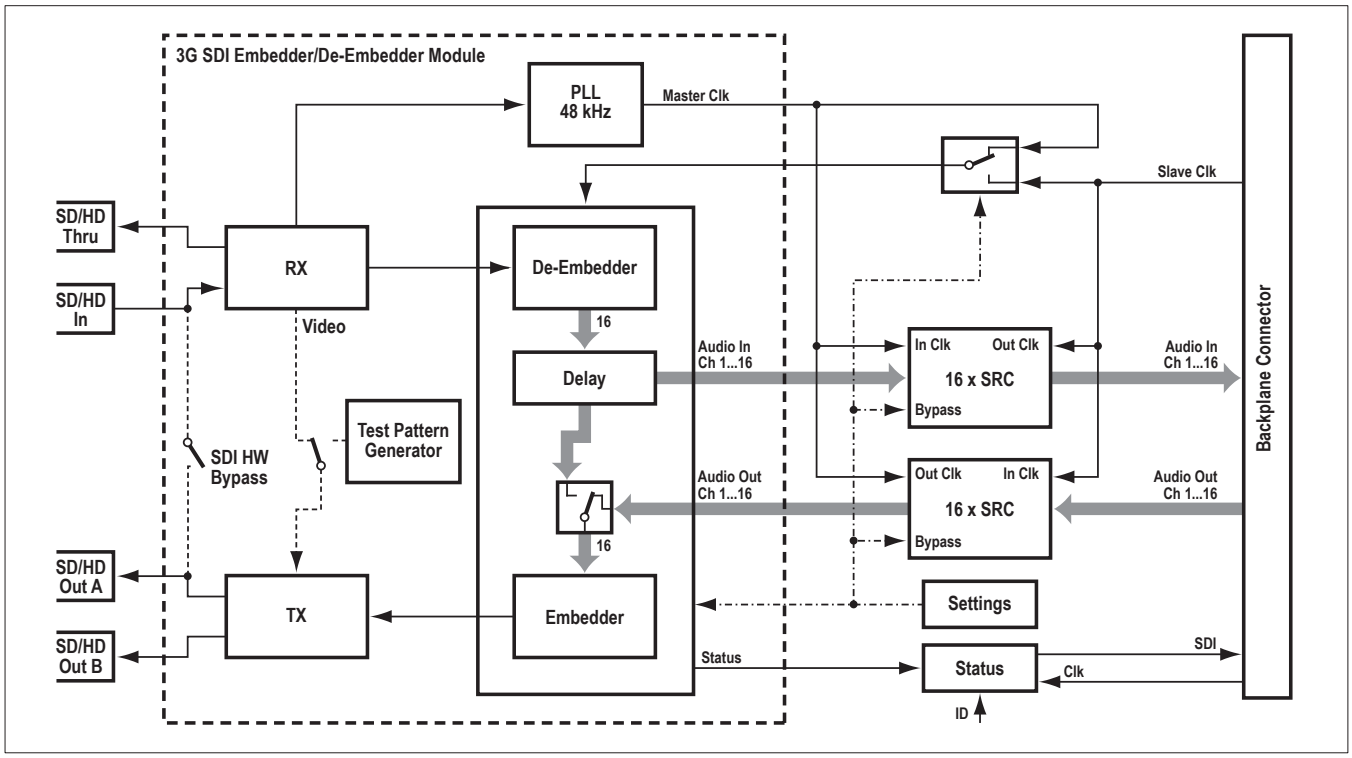
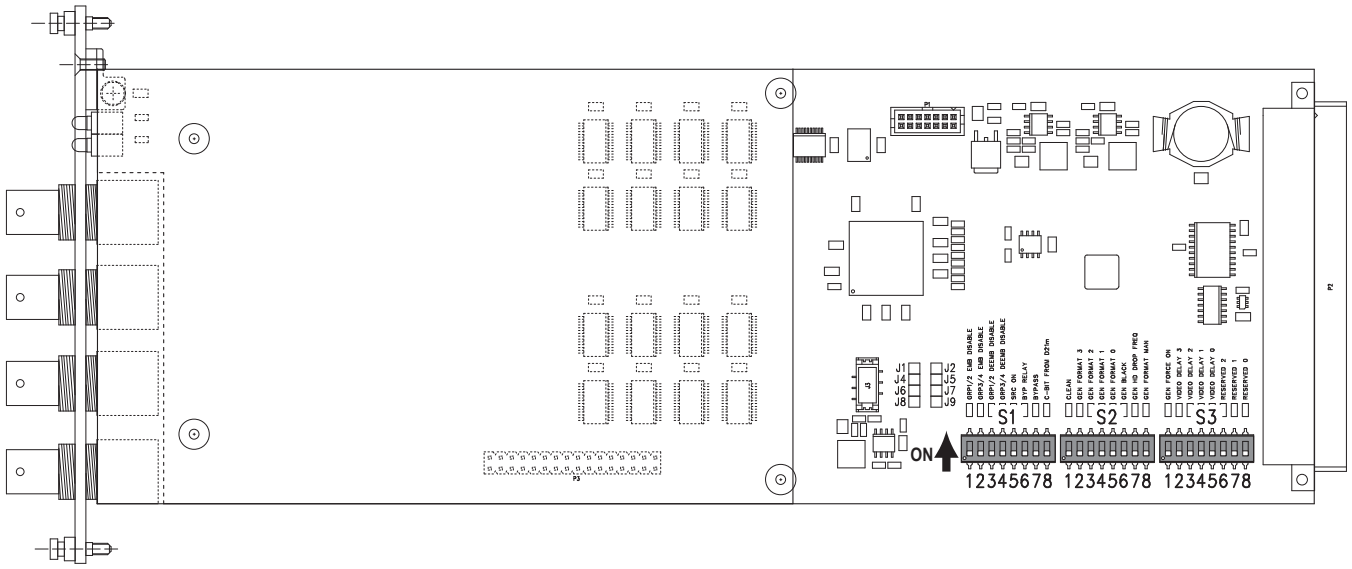
6.3.7 3G SDI I/O Card (VISTA, OnAir, ROUTE 6000) A949.0451

The 3G/HD/SD SDI (serial digital interface) embedder/de-embedder card is able to handle video signals according to the 3G (full HD), HD and SD standards; both level A and B versions of 3G signals are supported. Standard selection is performed automatically. The card can act as an eight- or 16-channel embedder, an eight- or 16-channel de-embedder, or any combination thereof. For the D21m I/O system it can be an eight- or 16-channel audio input card, an eight- or 16-channel audio output card, or an eight- or 16-channel input/output card. These modes are determined by DIP switches located on the card (or by software, if supported).
The SDI standard defines up to 16 audio channels transmitted within a video signal. These 16 channels are divided into four groups of four channels each. Selection of which channels are to be embedded or de-embedded is performed by DIP switches on the card (or by software, if supported): either groups 1&2, groups 3&4, or all. It is also possible to clear the SDI data structure possibly present in the incoming video signal and to allocate the groups from scratch.
The D21m SDI card hosts SRCs (sampling rate converters) for both the audio inputs (de-embedding) and outputs (embedding). So the mixing console can run independently of the video sync used for SDI. The sampling rate converters can be bypassed; if so, the SDI card is fully compatible to transmitting the Dolby® E audio format. If power is switched off, the input is hardware-bypassed to output A. *If the SRCs are bypassed, the card works at a sampling rate of 48 kHz only.*
Video signals can be delayed in frames; maximum delay is 4 frames (3G), 8 frames (HD) or 15 frames (SD). The delay can be set by DIP switches.
The test pattern generator is either automatically activated as soon as the SDI input signal is invalid, or manually. It either selects its output signal format according to the last valid SDI input signal or to the DIP switch setting on the card. Output signal is a black frame or a color bar frame, both with embedded audio. All generator settings and presets can be made with DIP switches on the card.

Operating modes	8- or 16-ch console output (embedder) and/or 8- or 16-ch console input (de-embedder)
Selectable SDI groups	groups 1&2, and/or groups 3&4
Connectors	IN, OUT A, OUT B, THROUGH (BNC, 75 Ω)
Cable length	max. 50 m
Video delay	max. 4 frames (3G); 8 frames (HD); 15 frames (SD)
Audio latency* (de-embedder + embedder)	3G/HD: <800 µs; SD: <2.6 ms
Current consumption (5 V)	1 A
Operating temperature	0-40 °C

***** Latency times are identical for all channels and all groups.





LEDs **SDI LOCK** Indicates a valid SDI signal at the input.
HD Indicates a valid (3G or HD) HD SDI signal at the input.

DIP Switches **S1, S2, S3** See next page *(factory default setting: All OFF)*

DIP Switch								Definition
S1.1	S1.2	S1.3	S1.4	S1.5	S1.6	S1.7	S1.8	
OFF	OFF	x	x	x	x	x	x	All embedders active, card has 16 output channels
OFF	ON	x	x	x	x	x	x	Only groups 1 and 2 will be embedded, groups 3 and 4 are transparent. Card has 8 output channels
ON	OFF	x	x	x	x	x	x	Only groups 3 and 4 will be embedded, groups 1 and 2 are transparent. Card has 8 output channels
ON	ON	x	x	x	x	x	x	All embedders inactive, card has 0 output channels
x	x	OFF	OFF	x	x	x	x	All de-embedders active, card has 16 input channels
x	x	OFF	ON	x	x	x	x	Only groups 1 and 2 will be de-embedded. Card has 8 input channels
x	x	ON	OFF	x	x	x	x	Only groups 3 and 4 will be de-embedded. Card has 8 input channels
x	x	ON	ON	x	x	x	x	All de-embedders inactive, card has 0 input channels
x	x	x	x	OFF	x	x	x	SRCs bypassed
x	x	x	x	ON	x	x	x	SRCs active
x	x	x	x	x	OFF	x	x	Signal not bypassed
x	x	x	x	x	ON	x	x	Signal bypassed (with relay)
x	x	x	x	x	x	OFF	x	Signal not bypassed
x	x	x	x	x	x	ON	x	Signal bypassed (electronically)
x	x	x	x	x	x	x	OFF	C-Bits newly generated
x	x	x	x	x	x	x	ON	C-Bits taken from D21m (reserve for future)

DIP Switch								Definition
S2.1	S2.2	S2.3	S2.4	S2.5	S2.6	S2.7	S2.8	
OFF	x	x	x	x	x	x	x	SDI Data structure not cleared
ON	x	x	x	x	x	x	x	SDI Data structure cleared
x	OFF	OFF	OFF	OFF	x	x	x	Generator format: 720 p 60 (HD)
x	OFF	OFF	OFF	ON	x	x	x	Generator format: 720 p 50 (HD)
x	OFF	OFF	ON	OFF	x	x	x	Generator format: 1080 i 60 (HD)
x	OFF	OFF	ON	ON	x	x	x	Generator format: 1080 p 30 (HD)
x	OFF	ON	OFF	OFF	x	x	x	Generator format: 1080 i 50 (HD)
x	OFF	ON	OFF	ON	x	x	x	Generator format: 1080 p 25 (HD)
x	OFF	ON	ON	OFF	x	x	x	Generator format: 1080 p 24 (HD)
x	OFF	ON	ON	ON	x	x	x	Generator format: 525 (SD)
x	ON	OFF	OFF	OFF	x	x	x	Generator format: 625 (SD)
x	ON	OFF	OFF	ON	x	x	x	Generator format: 625 (SD)
x	ON	OFF	ON	OFF	x	x	x	Generator format: 625 (SD)
x	ON	OFF	ON	ON	x	x	x	Generator format: 1080 p 60 (3G)
x	ON	ON	OFF	OFF	x	x	x	Generator format: 625 (SD)
x	ON	ON	OFF	ON	x	x	x	Generator format: 1080 p 50 (3G)
x	ON	ON	ON	OFF	x	x	x	Generator format: 625 (SD)
x	ON	ON	ON	ON	x	x	x	Generator format: Gen OFF
x	x	x	x	x	OFF	x	x	Generator output signal: Color bars
x	x	x	x	x	ON	x	x	Generator output signal: Black frame
x	x	x	x	x	x	OFF	x	Generator HD drop frequency: 74.25 MHz
x	x	x	x	x	x	ON	x	Generator HD drop frequency: 74.176 MHz
x	x	x	x	x	x	x	OFF	Generator format manual: Auto-format
x	x	x	x	x	x	x	ON	Generator format manual: Pre-selectef format

DIP Switch								Definition
S3.1	S3.2	S3.3	S3.4	S3.5	S3.6	S3.7	S3.8	
OFF	x	x	x	x	x	x	x	Generator active if lock fails
ON	x	x	x	x	x	x	x	Generator forced to active
x	OFF	OFF	OFF	OFF	x	x	x	Video delay: 0 frames
x	OFF	OFF	OFF	ON	x	x	x	Video delay: 1 frame
x	OFF	OFF	ON	OFF	x	x	x	Video delay: 2 frames
x	OFF	OFF	ON	ON	x	x	x	Video delay: 3 frames
x	...	...	...	...	x	x	x	...
x	ON	ON	OFF	ON	x	x	x	Video delay: 13 frames
x	ON	ON	ON	OFF	x	x	x	Video delay: 14 frames
x	ON	ON	ON	ON	x	x	x	Video delay: 15 frames
x	x	x	x	x	Reserved			