

CVG-41AV

4x1 Video/Audio Switcher

Several words on Video/Audio Switchers:

A video/audio switcher usually switches between several sources and one or more acceptors. A switcher that allows several inputs to be connected to several outputs simultaneously is called a matrix switcher. Switchers may be of the electronic or mechanic type. Most matrices are of the active electronic type, with many crosspoints.

Vertical Interval Switching, often used in video, assures that the transition from one video source to the other (like switching between two *Genlocked* cameras) is smooth and without interference. The switching and changeover is done during the blanked vertical interval period, where the transition is hidden from the eyes.

Vertical Interval switching is needed when recording or transmitting a video program involving several video sources, as in live broadcast, to assure "clean", undisturbed picture transitions. The switched sources should be genlocked. Matrices and switchers may be RS-232 controlled. RS-232 control is one way of remotely controlling a video or audio device (Switcher, SEG etc.) using a personal computer with a serial port or another device that uses a similar communication protocol. The simplest connection between the RS-232 controller and the controlled device uses two wires (TRANSMIT, RECEIVE) and a common ground wire. Another way for remote controlling a switcher is via a wired "contact-closure" system. In this way, remote switches or relays close a circuit between a common signal (usually ground) and one of the relevant pins.

There are many factors affecting quality when signals are transmitted from a source to an acceptor:

- ❑ Source and acceptor signal handling capability - different brands offer different quality and the final result is determined by the performance of the lowest quality part. Using a low quality source will always result in low quality duplicates.
- ❑ The connection cables should be of the best possible quality. Low quality cables are susceptible to interference, deteriorate signal quality due to poor matching and cause elevated noise levels.
- ❑ Sockets and connectors of the sources and acceptors - so often ignored, should be of best quality, as "Zero Ohm" connection resistance should be assured.

Sockets and connectors should match the required impedance (75 ohms in video). Cheap connectors tend to rust, causing breaks in the signal path.

- ❑ Amplifying circuitry quality is extremely important and is needed for high linearity, low distortion and low noise operation.
- ❑ The distance between source and acceptors plays a major role in the final result. If there are long distances (over 15 meters) between sources and acceptors, special means should be taken in order to avoid cable loss, such as using higher quality cables or if necessary adding line amplifiers.
- ❑ Interference from neighboring appliances may have an adverse effect on signal quality. Balanced audio lines are less prone to interference, but unbalanced audio and video lines should be installed far away from mains carrying cables, electric motors, transmitters etc. even when cables are shielded.

The CVG-41AV

The **CVG-41AV** is a high quality, mechanical 4x1 Video / Audio stereo switcher in a compact desktop enclosure. Audio is always switched together with the corresponding video signal, and unselected video inputs terminate into a 75-ohm resistor. High quality switching components provide excellent isolation between inputs. Due to the mechanical mode of operation, the machine can be used "backwards" – functioning as a 1x4 switcher.

1. RACK MOUNTING

The **CVG-41AV** switcher may be rack-mounted in a standard 19" (1U) EIA rack assembly. The **CVG-41AV** requires a special rack adapter. For installation procedure, follow the instructions in the installation guide enclosed with the adapter.

2. CONNECTING to VIDEO DEVICES

Video sources and output devices (such as monitors or recorders) may be connected to the switcher through the BNC type connectors located on the back of the machine.

3. CONNECTING to AUDIO DEVICES

Audio sources and output devices, such as amplifiers or recorders, may be connected to the switcher through the RCA type connectors located on the back panels of the machine.

4. USING the VIDEO /AUDIO SWITCHER

4.1 Controlling the Switcher

The switcher does not need to be activated, since it does not require any external power.

Operation of the **CVG-41AV** switcher is as follows:

- ⊗ Connect up to four video/stereo-audio sources to the input sockets of the switcher.
- ⊗ Connect a video/ stereo-audio acceptor to the output socket of the switcher.
- ⊗ Press one of the buttons marked “1”, “2” etc. on the front panel to select the required input to be switched to the output. These buttons correspond to the input connections as marked on the back panel.
- ⊗ Operate sources and acceptors.

Technical Specifications:

Inputs	4 video, 1Vpp / 75 ohms on BNCs, 4 stereo audio, +4dBm typical, on RCAs
Outputs	1 video, 1Vpp / 75 ohms on a BNC connector 1 Stereo audio, +4dBm typical, on RCAs
Switching System	Mechanical, "Break-before-make", Audio- Follow-Video mode
Frequency Response	500 MHz -3dB (video) 100 kHz -3dB (audio)
Crosspoints	4 for video, 4x2 for audio, 1 set active at any given time
Signal Levels	Up to 3Vpp Video, +30dBm Audio.
Dimensions (W, D, H)	18.8cm x 10.2cm x 4.4cm, 7.4" x 4" x 1.7"
Weight	0.65kg.(1.44lbs.) Approx.

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INSTRUCTION MANUAL