

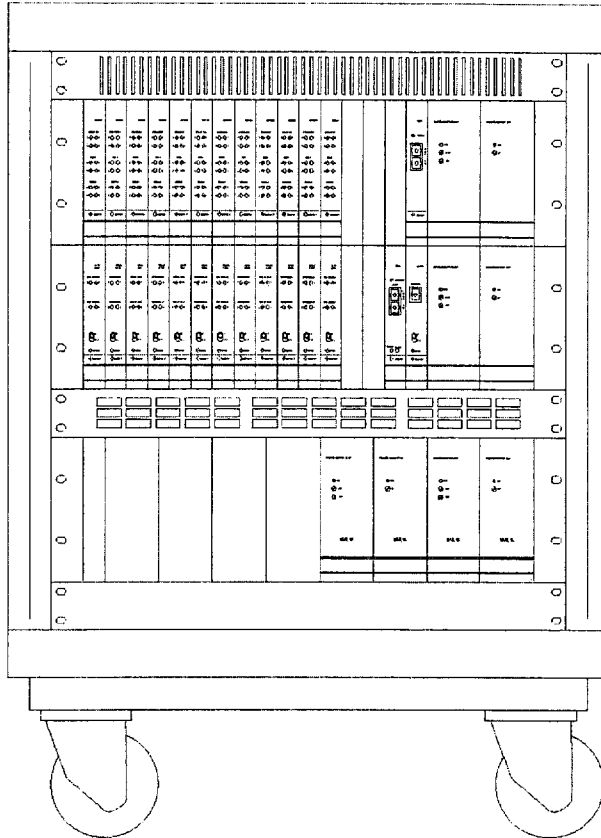
HERITAGE 3000 INPUT MODULE
 BLOCK DIAGRAM
 ISSUE A
 DATE 11 - 5 - 98

Annexe 2a

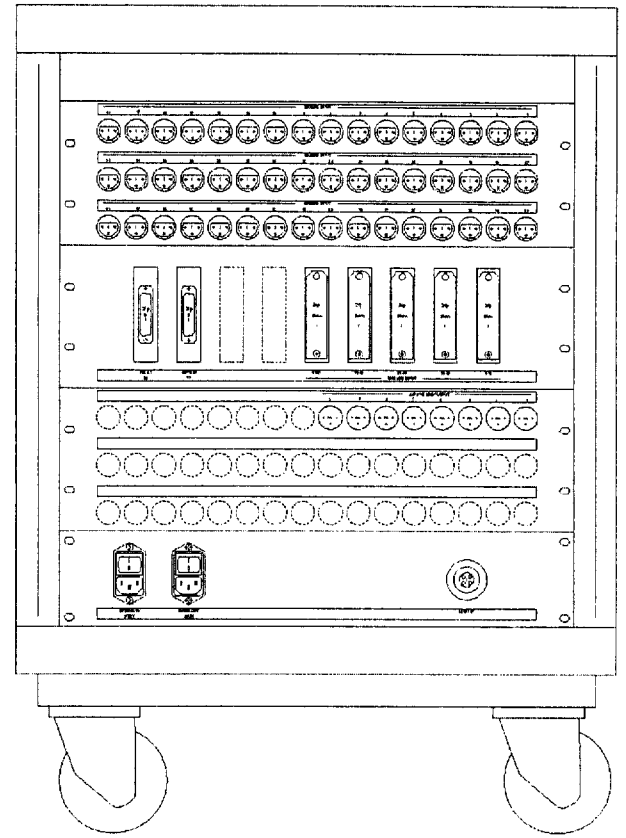
13.6 Studer D19m Stagebox

(only one of the many possible variations shown)

Front view:



Rear view:



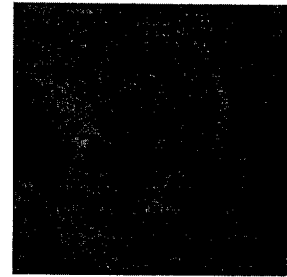
A transportable stagebox can be ordered as an option for the system. It typically consists of one or several Studer D19m frames in a flightcase. The number of frames and cards is variable and is usually done to customer specification. The following are some of the characteristics of the Studer D950 Stagebox system:

- A D19m frame can hold input and output cards (mixed arrangement).
- The connection to the D950 is typically via a single, robust, four-core optical fibre cable for MADI in/out, control receive/transmit signals, as well as the sync. This cable can cover distances of up to several hundred meters.
- The control signals are standard RS232/RS422 connections.
- A low-noise fan is required for large stageboxes.
- Optional redundant power supply is available (as shown in the above example).

Annexe 2b

Studer D19m Digital System Components

This range of digital modules can be used in stand-alone applications or for expanding the interfaces of a Studer digital product. The Studer D19m range includes two mounting frames both of which are equipped with power supplies. For further details on these racks and series of cards, please refer to the Studer D19m brochure.



D19m ADATI

Dual 8-channel ADAT Input

Optical Receiver and TDM Bus Driver, converting 2 x 8-channel ADAT* inputs into 16 time slots on the TDM Bus and eight AES/EBU stereo outputs. Optionally, two input channels can be transferred to AES/EBU stereo outputs. Sync by the frame signal of the TDM Bus; in standalone applications via an AES/EBU sync input or directly from the optical input.

D19m ADATO

Dual 8-channel ADAT Output

Optical Transmitter, converting 16 time slots on the TDM bus to two 8-channel ADAT outputs. The card can also be equipped with eight AES/EBU receivers for stand-alone applications.

D19m MADI

MADI Input for fibre optic/coaxial cable

MADI Receiver and TDM Bus driver, converting a MADI frame into 56 TDM Bus time slots. The TDM Bus is synchronized by the received sync signal. In slave mode, the board is synchronized by a back plane signal. The fiber-optic cards extract the sync signal from MADI (no additional sync input needed). External control via an RS 485 interface. Optional redundant MADI input / through with automatic switcher.

D19m MADO

MADI Output for coaxial cable

TDM Bus Receiver and MADI transmitter, converting up to 56 time slots into a MADI frame. The time slot allocation between the TDM signals and the MADI frame can be externally controlled via an RS 485 interface. This function allows the configuration of a very simple 56 x 56 MADI router. The TDM Bus is synchronized by the received sync signal. In case of a missing sync signal, the unit automatically generates a high-precision sync signal.

D19m TDIFI

Dual 8-channel TDIF Input

TDIF** Receiver and TDM Bus Driver, converting 2 x 8 channel TDIF inputs into 16 time slots on the TDM Bus and optional eight AES/EBU stereo outputs. Sync by the TDM bus; in stand-alone applications via AES/EBU sync input or directly from the TDIF input.

D19m TDIFO

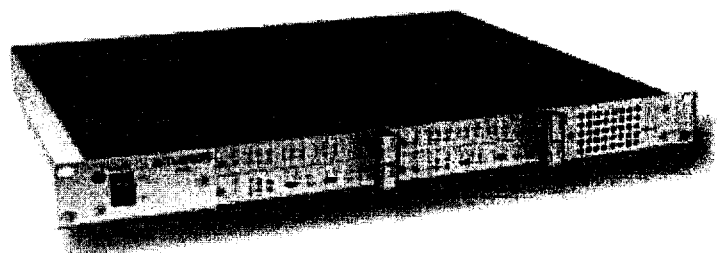
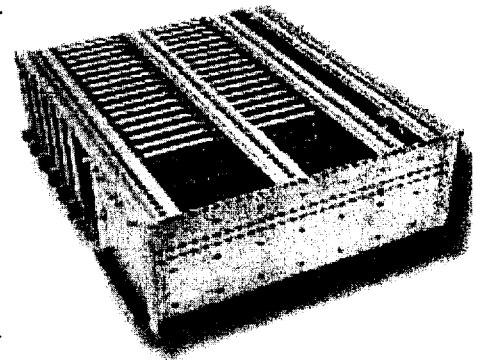
Dual 8-channel TDIF Output

TDIF Transmitter, converting 16 time slots on the TDM bus to two 8 channel TDIF outputs. The card can also be equipped with eight AES/EBU receivers for stand-alone applications.

D19m frames

One 19" 1 U unit accommodates up to four D19m cards, with power supply

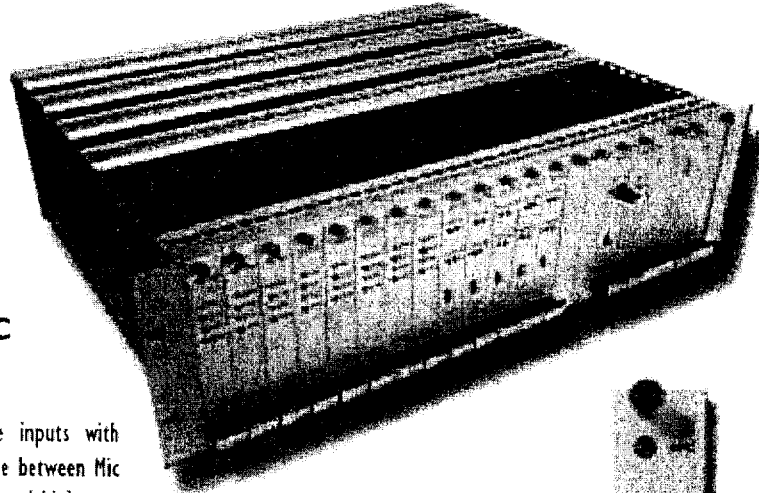
Three 19" 3 U units accommodate up to 16 D19m cards (14 I/O interface cards, up to two MADI I/O cards), with power supply



**TDIF is a trademark of TEAC

*ADAT is a trademark of Alesis

Annexe 2c



DI9m MP4RC

Quad Remote Controlled Mic/Line Input

Four transformer-balanced Mic/Line inputs with gain control in 1 dB steps. Switchable between Mic and Line level. 48 V phantom power and high pass filter for Mic/Line inputs. Additional split output per Mic/Line input. One external mute (GPI) input per Mic/Line input. Electronically balanced outputs. Remote controlled from the DI9m Remote Controller card. Clip Protection for all four Mic/Line inputs in common.

DI9m RCC

Remote Controller Card for MP4RC Mic/Line Input

Remote controller card for the DI9m MP4RC Quad Remote controlled Mic/Line input. The card is controlled via a serial interface (RS 422 with 38.4 kBd, standard 9-Pin on backplane or optical IF on front). Eight signaling IN and eight signaling OUT via GPI, remote controlled via serial IF. AES/EBU Synch distribution (four outputs) optionally mounted.

DI9m C4AD/24

Quad 24-bit A/D Converter

Stand-alone module, converting four analog inputs to two AES/EBU outputs. TDM Bus Driver, converting four analog inputs to four time slots in the TDM Bus. 24-bit Delta-Sigma Conversion. Sync external or internal; automatic switch over to internal source in case of missing external sync signal.

DI9m C4AD NS/24

Quad 24-bit A/D Converter with Noise Shaping

Stand-alone module, converting four analog inputs to two AES/EBU outputs. TDM Bus Driver, converting four analog inputs to four time slots in the TDM Bus. 24-bit Delta-Sigma Conversion. Sync external or internal; automatic switch over to internal source in case of missing external sync signal.

DI9m C4DA/24

Quad 24-bit D/A Converter

Stand-alone module, converting two AES/EBU inputs to four analog outputs. TDM Bus Receiver, converting four time slots in the TDM Bus to four analog outputs. 24-bit Delta-Sigma Conversion. External sync input; automatic switch over to one of the AES/EBU inputs in case of missing external sync signal. Special electronically balanced output circuit, providing functionality similar to a balanced floating output.

DI9m AESI

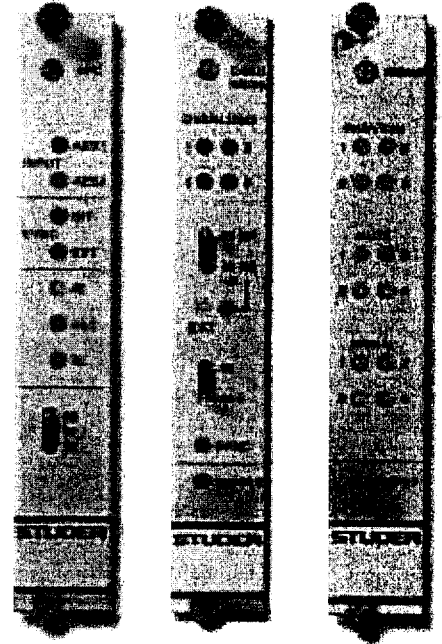
Dual AES/EBU Input

TDM Bus Driver, converting two AES/EBU inputs to four time slots in the TDM Bus. Channel status information from the inputs transferred on the TDM Bus (transparent interface).

DI9m AESI SFC

Dual AES/EBU Input with asynchronous SFC

Stand-alone module, converting two AES/EBU inputs to two AES/EBU outputs using asynchronous Sampling Frequency Converters. TDM Bus Driver, converting two AES/EBU inputs to four time slots in the TDM Bus using asynchronous Sampling Frequency Converters. Internal Sync (32, 44.1 or 48 kHz) or External Sync input; automatic switch over internal reference in case of missing external sync signal.



DI9m AESO

Dual AES/EBU Output

TDM Bus Receiver, converting four time slots in the TDM Bus to two AES/EBU outputs or to four AES/EBU mono outputs depending on Channel mode setting:

- MONO: Each TDM time slot is fed separately to one AES/EBU output.
- STEREO: Two TDM time slots are fed as a stereo pair to two parallel AES/EBU outputs.
- CHANNEL: Two TDM time slots are fed as a 2-channel pair to two parallel AES/EBU outputs.

Annexe 3

| EU TV Channel | TV CH | | WMS400/4000 | | 19 freq combs |
|------------------|---------|---------|----------------------|--------------------|---|
| | low | High | Hard ware version | Frequency range | |
| 43 | 646.000 | 654.000 | band | 1 650-680 | 650.000 650.300 650.750 651.350 651.725 652.850 653.750 |
| 44 | 654.000 | 662.000 | | | 656.975 658.250 661.625 |
| 45 | 662.000 | 670.000 | | | 664.400 666.050 667.925 668.750 |
| 46 | 670.000 | 678.000 | | | 671.000 673.625 675.575 676.100 676.775 |
| 47 | 678.000 | 680.000 | band | 2 680-710 | 680.000 |
| 47 | 680-686 | | | | 680.300 680.750 681.350 681.725 682.850 683.750 686.975 |
| | 686.000 | 694.000 | | | 688.250 691.625 |
| 49 | 694.000 | 702.000 | | | 694.400 696.050 697.925 698.750 701.000 |
| 50 | 702.000 | 710.000 | | | 703.625 705.575 706.100 706.775 |
| 52 | 718.000 | 726.000 | band | 3 720-750 | 720.000 |
| | | | | | 720.300 720.750 721.350 721.725 722.850 723.750 726.975 |
| 53 | 726.000 | 734.000 | | | 728.250 731.625 734.400 |
| 54 | 734.000 | 742.000 | | | 736.050 737.925 738.750 741.000 743.625 |
| 55 | 742.000 | | | | 745.575 746.100 746.775 |

| EU TV Channel | TV CH | | WMS400/4000 | | 19 freq combs |
|------------------|---------|---------|----------------------|--------------------|---|
| | low | High | Hard ware version | Frequency range | |
| 57 | 758.000 | 766.000 | band | 4 760 - 790 | 760.000 760.300 760.750 761.350 761.725 762.850 763.750 |
| 58 | 766.000 | 774.000 | | | 766.975 768.250 771.625 |
| 59 | 774.000 | 782.000 | | | 774.400 776.050 777.925 778.750 781.000 |
| 60 | 782.000 | 790.000 | | | 783.625 785.575 786.100 786.775 |
| 61 | 790.000 | 798.000 | band | 5 790-820 | 790.000 |
| | | | | | 790.300 790.750 791.350 791.725 792.850 793.750 796.975 |
| 62 | 798.000 | 806.000 | | | 798.250 801.625 804.400 |
| 63 | 806.000 | 814.000 | | | 806.050 807.925 808.750 811.000 813.625 |
| 64 | 814.000 | 820.000 | | | 815.575 816.100 816.775 |
| 66 | 835.000 | 838.000 | band | 6 835-862 | 835.000 |
| | | | | | 835.300 835.750 836.350 836.725 837.850 |
| 67 | 838.000 | 846.000 | | | 838.750 841.975 843.250 |
| 68 | 846.000 | 854.000 | | | 846.625 849.400 851.050 852.925 853.750 |
| 69 | 854.000 | 862.000 | | | 856.000 858.625 860.575 861.100 861.775 |

*** Example:

If TV channel 44 is occupied by a local TV station, the frequencies

656.975 658.250 661.625 have to be excluded.

Combining band1 with band 3 yields the new frequency set: From 650 to 706.775 Mhz plus the set from 720 to 746.775 MHZ