

अनिवार्य आवश्यकताएँ

संख्या : TEC28732108

Essential Requirements

ER No. : TEC28732108

Tracking Device

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Issued under MTCTE by:

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Essential Requirements for:

Tracking Device

Certification Scheme: **GCS**

Product Fee Group: **B**

This ER covers all types of Sensing and Tracking Devices with Cellular Connectivity

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. Asset Tracking Device
2. Human Tracking Device
3. Pet Tracking Device
4. Vehicle Tracking Device

1. Variant 1 : Asset Tracking Device

1.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
1.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
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 (Level 2)	TEC EMI EMC Standard EN/IEC:61000-4-2.

	or Level 3)	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	IoT Dev - Non-0 IMEI or MEID or Unique MAC	Annex-M
1.1.11	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1

1.2 Interface 1 : BLE for IoT

S.No.	Parameter Name	Standard Name
1.2.1	Basic RF Requirements for BLE Interface	Annex G4 (4.4 to 4.15). ETSI EN 300 328 V2.2.2.
1.2.2	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
1.2.3	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)
1.2.4	Maximum Transmitted Power for BLE Int	WPC GSR 45(E). Annex-G4 (4.3)

1.3 Interface 2 : CDMA

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

1.4 Interface 3 : GSM or GPRS or EDGE

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

1.5 Interface 4 : LTE or LTE-A

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

1.6 Interface 5 : WCDMA or HSPA

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

1.7 Interface 6 : WiFi

S.No.	Parameter Name	Standard Name
1.7.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
1.7.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
1.7.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
1.7.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

2. Variant 2 : Human Tracking Device

2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
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	TEC EMI EMC Standard EN/IEC:61000-4-

	Interruptions	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 (Level 2 or Level 3)	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	IoT Dev - Non-0 IMEI or MEID or Unique MAC	Annex-M
2.1.11	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
2.1.12	SAR Value for IoT Devices	Annex-M

2.2 Interface 1 : BLE for IoT

S.No.	Parameter Name	Standard Name
2.2.1	Basic RF Requirements for BLE Interface	Annex G4 (4.4 to 4.15). ETSI EN 300 328 V2.2.2.
2.2.2	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
2.2.3	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)
2.2.4	Maximum Transmitted Power for BLE Int	WPC GSR 45(E). Annex-G4 (4.3)

2.3 Interface 2 : CDMA

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

2.4 Interface 3 : GSM or GPRS or EDGE

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

2.5 Interface 4 : LTE or LTE-A

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

2.6 Interface 5 : WCDMA or HSPA

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

2.7 Interface 6 : WiFi

S.No.	Parameter Name	Standard Name
2.7.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
2.7.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
2.7.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
2.7.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

3. Variant 3 : Pet Tracking Device

3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
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3.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
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 (Level 2 or Level 3)	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	IoT Dev - Non-0 IMEI or MEID or Unique MAC	Annex-M
3.1.11	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
3.1.12	SAR Value for IoT Devices	Annex-M

3.2 Interface 1 : CDMA

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

3.3 Interface 2 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
3.3.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10

3.3.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F
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3.4 Interface 3 : LTE or LTE-A

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

3.5 Interface 4 : WCDMA or HSPA

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

4. Variant 4 : Vehicle Tracking Device

4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
4.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
4.1.2	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
4.1.3	Dual IP Layer Operation RFC 4213 - Address	RFC 4213 Cl. 2.1. Annex-P6
4.1.4	Dual IP Layer Operation RFC 4213 - DNS	RFC 4213 Cl. 2.1. Annex-P6
4.1.5	GPS Compliance	Compliance to Gol notification GSR no. 436(E).
4.1.6	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
4.1.7	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
4.1.8	Immunity to Electrostatic Discharge (Level 2	TEC EMI EMC Standard EN/IEC:61000-4-2.

	or Level 3)	Annex-B
4.1.9	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
4.1.10	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
4.1.11	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
4.1.12	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
4.1.13	IoT Dev - Non-0 IMEI or MEID or Unique MAC	Annex-M
4.1.14	IPV6 Extn Header Parameters	RFC 2460 or RFC 8200 . Annex-P7
4.1.15	IPV6 Header Parameters	RFC 2460 / RFC 8200 . Annex-P7
4.1.16	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1

4.2 Interface 1 : BLE for IoT

S.No.	Parameter Name	Standard Name
4.2.1	Basic RF Requirements for BLE Interface	Annex G4 (4.4 to 4.15). ETSI EN 300 328 V2.2.2.
4.2.2	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
4.2.3	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)
4.2.4	Maximum Transmitted Power for BLE Int	WPC GSR 45(E). Annex-G4 (4.3)

4.3 Interface 2 : CDMA

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

4.4 Interface 3 : GSM or GPRS or EDGE

S.No.	Parameter Name	Standard Name
4.4.1	Int Parameters for GSM or GPRS or EDGE	3GPP TS 51 010-1 or EN 301 511. Annex-F10

4.4.2	Operating Frequency for GSM or GPRS or EDGE Int	NFAP. Annex-F
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4.5 Interface 4 : LTE or LTE-A

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

4.6 Interface 5 : WCDMA or HSPA

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

4.7 Interface 6 : WiFi

S.No.	Parameter Name	Standard Name
4.7.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
4.7.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
4.7.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
4.7.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1