COMPLETE RF INTERCONNECT SOLUTIONS

24-HOUR SAMPLES & QUOTES

NO MINIMUM ORDER QUANTITY ON STANDARDS

2 TO 5 DAY LEAD TIME ON STANDARD PRODUCTS

THINK OUTSIDE THE CATALOG
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit rf.sanmtec.com
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Don’t see what you want? Contact [RFGroup@samtec.com](mailto:RFGroup@samtec.com)

*Compatible with Amphenol’s HD-BNC™*
HIGH PERFORMANCE TEST POINT SYSTEM

**BullsEye® Test Points, Microwave Cable Adaptors & Cable Assemblies**

- Rapid and simple connectivity of multiple signal channels to the board
- SMA performance with a board connector that is 10% of the cost
- Multi and single port in various configurations help significantly reduce board size
- 4:1 density vs. SMA
- 2.0, 5.0 and 10.0 pico-second phase matching
- Compression interface to the board
- Bayonet mechanical latch for quick press-and-twist locking
- Probe cable adaptor connects directly to existing instrument cables via SMA, 2.92 or SMP terminations
- 2.4 mm (50 GHz) and 1.85 (65 GHz) terminations in development
- Low loss microwave coax cable
- Low cost plastic housing option replaces expensive machined metal interfaces
- Solderless termination to PCB
- Fluorosilicone-based conductive elastomer provides excellent grounding
- Optimized layouts available upon request
- Field reconfigurable or replaceable
## Test Points

<table>
<thead>
<tr>
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<th>CCH</th>
<th>BQR</th>
<th>BAR</th>
<th>BDR</th>
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<td>22</td>
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## Cable Adaptors

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<th>RF23S</th>
<th>BE25S</th>
<th>RF25S</th>
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<td>23 AWG</td>
<td>23 AWG</td>
<td>25 AWG</td>
<td>25 AWG</td>
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<tr>
<td>Type</td>
<td>500Ω Phase Matched Pairs</td>
<td>500Ω Single</td>
<td>500Ω Phase Matched Pairs</td>
<td>500Ω Single</td>
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<tr>
<td>End 2 Options</td>
<td>2.92, 2.4*, 1.85*</td>
<td>SMA, SMP</td>
<td>SMA, SMP</td>
<td>2.92, SMA, SMP</td>
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<tr>
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<td>20 positions Quad Row</td>
<td>22 positions</td>
<td>24 positions Double Row</td>
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<tr>
<td>End 2 Options</td>
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<td>SMA, SMP</td>
<td>2.92</td>
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</table>

*In Development
## 50Ω RF CABLES & CONNECTORS

### WIDE VARIETY OF CABLES
- High frequency microwave cables:
  - Hand-formable semi-flexible cables at 0.47" DIA, 0.86" DIA or 1.14" DIA
  - 23 AWG or 25 AWG rugged solid dielectric cables to 40 GHz
  - 10 GHz, 500 cycle U.FL HMHF1 plug terminations
  - 2.92 terminations to 40 GHz
  - SMP terminations to 20 GHz
- 2.4 mm (50 GHz) and 1.85 mm (65 GHz) for 23 AWG cable in development
- Micro High Frequency U.FL/W.FL cable assemblies
- Industry standard cables with mix-and-match end options: RG 316, RG 174, RG 178, RG 58
- Double-shielded RG 316 cable with SMA terminations

### 50Ω HIGH FREQUENCY CABLE ASSEMBLIES

<table>
<thead>
<tr>
<th>Series</th>
<th>RF23S</th>
<th>RF25S</th>
<th>RF407</th>
<th>RF405</th>
<th>RF402</th>
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<td>25 AWG</td>
<td>.047&quot; DIA</td>
<td>.086&quot; DIA</td>
<td>.141&quot; DIA</td>
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*In Development

### 50Ω STANDARD CABLE ASSEMBLIES

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<tr>
<th>MH081/ MH113</th>
<th>RF174/RF316</th>
<th>RF178</th>
<th>RF058</th>
<th>RS316</th>
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<td>U.FL &amp; W.FL</td>
<td>Commodity components &amp; assemblies</td>
<td>Double-shielded</td>
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<td>0.81 mm/ 1.13 mm</td>
<td>RG 174/RG 316</td>
<td>RG 178</td>
<td>RG 58</td>
<td>RG 316 (double-shielded)</td>
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<tr>
<td>MHF1, MHF3, SMA</td>
<td>SMA, SMB, MMCX, MMCXV, BNC, TNC, N Type</td>
<td>SMA, SMB, MMCX, BNC, TNC, N Type</td>
<td>SMA, TNC, N Type</td>
<td>SMA, MCX, MMCX, TNC, BNC</td>
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<table>
<thead>
<tr>
<th>Page</th>
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<tbody>
<tr>
<td>26-27</td>
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</tbody>
</table>
WIDE VARIETY OF TERMINATIONS
- MHF (U.FL/W.FL), HMHF1 (High Speed, High Cycle U.FL)
- 2.92, SMA, SMP, SMB, MCX, MMCX, BNC, TNC, N Type
- 2.4 mm (50 GHz) and 1.85 mm (65 GHz) terminations in development
- Straight and right angle available for most; variety of jacks and plugs
- Bulkhead jack or Panel Mount jack options

BOARD LEVEL INTERCONNECTS AND ADAPTORS
- Straight or right angle orientations
- Through-hole, surface mount, edge mount or mixed technology
- Board level connectors with speeds of 50 GHz & 65 GHz in development
- 2.92, SMA, SMB, BNC, and TNC jacks
- MCX jacks/plugs
- MMCX jacks/plugs and switchable internal/external antenna jack (High Vibration jacks/plugs available)
- Cable adaptors (ADP5 Series): N Type to MMCXV
- SMP Plugs & Adaptors
  - Compensates for misalignment in X & Y directions
  - Bullet adaptor allows for flexible connections
  - Frequency range: DC to 40 GHz

50Ω BOARD LEVEL INTERCONNECTS, ADAPTORS

<table>
<thead>
<tr>
<th>Series</th>
<th>292PS</th>
<th>SMA</th>
<th>SMB5</th>
<th>SMP</th>
<th>MMCX*</th>
<th>MCX</th>
<th>BNC5</th>
<th>ADP5</th>
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<tbody>
<tr>
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<td>SMA 2.92</td>
<td>SMA</td>
<td>SMB</td>
<td>Floating Systems</td>
<td>MMCX</td>
<td>MCX</td>
<td>BNC</td>
<td>Adaptor</td>
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<tr>
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<td>Straight, Right Angle</td>
<td>Right Angle</td>
<td>Straight</td>
<td>Straight, Right Angle</td>
<td>Straight, Right Angle</td>
<td>Straight</td>
<td></td>
</tr>
<tr>
<td>Terminations</td>
<td>Panel Mount</td>
<td>T/H, SM, MT, Edge Mount, Panel Mount</td>
<td>T/H</td>
<td>T/H, MT, Edge Mount</td>
<td>T/H, SM, MT, Edge Mount</td>
<td>T/H, SM, MT, Edge Mount</td>
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</tbody>
</table>

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*High vibration available. Contact Service.
75Ω RF CABLES & CONNECTORS

75Ω CABLES OPTIMIZED FOR 3G-SDI BROADCAST VIDEO
- Industry standard cables with mix-and-match end options: RG 179, RG 6, Belden 1694A, Belden 1855A
- RFB8T Series (with Belden 1855A cable) designed to meet SMPTE 424M 3G-SDI specification
- Components are available for customer-installed field termination to cable

WIDE VARIETY OF TERMINATIONS
- Micro-mini components with higher extraction force (MMCX7)
- MCX, SMB, DIN 1.0/2.3, HD-BNC™, BNC
- Performance to 8 GHz (SMB)
- Jack or plug available for micro-mini and BNC components
- Straight and right angle orientations
- Die cast options available

BOARD LEVEL INTERCONNECTS AND ADAPTORS
- Through-hole, surface mount, edge mount or mixed technology
- Straight or right angle orientations
- Performance to 12 GHz on through-hole and edge mount (HD-BNC™ & BNC)
- Performance to 6 GHz (MMCX7, MCX)
- Micro-mini (MMCX7), MCX jacks/plugs
- SMB, DIN 1.0/2.3, HD-BNC™, BNC jacks
- Cable adaptors (ADP7 Series): BNC to HD-BNC™, N Type to Micro-mini (MMCX7 Series)

75Ω, True75™ STANDARD CABLE ASSEMBLIES

<table>
<thead>
<tr>
<th>Series</th>
<th>Type</th>
<th>RFA0T</th>
<th>RFB6T</th>
<th>RF179</th>
<th>RFB8T</th>
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<td></td>
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<tr>
<td>Type</td>
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<td>1694A</td>
<td>RG 179</td>
<td>1855A</td>
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<tr>
<td>Terminations</td>
<td>HD-BNC™, BNC, DIN 1.0/2.3</td>
<td>HD-BNC™, BNC, DIN 1.0/2.3</td>
<td>MMCX7, MCX, SMB, BNC, DIN 1.0/2.3</td>
<td>HD-BNC™, DIN 1.0/2.3</td>
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<td>39</td>
<td>39</td>
<td>40-41</td>
<td>42</td>
<td></td>
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</table>

HD-BNC™ is a trademark of Amphenol.
HIGH DENSITY BNC SYSTEMS
- Designed to meet SMPTE 424M 12G-SDI specifications
- 4X the panel density of traditional BNCs
- Patented design and bayonet latch
- 20% reduction in weight of traditional BNCs
- Extended performance of 12 GHz for high density requirements of future systems (-TH and -EM only)
- Crimp style plugs use industry standard termination tools
- Compatible with Amphenol’s HD-BNC™

RF GROUP
- Personal support from Samtec’s highly qualified, in-house staff of RF engineers
- Assistance in selecting the right RF product for your application
- Express modifications to standard products to complete engineering, design and prototype support
- Design, simulation and processing assistance
- Dedicated engineers and technicians for application specific RF products
- Contact RFGroup@samtec.com

RF SOLUTIONATOR®
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

75Ω, True75™ BOARD LEVEL INTERCONNECTS

<table>
<thead>
<tr>
<th>Series</th>
<th>SMB7H</th>
<th>DIN7A</th>
<th>MMCX7</th>
<th>MCX7</th>
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<td>Adaptor</td>
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<tr>
<td>Terminations</td>
<td>T/H, Edge Mount</td>
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<td>T/H, SM, MT</td>
<td>T/H, SM</td>
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12G-SDI

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# RF Cable Specifications

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<th>RG178</th>
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<td>0.5</td>
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<td>0.3</td>
<td>1.4 @ 2 GHz</td>
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<td>1.9</td>
<td>1.7</td>
<td>2.37</td>
<td>1.4</td>
<td>1.25</td>
<td>1.6 @ 3 GHz</td>
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<td>4.4</td>
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<th>Bare Copper</th>
<th>Silver &amp; Copper plated Steel</th>
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<tbody>
<tr>
<td>Diameter (mm)</td>
<td>0.65</td>
<td>0.89</td>
<td>1.37</td>
<td>1.5</td>
<td>2.57</td>
<td>1.73</td>
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<td>Material</td>
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<td>FEP</td>
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<td>FEP</td>
<td>PVC</td>
<td>FEP</td>
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<td>0.81</td>
<td>1.13</td>
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<td>2.79</td>
<td>2.53</td>
<td>2.90</td>
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<td>Temp Rating</td>
<td>-40°C to +90°C</td>
<td>-40°C to +90°C</td>
<td>-50°C to +165°C</td>
<td>-40°C to +200°C</td>
<td>-20°C to +60°C</td>
<td>-50°C to +165°C</td>
<td>-----</td>
<td>-50°C to +90°C</td>
</tr>
<tr>
<td>Color</td>
<td>Grey</td>
<td>Grey</td>
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<td>Blue</td>
<td>Black</td>
<td>Brown</td>
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<tr>
<td>Bend Radius</td>
<td>Min</td>
<td>5 mm</td>
<td>6.8 mm</td>
<td>10.2 mm</td>
<td>3.175 mm</td>
<td>25.4 mm</td>
<td>12.7 mm</td>
<td>12.8 mm</td>
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<tr>
<td>Termination Options</td>
<td>MHP1, MHP3, SMA</td>
<td>MHP1, SMA</td>
<td>MMCCX, MCX, SMA, SMB, BNC, TNC, N Type</td>
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<td>MMCCX, MCX, SMA, BNC, TNC, N Type</td>
<td>MMCCX, MCX, SMA, BNC, TNC, N Type</td>
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</tr>
<tr>
<td>Samtec Series</td>
<td>MH081</td>
<td>MH113</td>
<td>RF178</td>
<td>USG</td>
<td>RF174</td>
<td>RF316</td>
<td>USG</td>
<td>USG</td>
</tr>
</tbody>
</table>

- CTB-2650F-01: silver plated copper & clad steel, bare copper, silver & copper plated steel, silver plated copper & clad steel, tinned copper.
- FEP: fluoroethylene propylene.
- PTFE: polytetrafluoroethylene.
- KLPE: kevlar polyethylene.
- PVC: polyvinyl chloride.
- MMCCX, MCX, SMA, SMB, BNC, TNC, N Type: various connector types.
- MMCCX, MMCCX, MCX, SMA, SMB, BNC, N Type: MMCCX for connector types.
- MMCCX, MCX, SMA, BNC, TNC, N Type: MMCCX for connector types.
- Samtec Series: specific models and terminations.
### 50Ω MicroWave Cables

<table>
<thead>
<tr>
<th>MWC-2550-01</th>
<th>MWC-2350-01</th>
<th>RG 047 (.047&quot;)</th>
<th>RG 405 (.086&quot;)</th>
<th>RG 402 (.141&quot;)</th>
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</thead>
<tbody>
<tr>
<td>50 ± 1</td>
<td>50 ± 1</td>
<td>50 ± 1</td>
<td>50 ± 2</td>
<td>50 ± 2</td>
</tr>
<tr>
<td>0.65 @ 1 GHz</td>
<td>0.17</td>
<td>0.80 @ 0.5 GHz</td>
<td>0.72 @ 1 GHz</td>
<td>0.40 @ 1 GHz</td>
</tr>
<tr>
<td>1.37 @ 4 GHz</td>
<td>0.7</td>
<td>1.15</td>
<td>2.59 @ 4 GHz</td>
<td>1.04 @ 4 GHz</td>
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<tr>
<td>3.36 @ 20 GHz</td>
<td>1.7</td>
<td>2.62 @ 4 GHz</td>
<td>4.26 @ 20 GHz</td>
<td>2.30 @ 20 GHz</td>
</tr>
<tr>
<td>2.1</td>
<td>2.15</td>
<td>2.1</td>
<td>2.04</td>
<td>1.99</td>
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<td>-----</td>
<td>300</td>
<td>1.42</td>
<td>1.44</td>
<td>1.44</td>
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<tr>
<td>4.76</td>
<td>4.72</td>
<td>4.79</td>
<td>4.79</td>
<td>4.79</td>
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<td>5.3</td>
<td>7.4</td>
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<td>96.8</td>
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<table>
<thead>
<tr>
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<th>Silver plated Copper</th>
<th>Silver plated Copper</th>
<th>Silver plated Copper</th>
<th>Silver plated Copper</th>
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<tr>
<td>25</td>
<td>23</td>
<td>46</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>1/0.45</td>
<td>1/0.57</td>
<td>1/0.29</td>
<td>1/0.51</td>
<td>1/0.92</td>
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<tr>
<td>0.45</td>
<td>0.57</td>
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<td>0.51</td>
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<tr>
<td>0.105</td>
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<td>0.67</td>
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### 75Ω Cables

<table>
<thead>
<tr>
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<th>BELDEN 1855A</th>
<th>BELDEN 1694A</th>
<th>RG 6</th>
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<tr>
<td>75 ± 3</td>
<td>75 ± 3</td>
<td>75 ± 3</td>
<td>75 ± 3</td>
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<tr>
<td>0.3</td>
<td>0.12</td>
<td>0.07</td>
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<td>0.8</td>
<td>0.37</td>
<td>0.21</td>
<td>0.21</td>
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<tr>
<td>3.6</td>
<td>0.97</td>
<td>0.59</td>
<td>0.59</td>
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<tr>
<td>1.8</td>
<td>1.42</td>
<td>1.44</td>
<td>1.44</td>
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<tr>
<td>1200</td>
<td>300</td>
<td>300</td>
<td>2000</td>
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<tr>
<td>4.83</td>
<td>4.12</td>
<td>4.06</td>
<td>4.03</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
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<td>64</td>
<td>55.7</td>
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### 100Ω Cables

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<thead>
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<tr>
<td>30</td>
<td>23</td>
<td>18</td>
<td>18</td>
<td>28</td>
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<tr>
<td>7/0.10</td>
<td>1/0.58</td>
<td>1/1.02</td>
<td>1/1.02</td>
<td>1.97</td>
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<tr>
<td>0.30</td>
<td>0.58</td>
<td>1.02</td>
<td>1.02</td>
<td>0.029</td>
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<tr>
<td>0.34</td>
<td>0.066</td>
<td>0.021</td>
<td>0.021</td>
<td>0.029</td>
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<td>PTFE</td>
<td>FHDPE</td>
<td>FHDPE</td>
<td>FHDPE</td>
<td>FEP</td>
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<tr>
<td>1.58</td>
<td>2.59</td>
<td>4.57</td>
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<tr>
<td>2.13</td>
<td>3.00</td>
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<td>FEP</td>
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</tr>
<tr>
<td>2.54</td>
<td>4.04</td>
<td>6.96</td>
<td>7.00</td>
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<td>-50°C to +105°C</td>
<td>-30°C to +75°C</td>
<td>-30°C to +75°C</td>
<td>-30°C to +75°C</td>
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<tr>
<td>Brown</td>
<td>Black</td>
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<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
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</table>

### General Specifications

- **9 mm**: 12 mm, 10 mm, 3.18 mm, 6.35 mm
- **10.2 mm**: 38.1 mm, 69.85 mm, 69.85 mm
- **C285**: CJT

<table>
<thead>
<tr>
<th>RF2SS, BBE2SS</th>
<th>RF23S</th>
<th>RF047</th>
<th>RF405</th>
<th>RF402</th>
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<tbody>
<tr>
<td>RF179, GRF77-C, GRF78-H</td>
<td>RF68T</td>
<td>RF68T</td>
<td>RF68T</td>
<td>C285</td>
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</table>
ORIGINAL RF SOLUTIONS

GANGED MICRO-MINI SYSTEMS
- Board stacking and cable assemblies
- High performance rugged contacts
- 50Ω & 75Ω
- 5.00 mm pitch

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

ISORATE® SYSTEMS
- 50Ω board stacking and cable assemblies
- 75Ω board stacking assemblies
- Isolated signal systems for 90 percent performance of traditional RF at 50 percent of the cost
- 4.00 mm pitch
- Single or double-ended cable assemblies with rugged latching

HIGH SPEED Q2™ COMBO RF SYSTEM
- Q2™ ground plane strips with one isolated RF plug per end
- Increased insertion depth for rugged applications
- 10 mm stack height

CABLE SOLUTIONS

<table>
<thead>
<tr>
<th>Series</th>
<th>C28S/CJT</th>
<th>GRF1-C</th>
<th>GRF1H-C</th>
<th>GRF7H-C</th>
<th>IJSC/IJSH</th>
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<tbody>
<tr>
<td>Application</td>
<td>Shielded Twisted Pair</td>
<td>50Ω Micro-Mini Ganged</td>
<td>50Ω Micro-Mini Hybrid Ganged</td>
<td>75Ω Micro-Mini Hybrid Ganged</td>
<td>50Ω Isorate®</td>
</tr>
<tr>
<td>Page</td>
<td>68</td>
<td>69</td>
<td>70-71</td>
<td>72-73</td>
<td>76-77</td>
</tr>
</tbody>
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BOARD-TO-BOARD SOLUTIONS

<table>
<thead>
<tr>
<th>Series</th>
<th>GRF1-P/GRF1-J</th>
<th>GRF7-P/GRF7-J</th>
<th>IJ5/IP5</th>
<th>IJ7/IP7</th>
<th>QMS-RF/QFS-RF</th>
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<tbody>
<tr>
<td>Application</td>
<td>50Ω Micro-Mini Ganged</td>
<td>75Ω Micro-Mini Ganged</td>
<td>50Ω Isorate®</td>
<td>75Ω Isorate®</td>
<td>Q2™ High Speed Ground Plane</td>
</tr>
<tr>
<td>Page</td>
<td>74</td>
<td>75</td>
<td>78-79</td>
<td>80</td>
<td>81</td>
</tr>
</tbody>
</table>
BULLS EYE®

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Bulls Eye® .......................................................................................................................................................... 4-5
**SPECIFICATIONS**

For complete specifications see www.samtec.com/BE23S

**RF Connector:**
- Outer Contact Material: Brass (SMA)
- Center Contact Material: Brass (SMA Plug)
- Insulator Material: PTFE

**Operating Temperature:**
- 86°C to +185°C

**Insulator Resistance:** 5,000 MΩ

**Impedance:** 50Ω

**Frequency Range:** Testing Now!
- V.S.W.R.: Testing Now!
- RoHS Compliant: Yes

**MWC-2350-01**

**Cable**
- **Cable Type:** Low Loss Microwave Coax
- **Gauge:** 23 AWG Silver plated Copper
- **Dielectric:** Solid FEP
- **Jacket Material:** FEP
- **Bend Radius:** 12 mm
- **Impedance:** 50Ω ± 10%
- **Propagation Delay:** 4.76 nsec/meter
- **Capacitance:** 95.46 pF/meter

**CABLE TYPE**

- **BE23S** = Rugged solid FEP
- **Phase Matching**
  - **02** = 2.0 Pico-second (0.0005 maximum overall length)
  - **05** = 5.0 Pico-second (0.0047 maximum overall length)
  - **10** = 10.0 Pico-second

**END 2 OPTION**

**Specify END 2 OPTION from chart**

**PHASE MATCHING**

- **02** = 2 phase matched cable assemblies
- **05** = 4 phase matched cable assemblies
- **10** = 8 phase matched cable assemblies

**NO. OF CABLES**

- **2** = 2 phase matched cable assemblies
- **4** = 4 phase matched cable assemblies
- **6** = 6 phase matched cable assemblies
- **8** = 8 phase matched cable assemblies

**OVERALL LENGTH**

- **XXXX** = Overall Length in millimeters
  - 100 mm: 3.94" to 9999 (9999 mm) 392.7"

**EXTRACTION TOOL**

- **SCC31-CAT-EX-SCC-03**

**END OPTIONS**

- **S-925JP** = SMA 2.92
  - Straight Jack (30μ (0.76 μm) Gold on Center Contact, Passivated Stainless Steel on Shell)

- **S-925PP** = C2.92
  - Straight Plug (30μ (0.76 μm) Gold on Center Contact, Passivated Stainless Steel on Shell)

- **S-SCC31** = Bull’s Eye™ Test Point with standard ferrule (30μ (0.76 μm) Gold on Center Contact, Gold Flash on Shell)

**Notes:**
- Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.
- Some lengths, styles and options are non-standard, non-returnable.

**WWW.SAMTEC.COM**

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω MICROWAVE CABLE ASSEMBLIES

Specifications
For complete specifications see www.samtec.com/RP23S

RF Connector:
- Shell Material: Brass or Stainless Steel
- Contact Material: Brass
- Cable Body: Brass or Stainless Steel
- Socket: BEOCu
- Insulator Material: PCTFE
- Operating Temperature: -40°C to +85°C
- Insulator Resistance: >10.000Mohm
- Impedance: 50Ω
- Frequency Range: 40 GHz
- V.S.W.R.: 1.6 max
- RoHS Compliant: Yes

MWC-2350-01
- Type: Low Loss Microwave Coax
- Gauge: 23 AWG Silver plated Copper
- Dielectric: Rugged solid FEP
- Jacket Material: FEP
- Bend Radius: 12 mm
- Impedance: 50Ω ± 1Ω
- Propagation Delay: 4.76 nsec/meter
- Capacitance: 95.48 pF/meter

EXTRACTION TOOL
- -SCC31: CAT-EX-SCC-03

APPLICATION
- Rugged solid FEP dielectric

Mates with:
- 292PS, BDR, BQR
- 23 AWG microwave cable with rugged, solid FEP dielectric

CABLE TYPE
- RF23S
  - Rugged solid FEP Dielectric 23 AWG, MWC-2350-01 Microwave Cable

SEND 1 CONNECTOR
- Specify END OPTIONS from chart

SEND 2 CONNECTOR
- Overall Length
  - “XXX” = Overall Length in millimeters
  - 10100 (100 mm)
  - 3.94” minimum

ALSO AVAILABLE
- Additional stripping and tinning options
- Contact Samtec

Note:
- Cable lengths longer than 40.000” (1 meter) are not supported with S.I. test data.
- Some lengths, styles and options are non-standard, non-returnable.

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω MICROWAVE CABLE ASSEMBLIES

**SPECIFICATIONS**

For complete specifications see [www.samtec.com/BE25S](http://www.samtec.com/BE25S)

**RF Connector:**
- Outer Contact Material: Brass (SMA), Gold (SMP)
- Center Contact Material: Brass (SMA Plug), BeCu (SMA & SMP Jack)
- Insulator Material: PTFE
- Operating Temperature: -65°C to +150°C
- Insulator Resistance: 5,000 MΩ
- Impedance: 50Ω
- Frequency Range: 0–26 GHz (SMA), DC to 20 GHz (SMP)
- VSWR: 1.3 max
- RoHS Compliant: Yes

**MWC-2550-01**

**Cable:**
- Cable Type: Low Loss Microwave Coax
- Gauge: 25 AWG Silver plated Copper
- Dielectric: Solid FEP
- Jacket Material: FEP
- Bend Radius: 9 mm
- Impedance: 50.2 ± 1Ω
- Propagation Delay: 3.64 nsec/meter
- Capacitance: 75.4 pF/meter

**APPLICATION**

- Rugged solid FEP dielectric
- BE25S termination with SMA or SMP end option

**CABLE TYPE**

BE25S = Rugged solid FEP Dielectric 25 AWG, MWC-2550-01 Microwave Cable

**END 2 OPTION**

Specify END 2 OPTION from chart

-02 = 2.0 Pico-second
-05 = 5.0 Pico-second
-10.0 = 10.0 Pico-second

**PHASE MATCHING**

-02 = 2 phase matched cable assemblies
-04 = 4 phase matched cable assemblies
-06 = 6 phase matched cable assemblies
-08 = 8 phase matched cable assemblies

**NO. OF CABLES**

-02
-04
-06
-08

**OVERALL LENGTH**

XXXX = Overall Length in millimeters
-0100 (100 mm) 3.94”
-9999 (9999 mm) 393.7”

**EXTRACTION TOOLS**

- SCC41: CAT-EX-SCC-01
- SMP: CAT-EX-SMP-01

**Notes:**
- Cable lengths longer than 40.00’ (1 meter) are not supported with S/I test data.
- Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

[www.samtec.com](http://www.samtec.com)
50Ω MICROWAVE CABLE ASSEMBLIES

SPECIFICATIONS

Mates with:
- BAR (Requires –SCC41)
- CCH (Requires –SCC21)
- SMA, SMP

High frequency performance to 20 GHz

25 AWG rugged solid dielectric microwave cable

APPLICATION

SMA, SMP or Bulls Eye®
Test Point terminations

CABLE TYPE

END 1 CONNECTOR

END 2 CONNECTOR

OVERALL LENGTH

CABLE
Type:
Low Loss Microwave Coax
Gauge:
25 AWG Silver plated Copper
Dielectric:
Rugged solid FEP
Jacket Material:
FEP
Blend Radius:
9 mm
Impedance:
50Ω ± 10%
Propagation Delay:
3.84 nanosecond
Capacity:
75.4 pF/meter

END OPTIONS

RF25S = Rugged solid FEP Dielectric 25 AWG, MWC-2550-01 Microwave Cable

END OPTIONS

-01SP = SMA Straight Plug
(30° / 0.76 μm)
Gold on Center Contact,
Gold Flash on Shell

-01BJ = SMA Bullhead Jack
(30° / 0.76 μm)
Gold on Center Contact,
Gold Flash on Shell

-00SJ7 = SMP Straight Jack
(10° / 0.26 μm)
Gold on Center Contact,
Gold Flash on Shell

-00RJ7 = SMP Right Angle Jack
(10° / 0.26 μm)
Gold on Center Contact,
Gold Flash on Shell

STRIpped & Tinned

-003030 3.0 3.0 3.0
-003040 3.0 3.0 4.0
-003030 4.0 3.0 3.0
-003040 4.0 3.0 4.0
-004040 4.0 4.0 4.0

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

Notes:
- Cable lengths longer than 40.00” (1 meter) are not supported with S.I. test data.
- Some lengths, styles and options are non-standard, non-returnable.

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HIGH PERFORMANCE TEST POINTS

SPECIFICATIONS
For complete specifications and recommended PCB layouts, see www.samtec.com/CCH
Insulator Material: Black LCP
Gasket Material: MIL-DTL-63528C, Type D

OTHER SOLUTIONS
- Replacement elastomer gaskets available
  Contact Samtec.

Mates with: RF25S

Low cost plastic housing replaces expensive machined metal interfaces
Solderless termination to PCB
Compression interface to the board
Fluorosilicone-based conductive elastomer provides excellent grounding

<table>
<thead>
<tr>
<th>TYPE</th>
<th>J</th>
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<tbody>
<tr>
<td>CCH</td>
<td>= Single position test point</td>
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</table>

NUMBER OF POSITIONS

-01 = 1 Position
-02 = 2 Positions
-04 = 4 Positions

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

Due to technical progress, all designs, specifications and components are subject to change without notice.

WWW.SAMTEC.COM
QUAD ROW ARRAY 20 POSITIONS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/BQR

OTHER SOLUTIONS
- Replacement elastomer gaskets available
  Contact Samtec.

Mates with:
BE23S, RF23S

Compression interface to the board
Low cost plastic housing replaces expensive machined metal interfaces
Solderless termination to PCB
Fluorosilicone-based conductive elastomer provides excellent grounding

BQR → J → NUMBER OF POSITIONS

-O20
20 Positions

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

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
TEST POINT ARRAY 22 POSITIONS

SPECIFICATIONS
For complete specifications and recommended PCB layouts, see www.samtec.com/BAR
Insulator Material: Black LCP
Gasket Material: MIL-DTL-63528C, Type D

OTHER SOLUTIONS
• Replacement elastomer gaskets available
Contact Samtec.

BAR/J
= 22 Positions

Note: Some sizes, styles and options are non-standard, non-returnable.
BULLS EYE® 20 POSITION ASSEMBLY

SPECIFICATIONS

For complete specifications see www.samtec.com/BQRA

RF Connector:
- Outer Contact Material: Brass (SMA)
- Center Contact Material: Brass (SMA Plug)
- Insulator Material: PTFE
- Operating Temperature: -65°C to +185°C
- Insulator Resistance: 5,000 MΩ
- Impedance: 50Ω
- RoHS Compliant: Yes

MWC-2350-01
- Cable Type: Low Loss Microwave Coax
- Gauge: 23 AWG Silver plated Copper
- Dielectric: Solid FEP
- Jacket Material: PEP
- Bend Radius: 12 mm
- Impedance: 50Ω ±1Ω

OTHER SOLUTIONS

- Replacement elastomer gaskets available
- Contact Samtec.

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

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
BULLS EYE® 22 POSITION ASSEMBLY

SPECIFICATIONS
For complete specifications see www.samtec.com/BARA

RF Connector:
Outer Contact Material:
Brass (SMA), Gold (SMP)
Center Contact Material:
Brass (SMA Plug)
BeCu (SMA & SMP Jack)
Insulator Material:
PTFE
Operating Temperature:
-65°C to +185°C
Insulator Resistance:
5,000 MQ
Impedance:
50Ω
RoHS Compliant:
Yes
MWC-2550-01
Cable:
Cable Type:
Low Loss Microwave Coax
Gauge:
25 AWG Silver plated Copper
Dielectric:
Solid FEP
Jacket Material:
FEP
Bend Radius:
9 mm
Impedance:
50Ω ± 1Ω
Propagation Delay:
3.84 nanosecond
Capacitance:
75.4 pF/meter

OTHER SOLUTIONS
- Replacement elastomer gaskets available
- Contact Samtec.

BARA -- END 2 CONNECTOR
PHASE MATCHING
11
OVERALL LENGTH

Specify END 2 OPTION from chart

-02 = 2.0 Pico-second (-0305 maximum overall length)
-05 = 5.0 Pico-second (-0457 maximum overall length)
-10 = 10.0 Pico-second

-01 = Number of phase matched pairs

XXX = Overall Length in millimeters
-0100 (100 mm) 3.94" to -9999 (9999 mm) 393.7"

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

END 2 OPTIONS
-013J1 = SMA Bulkhead Jack (50μ” (0.17 pm) Gold on Center Contact, Gold Flash on Shell)
-013P1 = SMA Straight Plug (50μ” (0.17 pm) Gold on Center Contact, Gold Flash on Shell)
-05S7J = SMP Straight Jack (10μ” (0.25 pm) Gold on Center Contact, Gold Flash on Shell)
-09R7J = SMP Right Angle Jack (10μ” (0.25 pm) Gold on Center Contact, Gold Flash on Shell)

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
BULLS EYE® DOUBLE ROW ASSEMBLY

SPECIFICATIONS
For complete specifications see www.samtec.com/BDRA

RF Connector:
Outer Contact Material: Brass (SMA)
Center Contact Material: Brass (SMA Plug)
BeCu (SMA Jack)
Insulator Material: PTFE
Operating Temperature: -65°C to +125°C
Insulator Resistance: 5,000 MQ
Impedance: 50Ω
RoHS Compliant: Yes
MWC-2350-01

Cable:
Type: Low Loss Microwave Coax
Gauge: 23 AWG Silver plated Copper
Dielectric: Solid FEP
Jacket Material: FEP
Bend Radius: 12 mm
Impedance: 50Ω ±1Ω

OTHER SOLUTIONS
• Replacement elastomer gaskets available
Contact Samtec.

Mates with:
292PS

A total of 24 positions with 12 phase matched pairs

BDRA CONNECTOR
END 2 CONNECTOR
PHASE MATCHING
12
OVERALL LENGTH

Specify END 2 OPTION from chart

-02 = 2.0 Pico-second
-03 = 5.0 Pico-second
-04 = 10.0 Pico-second

-12 = Number of phase matched pairs

XXXX = Overall Length in millimeters
-0100 (100 mm) 3.94"
to -9999 (9999 mm) 393.7"

END 2 OPTIONS

-92SJP = SMA 2.92
Straight Jack
(93µ" (0.76 µm) Gold on Center Contact, Passivated Stainless Steel on Shell)

-92SPP = SMA 2.92
Straight Plug
(93µ" (0.76 µm) Gold on Center Contact, Passivated Stainless Steel on Shell)

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

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
# 50Ω & 75Ω CABLE ASSEMBLIES

## MICRO HIGH FREQUENCY
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**MICRO HIGH FREQUENCY RF CABLES**

**SPECIFICATIONS**

For complete specifications see www.samtec.com/MH081

- **Outer Contact Material:** Au plated Phosphor Bronze
- **Center Contact Material:** Au plated Phosphor Bronze (MH)
- **Insulator Material:** PBT (MHX)
- **PTFE (SMA)**
- **Operating Temperature:** -40°C to +90°C
- **Voltage Rating:** 170V max
- **Dielectric Withstanding Voltage:** 200 Vrms
- **Frequency Range:** 0–3 GHz
- **Contact Resistance:** Center Contact: 6mΩ max
- **Insulator Resistance:** 5,000 MΩ
- **Impedance:** 50Ω
- **RoHS Compliant:** Yes

**0.81 mm Cable**

- **Impedance:** 50Ω
- **Capacitance:** 100 pF/meter
- **Max Attenuation:** (cable only): 3.1dB @ 1 GHz
- **Conductor Size:** 38 AWG (0.81 mm), 0.032” dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 1.45Ω/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
- **Temp Rating:** -40°C to +90°C
- **RoHS Compliant:** Yes

**ALSO AVAILABLE**

- Additional stripping and tinning options
- Additional end connector combinations
- Overall lengths
- Contact Samtec

**EXTRACTION TOOLS**

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

**MH081**

**END 1 CONNECTOR**

**END 2 CONNECTOR**

**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)

**MATING SOLUTIONS**

- Micro RF PCB connectors for Micro High Frequency RFs
- MH1RP end mates with RSP-122811-01 (Cycles: 50 max.)
- MH3RP end mates with RSP-122811-02

**APPLICATION**

- **MH1RP** = MIF1 Type Plug (30µ” (0.75 µm) Gold on Center Contact, Gold Flash on Shell)
- **MH3RP** = MIF3 Type Plug (30µ” (0.75 µm) Gold on Center Contact, Gold Flash on Shell)
- **-01BJ1** = SMA Straight Bulkhead Jack
- **-01B2** = SMA Straight Bulkhead Jack, Reverse Polarity
- **-01SB1** = SMA Straight Jack, Sealed Bulkhead
- **-01SR1** = SMA Straight Jack, Sealed Bulkhead, Reversed Polarity
- **-SING** = Single Ended (End 1 callout)
- **-XXXX** = Stripped & Tinned (End 2 callout)

**END OPTIONS**

- **STRIPPED & TINNED** (Dimensions in mm)

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Due to technical progress, all designs, specifications and components are subject to change without notice.
MICRO HIGH FREQUENCY RF CABLES

SPECIFICATIONS
For complete specifications see www.samtec.com/MH113

Outer Contact Material:
Au plated Phosphor Bronze
Center Contact Material:
Au plated Phosphor Bronze (MHF)
Au plated Cu (SMA)
Insulator Material:
PBT (MHF)
PTFE (SMA)
Operating Temperature:
-40°C to +90°C
Voltage Rating:
170V max
Dielectric Withstanding Voltage:
200 Vrms
Frequency Range:
0–3 GHz
Contact Resistance:
Center Contact: 6mΩ max
Outer Contact: 2mΩ max
Insulator Resistance:
5,000 MΩ
Impedance: 50Ω
RoHS Compliant: Yes

1.13 mm Cable:
Impedance: 50Ω
Capacitance:
95 pF/m meter
Max Attenuation:
(2dB @ 1 GHz)
Conductor Size:
32 AWG, (1.13 mm) .045" dia.
Conductor Material:
Silver Plated Copper
Conductor Resistance:
0.60Ω/meter max
Insulator Diameter:
(0.06 mm) .025"
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
RoHS Compliant: Yes

MATING SOLUTIONS
• Micro RF PCB connectors for Micro High Frequency RFs
• MH1RP end mates with RSP-122811-01 (Cycles: 30 max.)

APPLICATION
MH1RP
2.4 mm
(2.6 mm MAX)

MH13
END 1 CONNECTOR
END 2 CONNECTOR
OVERALL LENGTH

Specify END OPTIONS from chart

MH1RP = MH1 Type Plug
(30µ" (0.76 µm) Gold on Center Contact, Gold Flash on Shell)

-01BJ1 = SMA Straight Bulkhead Jack
-01BJ2 = SMA Straight Bulkhead Jack, Reversed Polarity
-01SB1 = SMA Straight Jack, Sealed Bulkhead
-01SR1 = SMA Straight Jack, Sealed Bulkhead, Reversed Polarity
(30µ" (0.76 µm) Gold on Center Contact, Gold Flash on Shell)

-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)

END OPTIONS
XXX = OAL (millimeters)

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>-0030</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-0040</td>
<td>3.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>-0060</td>
<td>4.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-0080</td>
<td>4.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>-0100</td>
<td>4.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

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

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω RG 174 CABLE ASSEMBLIES

Mates with:
MCX, MMCX, MMCXV, SMA, SMB5, BNC5, TNC, NTPE

THINK OUTSIDE THE CATALOG
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

SPECIFICATIONS
For complete specifications see www.samtec.com/?RF174

RF Connector:
Outer Contact Material:
Ni plated brass (BNC)
Au plated Brass (SMB & SMA)
Au plated BcCu (MCM & MMCX)
Center Contact Material:
Au plated Brass (BNC-P, MCX-P, MMCX-P & SMA-P)
Au plated BcCu (SMB-P & SMA-J)
Au plated Phos. Bronze (BNC-J)
Insulator Material:
PTE
Operating Temperature:
-50°C to +80°C
Insulator Resistance:
5,000 MΩ
Impedance:
50Ω
Frequency Range:
0-6 GHz
(Cable & connector dependant)
RoHS Compliant:
Yes

RG 174 Cable:
Impedance:
50Ω
Capacitance:
101±24 pF/meter
Max. Attenuation
(cable only):
1.4dB @ 1 GHz for 1 meter
Conductor Size:
28 AWG (0.48 mm), 0.19” dia.
Conductor Material:
Copper
Insulator Material:
LCP
Shield Material:
Tin Copper
Jacket Material:
PVC
Jacket Diameter:
(2.70 mm), 106”
Jacket Color:
Black
Bend Radius:
25.4 mm
RoHS Compliant:
Yes

CABLE TYPE — END 1 CONNECTOR — END 2 CONNECTOR

Specify END OPTIONS from chart

-01SP1-01RP1 SHOWN

END OPTIONS

-01SP1 = SMA Straight Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-01RP1 = SMA Right Angle Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-07SP1 = SMB Straight Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-07RP1 = SMB Right Angle Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-02SJ1 = MCX Straight Jack
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-02RP1 = MCX Right Angle Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-03SP1 = MMCX Straight Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-03RP1 = MMCX Right Angle Plug
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-03J1 = MMCX Straight Jack
30° (0.76 μm) Gold on Center Contact, Gold Flash on Shell

-03RP1 = MMCX Right Angle Plug, High Vibration
30° (0.76 μm) Gold on Center Contact, Nickel on Shell

-03J1 = MMCX Straight Jack, High Vibration
30° (0.76 μm) Gold on Center Contact, Nickel on Shell

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
OVERALL LENGTH

“XXXX”

= Overall Length in millimeters –0100 (100 mm) minimum

(Cable lengths larger than 1000 millimeters are not supported by S1 Test data)

<table>
<thead>
<tr>
<th>END OPTIONS</th>
<th>END OPTIONS</th>
<th>END OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>-04SP9 = BNC Straight Plug (11µ” (0.25 pm) Gold on Center Contact, Nickel on Shell)</td>
<td>-01FN1 = SMA 4-Hole Panel Mount Jack (30µ” (0.76 pm) Gold on Center Contact, Gold Flash on Shell)</td>
<td>-SING = Single Ended (End 2 Cellout)</td>
</tr>
<tr>
<td>-05SP3 = TNC Straight Plug (11µ” (0.25 pm) Gold on Center Contact, Nickel on Shell)</td>
<td>-04BJ2 = BNC Bulkhead Jack (30µ” (0.76 pm) Gold on Center Contact, Nickel on Shell)</td>
<td>XXXXXXX = Stripped &amp; Tinned (End 2 Cellout)</td>
</tr>
<tr>
<td>-07BJ1 = SIMB Bulkhead Jack (35µ” (0.76 pm) Gold on Center Contact, Nickel on Nickel)</td>
<td>-05BJ2 = TNC Bulkhead Jack (30µ” (0.76 pm) Gold on Center Contact, Nickel on Shell)</td>
<td>(Dimensions in mm)</td>
</tr>
<tr>
<td>-01BJ1 = SIMA Straight Bulkhead Jack</td>
<td>-06BLJ2 = N Type Bulkhead Jack (30µ” (0.76 pm) Gold on Center Contact, Nickel on Shell)</td>
<td></td>
</tr>
<tr>
<td>-01BJ1 = SIMA Straight Bulkhead Jack, Sealed</td>
<td>-01SHN = SIMA Straight Bulkhead Jack, Sealed, Recessed Polarity</td>
<td></td>
</tr>
<tr>
<td>-01BH1 = SMA Straight Bulkhead Jack</td>
<td>-01BH1 = SMA Straight Bulkhead Jack, Recessed Polarity</td>
<td></td>
</tr>
<tr>
<td>(35µ” (0.76 pm) Gold on Center Contact, Gold Flash on Shell)</td>
<td>(30µ” (0.76 pm) Gold on Center Contact, Gold Flash on Shell)</td>
<td></td>
</tr>
</tbody>
</table>

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω RG 316 CABLE ASSEMBLIES

SPECIFICATIONS
For complete specifications see www.samtec.com/RF316

RF Connector:
Outer Contact Material:
Ni plated Brass (BNC)
Au plated Brass (SMB & SMA)
Au plated BeCu (MCX & MMCX)
Center Contact Material:
Au plated Brass (BNC & MMCX)
Au plated Brass (BNC & MMCX-P & SMA-P)
Au plated BeCu (SMB & SMA-J)
Au plated Phos. Bronze (BNC-J)
Insulator Material:
PTFE
Operating Temperature:
-50°C to +105°C
Insulator Resistance:
5,000 MQ
Impedance:
50Ω
Frequency Range:
0-6 GHz
(Cable & connector dependent)
RoHS Compliant:
Yes

RG 316 Cable:
Impedance:
50Ω
Capacitance:
96.432 pF/meter
Max Attenuation
(cable only):
1.25dB/1000 ft for 1 meter
Conductor Size:
26 AWG (0.51 mm)
Conductor Material:
Silver Plated Copper
Insulator Material:
PTFE
Shield Material:
Silver Plated Copper Clad Steel
Jacket Material:
FEP
Jacket Diameter:
(2.54 mm) 0.100”
Jacket Color:
Amber
Bend Radius:
12.7 mm
RoHS Compliant:
Yes

THINK OUTSIDE THE CATALOG
• Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
• 24-hour samples on standard products
• Visit: rf.samtec.com

SOLUTIONATOR
Double shielded RG 316 cable also available (RS316 Series)

CABLE TYPE
END 1 CONNECTOR
END 2 CONNECTOR

Specify END OPTIONS from chart

OTHER SOLUTIONS
• Double shielded RG 316 cable available, see RS316 Series
• Cable connector kits (see cable components catalog pages)
**RF316 SERIES**

- Standard heat shrink wraps
- Heavy gold plated
- Choice of RF connector styles
- Single or double ended
- Variety of bulkhead jacks

**ALSO AVAILABLE**

- Additonal stripping and tinning options
- IP68 Sealed Acclimote™ end options
- IP67 TNC option
- Additional plating options
- Additional end connector combinations
- Knurled nuts with BNC option

Contact Samtec.

**OVERALL LENGTH**

- "XXXX"
- Overall Length in millimeters — 0100 (100 mm) minimum
- (Cable lengths larger than 1000 millimeters are not supported by S.I. Test data)

**END OPTIONS**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>045SP3</td>
<td>BNC Straight Plug (1/4&quot; [6.35 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>055SP3</td>
<td>TNC Straight Plug (10/9&quot; [25.4 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>07BJ1</td>
<td>BULKHEAD Jack (1/8&quot; [3.175 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01BJH</td>
<td>SNA Straight Bulkhead Jack</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01SBH</td>
<td>SNA Straight Bulkhead Jack, Sealed</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01SBH5</td>
<td>SNA Straight Bulkhead Jack, Sealed, Reversed Polarity</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01BHJ</td>
<td>SNA Straight Bulkhead Jack, Reversed Polarity (3/4&quot; [6.35 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01FN1</td>
<td>SMA 4-Hole Panel Mount Jack (3/0&quot; [7.62 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>04BL2</td>
<td>BNC Bulkhead Jack (1/4&quot; [6.35 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>06BJ3</td>
<td>TNC Bulkhead Jack (1/8&quot; [3.175 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>06BJ2</td>
<td>N Type Bulkhead Jack (3/4&quot; [6.35 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
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<td>TNC Straight Plug (10/9&quot; [25.4 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
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<td>07BJ1</td>
<td>BULKHEAD Jack (1/8&quot; [3.175 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01BJH</td>
<td>SNA Straight Bulkhead Jack</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01SBH</td>
<td>SNA Straight Bulkhead Jack, Sealed</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01SBH5</td>
<td>SNA Straight Bulkhead Jack, Sealed, Reversed Polarity</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01BHJ</td>
<td>SNA Straight Bulkhead Jack, Reversed Polarity (3/4&quot; [6.35 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>01FN1</td>
<td>SMA 4-Hole Panel Mount Jack (3/0&quot; [7.62 mm]) Gold on Center Contact, Gold Flash on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>04BL2</td>
<td>BNC Bulkhead Jack (1/4&quot; [6.35 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>06BJ3</td>
<td>TNC Bulkhead Jack (1/8&quot; [3.175 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>06BJ2</td>
<td>N Type Bulkhead Jack (3/4&quot; [6.35 mm]) Gold on Center Contact, Nickel on Shell</td>
<td>![Diagram]</td>
</tr>
</tbody>
</table>

**STRIPPED & TINNED**

<table>
<thead>
<tr>
<th>Callout</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>303030</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>303040</td>
<td>3.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>403030</td>
<td>4.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>403040</td>
<td>4.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

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

**WWW.SAMTEC.COM**

Due to technical progress, all designs, specifications and components are subject to change without notice.
## 50Ω RG 178 CABLE ASSEMBLIES

### SPECIFICATIONS

For complete specifications see www.samtec.com/RF178

**RF Connector:**
- **Outer Contact Material:** Au plated Brass (SMA & SMB)
- **Center Contact Material:** Au plated BeCu (MCX & MMCX)
- **Inner Contact Material:** Nickel (BNC & TNC)

**Insulator Material:** PTFE

**Operating Temperature:** -55°C to +125°C

**Frequency Range:**
- 0 to 5 GHz
- Connector dependent

**Insulator Resistance:** 5,000 MΩ

**Impedance:** 50Ω

**RoHS Compliant:** Yes

**RG 178 Cable:**
- **Impedance:** 50Ω
- **Capacitance:** 89.61 pF/meter
- **Propagation Delay:** 4.85 ns/meter
- **Max Attenuation (cable only):** 1.70dB @ 1 GHz for 1 meter
- **Conductor Size:** 30 AWG, 0.31 mm, 0.12" dia.
- **Conductor Material:** Silver Plated Copper
- **Conductor Resistance:** 0.34Ω/meter max
- **Current Rating:** 3A DC
- **Insulator Diameter:** 0.066 mm, 0.034"
- **Insulator Material:** PTFE
- **Dielectric Constant:** 2.1dK
- **Shield Material:** Silver Plated Copper, Clad Steel
- **Jacket Material:** PEP
- **Jacket Diameter:** 1.80 mm, 0.07"
- **Jacket Temperature Rating:** -50°C to +165°C
- **Jacket Color:** Amber
- **Bend Radius:** 10.0 mm
- **RoHS Compliant:** Yes

### THINK OUTSIDE THE CATALOG

- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

### CABLE TYPE

**RF178**

= RG 178 Cable

### END 1 CONNECTOR

### END 2 CONNECTOR

Specify END OPTIONS from chart

<table>
<thead>
<tr>
<th>END OPTIONS</th>
<th>END OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>01BJ = SMA</code></td>
<td><code>02SP1 = MMCX</code></td>
</tr>
<tr>
<td><code>01BP = SMA</code></td>
<td><code>02SP1 = MMCX</code></td>
</tr>
<tr>
<td><code>01BJ = MCX</code></td>
<td><code>03JP = MMCX</code></td>
</tr>
<tr>
<td><code>01BP = MCX</code></td>
<td><code>03JP = MMCX</code></td>
</tr>
<tr>
<td><code>02SP1 = MMCX</code></td>
<td><code>03JP = MMCX</code></td>
</tr>
</tbody>
</table>

Due to technical progress, all designs, specifications and components are subject to change without notice.
**RF178 Series**

**Overview**
- **Straight or Right Angle**
- **Variety of Bulkhead Jacks**
- **Single or Double ended**

**Also Available** (MOQ Required)
- Additional stripping and tinning options
- IP67 TNC option
- Additional plating options
- Additional end connector combinations
Contact Samtec.

**Other Solutions**
- Cable connector kits
  (see cable components catalog pages)

**Overall Length**

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

---

**End Options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Gold/Center Contact/Nickel on Shell</th>
</tr>
</thead>
<tbody>
<tr>
<td>04SP3</td>
<td>BNC Straight Plug (10 μm) Gold on Center</td>
<td>Nickel on Shell</td>
</tr>
<tr>
<td>05SP3</td>
<td>TNC Straight Plug (10 μm) Gold on Center</td>
<td>Nickel on Shell</td>
</tr>
<tr>
<td>04BJ2</td>
<td>BNC Straight Bullet Head Jack (30 μm)</td>
<td>Gold on Center, Nickel on Shell</td>
</tr>
<tr>
<td>07BJ2</td>
<td>SMB Straight Bullet Head Jack (30 μm)</td>
<td>Gold on Center, Nickel on Shell</td>
</tr>
</tbody>
</table>

**Stripped & Tinned**

<table>
<thead>
<tr>
<th>Callout</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>-030030</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-030040</td>
<td>3.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>-040030</td>
<td>4.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-040040</td>
<td>4.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

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

---

**Source:** www.samtec.com

*Due to technical progress, all designs, specifications and components are subject to change without notice.*
**50Ω DOUBLE SHIELDED RG 316 CABLE**

**SPECIFICATIONS**
For complete specifications see [www.samtec.com?RS316](http://www.samtec.com?RS316)

**RF Connector:**
- Outer Contact Material: Ni plated Brass (BNC), Au plated Brass (SMA, MCX, MMCX)
- Center Contact Material: Au plated Brass (SMA, MCX, MMCX), Au plated Phosphor Bronze (BNC)
- Insulator Material: PTFE
- Operating Temperature: -50°C to +165°C
- Insulator Resistance: 5,000 MQ
- Impedance: 50Ω
- Frequency Range: 0–6 GHz
- (Cable & connector dependent)
- RoHS Compliant: Yes

**RG 316 DS Cable:**
- Impedance: 50Ω
- Capacitance: 93.6 pF/meter
- Max Attenuation (cable only): 1.438 dB at 2 GHz for 1 meter
- Conductor Size: 26 AWG (0.51 mm), 0.020” dia.
- Conductor Material: Silver Plated Copper
- Insulator Material: FEP Shield 1 Material: Silver Plated Copper
- Shield 2 Material: Silver Plated Copper
- Jacket Material: FEP
- Jacket Diameter: (2.90 mm) 0.114”
- Jacket Color: Orange
- Bend Radius: 12.6 mm
- RoHS Compliant: Yes

**Mates with:**
- SMA, MCX, MMCX, TNC, BNC

**THINK OUTSIDE THE CATALOG**
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

**ALSO AVAILABLE**
(MOQ Required)
- Additional stripping and tinning options
  - Contact Samtec.

**CABLE TYPE**
- **RS316**
  - RG 316 Cable, Double Shielded

**END 1 CONNECTOR**
- Specify END OPTIONS from chart

**END 2 CONNECTOR**
- **-01SP1**
- **-01SP1-01SP1 SHOWN**

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

**OTHER SOLUTIONS**
- Single shielded RG 316 cable available, see RF316 Series
- Cable connector kits (see cable components catalog pages)

**END OPTIONS**
- **-01SP1 = SMA Straight Plug  (300 μm, 0.012”) Gold on Center Contact, Gold Flash on Shell**
- **-02SP1 = MCX Straight Plug  (300 μm, 0.012”) Gold on Center Contact, Gold Flash on Shell**
- **-03SP1 = MCX Straight Plug  (300 μm, 0.012”) Gold on Center Contact, Gold Flash on Shell**
- **-03SP3 = TNC Straight Plug  (100 μm, 0.004”) Gold on Center Contact, Nickel on Shell**
- **-01BJ1 = SMA Straight Bulleted Jack  (300 μm, 0.012”) Gold on Center Contact, Gold Flash on Shell**
- **-04B2 = BNC Bulleted Jack  (300 μm, 0.012”) Gold on Center Contact, Nickel on Shell**
- **SING = Single Ended (End 2 Callout)**

**STRIPPED & TINNED**
- **-01SP1 = 3.0 3.0 3.0**
- **-02SP1 = 3.0 3.0 3.0**
- **-03SP1 = 4.0 3.0 3.0**
- **-03SP3 = 4.0 4.0 4.0**
- **-01BJ1 = 3.0 3.0 4.0**
- **-04B2 = 4.0 4.0 4.0**

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

**WWW.SAMTEC.COM**

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω RG 58 CABLE ASSEMBLIES

SPECIFICATIONS
For complete specifications see www.samtec.com/RF058

RF Connector:
- Outer Contact Material: Ni plated Brass (TNC, N Type), Au plated Ni (SMA)
- Center Contact Material: Au plated Ni (TNC, N Type), Au plated Brass (SMA)
- Insulator Material: PTFE
- Insulator Resistance: 5,000 MΩ
- Frequency Range: 0–1 GHz
- Impedance: 50Ω
- RoHS Compliant: Yes

RG 58 Cable:
- Impedance: 50Ω
- Capacitance: 101pF/meter
- Max Attenuation (cable only): 0.8dB @ 1 GHz
- Conductor Size: 20 AWG, (0.09 mm), 0.06 dia.
- Conductor Material: Tinned Copper
- Insulator Diameter: 2.95 mm, 0.115
- Insulator Material: Solid Polyethylene
- Shield Material: Tinned Copper
- Jacket Material: PVC
- Jacket Diameter: 4.95 mm, 0.195 dia.
- Bend Radius: 48.3 mm
- Jacket Temp Rating: -40°C to +85°C
- RoHS Compliant: Yes

Also Available (MOQ Required)
- Additional stripping and tinning options
- Additional plating options
- Additional end connector options
- Contact Samtec

Other Solutions
- Cable connector kits (see cable components catalog pages)

Think Outside the Catalog
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

Specify END OPTIONS from chart

END OPTIONS
-01SP = SMA Straight Plug
(10μ (0.78 μm) Gold on Center Contact, Gold Flash on Outer Contact and Shell)
-06SR3 = TNC Reversed Polarity Straight Plug
(10μ (0.78 μm) Gold on Center Contact, Nickel on Shell)
-06SP3 = N Type Straight Plug
(10μ (0.78 μm) Gold on Center Contact, Nickel on Shell)
-01BJ = SMA Straight Bulkhead Jack
-21581 = SMA Straight Bulkhead Jack, Sealed
(10μ (0.78 μm) Gold on Center Contact, Gold Flash on Outer Contact and Shell)

Single Ended (End 2 Calloff)

-XXXXX = Stripped & Tinend (End 2 Calloff)

Stripped & Tinend (Dimensions in mm)

CALLOUT A B C
-003030 3.0 3.0 3.0
-003040 3.0 3.0 4.0
-003050 3.0 3.0 5.0
-004040 4.0 3.0 4.0
-004050 4.0 3.0 5.0
-004060 4.0 3.0 6.0

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

Due to technical progress, all designs, specifications and components are subject to change without notice.
50\(\Omega\) .047" DIA FLEXIBLE CABLE

**SPECIFICATIONS**

For complete specifications see www.samtec.com?RF047

RF Connector:
- Outer Contact Material: Brass (SMA), BeCu (HMHF1)
- Contact Material: Brass (SMA), BeCu (HMHF1)
- Insulator Material: PTFE

Impedance: 50\(\Omega\)

Frequency Range:
- 0–10 GHz (HMHF1)
- 0–20 GHz (SMA)

V.S.W.R.: 1.4 max (SMA)

Dielectric Withstanding: 1,000 Vrms (SMA)

Contact Resistance (SMA):
- Center Contact: 6m\(\Omega\) max
- Outer Contact: 2m\(\Omega\) max

Insulator Resistance (SMA):
- 5,000 M\(\Omega\) min

CCA-047 (.047")
- Cable:
  - Impedance: 50\(\Omega\) microwave
  - Capacitance: 96.14 pf/meter
  - Max Attenuation (cable only):
    - 1.15 @ 1 GHz for 1 meter
  - Conductor Size:
    - 30 AWG (0.29 mm), .011" dia.
  - Conductor Material:
    - Silver plated copper
  - Insulator Material:
    - FEP
  - Shield Material:
    - Metallic Alloy
  - Jacket Material:
    - FEP
  - Jacket Diameter:
    - (1.42 mm), .056" dia.
  - Bend Radius:
    - 5 mm

**ALSO AVAILABLE**

- Additional stripping and tinning options
- Contact Samtec.

**OTHER SOLUTIONS**

- Cable connector kits (see cable components catalog pages)

**MATING SOLUTION**

- Micro RF PCB connectors for Micro High Frequency RFs
- HMHF1 end mates with RSP-122811-01 (Cycles: 30 max.)

**CABLE TYPE**

RF047 = (1.2 mm) .047" DIA flexible coax cable

30 AWG Flexible coax cable

**END 1 CONNECTOR**

Specify END OPTIONS from chart

**END 2 CONNECTOR**

**OVERALL LENGTH**

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

<table>
<thead>
<tr>
<th>END OPTIONS</th>
<th>STRIPPED &amp; TINNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>-01SP1 = SMA Straight Plug (30(\mu)m (0.76 (\mu)m) Gold on Center Contact, Gold Flash on Shell)</td>
<td>(Dimensions in mm)</td>
</tr>
<tr>
<td>-11SP1 = HMHF1 U.FL Straight Plug (30(\mu)m (0.76 (\mu)m) Gold on Center Contact, Gold Flash on Shell)</td>
<td>CALLOUT A B C</td>
</tr>
<tr>
<td>-11RP1 = HMHF1 U.FL Right Angle Plug (30(\mu)m (0.76 (\mu)m) Gold on Center Contact, Gold Flash on Shell)</td>
<td>-300300 3.0 3.0 3.0</td>
</tr>
<tr>
<td>-SING = Single Ended (End 2 Cutout)</td>
<td>-300300 3.0 3.0 4.0</td>
</tr>
<tr>
<td>-XXXXXX = Stripped &amp; Tinned (End 2 Cutout)</td>
<td>-400300 4.0 3.0 3.0</td>
</tr>
</tbody>
</table>

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

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω .086" DIA SEMI-FLEXIBLE CABLE

SPECIFICATIONS
Mates with:
SMA, SMP

RF Connector:
Shell Material:
Brass (SMA), Au plated Cu (SMP)
Contact Material:
Brass (SMA), Au plated Cu (SMP)
Impedance:
50Ω
Frequency Range:
0–20 GHz (SMA), DC to 20 GHz (SMP)
V: S.W.R.:
1.4 max (SMA, SMP)
Dielectric Withstanding:
1,000 Vrms (SMA), 500 Vrms min (SMP)
Contact Resistance
(SMA & SMP):
Center Contact: 6 μΩ max
Outer Contact: 2 μΩ max
Insulator Resistance
(SMA & SMP):
5,000 MΩ min

RG 405 (.086")
Cable:
Impedance:
50Ω, 2GHz
Capacitance:
96.79 pF/meter
Max Attenuation (cable only):
1.6 dB / 1 GHz for 1 meter
Conductor Size:
24 AWG (0.66 mm), .022" dia.
Conductor Material:
Silver plated copper clad steel
Insulator Material:
PTFE
Shield Material:
Tinned Copper
Braid Radius:
3.18 mm
RoHS Compliant:
Yes

ALSO AVAILABLE
(MOQ Required)
Additional stripping and tinning options
Contact Samtec.

OTHER SOLUTIONS
Cable connector kits
(see cable components catalog pages)

Note: Cable lengths longer than (1000 mm) 39.40" are not supported with S.I. test data.

THINK OUTSIDE THE CATALOG
• Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
• 24-hour samples on standard products
• Visit: rf.samtec.com

CABLE TYPE — END 1 CONNECTOR — END 2 CONNECTOR — OVERALL LENGTH

Specify END OPTIONS from chart

-01SP1-01RP1 SHOWN

= (2.18 mm) .086" DIA 24 AWG Semi-flexible coax cable

XXX = OAL (millimeters)

END OPTIONS

-01SP1 = SMA Straight Plug
(30º, 0.76 μm) Gold on Center Contact, Gold Flash on Shell

-01RP1 = SMA Right Angle Plug
(30º, 0.76 μm) Gold on Center Contact, Gold Flash on Shell

-00S7 = SMP Straight Jack
(10º, 0.25 μm) Gold on Center Contact, Gold Flash on Shell

-00R7 = SMP Right Angle Jack
(10º, 0.25 μm) Gold on Center Contact, Gold Flash on Shell

XXX = Stripped & Tinned (End 2 callout)

= Overall Length in millimeters

= 1006 (100 mm) 3.94" minimum

STRIPPED & TINED
(Dimensions in mm)

<table>
<thead>
<tr>
<th>CALLOUT</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0300</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>-0400</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.

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50\(\Omega\) .141" DIA SEMI-FLEXIBLE CABLE

Mates with:
SMA

**SPECIFICATIONS**

For complete specifications see www.samtec.com/RF402

RF Connector:
Shell Material: Brass
Contact Material: Brass
Insulator Material: PTFE
Impedance: 50\(\Omega\)
Frequency Range: 0–20 GHz
V.S.W.R.: 1.4 max
Dielectric Withstanding: 1,000 Volts
Contact Resistance:
Center Contact: 6m\(\Omega\) max
Outer Contact: 2m\(\Omega\) max
Insulator Resistance:
5,000 M\(\Omega\) min

**RG 402 (.141")**
Cable:
Impedance: 50\(\Omega\)
Capacitance: 96.79 pF/meter
Max Attenuation (cable only): 0.48 @ 1 GHz for 1 meter
Conductor Size: 19 AWG (0.12 mm), .035" dia.
Conductor Material: Silver plated copper clad steel
Insulator Material: PTFE
Shield Material: Tinned Copper
Bend Radius: 8.36 mm
RoHS Compliant: Yes

**THINK OUTSIDE THE CATALOG**

- Create a full system: cable assembly and board level mates, 50\(\Omega\) and 75\(\Omega\) solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

**ALSO AVAILABLE**
(MOQ Required)
- Additional stripping and tinning options
Contact Samtec.

**OTHER SOLUTIONS**
- Cable connector kits (see cable components catalog pages)

**CABLE TYPE**

RF402
= (3.58 mm) .141" DIA 19 AWG Semi-flexible coax cable

**END 1 CONNECTOR**

Specify END OPTIONS from chart

**END 2 CONNECTOR**

**OVERALL LENGTH**

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

**END OPTIONS**

<table>
<thead>
<tr>
<th>CALLOUT</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>01SP1</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>01RP1</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>0400</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.

Note: Cable lengths longer than (1000 mm) 39.4" are not supported with S.I. test data.
75Ω OPTIMIZED BNC CABLE ASSEMBLIES

SPECIFICATIONS
For complete specifications see www.samtec.com/RFAT or www.samtec.com/RFBT

RF Connector:
- Outer Contact Material: Ni plated Brass (BNC), Au plated Cu (DIN), Au plated Phosphor Bronze (HDBNC)
- Center Contact Material: Gold plated Brass
- Insulator Material: PTFE
- Operating Temperature: -55°C to +125°C
- Impedance: 75Ω ± 0.5 (± 5%)
- Frequency Range: 30 MHz to 2 GHz
- Working Voltage: 500 Vrms max
- Dielectric Withstanding: 1500 Vrms min
- Contact Resistance: Center Contact: 1.5mΩ max
- Outer Contact: 0.4mΩ max
- RoHS Compliant: Yes

RG 6/1694A Cable:
- Impedance: 75Ω ± 0.5
- Capacitance: 54 ±3pF/meter
- Max Attenuation: 0.216dB/10GHz for 1 meter
- Conductor Size: 18 AWG, 0.020” dia.
- Conductor Material: Bare Copper
- Insulator Material: Glass Filled Polyethylene
- Shield Material: Tinned Copper Braid over Aluminum Foil Wrap
- Jacket Material: PVC
- Jacket Diameter: 7.00 mm
- Bend Radius: 69.85 mm
- Jacket Color: Black
- RoHS Compliant: Yes

* See connector component pages for specific range.

Mates with:
- BNC7T, DIN7A, HDBNC

18 AWG 75Ω RG 6 coax cable, or 1694A Belden cable

Also Available (MOQ Required)
- Additional stripping and tinning options
- Additional plating options
- Contact Samtec

THINK OUTSIDE THE CATALOG
- Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

CABLE TYPE
- END 1 CONNECTOR
- END 2 CONNECTOR
- OVERALL LENGTH

RFA6T = RG 6 Cable
RFB6T = Belden 1694A Cable

Specify END OPTIONS from chart

-4SP3 = 75Ω High Density BNC Straight Plug (0.025” (0.65 µm) Gold on Center Contact, Nickel on Shell)
-75SP4 = 75Ω DIN Straight Plug (10µ”) Gold on Center Contact, Nickel on Shell)
-75SP3 = 75Ω BNC Straight Plug (10µ”) (0.65 µm) Gold on Center Contact Nickel on Shell)
-75SP3 = 75Ω BNC Stripped & Tinned (End 2 callout)
-75SP = 75Ω BNC Right Angle Plug (10µ”) Gold on Center Contact, Nickel on Shell)
-SING = Single Ended (End 2 callout)

-XXXX = Stripped & Tinned (End 2 callout)

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω OPTIMIZED RG 179 CABLES

Mates with:
- BNC7T, MCX7, MMCX7, SMB7H, DIN7A

**SPECIFICATIONS**

For complete specifications see www.samtec.com/RF-179

**RF Connector:**
- Outer Contact Material: Ni plated Brass (BNC)
- Au plated Brass (SMB)
- Au plated BeCu (MCX, MMCX7, DIN)

**Center Contact Material:**
- Au plated Brass (BNC-P MCX, MMCX7)
- Au plated BeCu (SMB)
- Au plated Copper Alloy (DIN, BNC-U)

**Insulator Material:**
- PTFE

**Operating Temperature:**
- -55°C to +165°C

**Impedance:**
- 75Ω

**Frequency Range:**
- 0-4 GHz

**RoHS Compliant:**
- Yes

**RG 179 Cable:**
- Impedance: 75Ω ±3Ω
- Capacitance: 6.45F/meter
- Propagation Delay: 4.83 nsec/meter
- Max Attenuation (cable only): 0.85dB @ 1GHz for 1 meter
- Conductor Size: 30 AWG, 0.31 mm, 0.12" dia.
- Conductor Material: Silver Plated Copper
- Conductor Resistance: 0.34Ω/meter max
- Current Rating: 3A DC
- Insulator Diameter: (1.6 mm) 0.063"
- Insulator Material: PTFE
- Dielectric Constant: 1.64K
- Shield Material: Silver Plated Copper
- Jacket Material: PEP
- Jacket Diameter: (2.54 mm) 100°
- Bend Radius: 10.2 mm
- Jacket Temp Rating: -65°C to +165°C
- Jacket Color: Amber
- RoHS Compliant: Yes

*See connector component pages for specific range.

**Note:** Designed to meet SMPTE 424M 3G-SDI specifications.

**THINK OUTSIDE THE CATALOG**

- Create a full system: cable assembly and board level mates, 50Ω and 75Ω, solutions
- 24-hour samples on standard products
- Visit: rf.samtec.com

**CABLE TYPE**

- RF179 = RG 179 Cable

**END 1 CONNECTOR**

**END 2 CONNECTOR**

Specify END OPTIONS from chart

- XXX = OAL (millimeters)
- ~77RP2-74SP3 SHOWN

**END OPTIONS**

- ~73SP4 = 75Ω MMCX7 Straight Plug (10g) (0.25 μm) Gold on Center Contact, Gold Flash on Shell
- ~73RP1 = 75Ω MMCX7 Right Angle Plug (30g) (0.76 μm) Gold on Center Contact, Gold Flash on Shell
- ~73S-J4 = 75Ω MMCX7 Straight Jack (10g) (0.25 μm) Gold on Center Contact, Gold Flash on Shell

- ~72SP1 = 75Ω MCX Right Angle Plug (30g) (0.76 μm) Gold on Center Contact, Gold Flash on Shell
- ~72SP1 = 75Ω SMB Straight Plug (30g) (0.76 μm) Gold on Center Contact, Gold Flash on Shell

**WWW.SAMTEC.COM**

Due to technical progress, all designs, specifications and components are subject to change without notice.
RF179 SERIES

Wide variety of 75Ω end options including BNC, MCX and SMB

Also Available
(MOQ Required)

- Additional stripping and tinning options
- Additional plating options
- Additional end connector combinations

Contact Samtec.

Other Solutions

- Cable connector kits (see cable components catalog pages)

Overall Length

"XXXX"

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

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>303030</td>
<td>3.0</td>
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<tr>
<td>404040</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.

END OPTIONS

-77RP1 = 75Ω SMB Right Angle Plug (89µ [0.79 mm]) Gold on Center Contact, Gold Flash on Shell)

-74SP3 = 75Ω BNC Straight Plug
-D4SP3 = 75Ω BNC Die Cast Straight Plug (10µ [0.25 mm]) Gold on Center Contact, Nickel on Shell)

-74BJ3 = 75Ω BNC Bulkhead Jack (10µ [0.25 mm]) Gold on Center Contact, Nickel on Shell)

-78SP4 = 75Ω DIN Straight Plug

SING = Single Ended (End 2 callout)

XXXXXX = Stripped & Tinned (End 2 callout)

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Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω OPTIMIZED 1855A CABLE ASSEMBLIES

SPECIFICATIONS
For complete specifications see www.samtec.com/RFB8T

RF Connector:
Outer Contact Material: Ni plated Brass (BNC)
Au plated Brass (DIN)
Center Contact Material: Au plated Brass
Operating Temperature: -65°C to +125°C
Impedance: 75Ω ±2Ω (ST), 75Ω ±4Ω (RA)
Frequency Range: 0-3.0 GHz
VSWR: 1.3:1
Working Voltage: 250 Vrms (DIN), 330 Vrms (BNC)
Dielectric Withstanding: 750 Vrms (DIN), 1000 Vrms (BNC)
Contact Resistance: Center Contact: Testing Now!
Outer Contact: Testing Now!
RoHS Compliant: Yes

1855A Cable:
Impedance: 75Ω ±3Ω
Capacitance: 56 ±3pF/meter
Max Attenuation (cable only): 0.37dB @ 1GHz for 1 meter
Conductor Size: 23 AWG (0.25 mm), 0.22″ dia.
Conductor Material: Bare Copper
Insulator Material: Gas Injected Foam
Polyethylene
Shield Material: Tin Copper
 Jacket Material: PVC
Jacket Diameter: 4.03 mm (0.162″)
Bend Radius: 38.1 mm
Jacket Color: Black
RoHS Compliant: Yes

ALSO AVAILABLE
(MOG Required)
• Additional stripping and tinning options
• Additional plating options
Contact Samtec.

OTHER SOLUTIONS
• Hand tool available.
Contact: RFGroup@samtec.com
• Cable connector kits (see cable components catalog pages)

* See connector component pages for specific range.

Note:
Designed to meet SMPTE 424M 3G-SDI specifications.

THINK OUTSIDE THE CATALOG
• Create a full system: cable assembly and board level mates, 50Ω and 75Ω solutions
• 24-hour samples on standard products
• Visit: rf.samtec.com

SOLUTIONATOR

CABLE TYPE
RFB8T = Belden 1855A Cable

END 1 CONNECTOR
Specify END OPTIONS from chart

END 2 CONNECTOR

OVERALL LENGTH

“XXXX” = Overall Length in millimeters
-40300 (800 mm)
11.81″ minimum

STRIPPED & TINNED
(Dimensions in mm)

CALLOUT A B C
-303000 5.0 3.0 3.0
-303040 3.0 3.0 4.0
-403000 4.0 3.0 3.0
-403060 4.0 3.0 4.0
-403040 4.0 3.0 4.0

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

www.samtec.com

Due to technical progress, all designs, specifications and components are subject to change without notice.
# 50Ω & 75Ω Connectors

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**Cable Assemblies And Board Level Connectors In Development**

- 2.4 mm with performance up to 50 GHz
- 1.85 mm with performance up to 65 GHz
- High speed solutions will complement Bulls Eye®
- Compression mount to board
- 50Ω impedance
- Passivated stainless steel
- Vertical orientation board level connectors
- Straight cable connector end options

For more information on high speed RF solutions, contact RFGroup@samtec.com

---

**BNC7T and HDBNC Meet Performance Standards**

- Designed to meet SMPTE 424M 12G-SDI specifications
- Ideal for the ever-evolving demands of the broadcast video industry
- Combined with other Samtec products such as SEARAY® and Edge Rate® on boards to produce 12G-SDI applications
- Through-hole and edge mount jacks available
- HDBNC provides 4X the panel density of traditional BNCs

For more information on 12G-SDI interconnect solutions, contact RFGroup@samtec.com
50Ω SMA 2.92 JACKS

**SPECIFICATIONS**

For complete specifications and assembly instructions see www.samtec.com/292PS-PN

- **Shell Material:** Stainless Steel
- **Insert:** Stainless Steel
- **Socket:** BuCu
- **Insulator Material:** PCTFE
- **Impedance:** 50Ω
- **Frequency Range:**
  - Testing Now!
  - V.S.W.R.
  - Testing Now!
- **Working Voltage:** Testing Now!
- **Dielectric Withstanding:** Testing Now!
- **Contact Resistance:** Testing Now!
- **Operating Temperature:** Testing Now!
- **RoHS Compliant:** Yes
- **Lead-Free Solderable:** Yes

**APPLICATION**

Hermetically sealed pin not included.

**Performance up to 40 GHz/80 Gb/s**

**Panel Mount**

**Passivated Stainless Steel outer contact and shell**

---

**TYPE**

- **292PS**
  - = Passivated Stainless Steel

**GENDER**

- **-J** = Jack

**TYPE**

- **-P** = PCB Mount

**PLATING**

- **-HP**
  - = 30μ (0.76 pm) Gold center contact, Passivated outer contact

**ORIENTATION**

- **-ST** = Straight

**TERMINATION**

- **-PN2** = Panel Mount

---

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Due to technical progress, all designs, specifications and components are subject to change without notice.
# 50Ω SMA 2.92 COMPONENTS

## SPECIFICATIONS

**TYPE** = 292PS

**GENDER** = -J (Jack), -P (Plug)

**TYPE** = -C (Cable)

**PLATING** = -HP (Gold center contact, Passivated outer contact)

**ORIENTATION** = -ST (Straight)

**TERMINATION** = -CS3 (MWC-2350-01 23 AWG Microwave Cable)

**Shell Material:** Stainless Steel

**Contact Material:** Brass

**Cable Body:** Stainless Steel

**Socket:** BeCu

**Insulator Material:** PCTFE

**Insert Material:** Stainless Steel

---

**TYPE** = 292PS

**GENDER** = -J (Jack), -P (Plug)

**TYPE** = -C (Cable)

**PLATING** = -HP (Gold center contact, Passivated outer contact)

**ORIENTATION** = -ST (Straight)

**TERMINATION** = -CS3 (MWC-2350-01 23 AWG Microwave Cable)

**Shell Material:** Stainless Steel

**Contact Material, Nut:** Brass

**Cable Body:** Stainless Steel

**Insert Material:** Stainless Steel

**Socket:** BeCu

**Insulator Material:** PCTFE

**Gasket:** Silicone

**C-Ring:** Stainless Steel

---

Due to technical progress, all designs, specifications and components are subject to change without notice.
**50Ω SMA COMPONENTS**

### Specifications

- **SMA**
- **Gender**
- **Type**
- **Plating**
- **Orientation**
- **Termination**

**J = Jack**

- **C = Cable**
- **C4 = Cable**
- **4-Mounting Screws (–PN1 only)**

- **H = 30µ” (0.76 µm)**
- **Gold center contact, 3µ” (0.08 µm)**
- **Gold outer contact (–BH1S only)**

- **ST = Straight**

- **BH1 = Bulkhead**
- **RG 174 / 316 Cable**

- **BH2 = Bulkhead**
- **RG 178 Cable**

- **BR1 = Bulkhead**
- **RG 174 / 316, Reversed Polarity**

- **BR2 = Bulkhead**
- **RG 178 Cable, Reversed Polarity**

- **BH1S = Bulkhead**
- **RG 316 Cable, Double Shield**

- **B10 = Bulkhead**
- **RG 58 Cable**

- **PN1 = 4-Hole**
- **Panel Mount**
- **RG 174 / 316 Cable**

- **S10 = Sealed Bulkhead**
- **RG 58 Cable**

---

**S10, B10**

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

---

- **P = Plug**
- **C = Cable**

- **H = 30µ” (0.76 µm)**
- **Gold center contact, 3µ” (0.08 µm)**
- **Gold outer contact (–CA1, CA10 only)**

- **ST = Straight**

- **RA = Right Angle**

- **CA1 = RG 174 / 316 Cable**

- **CA7 = RG 405 (.086” DIA)**
  - Semi-flexible Cable

- **CA9 = RG 402 (.141” DIA)**
  - Semi-flexible Cable

- **C10 = RG 58 Cable**
  - (–ST only)

- **CA1S = RG 316 Double Shielded Cable**
  - (–ST only)

---

Supplied with pins and ferrules. See website for dimensions.

---

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω SMA JACKS

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see:
www.samtec.com/75A-TH,
www.samtec.com/75A-SM,
www.samtec.com/?SMA-EM
www.samtec.com/75A-MT or
www.samtec.com/?SMA-PN

- **Contact Material:** B6Cu
- **Shell Material:** Brass
- **Insulator Material:** PTFE (LPI)
- **Operating Temp Range:** -65°C to +125°C
- **Contact Resistance:** Center Contact: 8mΩ max
  Outer Contact: 2mΩ max
- **Insulator Resistance:** 5,000 MQ
- **Impedance:** 50Ω
- **Dielectric Withstanding Voltage:** 1,000 Vrms
- **Frequency Range:** 0–20 GHz
- **Working Voltage:** 3.5V
- **RoHS Compliant:** Yes

**Processing:**
- Lead-Free Solderable: Yes

**Mates with:**
- RF174, RF316, RF058, RF405, RF402, RS316, GRF1H-C, IJSH, RF23S, BE26S

- **Panel Mount, Edge Mount, Mixed Technology, Through-Hole or Surface Mount termination**

**PLATING**

- **J**
  - Jack
  - 30µ (0.76 µm) Gold center contact, 3µ (0.08 µm) Gold outer contact

- **P**
  - PCB Mount
  - 30µ (0.76 µm) Gold center contact, 3µ (0.08 µm) Gold outer contact

- **H**
  - 10µ (0.25 µm) Gold center contact, 3µ (0.08 µm) Gold outer contact

**www.samtec.com**

Due to technical progress, all designs, specifications and components are subject to change without notice.
SMA SERIES

Performance up to 6 GHz

50Ω Impedance

Standard or Drop-in Edge Mount

2-hole or 4-hole Panel Mount jacks

ORIENTATION

- ST = Straight
- RA = Right Angle

TERMINATION

- TH1 = Through-hole
- SM1 = Surface Mount (−GF-RA only)
- EM1 = Edge Mount (−ST only)
- EM3 = Drop-in Edge Mount (−ST only)
- MT1 = Mixed Technology (−ST only)
- PN2 = 2-Hole Panel Mount (−ST only)
- PN4 = 4-Hole Panel Mount (−ST only)

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
### 50Ω SMB JACKS & PLUGS

**Mates with:**
RF174, RF316, GRF1H-C

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see www.samtec.com/SM56-TH

- **Shell Material:** Brass
- **Contact Material:** Brass
- **Insulator Material:** PTFE
- **Impedance:** 50Ω
- **Frequency Range:** 0–4 GHz
- **V.S.W.R.:** 1.5 max
- **Working Voltage:** 250 Vrms max
- **Dielectric Withstanding:** 750 Vrms min
- **Contact Resistance:** Center Contact: 6mΩ max
- **Operating Temp Range:** -25°C to +165°C
- **RoHS Compliant:** Yes

**Processing:**
Lead-Free Solderable: Yes

**Note:** 75Ω version available. See SMB7H Series.

---

**specifications**

For complete specifications and assembly instructions see www.samtec.com/SM55-CA

<table>
<thead>
<tr>
<th>SMB5</th>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
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</thead>
<tbody>
<tr>
<td>-J</td>
<td>Jack</td>
<td>-P</td>
<td>-H (30µ&quot;) Gold center contact, 3µ&quot; (0.08 µm) Gold outer contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-J</td>
<td>Jack</td>
<td>-C</td>
<td>-H (30µ&quot;) Gold center contact, 3µ&quot; (0.08 µm) Gold outer contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-J</td>
<td>Jack</td>
<td>-P-ST</td>
<td>-H (30µ&quot;) Gold center contact, 3µ&quot; (0.08 µm) Gold outer contact</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TERMINATION**
- **CA1** = RG 174/316 Cable (~P only)
- **CA2** = RG 178 Cable (~J only)
- **BH1** = RG 316 Cable (~J only)

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

**Due to technical progress, all designs, specifications and components are subject to change without notice.**
75Ω OPTIMIZED SMB JACKS & PLUGS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/SMB7H-TH or www.samtec.com/SMB7H-EM

Shell Material: Brass
Contact Material: Brass
Insulator Material: PTFE
Impedance: 50 Ω ± 0.01 Ω
Frequency Range: 0.1 to 3 GHz
V.S.W.R: 1.1 max
Dielectric Withstanding: 1000 Vrms min
Operating Temperature: -65°C to +165°C
RoHS Compliant: Yes

Processing: Lead-Free Solderable: Yes

Note: Designed to meet SMPTE 424M 3G-SDI specifications.

Mates with:
RF179, GRF7H-C

SMB7H = GENDER = TYPE = PLATING = ORIENTATION = TERMINATION
-J = Jack = PCB Mount = -H = 30μ (0.76 µm) Gold center contact, 3μ (0.08 µm) Gold outer contact
-P = PCB = RA = Right Angle

-TH1 = Through-hole (0.90 mm), 0.035” Dia (Signal Pin)
-TH2 = Through-hole (0.51 mm), 0.02” Dia (Signal Pin)
-EM1 = Edge Mount (~ST only)

Supplied with pins and ferrules. See website for dimensions.

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω SMP JACKS/PLUGS & ADAPTOR

SMP-PF, SMP-PL, SMP-PS, SMP-PC
Mate with:
SMP-B Bullet Adaptor

Cable Mates:
RF465, BE25S, RF25S

SPECIFICATIONS
For complete specifications see
www.samtec.com/SMP-TH,
www.samtec.com/SMP-EM,
www.samtec.com/SMP-MT1,
www.samtec.com/SMP-B or
www.samtec.com/SMP-CA

Shell Material:
Au plated Brass
(-TH2, -EM3, -MT1)
Au plated BeCu (-J, -J-C)
Contact Material:
Brass (-TH2, -EM3, -MT1)
BeCu (-CA)
Insulator Material:
PFA

Impedance:
50Ω

Frequency Range:
DC to 40 GHz,
DC to 20 GHz (26 AWG)

V.S.W.R. (Interface):
1.15: 1 max to 26.5 GHz,
1.5: 1 max to 40 GHz

Working Voltage:
33 Vrms min

Dielectric Withstanding:
500 Vrms min

Contact Resistance:
Center Contact: 6mΩ max
Outer Contact: 2mΩ max

Insulator Resistance:
5000 MΩ min

Engagement Force:
-PF: 15 lbs. max
-PL: 10 lbs. max
-PS & PC: 2 lbs. max

Disengagement Force:
-PF: 2 lbs. min
-PL: 2 lbs. min
-PS & PC: 0.5 lbs. min

Operating Temperature:
-55°C to +165°C

RoHS Compliant: Yes

Processing:
Lead-Free solderable: Yes

ALTERNATIVE SOLUTIONS
• The SMP Series is an alternative to the Corning Gilbert GPO Series. A mini SMP Series, available as an AGO, is an alternative to the Corning Gilbert GPO Series.

Note: While optimized for 50Ω applications, this connector can also perform well in certain 75Ω applications. Contact RFGroup@samtec.com for further information.

Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω DIN 1.0/2.3 JACKS & PLUGS

Mates with:
RF8T, RFA6T, RF8T,
RF179, GRF7H-C

SPECIFICATIONS
For complete specifications see
www.samtec.com/?DIN7A-TH,
www.samtec.com/?DIN7A-BH or
www.samtec.com/?DIN7A-CA

Shell Material:
Brass
Contact:
Copper Alloy
Insulator Material:
PTE
Operating Temp Range:
-65°C to +125°C
Impedance:
75Ω
Frequency Range:
Testing Now!
V.S.W.R:
Testing Now!
Working Voltage:
250 Vrms
Dielectric Withstanding:
750 Vrms
Contact Resistance:
Center Contact: Testing Now!
Outer Contact: Testing Now!
Insulator Resistance:
Testing Now!

Note:
Designed to meet SMPTE
423M 3g-SDI specifications.

Supplied with pins and ferrules. See website for dimensions.
**50Ω MMCX MICRO-MINI JACKS & PLUGS**

**Mates with:**
RF174, RF316, RF179, RS316, GRF1H-C

**SPECIFICATIONS**

- **Contact Material:** BiCu
- **Insulator Material:** PTFE
- **Pin and Shell Material:** Brass
- **Operating Temp. Range:** -65°C to +125°C
- **Insulation Resistance:** 1000MΩ min
- **Contact Resistance:**
  - Center: 5mΩ
  - Outer: 2.5mΩ
- **Impedance:** 50Ω
- **Dielectric Withstanding Voltage:** 500 Vrms, 50Hz
- **Dielectric Working Voltage:** 170 Vrms, 50Hz
- **V.S.W.R.:**
  - 1.3 max (−EM, −ST−SM1)
  - 1.5 max (−RA−SM1)
- **Frequency Range:** 0–6 GHz
- **RoHS Compliant:** Yes
- **Processing:** Lead-Free Solderable Yes

**OTHER SOLUTIONS**
- High Vibration jacks and plugs. These connectors are not changable with the MMCX.
  
Contact Samtec.

**NOTES:**
Random vibration and Resonant Search test reports available online.

75Ω version available. See MMCX7 Series.
**50Ω MMCX SWITCHABLE JACK**

**APPLICATION**

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see www.samtec.com/MMCX-SW

- **Contact Material:** BeCu
- **Insulator Material:** PTFE
- **Pin and Shell Material:** Brass
- **Operating Temp Range:** -40°C to +125°C
- **Insulation Resistance:** 500MΩ min
- **Contact Resistance:**
  - Center: 5mΩ max
  - Outer: 5mΩ max
- **Impedance:** 50Ω
- **Dielectric Withstanding Voltage:** 250 Vrms min
- **Dielectric Working Voltage:** 100 Vrms max
- **V.S.W.R.:** 1.5 max
- **Frequency Range:** Internal: 0–3 GHz
  - External: 0–6 GHz
- **Max Cycles:** 500
- **RoHS Compliant:** Yes
- **Processing:** Lead-Free Solderable: Yes

**Mates with:** RF316, RF178, RF174, GRF1H-C

(-03SP1 or -03RP1)

Performance up to 6 GHz DC

**APPLICATION**

Unmated

Mated

** MMCX – J – P – PLATING **

- **HF**
  - 30µ (0.76 µm) Gold center contact,
  - 5µ (0.13 µm) Gold outer contact

** ORIENTATION **

- **SW**
  - Switchable

** TERMINATION **

- **EM1**
  - Edge Mount

** OPTION **

- **TR**
  - Tape & Reel

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω MCX MINI JACKS & PLUGS

Mates with:
RF174, RF316, RF178, RS316, GRF1H-C

SPECIFICATIONS

Insulator Material: PTFE
Contact Material: BeCu, Brass (–P–TH)
Shell Material: Brass
Operating Temp. Range: -65°C to +125°C
Insulation Resistance: 1000MΩ min
Contact Resistance: Center: 5mΩ max
Outer: 2.5mΩ max
Impedance: 50Ω
V.S.W.R.: 1.3 max (–ST)
1.5 max (–RTH)
Dielectric Withstanding Voltage:
1000Vrms min, 50Hz
Dielectric Working Voltage:
335Vrms max
Frequency Range: 0–5 GHz
RoHS Compliant: Yes
Processing: Lead-Free Solderable: Yes

Note: 75Ω version available.
See MCX7 Series.

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
# 50Ω MMCX & MCX COMPONENTS

## MMCX SPECIFICATIONS

- **Gender:** P = Plug, C = Cable
- **Type:** MMCX
- **Plating:** H = 30µ" (0.762 µm) Gold center contact, 3µ" (0.08 µm) Gold outer contact
- **Orientation:** RA = Right Angle, ST = Straight
- **Termination:** CA1 = RG 174/316 Cable, CA2 = RG 178 Cable, CA1S = RG 316 Cable, Double Shield

Supplied with pins and ferrules. See website for dimensions.

## MCX SPECIFICATIONS

- **Gender:** J = Jack, P = Plug, C = Cable
- **Type:** MCX
- **Plating:** H = 30µ" (0.762 µm) Gold center contact, 3µ" (0.08 µm) Gold outer contact
- **Orientation:** RA = Right Angle, ST = Straight
- **Termination:** CA1 = RG 174/316 Cable, CA2 = RG 178 Cable, CA1S = RG 316 Cable, Double Shield

Supplied with pins and ferrules. See website for dimensions.
**75Ω MICRO-MINI SYSTEMS**

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see www.samtec.com/MMCX7-TH

Shell Material: Brass
Insulator Material: PTFE
Contact Material: BeCu
Pin Material: Brass

Operating Temp Range: -65°C to +125°C
Insulation Resistance: 600 MΩ min
Contact Resistance: Center: 10 MΩ
Outer: 25 MΩ
Impedance: 75Ω
Dielectric Withstanding Voltage: 500 Volts, 50 Hz
Dielectric Working Voltage: 170 Volts, 50 Hz
Frequency Range: 0-8 GHz
RoHS Compliant: Yes
Processing: Lead-Free Solderable: Yes

**OTHER SOLUTIONS**

- 75Ω Cable Components available
- Contact Samtec

---

Note: Designed to meet SMPTE 422-HD and SDI specifications.

---

Due to technical progress, all designs, specifications and components are subject to change without notice.
### 75Ω OPTIMIZED MCX JACKS & PLUGS

#### SPECIFICATIONS

**MCX7**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Type</th>
<th>Plating</th>
<th>Orientation</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Plug</td>
<td>-H</td>
<td>ST</td>
<td>SM1</td>
</tr>
<tr>
<td>J</td>
<td>Jack</td>
<td>-P</td>
<td>RA</td>
<td>TH1</td>
</tr>
</tbody>
</table>

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

**Shell Material:**
- Brass

**Contact Material:**
- BAgCu

**Insulator Material:**
- PTFE

**Impedance:**
- 75Ω ±0.5%

**Frequency Range:**
- 0–6 GHz

**V.S.W.R:**
- 1.2 max

**Working Voltage:**
- 170 Vrms max

**Dielectric Withstanding:**
- 500 Vrms min

**Contact Resistance:**
- Center Contact: 5mΩ max
- Outer Contact: 2.5mΩ max

**Insulator Resistance:**
- 1000 MΩ min

**Engagement Force:**
- 4.5 lbs max (~ST only)

**Disengagement Force:**
- 2.3 lbs max (~ST only)

**Operating Temperature:**
- -40°C to +125°C

**RoHS Compliant:**
- Yes

**Processing:**
- Lead-Free Solderable: Yes

---

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Gender</th>
<th>Type</th>
<th>Plating</th>
<th>Orientation</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Plug</td>
<td>-H</td>
<td>ST</td>
<td>CA3</td>
</tr>
<tr>
<td>C</td>
<td>Cable</td>
<td>-H</td>
<td>RA</td>
<td></td>
</tr>
</tbody>
</table>

**MCX7**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Type</th>
<th>Plating</th>
<th>Orientation</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Plug</td>
<td>-P</td>
<td>RA</td>
<td>RA</td>
</tr>
</tbody>
</table>

**Mates with:**
- RF179, RG179 Cable

**Contact Material:**
- Brass

**Finger Shell Material:**
- BAgCu

**Body Material:**
- Brass

**Insulator Material:**
- PTFE

**Impedance:**
- 75Ω

**Frequency Range:**
- 0–6 GHz (~ST)
- 0–4.5 GHz (~RA)

**V.S.W.R:**
- 1.3 max

**Working Voltage:**
- 170 Vrms max

**Dielectric Withstanding:**
- 500 Vrms min

**Contact Resistance:**
- Center Contact: 5mΩ max
- Outer Contact: 2.5mΩ max

**Insulator Resistance:**
- 1000 MΩ min

**Operating Temperature:**
- -65°C to +125°C

**Note:**
- Designed to meet SMPTE 424M 3G-SDI specifications.

**Supplied with pins and ferrules. See website for dimensions.**
75Ω HIGH DENSITY BNC JACKS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/HDBNC-TH or www.samtec.com/HDBNC-EM

Shell Material: Au plated Brass
Contact Material: Copper Alloy
Insulator Material: PTFE
Impedance: 75Ω ±2Ω
Frequency Range:
-EM & -TH: 0-12 GHz
-RA: 0-6 GHz
V.S.W.R: 1.45 max
Working Voltage: 330 Vrms max
Dielectric Withstanding: 1500 Vrms min
Contact Resistance:
Center Contact: 1.5mΩ max
Outer Contact: 0.4mΩ max
Operating Temperature: -65°C to +125°C
RoHS Compliant: Yes
Lead-Free Solderable: Yes

4X THE PANEL DENSITY
HDBNC vs. Traditional BNCs

EXTRACTION TOOL
- Hand tool for quickly installing/uninstalling

Notes: Compatible with Amphenol’s HD-BNC®
Designed to meet SMPTE 424M 12G-SDI specifications.

Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω HIGH DENSITY BNC COMPONENTS

SPECIFICATIONS
For complete specifications and assembly instructions see www.samtec.com/HD-BNC-CA

Shell Material: Brass
Contact Material: Brass
Center Contact: Soldered
Outer Ferrule: Crimped
Impedance: 75Ω
Working Voltage: 330 Vrms max
Dielectric Withstanding: 1000 Vrms
Operating Temperature: -65°C to +125°C

EXTRACTION TOOL
• Hand tool for quickly installing/uninstalling Contact Samtec.

Crimp style plugs use industry standard termination tools
Choice of RG 6, Belden 1694A or Belden 1855A cable terminations

True75™ 3G-SDI performance

HDBNC-CA SERIES

HDBNC-CA6

HDBNC-CA8

HDBNC-PCGNSTCA6

HDBNC-PCGNSTCA8

HDBNC-CAPCGNSTCA8

HDBNC-CAPCGNSTCA6

Notes:
Compatible with Amphenol’s HD-BNC®
Designed to meet SMPTE 424M 3G-SDI specifications.

Supplied with pins and ferrules. See website for dimensions.

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
# 75Ω Optimized BNC Jacks & Plugs

**Mates with:**
- RF179, RF6A1T, RF8B7T, GRF7H-C

## Specifications

**For complete specifications and recommended PCB layouts see [www.samtec.com](http://www.samtec.com) BNC7T, www.samtec.com/BNC7FTH or www.samtec.com/BNC7TEM**

**Shell Material:**
- Ni plated Brass (-TH, -BH1, -EM1, -EM2)
- Zinc (-TH2D, BH2D, EM1D, -EM2D)

**Contact Material:**
- Copper Alloy

**Insulator Material:**
- PTFE

**Impedance:**
- ST = 50Ω ±10%
- RA = 75Ω ±4Ω

**Frequency Range:**
- 0-12 GHz

**V.S.W.R.:**
- 1.45 max

**Working Voltage:**
- 500 Vrms

**Dielectric Withstanding:**
- 1500 Vrms min

**Contact Resistance:**
- Center Contact: 5 mΩ max
- Outer Contact: 0.4 mΩ max

**Operating Temperature:**
- -65°C to +125°C

**RoHS Compliant:**
- Yes

**Lead-Free Solderable:**
- Yes

**Tool:**
- Tool for quickly installing/uninstalling knurled nut for BNC7T Series
- Part Number: TOOL-BNC7T-01

**TERMINATION**

- **TH1** = Standard Through-hole
- **TH2D** = Tall Through-hole
- **BH1** = Standard Bulkhead Through-hole
- **BH2D** = Low Profile Die Cast Bulkhead Through-hole
- **EM1** = Edge Mount Bulkhead/Panel Mount for (1.60 mm)
- **EM2** = Edge Mount Bulkhead/Panel Mount for (2.40 mm)
- **EM1D** = Edge Mount Die Cast Bulkhead/Panel Mount (1.60 mm)
- **EM2D** = Edge Mount Die Cast Bulkhead/Panel Mount (2.40 mm)

*Lock washers & knurled nuts supplied with Bulkhead/Panel Mount options*

---

**BNC7T**

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TYPE</th>
<th>PLATING</th>
<th>ORIENTATION</th>
<th>TERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>J</strong> = Jack</td>
<td><strong>P</strong> = PCB Mount</td>
<td><strong>GN</strong> = 10µ (0.25 μm) Gold contact, 100µ (2.54 μm) Nickel shell</td>
<td><strong>ST</strong> = Straight</td>
<td><strong>EM1D</strong> = Die Cast Bulkhead/Panel Mount (1.60 mm)</td>
</tr>
</tbody>
</table>

**CA3** = RG 179 Cable

**CA6** = RG 6 or Belden 1694A Cable

---

**Supplied with pins, ferrules, washers, nuts and gaskets. See website for dimensions.**
50Ω BNC CABLE COMPONENTS

SPECIFICATIONS

For complete specifications and assembly instructions see www.samtec.com/BNC5-CA

Shell Material:
Brass

Contact Material:
Brass (-P)
Copper Alloy (-J)

Center Contact:
Soldered

Outer Contact:
Crimped

Impedance:
50Ω

Frequency Range:
0–4 GHz (Cable dependent)

V.S.W.R.:
1.3 max

Working Voltage:
500 Vrms max

Dielectric Withstanding:
1500 Vrms min

Contact Resistance:
Center Contact: 3mΩ max
Outer Contact: 2mΩ max

Insulator Resistance:
5,000 MΩ min

Operating Temp Range:
-65°C to +125°C

Performance up to 4 GHz

OTHER SOLUTIONS

- 50Ω BNC Board Jacks
- 50Ω TNC Board Jacks
- 50Ω TNC Cable Components
Contact Samtec.

BNC5 = Gender
- P = Plug
- J = Jack

Type
- C = Cable

Plating
- GN = 10µ" (0.25 μm) Gold on contact, Nickel on body

Orientation
- ST = Straight

Termination
- CA1 = RG 174 / 316 Cable (-P only)
- CA2 = RG 178 Cable (-P only)
- BH1 = Bulkhead, RG 174 / 316 Cable (-J only)
- BH2 = Bulkhead, RG 178 Cable (-J only)
- BH1S = Bulkhead, RG 316 Cable, Double Shield (-J only)

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

WWW.SAMTEC.COM

Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω N TYPE RF COMPONENTS

SPECIFICATIONS

For complete specifications and assembly instructions see www.samtec.com/NTPE-CA

Shell Material: Brass
Contact Material: Phosphor Bronze
Insulator Material: PTFE
Center Contact: Soldered
Outer Contact: Crimped
Impedance: 50Ω
Frequency Range: 0-3 GHz (Cable dependent)
V.S.W.R: 1.3 max
Working Voltage: 1000 Vrms max
Dielectric Withstanding: 2500 Vrms min
Contact Resistance: Center Contact: 5mΩ max
Outer Contact: 2mΩ max
Insulator Resistance: 5,000 MΩ min
Operating Temp Range: -65°C to +125°C

NTPE - GENDER - TYPE - PLATING - ORIENTATION - TERMINATION

-J = Jack
-C = Cable
-GN = 10µ" (0.25 µm) Gold on contact, Nickel on body
-ST = Straight
-BH1 = Bulkhead, RG 174 & RG 316 Cable

Choice of RG 174 & RG 316 Cable terminations

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

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Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω OPTIMIZED ADAPTORS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/ADP5

Shell Material:
Brass
Contact Material:
BeCu, Copper Alloy, Phosphor Bronze, or Brass
Impedance:
50Ω
Frequency Range:
0-6 GHz
Contact Resistance:
Center: 5mΩ max (MMCXV), 3mΩ max (N Type)
Outer: 2mΩ max (N Type), 2.5mΩ max (MMCXV)
Insulator Resistance:
5,000 MΩ min.
Operating Temp Range:
-50°C to +165°C

N TYPE TO MMCXV

<table>
<thead>
<tr>
<th>ADP5 ADAPTOR</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Type Jack to MMCXV Jack</td>
<td>ADP5-06SJ2-V3SJ1</td>
</tr>
<tr>
<td>N Type Jack to MMCXV Plug</td>
<td>ADP5-06SJ2-V3SP1</td>
</tr>
<tr>
<td>N Type Plug to MMCXV Jack</td>
<td>ADP5-06SP2-V3SJ1</td>
</tr>
<tr>
<td>N Type Plug to MMCXV Plug</td>
<td>ADP5-06SP2-V3SP1</td>
</tr>
</tbody>
</table>

Plating:
N Type jack/plug = 30μ" (0.76 μm) Gold center contact, 100μ" (2.54 μm) Nickel outer contact
MMCXV jack/plug = 30μ" (0.76 μm) Gold center contact, Gold flash outer contact

Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω OPTIMIZED ADAPTORS

Mates with:
RFAsT, RFbT, RFb8T, RF179, HDBNC, BNC7T, MMCX7, GRF7H-C

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/ADP7

Shell Material:
Brass

Contact Material:
AcCu (Jack)
Brass (Plug to Plug)

Impedance:
75Ω

Frequency Range:
3 GHz -

V.S.W.R.:
1.2 max (0-3 GHz)

Working Voltage:
170 Vrms

Dielectric Withstanding:
500 Vrms

Contact Resistance:
Center: 1.5mΩ max (BNC, HDBNC), 3mΩ max (N Type),
Outer: 4mΩ max (BNC, HDBNC), 2mΩ max (N Type),

Insulator Resistance:
5,000 mΩ min

Operating Temp Range:
-65°C to +185°C

BNC TO HDBNC

<table>
<thead>
<tr>
<th>ADP7 ADAPTER</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNC Jack to HDBNC Jack</td>
<td>ADP7-04SJ2-H4SJ2</td>
</tr>
<tr>
<td>BNC Jack to HDBNC Plug</td>
<td>ADP7-04SJ2-H4SP2</td>
</tr>
<tr>
<td>BNC Plug to HDBNC Jack</td>
<td>ADP7-04SP2-H4SJ2</td>
</tr>
<tr>
<td>BNC Plug to HDBNC Plug</td>
<td>ADP7-04SP2-H4SP2</td>
</tr>
</tbody>
</table>

Plating:
BNC jack/plug =
30μ" (0.76 μm) Gold center contact,
100μ" (2.54 μm) Nickel outer contact

HDBNC jack/plug =
30μ" (0.76 μm) Gold center contact,
100μ" (2.54 μm) Nickel outer contact

N TYPE TO MMCX7

<table>
<thead>
<tr>
<th>ADP7 ADAPTER</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Type Jack to MMCX7 Jack</td>
<td>ADP7-76SJ2-7VSJ1</td>
</tr>
<tr>
<td>N Type Jack to MMCX7 Plug</td>
<td>ADP7-76SJ2-7VSP1</td>
</tr>
<tr>
<td>N Type Plug to MMCX7 Jack</td>
<td>ADP7-76SP2-7VSJ1</td>
</tr>
<tr>
<td>N Type Plug to MMCX7 Plug</td>
<td>ADP7-76SP2-7VSP1</td>
</tr>
</tbody>
</table>

Plating:
N Type jack/plug =
30μ" (0.76 μm) Gold center contact,
100μ" (2.54 μm) Nickel outer contact

MMCX7 jack/plug =
30μ" (0.76 μm) Gold center contact,
Gold flash outer contact

Note:
Designed to meet SMPTE 424M 3g-SDI specifications.

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
ORIGINAL RF SOLUTIONS

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100Ω SHIELDED TWISTED PAIR SYSTEM

**SPECIFICATIONS**

For complete specifications see www.samtec.com/C28S

**RF Connector:**
- **Outer Contact Material:** Phosphor Bronze (Plug), Brass (Jack)
- **Center Contact Material:** Phosphor Bronze (Terminals), Beryllium Copper (Sockets)
- **Insulator Material:** PTFE
- **Operating Temperature:** -40°C to +85°C
- **Voltage Rating:** 200 VAC
- **Frequency Range:** 0 - 4 GHz
- **Impedance:** 50Ω
- **RoHS Compliant:** Yes

**Cable:**
- **Cable:** 28 AWG shielded twisted pair
- **Signal Routing:** 100Ω Differential
- **Jacket Material:** PVC
- **Insulator Material:** PTFE
- **RoHS Compliant:** Yes

Note: Cable lengths longer than 36.00” (0.92 meter) are not supported with S.I. test data.

**END OPTIONS**

- **C28S**
  - #28 AWG shielded twisted pair

**END OPTIONS**

- **“XX,XX”**
  - Overall Length in Inches (101.6 mm) 04.00” minimum

**Specify END OPTIONS from chart**

**ALSO AVAILABLE**

- **Additional stripping and tinning options**
- Contact Samtec.

**CALLOUT**

- **A**
  - 300000
  - 300040
  - 400000
  - 400040

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

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see www.samtec.com?CTJTH or www.samtec.com?CJT-BH

**Shell Material:** Brass
**Insulator Material:** PTFE
**Contact Material:** Phosphor Bronze
**Frequency Range:** 0 - 4 GHz
**Working Voltage:** 200 VAC
**Impedance:** 100Ω
**RoHS Compliant:** Yes
**Lead-Free Solderable:** Yes

**Mates with:**
- **C28S**

**CJT**

**GENDER**

- **T** = Jack
  - **P** = PCB Mount
  - **HH** = Straight
  - **ST** = Right Angle

**PLATING**

- **ST-TH1**
  - Lock washer, nut and gasket supplied unassembled with Bulkhead option.

**ORIENTATION**

- **RA**
  - **RA-BH1**

**TERMINATION**

- **TH1**
  - Standard Through-hole
- **RA-BH1**
  - Standard Bulkhead Through-hole
  - **RA** only

Due to technical progress, all designs, specifications and components are subject to change without notice.
50 Ω GANGED MICRO-MINI RF CABLE

SPECIFICATIONS
For complete specifications see www.samtec.com/GRF1-C

Shell Material:
Brass
Insulator Material:
PTFE
Contact Material:
BAGU
Pin Material:
Brass
Plating:
300° (0.76 μm) Au over 500° (1.27 μm) Ni
Operating Temp Range:
-40°C to +90°C
Impedance:
50Ω
RoHS Compliant:
Yes

RG 316 Cable:
Impedance: 50Ω
Capacitance: 96.43 pF/meter
Propagation Delay: 4.63 nsec/meter
Max Attenuation (cable only): 1.25dB @ 1 GHz for 1 meter
Conductor Size: 26 AWG, (0.51 mm), .020" dia.
Conductor Material: Silver Plated Copper
Insulator Diameter: (1.52 mm), .060"
Insulator Material: PTFE
Shield Material: Silver Plated Copper Clad Steel
Jacket Material: PEP
Jacket Diameter: (2.54 mm), 100°
Jacket Color: Amber
Rend Radius: 12.7 mm
RoHS Compliant: Yes

TOOLING
Application Tooling. Contact atg@samtec.com for more information.

OTHER SOLUTIONS
• 50Ω Board-to-Board system (see GRF1-J & GRF1-P Series)

Mates with:
GRF1-J

GRF1 - P - C - NO. OF POSITIONS - ASSEMBLED LENGTH - C1 - END OPTION - SCREW OPTION

-02, -04, -06, -08

-“XXXX” = Assembled Length in millimeters ~0100 to ~1000 (100 mm) 3.94” minimum

S = Single
D = Double

S = Captive Panel Screws
(Leave blank for no Screw Option)

RECOGNITIONS
For complete scope of recognitions see www.samtec.com/quality

Notes:
Cable lengths longer than 40.03” (1 meter) are not supported with S.I. test data.
This Series is non-standard, non-returnable.
50Ω HYBRID MICRO-MINI RF CABLE

**SPECIFICATIONS**

For complete specifications see www.samtec.com/GRF1H-C

**RF Connector:**
- **Shell Material:** Brass (GRF, SMA, MCX, MMCX, SMB, BNC)
- **Insulator Material:** PTFE
- **Contact Material:** Brass (GRF, SMA, MCX, MMCX, SMB-J, BNC-P, TNC-P)
- **Phosphor Bronze (SMB-P-ST, TNC-J, N Type)
- **BeCu (SMB-P-RA)
- **Copper Alloy (BNC-J)
- **Operating Temp Range:** -40°C to +90°C
- **Impedance:** 50Ω
- **RoHS Compliant:** Yes

**RG 316 Cable:**
- **Impedance:** 50Ω
- **Capacitance:** 96.430 pF/meter
- **Propagation Delay:** 4.83 nsec/meter
- **Max Attenuation (cable only):** 1.26dB @ 1 GHz for 1 meter
- **Conductor Size:** 26 AWG, 0.51 mm, 0.020” dia.
- **Conductor Material:** Silver Plated Copper
- **Insulator Material:** PTFE
- **Shield Material:** Silver Plated Copper Clad Steel
- **Jacket Material:** FEP
- **Jacket Diameter:** 2.24 mm, 0.010
- **Jacket Color:** Amber
- **Bend Radius:** 12.7 mm
- **RoHS Compliant:** Yes

Notes:
- Cable lengths longer than 40.00” (1 meter) are not supported with S.I. test data.
- This Series is non-standard, non-returnable.

---

**2, 4, 6 or 8 Positions**

- **High performance 26 AWG RG 316 coax cable**
- **26, 4, 6 or 8 Positions**
- **Optional Captive Panel Screws**

---

**END OPTIONS**

- **-01SP1 = SMA Straight Plug (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**
- **-01RP1 = SMA Right Angle Plug (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**
- **-01PN1 = SMA Straight Panel Mount Jack (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**

---

**END OPTIONS**

- **-07SP = SMB Straight Plug (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**
- **-07RP = SMB Right Angle Plug (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**
- **-02SJ = MCX Straight Jack (0.020” (0.51 mm) Gold on Center Contact, Gold Flash on Shell)**

---

Due to technical progress, all designs, specifications and components are subject to change without notice.

WWW.SAMTEC.COM
75Ω HYBRID MICRO-MINI RF CABLE

SPECIFICATIONS
For complete specifications see www.samtec.com/GRF7H-C

RF Connector:
Shell Material:
Brass (GRF, MCM, SMB, DIN, BNC, MMCX7-J)
BeCu
(MMCX7-P)
Insulator Material:
PTE
Contact Material:
BeCu
(GRF, SMB)
Brass
(MCMX7-P, MMCX7-J)
Copper Alloy
(DIN, BNC-J)
Operating Temp Range:
-40°C to +80°C
Impedance:
75Ω
RoHS Compliant:
Yes

RG 179 Cable:
Impedance:
75Ω ±3Ω
Capacitance:
64 pf/meter
Max Attenuation
(cable only):
0.5dB @ 1GHz for 1 meter
Conductor Size:
32 AWG, 0.31 mm, ,012" dia.
Conductor Material:
Silver Plated Copper
Insulator Material:
PE
Shield Material:
Silver Plated Copper
Jacket Material:
PE
Jacket Diameter:
(2.54 mm) .100"
Jacket Color:
Amber
Bend Radius:
1.2 mm
RoHS Compliant:
Yes

Notes:
Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.
Designed to meet SMPTE 424M 3G-SDI specifications.
This Series is non-standard, non-returnable.

---

GRF7H

NO. OF POSITIONS

-2, 4, 6, 8

ASSEMBLED LENGTH

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

END OPTIONS

-73SP1 = 75Ω MMCX7
Straight Plug
(39* x 0.76 μm Gold on Center Contact, Gold Flash on Shell)
-73SJ1 = 75Ω MMCX7
High-Velocity Straight Jack
(39* x 0.76 μm Gold on Center Contact, Gold Flash on Shell)

-728P1 = 75Ω MCX
Right Angle Plug
(39* x 0.76 μm Gold on Center Contact, Gold Flash on Shell)
-728J1 = 75Ω MCX
Right Angle Jack
(39* x 0.76 μm Gold on Center Contact, Gold Flash on Shell)
### Specifications

For complete specifications and recommended PCB layouts see www.samtec.com/?GRF1-J or www.samtec.com/?GRF1-P

- **Shell Material:** Brass
- **Insulator Material:** PTFE
- **Contact Material:** BeCu
- **Pin Material:** Brass

- **Plating:**
  - 30g (0.76 μm) Au over 50g (1.27 μm) Ni

- **Current Rating** (GRF1-J/GRF1-P):
  - Signals: 3.6 A per pin (8 adjacent pins powered)
  - Grounds: 6.2 A per pin (8 adjacent pins powered)

- **Operating Temp Range:** -40°C to +90°C

- **Insulation Resistance:** 1000MΩ min
- **Contact Resistance:** Center: 5mΩ
  - Outer: 2.8mΩ
- **Impedance:** 50Ω
- **Dielectric Withstanding Voltage:** 500 Vrms, 50Hz
- **Dielectric Working Voltage:** 170 Vrms, 50Hz
- **Frequency Range:** 0-6 GHz
- **RoHS Compliant:** Yes

- **Processing:** Lead-Free Solderable: Yes

### Recognitions

For complete scope of recognitions see www.samtec.com/quality

### Application

![Application Diagram]

- **Mates with:** GRF1-J

### Other Solutions

- Cable assembly (see GRF1-C Series)

---

### Insert Option

- **ST:** Vertical
- **RA:** Right Angle

- **E:**
  - #1 - 64 Through-hole Threaded Insert, Mates with GRF1-C with captive screw option

### GRF1-J, GRF1-P Series

- **Options:**
  - J-P-02, -04, -06, -08
  - E = 30g (0.76 μm) Gold on Center Conductor & Tail, Gold Flash on Shell and Tails

---

**Due to technical progress, all designs, specifications and components are subject to change without notice.**
# 75Ω Ganged Micro-Mini RF Systems

**Specifications**

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**Housing Material:**
- ABS
- Brass

**Contact Material:**
- BeCu

**Insulator Material:**
- PTFE

**Operating Temp Range:**
- −65°C to +125°C

**Insulation Resistance:**
- 600 MΩ min

**Contact Resistance:**
- Center: Testing Now!
- Outer: 25 mΩ

**Impedance:**
- 75Ω

**Dielectric Withstanding Voltage:**
- 500 Vrms, 50 Hz

**Dielectric Working Voltage:**
- 170 Vrms, 50 Hz

**Frequency Range:**
- 0–6 GHz

**RoHS Compliant:**
- Yes

**Processing:**
- Lead-Free Solderable: Yes

**Recognitions**

- For complete scope of recognitions see www.samtec.com/quality

**Application**

Mates with: GRF7-J

-02, −04, −06, −08

**Other Solutions**

- Cable assembly (see GRF7-C Series)

**Note:** Designed to meet SMPTE 423M & SDI specifications.

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**Due to technical progress, all designs, specifications, and components are subject to change without notice.**

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**WWW.SAMTEC.COM**
50Ω HIGH ISOLATION RF CABLE ASSEMBLY

Mates with: JPS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/IIJC

Insulator Material: Black LCP
Contact Material: Copper-Alloy
Pin Material: Copper-Alloy
Dielectric Material: Black LCP
Plating: Au over 50µ" (1.27 µm) Ni
Operating Temp Range: -40°C to +90°C
RoHS Compliant: Yes

RECOGNITIONS
For complete scope of recognitions see www.samtec.com/quality

Cable (-1):
Conductor Size: 26 AWG, .040" dia.
Conductor Material: Silver Plated Copper
Insulator Diameter: 1.27 mm (.050"
Insulator Material: Foamed FEP
Shield Material: Silver Plated Copper
Jacket Material: FEP
Jacket Diameter: 1.80 mm (.071"
Bend Radius: 3.175 mm
Impedance: 50Ω
Current Rating: 2.5 A
RoHS Compliant: Yes

Cable (-2):
Conductor Size: 26 AWG, .051 mm (.020") dia.
Conductor Material: Silver and Copper
Plated Steel Wire
Insulator Diameter: 1.52 mm (.060"
Insulator Material: PTFE
Shield Material: Silver Plated Copper Wire
Jacket Material: FEP
Jacket Diameter: 2.54 mm (.100"
Bend Radius: 12.7 mm
Impedance: 50Ω
Current Rating: 5 A DC
RoHS Compliant: Yes

Note: This Series is non-standard, non-returnable.

1 Meter Cable Assembly | Frequency
---|---
Insertion Loss = 3 dB | 9.5 GHz / 18.0 Gbps
Return Loss = 15 dB | 2.2 GHz / 4.4 Gbps
VSWR = 1.4 | 2.1 GHz / 4.2 Gbps
Isolation = 60 dB | 3.1 GHz / 5.2 Gbps

PLATING OPTION:
- S = Single Ended
- D = Double Ended

END OPTION:
- NUS = Notch up, straight
- NDS = Notch down, straight

CABLE TYPE:
- 1 = CTB-2050F-01 cable
- 2 = RG 316 cable

WWW.SAMTEC.COM
Due to technical progress, all designs, specifications and components are subject to change without notice.
**SPECIFICATIONS**

For complete specifications and recommended PCB layouts see www.samtec.com/IJ5H

- **Insulator Material:** Black LCP
- **Contact Material:** Copper Alloy
- **Pin Material:** Copper Alloy
- **Dielectric Material:** Black LCP
- **Plating:** Au over 50µ" (1.27 µm) Ni
- **Operating Temp Range:** -40°C to +90°C
- **RoHS Compliant:** Yes

**Cable (-2):**
- **Conductor Size:** 26 AWG, 0.020" dia.
- **Conductor Material:** Silver and Copper Plated Steel Wire
- **Insulator Diameter:** 1.52 mm, 0.060"
- **Insulator Material:** PTFE
- **Shield Material:** Silver Plated Copper Wire
- **Jacket Material:** PE
- **Jacket Diameter:** 2.54 mm, 100"
- **Bend Radius:** 12.7 mm
- **Impedance:** 50Ω
- **Current Rating:** 5A DC
- **RoHS Compliant:** Yes

**Mates with:**
- IP5, SMA, MCX, MMCX, SMB5

**Low cost isolated transmission line systems**

**END 1 PLATING:**
- **-S** = 30µ" (0.76 µm) Gold on contact

**CABLE TYPE:**
- **-2** = RG 316 cable

**END 2 OPTION:**
- **-01SP1** = SMA Straight Plug
- **-02SP1** = MCX Straight Plug
- **-03SP1** = MMCX Straight Plug
- **-07SP2** = SMB Straight Plug

**Choice of traditional RF end options**

**ASSEMBLED LENGTH**
- “XXXX” = Assembled Length in millimeters
- 0300 to 1000 (1000 mm) 39.40” maximum

**END 2 OPTION**
- **-01SP1** = SMA Straight Plug
- **-02SP2** = MCX Straight Plug
- **-03SP2** = MMCX Straight Plug
- **-07SP1** = SMB Straight Plug

**Gold/Nickel combination**

**Note:** This Series is non-standard, non-returnable.

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Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω HIGH ISOLATION RF JACKS

SPECIFICATIONS
- For complete specifications and recommended PCB layouts see www.samtec.com/IJ5
- Shell Material: Copper Alloy
- Insulator Material: Black LCP
- Contact Material: Copper Alloy
- Dielectric Material: Black LCP
- Plating: Au or Sn over 50µ (1.27 µm) Ni
- Current Rating (Vertical): Signals: 2.25 A per pin (2 adjacent pins powered)
  Grounds: 4.4 A per pin (2 adjacent pins powered)
- Operating Temp Range: -55°C to +125°C
- Insulation Resistance: >35,000 MΩ
- Contact Resistance: Center: <34 mΩ
  Outer: <7 mΩ
- Dielectric Withstanding Voltage: 600 VAC
- Working Voltage: 200 VAC
- RoHS Compliant: Yes
- Processing: Lead-Free Solderable: Yes

RECOGNITIONS
- For complete scope of recognitions see www.samtec.com/quality

ALSO AVAILABLE (MOQ Required)
- Other stack heights
- Other PCB thicknesses
- Contact Samtec.

OTHER SOLUTIONS
- 75Ω Board-to-Board system (see IJ7 & IP7 Series)
- Cable assembly (see IJ5C Series)

APPLICATION
- Due to technical progress, all designs, specifications and components are subject to change without notice.
50Ω HIGH ISOLATION RF PLUGS

SPECIFICATIONS
For complete specifications and recommended PCB layouts see www.samtec.com/IP5

Shell Material: Copper Alloy
Insulator Material: Black LCP
Contact Material: Copper Alloy
Dielectric Material: Black LCP
Plating: Au or Sn over 50µ (1.27 µm) Ni
Current Rating (Vertical): Signals: 2.5 A per pin, (2 adjacent pins powered) Grounds: 4.4 A per pin, (2 adjacent pins powered)
Operating Temp Range: -56°C to +125°C
Insulation Resistance: IP5 = 30,000 MΩ, IP5-RA = 25,000 MΩ
Contact Resistance: IP5 = Center: <34 mΩ, IP5 = Outer: <7 mΩ, IP5-RA = Center: 20 mΩ, IP5-RA = Outer: 5 mΩ
Dielectric Withstanding Voltage: IP5 = 600 VAC, IP5-RA = 100 VAC
Working Voltage: IP5 = 200 VAC, IP5-RA = 100 VAC
RoHS Compliant: Yes
Processing: Lead-Free Solderable: Yes

RECOGNITIONS
For complete scope of recognitions see www.samtec.com/quality

ALSO AVAILABLE
(MOG Required)
• Other stack heights
• Other PCB thicknesses
Contact Samtec.

OTHER SOLUTIONS
• 75Ω Board-to-Board system (see IJ7 & IP7 Series)

www.samtec.com
Due to technical progress, all designs, specifications and components are subject to change without notice.
75Ω HIGH ISOLATION RF PLUGS

**SPECIFICATIONS**

For complete specifications and recommended PCB layouts, see www.samtec.com/IP7 or www.samtec.com/IJ7.

- **Shell Material:** Copper Alloy
- **Insulator Material:** Black LCP
- **Contact Material:** Copper Alloy
- **Pin Material:** Copper Alloy
- **Dielectric Material:** Natural LCP
- **Plating:** Au or Sn over 50μ" (1.27 μm) Ni
- **Current Rating:**
  - Signals: 2.2 A per pin (2 adjacent pins powered)
  - Grounds: 6.3 A per pin (2 adjacent pins powered)
- **Operating Temp Range:** -65°C to +125°C
- **Insulation Resistance:** 100,000 MΩ
- **Contact Resistance:**
  - Signal: 25 μΩ
  - Ground: 2.7 mΩ
- **Impedance:** 75Ω
- **Dielectric Withstanding Voltage:** 1950 VAC
- **Working Voltage:** 550 VAC
- **RoHS Compliant:** Yes
- **Processing:** Lead-Free Solderable: Yes

**RECOGNITIONS**

For complete scope of recognitions see www.samtec.com/quality

**ALSO AVAILABLE (MOQ Required)**

- Other stack heights
- Other PCB thicknesses
  
**OTHER SOLUTIONS**

- 50Ω Board-to-Board system:
  (see IJS & IP5 series)
- 75Ω right angle plugs
  
**APPLICATION**

**IP7, IJ7 SERIES**

**IP7** - PLUGS PER ROW - 05.0 - PLATING - ROW OPTION - TAIL - TR

- Mates with: IJ7
- -01, -02, -04, -06, -08
- -L = 10μ" (0.25 μm) Gold on contact area, Matte Tin on tail
- -S = Single Row
- -D = Double Row (Not available with -01)

**IJ7** - JACKS PER ROW - 05.0 - PLATING - ROW OPTION - TAIL - TR

- Mates with: IP7
- -01, -02, -04, -06, -08
- -L = 10μ" (0.25 μm) Gold on contact area, Matte Tin on tail
- -S = Single Row
- -D = Double Row (Not available with -01)

**WWW.SAMTEC.COM**

Due to technical progress, all designs, specifications and components are subject to change without notice.
HIGH SPEED COMBO RF

**Board Mates:**
QMS-RF, QFS-RF

**SPECIFICATIONS**
For complete specifications and recommended PCB layouts, see www.samtec.com/QMS or www.samtec.com/QFS
Insulator Material:
Liquid Crystal Polymer
Contact, Terminal & Ground Plane Material:
Phosphor Bronze
Plating:
Au over 500A (1.27 μm) Ni
(Tin on Ground Plane Only)
Voltage Rating:
300 VAC maxed with QMS/QFS
Operating Temp:
-55°C to +125°C
RoHS Compliant:
Yes
Processing:
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004” max (026-078)
Board Stacking:
For applications requiring more than two connectors per board, contact pgb@samtec.com

**RECOGNITIONS**
For complete scope of recognitions, see www.samtec.com/quality

**ALSO AVAILABLE (MOQ Required)**
- Differential Pairs
- Retention Pins
- 2 RF Connectors/End
- Hot Pluggable Contact Samtec.

**APPLICATIONS**
See SO Series for precision machined standoffs.

**Note:** Some lengths, styles, and options are non-standard, non-returnable.

---

**QMS**

- **NO. OF PINS PER ROW**
  - 026, 052, 078 (52 total pins per bank)

- **LEAD STYLE**
  - 05.75

- **PLATING OPTION**
  - L
  - 10μ (0.25 μm) Gold on Signal Pins and Ground Plane (Tin on Signal Pin tails, and Ground Plane tails)

- **D**

- **END OPTION**
  - RF1 = One RF Plug per End

---

**QFS**

- **NO. OF PINS PER ROW**
  - 026, 052, 078 (52 total pins per bank)

- **LEAD STYLE**
  - 04.25

- **PLATING OPTION**
  - L
  - 10μ (0.25 μm) Gold on Signal Pins and Ground Plane (Tin on Signal Pin tails, and Ground Plane tails)

- **D**

- **END OPTION**
  - RF1 = One RF Jack per End

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**APPLICATION**

- Increased insertion depth
- Integral guide post

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**RUGGEDIZED BY SAMTEC**

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**FINAL INCH CERTIFIED**

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Due to technical progress, all designs, specifications, and components are subject to change without notice.
CUSTOM RF SOLUTIONS

EXPRESS MODIFICATIONS
- Quick-turn prototype samples
- Short lead times
- Low or no Nonrecurring Engineering Charges (NREs)
- Low or no tooling charges

RF Board Level Interconnects
- Custom tail lengths
- Through-hole termination to surface mount or mixed technology
- Right angle height adjustment from PCB
- Alternate plating options

RF Cable Assemblies
- Performance testing: VNA, TDR
- Custom labels and heat-shrink tubing
- Non-standard connector termination orientation
- Adding or removing bulkhead mounting
- Alternate plating options

ENGINEERED CUSTOMS
- Full engineering, design and prototype support from Samtec’s RF Group
- Design, simulation and processing assistance
- Flexible, quick-turn manufacturing
- Dedicated engineers and technicians for application specific RF products

RF Board Level Interconnects
- Completely customized to your specifications

RF Cable Assemblies
- Completely customized to your specifications
- Customized connector terminated to existing cable
- Customized cable terminated to existing connector

RF GROUP
- Personal support from Samtec’s highly qualified, in-house staff of RF engineers
- Express modifications to standard products to complete engineering, design and prototype support
- Design, simulation and processing assistance
- Dedicated engineers and technicians for application specific RF products
- Contact RFGroup@samtec.com
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**GENERAL POLICY**

The information contained in this catalog is accurate to the best of our knowledge. Due to technical progress, it is subject to change without notice. Application information is informational in nature and shall not be construed to warrant suitability of products for any particular purpose or environment. Usage may vary with the conditions encountered. Any cut-off or custom made items or options are considered “special” non-returnable items. Carrier products are warranted for 30 days and the warranty is limited strictly to replacement of products with defective workmanship.

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