TO

SPECIFICATION FOR APPROVAL

DESCRIPTION: 7+6 Pin SLIM SATA Plug, SMT Type

CUSTOMER PROD.NO/DWG.NO:

E&T PROD.NO: 8651K-X13N-XXX

APPROVAL SHEET NO:

E&T DWG. NO./DOCUMENT: 8651K-X13N-XXX

REV: A1

PLEASE RETURN TO US ONE COPY OF"SPECIFICATION FOR APPROVAL"WITH YOUR APPROVED SIGNATURES.

APPROVED SIGNATURES			

The Quality Connection

ENTERY INDUSTRIAL CO., LTD.
E&T ELECTRONICS (DONG GUAN) CO., LTD.
E&T ELECTRONICS (SU ZHOU) CO., LTD.

ENTERY INDUSTRIAL CO., LTD.

Title : 7+6 Pin SLIM SATA Plug
SMT Type

Max Lee		**Title: 7+6 Pin Slim SATA Plug, SMT Type**	
A1	**07,26'2010**	This Document Contains Information That Is Proprietary To E&T And Should Not Be Used Without Written Permission	
Rev	**Description**		
Document No **8651K-X13N-XXX**		Prepared By: **Max Lee**	Date: **11,24'2009**
		Checked By:	Date:
		Approved By:	Date:

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GROUP AND TEST SEQUENCE

Test of Examination		Test Group						
		A	B	C	D	E	F	G
1	Examination of Product	1,5	1,9	1,8	1,8	1,7	1,3	1,3
2	Low-Level Contact Resistance(LLCR)	2,4	3,7	2,4,6		4,6		
3	Insulation Resistance				2,6			
4	Dielectric Strength				3,7			
5	Current Rating			7				
6	Insertion Force		2					
7	Removal Force		8					
8	Durability	3	4(a)			2(a)		
9	Physical Shock		6					
10	Vibration		5					
11	Humidity				5			
12	Temperature Life			3				
13	Reseating(Manually Unplug/Plug Three Times)			5		5		
14	Mixed Flowing Gas					3		
15	Thermal Shock				4			
16	Solder Ability						2	
17	Soldering Heat Withstanding							2

NOTE :
(a) Preconditioning, 20 Cycles For The 50-Durability Cycle Requirement, 50 Cycles For The 500-Durability Cycle Requirement. The Insertion And Removal Cycle Is At The Maximum Rate Of 200 Cycles Per Hour.

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PRODUCT SPECIFICATION

1. SCOPE :

This product specification contains the test method, the general performance and requirement for interconnection system connectors. The specification covers 8651 series connectors manufactured by ENTERY INDUSTRIAL CO.. LTD.

2. PRODUCT NAME AND PART NUMBER :

Product Name	E&T Part Number
7+6 Pin Slim SATA Plug, SMT Type	8651K-X13N-XXX

3. RATINGS :

Item	Standard	
Rated Voltage (MAX.)	30 V	DC
Rated Current (MAX.)	1.5A	
Operating Temperature Range	-40^0C ~ $+80^0$C	

*Including terminal temperature rise

4.PERFORMANCE :

4- 1 Electrical Performance

Item		Test Condition	Requirement
4-1-1	Insulation Resistance	EIA 364-21 After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies.	1000 MΩ (min)
4-1-2	Dielectric Strength	EIA 364-20 Method B Test between adjacent contacts of mated and unmated connector assemblies. Test Voltage: 500V AC. Test Time: 60 sec.	No Breakdown
4-1-3	Low-Level Contact Resistance(LLCR)	EIA 364-23 Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA maximum	30 mΩ MAX. Resistance increase 15 mΩ maximum after stress
4-1-4	Contact Current Rating (Power Segment)	• Mount the connector to a test PCB • Wire power pins P1, P2, and P3 in parallel for power • Wire ground pins P4, P5, and P6 in parallel for return • Supply 4.5 A total DC current to the power pins in parallel, returning from the parallel ground pins • Record temperature rise when thermal equilibrium is reached	1.5 A per pin minimum. The temperature rise above ambient shall not exceed 30℃ at any point in the connector when contact positions are powered. The ambient condition is still air at 25℃

4-2 Mechanical Performance

Item		Test Condition	Requirement
4-2-1	Insertion force Cabled Signal Connector	EIA 364-13 Measure the force necessary to mate the connector assemblies at a max. rate of 12.5 mm per minute.	45N (MAX)
4-2-2	Removal Force Cabled Signal Connector (Non-latching)	EIA 364-13 Measure the force necessary to unmate the connector assemblies at a max. rate of 12.5 mm per minute.	10N (Min). Through 50 Cycles
4-2-3	Insertion force Cabled Power Connector	EIA 364-13 Measure the force necessary to mate the connector assemblies at a max. rate of 12.5 mm per minute.	45N (MAX)
4-2-4	Removal Force Cabled Power Connector (Non-latching)	EIA 364-13 Measure the force necessary to unmate the connector assemblies at a max. rate of 12.5 mm per minute.	10N (Min). For Cycles 1 Through 5 8N (Min). Through 50 Cycles
4-2-5	Insertion force Backplane Connector	EIA 364-13 Measure the force necessary to mate the connector assemblies at a max. rate of 12.5 mm per minute.	20N (MAX)
4-2-6	Removal Force Backplane Connector	EIA 364-13 Measure the force necessary to unmate the connector assemblies at a max. rate of 12.5 mm per minute.	2.5N (Min). After 500 Cycles
4-2-7	Removal Force Cabled Latching Connector Includes Power And Signal Connector	EIA 364-13 Apply a static 25N unmating test load	No damage and no disconnector through 50 mating cycles

4-3 Environmental Performance and Others

Item		Test Condition	Requirement
4-3-1	Durability	EIA 364-09 50 cycles for internal cabled application; 500 cycles for backplane/blindmate application. Test done at a maximum rate of 200 cycles per hour.	No physical damage. Meet requirements of additional tests as specified in the test sequence
4-3-2	Physical Shock	EIA 364-27 Condition H Subject mated connectors to 30 g's half-sine shock pulses of 11 msec duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. See NOTE 2.	No discontinuities of 1 μ s or longer duration. No physical damage.
4-3-4	Random Vibration	EIA 364-28 Condition V Test letter A Subject mated connectors to 5.35 g's RMS. 30 minutes in each of three mutually perpendicular planes. See NOTE 2.	No discontinuities of 1 μ s longer duration.

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Item		Test Condition	Requirement
4-3-5	Humidity	EIA 364-31 Method II Test Condition A. Subject mated connectors to 96 hours at 40℃ with 90% to 95% RH.	See NOTE 1
4-3-6	Temperature Cycling	EIA 364-17 Test Condition III Method A. Subject mated connectors to temperature life at +85℃ for 500 hours.	See NOTE 1
4-3-9	Thermal Shock	EIA 364-17 Test Condition III Method A. Subject mated connectors to 10 cycles between –55℃ and +85℃.	See NOTE 1
4-3-10	Mixed Flowing Gas	Half of the samples are exposed unmated for seven days, then mated for remaining seven days. Other half of the samples are mated during entire testing.	See NOTE 1
4-3-11	Solderadility	EIA364-52 Steam age 8 hour at 90℃～96℃Solder time to be 5±1 seconds at 245℃, using unactivated flux.	More than 95% of the immersion shall be covered with solder.
7-8	Soldering heat withstanding	Wave soldering： It shall be tested in accordance with EIA364-56 Procedure 3.Test condition C. Soldering temperature：255±5℃ Immersion Duration：10±2 sec	Inspect dimension during the test, no physical damage or derormed.
		Reflow soldering（Infrared）： Refer soldering method The conditions specified on paragraph 6 Shell be repeated twice.	

NOTE：

1. Shall meet EIA 364-18 Visual Examination requirements, show no physical damage.
2. Shock and vibration test fixture is to be determined by each user with connector vendors.

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INFRARED REFLOW CONDITION

1) Ascending time to preheating temperature 170°C shall be 40 seconds minimum.
2) Preheating shall be fixed at 160...180°C for 60...90 seconds.
3) Heating shall be fixed at 220°C for 50...60 seconds.
4) At 260±5°C peak shall be 10 seconds maximum.