

S.No.	Original ER		Comments				
	Parameter Name	Standard Name	C-DoT	Dish	HathWay	MyBox	TATA PLAY
1.1.1	Conducted And Radiated Emission - Class A TEC EMI EMC Standard CISPR 22/32	EN55022/32. Annex-B					Not applicable for consumer devices
1.1.2	Conducted And Radiated Emission - Class B TEC EMI EMC Standard CISPR 22/32	EN55022/32. Annex-B					EN55032 Class B is OK .More details needed on Annex-B
1.1.3	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B					IEC:61000-4-11:2004 is OK .More details needed on Annex-B
1.1.4	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B					Not applicable
1.1.6	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4- 2. Annex-B					IEC:61000-4-2:2009 is OK .More details needed on Annex-B
1.1.7	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4- 4. Annex-B					IEC:61000-4-4:2012 is OK .More details needed on Annex-B
1.1.8	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000- 4-3. Annex-B					IEC:61000-4-3:2006+A1:2008+A2:2010 is OK. More details needed on Annex-B
1.1.9	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4- 6. Annex-B					IEC:61000-4-6:2009/2014 is OK. More details needed on Annex-B
1.1.10	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4- 5. Annex-B					IEC:61000-4-5:2014 is OK. more details needed on Annex-B

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1.1.11	IPV6 Dual Stack as per RFC 4213	RFC 4213 clause 2.1 and 2.2. Annex-P6					More Time needed to analyse
1.1.12	IPV6 Parameters	RFC 2460 / 8200. Annex-P7		IPv4 (mandatory) and IPv6 (recommended)			
1.1.13	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1					IS 13252(Part1):2010+A1:2013+A2:2015/IEC 60950-1:2005 +A1:2009+A2:2013 is OK . More details needed on Annex-1
1.1.14	Safety Requirements (Optical Fibre Cables - Indoor or Outdoor)	Annex -Tx-A4-OFC					Not Applicable or Optional.
1.1.15	TCP Parameters	RFC 793. Annex-P11					More Time needed to analyse
1.1.16	UDP Parameters	RFC 768. Annex-P5					
1.1.17	Video Codecs	MPEG-4,H.265	MPEG-2 video, MPEG-4 video, H.264/AVC, H.265/HEVC	<ul style="list-style-type: none"> • MPEG-2: MP@ML, MP@HL • MPEG-4: MP@L3, MP@L4.1, HiP@L4.1 • H.265: Main@L5.1, Main 10@L5.1 (or higher) 	MPEG-2, HEVC, VP8, VP9, AV1	ADD : AV9, AV1, MPEG2,	It is function requirement, should not be part of essential requirements. MPEG-4 is OK. H.265(HEVC) should be optional
1.1.18	Video Container	MP4	MPEG-2 TS, ISO/IEC base media files(MP4, 3GP), MKV		3GPP, MPEG-4, MPEG2-TS, WMV, MKV, DAT, WEBM, AVI, VOB, MOV, FLV, F4V		It is function requirement, should not be part of essential requirements. DTH:MPEG-TS. OTT(HLS): MPEG-TS. OTT(DASH):MP4

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1.1.19	Audio Codecs	MPEG-4 AUDIO	MPEG-1 audio, MPEG-2 audio, MPEG-4 audio/AAC, AC-3, E-AC-3	<ul style="list-style-type: none"> • PCM audio is required • MPEG-1 Layer I/II [IEC 11172-3] • MPEG-2 Audio [ISO/IEC 13818-3] • MPEG4 AAC-HE v2 Level 2 as specified in [ISO/IEC 14496-3] • MPEG4 AAC-HE v2 Level 4 as specified in [ETSI TS 101 154], section 6.4 • Dolby Digital and Dolby Digital Plus is recommended • AC-3 [ETSI TS 102 366] is recommended • Manual lip-sync delay is recommended up to 400 ms 			ADD: , Dolby Digital, Dolby Digital Plus, AAC, MP3	It is a function Requirement, should not be part of essential requirements. DTH: MPEG 1 layer 2 OTT: AAC MPEG -4 AUDIO should be Optional.
1.1.20	Audio Container	MP4	MPEG-2 TS, ISO/IEC base media files(MP3, MP4, 3GP)		3GPP, MPEG-4, ADTS raw AAC, MPEG-TS, FLAC, MID, XMF, MXMF, RTTTL, RTX, OTA, IMY, MP3, MKV, WAV, OGG		It is a function Requirement, should not be part of essential requirements. DTH: MPEG-TS layer 2 OTT(HLS):MPEG-TS OTT(DASH): MP4	
1.1.21	Conditional Access System (CAS)	Schedule IX : The Telecommunication (Broadcasting and Cable) services Interconnection (Addressable Systems) (Third Amendment) Regulations, 2021 ; By TRAI	Apart from CAS, DRM support is also required to be mentioned	At least one of the digital rights management (DRM) standards is required for content protection of IP streaming, the detailed selection of DRM will be decided by the operator and the broadcaster.	DRM - Widevine L1 (Mandatory)		It is already part of TRAI requirement. No need to put here in this ER.	

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	Interface 4 : WiFi			<ul style="list-style-type: none"> Compliant with IEEE 802.11 a/b/g/n standard as minimum Single band (2.4 GHz) Wi-Fi module as client mode 			
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					More Time needed to analyse
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					
	Interface 5 : HDMI 2.0		HDMI 1.4, HDMI 2.0	<ul style="list-style-type: none"> Type-A (female) HDMI version 1.4a or above HDCP version 1.2 or above 		HDMI 2.1 / HDCP	
1.6.1	Bandwidth	Upto 18 Gbps					HDMI 2.0 should be Optional. Only HDMI 1.4 should be Mandatory.
1.6.2	Video resolution	Upto 4K@50/60 (2160p)					
1.6.3	Multi-dimensional Immersive Audio experience	Upto 32 Audio channels					

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						"1.6.4 Auto Low Latency Mode (ALLM) Support ALLM for cloud gaming 1.6.4 HDCP Support HDCP 2.3 CEC EDID output"	
	Interface 6 : 10G Optical Ethernet					<i>Interface 6 : 10G Optical Ethernet : why need 10G Optical Ethernet instead of 100M Ethernet which is sufficient for 4K streaming video?</i>	
1.7.1	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H					NA. It should be optional.
1.7.2	Receiver Sensitivity 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H					
1.7.3	Wavelength for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H					
	Interface 7 : USB 2.0						
				<ul style="list-style-type: none"> • USB Type A connector, version 2.0 or above • 5V@500 mA power supply as minimum • Comply with Universal Serial Bus Specification v2.0 or above 			
1.8.1	Data Transfer rates	Up to 480 Mbps					OK
1.8.2	Low – power device	Up to 100 mA; 5V; 0.50W					More details needed
	Interface 8: RCA Cables						
						Interface 8: RCA Cables: NOT SURE HOW THIS WORKS AS NEW 4K IC DON'T EVEN SUPPORT RCA OPTIONS...	

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1.9.1	RCA connector	3.5mm Jack connector- Stereo (L and R) analogue audio signal and composite video output					Should follow BIS spec for STB
EXTRA INPUTS						1.10. System configuration CPU Power : > 16K DMIPS DDR: 2GB/3GB/4GB DDR RAM Flash: 8GB/16GB eMMC Flash memory	
						1.11. Graphics: support OpenGL ES 3.2, Vulkan 1.2, OpenCL 2.0	
			Clauses pertaining to interoperability of Hybrid STBs may also be mentioned			1.12. HDR format support: HDR10, HDR10+, HLG (standard),	
						1.13. DRM: Widevine Level 1, PlayReady SL3000	
						1.14. SPDIF: Support optical Audit (Optional)	
						1.1.5: Micro SD card support	
						1.16 Environmental Tests are Critical	