
High Performance Modular Plugs & Jacks, PCB Mounted

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for TE Connectivity (TE) high performance modular plugs and jacks designed for printed circuit board mounting.

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.

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed on 31Mar97. The test file number for this testing is 501-91-2. This documentation is on file at and available from Engineering Practices and Standards (EPS).

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 Documents

- 109-1: Test Specification (General Requirements for Test Specifications)
- 109 Series: Test Specifications as indicated in Figure 1
- 114-2048: Application Specification (Modular Jacks)
- 114-6053: Application Specification (High Performance Modular Plug Connectors)
- 501-91-2: Qualification Test Report (High Performance Modular Plugs & Jacks, PCB Mounted)

2.2. Reference Documents

- 108-1163: Product Specification (Modular Plugs, Thru-Hole and Surface Mount Jacks, Data and Telephone, PCB Mounted)
- 502-1064: Engineering Report (High Performance PCB Modular Jacks)

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: 150 volts AC
- Current: Signal application only, 1.5 amperes AC rms maximum at 25°C derated to .2 ampere AC rms maximum at 70°C ambient
- Temperature:
 - Jacks: -40 to 85°C
 - Plugs: -40 to 60°C
- Shielding effectiveness: -20 dB minimum reduction from 30 to 400 MHz

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 per Test Specification 109-1.

3.5. Test Requirements and Procedures Summary

| Test Description | Requirement | Procedure | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|--|-----------|-----|------|-----|------|-----|------|------|------|------|------|------|------|------|------|-------|------|------|------|-------|------|--|
| Examination of product. | Meets requirements of product drawing and Application Specifications 114-2048 and 114-6053. | Visual, dimensional and functional per applicable quality inspection plan. | | | | | | | | | | | | | | | | | | | | | | |
| Crosstalk (NEXT). | <table border="1" style="display: inline-table; vertical-align: top;"> <thead> <tr> <th>Frequency (MHz)</th> <th>NEXT (dB)</th> </tr> </thead> <tbody> <tr><td>1.0</td><td>65.0</td></tr> <tr><td>4.0</td><td>65.0</td></tr> <tr><td>8.0</td><td>62.0</td></tr> <tr><td>10.0</td><td>60.0</td></tr> <tr><td>16.0</td><td>56.0</td></tr> <tr><td>20.0</td><td>54.0</td></tr> <tr><td>25.0</td><td>52.0</td></tr> <tr><td>31.25</td><td>50.0</td></tr> <tr><td>62.5</td><td>44.0</td></tr> <tr><td>100.0</td><td>40.0</td></tr> </tbody> </table> | Frequency (MHz) | NEXT (dB) | 1.0 | 65.0 | 4.0 | 65.0 | 8.0 | 62.0 | 10.0 | 60.0 | 16.0 | 56.0 | 20.0 | 54.0 | 25.0 | 52.0 | 31.25 | 50.0 | 62.5 | 44.0 | 100.0 | 40.0 | TE Spec 109-194. Test NEXT - TOC of each sample on each of 5 test plugs qualified per paragraph 3.2. of TE Spec 109-194. All pair combinations to be tested for NEXT - TOC ⇒ driven pair-quiet pair: 45-36, 45-12, 45-78, 36-78, 36-12, and 12-78. See Figure 3. |
| Frequency (MHz) | NEXT (dB) | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | 65.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | 65.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 8.0 | 62.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 10.0 | 60.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 16.0 | 56.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 20.0 | 54.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 25.0 | 52.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 31.25 | 50.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 62.5 | 44.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 100.0 | 40.0 | | | | | | | | | | | | | | | | | | | | | | | |

Figure 1

3.6. Product Qualification and Requalification Test Sequence

| Test or Examination | Test Group (a) |
|------------------------|-------------------|
| | 1 |
| | Test Sequence (b) |
| Examination of product | 1,3 |
| Crosstalk (NEXT) | 2 |

NOTE

- (a) See paragraph 4.1.A.
 (b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test group 1 shall consist of 10 terminated plugs/unmounted jack pairs.

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 the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

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

4.4. Quality Conformance Inspection

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

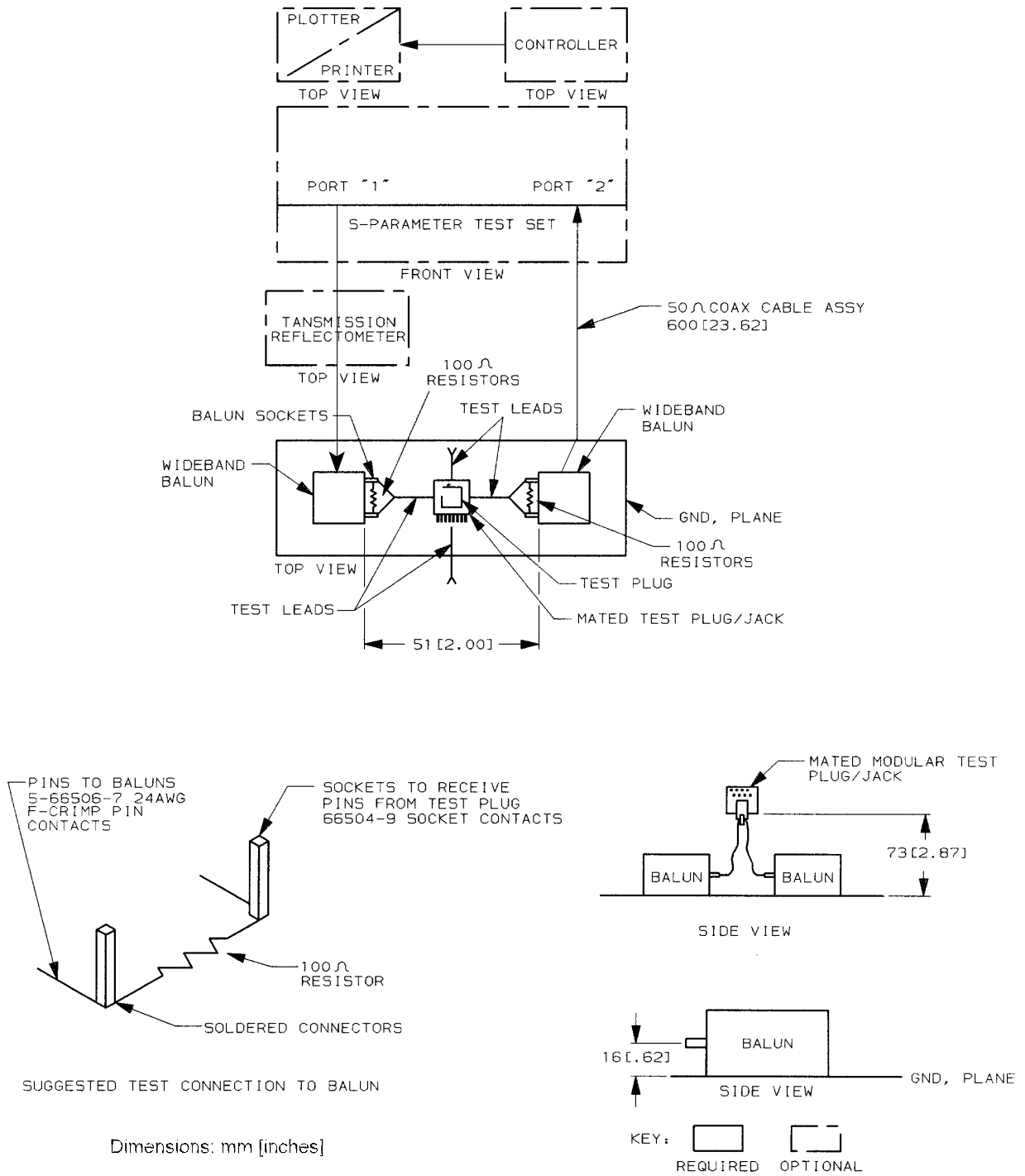


Figure 3