DB8/DB4 SDI

The SDI card for DB4/DB8 supports all commonly used SD and HD formats. While de-embedding and embedding 8 channels of audio (48kHz, 24 bit), selectable from the four SDI Groups in chunks of four audio channels, it passes the video side untouched.

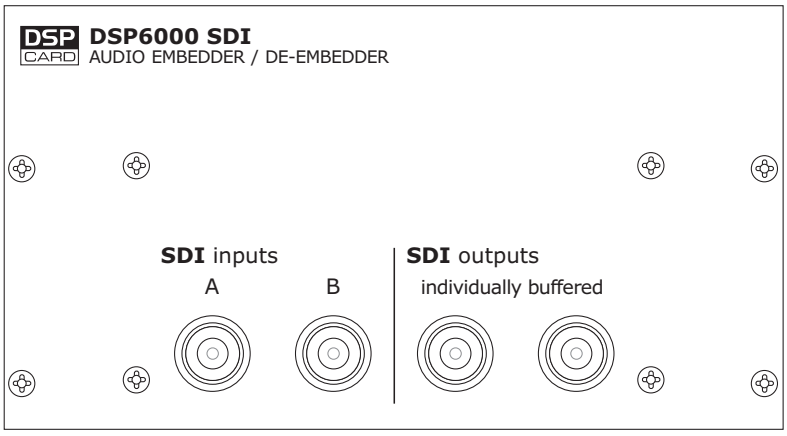
Processing may be inserted on any two of the four SDI Groups, and re-embedding may take place on any two groups. Consequently, the machine enables cross patching of audio and format conversion between SDI Groups. The design features two separate SDI inputs, of which one is active at a time, and two parallel, separately buffered outputs.

The DB's present an attractive SDI solution with massive jitter rejection, 48 bit processing and low latency. They also feature bit transparent, synchronous data handling, enabling routing of data reduced audio, such as AAC, DTS or Dolby E.

HD Audio
- Embedded audio multiplexer and demultiplexer
- Supports 38 HD video formats
- Supports eight audio channels at one time
- Fully SMPTE 299M compliant & compatible with common non-compliances
- Up to eight bit errors can be corrected in each audio data packet
- Full support for 48kHz synchronous or asynchronous 16-bit, 20-bit and 24-bit audio
- All four audio groups can be deleted
- Any two audio groups can be replaced when operating in multiplexer mode

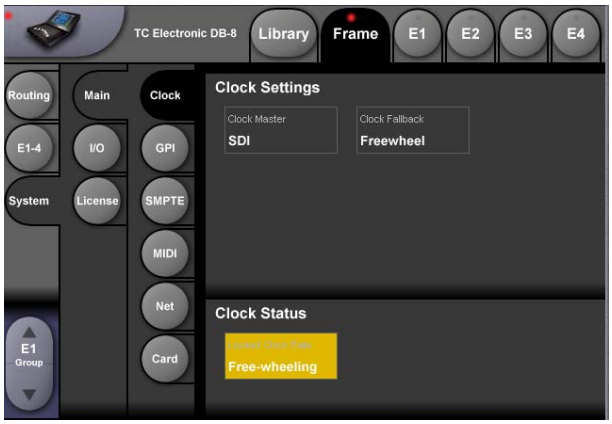
SD Audio
- Embedded audio multiplexer and demultiplexer
- Supports 6 SD video formats
- supports eight audio channels at one time
- Compliant to SMPTE 272M A and C & compatible with common non-compliances
- Full support for 48kHz synchronous 16-bit, 20-bit and 24-bit audio
- Programmable audio sample distribution
- All four audio groups can be deleted
- Any two audio groups can be replaced when operating in multiplexer mode

The SDI card



SDI ICON PAGES

System Main Clock page

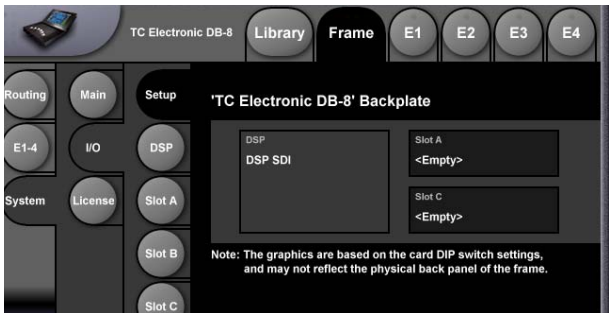


Clock Master
Sets the master clock of the processor. A machine with SDI option always expects an SDI input signal. If SDI is not available, the machine reverts to 48 kHz internal rate operation, which should be regarded an error condition.

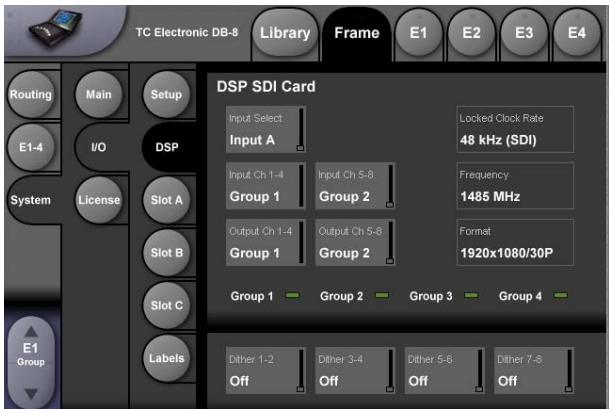
Clock Fallback
Determines how the processor reacts if it looses external reference. A machine with SDI option always expects an SDI input signal. If SDI is not available, the machine reverts to 48 kHz internal rate operation, which should be regarded an error condition. This state is called “Freewheel”. As this is an unexpected state the Clock Status field turns yellow.

I/O Setup page

Setup page with SDI installed.
The Frame-System-I/O-Setup appears as illustrated below when a SDI card is installed.



System I/O DSP page



Input Select
Select between SDI inputs A or B

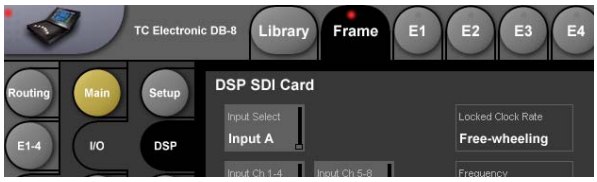
Input/Output channels 1-4/5-8
Use the Input/Output parameters to select which SDI Groups become available on the Routing display of the processor.

Group 1-4 indicators
These "LEDs" indicate which SDI Input Groups have audio available.

Locked Clock Rate
This information field displays the currently locked Clock Rate, which is always 48 kHz when the processor is used with SDI. If the field shows "Freewheeling", an external reference is not available or stable. In an installation, this should be regarded an error condition.

Freewheeling:
Indicates when the unit is Freewheeling. - See also “Clock Fallback” in the previous column.

Example: Free-wheeling



Frequency
This information field displays the SDI Input data rate in a range between 140 Mbps and 1.5 Gbps.

SDI ICON PAGES

Format
This information field displays the SDI Input format.
A partial list of SDI formats handled and recognized by DB4/8:

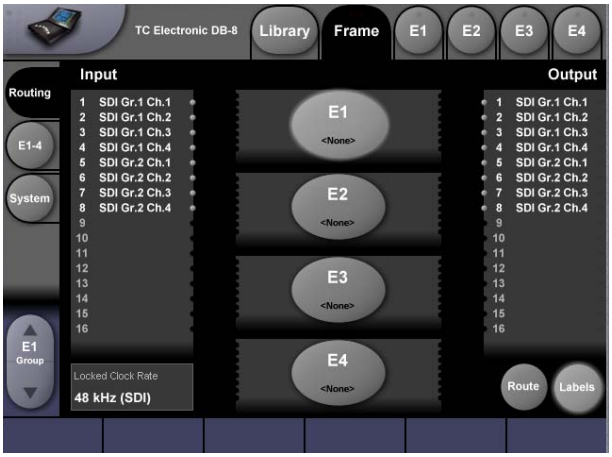
SD 29.97
SD 25
1280x720/60P
1280x720/30P
1280x720/50P
1280x720/25P
1280x720/24P
1920x1080/30P
1920x1080/25P
1920x1080/24P
1920x1080/25I
1920x1080/30I

Dither
Dither can be set individually on SDI output channel pairs 1/2 through 7/8. Dither is used to prevent noise floor distortion from being generated when the audio signal is truncated in lower resolution equipment downstream of the DB. The bit depth should therefore be set to correspond with the resolution of the next machine in the signal path.

Note: When the DB is passing data reduced signals, Dither must be turned off to enable bit transparency.

New functions and options for the SDI interface may become available. We encourage to visit the Broadcast section of the TC Electronic website to learn about the latest possibilities.

DSP SDI Card page - Free-wheeling DSP Lock



Technical Specifications

Number of audio channels	8 channel In, 8 channel Out
Connectors	2 BNC In, 2 BNC Out. 75 Ohm
Function	Audio de-embed/embed, video thru
Formats supported	SD and HD. 143 – 1485 MHz
Input selection	Input 1 or 2, SDI group 1-4
Outputs	2 is a replicate of 1. Outputs are individually buffered.

Please note: Technical specifications are subject to change without notice.