1.0 SCOPE
Product performance and test methods for Micro-Coaxial connectors

2.0 PRODUCT DESCRIPTION
Micro-Coaxial Connector

3.0 RATINGS

A. VOLTAGE
60 Vrms

B. TEMPERATURE
-40°C TO +90°C

C. OPERATING FREQUENCY
DC to 6 GHz

D. IMPEDANCE
50 OHM

E. VSWR
1.3 MAX (DC to 6 GHz)
4.0 TEST CONDITION
Unless otherwise specified all tests performed in accordance with MIL-STD-202

5.1 ELECTRICAL:

(1) Contact Resistance:
A. Measure contact resistance of mated pair.
B. Requirement:
- Inner contact: 20 mΩ MAX
- Outer contact: 10 mΩ MAX

(2) Insulation Resistance:
A. Apply 100V between inner and outer contacts in accordance with MIL-STD-202, Method 302.
B. Requirement:
- 500MΩ MIN

(3) Dielectric Withstand Voltage:
A. Apply AC 200 Vrms between inner and outer contact in accordance with MIL-STD-202, Method 301.
   A leakage current 6mA MAX.
B. Requirement: No breakdowns or damage to connector.

(4) VSWR
A. Measure VSWR as shown below (or using equivalent setup) from DC to 6 GHz
B. Requirement: 1.3 MAX (DC TO 6 GHz) for mated pair
5.2 MECHANICAL:

(1) Mating & Unmating Force
A. Mate cycle parts 30 times.
B. Requirements:
Mating force: Initial 20N MAX. After 30 cycles 15N MAX.
Unmating force: Initial 5N MIN. After 30 cycles 1.5N MIN.

(2) Durability :
A. Mate cycle parts 30 times.
B. Requirements:
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(3) Cable retention force (Mated status):
A. Testing: apply force on the cable as shown in Fig.3 with 100mA applied.
B. Requirements:
Appearance: No looseness, chipping, breakage or other damage.
Electrical: No discontinuity greater than 1 microsecond.

Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX

(4) Vibration
A. Apply the following vibration profile to mated connector pair while 100mA current is applied:
   Frequency: 10Hz → 100Hz → 10Hz/ 15minutes
   Half amplitude, peak value of acceleration: 1.5mm or 59m/s² (6G)
   Axes: 3 mutually perpendicular directions, 5 cycles (75min) for each direction
B. Requirements:
   Appearance: No looseness, chipping, breakage or other damage.
   Electrical: No discontinuity greater than 1 microsecond.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(5) Shock
A. Apply profile below to mated pair in accordance with MIL-STD-202, Method 213, condition B. During testing apply DC 100mA.
Peak value of acceleration: 735m/s² (75G)
Duration: 11 milliseconds
Wave Form: Half sinusoidal
Directions: 6 mutually perpendicular directions, 3 cycles in each direction

B. Requirement
Appearance: No looseness, chipping, breakage or other damage.
Discontinuity: No discontinuity greater than 1 microsecond.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(6) Cable crimp strength
A. Testing: Pull cable as shown below.

B. Requirements:
No damage after 4N pull force.

5.3 ENVIRONMENTAL:

(1) Thermal shock
A. Testing: Apply the following profile for 5 cycles:
-40°C/30 minutes → 5~35°C/5 minutes MAX. → 90°C/30 minutes → 5~35°C/5 minutes MAX.

B. Requirements:
Appearance: No looseness, chipping, breakage or other damage.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
Insulator resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.
(2) **Humidity**
A. Testing: Apply the following profile in accordance with MIL-STD-202, Method 103, Condition B:
   - Temperature: 40±2°C
   - Humidity: 90~95%
   - Duration: 96 hours

B. Requirements:
   - Appearance: No looseness, chipping, breakage or other damage.
   - Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
   - Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
   - Insulator resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.

(3) **High Temperature Life**
A. Testing: Apply the following profile:
   - Temperature: 90±2°C
   - Duration: 96 hours

B. Requirements:
   - Appearance: No looseness, chipping, breakage or damage.
   - Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
   - Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(4) **Salt spray**
A. Testing: Apply the following profile in accordance with MIL-STD-202, Method 101:
   - Temperature: 35±2°C
   - Salt percentage (by weight): 5±1%
   - Duration: 48 hours

B. Requirements:
   - Appearance: No exposure of base metal on interface or mating surface.
   - Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
   - Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
   - Insulation resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.