

# Instruction Manual



## **Compact 1RU 16 Channel 3G-SDI Multiviewer with 16×16 3G-SDI Matrix Switcher**

---

This device is the perfect solution for a large broadcast project. One machine supports two modes, 16 channel SDI multiviewer mode and 16x16 SDI matrix switcher. The input signal detects SD, HD and 3G-SDI automatically. The video format of multiview outputs can be selected from total 9 formats from 720p to 1080p. There are 20 preset layouts including 16/12/11/10/9/8/6/4 for choices. You can even SOLO any input signal in full screen through the shortcut key. MMV16310 also supports UMD, audio meter, signal status and time code overlay. All functions can be quickly controlled by the PC software or front panel button & knob.

---

## Default Mode: Multiviewer Mode

### Connections

**SDI Video Input**

16×SD/HD/3G-SDI(75Ω BNC)

**SDI Video Output**

2×SD/HD/3G-SDI(75Ω BNC)

**Control**

Front panel button,  
PC software via LAN/RS-422

**SDI Video Loop Output**

16×SD/HD/3G-SDI(75Ω BNC)

**HDMI Video Output**

1×HDMI type A

### Standards

**SDI Inputs Format Support**

- (HD) 1920×1080p 60/59.94/50/30/29.97/25/24/23.98
- (HD) 1920×1080PsF 30/29.97/25/24/23.98
- (HD) 1920×1080i 60/59.94/50
- (HD) 1280×720p 60/59.94/50
- (HD) 1280×720p 30/29.97/25/24/23.98
- (SD) 625i 50
- (SD) 525i 59.94

**SDI Auto Switching**

Automatically detects SD, HD and 3G-SDI on inputs

**SDI Video Rate**

SD/HD/3G-SDI

**SDI Compliance**

SMPTE 292M, SMPTE 259M,  
SMPTE 424M, SMPTE 352M,  
SMPTE 296M

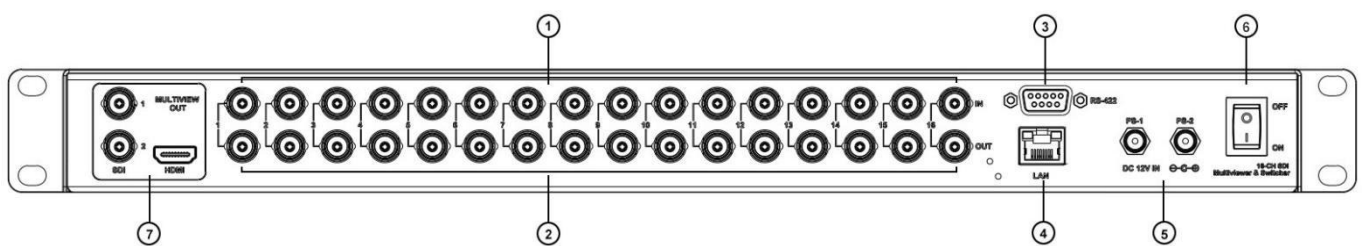
**SDI & HDMI Outputs Format Support**

- 1080p 60/50/30/25/24
- 1080i 60/50
- 720p 60/50

**SDI Color Space and Precision**

YUV 4:2:2/4:4:4, RGB 4:4:4 (SDI inputs)  
YUV 4:2:2(SDI & HDMI outputs)

### Interfaces



① <b>Inputs</b>	SDI inputs 1-16	② <b>Loop Outputs</b>	SDI loop outputs 1-16
③ <b>RS-422</b>	Software control	④ <b>LAN</b>	Software control and update
⑤ <b>Power</b>	Dual power connectors PS-1 & PS-2, for power redundancy	⑥ <b>Power Switch</b>	To turn on or off the device
⑦ <b>Outputs</b>	Multiview outputs, SDI×2 & HDMI×1		

## Second Mode: Switcher Mode

### Connections

#### SDI Video Input

16×SD/HD/3G-SDI/DVI-ASI(75Ω BNC)

#### Control

Front panel button,  
PC software via LAN/RS-232

#### Updates and Configuration

LAN(RJ45)

#### SDI Video Output

16×SD/HD/3G-SDI/DVI-ASI(75Ω BNC)

### Standards

#### SDI Format Support

(2K) 2048×1080p 30/29.97/25/24/23.98  
 (2K) 2048×1080PsF 30/29.97/25/24/23.98  
 (HD) 1920×1080p 60/59.94/50/30/29.97/25/24/23.98  
 (HD) 1920×1080PsF 30/29.97/25/24/23.98  
 (HD) 1920×1080i 60/59.94/50  
 (HD) 1280×720p 60/59.94/50  
 (HD) 1280×720p 30/29.97/25/24/23.98  
 (SD) 625i 50  
 (SD) 525i 59.94

#### SDI Compliance

SMPTE 372M, SMPTE 259M,  
 SMPTE 292M, SMPTE 296M,  
 SMPTE 424M, SMPTE 425M,  
 DVB-ASI

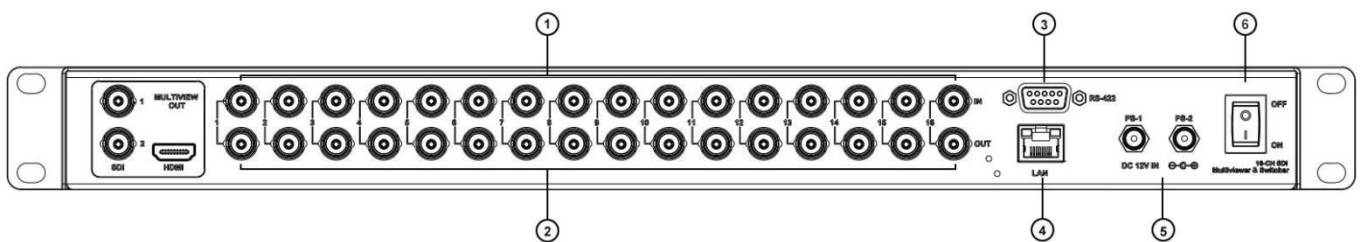
#### SDI Color Space and Precision

RGB 4:4:4 10bit/12bit  
 YUV 4:2:2 10bit/12bit  
 YUV 4:4:4 10bit/12bit  
 XYZ 4:4:4 12bit

#### SDI Auto Switching

Automatically detects SD, HD and 3G-SDI

### Interfaces

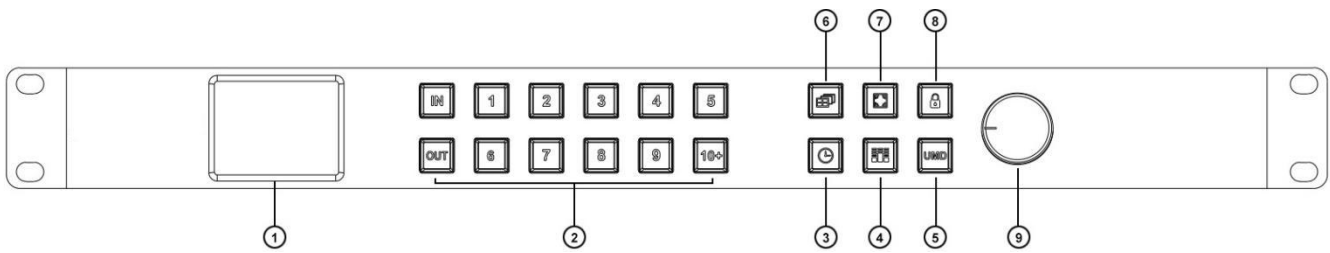


① <b>Inputs</b>	SDI inputs 1-16	② <b>Outputs</b>	SDI outputs 1-16
③ <b>RS-422</b>	PC software control	④ <b>LAN</b>	PC software control and update
⑤ <b>Power</b>	Dual power connectors PS-1 & PS-2, for power redundancy	⑥ <b>Power Switch</b>	To turn on or off the device

**Note:** The mode of Multiviewer and Switcher can be switched by PC software or knob menu.

## Controls

### Front Panel Control

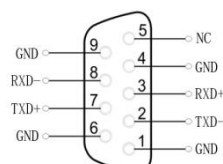


<p>① 2.2 Inch LCD Display</p>	<p>Show Device status and menu control</p>
<p>② IN/OUT Buttons and Channel Buttons</p>	<p>Input or output channel from 1 to 16 channel</p> <p><b>1) Multiviewer Mode</b></p> <ul style="list-style-type: none"> <li>- Switching an source to an window.</li> <li>press buttons “IN, 1, OUT, 2” to switch source 1 signal to window 2.</li> <li>- Switching an input to multiple windows.</li> <li>Press buttons “IN, 1, OUT, 2, 4, 5” to switch source 1 signal to windows 2, 4, 5.</li> </ul> <p><b>2) Switcher Mode</b></p> <ul style="list-style-type: none"> <li>- Switching an input to an output.</li> <li>press buttons “IN, 1, OUT, 2” to switch input 1 signal to output 2.</li> <li>- Switching an input to multiple outputs.</li> <li>Press buttons “IN, 1, OUT, 2, 4, 5” to switch input 1 signal to output 2, 4, 5.</li> </ul> <p><b>3) Note</b></p> <ul style="list-style-type: none"> <li>- Channel button over 10 need two buttons to combine,</li> <li>For example, 10= [10+] [10+], 11=[10+] [1], 12=[10+] [2], ... ,16=[10+] [6]</li> <li>- The OUT button indicator will automatically close after 8s. When it is off, you only need to press the OUT button again to continue the unperformed switch.</li> </ul>
<p>③ Time Code Button</p>	<p>Quick switch for Time Code overlays ON/OFF</p>
<p>④ Audio Meter Button</p>	<p>Quick switch for Audio Meter bars ON/OFF</p>
<p>⑤ UMD Button</p>	<p>Quick switch for UMD overlays ON/OFF</p>
<p>⑥ Multiview Layout Button</p>	<p>Quick switch between 20 kinds of multiviewer layouts</p>
<p>⑦ Full Screen Button</p>	<p>Press this button to activate the full screen mode; then select channel button to solo any inputs as full screen</p>
<p>⑧ Lock Button</p>	<p>Lock or unlock, press the button to Lock or unlock front panel buttons</p>
<p>⑨ Knob</p>	<p>Controls the menu. Turn anticlockwise=menu Up , Turn clockwise=menu down, Press down = Enter</p>

### PC Control

Please download the PC control software from website.

### RS-422 Interface Define



## Menu Control

Main Menu	Sub Menu	Options	Description
<b>System Setting</b>	Language	Chinese/English	Change the Language between Chinese and English
	LCD brightness	10-100	Set the brightness backlight between 10-100
	LCD ON/OFF	Always/ Off/ Dim	Set the state of backlight,there are three mode for option: Always/Off/ Dim
	LCD Sleep	5~60s	Set backlight time of "Off" and "Dim"
	Reset		Reset to default configuration
	Custom1		Load Custom1 configuration
	Custom2		Load Custom2 configuration
	Return		Back to the main menu
<b>Network Setting</b>	Network	Dynamic/Static	Two ways to acquire the IP: Static(set IP freely by yourself) and Dynamic(IP configured by router)
	IP		Set the IP address
	NetMask		Default setting is 255.255.255.0
	GateWay		Set Gateway according to current IP address
	Save		Save network setting
	Return		Back to the main menu
<b>Overlay Setting</b>	Item Select	UMD/Input Resolu/Audio Meter/Time Code/Border/Audio Alarm	Select a certain overlay
	Win/Source	1~16	Select a Window or signal source for each setting
	Enable	On/Off	On/Off the selected overlay
	Text Color	Yellow/White/Gray/Violet Red/Light Blue/Light Green/Light Cyan/Light Yellow/Transparent/HalfTrans/Blac k/Blue/Red/Magenta/Green/Cyan	Text color setting
	Background	Yellow/White/Gray/Violet Red/Light Blue/Light Green/Light Cyan/Light Yellow/Transparent/HalfTrans/Blac k/Blue/Red/Magenta/Green/Cyan	Background color setting
	Return		Back to the main menu
<b>Audio Setting</b>	Audio Source	WIN1~WIN16	Select the audio source of multiviewer output
	Audio Meter	1~16	Select a certain window for audio meter setting
	Channel	CH1&CH2 CH3&CH4 CH5&CH6 CH7&CH8 CH9&CH10 CH11&CH12 CH13&CH14 CH15&CH16	Set the audio channel of audio meter
	Return		Back to the main menu

<b>Output Setting</b>	Format	1080P60/1080P50/1080P30/1080P25/1080P24/1080I60/1080I50/720P60/720P50	Set the output formats
	Mode	Multiviewer/Switcher	Change the mode between Multiviewer and Switcher
	One to One		Under "Matrix Switcher" mode, set all input and output channels correspond one by one
	Return		Back to the main menu
<b>Device Info</b>	Version		Current version information
	Return		Back to the main menu
<b>Exit</b>			Exit main menu

## Power

### Power Supply

PS-1, PS-2, power redundancy

### Voltage Range

DC 12-24V

### Power Consumption

36W

## Physical Specifications

### Dimension

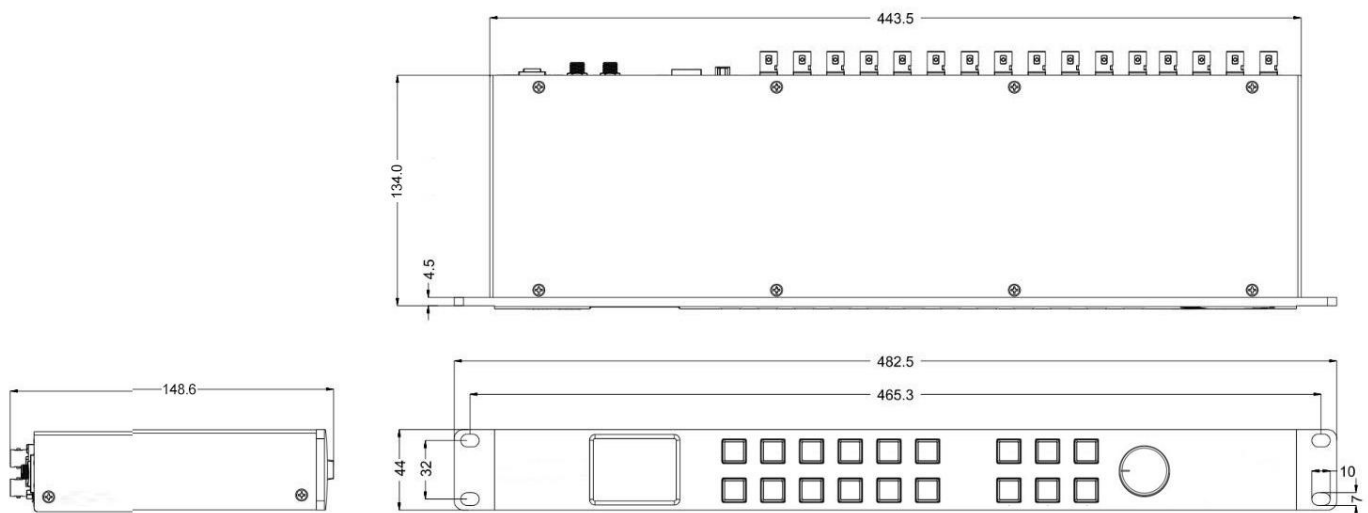
Standard 19" 1 rack unit

### Net Weight

2.0kg

### Gross Weight

3.8kg



## Environmental Specifications

### Operating Temperature

0°C~60°C

### Storage Temperature

-30°C~70°C

### Relative Humidity

0%~90% non-condensing

## What's Included

Compact 1RU 16 Channel 3G-SDI Multiviewer with 16×16 3G-SDI Matrix Switcher

RS-422 Connector × 1

DC 12V 5A Power Adapter × 2

## Warranty

3 Year Limited Manufacturer's Warranty.

◇ Note: due to constant effort to improve products and product features, specifications may change without notice.