



# **VISTEK 1632 20-BIT AUDIO DAC USER GUIDE**

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# VISTEK V1632 20-bit audio dac

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## 1. DESCRIPTION

The V1632A is a broadcast quality 20-bit audio digital to analog converter which forms part of the Vistek V1600 range of interface products. It is a 3U high card which is fitted into either a V1601 or V1603 rack, from which it receives its power. A passive rear module with screw terminal connections, is required for all signal interconnections.

The unit accepts two AES-3 digital stereo audio inputs and converts these signals to 4 differential mono analog outputs in two pairs. The V1632A is fully compatible with the Vistek DART remote system, allowing status information to be read by a DART compatible rack controller.

### INPUTS:

- 2 x AES3-1992 balanced 110 $\Omega$  digital audio channels,  $Z_{in} = 110 \Omega$  (or 75  $\Omega$  unbalanced with special rear module).
- Sampling frequencies of 32kHz, 44.1kHz, 48kHz are accommodated.
- AES inputs A and B can be different sample frequencies.

### OUTPUTS:

- 4 x Analog differential quasi-balanced outputs with  $Z_{out} < 50 \Omega$
- Max Output level: 0dBFS = +24dBu. Output level adjustable by on-card switches from 0dBFS = +12dBu to 0dBFS=+24dBu in 1dB steps.

### FEATURES:

- Hi-Z option on AES inputs allows daisy chaining of several AES inputs.
- Status available through DARTbus may be read by Vistek's Viewfind or V1605 remote control system.

## 2. INSTALLATION

### 2.1 Rear Panel Connections

The standard 3U Screw terminal rear panels is shown below. Other panel variants with screw terminal and/or BNC connectors are similarly marked. Table 2.1 describes the connections to the unit when these panels are used.

Grounds/screens (S) are connected to chassis on all outputs and inputs and should be connected to all cable screens to minimize hum and noise.

Table 2.2 describes connections to the unit when D-type panels are used.

**Note:** Pins indicated as 'No connect' in this Table must be left open.

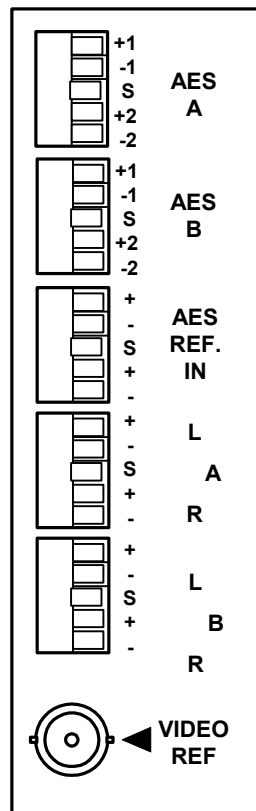


Table 2.1

Description of V1632A rear panel connections for standard rear panel assemblies

SIGNAL	SOURCE	COMMENTS
POWER	Rack PWR Header	+15V nominal (9-35V) at 10W max
DART bus	Rack DART header	Vistek DART Rack controller
AES A ◀ (IN) (+1,S,-1)	External AES source	Channelbair A AES3/AES3id digital input: Zin = 110 Ω balanced/ 75 Ω unbalanced /Hi-Z
AES B ◀ (IN) (+1,S,-1)	External AES source	Channelbair B AES3 digital input: Zin = 110 Ω balanced/ 75 Ω unbalanced /Hi-Z
A ▶ (OUT) L (+-) R (+-)	V1632A	Analog balanced outputs from AES A Left: Zout < 50 Ω; max output +24dBu Right: Zout < 50 Ω; max output +24dBu
B ▶ (OUT) L (+-) R (+-)	V1632A	Analog balanced outputs from AES B Left: Zout < 50 Ω; max output +24dBu Right: Zout < 50 Ω; max output +24dBu

Table 2.2

Description of V1631A rear panel connections for D-type rear panel assemblies

D15F Analog I/O connector					
Pin	Signal		Pin	Signal	
1	A left out -		9	A left out +	
2	A right out-		10	A right out +	
3	GND		11	GND	
4	GND		12	GND	
5	B left out -		13	B left out +	
6	B right out -		14	B right out +	
7	GND		15	GND	
8	GND				

D15F Digital I/O connector					
Pin	Signal		Pin	Signal	
1	AES A in -		9	AES A in +	
2	No connect		10	No connect	
3	GND		11	GND	
4	AES B in -		12	AES B in +	
5	No connect		13	No connect	
6	GND		14	GND	
7	No connect		15	No connect	
8	GND				

## 2.2 Maximum Output Level Adjustment

The V1632A has two rotary Hex Switches for adjusting the MOL (**M**aximum **O**utput **L**evel) of each of the AES channelpairs A and B. The location of the MOL switches is shown on the figure below. These switches adjust the analog MOL corresponding to 0dBFS digital input in 1dB steps from +12dBu to +24dBu. The table below shows the correspondence between the 16 switch positions and the max output level setting for the V1632A.

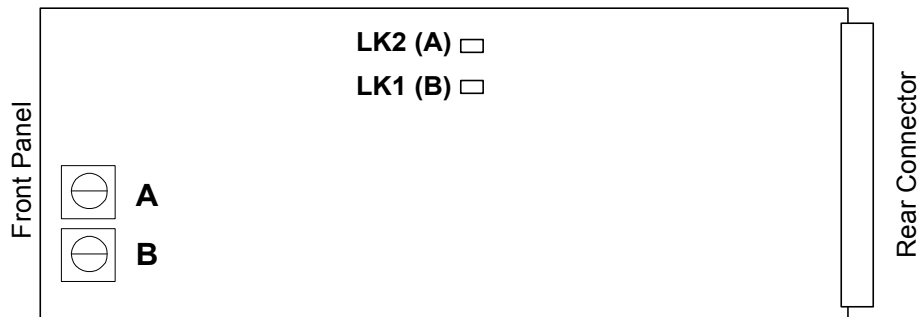
Switch setting	MOL (dBu)
0	+12
1	+13
2	+14
3	+15
4	+16
5	+17
6	+18
7	+19
8	+20
9	+21
A	+22
B	+23
C	+24
D..F	reserved

## 2.3 AES Input Impedance Options

LK2 and LK1 when closed respectively set the input impedance of AES A and AES B inputs to 75/110Ω. When open, the AES input impedance is Hi-Z and the AES inputs of V1632A modules may be daisy chained, with only one module (the end one) in the chain set to 75/110Ω to properly terminate the feed.

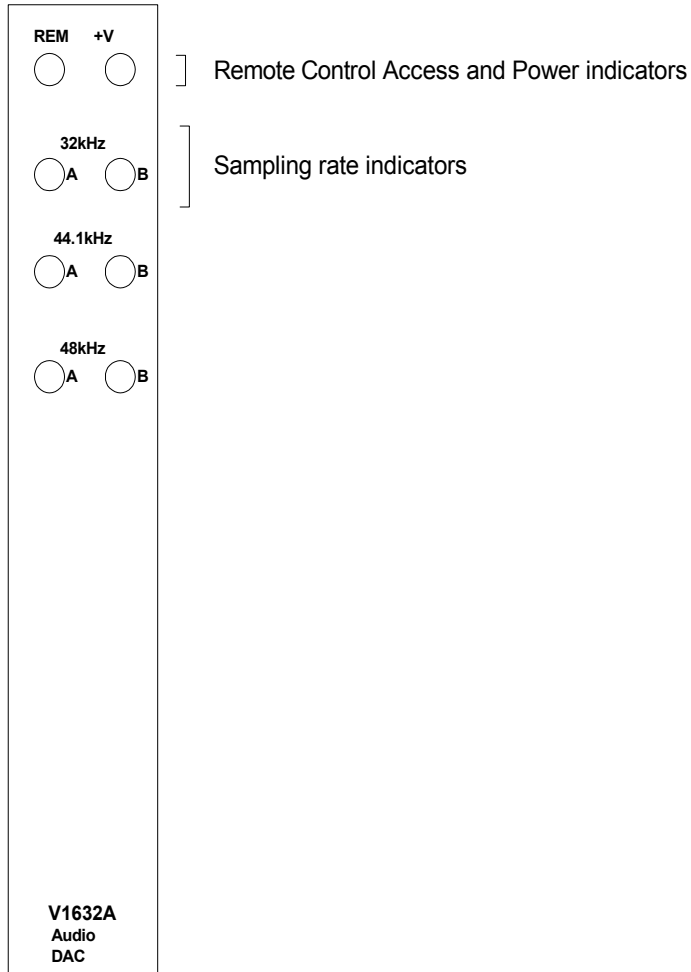
Figure 2.1

Location of switches and jumpers



## 3. OPERATION

### 3.1 Front Panel Controls and Indicators



#### 3.1.1 Remote Control Access and Power Indicators

The green V+ LED is lit when the unit's on-board power supply is delivering voltage. The yellow REM LED is lit whenever the unit is accessed by the Rack Controller for the DART remote system.

#### 3.1.2 Sampling Rate Indicators

Because the sampling rates of input AES A and B to the V1632A DAC may be different, the sampling rate of each AES input is indicated separately. When no input is present on an AES input, or the input is errored, the sampling rate LEDs will flash.



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### **3.2 Adjustment of Operating Parameters**

The V1632A requires no user adjustment and will automatically detect and lock to the sampling rate of the incoming AES audio. AES A and AES B can have different sampling rates.

## **4. DART INTERFACE**

### **4.1 General**

The V1632A is a Class 4 DART module which has a serial EEPROM for reading and writing card details through the DARTbus in the same manner as other V1600 range cards. In addition the unit has several read and write registers, details of which may be found in document ***scsm1632.doc***.