Laboratory	**SMIT EMI/EMC Laboratory, E-5/2, Chakan Industrial Area, Phase III, M.I.D.C., Nanekarwadi, Tal.- Khed, Pune, Maharashtra**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**TC-8007** **Page 1 of 4**
Validity	**23.10.2018 to 22.10.2020** **Last Amended on --**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection

ELECTRONIC TESTING

I.	**EMC TESTING FACILITY**			
1.	**Electronic Sub Assembly for Automobile**	Radiated Emission (RE)	**Antenna method:** CISPR 25 (Edition 4) CISPR 25 (Edition 3) AIS-004 (Part 3)	150 kHz to 2500 MHz Class 5
		Conducted Emission- Power supply and Interconnect lines (CE)	**Voltage Method:** CISPR 25 (Edition 4) CISPR 25 (Edition 3) **Current probe Method:** CISPR 25 (Edition 4) CISPR 25 (Edition 3)	150 kHz to 110 MHz Class 5 150 kHz to 110 MHz Class 5
		Conducted Emission – Transients on power supply line (CTE)	ISO 7637-2 (Edition 3) ISO 7637-2 (Edition 2) AIS-004 (Part 3)	(±)12 V to (±)600 V Switching time Δt_s=300 ns ± 20% with load R=0.6 Ω L=50 µH @ 1 kHz
		Electrostatic Discharge Immunity (ESD) - Contact and Air Discharge	ISO 10605 (Edition 2) ISO 10605 Amd. 1	Level: (±) 200V to 30 kV t_r = 0.7ns to 1ns
		RF Radiated Susceptibility –ALSE method	ISO 11452-2 (Edition 2) AIS-004 (Part 3)	80 MHz to 200 MHz, Level: 1V/m to 200V/m 200 MHz to 3200 MHz, Level: 1 V/m to 200 V/m

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Program Manager

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		RF Radiated Susceptibility – Harness excitation methods Bulk current Injection method (BCI)	ISO 11452-4 (Edition 4) ISO 11452-4 (Edition 3) AIS-004 (Part 3)	1 MHz to 200 MHz Level: Up to 250mA 200 MHz to 400 MHz Level: Up to 200 mA
		Electrical disturbance conduction and coupling	**Pulse 1** ISO 7637-2 (Edition 3) AIS-004 (Part 3)	(-) 20 V to (-) 600 V td = 2 ms & 1 ms tr = 0.5 µs to 1µs & 1.5 µs to 3 µs t1 ≥ 0.5 s t2 = 200ms t3 < 100 µs Supply voltage 60 V, 80 A
		Electrical disturbance conduction and coupling	**Pulse 2 (a & b)** ISO 7637-2 (Edition 3) AIS-004 (Part 3)	(+) 20V to (+) 150V, pulse 2a (+) 1V to (+) 60V, pulse 2b **Pulse 2a** td = 0.05 ms tr = 0.5 µs to 1 µs t1 = 0.2 s to 5 s **Pulse 2b** td = 0.2 s to 2 s t12 = 1 ms ± 0.5 ms tr = 1 ms ± 0.5 ms t6 = 1 ms ± 0.5 ms Supply voltage 60 V, 80 A

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Electrical disturbance conduction and coupling	**Pulse 3(a & b)** ISO 7637-2 (Edition 3) AIS-004 (Part 3)	(±) 25 V to (±)800 V **<u>Pulse 3a & Pulse 3b</u>** td = 150 ns ± 45 ns tr = 5 ns ± 1.5 ns t1 = 100 µs t4 = 10 ms t5 = 90 ms Supply voltage 60 V,80 A
		Electrical disturbance conduction and coupling	**Pulse 4** AIS-004 (Part 3)	Us: (-) 6 V to (-) 16V Ua: (-) 2.5V to (-) 12V tf : 9 ms to 11 ms t6 : 45 ms to 55 ms t7 : 45 ms to 55 ms t8 : 900 ms to 11,000 ms tr : 30 ms to 110 ms f : 2 Hz Supply voltage 60 V,80 A
		Electrical disturbance conduction and coupling	**Pulse 5(a & b)** Load dump ISO 16750-2 (Edition 3) ISO 16750-2 (Edition 4)	(+)20 V to (+)200V, Pulse a & b: td : 40 ms to 400 ms tr : 5 ms to 10 ms Supply voltage 60V, 80A

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Electrical disturbance conduction and coupling	**Capacitive coupling** Fast pulses: ISO 7637-3 ISO 7637-3 (Edition 2)	(±) 25V to (±) 300V Pulse 3a & 3b: tr :3.5 ns to 6.5 ns td :0.105 µs to 0.195 µs t1 :100 µs t4 :10 ms t5 :90 ms Supply voltage 60V,80A
		Electrical disturbance conduction and coupling	**Super imposed alternating voltage** ISO 16750-2 (Edition 3) ISO 16750-2 (Edition 4)	10 Hz to 50 kHz, 1 Vpp to 10 Vpp t = 120s Supply voltage 60 V, 80 A
		Electrical disturbance conduction and coupling	ISO 16750-2 (Edition 3) ISO 16750-2 (Edition 4)	Timing info for: DC Supply Voltage:N.A Over Voltage: N.A Slow decrease & increase of supply voltage: (0.5 ± 0.1) V/min linear. Momentary drop in supply Voltage: tr & tf ≤ 10ms Reset behavior at voltage drop: t_hold : 5 s t_hold_Usmin : ≥ 10 s Supply voltage 4V to 60V,80 A