AVmatrix SC2030

AVMatrix SC2030 3G/HD/SD-SDI/HDMI Updown Cross Converter Instruction Manual

Model: SC2030

1. INTRODUCTION

The AVMatrix SC2030 is a professional-grade cross converter designed for seamless conversion between SDI and HDMI signals. This versatile device supports up/down scaling and frame rate conversion, making it suitable for various broadcasting and AV post-production applications. It also features analog audio embedding for comprehensive signal management. Control and configuration are easily managed via built-in DIP switches or PC software through a micro USB connection.

Key Features:

- Input: 1x HDMI or 1x SDI, 1x Analog Audio
- Output: 2x 3G-SDI, 1x HDMI
- Up/down scaling and frame rate conversion capabilities
- Analog audio embedding
- Automatic detection and configuration for HDMI/SDI inputs
- Easy control via DIP switches or PC software (Micro USB)
- Dual threaded locking power for redundant power supply
- Detachable bracket design for wall mounting

2. SAFETY INFORMATION

Please read and understand all safety instructions before operating this device. Failure to follow these instructions may result in electric shock, fire, or damage to the product.
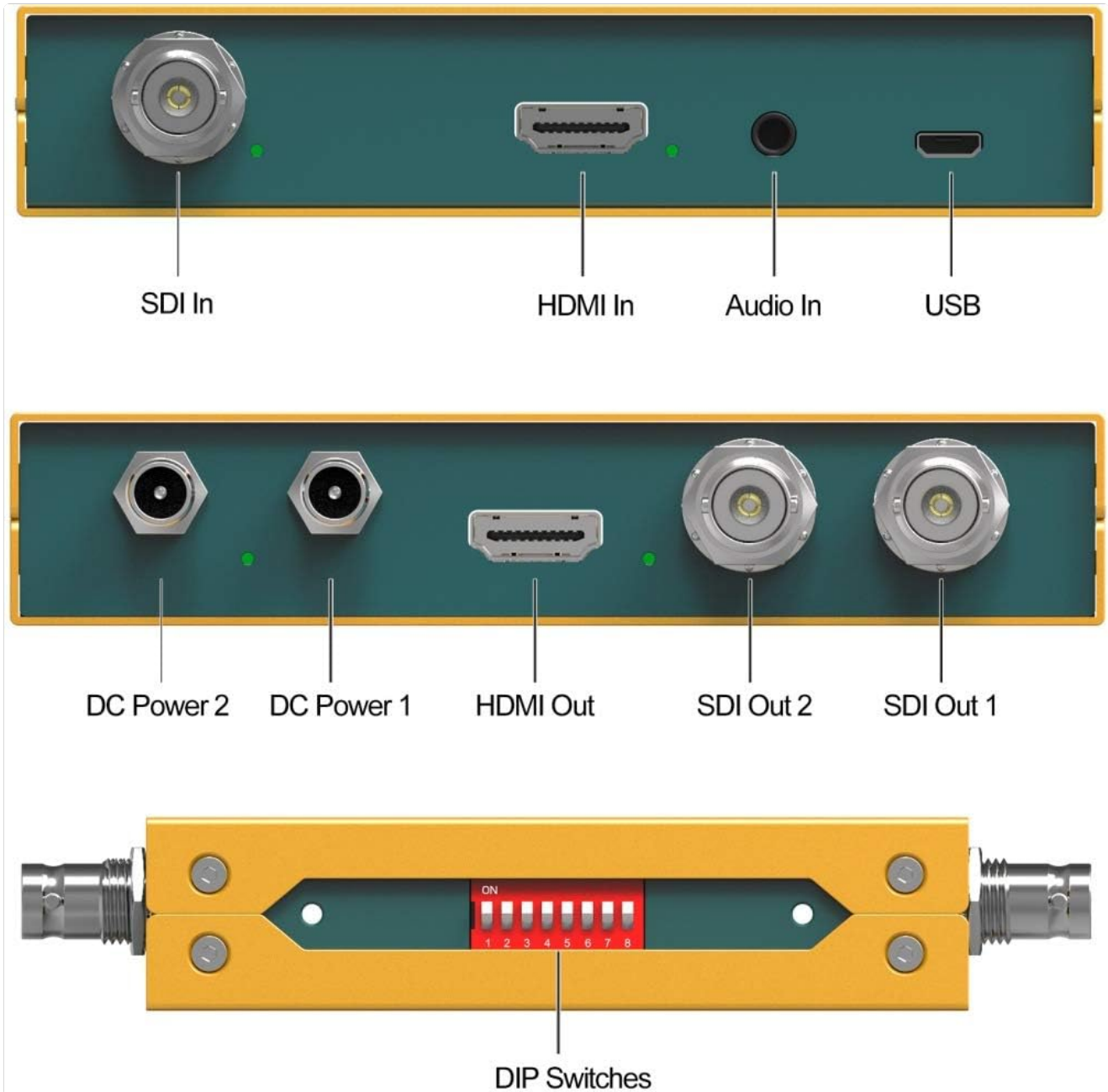
- **Power Supply:** Use only the specified power adapter. Ensure the power source voltage is compatible with the device. The device supports dual threaded locking power for redundancy.
- **Ventilation:** Do not block any ventilation openings. Ensure adequate airflow around the unit to prevent overheating.
- **Moisture:** Do not expose the device to rain, moisture, or liquids. Avoid placing objects filled with liquids on or

near the device.

- **Cleaning:** Disconnect power before cleaning. Use a dry, soft cloth. Do not use liquid or aerosol cleaners.
- **Servicing:** Do not attempt to service this product yourself. Refer all servicing to qualified service personnel.
- **Placement:** Place the device on a stable, flat surface. Avoid placing it in direct sunlight or near heat sources.

3. PRODUCT OVERVIEW

The AVMatrix SC2030 is a compact and robust converter designed for professional video environments. Below is a visual guide to its various ports and controls.

Figure 3.1: Front and Rear Panel Overview of the SC2030 Converter. This image displays the input ports (SDI In, HDMI In, Audio In, USB) on one side and output ports (DC Power 2, DC Power 1, HDMI Out, SDI Out 2, SDI Out 1) on the other side, along with the DIP switches.

Input Ports:

- **SDI IN:** Connect your 3G/HD/SD-SDI source here.
- **HDMI IN:** Connect your HDMI source here.
- **AUDIO IN:** Connect an analog audio source (3.5mm jack) for embedding into the output signal.

- **USB:** Micro USB port for PC software control and power supply.

Output Ports:

- **SDI OUT 1 & 2:** Two 3G-SDI outputs for connecting to SDI monitors or other devices.
- **HDMI OUT:** HDMI output for connecting to HDMI displays.
- **POWER 1 & 2:** Dual threaded locking power inputs for redundant power supply, ensuring continuous operation.

Figure 3.2: Side view of the SC2030 Converter highlighting the DIP switches for configuration.

4. SETUP AND CONNECTION

Follow these steps to set up your AVMatrix SC2030 converter:

1. **Power Connection:** Connect the provided power adapter to either POWER 1 or POWER 2 input on the converter. For redundancy, connect a second power adapter to the other power input.

2. **Input Source Connection:**

   - For SDI input: Connect your SDI source device (e.g., camera, SDI DVR) to the **SDI IN** port using a BNC cable.
   - For HDMI input: Connect your HDMI source device (e.g., camera, Blu-Ray DVD, game console) to the **HDMI IN** port using an HDMI cable.
   - For analog audio embedding: Connect your analog audio source to the **AUDIO IN** (3.5mm jack) port.

3. **Output Device Connection:**

   - For SDI output: Connect your SDI display or other SDI devices to the **SDI OUT 1** and/or **SDI OUT 2** ports using BNC cables.
   - For HDMI output: Connect your HDMI display or projector to the **HDMI OUT** port using an HDMI cable.

4. **Configuration (DIP Switches):** Before powering on, configure the desired output format, audio embedding, and control mode using the DIP switches. Refer to the "Operating Instructions" section for detailed DIP switch settings.

5. **Power On:** Once all connections are secure and DIP switches are set, connect the power adapter(s) to a power outlet. The device will power on automatically.

5. OPERATING INSTRUCTIONS

The SC2030 offers flexible control options via DIP switches or PC software. The device automatically detects the input signal (HDMI or SDI).

5.1 DIP Switch Configuration

The DIP switches allow you to set the output resolution, frame rate, audio embedding options, and control mode. The table below details the functions of each DIP switch (1=ON, 0=OFF).

SDI / HDMI Cross Converter

DIP SWITCHES (1=ON, 0=OFF)						
SDI/ HDMI Output	SW1	SW2	SW3	SW4	Video Input	SW5
1080p60	1	1	1	1	Auto (SDI First)	1
1080p59.94	1	1	1	0	HDMI	0
1080p50	1	1	0	1	Audio Embedding	SW6
1080p30	1	1	0	0	Follow Input	1
1080p29.97	1	0	1	1	Analog Audio	0
1080p25	1	0	1	0	SD Up Conversion	SW7
1080p24	1	0	0	1	16:9 De-Squeeze	1
1080p23.98	1	0	0	0	4:3 Pillarbox	0
1080i60	0	1	1	1	Controls	SW8
1080i59.94	0	1	1	0	DIP	1
1080i50	0	1	0	1	PC	0
720p60	0	1	0	0		
720p59.94	0	0	1	1		
720p50	0	0	1	0		

Figure 5.1: Detailed DIP Switch Settings for the SC2030. This table shows how to configure SDI/HDMI output, video input, audio embedding, SD up conversion, and control modes using the 8 DIP switches.

DIP Switch Functions:

- **SW1-SW4 (SDI/HDMI Output):** These switches control the output resolution and frame rate. Refer to the table in Figure 5.1 for specific combinations (e.g., 1080p60, 1080p59.94, 720p60).
- **SW5 (Video Input):**

  - 1: Auto (SDI First) - Prioritizes SDI input.
  - 0: HDMI - Forces HDMI input.

- **SW6 (Audio Embedding):**

  - 1: Follow Input - Audio follows the selected video input.

- 0: Analog Audio - Embeds audio from the 3.5mm analog audio input.

- **SW7 (SD Up Conversion):**

  - 1: 16:9 De-Squeeze - Converts 4:3 SD input to 16:9.
  - 0: 4:3 Pillarbox - Maintains 4:3 aspect ratio with pillarbox bars.

- **SW8 (Controls):**

  - 1: DIP - Control via physical DIP switches.
  - 0: PC - Control via PC software connected via USB.

5.2 PC Software Control

For advanced configuration and real-time monitoring, connect the SC2030 to a PC via the Micro USB port. Ensure SW8 is set to '0' (PC control mode). Download and install the official AVMatrix control software from the manufacturer's website. The software provides a graphical interface to adjust all settings available via DIP switches, plus potentially more granular control and firmware updates.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your SC2030 converter.

- **Cleaning:** Regularly wipe the exterior of the device with a soft, dry, lint-free cloth. Do not use harsh chemicals, solvents, or abrasive cleaners.
- **Ventilation:** Ensure that the ventilation holes are free from dust and obstructions.
- **Cable Connections:** Periodically check all cable connections for tightness and wear. Loose connections can lead to signal degradation.
- **Storage:** If storing the device for an extended period, disconnect it from power and store it in a cool, dry place away from direct sunlight and extreme temperatures.
- **Firmware Updates:** Check the AVMatrix website periodically for firmware updates. Keeping the firmware updated can improve performance and add new features.

7. TROUBLESHOOTING

If you encounter issues with your SC2030 converter, refer to the following common problems and solutions:

- **No Video Output:**

  - Verify all cables (HDMI, SDI) are securely connected.
  - Ensure the input source is active and outputting a signal.
  - Check DIP switch settings for correct output resolution and input selection (SW5).
  - Try a different input source or output display to isolate the problem.
  - Ensure the power adapter is connected and the device is powered on.

- **No Audio Output:**

  - Check audio cable connections.
  - Verify DIP switch SW6 is set correctly for audio embedding (Follow Input or Analog Audio).
  - Ensure the audio source is active and outputting sound.
  - Check audio settings on the connected display or receiving device.

- **Incorrect Resolution/Frame Rate:**

- Adjust DIP switches SW1-SW4 to match the desired output resolution and frame rate.
- Ensure the connected display supports the selected resolution and frame rate.

- **Device Not Responding to PC Software:**

  - Ensure SW8 is set to '0' (PC control mode).
  - Verify the Micro USB cable is properly connected.
  - Check if the AVMatrix control software is correctly installed and running on your PC.
  - Try restarting the PC and the converter.

- **Overheating:**

  - Ensure the device has adequate ventilation and is not covered.
  - Operate the device within its specified operating temperature range.

8. SPECIFICATIONS

Below are the technical specifications for the AVMatrix SC2030 Updown Cross Converter:

Feature	Specification
Brand	AVmatrix
Model Number	SC2030
Mounting Type	Wall Mount
Interface Type	HDMI, SDI
Number of Channels	2
Product Dimensions	6.8 x 6.7 x 3.7 inches
Item Weight	2.44 pounds
SDI Video Input	SD/HD/3G-SDI x 1
HDMI Video Input	HDMI type A x 1
Analog Audio Input	1/8" (3.5mm) jack x 1
SDI Video Output	SD/HD/3G-SDI x 2
HDMI Video Output	HDMI type A x 1
SDI Input Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98, 1080i 60/59.94/50, 720p 60/59.94/50/30/29.97/25/24/23.98, 625i, 525i
HDMI Input Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98, 1080i 60/59.94/50, 720p 60/59.94/50, 480i, 60/59.94
SDI Compliance	SMPTE 292M, SMPTE 259M, SMPTE 424M
SDI Color Space and Precision	YUV 4:2:2

Feature	Specification
HDMI Input Color Space and Precision	RGB 4:4:4, YUV 4:2:2, YUV 4:4:4
SDI/HDMI Output Format Support	1080p 60/59.94/50, 1080i 60/59.94/50, 720p 60/59.94/50
Power Connector	Threaded locking connector, Micro USB
Voltage Range	USB 3.3-5V, DC 6-23V
Power Consumption	4W
Operating Temperature	-20°C ~ 60°C
Storage Temperature	-30°C ~ 70°C
Relative Humidity	0% ~ 90% non-condensing
Warranty	3 year limited warranty

Technical specification

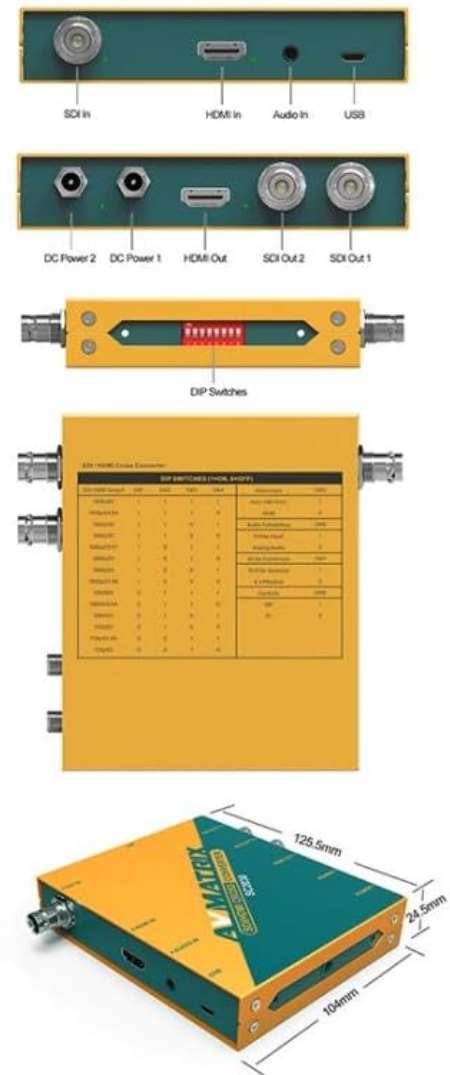|		
INPUTS	HDMI Video Input	HDMI type A ×1
	SDI Video Input	SD/HD/3G-SDI ×1
	Analog Audio Input	1/8" (3.5mm) jack ×1
OUTPUTS	SDI Video Outputs	SD/HD/3G-SDI ×2
	HDMI Video Output	HDMI type A ×1
FORMATS	SDI Input Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98
		1080Psf 30/29.97/25/24/23.98
		720p 60/59.94/50/30/29.97/25/24/23.98
		625i 50
		525i 59.94
	SDI Video Rate	SD/HD/3G-SDI
	SDI Compliance	SMPTE 292M, SMPTE 259M, SMPTE 424M
	SDI Color Space and Precision	YUV 4:2:2
	HDMI Input Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98/23.976
		1080i 60/59.94/50
		720p 60/59.94/50/30/29.97/25/24/23.98
		576p 50, 576i 50
		480i 60/59.94
	HDMI Input Color Space and Precision	RGB 4:4:4, YUV 4:2:2, YUV 4:4:4
	SDI/HDMI Output Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98
		1080i 60/59.94/50
		720p 60/59.94/50
SIZE	Dimension (LWD)	125.5mm × 104mm × 24.5mm
	Weight	485g
POWER	Power Connector	Threaded locking connector
		Micro USB
	Voltage Range	USB 3.3~5V
		DC 6~23V
	Power Consumption	4W
ENVIRONMENT	Operating Temperature	-20℃~60℃
	Storage Temperature	-30℃~70℃
	Relative Humidity	0%~90% non-condensing
WARRANTY	Warranty	3 year limited warranty

Figure 8.1: Detailed Technical Specifications of the SC2030 Converter, including inputs, outputs, supported formats, power, and environmental conditions.

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The AVMatrix SC2030 converter comes with a **3-year limited warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modifications, or external causes such as power surges.
For warranty claims, please retain your proof of purchase and contact AVMatrix customer support.

9.2 Customer Support

For technical assistance, troubleshooting, or general inquiries regarding your AVMatrix SC2030, please visit the official AVMatrix website or contact their customer support team. You may find FAQs, driver downloads, and additional resources online.

10. RELATED PRODUCT VIDEOS

Below are some official product videos from sellers that may provide additional information or visual guidance on similar converter products.

SDI to HDMI Converter Overview

Your browser does not support the video tag.

This video provides an overview of an SDI to HDMI converter, demonstrating its features and basic functionality. It can be helpful for understanding the general operation of such devices.

HDMI to Dual SDI Converter Demonstration

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Watch this video for a demonstration of an HDMI to dual SDI converter, showcasing how an HDMI signal can be converted and distributed to two SDI outputs. This illustrates a common use case for cross converters.

Product Overview Video

Your browser does not support the video tag.

This general product overview video provides a quick look at the features and benefits of a video converter, offering a broader context for the SC2030's capabilities.