# REVISIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
<th>DATE</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Initial Release</td>
<td>09/01/2009</td>
<td>JS</td>
</tr>
</tbody>
</table>

## SHEET REVISION STATUS

All sheets are at the same revision.

<table>
<thead>
<tr>
<th>ORIGINATOR:</th>
<th>DATE</th>
<th>FSC: 5935</th>
</tr>
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<tbody>
<tr>
<td>Mary Morrow</td>
<td>09-01-09</td>
<td>Connector, Electrical, RF, Twinaxial, Microminiature</td>
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ADDITIONAL APPROVAL:

<table>
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<tr>
<th>Code 562 APPROVAL:</th>
<th>DATE</th>
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</thead>
<tbody>
<tr>
<td>Rich Williams</td>
<td>09-01-09</td>
</tr>
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
GREENBELT, MD 20771

CAGE CODE: 25306
1.0  SCOPE

1.1  Scope. This specification establishes the performance, design, development, and verification requirements for an ultraminiature, differential contact, twinaxial connector for termination of 100 ohm differential twinaxial cable, as defined in Figure 4 herein. Connectors delivered to this specification are intended for use in high-reliability space flight applications.

1.2  Part or Identifying Number. Connectors procured in compliance with this specification shall be identified by a Goddard part number having the following form:

<table>
<thead>
<tr>
<th>GSFC Part Identifier</th>
<th>Dash Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G311P835</td>
<td>–XX (reference paragraph 6.2 herein)</td>
</tr>
</tbody>
</table>

2.0  APPLICABLE DOCUMENTS

2.1  Government specifications, standards, and handbooks. The following Government specifications, standards, and handbooks form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, in effect on the date of the contract or purchase order.

STANDARDS

Military

MIL-STD-1285  Marking of Electrical and Electronic Parts

SPECIFICATIONS

Military

MIL-PRF-49142  Connector, Triaxial, Radio Frequency, General Specification for

Federal

A-A-59588  Commercial Item Description; Rubber, Silicone
2.2 **Non-Government Publications.** The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents that are DoD adopted are those listed in the issue of the DoDISS in effect on the date of the contract or purchase order. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents in effect on the date of the contract or purchase order.

**American Society for Testing and Materials (ASTM)**

- ASTM A582  Stainless Steel Bars
- ASTM B16  Brass Alloy Rod & Bar.
- ASTM B196  Copper-Beryllium Alloy Rod and Bar.
- ASTM D 1710  Extruded PolyTetraFluoroEthylene (PTFE) Rod, Heavy Walled Tubing and Basic Shapes

**American National Standards Institute (ANSI)**


**Joint Industry Standard**

- J-STD-004  Requirements for Soldering Fluxes.
- J-STD-005  Requirements for Soldering Pastes.

**Electronics, Components, Assemblies and Materials Association (ECA)**

ECA/EIA-364-21  Insulation Resistance Test Procedure for Electrical Connectors, Sockets, and Coaxial Contacts.

ECA/EIA-364-27  Mechanical Sock (Specified Pulse) Test Procedure for Electrical Connectors.


**International Organizations for Standards (ISO)**


**Society of Automotive Engineers (SAE)**

SAE-AMS-QQ-N-290  Nickel Plating


Copies of DoD adopted non-Government standards are available to military activities through the DoD Single Stock Point, Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094. Military activities may obtain copies of non-DoD adopted documents from the sponsoring Industry Association. Non-military activities may obtain copies of non-Government standards and publications from the sponsoring industry organization.

### 2.3 Order of Precedence.
In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.
3.0 REQUIREMENTS

3.1 Absolute Maximum Ratings. Extended operation at the maximum levels may degrade device performance and affect reliability.

- Maximum temperature: -60°C to +165°C
- Maximum contact Current Rating 1.5 AMPS DC
- Maximum voltage: 100 VDC @ 5 MHz from contact to contact
- 200 VDC @ 5 MHz from a contact to the outer shell.

3.2 Individual Item Requirements. Individual item requirements shall be as specified herein. Connectors supplied to this specification shall meet all performance requirements specified herein, under all combinations of environmental conditions and input voltages as specified herein.

3.3 Parts, Materials and Processes. Parts, materials and processes used to build the Connector shall be as specified herein. However, when materials, parts, or processes are not specified explicitly, materials, parts and processes shall be used which will enable the Connector to meet the performance requirements of this drawing. Acceptance or approval of any constituent material or component shall not be construed as a guarantee for acceptance of the finished product.

3.4 Electrical Requirements

3.4.1 Permeability. When connectors are tested in accordance with paragraph 4.7.4, the permeability (m\(\mu\)) shall be less than 2.0.

3.4.2 Dielectric Withstanding. When connectors are tested in accordance with paragraph 4.7.3, there shall be no evidence of breakdown.

3.4.3 Insulation Resistance. When connectors are tested as specified in paragraph 4.7.5, the insulation resistance shall not be less than 5,000 megohms (M\(\Omega\)) minimum. Following the environmental tests, insulation resistance shall not change from the initial requirement.

3.4.4 Contact Resistance. When tested as specified in 4.7.12, contact resistance shall not exceed the limits on Table 1.

3.5 Mechanical and Environmental Requirements

3.5.1 Shock. When connectors are tested as specified in paragraph 4.7.10, there shall be no electrical interruptions exceeding 1.0 microsecond (\(\mu\)s). There shall not be any evidence of visual or mechanical damage after the test.
3.5.2 **Vibration.** When connectors are tested in accordance to paragraph 4.7.11, there shall be no electrical interruptions exceeding 1.0μs. There shall be no evidence of visual mechanical damage after the test.

3.5.3 **Thermal Shock.** When connectors are tested in accordance to paragraph 4.7.9, there shall be no evidence of visual mechanical damage to the connector and it shall meet the dielectric withstanding voltage requirements.

3.5.4 **Coupling Retention and Cable Retention.** When connectors are tested in accordance with paragraph 4.7.7, the coupling ring shall remain intact and cable will be retained to the connectors without breaks in continuity.

3.5.5 **Force to Engage and Disengage.** When tested in accordance with paragraph 4.7.6, during the engaging cycle, the torque necessary to fully engage the connectors shall not exceed that specified. Upon completion of engagement, an opposite force necessary for disengagement shall be applied. Full engagement shall not damage the contacts or dislodge the connector components.

3.5.5.1 **Socket Contacts.** The force necessary to fully engage the center socket contacts shall not be greater then 12.0 ounces (3.33 N). The force necessary to separate the sockets shall not be less than 0.5 ounces (139mN).

3.6 **Material and Finish Requirements**

3.6.1 **Plug Bodies, All Contacts, and Other Metal Parts.**

3.6.1.1 **Materials.** Shall be beryllium copper per ASTM B196, alloy UNS C17200 or UNS C17300, temper TD04.

3.6.1.2.1 **Finish.** Shall be plated to a minimum of 50 micro-inches (1.25μm) of gold in accordance with ASTM B488, type II, code C, class 1.25, over 50 micro-inches (1.25μm) minimum of nickel in accordance with SAE-AMS-QQ-N-290, class 1.

3.6.1.3 **Dust Caps.** One black conductive polyethylene dust cap shall be supplied with each connector.

3.6.2 **Jack Body and Outer Metal Parts**

3.6.2.1 **Materials:** Stainless steel per ASTM-A582, Alloy UNS S30300.

3.6.2.2 **Finish:** Gold plated per ASTM-B488 Type II Class 1.25, minimum.

3.6.3 **Jack Bushing**

3.6.3.1 **Materials.** Brass in accordance with ASTM B16, alloy UNS C36000, half hard.
3.6.3.2 **Finish.** The connector finish shall be gold plated in accordance with ASTM B488 Type II Class 1.25, to a minimum thickness of 50 µin (1.25 µm), over 50 µin (1.25 µm) minimum of nickel in accordance with SAE-AMS-QQ-N-290, Class I.

3.6.4 **Connector Insulators.** The connector Insulator shall be PolyTetraFluoroEthylene (PTFE) per ASTM D 1710.

3.6.5 **Connector O-Ring.** (Jack Only). Shall be silicone rubber per A-A-59588, grade 50. O Ring Shall be Vacuum Baked at 10⁻⁵ torr, minimum, at 171°C, minimum, for 24 hours, minimum, prior to installation in the connector.

3.6.6 **Potting Compound.** (Solder Jack Only). Emerson & Cuming Stycast 2850 FT. Alternate material shall require written approval from the procuring activity.

3.6.7 **Outgassing.** All non metallic materials used in fabrication of these connectors shall meet Collectible Volatile Condensable Material (CVCM) of ≤0.10 % and a Total Mass Loss (TML) of ≤1%. If material does not meet these acceptance levels, they must be tested in accordance to paragraph 4.7.8 herein.

3.6.8 **Prohibited Materials.** Materials, such as silver plating, pure tin, zinc, and cadmium shall not be used to construct the connector.

3.7 **Design, Construction, and Physical Dimensions.** The design, construction, and physical dimensions of the connector shall be specified in Figure 1 for part number S311P835-01 Figure 2 for part number S311P835-02, and Figure 3 for part number S311P835-03.

3.7.1 **Screw Threads.** Screw threads shall be in accordance with figures 1, 2 and FED-STD-H28 unless otherwise specified

3.7.2 **Coupling Proof Torque.** The Coupling Proof Torque shall be a maximum of 5.2 inch-lbs (0.58Nm).

3.7.3 **Accommodating cable.** Connectors covered by this specification are intended to be terminated to 100 ohm, twinaxial cable, with the configuration as shown in Figure 4 herein.
3.8 **Marking.** Devices that have been subjected to and passed the quality assurance requirements of this drawing shall be marked in accordance with MIL-STD-1285, Method I, and shall include the following, as a minimum.

- a. Procurement part number as specified in paragraph 6.2 herein
- b. Vendor cage code or identifying information
- c. Date/lot code

3.9 **Certificate of Conformance.** A certificate of conformance, signed by the quality assurance representative of the manufacturer, shall accompany each shipment of connectors delivered against this specification.

3.10 **Workmanship.** The connector’s components shall be free of defects.
- Body cracks: chips, or plating defects
- Contact Elements: cracks, thinned areas, cracked or spread elements, plating defects
- Insulation: cracks, chips, or voids; threads: nicks, cracks, or plating defects
- Markings: illegible or incomplete

3.11 **Resistance to Soldering Heat and Solderability.** When tested in accordance with paragraph 4.7.13, proper wetting of the solder joints shall be exhibited, and there shall not be any reflow of insulating dielectric materials.

### Table I. Electrical Performance Table.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>Contact to contact: 250 VDC min.</td>
</tr>
<tr>
<td></td>
<td>Each contact to outer shell: 500 VDC min.</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-60°C to +165°C</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>5,000 MΩ min. with applied voltage:</td>
</tr>
<tr>
<td></td>
<td>Each contact to outer shell: 125 VDC</td>
</tr>
<tr>
<td>Contact Current Rating</td>
<td>1.5 Amps DC at 125°C max.</td>
</tr>
<tr>
<td>Permeability (mμ)</td>
<td>2.0 Max</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>55mΩ</td>
</tr>
</tbody>
</table>
**Figure 1:** Micro Twinax Bulkhead Cable Jack

Note: Cable shown for reference only, supplied separately.
Figure 2: Micro Twinax Cable Plug
Note: Cable shown for reference only – supplied separately
Figure 3: Micro Twinax Bulkhead Jack
CONSTRUCTION
1. CONDUCTOR: .019 ± .002 AWG 26, 19/38 AWG, SILVER-COATED COPPER WIRE
2. DIELECTRIC: .047±.003 EXPANDED PTFE, COLOR WHITE, LIGHT BLUE
3. SHIELD 1: .050±.003 x .996±.003 ALUMINUM NYLAR
4. SHIELD 2: .065±.004 x .109±.004 AWG 40, SPC WIRE
5. JACKET: .085±.005 x .130±.005 EXTRUDED FEP, COLOR RED

ELECTRICAL PARAMETERS
IMPEDEANCE: 100 ±10 OHMS (MEASURED DIFFERENTIALLY)
55 ±5 OHMS (MEASURED SIG. TO SIG.)
CAPACITANCE: 13.5 MAX pF/FT (MEASURED SIG. TO SIG.)
VOL. OF PROPAGATION: % OF AIR 85% NOM.
DIELECTRIC STRENGTH: 500 V/MKS
TIME DELAY: 1.28 ns MAX
INDUCTANCE: .12 uH (SIGNAL TO SIGNAL) NOM.
RESISTANCE: 30 OHMS/1,000 FT (SIG.)
SKW (max): 10 ps/FT
ATTENUATION (NOM.)
FREQ. (MHz)
ATTEN. (dB/100 ft)

100 200 500 1,000
8 10 20 30

MINIMUM BEND RADIUS: .560 inches
WEIGHT PER 1,000 FT: 9.2 LBS NOM.

Figure 4: Twinax Cable
## Table II. Group A Inspection

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Test Description</th>
<th>Requirement Paragraph</th>
<th>Test Paragraph</th>
<th>Reference Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subgroup 1: 100% Screening Tests</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Visual Examination / Workmanship</td>
<td>3.10</td>
<td>4.7.1</td>
<td>EEE-INST-002, Sect. C2, Table 4A</td>
</tr>
<tr>
<td><strong>Subgroup 2: Sample Tests 3 (0)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mechanical/Dimensional Examination</td>
<td>3.10 &amp; 3.7</td>
<td>4.7.2</td>
<td>Figures 1 &amp; 2</td>
</tr>
<tr>
<td>3</td>
<td>Plating Thickness &amp; Adhesion</td>
<td>3.6</td>
<td>4.3.1</td>
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</tr>
<tr>
<td>4</td>
<td>Dielectric Withstanding Voltage (DWV, Sea Level)</td>
<td>3.4.2</td>
<td>4.7.3</td>
<td>ECA/EIA-364-20 Method C</td>
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<tr>
<td>5</td>
<td>Insulation Resistance</td>
<td>3.4.3</td>
<td>4.7.5</td>
<td>ECA/EIA-364-21</td>
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<tr>
<td>6</td>
<td>Force to Engage/Disengage</td>
<td>3.5.5</td>
<td>4.7.6</td>
<td>SAE-AS-39029</td>
</tr>
</tbody>
</table>

### Notes:

1/ Tests shall be performed in the order shown.

2/ Subgroup 2 sample tests are to be performed on three mated pairs, that have been assembled to flexible twinaxial cable as defined in Figure 4 herein.
### Table III. Qualification Requirements 1/, 2/

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Requirement Paragraph</th>
<th>Test Paragraph</th>
<th>Test Specification</th>
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<tbody>
<tr>
<td><strong>Pre-Production Examinations</strong></td>
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<tr>
<td>Materials Analysis</td>
<td>3.6</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Outgas Testing</td>
<td>3.6.5</td>
<td>4.7.8</td>
<td>ASTM E595</td>
</tr>
<tr>
<td>Permeability</td>
<td>3.4.1</td>
<td>4.7.4</td>
<td>ASTM A342</td>
</tr>
<tr>
<td><strong>Group 1: Sample Size 3 (0)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual and Mechanical Examination</td>
<td>3.10 &amp; 3.7</td>
<td>4.7.1 and 4.7.2</td>
<td>EEE-INST-002, Sect. C2, Table 4A</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>3.4.3</td>
<td>4.7.5</td>
<td>ECA/EIA-364-21</td>
</tr>
<tr>
<td>Contact Force to Engage/Disengage</td>
<td>3.5.5</td>
<td>4.7.6</td>
<td>SAE-AS-39029</td>
</tr>
<tr>
<td><strong>Group 2: Sample Size 3 (0)</strong></td>
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<td></td>
</tr>
<tr>
<td>Resistance to Soldering Heat and Solderability</td>
<td>3.11</td>
<td>4.7.13</td>
<td>J-STD-004, J-STD-005</td>
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<tr>
<td>Coupling and Cable Retention</td>
<td>3.5.4</td>
<td>4.7.7</td>
<td>EEE-INST-002, Sect. C2 Table 31</td>
</tr>
<tr>
<td>Vibration Testing</td>
<td>3.5.2</td>
<td>4.7.11</td>
<td>ECA/EIA-364-28, Condition III</td>
</tr>
<tr>
<td>Shock (Specified Pulse)</td>
<td>3.5.1</td>
<td>4.7.10</td>
<td>ECA/EIA-364-27, Condition E</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>3.5.3</td>
<td>4.7.9</td>
<td>ECA/EIA-364-32, Condition III</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>3.4.4</td>
<td>4.7.12</td>
<td>SAE-AS-39029 , Paragraph 4.7.5 and Table V.</td>
</tr>
</tbody>
</table>

**Table III Notes:**

1/ Tests shall be performed in the order shown.

2/ Connector Inspection Lots subjected to Qualification testing shall have successfully completed 100% Group A screening inspection per Table II. Qualification tests are to be performed on three mated pairs, that have been assembled to flexible twinaxial cable as defined in Figure 4 herein.
4.0 QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection. Unless otherwise specified in the contract purchase order, the manufacturer of the connector is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the procuring activity retains the right to witness or re-perform such inspections, where witnessing or re-performing such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Test Equipment and Inspection Facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality, and quantity to permit performance of the required inspection, shall be established and maintained by the manufacturer. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with ISO-10725:2000, ANSI/NCSL Z540-1-1994 (R2002), or other approved specification.

4.2 Classification of Inspections. The inspections specified herein shall be classified as follows.

a. Materials inspection.
b. Conformance inspection.
e. Qualification testing.

4.3 Material Inspection. Material inspection shall consist of certification supported by verifying data that the materials used in fabricating the device are in accordance with paragraph 3.6 herein and the applicable referenced specifications or requirements. Material inspection shall be completed prior to the start of fabrication.

4.3.1 Plating Thickness and Adhesion. Plating thickness shall be verified in accordance with paragraph 3.6. Plating adhesion shall be verified by placing adhesive tape over plated surface and pulling from contacts and body. There shall not be any gold plating stuck to the tape.

4.4 Conformance Inspection

4.4.1 Inspection of Product for Delivery. Inspection of product for delivery shall consist of Group A inspection.

4.4.2 Inspection Lot. An inspection lot shall consist of all connectors of the same PIN produced under essentially the same conditions, and offered for inspection at one time.

4.4.3 Group A Screening Inspections. These shall consist of the inspections specified in table II, performed in the order shown. Inspection lots submitted to qualification testing must have successfully completed Group A inspection.
4.5 **Qualification Testing.** Qualification shall consist of the testing specified in Table III herein. Qualification shall be required on a minimum of three (3) mated pair test samples.

4.6 **Disposition of Sample Units.** Sample units, which have been subjected to the qualification inspection specified herein, shall not be delivered as flight material. Qualification samples shall be packaged separately from the deliverable flight hardware, clearly marked as non-flight qualification samples, and delivered with the final qualification data package.

4.7 **Methods of Examination and Test.** The methods for examination and test shall be as specified herein and as otherwise specified.

4.7.1 **External Visual Inspection.** Shall be performed per EEE-INST-002; section C2; Table 4A. Rejectable defects shall include, but are not limited to, the items noted in 3.10.

4.7.2 **Mechanical Inspection.** Dimensions shall be measured and conform to Figures 1, 2, or 3 herein, as applicable.

4.7.3 **Dielectric Withstanding Voltage.** Two samples shall be assembled with 100 ohm test cable meeting the dimensions shown in Figure 4 herein; 2ft (0.6m) minimum per ECA/EIA-364-20. Apply voltage as listed in Table I.

4.7.4 **Permeability.** Testing shall be performed per ASTM A342 using the voltages as listed in Table I.

4.7.5 **Insulation Resistance.** Testing shall be performed per ECA/EIA-364-21, except the magnitude and placement of the test voltages shall be as listed in Table I.

4.7.6 **Force to Engage/Disengage.** Testing shall be performed per MIL-PRF-49142 paragraph 4.6.2.1. Longitudinal force not applicable; applied torque: 2.5 inch-lb (0.28Nm) max.

4.7.7 **Coupling Retention and Cable Retention.** Apply a torque of 4.0 inch-lb (0.45Nm) to the connector mated to its mating connector or a test jig. After 1 minute, the connector shall be disengaged. Re-mate connectors and tighten to a torque of 2.6 inch-lb (0.29Nm). Apply a force of 2.5 pounds (0.28Nm) longitudinally to the mated connector for 1 minute.

4.7.8 **Outgas Testing.** Materials shall be tested in accordance with ASTM E595.

4.7.9 **Thermal Shock.** Testing shall be performed per ECA/EIA-364-32; Table 2, test condition III (-65°C to +125°C) Following thermal shock, the DWV test of 4.7.3 shall be repeated.
4.7.10 **Shock.** Testing shall be performed per ECA/EIA-364-27 test condition E. Connectors shall be mounted using normal means.

4.7.11 **Vibration.** Testing shall be performed per ECA/EIA-364-28, condition III.

4.7.12 **Contact Resistance.** When tested in accordance with SAE-AS39029, the inner contact resistance from terminal end to terminal end shall be 55 milliohms maximum. The test current shall be 1 ampere +/- 10%.

4.7.13 **Resistance to Soldering Heat and Solderability.** Samples shall be terminated to cable with the use of Sn63Pb27 solder per J-STD-005 and type ROL1 flux per J-STD-004. Following the terminations, the solder shall be thoroughly cleaned and inspected for proper wetting.

4.8 **Acceptance Data Package.** One copy of the Acceptance Data Package shall be delivered with each shipment of flight connectors. The data package shall contain the following information, as a minimum.

b. Attribute summary for Group A inspection.
c. Attribute summary for qualification tests.

5.0 **PACKAGING**

5.1 **Packaging Requirements.** Connectors shall be clean, dry, and packaged individually in an electrostatic discharge (ESD) safe packaging in a secure manner that will afford adequate protection against corrosion, deterioration, and physical damage during common carrier shipment to the procuring activity. These packages shall conform to the applicable carrier rules and regulations.

5.2 **Assembly Instructions.** Assembly instructions shall be provided with each delivered connector.

6.0 **NOTES**

6.1 **Notice.** When GSFC drawings, specification, or other data are used for any purpose other than in connection with a definitely related GSFC procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; the fact that GSFC might have formulated, furnished, or in any way supplied the said drawings, specification, or other data is not to be regarded by implication or otherwise in any manner licensing the holder or any person or corporation, or conveying any right or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.
6.2 **Approved Source(s) of Supply.** Identification of the suggested source(s) of supply hereon is not to be construed as a guarantee of present or continued availability as a source of supply for the item. Parts shall be purchased only from a source of supply, as listed on the latest revision of the GSFC QPLD.

<table>
<thead>
<tr>
<th>Type</th>
<th>Procurement Part Number</th>
<th>Vendor Similar Part Number 1/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Jack</td>
<td>311P835-01</td>
<td>014134-5008</td>
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<tr>
<td>Cable Plug</td>
<td>311P835-02</td>
<td>014034-2038</td>
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<tr>
<td>Bulkhead Jack</td>
<td>311P835-03</td>
<td>014100-5002</td>
</tr>
</tbody>
</table>

1/ **Caution.** Do not use this part number for item acquisition. Connectors acquired to this part number may not satisfy the performance requirements of this specification.

<table>
<thead>
<tr>
<th>Vendor CAGE Code</th>
<th>Vendor Name and Address</th>
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<tbody>
<tr>
<td>58795</td>
<td>Sabritec</td>
</tr>
<tr>
<td></td>
<td>17550 Gillette Avenue</td>
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<tr>
<td></td>
<td>Irvine, CA 92614-5610</td>
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