









Proposals for 1394 Cable and Connector Compliance Testing by Similarity

(Version 1.0, approved by QRB on May 16, 2006)

To provide guidelines for classification of “Similar Products” which allows certification testing of only one type of 1394 cable or connector “the Parent”. Once “the Parent” passes the compliance tests as defined in the 1394 Connector and Cable Compliant Testing Criteria (TA Document TS2004003) and earns the 1394 Compliance logo all other “Similar Products” can earn the 1394 Compliance logo by reference to “the Parent”.

1394 connectors can be qualified by similarity as described in the following schedule:

1394 6 pin Receptacles Test Requirements for Electromechanical Performance by Similarity						
Test Parameters		Parent	Right Angle 6 pin thru hole 	Right Angle 6 pin SMT 	Upright 6 pin thru hole 	Vertical 6 pin thru hole 
Group	A	Yes	Yes	Yes	Yes	Yes
	B	Yes				
	C	Yes				
	D	Yes				
	E	Yes				
	F	Yes				
	G	Yes	Yes	Yes	Yes	Yes
	I (Impedance)	Yes	Yes	Yes	Yes	Yes

1394 4 pin Receptacles Test Requirements for Electromechanical Performance by Similarity						
Test parameters		Parent	Right Angle 4 pin thru hole 	Right Angle 4 pin SMT 	Right Angle 4 pin SMT Flange 	Right Angle 4 pin SMT Upper Flange 
Group	A	Yes	Yes	Yes	Yes	Yes
	B	Yes				
	C	Yes				
	D	Yes				
	E	Yes				
	F	Yes				
	G	Yes	Yes	Yes	Yes	Yes
	I (impedance)	Yes	Yes	Yes	Yes	Yes

Note:

“Yes” means the test is required. “Blank” means the test is not required.

The Parent may be any of the types listed under the 4 right columns.

For changing design, materials, process or configurations that are not listed above a full qualification of the connectors is required.

Photos of connectors are for illustration purpose only (Courtesy COMOSS Electronic Co. Ltd).

Test Group Detail

Group A: Basic construction, workmanship dimensions & plating thickness

ANSI/EIA Test Procedures

Visual and dimensional inspection ID 364-18B-05
Plating Thickness

Group B: DC electrical functionality when subjected to mechanical shock and vibration

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Vibration ID 364-28E-05
Mechanical Shock (Specified Pulse) ID 364-27B-96

Group C: DC electrical functionality when subjected to thermal shock and humidity stress

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Thermal Shock ID 364-32D-06
Humidity ID 364-31B-00

Group D: Insulator integrity when subjected to thermal shock and stress

ANSI/EIA Test Procedures

Withstanding Voltage ID 364-20C-04
Thermal Shock ID 364-32D-06
Resistance ID 364-21C-00
Humidity ID 364-31B-00

Group E: DC electrical functionality when subjected to mechanically cycling and corrosive gas exposure

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Continuity ID 364-06C-05
Durability ID 364-09C-99
Mixed Flowing Gas ID 364-65-97

Group F: DC electrical functionality and unmating forces when subjected to temperature life stress

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Continuity ID 364-06C-05
Temperature Life ID 364-17B-99

Group G: Unmating forces when subjected to mechanically cycling

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Durability ID 364-09C-99

Group I: High speed electrical functionality

ANSI/EIA Test Procedures

Impedance (cable) ID IEEE Std 1394-1995 Annex K.3.2
Impedance (connector) ID IEEE Std 1394a-2000 Annex K.3
Attenuation ID IEEE Std 1394-1995 Annex K.4
Propagation Delay ID IEEE Std 1394-1995 Annex K.5
Skew ID IEEE Std 1394-1995 Annex K.6.2
Cross Talk ID IEEE Std 1394a-2000 Annex K.8
Power Pair DC resistance ID IEEE Std 1394-1995 Annex K.7.3
(for 6 circuit)

1394 cable Assemblies can be qualified by similarity as described in the following schedule:

1394 Cable Assemblies Test Requirements by Similarity				
Test Parameters		6-6	6-4	4-4
Group	A	Yes	Yes	Yes
	G	Yes	Yes	Yes
	H	Yes	Yes	Yes
	I	Yes	Yes	Yes

Note:

If qualification is completed on cables 4.5 meters long, then all cables of same design (plug configurations, wiring diagram, termination method) and material (raw cables, plugs and overmold materials) with only a shorter length between 4.5 meters and 1 meter are qualified by similarity. For cables with a length less than 1 meter, full qualification is required.

If only the colors of the overmold and the cable jacket of a cable assembly changes, not the individual wires, this cable qualifies by similarity.

If all connectors used in the cable assemblies are on the 1394TA Compliant Product List, no additional connector qualifications are required on the cable assemblies.

Any changes in design (plug configurations, wiring diagram, termination method), materials (raw cables, plugs and overmold materials) or process will require a full qualification of the cable assemblies.

Test Group Detail

Group A: Basic construction, workmanship dimensions & plating thickness

ANSI/EIA Test Procedures

Visual and dimensional inspection ID 364-18B-05
Plating Thickness

Group G: Unmating forces when subjected to mechanically cycling

ANSI/EIA Test Procedures

Mating and unmating forces ID 364-13C-06
Durability ID 364-09C-99

Group H: General tests

ANSI/EIA Test Procedures

Electrostatic Discharges ID IEC 61000-4-2
Cable Axial Pull test ID 364-46B-00
Cable Flexing ID 364-41C-99

Group I: High speed electrical functionality

ANSI/EIA Test Procedures

Impedance (cable) ID IEEE Std 1394-1995 Annex K.3.2
Impedance (connector) ID IEEE Std 1394a-2000 Annex K.3
Attenuation ID IEEE Std 1394-1995 Annex K.4
Propagation Delay ID IEEE Std 1394-1995 Annex K.5
Skew ID IEEE Std 1394-1995 Annex K.6.2
Cross Talk ID IEEE Std 1394a-2000 Annex K.8
Power Pair DC resistance ID IEEE Std 1394-1995 Annex K.7.3
(for 6 circuit)

Project Editor: Sam Liu

1394TA Quality Review Board (QRB) has the following members:

Dave Thompson (Chair)
Jack Bell
Sam Liu
Richard Mourn
Michael Scholles
Mark Slezak,
James Snider
Colin Whitby-Strevens
Hans van der Ven