PUBLIC NOTICE

Minimum Specifications for DVB-T2 Digital Set Top Boxes (STP) for the Kenyan Market

The enhanced features on the DVB-T standard have motivated a number of countries to upgrade to the second generation DVB-T2 standard. Kenya has adopted the DVB-T2 standard and any rollout of digital broadcasting infrastructure in Kenya after 2010 is on the DVB-T2 platform.

DVB-T and DVB-T2 platforms have been running concurrently in Nairobi since 2010. However, the upgrade of the DVB-T platform in Nairobi has been finalized and starting from 1st September 2012, the TV signals shall be transmitted in the DVB-T2 format only. Vendors of equipment were advised in November 2010 to cease any further importation of the DVB-T set-top boxes. All importations of the set-top boxes were, therefore, required to comply with the Government approved DVB-T2 system specifications.

To facilitate reception of TV programmes on the DVB-T2 platform, consumers require DVB-T2 set- top boxes or integrated digital TVs (idTVs) fitted with a DVB-T2 tuner. The list of already type approved DVB-T2 set top boxes is available on CCK website at http://www.cck.go.ke/about/downloads/TYPE_APPROVED_STBs_WITH_ADDRESSES.pdf

Consumers and vendors are advised to note that DVB-T set-top boxes shall NOT be capable of correctly receiving and displaying digital TV signals transmitted on a DVB-T2 digital platform.

All equipment suppliers and vendors are further advised to obtain type approval of the set-top boxes from the Communications Commission of Kenya in line with the Kenya Information and Communications Act, CAP 411A. Authorized vendors /dealers of such equipment will be required to display, at the point of sale, a valid vendor authorization and type approval certificate issued by the Commission.

Vendors/ dealers/suppliers are advised to note that the minimum specifications have been revised making CONDITIONAL ACCESS (CA) feature OPTIONAL for DVB-T2 set top boxes that are intended for use to receive Free to Air (FTA) TV content on the digital terrestrial platforms in Kenya. However, the CA feature remains mandatory for set top boxes intended for PAY/Subscription TV.

The revised minimum DVB-T2 Digital set-top box specifications for the Kenyan market are as follows:

1.	RF tuner & DVB-T2 Channel	Complied Standard	ETSI EN 302 755 V1.1.1 (2009-09)
		Input impedance	75Ω
		Modulation	COFDM: QPSK, 16QAM, 64QAM, 256QAM
		Frequency	VHF (174-230 MHz), UHF (470 – 806 MHz)
		Input signal level	36~85dBµV
		FEC coding	LDPC Code + BCH Code, Code rates: 1 /2, 3/5, 2/3, 3 /4, 4/5, 5/6
		FFT Size	1K, 2K, 4K, 8K, 16K, 32K.
		C/N range (Rice channel)	3dB (QPSK 1 /2) to 24dB (256QAM 5/6)
		Pilot Pattern	PP1 to PP8
		Guard intervals	1/128, 1/32, 1/16, 19/256, 1/8, 19/128, 1/4.
		Channel raster	7 MHz (VHF), 8 MHz (UHF), 1.7 MHz (VHF)-optional
		Signal Bandwidth	6.66, 7.61 MHz (Normal mode) 1.54 (optional), 6.80, 7.77 MHz (Extended mode), 1.57 (optional)
		Service specific robustness	Physical Layer Pipes (PLP)
		Interleaving	Bit + Cell +Time + Frequency
		Diversity	SISI, MISO, (SIMO, MIMI if diversity receiver)
		Rotated constellations	Significant robustness gain in channels with severe degradations (multipath, SFN operation, narrow band interference...)
		Mode of Extensions	Future Extension Frame (FEF)
		Max Bit Rates (8MHz)	50.3 Mbit/s, (32Ke, 256QAM, CR=5/6, GI=1/28, PP7)
		Used Bit Rates (8MHz)	Portable SFN: 25.0 Mbit/s, Fixed SFN: 37.0 Mbit/s, Fixed MFN: 40.2 Mbit/s
		GE06 compatible	Signal is under the mask of DVB-T (power level measured in a 4 KHz bandwidth)
2.	MPEG Transmission stream and video and Audio Decoding	Transmission stream	MPEG-2 ISO/IEC 13818
		Video decoding	MPEG-2/MPEG 4 AVC (H.264)
		Aspect Ratio (image rate)	4:3, 16:9
		Frame frequency	25Hz (PAL)
		Video Resolution	720X576 (PAL)-standard definition, 1920X1080 (High definition-optional)
		Audio decoding	MPEG/MusiCam Layer I & II / HE AAC
		Audio mode	Single track/dual track/stereo
		Audio sampling rate	32KHz, 44.1KHz 48KHz. , 96 KHz (optional)
3.	Scanning function	- The STB should include a frequency scanning function to detect the availability of DVB-T signals - Should also automatically list the content of the terrestrial bouquet by reading the PSI/SI streams and - Be capable of programme memory in case of cut off	
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 Identity control, watch rating and parental lock - Auto/manual tuning 24-hour clock **OTA:** STB software's, EPG, CA features must be upgradable over the air. (USB Upgrade-optional) - Support Receive mail - Provides the instant and personalized message prompt - Display and withdrawal of subtitles - Support multi-language info	
6.	Additional Hardware	PVR (optional)	
7	Teletext & Teletext subtitle	- Able to display Teletext using the OSD and/or by the insertion of the Teletext data in the VBI of the analogue CVBS video output - Able to display Teletext subtitling, meeting the requirements for level 1.5 in ref. [ETS 300 706, "Enhanced Teletext Specification"]	
8.	Interfaces	- RF input connector: IEC 169-2 female, input impedance 75 ohms - One RCA (CINCH) female connector for video output and Two RCA (CINCH) female connectors for stereo sound output - RF by pass (loop) IEC 169-2 male - RF output via a PAL-G modulator - SCART interface (optional) - HDMI interface (optional) - Should include at least one RF cable to connect the unit with its associated analogue television receiver.	
9.	Conditional Access	- Optional for STBs purely intended for reception of free to air (FTA) TV signals - PAY TV STB must include at least one embedded smart card reader or a DVB-CI (Common Interface) slot to allow any type of conditional access module to be plugged into the set top box	
10.	Physical attributes	Power supply	AC 240±10%, 50 ±1Hz with an option of 12V DC input
		Power	Energy star option preferred
11.	Environmental attributes	Operating Temperature	0~45°C
		Operating humidity	Upto 90%
12.	Reliability	MTBF	>80,000Hrs
13.	Documentation	Use friendly documentation which should be both in English and Kiswahili (optional)	

For further enquiries, please contact: