VISTEK V6301 AUDIO WORDCLOCK DISTRIBUTION AMPLIFIER USER GUIDE

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Contents

VISTEK V6301 audio wordclock distribution amplifier

1. DESCRIPTION

The V6301 is a broadcast quality distribution amplifier which form 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 either BNC or screw terminal connections, is required for all signal interconnections.

The V6301 wordclock DA accepts two TTL level wordclock signals at 8-96kHz and distributes regenerated TTL level wordclock to 4 outputs per channel. Modes whereby either one of the two wordclock inputs are distributed to 8 AES outputs is also available as a panel control option.

LEDs are provided to indicate signal presence on each input. No sampling rate indication is provided. The V6301 wordclock DA may be used with either the balanced rear module or the unbalanced BNC module.

Two families of passive rear panel module are available.

- TTL inputs and outputs with screw terminals. This rear panel provides for a 2:4 or 1:8 configuration.
- TTL inputs and outputs with BNC connectors. This rear panel provides for a (1:4 + 1:3) or 1:7 configuration, since only 9 BNC connectors can be accomodated on the rear panel.

The V6301 allows input impedance to be set to either 75 Ω or Hi-Z to facilitate daisy-chaining V6301 inputs within a V1600 rack. Source cable runs up to 100 metres using quality coaxial cable may typically be accomodated, but this is not guaranteed. Propagation delay of the V6301 module is typically 50ns.

The V6301 is compatible with the Vistek DART remote system, allowing card ID, status and mode to be read, and card mode to be written by a DART compatible rack controller. The module can accomodate a piggyback expander card which expans both output groups from 4 to 8, providing for a maximum of 16 outputs. Consult Vistek sales for further details.

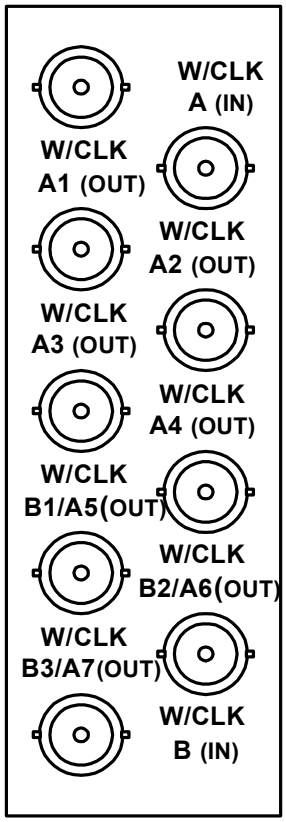
2. INSTALLATION

2.1 Rear Panel Connections

The 3U BNC and 3U Screw terminal rear panels are shown below.

Note: All inputs and outputs must be connected with coaxial cable. The inputs/outputs are connected with 'hot' to the '+' terminal (centre on BNC's) and the ground to the 'S' terminal (outer GND on BNC's).

Grounds/screens are connected to chassis on all outputs and inputs. 1U panels are similarly marked and details for the standard rear panel options are given in Table 2.1.1.



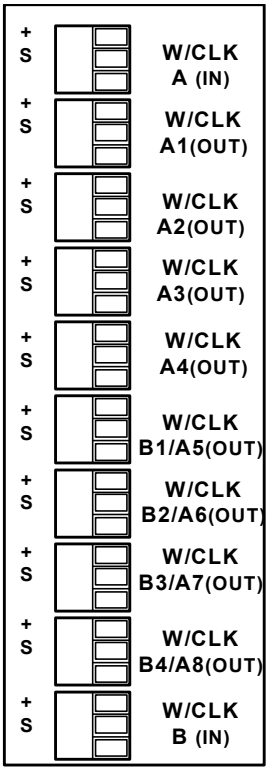


Table 2.1.1

Description of V6301 rear panel connections for standard rear panels

SIGNAL	SOURCE	COMMENTS
POWER	Rack PWR Header	+15V at 100mA (1.5W max)
DART bus	Rack DART header	Vistek DART Rack controller
W/CLK A(IN)	W/CLK ext. source	Ch. A TTL wordclock input: 75 Ω/Hi-Z single ended on BNC rear panel 75 Ω /Hi-Z single ended on screw terminal rear panel
W/CLK A1 (OUT) W/CLK A2 (OUT) W/CLK A3 (OUT) W/CLK A4 (OUT)	V6301 DA	Ch. A TTL wordclock outputs (all modes) 75 Ω /Hi-Z single ended on BNC rear panel 75 Ω /Hi-Z single ended on screw terminal rear panel
W/CLK B(IN)	W/CLK ext. source	Ch. TTL wordclock input sourcing cable length up to 50m 75 Ω single ended on BNC rear panel 75 Ω /Hi-Z single ended on BNC rear panel 75 Ω /Hi-Z single ended on screw terminal rear panel
W/CLK B1/A5 (OUT) W/CLK B2/A6 (OUT) W/CLK B3/A7 (OUT) W/CLK B4/A8 (OUT)	V6301	1:8 mode: Ch A wordclock o/p. 2:4 mode: Ch B wordclock o/p 75 Ω /Hi-Z single ended on BNC rear panel 75 Ω /Hi-Z single ended on screw terminal rear panel

2.2 Input Impedance Selection

The input impedance of the A Channel and B Channel wordclock receivers may be set to either 75 ohms or high impedance (≥ 10k Ω) by means of jumpers LK3 and LK5. The high impedance function may be used when it desired to daisy-chain the inputs of a number of V6301 DA's in a rack, without cascading them. In this case one of the V6301s is set for 75 ohms and the others are set to high input impedance. Two cautions are advised:

- The V6301 with 75 impedance should be the V6301 physically farthest from the feeding source.
- The daisy chaining is intended to be used within a rack or cabinet. Long cable runs into high impedance are NOT recommended. When daisy chaining V6301s with Hi-Z inputs, source cable length should not be more than a couple of meters.

Impedance option	Jumpers
Channel A 75 Ω	LK3 CLOSED
Channel A Hi-Z (>10k Ω)	LK3 OPEN
Channel B 75 Ω	LK5 CLOSED
Channel B Hi-Z (>10k Ω)	LK5 OPEN

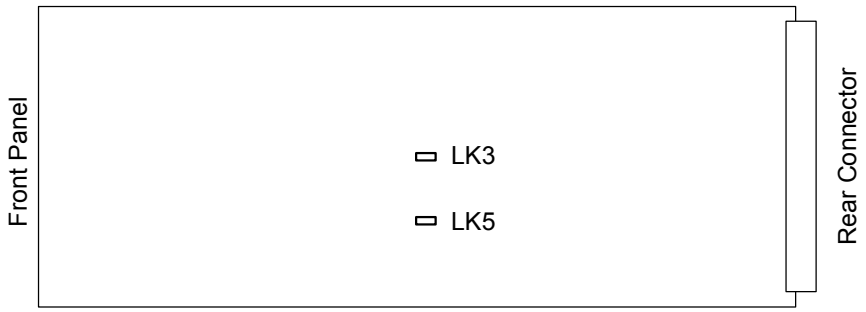
2.3 DA Mode

The V6301 DA has 4 modes op operation, controlled by DART or front panel switches. When the **REM/LOCAL** switch is set to **LOCAL**, control is by panel switches. Four possible modes, namely two 2:4 modes and two 1:8 modes as follows:

- **Aout switch** sources the 4 Channel A outputs from either the Channel A input or the Channel B input.
- **Bout switch** sources the 4 Channel B outputs from either the Channel A input or the Channel B input.

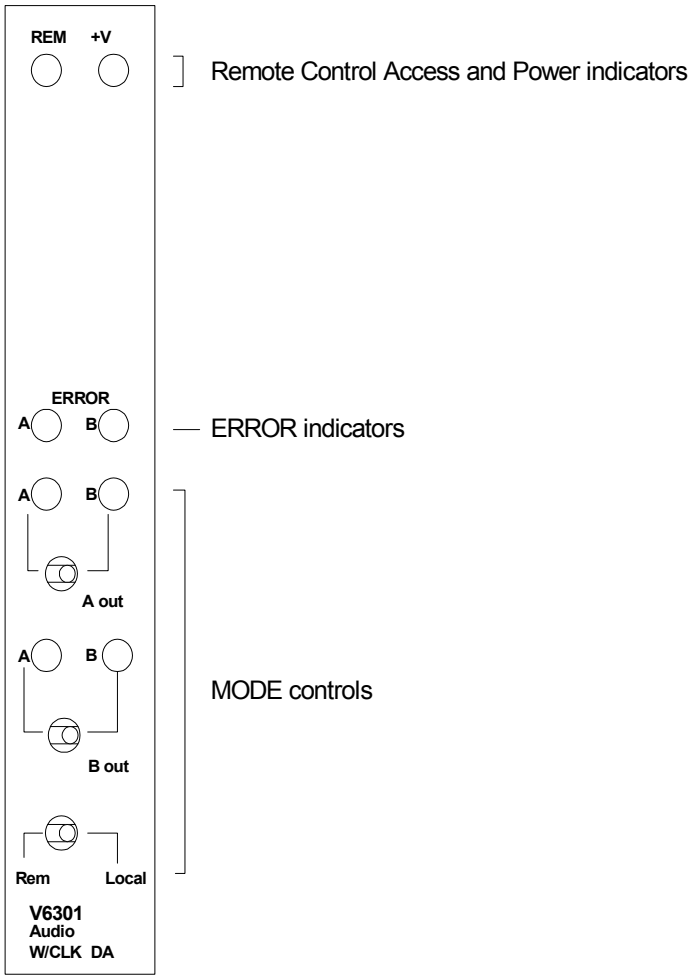
The source channel for each of the Aout and Bout switches is indicated by an **A** or **B** LED above the switch. The LEDs indicate the source channel selection in force, set either by DART (**Rem/Local** = **Rem**) or by the **Aout** and **Bout** switches (**Rem/Local** = **Local**). If the **Rem/Local** switch is set to **Rem**, the settings of the **Aout** and **Bout** switches are ignored.

The figure below shows the V6301 and the location of the jumpers referred to in Section 2.1.



3. OPERATION

3.1 Front Panel



3.2 LED Indications

The V6301 has front panel indicators as shown above.

A red **ERROR** LED for each channel indicates no signal on the W/CLK input.

The **REM** LED flashes to indicate a DARTbus access is in progress.

The green **V+** LED is lit whenever power is applied and the V6301's internal power supply is operating correctly.

The LEDs **A** and **B** above the **Aout** and **Bout** switches indicate the source channel for each of the output blocks Aout and Bout, selected by either the **Aout** and **Bout** switches, or by DART.

3.3 Mode Controls

The V6301 has two input channels Ain and Bin and two groups of four output channels Aout and Bout. The mode controls **Aout** and **Bout** allow each of the two groups of four output channels to receive signal from either the Ain or Bin inputs. The Aout and Bout mode controls are only effective if the **Rem/Local** switch is set to **Local**. If the **Rem/Local** switch is set to **Rem**, the Aout and Bout groups have their sourcing controlled by DART. The switches may be changed at any time and the table below shows the possible combinations:

Aout switch	Bout switch	Mode
A	A	1:8 mode: Aout = Ain, Bout = Ain
A	B	2:4 mode: Aout = Ain, Bout = Bin
B	A	2:4 mode: Aout = Bin, Bout = Ain
B	B	1:8 mode: Aout = Bin, Bout = Bin

3.4 DART Interface

The V6301 is a Class 4 DART module with a serial EEPROM for reading and writing card details through the DARTbus. In addition the unit presents two bytes of status information to the DART system and the DART system can write one byte of control data to the V6301. Full details of the bit allocations may be found in document number ***scsm6301.doc.***