

## PRODUCTS SPECIFICATION

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DESCRIPTION : IEEE 1394b Cable Assembly  
CUSTOMER :  
COMOSS P/N : 1394C series  
Date of Issue : 2005 / Aug. / 10  
Version : 1.1  
Designer : Miles

Approval

Customer Signature

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Subject :

**Product Specification –IEEE 1394b Cable Assembly**

**1.0 General**

This product specification contains the test method, the general performance and requirements for IEEE 1394b series cable assembly. All materials of the 1394b cable assembly meet the requirement of RoHS (Restriction of Hazardous Substances). The reflow process accord with the lead-free condition.

**2.0 Series Description**

**1394C--9A--9A--100—00**

**(1) (2) (3) (4)**

(1)(2) Interface Type :

\*9A : 9 pin beta plug

\*9B : 9 pin bilingual plug

(3) Cable Length :

\*050 : 50 cm

\*100 : 100 cm

\*200 : 200 cm

\*300 : 300 cm

\*450 : 450 cm

(4) Option :

00 : COMOSS Standard

**3.0 Application**

(1) Performance: S400~S1600

(2) Ambient Temperature Range : -40 to +85 °C.

**4.0 Overall Dimensions**

See attachment.

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### **5.0 Electrical performance**

Item	Description	Test methods and Condition	Requirements
5-1	Rated Voltage		30 Vdc.
5-2	Rated Current		1.5 Amp.
5-3	Low-level contact resistance	ANSI/EIA 364-23A Subject mated contacts by 20mV maximum open circuit at 100mA.	Initial: 50mΩ Max. change: 30mΩ.
5-4	Insulation Resistance	ANSI/EIA 364-21B Test between adjacent contacts and contacts and shell at test voltage 100Vdc ± 10Vdc at 1 minute.	100MΩ minimum.
5-5	Withstanding Voltage	ANSI/EIA 364-20A Test between adjacent contacts. 100Vdc±10Vdc at 1 minute.	No flashover. No sparkover. No excess leakage. No breakdown.

### **6.0 Mechanical performance**

6-1	Durability	ANSI/EIA 364-09C Automatic cycling to 1000 cycles, 500 cycles/h ±50 cycles.	Unmating force at end of durability cycles: 10.0N min, 39.0N max.
6-2	Cable axial pull test	ANSI/EIA 364-38A Fix plug housing and apply a 50.0 N load for 1 min on cable axis.	No discontinuity at 1μs or longer. No jacket tears. No jacket movement greater than 1.5mm.

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Item	Description	Test methods and Condition	Requirements
6-3	Cable flexing	ANSI/EIA 364-41B X=5.5 x cable diameter; 100 cycles in each of two planes.	No flashover. No sparkover. No excess leakage. No breakdown. 100MΩ minimum. No discontinuity at 1μs or longer. No jacket tears. No jacket movement greater than 1.5mm.

### **7.0 Environmental performance**

Item	Description	Test methods and Condition	Requirements
7-1	Temperature Life	ANSI/EIA 364-17B Condition 2 (79°C) 96 hours, Method A (mated).	LLCR: 30mΩ max.change.
7-2	Humidity	ANSI/EIA 364-31A Condition A (96h) method III nonenergized Omit steps 7a and 7b	Insulation Resistance: 100MΩ minimum.
7-3	Thermal Shock	ANSI/EIA 364-32B 10 cycles (unmated) Test condition I.	LLCR: 30mΩ max. change. Withstanding voltage: No flashover. No sparkover. No excess leakage. No breakdown.
7-4	Mixed Flow Gas	ANSI/EIA 364-65A Class II Exposures: Expose mated for 10 days.	LLCR: 30mΩ max. change.
7-5	Vibration	ANSI/EIA 364-28D Condition I	No discontinuity at 1 μs or longer.
7-6	Mechanical shock	ANSI/EIA 364-27B Condition A or Condition E	No discontinuity at 1μs or longer.

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Item	Description	Test methods and Condition	Requirements	
<b>8.0 High frequency characteristics</b>				
8-1	Signal Impedance	Annex clause K.3 of IEEE Std 1394-1995 and 1394a-2000	Differential Mode: $Z_{TPA}=(110 \pm 6) \Omega$ $Z_{TPB}=(110 \pm 6) \Omega$  Common mode: $Z_{TPACM}=(33 \pm 6) \Omega$ $Z_{TPBCM}=(33 \pm 6) \Omega$	
8-2	Propagation skew	ANSI/EIA 364-103 The max difference between the differential mode propagation delay within the differential twisted pairs shall be measured in the time domain with injected of 70ps.	Skew $\leq 160$ ps	
8-3	Crosstalk	To be measured within a 4.5m cable assembly in the time domain using the cable assembly differential test fixture and a differential TDT at 160ps(10% ~ 90%) to emulate cable assembly at S1600 operation.	$X_{NEXT}, X_{FEXT} \leq 5\%$	
8-4	Signal pair attenuation	Annex clause K.4 of IEEE Std 1394-1995	Frequency	Attenuation
			250 MHz	$\leq 3.3$ dB
			400 MHz	$\leq 4.1$ dB
			800 MHz	$\leq 6.2$ dB
1000 MHz	$\leq 7.5$ dB			
8-5	Propagation delay	Annex clause K.5 of IEEE Std 1394-1995	$V_{TPA} \leq 5.05$ ns/meter $V_{TPB} \leq 5.05$ ns/meter	