This specification specifies the procedure for the assembly of the iBridge Ultra female connector and cables when the Housing and Retainer (secondary lock) is packed in bulk separately.

### 1. Part Description & Component Details

#### 1.1 Female Housing & Retainer

<table>
<thead>
<tr>
<th>Position</th>
<th>Housing Part No</th>
<th>Retainer part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>119971</td>
<td>119981</td>
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</tr>
<tr>
<td>12</td>
<td>119978</td>
<td>119988</td>
</tr>
</tbody>
</table>

The Housing and the Retainer are packaged separately in bulk.
1.1.1 iBridge Ultra Female Housing

1.1.2 iBridge Ultra Retainer

Retainer 2,3,4,5, 6 & 8 position
Without strengthening rib

Retainer 10 & 12 position
With strengthening rib
1.1.3 Female Contact,

SECTION A-A

SECTION B-B

Carrier Layout
2. **Component Preparation**

2.1 **Housing & Retainer**

2.1.1 The Retainer could be locked into the Housing in two positions. In the pre-locked condition & full locked condition

<table>
<thead>
<tr>
<th>Pre-locked condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Pre-locked condition" /></td>
</tr>
<tr>
<td><img src="image2.png" alt="Retainer latch position in pre-locked condition" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full locked condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Full locked condition" /></td>
</tr>
<tr>
<td><img src="image4.png" alt="Retainer latch position in full locked condition" /></td>
</tr>
</tbody>
</table>
2.1.2 Assemble the Retainer as shown below to the **pre-lock condition**. Do not press the Retainer fully.

2.1.3 Errors in pressing to pre-lock condition

- Pressed to full lock condition
- Pressed one side to full locked condition
2.1.4 In case the Retainer is pressed to full locked condition before inserting the contact, use a small soft tool to deflect the latch of the Retainer through the Housing window and push down it to the pre-lock condition. Please check for any damages on the Retainer. Replace the Retainer if required.

Soft tool with 1.0 -1.3mm diameter round cross section recommended.

2.2 Cable
AWG 22 (=0.35mm²) & AWG 24 (=0.22mm²) discrete cables can be crimped with the female contacts.
The insulation diameter of the cable cannot be more than 1.6mm
The recommended cable stripping length is 2.8mm.
Common defects in cable preparation

- Strand damage
- Strand damage
- Wire separation (Bird caging)

2.3 Crimping

2.3.1 Crimping should meet requirements as per USCAR-21

Cable pull out force
1. AWG 22: 50 N min (USCAR-21)
2. AWG 24: 28 N min (IEC 60512-16-4)

Recommended crimping dimensions

<table>
<thead>
<tr>
<th>Crimping Dimensions</th>
<th>Conductor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AWG 22</td>
</tr>
<tr>
<td>Crimping Height</td>
<td>0.70 ±0.05</td>
</tr>
<tr>
<td>Crimping Width</td>
<td>1.22 ±0.03</td>
</tr>
</tbody>
</table>
2.3.2 Common defects on crimping. Discard the crimped contact if it is damaged.

- Terminal bent down
- Terminal bent up
- Terminal bent sideways
- Primary lock lance deformed
- Uncrimped conductor
3. Cable Assembly

3.1 Check the orientation of the contacts

3.2 Insert the cable straight into the Housing

3.3 Push the contact into the Housing all the way. The crimped contact should be in-line to the Housing cavity for easy insertion

3.4 Check that the Contact Primary lock lance is properly engaged.
3.5 Continue to assemble all the contacts in a similar way
3.6 Before pressing the Retainer down to activate the secondary lock feature, make sure the contacts are properly inserted in the correct position as shown below.

3.7 The Retainer should not be pressed down if any of the contacts are inserted wrongly or not fully inserted as shown in the figure below.

3.8 Once all the contacts are properly inserted in the correct position, press down the Retainer to activate Secondary lock feature.
4. Assembled part

4.1 Full locked conditions

4.2 When the Retainer is fully pressed it will lock the contact in position.

4.3 For the laying of the cable above the female connector, the recommended bending radius is 5 times the cable diameter.
4.4 Final Assembly Dimensions