VideoSwitch
DIGITAL INNOVATION

HARDWARE
AND SOFTWARE
SOLUTIONS
FOR DIGITAL TV

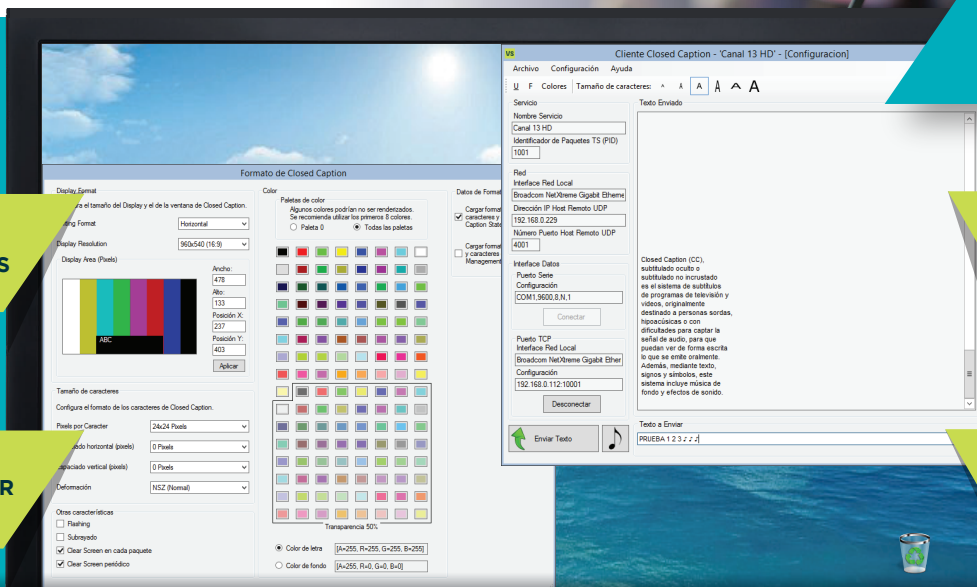# CLOSED CAPTION SERVER

ISDB-T INTERNATIONAL

▶ **Generates Closed Captions for multiple signals in a single server**

▶ **Complies with ISDB-T International legal requirements**

USER INTERFACE

COLOR AND TEXT SETTINGS

CLOSED CAPTION PREVIEW

SIMPLE AND INTUITIVE USER INTERFACE

TEXT INPUT USING A KEYBOARD

MAIN FEATURES

▶ This solution responds to the need of including Closed Captions in digital terrestrial television (DTT), to allow hearing impaired people to enjoy television content. It is also useful in waiting rooms or places where it is difficult or impractical to listen to the audio of the broadcast signal. It is also used to help people who are learning a language.

▶ VideoSwitch developed this solution called Closed Caption Server within the Auxiliary Services Server Suite for ISDB-T Standard, which also includes the Electronic Program Guide (EPG), Ginga, and Software Updates (OAD/OTA). This solution also allows the operator to fully customize the properties of the Closed Caption: screen position, text and background size and color (including transparency), number of characters per line, number of CC lines, and other display settings.

- Compliant with ABNT NBR 15606-1 and ARIB STD-B24, and their operating guidelines ABNT NBR 15608-3 and ARIB TR-B14.

- User selectable 1, 2 or 3 lines display mode.

- Control of maximum length of characters per line with automatic line wrap.

- Configurable display size and location on the screen.

- Background and text color settings.

- Font size and scaling settings.

- Underline and Flashing effects.

- Timeout clear screen settings.

- Roll-Up and Pop-Up modes.

- Advanced settings in Caption Management and Caption Statement packets.

- IP or Serial (RS232/USB) input interface: It allows extraction of text from a CC encoder/decoder for SDI-SD/HD (CEA-608/708) or analog NTSC (line 21) or PAL-N (line 18) signals.

- IP or ASI output interface with 188 byte TS supporting any ISDB-T multiplexer.

- Closed Caption PID settings in the TS output.

- It generates multiple Closed Caption streams from a single server, to feed one or multiple ISDB-T multiplexers like VideoSwitch DMUX.

- Support virtualized environments.

IT IS PART OF THE COMPREHENSIVE SOLUTION FOR DIGITAL AND ANALOG RETRANSMITTERS, WHICH INCLUDES:

- **CC ENCODER/DECODER**

- **CC SERVER**

- **IRD WITH TS OUTPUT (CC ISDB-T PID) AND COMPOSITE VIDEO (CC IN VBI LINE 21)**

- **ISDB-T MULTIPLEXERS (DMUX-3000i/DMUX-500i)**

CLOSED CAPTION SERVER
ISDB-T INTERNATIONAL

FEATURES	Compliant with ABNT NBR 15606-1 and ARIB STD-B24 standards, and their operating guidelines ABNT NBR 15608-3 and ARIB TR-B14. It generates Closed Caption on a configurable PID which enters the ISDB-T multiplexer through ASI or IP. Data is transmitted in Packetized Elementary Stream (PES) format on a MPEG Transport Stream (TS) based on ISO/IEC 13818-1.
INPUTS	Standard PC keyboard or stenotype keyboard (optional). Remote PC (via IP/Internet). CC encoder/decoder for SDI or Composite Video signals (via IP or RS 232/USB). External CC provider (via IP/Internet). Voice recognition system (optional). Compatible with any ASR (Automatic Speech Recognition) system.
OUTPUTS	Interfaces: UDP/IP (Unicast/Multicast): Through Server's Ethernet Network port. It also supports DekTec boards, models DTA-160, DTA-2160. DVB-ASI (dual/octal): Through an IP-ASI converter VideoSwitch CNV-IP/ASI-2/8 (via TCP/IP). Also supporting DekTec board, model DTA-105. Connectors: IP: RJ45 DVB-ASI:BNC, 75 Ohms. ®DekTec is a registered trademark of DekTec Digital Video B.V.
PLATAFORM PROPOSED SERVER	Dell Power Edge Server® (1U rack) or similar IP-ASI converter for bit-rate handling, status monitoring, and automatic redundancy.

CC SERVER
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