Essential Requirements (ER)

For

Conferencing Equipment

(With two variants)

Index:

1. Scope:

This document lays down the Essential Requirements **(ER)** under the Mandatory Testing Framework in accordance with Government of India Gazette Notification No. G.S.R. 1131 (E), dated 5th September 2017, for **"Conferencing Equipment"** used in Indian Telecom Networks.

1.1 Variants:

This document covers the following two product variants of the product "Conferencing Equipment" (refer Table-I below:-

Table I: List of product variants		
Variants→ **Products↓**	Variant 1	Variant 2
Conferencing Equipment	Audio Conference Facility Device	Multi Line Telephone System

1.2 Brief Description

This Document covers the following aspects of the Essential Requirements, namely-EMI/EMC Requirements, Safety Requirements, Security Requirements, Technical Requirements and Other Requirements (if any)

2. Essential Requirements

Essential Requirements, namely-EMI/EMC Requirements, Safety Requirements, Security Requirements, Technical Requirements and Other Requirements (if any) are as follows:

2.1 EMI/EMC Requirement:

The equipment shall conform to the EMC requirements as per the TEC Standard No. TEC/SD/DD/EMC-221/05.OCT 2016 and limits indicated therein.

S.N.	Parameter	Results
i)	**Conducted and radiated emission:** **Name of EMC Standard:** "CISPR 22 (2008)/CISPR 32 - Limits and methods of measurement of radio disturbance characteristics of Information Technology Equipment". **Limits:-** i. To comply with Class B of CISPR 22 (2008) /CISPR 32. ii. The values of limits shall be as per TEC Standard No. TEC/SD/DD/EMC-221/05.OCT 2016. iii. For Radiated Emission tests, limits below 1 GHz shall be as per Table 4 (a1) or 5 (a1) of TEC Standard No. TEC/SD/DD/EMC-221/05.OCT 2016 for measuring distance of 3m.	Test results from Designated CAB of TEC to be submitted for compliance.
ii)	**Immunity to Electrostatic discharge:** **Name of EMC Standard:** IEC 61000-4-2 {2008) "Testing and measurement techniques of Electrostatic discharge immunity test". **Limits: -** i. Contact discharge level 2 {± 4 kV} or higher voltage;	Test results from Designated CAB of TEC to be submitted for compliance

	ii. Air discharge level 3 {± 8 kV} or higher voltage;	
iii)	**Immunity to radiated RF:** **Name of EMC Standard:** IEC 61000-4-3 (2010) "Testing and measurement techniques- Radiated RF Electromagnetic Field Immunity test" **Limits:-** **For Telecom Equipment and Telecom Terminal Equipment with Voice interface (s):** i. Under Test level 2 {Test field strength of 3 V/m} for general purposes in frequency range 80 MHz to 1000 MHz and ii. Under test level 3 (10 V/m) for protection against digital radio telephones and other RF devices in frequency ranges 800 MHz to 960 MHz and 1.4 GHz to 6.0 GHz.	Test results from Designated CAB of TEC to be submitted for compliance
iv)	**Immunity to fast transients (burst):** **Name of EMC Standard**: IEC 61000- 4- 4 {2012) "Testing and measurement techniques of electrical fast transients/burst immunity test" **Limits:-** Test Level 2 i.e. a) 1 kV for AC/DC power lines; b) 0. 5 kV for signal / control / data / telecom lines;	Test results from Designated CAB of TEC to be submitted for compliance
v)	**Immunity to surges:** **Name of EMC Standard:** IEC 61000-4-5 (2014) “Testing & Measurement techniques for Surge immunity test" **Limits:-** i. For mains power input ports: (a) 2 kV peak open circuit voltage for line to ground coupling (b) 1 kV peak open circuit voltage for line to line coupling	Test results from Designated CAB of TEC to be submitted for compliance

	ii. For telecom ports: (a) 2 kV peak open circuit voltage for line to ground (b) 2 kV peak open circuit voltage for line-to-line coupling.	
vi)	**Immunity to conducted disturbance induced by Radio frequency fields:** **Name of EMC Standard:** IEC 61000-4-6 (2013) "Testing & measurement techniques- Immunity to conducted disturbances induced by radio- frequency fields" **Limits:-** Under the test level 2 {3 V r.m.s.}in the frequency range 150 kHz-80 MHz for AC / DC lines and Signal /Control/telecom lines.	Test results from Designated CAB of TEC to be submitted for compliance
vii)	**Immunity to voltage dips & short interruptions (applicable to only ac mains power input ports, if any):** **Name of EMC Standard:** IEC 61000-4-11 (2004) "Testing & measurement techniques- voltage dips, short interruptions and voltage variations immunity tests" **Limits:-** i. a voltage dip corresponding to a reduction of the supply voltage of 30% for 500ms (i.e. 70 % supply voltage for 500ms) ii. a voltage dip corresponding to a reduction of the supply voltage of 60% for 200ms; (i.e. 40% supply voltage for 200ms) iii. a voltage interruption corresponding to a reduction of supply voltage of > 95% for 5s. iv. a voltage interruption corresponding to a reduction of supply voltage of >95% for 10ms.	Test results from Designated CAB of TEC to be submitted for compliance

Note: For checking compliance with the above EMC requirements, the method of measurements shall be in accordance with TEC Standard No. TEC/SD/RD/EMC-002/02.OCT.2016 and the references mentioned therein.

2.2 Safety Requirements:

S.N.	Parameter	Limits	Results
i)	The device shall conform to IS 13252 (2003) (Clause N0. 2.3, 2.9, 5.1, 5.2, 6.1, 6.2, 6.3 and 7.2) “Safety of information technology device including electrical business device” {equivalent to IEC Publication 60950 (2001)}.	Compliance	

2.3 Security Requirements:

As and when prescribed by DoT.

2.4 Technical Requirements:

For technical requirements, refer Table-II for interfaces used for product variants, Table-III A for Interface parameters and Table III B for other test parameters for product variants.

Table II: List of Interfaces for products variants		
Applicable to→ Interface↓	**Product Variants**	
	Audio Conference Facility Device	Multi Line Telephone System
2 Wire/PSTN	y	y

Table III-A: List of Interface parameters and their international standards		
Applicable to→ **Test Parameter↓**	*(Standards)*	2W/ PSTN
Longitudinal/ Transverse Conversion Loss/ (Impedance Unbalance about earth)	Q.552 (clause 2.1.2)	y
Return Loss	Q.552(clause 2.1.1.2)	y
Over Voltage/ Over Current Protection	K.21	y
Max. Loop Current	ETSI EN 300 001(<60 mA)	y
Idle State Current	ETSI EN 300 001 (< 30 µA)	y
Insulation Test	ETSI EN 300 001(>5 MΩ)	y

Table III-B: List of additional test parameters applicable to product variants			
Applicable to→ **Test Parameter↓**	*(Standards)*	Audio Conference Facility Device	Multi Line Telephone System
Voice Conference Verification (Functional)		y	y

2.5 Other Requirements (if any): NIL