

**AMPMODU\* MTE Right Angle Surface Mount Connector****1. INTRODUCTION**

## 1.1. Purpose

Testing was performed on the AMPMODU\* MTE right angle surface mount connector to determine its conformance to the requirements of AMP Product Specification 108-25034-2 Revision A.

## 1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the AMPMODU MTE right angle surface mount connector. Testing was performed at the Americas Regional Laboratory between 19Nov99 and 03Jan00. The test file number for this testing is CTL A299-002. This documentation is on file at and available from the Americas Regional Laboratory.

## 1.3. Conclusion

The AMPMODU MTE right angle surface mount connector listed in paragraph 1.5., conformed to the electrical, mechanical, and environmental performance requirements of AMP Product Specification 108-25034-2 Revision A.

## 1.4. Product Description

The AMPMODU MTE interconnection system consists of single row housings with contacts preloaded on .100 inch centers.

## 1.5. Test Specimens

Test specimens were representative of normal production lots. Specimens identified with the following part numbers were used for test:

Test Group	Quantity	Part Number	Description
1	10	147278-2	3 position right angle surface mount MTE latching header
	10	103957-2	3 position polarized/latching receptacle
	6	147264-1	5 position right angle surface mount MTE latching header
	6	103957-4	5 position polarized/latching receptacle

Figure 1

## 1.6. Environmental Conditions

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

Temperature: 15 to 35°C  
Relative Humidity: 20 to 80%

1.7. Qualification Test Sequence

Test or Examination	Test Group (a)
	1
Test Sequence (b)	
Initial examination of product	1
Dry circuit resistance	3,7
Vibration	5
Mechanical shock	6
Durability	4
Mating force	2
Unmating force	8
Final examination of product	9

**NOTE** (a) See paragraph 1.5.  
 (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 the Product Assurance Department. Where specified, specimens were visually and dimensionally examined per the product drawing and no evidence of physical damage detrimental to product performance was observed.

2.2. Termination Resistance

All termination resistance measurements, taken at 100 milliamperes maximum and 20 millivolts maximum open circuit voltage were less than 15 milliohms initially and had a change in resistance ( $\Delta R$ ) of less than 5 milliohms after testing.

Test Group	Number of Data Points	Condition	Termination Resistance		
			Min	Max	Mean
1	60	Initial	6.072	8.559	7.254
		After mechanical ( $\Delta R$ )	-0.275	2.125	0.552

**NOTE** All values in milliohms.

Figure 3

2.3. Vibration

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

#### 2.4. Mechanical Shock

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

#### 2.5. Durability

No physical damage occurred as a result of mating and unmating the specimens 75 times.

#### 2.6. Mating Force

All mating force measurements were less than 9 ounces per contact.

#### 2.7. Unmating Force

All unmating force measurements were greater than 1 ounce per contact.

#### 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

Where specified, specimens were visually and dimensionally examined per the product drawing for evidence of physical damage detrimental to product performance.

#### 3.2. Termination Resistance

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

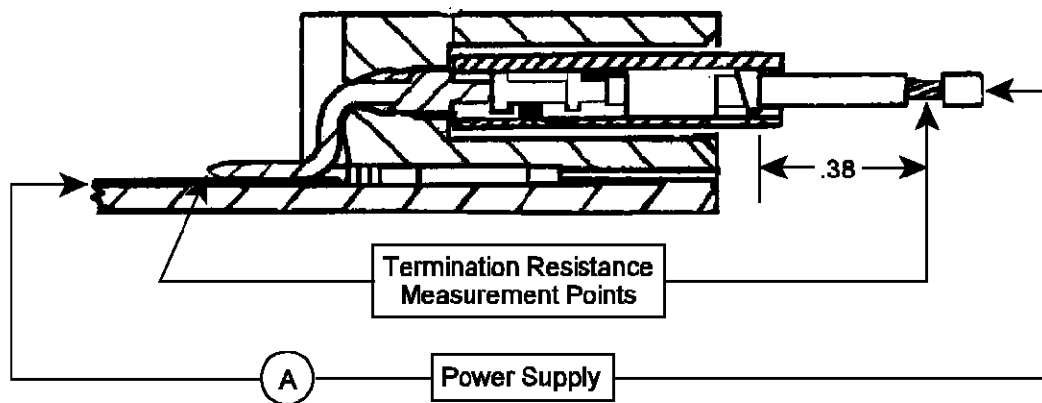


Figure 4  
Typical Termination Resistance Measurement Points

**3.3. Vibration, Sinusoidal**

Mated specimens were subjected to sinusoidal vibration, having a simple harmonic motion with an amplitude of 1.5 mm [0.06 in], double amplitude or 15 G's (whichever was less). The vibration frequency was varied uniformly between the limits of 10 and 2000 Hz and returned to 10 Hz in 20 minutes. This cycle was performed 12 times in each of 3 mutually perpendicular planes for a total vibration time of 12 hours. Specimens were monitored for discontinuities of 1 microsecond or greater using a current of 100 milliamperes DC.

**3.4. Mechanical Shock, Sawtooth**

Mated specimens were subjected to a mechanical shock test, having a sawtooth waveform of 50 gravity units (g peak) and a duration of 11 milliseconds. Three shocks in each direction were applied along the 3 mutually perpendicular planes, for a total of 18 shocks. Specimens were monitored for discontinuities of 1 microsecond or greater, using a current of 100 milliamperes DC.

**3.5. Durability**

Specimens were mated and unmated 75 times at a maximum rate of 600 cycles per hour.

**3.6. Mating Force**

The force required to mate individual specimens was measured using a tensile/compression device with a free floating fixture and a rate of travel of 12.7 mm [0.5 in] per minute. The average force per contact was calculated.

**3.7. Unmating Force**

The force required to unmate individual specimens was measured using a tensile/compression device with a free floating fixture and a rate of travel of 12.7 mm [0.5 in] per minute. The average force per contact was calculated.

**3.8. Final Examination of Product**

Where specified, specimens were visually examined for evidence of physical damage detrimental to product performance.