RF INTERCONNECT
FULL LINE SOLUTIONS CATALOG

50 Ω & 75 Ω • PRECISION RF • NON-MAGNETIC • 12G-SDI • ORIGINAL SOLUTIONS
COMPLETE RF INTERCONNECT SOLUTIONS

50 Ω & 75 Ω • PRECISION • 12G-SDI • NON-MAGNETIC • ORIGINAL SOLUTIONS

FULL LINE RF CABLE ASSEMBLIES & CONNECTORS

As a manufacturer of a broad line of electronic interconnects, Samtec offers full RF solution capabilities. In addition to high-frequency precision RF and high-performance test systems, Samtec’s full line includes:

- Micro High-Frequency U.FL and W.FL
- 50 Ω and 75 Ω cable assemblies, cable connectors and board level interconnects
- Ganged and high isolation cable systems
- 100 Ω shielded twisted pair cable assemblies
- Micro-mini interconnects
- Non-magnetic RF solutions
- High-frequency, precision (18 GHz to 110 GHz)

Samtec is the service leader in the industry with the resources and willingness to provide technical support for launch optimization, simulation and test & measurement. Visit samtec.com/RF for additional information.

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 RF CABLES & CONNECTORS

- High-frequency cables: semi-flexible, solid, foamed or air enhanced dielectric
- Variety of straight and right-angle jacks, plugs and bulkhead jacks
- Double-shielded RG 316 cable
- Micro high-frequency U. FL/W. FL assemblies
- Wide variety of industry standard cables with mix & match cable connectors
- Precision interconnects supporting frequencies from 18 to 110 GHz

NON-MAGNETIC RF SOLUTIONS

- Truly non-magnetic RF solutions; 100% inspected for magnetic permeability
- Nearly all Samtec interconnects can be ordered as non-magnetic
- Supported by Samtec’s quick-turn lead times and unmatched service
- Ideal for medical imaging, advanced driver assistance systems, hand held devices, etc.
- Contact RFGroup@samtec.com

75 Ω RF CABLES & CONNECTORS

- Wide variety of industry standard cables with mix & match cable connectors
- Low-Profile BNC with Pick & Place capability, optimized for high volume manufacturing
- RFB8T Series (with Belden 1855A cable)
- HD-BNC™ is a trademark of Amphenol.

12G-SDI BROADCAST VIDEO SOLUTIONS

- Samtec has the largest variety of 12G-SDI optimized products
- Analysis and launch optimization: RFGroup@samtec.com
- 75 Ω BNC, HD-BNC™ and DIN 1.0/2.3
- Right-angle, vertical, edge mount, low-profile and standard or tall through-hole
- For additional details, please visit: samtec.com/12gsdi

SAMTEC ORIGINAL SOLUTIONS

- High vibration and 75 Ω MMCX
- Ganged micro-miniature high-performance RF cable assemblies with rugged contacts
- Circular RF shielded twisted pair system
- IsoRate® cost-efficient high-performance isolated signal systems
- Machined U.FL to 500 cycles

samtec.com/RF

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PRECISION RF
MICROWAVE / MILLIMETER WAVE CABLE ASSEMBLIES & INTERCONNECTS

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
# 50 Ω μWAVE/mmWAVE CABLES
## STANDARD OFF-THE-SHELF ASSEMBLIES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MWC-2550-01</th>
<th>MWC-2350-01</th>
<th>MWC-19550-CU-01</th>
<th>RG 405 (.086&quot;)</th>
<th>RG 402 (.141&quot;)</th>
<th>.047 Low-Loss Flexible</th>
<th>.085 Low-Loss Flexible</th>
<th>.086 Low-Loss Flexible</th>
<th>.178 Low-Loss Flexible</th>
<th>.277 Low-Loss Flexible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MWC-2550-01</th>
<th>MWC-2350-01</th>
<th>MWC-19550-CU-01</th>
<th>RG 405 (.086&quot;)</th>
<th>RG 402 (.141&quot;)</th>
<th>.047 Low-Loss Flexible</th>
<th>.085 Low-Loss Flexible</th>
<th>.086 Low-Loss Flexible</th>
<th>.178 Low-Loss Flexible</th>
<th>.277 Low-Loss Flexible</th>
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<tbody>
<tr>
<td>Max. Frequency (GHz)</td>
<td>40</td>
<td>35</td>
<td>50</td>
<td>45</td>
<td>20</td>
<td>20</td>
<td>65</td>
<td>50</td>
<td>65</td>
<td>27</td>
</tr>
<tr>
<td>Max. Insertion Loss (dB/m)</td>
<td>0.79</td>
<td>0.72</td>
<td>0.68</td>
<td>0.43</td>
<td>0.72</td>
<td>0.40</td>
<td>1.21</td>
<td>0.69</td>
<td>0.65</td>
<td>0.27</td>
</tr>
<tr>
<td>Propagation Delay (ns/m)</td>
<td>4.76</td>
<td>4.72</td>
<td>4.76</td>
<td>4.12</td>
<td>4.79</td>
<td>4.79</td>
<td>4.76</td>
<td>4.75</td>
<td>4.20</td>
<td>4.17</td>
</tr>
<tr>
<td>Velocity of Propagation</td>
<td>70%</td>
<td>81%</td>
<td>70%</td>
<td>70%</td>
<td>80%</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacitance (pF/m)</td>
<td>96.80</td>
<td>95.45</td>
<td>97.80</td>
<td>82.39</td>
<td>104.97</td>
<td>98.07</td>
<td>95.00</td>
<td>88.2</td>
<td>83.37</td>
<td>82.00</td>
</tr>
</tbody>
</table>

### CONSTRUCTION

- **Center Conductor**: Solid Silver Plated Copper
- **Dielectric**: FEP, Foam Fluoropolymer, PTFE, PFA, Solid PTFE, Foam Fluoropolymer, PTFE Tape
- **Shield**: 1) Ag Plated Cu, 2) Ag Plated Cu, 3) Cu Tape, 2) Ag Plated Cu, 1) Ag Plated Cu, 2) Ag Plated Cu, Tinned Cu, 1) Ag Plated Cu, 2) Ag Plated Cu, 1) Flat Ag Plated Cu, 2) Al Polyester, 3) Round Ag Plated Cu
- **Jacket**: FEP

### MECHANICAL

- **Operating Temp**: -40°C to 200°C
- **Min. Bend Radius**: 9.00 mm, 12.00 mm, 6.00 mm, 12.50 mm, 6.00 mm, 10.90 mm, 5.00 mm, 13.20 mm, 8.90 mm, 24.80 mm, 38.10 mm
- **Connector Options**: SMA, SMP, 3.50 mm, 2.92 mm, 2.40 mm, 2.40 mm, SMA, SMP, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMP, 2.92 mm, 2.40 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMP, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMP

### PART NUMBER

- **Series**: RF25S, RF23S, RF23C, RF120, RF405, RF402, RF047-A, RF085, RF086, RF180, RF280

*Shown at ~1/2 scale. ** Shown at 1/3 scale.*
1.00 mm TO 110 GHz

**1.00 mm**

**Cable Connectors**

PRF10

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>Connector Description</th>
<th>Diameter (DIA)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF10-J-C-VP-047D-SS</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>PRF10-P-C-VP-047D-SS</td>
<td>0.47</td>
<td></td>
</tr>
</tbody>
</table>

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 TO 90 GHz

**1.35 mm**

**Cable Assemblies**

RF047-A

**SERIES**

RF047-A  
(1.2 mm) 0.47" overshield  
29 AWG millimeter wave cable

**END 1 CONNECTOR**

-13SJ  
1.35 mm Straight Jack

-13SP  
1.35 mm Straight Plug

**OVERALL LENGTH**

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

**ALSO AVAILABLE**

1.85 mm, 2.40 mm, 2.92 mm, SMPM = RF047-A

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**1.35 mm**

**Cable Connectors**

PRF13

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>Connector Description</th>
<th>Diameter (DIA)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF13-J-C-VP-047A-BS</td>
<td>0.47</td>
<td></td>
</tr>
</tbody>
</table>

P.C = Cable Plug  
J.C = Cable Jack  
VP = Plating (75 µ" Gold center contact, passivated outer contact)  
SS = Straight, Solder Clamp  
BS = Bulkhead, Solder Clamp

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**1.35 mm**

**Board Connectors**

135

**Cable Mates:**

RF047-A

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**1.35 mm**

**Series**

135

**Gender**

-J = Jack

-P = PCB Mount

-VP = Plating (75 µ" gold center contact, passivated outer contact)

-ST = Straight

-CM = Compression Mount

-CMM = Compression Mount Microstrip

-1 = Without screws

-2 = With screws

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Contact Samtec

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1.85 mm TO 65 GHz

1.85 mm Cable Assemblies
RF047-A, RF086

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

**RF086**
= (2.18 mm) .086" oversheild DIA 23 AWG millimeter wave cable

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**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<table>
<thead>
<tr>
<th>Connector Code</th>
<th>Description</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF18-J-C-EP-047D-SS</td>
<td>.047, semi-rigid</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-P-C-EP-047D-SS</td>
<td>.047, semi-rigid</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-J-C-EP-086-SS</td>
<td>.086 Temp-Flex, low loss flexible</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-P-C-EP-086-SS</td>
<td>.086 Temp-Flex, low loss flexible</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-J-C-EE-405-SD</td>
<td>RG 405, .085, semi-rigid</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-J-C-EP-085-BS</td>
<td>Harbour SS405, flexible alternative to RG 405</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-P-C-EE-085-SD</td>
<td>Harbour SS405, flexible alternative to RG 405</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-P-C-EP-085-SS</td>
<td>Harbour SS405, flexible alternative to RG 405</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-P-C-047A-SS</td>
<td>.047 Temp-Flex, low loss flexible, 29 AWG</td>
<td>RF047-A</td>
</tr>
<tr>
<td>PRF18-J-C-EP-047A-SS</td>
<td>.047 Temp-Flex, low loss flexible, 29 AWG</td>
<td>RF047-A</td>
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</tbody>
</table>

**INTERFERENCE STANDARD**

**1.85 mm Board Connectors**

**RF047-A, RF086**

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**185**
- GENDER
  - J = Jack
  - P = PCB Mount
- TYPE
  - EP = 50 µ" (1.27 µm) Gold center contact, Passivated outer contact
- PLATING
  - ST = Straight
  - CM = Compression Mount Stripline
  - CMM = Compression Mount Microstrip
- ORIENTATION
  - 1 = Without Srews
  - 2 = With Srews
2.40 mm TO 50 GHz

### 2.40 mm Cable Assemblies

**RF047-A, RF085, RF086, RF23C, RF120**

<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 = 2.40 mm Straight Jack</td>
<td>-24SP = 2.40 mm Straight Plug</td>
<td>-“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF086</td>
<td>1.35 mm, 1.85 mm, 2.92 mm, SMPM = RF047-A</td>
<td>1.85 mm, 2.92 mm, SMPM = RF086</td>
<td>-0100 (100 mm) 3.94&quot; minimum (RF047-A, RF085, RF086, RF120)</td>
</tr>
<tr>
<td>RF085</td>
<td>2.92 mm = RF085</td>
<td>2.92 mm, SMPM = RF23C</td>
<td>-0152 (152 mm) 5.984&quot; minimum (RF23C)</td>
</tr>
<tr>
<td>RF23C</td>
<td>MWC-2350CU-01 millimeter wave cable with copper foil shield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF120</td>
<td>MWC-19550-FCU-01 19 AWG millimeter wave cable</td>
<td></td>
<td></td>
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</tbody>
</table>

### 2.40 mm Cable Connectors

**PRF24**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRF24-J-C-EP-085-SS</td>
</tr>
<tr>
<td>PRF24-J-C-EP-405-BS</td>
</tr>
<tr>
<td>PRF24-P-C-EP-085-DD</td>
</tr>
<tr>
<td>PRF24-P-C-EP-120A-SS</td>
</tr>
<tr>
<td>PRF24-J-C-EP-160B-SS</td>
</tr>
<tr>
<td>PRF24-J-C-EP-140B-SS</td>
</tr>
<tr>
<td>PRF24-J-C-EP-150B-SS</td>
</tr>
<tr>
<td>PRF24-J-C-EP-150-SS</td>
</tr>
<tr>
<td>PRF24-P-C-EP-086-SS</td>
</tr>
<tr>
<td>PRF24-P-C-EP-086-SS</td>
</tr>
</tbody>
</table>

**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**

### 2.40 mm Board Connectors

**240**

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>–J = Jack</td>
<td>–P = PCB Mount</td>
<td>–EP = 50 µ&quot; (1.27 µm) Gold center contact, Passivated outer contact</td>
<td>–ST = Straight</td>
<td>–CM = Compression Mount Stripline</td>
<td>–1 = without Screws</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>–CMM = Compression Mount Microstrip</td>
<td>–2 = With Screws</td>
</tr>
</tbody>
</table>

**ALSO AVAILABLE**

1.35 mm, 1.85 mm, 2.92 mm, SMPM = RF047-A

1.85 mm, 2.92 mm, SMPM = RF086

2.92 mm = RF085

2.92 mm, SMPM = RF23C

2.92 mm = RF120

**SERIES**

**END 1 CONNECTOR**

**END 2 CONNECTOR**

**OVERALL LENGTH**

**VSWR**

**RF047-A:** 1.35 max.

**RF086:** 1.40 max.

**RF085:** 1.40 max.

**RF23C:** 1.40 max.

**RF120:** 1.40 max.

**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**

**INTERFACE STANDARD**

** samtec.com/240**

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.
2.92 mm TO 40 GHz

2.92 mm Cable Assemblies
RF047-A, RF086, RF085, RF23C, RF120

- 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
  - RF085 = (2.16 mm) .085" overshield DIA 24 AWG millimeter wave cable
  - RF23C = MWC-2350CU-01 millimeter wave cable with copper foil shield
  - RF120 = MWC-19550-FCU-01 19 AWG millimeter wave cable

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

- END 2 CONNECTOR
  - ALSO AVAILABLE
    - 1.35 mm, 1.85 mm, 2.40 mm, SMPM = RF047-A
    - 1.85 mm, 2.40 mm, SMPM = RF086
    - 2.40 mm = RF085
    - 2.40 mm, SMPM = RF23C
    - 2.40 mm = RF120

- OVERALL LENGTH
  - “XXXX” = Overall Length in millimeters
    - -0100 (100 mm) 3.94" minimum (RF047-A, RF085, RF086, RF120)
    - -0152 (0152 mm) 5.984" minimum (RF23C)

- ALSO AVAILABLE
  - 1.35 mm, 1.85 mm, 2.40 mm, SMPM = RF047-A
  - 1.85 mm, 2.40 mm, SMPM = RF086
  - 2.40 mm = RF085
  - 2.40 mm, SMPM = RF23C
  - 2.40 mm = RF120

2.92 mm Cable Connectors
PRF92

- CONNECTORS FOR INDUSTRY STANDARD CABLES
  - PRF92-P-C-EE-405-SD: RG 405, .085, semi-rigid
  - PRF92-P-C-EE-085A-SD: .085, semi-rigid, 23AWG
  - PRF92-P-C-EP-180-SS: Semflex HP160, low loss flexible
  - PRF92-P-C-EP-190-SS: IW 1501, low loss flexible
  - PRF92-P-C-EP-142-SS: Harbour LL142, low loss flexible
  - PRF92-P-C-EP-085-SS: Harbour SS405, flexible alternative to RG 405
  - PRF92-P-C-EP-085-BS: Harbour SS405, flexible alternative to RG 405
  - PRF92-P-C-EP-085-SD: RG 402, .141, semi-rigid
  - PRF92-P-C-EP-180-SD: RG 402, semi-rigid
  - PRF92-P-C-EP-190-SD: Semflex HP190, low loss flexible
  - PRF92-P-C-EP-190-SS: Semflex HP150, low loss flexible
  - PRF92-P-C-EP-120A-SS: Semflex HP120, low loss flexible
  - PRF92-P-C-EP-140-SS: Dynawave DF140, low loss flexible
  - PRF92-J-C-EP-405-4S: RG 405, .085, semi-rigid
  - PRF92-J-C-EP-405-SD: Dynawave DF150, low loss flexible
  - PRF92-J-C-EP-190-4S: RG 405, .141, semi-rigid
  - PRF92-J-C-EP-190-SS: P.C = Cable Plug
  - PRF92-J-C-EP-190-4S: J.P = Cable Jack
  - PRF92-J-C-EP-190-SD: P.C = Cable Plug
  - PRF92-J-C-EP-180-SS: EE = Plating (50 µ" Gold center contact & outer contact)
  - PRF92-J-C-EP-180-4S: EP = Plating (50 µ" Gold center contact, passivated outer contact)
  - PRF92-J-C-EP-180-SD: SS = Straight, Solder Clamp
  - PRF92-J-C-EP-180-4S: BS = Bulkhead, Solder Clamp
  - PRF92-J-C-EP-180-4S: 4S = 4-hole flange, Solder Clamp

2.92 mm Board Connectors
292

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

- TYPE
  - -HP = 30 µ" (0.76 µm) Gold center contact, Passivated outer contact

- PLATING
  - -HP = 30 µ" (0.76 µm) Gold center contact, Passivated outer contact

- ORIENTATION
  - -ST = Straight
  - -CM2 = Compression Mount

- TERMINATION
  - -J = Jack
  - -P = PCB Mount

IFRF047-A: 1.35 max.
RF086: 1.40 max.
RF085: 1.40 max.
RF23C: 1.40 max.
RF120: 1.40 max.

VSWR
RF047-A: 1.35 max.
RF086: 1.40 max.
RF085: 1.40 max.
RF23C: 1.40 max.
RF120: 1.40 max.

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### 3.50 mm TO 34 GHz

**3.50 mm Cable Assemblies**

**RF23S**
- WMC-2350-01 microwave cable with 23 AWG solid FEP Dielectric
- **OVERALL LENGTH**
  - “XXXX” = Overall Length in millimeters
  - 0100 (100 mm) 3.94” min.

**RF23S**
- **VSWR**
  - 1.30 max

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

- **PRF35-P-C-EP-405-SS**
  - RG 405, .085, semi-rigid
- **PRF35-J-C-EP-402-SS**
  - RG 402, .141, semi-rigid
- **PRF35-J-C-EP-402-BS**
  - RG 402, .141, semi-rigid
- **PRF35-P-C-EP-402-SS**
  - RG 402, .141, semi-rigid
- **PRF35-P-C-EP-120A-SS**
  - Semflex HP120, low loss flexible
- **PRF35-J-C-EP-160-SS**
  - Semflex HP160, low loss flexible
- **PRF35-P-C-EP-160-SS**
  - Semflex HP160, low loss flexible

**INTERFACE STANDARD**

- 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**
- Harbour SS402, flexible alternative to RG 402

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

- **PRFS1-J-C-EE-405-BD**
  - RG 405, .085, semi-rigid
- **PRFS1-P-C-EE-405-SD**
  - RG 405, .085, semi-rigid
- **PRFS1-P-C-EP-141A-SS**
  - Harbour SS402, flexible alternative to RG 402
- **PRFS1-P-C-EP-141A-SS**
  - Harbour SS402, flexible alternative to RG 402

**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
- BD = Bulkhead, Direct Solder

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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.
SMA Cable Assemblies
RF25S, RF402, RF405, RF180, RF280

SMA
Cable Connectors
PRF01

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

Cable Mates:
RF25S, RF402, RF405, RF180, RF280

SERIES

END 1 CONNECTOR

END 2 CONNECTOR

OVERALL LENGTH

RF25S
MWC-2550-01 microwave cable with 25 AWG solid FEP dielectric

RF402
RG 402 (.141") 19 AWG semi-flexible microwave cable

RF405
RG 405 (.086") 24 AWG semi-flexible microwave cable

RF180
(4.52 mm), .178" oversheild DIA, 16 AWG microwave cable

RF280
(7 mm), .277" oversheild DIA, 11 AWG microwave cable

-01SP1*
SMA Straight Plug

-01RP1*
SMA Right-angle Plug (RF25S not available)

-01BJ1*
SMA Bulkhead Jack (RF402 & RF405 not available)

*Remove last “1” from end connector when specifying RF180 & RF280.

-0100
(100 mm) 3.94" minimum

ALSO AVAILABLE

SMP = RF25S, RF405
TNCA, N Type = RF180
TNCA, N Type = RF280

VSWR

RF25S: 1.60 max.
RF402: 1.50 max.
RF405: 1.35 max.
RF180: 1.35 max.
RF280: 1.35 max.

Additional connector options available. Contact RFGroup@samtec.com

CONNECTIONS FOR INDUSTRY STANDARD CABLES

<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>RF25S</td>
<td>-01SP1*</td>
<td>-0100</td>
<td>-&quot;XXXXX&quot; = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF402</td>
<td>-01RP1*</td>
<td>-0100</td>
<td>-0100 (100 mm) 3.94&quot; minimum</td>
</tr>
<tr>
<td>RF405</td>
<td>-01BJ1*</td>
<td>-0100</td>
<td></td>
</tr>
</tbody>
</table>

SMA TO 18 GHz

samtec.com/SMA

SMA CABLES TO 18 GHz

SMA Connector Applications

RF25S, RF402, RF405, RF180, RF280

Cable Mates:
RF25S, RF402, RF405, RF180, RF280

Cable Connectors

SMA-TH, SMA-SM, SMA-MT, SMA-EM

Board Connectors

SMA-TH, SMA-SM, SMA-MT, SMA-EM

Additional connector options available. Contact RFGroup@samtec.com

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
RS = Right-angle, Solder Clamp
4D = 4-hole flange, Direct Solder

Contact Samtec for additional connector options at RFGroup@samtec.com

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 Cable Assemblies
RF047-A, 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>MOSP = SMPM Straight Plug, Full Detent</td>
<td>MOSJ = SMPM Straight Jack</td>
<td>“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF086</td>
<td>= (1.2 mm) .047&quot; overshield DIA 29 AWG millimeter cable</td>
<td>= SMPM Right-angle Jack (RF047-A only)</td>
<td>= 0100 (0100 mm) 3.94&quot; minimum (RF047-A, RF086)</td>
</tr>
<tr>
<td>RF23C</td>
<td>= MWC-2350CU-01 millimeter wave cable with copper foil shield</td>
<td>= SMPM Straight Bulkhead Jack (RF047-A only)</td>
<td>= 0152 (0152 mm) 5.984&quot; minimum (RF23C)</td>
</tr>
</tbody>
</table>

VSFR
RF047-A: 1.40 max.  
RF086: 1.40 max.  
RF23C: 1.40 max.

SMPM Cable Connectors
PRFM0

CONNECTORS FOR INDUSTRY STANDARD CABLES
- PRFM0-J-EE-047A-BD = .047 Temp-Flex, low loss flexible, 29 AWG
- PRFM0-J-EE-085-BD = Harbour SS405, flexible alternative to RG 405
- PRFM0-J-EE-047A-SD = .047 Temp-Flex, low loss flexible, 29 AWG
- PRFM0-J-EE-086-SD = .086 Temp-Flex, low loss flexible
- PRFM0-J-EE-047B-SD = .047 Temp-Flex, low loss flexible, 28 AWG
- PRFM0-P-EE-047A-SD = .047 Temp-Flex, low loss flexible, 29 AWG
- PRFM0-J-EE-047A-SD = .047 Temp-Flex, low loss flexible, 29 AWG

INTERFACE STANDARD (CATCHERS MITT)
- P-C = Cable Plug
- J-C = Cable Jack
EE = Plating (50 μ" Gold center contact, & outer contact)
HG = Plating (30 μ" Gold center contact, 10 μ" Gold outer contact)
SD = Straight, Direct Solder
BD = Bulkhead, Direct Solder
RD = Right-angle, Direct Solder

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

Cable Mates:
RF047-A, RF086, RF23C

<table>
<thead>
<tr>
<th>SMPM</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PF</td>
<td>= Full Detent</td>
<td>- P</td>
<td>= PCB Mount</td>
<td>- ST</td>
<td>= Drop-in Edge Mount (-ST only)</td>
<td></td>
</tr>
<tr>
<td>PS</td>
<td>= Smooth Bore</td>
<td>- PC</td>
<td>= Catchers Mitt (-ST-TH only)</td>
<td>- RA</td>
<td>= Righ-angle (-TH required)</td>
<td></td>
</tr>
</tbody>
</table>
| HF   | = 30 μ" (0.76 μm)  
Gold center contact, 10 μ" (0.25 μm)  
Gold outer contact (-ST only) | - HG | = 30 μ" (0.76 μm)  
Gold center contact, 10 μ" (0.25 μm)  
Gold outer contact (-ST only) | - ST | = Straight |
|      | = Gold center contact, 3 μ" (0.08 μm)  
Gold outer contact (-RA only) | - EE | = Gold center contact and outer body (-SM only) | - EM        | = Drop-in Edge Mount (-ST only) |
|      | = (3.98) .157  
DIA | - TH | = Through-hole |
|      | (3.99) .157  
DIA | - SM | = Surface Mount (-ST only) |

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SMPM TO 65 GHz

GANGED SMPM SOLUTIONS

BOARD-TO-BOARD GANGED, MULTI-POSITION SMPM BLOCKS

Series: GPPB
Mates with: PRFIA

FEATURES
- High-density, space-saving design
- 8.33 mm (.328") pitch (3.56 mm (.140") pitch in development)
- Push-on interface with varying retention forces
- Bullet adaptors enable blind mate applications accommodating axial and radial misalignment
- Board height options: 4.22 mm (.166"), 5.33 mm (.210"), 8.31 mm (.327"), 12.70 mm (.500")

CABLE-TO-BOARD GANGED, MULTI-POSITION SMPM CABLE ASSEMBLY

Cable Assembly: GC47
Board Mate: GPPC

FEATURES
- High-density, space-saving design
- Pitch: 3.56 mm (.140")
- Push-on interface for quick installation
- .047 low-loss flexible microwave/millimeter wave cable

Applications include: 5G wireless, mmWave, military/defense, telecom, radar, test & measurement, applications that are space limited and require high operating frequency
SMP TO 40 GHz

SMP Cable Assemblies
RF25S, RF405

- **RF25S**
  = MWC-2550-01 microwave cable with 25 AWG solid FEP dielectric
- **RF405**
  = RG 405 (.086") 24 AWG semi-flexible microwave cable

**VSWR**
RF25S: Contact Samtec
RF405: Contact Samtec

**SERIES**

<table>
<thead>
<tr>
<th>END 1 CONNECTOR</th>
<th>END 2 CONNECTOR</th>
<th>OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>-00SJ7 = SMP Straight Jack</td>
<td>-00RJ7 = SMP Right-angle Jack</td>
<td>“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>–0100 (100 mm) 3.94” minimum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ALSO AVAILABLE**

- SMA = RF25S
- SMA = RF405

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-PF-C-KK-047D-BD</td>
</tr>
</tbody>
</table>

- 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

**INTERFACE STANDARD (FULL DETENT)**

Unslerwise 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**

**Cable Mates:**
RF405, RF255

<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>-P</td>
<td>PC Mount</td>
<td>-ST</td>
<td>Through-hole</td>
</tr>
<tr>
<td>-PL</td>
<td>Plug, Limited Detent</td>
<td>-GF</td>
<td>10 µ&quot; (0.25 µm) Gold center contact, Gold Flash outer contact (-TH2 only)</td>
<td>-EM3</td>
<td>Drop-in Edge Mount (Not available with -PC)</td>
</tr>
<tr>
<td>-PS</td>
<td>Plug, Smooth Bore</td>
<td>-HH</td>
<td>30 µ&quot; (0.76 µm) Gold center and outer contact (-EM3)</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>
</tbody>
</table>

<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>-GF</td>
<td>10 µ&quot; (0.25 µm) Gold center contact, Gold Flash outer contact</td>
<td>-ST</td>
<td>-0645 = 6.45 mm (.254&quot;)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1450 = 14.50 mm (.571&quot;)</td>
</tr>
</tbody>
</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>-GF</td>
<td>10 µ&quot; (0.25 µm) Gold center contact, Gold Flash outer contact</td>
<td>-ST</td>
<td>-0645 = 6.45 mm (.254&quot;)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1450 = 14.50 mm (.571&quot;)</td>
</tr>
</tbody>
</table>

### Application
Compensates for axial & radial misalignment

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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>(4.52 mm), .178&quot; overshield DIA, 16 AWG microwave cable</td>
<td>-06SP = N Type Straight Plug</td>
<td>&quot;XXXX&quot; = Overall length in millimeters</td>
</tr>
<tr>
<td>RF280</td>
<td>(7 mm), .277&quot; overshield DIA, 11 AWG microwave cable</td>
<td>-06RP = N Type Right-angle Plug</td>
<td>-0100 (100 mm) 3.94&quot; minimum</td>
</tr>
</tbody>
</table>

VSWR
RF180: 1.35 max.
RF280: 1.35 max.

N Type Cable Connectors
PRF06

CONNECTIONS FOR INDUSTRY STANDARD CABLES

| Harbour LL142, low loss flexible | Semflex HP190, low loss flexible | Harbour LL335, low loss flexible | Semflex LA290, low loss flexible | Harbour SB142, low loss flexible | Semflex HP305, low loss flexible | Harbour LL335, low loss flexible | Harbour LL142, low loss flexible | Semflex HP190, low loss flexible | Semflex HP120, low loss flexible | RG 402, .141, semi-rigid | Harbour LL142, low loss flexible | Semflex HP190, low loss flexible | Semflex LA290, low loss flexible | Harbour LL142, low loss flexible | Harbour LL335, low loss flexible | Times Max Gain 300, low loss flexible | Harbour LL335, low loss flexible | ATM CF-210, low loss flexible | Dynawave DF218, low loss flexible |

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
4S = 4-hole Flange, Solder Clamp

INTERFACE STANDARD

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.
**TNCA TO 18 GHz**

**TNCA Cable Assemblies**
RF180, RF280

**RF180**
= (4.52 mm) .178” oversheild DIA, 16 AWG microwave cable

**RF280**
= (7 mm) .277” oversheild DIA, 11 AWG microwave cable

**VSWR**
RF180: 1.35 max.
RF280: 1.35 max.

---

**TNCA Cable Connectors**
PRF04

---

**CONNECTORS FOR INDUSTRY STANDARD CABLES**

<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>-04SP = TNCA Straight Plug</td>
<td>-04RP = TNCA Right-angle Plug</td>
<td>“XXXX” = Overall length in millimeters</td>
</tr>
<tr>
<td>RF280</td>
<td>-04B = TNCA Straight Bulkhead Jack</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INTERFACE STANDARD**

---

**ALSO AVAILABLE**
SMA, N Type = RF180
SMA, N Type = RF280

---

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

---

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.
The high-density array designs and advanced cabling solutions within Samtec’s Bulls Eye® product family support test and measurement applications to 70 GHz.

- Compression interface to the board provides easy on/off and eliminates soldering costs
- High-density, space-saving design
- Enables smaller evaluation boards and shorter trace lengths
- Installation: while the attach process for each series is similar, each have unique specifications that need to be observed

**FEATURES & BENEFITS**

**HIGH-DENSITY & SPACE-SAVING**
Enables smaller evaluation boards and shorter trace lengths.

**PRODUCT FAMILY CROSS REFERENCE GUIDE**

<table>
<thead>
<tr>
<th>ASSEMBLY</th>
<th>70 GHz</th>
<th>50 GHz</th>
<th>40 GHz</th>
<th>20 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>End 2 Connectors</td>
<td>1.85 mm</td>
<td>2.40 mm (50 GHz)</td>
<td>2.92 mm (40 GHz)</td>
<td>2.92 mm (2 Row)</td>
</tr>
<tr>
<td>Samtec Series</td>
<td>BE70A</td>
<td>BE40A</td>
<td>BDRA</td>
<td>BQRA</td>
</tr>
<tr>
<td>Cable Type</td>
<td>.086</td>
<td>MWC-2350CU-01</td>
<td>MWC-2350-01</td>
<td></td>
</tr>
<tr>
<td>PCB Transmission</td>
<td>Microstrip or Stripline</td>
<td>Stripline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>Spring-Loaded Contact; 360° Grounding</td>
<td>Pogo-Pin for Signal &amp; Ground</td>
<td>Fixed-Pin for Signal; Elastomer &amp; Block for Ground</td>
<td></td>
</tr>
<tr>
<td>No. of Positions</td>
<td>2x 3, 4, 6, 8, 10, 12, 14, 16</td>
<td>2x 12</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ω</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPGA Development Kit</td>
<td>Xilinx® Zynq® UltraScale™ RFSoC ZCU1275</td>
<td>Xilinx® Virtex® UltraScale™ FPGA VCU110</td>
<td></td>
<td></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.
**BE70A**, 2 X 4 FOOTPRINT, 12-INCH CABLE

~3 dB LOSS: BREAKOUT REGION + BE70A

MEASURED: 1.975 mm STRIPLINE + BREAKOUT REGION + BE70A
### 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></td>
<td>-92SJ</td>
<td>2</td>
<td></td>
<td>-“XXXX”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-92SPP</td>
<td>2</td>
<td></td>
<td>-03, -04, -06, -08, -10, -12, -14, -16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>2.92 mm Straight Plug</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-92SP</td>
<td>2</td>
<td></td>
<td>-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>5.0 Pico-second</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-92SP</td>
<td>2</td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>10.0 Pico-second</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-24SJ</td>
<td>2</td>
<td></td>
<td>-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>No Phase Matching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-24SP</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### 20 GHz ASSEMBLIES

<table>
<thead>
<tr>
<th>BDRA</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>-92SP</td>
<td>2</td>
<td></td>
<td>-“XXXX”</td>
</tr>
<tr>
<td></td>
<td>2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td>-92SP</td>
<td>2</td>
<td></td>
<td>-03, -04, -06, -08, -10, -12, -14, -16</td>
</tr>
<tr>
<td></td>
<td>2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>2.92 mm Straight Plug</td>
</tr>
<tr>
<td></td>
<td>-24SP</td>
<td>2</td>
<td></td>
<td>-5</td>
</tr>
<tr>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>5.0 Pico-second</td>
</tr>
<tr>
<td></td>
<td>-24SP</td>
<td>2</td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>10.0 Pico-second</td>
</tr>
</tbody>
</table>

**BDRA End 2 Connectors:**
- 2.92 mm

### 20 POSITIONS PER ROW SHOWN

**Footprint (Compatible with BE40A series footprint)**

<table>
<thead>
<tr>
<th>BQRA</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>-92SP</td>
<td>2</td>
<td></td>
<td>-“XXXX”</td>
</tr>
<tr>
<td></td>
<td>2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>Overall length in millimeters</td>
</tr>
<tr>
<td></td>
<td>-92SP</td>
<td>2</td>
<td></td>
<td>-03, -04, -06, -08, -10, -12, -14, -16</td>
</tr>
<tr>
<td></td>
<td>2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>2.92 mm Straight Plug</td>
</tr>
<tr>
<td></td>
<td>-24SP</td>
<td>2</td>
<td></td>
<td>-5</td>
</tr>
<tr>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>5.0 Pico-second</td>
</tr>
<tr>
<td></td>
<td>-24SP</td>
<td>2</td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td></td>
<td>50 GHz, 2.92 mm Straight Plug</td>
<td></td>
<td></td>
<td>10.0 Pico-second</td>
</tr>
</tbody>
</table>

**BQRA End 2 Connectors:**
- 2.92 mm

### 20 POSITIONS, 4 ROWS

**Footprint**

---

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samtec.com/BullsEye
To support the demands of next generation systems, Samtec is developing innovative interconnect solutions such as our new mmWave technology, which enables a high-frequency, ultra-small form factor, and highly flexible waveguide design.

Samtec High-Frequency Micro Waveguides offer high-performance at a lower overall cost than traditional metallic waveguides. Products currently in testing:

- Threaded Termination Cable and mating PCB Launch Right-Angle Connector
- In Development: Push-Pull Style Mini Termination Cable and mating PCB Launch Right-Angle Connector
- Roadmap: Low Loss Dielectric Push-Pull Mini Termination Cable and Vertical PCB Launch Connector
- Adaptors to traditional waveguide interfaces also available

Contact RFGroup@samtec.com for additional details.
# LOW-FREQUENCY CABLES

## STANDARD OFF-THE-SHELF ASSEMBLIES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>50 Ω CABLES</th>
<th>75 Ω CABLES</th>
<th>100 Ω CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RG 178</td>
<td>CTB-265OF-01</td>
<td>RG 174</td>
</tr>
<tr>
<td></td>
<td>RG 316</td>
<td>RG 316 DS</td>
<td>RG 58</td>
</tr>
<tr>
<td></td>
<td>RG 179</td>
<td>Belden 1855A</td>
<td>Belden 1694A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belden 4855R</td>
<td>Belden 4694R</td>
</tr>
<tr>
<td></td>
<td>RG 6</td>
<td>TPS-28100-RF</td>
<td></td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>50 Ω</th>
<th>75 Ω</th>
<th>100 Ω</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50 ± 2</td>
<td>75 ± 3</td>
<td>100 ± 5</td>
</tr>
<tr>
<td>Insertion Loss (dB/m)</td>
<td>0.30</td>
<td>0.12</td>
<td>0.07</td>
</tr>
<tr>
<td>100 MHz</td>
<td>0.20</td>
<td>0.12</td>
<td>0.06</td>
</tr>
<tr>
<td>1 GHz</td>
<td>0.80</td>
<td>0.37</td>
<td>0.21</td>
</tr>
<tr>
<td>6 GHz</td>
<td>0.80</td>
<td>0.37</td>
<td>0.21</td>
</tr>
</tbody>
</table>

### CONSTRUCTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>50 Ω</th>
<th>75 Ω</th>
<th>100 Ω</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Conductor Material</td>
<td>Silver Plated Copper Clad Steel</td>
<td>Silver Plated Copper Clad Steel</td>
<td>Silver Plated Copper Clad Steel</td>
</tr>
<tr>
<td>AWG</td>
<td>30</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>Dielectric Material</td>
<td>PTFE</td>
<td>Foamed FEP</td>
<td>KLPE</td>
</tr>
<tr>
<td>Shield Material</td>
<td>Silver Plated Copper</td>
<td>Tinned Copper</td>
<td>Silver Plated Copper</td>
</tr>
<tr>
<td>Jacket Material</td>
<td>FEP</td>
<td>PVC</td>
<td>FEP</td>
</tr>
<tr>
<td>Temp Rating</td>
<td>-50 °C to +165 °C</td>
<td>-50 °C to +165 °C</td>
<td>-50 °C to +165 °C</td>
</tr>
<tr>
<td>Connector Options</td>
<td>MMGX, MCX, SMA, SMB, BNC, TNC, N Type</td>
<td>Isorating</td>
<td>MMGX, MMXCV, MCX, SMA, SMB, BNC, TNC, N Type</td>
</tr>
<tr>
<td>Series</td>
<td>RF178</td>
<td>IJ5C</td>
<td>RF174</td>
</tr>
</tbody>
</table>

### MECHANICAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>50 Ω</th>
<th>75 Ω</th>
<th>100 Ω</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend Radius</td>
<td>10.2 mm</td>
<td>3.175 mm</td>
<td>25.4 mm</td>
</tr>
<tr>
<td>Connector Options</td>
<td>MMGX, MCX, SMA, SMB, BNC, TNC, N Type</td>
<td>Isorating</td>
<td>MMGX, MMXCV, MCX, SMA, SMB, BNC, TNC, N Type</td>
</tr>
<tr>
<td>Series</td>
<td>RF178</td>
<td>IJ5C</td>
<td>RF174</td>
</tr>
</tbody>
</table>

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**MHF Cable Assemblies**

**MH081, MH113**

### SERIES

- **MH081** = 0.81 mm Cable
- **MH113** = 1.13 mm Cable

Specify END OPTIONS from chart

### APPLICATION

- **-MH1RP**
  - 2.5 mm MAX
  - 1.55 mm MAX

- **-MH3RP**
  - 1.2 mm MAX

- **-MH4RP**

### SPECIFICATIONS

**0.81 mm Cable:**
- **Capacitance:** 100 pF/meter
- **Max Attenuation (cable only):** 3.1 dB @ 1 GHz
- **Conductor Size:** 36 AWG, (0.81 mm), 0.032" dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 1.40 Ω/meter max
- **Insulator Diameter:** (0.4 mm), 0.016"
- **Insulator Material:** FEP
- **Shield Material:** Silver Plated Copper
- **Jacket Material:** FEP
- **Jacket Diameter:** (0.81 mm), 0.032" 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), 0.045" dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 0.60 Ω/meter max
- **Insulator Diameter:** (0.66 mm), 0.026".
- **Insulator Material:** FEP
- **Shield Material:** Tinned Copper
- **Jacket Material:** FEP
- **Jacket Diameter:** (1.13 mm), 0.045" 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)

- **-MH4RP = MHF4 Type Plug**
  - (10 µ" (0.25 µm) Gold on Center Contact, 1.9 µ" (0.05 µm) Gold on Shell)
  - (MH4RP is not available with MH1RP & MH3RP)

- **-01BJ1 = SMA Straight Bulkhead Jack (MH081 only)**
- **-01BJ2 = SMA Straight Bulkhead Jack, Reversed Polarity (MH081 only)**
- **-01SB1 = SMA Straight Jack, Sealed Bulkhead (MH081 only)**
- **-01SR1 = SMA Straight Jack, Sealed Bulkhead, Reversed Polarity (MH081 only)**

- **-SING = Single Ended (End 2 callout)**

### STRIPPED & TINNED (Dimensions in mm)

- **CALLOUT**
  - A
  - B
  - C

- **-30030**
  - 3.0
  - 1.0
  - 3.0

- **-30040**
  - 3.0
  - 1.0
  - 4.0

- **-40030**
  - 4.0
  - 1.0
  - 3.0

- **-40040**
  - 4.0
  - 1.0
  - 4.0

Both center conductor and braid shield are stripped, only the center conductor is tinned.
### SMA Cable Assemblies

- **RF174**: RG 174 Cable
- **RF178**: RG 178 Cable (-01BJ1 & -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**

- **SMA**: SMA connector
- **GENDER**: Jack (-J), Cable (-C), etc.
- **TYPE**: Plug (-P), Cable (-C), etc.
- **PLATING**: Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-CA1, -C10 only)
- **ORIENTATION**: Straight (-ST), Right-angle (-RA)
- **TERMINATION**: 4-Hole Panel Mount Jack (-S10, -B10)

### SMA Board Connectors

See page 145 for Board Connectors

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**50 Ω SMA TO 6 GHz**

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**OVERALL LENGTH**

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

---

**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

---

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

---

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### MCX Cable Assemblies

**RF174**, RF178, RF316, RS316

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

#### Connectors for Industry Standard Cables

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Cable Type</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCX-J-C-H-ST-CA1</td>
<td>RG 174/316 Cable</td>
<td>A: 4.50, B: 1.77, C: 15.50, D: 6.10</td>
</tr>
<tr>
<td>MCX-J-C-H-ST-CA2</td>
<td>RG 178 Cable</td>
<td>A: 4.78, B: 1.88, C: 15.00, D: 5.91</td>
</tr>
<tr>
<td>MCX-J-C-H-ST-CA15</td>
<td>RG 316 Double Shielded Cable</td>
<td>A: 4.50, B: 1.77, C: 15.50, D: 6.10</td>
</tr>
<tr>
<td>MCX-P-C-H-ST-CA1</td>
<td>RG 174/316 Cable</td>
<td>A: 7.78, B: 3.06, C: 9.50, D: 3.74</td>
</tr>
<tr>
<td>MCX-P-C-H-ST-CA2</td>
<td>RG 178 Cable</td>
<td>A: 8.58, B: 3.38, C: 10.00, D: 3.94</td>
</tr>
<tr>
<td>MCX-P-C-H-ST-CA15</td>
<td>RG 316 Double Shielded Cable</td>
<td>A: 4.50, B: 1.77, C: 15.50, D: 6.10</td>
</tr>
<tr>
<td>MCX-P-C-H-RA-CA1</td>
<td>RG 174/316 Cable</td>
<td>A: 7.78, B: 3.06, C: 9.50, D: 3.74</td>
</tr>
<tr>
<td>MCX-P-C-H-RA-CA2</td>
<td>RG 178 Cable</td>
<td>A: 8.58, B: 3.38, C: 10.00, D: 3.94</td>
</tr>
</tbody>
</table>

- **P-C** = Cable Plug
- **J-C** = Cable Jack
- **ST** = Straight
- **RA** = Right-angle

#### MCX Board Connectors

**MCX-TH**, **MCX-SM**, **MCX-EM**, **MCX-MT**

- **J** = Jack
- **P** = Plug
- **H** = Through-hole
- **ST** = Straight
- **RA** = Right-angle
- **SM** = Surface Mount
- **EM** = Edge Mount
- **MT** = Mixed Technology

### Also Available

- 50 Ω: MMCX, SMA, SMB, BNC, TNC, N Type = RF174, RF178, RS316
- 50 Ω: MMCX, SMA, BNC, TNC = RS316

**Supplied with pins and ferrules. See website for dimensions.**
50 Ω MMCX TO 6 GHz

MMCX Cable Assemblies
RF174, RF178, RF316, RS316

<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>= MMCX Straight Jack</td>
<td>–“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF178</td>
<td>= RG 178 Cable (-03SP1 &amp; -03RP1 only)</td>
<td>= MMCX Right-angle Plug</td>
<td>–0100 (100 mm) 3.94&quot; minimum</td>
</tr>
<tr>
<td>RF316</td>
<td>= RG 316 Cable, Single Braid Shield</td>
<td>= MMCXV Straight Plug, High Vibration</td>
<td>–V3SP1 = MMCXV Straight Plug, High Vibration</td>
</tr>
<tr>
<td>RS316</td>
<td>= RG 316 Cable, Double Shielded (-03SP1 only)</td>
<td>= MMCXV Right-angle Plug, High Vibration</td>
<td>–V3RP1 = MMCXV Right-angle Plug, High Vibration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>= MMCXV Straight Jack, High Vibration</td>
<td>–V3SJ1 = MMCXV Straight Jack, High Vibration</td>
</tr>
</tbody>
</table>

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

MMCX Cable Connectors
MMGX-CA

Connecors for Industry Standard Cables

<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>MMCX-P-H-ST-CA1</td>
<td>= RG 174/316 Cable</td>
<td>= MMCX Straight Jack</td>
<td>–“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>MMCX-P-H-ST-CA2</td>
<td>= RG 178 Cable</td>
<td>= MMCX Right-angle Plug</td>
<td>–0100 (100 mm) 3.94&quot; minimum</td>
</tr>
<tr>
<td>MMCX-P-H-FH-ST-CA1S</td>
<td>= RG 316 Double Shielded Cable</td>
<td>= MMCXV Straight Plug, High Vibration</td>
<td>–V3SP1 = MMCXV Straight Plug, High Vibration</td>
</tr>
<tr>
<td>MMCX-P-H-R-A-CA1</td>
<td>= RG 174/316 Cable</td>
<td>= MMCXV Right-angle Plug, High Vibration</td>
<td>–V3RP1 = MMCXV Right-angle Plug, High Vibration</td>
</tr>
</tbody>
</table>

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

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

Cable Mates:
RF174, RF178, RF316, RS316, GRF1H-C, I5JH

<table>
<thead>
<tr>
<th>MMCX</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>= Jack</td>
<td>= PCB Mount</td>
<td>= 30 µ&quot; (0.76 µm) Gold center contact, 3 µ&quot; (0.08 µm) Gold outer contact</td>
<td>= Straight</td>
<td>= Through-hole</td>
</tr>
<tr>
<td></td>
<td>= Plug</td>
<td>= RA = Right-angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>= RA = Right-angle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|      | = EM1 = Edge Mount (
| | |
|      | = MT1 = Mixed Technology (*ST only) |
|      | = SM1 = Surface Mount (*RA plug not available) |
50 Ω TNC TO 6 GHz

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

END 1 CONNECTOR
- 05SP3 = TNC Straight Plug (RF058 not available)
- 05BJ3 = TNC Straight Bulkhead Jack (RS316 & RF058 not available)
- 05SR3 = TNC Straight Plug, Reversed Polarity (RF058 only)

END 2 CONNECTOR
- “XXXX” = Overall Length in millimeters
- 0100 (100 mm) 3.94” minimum

OVERALL LENGTH

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

TNC Cable Connectors
TNC-CA

CONNECTORS FOR INDUSTRY STANDARD CABLES

- TNC-P-C-GN-ST-CA1 = RG 174/316 Cable
- TNC-P-C-GN-ST-CA2 = RG 178 Cable
- TNC-P-C-GN-SR-C10 = RG 58 Cable
- TNC-J-C-GN-ST-BH1 = RG 174/316 Cable, Bulkhead
- TNC-J-C-GN-ST-BH2 = RG 178 Cable, Bulkhead

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

TNC Board Connectors
TNC-TH

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

TNC Gender
- J = Jack
- P = PCB Mount

Type
- H = 30 µ” (0.76 µm) Gold center contact, Nickel on shell

Termination
- RA = Right-angle
- TH1 = Through-hole

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

samtec.com/TNC

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**BNC 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>-04SP3</td>
<td>“XXXX” = Overall Length in millimeters</td>
</tr>
<tr>
<td>RF178</td>
<td>= RG 178 Cable</td>
<td>-04BJ2</td>
<td>-0100 (100 mm) 3.94” minimum</td>
</tr>
<tr>
<td>RF316</td>
<td>= RG 316 Cable, Single Braid Shield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS316</td>
<td>= RG 316 Cable, Double Shielded</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Also Available**

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

BNC Cable Connectors

**BNC5-CA**

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

**Connectors for Industry Standard Cables**

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BNC5-P-C-GN-ST-CA1</td>
<td>RG 174/316 Cable</td>
</tr>
<tr>
<td>BNC5-P-C-GN-ST-CA2</td>
<td>RG 178 Cable</td>
</tr>
<tr>
<td>BNC5-J-C-GN-ST-BH1</td>
<td>RG 174/316 Cable, Bulkhead</td>
</tr>
<tr>
<td>BNC5-J-C-GN-ST-BH2</td>
<td>RG 178 Cable, Bulkhead</td>
</tr>
<tr>
<td>BNC5-J-C-GN-ST-BH1S</td>
<td>RG 316 Double Shielded 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
## 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</td>
<td></td>
<td>“XXXX”</td>
</tr>
<tr>
<td>RF178</td>
<td>07RP1</td>
<td></td>
<td>Overall Length</td>
</tr>
<tr>
<td>RF316</td>
<td>07BJ1</td>
<td></td>
<td>millimeters</td>
</tr>
<tr>
<td></td>
<td>07BJ2</td>
<td></td>
<td>0100 (100 mm)</td>
</tr>
</tbody>
</table>

-07SP1 = SMB Straight Plug
-07RP1 = SMB Right-angle Plug
-07BJ1 = SMB Bulkhead Jack
-07BJ2 = SMB Bulkhead Jack (RF178 only)

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

### CONNECTORS FOR INDUSTRY STANDARD CABLES

<table>
<thead>
<tr>
<th>CONNECTOR</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB5-P-C-H-ST-CA1</td>
<td>RG 174 Cable</td>
</tr>
<tr>
<td>SMB5-P-C-H-RA-CA1</td>
<td>RG 174 Cable</td>
</tr>
<tr>
<td>SMB5-J-C-H-ST-CA2</td>
<td>RG 178 Cable</td>
</tr>
<tr>
<td>SMB5-J-C-H-ST-BH1</td>
<td>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

### SMB Cable Connectors
**SMB5-CA**

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

### 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>-J</td>
<td>Jack</td>
<td>P</td>
<td>H</td>
<td>RA</td>
<td>TH1</td>
</tr>
<tr>
<td>-P</td>
<td>PCB</td>
<td>Mount</td>
<td>30 µ” (0.76 µm) Gold center contact, 3 µ” (0.08 µm) Gold outer contact</td>
<td></td>
<td></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.
75 Ω BNC TO 12 GHz

BNC Cable Assemblies
RFC6T, RFA6T, RFB6T, RF179

<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>–74SP3 75 Ω BNC Straight Plug</td>
<td>–D4SP3 75 Ω BNC Die Cast Straight Plug</td>
<td>–”XXXX” Overall Length in millimeters</td>
</tr>
<tr>
<td>RFA6T  = RG 6 Cable</td>
<td>–74BJ3 75 Ω BNC Bulkhead Jack (RF179 only)</td>
<td>–0300 (300 mm) 11.81” minimum</td>
<td></td>
</tr>
<tr>
<td>RFB6T  = Belden 1694A Cable</td>
<td>–74RP3 75 Ω BNC Right-angle Plug (RFA6T, RFB6T, RFC6T only)</td>
<td>–0100 (100 mm) 3.94” minimum</td>
<td></td>
</tr>
<tr>
<td>RF179  = RG 179 Cable</td>
<td></td>
<td>(RFA6T, RFB6T, RFC6T)</td>
<td></td>
</tr>
</tbody>
</table>

ALSO AVAILABLE
75 Ω: DIN 1.0/2.3, HD-BNC™ = RFA6T, RFB6T, RFC6T
75 Ω: DIN 1.0/2.3, SMB, MCX, MMCX = RF179

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

BNC Cable Connectors
BNC7T-CA

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

CONNECTORS FOR INDUSTRY STANDARD CABLES

| BNC7T-P.C-GN-ST-CA3 | Machined, RG 179 Cable |
| BNC7T-P.C-GN-RA-CA3 | Machined, RG 179 Cable |
| BNC7T-P.C-GN-ST-CA6 | *Machined, RG 6, Belden 1694A or Belden 4694R Cable |
| BNC7T-P.C-GN-RA-CA6 | *Machined, RG 6, Belden 1694A or Belden 4694R Cable |
| BNC7T-J-GN-ST-BH3 | Machined, Bulkhead, RG 179 Cable |
| BNC7T-P.GN-ST-CA3D | Die Cast, RG 179 Cable |
| BNC7T-P.C-GN-ST-CA6D | Die Cast, RG 179 Cable |

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

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

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

F-221

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 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

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-J</td>
<td>-P</td>
<td>-GN</td>
<td>-ST</td>
<td>-TH2D</td>
</tr>
<tr>
<td>Jack</td>
<td>PCB Mount</td>
<td>10 μ&quot; (0.25 μm) Gold contact, 100 μ&quot; (2.54 μm) Nickel Shell</td>
<td>Straight</td>
<td>Tall Through-hole Die Cast (~ST only)</td>
</tr>
</tbody>
</table>

**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

### 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

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-J</td>
<td>-P</td>
<td>-GN</td>
<td>-ST</td>
<td>-TH1</td>
</tr>
<tr>
<td>Jack</td>
<td>PCB Mount</td>
<td>10 μ&quot; (0.25 μm) Gold contact, 100 μ&quot; (2.54 μm) Nickel Shell</td>
<td>Straight</td>
<td>Standard Through-hole (~ST only)</td>
</tr>
</tbody>
</table>

**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

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

**HD-BNC™ Cable Assemblies**
RFA6T, RFB6T, RFB8T, RFC6T, RFC8T

**Connecting Cable Connectors**
HDBNC-CA

**Connectors for Industry Standard Cables**

<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>= 12G-SDI, Belden 4855R Cable</td>
<td>= Overall Length in millimeters</td>
</tr>
<tr>
<td>RFC8T*</td>
<td>= RG 6 Cable</td>
<td>= Belden 1694A Cable</td>
<td>= 0300 (300 mm) 11.81&quot; minimum</td>
</tr>
<tr>
<td>RFA6T</td>
<td>= Belden 1694A Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFB6T</td>
<td>= Belden 1855A Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFB8T</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Also Available**
75 Ω: DIN 1.0/2.3, BNC = RFB6T, RFA6T, RFC6T
75 Ω: DIN 1.0/2.3 = RFB8T, RFC8T

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

**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

**HD-BNC™ Cable Connectors**
HDBNC-CA

**Supplied with pins and ferrules.**
See website with dimensions.

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

**HD-BNC™ Board Connectors**
HDBNC-TH, HDBNC-EM, HDBNC-BH, HDBNC-BM

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

**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

**Samtec.com/HDBNC**

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>75 Ω DIN Straight Plug</td>
<td>–“XXXX” = Overall length in millimeters</td>
<td></td>
</tr>
<tr>
<td>RFC8T*</td>
<td>75 Ω: HD-BNC™, BNC = RFC6T, RFC8T</td>
<td>–0100 (100 mm) 3.94” minimum (RF179)</td>
<td></td>
</tr>
<tr>
<td>RFA6T</td>
<td>75 Ω: BNC, SMB, MCX, MMCX = RF179</td>
<td>–0300 (300 mm) 11.81” minimum (RFA6T, RFC6T, RFC8T, RF8T)</td>
<td></td>
</tr>
<tr>
<td>RFB6T</td>
<td>75 Ω: HD-BNC™ = RFB8T, RFC8T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**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 = RG 179</td>
</tr>
<tr>
<td>DIN7A-PP-C-GF-ST-CA6 = *RG 6, Belden 1694A or Belden 4694R Cable</td>
</tr>
<tr>
<td>DIN7A-PP-C-GF-ST-CA8 = *Belden 1855A or Belden 4855R Cable</td>
</tr>
</tbody>
</table>

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

PP-C = Push Pull Plug Cable
GF = Plating (10 µ” Gold on center contact, Flash Gold on outer contact, Nickel on Shell)
ST = Straight

Supplied with pins and ferrules. See website for dimensions

**DIN Board Connectors**

DIN7A-TH, DIN7A-BH

<table>
<thead>
<tr>
<th>DIN7A</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>J = Jack</td>
<td>P = PCB Mount</td>
<td>–GF = 10 µ” (0.25 µm) Gold center contact, 3 µ” (0.08 µm) Gold outer contact, (100 µ” (2.54 µm) Nickel body –RA only)</td>
<td>–ST = Straight (–TH1 only)</td>
<td>–TH1 = Through-hole (–ST only)</td>
<td></td>
</tr>
<tr>
<td>–RA = Right-angle (–BH1 only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–BH1 = Bulkhead Through-hole (–RA only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
75 Ω SMB TO 4 GHz

**SMB Cable Assemblies**
RF179

<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>
</tbody>
</table>

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

---

**SMB Cable Connectors**
SMB7H-CA

<table>
<thead>
<tr>
<th>CONNECTORS FOR INDUSTRY STANDARD CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB7H-P.C.H-ST-CA3</td>
</tr>
<tr>
<td>SMB7H-P.C.HF.RA-CA3</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.

---

**SMB Board Connectors**
SMB7H-TH, SMB7H-EM

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

<table>
<thead>
<tr>
<th>SMB7H</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>–J</td>
<td>= Jack</td>
<td>–P</td>
<td>= PCB Mount</td>
<td>–ST</td>
<td>= Straight</td>
</tr>
<tr>
<td>–H</td>
<td>= 30 μ&quot; (0.76 μm) Gold center contact, 3 μ&quot; (0.08 μm) Gold outer contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–ST</td>
<td>= Right-angle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–RA</td>
<td>= Through-hole ((0.90 mm) .035&quot; DIA Signal Pin)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–TH1</td>
<td>= Through-hole ((0.51 mm) .020&quot; DIA Signal Pin)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–EM1</td>
<td>= Edge Mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

---

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ORIGINAL RF SOLUTIONS

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 Ω & 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)
• .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/IJ5H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Shielded Twisted Pair</td>
<td>50 Ω &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>IJ5/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>

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 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.

CUSTOMIZED CABLE ASSEMBLIES • EXTREME FLEXIBILITY
- Mix & Match solutions for any application
- Choose any cable connector
- Choose any standard cable

QUICK-TURN MODIFICATIONS & CUSTOMS • STANDARDS & NEW DESIGNS
- Termination types
- Custom tail lengths / designs
- Right-angle height adjustment
- Heat-shrink tubing
- High-frequency applications
- Pick & Place machine designs
- Alternate platings
- Custom labels
- Test & Measurement solutions

TECHNICAL SUPPORT • FULL SYSTEM DESIGN & DEVELOPMENT
- Launch design
- Prototyping
- Fabrication
- Simulations
- Launch optimization support
- Full system test & measurement
<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>50 Ω Precision 1.35 mm Compression Jacks</td>
<td>6</td>
</tr>
<tr>
<td>185</td>
<td>50 Ω Precision 1.85 mm Compression Jacks</td>
<td>7</td>
</tr>
<tr>
<td>240</td>
<td>50 Ω Precision 2.40 mm Compression Jacks</td>
<td>8</td>
</tr>
<tr>
<td>292</td>
<td>50 Ω Precision 2.92 mm Compression Jacks</td>
<td>9</td>
</tr>
<tr>
<td>BE70A</td>
<td>70 GHz Bulls Eye* Assembly, Double Row</td>
<td>19</td>
</tr>
<tr>
<td>BE40A</td>
<td>50 &amp; 40 GHz Bulls Eye* Assembly, Double Row</td>
<td>20</td>
</tr>
<tr>
<td>BDRA</td>
<td>20 GHz Bulls Eye* Assembly, Double Row</td>
<td>20</td>
</tr>
<tr>
<td>BNC-C.A</td>
<td>50 Ω BNC Cable Connectors</td>
<td>28</td>
</tr>
<tr>
<td>BNC-7T</td>
<td>75 Ω 12G-20B BNC Jacks</td>
<td>31</td>
</tr>
<tr>
<td>BNC-7T-CA</td>
<td>75 Ω 12G-20B BNC Cable Connectors</td>
<td>30</td>
</tr>
<tr>
<td>BQRA</td>
<td>20 GHz Bulls Eye* Assembly, Quad Row</td>
<td>20</td>
</tr>
<tr>
<td>C28S</td>
<td>100 Ω Shielded Twisted Pair Twinax Cable Assembly</td>
<td>35</td>
</tr>
<tr>
<td>CJT</td>
<td>100 Ω Twinax Jacks</td>
<td>35</td>
</tr>
<tr>
<td>DIA7A</td>
<td>75 Ω, 12G DIN 1.0/2.3 Jacks</td>
<td>33</td>
</tr>
<tr>
<td>DINA-7A</td>
<td>75 Ω, 12G DIN 1.0/2.3 Cable Connectors</td>
<td>33</td>
</tr>
<tr>
<td>GC47</td>
<td>50 Ω Precision Ganged SMP Cable Assembly</td>
<td>13</td>
</tr>
<tr>
<td>GPPB</td>
<td>50 Ω Precision Ganged SMP Block, Board-to-Board</td>
<td>13</td>
</tr>
<tr>
<td>GPPC</td>
<td>50 Ω Ganged SMP Cable Board Mates</td>
<td>13</td>
</tr>
<tr>
<td>GRF1-C</td>
<td>5.00 mm 50 Ω Ganged Micro-Mini RF plugs, Cable</td>
<td>35</td>
</tr>
<tr>
<td>GRF1-H-C</td>
<td>5.00 mm 50 Ganged Hybrid Micro-Mini RF Cable</td>
<td>35</td>
</tr>
<tr>
<td>GRF1-J</td>
<td>5.00 mm 50 Ganged Micro-Mini RF Jacks</td>
<td>35</td>
</tr>
<tr>
<td>GRF1-P</td>
<td>5.00 mm 50 Ganged Micro-Mini RF Plug, PCB Mount</td>
<td>35</td>
</tr>
<tr>
<td>GRF7-C</td>
<td>5.00 mm 75 Ω Ganged Micro-Mini RF plugs, Cable</td>
<td>35</td>
</tr>
<tr>
<td>GRF7-H-C</td>
<td>5.00 mm 75 Ganged Hybrid Micro-Mini RF Cable</td>
<td>35</td>
</tr>
<tr>
<td>GRF7-P</td>
<td>5.00 mm 75 Ganged Micro-Mini RF Plug, PCB Mount</td>
<td>35</td>
</tr>
<tr>
<td>GRF7-J</td>
<td>5.00 mm 75 Ganged Micro-Mini RF Jacks</td>
<td>35</td>
</tr>
<tr>
<td>HDBNC</td>
<td>75 Ω, 12G High-Density BNC Jacks</td>
<td>32</td>
</tr>
<tr>
<td>HBDNC-CA</td>
<td>75 Ω, 12G High-Density Cable Connectors</td>
<td>32</td>
</tr>
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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.*