

VMV-402-SH

3G/HD/SD-SDI Quad-viewer/Switcher
with Audio Meter Display



User Manual

Table of Contents

1. Introduction	3
2. Features	3
3. Package Contents	3
4. Specifications	4
5. Panel Descriptions	5
6. Hardware Installation	6
7. Connection Diagram	6
8. IR Remote Control	7
9. Operation Via Software	8
10. Utilities.....	13
11. Warranty	15

1. Introduction

The VMV-402-SH Quad-viewer/Switcher enables instant seamless switching or quad-view display of up to four SDI video signals with independent audio meters. The VMV-402-SH is pre-programmed with five default quad-view layouts, and is ideal for presentations and control rooms that require multiple inputs to be displayed on a single screen.

The embedded processor converts signals from input sources to match the native resolution of monitors, flat panel displays and projectors, with user-selectable output settings up to 4K2K 60HZ (HDMI output). SDI output resolution up to 1920x1080p. Additional output adjustments include brightness, contrast, hue and saturation.

2. Features

- Supports four 3G/HD/SD-SDI input video formats
- 4 individual buttons for full screen selection and 1 button for quad-view mode
- HDMI output supports up to 4K2K@60 (UHD 3840x2160)
- Supports USB, IR and ethernet control
- One SDI and one HDMI output
- Supports standard VESA resolution for HDMI output
- Firmware upgradable via USB
- Illuminated buttons indicate currently selected source
- Pre-programmed with five default quadview layouts
- Supports tally function on quad-view output

3. Package Contents

Please take a moment to ensure that the following is included with the VMV-402-SH:

1x VMV-402-SH	1x IR Remote Control
2x 1U rack mounting-ears	1x IR Receiver
1x 24V 5A power adapter	1x Installation software CD
1x UL AC power cord	

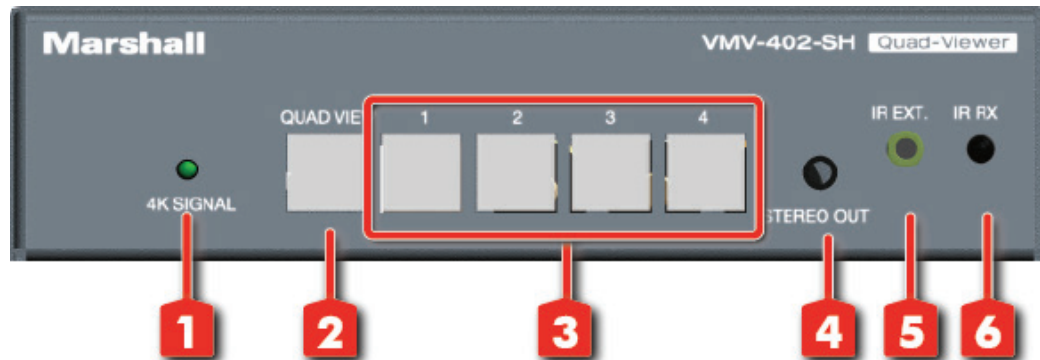
4. Specifications

Model Name	VMV-402-SH Quad-viewer/Switcher
Role of Usage	Quad-viewer or 4x1 Video Switcher
Video Input Support	[3G] 1080p @50/59.94/60Hz (4:2:2) [HD] 720p @50/59.94/60Hz, 1080i @50/59.94/60Hz, 1080p @24/30/60Hz [SD] NTSC @59.94Hz, PAL @50Hz
Audio Support	Embedded surround sound (up to 7.1ch) or stereo digital audio
ESD Protection	Human body model — ±12kV [air-gap discharge] & ±8kV [contact discharge]
Input	4x BNC [SDI]
Program Output	1x HDMI + 1x BNC(SDI)
HDMI connector	Type A [19-pin female]
RJ-45 connector	WE/SS 8P8C

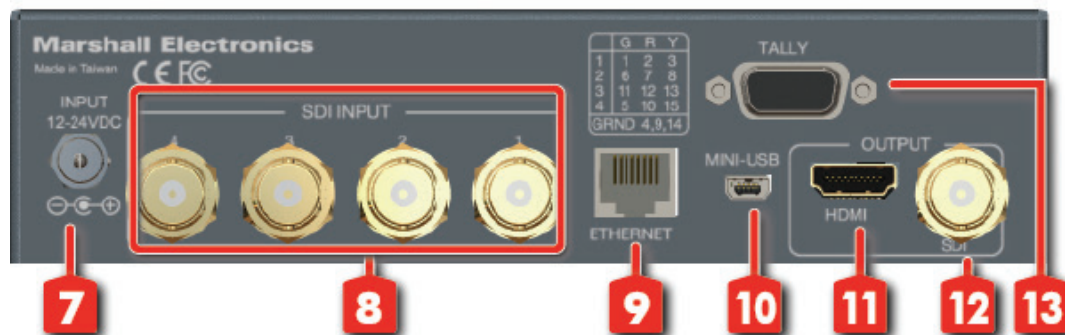
Mechanical	
Housing	Metal enclosure
Dimensions [L x W x H]	190 x 180 x 44mm [6.5 x 2.8 x 1"]
Weight	1kg [2.2 lbs]
Mounting	1U rack-mounting case with ears
Power supply	24V 5A DC
Power consumption	25 Watts Nominal
Operation Temperature	0~40°C [32~104°F]
Storage Temperature	-20~60°C [-4~140°F]
Relative Humidity	20~90% RH [no condensation]

5. Panel Descriptions

Front Panel



Rear Panel

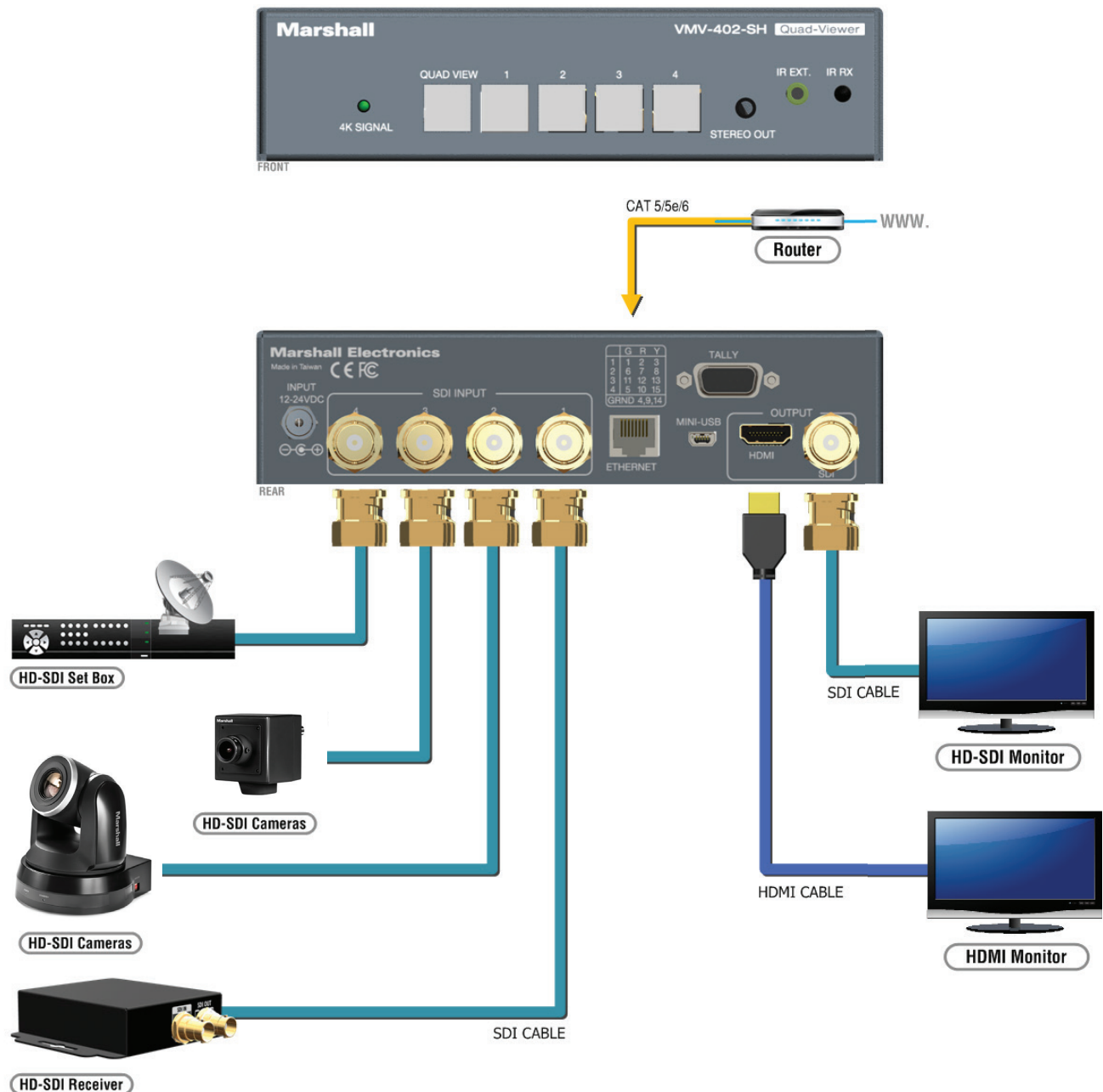


1. **4K Signal LED:** Lighted when output is set for 4K (HDMI output)
2. **Quadview Button:** Toggles between default quad-view layouts
3. **Input Select Buttons:** Selects between sources. The button will illuminate when source is selected.
4. **Stereo out:** Stereo audio output
5. **IR Extension:** 3.5mm output for IR receiver extension cable
6. **IR Sensor:** IR sensor for receiving commands from IR remote
7. **DC 24V Input:** Connects to the +12V or +24V DC power supply unit
8. **Source 1-4:** 3G-SDI inputs
9. **Ethernet:** Ethernet control port
10. **Mini-USB Input:** Connects to computer for control
11. **HDMI Output:** Provides the selected Program Output
12. **SDI Output:** Provides the selected Program Output
13. **Tally**

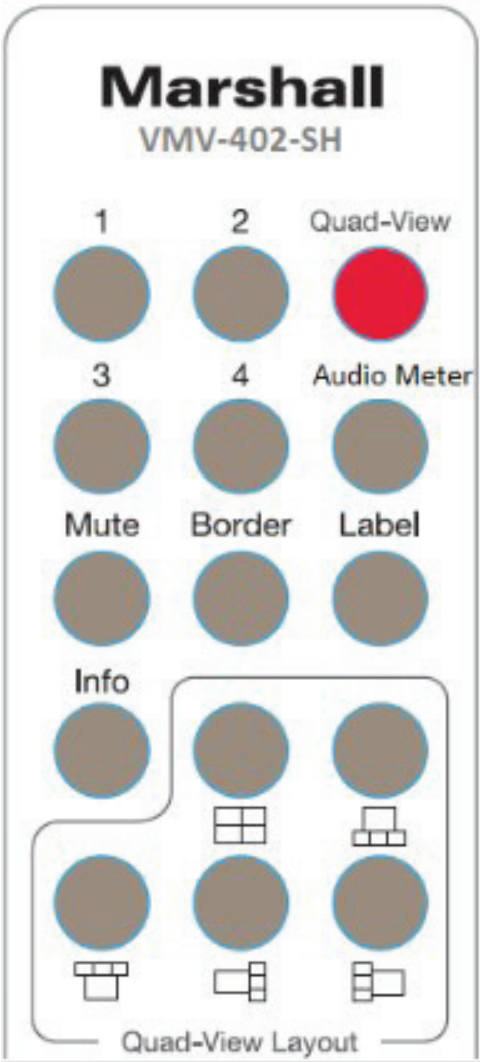
6. Hardware Installation

1. Connect display, recorder, etc. to SDI or HDMI output of the VMV-402-SH
2. Connect the SDI input sources to the inputs of VMV-402-SH
3. Securely attach 5V power supply unit to the locking power jack
4. Use IR remote or computer software to switch between input channels

7. Connection Diagram



8. IR Remote Control



Button	Function
1	SDI input 1
2	SDI input 2
3	SDI input 3
4	SDI input 4
Quad-View	Quick select quad-view layout
Audio Meter	Toggles audio meters on/off
Mute	Toggles audio pass through on/off
Border	Toggles window border on/off
Label	Toggles window labels on/off
Info	Device information (current state of operation)
	Default quad-view layout 1
	Default quad-view layout 2
	Default quad-view layout 3
	Default quad-view layout 4
	Default quad-view layout 5

9. Operation Via Software

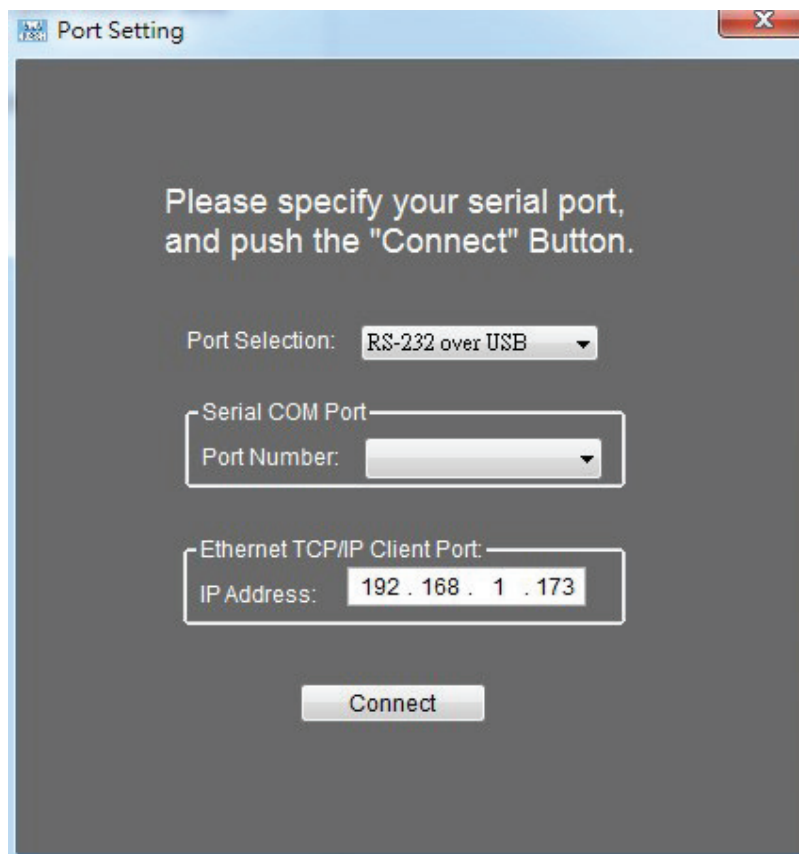
System requirements and precautions

1. When powering off the VMV-402-SH, allow the unit to remain unpowered for at least 5 to 10 seconds for capacitors to discharge completely before powering on again.
2. The VMV-402-SH software control program is compatible with Microsoft Windows 98, 2000, XP, 7, 8 and 10.
3. Secure the connection between your computer and the VMV-402-SH before loading the control software.

Initializing the software control program

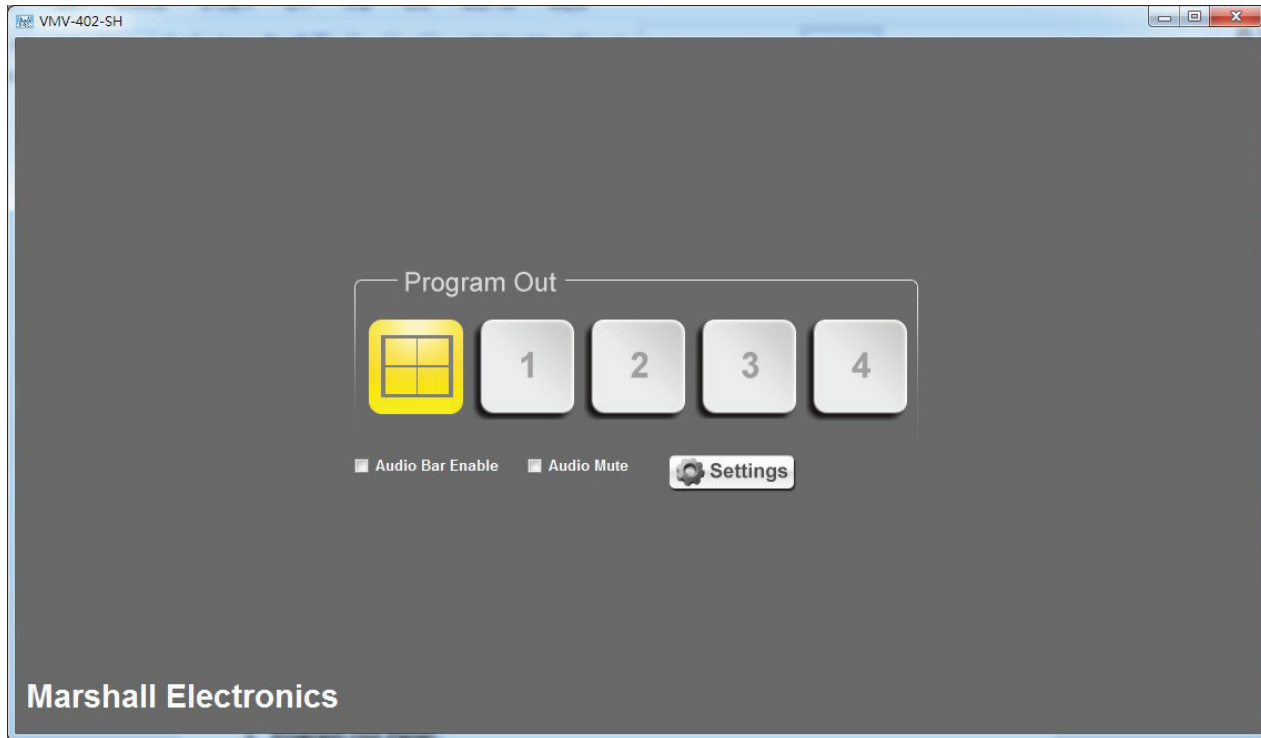
When clicking on the executable file, the following dialog will pop-up. There are two ways to control the VMV-402-SH (under Microsoft Windows 7, please run as administrator).

1. **RS-232 over USB Port:** Use the mini-USB to connect the ports on device and computer. Select the correct port number and click the Connect button.
2. **Ethernet TCP/IP Client / DHCP Port:** Enter the IP address (or DHCP) of the device and click the Connect button.



9. Operation Via Software

Control Interface



1. Program Out Panel



Select quad-view mode for program output. All four sources will be shown.



Select only source 1 for program output



Select only source 2 for program output



Select only source 3 for program output



Select only source 4 for program output

2. Additional Functions



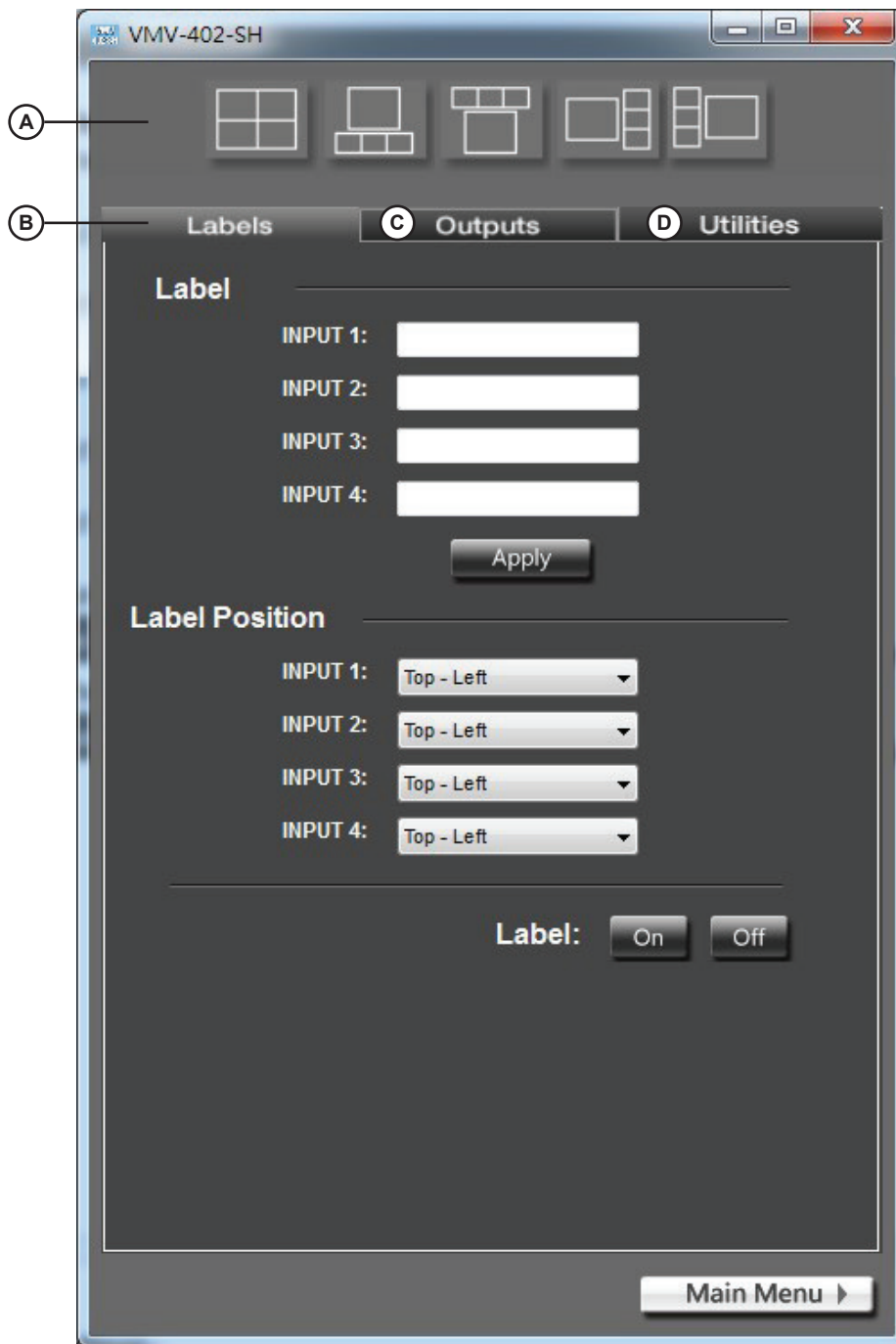
Audio Bar Enable: Toggle audio meters on/off. (When the output is in full screen mode, it will display on both sides of the window).



Audio Mute: Toggle audio passthrough on/off. (Blocks audio passthrough from SDI source).

9. Operation Via Software

3. Window settings



A. Output Layer Setting

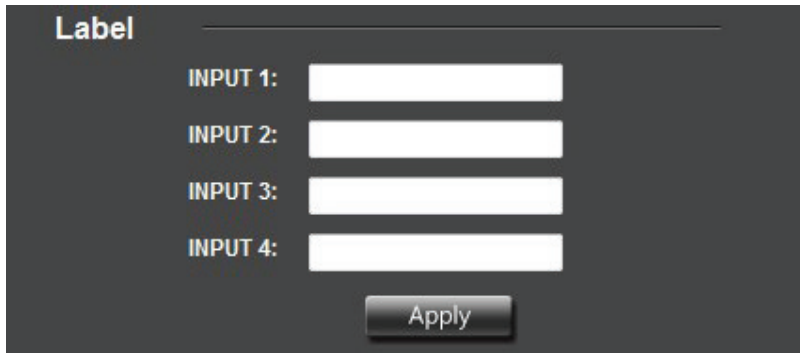
Select between 5 default quad-view layouts for quad-view program output.

9. Operation Via Software

B. Labels Setting

(1) Label

Input text to display with video output.



Label

INPUT 1:

INPUT 2:

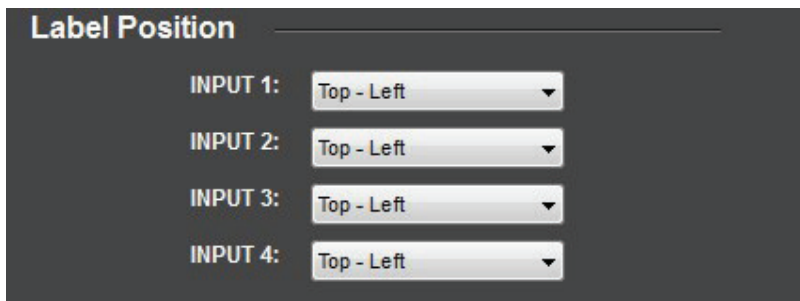
INPUT 3:

INPUT 4:

Apply

(2) Label Position

Select between label positions (Top-Left, Top-Middle, Top-Right, Bottom-Left, Bottom-Middle and Bottom-Right) for each input.



Label Position

INPUT 1: Top - Left ▼

INPUT 2: Top - Left ▼

INPUT 3: Top - Left ▼

INPUT 4: Top - Left ▼

(3) Label Toggle

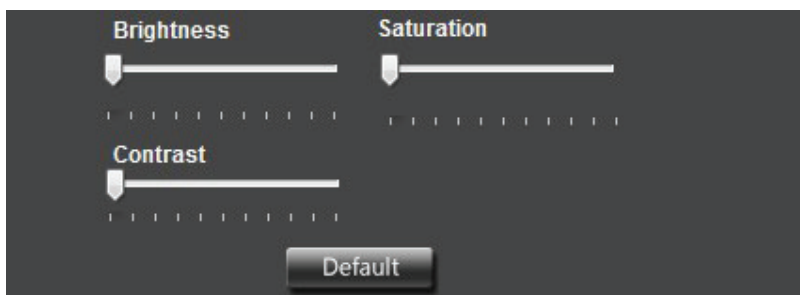


Label:

C. Outputs

(1) Color Setting

Adjust brightness, contrast and saturation of Program output.



Brightness

Saturation

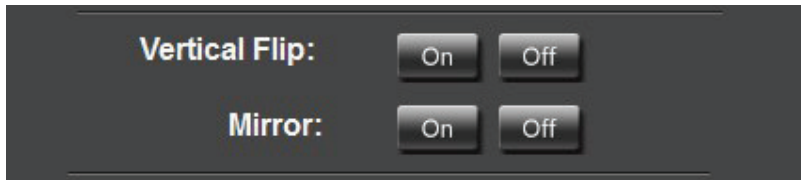
Contrast

Default

9. Operation Via Software

(2) Vertical Flip and Mirror

Adjust video output in vertical or horizontal flip.



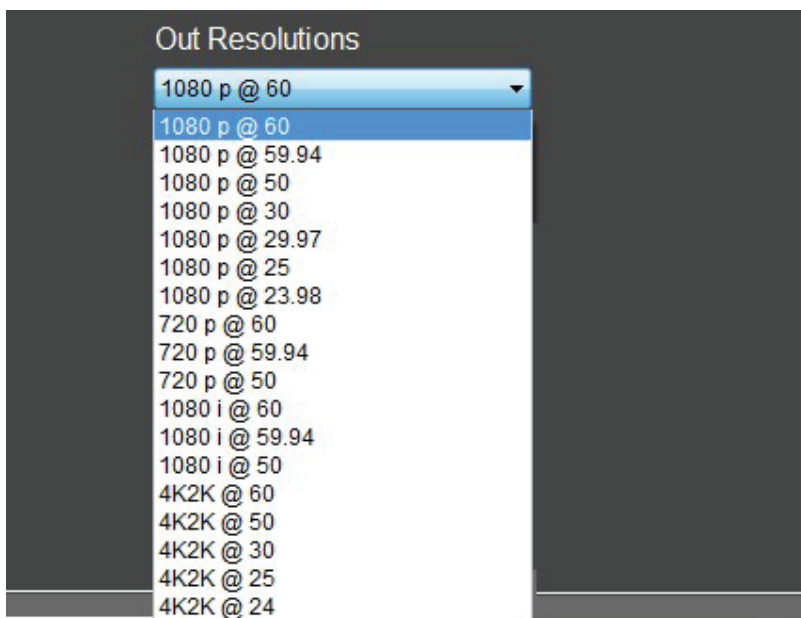
(3) Video Shift

Adjust video output in horizontal or vertical directions. (Adjustments are shifted per pixel)



(4) Output Resolutions

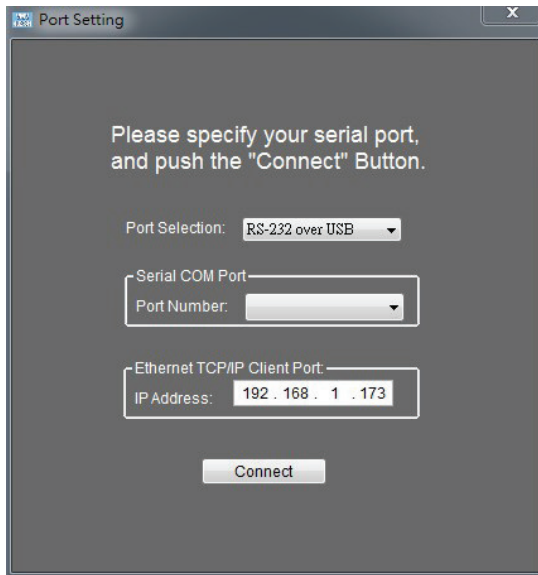
Select program output resolution.



10. Utilities

(1) Port Setting

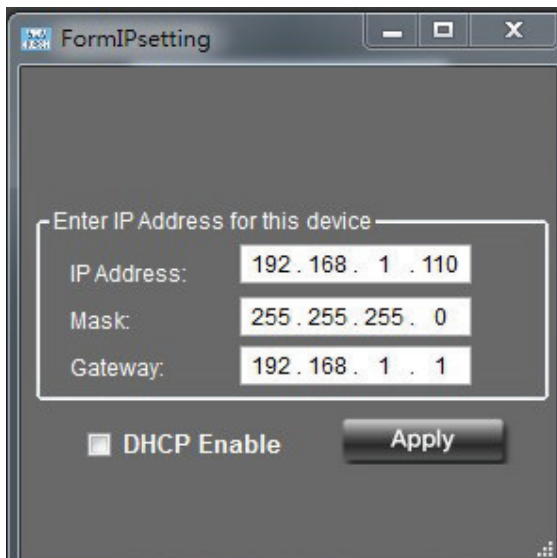
Use this menu to adjust the settings for the RS-232 over USB connection, or to select TCP/IP ethernet control.



The Port Setting dialog box has a title bar with the VMV-402-SH logo and a close button. The main area contains the text: "Please specify your serial port, and push the 'Connect' Button." Below this, there are three sections: "Port Selection:" with a dropdown menu showing "RS-232 over USB"; "Serial COM Port:" with a "Port Number:" dropdown menu; and "Ethernet TCP/IP Client Port:" with an "IP Address:" text field showing "192 . 168 . 1 . 173". At the bottom is a "Connect" button.

(2) IP Setting

Use this menu to change the IP address of the VMV-402-SH, or to select DHCP settings for this device.

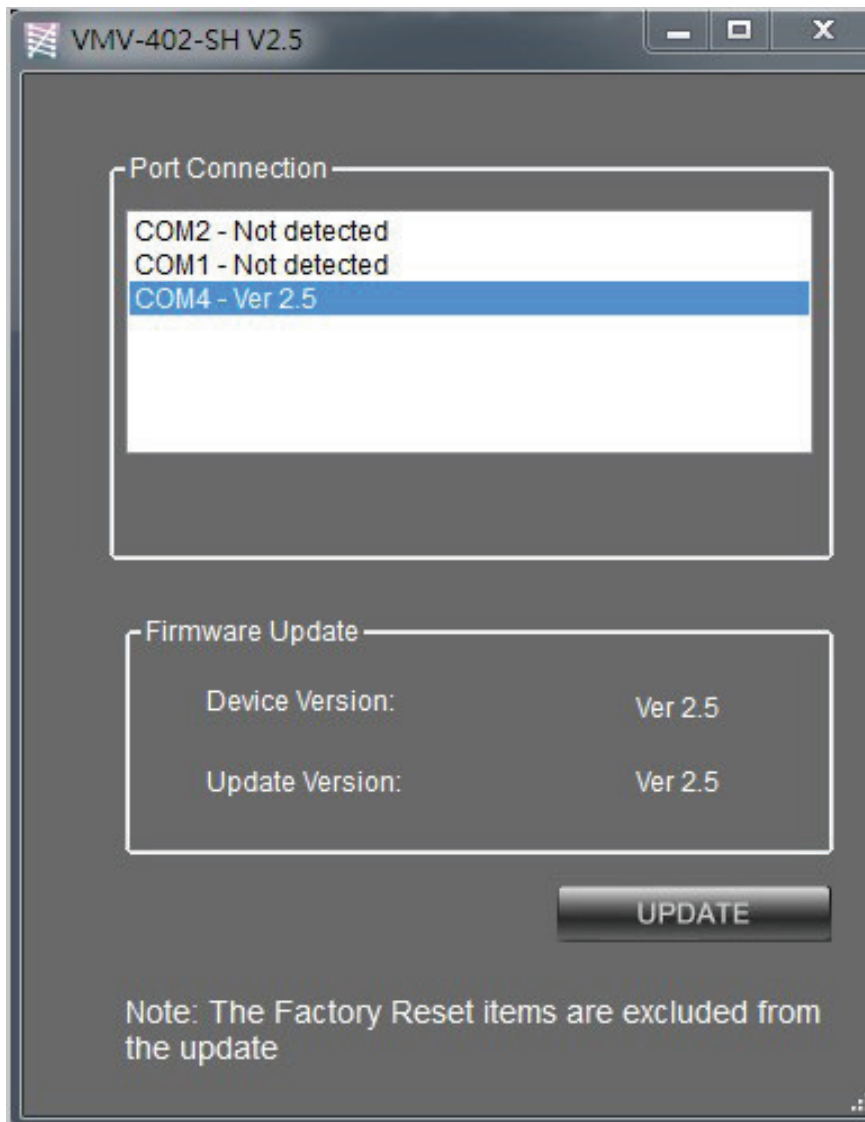


The FormIPsetting dialog box has a title bar with the VMV-402-SH logo and standard window controls. The main area contains the text: "Enter IP Address for this device". Below this, there are three text fields: "IP Address:" with "192 . 168 . 1 . 110", "Mask:" with "255 . 255 . 255 . 0", and "Gateway:" with "192 . 168 . 1 . 1". At the bottom, there is a checkbox labeled "DHCP Enable" and an "Apply" button.

10. Utilities

(3) Firmware Update

- Use this menu to check for any available firmware updates.
- If a firmware update is available, connect using a USB cable, select the correct COM port and click the UPDATE button to begin the update.
- Please allow at least 3 minutes for the update to complete before disconnecting or removing power.



11. Warranty

Marshall Electronics warrants to the first consumer that this VMV-402-SH, Video Switcher will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of one year from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer. This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty.

No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above.

Note:

Due to constant effort to improve products and product features, specifications may change without prior notice.

IMPORTANT SAFETY INSTRUCTIONS:



The VMV-402-SH has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the VMV-402-SH should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

Marshall Electronics



Tel: (800) 800-6608 / (310) 333-0606 • Fax: 310-333-0688
www.marshall-usa.com
support@marshall-usa.com