

# AX24 CONVERTER SYSTEM

MUSICAL. CORRECT. FLEXIBLE.

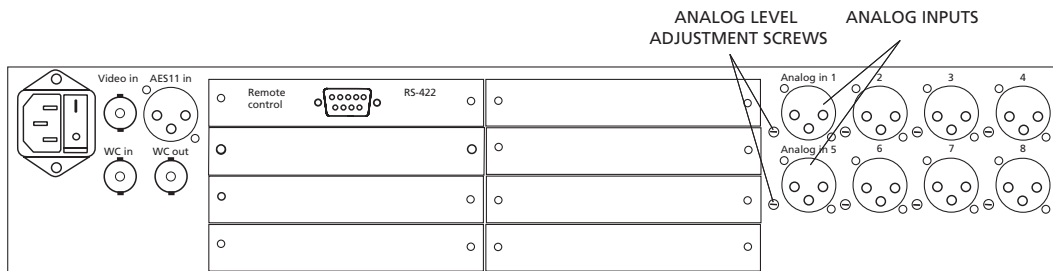
## Modules and Interfaces



# Analog interfaces

## Analog Inputs

The input level can be precisely adjusted on the rear panel of the AX24. Please note that the setting potentiometers are delicate and must be operated with care. Only trained personnel should undertake this work. **Note** that the warranty of the unit does not cover damage to these controls.



## Adjusting the Line Input

The Input line level can be adjusted between +12 and +30 dBu. In the DADman program system menu the maximum line level can be set to the range 12 to 21 dBu or 21 to 30 dBu.

Use the back-panel multi-turn adjustment screws in order to fine tune the maximum input level within the range +12 and +21 dBu, or +21 and +30 dBu.

Turn the adjustment screw clockwise in order to raise the analog input gain or turn the adjustment screw counter clockwise in order to lower the analog input gain.

## Analog output module

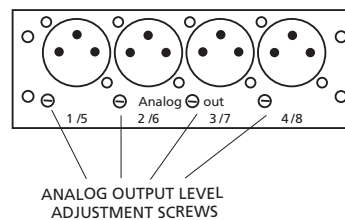
### Adjusting the Line Output

The analog line output can be adjusted between +12 and +27 dBu.

Use the multi-turn adjustment screws on the back panel in order to adjust the maximum output level.

Turn the adjustment screw clockwise in order to increase analog output level or turn the adjustment screw counter clockwise in order to decrease analog output level.

If single-ended output is needed, connect only pin1 for signal and pin3 for gnd.



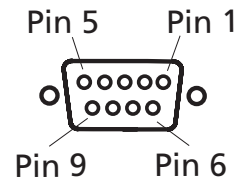
# Interface specifications

## RS422 control interface

In RS422 communication the AX24 must always be slave and the computer the master.

### RS422 Pin out AX24:

Baud rate                    19.2 Kbaud  
Cable length:                <100 meter  
Connector Type:            9 pole D-Sub Female  
Pin 1: RX- (input)  
Pin 2: RX+ (input)  
Pin 3: TX+ (output)  
Pin 4: TX- (output)  
Pin 5: GND  
Pin 6: NC  
Pin 7: NC  
Pin 8: NC  
Pin 9: NC



For interfacing to the VScom/Easysync USB to RS422 I/O adapter a 1:1 male-female 9 pin D-sub cable must be used.

If you want to use an Antona RS232 to RS422 converter for controlling the AX24, you will require a special cable between the AX24 and the Antona converter.

RS422 pin out for the Antona RS232 to RS422 converter in master mode:

Pin 1: GND                  Pin 6: NC  
Pin 2: RX-                  Pin 7: RX+  
Pin 3: TX+                  Pin 8: TX-  
Pin 4: NC                    Pin 9: +V  
Pin 5: GND

## 8 ch TDIF digital I/O module

The 8 channel TDIF I/O module makes it possible to interface to equipment with a standard Tascam TDIF interface. The module fully supports the original TDIF 1 standard, the TDIF 96 extension as well as the TDIF double speed format. The module supports 8 channel I/O at 44.1 kHz or 96 kHz.

At 88.2 and 96 KHz the two TDIF interfaces are required if the TDIF mode is TDIF-1 or TDIF 96. In this case channel 1-4 is interfaced via connector 1, and channel 5-8 via connector 2.

Only a single interface connection is needed for the TDIF DS mode, and in all three modes at 44.1 and 48 kHz sample rates. TDIF mode is selected via DADman.

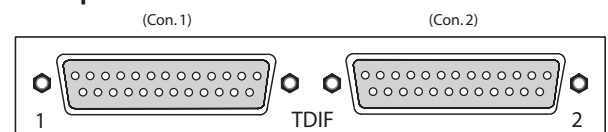
### TDIF I/O Specifications:

Connectors:                    1 x 25-pin female D-sub  
Formats:                        TDIF-1, TDIF96, TDIF DS  
Sample Rates:                 44.1 to 96 kHz

### TDIF I/O Pin out:

The pin out format of the D25 connector is compatible with the TDIF-1 specification.

### Rear plate

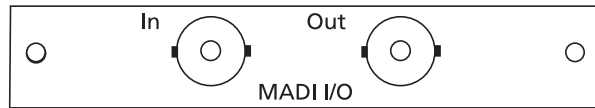


## MADI digital I/O module

The MADI digital I/O module is capable of interfacing the 8 AD and DA channels of the AX24 in blocks of eight to any of the 56 channels available in the MADI format in standard mode or any of the up-to 64 channels when operating in extended mode. The allocation can be set independently for input and output. The interface will pass all unused channels from the input to the output connector, with a latency of a few samples. All module settings are made via DADman.

The physical connection is made via two BNC connectors. One for input and one for output.

### Rear plate



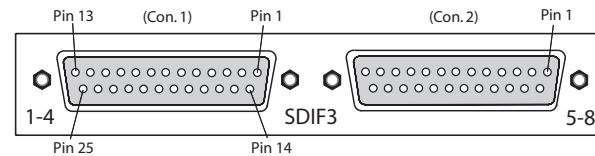
### MADI I/O Specifications:

Connectors: 2 x BNC, 50 Ohm  
 Formats: AES10-96  
 Merging/Sony DSD64 mapping  
 Merging DXD mapping  
 Sample Rates: 44.1 to 192 kHz.  
 352,8 (DXD) and 384 kHz

## 8 ch SDIF3 digital I/O module

The 8 channel SDIF3 I/O module is able to interface all 8 input and output channels of the AX24 according to the SDIF3 specification. The connection is made via two 25 pin female D-sub connectors. Each connector can interface 4 input and output channels.

### Rear plate



### SDIF3 I/O Specifications:

Connectors: 2 x 25-pin female D-sub  
 Formats: DSD64 and DSD128  
 Sample Rate: 2.288 and 4.576 Mhz

### SDIF3 I/O Pin out:

The connector is compatible with the Merging D25 to BNC break out cable. Interfacing can also be made directly to the Mykerinos cards by using a 1:1 male-male D-sub cable with 8 input and 8 output 50 Ohm coaxial cables

### Pin out table

Pin no.	Con. 1	Con. 2
1	DOUT 1+	DOUT 5+
2	DOUT 2+	DOUT 6+
3	DOUT 3+	DOUT 7+
4	DOUT 4+	DOUT 8+
5	NC	NC
6	NC	NC
7	GND	GND
8	NC	NC
9	NC	NC
10	DIN 4+	DIN 8+
11	DIN 3+	DIN 7+
12	DIN 2+	DIN 6+
13	DIN 1+	DIN 5+
14	GND	GND
15	GND	GND
16	GND	GND
17	GND	GND
18	NC	NC
19	NC	NC
20	NC	NC
21	NC	NC
22	GND	GND
23	GND	GND
24	GND	GND
25	GND	GND

## 8 ch AES3 digital I/O module

The 8 channel AES3 I/O module is able to interface all 8 input and output channels of the AX24 according to the AES3 specification up to the 96 kHz in single wire/true speed. The connection is made via a 25 pin female D-sub connector. The pin-outs can be set for compliance with 3 different pin allocation formats.

The AES3 I/O module is able to interface 4 input and output channels at 176,4 and 192 kHz as a dual wire format, and 2 input and output channels at 352,8 and 384 kHz as a quad wire format. Two AES3 I/O modules can be installed in the AX24, for a total of 8 176,4 and 192 kHz channels and 4 352,8 and 384 kHz channels.

### AES3 I/O Specifications:

Connectors:	1 x 25-pin female D-sub
Formats:	AES3 Dual wire compatible with Protools Quad wire compatible with Merging
Sample Rates:	
Single Wire	44.1 to 96 kHz
Dual Wire	176,4 and 192 kHz
Quad Wire	352,8/DXD and 384 kHz
Number of I/O:	8 ch at sigle wire 4 ch at dual wire 2 ch at quad wire

The AX24 can be installed with two 8 ch AES3 modules, giving 8 ch dual wire, and 4 ch quad wire I/O.

### AES3 I/O Pin out:

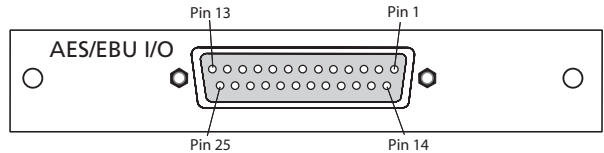
The pin-out format of the D25 connector is selected by the position of the internal flat cable connector on the PCB.

The first position is the one closest to the rear plate. The second position is in the middle. In the 3 positions the D25 connector pin-out is compatible with the following manufacturers (typical)

- Pos. 1 Yamaha, Mackie, Akai and Apogee
- Pos. 2 Merging (factory default)
- Pos. 3 Tascam and Digidesign

In the Merging pin-out position 2, the connector is compatible with the Merging D25 to XLR break out cable. Interfacing can also be made directly to the Mykerinos cards by using a 1:1 male-male D-sub cable.

### Rear plate



### Pin out table (single wire)

Pin no.	Pos. 1	Pos. 2	Pos. 3
1	DIN 1/2+	DOUT 1/2+	DOUT 7/8+
2	DIN 3/4+	DOUT 3/4+	GND
3	DIN 5/6+	DOUT 5/6+	DOUT 5/6-
4	DIN 7/8+	DOUT 7/8+	DOUT 3/4+
5	DOUT 1/2+	GND	GND
6	DOUT 3/4+	GND	DOUT 1/2-
7	DOUT 5/6+	NC	DIN 7/8+
8	DOUT 7/8+	GND	GND
9	NC	GND	DIN 5/6-
10	GND	DIN 7/8+	DIN 3/4+
11	NC	DIN 5/6+	GND
12	GND	DIN 3/4+	DIN 1/2-
13	GND	DIN 1/2+	NC
14	DIN 1/2-	DOUT 1/2-	DOUT 7/8-
15	DIN 3/4-	DOUT 3/4-	DOUT 5/6+
16	DIN 5/6-	DOUT 5/6-	GND
17	DIN 7/8-	DOUT 7/8-	DOUT 3/4-
18	DOUT 1/2-	GND	DOUT 1/2+
19	DOUT 3/4-	GND	GND
20	DOUT 5/6-	GND	DIN 7/8-
21	DOUT 7/8-	GND	DIN 5/6+
22	GND	DIN 7/8-	GND
23	GND	DIN 5/6-	DIN 3/4-
24	GND	DIN 3/4-	DIN 1/2+
25	GND	DIN 1/2-	GND