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V1615/ V1615N

SDI DISTRIBUTION AMPLIFIERS

INSTALLATION and OPERATION

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V1615/V1615N SDI DISTRIBUTION AMPLIFIERS

INSTALLATION AND OPERATION

1. DESCRIPTION

The V1615 and V1615N are serial digital distribution amplifiers, normally with eight active outputs. They can process both SDI and ASI signals, but only four of the outputs have the correct polarity for ASI. Thus all eight outputs can be used for SDI, but only four for ASI. There is a similar pair of companion modules, the V1614 and V1614N, which provide 8 outputs all of which are ASI compatible.

The V1615 re-clocks the input SDI signal while the V1615N is a non-reclocker. In some installations the use of a non-reclocking amplifier is preferred since it does not lock jitter errors into a signal.

There is an existing V1615 in the V1600 range which provides similar facilities, but it is replaced by this new unit. This new unit is simpler, more reliable, and has better remote indication facilities over DART.

These units are part of the V1600 range of interface modules and are built on a 3U high Eurocard so they can be fitted into either a V1601 1U Chassis or V1606 3U Chassis. (The earlier V1603 3U chassis can also be used, so it can be retro-fitted into earlier installations.) A suitable passive rear module, either 1U or 3U as required, should be used. The modules receive all their power and signals from the rack and rear modules.

The V1615 reclocking DA is normally set to pass only the most widely used 270Mbit/s. This avoids the problem of the re-clocker losing lock and hunting for other bit rates with highly compressed ASI signals. For SDI data rates other than 270Mbit/s a link can be set so the unit will automatically lock to any of them – 143, 177, 360 or 540 Mbit/s. In exceptional cases the unit can be fixed to operate at one of these other data rates.
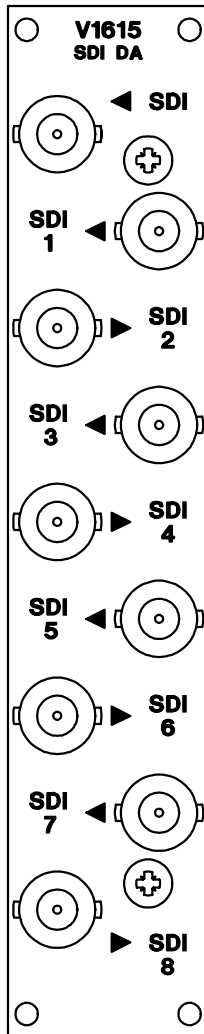
The V1615N, non reclocking DA, will pass any of the SDI digital bit rates.

The DART remote monitoring and control system will indicate unit type, Reclocking or non re-clocking, signal present and the operating data rate.
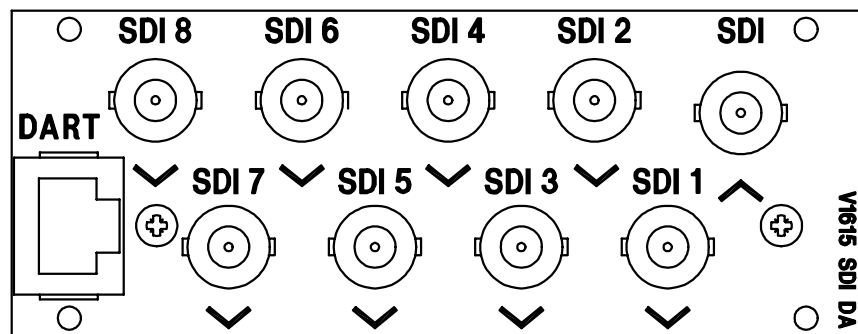
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2. INSTALLATION

2.1 REAR PANEL CONNECTIONS

The two available rear panels are shown below:

3U - V16VR3B

1U - V16VR1B

SIGNAL	SOURCE	COMMENTS
SDI	SDI Video I/P	Sourcing cable length up to 250m
SDI 1,4,5,8	SDI Outputs 1,4,5,8	SDI Outputs
SDI 2,3,6,7	SDI Outputs 2,3,6,7	SDI Outputs – also suitable for ASI
DART	DARTNET	For Remote Control System

Note: The DART connector on the V16VR1B rear panel is only used if fitted into a particular slot on the V1601 Chassis. See the DART Documentation for details.

2.2 FRONT PANELS

These are the two front panels. Only the re-clocking DA, the V1615, has an indication that the input signal is present.
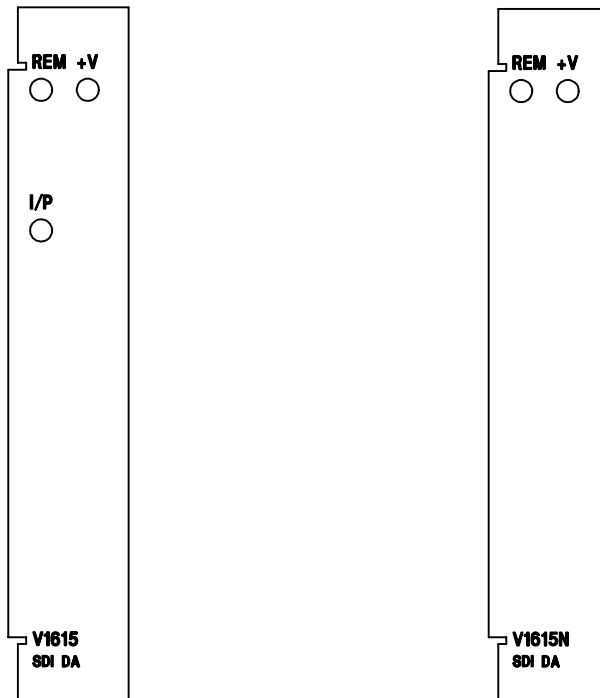
| INDICATOR	DESCRIPTION
+V	Onboard regulated power is present
REM	Short blips to indicate access from the remote control system. A Rack Controller must be fitted to the Chassis.
I/P	Indicates SDI input is present and locked.

2.3 INSERTION DELAY

UNIT	DELAY
V1615	<20ns
V1615N	<20ns

2.4 HARDWARE

The figure below shows diagrammatically the main board of the V1615 along with some components of interest.

The only setting available to the user is LK 1 which changes the data rate selection from FIXED to AUTO. As delivered from the factory the unit will be set to FIXED at 270Mbit/s. This is as recommended. For other data rates move the link to AUTO. In exceptional cases the unit can be FIXED to other data rates by changing resistors in the frequency setting matrix, but this must be done by VISTEK.
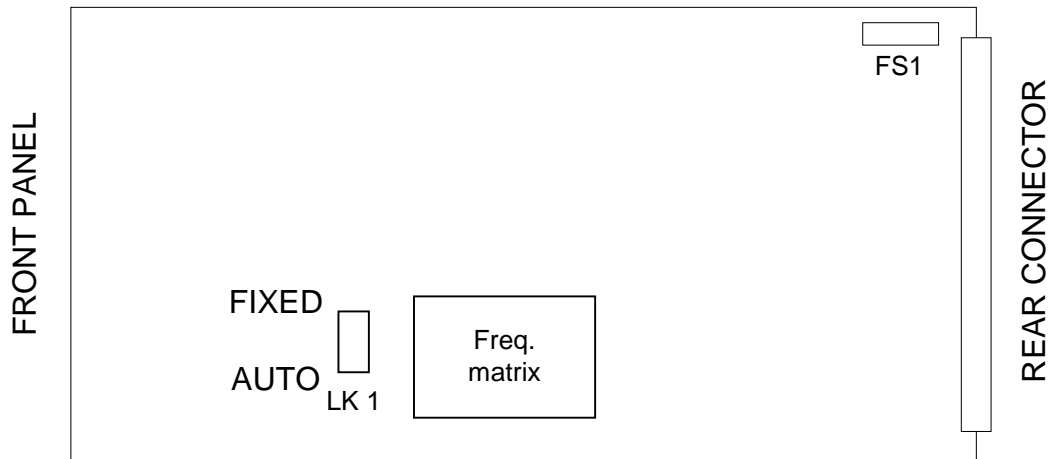
The V1615N is built with an identical PCB but there are differences in which components are fitted. In particular the Link and frequency setting matrix is not fitted. Therefore there are no user settings on the V1615N.

2.5 ASI SIGNALS

Although the V1615 and V1615N are SDI DAs, they can be used for ASI signals on some outputs. The main difference is that SDI signals are polarity independent while ASI signals are not. (There are other technical differences, but this is the critical one which directly affects the signal integrity.)

Four of the outputs have the correct polarity while the other four are inverted. This means that only the following four outputs can safely be used for ASI signals:

> SDI 2
> SDI 3
> SDI 6
> SDI 7

For those applications that require all outputs to be ASI compatible the V1614 and V1614N DAs are available.

2.6 DART CONTROLS

These units have no control, but do have status indication as follows:

PARAMETER	V1615	V1615N
Input Signal present and locked	✔	
Re-clocker fitted (V1615N)	✔	✔
Fixed/Auto Data Rate Mode	✔	
Data Rate (as set if fixed, or as detected if AUTO)	✔	