PRODUCT SPECIFICATION PS-7330 Rev. DX1

Title: SD Connector

Part Number: GSD Series

Description: 9 Positions, SMT Type for RoHS or GP

FOR REFERENCE ONLY

Revisions Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	Initial Release	Sondra Sang	Henry Ko	Sep. 29, 2005
B	NE-11186	Aqua Chou	Roger Tsai	Dec. 28, 2011
C	NE-12071	Aqua Chou	Roger Tsai	May. 15, 2012
DX1		Sandy Wu	Roger Tsai	Dec. 18, 2017

Product Specification Origination

Originator:	Date:	Checked by:	Date:	Approved by:	Date:
Sandy Wu	12-18-2017	Roger Tsai	05-15-2012	Roger Tsai	05-15-2012

1.0 SCOPE

This specification defines the detailed requirements for the Amphenol commercial SD card connector.

2.0 APPLICABLE DOCUMENTS

The following documents, of the latest issue in effect at the time of performance of the qualification tests, shall form a part of this specification to the extent specified herewith. In the event of conflict between the requirement of this specification and the product drawing, the product drawing shall take precedence.

Commercial Standards And Specification

EIA-364	Test methods for electrical connectors
IEC-512	Electromechanical components for electronic equipment; basic testing procedures and measuring methods.

Underwriters' Laboratories, Inc.

UL-STD-94	Tests for flammability of plastic material for parts in devices and appliances.

3.0 REQUIREMENTS

3.1 DESIGN AND CONSTRUCTION

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 MATERIALS

3.2.1 Housing: LCP, UL94V-0, Color- black.

3.2.2 Contact: Phosphor Bronze

Finish: (a) Contact area: gold plated

(b) Solder tail: 100μ" minimum Tin plated

(c) Under plated: 50μ" minimum nickel plated

3.2.3 Cover: Stainless Steel

Finish: (a) Solder tail: gold plated

(b) Under plated: 50μ" minimum nickel plated

****This product doesn't contain environmental hazardous materials per per Directive 2002/95/EC for RoHS or per SS-00259 for Sony GP.**

3.3 RATINGS

3.3.1 Current Rating: 0.5A

3.3.2 Voltage Rating: 5V

3.3.3 Operating temperature: -40˚C to 90˚C

Storage temperature: -40˚C to 90˚C

Humidity: 95% max. none condensing.

4.0 PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

TEST DESCRIPTION	TEST GROUPS										
	A	B	C	D	E	F	G	H	I	J	K
	Test Sequence										
Visual & Mechanical Examination	1,9	1,8	1,5	1,7	1,4	1,5	1,9	1,9	1,9	1,9	1
Contact Resistance	2,6	2,7	2,4	2,5		2,4	2,6	2,6	2,6	2,6	
Insulation Resistance	3,7			3,6			3,7	3,7	3,7	3,7	
Dielectric Withstanding Voltage	4,8						4,8	4,8	4,8	4,8	
Total Pulling and Insertion Force		3,6									
Vibration and High Frequency			3								
Shock				4							
Contact Retention Force											2
Connector Intensity		4									
Wrestling Strength					2						
Durability cycling		5									
Humidity	5										
Salt Spray						3					
Solderability					3						
Thermal Shock							5				
Moisture Resistance								5			
High Temperature Resistance									5		
Resistance to Reflow Soldering										5	
Test samples (pcs)	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**

Note: Numbers indicate sequence in which tests are performed.

5.0 PERFORMANCE AND TEST DESCRIPTION

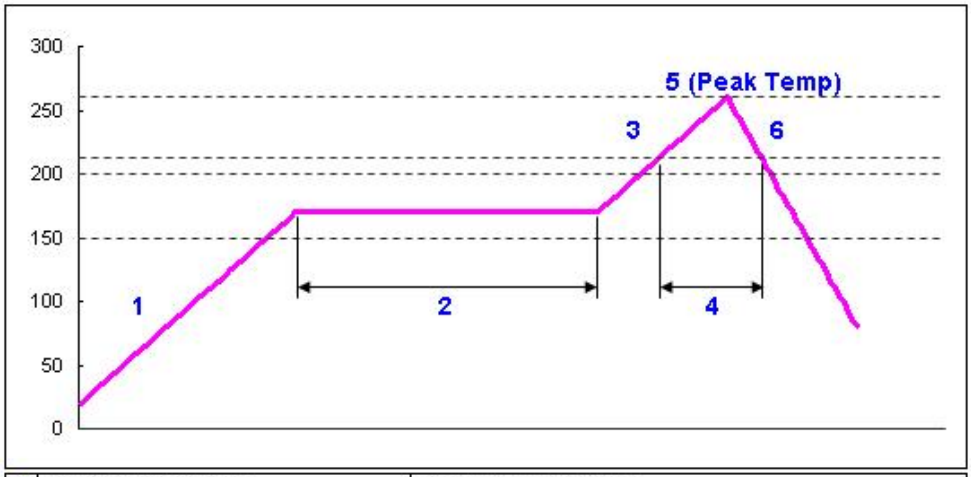
Product is designed to meet electrical, mechanical and environmental performance requirements specified in Table I. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Table I - Test Requirements and Procedures Summary

Test Description	Requirements	Procedure
• Visual & mechanical examination	Meets requirements of drawing	**EIA 364-18** Visual, dimensional and functional compliance.
ELECTRICAL		
• Contact resistance	100 mΩ maximum Write protect contact resistance: 150 mΩ maximum Card detect contact resistance: 150 mΩ maximum	**IEC 512, part 2, test 2a** 20 mV maximum open circuit at 100 mA maximum test current
• Insulation resistance	Initial: 1000 MΩ min. Final: 100 MΩ min.	**IEC 512, part 2, test 3a, method C** Test between adjacent contacts of connector assemblies at 500V DC
• Dielectric Withstanding Voltage	No creeping discharge or flashes occur. Current leakage 1mA max.	**EIA 364-20** 500V AC rms., for 1 minute Test between adjacent contacts of unmated connector.
MECHANICAL		
• Total Insertion force	Total Insertion force: 40N max.	**IEC 512, part 7** Measure force necessary to mate connector assembly's rate of 25 mm per minute.
• Total Pulling force	Total pulling force (for Non-Push Type): 2N min. Total lock release force (for Push-Push Type): 40N max.	**IEC 512, part 7** Measure force necessary to mate connector assembly's rate of 25 mm per minute.
• Vibration and High Frequency	No physical damage	**IEC 512, part 4, test 6c.** Mechanical frequency range is 10~2000Hz, Acceleration is 2G
• Shock	No physical damage	**IEC 512, part 4, test 6c** Acceleration is 5G
• Contact Retention Force	9PIN Contact: 3N min. WP Contact: 2N min. CD Contact: 2N min.	**IEC 512, part 8**
• Connector Intensity	No Physical damage	Applied Force 10N to main body of connector at no card for Up/Down/

		forward/ backward directions
• Wrestling (Flapping) strength	No physical damage	Applied force 10N to SD card for Up/ Down/ Right/ Left directions (The card shall be inserted 15mm into the connector from the head of the card)
• Durability Cycling	No physical damage	Operation Cycles: 10000 cycles (push-in and push-out) times, mate and unmated connectors with SD card gauge for 500 cycles per hour **EIA-364-09**
ENVIRONMENTAL		
• Humidity	Contact resistance: 100 mΩ max. at initial; 20 mΩ max. after test Insulation resistance: 1000 MΩ at initial; 100 MΩ after test.	**MIL-STD-202F, method 103B, Test condition B** Temperature: 40˚C±2˚C Humidity: 90~95% (RH) Period: 96 hours.
• Salt Spray	No harmful corrosion	**MIL-STD-202F, method 101D** Temperature: 35˚C±2˚C Concentration: 5% Period: 48 hours.
• Thermal Shock	No physical damage	**MIL-STD-202F, method 107G, Test Condition A** -55˚C to +85˚C, 5 cycles.
• Moisture Resistance	No physical damage	**MIL-STD-202, method 106,Test condition B.** Subject mated connector to 10 cycles between -10˚C and 65˚C at 80~98% relative humidity.
• High Temperature Resistance	No physical damage	**MIL-STD-202, method 108** Subject mated connector to 85˚C for 250 hours.
PHYSICAL		
• Solderability	The test area shall be covered more than 95% of immersed area with flash solder.	**MIL-STD-202F, method 208** Solder temperature: 230˚C±5˚C Lead-Free plated solder temperature: 245˚C±3˚C Period: 5±0.5 sec.
• Resistance to Reflow soldering Heat	No physical abnormalities such as Crack and deformation of housing, shall be present after the test	**EIA-364-56** Pre-Heat: 150~200˚C, 60 to 120 sec. Peak temperature 260˚C +0/-10 ˚C 1 cycles.

- Resistance to Soldering Heat: (refer to attached profile)
  Test condition: Peak temperature: 260+0 / -10 ℃
  Preheating temperature: 150 – 200 ℃



1	Average ramp rate	3°C per second max.
2	Pre-heat temp.(minimum)	150°C
	Pre-heat temp.(maximum)	200°C
	Pre-heat time	60 to 120 seconds
3	Ramp to peak	3°C per second max.
4	Time over liquidus(217°C)	60 to 150 seconds
5	Peak temp.	260 +0/-10°C
	Time within 5°C of peak	10 seconds max.
6	Ramp- cool down	6°C per second max.
	Time 25°C to peak	8 minutes max.

Figure 1