6.3.5 3G SDI Input Card (VISTA, OnAir, ROUTE 6000) A949.0452

The 3G/HD/SD SDI (serial digital interface) 16-channel de-embedder card is able to de-embed eight or 16 audio channels from SDI-SD as well as from SDI-HD and 3G (full HD) video streams. For the D21m I/O system it acts as an eight- or 16-channel audio input card. These two modes are determined by DIP switches located on the card.
The SDI standard defines up to 16 audio channels transmitted within a video signal. These 16 channels are divided into four groups of four each. The user can determine by hardware switches whether all four groups, or only groups 1&2, or only groups 3&4 will be de-embedded.
The card hosts SRCs (sampling rate converters) that are bypassed per default. When bypassed, the SDI card is fully compatible to receiving embedded Dolby® E audio data. The SRCs can be enabled in case the audio extracted from the SDI stream is not in sync with the local system. This means that the mixing console can run fully independent of the video sync used for SDI.
If the SRCs are bypassed, the card works at a sampling rate of 48 kHz only.

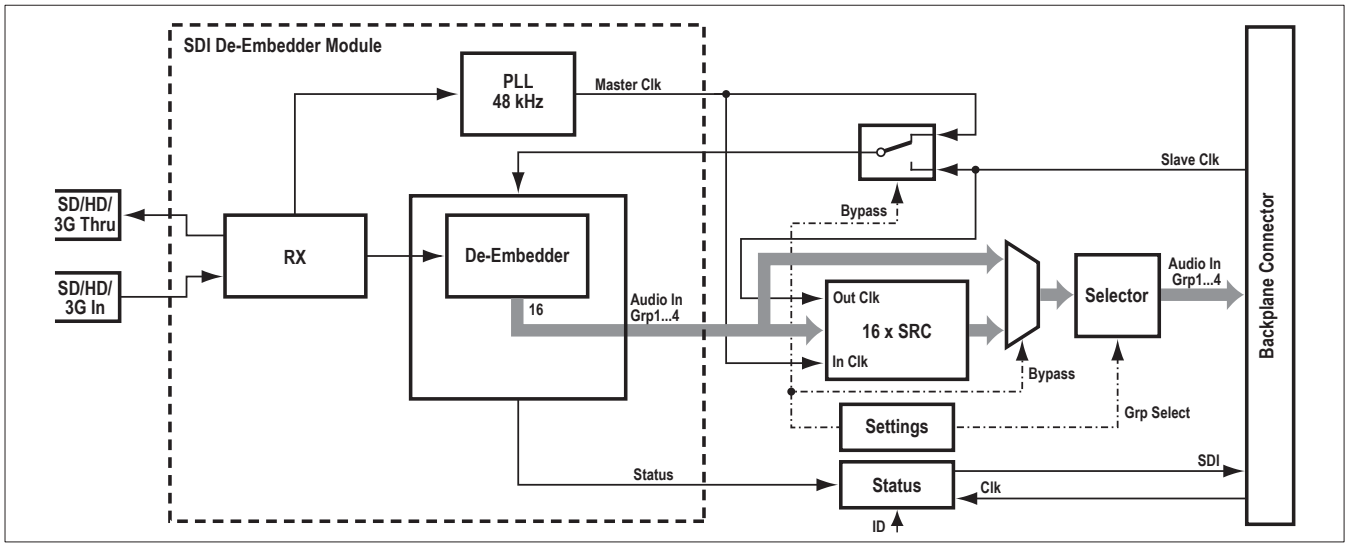
SRC Delay Enabled input and output SRCs each cause a delay (D) that depends on the SRC's input and output sampling rate (f_{S_IN} and f_{S_OUT}). Input and output delays can be calculated using the following formulas.

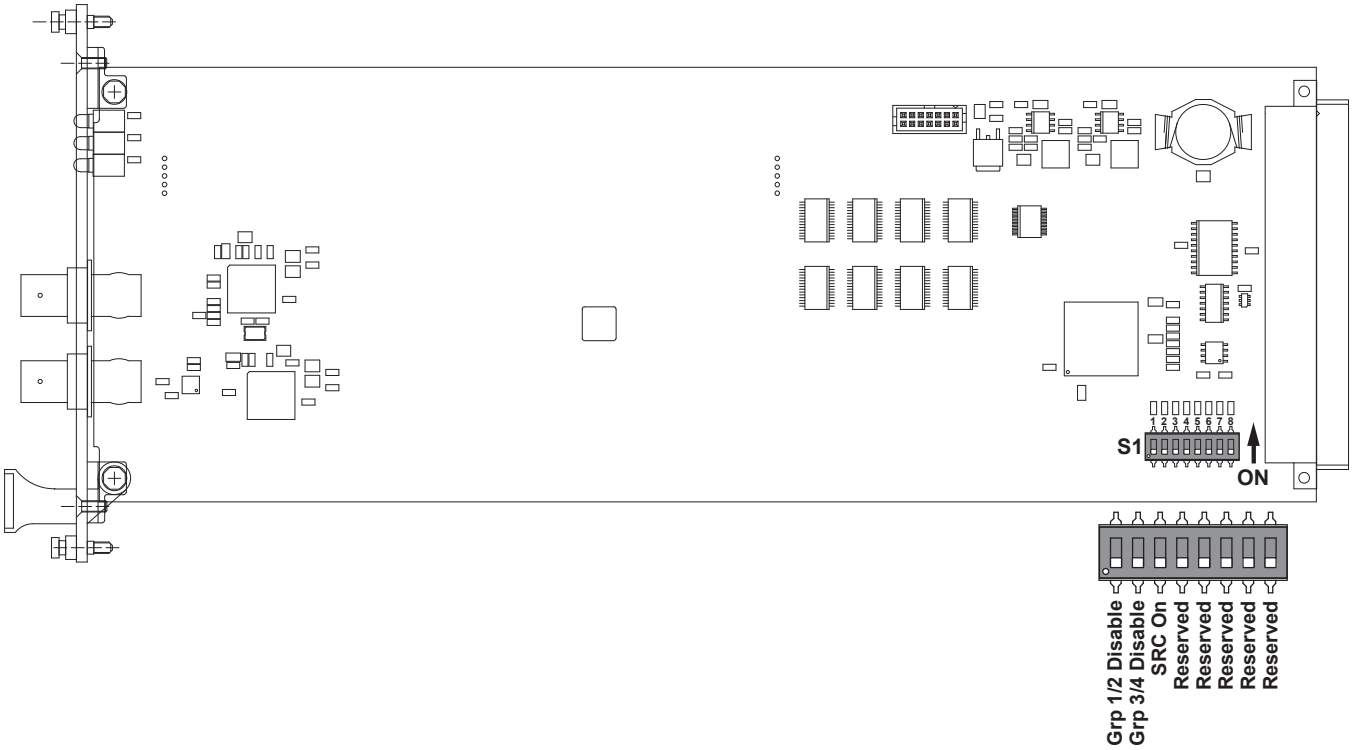
$$[1]\ f_{S\_IN} > f_{S\_OUT}:\ D = \frac{16}{f_{S\_IN}} + \frac{32}{f_{S\_OUT}}\ [s] \qquad [2]\ f_{S\_OUT} > f_{S\_IN}:\ D = \frac{48}{f_{S\_IN}}\ [s]$$

Examples: *For a 96 kHz input signal and a 48 kHz system clock (i.e., the 'output signal' of the input SRC), input delay is 40 output samples or 0.833 ms (formula [1]). For a 48 kHz system clock (i.e., the 'input signal' of the output SRC) and a 96 kHz output signal, output delay is 96 output samples or 1 ms (formula [2]).*

Operating modes	8- or 16-ch console input (de-embedder)
Selectable SDI groups	1&2, 3&4, or all
Connectors	IN, THROUGH (BNC, 75 Ω)
Cable length	max. 50 m
Latency* (de-embedder)	< 360 µs + D (D = SRC delay if active; s. above)
Current consumption (5 V)	0.9 A
Operating temperature	0-40 °C

* Audio latency times are identical for all channels and all groups.





LEDs

SDI LOCK (Green); indicates a valid (3G, HD or SD) SDI signal at the input.

HD (Yellow); indicates a valid HD SDI signal at the input.

3G (Yellow); indicates a valid 3G SDI signal at the input.

DIP Switches

S1.1, S1.2

S1.1	S1.2	Definition
OFF	OFF	All de-embedders active, card has 16 input channels
OFF	ON	Only groups 1 and 2 are de-embedded, card has 8 input channels
ON	OFF	Only groups 3 and 4 are de-embedded, card has 8 input channels
ON	ON	All de-embedders inactive, card has 0 input channels

S1.3

S1.3	Definition
OFF	SRCs bypassed *(factory default)*
ON	SRCs active

S1.4-S1.8 reserved