
ARINC, High Frequency, Coaxial Contacts

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for TE Connectivity (TE) ARINC*, High Frequency, Coaxial Contacts. The high frequency coaxial contacts are available in both pin and socket contact design, and are designated for size 5 and size 12 ARINC* inserts.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. TE Connectivity (TE) Documents

- [501-134046](#): Qualification Test Report (SMP Male and Female Uncabled Connectors)
- [408-32166](#): Instruction Sheet (High Frequency Coaxial Contacts Size 5 and Size 12 for Arinc* Connectors)

2.2. Industry Document

EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications

2.3. Reference Document

109-197: Test Specification (TE Test Specifications vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

- Voltage: 325 volts AC
- Current: Signal application only
- Temperature: -65 to 85°C
- Characteristic Impedance: 50 ohms
- Frequency Range: DC to 5 GHz

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

3.5. Test Requirements and Procedures Summary

Test Description	Requirements	Procedures
Initial examination of product	Meets requirements of product drawing.	EIA-364-18. Visual examination and dimensional (C of C) inspection per product drawing.
Final examination of product	Meets visual requirements.	EIA-364-18. Visual examination.
ELECTRICAL		
Low Level Contact Resistance (LLCR)	10 milliohms maximum initial for center contact. 2 milliohms maximum initial for outer contact. ΔR 5 milliohms final.	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage.
Voltage Standing Wave Ratio (VSWR)	1.5:1 maximum, DC to 5 GHz	EIA-364-108. Measure VSWR of product between DC and 5 GHz
Insulation resistance	5000 megohms minimum.	EIA-364-21. 500 volts DC, 2 minute hold.
Withstanding voltage	One minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 750 volts AC at sea level for size 5 325 volts AC at sea level for size 12
MECHANICAL		
Sinusoidal vibration	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28, Test Condition IV. Subject mated specimens to 10 to 2000 to 10 Hz traversed in 20 minutes with 1.5 mm maximum total excursion. Four hours in each of 3 mutually perpendicular planes.

Figure 1 (cont)

Test Description	Requirements	Procedures
Mechanical shock	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-27, Test Condition G. Subject mated specimens to 100 G's sawtooth shock pulses of 6 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Durability	See Note.	EIA-364-9. Mate and unmate specimens for 500 cycles at a rate not to exceed 10 cycles per minute.
Mating force	23.0 N maximum	EIA-364-13, Method A. Measure force necessary to mate contact at a maximum rate of 12.7 mm per minute.
Unmating force	1.5 N minimum	EIA-364-13, Method A. Measure force necessary to unmate contact at a maximum rate of 12.7 mm per minute.
ENVIRONMENTAL		
Thermal shock	See Note.	EIA-364-32, Method A Subject mated specimens to 5 cycles between -65 and 85°C.
Salt spray	See Note.	EIA-364-26, Condition B. Subject mated specimens to a salt-laden atmosphere for 48 hours.
Humidity	See Note.	EIA-364-31, Method IV. Subject mated specimens to 10 cycles (10 days) between 25°C and 65 °C and 80% to 100% RH, with cold shock.
Temperature Life	See Note.	EIA-364-17, Method A test Condition 3, test time condition C. Subject mated specimens to 85°C for 500 hours.


NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)				
	1	2	3	4	5
	Test Sequence (b)				
Initial examination of product	1	1	1	1	1
LLCR	3,7	2,4	2,4		
VSWR					2
Insulation resistance				2,6	
Withstanding voltage				3,7	
Sinusoidal vibration	5				
Mechanical shock	6				
Durability	4				
Mating force	2				
Unmating force	8				
Thermal shock				4	
Salt spray			3(c)		
Humidity				5	
Temperature life		3(c)			
Final examination of product	9	5	5	8	3



NOTE

(a) Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Each test group shall consist of a minimum of four (4) specimens.

(b) Numbers indicate sequence in which tests are performed.

(c) Precondition with 10 cycles of durability.

Figure 2