

TB-2346

**GENERAL PRODUCT SPECIFICATION
LYNX QD MEZZANINE CONNECTORS**

Revision A

Specification Revision Status

Revision	SCR No.	Description	Initial	Date
A	S4826	New Release	VP	11.12.19

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1.0 SCOPE

1.1 Content

1.1.1 This specification covers performance, test and quality requirements for the Lynx QD Mezzanine Connector system. These connectors are two-piece devices, a plug and a socket, that connect two printed circuit boards. Both connectors are SMT devices with solder leg SMT contacts. Both plug and socket consist of 4 rows of contacts which can be configured as differential, single ended or power segments.

1.2 Qualification

- 1.2.1 When tests are performed on subject product line, procedures specified in EIA-364-B shall be used per the test sequences outlined in Amphenol-TCS Technical Bulletin TB-2023. All inspections shall be performed using applicable inspection plan and product drawings.
- 1.2.2 If changes affecting form, fit or function are made to the product or to the manufacturing process, product engineering shall coordinate re-qualification testing, consisting of all or part of the original sequence.
- 1.2.3 Acceptance is based on verification that the product meets the requirements of Section 11.0 TB2023 for general CONNECTOR QUALIFICATION PLAN specifications. Failures attributed to equipment, test set-up, or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples re-submitted for qualification. Verification of corrective action is required before re-submittal.

2.1 REFERENCE DOCUMENTS

2.2 The following documents form a part of this specification to the extent specified herein.

2.2.1 Amphenol Documents

- 2.2.1.1 TB-2023 - Connector Qualification Plan
- 2.2.1.2 Lynx QD Differential and Single Ended SI Report
- 2.2.1.3 TB-2129 Reliability of Lead Free Surface Mount Termination

2.3 Commercial Standards

- 2.3.1 EIA-364-B - Electrical Connector Test Procedure Including Environmental Classifications
- 2.3.2 GR-1217-CORE - Generic Requirements for Separable Electrical Connectors Used in Telecommunications Hardware
- 2.3.3 IEC-512 - Electromechanical Components for Electronic Equipment - Basic Testing Procedures and Measuring Methods.

3.1 MATERIALS AND FINISHES

3.2 Contacts

- 3.2.1 Contacts shall be 0.12 mm thick, high performance copper alloy. Finish should be 0.00076mm thick gold minimum, selective in mating area, per MIL-G-45204, Type II, Grade C over 0.00127mm thick nickel minimum all over per QQ-N-290. 0.00254mm to 0.00762mm thick 90/10 tin/lead or matte Tin (Pb free) over 0.00076mm minimum nickel, selective in pin area, per MIL-P-81728A.]

3.3 Insulators

- 3.3.1 High Temperature reinforced polyester (Liquid Crystal Polymer). UL 94V-0 rating.

4.0 ELECTRICAL RATINGS

Electrical Ratings	
Parameter	Specification Value
Dielectric Withstanding Voltage	500 Volts RMS
Insulation Resistance	1000 Megaohms Min
Delta Contact Resistance	10 Milliohms Max
Crosstalk Reflection	<5%

Contact Current Rating	
1x1x1 foot box without airflow and contacts wired in series	
*All Contacts Wired in Series	0.5A Max
*60 Contacts Wired in Series	0.8A Max
*40 Contacts Wired in Series	1.0A Max
*20 Contacts Wired in Series	1.2A Max

*Contact Current Rating provided in the table above is an estimated value and will be updated upon completion of the testing.

Lynx QD Co-Planar: Mated Bulk Resistance	
Row #	Mated Bulk Resistance (milliohms) measured
Row 1	20
Row 2	20
Row 3	20
Row 4	19

Lynx QD Right Angle: Mated Bulk Resistance	
Row #	Mated Bulk Resistance (milliohms) measured
Row 1	21
Row 2	19
Row 3	19
Row 4	17

5.0 MECHANICAL

Parameter	Specification Value
Contact Normal Force	0.25N [25 grams] End of Life
Contact Engagement Force	0.26N [27 grams] maximum per contact
Contact Separation Force	0.13N [13 grams] minimum per contact
Mating cycles	250 Cycles maximum
Contact Wipe Length	0.5mm

6.0 ENVIRONMENTAL

Parameter	Specification Value
Temperature Life	No change in LLCR >10 milliohms
Moisture Resistance	No change in LLCR >10 milliohms
Dust	No change in LLCR >10 milliohms
Vibration	No change in LLCR >10 milliohms
Mechanical Shock	No change in LLCR >10 milliohms
Industrial MFG	No change in LLCR >10 milliohms
Operating Temperature	-55°C to 105°C
Flammability Rating	94V-0
RoHS Compliant	Yes
Lead Free Solderable	Yes

7.1 PRINTED CIRCUIT BOARDS

7.2 Required SMT characteristics for Signal contact pads lines and spacing. Refer to TB-2353 for PWB requirements and guidelines.

8.1 QUALIFICATION TESTING

8.2 SEE TB2023 for general CONNECTOR QUALIFICATION PLAN specifications.

9.1 RE-QUALIFICATION TESTING

9.2 If changes affecting form, fit or function are made to the product or to the manufacturing process, Product Engineering shall coordinate requalification testing, consisting of all or part of the original testing sequence.

10.1 ACCEPTANCE

10.2 Acceptance is based on verification that the product meets the requirements of Section 11.0 TB2023 for general CONNECTOR QUALIFICATION PLAN specifications. Failures attributed to equipment, test set-up, or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Verification of corrective action is required before resubmitting.

11.1 QUALITY CONFORMANCE INSPECTION

11.2 The applicable plating Quality Inspection Plan shall specify the acceptable stamping and molding quality levels to be applied. Dimensional and functional requirements shall be in accordance with the applicable product drawings and this product specification.