

Laboratory Tech Mahindra Ltd., Noida Lab, A-20 Sector 60, Noida, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7894

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Validity 26.09.2018 to 25.09.2020

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
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ELECTRONICS TESTING

I. ELECTRONIC COMPONENTS & EQUIPMENT				
1.	LTE Mobile Terminal	Wireless Protocol (RLC/MAC)	3GPP TS 36 523-1 (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 36.523-1 FDD) (section: 6, 7, 8, 9, 10, 11, 12, 13), Ver 15.2.0	LTE Band 1-2100 MHz LTE Band 2-1900 MHz LTE Band 4-1700 MHz LTE Band 5-850 MHz LTE Band 12-700 MHz LTE Band 17-700 MHz LTE Band 7-2600 MHz UMTS Band 1-2100 MHz UMTS Band 1-2100 MHz UMTS Band 2-1900 MHz UMTS Band 4-1700 MHz UMTS Band 5-850 MHz UMTS Band 7-2600 MHz
2.	UMTS Mobile Terminal	Wireless Protocol (PDCP/IRAT)	Universal Mobile Telecommunications System (UMTS); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification (3GPP TS 34.123-1) (section: 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17) , Ver 14.5.0	LTE Band 1-2100 MHz LTE Band 2-1900 MHz LTE Band 4-1700 MHz LTE Band 5-850 MHz LTE Band 12-700 MHz LTE Band 17-700 MHz LTE Band 7-2600 MHz UMTS Band 1-2100 MHz UMTS Band 1-2100 MHz UMTS Band 2-1900 MHz UMTS Band 4-1700 MHz UMTS Band 5-850 MHz UMTS Band 7-2600 MHz
3.	GSM/GPRS/EDGE/ STK Mobile Terminal	Wireless Protocol (RR/CC/MM)	3GPP TS 51.010-1 Mobile Station (MS) conformance specification; Part 1: Conformance specification;	GSM-850 MHz GSM-1900 MHz GSM-900 MHz GSM-1800 MHz

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			(section: 11,12,15,18,19,20,25,26,27,28,29,31,33,34,41,42,43,44,45,46,47,51,52,53,57) 3GPP TS 51.010-4 Mobile Station (MS) conformance specification; Part 4: Subscriber Identity Module(SIM) application toolkit conformance test specification (Section: 27), Ver 13.7.0	
4.	A-GPS for 2G Mobile Terminals	Wireless Protocol (Data Assistant/ Emergency Call)	3GPP TS 51.010-1 Mobile Station (MS) conformance specification; Part 1: Conformance specification (Section: 70), Ver 13.7.0	GSM-850 MHz GSM-1900 MHz GSM-900 MHz GSM-1800 MHz
5.	A-GPS for 3G Mobile Terminals	Wireless Protocol (MT-LR/NI-LR)	3GPP TS 34.171 AGPS Conformance Specification, Ver 9.4.0	UMTS Band 1- 2100 MHz UMTS Band 2- 1900 MHz UMTS Band 4- 1700 MHz UMTS Band 5- 850 MHz
6.	USIM application test on Mobile Terminals	Wireless Protocol (Access Control/PIN Authentication/Phonebook)	3GPP TS 31.121 UICC-terminal interface; Universal Subscriber Identity Module (USIM) application test specification (Section: 5, 6, 7 & 8), Ver 15.0.0	UMTS Band5- 850 MHz UMTS Band1- 2100 MHz UMTS Band2- 1900 MHz
7.	Audio for 2G-3G Mobile Terminals	Wireless Protocol (SLR/RLR/RFR/SFR)	3GPP TS 26.132 Speech and video telephony terminal acoustic test specification (Section: 7), Ver 15.0.0	SLR (5 ~ 11dB) RLR (-13 to 18dB) TX Noise (< -64dBm0(P) Echo Loss (> 46dB)

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8.	GCF-CC-3.61.2_R007 (OMA Supplementary Testing)	Wireless Protocol (RR-LP/MO-LR)	OMA SUPL, Ver 1.0 OMA SUPL, Ver 2.0	LTE Band FDD-1 LTE Band FDD-2 LTE Band FDD-4 LTE Band FDD-5 LTE Band FDD-7 LTE Band FDD-12 LTE Band FDD-17 LTE Band FDD-20 UMTS Band-1 UMTS Band-2 UMTS Band-4 UMTS Band-5 UMTS Band-7 UMTS Band-8
9.	GSMA Field Trials (Mobile Terminal)	Field Testing (Call Reliability, Handover, IRAT)	GSMA TS11-2018 Ver 17.0.0	GSM-1900 MHz Qualitative GSM-850 MHz GSM-1900 MHz GSM-900 MHz GSM-1800 MHz UMTS Band 1, 2, 4, 5,8,9,19 LTE FDD Band: 1,2,3,4,5,7,8,12,13,17,18, 19,20,25,26,27,28, 29,30 LTE TDD Band: 38,39,40,41
10.	IOP (3G/LTE Mobile Terminal)	MMS	OMA-ETS-MMS_INT-V1_3-20101015-C	FRW: V2.1
		Browsing	OMA-ETS-XHTML_MP-V1_1-20110607-C	FRW: V2.2
		NFC	TS27_V6-1_NFC	FRW: V2.3
11.	IoT (LTE Mobile Terminal)	NB-IoT	CLP.23 – MIoT, Ver 1.0	V 1.0
		LTE Cat M1	CLP.23 – MIoT, Ver 1.0	V 1.0

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