 FCI	TYPE	PRODUCT SPECIFICATION		NUMBER	GS-12-301		
	TITLE			PAGE	1 of 4	REVISION	A
EXPRESSCARD HOST SYSTEM PRODUCT SPECIFICATION			AUTHORIZED BY	KENNY TAI		DATE	07/08/04
			CLASSIFICATION				CONFIDENTIAL

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:

<u>Paragraph</u>	<u>Title</u>
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


 TITLE	TYPE PRODUCT SPECIFICATION	NUMBER GS-12-301	
	EXPRESSCARD HOST SYSTEM PRODUCT SPECIFICATION	PAGE 2 of 4	REVISION A
AUTHORIZED BY KENNY TAI		DATE 07/08/04	
CLASSIFICATION CONFIDENTIAL			

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	Parameter	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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	TYPE	PRODUCT SPECIFICATION		NUMBER	GS-12-301		
	TITLE			PAGE	3 of 4	REVISION	A
EXPRESSCARD HOST SYSTEM PRODUCT SPECIFICATION			AUTHORIZED BY	KENNY TAI		DATE	07/08/04
CLASSIFICATION							CONFIDENTIAL

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 size 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 ± 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

	TYPE	PRODUCT SPECIFICATION		NUMBER	GS-12-301			
	TITLE	EXPRESSCARD HOST SYSTEM PRODUCT SPECIFICATION			PAGE	4 of 4	REVISION	A
				AUTHORIZED BY	KENNY TAI		DATE	07/08/04
				CLASSIFICATION	CONFIDENTIAL			

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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