ELECTRIC CONNECTOR TECHNOLOG	Document Number: 606513133001

产品规格书

Product Specification

P/N: 818031330	Title : **MCIO 4I STR TO RA Cable**

Rev.	ECN	Release and Revision Description	Prepared By/Date:	Approved By/Date:
A	ECN20****	The new formulation	2022.03.20	蔡家兴 2022.03.20

Content

目录

1. Scope:

This Product Specification covers the requirement of MCIO 4I cable assemblies on product performance, test methods and quality assurance provisions

2. Product Application & Features:

The MCIO 4I cable assembly is designed for in the servers, Data storage, Workstation, etc.
Product Features:

- Provide 6 channels signal transmission as per industry standard.
- Data speed: support PCIE GEN5 32Gbps.
- Meet SFF-TA-1016 Specification.

3. Ratings:

Voltage Rating:	30 V DC /contact;
Current:	1.1 A /contact;
Insulation Resistance:	100MegaOhm;
Withstanding Voltage:	300V DC 1 minute ;
Durability:	200 cycles

4. Electrical Performance

Item	Description	Test Condition	Requirement
4.1	**Low Level Contact Resistance**	EIA-364-23 (termination of connector to board carrier shall be included in the measurements)	20 mΩ MAX change from baseline
4.2	**Insulation Resistance**	(EIA 364-21) Testing by applying the specified voltage (DC 100 V) between adjacent contacts for one minute.	100MegaOhm Minimum
4.3	**Dielectric withstanding voltage**	EIA-364-20 Method B 300 VDC minimum for 1 minute Applied voltage may be product / application specific	No defect or breakdown between adjacent contacts -AND- 0.5 mA Max Leakage Current

5. Mechanical Performance

Item	Description	Test Condition	Requirement
5.1	**Latched Mating Force**	EIA-364-13 To be tested with connector (with integrated latch shroud) and module (plug) without any heat sinks. Latching mechanism deactivated (locked out)	SFF-TA-1016 30.9N MAX

5.2	**Latched Unmating Force**	EIA-364-13 To be tested with connector (with integrated latch shroud) and module (plug) without any heat sinks. Latching mechanism deactivated (locked out)	1.9N MIN
5.3	**Axial Latch Retention**	Pull in direction parallel to insertion, hold for minimum of 60 seconds	50N, no damage
5.4	**Durability (preconditioning)**	EIA-364-09, perform 5 plug/unplug cycles	No evidence of physical damage
5.5	**Durability**	EIA-364-09 To be tested with connector and module (Latches should be locked out per EIA-364-1000)	200 cycles min No visual damage to mating interface or latching mechanism
5.6	**Mechanical Vibration**	EIA-364-28 Test Condition D Random profile: 5 Hz @ 0.01 g2/Hz to 20 Hz @ 0.02 g2/Hz (slope up) 20 Hz to 500 Hz @ 0.02 g2/Hz (flat) Input acceleration is 3.13 g RMS 15 minutes per axis for all 3 axes on all samples Random control limit tolerance is ± 3 dB Shock and Vibration board, Annex D	No damage No discontinuity longer than 1 microsecond allowed 20 milliohms maximum change from initial (baseline) contact resistance
5.7	**Mechanical Shock**	EIA-364-27, Test Condition A Trapezoidal shock 50 G, ± 10% Duration 11 ms Velocity change 170 inch/sec, ± 10% Three drops in each of six directions are applied to each of the samples Shock and Vibration board, Annex D	No damage 20 milliohms maximum change from initial (baseline) contact resistance
5.8	**Wrenching Strength**	Bend cable 90° at minimum bend radius. Pull 25 N Min in each of 4 axis directions for round cable. Pull 25 N Min in each of 2 axis directions for flat cable.	No damage to plug / cable assembly.

6. Environmental Performance

Item	Description	Test Condition	Requirement
6.1	**Storage Temperature & Humidity**	EIA-364-32 -20°C to +80°C degrees 80% Relative Humidity Method A, Test Condition 1, Duration 4 Use min and max Field Temperatures listed in Table 7-1 for temperature range	After the environmental test, the electrical and mechanical properties meet the criteria
6.2	**Thermal Shock**	EIA-364-32, Method A, Table 2, Test Condition I, -55 °C to 85 °C, perform 10 cycles in mated condition	After the environmental test, the electrical and mechanical properties meet the criteria

6.3	**Cyclic Temperature and Humidity**	EIA-364-31G, Method Ⅳ, Ramp times should be 2.5 hour and dwell times should be 3.0 hour. Dwell times start when the temperature and humidity have stabilized within specified levels, perform 10 cycles in mated condition, the cycle duration is 24 hours.	After the environmental test, the electrical and mechanical properties meet the criteria
6.4	**Temperature Life Temperature Life (preconditioning)**	EIA-364-17, Method A (without electrical load) 65°C field temperature. for 10 years Test Temperature and Test Duration per EIA 364-1000 Table 8 105°C/240hour Test Temperature and Test Duration per EIA 364-1000 Table 9 105°C/120hour	After the environmental test, the electrical and mechanical properties meet the criteria
6.5	**Thermal Disturbance**	EIA-364-1000 Cycle the connector between 15 ±3 °C and 85 ±3 °C, as measured on the part. Ramps should be a minimum of 2 °C/minute. Dwell times should ensure that the contacts reach the temperature extremes (a minimum of 5 minutes), humidity is not controlled; perform 10 cycles in mated condition.	After the environmental test, the electrical and mechanical properties meet the criteria
6.6	**Thermal cycling**	Cycle the connector or socket between 15 °C ± 3°C. and 85 °C ±3 °C, as measured on the part.Ramps should be a minimum of 2 °C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Perform 500 such cycles.	After the environmental test, the electrical and mechanical properties meet the criteria

7. High frequency Performance

7.1 PCIE 5.0:

Test Item								

ITEM	PCIE5.0
Rise time	23ps(20%~80%)
SDD21/SD12	-4dB;0.01Ghz<f<=8Ghz -8dB;8Ghz<f<=16Ghz
SDD11/SDD22	-15dB 0.01Ghz~2Ghz； -15dB to -8dB 2GHz~8GHz -8dB 8Ghz~16Ghz； -8dB to -5dB 16GHz~20GHz
NEXT	MDNEXT：-45dB 0.05GHz~8GHZ -45dB~-40dB 8GHz~12GHz； -40dB 12GHz~20GHz
FEXT	MDFEXT：-40dB 0.05GHz~6GHZ -40dB~-35dB 6GHz~12GHz； -35dB 12GHz~20GHz
SCD21	0.05Ghz~16Ghz，-18dB Max.
SCD21-SDD21	-10dB 0.05GHz~16GHz.
SCD11/SCD22	-20dB to -12dB 0.01GHz~12GHz -12dB 12GHz~16GHz
SCC11/SC22	-4dB 0.05GHz~16GHz
Difference Impedance	Cable 85Ω+/-5 Connector 85Ω+/-15%
Delay	≤5.3ns

8. Test Sequence and Sample Quantity/测试顺序及样品数量

							G	H
Examination of product	1,	1	1	1	1	1	1	
Insulation Resistance					2	2	2	
Dielectric withstanding voltage					3	3	3	
Low Level Contact Resistance	2,9	2,6,8	2,4,6, 8	2,5,7	4,7	4,7,9	4,7,9	
Durability(preconditioning)	3			3	5	5	5	
Latched Mating Force	4							
Latched Unmating Force	5							
Durabilty Cycles	6			4				
Axial Latch Retention	7	5		6				
Wrenching Strength	8	4	7	9				
Mechanical Shock		3	5	8				
vibration			3					
Temperature Life					6			
Temperature Life (preconditioning)							6	
Thermal Shock						6		
Cyclic Temp and Humidity						8		
Thermal Disturbance							8	
Thermal cycling		7						
Difference Impedance								1
SCD21-SDD21								2
SCD11/SCD22								3
SCC11/SC22								4
SDD21/SD12								5
SDD11/SDD22								6
NEXT								7
FEXT								8
SCD21								9
Delay								10
Sample QTY(PCS)	5	5	5	5	5	5	5	5
The number of group is test sequence 测试分组中的序号为试验顺序.								