

SDI-INSERTER

SDI-3G-7xx

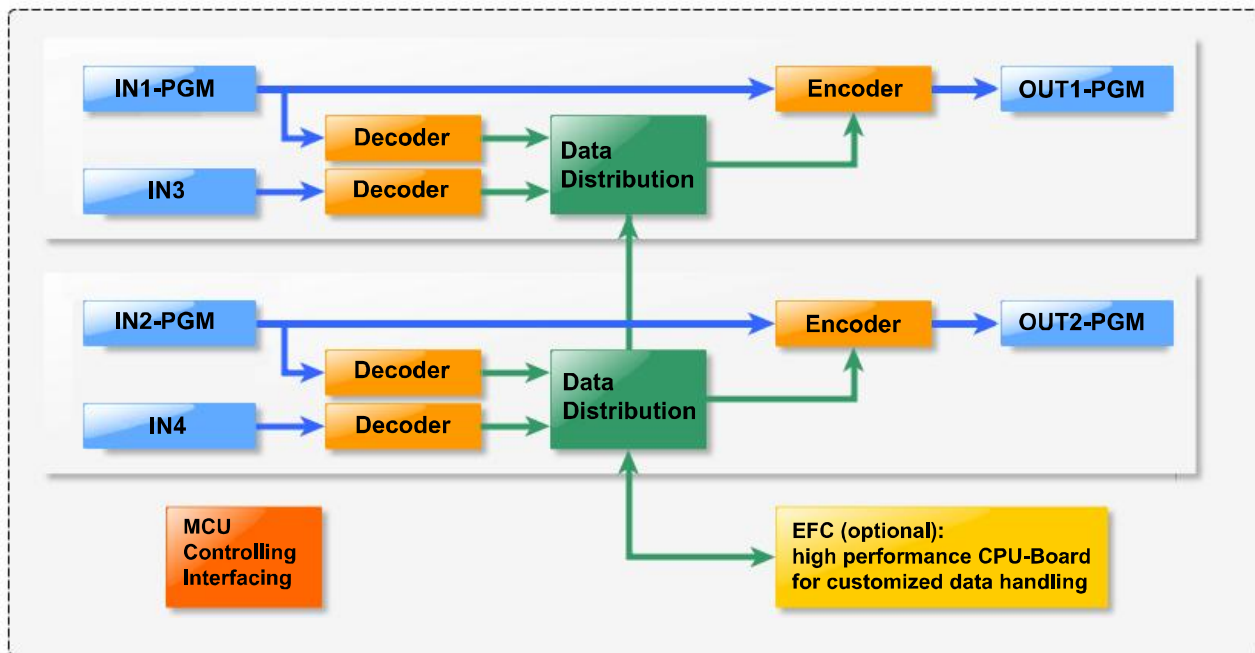


FLYER
V2.50

FUNCTION

The SDI-Inserter / Databridge SDI-3G-7xx decodes, generates, formats and inserts data into a 3G, HD- or SD-SDI-signal. The Inserter is featuring auto-sensing CCVS / SD / HD / 3G-SDI Inputs combined with an automatic switch-over of the complete Inserter configuration.

There are two independent SDI-main signal paths with one input for VANC- or VBI-data signals each. These signals can be completely asynchronous to the SDI main signals. The inserter is transparent for embedded audio and videoindex. Bypass relays bridges the IN- and OUT-PGM connectors in case of power fail.



Decoder:

Teletext, subtitles, VPS-, WSS-, AFD-data as well as custom data can be decoded from any input. The inserter supports a lot of standards (modulated SD, OP47, SMPTE2031, etc.). The data can be modified or queried by any interface (for example: GPI-output 1: open when WSS 16/9, closed if 4/3).

Data Distribution:

Decoded data, as well as data provided by any interface (Ethernet, GPI, RS422, MCU (presets) or EFC-Board) can be used by both encoder modules.

Encoder / Overlay:

Data are encoded meeting the supported standards and inserted into the PGM-signals (SD-SDI, HD and 3G-SDI). The EFC-Board can provide graphical data for overlay, e.g. for subtitle monitoring.

MCU:

A low power micro-controller is setting up the inserter and provides the interfaces. So the inserter is fanless and ready for operation within five seconds after power-on. There is a WEB-Interface for setup and status control. SNMP can be used for device monitoring.

TYPICAL APPLICATIONS:

- decoding CCVS or SD-SDI teletext and inserting it as SMPTE2031 or OP47 in HD-SDI
- extraction of teletext subtitles for ingest systems
- data insertion and decoding for application control
- data cross conversion SD ↔ HD / 3G or OP47 ↔ SMPTE2031
- decoding of AFD, WSS, teletext with graphical overlay on one PGM-output for control rooms

IMPROVEMENTS OF VERSION 7

- Input signals up to 3G supported
- two independent signal paths, both with power-fail relays
- optional dual power supply
- optional EFC Board for additional software, e.g. teletext combiner
- faster Ethernet (10 / 100 Mbit)
- auto detection of input signals (3G, HD, SD or CCVS) on all inputs

AVAILABLE OPTIONS

SDI-3G-7E	with CPU extension board for complex software applications
SDI-3G-7D	dual power supply
SDI-3G-7ED	with CPU extension board and dual power supply
SDI-3G-4xx	this version provides one main channel only, but all other features of the SDI-3G-7xx version

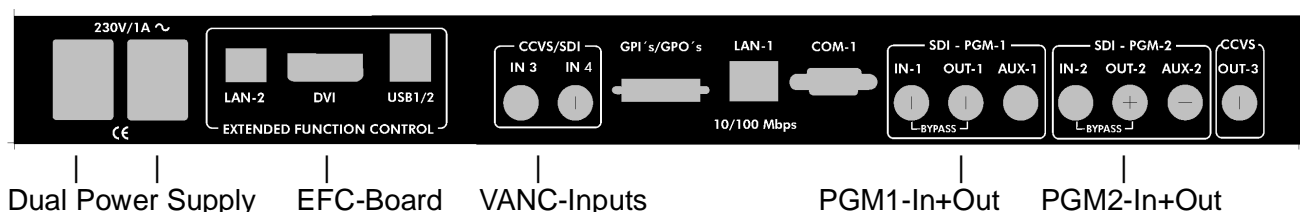
FRONTPANEL



The LC-Display shows the type of 3G-SDI Inserter. When pressing any button on the right side of the display, the actual network IP-address will be shown.

The IN-1 to IN-4 LED's as well as OUT-1 and OUT-2 showing, that the video signals are locked. EFC indicates the activity of the EFC-Board. Power1 and Power2 signals 'power-good'.

BACKPANEL



Dual Power Supply

EFC-Board

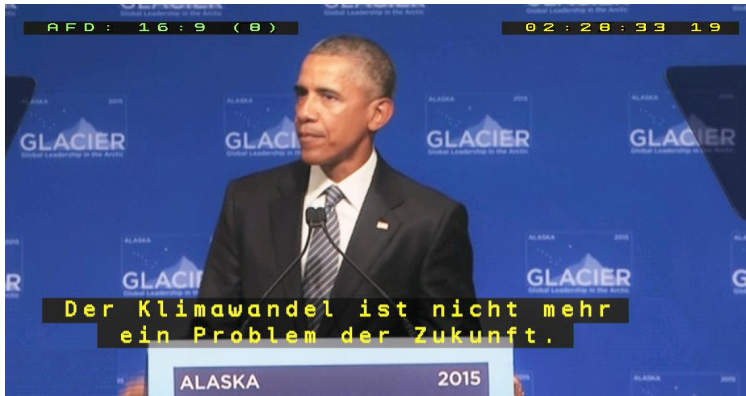
VANC-Inputs

PGM1-In+Out

PGM2-In+Out

NEW FEATURES OF INSERTER SDI-3G-7xx

Graphical Overlay for Information:



The inserter provides the option for graphical overlay. So any information like subtitles, AFD-status or timecode can be displayed on top of the videosignal for monitoring and control.

Detailed Logging:

The logging function protocols all events inside the inserter. The status of the video signals as well as the serial interface commands.

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Setup Inserter

System Logfile

```

S 28.08.2015 10:33:41 BCC8 03:01:05.00 0 22 SMPTE_2031
S 28.08.2015 10:33:43 Input3: input not locked
S 28.08.2015 10:33:46 Input3: input not locked
S 28.08.2015 10:33:47 Input3: HD-SDI 1080i 50Hz locked
S 28.08.2015 10:33:47 PGML : input not locked
S 28.08.2015 10:33:49 PGML : input not locked
S 28.08.2015 10:33:50 PGML : HD-SDI 1080i 50Hz locked
U 28.08.2015 10:42:58 F2E3 03:10:22.09 1 22 SMPTE_2031
U 28.08.2015 10:43:01 F323 03:10:24.23 0 22 SMPTE_2031
U 28.08.2015 10:43:01 F324 03:10:24.24 1 07 SMPTE_2031
U 28.08.2015 10:43:01 F324 03:10:24.24 1 08 SMPTE_2031
U 28.08.2015 10:43:05 F383 03:10:28.19 1 07 SMPTE_2031
U 28.08.2015 10:43:08 F3D9 03:10:32.05 1 22 SMPTE_2031
U 28.08.2015 10:43:09 F3E4 03:10:32.15 0 22 SMPTE_2031
U 28.08.2015 10:43:09 F3E4 03:10:32.16 1 07 SMPTE_2031
    
```

Subtitles can be analysed in detail based on the log-file.

```

U 'Header: 150 OB A8 OB F4 E3
U 'Header: 150 OB A8 OB F4 E3
U ' Zehn Jahre nach dem Hurrikan Katrina
U ' lobte US-Präsident Obama
U ' in New Orleans den Willen
U ' der Menschen zum Wiederaufbau.
U 'Header: 150 OB A8 OB F4 E3
U 'Header: 150 OB A8 OB F4 E3
U 'Header: 150 OB A8 OB F4 E3
U 'Header: 150 OB A8 OB F4 E3
    
```

select filter:
 show system show VPS show subtitles show dbg

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Extended Inserter Functions:

The actual firmware supports the simultaneous output of Teletext and Subtitles using SMPTE 2031 and OP47. The insertion of timecode is also possible.

SPECIFICATION

GENERAL DEVICE CONFIGURATION

The SDI-INSERTER of type SDI-3G-7xx provides two SDI-PGM and maximum two additional Inputs for CCVS- and/or SDI-signals. Data can be extracted from the VBI/VANC of these inputs and inserted into the SDI-PGM signal. Additional data and control signals can be pushed via network, RS422 and/or GPI-inputs. The inserters are transparent for embedded audio.

TECHNICAL DATA:

SDI-SPECS: for SDI-PGM SIGNAL and VANC-Inputs:
3G-SDI (2.97 Gbps): SMPTE 424M (video format 1080p up to 60 Hz)
HD-SDI (1.485 Gbps): SMPTE 292M (video formats 720p or 1080i up to 60 Hz)
SD-SDI (PAL 270 Mbps): SMPTE 259M-C

INPUTS:

SDI-PGM: INPUT 1 + 2:

3G/HD/SD SDI-program-signal, Impedance 75Ohm, 3G/HD/SD auto-sensing with automatic switch-over of video output mode, automatic cable equalization, active Loop Out. Bypass to SDI-PGM output in case of power fail.

SDI-VANC: INPUT 3+4:

3G/HD/SD/CCVS SDI-Signal, Impedance 75 Ohm, automatic 3G/HD/SD/CCVS detection with cable equalization, VANC (SD) can be read from line 7 to line 23.

GPI's: 8x GPI Inputs (high : 3V – 6V) with PhotoMOS-Relays for operation control and generator input of SDI-inserter.

OUTPUTS:

SDI-SIGNALS: 2 outputs for each SDI-program-signal, reclocked with drivers according ITU/SMPTE standards, impedance 75 Ohm.

TEST-SIGNAL: CCVS-output, 1Vpp, PAL-Standard, available with video mode SD-SDI only.

GPI's: 8x GPI Output (< 28 V with internal resistor), using PhotoMOS-Relays for control of external functions and devices

CONTROL: serial via RS422, e.g. for controlling of the integrated VPS- and WSS-generator by an automation system, and /or control via 10/100 Mbit/s Ethernet TCP/IP or SNMP network.

DISPLAY: shows type version and TCP/IP address of device.

CASE: 19"/1 HE (hxwxh = 44 mm x 448 mm x 228 mm), integrated power supply, passive cooled.

POWER SUPPLY: 230V +15/-20%, connector IEC-60320 C14
power consumption: < 20 W without CPU-extension
< 40 W with CPU-extension
additional 7W for second Powersupply

SPECIAL FEATURES:

instant boot, fully operation within five seconds after power on
no operating system, no hard disk, 5 year warranty

AVAILABLE DECODER AND INSERTER MODULES (SD-mode)

VPS EN 300 231, **WSS** EN 300 294
Teletext EN 300 472, **Videoindex** RP186-2008, **AFD** SMPTE 2016

AVAILABLE STANDARDS (HD-modes)

SMPTE 2031 - ETSI EN 301 775 (**VPS, WSS, Teletext**)
OP47 (Teletext), SMPTE 2016 (AFD)