DESCRIPTION

Tyco Electronics introduces the Ultraminiature Coax Connector and Cable Assembly series products. The UMCC series is an ultra low profile coax interconnect solution that meets the ever growing demand for miniaturization in next generation wireless applications. UMCC cable assemblies and connectors are available as double-ended jumpers and inter-series assemblies, and PCB jack receptacles for board mount applications.

Tyco Electronics specializes in solving tough problems with cable assemblies designed and manufactured to meet the most demanding requirements. Tyco Electronics can engineer custom UMCC solutions to meet special requirements. By making Tyco Electronics your partner in cable assembly design, you reduce risk and gain assurance that you will receive your assembly on time, to specification and within budget.

APPLICATIONS

- Wireless LAN, Mini PCI
- Mobile Antenna/GPS/Radio Systems
- PDA / PCS / Cellular Handset applications
- Wireless Communications systems (LAN, GSM, PCS, WCDMA, UMTS)
- Remote measuring equipment

KEY FEATURES

- Ultra low profile (2.0mm Type II or 2.5mm Type III maximum mated height)
- Easy snap on/off mating
- Small footprint on PCB (3mm x 3mm)
- Excellent performance to 6 GHz
- Surface mount and reflow solderable
- 360 degree mated rotation
- Available on 0.81mm, 1.13mm, and 1.37mm dia single shield, and 1.32mm dia double shield cable
- Compatible with Hirose U.FL/U.FL(v) Series connectors

For More Information

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 31 73 6246 431
SPECIFICATIONS

ELECTRICAL

Characteristic Impedance: 50 Ohms
Frequency Range: DC to 6 GHz
VSWR (mated pair): 1.30 max DC to 3 GHz
1.5 max 3 to 6 GHz (typical)
Insertion Loss (connectors only): 0.24 dB max DC to 6 GHz
Rated voltage: 60 VAC (rms) – standard recept
Dielectric Withstanding Voltage: 200 VAC, 50 Hz for 1 min (at sea level)
Insulation Resistance: 500 Megohms min
Contact Resistance (connectors only): 20 milliohms max (Center)
10 milliohms max (Outer, Plug)
10 milliohms max (Outer, Receptacle)

MECHANICAL / ENVIRONMENTAL

Durability: 30 cycles – standard recept
Disengagement Force: 2N min perpendicular
4N min orthogonal
Center Contact Retention force: 0.15N min
Tape/Reel Packaging (receptacle): 12mm carrier per EIA-481
Operating Temperature: -40°C to +90°C

MATERIAL

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Material</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Phosphor Bronze</td>
<td>Gold or Silver Plating</td>
</tr>
<tr>
<td>Male Center Contact</td>
<td>Brass or Phos Bronze</td>
<td>Gold Plating</td>
</tr>
<tr>
<td>Female Center Contact</td>
<td>Brass or Phos Bronze</td>
<td>Gold Plating</td>
</tr>
<tr>
<td>Insulator (Plug)</td>
<td>PBT (15% G.F.)</td>
<td>Black, UL94V-0</td>
</tr>
<tr>
<td>Insulator (Receptacle)</td>
<td>LCP</td>
<td>Beige or Black, UL94V-0</td>
</tr>
</tbody>
</table>
# SPECIFICATIONS

## CABLE INFORMATION

<table>
<thead>
<tr>
<th>Diameter</th>
<th>0.81 mm Diameter</th>
<th>1.13 mm Diameter</th>
<th>1.32 mm Diameter</th>
<th>1.37 mm Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center Conductor</td>
<td>Silver Plated Copper</td>
<td>Silver Plated Copper</td>
<td>Silver Plated Copper</td>
<td>Silver Plated Copper</td>
</tr>
<tr>
<td>Size</td>
<td>Stranded 7/0.05 mm</td>
<td>Stranded 7/0.08 mm</td>
<td>Stranded 7/0.08 mm</td>
<td>Stranded 7/0.10 mm</td>
</tr>
<tr>
<td>Dielectric</td>
<td>FEP or PFA</td>
<td>FEP</td>
<td>FEP</td>
<td>FEP</td>
</tr>
<tr>
<td>Size</td>
<td>0.40 mm OD</td>
<td>0.62 mm OD</td>
<td>0.66 mm OD</td>
<td>0.83 mm OD</td>
</tr>
<tr>
<td>Shield</td>
<td>Silver Plated Copper Braid</td>
<td>Silver Plated Copper Braid</td>
<td>Double SPL Braid</td>
<td>Silver Plated Copper Braid</td>
</tr>
<tr>
<td>Coverage</td>
<td>&gt; 90%</td>
<td>&gt; 90%</td>
<td>&gt; 90%</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>Jacket</td>
<td>FEP or PFA</td>
<td>FEP</td>
<td>&gt; 90%</td>
<td>&gt; 90%</td>
</tr>
<tr>
<td>Size</td>
<td>0.81 mm OD</td>
<td>1.13 mm OD</td>
<td>1.32 mm OD</td>
<td>1.37 mm OD</td>
</tr>
</tbody>
</table>

## MECHANICAL:

<table>
<thead>
<tr>
<th>Metric</th>
<th>0.81 mm Diameter</th>
<th>1.13 mm Diameter</th>
<th>1.32 mm Diameter</th>
<th>1.37 mm Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Bend Radius</td>
<td>5 mm Single Bend</td>
<td>5 mm Single Bend</td>
<td>5 mm Single Bend</td>
<td>5 mm Single Bend</td>
</tr>
<tr>
<td>30 mm Continuous Flexing</td>
<td>30 mm Continuous Flexing</td>
<td>30 mm Continuous Flexing</td>
<td>30 mm Continuous Flexing</td>
<td>30 mm Continuous Flexing</td>
</tr>
</tbody>
</table>

## ELECTRICAL:

<table>
<thead>
<tr>
<th>Metric</th>
<th>0.81 mm Diameter</th>
<th>1.13 mm Diameter</th>
<th>1.32 mm Diameter</th>
<th>1.37 mm Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance (Ohms)</td>
<td>50 ± 2</td>
<td>50 ± 2</td>
<td>50 ± 2</td>
<td>50 ± 2</td>
</tr>
<tr>
<td>Velocity of Propagation</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>CC Resistance (Ohms/M)</td>
<td>1.450</td>
<td>0.750</td>
<td>0.560</td>
<td>0.354</td>
</tr>
<tr>
<td>Voltage Rating</td>
<td>60 VAC</td>
<td>60 VAC</td>
<td>60 VAC</td>
<td>60 VAC</td>
</tr>
<tr>
<td>Attenuation</td>
<td>See Chart</td>
<td>See Chart</td>
<td>See Chart</td>
<td>See Chart</td>
</tr>
</tbody>
</table>

Dimensions are millimeters [inches] unless otherwise specified.

![UMCC Cable Attenuation Chart](chart.png)

Tyco Electronics
Our commitment. Your advantage.
### Standard Double Ended Cable Assemblies

**Part Number** | **Cable Dia** | **Length L** | **UMCC Cable Connector Type** | **Mated Height (H)**
--- | --- | --- | --- | ---
2015698-4 | 0.81mm | 50mm | II | 2.0mm
2015698-2 | 0.81mm | 100mm | II | 2.0mm
2015698-3 | 0.81mm | 200mm | II | 2.0mm
2015699-3 | 0.81mm | 50mm | III | 2.5mm
2015699-1 | 0.81mm | 100mm | III | 2.5mm
2015699-2 | 0.81mm | 200mm | III | 2.5mm
2015487-6 | 1.13mm | 50mm | III | 2.5mm
2015487-4 | 1.13mm | 100mm | III | 2.5mm
2015487-5 | 1.13mm | 200mm | III | 2.5mm
2015700-3 | 1.32mm | 50mm | III | 2.5mm
2015700-1 | 1.32mm | 100mm | III | 2.5mm
2015700-2 | 1.32mm | 200mm | III | 2.5mm
2015357-2 | 1.37mm | 50mm | III | 2.5mm
2015357-3 | 1.37mm | 100mm | III | 2.5mm
2015357-4 | 1.37mm | 200mm | III | 2.5mm

**Total Length (mm) | Standard Tolerance (mm)**
--- | ---
25< L <200 | +/- 2
200< L <700 | +/- 3
700< L <900 | +/- 4
900< L | +/- 5

Note: Shortest length L is 25mm

Custom cable assembly lengths available. Contact Tyco Electronics with specific requirements.
## Interseries Cable Assemblies

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Cable Dia</th>
<th>UMCC Conn Type</th>
<th>Mated Height (H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2032439-1</td>
<td>UMCC to STD SMA Plug</td>
<td>1.37mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032440-1</td>
<td>UMCC to STD SMA BHD Jack</td>
<td>1.37mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032445-1</td>
<td>UMCC to R/P SMA BHD Jack</td>
<td>1.13mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032446-1</td>
<td>UMCC to R/P TNC BHD Jack</td>
<td>1.13mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032407-2</td>
<td>UMCC to STD TNC BHD Jack</td>
<td>1.13mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032441-1</td>
<td>UMCC to MCX R/A Plug</td>
<td>0.81mm</td>
<td>II</td>
<td>2.0mm</td>
</tr>
<tr>
<td>2032442-1</td>
<td>UMCC to MCX R/A Plug</td>
<td>1.37mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
<tr>
<td>2032443-1</td>
<td>UMCC to MMCX R/A Plug</td>
<td>0.81mm</td>
<td>II</td>
<td>2.0mm</td>
</tr>
<tr>
<td>2032444-1</td>
<td>UMCC TO MMCX R/A Plug</td>
<td>1.37mm</td>
<td>III</td>
<td>2.5mm</td>
</tr>
</tbody>
</table>

Standard length is 200mm.
Custom cable assembly lengths and connector configurations are available.
Contact Tyco Electronics with specific requirements.
## Adapters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>UMCC Conn Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1775230-1</td>
<td>UMCC Plug to SMA Jack II/III</td>
<td></td>
</tr>
<tr>
<td>1775227-1</td>
<td>UMCC Jack Receptacle to SMA Plug II/III</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions are millimeters [inches] unless otherwise specified
PCB Receptacles

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Mates with UMCC Cable Conn Type</th>
<th>Mated Height (H)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1566230-1</td>
<td>UMCC PCB Receptacle II/III</td>
<td>2.0mm/2.5mm</td>
<td>Tape (2500 pieces/reel)</td>
<td></td>
</tr>
<tr>
<td>1566230-2</td>
<td>UMCC PCB Receptacle II/III</td>
<td>2.0mm/2.5mm</td>
<td>Bulk (500 pieces/bag)</td>
<td></td>
</tr>
</tbody>
</table>

UMCC PCB Receptacle

Dimensions are millimeters [inches] unless otherwise specified.
**Application Notes**

**Soldering Profile - SMT Receptacle**

**Recommended Temperature Profile (Reference)**
1) The preferred technique for mounting the SMT Receptacle package is to reflow solder the device onto a PCB (Printed Circuit Board).
2) The maximum temperature for the lead of PCB surface does not exceed 240.
3) The right reflow soldering profile is for reference and will modify under individual different conditions.

**Hand Soldering (Reference only)**
1) Soldering iron: The maximum temperature 240.
2) Soldering period: within 5 seconds.

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**Tape and Reel Packaging Specifications**

**Standard Receptacles**

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**RECOMMENDED TEMPERATURE PROFILE (REFERENCE)**

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**DIMENSIONS OF TAPING**

**DIMENSIONS REEL (2500 PIECES/REEL)**
**Application Notes**

**Extraction Tool**

Part Number: 1775231-1

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**Mating/Unmaking — Cable Plugs**

1) To mate the connectors, insert the cable plug into the SMT receptacle, making sure the cable plug is as vertical as possible and the mating axis of both connectors are aligned. Do not insert on an extreme angle.

2) To unmate the connectors, insert the end portion of the extraction tool under the SMT receptacle connector flanges and pull off vertically in the direction of the mating axis.

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**Permissible Load**

Do not apply excessive load to the cable after the connectors are mated. Please refer to the permissible loads indicated in the figure to the right.

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