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CARD BUS I, EJECTOR HEADER		JOSEPH HSIA	12/27/00

### 1.0 OBJECTIVE

1.1 This specification defines the performance, test, quality and reliability requirements of the CARD BUS I product.

### 2.0 SCOPE

This specifies the design and product requirements for a dual stack, or single stack of CARD BUS I header using ejector mechanism or CARD BUS header without ejector mechanism, along with other applicable documents.

### 3.0 GENERAL

This document is composed of the following sections :

- 1.0 Objective
- 2.0 Scope
- 3.0 General
- 4.0 Applicable Documents
- 5.0 Requirements
  - 5.1 Material
  - 5.2 Finish
  - 5.3 Design and Construction
- 6.0 Performance

### 4.0 APPLICABLE DOCUMENTS

- 4.1 Specifications
  - 4.1.1 FCI Assembly Drawing.
- 4.2 Military Standards
  - 4.2.1 MIL-STD-202F Test methods for electronic and electrical component parts
  - 4.2.2 MIL-G-45204 Gold Plating (Electrodeposited)
  - 4.2.3 MIL-P-81728 Palladium Plating (Electrodeposited)
  - 4.2.4 MIL-P-81728 Plating, Tin-Lead (Electrodeposited)
- 4.3 Federal Specifications
  - 4.3.1 QQ-N-290 Nickel Plating, (Electrodeposited)
  - 4.3.2 QQ-B-750 Phosphor-Bronze

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4.4 Other Standards and Specifications

- 4.4.1 UL94-V0 Flammability
- 4.4.2 PC Card Standard Release March 1997
- 4.4.3 JEIDA Release 4

4.5 FCI Specifications

- 4.5.1 FCI product specification, BERGSTAK, 110-327

**5.0 REQUIREMENT**

5.1 Material

- 5.1.1 Contact and Solder tail Material : Phosphor-Bronze per QQ-B-750
- 5.1.2 Housing Material : High temperature thermoplastic meeting UL 94V-0 flammability and resistance to reflow soldering heat requirements.

5.2 Finish

- 5.2.1 0.1  $\mu$  m (4  $\mu$  in) min gold flash over 0.5  $\mu$  m (20  $\mu$  in) min palladium nickel, over 0.5  $\mu$  m (20  $\mu$  in) min nickel underplate per QQ-N-290, MIL-P-81728 and MIL-G-45204.

5.3 Design and Construction

- 5.3.1 This connector consists of CARDBUS I double deck, single deck, and 68pos.pin header with one or two vertical transition boards, eject mechanisms and 100pos.receptacles.

**6.0 PERFORMANCE**

- 6.1 Current Rating : 0.5A D.C MAX. per Contact
- 6.2 Temperature Rise : Max 30°C
- 6.3 Operating Temperature Range : - 20°C ~ + 60°C
- 6.4 Storage Temperature Range : - 40°C ~ +70°C

Unless otherwise specified, the performance of connectors given in the attached list shall satisfy the values specified in Table 6.5~6.7, under the environmental conditions (JIS C0010) listed below. When 68pos.socket connector to be used for the test, it should meet the requirements of PC Card Standard.

- Temperature : 15 to 35°C
- Relative humidity : 25 to 85%
- Atmospheric pressure : 86 to 106 KPa

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6.5 Electrical characteristics

No.	Item	Requirement	Test Condition	Applicable (*1) classification		
				E	H	R
6.5.1	Contact Resistance (Low level)	After test Contact resistance change from initial value : 20 mΩ MAX.	MIL-STD-1344A Method 3002. 1 Open circuit voltage : 20mV MAX. Test current : 1mA		✓	✓
6.5.2	Insulation Resistance	Initial : 1000 MΩ MIN. After test : 100 MΩ MIN.	MIL-STD-202 Method 302 Apply 250V DC 1min.		✓	✓
6.5.3	Withstanding Voltage	No arc-over or insulation breakdown. Current leakage : 1mA MAX.	MIL-STD-202 Method 301 Apply 125Vrms 1min.		✓	✓

6.6 Mechanical characteristics

No.	Item	Requirement	Test Condition	Applicable (*1) classification		
				E	H	R
6.6.1	Durability (Office environment)	No physical or mechanical damage which affects connector function After test Contact resistance change from initial value : 20 mΩ MAX.	.Suitable PC Card to be used. .10,000 cycles .400-600 cycles per hour .Ejection to be done by eject mechanism	✓	✓	
6.6.2	Durability (Harsh environment)	No physical or mechanical damage which affects connector function After test Contact resistance change from initial value : 20 mΩ MAX.	.Suitable PC Card to be used. .Total 5,000 cycles with Humidity and Hydrogen sulfide .400-600 cycles per hour .Ejection to be done by eject mechanism	✓	✓	



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6.6.3	Durability (100pos. Receptacle)	After test Contact resistance change from initial value : 20 mΩ MAX.	.Vertical board to be mated/unmated with 100pos. Receptacle .20 cycles			✓
6.6.4	Total unmating force	4 kg MAX.	.Suitable PC Card to be used. .Mating/unmating speed : 25mm/min.		✓	
6.6.5	Total unmating force	0.68 kg MIN. 4 kg MAX.	.Suitable PC Card to be used. .Mating/unmating speed : 25mm/min.		✓	
6.6.6	Vertical board mating force (to receptacle)	9.0 kg MAX.	.Mating/unmating speed : 25mm/min.			✓
6.6.7	Vertical board unmating force (from receptacle)	1.0 kg MIN.	.Mating/unmating speed : 25mm/min.			✓
6.6.8	Vibration	No physical or mechanical damage or disassociation of parts. No discontinuity greater than 100 nanoseconds.	MIL-STD-202 Method 204D Test condition B 15G, 10-2000 Hz		✓	✓
6.6.9	shock	No physical or mechanical damage or disassociation of parts. No discontinuity greater than 100 nanoseconds.	MIL-STD-202 Method 213B 50G, 1 Imsec. Semi-Sine wave		✓	✓

6.7 Environmental Resistance characteristics

No.	Item	Requirement	Test Condition	Applicable (*1) classification		
				E	H	R
6.7.1	Thermal shock	After test .Contact resistance change from initial value : 20 mΩ MAX. .Insulation resistance : 100 mΩ MIN.	.MIL-STD-202 method 107G test condition A . -55°C to +85°C .5 cycles(1 hour/1 cycle) .with connector engaged		✓	✓



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6.7.2	Moisture Resistance	After test .Contact resistance change from initial value : 20 mΩ MAX. .Insulation resistance : 100 mΩ MIN.	.MIL-STD-202 method 106E .10 cycles(24 hour/1 cycle) .with connector engaged		✓	✓
6.7.3	Humidity (normal condition)	After test .Contact resistance change from initial value : 20 mΩ MAX. .Insulation resistance : 100 mΩ MIN.	.MIL-STD-202 method 103B .40°C .90 to 95%RH .96 hours .With connector engaged		✓	✓
6.7.4	Hydrogen sulfide	After test .Contact resistance change from initial value : 20 mΩ MAX.	.JEIDA 38 .3ppm H2S .Approx. 80%RH .96 hours .With connector engaged		✓	✓
6.7.5	High temperature	After test .Contact resistance change from initial value :20 mΩ MAX.	.MIL-STD-202 method 108A test condition B .+85°C .250 hours .With connector engaged		✓	✓
6.7.6	Cold resistance	After test .Contact resistance change from initial value : 20 mΩ MAX.	.JIS C0020 . -55°C .96 hours .With connector engaged		✓	✓

(\*1) E : Eject mechanism  
H : 68pos. Pin header  
R : 100pos. Receptacle



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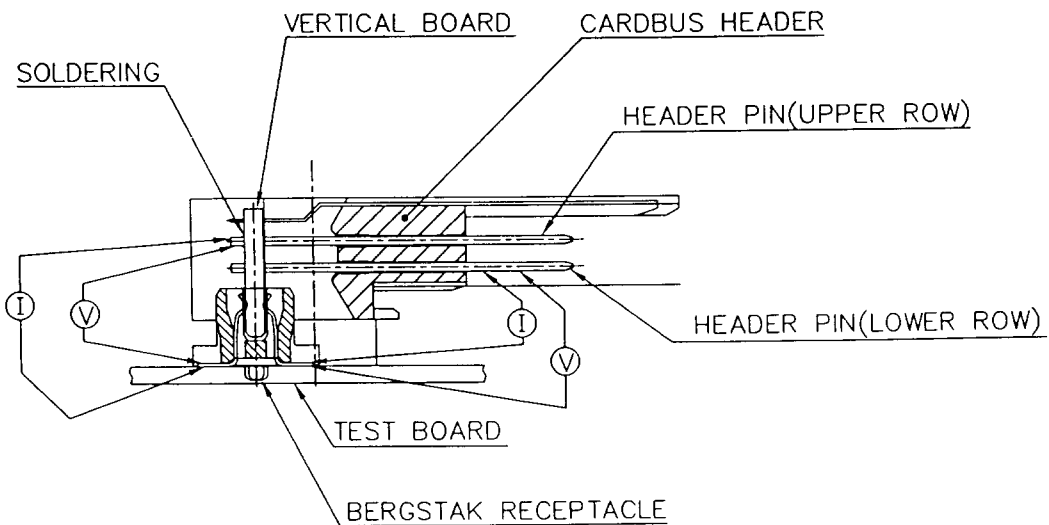
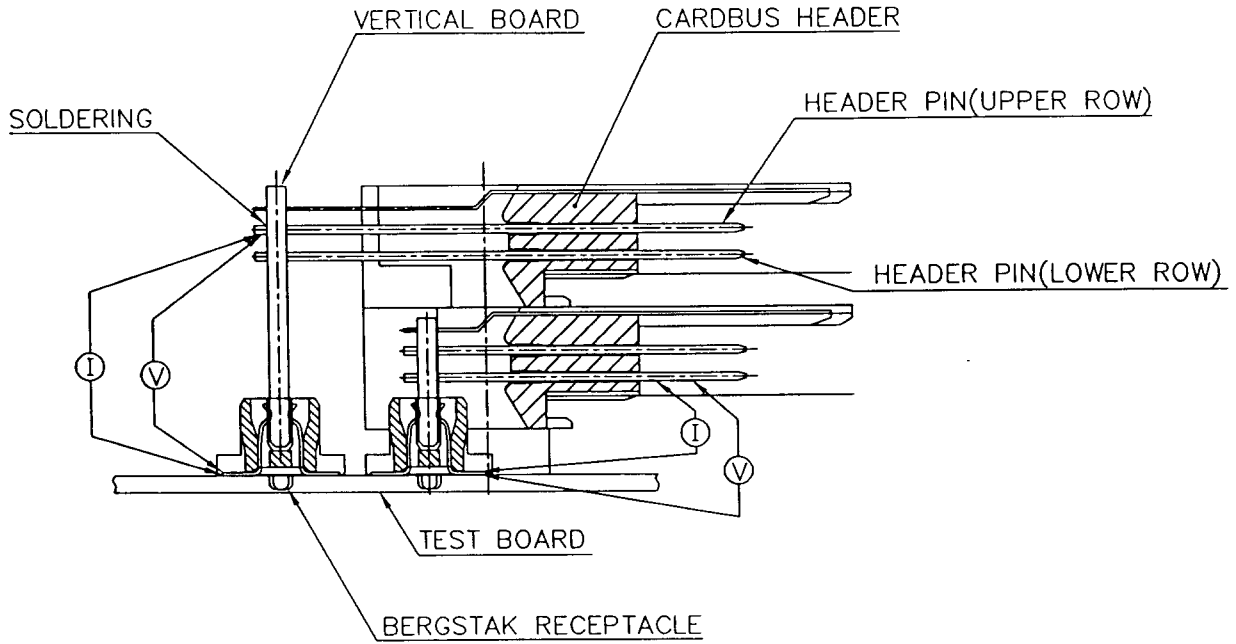
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A	ALL	RELEASE	T90094	3/2/99
B	ALL	UPDATE MATING & UNMATING FORCE	T00387	12/27/00

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