

DSC 3G-3G A Scaler • Setup Guide

IMPORTANT:
Go to www.extron.com for the complete user guide and installation instructions before connecting the product to the power source.

The Extron DSC 3G-3G A scaler converts between 3G-SDI, HD-SDI, and SD-SDI resolutions and frame rates. It accepts, scales, and outputs SMPTE video resolutions from 480i and 576i up to 1080p/60 and 2K. Stereo audio embedding and de-embedding, dual SDI outputs, genlock, and an SDI input loop-through are also provided. Configuration and control are available via the Windows®-based PCS configuration software, Simple Instruction Set (SIS™) commands, and the on-screen display (OSD) menus.

This setup guide provides step-by-step instructions for an experienced user to set up and configure a DSC 3G-3G A.

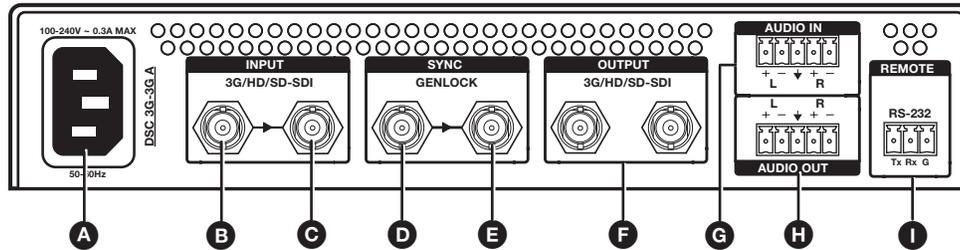
NOTE: For full installation, configuration, menus, connector wiring, and operation details, see the *DSC 3G-3G A User Guide*, available at www.extron.com.

Installation

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués uniquement par un électricien qualifié.

Rear Panel Features



- A** AC power connector
- B** 3G/HD/SD-SDI input connector
- C** Buffered SDI loop-through connector
- D** SDI genlock input connector
- E** SDI genlock loop-through connector
- F** SDI output connectors
- G** 5-pole captive screw audio input connector
- H** 5-pole captive screw audio output connector
- I** 3-pole captive screw connector for RS-232 control

Figure 1. Rear Panel Connectors

Mounting and Cabling the DSC 3G-3G A

- 1. Disconnect power** — Turn off or disconnect all equipment power sources.
- 2. Mount the unit** — (Optional) Mount the DSC 3G-3G A either in a rack using shelf mounting brackets (RSU 129 or RSB 129) or under furniture using furniture mounting brackets (MBU 125) (see the instructions provided with the mounting kit).
- 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 SDI loop-through BNC connector (**C**) for a buffered, reclocked copy of the input.
- 5. Connect analog audio input** — (Optional) Connect analog audio from the source to the captive screw Audio input connector (**G**) for balanced or unbalanced input.

NOTE: To embed analog audio from this input, you must first set it up using the **OSD menus** (see page 3) or **SIS commands** (see page 4).

- 6. Connect the output** — Connect one or two SDI display devices to the 3G/HD/SD-SDI output connectors (**F**) for SDI output.
- 7. Connect analog audio output** — (Optional) Connect speakers, an amplifier, or other audio output device to the captive screw Audio output connector (**H**) for stereo or dual mono audio.

DSC 3G-3G A • Setup Guide (Continued)

8. **Connect a computer or control device** — For remote configuration and control via the PCS software or SIS commands:
 - **RS-232** — For serial RS-232 control, connect a host computer or control system to the 3-pole captive screw RS-232 connector (see [figure 1](#), **I**, on the previous page). RS-232 protocol (default values) are 9600 baud, 1 stop bit, no parity, 8 data bits, no flow control.
 - **USB** — For configuration via the Extron PCS Configuration software, connect a host computer to the front panel USB mini-B port (see [figure 2](#), **B**).
9. **Connect power to the unit** — Connect the supplied US standard IEC power cord between the power connector (see [figure 1](#), **A**), and a 110-220 V 50-60 Hz AC power source.

Front Panel Overview

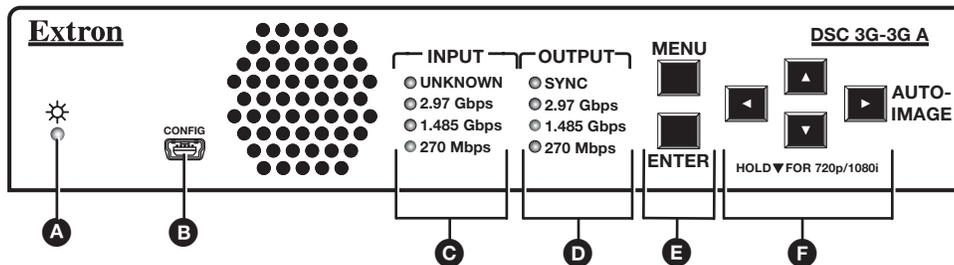


Figure 2. Front Panel Features

- A Status LED** — Lights steadily amber when there is power but no input 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 mini USB 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:
 - **Sync** — Sync is present (does not light if video sync is muted).
 - **2.97 Gbps** — SMPTE 424M
 - **1.485 Gbps** — SMPTE 292M
 - **270 Mbps** — SMPTE 259M
- E Menu and Enter buttons** — Press these buttons to 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 configuration available only by SIS commands or the PCS configuration software. (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 ØX.

Configuring the DSC 3G-3G A

The DSC 3G-3G A can be configured through a host connected to the RS-232 or USB port, using the Extron PCS configuration software (available at no charge at 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 on page 3. The illustration at right shows the **Quick Setup** menu, which is the opening OSD screen.

Extron Electronics DSC 3G-3G A		FW: 1.00
Quick Setup	Auto-Image	
User Presets	Output Resolution 720p @59.94Hz	
Picture Controls	Auto Memory On	
Input	Aspect Ratio Fill	
Output	Input Audio Format SDI Stereo	
Audio	Test Pattern Off	
Advanced		
Communication		
Device Info		
Input Resolution 720p @59.94Hz	Output Resolution 720p @59.94Hz	

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 move the yellow outline to the desired menu item. Press the **Enter** button to select an outlined item. The **Communication** and **Device Info** screens are view-only.

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

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 items 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 right or left arrow button to select the setting on the right or left, then press the **▲** and **▼** buttons to adjust it.
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-3G A Using the OSD Menu

The **Quick Setup** submenu is displayed when the OSD opens. This submenu contains items 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 items from **Quick Setup** menu 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 settings 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 output), **SDI Stereo** (select an audio group and channel pair and pass them to the SDI output and the analog audio output), and **SDI Pass** (pass all AES audio on the SDI input to the SDI output and pass a selected channel pair from a specified audio group to the analog audio output).
- **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 shows the rates and their SIS variables (see page 4 for the **commands**).

SIS Variables for DSC 3G-3G A Resolutions and Refresh Rates (x20 = 08 through 53)								
Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz
480i							08	
576i						09		
720p	27	28	29	30	31	32	33*	34
1080i						35	36	37
1080p	38	39	40	41	42	43	44	45
2048x1080 (2K)	46	47	48	49	50	51	52	53

*Default output resolution

Output Rate Reset

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

Press the **Menu** button twice to close the OSD menu, then press and hold the **▼** button for approximately 5 seconds to toggle between 1080i @ 59.94 Hz and 720p @ 59.94 Hz.

DSC 3G-3G A • Setup Guide (Continued)

Basic SIS Commands

The DSC 3G-3G A can be configured with specific SIS commands via an RS-232 or USB connection. This table lists a selection of basic commands (view command responses are shown in verbose mode). For a complete list of SIS commands and variables see the *DSC 3G-3G A User Guide* online at www.extron.com.

Command	ASCII Command (host to Scaler)	Response (Scaler to Host)	Additional Description
View input video format	1 * \	X3 ←	View detected input video format X3.
Audio Input Format — Select between analog (5-pole captive screw connector) and digital (embedded in SDI input) audio sources.			
Set to none	Esc I 1 * 0 AFMT ←	Afmt I 1 * 0 ←	Mute all audio for the input.
Set to analog	Esc I 1 * 1 AFMT ←	Afmt I 1 * 1 ←	Select analog audio for the input.
Set SDI stereo (AES)	Esc I 1 * 2 AFMT ←	Afmt I 1 * 2 ←	Select SDI stereo audio for the input (default).
Set SDI pass (AES)	Esc I 1 * 3 AFMT ←	Afmt I 1 * 3 ←	Select SDI pass audio for the input.
View input audio format	Esc I 1 AFMT ←	X58 ←	View the current audio input type (X58).
Execute Auto-Image	A	Img ←	Perform an Auto-Image on the current input.
Output Configuration			
Set output scaler rate	Esc X20 RATE ←	Rate X20 ←	Select the output resolution and refresh rate X20.
View output rate	Esc RATE ←	X20 ←	Show the current output rate for the DSC 3G-3G A.
Video Mute (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 video and sync on the output.
Unmute video and output sync	1 * 0B	Vmt 1 * 0 ←	Display the selected input on the output.
View video mute status	1B	X42 ←	View output video mute status (X42).
Screen Saver Mode (Takes place when no signal is detected on the SDI input.)			
Set screen saver mode	Esc M X40 SSAV ←	Ssav M X40 ←	Set the screen saver mode to X40 (default = 1: black).
View screen saver mode	Esc M SSAV ←	X40 ←	View current screen saver mode X40.
Set sync timeout duration	Esc T X28 SSAV ←	Ssav T X28 ←	Set the period before sync timeout to X28 seconds (default = 501: never).
View sync timeout duration	Esc T SSAV ←	X28 ←	View the amount of time X28 before sync timeout.
View screen saver status	Esc S SSAV ←	X63 ←	View the screen saver status X63.
Reset device to factory settings	Esc ZXXX ←	Zpx ←	Resets all device settings to the factory defaults.
Power Save Mode			
Power save off	Esc 0 PSAV ←	Psav 0 ←	Set the DSC to run in full power mode (default).
Power save on	Esc 1 PSAV ←	Psav 1 ←	Place the DSC in low power mode. (This mode can be exited only via the Esc 0 PSAV ← command.)
View power save setting	Esc PSAV ←	X62 ←	View power save status X62.

NOTE: X3 = Input video format: 0 = no signal, 1 = SD-SDI 480i, 2 = SD-SDI 576i, 3 = HD-SDI 480p, 576p, 720p, 1080i, and 1080p (up to 30 Hz), 4 = 3G-SDI 1080p (@ 50, 59.94, and 60 Hz) and 2K, 5 = unknown.
X20 = Output scaler rate: See the [resolution and refresh rate table](#) on page 3 for 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 with OSD text.
X42 = Video mute: 0 = off (unmute), 1 = on (mute to black screen), 2 = on (mute all output sync and video)
X58 = Input audio format: 0 = None (muted), 1 = Analog, 2 = SDI stereo (default), 3 = SDI pass
X62 = Power save setting: 0 = full power (default), 1 = low power state
X63 = Screen saver status: 0 = active with timer not running, 1 = no active input with timer running and output sync active, 2 = No active input with timer expired.

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