## Jünger

C8305

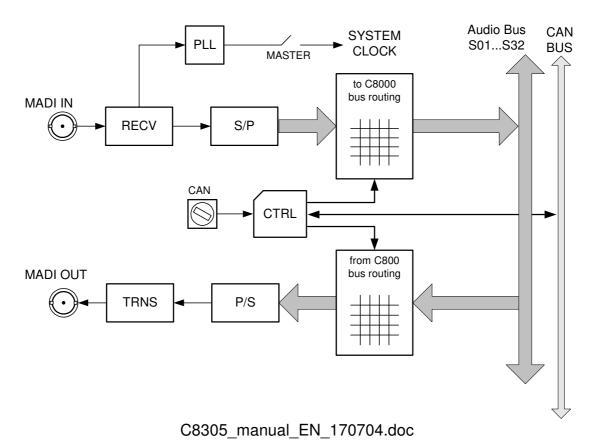
## 64ch BNC MADI I/O

## features

- · Interface for MADI encoded digital audio signals
- AES3id receiver and transmitter
- Word length 24bit
- Extended mode (64ch)
- High sampling mode (32 channels @ 96kHz)
- MASTER mode: C8000 frame may be clocked via MADI input



## block diagram



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## 64ch BNC MADI I/O

# C8305

## technical specifications

MADI interface:	
standard:	AES 10 (2003)
connection:	AES3id
signal level:	800mV ±10%
data format:	24bit transparent for C- and U-bits according to AES3
sample rate:	48kHz (24bit = max. 64 channels) 96kHz (24bit = max. 32 channels)
Backplane connector:	ref. to DIN 41612, 64pin, a+b, male
Power supply:	+5V DC
Consumption:	approx. 360mA
Dimensions:	3RU, 4HP, 160mmd deep (Euro Format)
Ambient:	10ºC to 40ºC
Humidity:	90%, non condensing

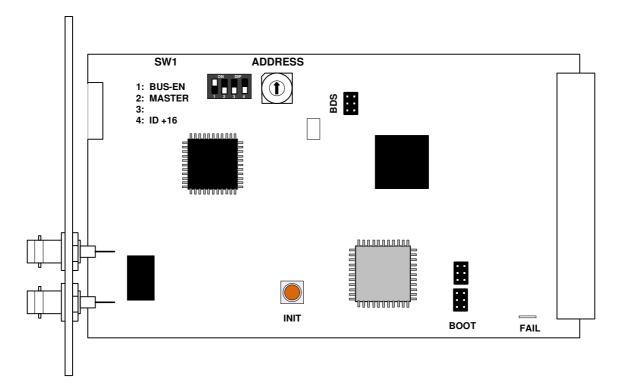
## digital audio modular processing system

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C8305

64ch BNC MADI I/O

## installation



Initial set up

ADDRESS:

This **rotary encoder** sets the **CAN ID** of the **C8305**. The switch positions are hexadecimal numbers (0x0 to 0xF). The CAN address also defines the location of the module icon within the GUI overview of rows three to six.

SW1:

#1 BUS-EN	ON	=	The output configuration will be taken from the <b>NV</b> (non volatile) <b>memory</b> after power up.
	OFF	=	will set all bus outputs to Tri-State-Mode (inactive). Now you may use the frame controller to configure the board. This configuration will automatically be stored into the <b>NV memory</b> To enable the configuration for the next power up you must <b>pull out</b> the module and set <b>BUS-EN=ON</b> again.

**Important note!** Since this type of module has an electronic output routing facility, great care must be taken when installing or exchanging a module when such frame has components which are On Air! If an unknown output bus configuration is stored, it can cause a conflict with other modules in the frame. If you are not sure about the output bus configuration you must turn **BUS-EN=OFF** before inserting such a module into a system that is On Air. If all settings are done remotely and the unit fits into the bus assignment scheme of that frame, you must remove it and place the switch back into position **BUS-EN=ON** to activate this setting for the next power up(s).

#2 MASTER

- **OFF** = Sync is taken from the c8k frame.
- **ON** = The **C8305** is sync master for the frame. Sync is derived from the MADI input.

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# C8305

**Important Note!** If in MASTER mode and installed into a **C8932** frame the C8305 must be put into one of the red colored fitting rails at the rear of the frame.

#3	OFF	=	Internal use and <b>must</b> be set to <b>OFF</b> .
#4 ID +16	OFF	=	<b>CAN</b> bus address range is standard (counting from 0x0 to 0xF) see rotary encoder settings above.
	ON	=	<b>CAN</b> bus address range is extended by <b>+16</b> (counting from 0x10 to 0x1F).
INIT			the <b>INIT</b> button during power up will initialize the module ers to factory default values.

## Web browser based GUI

### OVERVIEW

The module overview of a frame (below the display of an example frame):

i 10.110.53.83/control.xml.	gz			C Q Sear	rch	★ 自 ♥	<b>⋒</b>
	OVERVIEW	CONTROLLER C8702	C8092 DEVICE 00 C8092	C8305 DEVICE 0 C8305	UPMIX C8492	6HD DDPLUS ENC GPI C8812 C88	
jünger							
HD ONE		Controller					
FRAME NAME		C8702					
F 7 FRAME LOCATION		૱					
OVERVIEW							
	C8092 DEVICE 00	c	8305 DEVICE 0				
	C8092 [0]		C8305 [2]				
		5HD DDplus Enc					
	C8492 [8]	C8812 [9]					
	GPIO						
	C8817 [10]						

By simply clicking on the spanner tool symbol  $\bullet$  you will be forwarded to the control pages of the **C8305** and the status pane on the left hand side, which is also shown on mouse over.

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## 64ch BNC MADI I/O

# C8305

**PRESETS:**Each preset includes the parameters of the transmitter and the receiver.<br/>There are 8 user-presets available. They can be changed manually or by GPI.

HD one channel test - C8000 ×	+						
(i) 10.110.53.83/control.xml.gz			C C	Search	* 6		≡
	OVERVIEW	CONTROLLER C8702 C8702 C8092 C8092	E 00 UPMIX C8492	5HD DDPLUS ENC C8812	GPIO C8817	C8305 DEVICE ( C8305	2
Jünger							
	PRESETS DEV	VICE RECEIVER TRANSMITTE	R SETUP GPI	GPO			×
	PRESET-						
C8305 DEVICE 0	Load 1: PR	E1 V LOAD					
C8305			AVE				
MADI	Gave as #		AVE				
Receiver/Transmitter	Presets Clipbo	ard COPY TO CLIPBOA	RD [empty]				
Preset modified	Backup Preset	ts to File BACKUP					
Locked	Restore Preset	ts from File RESTORE Brow	vse No file selec	ted.			
Received Audio sync							
Sample Rate 48 kHz							
Input Channel Mode 64 Transmitter Input Bus Error							
Transmitter Input Bus Error							
		0.1					
oad		Select a pres	•	•		<b>&gt;</b> .	
ave as #		Select a pres	set NV me	mory numb	er.		
ame		Assign the p		me (up to 1	6 digits).		
		and press <	SAVE>.				
reset Clipboard		<copy td="" to<=""><td>CLIPBOA</td><td>RD&gt; copies</td><td>the activ</td><td>e preset t</td><td>to a c</td></copy>	CLIPBOA	RD> copies	the activ	e preset t	to a c
		the data may					
		-		-			
ackup Presets to	File	<backup></backup>	creates a	backup <b>XM</b>	L file wh	ich may b	e sav
		on a PC.					
antono Dressta fr		Ducine		file distant			
estore Presets fr		< <b>Browse…</b> : preset file. <					
		presets for the					wille
		presets for th	iis mouule	7.			

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## 64ch BNC MADI I/O

#### **DEVICE:** Display of device specific information HD one channel test - C8000 X C Q Search 🚖 自 🛡 🏫 10.110.53.83/control.xml.gz 1 = C8092 DEVICE 00 UPMIX 5HD DDPLU S ENC GPIO C8092 C8492 C8812 C8412 C8305 DEVICE 0 OVERVIEW CONTROLLER C8702 Jünger PRESETS DEVICE RECEIVER TRANSMITTER SETUP GPI GPO × 5 INFO C8305 DEVICE 0 C8305 DEVICE 0 CHANGE NAME Device Name C8305 Platform c8305 Parameter Version 1 MADI Receiver/Transmitter FIRMWARE 14 Controller Preset modified 21 FPGA Locked • Received Audio sync RESET Sample Rate 48 kHz Restart Module RESTART Initialize and Restore Factory Defaults INITIALIZE Input Channel Mode 64 Transmitter Input Bus Error 👘 🔴 BACKUP / RESTORE Backup Settings and Presets to File BACKUP Restore Settings and Presets from File RESTORE Browse... No file selected.

### INFO

Device Name	[16 digit ASCII text] Pressing <b><change name=""></change></b> will do so.
Platform	[C8305] Hardware related descriptor.
Parameter Version	[x] Software related descriptor (feature set).
FIRMWARE	
Controller	[xy] Actual version of the module controller firmware.
FPGA	[xy] Actual version of the system FPGA.
RESET	
Restart Module	<restart> Pressing the soft button will warm start the module.</restart>
Initialize and Restore Factory Defaults	<initialize> Pressing the soft button, will clear the parameter memory and will initialize all parameters to their factory default values.</initialize>

64ch BNC MADI I/O

# C8305

## **BACKUP / RESTORE**

Backup Settings and Presets to File	<backup> Pressing the soft button will create an XML file that one may store on a PC.</backup>
Restore Settings and Presets from File	<b>RESTORE</b> > I Pressing the soft button will upload a backup file that has been selected via soft button <b>BROWSE</b> > and move the previously stored settings back to the module.

### SETUP:

Set up of device parameters

(i) 10.110.53.83/control.xml.gz				C Q	Search	★ 自		. ■
	OVERVIEW	CONTROLLER C8702	C8092 DEVICE 00 C8092	UPMIX C8492	5HD DDPLUS ENC C8812	GPIO C8817	C8305 DEV C8305	ICE 0
Jünger								
	PRESETS D	EVICE RECEIVER	TRANSMITTER	SETUP GPI	GPO			×
C8305 DEVICE 0	MADI Bypa: Transparen Error Proce	t Status Bits	<ul> <li>⊙ Off ○ 0</li> <li>⊙ Off ○ 0</li> <li>⊙ Off ○ 0</li> </ul>	Dn				
MADI Receiver/Transmitter	Error Mask	(BUS)	S9 S1 S17 S1	0 S11 S 8 S19 S	S4         S5         S6           S12         S13         S14           S20         S21         S22           S28         S29         S30	S15 S1 S23 S23 S2	8 6 4 2	
reset modified								
ocked								
Received Audio sync								
ample Rate 48 kHz								
nput Channel Mode 64								
ransmitter Input Bus Error								

MADI Bypass	[Off / On] will bypass the MADI processing
Transparent Status Bits	[Off / On] If set to <b>Off</b> , a set of <b>Professional</b> channel status bits will be inserted, representing the actual sample rate and the audio status (non audio if applicable) with correct V bit.
Error Processing	[Off / On] (used for remote system monitoring) will turn on the bus error detection in general
Error Mask	[S01 S32] will turn on error detection for individual busses

Important note! You must turn off error detection for busses not in use, to prevent bad module status.

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## 64ch BNC MADI I/O

(i) 10.110.53.83/control.xml.gz				C Q Sei	arch	★ 自	© n	
	OVERVIEW	CONTROLLER C8702	C8092 DEVICE 00 C8092	UPMIX C8492	5HD DDPLUS ENC C8812	GPIO C8817	C8305 DEV C8305	ICE 0
Jünger								
2011321	PRESETS I	EVICE RECEIVER	TRANSMITTER	ETUP GPI	GPO			2
5	TRESETS	NEVICE NECEIVER	TRAISINT LA .					
C8305 DEVICE 0	MADLInnut	Channel to C8000 E	Due Douting					
COSUS DEVICE U	MADI Input	channel to Coulo E	ous Routing					
C8305	8 Channel	Mode (TDM)	-		Channel Mode 🗕			
	IN 18	BUS	BUS IN 1/2 OFF	IN 3/4 OF	JS BU FF IN 5/6 OF		BUS	
MADI	IN 18 IN 916	OFF	IN 9/10 OFF	IN 3/4 OF				
Receiver/Transmitter	IN 1724	OFF	IN 17/18 OFF	IN 19/20 OF				
	IN 2532	OFF	IN 25/26 OFF	IN 27/28 OF				
Preset modified	IN 3340	OFF	IN 33/34 OFF	IN 35/36 OF	FF IN 37/38 OF	F IN 39/40	OFF	
Locked	IN 4148	OFF	IN 41/42 OFF	IN 43/44 OF			OFF	
Received Audio sync	IN 4956	OFF	IN 49/50 OFF	IN 51/52 OF				
Sample Rate 48 kHz	IN 5764	OFF	IN 57/58 OFF	IN 59/60 OF	FF IN 61/62 OF	F IN 63/64	OFF	
	Enable C	8000 Bus Driver						
Input Channel Mode 64								
Transmitter Input Bus Error 🌒								

## **RECEIVER:** Routing of MADI input signals to the C8000 audio buses

8 Channel Mode	Goups of 8 adjacent MADI channels may be multiplexed on one C800 audio bus from MADI reception.
2 Channel Mode	Pirs of 2 adjacent MADI channels may be multiplexed on one C8000 bus from MADI reception.
Enable C8000 Bus Driver	will enable all 32 bus drivers. Make sure that there is no conflict with other modules occupying the same bus line.

**Important note!** Only one output is allowed for connection with one bus line. Bus lines not in use should be set to OFF.

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## 64ch BNC MADI I/O

#### HD one channel test - C8000 × + C Q Search (i) 10.110.53.83/control.xml.gz 🛉 自 🛡 合 🐗 = CONTROLLER C8702 C8092 DEVICE 00 UPMIX C8492 SHD DDPLUS ENC GPIO C8812 C8817 C8305 DEVICE 0 C8305 OVERVIEW Jünger PRESETS DEVICE RECEIVER TRANSMITTER SETUP GPI GPO × 5 0 56 0 64 Number of channels C8305 DEVICE 0 C8000 Bus to MADI Output Channel Routing C8305 8 Channel Mode (TDM) 2 Channel Mode BUS BUS BUS BUS BUS MADI Receiver/Transmitter OFF OUT 1..8 S5 OUT 1/2 S5 OUT 9/10 S9 OUT 17/18 S13 OUT 25/26 S5 OUT 3/4 S6 OUT 11/12 S5 OUT 5/6 S7 OUT 13/14 S5 OUT 7/8 S8 OUT 15/16 S5 OUI 9/10 S6 OUI 11/12 S7 OUI 13/14 S8 OUI 15/16 S9 OUT 17/18 S10 OUT 19/20 S11 OUT 21/22 S12 OUT 23/24 S13 OUT 25/26 S14 OUT 27/28 S15 OUT 23/30 S16 OUT 31/34 S10 OUT 31/34 S10 OUT 31/34 S20 OUT 31/44 S20 OUT S20 OUT S21 S OFF OUT 17..24 Preset modified Locked OFF OUT 33..40 OFF OUT 41..48 Received Audio sync OUT 49..56 OFF OUT 57..64 Sample Rate 48 kHz Input Channel Mode 64 Transmitter Input Bus Error

Number of channels	[56 / 64] Junger Audio MADI interfaces benefit from the extended MADI mode. It allows for transportation of 64 audio channels over a MADI interface.
C8000 Bus to MADI Output Channel Routing	
8 Channel Mode	Groups of 8 adjacent audio channels may be taken from one bus line for MADI transmission.
2 Channel Mode	Pairs of 2 adjacent audio channels may be taken from one bus line for MADI transmission.

### TRANSMITTER: Routing of inputs to the C8000 audio buses

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## 64ch BNC MADI I/O

## **GPI :** Set up of frame wide **GPI** numbers to trigger a dedicated module function or preset. If a **GPI** is detected by an **GPI/O** module **C8817**, it will put an associated number on the CAN bus. Each module in a frame is permanently listening for such numbers

(i) 10.110.53.83/control.xml.c	z				C	Q, Sea	arcn	0		-7/4	1
	OVERVIEW	C0N C870	ROLLER 2	C8092 DEVICE 00 C8092	UPMIX C8492		5HD DDPLUS ENC C8812	GPIO C8817	C8305 C8305	DEVICE 0	NC -
jünger											
	PRESETS	DEVICE	RECEIVER	TRANSMITTER	SETUP	GPI	GPO				\$
C8305 DEVICE 0	GPI										
C8305 MADI Receiver/Transmitter	Preset 1 Preset 2 Preset 3 Preset 4 Preset 5		OFF OFF OFF OFF								
et modified	Preset 8 MADI By	pass On	OFF OFF OFF								
ple Rate 48 kHz											
t Channel Mode 64 smitter Input Bus Error											

**Important Note!** Great care must be taken to avoid same numbers being assigned to different presets because it will activate multiple presets, causing great confusion in bigger installations, e.g. where Junger HW remote controller is in place or GPIs are connected with automation systems.

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## 64ch BNC MADI I/O

## **GPO** (Tally) : Set up of frame wide **GPO** numbers to trigger a dedicated **GPO** (Tally) of a **GPI/O** module **C8817** if the associated function is activated.

(i) 10.110.53.83/control.xml.gz					G	Q, Sea	rch		會 自	0 1	<b>î</b>	
	OVERVIEW CS702		C8092 DEVICE 00 C8092	UPMIX C8492		5HD DDPLUS ENC C8812		GP10 C8817	C8305 DEVICE 0 C8305			
Jünger												
	PRESETS D	EVICE	RECEIVER	TRANSMITTER	SETUP	GPI 0	PO					>
C8305 DEVICE 0	GPO											
00000 DEVICE 0	Preset 1		OFF									
C8305	Preset 2		OFF									
MADI	Preset 3 Preset 4		OFF									
Receiver/Transmitter	Preset 5		OFF									
reset modified	Preset 6 Preset 7		OFF									
ocked	Preset 8		OFF									
eceived Audio sync	MADI Bypa Lock	ass On	OFF									
ample Rate 48 kHz												
put Channel Mode 64												
ransmitter Input Bus Error												

**Important Note!** Great care must be taken to avoid same numbers being assigned to different presets because the inactive state of one preset will overwrite the active state of another one and the assigned GPO will be cleared, causing great confusion in bigger installations, e.g. where Junger HW remote controller is in place or GPOs are connected with other management systems. There is no mechanism implemented to check for doublets.