

Economy RF Coaxial Connector (ZDC)

1. INTRODUCTION

1.1. Purpose

Tests were performed on various Tyco Electronics Economy RF Coaxial Connectors (BNC, TNC, SMA, F, UHF, M-UHF type) to determine its conformance to the requirement of Product Specification 108-112000 Rev .A.

1.2. Scope

This report covers the electrical and mechanical performance of Economy RF coaxial connector .Testing was performed at Shanghai Engineer Center Laboratory between 24Nov08 and 30Dec08.And test file numbers for these testing are TR-60108-E and TR-60110-E .These documentations are on file at and available from the Shanghai Engineer Center Laboratory.

1.3 Conclusion

The connectors listed in paragraph 1.4 conformed to the electrical and mechanical performance requirements of Product Specification 108-112000 Rev.A.

1.4 Test Specimens

Test specimens were representative of normal production lots. Specimens indentified with the following part numbers were used for test(5 pieces each group):

Connector Type	Part Number			
BNC	5-1634503-3 5-1634502-2	5-1634556-0 5-1634500-2	5-1634504-1 5-1634500-2	5-1634504-1 5-1634500-2 5-1634532-1
TNC	5-1814802-3 and 5-1814800-3			
SMA	5-1814832-1 and 1408442-1			
F	5-1814826-1 and 5-1814821-1			
UHF	5-1814816-1 and 5-1814813-1			
M-UHF	5-1814818-1 and 5-1814819-1			

Figure 1

1.5 Environmental conditions

Unless otherwise stated, the following environmental conditions prevailed during testing.

Temperature: 15°C to 35°C
Relative Humidity:25% to 75%

1.6 Qualification Test sequence

Test or Examination	Test Group (a)
	1
	Test Sequence (b)
Initial examination of product	1
LLCR	2,6
Insulation resistance	3
Withstanding voltage	4
Durability	5
Sinusoidal Vibration	7
Mechanical shock	8
Final examination of product	9

NOTE

(a) See paragraph 1.4
 (b) Numbers indicate sequence in which tests are performed.

Figure 2

2. SUMMARY OF TESTING

2.1. Initial Examination of Product

All specimens submitted for testing were representative of normal production lots. A certificate of conformance was issued by Product Assurance. Specimens were visually examined and no evidence of physical damage detrimental to product performance was observed.

2.2 Low Level Contact Resistance (LLCR)

Taken at 100 milliamperes maximum and 20 millivolts maximum open circuit voltage for LLCR measurement, the change in resistance between sequence 2(initially) and sequence 6(conditionally) didn't exceed 3 milliohm for both center contact and out contact.

2.3. Insulation Resistance

All insulation resistance measurement were greater than 5000 megohms.

2.4. Withstanding Voltage

No breakdown or flashover occurred.

2.5 Durability

No physical damage occurred as a result of manually mating and unmating the specimens 50 times.

2.6 Sinusoidal Vibration

No discontinuities were detected during vibration testing. Following vibration testing, no cracks, breaks, or loose parts on specimens were visible.

2.7. Mechanical Shock

No discontinuities were detected during vibration testing. Following mechanical shock testing ,no cracks, breaks, or loose parts on specimens were visible

2.8 Final Examination of Product

Specimens were visually examined and no evidence of physical damage detrimental to product performance was observed.

3. TEST METHODS

3.1 Initial Examination of Product

A C to C was issued stating that all specimens in this test package were produced ,and accepted as conforming to product drawing requirement, and were manufactured using the same core manufacturing process and technologies as production parts.

3.2 Low Level Contact Resistance (LLCR)

LLCR measurements were made using a 4 terminal measuring technique (Figure 3).The test current was maintained at 100 milliamperes maximum with a 20 millivolt maximum open circuit voltage.

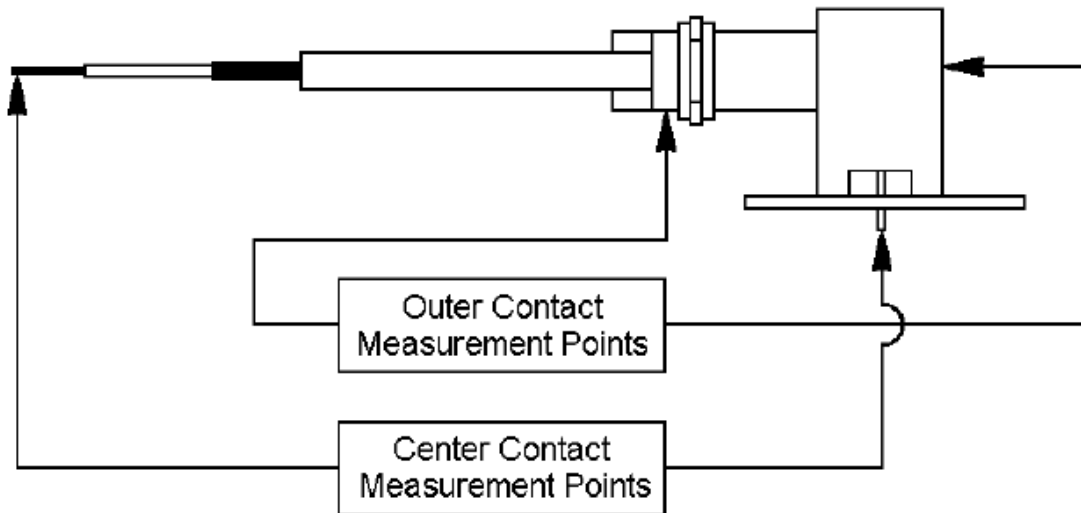


Figure 4
Typical LLCR Measurement Points

3.3 Insulation Resistance

Insulation resistance was measured between signal contact and outer shield of mated specimen .A test voltage of 500 volts DC was applied for 2 minutes before resistance was measured.

3.4 Withstanding Voltage

A test potential was applied between signal contact and outer shield or mated specimens. The potential was applied for 1 minute and then returned to zero.

Potential for BNC,TNC and UHF: 1500 volts AC

Potential M-UHF: 1000 volts AC

Potential SMA and F: 500 volts AC

3.5 Durability

Specimens were manually mated and unmated 50 times.

3.6 Sinusoidal Vibration

Mated specimens were subjected to sinusoidal vibration, have a simple harmonic motion with an amplitude of 1.52mm double amplitude. The vibration frequency was varied uniformly between the limits of 20 and 500 HZ. This cycle was performed for 15 minutes in each of 3 mutually perpendicular planes. Specimens were monitored for discontinuities of 1microsecond or greater using a current of 100 milliamperes DC.

3.7 Mechanical Shock

Subject mated specimens to 30 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. Specimens were monitored for discontinuities of 1microsecond or greater using a current of 100 milliamperes DC.

3.8 Final Examination of Product

Specimens were visually examined for evidence of physical damage detrimental to product performance.