



V1614 /15 /16

ASI DISTRIBUTION AMPLIFIER SDI DISTRIBUTION AMPLIFIER 16 O/P SDI DISTRIBUTION AMPLIFIER

INSTALLATION and OPERATION

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SDV DISTRIBUTION AMPLIFIER

INSTALLATION AND OPERATION

1. DESCRIPTION

The V1615 and V1616 Serial Digital Video Distribution Amplifiers provide eight or sixteen equalised and reclocked outputs of the provided input. It will automatically select the data rate from either 143, 177, 270 or 360Mbits/s. An indication is provided on the front panel of the operating data rate.

The V1614 ASI Distribution Amplifier provides eight non-inverted equalised and reclocked outputs of the provided input. It will automatically select the data rate like the V1615 and can be used with SDI signals.

The V1614 and V1615 occupy a single module slot in a frame and can be fitted into either a 1U or 3U frame. The V1616 occupies two adjacent slots and can only be fitted into a 3U frame.

2. INSTALLATION

The V1614 and V1615 consist of two modules. A main board and an interconnection rear module. The V1616 has an additional interconnection rear module and thus occupies two module slots.

Disconnect the power from the V1600 rack.

To fit the module into a V1600 rack first identify a spare slot or slots and fit the rear interconnection panel(s). Then slot the main module into the rack to plug into its rear module(s).

Connect the input signal to the input connector on the rear panel and the outputs to any of the remaining connectors

Apply power to the unit.

3. CIRCUIT DESCRIPTION

The Distribution Amplifier is built on a multi-purpose V1600 Digital Video I/O Module, which has been partially populated. The V1614 and V1616 also use a sub-module to provide the additional output drivers required.

POWER DISTRIBUTION

The main module operates from a supply of +15V from the rack, which it regulates to +5V in a dc-dc converter U10.

INPUT EQUALIZING STAGE

The Serial Digital Video enters the module as a single ended signal through a passive return loss network into the cable equaliser U1. The output of the cable equaliser is a balanced signal terminated and passed through series resistors to the reclocking stage at Pseudo-ECL levels (PECL).

If no signal carrier is detected the outputs will be muted, but the equaliser will operate with input signals of less than 50Mbits/s upto 400Mbits/s.

RELOCKING STAGE

The reclocking stage is an auto standard reclocker, which will operate at either 143Mbits/s, 177Mbits/s, 270Mbits/s or 360Mbits/s. The inputs and outputs are balanced PECL signals.

When a signal is applied to the reclocker U2 the four Voltage Controlled Oscillator (VCO) rate configuration pins will be scanned until the correct resistor network is found, which sets the centre frequency of the oscillator. This selection will be maintained until lock is lost for more than 10ms. The configuration pin selected is also indicated by the VCO data rate bus pins.

OUTPUT STAGE

V1615

The balanced output from the reclocker is fed to two cable drivers via several zero ohm links. The signal tracks are then terminated at the end of the line. The cable drivers each provide four unbalanced outputs, which drive off the module to the rear connectors via passive networks.

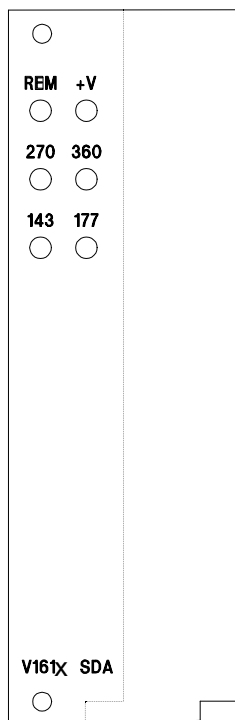
V1614 / V1616

The balanced output from the reclocker is fed to the sub-module, where it is distributed through an ECL buffer to four cable drivers. The eight non-inverted outputs are then returned to the main module to drive out via the edge connector to the rear module.

The eight inverted outputs feed the edge connector on the sub-module. (This is not fitted on the V1614.) This provides the additional output signals to the second rear module for the 16 output DA.

The V1614 has the sub-module fitted on short pillars to keep it within the single slot profile, whilst the V1616 has it mounted on long pillars to get the correct spacing to connect across two module slots.

4. FRONT PANEL INDICATION



The REM lamp indicates that the module/control system communications link is active. (Operational on V1615E version only)

The +V lamp indicated that power is applied to the module.

The 270 lamp indicates that the 270Mbit/s ITU-R Rec.601 serial component system is selected.

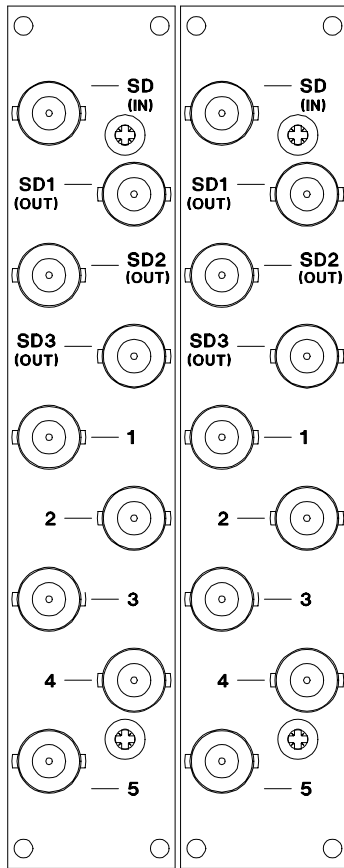
The 360 lamp indicates that the 360Mbit/s ITU-R Rec.601 serial component system is selected.

The 143 lamp indicates that the 143Mbit/s ITU-R Rec.601 serial composite system is selected.

The 177 lamp indicates that the 177Mbit/s ITU-R Rec.601 serial composite system is selected.

5. REAR PANEL CONNECTIONS

(V1616 only) V1614 /15 /16



The SDI (IN) BNC connector is for the serial video input (Right hand module only) (Left hand Module SDI (IN) not connected.)

The SD1 (OUT) BNC connector is the first / ninth driven output of the Serial data.

The SD2 (OUT) BNC connector is the second / tenth driven output of the Serial data.

The SD3 (OUT) BNC connector is the third / eleventh driven output of the Serial data.

The 1 BNC connector is the fourth / twelfth driven output of the Serial data.

The 2 BNC connector is the fifth / thirteenth driven output of the Serial data.

The 3 BNC connector is the sixth / fourteenth driven output of the Serial data.

The 4 BNC connector is the seventh / fifteenth driven output of the Serial data.

The 5 BNC connector is the eighth / sixteenth driven output of the Serial data.