DADA-VF

Digital audio distribution amplifier

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Contents

1 Introduction

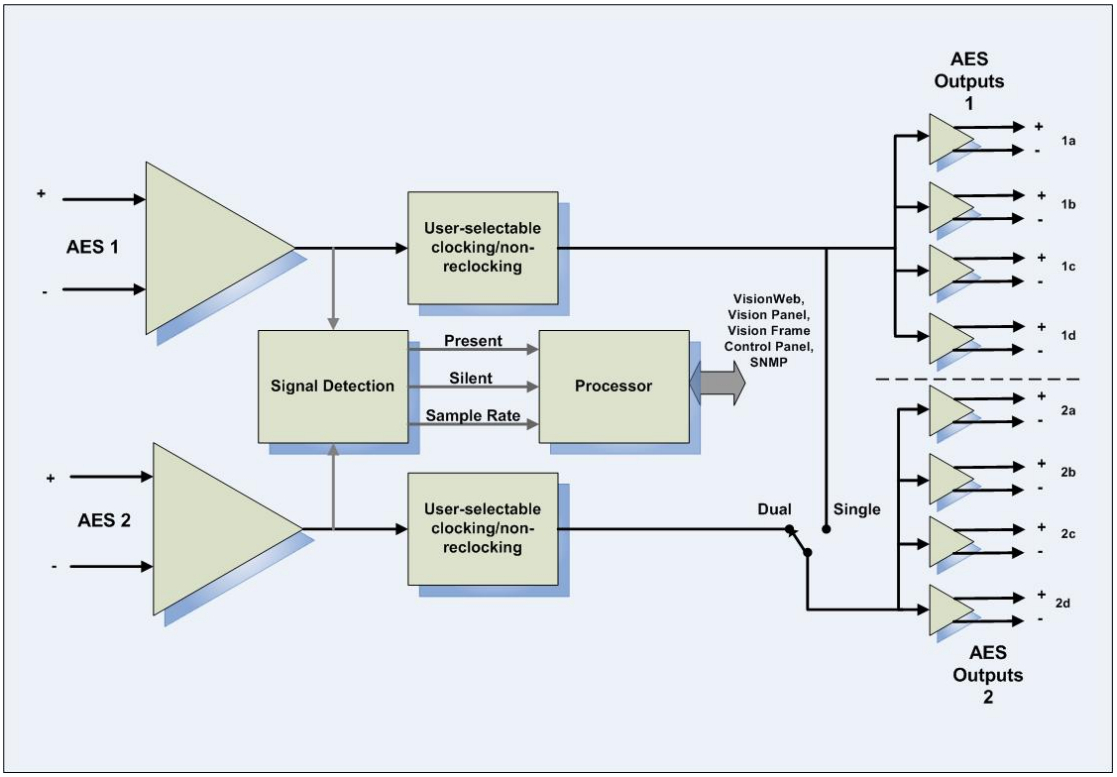
The DADA-VF is an AES audio distribution amplifier that can be configured as dual channel, one input to four outputs, or as single channel, one input to eight outputs.

DADA-VF supports a range of input sampling frequencies from 32kHz to 192kHz. Audio input reclocking before distribution is user-selectable.

The DADA-VF is a space-saving 96mm x 325mm module which fits in the standard Vision frames from Crystal Vision.

Inputs and outputs are accessed by using the VR20, VR21 or VR22 rear modules.

Status monitoring and control is by the Vision frame active front panel, remote VisionPanel control panel, SNMP or VisionWeb PC software.



DADA-VF block diagram

The rear connector details may be found in the section *Rear modules and signal I/O*.

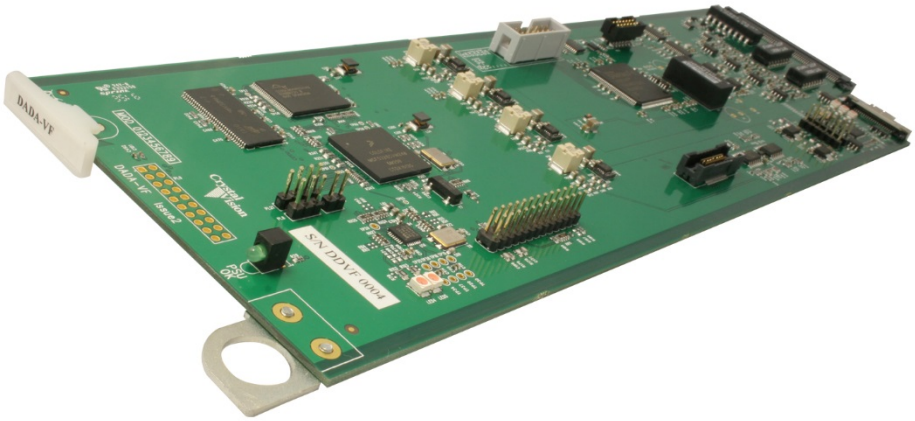
The main features are as follows:

- Single or dual channel operation
- User-selectable input reclocking

- 75 ohm unbalanced or 110 ohm balanced operation depending on rear module fitted
- Sampling rates 32, 44.1, 48, 96 and 192kHz supported
- Support for word clock distribution
- Up to 20 DADA-VF cards in a Vision 3 3U frame
- Less than 100us delay when reclocking
- Remote monitoring and control via VisionPanel, VisionWeb control system, SNMP and the frame active panel

2 Hardware installation

2.1 Board configuration



DADA-VF card

Link configuration

The DADA-VF has no user-selectable links. Any links or controls should remain in their factory set positions.

Inserting cards

Cards can be plugged in and out of powered Vision frames without damage.

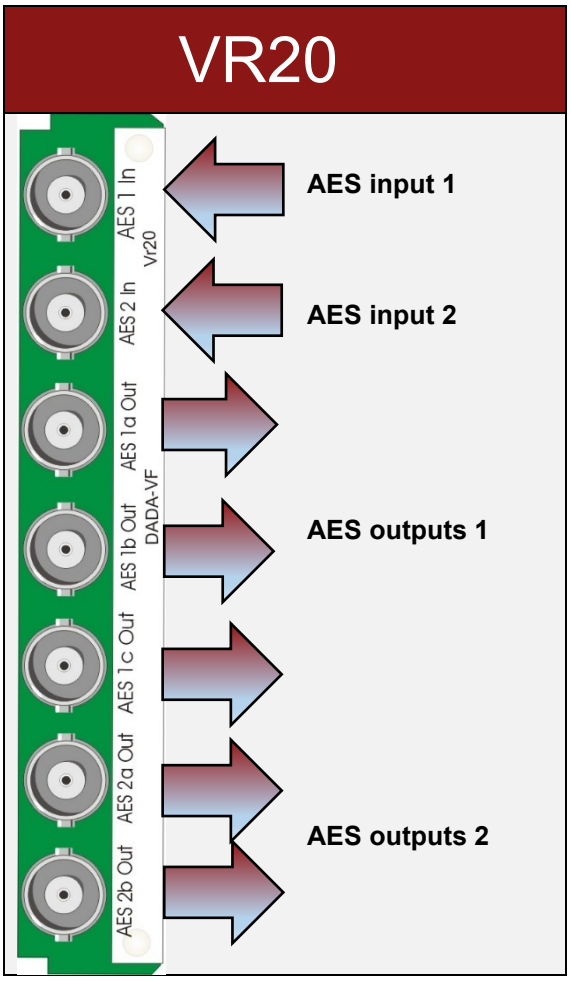
See Vision frame User manual for the correct procedure for installing cards and rear modules.

3 Rear modules and signal I/O

The DADA-VF AES audio distribution amplifier fits into all Vision rack frames from Crystal Vision and can be plugged in and removed while the frame is powered without damage.

Vision frames all have a hinged front panel that gives access to the PSUs and all cards. The universal frame wiring system allows any of the interface range of cards to be fitted in any position with the use of removable rear modules.

3.1 Rear module connections with VR20



The VR20 single-slot rear module allows maximum packing density but with fewer outputs.

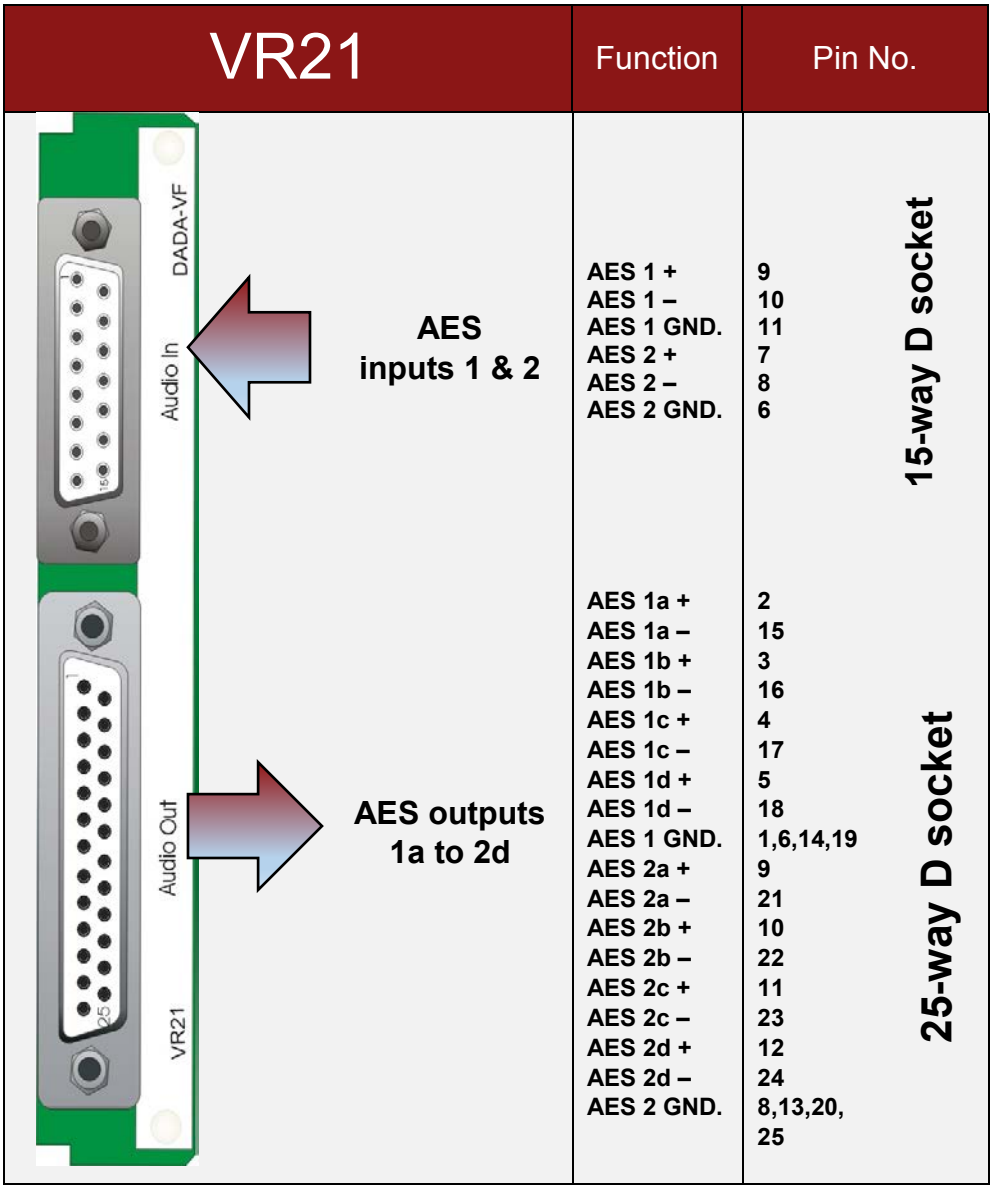
BNC connectors provide two unbalanced 75 ohm AES inputs and five outputs which can be configured as either - Input 1 to three outputs and Input 2 to two outputs, or Input 1 to all five outputs.

Up to 20 VR20 rear modules can fit into a Vision 3 frame.

3.2 Rear module connections with VR21

The VR21 single-slot rear module allows maximum packing density and the maximum number of outputs. 'D-Type' sockets provide two balanced 110 ohm AES inputs and eight outputs which can be configured as either - Input 1 to four outputs and Input 2 to four outputs, or Input 1 to all eight outputs.

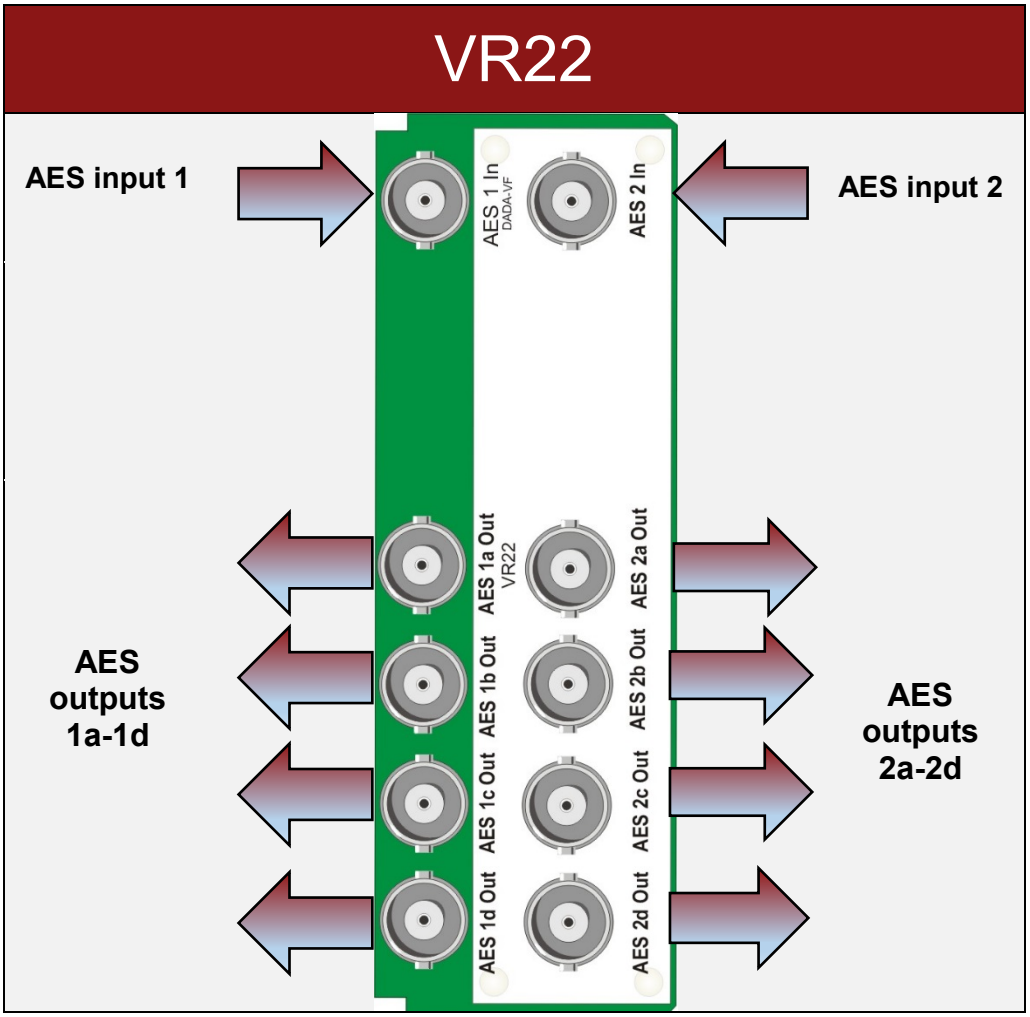
Up to 20 VR21 rear modules can fit into a Vision 3 frame.



3.3 Rear module connections with VR22

The VR22 double-slot rear module has the maximum number of outputs. BNC connectors provide two unbalanced 75 ohm AES inputs which can be configured as dual channel, one input to four outputs or as a single channel, one input to eight outputs.

Up to ten VR22 rear modules can fit into a Vision 3 frame.



4 Status monitoring

DADA-VF status can be accessed most easily by VisionWeb remote control PC software but also by VisionPanel, the Vision frame's front panel and SNMP. The following screen grabs are from the VisionWeb GUI and are used to identify the various available status indications. The menu tree for VisionWeb, front panel and VisionPanel operation is identical although the appearance and labelling of some controls may vary according to the available space. See the Vision frame and VisionPanel's User Manuals for more details.

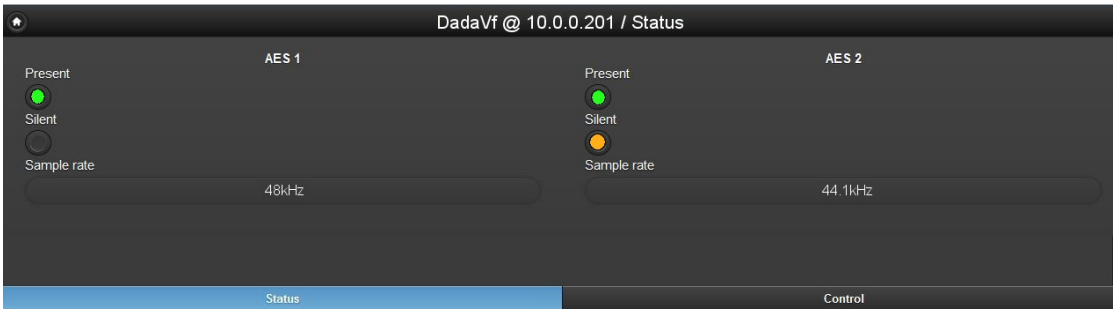
4.1 Controlling cards via VisionWeb

Crystal Vision cards use an XML file to create a control database that is used by the Vision frame front panel controller, VisionPanel and VisionWeb software. VisionWeb software offers a full range of controls with slider controls etc.

Accessing the Vision frame homepage with a PC browser via the Ethernet connector of a frame will display a list of the cards fitted. (See Vision frame User Manual for more details.)

Typical Vision 3 frame homepage

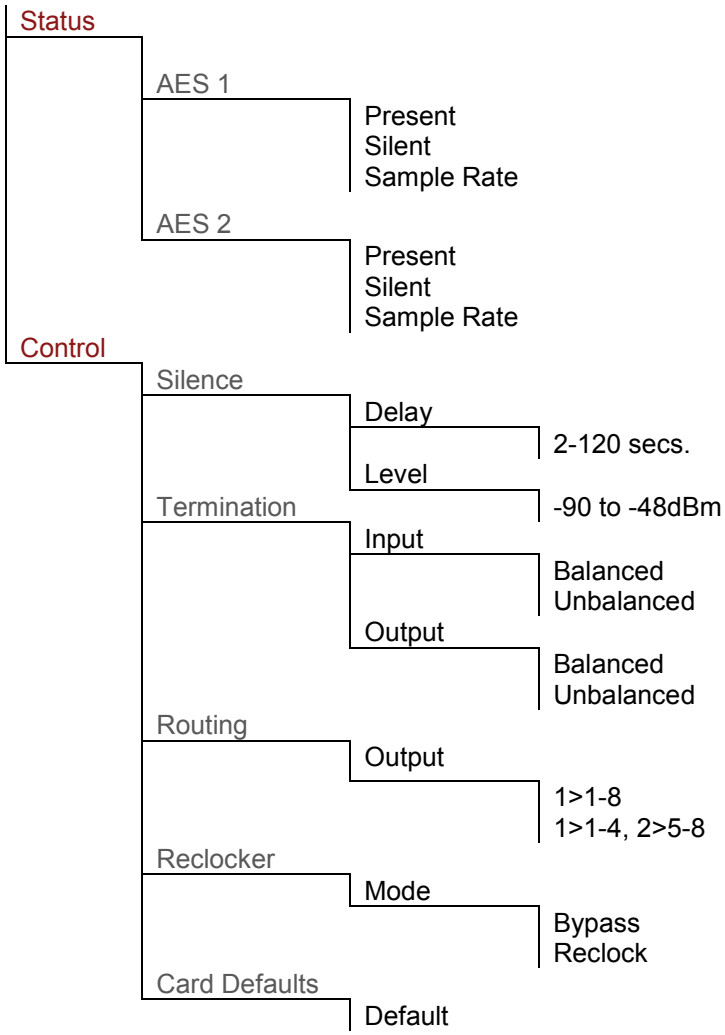
The example above shows a DADA-VF card fitted in slot 1 and other Vision cards in slots 2, 3, 5 and 7. Clicking on the DADA-VF card will bring up the card's Status page, for example:



DADA-VF Status page

4.2 Menu Structure

Operators of a Vision frame active front panel or VisionPanel should use the following tree to access the DADA-VF status:



Users of VisionWeb need only select the tabs shown above in red to access the page containing the set of controls. Menu items shown in grey are only labels in VisionWeb.

4.3 Control Descriptions

The description of controls used in this manual is based on VisionWeb GUI screen grabs. VisionWeb monitoring and control pages are accessed by tabs at the bottom of the page which, when selected, offer controls such as LEDs, check boxes, buttons, sliders and labels.

The description of the monitoring and control pages is in the order shown in the menu tree i.e.

STATUS, CONTROL:

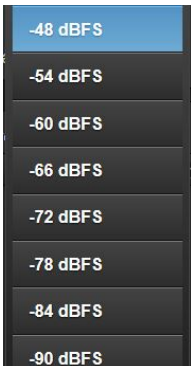
Status

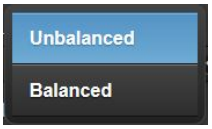
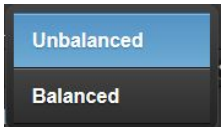
Display presence and status of audio input signals.

Present	**On if an audio input is detected.**
Silent	**On if input audio is below the threshold set by the 'Silence Level' control and for the time period set by the 'Silence Delay' control.**
Sample Rate	**Displays the input audio sampling rate. The following sample rates are permissible: 32, 44.1, 48, 96 or 192kHz.**

Control

Set the silence threshold and delay time, input and output termination, output routing and reclocking options.

Delay	**Set the period between 2 and 120 seconds that an input signal must be consistently below the threshold set by the 'Level dBFs' control before the 'Silent' alarm status is set.**	
Level dBFs		**Set the threshold that the input audio must be below to be considered 'silent'.**

Input Termination		**Set the input termination to match the rear module fitted. For example, users of the VR20/22 should always set this to 'unbalanced' and VR21 to 'balanced'.**
Output Termination		**Set the output termination to match the rear module fitted. For example, users of the VR20/22 should always set this to 'unbalanced' and VR21 to 'balanced'.**
Output Routing		**Set the output routing to single or dual channel routing. Setting '1>1-8' routes input 1 to all possible outputs. Setting the lower option routes Input 1 to half of the outputs and Input 2 to the other half. *Note that some rear modules have a limited or odd number of outputs and the split between inputs may not be exactly half. See* Rear modules and signal I/O.**
Reclocker		**Setting 'Bypass' option will force the DADA-VF to bypass the reclocking circuitry. Delay time through the board is reduced without reclocking. *Note that it is not possible to reclock when distributing Word Clock.***
Default	**Set the DADA-VF to its default settings: Silence delay 2s, Silence level -48dBFS, Input and output termination balanced, Routing 1 > 1-4, 2 > 5-8 and Reclocker set to Reclock.**	

5 Troubleshooting

5.1 Card edge monitoring

The green LED on the front edge of the card provides power rail monitoring. The red LED, if fitted, currently has no function.

DADA-VF front edge

5.2 Basic fault finding guide

- **Power OK LED not illuminated:** Check that the frame PSU is functioning – refer to the Vision frame manual for detailed information
- **The card no longer responds to front panel control:** Check that the card is seated correctly and that the Power OK LED is lit. Check if the control panel can control another card in the same rack. If necessary reset the card
- **Input 2 does not work:** Check that the output routing is set to '1>1-4, 2>5-8'.
- **Audio output missing from some or all outputs:** Check that the output routing is set correctly. If set as '1>1-8' then input 2 is disabled. If set as '1>1-4, 2>5-8' then input 1 will only be routed to the first four outputs. Check the number of outputs available for rear module used. Check that an input signal is present and that the cabling is intact
- **Resetting the card:** If required, the card may be reset by removing the card from the rack and then re-inserting it. It is safe to re-insert the card whilst the rack is powered. Any previous configuration will be retained

6 Specification

General

Dimensions	96mm x 325mm module with connector.
Weight	200g.
Power consumption	DADA-VF 4 Watts.

Inputs

Number and type:	Two AES/EBU audio inputs: With VR20:75 ohm unbalanced. With VR21: 110 ohm balanced. With VR22: 75 ohm unbalanced.
Sampling rates:	32, 44.1, 48, 96 and 192kHz.
Reclocking:	Each input, user-selectable enable.
Connector:	With VR20: BNC. With VR21: 15-way ‘D-Type’ socket. With VR22: BNC.

Outputs

Number and type:	Up to eight AES/EBU audio. With VR20: Five unbalanced outputs. With VR21: Eight balanced 110 ohm outputs. With VR22: Eight unbalanced outputs.
Connector:	With VR20: BNC. With VR21: 25-way ‘D-Type’ socket. With VR22: BNC.

Rear Module I/O

VR20	Two 75 ohm unbalanced inputs and five outputs via BNC. Configured as either: input 1 to three outputs and input 2 to two outputs, or input 1 to five outputs.
VR21	Two 110 ohm balanced inputs and eight outputs via ‘D-Type’ connectors. Configured as either: input 1 to four outputs and input 2 to four outputs, or Input 1 to eight outputs.
VR22	Two 75 ohm unbalanced inputs and eight outputs via BNC. Configured as either: input 1 to four outputs and input 2 to four outputs, or input 1 to eight outputs.

Delays

Delay through board	Less than 100uS with reclocking enabled.

Monitoring and Control

Remote:	Monitor and control from Vision frame front panel, VisionPanel remote panel and VisionWeb Control which is available via the web server on the frame and allows operation using a standard web browser on a computer, tablet or phone. Complimentary SNMP control and monitoring via frame CPU and Ethernet connection.
Silence warning:	Silence threshold -90dBFs to -48dBFs. Delay time 2-120 secs.