

अनिवार्य आवश्यकताएँ

संख्या : TEC47722108

Essential Requirements

ER No. : TEC47722108

Mobile User Equipment

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दूरसंचार अभियांत्रिकी केंद्र

भारत सरकार

खुर्शीद लाल भवन, जनपथ, नई दिल्ली - 110001, भारत

Telecommunication Engineering Centre

Government of India

Khurshid Lal Bhawan, Janpath, New Delhi-110001, INDIA

Essential Requirements for:

Mobile User Equipment

Certification Scheme: **GCS**

Product Fee Group: **C**

This ER covers all types of Mobile User Equipment like Mobile Handset i.e. feature phone and smart phone, Tablets /Phablets, Data Card/Dongle or any other device having cellular interface for which separate ER is not existing.

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. Mobile Data Card or Dongle with WiFi
2. Mobile Data Card or Dongle without WiFi
3. Mobile Handset
4. Mobile Handset without Data
5. Mobile Tablet

1. Variant 1 : Mobile Data Card or Dongle with WiFi

1.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
1.1.1	Battery Safety	IS 16046. EN/IEC 62133. Annex-A2
1.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
1.1.3	Dual IP Layer Operation RFC 4213 - Address	RFC 4213 Cl. 2.1. Annex-P6
1.1.4	Dual IP Layer Operation RFC 4213 - DNS	RFC 4213 Cl. 2.1 and 2.2. Annex-P6
1.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2.

		Annex-B
1.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
1.1.7	IPV6 Extn Header Parameters	RFC 2460 or RFC 8200 . Annex-P7
1.1.8	IPV6 Header Parameters	RFC 2460 / RFC 8200 . Annex-P7
1.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1

1.2 Interface 1 : CDMA

S.No.	Parameter Name	Standard Name
1.2.1	CDMA Int Parameters	1xS0011 or EN 301 908-04 CDMA. Annex-F9
1.2.2	Operating Frequency for CDMA Int	NFAP. Annex-F

1.3 Interface 2 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
1.3.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10
1.3.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F

1.4 Interface 3 : LTE or LTE-A

S.No.	Parameter Name	Standard Name
1.4.1	Int Parameters for LTE or LTE-A	3GPP TS 36.521-1 or EN 301 908-13. Annex-F12
1.4.2	Operating Frequency for LTE or LTE-A Int	NFAP. Annex-F

1.5 Interface 4 : WCDMA or HSPA

S.No.	Parameter Name	Standard Name
1.5.1	Operating Frequency for WCDMA or HSPA Int	NFAP. Annex-F
1.5.2	WCDMA or HSPA Int Parameters	3GPP TS 34.121-1 or EN 301 908-2. Annex-F11

1.6 Interface 5 : WiFi

S.No.	Parameter Name	Standard Name
1.6.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
1.6.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
1.6.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
1.6.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

2. Variant 2 : Mobile Data Card or Dongle without WiFi

2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
2.1.2	Dual IP Layer Operation RFC 4213 - Address	RFC 4213 Cl. 2.1. Annex-P6
2.1.3	Dual IP Layer Operation RFC 4213 - DNS	RFC 4213 Cl. 2.1 and 2.2. Annex-P6
2.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
2.1.5	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
2.1.6	IPV6 Extn Header Parameters	RFC 2460 or RFC 8200 . Annex-P7
2.1.7	IPV6 Header Parameters	RFC 2460 / RFC 8200 . Annex-P7
2.1.8	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1

2.2 Interface 1 : CDMA

S.No.	Parameter Name	Standard Name
2.2.1	CDMA Int Parameters	1xS0011 or EN 301 908-04 CDMA. Annex-F9

2.2.2	Operating Frequency for CDMA Int	NFAP. Annex-F
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2.3 Interface 2 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
2.3.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10
2.3.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F

2.4 Interface 3 : LTE or LTE-A

S.No.	Parameter Name	Standard Name
2.4.1	Int Parameters for LTE or LTE-A	3GPP TS 36.521-1 or EN 301 908-13. Annex-F12
2.4.2	Operating Frequency for LTE or LTE-A Int	NFAP. Annex-F

2.5 Interface 4 : WCDMA or HSPA

S.No.	Parameter Name	Standard Name
2.5.1	Operating Frequency for WCDMA or HSPA Int	NFAP. Annex-F
2.5.2	WCDMA or HSPA Int Parameters	3GPP TS 34.121-1 or EN 301 908-2. Annex-F11

3. Variant 3 : Mobile Handset

3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
3.1.1	Battery Safety	IS 16046. EN/IEC 62133. Annex-A2
3.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
3.1.3	Dual IP Layer Operation RFC 4213 - Address	RFC 4213 Cl. 2.1. Annex-P6
3.1.4	Dual IP Layer Operation RFC 4213 - DNS	RFC 4213 Cl. 2.1 and 2.2. Annex-P6
3.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B

3.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
3.1.7	IPV6 Extn Header Parameters	RFC 2460 or RFC 8200 . Annex-P7
3.1.8	IPV6 Header Parameters	RFC 2460 / RFC 8200 . Annex-P7
3.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
3.1.10	Mobile device - Non Zero IMEI or MEID or ESN	Annex-M
3.1.11	Mobile Device Indian Language Support	IS 16333 (Part 3). Annex-M
3.1.12	Mobile Emergency Support - Call on 112	DoT order 3GPP2 C.S0023 TS 22.101 TS 24.008. Annex-M
3.1.13	Mobile Emergency Support - GPS Location	G.S.R. No. 1441 (E) dated 23-11-2017. Annex-M
3.1.14	Mobile Emergency Support - Panic Button	G.S.R. No. 436 (E) 3GPP TS 22.101 C.S0023. Annex-M
3.1.15	SAR Display for Mobile Handset	Annex-M
3.1.16	SAR Value for Mobile Handset	IEC 62209-1:2005 TEC/GR/SAR/001/01.MAR.09. Annex-M

3.2 Interface 1 : Bluetooth Low Energy

S.No.	Parameter Name	Standard Name
3.2.1	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
3.2.2	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)
3.2.3	Spurious Emission for BLE Interface	Annex G3

3.3 Interface 2 : CDMA

S.No.	Parameter Name	Standard Name
3.3.1	CDMA Int Parameters	1xS0011 or EN 301 908-04 CDMA. Annex-F9
3.3.2	Operating Frequency for CDMA Int	NFAP. Annex-F

3.4 Interface 3 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
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3.4.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10
3.4.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F

3.5 Interface 4 : LTE or LTE-A

S.No.	Parameter Name	Standard Name
3.5.1	Int Parameters for LTE or LTE-A	3GPP TS 36.521-1 or EN 301 908-13. Annex-F12
3.5.2	Operating Frequency for LTE or LTE-A Int	NFAP. Annex-F

3.6 Interface 5 : WCDMA or HSPA

S.No.	Parameter Name	Standard Name
3.6.1	Operating Frequency for WCDMA or HSPA Int	NFAP. Annex-F
3.6.2	WCDMA or HSPA Int Parameters	3GPP TS 34.121-1 or EN 301 908-2. Annex-F11

3.7 Interface 6 : WiFi

S.No.	Parameter Name	Standard Name
3.7.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
3.7.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
3.7.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
3.7.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

4. Variant 4 : Mobile Handset without Data

4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
4.1.1	Battery Safety	IS 16046. EN/IEC 62133. Annex-A2

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 Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
4.1.4	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
4.1.5	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
4.1.6	Mobile device - Non Zero IMEI or MEID or ESN	Annex-M
4.1.7	Mobile Device Indian Language Support	IS 16333 (Part 3). Annex-M
4.1.8	Mobile Emergency Support - Call on 112	DoT order 3GPP2 C.S0023 TS 22.101 TS 24.008. Annex-M
4.1.9	Mobile Emergency Support - GPS Location	G.S.R. No. 1441 (E) dated 23-11-2017. Annex-M
4.1.10	Mobile Emergency Support - Panic Button	G.S.R. No. 436 (E) 3GPP TS 22.101 C.S0023. Annex-M
4.1.11	SAR Display for Mobile Handset	Annex-M
4.1.12	SAR Value for Mobile Handset	IEC 62209-1:2005 TEC/GR/SAR/001/01.MAR.09. Annex-M

4.2 Interface 1 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
4.2.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10
4.2.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F

5. Variant 5 : Mobile Tablet

5.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
5.1.1	Battery Safety	IS 16046. EN/IEC 62133. Annex-A2
5.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B

5.1.3	Dual IP Layer Operation RFC 4213 - Address	RFC 4213 Cl. 2.1. Annex-P6
5.1.4	Dual IP Layer Operation RFC 4213 - DNS	RFC 4213 Cl. 2.1 and 2.2. Annex-P6
5.1.5	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
5.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
5.1.7	IPV6 Extn Header Parameters	RFC 2460 or RFC 8200 . Annex-P7
5.1.8	IPV6 Header Parameters	RFC 2460 / RFC 8200 . Annex-P7
5.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
5.1.10	Mobile device - Non Zero IMEI or MEID or ESN	Annex-M
5.1.11	Mobile Device Indian Language Support	IS 16333 (Part 3). Annex-M
5.1.12	Mobile Emergency Support - Call on 112	DoT order 3GPP2 C.S0023 TS 22.101 TS 24.008. Annex-M
5.1.13	Mobile Emergency Support - GPS Location	G.S.R. No. 1441 (E) dated 23-11-2017. Annex-M
5.1.14	Mobile Emergency Support - Panic Button	G.S.R. No. 436 (E) 3GPP TS 22.101 C.S0023. Annex-M
5.1.15	SAR Display for Mobile Handset	Annex-M
5.1.16	SAR Value for Mobile Handset	IEC 62209-1:2005 TEC/GR/SAR/001/01.MAR.09. Annex-M

5.2 Interface 1 : Bluetooth Low Energy

S.No.	Parameter Name	Standard Name
5.2.1	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
5.2.2	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)
5.2.3	Spurious Emission for BLE Interface	Annex G3

5.3 Interface 2 : CDMA

S.No.	Parameter Name	Standard Name
5.3.1	CDMA Int Parameters	1xS0011 or EN 301 908-04 CDMA. Annex-F9

5.3.2	Operating Frequency for CDMA Int	NFAP. Annex-F
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5.4 Interface 3 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
5.4.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10
5.4.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F

5.5 Interface 4 : LTE or LTE-A

S.No.	Parameter Name	Standard Name
5.5.1	Int Parameters for LTE or LTE-A	3GPP TS 36.521-1 or EN 301 908-13. Annex-F12
5.5.2	Operating Frequency for LTE or LTE-A Int	NFAP. Annex-F

5.6 Interface 5 : WCDMA or HSPA

S.No.	Parameter Name	Standard Name
5.6.1	Operating Frequency for WCDMA or HSPA Int	NFAP. Annex-F
5.6.2	WCDMA or HSPA Int Parameters	3GPP TS 34.121-1 or EN 301 908-2. Annex-F11

5.7 Interface 6 : WiFi

S.No.	Parameter Name	Standard Name
5.7.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
5.7.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
5.7.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
5.7.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1