अनिवार्य आवश्यकताओं का अनुलग्नक

सं०: टीईसी/एसडी/डीडी/टीसीपी-222/01/दिसंबर18

ANNEXURES TO ERs

No.: TEC/SD/DD/TCP-222/01.Dec18

अनिवार्य आवश्यकताओं में इंगित मानकों का विवरण

संस्करण-1.0

DETAILS OF STANDARDS SPECIFIED IN ESSENTIAL REQUIREMENTS

VERSION-1.0

भारत सरकार GOVERNMENT OF INDIA

दूरसंचार अभियांत्रिकी केंद्र

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Annexure-A1: Safety Requirement for Telecom Equipment having RF Interface			
Parameter Name	Standard	Limits/ Test Levels	Applicability/ Remarks
Safety of IT Equipment with Radio Interface	IS 13252 Part 1:2010 + Amd1:2013 + Amd2:2015 OR IS 62368:2014 OR EN/IEC 60950-1:2005 + Amd1:2009 + Amd2:2013	Compliance to clauses applicable to the EUT	Older version of standard shall be accepted if it was in force on the date of issue of report.
Safety of IT Equipment with Radio Interface	EN/IEC 60215:2016 OR IS 10437:1986	Compliance to clauses applicable to the EUT	

Annexure-A2: Safety Requirement for Telecom Equipment not having RF Interface			
IT Equipment Safety	IS 13252 Part 1:2010 + Amd1:2013 + Amd2:2015 OR IS 62368:2014 OR EN/IEC 60950-1:2005 + Amd1:2009 + Amd2:2013	Compliance to clauses applicable to the EUT	Older version of standard shall be accepted if it was in force on the date of issue of report.

Annexure-A3: Safety Requirement for Battery in portable equipment			
Battery Safety	IS 16046:2015 OR EN/IEC 62133:2012	Compliance to clauses applicable to the EUT	Applicable only if it is portable equipment and uses secondary cells and batteries containing alkaline or non-acid electrolyte

Annexure-A4: Optical Safety for PON Equipment			
Optical Safety for PON OLT	Optical Safety as per EN/IEC 60825-1	Compliance to clauses applicable to the EUT	

Annexure-B: EMI/ EMC Requirement			
Parameter Name	Standard	Limits/ Test Levels	Applicability/ Remarks
Conducted and radiated emission	CISPR22 (2008)/ EN 55022 UPTO 31.3.2019 OR CISPR32/EN 55032 AFTER 31.03.2019	For Radiated Emission tests, limits below 1 GHz shall be as per Table 5 (a1) for measuring distance of 3m	Applicable for Class A equipment
Conducted and radiated emission	CISPR22 (2008)/ EN 55022 UPTO 31.3.2019 OR CISPR32/EN 55032 AFTER 31.03.2019	For Radiated Emission tests, limits below 1 GHz shall be as per Table 4 (a1) (for Class B) for measuring distance of 3m	Applicable for Class B equipment
Immunity to Electrostatic discharge	EN/IEC 61000-4-2(2008) Contact discharge	Level 2 {± 4 kV} or higher voltage; Performance Criteria B	
Immunity to Electrostatic discharge	EN/IEC 61000-4-2(2008) Air discharge	Level 3 {± 8 kV} or higher voltage; Performance Criteria B	
Immunity to radiated RF	EN/IEC 61000-4-3(2010) 80 MHz to 1000 MHz	Test level 2 {Test field strength of 3 V/m; Performance Criteria A	
Immunity to radiated RF	EN/IEC 61000-4-3(2010) 800 MHz to 960 MHz and 1.4 GHz to 6.0 GHz	test level 3 {Test field strength of 10 V/m: Performance Criteria B	
Immunity to fast transients (burst)	EN/IEC 61000-4-4(2012) AC/DC power lines	Test Level 2 (1 kV): Performance Criteria B	Not applicable for devices having in-built or replaceable battery
Immunity to fast transients (burst)	EN/IEC 61000-4-4(2012) signal / control / data / telecom lines	Test level 1 (0.5kV): Performance Criteria B	Not applicable for mobile devices having only radio interface
Immunity to surges	EN/IEC 61000-4-5(2014) line to ground – power port	2kV: Performance Criteria B	Not applicable for devices having in-built or replaceable battery
Immunity to surges	EN/IEC 61000-4-5(2014) line to line – power port	1kV: Performance Criteria B	Not applicable for devices having in-built or replaceable battery
Immunity to surges	EN/IEC 61000-4-5(2014) Common mode – telecom ports	2kV: Performance Criteria B	Not applicable for mobile devices having only radio interface

Parameter Name	Standard	Limits/ Test Levels	Applicability/ Remarks
Immunity to conducted disturbance induced by Radio frequency fields	EN/IEC 61000-4-6(2013):	Test level 2 {3 V r.m.s.}: Performance Criteria A	Not applicable for mobile devices having only radio interface
Immunity to voltage dips & short interruption: Voltage dip corresponding to a reduction of supply voltage of 30% for 500ms (i.e. 70 % supply voltage for 500ms)	EN/IEC 61000-4-11(2004)	Performance criteria B	Applicable if AC power supply is used
Immunity to voltage dips & short interruption: Voltage dip corresponding to a reduction of supply voltage of 60% for 200ms; (i.e. 40% supply voltage for 200ms).	EN/IEC 61000-4-11(2004)	Performance criteria C	Applicable if AC power supply is used
Immunity to voltage dips & short interruption: Voltage interruption corresponding to a reduction of supply voltage of > 95% for 5s.	EN/IEC 61000-4-11(2004)	Performance criteria C	If AC power supply is used
Immunity to voltage dips & short interruption: Voltage interruption corresponding to a reduction of supply voltage of >95% for 10ms.	EN/IEC 61000-4-11(2004)	Performance criteria B	Applicable if AC power supply is used
Immunity to voltage dips & short interruption: Voltage Interruption with 0% of supply for 10ms.	EN/IEC 61000-4-29	Performance criteria B	Applicable if DC power supply is used
Immunity to voltage dips & short interruption: Voltage Interruption with 0% of supply for 30ms, 100ms, 300ms and 1000ms.	EN/IEC 61000-4-29	Performance criteria C	Applicable if DC power supply is used
Immunity to voltage dips & short interruption: Voltage dip corresponding to 40% & 70% of supply for 10ms, 30 ms.	EN/IEC 61000-4-29	Performance criteria B	Applicable if DC power supply is used
Immunity to voltage dips & short interruption: Voltage dip corresponding to 40% & 70% of supply for 100ms, 300ms and 1000 ms.	EN/IEC 61000-4-29	Performance criteria C	Applicable if DC power supply is used
Immunity to voltage dips & short interruption: Voltage variations corresponding to 80% and 120% of supply for 100 ms to 10s as per Table 1c of IEC 61000-4-29.	EN/IEC 61000-4-29	Performance criteria B	Applicable if DC power supply is used

Annexure-C1: Frequency Band of Operation For Non-Cellular Radio Equipment			
Parameter Group: Radio Conformance (RADCONF)			
Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
Frequency Band For MRTS	Latest NFAP issued by WPC.	300/400 MHz or 800 MHz	MRTS Equipment
Frequency for HF equipment	Latest NFAP issued by WPC		HF Equipment
Frequency for UHF/ VHF equipment	Latest NFAP issued by WPC		VHF/UHF Equipment
Frequency for PTP Radio Interface	Latest NFAP issued by WPC. Testing as per EN 302 217-2	6/ 7/ 13/ 15/ 18/ 23 GHz. Applicable for full or split outdoor unit.	Point To Point Microwave Fixed Radio Systems
Frequency for PMP Radio Interface	Latest NFAP issued by WPC. Testing as per EN 302 326-2	10.5/ 26/ 28 GHz. Applicable for full or split outdoor unit.	Point to Multi-Point Microwave Fixed Radio Systems
Frequency of Operation - Satellite Equipment	Lower C-band Receive Frequency Trans Frequency	 3.400-3.700 GHz 6.425-6.725 GHz	Satellite Equipment
Frequency of Operation - Satellite Equipment	Normal C-band Receive Frequency Trans Frequency	 3.700-4.200 GHz 5.925-6.425 GHz	Satellite Equipment
Frequency of Operation - Satellite Equipment	Extended C-band Receive Frequency Trans Frequency	 4.500-4.800 GHz 6.725-7.025 GHz	Satellite Equipment
Frequency of Operation - Satellite Equipment	Ku band Receive Frequency Trans Frequency	 10.7-11.7 GHz 12.2-12.75 GHz	Satellite Equipment

Annexure-C2: Transmitted Power/ EIRP for Non-Cellular Radio Equipment			
Parameter Group: Radio Conformance (RADCONF)			
Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
Max RF Power Output MRTS Base Stn	Latest WPC Notification		MRTS Base Stations
Max RF Power Output MRTS Mobile Stn	Latest WPC Notification		MRTS Fixed Mobile Equipment
Max RF Power Output for MRTS Handheld Stn	Latest WPC Notification		MRTS Handheld Equipment
Max RF Power Output for MRTS Fixed Stn	Latest WPC Notification		MRTS Fixed Equipment
Max Transmit Power for HF Base Stn	Latest WPC Notification		HF Base Stations
Max Transmit Power for HF HH Stn	Latest WPC Notification		HF Handheld Equipment
Max Transmit Power for HF Mob Stn	Latest WPC Notification		HF Mobile Equipment
Max Transmit Power for HF Fixed Stn	Latest WPC Notification		HF Fixed Equipment
Max Transmit Power for UHF/VHF Base Stn	Latest WPC Notification		VHF/UHF Base Station
Max Transmit Power for UHF/VHF HH Stn	Latest WPC Notification		VHF/UHF Handheld Equipment
Max Transmit Power for UHF/VHF Mob Stn	Latest WPC Notification		VHF/UHF Mobile Equipment
Max Transmit Power for UHF/VHF Fixed Stn	Latest WPC Notification		VHF/UHF Fixed Equipment
Transmit Power for PTP Radio interface	Latest WPC Notification Testing as per EN 302 217-2	Applicable for full or split outdoor unit.	Point To Point Microwave Fixed Radio Systems
Transmit Power for PMP Radio Interface	Latest WPC Notification Testing as per EN 302 326-2	Applicable for full or split outdoor unit.	Point to Multi-Point Microwave Fixed Radio Systems
Transmit Power - Satellite Equipment	Latest WPC Notification		Satellite Equipment

Annexure-C3: Radio Conformance Requirement for Non-Cellular Radio Equipment				
Parameter Group: Radio Conformance (RADCONF)				
Equipment Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 113	Compliance	Applicable for equipment meant for transmission of data and/or speech and having antenna connector
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 390	Compliance	Applicable for equipment meant for transmission of data and/or speech and having integral antenna
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 086	Compliance	Applicable for equipment meant for analogue speech and having internal or external RF connector
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 296	Compliance	Applicable for equipment meant for analogue speech and having integral antenna
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 219	Compliance	Applicable for equipment meant to transmit signals to initiate specific receiver response
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 300 341	Compliance	Applicable for equipment, using integral antenna, meant to transmit signals to initiate specific receiver response
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 301 166	Compliance	Applicable for equipment meant for transmission of data and/or speech and operating on narrow band channels (<10KHz) and having antenna connector
MRTS Equipment	Conformance to standards for MRTS	ETSI EN 302 561	Compliance	Applicable for Terrestrial Trunked Radio (TETRA)

Equipment Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 113	Compliance	Applicable for equipment meant for transmission of data and/or speech and having antenna connector
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 390	Compliance	Applicable for equipment meant for transmission of data and/or speech and having integral antenna
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 086	Compliance	Applicable for equipment meant for analog speech and having internal or external RF connector
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 296	Compliance	Applicable for equipment meant for analog speech and having integral antenna
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 219	Compliance	Applicable for equipment meant to transmit signals to initiate specific receiver response
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 341	Compliance	Applicable for equipment, using integral antenna, meant to transmit signals to initiate specific receiver response
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 783	Compliance	Applicable for commercial amateur radio equipment.
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 720	Compliance	Applicable for UHF On-board vessels communication systems.
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 301 925	Compliance	Applicable for Radiotelephone transmitters and receivers for maritime mobile service operating in VHF band

Equipment Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 301 178	Compliance	Applicable for portable VHF radiotelephone equipment for the maritime mobile service (for non-GMDSS applications only)
VHF/UHF Equipment	Conformance to standards for Equipment used in VHF/UHF Radio Systems	ETSI EN 300 698	Compliance	Applicable for Radio telephone transmitters and receivers for the maritime mobile service operating in the VHF bands used on inland waterway
HF Equipment	HF Radio Systems	ETSI EN 300 433	Compliance	Applicable to Citizen band (CB) Radio equipment.
HF Equipment	HF Radio Systems	ETSI EN 303 402	Compliance	Applicable to maritime mobile transmitters and receivers.
HF Equipment	HF Radio Systems	ETSI EN 301 783	Compliance	Applicable to commercially available amateur radio equipment.
PTP Microwave Fixed Radio Systems	PTP Fixed Digital Radio Requirements	ETSI EN 302 217-2	Compliance	Applicable for full or split outdoor unit of Point To Point Microwave Fixed Radio Systems
PMP Microwave Fixed Radio Systems	PMP Fixed Digital Radio Requirements	ETSI EN 302 326-2	Compliance	Applicable for full or split outdoor unit of Point to Multi-Point Microwave Fixed Radio Systems
VSAT	Conformance to standards for Satellite	Compliance to ETSI EN 301 443	Compliance	For C Band
VSAT	Conformance to standards for Satellite	Compliance to ETSI EN 301 428	Compliance	For Ku Band

Annexure-D: Parameters for 2-wire PSTN Lines, Trunks lines and CPEs connected thereon (INT2W & CPE2W)				
Parameter Group: 2-Wire Interface (INT2W) and CPEs connected on 2-Wire (CPE2W)				
Equipment Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
2-Wire CPEs and Interfaces	Longitudinal/ Transverse Conversion Loss	Q.552 Clause 2.1.2 & Figure 2 / TBR.21 Clause 4.4.3	> 40 dB 300-600 Hz > 46 dB 600-3400Hz	
2-Wire CPEs and Interfaces	Return Loss	Q.552 Clause 2.1.1.2 and Figure 1	As in Figure 1	
2-Wire CPEs and Interfaces	Over Voltage/ Over Current Protection	K.21	Compliance	
2-Wire CPEs and Interfaces	Maximum Loop Current	ETSI EN 300 001	< 60 mA	
2-Wire CPEs and Interfaces	Idle State Current	ETSI EN 300 001	< 30 µA	
2-Wire CPEs and Interfaces	Insulation Test	ETSI EN 300 001	$\geq$ 5 MΩ	
2-Wire CPEs and Interfaces	Resistance to Earth	TBR-21 Clause 4.4.4	$\geq$ 10 MΩ	
2-wire Trunk Line	DC Resistance	ETSI TBR-21 Clause 4.4.1	$\geq$ 1 MΩ	
2-wire Trunk Line	Minimum Current on MGW Trunk Line	ETSI EN 300 001	$\geq$ 60 µA	
Telephones/ Fax with Handset	Acoustic Shock Absorption	P.360 Clause 4.1	Compliance	
Audio Conferencing Equipment	Voice Conference Verification	Functional Test	Compliance	
Fax, Modem	Transmit Power for Fax Machine/ Modem	T.4 Clause 6	-3dBm to -15 dBm	
Fax	Receiver Sensitivity for FAX	T.4 Clause 7	> -43 dBm	
Modem	Receiver Signal for Modem	V.34 (para 6.6)	> -43 dBm ON < -48 dBm OFF	
2-wire line and trunk	Transmission of DTMF Signals	Q.23 Clause 6 and 7	Compliance	

Annexure-D1				
ISDN Layer-III Specifications Test				
Parameter Group: ISDN Conformance (ISDNCONF)				
Equipment Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
ISDN BRI and PRI	Layer III specification Messages for circuit-mode connection basic call control.	Q.931 Applicable to ISDN BRI and PRI	Compliance	
	ALERTING	Clause no. 3.1.1		
	CALL PROCEEDING	Clause no. 3.1.2		
	CONNECT	Clause no. 3.1.3		
	SETUP	Clause no. 3.1.14		
	SETUP ACKNOWLEDGE	Clause no. 3.1.15		
	DISCONNECT	Clause no. 3.1.5		
	RELEASE	Clause no. 3.1.9		
	RELEASE COMPLETE	Clause no. 3.1.10		
	Bearer capability	Clause no. 4.5.5		
	Called party number	Clause no. 4.5.8		
	Calling party number	Clause no. 4.5.10		
	Channel identification	Clause no. 4.5.13		
	Normal call clearing	As per Table 6-5		
	Call clearing User Busy	As per Table 6-5		
	Call clearing Invalid number format or incomplete number	As per Table 6-5		
	Call clearing No answer	As per Table 6-5		

Annexure-D2: Parameters for Cordless Telephone			
Parameter Group: Radio Conformance (RADCONF)			
Parameter Name	Frequency	Power	Remarks
Frequency band of Operation and Transmit Power – Base Unit only	1610, 1640, 1675, 1690 KHz	Transmit power < 500 mW	
Frequency band of Operation and Transmit Power – Base and Remote Unit	26.375, 26.475, 26.575, 26.625, 46.675, 46.725, 46.775, 46.825, 46.830, 49.845, 49.860, 49.875 MHz.	Transmit power < 500 mW for Base Unit Transmit Power < 200 mW for Remote Unit	
Frequency band of Operation and Transmit Power – Remote Unit only	150.360, 150.750, 150.850, 150.950 MHz.	Transmit power < 50 mW	
Transmitted frequency by Base Unit	46.610, 46.630, 46.670, 46.710, 46.730, 46.770, 46.830, 46.870, 46.930, 46.970, 43.720, 43.740, 43.820, 43.840, 43.920, 43.960, 44.120, 44.160, 44.180, 44.200, 44.320, 44.360, 44.400, 44.460, 44.480 MHz	RF Power < 500 mW	
Transmitted frequency by Handset	49.670, 49.845, 49.860, 49.770, 49.875, 49.830, 49.890, 49.930, 49.990, 49.970, 48.760, 48.840, 48.860, 48.920, 49.020, 49.080, 49.100, 49.160, 49.200, 49.240, 49.280, 49.360, 49.400, 49.460, 49.500 MHz	RF Power < 100 mW	
Frequency of Operation	926-926.5 MHz	Very low power Cordless Phone	
Frequency and Power for FHSS	2.4-2.4835 GHz	Power < 100 mW Power Spectral Density < 100 mW/100 KHz EIRP	

Parameter Name	Frequency	Power	Remarks
Frequency and Power for other modulation types	2.4-2.4835 GHz	Power < 100 mW Power Spectral Density < 10 mW/1 MHz EIRP	
Frequency and Power in 5 GHz band	5.150-5.350 and 5.725-5.875 GHz	Mean EIRP < 200 mW Power Spectral Density < 10 mW/1 MHz EIRP	
Maximum Frequency Deviation	5 Khz		
Transmitter narrowband spurious emission	30 MHz- 1 GHz	When operating: < -36dBm, When in stand-by: < -57 dBm.	
Transmitter narrowband spurious emission	>1GHz-12.75GHz	When operating: < -30dBm, When in stand-by: < -47 dBm.	
Transmitter narrowband spurious emission	>1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz	When operating: < -47dBm, When in stand-by: < -47 dBm.	
Transmitter wideband spurious emission	30 MHz-1GHz	When operating: < -86dBm/Hz, When in stand-by: < -107 dBm/Hz.	
Transmitter wideband spurious emission	>1GHz-12.75GHz	When operating: < -80dBm/Hz, When in stand-by: < -97 dBm/Hz.	
Transmitter wideband spurious emission	>1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz	When operating: < -97dBm/Hz, When in stand-by: < -97 dBm/Hz.	
Receiver narrowband spurious emission	30 MHz-1GHz	< -57 dBm	
Receiver narrowband spurious emission	>1GHz-12.75GHz	< -47 dBm	
Receiver wideband spurious emission	30 MHz-1GHz	< -107 dBm/Hz	
Receiver wideband spurious emission	>1GHz-12.75GHz	< -97 dBm/Hz	

Annexure-D3: CCS#7 Conformance Parameters				
Parameter Group: ISDN Conformance (ISDNCONF)				
Parameter Name	Individual Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
CCS#7 MTP2 Parameters	Timer T2	ITU-T Q.781. Annex-D3	Test 1.2	Signaling Gateway and Media Gateway
CCS#7 MTP2 Parameters	Timer T3	ITU-T Q.781. Annex-D3	Test 1.3	
CCS#7 MTP2 Parameters	Timer T4 and T1	ITU-T Q.781. Annex-D3	Test 1.4	
CCS#7 MTP2 Parameters	Normal Alignment	ITU-T Q.781. Annex-D3	Test 1.5	
CCS#7 MTP2 Parameters	Emergency Alignment T4E	ITU-T Q.781. Annex-D3	Test 1.19	
CCS#7 MTP3 Parameters	Signalling Linkset deactivation	ITU-T Q.782. Annex-D3	Test 1.2	
CCS#7 MTP3 Parameters	Signalling Linkset activation	ITU-T Q.782. Annex-D3	Test 1.3	
CCS#7 MTP3 Parameters	Message with Invalid DPC	ITU-T Q.782. Annex-D3	Test 2.2	
CCS#7 MTP3 Parameters	Message with erroneous SI	ITU-T Q.782. Annex-D3	Test 2.3	
CCS#7 MTP3 Parameters	Additional CBD	ITU-T Q.782. Annex-D3	Test 4.3	
CCS#7 MTP3 Parameters	No acknowledgement to first CBD	ITU-T Q.782. Annex-D3	Test 4.4	
CCS#7 MTP3 Parameters	Inhibition of available link	ITU-T Q.782. Annex-D3	Test7.1.1	
CCS#7 MTP3 Parameters	Inhibition of unavailable link	ITU-T Q.782. Annex-D3	Test 7.1.2	
CCS#7 MTP3 Parameters	Signaling Link test: After activation of a link	ITU-T Q.782. Annex-D3	Test 12.1	
CCS#7 ISUP Parameters	Reset Received	ITU-T Q.784. Annex-D3	Test 1.2.1	Signaling Gateway
CCS#7 ISUP Parameters	Reset Sent	ITU-T Q.784. Annex-D3	Test 1.2.2	
CCS#7 ISUP Parameters	Circuit Group Reset Received	ITU-T Q.784. Annex-D3	Test 1.2.5	
CCS#7 ISUP Parameters	Circuit Group Reset Sent	ITU-T Q.784. Annex-D3	Test 1.2.6	
CCS#7 ISUP Parameters	CGB and CGU Received	ITU-T Q.784. Annex-D3	Test 1.3.1.1	
CCS#7 ISUP Parameters	CGB and CGU Sent	ITU-T Q.784. Annex-D3	Test 1.3.1.2	
CCS#7 ISUP Parameters	Circuit Blocking received	ITU-T Q.784. Annex-D3	Test 1.3.2.1	
CCS#7 ISUP Parameters	Circuit Blocking sent	ITU-T Q.784. Annex-D3	Test 1.3.2.2	

Annexure-F: Frequency of Operation for Cellular Wireless Interfaces and Equipment				
Parameter Group: Cellular (CELLULAR)				
Technology	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
CDMA2000	Frequency of Operation	Latest NFAP issued by WPC.		
2G/ GSM/ GPRS/ EDGE	Frequency of Operation	Latest NFAP issued by WPC.		
3G/ WCDMA/ HSPA	Frequency of Operation	Latest NFAP issued by WPC.		
4G/ LTE/ LTE-A	Frequency of Operation	Latest NFAP issued by WPC.		
BTS with MSR	BTS with MSR Operating Frequency	Latest NFAP issued by WPC.		
BTS with AAS	BTS with AAS Operating Frequency	Latest NFAP issued by WPC.		

Annexure-F1: Radio Conformance Test for Base Transmitting Station (BTS) and Compact Cellular Network (CCN) using 2G/ GSM/ GPRS/ EDGE Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
GSM BTS Output Power	Output Power	3GPP TS 45.005	Clause 4.1.2	BTS and CCN
GSM BTS Transmitter Parameters	Adjacent channel power	3GPP TS 51.021	Clause 6.5	
	Wideband noise and intra BSS intermodulation attenuation in multicarrier operation	3GPP TS 51.021	Clause 6.12	
	Spurious emissions from the transmitter antenna connector	3GPP TS 51.021	Clause 6.6	
	Mean transmitted RF carrier power and equivalent combined power	3GPP TS 51.021	Clause 6.3	
	Intermodulation attenuation	3GPP TS 51.021	Clause 6.7	
	Intra Base Station System intermodulation attenuation	3GPP TS 51.021	Clause 6.8	
	Radiated spurious emissions	3GPP TS 51.021	Clause 8	
GSM BTS Receiver Parameters	Static Reference Sensitivity Level	3GPP TS 51.021	Clause 7.3	
	Reference interference level	3GPP TS 51.021	Clause 7.5	
	Blocking Characteristics	3GPP TS 51.021	Clause 7.6	
	Intermodulation characteristics	3GPP TS 51.021	Clause 7.7	
	AM suppression	3GPP TS 51.021	Clause 7.8	
	Spurious emissions from the receiver antenna connector	3GPP TS 51.021	Clause 7.9	

Annexure-F2: Radio Conformance Test for NodeB (BTS) and Compact Cellular Network (CCN) using 3G/WCDMA/HSPA Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
WCDMA NodeB Transmitter Parameters	Spectrum emission mask	3GPP TS 25.141	Clause 6.5.2.1	NodeB and CCN
	Adjacent Channel Leakage power Ratio (ACLR)	3GPP TS 25.141	Clause 6.5.2.2	
	Spurious emissions	3GPP TS 25.141	Clause 6.5.3	
	Base station output power	3GPP TS 25.141	Clause 6.2	
	Transmitter intermodulation	3GPP TS 25.141	Clause 6.6	
WCDMA NodeB Receiver Parameters	Spurious Emissions	3GPP TS 25.141	Clause 7.7	
	Blocking characteristics	3GPP TS 25.141	Clause 7.5	
	Intermodulation characteristics	3GPP TS 25.141	Clause 7.6	
	Adjacent Channel Selectivity (ACS)	3GPP TS 25.141	Clause 7.4	
	Reference sensitivity level	3GPP TS 25.141	Clause 7.2	
WCDMA NodeB Home BTS Adj Chl Op Power	Home base station output power for adjacent channel protection	3GPP TS 25.141	Clause 6.4.6	NodeB

Annexure-F3: Radio Conformance Test for eNodeB (BTS) and Compact Cellular Network (CCN) using 4G/LTE/LTE-A Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
LTE eNodeB Transmitter Parameters	Operating band unwanted emissions	3GPP TS 36.141	Clause 6.6.3	eNodeB and CCN
	Adjacent Channel Leakage power Ratio (ACLR)	3GPP TS 36.141	Clause 6.6.2	
	Home BS output power for adjacent E-UTRA channel protection: Applicable to Home base Station only	3GPP TS 36.141	Clause 6.2.7	
	Home BS output power for co-channel E-UTRA protection: Applicable to Home base Station only	3GPP TS 36.141	Clause 6.2.8	
	Transmitter spurious emissions	3GPP TS 36.141	Clause 6.6.4	
	Base station output power	3GPP TS 36.141	Clause 6.2	
	Transmitter intermodulation	3GPP TS 36.141	Clause 6.7	
LTE eNodeB Receiver Parameters	Receiver spurious emissions	3GPP TS 36.141	Clause 7.7	
	Blocking	3GPP TS 36.141	Clause 7.6	
	Receiver intermodulation	3GPP TS 36.141	Clause 7.8	
	Adjacent Channel Selectivity (ACS) and narrow-band blocking	3GPP TS 36.141	Clause 7.5	
	Reference sensitivity level	3GPP TS 36.141	Clause 7.2	
LTE eNodeB Home BS Parameters	Home BS output power for adjacent UTRA channel protection : Applicable to Home base Station only	3GPP TS 36.141	Clause 6.2.6	eNodeB

Annexure-F4: Radio Conformance Test for BTS using Multi Standard Radio (MSR) Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
BTS with MSR Transmitter Parameters	Base Station output power	3GPP TS 37.141	Clause 6.2	BTS with MSR
	Transmitter spurious emissions	3GPP TS 37.141	Clause 6.6.1	
	Operating band unwanted emissions	3GPP TS 37.141	Clause 6.6.2	
	Adjacent Channel Leakage power Ratio (ACLR)	3GPP TS 37.141	Clause 6.6.4	
	Transmitter intermodulation	3GPP TS 37.141	Clause 6.7	
BTS with MSR Receiver Parameters	Receiver spurious emissions	3GPP TS 37.141	Clause 7.6	
	In-band selectivity and blocking	3GPP TS 37.141	Clause 7.4	
	Out-of-band blocking	3GPP TS 37.141	Clause 7.5	
	Receiver intermodulation	3GPP TS 37.141	Clause 7.7	
	In-band selectivity and blocking	3GPP TS 37.141	Clause 7.4	
	Reference sensitivity level	3GPP TS 37.141	Clause 7.2	

Annexure-F5: Radio Conformance Test for BTS using Active Antenna System (AAS)				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
BTS with AAS Transmitter Parameters	Base Station output power	3GPP TS 37.145-1	Clause 6.2	BTS with AAS
	Spurious emission	3GPP TS 37.145-1	Clause 6.6.6	
	Operating band unwanted emission	3GPP TS 37.145-1	Clause 6.6.5	
	Adjacent Channel Leakage power Ratio	3GPP TS 37.145-1	Clause 6.6.3	
	Spectrum emission mask	3GPP TS 37.145-1	Clause 6.6.4	
	Transmitter intermodulation	3GPP TS 37.145-1	Clause 6.7	
BTS with AAS Receiver Parameters	Reference sensitivity level	3GPP TS 37.145-1	Clause 7.2	
	Adjacent channel selectivity and narrowband blocking	3GPP TS 37.145-1	Clause 7.4	
	Blocking	3GPP TS 37.145-1	Clause 7.5	
	Receiver spurious emissions	3GPP TS 37.145-1	Clause 7.6	
	Receiver intermodulation	3GPP TS 37.145-1	Clause 7.7	

Annexure-F6: Radio Conformance Test for Cellular Wireless Repeaters using 2G/GSM Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
GSM Repeater Station Parameters	Output Power	3GPP TS 45.005	Clause 4.1.2	
	Spurious emissions	3GPP TS 51.026	Clause 5	
	Frequency Error	3GPP TS 51.026	Clause 8	
	Intermodulation Attenuation	3GPP TS 51.026	Clause 6	
	Out of Band Gain	3GPP TS 51.026	Clause 7	

Annexure-F7: Radio Conformance Test for Cellular Wireless Repeaters using 3G/WCDMA ULTRA FDD Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
WCDMA Repeater Station Parameters	Output Power	3GPP TS 25.143	Clause 6	
	Out of band emission	3GPP TS 25.143	Clause 9.1	
	Spurious emissions	3GPP TS 25.143	Clause 9.2	
	Input intermodulation	3GPP TS 25.143	Clause 11	
	Out of band gain	3GPP TS 25.143	Clause 8	
	Adjacent Channel Rejection Ratio	3GPP TS 25.143	Clause 13	
	Output intermodulation	3GPP TS 25.143	Clause 12	

Annexure-F8: Radio Conformance Test for Cellular Wireless Repeaters using 4G/LTE FDD Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/Remarks
LTE Repeater Station Parameters	Output Power	3GPP TS 36.143 Clause 6	Clause 6	
	Operating band unwanted emissions	3GPP TS 36.143 Clause 9.1	Clause 9.1	
	Spurious emissions	3GPP TS 36.143 Clause 9.2	Clause 9.2	
	Input intermodulation	3GPP TS 36.143 Clause 11	Clause 11	
	Out of band gain	3GPP TS 36.143 Clause 8	Clause 8	
	Adjacent Channel Rejection Ratio	3GPP TS 36.143 Clause 13	Clause 13	
	Output intermodulation	3GPP TS 36.143 Clause 12	Clause 12	

Annexure-F9: Radio Conformance Test for Devices having Cellular Wireless Interface using CDMA2000 Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
CDMA Int Parameters	Transmitter Maximum output power	1x: S0011 Clause 4.4.5	EN 301 908-04 (CDMA) Clause 4.2.3	
	Transmitter Spectrum emissions mask	1x: S0011 Clause 4.5.1	EN 301 908-04 (CDMA) Clause 4.2.2	
	Transmitter spurious emissions in active mode (Conducted)	1x: S0011 Clause 4.5.1	EN 301 908-04 (CDMA) Clause 4.2.2	
	Receiver spurious emission in idle mode (Conducted)	1x: S0011 Clause 3.6	EN 301 908-04 (CDMA) Clause 4.2.5	
	Receiver Adjacent Channel Selectivity (ACS)		EN 301 908-04 (CDMA) Clause 4.2.8	
	Receiver In-band blocking		EN 301 908-04 (CDMA) Clause 4.2.6	

Annexure-F10: Radio Conformance Test for Devices having Cellular Wireless Interface using GSM/ GPRS/ EDGE Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
GSM Int Parameters	Transmitter Maximum output power	3GPP TS 51 010-1 Clause 13.3	EN 301 511 (GSM) Clause 4.2.5	GSM
	Transmitter Maximum output power	3GPP TS 51 010-1 Clause 13.16.2	EN 301 511 (GSM) Clause 4.2.10	GPRS/ EDGE
	Output RF Spectrum	3GPP TS 51 010-1 Clause 13.4	EN 301 511 (GSM) Clause 4.2.6	GSM
	Output RF Spectrum	3GPP TS 51 010-1 Clause 13.16.3	EN 301 511 (GSM) Clause 4.2.11	GPRS/ EDGE
	Spurious emissions (MS allocated a channel)	3GPP TS 51 010-1 Clause 12.1.1	EN 301 511 (GSM) Clause 4.2.12	GSM
	Spurious emission (MS in idle mode)	3GPP TS 51 010-1 Clause 12.1.2	EN 301 511 (GSM) Clause 4.2.13	GSM
	Frequency Error and phase error	3GPP TS 51 010-1 Clause 13.1	EN 301 511 (GSM) Clause 4.2.1	GSM
	Frequency Error and phase error	GPRS:3GPP TS 51 010-1 Clause 13.16.1	EN 301 511 (GSM) Clause 4.2.4	GPRS/ EDGE
	Reference sensitivity level (speech channels)	3GPP TS 51 010-1 Clause 14.2.1	EN 301 511 (GSM) Clause 4.2.42	GSM
	Adjacent Channel Rejection (speech channels)	3GPP TS 51 010-1 Clause 14.5.1	EN 301 511 (GSM) Clause 4.2.38	GSM
	Receiver blocking	3GPP TS 51 010-1 Clause 14.7.1	EN 301 511 (GSM) Clause 4.2.20	GSM

Annexure-F11: Radio Conformance Test for Devices having Cellular Wireless Interface using WCDMA/ HSPA Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
WCDMA Int Parameters	Transmitter Maximum output power	3GPP TS 34.121-1 Clause 5.2	EN 301 908-2 (UMTS) Clause 4.2.2	
	Transmitter Spectrum emissions mask	3GPP TS 34.121-1 Clause 5.9	EN 301 908-2 (UMTS) Clause 4.2.3	
	Transmitter spurious emissions	3GPP TS 34.121-1 Clause 5.11	EN 301 908-2 (UMTS) Clause 4.2.4	
	Receiver spurious emission	3GPP TS 34.121-1 Clause 6.8	EN 301 908-2 (UMTS) Clause 4.2.10	
	Transmitter Minimum Output Power	3GPP TS 34.121-1 Clause 5.4.3	EN 301 908-2 (UMTS) Clause 4.2.5	
	Receiver Reference sensitivity level	3GPP TS 34.121-1 Clause 6.2	EN 301 908-2 (UMTS) Clause 4.2.13	
	Receiver Adjacent Channel Selectivity (ACS)	3GPP TS 34.121-1 Clause 6.4	EN 301 908-2 (UMTS) Clause 4.2.6	
	Receiver In-band blocking	3GPP TS 34.121-1 Clause 6.5.2.1	EN 301 908-2 (UMTS) Clause 4.2.7	

Annexure-F12: Radio Conformance Test for Devices having Cellular Wireless Interface using LTE/ LTE-A Technology				
Parameter Group: Cellular (CELLULAR)				
Parameter Name	Individual Parameter Name	Standard	Clause	Applicability/ Remarks
LTE Int Parameters	Maximum output power	3GPP TS 36.521-1 Clause 6.2.2	EN 301 908-13 (LTE) Clause 4.2.2	
	Spectrum emissions mask	3GPP TS 36.521-1 Clause 6.6.2.1	EN 301 908-13 (LTE) Clause 4.2.3	
	Spurious emissions	3GPP TS 36.521-1 Clauses 6.6.3.1, 6.6.3.2, 6.6.3.3	EN 301 908-13 (LTE) Clause 4.2.4	
	Receiver spurious emission	3GPP TS 36.521-1 Clause 7.9	EN 301 908-13 (LTE) Clause 4.2.10	
	Receiver Reference Sensitivity level	3GPP TS 36.521-1 Clause 7.3	EN 301 908-13 (LTE) Clause 4.2.12	
	Receiver Adjacent Channel Selectivity (ACS)	3GPP TS 36.521-1 Clause 7.5	EN 301 908-13 (LTE) Clause 4.2.6	
	Receiver In-band blocking	3GPP TS 36.521-1 Clause 7.6.1	EN 301 908-13 (LTE) Clause 4.2.7	

Annexure-G1: Parameters for Radio Interfaces for equipment operating in delicensed frequency bands of 2.4 GHz and 5 GHz				
Parameter Group: Radio Conformance (RADCONF)				
Parameter Group	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/Remarks
	Frequency of Operation for LoRa Int	Latest NFAP		LoRa Interface
	Frequency of Operation for SigFox Int	Latest NFAP		SigFox Interface
	Frequency of Operation for NFC Int	Latest NFAP	13.56 MHz	NFC Interface
	Frequency of Operation for BLE Interface	Latest NFAP	2.4 GHz	Bluetooth Low Energy Interface
	Frequency of Operation for RFID Int	Latest NFAP	865-867 MHz	RFID Interface
	Frequency of Operation for RF Mesh Int	Latest NFAP	865-867 MHz	RF Mesh interface
	Frequency Band of Operation	Latest NFAP	2.4 GHZ Band: 2.4-2.4835 GHz 5 GHz Band: 5.150-5.350 GHz indoor usage 5.725-5.875 GHz indoor usage	Wifi Interface
	Frequency Band of Operation	Latest NFAP	2.4 GHZ Band: 2.4-2.4835 GHz 5 GHz Band: 5.150-5.350 GHz 5.725-5.875 GHz	Wifi Interface
	Frequency Band of Operation	Latest NFAP	5.825-5.875 GHz with maximum EIRP of 4 W	PTP/PMP Wireless Access Equipment in 5.8 GHz

Annexure-G2: Parameters for Radio Interfaces for equipment operating in delicensed frequency bands of 2.4 GHz and 5 GHz				
Parameter Group: Radio Conformance (RADCONF)				
Parameter Group	Parameter Name	Standard/ Parameter	Limits/ Values	Remarks
	Maximum Transmit Power LoRa	EN 300 220. WPC GSR		LoRa Interface
	EIRP LoRa	EN 300 220. WPC GSR		LoRa Interface
	Maximum Transmit Power SigFox	EN 300 220. WPC GSR		SigFox Interface
	EIRP SigFox	EN 300 220. WPC GSR		SigFox Interface
	Carrier Bandwidth for RFID Interface	EN 300 220. WPC GSR	200 KHz	RFID Interface
	EIRP for RFID Interface	EN 300 220. WPC GSR	< 1W	RFID Interface
	Maximum Transmit Power RFID	EN 300 220. WPC GSR	< 1W	RFID Interface
	Carrier Bandwidth for NFC Interface	EN 300 220. WPC GSR	200 KHz	NFC Interface
	EIRP for NFC Interface	EN 300 220. WPC GSR	< 4W	NFC Interface
	Maximum Transmit Power NFC	EN 300 220. WPC GSR	< 1W	NFC Interface
	Carrier Bandwidth for BLE Interface	EN 300 220. WPC GSR	200KHz	Bluetooth Low Energy Interface
	EIRP for BLE Interface	EN 300 220. WPC GSR	< 4W	Bluetooth Low Energy Interface
	Maximum Transmit Power BLE	EN 300 220. WPC GSR	< 1W	Bluetooth Low Energy Interface
	Maximum Transmit Power RF Mesh	EN 300 220-1 or FCC part 15.247.		RF Mesh interface
	EIRP for RF Mesh	EN 300 220-1 or FCC part 15.247.		RF Mesh interface
	EIRP for equipment operating in 2.4 GHz	EN 300 328	≤ 4 W for outdoor usage ≤ 200 mW for indoor usage	Wifi Interface
	EIRP for RLAN/ WLAN equipment operating in 5 GHz	EN 301 893	≤ 4 W for outdoor usage ≤ 200 mW for indoor usage	Wifi Interface
	EIRP for PTP/ PMP fixed Radio systems operating in 5.825-5.875 GHz	EN 302 502	≤ 4 W for outdoor usage ≤ 200 mW for indoor usage	PTP/PMP Wireless Access Equipment in 5.8 GHz
	EIRP for Cordless Telephone	WPC GSR		Cordless Phone

Annexure-G3: Parameters for Radio Interfaces for equipment operating in delicensed frequency bands of 2.4 GHz and 5 GHz				
Parameter Group: Radio Conformance (RADCONF)				
Parameter Group	Parameter Name	Standard/ Parameter	Applicability/Limits/ Values	Remarks
	Compliance to 6LowPAN Standard			
	Compliance to ZigBee Standard	IEEE 802.15.4		
	In-band Spurious Emission for RFID Interface	WPC GSR	Frequency Offset: 550 KHz, Transmitted Power: < -20dBc. Frequency Offset: |M*-N*| =2, Transmitted Power: < -20dBm. Frequency Offset: |M*-N*| =3, Transmitted Power: < -40dBm.	
	Out-of-band Spurious Emission for RFID Interface	WPC GSR	Frequency range: 30 MHz-1GHz, When operating: < -36dBm, When in stand-by: < -57 dBm. Frequency range: > 1GHz-12.75GHz, When operating: < -30dBm, When in stand-by: < -47 dBm. Frequency range: >1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz, When operating: < -47dBm, When in stand-by: < -47 dBm.	
	Basic RF Requirement RFID	ETSI EN 300 330.		
	Receiver Spurious Emission for RFID Interface (measured in a 100 KHz bandwidth):		Frequency range: 30 MHz-1GHz, < -57 dBm. Frequency range: >1GHz-12.75GHz, < -47 dBm.	

Parameter Group	Parameter Name	Standard/ Parameter	Applicability/Limits/ Values	Remarks
	In-band Spurious Emission for NFC Interface	WPC GSR	Frequency Offset: 550 KHz, Transmitted Power : > -20dBc. Frequency Offset: |M*-N*| =2, Transmitted Power: < -20dBm. Frequency Offset: |M*-N*| =3, Transmitted Power: < -40dBm.	
	Out-of-band Spurious Emission for NFC Interface	WPC GSR	Frequency range: 30 MHz-1GHz, When operating: < -36dBm, When in stand-by: < -57 dBm. Frequency range: > 1GHz-12.75GHz, When operating: < -30dBm, When in stand-by: < -47 dBm. Frequency range: >1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz, When operating: < -47dBm, When in stand-by: < -47 dBm.	Pos
	Receiver Spurious Emission for NFC Interface (measured in a 100 KHz bandwidth):		Frequency range: 30 MHz-1GHz, -57 dBm Frequency range: >1GHz-12.75GHz, -47 dBm	Pos
	Unwanted Emission in Spurious Domain RF Mesh	EN 300 220-1 or FCC part 15.247.		

Parameter Group	Parameter Name	Standard/ Parameter	Applicability/Limits/ Values	Remarks
	In-band Spurious Emission for BLE Interface	WPC GSR	Frequency Offset: 550 KHz, Transmitted Power: < -20dBc. Frequency Offset: |M*-N*| =2, Transmitted Power: < -20dBm. Frequency Offset: |M*-N*| =3, Transmitted Power: < -40dBm.	
	Out-of-band Spurious Emission for BLE Interface	WPC GSR	Frequency range: 30 MHz-1GHz, When operating: < -36dBm, When in stand-by: < -57 dBm. Frequency range: >1GHz-12.75GHz, When operating: < -30dBm, When in stand-by: < -47 dBm. Frequency range: >1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz, When operating: < -47dBm, When in stand-by: < -47 dBm.	
	Receiver Spurious Emission for BLE Interface (measured in a 100 KHz bandwidth):		Frequency range: 30 MHz-1GHz, -57 dBm. Frequency range: >1GHz-12.75GHz, -47 dBm.	
	Unwanted Emission in Spurious Domain LoRa	EN 300 220-1 or FCC part 15.247.		
	Unwanted Emission in Spurious Domain SigFox	EN 300 220-1 or FCC part 15.247.		

Parameter Group	Parameter Name	Standard/ Parameter	Applicability/Limits/ Values	Remarks
	Transmitter narrowband spurious emission for WiFi Interface	WPC GSR	Frequency range: 30 MHz-1GHz, When operating -36dBm, When in stand-by -57 dBm Frequency range: >1GHz-12.75GHz, When operating -30dBm, When in stand-by -47 dBm Frequency range: >1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz, When operating -47dBm, When in stand-by -47 dBm	
	Transmitter wideband spurious emission for WiFi Interface	WPC GSR	Frequency range: 30 MHz-1GHz, When operating -80dBm/Hz, When in stand-by -107 dBm/Hz Frequency range: >1GHz-12.75GHz, When operating -86dBm/Hz, When in stand-by -97 dBm/Hz Frequency range: >1.8GHz-1.9GHz and 5.15 GHz-5.3 GHz, When operating -97dBm/Hz, When in stand-by -97 dBm/Hz	
	Receiver narrowband spurious emission for WiFi Interface	WPC GSR	Frequency range: 30 MHz-1GHz, -57 dBm Frequency range: >1GHz-12.75GHz, -47 dBm	
	Receiver wideband spurious emission for WiFi Interface	WPC GSR	Frequency range: 30 MHz-1GHz, -107 dBm/Hz Frequency range: >1GHz-12.75GHz, -97 dBm/Hz	

Parameter Group	Parameter Name	Standard/ Parameter	Applicability/Limits/ Values	Remarks
	Radio Conformance for equipment operating in 2.4 GHz	EN 300 328 Or FCC CFR47 Part15.247 or 15.249 as applicable		
	Radio Conformance for RLAN/ WLAN equipment operating in 5.150-5.350 GHz	EN 301 893 Or FCC CFR47 15.407 or 15.249		
	Radio Conformance for PTP/PMP Wireless Access Equipment operating in 5.725-5.875 GHz	EN 301 893 Or FCC CFR47 Part 15.249		
	Radio Conformance for PTP/PMP Wireless Access Equipment operating in 5.825-5.875 GHz	EN 302 502 (Except clauses 4.2.4, 4.2.6 and 4.2.8) Or FCC CFR47 Part 15.249		

Annexure-H: Ethernet Interface Parameters				
Parameter Group: Ethernet Interface (INTETH)				
Interface Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
Gigabit Ethernet Electrical	Link Speed and Auto Negotiation GE	IEEE 802.3		
Gigabit Ethernet Electrical	Differential Output Voltage GE			
Gigabit Ethernet Electrical	Output Timing Jitter GE			
Fast Ethernet Electrical	Link Speed and Auto Negotiation for GE	IEEE 802.3 Cl. 28		
Fast Ethernet Electrical	Differential Output Voltage FE			
Fast Ethernet Electrical	Receiver Differential Input Impedance FE	IEEE 802.3z Cl. 38		
Fast Ethernet Electrical	Output Timing Jitter FE			
Gigabit Ethernet Optical	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38		
Gigabit Ethernet Optical	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38		
Gigabit Ethernet Optical	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38		
10 Gigabit Ethernet Optical	Operating Wavelength for 10GE Int	IEEE 802.3ae Cl. 52		
10 Gigabit Ethernet Optical	Receiver Sensitivity for 10GE Int	IEEE 802.3ae Cl. 52		
10 Gigabit Ethernet Optical	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52		

Interface Name	Parameter Name	Standard	Limits/ Values	Applicability/ Remarks
40 Gigabit Ethernet Optical	Average Launch power for 40 GE Opt	IEEE 802.3ba Cl. 86, 87		
40 Gigabit Ethernet Optical	Wavelength for 40 GE Opt	IEEE 802.3ba Cl. 86, 87		
40 Gigabit Ethernet Optical	Receiver Sensitivity 40 GE Opt	IEEE 802.3ba Cl. 86, 87		
100 Gigabit Ethernet Optical	Average Launch power for 100 GE Opt	IEEE 802.3ba Cl. 86, 88		
100 Gigabit Ethernet Optical	Wavelength for 100 GE Opt	IEEE 802.3ba Cl. 86, 88		
100 Gigabit Ethernet Optical	Receiver Sensitivity 100 GE Opt	IEEE 802.3ba Cl. 86, 88		
Fast Ethernet Optical	Average Launch power for FE Opt	IEEE 802.3u		
Fast Ethernet Optical	Wavelength for FE Opt	IEEE 802.3u		
Fast Ethernet Optical	Receiver Sensitivity for FE Opt	IEEE 802.3u		

Annexure-I: PDH Interface Parameters				
Parameter Group: PDH Interface (INTPDH)				
Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
2Mbps-E1	Input Jitter Tolerance for 2 MBPS Int	G.823 Cl. 9.3.3		
2Mbps-E1	Input Return Loss for 2 MBPS Int	G.703 Cl. 11.3/ ETSI TBR4 Cl. 9.3.1		
2Mbps-E1	Bit Rate Tolerance 2 MBPS Int	G.703 Cl. 11.1/ ETSI TBR4 Cl. 9.2.3		
2Mbps-E1	Output Jitter for 2 MBPS Int	G.823/ I.431 Cl. 5.4.3/ ETSI TBR4 Cl. 9.2.4		
2Mbps-E1	Pulse Mask for 2 MBPS Int	G.703 Cl. 11.2/ TBR4 Cl. 9.2.1		
8Mbps-E2	Input Jitter Tolerance for 8 MBPS Int	G.823/ TBR4 Cl. 9.3.3		
8Mbps-E2	Input Return Loss for 8 MBPS Int	G.703 Cl. 11.3/ TBR4 Cl. 9.3.1		
8Mbps-E2	Bit Rate Tolerance 8 MBPS Int	G.703 Cl. 12.1		
8Mbps-E2	Output Jitter for 8 MBPS Int	G.823/ I.431		
8Mbps-E2	Pulse Mask for 8 MBPS Int	G.703 Cl. 11.2 TBR4 Cl. 9.2.1		
34Mbps-E31	Input Jitter Tolerance for 34 MBPS Int	G.823		
34Mbps-E31	Input Return Loss for 34 MBPS Int	G.703		
34Mbps-E31	Bit Rate Tolerance 34 MBPS Int	G.703 Cl. 13.1		
34Mbps-E31	Output Jitter for 34 MBPS Int	G.823		
34Mbps-E31	Pulse Mask for 34 MBPS Int	G.703		

Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
64 Kbps	Input Jitter Tolerance for 64 KBPS Int	G.823		
64 Kbps	Input Return Loss for 64 KBPS Int	G.703		
64 Kbps	Bit Rate Tolerance 64 KBPS Int	G.703 Cl. 6.2.3.1		
64 Kbps	Output Jitter for 64 KBPS Int	G.703		
64 Kbps	Pulse Mask for 64 KBPS Int	G.703		
N X 64 Kbps	Input Jitter Tolerance for NX64 KBPS Int	G.703		
N X 64 Kbps	Input Return Loss for NX64 KBPS Int	G.703		
N X 64 Kbps	Bit Rate Tolerance NX64 KBPS Int	G.703		
N X 64 Kbps	Output Jitter for NX64 KBPS Int	G.703		
N X 64 Kbps	Pulse Mask for NX64 KBPS Int	G.703		
45Mbps-E32	Input Jitter Tolerance for 45 MBPS Int	G.824		
45Mbps-E32	Input Return Loss for 45 MBPS Int	G.703		
45Mbps-E32	No DC power	G.703		
45Mbps-E32	Bit Rate Tolerance 45 MBPS Int	G.703 Cl 10		
45Mbps-E32	Output Jitter for 45 MBPS Int	G.824		
45Mbps-E32	Pulse Mask for 45 MBPS Int	G.703		
140Mbps-E4	Input Jitter Tolerance for 140 MBPS Int	G.823/ TBR4 Cl. 9.3.3		
140Mbps-E4	Input Return Loss for 140 MBPS Int	G.703 Cl. 11.3/ TBR4 Cl. 9.3.1		
140Mbps-E4	Bit Rate Tolerance 140 MBPS Int	G.703 Cl 11.1/ TBR4 Cl. 9.2.3		
140Mbps-E4	Output Jitter for 140 MBPS Int	G.823		
140Mbps-E4	Pulse Mask for 140 MBPS Int	G.703 Cl. 11.2/ TBR4 Cl. 9.2.1		

Annexure-J1: xDSL Interface Parameters				
Parameter Group: DSL Interface (INTDSL)				
Interface Name	Parameter Name	Standard/ Parameter	Clause	Applicability/ Remarks
ADSLx	Insulation Test for 2 wire Int	ETSI EN 300 001		
ADSLx	Loop resistance for ADSLx	ETSI EN 300 001		
ADSLx	PSD for ADSL Int	G.992.3, G992.5		
ADSLx	Bit Rate for ADSL Int	ANSI.T1.413-2		
ADSLx	Insulation Test for ADSL Int			
ADSLx	Impulse Noise Protection for ADSL Int			
ADSLx	Transmitted Power At ATU-C for ADSLx Int			
ADSLx	Line Port impedance for ADSLx Int			
VDSLx	Insulation Test for 2 wire Int	ETSI EN 300 001		
VDSLx	Loop resistance for VDSLx	ETSI EN 300 001		
VDSLx	Profiles for VDSLx	G.993.2	7.2	
VDSLx	Return Loss for VDSLx	G.993.1	6.5	
VDSLx	PSD for VDSLx Int	G.993.1/ G.993.2	6.2/ 7.2	
VDSLx	Line Port impedance for VDSLx Int			
VDSLx	Transmitted Power At ATU-C for VDSLx Int			
VDSLx	Bit Rate for VDSLx Int	G.993.1/ G993.2		
G.FAST	PPPoE for G.FAST Int	RFC 2516		
G.FAST	PVC Support for G.FAST Int			
G.FAST	VPI-VCI Support for G.FAST Int			
G.FAST	Loop Resistance for G.FAST IntSLx	ETSI EN 300 001		
G.FAST	Insulation Test for G.FAST Int			
G.FAST	Impulse Noise Protection for G.FAST Int			
G.FAST	Throughput Test for G.FAST Int			
G.FAST	Profiles for G.FAST Int	G.9700		
G.HN	Profiles for G.HN Int	G.9960		
G.HN	PSD for G.HN	G.9964		

Annexure-J2: PON Interface Parameters				
Parameter Group: PON Interface (INTPON)				
Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Remarks
GPON	Operating Wavelength Trans for GPON Int	G.984.2		
GPON	Operating Wavelength Recv for GPON Int	G.984.2		
GPON	Opt Output Power for GPON Int at OLT	G.984.2		
GPON	Opt Output Power for GPON Int at ONT	G.984.2		
GPON	Receiver Sensitivity for GPON Int at OLT	G.984.2		
GPON	Receiver Sensitivity for GPON Int at ONT	G.984.2		
GPON	Throughput for GPON Int	G.984.1, RFC 3544		
GPON	Protocol Test for GPON Int	EthOGEM/ G.984.2		
GPON	Line Test for GPON Int	802.3ah		
EPON	Operating Wavelength Trans for EPON Int	802.3ah		
EPON	Operating Wavelength Recv for EPON Int	802.3ah		
EPON	Opt Output Power for EPON Int at OLT	802.3ah		
EPON	Opt Output Power for EPON Int at ONT	802.3ah		
EPON	Receiver Sensitivity for EPON Int at OLT	802.3ah		
EPON	Receiver Sensitivity for EPON Int at ONT	802.3ah		
EPON	Throughput for EPON Int	RFC3544		
EPON	Line Test for EPON Int	802.3ah		
XGPON	Operating Wavelength Trans for XGPON Int	G.987.2		
XGPON	Operating Wavelength Recv for XGPON Int	G.987.2		
XGPON	Opt Output Power XGPON Int at OLT	G.987.2		
XGPON	Opt Output Power XGPON Int at ONT	G.987.2		
XGPON	Receiver Sensitivity XGPON Int at OLT	G.987.2		
XGPON	Receiver Sensitivity XGPON Int at ONT	G.987.2		
XGPON	Throughput for XGPON Int	G.987.1, RFC2544		
XGPON	Protocol test for XGPON Int	G.987.1, XGEM		
XGPON	Line test for XGPON Int	802.3ah		

Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Remarks
XGSPON	Operating Wavelength Trans XGSPON Int	G.9807.1		
XGSPON	Operating Wavelength Recv XGSPON Int	G.9807.1		
XGSPON	Opt Output Power XGSPON Int at OLT	G.9807.1		
XGSPON	Opt Output Power XGSPON Int at ONT	G.9807.1		
XGSPON	Receiver Sensitivity XGSPON Int at OLT	G.9807.1		
XGSPON	Receiver Sensitivity XGSPON Int at ONT	G.9807.1		
XGSPON	Throughput for XGSPON Int	G.9807.1, RFC2544		
XGSPON	Protocol Test for XGSPON Int	G.9807.1, XGEM		
XGSPON	Line Test for XGSPON Int	802.3ah		
WDMPON	Operating Wavelength Trans WDMPON Int	G.694.1		
WDMPON	Operating Wavelength Recv WDMPON Int	G.694.1		
WDMPON	Opt Output Power WDMPON Int at OLT	G.694.1		
WDMPON	Opt Output Power WDMPON Int at ONT	G.694.1		
WDMPON	Receiver Sensitivity WDMPON Int at OLT	G.694.1		
WDMPON	Receiver Sensitivity WDMPON Int at ONT	G.694.1		
WDMPON	Throughput for WDMPON Int	RFC2544		
WDMPON	Protocol test for WDMPON Int	G.698.3		
WDMPON	Line Test for WDMPON Int	802.3ah		
NGNPON	Operating Wavelength Trans NGPON Int	G.989.2		
NGNPON	Operating Wavelength Recv NGPON Int	G.989.2		
NGNPON	Opt Output Power NGPON Int at OLT	G.989.2		
NGNPON	Opt Output Power NGPON Int at ONT	G.989.2		
NGNPON	Receiver Sensitivity NGPON Int at OLT	G.989.2		
NGNPON	Receiver Sensitivity NGPON Int at ONT	G.989.2		
NGNPON	Throughput for NGPON Int	G.989.2		
NGNPON	Protocol Test for NGPON Int	G.989.2, RFC2544		
NGNPON	Line Test for NGPON Int	802.3ah		
RF Video	RF Video Output Bandwidth, Level and Tilt		52±870 MHz, 14 dBmV, 0 dB	

Annexure-K: SDH Interface Parameters				
Parameter Group: PDH Interface (INTPDH)				
Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
STM-1 Electrical	Input Jitter Tolerance STM-1 Electrical	G.825		
STM-1 Electrical	Input Return Loss for STM-1 Electrical	G.703		
STM-1 Electrical	Bit Rate Tolerance STM-1 Electrical Int	G.703 Cl. 17.1		
STM-1 Electrical	Output Jitter for STM-1 Electrical Int	G.825		
STM-1 Electrical	Pulse Mask for STM-1 Electrical Int	G.703		
STM-1 Optical	Input Jitter Tolerance for STM-1 Opt	G.825		
STM-1 Optical	Mean Launched Power for STM-1 Opt Int	G.957		
STM-1 Optical	Bit Rate Tolerance STM-1 Opt Int	G.957		
STM-1 Optical	Operating Wavelength for STM-1 Opt Int	G.957		
STM-1 Optical	Opt Output Power for STM-1 Opt Int			
STM-1 Optical	Output Jitter for STM-1 Opt Int	G.783		
STM-1 Optical	Receiver Overload for STM-1 Opt Int	G.957		
STM-1 Optical	Receiver Sensitivity for STM-1 Opt Int	G.957		
STM-4 Optical	Input Jitter Tolerance for STM-4 Opt	G.825		
STM-4 Optical	Mean Launched Power for STM-4 Opt Int	G.957		
STM-4 Optical	Bit Rate Tolerance STM-4 Opt Int	G.957		
STM-4 Optical	Operating Wavelength for STM-4 Opt Int	G.957		
STM-4 Optical	Output Jitter for STM-4 Opt Int	G.783		
STM-4 Optical	Receiver Overload for STM-4 Opt Int	G.957		
STM-4 Optical	Receiver Sensitivity for STM-4 Opt Int	G.957		

Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
STM-16 Optical	Input Jitter Tolerance for STM-16 Opt	G.825		
STM-16 Optical	Mean Launched Power for STM-16 Opt Int	G.957		
STM-16 Optical	Bit Rate Tolerance STM-16 Opt Int	G.957/ G.709		
STM-16 Optical	Operating Wavelength for STM-16 Opt Int	G.957		
STM-16 Optical	Output Jitter for STM-16 Opt Int	G.783		
STM-16 Optical	Receiver Overload for STM-16 Opt Int	G.957		
STM-16 Optical	Receiver Sensitivity for STM-16 Opt Int	G.691		
STM-64 Optical	Input Jitter Tolerance for STM-64 Opt	G.825		
STM-64 Optical	Mean Launched Power for STM-64 Opt Int	G.691		
STM-64 Optical	Bit Rate Tolerance STM-64 Opt Int	G.957/ G.709		
STM-64 Optical	Operating Wavelength for STM-4 Opt Int	G.957		
STM-64 Optical	Output Jitter for STM-64 Opt Int	G.783		
STM-64 Optical	Receiver Overload for STM-64 Opt Int	G.691		
STM-64 Optical	Receiver Sensitivity for STM-64 Opt Int	G.691		
STM-256 Optical	Input Jitter Tolerance for STM-256 Opt	G.825		
STM-256 Optical	Mean Launched Power for STM-256 Opt Int	G.693		
STM-256 Optical	Bit Rate Tolerance STM-256 Opt Int	G.693		
STM-256 Optical	Operating Wavelength for STM-256 Opt Int	G.693		
STM-256 Optical	Output Jitter for STM-256 Opt Int	G.783		
STM-256 Optical	Receiver Overload for STM-256 Opt Int	G.693		
STM-256 Optical	Receiver Sensitivity for STM-256 Opt Int	G.693		

Annexure-L: OTN Interface Parameters				
Parameter Group: OTN Interface (INTOTN)				
Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
OTU-1	Central Frequency for OTU-1			
OTU-1	Input Jitter Tolerance for OUT-1 Int			
OTU-1	Mean Total Input Power for OTU-1			
OTU-1	Mean Total Output Power for OTU-1			
OTU-1	Minimum Receiver Overload for OTU-1			
OTU-1	Bit Rate Tolerance OTU-1 Int			
OTU-1	Output Jitter for OTU-1 Int			
OTU-1	Receiver Sensitivity for OTU-1 Int			
OTU-2	Central Frequency for OTU-2			
OTU-2	Input Jitter Tolerance for OUT-2 Int			
OTU-2	Mean Total Input Power for OTU-2			
OTU-2	Mean Total Output Power for OTU-2			
OTU-2	Minimum Receiver Overload for OTU-2			
OTU-2	Bit Rate Tolerance OTU-2 Int			
OTU-2	Output Jitter for OTU-2 Int			
OTU-2	Receiver Sensitivity for OTU-2 Int			
OTU-3	Central Frequency for OTU-3			
OTU-3	Mean Total Input Power for OTU-3			
OTU-3	Mean Total Output Power for OTU-3			
OTU-3	Minimum Receiver Overload for OTU-3			
OTU-3	Bit Rate Tolerance OTU-3 Int			
OTU-3	Receiver Sensitivity for OTU-3 Int			

Interface Name	Parameter Name	Standard/ Parameter	Limits/ Values	Applicability/ Remarks
OTU-4	Central Frequency for OTU-4			
OTU-4	Mean Total Input Power for OTU-4			
OTU-4	Mean Total Output Power for OTU-4			
OTU-4	Minimum Receiver Overload for OTU-4			
OTU-4	Bit Rate Tolerance OTU-4 Int			
OTU-4	Receiver Sensitivity for OTU-4 Int			

Annexure-M: Mobile Handset and Tablet Test Parameters			
Parameter Group: Mobile Functional (MOBFUNC)			
Applicability	Parameter Name	Standard	Test Procedure
Mobile Handset and Tablet	Mobile device - Non Zero IMEI/MEID/ESN		Press *#06# to display IMEI. Check that IMEI is not all zeroes/ null.
Mobile Handset – Feature Phone	Mobile Emergency Support - Panic Button	G.S.R. No. 436 (E) dated 22-04-2016, 3GPP TS 22.101 for GSM/ UMTS/ LTE, 3GPP2 C.S0023 for CDMA.	Test that by pressing “Numeric key -5” or “numeric key -9” invokes emergency call.
Mobile Handset – Smart Phone	Mobile Emergency Support - Panic Button		Test that emergency call is invoked by A or B. A. Mobile in screen OFF condition: 1. Switch the screen ON by pressing power-on button or any other designated method and remove screen protector, if used. 2. Soft emergency call button should be visible even in screen lock mode. 3. Invoke emergency call by touching it. B. Mobile in screen OFF condition: 1. By short pressing power-on button thrice in quick succession, emergency call is invoked. C. Mobile in screen ON condition (screen lit): 1. Press power-on button for long time. 2. Soft emergency call button should be visible. 3. Invoke emergency call by touching it.

Applicability	Parameter Name	Standard	Test Procedure
Mobile Handset – Smart Phone	Mobile Emergency Support - GPS Location	G.S.R. No. 1441 (E) dated 23-11-2017.	Verify that device is able to display GPS based location using any available APP.
Mobile Handset	Mobile Emergency Support - Call on 112	DoT 16-04/2015-AS-III/NP/67/120 dated 04th May 2016, 3GPP2 C.S0023 for CDMA2000, 3GPP TS 22.101 and TS 24.008 for GSM/ UMTS/ LTE.	Test that it is possible to dial the emergency number 112 even if the key pad is locked. Test that it is possible to dial the emergency number 112 with or without SIM. Test that an UE/ME which has not successfully registered shall nevertheless be able to make emergency call attempts on an available PLMN (which supports the emergency call tele-service), without the need for the user to select a PLMN.
Mobile Handset	Mobile Device Indian Language Support	IS 16333 (Part 3).	
Mobile Handset	SAR Display for Mobile Handset		
Mobile Handset	SAR Value for Mobile Handset		

Annexure-P1: IP Conformance Parameters – SIP and SIPI – RFC 3261 and Q.1912.5				
Parameter Group: IP Conformance				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
SIP Parameters Set-A	SIP Header : Message Body Type	RFC 3261	Clause 7.4.1	SIP Terminal, PABX
SIP Parameters Set-A	Generating SIP request (To, R-URI, From, Call-ID, CSeq, Max-Forwards, Via)	RFC 3261	Clause 8.1.1, 8.1.1.2 to 8.1.1.7	SIP Terminal, PABX
SIP Parameters Set-A	SIP Dialog and Transaction	RFC 3261	Clause 12, 12.1.1, 12.1.2	SIP Terminal, PABX
SIP Parameters Set-A	SIP Terminating a Session with a BYE request.	RFC 3261	Clause 15	SIP Terminal, PABX
SIP Parameters Set-A	SIP Creating the initial invite	RFC 3261	Clause 13.2.1	SIP Terminal, PABX
SIP Parameters Set-A	User Authentication	RFC 3261	Clause 21	SIP Terminal, PABX
SIP Parameters Set-B	SIP - Call Flow	RFC 3261	Clause 4	LMGW
SIP Parameters Set-B	SIP Header : Message Body Type	RFC 3261	Clause 7.4.1	LMGW
SIP Parameters Set-B	Generating SIP request (To, R-URI, From, Call-ID, CSeq, Max-Forwards, Via)	RFC 3261	Clause 8.1.1, 8.1.1.2 to 8.1.1.7	LMGW
SIP Parameters Set-B	SIP Dialog and Transaction	RFC 3261	Clause 12, 12.1.1, 12.1.2	LMGW
SIP Parameters Set-B	SIP Terminating a Session with a BYE request.	RFC 3261	Clause 15	LMGW
SIP Parameters Set-B	SIP Creating the initial invite	RFC 3261	Clause 13.2.1	LMGW
SIP Parameters Set-B	User Authentication	RFC 3261	Clause 21	LMGW

Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
SIP Parameters Set-C	SIP - Max Forwards (Not for SIPS URI)	RFC 3261	Clause 8.1.1.6	SBC
SIP Parameters Set-C	SIP - Message Body length (Not for SIPS URI)	RFC 3261	Clause 7.4.2	SBC
SIP Parameters Set-C	SIP - Responses (Not for SIPS URI)	RFC 3261	Clause 7.2	SBC
SIP Parameters Set-D	SIP - Max Forwards (Not for SIPS URI)	RFC 3261	Clause 8.1.1.6	SOFT SWITCH
SIP Parameters Set-D	SIP - Message Body length (Not for SIPS URI)	RFC 3261	Clause 7.4.2	SOFT SWITCH
SIP Parameters Set-D	SIP - Responses (Not for SIPS URI)	RFC 3261	Clause 7.2	SOFT SWITCH
SIP Parameters Set-D	SIP - Cancelling a Request	RFC 3261	Clause 9	SOFT SWITCH
SIP Parameters Set-D	SIP - Client Behaviour (Not for SIPS URI)	RFC 3261	Clause 9.1	SOFT SWITCH
SIPI Parameters	SIPI - Conventions for representation of ISUP PDU	Q 1912.5	Clause 5.1	SOFT SWITCH
SIPI Parameters	SIPI - Conventions for representation of SIP/SDP information	Q 1912.5	Clause 5.2	SOFT SWITCH
SIPI Parameters	SIPI - IAM parameters	Q 1912.5	Clause 6.1.3	SOFT SWITCH
SIPI Parameters	SIPI - INVITE received with an SDP offer	Q 1912.5	Clause 6.1.2	SOFT SWITCH
SIPI Parameters	SIPI - INVITE received without an SDP offer	Q 1912.5	Clause 6.1.1	SOFT SWITCH
SIPI Parameters	SIPI - ISUP encapsulation – detailed procedures	Q 1912.5	Clause 5.4	SOFT SWITCH
SIPI Parameters	SIPI - Sending of Initial Address Message (IAM)	Q 1912.5	Clause 6.1	SOFT SWITCH

Annexure-P2: IP Conformance Parameters – RTP – RFC 3550				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
RTP Parameters Set-A	RTP: Sender report RTCP packet version	RFC 3550	Clause 6.4.1	SIP Terminal, PABX
RTP Parameters Set-A	RTP: Sequence number	RFC 3550	Clause 5.1	SIP Terminal, PABX
RTP Parameters Set-A	RTP: Version and Port	RFC 3550	Clause 5.1	SIP Terminal, PABX
RTP Parameters Set-A	RTP: Payload Type	RFC 3550	Clause 5.1	SIP Terminal, PABX
RTP Parameters Set-A	RTP: SSRC Identification	RFC 3550	Clause 5.1	SIP Terminal, PABX
RTP Parameters Set-B	RTP: Sender report RTCP packet version	RFC 3550	Clause 6.4.1	LMGW, MGW
RTP Parameters Set-B	RTP: Sequence number	RFC 3550	Clause 5.1	LMGW, MGW
RTP Parameters Set-B	RTP: Version and Port	RFC 3550	Clause 5.1	LMGW, MGW
RTP Parameters Set-B	RTP: Payload Type	RFC 3550	Clause 5.1	LMGW, MGW
RTP Parameters Set-C	RTP: Byte Order, Alignment, and Time Format	RFC 3550	Clause 4	Session Border Controller
RTP Parameters Set-C	RTP: Simple Multicast Audio Conference	RFC 3550	Clause 2.1	Session Border Controller

Annexure-P3: IP Conformance Parameters – RTCP – RFC 3551				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
RTCP Parameters Set-A	RTCP: Port Assignment	RFC 3551	Clause 8	SIP Terminal
RTCP Parameters Set-A	RTCP: Registering Additional Encodings	RFC 3551	Clause 3	SIP Terminal
RTCP Parameters Set-A	RTCP: GSM-EFR	RFC 3551	Clause 4.5.9	SIP Terminal
RTCP Parameters Set-A	RTCP: Guidelines 1 for sample based audio encodings	RFC 3551	Clause 4.3	SIP Terminal
RTCP Parameters Set-A	RTCP: Guidelines 2 for sample based audio encodings	RFC 3551	Clause 4.4	SIP Terminal
RTCP Parameters Set-B	RTCP: Port Assignment	RFC 3551	Clause 8	Session Border Controller
RTCP Parameters Set-B	RTCP: Registering Additional Encodings	RFC 3551	Clause 3	Session Border Controller

Annexure-P4: IP Conformance Parameters – TCP – RFC 793				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
TCP Parameters Set-A	Header Format	RFC 793	Clause 3.1	MGW, SIP Terminal
TCP Parameters Set-A	Terminology	RFC 793	Clause 3.2	MGW, SIP Terminal
TCP Parameters Set-A	Sequence numbers	RFC 793	Clause 3.3	MGW, SIP Terminal
TCP Parameters Set-B	Header Format	RFC 793	Clause 1.4	Session Border Controller
TCP Parameters Set-B	Terminology	RFC 793	Clause 2.3	Session Border Controller
TCP Parameters Set-B	Sequence numbers	RFC 793	Clause 3.1	Session Border Controller
TCP Parameters Set-C		Functional Test	Test 7 Annexure-II	Router

Annexure-P5: IP Conformance Parameters – UDP – RFC 768 and MGCP – H.248				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
UDP Parameters	UDP Format	RFC 768		MGW, LMGW, SBC, Soft Switch, PABX
UDP Parameters	User Terminology	RFC 768		MGW, LMGW, SBC, Soft Switch, PABX
UDP Parameters	Sequence numbers	RFC 768		MGW, LMGW, SBC, Soft Switch, PABX
MGCP Parameters	Connection Model	H.248	Clauses 6.1 & 6.2	MGW, LMGW, Soft Switch

Annexure-P6: IP Conformance Parameters – IPV4 Dual Stack – RFC 791 and RFC 4213				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
IPV4 Parameters Set-A	Model of operation	RFC 791	Clause 2.2	MGW, SGW, PABX, ONU, ONT
IPV4 Parameters Set-A	Internet Header Format	RFC 791	Clause 3.1	MGW, SGW, PABX, ONU, ONT
IPV4 Parameters Set-A	Addressing	RFC 791	Clause 3.2	MGW, SGW, PABX, ONU, ONT
IPV4 Parameters Set-C	Functional Description	RFC 791	Clause 2.3	SOFT SWITCH
IPV4 Parameters Set-C	Gateways	RFC 791	Clause 2.4	SOFT SWITCH
IPV4 Parameters Set-C	Interfaces	RFC 791	Clause 3.3	SOFT SWITCH
IPV4 Parameters Set-D		Functional Test	Test 7 Annexure-I	L3 Switch
IPV4 Parameters Set-E		Functional Test	Test 2 Annexure-II	Router
Dual IP layer operation	Dual IP layer operation	RFC 4213	Clause 2.1	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
Dual IP layer operation: DNS	Dual IP layer operation: DNS	RFC 4213	Clause 2.2	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN

Annexure-P7: IP Conformance Parameters – IPV6 and Dual Stack – RFC 2460				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
IPV6 Header Parameters	Header: Version Field	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: Traffic Class	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: Flow Label	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: Payload Length	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: No next header after IPv6 Header	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: Hop Limit	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Header Parameters	Header: Source and Destination Address	RFC 2460	Clause 3	SIP Terminal, SBC, Mobile Device, ONU, ONT, CCN
IPV6 Extn. Header Parameters	IPv6 Extension Header Order	RFC 2460	Clause 4.1	Mobile Device, ONU, ONT, CCN
IPV6 Extn. Header Parameters	IPv6 Extension Header Options	RFC 2460	Clause 4.2	Mobile Device, ONU, ONT, CCN
IPV6 Extn. Header Parameters	IPv6 Extension Header Hop By Hop Options	RFC 2460	Clause 4.3	Mobile Device, ONU, ONT, CCN
IPV6 Extn. Header Parameters	IPv6 Extension Header Routing	RFC 2460	Clause 4.4	Mobile Device, ONU, ONT, CCN

Annexure-P8: IP Conformance Parameters – DTMF – RFC 4733				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
DTMF Parameters Set-A	RTP payload format for named telephones events	RFC 4733	Clause 2	MGW,LMGW
DTMF Parameters Set-A	Use of RTP header fields	RFC 4733	Clause 2.2	MGW,LMGW
DTMF Parameters Set-A	Payload Format	RFC 4733	Clause 2.3	MGW,LMGW
DTMF Parameters Set-B	DTMF: Applications	RFC 4733	Clause 3.1	Soft Switch
DTMF Parameters Set-B	DTMF: Congestion Consideration	RFC 4733	Clause 3.3	Soft Switch
DTMF Parameters Set-B	DTMF: Events	RFC 4733	Clause 3.2	Soft Switch
DTMF Parameters Set-B	DTMF: Payload Format	RFC 4733	Clause 2.3	Soft Switch
DTMF Parameters Set-B	DTMF: RTP payload format for named telephones events	RFC 4733	Clause 2	Soft Switch
DTMF Parameters Set-B	DTMF: Specification of Events codes for DTMF events	RFC 4733	Clause 3	Soft Switch
DTMF Parameters Set-B	DTMF: Use of RTP header fields	RFC 4733	Clause 2.2	Soft Switch
DTMF Parameters Set-C	DTMF: Duration negotiation	RFC 4733	Clause 2.3.5	PABX
DTMF Parameters Set-C	DTMF: Negotiation of Payload	RFC 4733	Clause 2.5.1.1	PABX
DTMF Parameters Set-C	DTMF: Transmission of Event Packet	RFC 4733	Clause 2.5.1.2	PABX
DTMF Parameters Set-C	DTMF: Verification of sequence no. and time stamp	RFC 4733	Clause 2.2.1	PABX

Annexure-P9: IP Conformance Parameters – SCTP – RFC 4960				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
SCTP Parameters Set-A	SCTP packet Format	RFC 4960	Clause 3	MGW, LMGW, SGW
SCTP Parameters Set-A	SCTP common header field descriptions	RFC 4960	Clause 3.1	MGW, LMGW, SGW
SCTP Parameters Set-A	Chunk field descriptions	RFC 4960	Clause 3.2	MGW, LMGW, SGW
SCTP Parameters Set-A	Optional/variable-length parameters format	RFC 4960	Clause 3.2.1	MGW, LMGW, SGW
SCTP Parameters Set-A	Reporting of unrecognized parameters	RFC 4960	Clause 3.2.2	MGW, LMGW, SGW
SCTP Parameters Set-A	SCTP association state diagram	RFC 4960	Clause 4	MGW, LMGW, SGW
SCTP Parameters Set-B	User Data Fragmentation	RFC 4960	Clause 1.5.3	SBC, Soft Switch
SCTP Parameters Set-B	Path Management	RFC 4960	Clause 1.5.7	SBC, Soft Switch
SCTP Parameters Set-B	Transmission of DATA Chunks	RFC 4960	Clause 6.1	SBC, Soft Switch
SCTP Parameters Set-B	Path Failure Detection	RFC 4960	Clause 8.2	SBC, Soft Switch

Annexure-P10: IP Conformance Parameters – M3UA – RFC 4960 and Signalling over IP – RFC 2719				
Parameter Group: IP Conformance (CONFIP)				
Parameter Name	Individual Parameter Name	IETF RFC	Clause/ Section	Applicability/ Remarks
M3UA Parameters	Procedures to Support the M3UA-User	RFC 3332	Clause 4.1	Soft Switch, SGW
M3UA Parameters	Establishment of Association and Traffic Between SGs and ASPs	RFC 3332	Clause 5.1	Soft Switch, SGW
M3UA Parameters	M3UA Port Number	RFC 3332	Clause 7.2	Soft Switch, SGW
M3UA Protocol Extensions Parameter	M3UA Protocol Extensions	RFC 3332	Clause 7.3	Soft Switch, SGW
Signalling Protocol Over IP	Gateway Component Functions	RFC2719	Clause 2.1	SGW
Signalling Protocol Over IP	SS7 Interworking for Connection Control	RFC2719	Clause 2.2	SGW
Signalling Protocol Over IP	ISDN Interworking for Connection Control	RFC2719	Clause 2.3	SGW
Signalling Protocol Over IP	Architecture for Database Access	RFC2719	Clause 2.4	SGW
Signalling Protocol Over IP	SG to SG	RFC2719	Clause 3.5	SGW