

**अनिवार्य आवश्यकताएँ**

**संख्या : TEC18352108**

**Essential Requirements**

**ER No. : TEC18352108**

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## **2 Wire Telephone Equipment**

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**Government of India**

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Essential Requirements for:

## 2 Wire Telephone Equipment

Certification Scheme: **SCS**

Product Fee Group: **A**

This ER covers all types of telephone instruments and devices, connectable to 2-wire standard interface as well as proprietary interface.

*Note: Annexures referred to in this ER are Annexures as mentioned in "Annexures to ERs" No. TEC/SD/DD/TCP-222/02/June19 as updated from time to time and available on MTCTE portal.*

This product has the following variants:

1. 2-Line Feature Phone
2. CLIP Phone
3. Coin Box Telephone
4. Coin Box Telephone - Table Top Interface
5. Electronic Telephone Instrument
6. Executive Telephone Systems
7. Key Telephone Systems
8. Key Telephone Systems with proprietary interface
9. NSD or ISD Payphone
10. Terminals for connecting to PSTN

### 1. Variant 1 : 2-Line Feature Phone

#### 1.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
1.1.1	Acoustic Shock Absorption	P.360. Annex-D
1.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
1.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
1.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
1.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
1.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
1.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
1.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
1.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
1.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
1.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

## 1.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
1.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
1.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
1.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
1.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
1.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

## 2. Variant 2 : CLIP Phone

## 2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	Acoustic Shock Absorption	P.360. Annex-D
2.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
2.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
2.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
2.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
2.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
2.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
2.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
2.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
2.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
2.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

## 2.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
2.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
2.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
2.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
2.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
2.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

### 3. Variant 3 : Coin Box Telephone

#### 3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
3.1.1	Acoustic Shock Absorption	P.360. Annex-D
3.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
3.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
3.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
3.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
3.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
3.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
3.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
3.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
3.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
3.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

#### 3.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
3.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
3.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
3.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
3.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D

3.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D
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#### 4. Variant 4 : Coin Box Telephone - Table Top Interface

##### 4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
4.1.1	Acoustic Shock Absorption	P.360. Annex-D
4.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
4.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
4.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
4.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
4.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
4.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
4.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
4.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
4.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
4.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

##### 4.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
4.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
4.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
4.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D

4.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
4.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

## 5. Variant 5 : Electronic Telephone Instrument

### 5.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
5.1.1	Acoustic Shock Absorption	P.360. Annex-D
5.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
5.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
5.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
5.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
5.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
5.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
5.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
5.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
5.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
5.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

### 5.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
5.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
5.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D

5.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
5.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
5.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

## 6. Variant 6 : Executive Telephone Systems

### 6.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
6.1.1	Acoustic Shock Absorption	P.360. Annex-D
6.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
6.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
6.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
6.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
6.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
6.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
6.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
6.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
6.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
6.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

### 6.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
6.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D



6.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
6.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
6.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
6.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

## 7. Variant 7 : Key Telephone Systems

### 7.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
7.1.1	Acoustic Shock Absorption	P.360. Annex-D
7.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
7.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
7.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
7.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
7.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
7.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
7.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
7.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
7.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
7.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

### 7.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
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7.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
7.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
7.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
7.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
7.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

### 7.3 Interface 2 : ISDN BRI

S.No.	Parameter Name	Standard Name
7.3.1	Layer-III BRI Specification - Call Clearing	Q.931. Annex-D1
7.3.2	Layer-III BRI Specification - Call Setup	Q.931. Annex-D1

## 8. Variant 8 : Key Telephone Systems with proprietary interface

### 8.101 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
8.1.1	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
8.1.2	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
8.1.3	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
8.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
8.1.5	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
8.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
8.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
8.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
8.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1.

## 9. Variant 9 : NSD or ISD Payphone

### 9.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
9.1.1	Acoustic Shock Absorption	P.360. Annex-D
9.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
9.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
9.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
9.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
9.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
9.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
9.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
9.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
9.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
9.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

### 9.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
9.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
9.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D
9.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D

9.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
9.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D

## 10. Variant 10 : Terminals for connecting to PSTN

### 10.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
10.1.1	Acoustic Shock Absorption	P.360. Annex-D
10.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
10.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
10.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
10.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
10.1.6	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
10.1.7	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
10.1.8	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
10.1.9	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
10.1.10	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
10.1.11	Over Voltage and over Current Protection on 2W	K.21. Annex-D

### 10.2 Interface 1 : 2 Wire

S.No.	Parameter Name	Standard Name
10.2.1	Idle State Current for 2 wire Int	ETSI EN 300 001 ETSI TBR-21 Cl. 4.4.1. Annex-D
10.2.2	Insulation Test for 2 wire Int	ETSI EN 300 001. Annex-D

10.2.3	Longitudinal Conversion Loss for 2W Int	Q.552 Cl. 2.2.2. Annex-D
10.2.4	Maximum Loop Current for 2W Int	ETSI EN 300 001 ETSI TBR-21 Cl.4.4.3. Annex-D
10.2.5	Return Loss for 2W Int	Q.552 Cl. 2.2.1.2. Annex-D