

**अनिवार्य आवश्यकताएँ**

**संख्या : TEC50012202**

**Essential Requirements**

**ER No. : TEC50012202**

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**Radio Broadcast Receiver RBR**

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**Government of India**

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Essential Requirements for:  
**Radio Broadcast Receiver RBR**

Certification Scheme: **GCS**

Product Fee Group: **B**

Essential Requirements for Radio Broadcast Receivers which are primarily used in sound/audio broadcasting.

*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. All Motor vehicle RBRs requiring external power
2. All RBRs driven with inbuilt power source
3. Other devices having RBR interface

**1. Variant 1 : All Motor vehicle RBRs requiring external power**

**1.1 Parameters Linked with Product Variant**

S.No.	Parameter Name	Standard Name
1.1.1	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
1.1.2	Frequency of operation for Radio Broadcast Receivers	Annexure -R- A1-Freq (In Annexure to ER of Radio Broadcast Receiver)
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 or Level 3)	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	Radio Conformance for RBR	Annexure -R- A1-Radio_conformance (In Annexure to ER of Radio Broadcast Receiver)
1.1.11	Safety standard for Audio-Video devices-equipment	Annexure-R-A1-Safety (In annexure to ER of Radio Broadcast Receiver)

## 1.2 Interface 1 : Bluetooth Low Energy

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

## 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 : Geolocation Navigation Interface

S.No.	Parameter Name	Standard Name
1.4.1	GPS	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver).
1.4.2	NavIC	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver)

## 1.5 Interface 4 : GSM or GPRS or EDGE

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

### 1.6 Interface 5 : LTE or LTE-A

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

### 1.7 Interface 6 : WCDMA or HSPA

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

### 1.8 Interface 7 : WiFi

S.No.	Parameter Name	Standard Name
1.8.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
1.8.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
1.8.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
1.8.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

## 2. Variant 2 : All RBRs driven with inbuilt power source

### 2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
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2.1.1	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
2.1.2	Frequency of operation for Radio Broadcast Receivers	Annexure -R- A1-Freq (In Annexure to ER of Radio Broadcast Receiver)
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 (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	Radio Conformance for RBR	Annexure -R- A1-Radio_conformance (In Annexure to ER of Radio Broadcast Receiver)
2.1.11	Safety standard for Audio-Video devices-equipment	Annexure-R-A1-Safety (In annexure to ER of Radio Broadcast Receiver)

## 2.2 Interface 1 : Bluetooth Low Energy

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

## 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
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#### 2.4 Interface 3 : Geolocation Navigation Interface

S.No.	Parameter Name	Standard Name
2.4.1	GPS	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver).
2.4.2	NavIC	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver)

#### 2.5 Interface 4 : GSM or GPRS or EDGE

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

#### 2.6 Interface 5 : LTE or LTE-A

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

#### 2.7 Interface 6 : WCDMA or HSPA

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

#### 2.8 Interface 7 : WiFi

S.No.	Parameter Name	Standard Name
2.8.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
2.8.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407

		or FCC CFR47 pt 15.249. Annex-G3
2.8.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
2.8.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1

### 3. Variant 3 : Other devices having RBR interface

#### 3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
3.1.1	Frequency of operation for Radio Broadcast Receivers	Annexure -R- A1-Freq (In Annexure to ER of Radio Broadcast Receiver)
3.1.2	Radio Conformance for RBR	Annexure -R- A1-Radio_conformance (In Annexure to ER of Radio Broadcast Receiver)

#### 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 : Geolocation Navigation Interface

S.No.	Parameter Name	Standard Name
3.4.1	GPS	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver).
3.4.2	NavIC	Annexure -R- A1- Navigation (In Annexure to ER of Radio Broadcast Receiver)

### 3.5 Interface 4 : GSM or GPRS or EDGE

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

### 3.6 Interface 5 : LTE or LTE-A

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

### 3.7 Interface 6 : WCDMA or HSPA

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

### 3.8 Interface 7 : WiFi

S.No.	Parameter Name	Standard Name
3.8.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
3.8.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
3.8.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
3.8.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1