



11/07/2023

Subject: USCAR-17 Revision 5 Letter #4

Changes have been made to USCAR-17 as described below. Comments and questions can be sent to EWCAP@uscar.org.

Situation:

The test to ensure electrical continuity under mechanical load (USCAR-17 section 4.2.1.2) tests with an applied force higher than is anticipated in applications with small cables such as RG174. A change to the applied force can be made to align the test force to the application force. An existing table is in USCAR-17, that defines the cable braid crimp strength (4.2.6.4 #9), can be used to define a limit on the applied force.

Resolution:

The following changes have been made to the test method in USCAR-17. The changed part is highlighted:

Clause 4.2.1.2 #4 is changed to “Increase the pull force at a uniform rate not to exceed 50mm/min until the force equals 110N, or the applicable value in USCAR-17 Table #4.2.6.5-B, whichever is lower, as shown below.

4.2.1.2 Procedure

1. Prepare Connector Under Test (CUT) assemblies for each cable being qualified per Procedure 4.4.2.2, Steps 1 through 7
2. Attach a continuity tester to check continuity through both the center contact and shield of the mated connector pair.
3. Subject Inline, Board and Panel Mount connection systems to a direct pull force parallel with the axis of the cable. Any method can be used. If an SMA connector is present for testing, gripping on the SMA connectors can be effective. For samples prepared for SWR measurement (per 4.4.2.2, Note C), it is also acceptable to wrap the cable around a 2-inch diameter mandrel, securing the cable to the mandrel with electrical tape or some other suitable means. Board mount connectors may have the circuit board end firmly attached to a suitable fixture.
4. Increase the pull force at a uniform rate not to exceed 50mm/min until the force equals 110N. **or the applicable value in USCAR-17 Table #4.2.6.5-B, whichever is lower.**
5. Hold the force for 5 seconds while monitoring for continuity.
6. Additional Board and Panel Mount testing only. Grab far-end SMA connector (or other available area) and apply 75N of force in the following directions using the same test sample: 1C, 3C, 5B, 7B, 8C (per Figure 4.2.1.2.). The sequence of force application is not mandatory. Direction vectors B and C revolve 360° around the connector