Minimum Technical Specifications for DVB-S2 Satellite Television Receivers/Decoders

NOTE:
*The Authority wishes to inform the general public that the effective date of coming into force of the minimum technical specifications for DVB-S2 satellite TV shall be **1st January 2018**. In this regard, type approval of Satellite TV receivers/decoders shall be on the basis of this specification starting from 1st January 2018.*

*The importation into Kenya of Satellite TV receivers/decoders that do not comply with the said DVB-S2 specifications shall not be permitted from **1st January 2018**. However, decoder stocks complying with DVB-S standard that are already in the country prior to the said date shall continue to be used and eventually phased out over time to pave way for the second generation satellite decoders.*

A: DVB-S2 TV RECEIVER TECHNICAL SPECIFICATIONS

1.	RF tuner & DVB-S2 Channel	Complied Standard	ETSI EN 302307-1 v1.4.1 (2014-11)
		Input impedance	75Ω
		Modulation	Single carrier QPSK with multiple streams or Multiple carriers QPSK
		Modulation Schemes	BPSK, QPSK, 8PSK, 16APSK, 32APSK
		Demodulation Frequency Range	950-2150MHz

		Input signal level	-25dBm to -60dBm
		FEC coding	LDPC Code + BCH Code Code rates: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3 3/4, 4/5, 5/6, 8/9 and 9/10
		Interleaving	Bit interleaving
		Data Throughput	80Mbps
		Rotated Constellation	2 to 5 bit/s/Hz, optimized for operation over non-linear transponders (the upper limit is not mandatory)
		C/N Range	-2.4 dB (QPSK) to +16 dB (32APSK)
2.	MPEG Transmission stream, video and Audio Decoding	Transmission stream	MPEG-2 ISO/IEC 13818 and MPEG-4 ISO/IEC 13818-1
		Video decoding	MPEG-2/MPEG 4 AVC (H.264)/HEVC (optional for UHD)
		Image rate (Aspect Ratio)	4:3, 16:9
		Frame frequency	25Hz (PAL)
		Video Resolution	720x576 (PAL)-standard definition, 1920x1080 - high definition (UHD)
		Audio decoding	MPEG-1, MPEG-2, MPEG-4
		Audio mode	Stereo
3.	Scanning function	The STB should include a frequency scanning function to detect the availability of DVB-S2 signals.	

		It should be able to display the number of channels currently being scanned. Display of the progress bar is optional. It should be able to display the number of services/channels located Be capable of programme memory in case of power cut off The Decoder should display details of its name, Network ID, signal Strength and quality
4.	Quality reception thresholds	All STBs should have an on-screen visual signal level indicator, which would aid in directing the antenna and troubleshooting reception problems.
5.	Software	EPG: current and next programme information. 24x7 days schedule. Capable of the parental lock mechanism. The parental lock should have software capable of using the EPG Programme rating to enforce the controls/parental lock. Auto / Manual tuning 24 hour clock OTA: STB software's, EPG, CA features must be upgradable over the air (USB upgrade –Optional) Display and withdrawal of subtitles Support multi-language info Support text to speech conversion for PWDs (Optional)
6.	Interfaces	RF input/output connector: IEC 60169-24 female connector, input impedance 75 ohms Input interfaces- Multiple Transport Stream and Generic stream Encapsulation RF output video: One RCA (CINCH) female connector type for video output and Two RCA (CINCH) female connectors for stereo sound output (optional) HDMI interface (optional) Should include one RF cable to connect the unit with its associated

		analogue television receiver (optional).	
7.	Conditional Access	Must include a conditional access mechanism for PAY TV STB.	
8.	Physical attributes	Power supply	AC 240±10%, 50 ±1Hz with an option of 12V DC input
		Power	Energy star option preferred. Complying with IEC 62087 or similar standards
9.	Environmental attributes	Operating Temperature	0~45°C
		Operating humidity	Upto 90%
10.	Reliability	MTBF	>80,000Hrs
11.	Documentation	Use friendly documentation preferably in English language with Kiswahili languages as an additional option.	

B: DVB-S2 TV Receiver Basic Features

	BASIC FEATURE	**FUNCTION**
1	Channel search modes	Auto and manual
2	Signal Quality level Indicator	Signal level indication (green or yellow) for acceptable signal quality
3	Viewing Control	Parental Lock/ PIN feature for locking and unlocking channels
4	Electronic Program Guide (EPG)	On screen electronic Programme Guide
5	Full function standard infrared remote control using AA or AAA size	Small size battery, hence an easier to handle (small in size) remote control

	battery	
6	Languages Selection:	Availability language selection feature. English and Kiswahili (optional)
7	Video System auto conversion	PAL B /G
8	Minimum capacity for channels number storage	1000 channels The software programming for channel storage should cater for 00-99 and 000-999
9	Favorite channel list editing	Provision for editing channels for user preference (basic feature)
10	Minimum Warranty	1 year
11	User manual	In English languages with Kiswahili as an option.
12	STB Marking:	Each STB shall be legibly and indelibly marked with at least the following information: a) Manufacturer's name or trademark b) Mode designation and serial number c) Country of manufacture d) Input supply voltage and frequency e) Power consumption f) Cable input and output terminals Sockets for audio and video output