

# DSC 3G-HD A Scaler • Setup Guide

**IMPORTANT:**  
Go to [www.extron.com](http://www.extron.com) for the complete user guide and installation instructions before connecting the product to the power source.

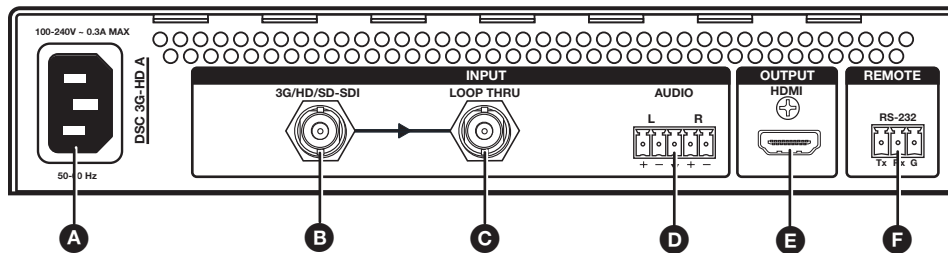
The Extron DSC 3G-HD A is a 3G-SDI to HDMI scaler that converts 3G-SDI, HD-SDI, and SD-SDI signals to HDMI. It accepts and scales SMPTE video resolutions from 480i and 576i up to 1080p @ 60 Hz and 2K, and offers multiple output rates up to 1920x1200, including HDTV 1080p/60 and 2K. Stereo audio embedding and an SDI input loop-through are also provided.

This setup guide provides step-by-step instructions for an experienced user to set up and configure a DSC 3G-HD A. It covers how to perform basic operations using the front panel controls and selected Simple Instruction Set™ (SIS™) commands.

**NOTE:** For full installation, configuration, menus, connector wiring, and operation details, see the *DSC 3G-HD A and DSC HD-3G A User Guide*, available at [www.extron.com](http://www.extron.com).

## Installation

### Rear Panel Features



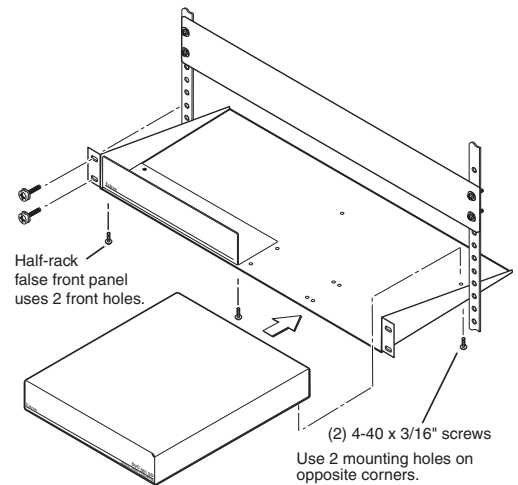
- A** AC power connector
- B** 3G/HD/SD-SDI video connector
- C** Buffered loop-through connector
- D** 5-pole captive screw audio input connector
- E** HDMI output connector
- F** 3-pole RS-232 captive screw connector

### Mounting and Cabling the DSC 3G-HD A

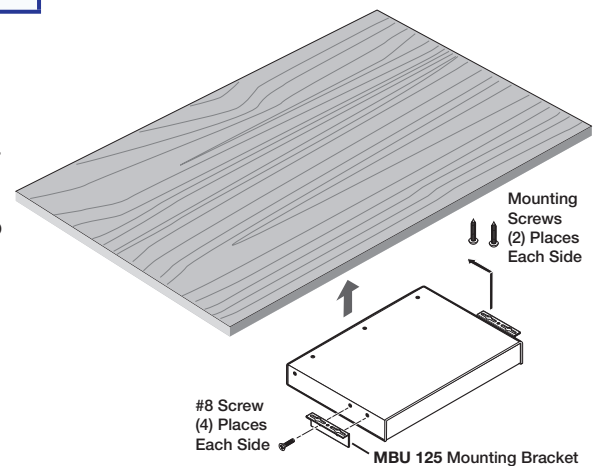
1. **Disconnect power:** Turn off or disconnect all equipment power sources.
2. **Mount the unit:** (Optional) Mount the DSC 3G-HD A either in a rack using shelf mounting brackets (RSU 129 or RSB 129) or under furniture using furniture mounting brackets (MBU 125) (see figures 1 and 2 at right). A false face plate (RFF 052) can be fitted on top of the low profile DSC if desired.
3. **Connect the input:** Connect an SDI video source to the 3G/HD/SD-SDI BNC input connector **B**.
4. **Connect a monitor:** (Optional) Connect a local monitor to the buffered Loop Thru SDI connector **C**.
5. **Connect analog audio input:** (Optional) Connect analog audio from the source to the captive screw Audio input connector **D**.

**NOTE:** To embed analog audio from this input, you must first set it up using the **on-screen display (OSD)** (see page 2) or **SIS commands** (see page 4).

6. **Connect the output:** Connect an HDMI display device to the HDMI output connector **E** for HDMI output (with optional analog audio if connected and embedded).
7. **Connect a control device:** For remote control via SIS commands or the Extron PCS Windows®-based control software:
  - **RS-232** — For serial RS-232 control, connect a host computer to the 3-pole captive screw RS-232 connector **F**. RS-232 protocol (default values) are 9600 baud, 1 stop bit, no parity, 8 data bits, no flow control.
  - **USB** — Connect a host computer to the front panel mini USB port **(B)** in the front panel illustration on page 2) for configuration via Extron PCS software.
8. **AC power connector** — Connect the supplied US standard IEC power cord between this connector **A** and a 110-220 V 50-60 Hz AC power source.



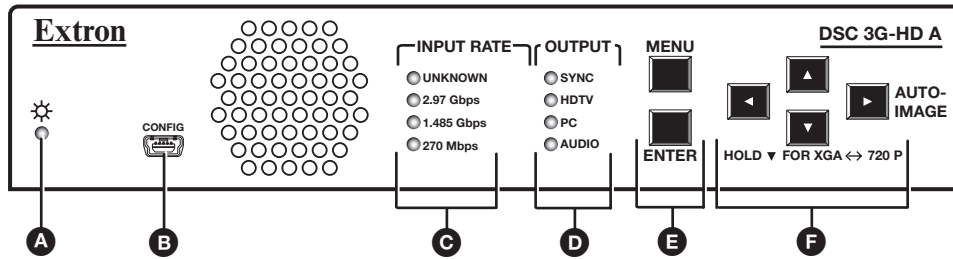
**Figure 1. Rack Mounting**



**Figure 2. Under-furniture Mounting**

# DSC 3G-HD A • Setup Guide (Continued)

## Front Panel Overview



- A Status LED** — Lights steadily amber when there is power but no signal, blinks amber every 3 seconds when the unit is in standby mode, and lights steadily green when both power and an input signal are present.
- B USB configuration port** — Connect a computer to this USB mini-B port (cable not supplied) for device configuration and firmware updating.
- C Input Rate LEDs** — One signal LED (2.97 Gbps, 1.485 Gbps, or 270 Mbps) lights to indicate the type of signal that is present. The Unknown LED lights if the signal does not reference SMPTE 259M, 292M, or 424M.
- D Output LEDs** — Light to indicate the presence of sync and other output signal information:
  - **HDTV:** Indicates 2K, 1080p, 1080i, 720p, 480p, 576p, or custom rates.
  - **PC:** Indicates VESA standard or custom computer rates.
  - **Audio:** Audio is embedded in the signal.
  - **Sync:** Sync is present (does not light if video sync is muted).
- E Menu and Enter buttons** — Let you access the OSD and select submenus and items from the menus.
- F Navigation buttons** — Press these right ►, left ◀, up ▲, and down ▼ arrow buttons to step through the OSD submenus, to lock the front panel (see the next section), perform Auto-Image™ (press ►), and reset the output rate (hold ▼ for 5 seconds).

## Locking the Front Panel (Executive Mode)

To prevent unauthorized access or accidental changes to DSC settings, you can lock the front panel controls, making control available only by SIS commands. (The default state is unlocked.) You can lock and unlock the front panel as follows:

- **Using the front panel buttons** — To **lock**, press the **Menu** and ▼ buttons simultaneously and hold them until the OSD displays Executive Mode Enabled (approximately 5 seconds). To **unlock**, repeat this process.
- **SIS commands** — To **lock** (enable executive mode), enter 1X. To **unlock** (disable executive mode), enter 0X.

## Configuring the DSC 3G-HD A

The DSC 3G-HD A can be configured through a host connected to the USB port, using Extron PCS Windows-based configuration software (available at [www.extron.com](http://www.extron.com)) or SIS commands (see page 4 for a selection of [basic commands](#)). You can also configure it using the OSD menu system, described below.

### On-Screen Display (OSD) Menu System

The OSD menu system consists of seven submenus and two information screens. To access the menus, press the front panel **Menu** button. With the main menu displayed, use the arrow buttons to step through the submenus and submenu items. Press the **Enter** button to select items that you highlight. The Communication and Device Info screens are read-only and do not provide selections.

- Quick Setup
- User Presets
- Picture Controls
- Input
- Output
- Audio
- Advanced
- Communication
- Device Info.

**NOTE:** The OSD times out and closes after 1 minute if no buttons are pressed.

Extron Electronics DSC 3G-HD A		FW: 1.00
Quick Setup	Auto-Image Press Enter to Auto-Image	
User Presets	Output Resolution RGB	
Picture Controls	Auto Memory On	
Input	Aspect Ratio Fill	
Output	Input Audio Format 2CH Digital	
Audio	Test Pattern Crop	
Advanced		
Communication		
Device Info		
Input Resolution 720P @60Hz		Output Resolution 1080P @60Hz

To use any menu:

1. Press the **Menu** button to access the main menu. The menu opens with the **Quick Setup** menu displayed.
2. Press the **▲** and **▼** buttons repeatedly to cycle through to the desired submenu (each button press outlines the next item).
3. Press the **Enter** button to access the desired submenu. The first item is outlined in yellow.
4. Press the **▲** and **▼** buttons to cycle through the options of the selected submenu until the desired item is outlined.
5. Press the **Enter** button to select the outlined item (the selected item is highlighted).
6. Press the **◀** and **▶** buttons to adjust the values within the item. For the items on the **Picture Controls** submenu, press the **◀** or **▶** button to select the item on the right or left, then press the **▲** and **▼** buttons to adjust the settings.
7. Press **Enter** to confirm your new values. The yellow highlighting is replaced by the yellow outline on the submenu screen.
8. Press the **▲** and **▼** buttons to move to another submenu item or press the **Menu** button to exit the submenu. To exit the menu system, press the **Menu** button twice.

## Setting Up the DSC 3G-HD A Using the OSD Menu

The **Quick Setup** submenu is displayed when the OSD opens. This submenu contains options from other submenus that you are most likely to need when configuring the DSC for the first time. Use the **Quick Setup** submenu to perform a basic system setup and get started quickly using the DSC. Select the following options from it as needed:

- **Auto-Image™** — Performs an Auto-Image on the video input to adjust the horizontal and vertical size and positioning to the selected aspect ratio (fill the screen or follow the input device aspect ratio). To perform an Auto-Image, select this item, then press **Enter** again to initiate the Auto-Image.
- **Output Resolution** — Lets you select the resolution and refresh rate for the current output from a range of available factory-installed rates (see "Output Scaler Rates"). Select the **Output Resolution** submenu, then press the **▲** and **▼** buttons to cycle through the available rates.
- **Auto Memory** — Sets the DSC to automatically save the current input configuration and picture control values according to the most recent configuration for each different rate. After selecting **Auto Memory**, press any arrow button to toggle Auto Memories on and off.
- **Aspect Ratio** — Lets you specify how much of the display the image fills. The submenu items are **Fill** (fills the entire screen) and **Follow** (uses the aspect ratio of the input). After selecting **Aspect Ratio**, press any arrow button to toggle between **Fill** and **Follow**.
- **Input Audio Format** — Lets you select the format of the audio to embed in the output. After selecting **Input Audio Format**, press any arrow button to cycle through the items: **None** (mute the audio), **Analog** (embed analog audio onto the HDMI output), **2CH Digital** (select one channel pair), **8CH Digital** (use first four pairs), and **SDI Audio Decode** (select a pair from a group).
- **Test Pattern** — Lets you select from seven test patterns to aid in setting up the DSC and the output display.

## Output Scaler Rates

Output rates can be set using the OSD menu or SIS commands. The table at right gives the rates and their SIS variables (see the [SIS table](#) on page 4).

## Output Rate Reset

If an image cannot be displayed due to an incompatible output rate, you can reset the output rate as follows:

With the OSD **closed**, press and hold the **▼** button for approximately 5 seconds to toggle between 1024x768 @ 60 Hz and 720p @ 60 Hz.

SIS Variables for DSC 3G-HD A Resolutions and Refresh Rates (X20 = 11 through 92)								
Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz
640x480								11
800x600								14
1024x768								20
1280x768								29
1280x800								32
1280x1024								35
1360x768								41
1366x768								47
1440x900								53
1400x1050								56
1600x900								58
1680x1050								60
1600x1200								62
1920x1200								64
480p							65	66
576p						67		
720p			68	69	70	71	72	73*
1080i						74	75	76
1080p	77	78	79	80	81	82	83	84
2048x1080 (2K)	85	86	87	88	89	90	91	92

\*Default output resolution

# DSC 3G-HD A • Setup Guide (Continued)

## Basic SIS Commands

The DSC 3G-HD A can be configured with specific SIS commands via RS-232 or USB connection. This table lists a selection of basic commands (all responses to View commands are shown in verbose mode with tagged responses). For a full list of SIS commands and variables see the *DSC 3G-HD A and DSC HD-3G A User Guide*, online at [www.extron.com](http://www.extron.com).

Command	ASCII Command (Host to Scaler)	Response (Scaler to Host)	Additional Description
View input video format	1 * \	Vtyp 1 * <u>X2</u> ←	View detected input video format <u>X2</u> .
<b>Audio Input Format</b> — select between analog (5-pole captive screw connector) and digital (embedded in SDI input) audio sources.			
Set to none	<u>Esc</u> I 1 * 0 AFMT ←	Afmt I 1 * 0 ←	Mute all audio for the input.
Set to analog	<u>Esc</u> I 1 * 1 AFMT ←	Afmt I 1 * 1 ←	Select analog audio for the input.
Set to 2CH Digital	<u>Esc</u> I 1 * 2 AFMT ←	Afmt I 1 * 2 ←	Select two-channel digital audio for the input (default).
Set to 8CH Digital	<u>Esc</u> I 1 * 3 AFMT ←	Afmt I 1 * 3 ←	Select eight-channel digital audio for the input.
Execute Auto-Image	A	Img ←	Perform an Auto-Image on the current input.
<b>Output Configuration</b>			
Set output scaler rate	<u>Esc</u> <u>X20</u> RATE ←	Rate <u>X20</u> ←	Select output resolution and refresh rate <u>X20</u> (see the output <a href="#">SIS variables table</a> on page 3).
View output rate	<u>Esc</u> RATE ←	Rate <u>X20</u> ←	Show the current output rate for the DSC 3G-HD A.
<b>Video Mute</b> (Defaults to unmuted after a power cycle.)			
Mute video to black	1 * 1B	Vmt 1 * 1 ←	Mute the video and display a black screen.
Mute video and output sync	1 * 2B	Vmt 1 * 2 ←	Mute all TMDS signals on the HDMI video output.
Unmute video	1 * 0B	Vmt 1 * 0 ←	Unmute the output video.
View video mute status	1B	Vmt <u>X42</u> ←	View output video mute status <u>X42</u> .
<b>Screen Saver Mode</b> (Takes place when no signal is detected on the input.)			
Set screen saver mode	<u>Esc</u> M <u>X40</u> SSAV ←	Ssav M <u>X40</u> ←	Set the screen saver mode to <u>X40</u> (default = 1 = black).
View screen saver mode	<u>Esc</u> M SSAV ←	Ssav M <u>X40</u> ←	View current screen saver mode <u>X40</u> .
Set sync timeout duration	<u>Esc</u> T <u>X28</u> SSAV ←	Ssav T <u>X28</u> ←	Set the period before sync timeout to <u>X28</u> seconds (default = 501 = never).
View sync timeout duration	<u>Esc</u> T SSAV ←	Ssav T <u>X28</u> ←	View the amount of time <u>X28</u> before sync timeout.
View screen saver status	<u>Esc</u> S SSAV ←	Ssav S <u>X63</u> ←	View the screen saver status <u>X63</u> .
Reset device to factory settings	<u>Esc</u> ZXXX ←	Zpx ←	Resets all device settings to the factory defaults.
<b>Power Save Mode</b>			
Power save off	<u>Esc</u> 0 PSAV ←	Psav 0 ←	Set the DSC to run in full power mode (default).
Power save on	<u>Esc</u> 1 PSAV ←	Psav 1 ←	Place the DSC in low power mode). (This mode can be exited only via the <u>Esc</u> 0 PSAV ← command
View power save setting	<u>Esc</u> PSAV ←	Psav <u>X62</u> ←	View power save status <u>X62</u> .

**NOTE:** X2 = Input video format: 0 = no signal; 1 = SD-SDI 480i; 2 = SD-SDI 576i; 3 = HD-SDI 480p, 576p, 720p, 1080i, 1080PsF, 1080p (up to 30 Hz); 4 = 3G-SDI 1080p (@ 50, 59.94, and 60 Hz), 2K; 5 = unknown  
X20 = Output scaler rate: 1 = EDID of connected display, 2 = custom rate 1, 3 = custom rate 2, 4 = custom rate 3, 9 = match input rate (see the [SIS variables table](#) on page 3 for more rate variables)  
X28 = Output sync timeout duration in seconds (1 - 500 in 1-second increments): 501 = never (default), 0 = immediate timeout  
X40 = Screen saver mode: 1 = black (default), 2 = blue  
X42 = Video mute: 0 = off (unmute), 1 = on (mute to black screen), 2 = on (mute all output sync and video)  
X62 = Power save setting: 0 = full power (default), 1 = low power state  
X63 = Screen saver status: 0 = active, timer not running; 1 = no active input, timer running, output sync active; 2 = No active input, timer expired

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