

Laboratory **Bharat Test House Pvt. Ltd., 781, HSIDC Industrial Estate, Rai, District Sonapat, Haryana**
Location 1- 781, HSIDC Industrial Estate, Rai, District Sonapat, Haryana
Location 2- 1474, HSIDC Industrial Estate, Rai, District Sonapat, Haryana

Accreditation Standard **ISO/IEC 17025: 2005**

Discipline **Electronics Testing** **Issue Date** **08.10.2015**

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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LOCATION 1 & 2

I. SAFETY TESTING FACILITY

1.	Information Technology Equipments	Components	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 1.5 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative Test
		Power Interface	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 1.6 IEC 60950-1: 2005 Amd. 1: 2009	0.01 W to 9999.99 W 0.1 A to 50 A
		Verifications of Marking & Instructions	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 1.7 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative Test
		Protection From Electric Shock And Energy Hazards	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.1 IEC 60950-1: 2005 Amd. 1: 2009	Up to 200 N Upto 20 mA 200 mV to 1000 V (DC) 200 mV to 750 V (AC)
		SELV Circuits	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.2 IEC 60950-1: 2005 Amd. 1: 2009	Upto 300 V DC Upto 500 V AC
		TNV Circuits	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.3 IEC 60950-1: 2005 Amd. 1: 2009	Upto 120 V Upto 1200 Ω

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	Information Technology Equipments	Limited Current Circuits	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.4 IEC 60950-1: 2005 Amd. 1: 2009	1 μ A to 20 mA
		Limited Power Sources	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.5 IEC 60950-1: 2005 Amd. 1: 2009	Upto 300 V Upto 10 A
		Provisions For Earthing and Bonding	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.6 IEC 60950-1: 2005 Amd. 1: 2009	Upto 100 V Upto 5 mA 0.01 s to 300 s
		Overcurrent And Earth Fault Protection In Primary Circuits	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.7 IEC 60950-1: 2005 Amd. 1: 2009	0.1 A to 50 A 0.01 s to 9999 h
		Safety Interlocks	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.8 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative
		Electrical Insulation	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.9 IEC 60950-1: 2005 Amd. 1: 2009	(20 %RH to 99 %RH)/ 0.1%RH 10 °C to 50 °C 0.01 kV to 10 kV 1s to 9999 h/0.01 s

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	Information Technology Equipments	Clearances, Creepage Distances And Distances Through Insulation	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 2.10 IEC 60950-1: 2005 Amd. 1: 2009	Upto 50 mm
		Wiring, Connections and Supply	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 3 IEC 60950-1: 2005 Amd. 1: 2009	200 mV to 1000 V (DC) 200 mV to 750 V (AC)
		Connection to a Main Supply	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 3.2 IEC 60950-1: 2005 Amd. 1: 2009	Upto 100 N
		Wiring Terminals for Connection of External Conductors	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 3.3 IEC 60950-1: 2005 Amd. 1: 2009	0.01 mm to 300 mm
		Disconnection for the Main Supply	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 3.4 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative
		Interconnection of Equipment	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 3.5 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative

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	Information Technology Equipments	Stability	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.1 IEC 60950-1: 2005 Amd. 1: 2009	10° to 15° 1 N to 200 N
		Mechanical Strength	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.2 IEC 60950-1: 2005 Amd. 1: 2009	Upto 500 N
		Design and Construction	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.3 IEC 60950-1: 2005 Amd. 1: 2009	Upto 30 mm Upto 500 g
		Protection Against Hazardous Moving Parts	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.4 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative
		Thermal Requirements	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.5 IEC 60950-1: 2005 Amd. 1: 2009	Upto 300 °C Upto 20 kΩ
		Openings In Enclosures	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.6 IEC 60950-1: 2005 Amd. 1: 2009	0.01 mm to 300 mm

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Information Technology Equipments	Resistance To Fire	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 4.7 IEC 60950-1: 2005 Amd. 1: 2009	Mass 20 N, Ball: 5 mm, 9.5 mm, 0.5 mm 1 ms to 99.99 min Upto 20 mA AC Upto 4 kVac
		Electrical Requirements and Simulated Abnormal Conditions	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 5 IEC 60950-1: 2005 Amd. 1: 2009	2 mA to 20 mA AC
		Electric Strength	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 5.2 IEC 60950-1: 2005 Amd. 1: 2009	Qualitative (Upto 5 kVac)
		Abnormal Operating and Fault Conditions	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 5.3 IEC 60950-1: 2005 Amd. 1: 2009	Upto 300 °C Upto 20 mA AC
		Connection to Telecommunication Networks	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 6 IEC 60950-1: 2005 Amd. 1: 2009	Upto 20 kV Upto 5 kVac
		Connection To Cable Distribution Systems	IS 13252 (Part 1): 2010 Amd. 1: 2013 Cl. No. 7 IEC 60950-1: 2005 Amd. 1: 2009	Upto 1000 MΩ Upto 10 kV

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2.	Medical Devices	Power Input	IEC 60601-1: 2005 Cl. No. 4.11 IS 13450-1: 2008	0.01 W to 9999.99 W
		Marking And Instructions	IEC 60601-1: 2005 Cl. No. 7 IS 13450-1: 2008	Qualitative
		Determination Of Accessible Parts	IEC 60601-1: 2005 Cl. No. 5.9 IS 13450-1: 2008	Qualitative
		Protective Earthing, Functional Earthing, Potential Equalization, Surface Coating, Plugs & Sockets, Functional Earth Terminal	IEC 60601-1: 2005 Cl. No. 8.6 IS 13450-1: 2008	Qualitative
		Leakage Currents And Patients Auxiliary Currents	IEC 60601-1: 2005 Cl. No. 8.7 IS 13450-1: 2008	1 μ A to 20 mA
		Dielectric Strength	IEC 60601-1: 2005 Cl. No. 8.8 IS 13450-1: 2008	0.2 kV to 20 kV
		Resistance To Environmental Stress	IEC 60601-1: 2005 Cl. No. 8.8.4.2 IS 13450-1: 2008	Qualitative

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	Medical Devices	Accessible Parts Including Applied Part	IEC 60601-1: 2005 Cl. No. 5.9 IS 13450-1: 2008	Qualitative
		Creepage Distances And Air Clearance	IEC 60601-1: 2005 Cl. No. 8.9 IS 13450-1: 2008	0.01 mm to 300 mm
3.	Electronics Audio, Video and Similar Electronic Apparatus	Verifications of Marking And Instructions	IS 616 : 2010 Cl. No. 5 IEC 60065: 2005	Qualitative
		Hazardous Radiations	IS 616 : 2010 Cl. No. 6 IEC 60065: 2005	0.1 mR/ H to 100 mR/H
		Heating Under Normal Operating Conditions	IS 616 : 2010 Cl. No. 7 IEC 60065: 2005	Upto 200 °C Upto 20 kΩ
		Constructional Requirements With Regard To The Protection Against Electric Shock	IS 616 : 2010 Cl. No. 8 IEC 60065: 2005	As per Figs Upto 200 N 0 to 20 mA 0 to 25 mA, 12 V DCV: 200 mV to 1000 V ACV: 200 mV to 750 V 0 to 5 kVac 0 to 200 mm
		Electric Shock Hazard Under Normal Operating Condition	IS 616 : 2010 Cl. No. 9 IEC 60065: 2005	Qualitative

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	Electronics Audio, Video and Similar Electronic Apparatus	Insulation Requirements	IS 616 : 2010 Cl. No. 10 IEC 60065: 2005	0 to 10 kV 1000 MΩ 0 to 5 kV AC
		Fault Conditions	IS 616 : 2010 Cl. No.11 IEC 60065: 2005	Upto 200 °C Upto 20 kΩ
		Mechanical Strength	IS 616 : 2010 Cl. No. 12 IEC 60065: 2005	0 to 200 N 0 to 5 Nm
		Clearances and Creepage Distances	IS 616 : 2010 Cl. No. 13 IEC 60065: 2005	0 to 50 mm
		Components	IS 616 : 2010 Cl. No. 14 IEC 60065: 2005	Qualitative
		Terminals	IS 616 : 2010 Cl. No. 15 IEC 60065: 2005	(1 Nm to 10 Nm)/0.1 Nm
		External Flexible Cords	IS 616 : 2010 Cl. No. 16 IEC 60065: 2005	0 to 200 mm 0 to 25 Nm
		Electrical Connections and Mechanical Fixings	IS 616 : 2010 Cl. No. 17 IEC 60065: 2005	35 A, 7 kg 0 to 2.5 Nm
		Stability and Mechanical Hazards	IS 616 : 2010 Cl. No. 19 IEC 60065: 2005	0 to 200 N

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	Electronics Audio, Video and Similar Electronic Apparatus	Resistance to Fire	IS 616 : 2010 Cl. No. 20 IEC 60065: 2005	Mass 20 N, Ball Dia: 5 mm, 9.5 mm 0.5 mm 1 ms to 99.99 min
4.	Instruments For Measurement And Laboratory Use (Electrical Control Equipment, Electrical Microscopes, Power Supply, Auto Transformer Electrical Laboratory Equipment, Signal Generators, Transducers, Transmitters)	Testing In Single Fault Condition	IEC 61010-1: (2010-06) Cl. No. 4.4	Qualitative
		Durability Of Markings	IEC 61010-1: (2010-06) Cl. No. 5.3	Qualitative
		Determination Of Accessible Parts	IEC 61010-1: (2010-06) Cl. No. 6.2	Qualitative
		Protective Bonding	IEC 61010-1: (2010-06) Cl. No. 6.5.2	Qualitative
		Insulation Requirements	IEC 61010-1: (2010-06) Cl. No. 6.7	Qualitative (0.01 MΩ to 1 GΩ At 500 V DC & 1000 V DC)
		Procedure For Voltage Test	IEC 61010-1: (2010-06) Cl. No. 6.8	Qualitative
		Clearance & Creepage Distance	IEC 61010-1: (2010-06) Cl. No. 6.7	0.01 mm to 300 mm

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	Instruments For Measurement And Laboratory Use (Electrical Control Equipment, Electrical Microscopes, Power Supply, Auto Transformer Electrical Laboratory Equipment, Signal Generators, Transducers, Transmitters)	Drop Test	IEC 61010-1: (2010-06) Cl. No. 8.3	Qualitative
		Resistance To Heat	IEC 61010-1: (2010-06) Cl. No. 10.5	Quantitative
		Transient Overvoltage Limiting Device	IEC 61010-1: (2010-06) Cl. No. 14.9	Qualitative
		Specially Protected Equipment	IEC 61010-1: (2010-06) Cl. No. 11.6	Qualitative
II. POWER SUPPLIES AND STABILIZERS				
1.	Uninterruptible Power Supply (UPS)	Protective Earthing & Bonding	IEC 62040-1: 2008 Cl. No. 5.3 IS 16242 (Part 1): 2014 Cl. No. 5	Qualitative
		AC and DC Power Isolation	IEC 62040-1: 2008 Cl. No. 5.4 IS 16242 (Part 1): 2014 Cl. No. 5.4	Qualitative
		Over-Current & Earth- Fault Protection	IEC 62040-1: 2008 Cl. No. 5.5 IS 16242 (Part 1): 2014 Cl. No. 5.5	Qualitative (0.1 A to 50 A) A

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	Uninterruptible Power Supply (UPS)	Protection Of Personnel- Safety Interlocks	IEC 62040-1: 2008 Cl. No. 5.6 IS 16242 (Part 1): 2014 Cl. No. 5.6	Qualitative
		Wiring, Connections & Supply	IEC 62040-1: 2008 Cl. No. 6 IS 16242 (Part 1): 2014 Cl. No. 6	Qualitative
		Physical Requirements	IEC 62040-1: 2008 Cl. No. 7 IS 16242 (Part 1): 2014 Cl. No. 7	Qualitative (0.1 °C to 1200 °C)
		Electrical Requirements & Simulated Abnormal Conditions	IEC 62040-1: 2008 Cl. No. 8 IS 16242 (Part 1): 2014 Cl. No. 8	1 µA to 20 mA

III. DOMESTIC ELECTRONIC APPLIANCES & ACCESSORIES

1. Domestic Electric Clothes Washing Machine	Safety Requirements	IS 302-2-7: 2012 Cl. No. 8 to 32	Qualitative
	Determination of Washing Performance	IS 14155: 1994 Cl. No. 11	Upto 80 %
	Determination of Wear Suffered by Textile	IS 14155: 1994 Cl. No. 12	Upto 80 % 1 mm to 5000 mm
	Determination of Rinsing Efficiency	IS 14155: 1994 Cl. No. 13	Upto 1000 milli equivalent/l 1 g to 200 kg

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	Domestic Electric Clothes Washing Machine	Determination of Water Extracting Efficiency	IS 14155: 1994 Cl. No. 14	1 g to 200 kg
		Determination of Mechanical Detergent Loss in the Sump of Washing Machine	IS 14155: 1994 Cl. No. 16	0.01 g to 200 g
		Determination of Water and Energy Consumption	IS 14155: 1994 Cl. No. 15	0.1 kWh to 9999.9 kWh 0.01 m ³ /s to 99.9 m ³ /s
		Endurance	IS 14155: 1994 Cl. No. 17	Qualitative
		Finish	IS 14155: 1994 Cl. No. 18	Qualitative
IV. ENVIRONMENTAL TEST FACILITY				
1.	Environmental Testing For IT, Electronic & Electrical Items	Dry Heat and Cold Test	IS 9000 (Part 2/Sec I to IV): 1977 IS 9000 (Part 3/Sec I to V): 1977 IEC 60068-2-1: 2007 IEC 60068-2-2: 2007	Qualitative (Ambient to 25 °C)
		Composite Temperature/ Humidity Cyclic Test	IS 9000 (Part 6): 1978 IEC 68-2-38	Qualitative
		Impact Test	IS 9000 (Part 7/Sec I): 2006 IS 9000 (Part 7/Sec I to V): 1979 IS 9000 (Part 7/Sec VI): 1988 IS 9000-7-7: 2006 IEC 60068-2-27 IEC Pub 68-2-27: 2009 IEC Pub 68-2-31: 2008 IEC 60068-2-55: 2013 IEC 60068-2-75: 1997	Qualitative

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	Environmental Testing For IT, Electronic & Electrical Items	Low Air Pressure Test	IS 9000 (Part 13): 1981	Qualitative
		Change Of Temp	IS 9000 (Part 14/Sec I to III): 1988	Qualitative
V. EMC/EMI TEST FACILITY				
1.	Information technology equipment	Conducted Disturbance Voltage	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement CISPR 22:2008 EN 55022:2010	150 kHz to 30 MHz
2.	Audio, video and associated equipment	Conducted Disturbance Voltage	Sound and Television Broadcast Receivers and Associated Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement CISPR 13:2009 EN 55013:2013	150 kHz to 30MHz
		Disturbance Power		30 MHz to 300 MHz
3.	Household appliances, electric tools and similar apparatus	Disturbance Power	CISPR 14-1: 2005+A1:2008+A2:2011 EN 55014-1: 2006+A1:2009+A2:2011	30 MHz to 300 MHz

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	Household appliances, electric tools and similar apparatus	Conducted Disturbance	Household appliances, electric tools and similar apparatus - CISPR 14-1: 2005+A1:2008+A2:2011 EN 55014-1: 2006+A1:2009+A2:2011	150 kHz to 30 MHz
4.	Lighting Equipment	Radiation Disturbance	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment EN 55015:2013	150 kHz to 30 MHz
		Radiated electromagn-etic disturbances	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment EN 55015:2013	150 kHz to 30 MHz
5	Industrial, scientific and medical equipment	Conducted Disturbance Voltage	Industrial, scientific and medical (ISM) CISPR 11:2009+A1:2010 EN 55011:2009+A1:2010	150 kHz to 30 MHz
6.	Electric/ electronic products used in residential, commercial and light-industrial environments	Conducted Disturbance Voltage	Residential, commercial and light-industrial environments IEC 61000-6-3:2006+A1:2010 EN 61000-6-3:2007+A1:2011	150 kHz to 30 MHz

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7.	Electric/ electronic products used in industrial environ-ments	Conducted Disturbance Voltage	Electromagnetic compatibility (EMC) - Part 6-4:Generic standards - Emission standard for industrial environments IEC 61000-6-4:2006+A1:2010 EN 61000-6-4:2007+A1:2011	150 kHz to 30 MHz
8.	Radio frequency devices	Conducted Disturbance Voltage	Radio frequency devices FCC PART 15:2013	150 kHz to 30 MHz
VI. TELECOM PRODUCTS				
1.	Telecom Products: Telephones /Analog Modems/Digital Modems/T1/E1/A DSL	Surge	TIA 968-B IC CS-03 Issue 9	Metallic Voltage Surge - Type A: (800 Volts, 100A, 10/560 uS.) Longitudinal Voltage Surge - Type A: (1500 Volts, 200A, 10/160 uS.) Metallic Voltage Surge - Type B: (1000 Volts, 25A, 9/720uS) Longitudinal Voltage Surge - Type B: (1500 Volts, 37.5A, 9/720uS) Power Line Surge: (2500 V, 2/10 uS.)

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Telecom Products: Telephones /Analog Modems/Digital Modems/T1/E1/A DSL	Leakage Current	TIA 968-B IC CS-03 Issue 9	1000V & 10mA
		Signal Power Limitations	TIA 968-B IC CS-03 Issue 9	100 Hz to 30 MHz
		Longitudinal Balance	TIA 968-B IC CS-03 Issue 9	200 Hz to 4kHz
		On Hook Impedance	TIA 968-B IC CS-03 Issue 9	Qualitative
		Pulse Shape	TIA 968-B IC CS-03 Issue 9	T1,E1, DSL

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