

 ELECTRIC CONNECTOR TECHNOLOGY	Product Specification			
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1. Scope:

This Product Specification covers the requirement of Multi_Trak 8I&16I-21A&34&55A-PW cable assemblies on product performance, test methods and quality assurance provisions

2. Product Application & Features:

The Multi_Trak 8I&16I-21A-PW cable assembly is designed for in the servers, Data storage, Workstation, etc.

Product Features:

- Provide 12 channels signal transmission as per industry standard.
- Data speed: support PCIE GEN6 64Gbps.
- Meet SFF-TA-1033 Specification.

3. Ratings:

Voltage Rating: 30 V DC /contact;
 Current: 1.1 A /contact+
 21A Standard version: 10.5A MAX per power pin, 0.5A MAX per signal pin.&
 34A High Power version: 8.5A MAX per power pin, 0.5A MAX per signal pin. &
 55A High Power Plus version: 27.5A MAX per power pin, 0.5A MAX per signal pin.

Insulation Resistance: 100MegaOhm;
 Withstanding Voltage: 300V DC 1 minute ;
 Durability: 200 cycles

Item	Description	Test Condition	Requirement
1	Initial examination of product	Meets requirements of product drawing. No detrimental condition	EIA-364-18B Visual examination and dimensional inspection per product drawing.
2	Final examination of product	Meets visual requirements. No detrimental condition	EIA-364-18B Visual examination.

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4. Electrical Performance

Item	Description	Test Condition	Requirement
4.1	Low Level Contact Resistance	EIA-364-23 20 mV DC MAX, 100 mA MAX To include wire termination or connector-to-board termination	20 mΩ MAX change from baseline The first low level contact resistance reading in each test sequence is used to determine a baseline measurement. Subsequent measurements in each sequence are measured against this baseline.
4.2	Insulation Resistance	(EIA 364-21) Testing by applying the specified voltage (DC 100 V) between adjacent contacts for one minute.	10MegaOhm 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
4.4	Current*	Maximum current to which a contact is exposed in use. EIA-364-70 Method 3, 30-degree temperature rise Mate connectors:measure the temperature rise at the rated current after. Based upon EIA-364-70&55 Temperature rise:+30 °C Max	Electrical, mechanical and environmental criteria 21A Standard version: 10.5A MAX per power pin, 0.5A MAX per signal pin. 34A High Power version: 8.5A MAX per power pin, 0.5A MAX per signal pin. 55A High Power Plus version: 27.5A MAX per power pin, 0.5A MAX per signal pin.
4.5	Operating Rating Voltage	Maximum voltage to which a contact is exposed in use. 30V DC per contact MAX	Electrical, mechanical and environmental criteria

NOTE: Performance criteria denoted with stars (*) are not validated by EIA-364-1000 testing. Refer to Table 7-3 for test procedures and pass/fail c

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5. Mechanical Performance

Item	Description	Test Condition	Requirement
5.1	Latched Mating Force	EIA-364-13 Latch removed, measure the connector (male to female) Mating and Un-mating forces at a speed of 25 ±6 mm (1 ± ¼inch) per minute. 8X 21A:53.9 N MAX 8X 34A:60.5 N MAX 16X 21A:94.6 N MAX 16X 34A:101.2 N MAX 16X55A: 115.6N MAX	SFF-TA-1033 1.1 N/contact pair + 10 N MAX
5.2	Latched Unmating Force	EIA-364-13 Un-mating force. 8X 21A:4.9 N MIN 8X 34A: 5.5 N MIN 16X 21A:8.6 N MIN 16X 34A:9.2 N MIN 16X 55A 9.6N MIN	0.1 N/contact pair MIN
5.3	Axial Latch Retention	Pull in direction parallel to insertion, hold for minimum of 60 seconds	50N MIN, 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: 5Hz@0.01g ² /Hz 20Hz@0.02g ² /Hz 500Hz@0.02g ² /Hz;Grms=3.1g, 15 minutes in each of 3 mutually perpendicular directions. Before the test, The cable core (GND are not included) be connected in series by the mating test PCB and fixed on test platform. During the test a monitoring current of 80mA DC for each contacts of the series loop to monitor connectivity, should without discontinuity more than 1us, no damage after test.	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 Half-sine shock of 50g, pulses of 11ms duration, 3 shocks in each axis (18 total). The cable core (GND are not included) end to end must be connected become a series circuit by the mating test PCB and fixed on test platform. During the test a monitoring current of DC 100mA maximumfor each contacts of the series loop to monitor the connectivity, should without discontinuity more than 1us no damage	No damage 20 milliohms maximum change from initial (baseline) contact resistance

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		after test.	
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.
5.9	Wipe length	Designed distance a contact traverses over a mating contact surface during mating and resting at a final position	Greater than 0.127mm

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	Electrical, mechanical and environmental 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	Electrical, mechanical and environmental criteria
6.3	Cyclic Temperature and Humidity	EIA-364-31B, Method III without conditioning, initial measurements, cold shock and vibration. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within specified levels, perform 24 cycles in mated condition. 25 °C 3 °C at 80 % 3% RH and 65 °C 3 °C at 50 % 3% RH.	Electrical, mechanical and environmental 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	Electrical, mechanical and environmental criteria

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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.	Electrical, mechanical and environmental 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.	Electrical, mechanical and environmental criteria
6.7	Mixed Flowing Gas (see Note 2)	EIA-364-65 Class IIA Duration: 7 days Test option Per EIA-364-1000: 4	Test option, temperature, duration must be reported.

Electrical Requirements

7. High frequency Performance

7.1 PCIE 6.0:

ITEM	PCIE6.0
Rise time	15ps(20%~80%)
SDD21/SD12	-2.5-0.3125*f for 0.05Ghz<f<=16Ghz 1.5-0.5625*f for 16Ghz<f<=24Ghz
SDD11/SDD22	-20+0.625*f for 0.05Ghz<f<=24Ghz PS:如果 SDD11/SDD22 Fail, 产品测试结果需<=IRL Spec
NEXT	PSNEXT: --55+0.4166667*f 0.05GHZ<f<=24GHZ PS:如果 PSNEXT Fail, 产品测试结果需<=ccICN_NEXT Spec
FEXT	PSFEXT: --45+0.4166667*f 0.05GHZ<f<=24GHZ PS:如果 PSFEXT Fail, 产品测试结果需<=ccICN_FEXT Spec
EIPS	4ps Max.



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Lane-to-Lane Skew	200ps Max
iRL	iRL=-25dB Max (Trise=25ps)
ccICN_NEXT	500μV
ccICN_FEXT	400μV



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8. Test Sequence and Sample Quantity

Test Item 测试项目	A	B	C	D	E	F	G	
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	2,11	2,8,10	2,6,8,10	2,7,9,11,13	4,9	4,9,11	4,9,11	
Durability(preconditioning)	5			5	7	7	7	
Latched Mating Force	9							
Latched Unmating Force	10							
Durabilty Cycles	7			6				
Axial Latch Retention	6	7		8				
Wrenching Strength	8	6	9	12				
Mechanical Shock		5	7	10				
vibration			5					
Temperature Life					8			
Temperature Life (preconditioning)							8	
Thermal Shock						8		
Cyclic Temp and Humidity						10		
Thermal Disturbance							10	
Thermal cycling		9						
Mixed Flowing Gas								
Cable Assembly Double 85 test								
Difference Impedance	3,12	3,11	3,11	3,14	5,10	5,12	5,12	
SDD21/SD12	4,13	4,12	4,12	4,15	6,11	6,13	6,13	
Final examination of product	14	13	13	16	12	14	14	
Sample QTY(PCS)	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.								