

# OMX-9047, 9048, 9049, 9050

## 8x1 Video / s-Video / Audio Switchers

### *Several words on Video/Audio Switchers:*

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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 OMX-9047, 9048, 9049, 9050*

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The Ocean Matrix **OMX-9049** is a precision, mechanical, *8x1 Stereo Audio Switcher*, the **OMX-9047** is an *8x1 Video Switcher*, the **OMX-9048** is an *8x1 s-Video Switcher* and the **OMX-9050** is an *8x1 Balanced Audio Switcher* offering fast and easy video/audio source and acceptor selection. The machines are housed in small enclosures, occupying minimal desk space.

Video signal bandwidth of well over 375 MHz (**OMX-9047, OMX-9048**) and superb performance allow the switchers to be used for SDI (Serial Digital) signals as well, making them the most flexible signal switchers for any purpose.

## ***Operation:***

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- ◆ Connect up to 8 stereo audio sources to the input sockets of the **OMX-9049**, or 8 Video sources to the **OMX-9047**, or 8 s-Video sources to the **OMX-9048** or 8 Balanced Audio sources to the **OMX-9050**.
- ◆ Connect the video (s-Video) / stereo (Balanced) audio acceptor to the output socket. Use the best cables available in order not to impair signal quality and bandwidth.
- ◆ Operate sources, acceptors and the switcher.
- ◆ Select the required source to be routed to the output using the appropriate switch on the front panel of the machine.

## ***Technical Specifications:***

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<b>INPUTS:</b>	8 Stereo Audio on RCAs ( <b>OMX-9049</b> ). 8 Video, 1Vpp/75 $\Omega$ nom. on BNCs ( <b>OMX-9047</b> ). 8 s-Video, 1Vpp/75 $\Omega$ nom (Y), 0.3Vpp/75 $\Omega$ nom. (C) on 4P connectors ( <b>OMX-9048</b> ). 8 Balanced Audio, on XLRs ( <b>OMX-9050</b> ).
<b>OUTPUTS:</b>	1 Stereo Audio on RCAs ( <b>OMX-9049</b> ). 1 Video, 1 Vpp/75 $\Omega$ nom. on a BNC ( <b>OMX-9047</b> ). 1 s-Video, 1Vpp/75 $\Omega$ nom (Y), 0.3Vpp/75 $\Omega$ nom. (C) on a 4P connector ( <b>OMX-9048</b> ). 1 Balanced Audio, on XLRs ( <b>OMX-9050</b> ).
<b>SWITCHING SYSTEM:</b>	Mechanical, Break-before-Make.
<b>CROSSPOINTS:</b>	1 of 8.
<b>SIGNAL LEVELS:</b>	Up to 3Vpp video, +30dBm audio.
<b>FREQUENCY RESPONSE:</b>	25 kHz -0.2dB ( <b>OMX-9049</b> ) 400 MHz +/- 2dB ( <b>OMX-9047</b> ). 375 MHz +/- 2dB ( <b>OMX-9048</b> , "Y"). 25 kHz -0.2dB ( <b>OMX-9050</b> ).
<b>SOURCE ISOLATION:</b>	-47dB @ 5 MHz ( <b>OMX-9047</b> ) -50dB (Y), -44dB (C) ( <b>OMX-9048</b> ).
<b>DIMENSIONS:</b>	18.8 cm X 10.2 cm X 4.4 cm (W, D, H) for <b>OMX-9049 / OMX-9047/ OMX-9048</b> . 25.5 cm X 10.2 cm X 4.5 cm (W, D, H) for <b>OMX-9050</b> .

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