6.3.2 MADI I/O Cards (VISTA, OnAir, ROUTE 6000) A949.0430/.0431/.0433

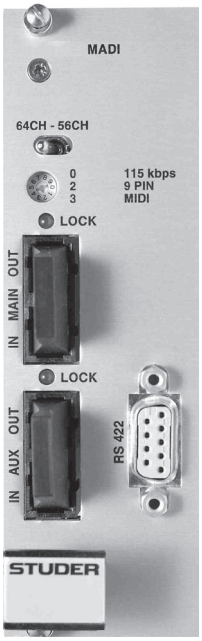
A949.0430xx Optical / multi-mode fibre
A949.0431xx Optical / single-mode fibre
A949.0433xx Twisted-pair (+ additional word clock out).

The MADI I/O cards can establish a 64-channel MADI input and output to the D21m frame, with 44.1/48/88.2/96 kHz operation. Three different versions are available:

Optical inputs and outputs are provided on SC connectors. The version with RJ45 connectors for twisted-pair cable features an additional word clock output on a BNC socket.

The auxiliary interface can be used as a redundant link or, in 96 kHz operation, to extend the number of channels from 32 back to 64. *Please note that in this mode the two cables may only be used to connect from one MADI card to another MADI card (i.e. it is not possible to link 32 channels to one MADI card, and the other 32 channels to a different one).*

It is possible to transmit any serial control signals, such as MIDI or Sony 9-pin (machine control) through a MADI connection without losing any audio bandwidth or microphone control of the remote I/O box. For this purpose, an RS422 connector is located on this card (hub frame side). The desired baud rate can be set with a rotary switch. The pinout of the RS422 connector can be set to 'device' or 'controller' with a DIP switch, depending on the 3rd party serial device connected.

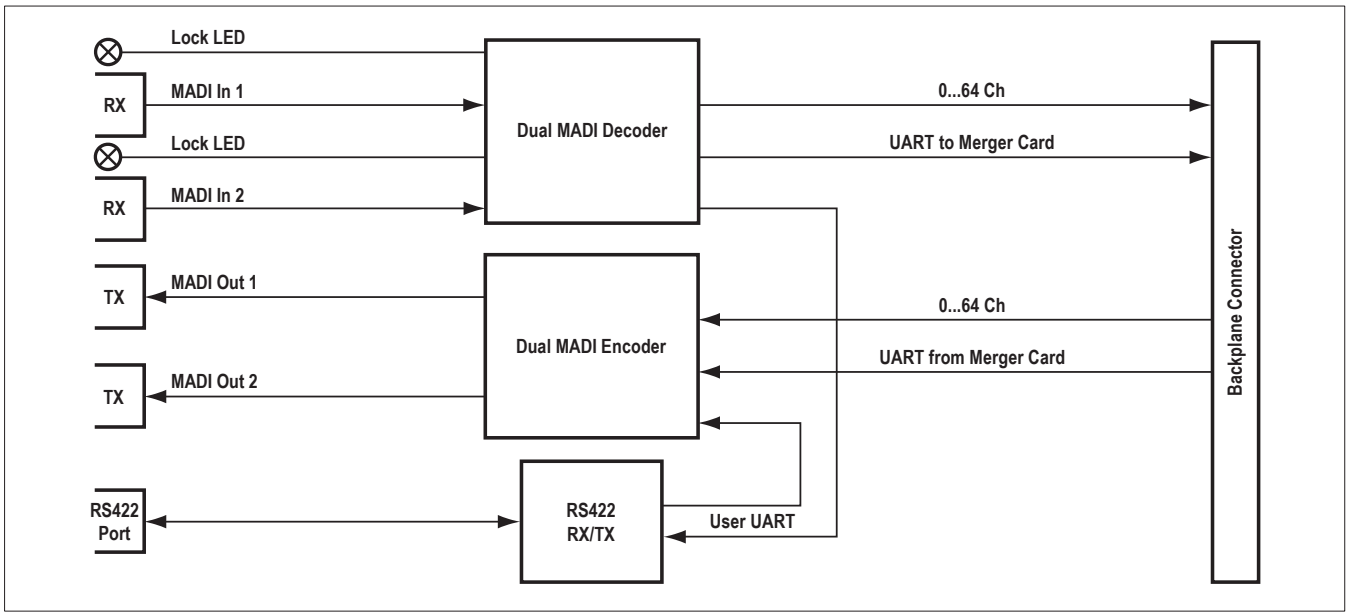


A949.0430
A949.0431

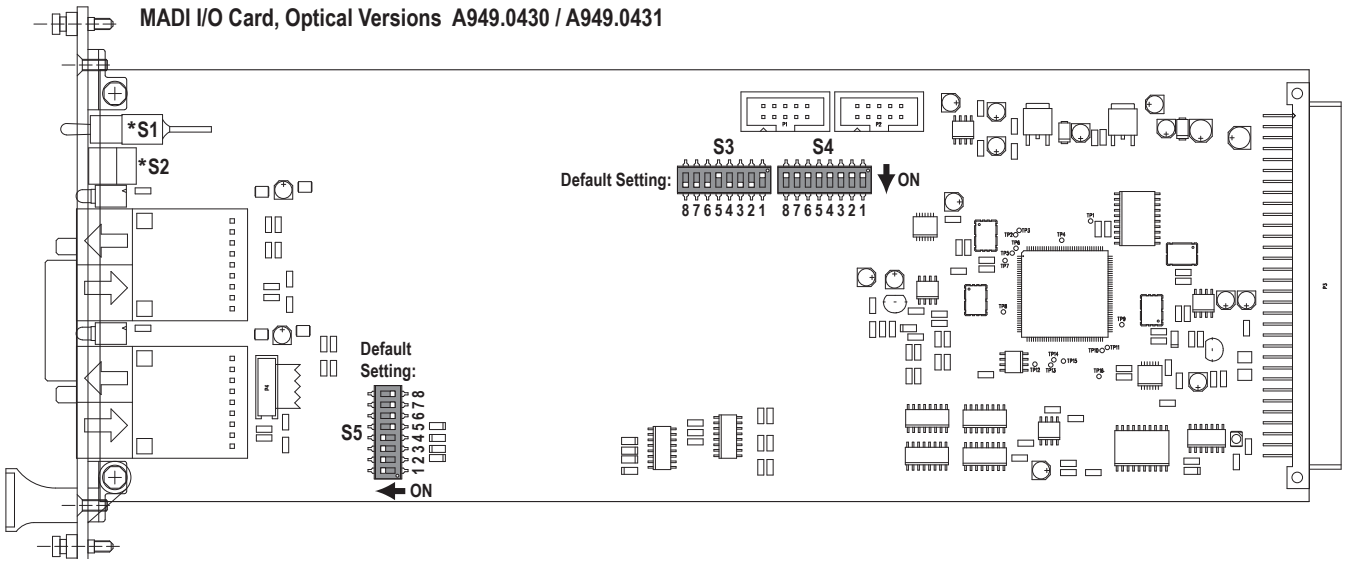
A949.0433

Max. cable length	(A949.0430, multi-mode fibre, wavelength 1300 nm*, ø either 62.5 or 50 µm)	2 km
	(A949.0431, single-mode fibre, wavelength 1300 nm*, ø 9 µm)	15 km
	(A949.0433, CAT5e or better, flexible braid)	75 m
	(A949.0433, CAT7, solid core)	120 m
Input frequencies		44.1/48/88.2/96 kHz ±100 ppm
Current consumption	(3.3 V)	0.4 A
	(5 V)	0.4 A
Operating temperature		0-40 °C

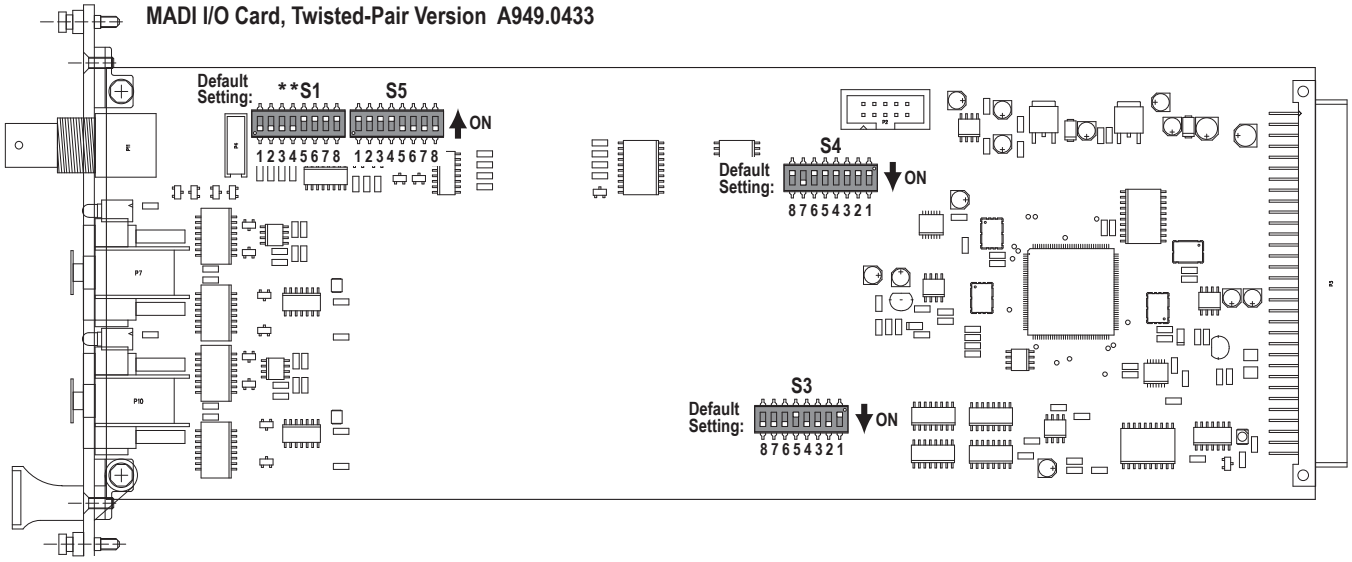
* *different wavelengths on request*



MADI I/O Card, Optical Versions A949.0430 / A949.0431



MADI I/O Card, Twisted-Pair Version A949.0433



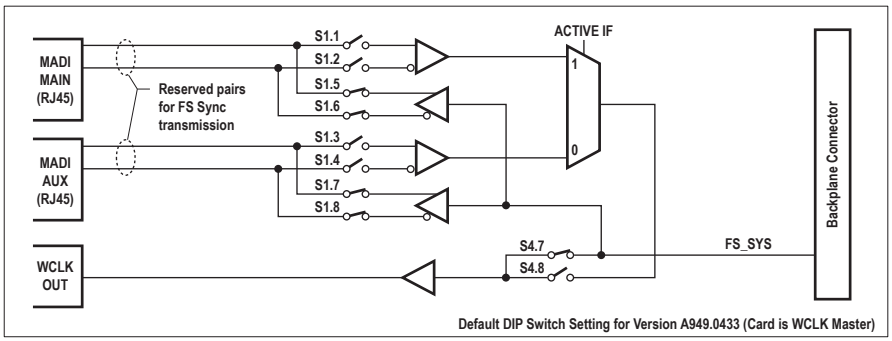
Switches

***S1** *(On versions A949.0430, A949.0431 only)*
Toggle switch for 64 (factory default) or 56 channel selection.

****S1** *(On version A949.0433 only)*
In case of connecting two cores, they must be synchronized. The twisted-pair cable version of the MADI card provides a reserved wire pair for both the main and aux RJ45 sockets on which the sync signal can be transferred. The sync transfer direction (from master to slave) is set using the DIP switches S1 and S4.7/.8. P*lease note that in such a case the twisted-pair wiring has to be done with a crossover cable. On the slave core, the WCLK output must be patched to the WCLK input of the audio clock card.*

(refer to the block diagram on the next page)

1	2	3	4	5	6	7	8	Setting
OFF	OFF	OFF	OFF	ON	ON	ON	ON	Card is Master *(factory default)*
ON	ON	ON	ON	OFF	OFF	OFF	OFF	Card is Slave
NO OTHER SETTINGS ALLOWED !								



***S2** *(On versions A949.0430, A949.0431 only)*
Rotary switch for baud rate selection of the RS422 user interface:

Position	Setting
0	115'200 bps *(factory default)*
1	57'600 bps
2	38'400 bps (9-pin)
3	31'250 bps (MIDI)
4	19'200 bps
5	9'600 bps
6-9	Reserved for future use

S3 DIP switch for D21m channel count setting:

1	2	3	4	5	6	7	8	Number of Channels
ON	ON	ON	ON	-	-	-	-	0 inputs
ON	ON	ON	OFF	-	-	-	-	8 inputs
ON	ON	OFF	ON	-	-	-	-	16 inputs
ON	ON	OFF	OFF	-	-	-	-	24 inputs
ON	OFF	ON	ON	-	-	-	-	32 inputs
ON	OFF	ON	OFF	-	-	-	-	40 inputs
ON	OFF	OFF	ON	-	-	-	-	48 inputs
ON	OFF	OFF	OFF	-	-	-	-	56 inputs
OFF	ON	ON	ON	-	-	-	-	64 inputs (factory default)
OFF : OFF	ON : OFF	ON : OFF	OFF : OFF	- : -	- : -	- : -	- : -	***NOT ALLOWED***
-	-	-	-	ON	ON	ON	ON	0 outputs
-	-	-	-	ON	ON	ON	OFF	8 outputs
-	-	-	-	ON	ON	OFF	ON	16 outputs
-	-	-	-	ON	ON	OFF	OFF	24 outputs
-	-	-	-	ON	OFF	ON	ON	32 outputs
-	-	-	-	ON	OFF	ON	OFF	40 outputs
-	-	-	-	ON	OFF	OFF	ON	48 outputs
-	-	-	-	ON	OFF	OFF	OFF	56 outputs
-	-	-	-	OFF	ON	ON	ON	64 outputs (factory default)
- : -	- : -	- : -	- : -	OFF : OFF	ON : OFF	ON : OFF	OFF : OFF	***NOT ALLOWED***

S4 DIP switch for MADI setting *(on version A949.0433, the switches 4-8 are used differently, as indicated below)*:

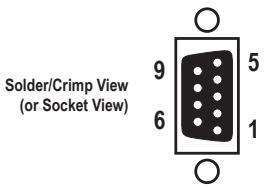
Card Versions	Switch	Setting		
ALL MADI Cards	**1**	OFF: AUX IF is used for channel extension at 96 kHz *(factory default)* ON: AUX IF is used for redundancy at 96 kHz *(in 48 kHz mode, AUX IF is used for redundancy regardless of the switch setting)*		
	2, 3	Both OFF: Standard operation *(factory default)* Both ON: No communication on system UART (used for Hub-Hub interconnection) *One ON and one OFF:* ***NOT ALLOWED****.*		
Optical Versions only (A949.0430, A949.0431)	**4-7**	Must be set to OFF *(factory default)*		
	8	Not used *(factory default: OFF)*		
Twisted-Pair Cable Version only (A949.0433)	**4**	**5**	**6**	**Baud Rate**
	OFF	OFF	OFF	115'200 bps *(factory default)*
	OFF	OFF	ON	57'600 bps
	OFF	ON	OFF	38'400 bps (9-pin)
	OFF	ON	ON	31'250 bps (MIDI)
	ON	OFF	OFF	19'200 bps
	ON	OFF	ON	9'600 bps
	ON ... ON	ON ... ON	OFF ... OFF	Reserved for future use
	7	**8**	**Setting (refer to **S1 above)**	
	ON	OFF	BNC output carries D21m system word clock *(factory default)*	
	OFF	ON	BNC output carries received word clock	

S5 DIP switch for RS422 pinout selection:

1	2	3	4	5	6	7	8	Setting
OFF	OFF	OFF	OFF	ON	ON	ON	ON	**RS422 Controller pinout**
ON	ON	ON	ON	OFF	OFF	OFF	OFF	**RS422 Device pinout** *(factory default)*
NOT OTHER SETTINGS ALLOWED!								

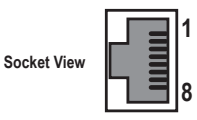
Connector Pin Assignments

CTRL (9pin D-type, female, UNC 4-40 thread)



Pin	RS422 Controller	RS422 Device
1	Chassis	Chassis
2	RxD –	TxD –
3	TxD +	RxD +
4	GND	GND
5	n.c.	n.c.
6	GND	GND
7	RxD +	TxD +
8	TxD –	RxD –
9	Chassis	Chassis

MADI MAIN / MADI AUX (8pin RJ45) *(on version A949.0433 only)*



Pin	Signal
1	MADI TxD +
2	MADI TxD –
3	MADI RxD +
4	WCLK TxD/RxD +
5	WCLK TxD/RxD –
6	MADI RxD –
7	reserved
8	reserved

LEDs

LOCK On if a valid MADI signal is available at the input that is locked to the system clock.