBA

CONNECTOR

END 1 GENDER

CONNECTOR

END 2 GENDER

ORIENTATION

–292

–SMPM

–PF

= 2.92 mm

= Jack

= Plug Full Detent

= Straight

Required for Jack-to-Jack adaptor (PRFBA-292-J-SMPM-J-S-1)

Leave blank for all other part numbers.

1.30 max. (DC to 40 GHz)

1.30 max. (DC to 40 GHz)

1.12 max. (26.5 GHz to 40 GHz)

1.25 max. (26.5 GHz to 40 GHz)

1.30 max. (40 GHz to 50 GHz)

1.35 max. (50 GHz to 67 GHz)

1.30 max. (50 GHz to 67 GHz)

1.35 max. (50 GHz to 67 GHz)

1.30 max. (67 GHz to 40 GHz)

1.35 max. (67 GHz to 40 GHz)

1.00 mm to 1.85 mm Adaptors

PRFBA

CONNECTOR

END 1 GENDER

CONNECTOR

END 2 GENDER

ORIENTATION

–100

–185

–P

–P

= 1.00 mm

= 1.85 mm

= Plug

= Plug

–J

= Jack

= Jack

–S

= Straight

= Straight

VSWR

1.12 max. (DC to 26.5 GHz)

1.25 max. (26.5 GHz to 40 GHz)

1.30 max. (40 GHz to 50 GHz)

1.35 max. (50 GHz to 67 GHz)

PRFBA-100-P-185-J-S

PRFBA-100-J-185-J-S

PRFBA-100-P-185-P-S

PRFBA-100-J-185-P-S

PRFBA-292-J-SMPM-J-S

PRFBA-292-P-SMPM-J-S

PRFBA-292-J-SMPM-PF-S

PRFBA-292-P-SMPM-PF-S

2.92 mm to SMPM Adaptors

PRFBA

VSWR

1.30 max. (DC to 40 GHz)
The Bulls Eye® high-performance test assembly features a high-density, space-saving design that enables smaller evaluation boards and shorter trace lengths in test and measurement applications to 90 GHz.

- Compression mounts to the board for placement directly adjacent to the SerDes being characterized
- Solderless design improves cost and is easy to use within a lab setting
- End 2 connection to instrumentation: 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm or 2.92 mm
- High-density, space-saving design
- Single row or double row
- Complete list of applications: SerDes characterization, clock/data recovery (CDR), mmWave radar, automated test equipment, FR2 5G networks

**FEATURES & BENEFITS**

**PRODUCT FAMILY CROSS REFERENCE GUIDE**

<table>
<thead>
<tr>
<th>ASSEMBLY</th>
<th>90 GHz</th>
<th>70 GHz</th>
<th>50 GHz</th>
<th>40 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Bottom View</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End 2 Connector</td>
<td>1.00 &amp; 1.35 mm</td>
<td>1.85 mm</td>
<td>2.40 mm</td>
<td>2.92 mm</td>
</tr>
<tr>
<td>Samtec Series</td>
<td>BE90A</td>
<td>BE70A</td>
<td>BE40A</td>
<td></td>
</tr>
<tr>
<td>Cable Type</td>
<td>.047</td>
<td>.086</td>
<td>MWC-2350CU-01</td>
<td></td>
</tr>
<tr>
<td>Cable Management</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCB Transition</td>
<td>Microstrip/CPW or Stripline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulls Eye® Connector Design</td>
<td>Spring-Loaded Contact; 360° Grounding</td>
<td>Pogo-Pin for Signal &amp; Ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Rows</td>
<td>Single or Double</td>
<td>Double</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Positions</td>
<td>1x: 2, 4, 8, 12</td>
<td>1x: 2, 4, 8, 12</td>
<td>2x: 3, 4, 6, 8, 10, 12, 14, 16</td>
<td>2x: 3, 4, 6, 8, 10, 12, 14, 16</td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ω</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPGA Development Kit</td>
<td></td>
<td></td>
<td>Xilinx® Zynq® UltraScale™</td>
<td></td>
</tr>
<tr>
<td>SI Evaluation Kit</td>
<td></td>
<td></td>
<td>70 GHz: REF-213864-01</td>
<td>50 GHz: REF-213497-01</td>
</tr>
</tbody>
</table>

**SERDES CHARACTERIZATION**

<table>
<thead>
<tr>
<th>TEST ASSEMBLY</th>
<th>SERDES CHARACTERIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE90A, 90 GHz</td>
<td>PAM 4 224 Gbps</td>
</tr>
<tr>
<td>BE70A, 70 GHz</td>
<td>PAM 4 112 Gbps</td>
</tr>
<tr>
<td>BE40A, 50 GHz</td>
<td>PAM 4 56 Gbps</td>
</tr>
</tbody>
</table>

**HIGH-DENSITY & SPACE-SAVING**

Enables smaller evaluation boards and shorter trace lengths.
BE90A, 2 X 4 FOOTPRINT
Performance was measured using 50 Ohm coplanar waveguide (CPW) transmission line and 6 layer PCB (Isola Tachyon). The BE90A DUT consisted of a 2 row x 4 position -M (CPW/microstrip) block, 6-inch (152 mm) low-loss microwave cable and 1.00 mm end 2 connectors. Results include the breakout region and BE90A cable assembly. All other effects have been removed by de-embedding (AFR technique).
### 70 GHz ASSEMBLIES

<table>
<thead>
<tr>
<th>BE70A</th>
<th>TRANSMISSION TYPE</th>
<th>END 2</th>
<th>PHASE MATCHING</th>
<th>ROW OPTION</th>
<th>POSITIONS PER ROW</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S = Stripline</td>
<td>-18SJ</td>
<td>2.0 Pico-second</td>
<td>-1</td>
<td>-02, -03, -04, -06, -08, -10, -12, -14, -16</td>
<td>&quot;XXXX&quot;</td>
</tr>
<tr>
<td></td>
<td>M = Microstrip</td>
<td>-18SP</td>
<td>5.0 Pico-second</td>
<td>-5</td>
<td></td>
<td>Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-N = No Phase Matching</td>
<td>-2, -02, -04, -08 &amp; -12 positions only</td>
<td></td>
<td>-0152 (152 mm) 5.984&quot; minimum</td>
</tr>
</tbody>
</table>

**BE70A End 2 Connectors:**
- 1.85 mm (70 GHz)

### 50 GHz & 40 GHz ASSEMBLIES

<table>
<thead>
<tr>
<th>BE40A</th>
<th>TRANSMISSION TYPE</th>
<th>END 2</th>
<th>PHASE MATCHING</th>
<th>POSITIONS PER ROW</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S = Stripline</td>
<td>-92SJ</td>
<td>40 GHz, 2.92 mm Straight Jack</td>
<td>-03, -04, -06, -08, -10, -12, -14, -16</td>
<td>&quot;XXXX&quot;</td>
</tr>
<tr>
<td></td>
<td>M = Microstrip</td>
<td>-24SJ</td>
<td>50 GHz, 2.40 mm Straight Jack</td>
<td></td>
<td>Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-92SP</td>
<td>40 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td>-0152 (152 mm) 5.984&quot; minimum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-24SP</td>
<td>50 GHz, 2.40 mm Straight Plug</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BE40A End 2 Connectors:**
- 2.40 mm (50 GHz)
- 2.92 mm (40 GHz)

---

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
Samtec's new, high frequency micro waveguide technology is designed to support the demands of next generation millimeter wave systems. It uses a cable design allowing flexibility and a reduced size, and supports frequencies up to 90 GHz (E-band), but with a loss performance greatly improved over coaxial cables. Due to loss requirements, higher frequencies often require the use of rigid, metallic waveguides. However, Samtec's innovative technology provides an alternative solution that is flexible, easier to use, and lower cost, while also maintaining the near-loss performance of a traditional rigid waveguide.

**Loss Comparison**

<table>
<thead>
<tr>
<th>Product</th>
<th>Series</th>
<th>Frequency Band</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waveguide</td>
<td>WF12</td>
<td>E (60 to 90 GHz)</td>
<td>Overall Length: 102 mm (4.00&quot;) Min.</td>
</tr>
<tr>
<td>Adaptor</td>
<td>WGBA UG-387</td>
<td>to Threaded Waveguide Jack</td>
<td>Diameter: 19.05 mm (.750&quot;) (mates with WR12 standard flange)</td>
</tr>
</tbody>
</table>

**E-Band, Flexible Waveguide**

- 60 GHz to 90 GHz, E-band
- Flexible cable with dynamic stability
- Low loss
- Ultra-small form factor

**FLEXIBILITY & STABILITY**

- Dynamic Stability During Flexure (E-Band Waveguide)
  - E-Field, Flexed (negligible change in pattern)
  - View the E-Field animation at samtec.com/waveguide-dynamic-stability.

- Samtec's Waveguide Technology vs. Traditional Waveguide
  - Flexible Cable
  - Rigid, Metallic

View complete specifications at: samtec.com?WF12 and samtec.com?WGBA
# LOW FREQUENCY CABLE SPECIFICATIONS

## STANDARD OFF-THE-SHELF ASSEMBLIES

### LOW FREQUENCY PROPAGATION

<table>
<thead>
<tr>
<th>Capacitance (pF/m)</th>
<th>50 Ω CABLES</th>
<th>75 Ω CABLES</th>
<th>100 Ω CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.81 mm (34 AWG)</td>
<td>100.00</td>
<td>95.00</td>
<td>96.00</td>
</tr>
<tr>
<td>1.13 mm (31 AWG)</td>
<td>95.00</td>
<td>96.00</td>
<td>95.80</td>
</tr>
<tr>
<td>RG 178 (28 AWG)</td>
<td>101.00</td>
<td>85.60</td>
<td>96.00</td>
</tr>
<tr>
<td>RG 174 (24 AWG)</td>
<td>96.00</td>
<td>95.80</td>
<td>102.00</td>
</tr>
<tr>
<td>Samtec 26 AWG, high-temp micro coax</td>
<td>64.00</td>
<td>55.70</td>
<td>53.40</td>
</tr>
<tr>
<td>RG 316 (24 AWG)</td>
<td>53.14</td>
<td>53.14</td>
<td>38.00</td>
</tr>
</tbody>
</table>

### CONSTRUCTION

#### ELECTRICAL

<table>
<thead>
<tr>
<th>Impedance (Ω)</th>
<th>50 ± 3</th>
<th>50 ± 2</th>
<th>50 ± 5</th>
<th>50 ± 2</th>
<th>50 ± 3</th>
<th>75 ± 3</th>
<th>100 ± 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 MHz</td>
<td>1.00</td>
<td>0.60</td>
<td>0.50</td>
<td>0.40</td>
<td>0.68</td>
<td>0.30</td>
<td>1.40 @ 2 GHz</td>
</tr>
<tr>
<td>1 GHz</td>
<td>3.10</td>
<td>1.90</td>
<td>1.70</td>
<td>1.40</td>
<td>2.37</td>
<td>1.25</td>
<td>1.60 @ 3 GHz</td>
</tr>
<tr>
<td>6 GHz</td>
<td>8.60</td>
<td>4.90</td>
<td>5.90</td>
<td>4.40</td>
<td>6.53</td>
<td>4.25</td>
<td>2.20 @ 5 GHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insertion Loss (dB/m)</th>
<th>100 MHz</th>
<th>1.00</th>
<th>0.60</th>
<th>0.50</th>
<th>0.40</th>
<th>0.68</th>
<th>0.30</th>
<th>1.40 @ 2 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 GHz</td>
<td>3.10</td>
<td>1.90</td>
<td>1.70</td>
<td>1.40</td>
<td>2.37</td>
<td>1.25</td>
<td>1.60 @ 3 GHz</td>
<td></td>
</tr>
<tr>
<td>6 GHz</td>
<td>8.60</td>
<td>4.90</td>
<td>5.90</td>
<td>4.40</td>
<td>6.53</td>
<td>4.25</td>
<td>2.20 @ 5 GHz</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Propagation Delay (ns/m)</th>
<th>4.70</th>
<th>4.70</th>
<th>4.83</th>
<th>5.06</th>
<th>4.17</th>
<th>4.83</th>
<th>-----</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating (Amps)</td>
<td>1.20</td>
<td>2.10</td>
<td>3.00</td>
<td>5.00</td>
<td>3.00</td>
<td>5.00</td>
<td>-----</td>
</tr>
<tr>
<td>Capacitance (pF/m)</td>
<td>100.00</td>
<td>95.00</td>
<td>96.00</td>
<td>101.00</td>
<td>85.60</td>
<td>96.00</td>
<td>102.00</td>
</tr>
</tbody>
</table>

#### MECHANICAL

<table>
<thead>
<tr>
<th>Operating Temp</th>
<th>-40 °C to +90 °C</th>
<th>-50 °C to +165 °C</th>
<th>-20 °C to +80 °C</th>
<th>-40 °C to +200 °C</th>
<th>-55 °C to +165 °C</th>
<th>-50 °C to +90 °C</th>
<th>-50 °C to +165 °C</th>
<th>-30 °C to +75 °C</th>
<th>-30 °C to +105 °C</th>
<th>-20 °C to +75 °C</th>
<th>-20 °C to +105 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend Radius</td>
<td>5.00 mm</td>
<td>6.80 mm</td>
<td>10.20 mm</td>
<td>25.40 mm</td>
<td>31.88 mm</td>
<td>12.80 mm</td>
<td>12.80 mm</td>
<td>49.50 mm</td>
<td>41.00 mm</td>
<td>69.85 mm</td>
<td>69.85 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHF1, MHF3, MHF4</td>
</tr>
<tr>
<td>MHF1, SMA</td>
</tr>
<tr>
<td>MMX, MCX</td>
</tr>
<tr>
<td>MXX, MCM</td>
</tr>
<tr>
<td>SMA, TNC, N Type</td>
</tr>
</tbody>
</table>

* ALSO USES RG 316
**MHF Cable Assemblies**

**MH081, MH113**

### APPLICATION

- **MH1RP**
  - Specify END OPTIONS from chart
  - MH081 = 0.81 mm Cable
  - MH113 = 1.13 mm Cable
  - Overall Length:
    - 0030 = 1.18" (30 mm)
    - 0050 = 1.97" (50 mm)
    - 0100 = 3.94" (100 mm)
    - 0150 = 5.91" (150 mm)
    - 0300 = 11.81" (300 mm)

### SPECIFICATIONS

**Outer Contact Material:** Au plated Phosphor Bronze

**Center Contact Material:** Au plated BeCu (SMA), Au plated Phosphor Bronze (MHX)

**Insulator Material:** PBT (MHX), PTFE (SMA)

**Operating Temperature:** -40 °C to +90 °C

**Voltage Rating:** 170 V max

**Dielectric Withstanding Voltage:** 200 Vrms

#### 0.81 mm Cable:
- **Capacitance:** 100 pF/meter
- **Max Attenuation** (cable only): 3.1 dB @ 1 GHz
- **Conductor Size:** 36 AWG, (0.81 mm) .032" dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 1.40 Ω/meter max
- **Insulator Diameter:** (0.4 mm) .016"
- **Insulator Material:** FEP
- **Shield Material:** Silver Plated Copper
- **Jacket Material:** PFA
- **Jacket Diameter:** (0.81 mm) .032" dia.
- **Bend Radius:** 5.0 mm
- **Jacket Temp Rating:** -40 °C to +90 °C

#### 1.13 mm Cable:
- **Capacitance:** 95 pF/meter
- **Max Attenuation** (cable only): 2 dB @ 1 GHz
- **Conductor Size:** 32 AWG, (1.13 mm) .045" dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 0.60 Ω/meter max
- **Insulator Diameter:** (0.66 mm) .026"
- **Insulator Material:** FEP
- **Shield Material:** Tinned Copper
- **Jacket Material:** FEP
- **Jacket Diameter:** (1.13 mm) .045" dia
- **Bend Radius:** 6.8 mm
- **Jacket Temp Rating:** -40 °C to +90 °C

### EXTRATION TOOLS

- **MH1RP = RSP-122893-01**
- **MH3RP = RSP-122893-02**
- **MH4RP = RSP-122893-03**

### MATING SOLUTIONS

- **MH1RP end mates with RSP-122811-01** (Cycles: 30 max.)
- **MH3RP end mates with RSP-122811-02**
- **MH4RP end mates with RSP-122811-03**

### END OPTIONS

- **MH1RP = MHF1 Type Plug**
  - (3.9 µ" (0.1 µm) Gold on Center Contact, 1.9 µ" (0.05 µm) Gold on Shell)
- **MH3RP = MHF3 Type Plug**
  - (3.9 µ" (0.1 µm) Gold on Center Contact, 1.9 µ" (0.05 µm) Gold on Shell) (MH081 only)
- **MH4RP = MHF4 Type Plug**
  - (10 µ" (0.25 µm) Gold on Center Contact, 1.9 µ" (0.05 µm) Gold on Shell) (MH081 only)
- **-01BJ1 = SMA Straight Bulkhead Jack (MH081 only)**
- **-01BJ2 = SMA Straight Bulkhead Jack, Reversed Polarity**
- **-01SB1 = SMA Straight Jack, Sealed Bulkhead**
- **-01SR1 = SMA Straight Jack, Sealed Bulkhead, Reversed Polarity**
  - (30 µ" (0.76 µm) Gold on Center Contact, Gold Flash on Shell)
- **-SING =**
  - Single Ended (End 2 callout)
- **XXXXXX =**
  - Stripped & Tinned (End 2 callout)

### STRIPPED & TINNED (Dimensions in mm)

<table>
<thead>
<tr>
<th>CALLOUT</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>-30090</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-40090</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Both center conductor and braid shield are stripped, only the center conductor is tinned.

---

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### SMA Cable Assemblies

**RF174**
- RG 174 Cable

**RF178**
- RG 178 Cable
  - (-01BJ & -01BR1 only)

**RF316**
- RG 316 Cable, Single Braid Shield

**RS316**
- RG 316 Cable, Double Shield
  - (-01SP1 & -01BJ1 only)

**RF058**
- RG 58 Cable
  - (-01SP1, -01BJ1 & -01SB1 only)

---

### SMA Cable Connectors

**SMA-CA**

<table>
<thead>
<tr>
<th>SMA</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>-J</td>
<td>= Jack</td>
<td>-C</td>
<td>-H</td>
<td>-ST</td>
<td>-BH1</td>
<td>Leave blank for individually bagged.</td>
</tr>
<tr>
<td>-C4</td>
<td>= Cable</td>
<td>-M</td>
<td>-H</td>
<td>= Straight</td>
<td>= Bulkhead</td>
<td></td>
</tr>
<tr>
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<td>-30 µ&quot; (0.76 µm) Gold center contact,</td>
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<td>RG 174 / 316</td>
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<td></td>
<td>(N/A with -BH1S)</td>
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<td>RG 174 / 316</td>
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<td>Cable</td>
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<td>RG 58 Cable</td>
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<td>RG 174 / 316</td>
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<td>RG 178 Cable</td>
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<td>-BR2</td>
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<td>RG 58 Cable</td>
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</tbody>
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### SMA Board Connectors

See page 154 for Board Connectors

<table>
<thead>
<tr>
<th>SMA</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>-P</td>
<td>= Plug</td>
<td>-C</td>
<td>-H</td>
<td>-ST</td>
<td>-CA1</td>
<td>Leave blank for individually bagged.</td>
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<tr>
<td></td>
<td></td>
<td>-30 µ&quot; (0.76 µm) Gold center contact,</td>
<td></td>
<td>= Straight</td>
<td>= RG 174 / 316</td>
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</tr>
<tr>
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<td>3 µ&quot; (0.08 µm) Gold outer contact</td>
<td></td>
<td></td>
<td>Cable</td>
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</tr>
<tr>
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<td>-CA1S</td>
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<td>-C10</td>
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<td>= RG 58 Cable</td>
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<td>(-ST only)</td>
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<td></td>
<td></td>
<td></td>
<td>-S10</td>
<td></td>
</tr>
</tbody>
</table>

---

#### Leave blank for individually bagged.

#### B = Bulk packaged (-BH1 only)

#### Also Available

50 Ω: MCX, MMCX, SMB, BNC, TNC,
- N Type = RF174, RF178, RF316
- 50 Ω: MCX, MMCX, BNC, TNC = RS316
- 50 Ω: TNC = RF058
**MCX Cable Assemblies**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF174</td>
<td>= RG 174 Cable</td>
<td>-02S31</td>
<td>= Overall Length in millimeters</td>
</tr>
<tr>
<td>RF178</td>
<td>= RG 178 Cable</td>
<td>-02R31</td>
<td>-0100 (100 mm) 3.94&quot; minimum</td>
</tr>
<tr>
<td>RF316</td>
<td>= RG 316 Cable, Single Braid Shield</td>
<td>-02S31</td>
<td></td>
</tr>
<tr>
<td>RS316</td>
<td>= RG 316 Cable, Double Shielded</td>
<td>-02R31</td>
<td></td>
</tr>
<tr>
<td>RF174</td>
<td>= RG 174 Cable</td>
<td>-02S31</td>
<td></td>
</tr>
<tr>
<td>RF178</td>
<td>= RG 178 Cable</td>
<td>-02R31</td>
<td></td>
</tr>
<tr>
<td>RF316</td>
<td>= RG 316 Cable, Single Braid Shield</td>
<td>-02S31</td>
<td></td>
</tr>
<tr>
<td>RS316</td>
<td>= RG 316 Cable, Double Shielded</td>
<td>-02R31</td>
<td></td>
</tr>
</tbody>
</table>

**ALSO AVAILABLE**

- 50 Ω: MMX, SMA, SMB, BNC, TNC,
- 50 Ω: MMCX, SMA, BNC, TNC = RS316
- 50 Ω: MCX TO 6 GHz
- 50 Ω: MCX-TH, MCX-SM, MCX-EM, MCX-MT

**MCX Board Connectors**

- MCX-TH, MCX-SA, MCX-EM, MCX-MT

**Cable Mates:**

- RF174, RF178, RF316, RS316, GRF1H-C, IJSH

**MCX Cable Connectors**

**MCX-CA**

- MCX-J-C-H-ST-CA1 = RG 174/316 Cable
- MCX-P-C-H-ST-CA2 = RG 178 Cable
- MCX-J-C-H-ST-CA1S = RG 174/316 Cable
- MCX-P-C-H-ST-CA1S = RG 178 Cable
- MCX-P-C-H-RA-CA1 = RG 174/316 Cable
- MCX-P-C-H-RA-CA2 = RG 178 Cable

**Connectors for Industry Standard Cables**

- MCX-J-C-H-ST-CA1 = RG 174/316 Cable
- MCX-P-C-H-ST-CA2 = RG 178 Cable
- MCX-J-C-H-ST-CA1S = RG 174/316 Cable
- MCX-P-C-H-ST-CA1S = RG 178 Cable
- MCX-J-C-H-RA-CA1 = RG 174/316 Cable
- MCX-P-C-H-RA-CA2 = RG 178 Cable

*Add "-B" to the end of the part number for bulk packaging.

Supplied with pins and ferrules. See website for dimensions.

---

**50 Ω MCX TO 6 GHz**

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
50 Ω MMCX TO 6 GHz

MMCX Cable Assemblies
RF174, RF178, RF316, RS316

SERIES
- RF174 = RG 174 Cable
- RF178 = RG 178 Cable
- RF316 = RG 316 Cable, Single Braid Shield
- RS316 = RG 316 Cable, Double Shielded

END 1 CONNECTOR
- 03SP1 = MMCX Straight Plug
- 03RP1 = MMCX Right-angle Plug
- V3SP1 = MMCXV Straight Plug, High Vibration
- V3RP1 = MMCXV Right-angle Plug, High Vibration
- V3SJ1 = MMCXV Straight Jack, High Vibration

OVERALL LENGTH
- “XXXX” = Overall Length in millimeters
- 0100 (100 mm) 3.94” minimum

ALSO AVAILABLE
50 Ω: MCX, SMA, SMB, BNC, TNC, N Type = RF174, RF178, RF316
50 Ω: MCX, SMA, BNC, TNC = RS316

MMCX Board Connectors
MMCX-SM, MMCX-TH, MMCX-MT, MMCX-EM

Cable Mates:
RF174, RF178, RF316, RS316, GRP1H-C, IJ5H

MMCX = Gender
- J = Jack
- P = Plug

TYPE
- H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact

PLATING
- ST = Straight
- RA = Right-angle

ORIENTATION
- TH1 = Through-hole
- MT1 = Mixed Technology (–ST only)
- SM1 = Surface Mount (–RA plug not available)
- EM1 = Edge Mount (–ST only)

TERMINATION

MMCX Cable Connectors
MMCX-CA

CONNECTORS FOR INDUSTRY STANDARD CABLES
- MMCX-P-C-H-ST-CA1 = RG 174/316 Cable
- MMCX-P-C-H-RA-CA1 = RG 174/316 Cable
- MMCX-P-C-H-ST-CA2 = RG 178 Cable
- MMCX-P-C-H-RA-CA2 = RG 178 Cable
- MMCX-P-C-HF-ST-CA1S = RG 316 Double Shielded Cable

Add “-B” to the end of the part number for bulk packaging
P.C = Cable Plug
H or HF = Plating (30 μ" Gold center contact, 3 μ" Gold outer contact)
ST = Straight
RA = Right-angle

Supplied with pins and ferrules. See website for dimensions.

samtec.com/MMCX
TNC Cable Assemblies
RF174, RF178, RF316, RS316, RF058

RF174 = RG 174 Cable
RF178 = RG 178 Cable
RF316 = RG 316 Cable, Single Braid Shield
RS316 = RG 316 Cable, Double Shielded
RF058 = RG 58 Cable

SERIES - END 1 CONNECTOR - END 2 CONNECTOR - OVERALL LENGTH

-05SP3 = TNC Straight Plug (RF058 not available)
-05BJ3 = TNC Straight Bulkhead Jack (RS316 & RF058 not available)
-05SR3 = TNC Straight Plug, Reversed Polarity (RF058 only)

-"XXXX" = Overall Length in millimeters
-0100 (100 mm) 3.94" minimum

ALSO AVAILABLE
50 Ω: MCX, MMCX, SMA, SMB, BNC, N Type = RF174, RF178, RF316
50 Ω: MCX, MMCX, SMA, BNC = RS316
50 Ω: SMA, N Type = RF058

50 Ω TNC TO 6 GHz

TNC Board Connectors
TNC-TH

Cable Mates:
RF174, RF178, RF316, RS316, RF058, GRF1H-C

TNC - GENDER - TYPE - PLATING - ORIENTATION - TERMINATION

-J = Jack
-P = PCB Mount
-H = 30 μ" (0.76 μm) Gold center contact, Nickel on shell
-RA = Right-angle
-TH1 = Through-hole

TNC Cable Connectors
TNC-CA

CONNECTORS FOR INDUSTRY STANDARD CABLES

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>CABLE Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNC-P.C-GN-ST-CA1</td>
<td>RG 174/316 Cable</td>
</tr>
<tr>
<td>TNC-P.C-GN-ST-CA2</td>
<td>RG 178 Cable</td>
</tr>
<tr>
<td>TNC-P.C-GN-SR-C10</td>
<td>RG 58 Cable</td>
</tr>
<tr>
<td>TNC-J.C-GN-ST-BH1</td>
<td>RG 174/316 Cable, Bulkhead</td>
</tr>
<tr>
<td>TNC-J.C-GN-ST-BH2</td>
<td>RG 178 Cable, Bulkhead</td>
</tr>
</tbody>
</table>

P.C = Cable Plug
J.C = Cable Jack
GN = Plating (10 μ" Gold on contact, Nickel on body)
ST = Straight
SR = Straight Reverse Polarity

Supplied with pins, washers, nuts and ferrules. See website for dimensions.
BNC Cable Assemblies
RF174, RF178, RF316, RS316

**SERIES**

- **RF174** = RG 174 Cable
- **RF178** = RG 178 Cable
- **RF316** = RG 316 Cable, Single Braid Shield
- **RS316** = RG 316 Cable, Double Shielded

**END 1 CONNECTOR**

- **-04SP3** = BNC Straight Plug (RS316 not available)
- **-04BJ2** = BNC Bulkhead Jack

**END 2 CONNECTOR**

- **“XXXX”** = Overall Length in millimeters
  -0100 (100 mm) 3.94” minimum

**OVERALL LENGTH**

- **ALSO AVAILABLE**
  - 50 Ω: MCX, MMCX, SMA, SMB, TNC, N Type = RF174, RF178, RF316
  - 50 Ω: MCX, MMCX, SMA, TNC = RS316

**BNC Cable Connectors**
BNC5-CA

- Supplied with pins, washers, nuts, gaskets and ferrules.

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

- **BNCS-P-C-GN-ST-CA1** = RG 174/316 Cable
- **BNCS-P-C-GN-ST-CA2** = RG 178 Cable
- **BNCS-J-C-GN-ST-BH1** = RG 174/316 Cable, Bulkhead
- **BNCS-J-C-GN-ST-BH2** = RG 178 Cable, Bulkhead
- **BNCS-J-C-GN-ST-BH1S** = RG 316 Double Shielded Cable, Bulkhead

*Add “-B” to the end of the part number for bulk packaging

- **P** = Cable Plug
- **J** = Cable Jack
- **GN** = Plating (10 µ” Gold on contact, Nickel on body)
- **ST** = Straight

samtec.com/BNC

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
50 Ω SMB TO 4 GHz

SMB Cable Assemblies
RF174, RF178, RF316

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF174</td>
<td>07SP1 = SMB Straight Plug</td>
<td>07BP1 = SMB Bulkhead Jack</td>
<td>“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF178</td>
<td>07RP1 = SMB Right-angle Plug</td>
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</tr>
<tr>
<td>RF316</td>
<td>07BJ1 = SMB Bulkhead Jack</td>
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</tr>
</tbody>
</table>

“XXXX” = Overall Length in millimeters

0100 (100 mm) 3.94” minimum

ALSO AVAILABLE
50 Ω: MCX, MMCX, SMA, BNC, TNC, N Type = RF174, RF178, RF316

SMB Board Connectors
SMB5-TH

Cable Mates:
RF174, RF178, RF316, GRF1H-C, IJ5H

<table>
<thead>
<tr>
<th>SMB5</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-J = Jack</td>
<td>-P = PCB Mount</td>
<td>-H = 30 μ” (0.76 μm) Gold center contact, 3 μ” (0.08 μm) Gold outer contact</td>
<td>-RA = Right-angle</td>
<td>-TH1 = Through-hole</td>
</tr>
</tbody>
</table>

Supplied with pins, washers, nuts and ferrules. See website for dimensions.

SMB Cable Connectors
SMB5-CA

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB5-P-C-H-ST-CA1: RG-174/316 Cable</td>
</tr>
<tr>
<td>SMB5-P-C-H-RA-CA1: RG-174/316 Cable</td>
</tr>
<tr>
<td>SMB5-J-C-H-ST-CA2: RG-178 Cable</td>
</tr>
<tr>
<td>SMB5-J-C-H-ST-BH1: RG-316 Cable, Bulkhead</td>
</tr>
</tbody>
</table>

P-C = Cable Plug
J-C = Cable Jack
H = Plating (30 μ” Gold center contact, 3 μ” Gold on outer contact)
ST = Straight
RA = Right-angle

supplied by pins, washers, nuts and ferrules. See website for dimensions.

samtec.com/SMB

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.

F-224
### 75 Ω BNC TO 12 GHz

#### BNC Cable Assemblies
- RFC6T, RFA6T, RFB6T, RF179

#### CONNECTORS FOR INDUSTRY STANDARD CABLES

<table>
<thead>
<tr>
<th>Series</th>
<th>Connector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC6T*</td>
<td>-74SP3</td>
<td>75 Ω BNC Straight Plug</td>
</tr>
<tr>
<td>RFA6T</td>
<td>-D4SP3</td>
<td>75 Ω BNC Die Cast Straight Plug (RFA6T, RFB6T, RF179 only)</td>
</tr>
<tr>
<td>RFB6T</td>
<td>-74BJ3</td>
<td>75 Ω BNC Bulkhead Jack (RF179 only)</td>
</tr>
<tr>
<td>RF179</td>
<td>-74RP3</td>
<td>75 Ω BNC Right-angle Plug (RFA6T, RFB6T, RFC6T only)</td>
</tr>
</tbody>
</table>

- RFA6T = RG 6 Cable
- RFB6T = Belden 1694A Cable
- RF179 = RG 179 Cable

**End 1 Connector**

**End 2 Connector**

**Overall Length**

- **“XXXX”** = Overall Length in millimeters
- **-0300 (300 mm)** 11.81” minimum (RFA6T, RFB6T, RFC6T)
- **-0100 (100 mm)** 3.94” minimum (RF179)

**Also Available**

75 Ω: DIN 1.0/2.3, HDBNC = RFA6T, RFB6T, RFC6T

75 Ω: DIN 1.0/2.3, SMB, MCX, MMCX = RF179

**Design Note:**
- Designed to meet SMPTE 2082 12G-SDI specifications.
- Add “-B” to the end of the part number for bulk packaging.

### BNC Cable Connectors
- BNC7T-CA

Supplied with pins, washers, nuts, gaskets and ferrules. See website for dimensions.

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>Series</th>
<th>Connector Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BNC7T-P-C-GN-ST-CA3</strong></td>
<td><strong>BNC7T-P-C-GN-RA-CA3</strong></td>
<td>Machined, RG 179 Cable</td>
</tr>
<tr>
<td><strong>BNC7T-P-C-GN-ST-CA6</strong></td>
<td><strong>BNC7T-P-C-GN-RA-CA6</strong></td>
<td>Machined, RG 6 Cable</td>
</tr>
<tr>
<td><strong>BNC7T-P-C-GN-RH-CA6B</strong></td>
<td><strong>BNC7T-P-C-GN-RA-CA6B</strong></td>
<td>Belden 4694R Cable</td>
</tr>
<tr>
<td><strong>BNC7T-J-C-GN-ST-BH3</strong></td>
<td><strong>BNC7T-P-C-GN-ST-CA6D</strong></td>
<td>Machined, Bulkhead, RG 179 Cable</td>
</tr>
<tr>
<td><strong>BNC7T-P-C-GN-ST-CA3D</strong></td>
<td><strong>BNC7T-P-C-GN-ST-CA6D</strong></td>
<td>Die Cast, RG 179 Cable</td>
</tr>
</tbody>
</table>

**P-C = Cable Plug**
**J-C = Cable Jack**
**GN = Plating (10 µ" Gold on contact, Nickel on outer contact and shell)**
**ST = Straight**
**RA = Right-angle**

**Machined & Die-Cast**

**Termination C (Dia)**

| **-CA3** | 2.70 106 |
| **-CA6** | 6.85 207 |

**Note:**
- Additional plating options available on Cable Assemblies, Cable Connectors and Board Connectors.
- Contact RFGroup@samtec.com

samtec.com/BNC

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75 Ω DIE CAST BNC TO 12 GHz

BNC Board Connectors
BNC7T-TH, BNC7T-BH, BNC7T-BM, BNC7T-EM

Cable Mates:
RF179, RFA6T, RFB6T, RFC6T, GRF7H-C

BNC7T - GENDER - TYPE - PLATING - ORIENTATION - TERMINATION - PACKAGING

- J = Jack
- P = PCB Mount
- GN = 10 µ (0.25 µm) Gold contact, 100 µ (2.54 µm) Nickel Shell
- ST = Straight
- RA = Right-angle Bulkhead/Panel Mount
- TH2D = Tall Through-hole Die Cast (~ST only)
- BH2D* = Low Profile Die Cast Bulkhead Through-hole (~RA only)
- BM1D* = Low Profile Die Cast Bulkhead Mixed Technology for (1.60 mm) .062” PCB (~RA only)
- BM2D* = Low Profile Die Cast Bulkhead Mixed Technology for (3.18 mm) .125” PCB (~RA only)
- EM1D* = Edge Mount Die Cast Bulkhead/Panel Mount for (1.60 mm) .062” PCB (~ST only)
- EM2D* = Edge Mount Die Cast Bulkhead/Panel Mount for (2.40 mm) .093” PCB (~ST only)

Notes:
Contact RFGroup@samtec.com for 12G-SDI PCB mount launch characteristics.
Designed to meet SMPTE 2082 12G-SDI specifications.
Additional plating options available on Board Connectors. Contact RFGroup@samtec.com

Leave blank for individually bagged.

- B = Bulk packaged (~BH2D only)

*Lock washers & knurled nuts supplied with bulkhead/panel mount options

75 Ω MACHINED BNC TO 12 GHz

BNC Board Connectors
BNC7T-TH, BNC7T-BH, BNC7T-EM

Cable Mates:
RF179, RFA6T, RFB6T, RFC6T, GRF7H-C

BNC7T - GENDER - TYPE - PLATING - ORIENTATION - TERMINATION - PACKAGING

- J = Jack
- P = PCB Mount
- GN = 10 µ (0.25 µm) Gold contact, 100 µ (2.54 µm) Nickel Shell
- ST = Straight
- RA = Right-angle Bulkhead/Panel Mount
- TH1 = Standard Through-hole (~ST only)
- BH1* = Standard Bulkhead Through-hole (~RA only)
- EM1* = Edge Mount Bulkhead/Panel Mount for (1.60 mm) .062” PCB (~ST only)
- EM2* = Edge Mount Bulkhead/Panel Mount for (2.40 mm) .093” PCB (~ST only)

Notes:
Contact RFGroup@samtec.com for 12G-SDI PCB mount launch characteristics.
Designed to meet SMPTE 2082 12G-SDI specifications.
Additional plating options available on Board Connectors. Contact RFGroup@samtec.com

Leave blank for individually bagged.

- B = Bulk packaged (~BH1 only)

*Lock washers & knurled nuts supplied with bulkhead/panel mount options
### 75 Ω HIGH-DENSITY BNC TO 12 GHz

**HIGH-DENSITY BNC Cable Assemblies**
RFA6T, RFB6T, RFB8T, RFC6T, RFC8T

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC6T* = 12G-SDI, Belden 4694R Cable</td>
<td>-H4SP3 = 75 Ω High-Density BNC Straight Plug</td>
<td>“XXXX” = Overall Length in millimeters</td>
<td></td>
</tr>
<tr>
<td>RFC8T* = 12G-SDI, Belden 4855R Cable</td>
<td></td>
<td>-0300 (300 mm) 11.81” minimum</td>
<td></td>
</tr>
<tr>
<td>RFA6T = RG 6 Cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFB6T = Belden 1694A Cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFB8T = Belden 1855A Cable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Designed to meet SMPTE 2082 12G-SDI specifications.

### HIGH-DENSITY BNC Board Connectors
HDBNC-TH, HDBNC-EM, HDBNC-BH, HDBNC-BM

**Cable Mates:**
RFA6T, RFB6T, RFB8T, RFC6T, RFC8T

<table>
<thead>
<tr>
<th>HDBNC</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>-J = Jack</td>
<td>-P = PCB Mount</td>
<td>-ST = Straight</td>
<td>RA = Right-angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BH1 = Through-hole</td>
<td>BM1D = Through-hole (2.36 mm) .093” PCB</td>
<td>Leave blank for individually bagged</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-RA-BH2</td>
<td>BM2D = Through-hole (2.54 mm) .125” PCB (RA only)</td>
<td>-B = Bulk packaged (BHX only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ST-EM1</td>
<td>EM1 = Edge Mount (ST only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-RA-BM1D &amp; -BM2D (BALANCED FOR PICK-AND-PLACE)</td>
<td>TH1 = Through-hole, Three Legs (ST only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
Designed to meet SMPTE 2082 12G-SDI specifications.

Additional plating options available on Cable Assemblies, Cable Connectors and Board Connectors. Contact RFGroup@samtec.com

### HIGH-DENSITY BNC Cable Connectors
HDBNC-CA

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDBNC-P.C-GN-ST-CA6</td>
</tr>
<tr>
<td>HDBNC-P.C-GN-ST-CA8</td>
</tr>
</tbody>
</table>

Add “-B” to the end of the part number for bulk packaging (100 max.)
P.C = Cable Plug
GN = Plating (10 µ” Gold on contact, Nickel on outer contact & shell)
ST = Straight

Supplied with pins and ferrules. See website with dimensions.

Designed to meet SMPTE 2082 12G-SDI specifications.

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
**75 Ω DIN 1.0/2.3 TO 12 GHz**

**DIN Cable Assemblies**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC6T*</td>
<td>= 12G-SDI, Belden 4694R Cable</td>
<td>-785P4</td>
<td>= 75 Ω DIN Straight Plug</td>
</tr>
<tr>
<td>RFC8T*</td>
<td>= 12G-SDI, Belden 4855R Cable</td>
<td>= RG 179 Cable</td>
<td>= “XXXX”</td>
</tr>
<tr>
<td>RFA6T</td>
<td>= RG 6 Cable</td>
<td>= Belden 1694A Cable</td>
<td>= Overall length in millimeters</td>
</tr>
<tr>
<td>RFB6T</td>
<td>= Belden 1694A Cable</td>
<td>= RG 179 Cable</td>
<td>-000 (100 mm) 3.94” minimum</td>
</tr>
<tr>
<td>RF179</td>
<td>= RG 179 Cable</td>
<td>= Belden 1855A Cable</td>
<td>-0300 (300 mm) 11.81” minimum</td>
</tr>
<tr>
<td>RFB8T</td>
<td>= Belden 1855A Cable</td>
<td></td>
<td>(RF179)</td>
</tr>
</tbody>
</table>

*Designed to meet SMPTE 2082 12G-SDI specifications.

---

**DIN Board Connectors**

**DIN7A-TH, DIN7A-BH**

| Cable Mates: | RFA6T, RFB6T, RF179, RFB8T, RFC6T, RFC8T, GRF7H-C |

**Notes:**

Contact RFGroup@samtec.com for 12G-SDI PCB mount launch characteristics.

Designed to meet SMPTE 2082 12G-SDI specifications.

Additional plating options available on Cable Assemblies, Cable Connectors and Board Connectors. Contact RFGroup@samtec.com

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**DIN Cable Connectors**

**DIN7A-CA**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN7A-PP-C-GF-ST-CA3</td>
</tr>
<tr>
<td>DIN7A-PP-C-GF-ST-CA6</td>
</tr>
<tr>
<td>DIN7A-PP-C-GF-ST-CA8</td>
</tr>
</tbody>
</table>

Add “-B” to the end of the part number for bulk packaging (100 max.)

*Designed to meet SMPTE 2082 12G-SDI specifications.

PP-C = Push Pull Plug Cable

GF = Plating(10µ” Gold on center contact, Flash Gold on outer contact, Nickel on Shell)

ST = Straight

Supplied with pins and ferrules. See website for dimensions

---

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
75 Ω SMB TO 4 GHz

**SMB Cable Connectors**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF179</td>
<td>-77SP1 = 75 Ω SMB Straight Plug</td>
<td>-77RP1 = 75 Ω SMB Right-angle Plug</td>
<td>-“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-0100 (100 mm) 3.94” minimum</td>
</tr>
</tbody>
</table>

**ALSO AVAILABLE**

75 Ω: DIN 1.0/2.3, BNC, MCX, MMCX = RF179

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**SMB Cable Connectors**

**Series:** SMB7H-TH, SMB7H-EM

**Cable Mates:** RF179, GRF7H-C

**Note:** Additional plating options available on Cable Assemblies, Cable Connectors and Board Connectors. Contact RFGroup@samtec.com

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**Connectors for Industry Standard Cables**

<table>
<thead>
<tr>
<th>SMB7H - P-C-H-ST-CA3</th>
<th>RG 179 Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB7H - P-C-HF-RA-CA3</td>
<td>RG 179 Cable</td>
</tr>
</tbody>
</table>

P-C = Cable Plug
H or HF = Plating (30 µ" Gold center contact, 3 µ" Gold outer contact)
ST = Straight
RA = Right-angle

---

Supplied with pins and ferrules. See website for dimensions.

samtec.com/SMB

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Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec’s specifications which are subject to change without notice.
ORIGINAL SOLUTIONS
LOW FREQUENCY RF

SHIELDED TWISTED PAIR SYSTEM
• 100 Ω differential pair
• 28 AWG shielded twisted pair cable assembly
• High reliability BeCu contacts
• 1/4-turn bayonet lock

GANGED MICRO-MINI SYSTEMS
• 50 & 75 Ω board stacking and cable assemblies
• High performance rugged contacts
• Variety of End 2 connectors (GRF1H-C, GRF7H-C Series)

ISORATE® SYSTEMS
• 50 Ω board stacking and cable assemblies
• Isolated signal systems for 90 percent performance of traditional RF at 50 percent of the cost

MINI & MICRO-MINI INTERCONNECTS
• 75 Ω impedance (MMCX7 & MCX7 Series)
• Higher extraction forces (MMCXV Series)
• Not intermateable with standard MMCX, MCX

HIGH-CYCLE U.FL CABLE PLUG
• 500 cycle U.FL compatible plug (HMHF1 Series)
• .047” DIA flexible cable (RF047 Series)

CABLE SOLUTIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>C28S/CJT</th>
<th>GRF1-C/GRF7-C</th>
<th>GRF1H-C/GRF7H-C</th>
<th>RF047</th>
<th>IJSC/IJSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Shielded Twisted Pair</td>
<td>50 &amp; 75 Ω Micro-Mini Ganged</td>
<td>50 &amp; 75 Ω Micro-Mini Hybrid Ganged</td>
<td>50 Ω .047 DIA Flexible Cable</td>
<td>50 Ω IsoRate®</td>
</tr>
</tbody>
</table>

BOARD-TO-BOARD SOLUTIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>GRF1-P/GRF1-J</th>
<th>GRF7-P/GRF7-J</th>
<th>MMCX7</th>
<th>MCX7</th>
<th>MMCXV</th>
<th>IJS/IP5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>50 Ω Micro-Mini Ganged</td>
<td>75 Ω Micro-Mini Ganged</td>
<td>75 Ω Mini and Micro-Mini Interconnects</td>
<td>High-Vibration Micro-Mini</td>
<td>50 Ω IsoRate®</td>
<td></td>
</tr>
</tbody>
</table>

High Frequency Original RF Solutions Available.
See page 11
CUSTOM SOLUTIONS & QUICK-TURN MODIFICATIONS

Samtec’s fully vertically integrated business model enables the flexibility to quickly and efficiently identify and/or develop innovative, application-specific interconnect solutions to meet a variety of demands in digital/analog systems. Contact RFGroup@samtec.com to discuss your application.

- Termination types
- Custom tail lengths / designs
- Right-angle height adjustment
- Heat-shrink tubing
- High frequency applications
- Pick & Place machine designs
- Counterweights for automated assembly (eliminate hand-soldering)
- Alternate platings
- Custom labels
- Test & Measurement solutions

TECHNICAL SUPPORT, SI & RF DESIGN EXPERTISE

Samtec’s Signal Integrity / RF Design & Simulation Engineers provide personal support for solving complex system challenges. In addition, a variety of resources are available online which help answer questions specific to microwave / millimeter wave system design.

- Launch optimization & design services
- Simulation
- Prototyping
- Physical test and measurement verification
- Full channel analysis, system support
- Specific design and development application assistance

TECHNICAL RESOURCES

More available on samtec.com

WHITE PAPERS
samtec.com/tech-library
- Wideband RF Launches
- Impacts of Solder Reflow on RF Connectors
- Millimeter Wave Design

TECH REPORT
samtec.com/alignment
- Precision Alignment Features

PRESENTATION
samtec.com/system-impedance
- Understanding Transmission Line Discontinuities

PRECISION RF EVALUATION KITS
samtec.com/kits/rf
- Precision RF
- Bulls Eye®
- Analog Over Array™
<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRFBA</td>
<td>Precision 1.35 mm Compression Jacks</td>
<td>13</td>
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<tr>
<td>DIN7A-CA</td>
<td>75</td>
<td>14</td>
</tr>
<tr>
<td>BE40A</td>
<td>50 Precision 2.40 mm Compression Jacks</td>
<td>15</td>
</tr>
<tr>
<td>BE90A</td>
<td>50 Precision 2.92 mm Compression Jacks</td>
<td>16</td>
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<tr>
<td>PRF18</td>
<td>90 GHz Bulls Eye Assembly, Single or Double Row</td>
<td>29</td>
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<tr>
<td>BE70A</td>
<td>50 &amp; 40 GHz Bulls Eye Assembly, Double Row</td>
<td>30</td>
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<td>BNC-CA</td>
<td>50Ω BNC Cable Connectors</td>
<td>38</td>
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<tr>
<td>BNC7T</td>
<td>75Ω 12G SDI BNC Jacks</td>
<td>41</td>
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<tr>
<td>BNC7T-CA</td>
<td>75Ω 12G SDI BNC Cable Connectors</td>
<td>40</td>
</tr>
<tr>
<td>C28S</td>
<td>100Ω Shielded Twisted Pair Twinax Cable Assembly</td>
<td>45</td>
</tr>
<tr>
<td>CJT</td>
<td>100Ω Twinax Jacks</td>
<td>45</td>
</tr>
<tr>
<td>DIN7A</td>
<td>75Ω, 12G-SDI DIN 1.0/2.3 Jacks</td>
<td>43</td>
</tr>
<tr>
<td>DIN7A-CA</td>
<td>75Ω, 12G-SDI DIN 1.0/2.3 Cable Connectors</td>
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<tr>
<td>GC47</td>
<td>50Ω Precision Ganged SMPM Assembly, .047&quot; Cable</td>
<td>20</td>
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<tr>
<td>GC86</td>
<td>50Ω Precision Ganged SMPM Assembly, .086&quot; Cable</td>
<td>20</td>
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<tr>
<td>GPPB</td>
<td>50Ω Precision Ganged SMPM Block, Board-to-Board</td>
<td>21</td>
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<tr>
<td>GPPC</td>
<td>50Ω Ganged SMPM Cable Board Mates</td>
<td>20-21</td>
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<td>GRF1-C</td>
<td>5.00 mm 50Ω Ganged Micro-Mini RF Plugs, Cable</td>
<td>45</td>
</tr>
<tr>
<td>GRF1H-C</td>
<td>5.00 mm 50Ω Ganged Hybrid Micro-Mini RF Cable</td>
<td>45</td>
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<tr>
<td>GRF1-J</td>
<td>5.00 mm 50Ω Ganged Micro-Mini RF Jacks, PCB Mount</td>
<td>45</td>
</tr>
<tr>
<td>GRF1-P</td>
<td>5.00 mm 50Ω Ganged Micro-Mini RF Plugs, PCB Mount</td>
<td>45</td>
</tr>
<tr>
<td>GRF7-C</td>
<td>5.00 mm 75Ω Ganged Micro-Mini RF Plugs, Cable</td>
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<tr>
<td>GRF7H-C</td>
<td>5.00 mm 75Ω Ganged Hybrid Micro-Mini RF Cable</td>
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<tr>
<td>GRF7J</td>
<td>5.00 mm 75Ω Ganged Micro-Mini RF Plugs, PCB Mount</td>
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<tr>
<td>HDBNC</td>
<td>75Ω, 12G-SDI High-Density BNC Jacks</td>
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<td>HDBNC-CA</td>
<td>75Ω, 12G-SDI High-Density Cable Connectors</td>
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<td>IS5</td>
<td>4.00 mm IsoRate® 50Ω High Isolation RF Jack Strip</td>
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<td>IS5C</td>
<td>4.00 mm IsoRate® 50Ω High Isolation RF Cable</td>
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<td>IS5H</td>
<td>4.00 mm IsoRate® 50Ω High Isolation Hybrid Cable</td>
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<td>IPS</td>
<td>4.00 mm IsoRate® 50Ω High Isolation RF Plug Strip</td>
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<tr>
<td>MCX</td>
<td>50Ω MCX Jacks &amp; Plugs</td>
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<tr>
<td>MCK7</td>
<td>75Ω MCX Jacks &amp; Plugs</td>
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<td>MCK7-CA</td>
<td>75Ω MCX Cable Connectors</td>
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<td>50Ω MCX Cable Connectors</td>
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<tr>
<td>MMX</td>
<td>50Ω MMX Cable Connectors, 65 GHz</td>
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<tr>
<td>MMXV</td>
<td>50Ω MMX Cable Connectors, 65 GHz</td>
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<tr>
<td>MMXV-CA</td>
<td>50Ω MMX Cable Connectors, 65 GHz</td>
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<tr>
<td>MH081</td>
<td>50Ω ISO Rate® 50Ω High Isolation RF Jack Strip</td>
<td>32</td>
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<td>MH113</td>
<td>50Ω ISO Rate® 50Ω High Isolation RF Cable, 1.13 mm DIA</td>
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<td>PRF00</td>
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<td>PRF01</td>
<td>Precision SMA Cable Connectors, 26.5 GHz</td>
<td>18</td>
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<td>PRF04</td>
<td>Precision TNCA Cable Connectors, 18 GHz</td>
<td>25</td>
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<td>PRF06</td>
<td>Precision N Type Cable Connectors, 18 GHz</td>
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<tr>
<td>PRF10</td>
<td>Precision 1.00 mm Cable Connectors, 110 GHz</td>
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<td>PRF13</td>
<td>Precision 1.35 mm Cable Connectors, 90 GHz</td>
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<td>PRF18</td>
<td>Precision 1.85 mm Cable Connectors, 65 GHz</td>
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<td>PRF24</td>
<td>Precision 2.40 mm Cable Connectors, 50 GHz</td>
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<td>PRF92</td>
<td>Precision 2.92 mm Cable Connectors, 40 GHz</td>
<td>16</td>
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<tr>
<td>PRF35</td>
<td>Precision 3.50 mm Cable Connectors, 34 GHz</td>
<td>17</td>
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<tr>
<td>PRFA</td>
<td>Precision 50Ω In Series Bullet Adaptors</td>
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<td>PRFAA</td>
<td>Precision 50Ω Between-Series Bullet Adaptors</td>
<td>27</td>
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<td>PRFAO</td>
<td>Precision SMP Cable Connectors, 65 GHz</td>
<td>19</td>
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<td>PRFS1</td>
<td>Precision SSMA Cable Connectors, 34 GHz</td>
<td>17</td>
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