MIO–CCE–4K/3G

SMPTE ST 2110 and/or 4K/3G/HD/SD Closed Caption Encoder with Media–to–IP Streaming

The **MIO–CCE–4K/3G** is a closed caption encoder for SMPTE ST 2110 and/or 4K/3G/HD/SD–SDI video signals that can be housed in any SCORPION frame. MIO modules provide native support for numerous captioning interfaces, such as captioning over dial–up phone line, captioning over IP and captioning over serial RS–232/RS–422.

MIO–CCE–4K/3G supports many advanced applications such as “translating” captions from CEA–608 to CEA–708 or “transcoding” CEA–608 between SD line–21 and HD VANC carriage are natively supported.

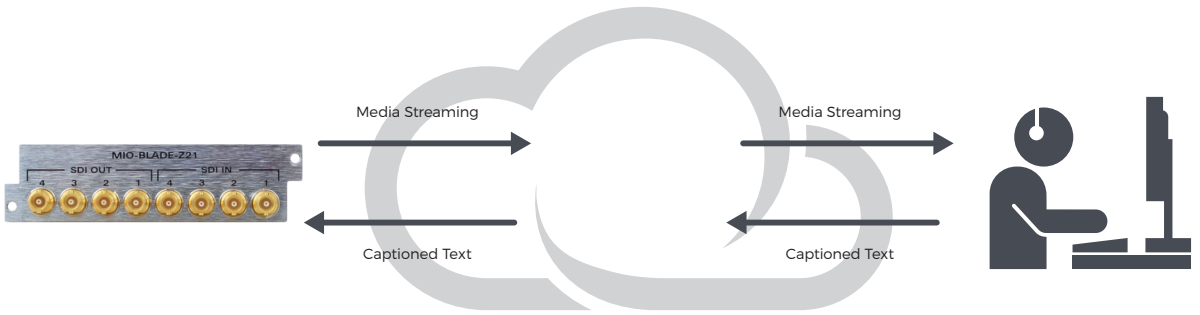
The onboard storage may be used for both caption file capture and insertion. With the capture function, the unit can record and store captions that are being actively encoded or already present on the incoming video. The stored files may be retrieved from storage and are useful in cases such as editing/correcting captions from existing content, avoiding complete re–authoring, or for verifying compliance. The insertion function allows files in storage to be directly encoded to video, convenient where an external transfer station is not available.

Taking advantage of the availability of IP connectivity, the MIO–CCE–4K/3G is able to generate a low latency, low bandwidth media–over–IP stream from the embedded tracks in the incoming video. This media may be streamed to the remote captioner, facilitating a complete bi–directional link and negating the need for a POTS/dialup connection.

Features & Benefits

- Simultaneously encodes new CEA–608 and CEA–708 captions onto 4K/3G/HD/SD–SDI video
- Supports caption encoding on dual video paths to simultaneously apply the same captions to two video sources (e.g. to both SD and HD signals)
- Built–in CEA–608 and CEA–708 closed caption decoders
- Closed caption shifting to avoid overwriting emergency alert messages
- Support for SMPTE ST 334M/ CEA–708 and CEA–608 captions onto 4K/3G/HD/SD–SDI video
- Supports control and insertion of captions over Ethernet TCP/IP, RS–232/RS–422 serial and telephone modem
- Save or insert captions directly to or from a file (CEA–608, Procap, SCC, CDP) on a local storage and are accessible via FTP

Sample Application: Captioning and Streaming Media Over IP



MIO–CCE–4K/3G

SMPTE ST 2110 and/or 4K/3G/HD/SD Closed Caption Encoder with Media–to–IP Streaming

Specifications

Electrical Inputs:

Reclocked Standards:	SMPTE ST 2081 (12G–SDI), SMPTE ST 424M (3G), SMPTE ST 292M (1.5G), SMPTE ST 259M (270Mb) DVB–ASI
Connector:	HD–BNC
Impedance:	75Ω (nominal)
Equalization:	Automatic to 80m @ 3G, 100m @ 1.5G, 250m @ 270Mb (with Belden 1694A or equivalent)
Return Loss:	> 15dB up to 1.5GHz, > 10dB up to 3GHz, > 7dB up to 6GHz, > 4dB up to 12GHz

Electrical Outputs:

Connector:	HD–BNC
Impedance:	75Ω (nominal)
Signal Level:	800mV (nominal)
DC Offset:	0V ±0.5V
Rise and Fall Time:	Reclocked SFPs only
12G:	<45ps
3G/HD:	<135ps
SD:	<900ps
Overshoot:	<10% of amplitude (reclocked SFPs only)
Alignment Jitter:	Reclocked SFPs only; <0.2UI to 1.485GB/s, <0.3UI to 2.97GB/s, <0.3UI to 12GB/s

Physical:

Power Consumption:	20W
Requires:	Dual–slot MIO
Operating Temp.:	0–70°C

The MIO–CCE–4K/3G supports webEASY and is also VistaLINK® PRO–capable, which allows for control and configuration via Simple Network Management Protocol (SNMP). This offers the flexibility to manage the module status monitoring and configuration from SNMP enabled control systems such as Evertz' VistaLINK® PRO locally or remotely.

Ordering Information

MIO–BLADE–Z21	Dual slot module capable of running FPGA applications to define functionality. Requires a MIO–APP to define the module function, and channel keys to enable paths. For use in any SCORPION chassis types.

Application Options:

MIO–APP–CCE–3G	Application to run Closed Captioning Encoder for 3G/HD/SD path on MIO–BLADE–Z21 or MIO–CPU. evEDGE–CCE–3G, media streaming and other licenses not included.

License Options:

evEDGE–CCE–3G	License for a single path of Closed Caption Encoder (3G/HD/SD support) for MIO–BLADE–Z21 or MIO–CPU. Does not include Media streaming (+Audio or Video) license.
evEDGE–CCE–AUD	Audio Streaming license for any supported Closed Captioning Encoder. Sends a low bitrate audio stream over IP to the Captioner. Sold as a per channel license.
evEDGE–TC	License to add support for VITC/LTC insertion on EVBLADE–4Z10 / MIO–BLADE–Z21 hardware. Sold per channel.
evEDGE–NDE	License to add Name Dropper insertion on MIO–CCE. Sold per channel.

Ordering Options:

MIO–CCE–AUX–IO	Dual Slot MIO module to add support for up to 8x GPIOs and 3x Serial RS232/422 data I/Os. Works in conjunction with MIO-CCE-3G/4K (separately quoted). For use in fanless SCORPION frames.
MIO–GE–RJ45–IP	Single slot module for GbE. Supports passthrough, VLAN tagging, or tunneling. For use in fanless SCORPION chassis types.

Enclosure Options:

SCORPION–6	Silent standalone SCORPION chassis. Supports up to 6 single, or 3 dual slot modules and up to 2 SFP slots. Integrated crosspoint routing and gateway support for either ST2022-1/2/6/7 or ST2110.
SCORPION–X18	1RU SCORPION chassis. Supports up to 18 single, or 8 dual slot modules and 18x SFP slots. Includes integrated 12G crosspoint, power module, and power brick. Frame controllers not included.
SCORPION–S18	1RU SCORPION chassis. Supports up to 18 single or 8 dual slot modules, 18 SFP slots, and 2 QSFP slots. Includes integrated ethernet switch, and power module. Frame controllers and power bricks not included.
SCORPION–SX18	1RU SCORPION chassis. Supports up to 18 single or 8 dual slot modules, 18 SFP slots, and 2 QSFP slots. Includes integrated 12G crosspoint, internal ethernet switch, power module, and power brick. Frame controllers not included.