



**COMMUNICATIONS
AUTHORITY OF KENYA**

Minimum Technical Specifications for DVB-C2 Cable 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-C2 cable TV receivers/decoders shall be **1st January 2018**. In this regard, type approval of cable TV receivers/decoders shall be on the basis of this specification starting from 1st January 2018.*

*The importation into Kenya of cable TV receivers/decoders that do not comply with the said DVB-C2 specifications shall not be permitted from **1st January 2018**. However, decoder stocks complying with DVB-C 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 cable decoders.*

A: DVB-C2 TV TECHNICAL SPECIFICATIONS

| | | | |
|----|---------------------------|--------------------|---|
| 1. | RF tuner & DVB-C2 Channel | Complied Standard | ETSI EN 302 769 V1.2.1 (2011-04), ETSI TS 102 991 V1.2.1 (2011-06) |
| | | Input impedance | 75Ω |
| | | Modulation system | OFDM |
| | | Modulation Schemes | 16, 64, 256, 1024 and 4096 QAM |
| | | Frequency | Flexible, 8MHz or several hundred MHz |
| | | Input signal level | -31dBm to -65dBm |
| | | FEC coding | LDPC Code + BCH Code Code rates: 1/2, 2/3, 3 /4, 4/5, 5/6, 8/9, 9/10 |

| | | | |
|----|--|--|--|
| | | Inverse Fast Fourier Transform (IFFT) Size | 4K |
| | | C/N range | 10.7dB (16 QAM) to 29.5dB (1024 QAM) |
| | | Pilot Pattern | Scattered and continual pilots |
| | | Guard intervals | 1/64 or 1/128 |
| | | Signal Bandwidth | 47MHz - 862MHz (BW of signaling block =7.61MHz ~8 MHz raster) |
| | | Service specific robustness | Single and multiple Physical Layer Pipes (PLP) |
| | | Interleaving | Bit + Cell + Frequency |
| | | Bit Rates | 24.5Mbits/s – 82.6 Mbit/s |
| | | Constellation | 5 constellation, ranging in spectrum efficiency from 1 to 10,8 bit/s/Hz, optimized for operation in cable networks |
| 2. | MPEG Transmission stream and 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), UHD(optional) |
| | | Image rate (Aspect Ratio) | 4:3, 16:9 |
| | | Frame frequency | 25Hz (PAL) |
| | | Video Resolution | 720X576 (PAL)-standard definition, 1920X1080 - high definition 3840X2160-Ultra High Definition(optional). |
| | | 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-C2 signals. | |

| | | | |
|----|-------------------------------------|---|---|
| | | <p>It should be able to display the number of channels currently being scanned. Progress bar during scan (optional)</p> <p>It should be able to display the number of services/channels located.</p> <p>Be capable of programme memory in case of power cut off</p> <p>The Decoder should display details of its name, Network ID, signal Strength and quality</p> | |
| 4. | Quality reception thresholds | <p>All STBs should have an on-screen visual signal level indicator, which would aid in directing the antenna and troubleshooting reception problems.</p> | |
| 5. | Software | <p>EPG: current and next programme information. 24x7 days schedule.</p> <p>Capable of the Identity control, watch rating and parental lock</p> <p>Auto / Manual tuning</p> <p>24 hour clock</p> <ul style="list-style-type: none"> • Over the Air (OTA): STB software's, EPG, CA features must be upgradable over the air (USB upgrade –Optional) • Support Receive mail (Optional) • Display and withdrawal of subtitles • Support multi-language info • Support text to speech conversion for PWDs (Optional) | |
| 6. | Interfaces | <ul style="list-style-type: none"> • RF input/output connector: IEC 61169-2 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) • Should include one RF cable to connect the unit with its associated analogue television receiver (optional). • SCART interface (Optional) • HDMI interface (Optional) | |
| 7. | Conditional Access | <p>Should have a conditional access mechanism for PAY TV</p> | |
| 8. | Physical attributes | Power supply | AC 240±10%, 50 ±1Hz with an option of 12V DC input |
| | | Power | Energy star option preferred. Should comply with IEC 62087 or similar standards |
| | Environmental | Operating | 0~45°C |

| | | | |
|-----|----------------------|--|------------|
| 9. | attributes | Temperature | |
| | | Operating humidity | Upto 90% |
| 10. | Reliability | MTBF | >80,000Hrs |
| 11. | Documentation | User friendly documentation which should be in English language (Mandatory) and Kiswahili languages (optional) | |

B: DVB-C2 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 battery | Small size battery, hence an easier to handle (small in size) remote control |
| 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 language with Kiswahili being an additional option. |
| 12 | STB Marking: | Each receiver shall be legibly and indelibly marked with at least the following |

| | | |
|--|--|--|
| | | <p>information:</p> <ul style="list-style-type: none">a) Manufacturer's name or trademarkb) Mode designation and serial numberc) Country of manufactured) Input supply voltage and frequencye) Power consumptionf) Cable input and output terminals <p>Sockets for audio and video output</p> |
|--|--|--|