


NUMBER <b>GS-12-240</b>	TYPE <b>Product Specification</b>		
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		AUTHORIZED BY <b>Sterling Lin</b>	DATE <b>05-07-2010</b>
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## 1.0 GENERAL

This specification defines the performance, tests and quality requirements for the CF Header & Receptacle connector.

This document is composed of the following sections.

1. General
2. Scope
3. Applicable Documents
4. Requirements
  - ✧ Design and Construction
  - ✧ Material
  - ✧ Finish
5. Test Methods and Requirements
6. Test Plan
7. Revision Record

## 2.0 SCOPE

This specification is applicable to the termination characteristics of the product of CF family which provide interconnection of computer peripherals.

## 3.0 APPLICABLE DOCUMENTS

### 3.1 Military Standards:

- 3.1.1 MIL-STD-202F: Test methods for electronic and electrical component parts.
- 3.1.2 MIL-STD-1344A: Test methods for electrical connectors.

### 3.2 Industry Specification/Other Standards:

- 3.2.1 UL-94: Tests for flammability of plastic materials.
- 3.2.2 EIA 364: Electrical connector/socket test procedures including environmental classifications.
- 3.2.3 CFA: CompactFlash Association Standard.

## 4.0 REQUIREMENT

### 4.1 Design and Construction:

Connectors shall be of the design construction and physical dimensions specified on the applicable product drawing and shall be capable of meeting the qualification test requirements specified herein.

### 4.2 Materials

#### 4.2.1 Housing:


- ✧ The insulators shall be rated flame retardant 94V-O in accordance with UL-94.

#### 4.2.2 Terminal:

- ✧ Copper Alloy.

#### 4.2.3 Shell:

- ✧ Stainless Steel.

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#### 4.3 Ratings

- 4.3.1 Rated Voltage (Max.): 100Vac rms.
- 4.3.2 Rated Current (Max.): 0.5A per contact.
- 4.3.3 Ambient/Operating Temperature Range: -40°C to +85°C.
- 4.3.4 Storage Temperature Range: -40°C to +85°C (Recommended).

#### 4.4 Finish:

The finish for applicable components shall be specified on the applicable product drawing


4.4.1 Contact Area: Gold plating with Nickel under-plated.

4.4.2 Solder Tail Area: Tin/Lead plating or Matte Tin plating with Nickel under-plated.

### 5.0 TEST METHODS AND REQUIREMENTS:

#### 5.1 Electrical Performance:


Item	Test Description	Test Methods	Requirement
5.1.1	LL Contact Resistance	<b>EIA 364-23A (or MIL-STD-1344A, Method 3002.1, Test Condition B)</b>	1).Initial: 40 mΩ Maximum. 2).After test: 20 mΩ Maximum change from the initial change.
5.1.2	Insulation Resistance	<b>EIA 364-21A (or MIL-STD-202F, Method 302, Test Condition B)</b> Applied voltage 500VDC for 1 minute.	1).Initial: 1000 MΩ Minimum. 2).After test: 100 MΩ Minimum.
5.1.3	Dielectric Withstanding Voltage	<b>EIA 364-20A (or MIL-STD-202F, Method 301, Test Condition B)</b>	1).No shorting during 1 minute @500VAC(rms), with 1 mA maximum current leakage.
5.1.4	Temperature Rise	<b>EIA 364-70 Method B (or IEC-512-PT3)</b>	0.5 Amperes per contact, without exceeding 30°C temperature rise above ambient.

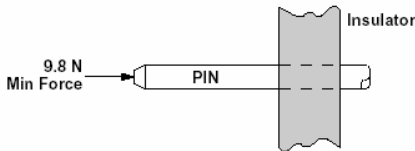
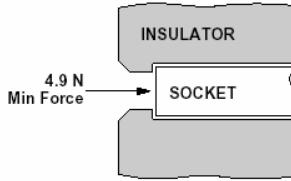
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## 5.2 Mechanical Performance:

Item	Test Description	Test Methods	Requirement
5.2.1	Random Vibration	<b>EIA 364-28A Test Condition III ( or MIL-STD-202F, Method 204D, Test Condition B)</b>	1). No discontinuities greater than 100ns. 2). Meet visual requirement, no physical damage. 3). Meet requirements of additional tests as specified in test sequence in Section 6
5.2.2	Mechanical Shock	<b>EIA 364-27A Test Condition A ( or MIL-STD-202F, Method 213B, Test Condition A)</b>	1). No discontinuities greater than 100ns. 2). Meet visual requirement, no physical damage. 3). Meet requirements of additional tests as specified in test sequence in Section 6
5.2.3	Durability	<b>EIA 364-09B</b> The recommended cycle rate (cycle/hour): Automatic equipment: 500+/-50 Manual mating/unmating: 300 Max.	1). 10000 mating cycles (under office environment) without exceeding LLCR. 2). Meet visual requirement, no physical damage. 3). Meet requirements of additional tests as specified in test sequence in Section 6
5.2.4	Total Mating Force	<b>EIA 364-13A</b>	1). Initial : 28.8 N Maximum 2). After test: 28.8 N Maximum At 25mm/minute
5.2.5	Total Unmating Force	<b>EIA 364-13A</b>	1). Initial : 4.9 N Minimum, 24.5 N Max. 2). After test: 4.9 N Minimum, 24.5 N Max. At 25mm/minute

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5.2.6	Single Pin Holding Force	<b>EIA-364-29A</b>  <p>Push pin on the axis with 9.8N minimum force at a speed of 25 min / minute while holding insulator rigid.</p>
5.2.7	Single Socket Holding Force	<b>EIA-364-29A</b>  <p>Push socket on the axis with 4.9N minimum force at a speed of 25 min / minute while holding insulator rigid.</p>

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### 5.3 Environmental Performance:

Item	Test Description	Test Methods	Requirement
5.3.1	Thermal Shock	<b>EIA 364-32B, Test Condition I ( or MIL-STD-202F, Method 107G, Test Condition A)</b> -55°C to 85°C, 5minutes transition time (max.), 5 cycles (1 cycle=1 hour).	1). Meet visual requirement, show no physical damage. 2). Meet requirements of additional tests as specified in test sequence in Section 6
5.3.2	Humidity ( Temperature- Humidity Cycling )	<b>EIA 364-31A, Test Condition B Method III ( or MIL-STD-202F, Method 106E )</b> 10 (24hour) cycles with connector mated.	1). Meet visual requirement, show no physical damage. 2). Meet requirements of additional tests as specified in test sequence in Section 6
5.3.3	Salt Spray	<b>EIA 364-26, Test Condition B ( or MIL-STD-202F, Method 101D, Test Condition B )</b>	1). Meet visual requirement, show no physical damage. 2). Meet requirements of additional tests as specified in test sequence in Section 6
5.3.4	Resistance to Soldering Heat	Place the connector on the PCB and expose to the reflow oven. Peak Temp: 260°C for 10sec.	No physical damage such as crack and deformation of housing.
5.3.5	Solderability	<b>EIA 364-52 ( or MIL-STD-202F, Method 208G ).</b>	The surface of the portion to be soldered shall at least 95% covered with new solder coating.

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## 6 TEST PLAN:

TEST ITEM	PARA.	TEST GROUP								
		A	B	C	D	E	F	G	H	
		TEST SEQUENCE								
Examination of Product		1,6	1,9	1,10	1,5	1,3	1,3	1,3	1,3	
Contact Resistance	5.1.1	2,5	2,8	2,7	2,4					
Insulation Resistance	5.1.2			3,8						
Dielectric Withstand Voltage	5.1.3			4,9						
Contact Current Rating	5.1.4									
Vibration	5.2.1	3								
Mechanical Shock	5.2.2	4								
Durability	5.2.3		5							
Total Mating Force	5.2.4		3,7							
Total Unmating Force	5.2.5		4,6							
Single Pin Holding Force	5.2.6							2		
Single Socket Holding Force	5.2.7								2	
Thermal Shock	5.3.1			5						
Temperature-Humidity Cycling	5.3.2			6						
Salt Spray	5.3.4				3					
Resistance to Re-flow Soldering Heat	5.3.5					2				
Solderability	5.3.6						2			

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## 7 REVISION RECORD:

Revision	Page	Description	ECR no	Date
A	All	New released	T03-0176	8/6/2003
B	All	Revised according to CFA spec	T05-0263	11/21/2005
<b>C</b>	<b>2</b>	<b>Change 4.3.3 temp from 90C to 70C</b>	<b>T09-1071</b>	<b>05/11/2009</b>
<b>D</b>	<b>2</b>	<b>Change 4.3.3 temp from -20C -- 70C to -40C – 85C</b>	<b>T10-0050</b>	<b>03/31/2010</b>
<b>E</b>	<b>2</b>	<b>Change 4.3.4 temp from 70C to 85C (Recommended)</b>	<b>T10-0060</b>	<b>04/21/2010</b>

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