

अनिवार्य आवश्यकताएँ

संख्या : TEC30042208

Essential Requirements

ER No. : TEC30042208

Hybrid Set Top Box

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Telecommunication Engineering Centre

Government of India

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

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

S.No.	Parameter Name	Standard Name
1.1.1	Audio Codecs	MPEG-2 L2
1.1.2	Conditional Access System (CAS)	Conditional Access System (CAS) Schedule IX -The Telecommunication (Broadcasting and Cable) services Interconnection (Addressable Systems) (Third Amendment) Regulations 2021 By TRAI
1.1.3	Conducted And Radiated Emission - Class B	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
1.1.4	Digital Right Management System (DRM)	Multi-DRM
1.1.5	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
1.1.6	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B

1.1.7	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
1.1.8	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
1.1.9	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
1.1.10	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
1.1.11	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
1.1.12	IPv6 Dual Stack as per RFC 4213	RFC 4213 clause 2.1 and 2.2. Annex-P6
1.1.13	IPV6 Parameters	RFC 2460 / 8200. Annex-P7
1.1.14	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
1.1.15	RF Tuner	DVB-C DVB-T DVB-S Tuner
1.1.16	TCP Parameters	RFC 793. Annex-P11
1.1.17	UDP Parameters	RFC 768. Annex-P5
1.1.18	Video Codecs	MPEG-4

1.2 Interface 1 : 1 G Optical Ethernet

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

1.3 Interface 2 : 10 100 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
1.3.1	Link Speed and Autonegotiation Test FE	IEEE 802.3 Annex-H

1.4 Interface 3 : Bluetooth Low Energy

S.No.	Parameter Name	Standard Name
1.4.1	EIRP for BLE Interface	WPC GSR 45(E). Annex-G4 (4.2)
1.4.2	Frequency of Operation for BLE Interface	Latest NFAP. Annex-G4(4.1)

1.4.3	Spurious Emission for BLE Interface	Annex G3
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1.5 Interface 4 : HDMI 1.4

S.No.	Parameter Name	Standard Name
1.5.1	Bandwidth	Up to 10.2 Gbps
1.5.2	Multi-dimensional Immersive Audio experience	Up to 8 Audio channels
1.5.3	Video resolution	Up to 4K (1080p)

1.6 Interface 5 : HDMI 2

S.No.	Parameter Name	Standard Name
1.6.1	Bandwidth HDMI 2	Up to 18 Gbps
1.6.2	Multi-dimensional Immersive Audio Experience	Up to 32 Audio channels
1.6.3	Video resolution HDMI 2	Up to 4K at the rate 50-60 (2160p)

1.7 Interface 6 : RF Video (IN)

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

1.8 Interface 7 : USB 2.0

S.No.	Parameter Name	Standard Name
1.8.1	Data transfer rates USB 2.0	Up to 480 Mbps plus minus 0.05 percent
1.8.2	Maximum Power Output	500 mA-5V-2.5W

1.9 Interface 8 : WiFi

S.No.	Parameter Name	Standard Name
1.9.1	2.4 GHz WiFi Radio Conformance	ETSI EN 300 328 or FCC CFR47 pt 15.247 or FCC CFR47 pt 15.249. Annex-G3
1.9.2	5 GHz WiFi Radio Conformance	ETSI EN 301 893 or FCC CFR47 pt 15.407 or FCC CFR47 pt 15.249. Annex-G3
1.9.3	EIRP for Wifi Interface	Latest NFAP and GSRs issued by DoT WPC. Annex-G2

1.9.4	Frequency for WiFi equipments	DoT WPC GSR No. 45(E) 1048(E). Annex-G1
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