

# अनिवार्य आवश्कताएँ

संख्या: TEMP1646386699659

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## Essential Requirements

ER No. : TEMP1646386699659

### HYBRID SET TOP BOX

2022

MTCTE के तहत जारी:

Issued under MTCTE by:

दूरसंचार अभियांत्रिकी केंद्र

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Government of India  
Khurshid Lal Bhawan, Janpath, New Delhi-110001

Essential Requirements for:

## Hybrid Set Top Box

### Certification Scheme: **GCS** Product Fee Group: **B**

Hybrid Set Top Box for Broadcasting and IP based video. Such Devices allow users to view Television using digital cables or Direct to Home (DTH) as well as video from the Internet or local IP network.

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. Hybrid Set Top Box

#### 1. Variant 1 : Hybrid Set Top Box

##### 1.1 Parameters Linked with Product Variant

<b>S.No</b>	<b>Parameter Name</b>	<b>Standard Name</b>
1.1.1	Conducted And Radiated Emission - Class B TEC EMI EMC Standard CISPR 22/32	EN55022/32. Annex-B
1.1.2	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4- 11. Annex-B
1.1.3	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
1.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4- 2. Annex-B

1.1.5	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4- 4. Annex-B
1.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000- 4-3. Annex-B
1.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4- 6. Annex-B
1.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4- 5. Annex-B
1.1.9	IPV6 Dual Stack as per RFC 4213	RFC 4213 clause 2.1 and 2.2. Annex-P6
1.1.10	IPV6 Parameters	RFC 2460 / 8200. Annex-P7
1.1.11	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
1.1.12	TCP Parameters	RFC 793. Annex-P11
1.1.13	UDP Parameters	RFC 768. Annex-P5
1.1.14	Video Codecs	MPEG-4
1.1.15	Audio Codecs	MPEG-2 L2
1.1.16	Conditional Access System (CAS)	<b>Schedule IX</b> : The Telecommunication (Broadcasting and Cable) services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021 ; <b>By TRAI</b>
1.1.17	Digital Right Management System(DRM)	Multi-DRM
1.1.18	RF Tuner	DVB-C / DVB-T / DVB-S Tuner

## 1.2 Interface 1 : 10 100 BASE-T Ethernet

S.No	Parameter Name	Standard Name
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1.2.1	Link Speed and Auto Negotiation Test FE	IEEE 802.3 Annex-H
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### 1.3 Interface 2 : Bluetooth Low Energy

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

### 1.4 Interface 3 : RF Video(IN)

S.No.	Parameter Name	Standard Name
1.4.1	RF Input	IEC 60169 – 24 F-type female

### 1.5 Interface 4 : WiFi

S.No.	Parameter Name	Standard Name
1.5.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex G3
1.5.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex- G3
1.5.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2
1.5.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex G1

### 1.6 Interface 5 : HDMI 1.4

S.No.	Parameter Name	Standard Name
1.6.1	Bandwidth	Up to 10.2 Gbps

1.6.2	Video resolution	Up to 4K (1080p)
1.6.3	Multi-dimensional Immersive Audio experience	Up to 8 Audio channels

### 1.7 Interface 6 : HDMI 2

S.No.	Parameter Name	Standard Name
1.7.1	Bandwidth	Up to 18 Gbps
1.7.2	Video resolution	Up to 4K@50/60 (2160p)
1.7.3	Multi-dimensional Immersive Audio experience	Up to 32 Audio channels

### 1.8 Interface 7 : 1G Optical Ethernet

S.No	Parameter Name	Standard Name
1.8.1	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
1.8.2	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
1.8.3	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H

### 1.9 Interface 8 : USB 2.0

S.No	Parameter Name	Standard Name
1.9.1	Data Transfer rates	Up to 480 Mbps +/-0.05%
1.9.2	Maximum Power output	500 mA; 5V; 2.5W