

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for AMP* commercial coaxial BNC T adapter. This adapter is intended for use with two BNC plugs and one BNC jack.

1.2. Qualification

When tests are performed on subject product line, procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents constitute a part of this specification to the extent specified herein. In the event of conflict between requirements of this specification and product drawing, product drawing shall take precedence. In the event of conflict between requirements of this specification and referenced documents, this specification shall take precedence.

2.1. AMP Documents

- A. 109-1: General Requirements For Test Specifications
- B. 109 Series: Test Specifications as indicated in Figure 1. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. Corporate Bulletin 401-76: Cross reference between AMP Test Specifications and Military or Commercial Documents
- D. 501-204: Test Report

2.2. Military Specifications

- A. MIL-C-17: Cable, Coaxial, Radio Frequency
- B. MIL-C-39012: Connectors, Coaxial, Radio Frequency

3. REQUIREMENTS

3.1. Design and Construction

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

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Product Code: 3586

CONTROLLED DOCUMENT This specification is a controlled document per AMP Specification 102-21. It is subject to change and Corporate Standards should be contacted for latest revision.				DR <i>Brent Beckley</i> CHK <i>Charles E. H...</i>		AMP AMP Incorporated Harrisburg, PA 17105-3608	
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3.2. Materials

- A. Contact, female: Beryllium copper or phosphor bronze, gold or silver plated
- B. Dielectric: Polymethylpentene
- C. Shell: Zinc diecast, nickel plated

3.3. Ratings

- A. Voltage: 1500 volts alternating current
- B. Temperature: -55 to 85°C
- C. Characteristic Impedance: 50Ω nominal

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1. All tests performed at ambient environmental conditions per AMP Specification 109-1 unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance, dry circuit.	$\Delta R < 2.5$ milliohms maximum.	Subject mated connector to 50 mv open circuit at 100 ma. See Figure 3. AMP Spec 109-6-1.
Dielectric withstanding voltage.	Test Voltage Altitude 1500 Sea level No breakdown or flashover.	Test between outer and inner contacts of unmated connector assemblies. AMP Spec 109-29-1.
Insulation resistance.	5000 megohms minimum.	Test between outer and inner contacts of unmated connector assemblies. AMP Spec 109-28-4.
Corona.	Less than 5 picocoulombs at 375 volts rms minimum.	Measure connectors for corona at 70000 feet simulated altitude. AMP Spec 109-40.
RF high potential.	1000 volts rms at 5MHz. 1 minute hold. No breakdown or flashover.	Subject mated connectors to 1000 volts instantaneously applied between center contact and outer shell. AMP Spec 109-29-4.

Figure 1 (cont)

Test Description	Requirement	Procedure
MECHANICAL		
Vibration, sinusoidal.	No discontinuities greater than 10 microseconds. See Note (a).	Subject mated connectors to 15 G's between 10 to 2000 Hz traversed in 20 minutes in each of 3 mutually perpendicular planes. AMP Spec 109-21-3.
Mechanical shock.	No discontinuities greater than 10 microseconds. See Note (a).	Subject mated connectors to 100 G's sawtooth pulses of 6 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. AMP Spec 109-26-9.
Mating/unmating force, (torque).	3.5 pounds maximum longitudinal force. 2.5 inch pounds maximum torque.	Measure force necessary to initiate mating of coupling nut of plug. Measure torque necessary to fully couple and uncouple connector. AMP Spec 109-42, Conditions A and B.
Durability.	See Note (a).	Mate and unmate connector assemblies for 500 cycles for beryllium copper contacts and 250 cycles for phosphor bronze contacts at a maximum rate of 600 cycles per hour. AMP Spec 109-27.
Coupling retention.	Plug end only. See Note (a).	Subject mated connectors to axial force applied at rate of 60 pounds per minute maximum and held for 1 minute.
ENVIRONMENTAL		
Thermal shock.	See Note (a).	Subject unmated connectors to 5 cycles between -55 and 85°C. AMP Spec 109-22.

Figure 1 (cont)

Test Description	Requirement	Procedure
Humidity-temperature cycling.	See Note (a).	Subject unmated connectors 10 humidity-temperature cycles between 25 and 65°C at 95% RH. AMP Spec 109-23-4. Condition B.
Mixed flowing gas.	See Note (a).	Subject mated connectors to environmental class II for 20 days. AMP Spec 109-85-2.
Temperature life.	See Note (a).	Subject mated connectors to temperature life at 85°C for 1000 hours duration. AMP Spec 109-43.

- (a) Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests specified in Test Sequence 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)				
Examination of product	1,9	1,5	1,5	1,8	1,4
Termination resistance, dry circuit	3,7	2,4	2,4		
Dielectric withstanding voltage				3,7	
Insulation resistance				2,6	
RF high potential					3
Corona					2
Vibration	5				
Physical shock	6				
Mating/unmating force	2				
Coupling retention	8				
Durability	4				
Thermal shock				4	
Humidity-temperature cycling				5	
Mixed flowing gas			3(c)		
Temperature life		3(c)			

- (a) See Para 4.1.A.
(b) Numbers indicate sequence in which tests are performed.
(c) Precondition samples with 10 cycles durability.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample selection.

Connector housings and contacts shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall consist of 3 T adapters. 3 plugs shall be assembled to 12 inch length of RG 58 C/U coaxial cable that is in accordance with MIL-C-17. Current equalizers shall be attached to center conductor and braid as shown in Figure 3.

B. Test sequence.

Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate requalification testing consisting of all or part of original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based upon verification that product meets requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required prior to resubmittal.

4.4. Quality Conformance Inspection

Applicable AMP quality inspection plan will specify acceptable quality sampling level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.

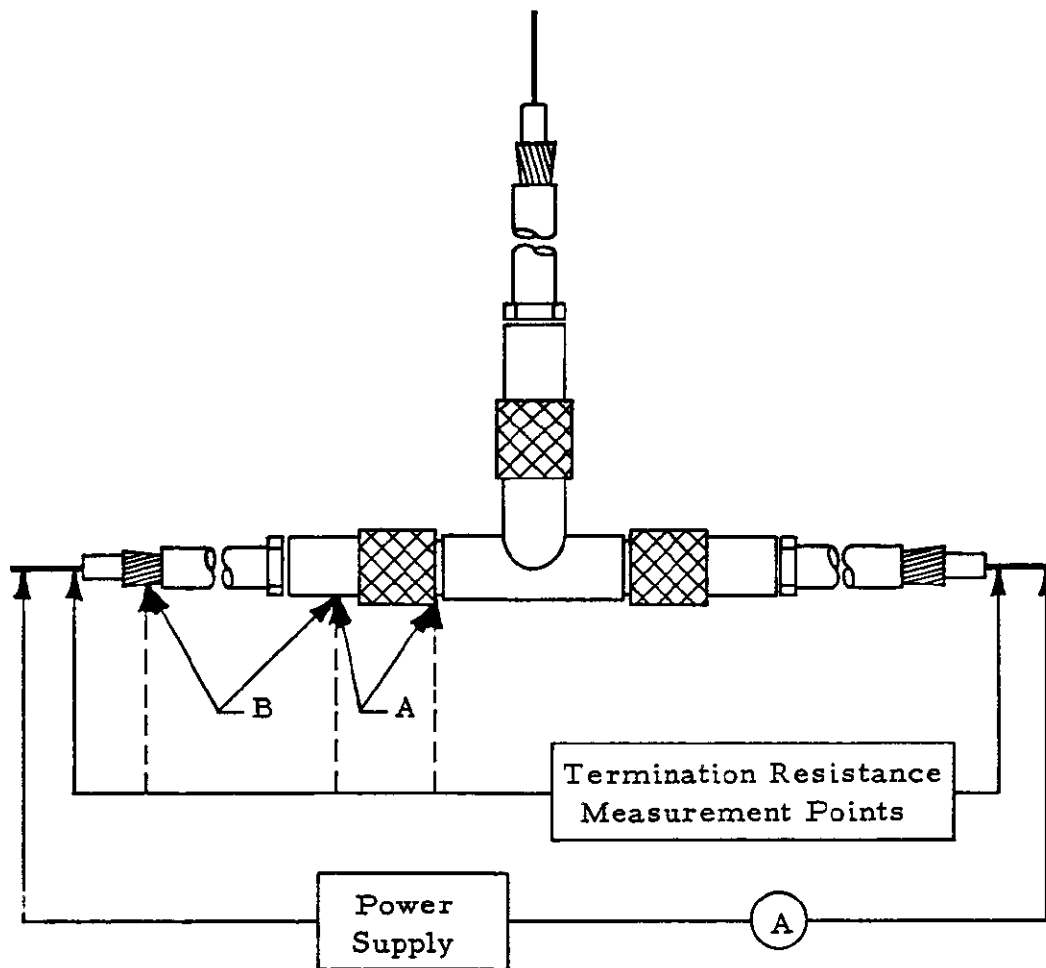
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Note: A - Outer contact probe points.
B - Braid to shell probe points.

Figure 3
Typical Resistance Measurement Points