1.0 Objective

This specification defines the performance, test, quality and reliability requirements of the Express Card host product.

2.0 Scope

This specification is applicable to the termination characteristics of the Express Card host family of products which provides signal and power

3.0 Ratings

3.1 Operating Voltage Rating = 5 V

3.2 Operating Current Rating = 0.5 A

3.3 Operating Temperature Range =0^{o}C to 55^{o}C

4.0 Applicable Documents

4.1 FCI Specifications

4.1.1 Engineering drawings

4.1.2 Process drawings

4.1.3 Application specification(s)

4.1.4 Material specification(s)

4.2 Industry or Trade Association standards

4.2.1 EIA-364-1000.01, Electrical/socket Test Procedures Including Environmental Classifications

4.2.2 Express card standard

4.2.3 FCI product drawings

4.3 National or International Standards

4.3.1 Flammability: UL94V-0 or similar applicable specification

4.3.2 EIA 364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.

4.3.3 IEC 60512: Connectors for Electronic Equipment – Tests and Measurement

5.0 Requirements

5.1 Qualification

Connectors furnished under this specification shall be capable of meeting the qualification test requirements specified herein.

5.2 Material

The material for each component is defined in product drawings

5.3 Finish

The finish for applicable components is defined in product drawings

5.4 Design and Construction

Connectors shall be of the design, construction, and physical dimensions specified on the applicable product drawing. There shall be no cracks, burrs, or other physical defects that may impair performance.

6.0 Electrical Characteristics

6.1 Contact Resistance, Low Level (LLCR)

The low level contact resistance shall not exceed 40 milliohms initially. The low level contact resistance shall also not exceed 15 milliohms increase in resistance (from the initial measurement) after any treatment and/or environmental exposure. Measurements shall be in accordance with IEC 60512-2-1 or EIA 364-23.

The following details shall apply:

a. Test Voltage - 20 milli-volts DC max open circuit.

b. Test Current - Not to exceed 100 milli-amperes.

6.2 Insulation Resistance

The insulation resistance of unmated connectors shall not be less than 1000M ohms initially and100M ohms after environmental exposure.

Measurements shall be in accordance with IEC 60512-3-1 or EIA 364-21.

The following details shall apply:

a. Test Voltage - 500 volts DC.

b. Electrification Time - 2 minutes, unless otherwise specified.

c. Points of Measurement - Between adjacent contacts

b. Test configuration *(specify wire gage, test board requirements, thermocouple placement, sample orientation, etc.)*

c. Reference - IEC 60512-5-1 or IEC 60512-5-2 or EIA 364-70

7.0 Mechanical Characteristics

7.1 Mating/Unmating Force

The force to mate a receptacle connector and compatible header shall not exceed 39N. The unmating force shall not be less than 3.7N and not exceed 18.5N.

The following details shall apply:

a. Cross Head Speed – 12.5mm per minute.

b. Lubrication - NA

c. Utilize free floating fixtures.

d. Reference – IEC 60512-13-2 or EIA 364-13.

7.2 Durability

The connector pairs shall be capable of withstanding 5000 mating/unmating cycles

Cycle rate: 500±50per hour for automatic equipment.

Reference EIA-364-09.

8.0 Environmental Conditions

After exposure to the following environmental conditions in accordance with the specified test procedure and/or details, the product shall show no physical damage and shall meet the electrical and mechanical requirements per paragraphs 6.0 and 7.0 as specified in the Table 1 test sequences. Unless specified otherwise, assemblies shall be mated during exposure.

8.1 Thermal Shock –EIA 364-32.

a. Number of Cycles - 10

b. Temperature Range - Between -55 and+85 deg C

8.2 Humidity –EIA 364-31 method II

a. Relative Humidity – 90~95% (for cyclic humidity, specify for temperature ramps, if applicable, and temperature dwells)

b. Temperature - 40±2 deg C

c. Duration - 96 hours

8.3 High Temperature Life –EIA 364-17.

a. Test Temperature - _65 deg C

b. Test Duration - 96 hours

8.4 Mixed Flowing Gas corrosion (MFG) –EIA 364-65

a. Class - IIA

b. Duration – 2 days

8.5 Salt Spray –EIA-364-26

a. Test Condition - B

b. Duration – 48 hours

c. Acceptance criteria – Meet LLCR criteria

8.6 Vibration (Random) –EIA 364-28

a. Test Condition – VII, Letter D

b. Duration – 15minutes along each of three orthogonal axes

c. Mounting - Rigidly mount assemblies; specify cable length and mounting location if appropriate.

d. No discontinuities greater than 1 microseconds or nanoseconds

8.7 Mechanical Shock –EIA 364-27

a. Condition - 220G, 2millisecond, Half-sine.

b. Shocks -1 shocks in both directions along each of three orthogonal axes (6 shocks total)

c. Mounting - Rigidly mount assemblies

d. No discontinuities greater than 1 microseconds or nanoseconds

8.8 Durability - EIA 364-09

a. Number Cycles - 5000 cycles

b. Cycling Rate - 500±50 per hour

c. Use free floating fixtures

REVISION RECORD

Rev	Page	Description	EC#	Date
A	ALL	NEW RELEASE	T04-0426	12/08/'04
B	ALL	CHANGE THE FORMAT	ELX-N-18733	09/03/'14