

<b>FCI</b>	TYPE <b>PRODUCT SPECIFICATION</b>	NUMBER <b>GS-12-301</b>
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EXPRESSCARD HOST SYSTEM PRODUCT SPECIFICATION	AUTHORIZED BY KENNY TAI	DATE 07/08/04
	CLASSIFICATION <b>CONFIDENTIAL</b>	

## 1. **OBJECTIVE**

This specification defines the performance, test, quality and reliability requirements of ExpressCard host system (include host connector and slot mechanism which is with / without push function).

## 2. **SCOPE**

This specification provides information regarding product features and materials for ExpressCard connectors and host system. All products shall meet ExpressCard Standard, PCMCIA /JEITA.

## 3. **GENERAL**

This document is composed of the following sections:

<b>Paragraph</b>	<b>Title</b>
1.0	OBJECTIVE
2.0	SCOPE
3.0	GENERAL
4.0	APPLICABLE DOCUMENTS
4.1	STANDARD AND SPECIFICATIONS
5.0	REQUIREMENTS
5.1	MATERIAL
5.2	FINISH
6.0	CONNECTOR REQUIREMENTS
6.1	EXAMINATION OF PRODUCT
6.2	MATING / UNMATING FORCE
6.3	ELECTRICAL REQUIREMENTS
6.4	OPERATING TEMPERATURE
6.5	STORAGE TEMPERATURE
6.6	ENVIRONMENTAL TEST
7.0	NOTE

## 4. **APPLICATION DOCUMENTS**

### 4.1 Standards and Specifications

- 4.1.1 EIA-364-1000.01, Electrical / Socket Test Procedures Including Environmental Classifications
- 4.1.2 ExpressCard Standard
- 4.1.3 FCI product drawings

## 5. **REQUIREMENT**

### 5.1 Material of host system

The materials of host connector and host system are defined in product drawings.

### 5.2 Finish

The finish for applicable components are specified in product drawings.

## 6. **HOST SYSTEM REQUIREMENTS**

### 6.1 Examination of Product

Samples must comply to applicable FCI product prints.

### 6.2 Mating / Unmating force

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**Table 6-1 Mating / Unmating force**

Test Description	Procedure	Requirements
Insertion Force	EIA 364-13 Measure the force to mate the dummy card for module side and, with guiding plates and mechanism assemblies in host side at a maximum rate of 12.5 mm (0.492 inches) per minute.	39N maximum.
Removal Force	EIA 364-13 Measure the force to un-mate the dummy card for module side and, with guiding plates and mechanism assemblies in host side at a maximum rate of 12.5 mm (0.492 inches) per minute.	3.7N min.; 18.5N max.

### 6.3 Electrical Requirements

Unless otherwise specified, all test and measurements shall be made at:

Temperature	25°C +/- 5°C
Relative humidity	50% Max

6.4 Operating Temperature: 0°C to +55°C

6.5 Storage Temperature: -20°C to +65°C

### 6.6 Environmental Test

Table 6-2 lists ExpressCard connector environmental test procedure and requirements.

**Table 6-2 ExpressCard connector environment test & requirements**

Item	Paramater	Procedure	Requirements
6-6-1	Contact Resistance (LLCR)	EIA 364-23B. Measure the resistance of the connector interface.	Initial: 40 mΩ max Final (after stress): 55 mΩ max (allowable resistance change: 15mΩ)
6-6-2	Insulation Resistance	EIA-364-21, 500V DC. Apply a voltage between terminals and measure.	Initial 1000 MΩ min. After test 100 MΩ min.
6-6-3	Thermal Shock	EIA-364-32, test condition I. Temperature change range between -55°C to +85°C, 10 cycles. Measure before the first cycle and after the completion of the final cycle.	No evidence of physical damage. Meet LLCR requirement 6-6-1. Meet Insulation resistance requirement 6-6-2.
6-6-4	Humidity	EIA-364-31, Method II, Test condition A. 40 +/- 2 °C, RH 90~95%, 96 Hours	Meet LLCR requirement 6-6-1. Meet Insulation resistance requirement 6-6-2.
6-6-5	High Storage Temperature	Test Condition 65°C and 90-95% RH for 96 hours minimum, all voltage inputs = 0	Meet LLCR requirement 6-6-1.
6-6-6	Low Storage Temperature	Test Condition -20°C for 96 hours minimum, all voltage inputs = 0	Meet LLCR requirement 6-6-1.

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6-6-7	Vibration	EIA-364-28, test condition VII, test condition letter D (15 minutes in each of 3 mutually perpendicular directions. Both mating halves should be rigidly fixed so as not to contribute to the relative motion of one contact against another. The method of fixturing should be detailed in the test report.)	No evidence of physical damage.
6-6-8	Shock	Half sine shock, 220G, 2ms 1 shock per side on all 6 sides (6 shocks total) Test fixture is defined in Fig. 1. During shock, an ExpressCard 34 module shall be plugged in for all testing direction, except for the directions in which the module is perpendicular to the shock table.	No evidence of physical damage.
6-6-9	Mixed Flowing Gas	EIA-364-65, class IIA; EIA-364-1000.01, 7 days, for 2 piece connectors, option 2	Meet Contact Resistance (LLCR) requirement 6-6-1.
6-6-10	Salt Spray	EIA-364-26, test condition B. Expose a connector in the fitted state in a test chamber at 35°C, 5% salt spray for 48 hours. Measure the sample before the start of the test and after completion, outside the chamber for between one and two hours.	Meet Contact Resistance (LLCR) requirement 6-6-1.
6-6-11	Durability Test	EIA-364-09. Cycle rate: $500 \pm 50$ per hour for automatic equipment. Durability (mating/un-mating) rating of 5000 cycles for the host system.	No evidence of physical damage in card push mechanism.

**7. NOTE**  
NA

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REVISION RECORD

<u>REV</u>	<u>PAGE</u>	<u>DESCRIPTION</u>	<u>ECR NO.</u>	<u>DATE</u>
A	ALL	NEW RELEASE	T04-0426	12/08/04

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