



# **Instruction Manual**

**T**hank you for purchasing an Ocean Matrix component. This unit is designed to give you years of trouble free professional operation for your most demanding applications. It is our goal to develop long term partnerships with our customers through our commitment to exceed their expectations.

## **OMX-9003**

**For Repair Information and to view the entire Ocean Matrix product line, please visit our web site.**

**[www.oceanmatrix.com](http://www.oceanmatrix.com)**

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## 1 Introduction

Congratulations on purchasing your OCEAN MATRIX® **OMX-9003 4x1 Vertical Interval Switcher**. This product comes with a power cord, a Null-modem adapter, Windows control software and this instruction manual. Your **OMX-9003** is ideal for the following applications:

- Video production studios
- Live broadcast, for switching between cameras in real -time

## 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this instruction manual

### 3 Overview

The **OMX-9003** *4x1 Vertical Interval Switcher* is a 4x1 vertical interval switcher for composite video and audio stereo signals, routing one of 4 sources to the output.

In addition, the high performance **OMX-9003** *4x1 Vertical Interval Switcher*:

- Is also a distribution amplifier, as well as a *4x1 Vertical Interval Switcher*, as it routes the selected source to 3 parallel video and audio outputs
- With its video bandwidth of 400 MHz, ensures transparent performance even in the most critical production, presentation, or broadcast applications
- Is controllable via the front panel INPUT SELECTOR buttons, or remotely, via the remote contact closure assembly or by RS-485 or RS-232 serial commands transmitted by a touch screen system, PC, or other serial controller
- Produces glitch-free transitions, when sources share a common reference sync<sup>1</sup>

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality and positioning your **OMX-9003** in a location free from moisture and away from excessive sunlight and dust

### 4 Your Vertical Interval Switcher

Figure 1 and Tables 1 and 2 define the **OMX-9003**:

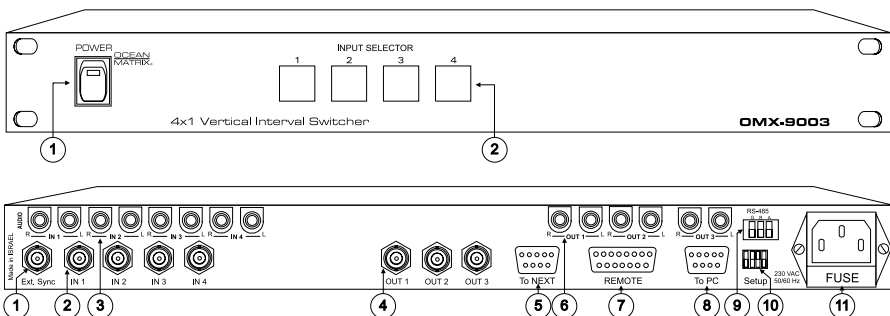


Figure 1: OMX-9003 4x1 Vertical Interval Switcher

<sup>1</sup> As it switches during the vertical interval

Table 1: Front Panel Features and Functions of the OMX-9003

#	Feature	Function
1	POWER Switch	Illuminated switch supplying power to the unit
2	INPUT SELECTOR Buttons	Select the composite video/audio source (from 1 to 4)

Table 2: Rear Panel Features and Functions of the OMX-9003

#	Feature	Function
1	Ext. Sync BNC connector	Connects to an external sync
2	CV IN BNC connector	Connects to the composite video source (from 1 to 4)
3	Audio inputs (R and L) RCA Connectors	Connect to the audio source (from 1 to 4)
4	CV OUT BNC connector	Connects to the composite video acceptor (from 1 to 3)
5	To NEXT DB 9 Connector	For looping to the next switcher
6	Audio outputs (R and L) RCA Connectors	Connect to the audio acceptor (from 1 to 3)
7	REMOTE HD15F connector	For remote contact closure control
8	To PC DB 9 Port	For external RS-232 control via a PC or remote control panel
9	RS-485 Terminal Block Connector	For bi-directional communication with another switcher or external RS-485/RS-422 control via a PC
10	Setup	Dipswitches setup
11	Power Connector with FUSE	AC connector enabling power supply to the unit

## 5 Connecting Your Vertical Interval Switcher

This section describes:

- Connecting a PC
- Setting the dipswitches
- Connecting the REMOTE connector
- Adjusting the OUTPUT level or EQ. level

### 5.1 Connecting a PC

To connect a PC to the **OMX-9003**, using the Null-modem adapter provided with the machine (recommended):

- Connect the *To PC* DB 9 RS-232 rear panel port on the **OMX-9003** to the Null-modem adapter and connect the Null-modem adapter with a 9 wire flat cable to the RS-232 DB9 port on your PC

To connect a PC to the **OMX-9003**, without using a Null-modem adapter:

- Connect the RS-232 DB9 port on your PC to the *To PC* DB 9 RS-232 rear panel port on the **OMX-9003**, as Figure 2 illustrates (depending on whether the PC has a 9-pin or 25-pin connector)

## Connecting Your Vertical Interval Switcher

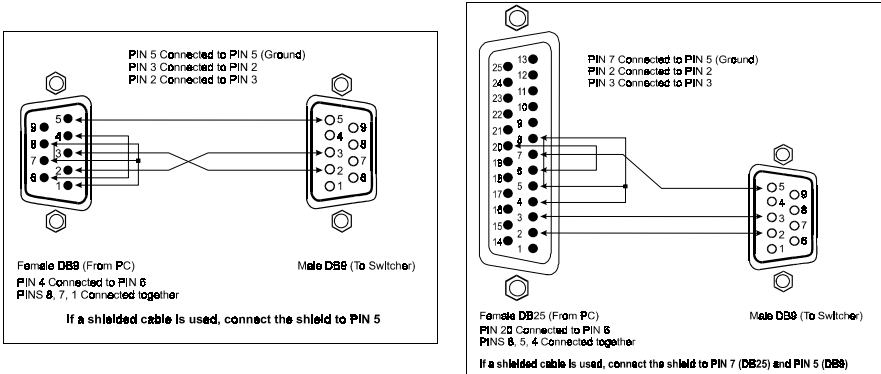


Figure 2: Connecting a PC without using a Null-modem Adapter

## 5.2 Dipswitch Settings

The **OMX-9003** includes a set of 4 dipswitches<sup>1</sup>. The **MACHINE #**<sup>2</sup> defines the position of an **OMX-9003** unit in the sequence, as Table 3 defines.

Table 3: Dipswitch Settings

MACHINE #	DIP 1 (Reply)	DIP 2	DIP 3	DIP 4
1 (Master)	ON	ON	ON	ON
2	ON or OFF	ON	ON	OFF
3	ON or OFF	ON	OFF	ON
4	ON or OFF	ON	OFF	OFF
5	ON or OFF	OFF	ON	ON
6	ON or OFF	OFF	ON	OFF
7	ON or OFF	OFF	OFF	ON
8	ON or OFF	OFF	OFF	OFF

## 5.3 Connecting the REMOTE Connector

Connecting the **REMOTE** DB15F connector to a dry contact switch enables you to route an input to an output by remote control. To do so, touch (momentarily) the PIN corresponding to that input to PIN 14<sup>3</sup>. For example, as Figure 3 illustrates, to connect input # 1 to the outputs, touch PIN 14 to PIN 1. To connect input # 4 the outputs, touch PIN 14 to PIN 4.

1 For operating the OMX-9003 via RS-232 or RS-485/422, or when interconnecting with other switchers

2 When using a single unit, set the unit to MACHINE # 1. For example, when connecting 3 OMX-9003 units, set the MACHINE # on the first OMX-9003 unit to one, on the second OMX-9003 unit to 2 and on the third OMX-9003 unit to 3

3 The appropriate front panel INPUT SELECTOR button illuminates

## Technical Specifications

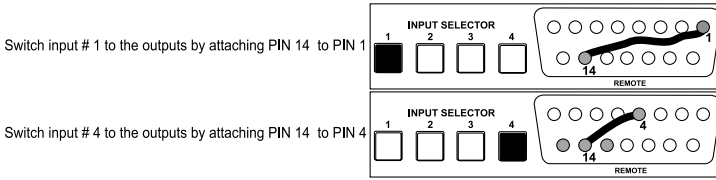


Figure 3: Remote Connector PIN # Settings

### 5.4 Adjusting the OUTPUT Level or EQ. Level

To adjust (trim) the output level or EQ. level, insert a screwdriver into the appropriate small hole, as Figure 4 illustrates, and carefully rotate it.

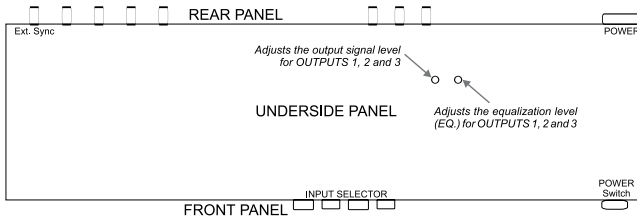


Figure 4: OMX-9003 4x1 Vertical Interval Switcher Underside

## 6 Technical Specifications

Table 4: OMX-9003 4x1 Vertical Interval Switcher Technical Specifications

Inputs:	4 composite / single component video, 1Vpp / 75 $\Omega$ , on BNC connectors 4 audio stereo, +4dBm, 10 k $\Omega$ , on RCA connectors 1 external sync input (or composite video) 1Vpp / 75 $\Omega$ on a BNC connector
Outputs:	1 x 3 composite / single component video, 1Vpp / 75 $\Omega$ on BNC connectors 1 x 3 audio stereo up to +28 Vpp / 50 $\Omega$ , (24dBm) on RCA connectors
Video Bandwidth:	400 MHz - 3 dB (typical)
Audio Bandwidth:	55 kHz, -0.1 dB
Non Linearity:	< 0.1%
Audio THD + Noise:	0.02%
Diff. Phase:	0.03 Deg
2nd Harmonic:	< 0.003% (1kHz)
Diff. Gain:	0.04 %
Audio Crosstalk:	-79 dB
Video S/N:	> 77 dB
Audio S/N Ratio:	> 90 dB unweighted
K-Factor:	<0.05%
Control:	4 illuminated front-panel touch switches, RS-232, RS-485, contact closure
Dimensions:	19 inch (W), 7 inch (D) 1U (H) rack mountable
Power Source:	230 VAC, 50/60 Hz, (115 VAC U.S.A.)
Weight:	3.1 kg. (6.88 lbs.) approx.
Accessories:	Power cord, Null-modem Adapter, Windows Control Software