

SSG192

HIGH DEFINITION STUDIO SYNC GENERATOR



**the master
clock for
all audio
and video
in your
studio**



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SSG192 High Definition Studio Sync Generator User Guide

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BEFORE YOU BEGIN

What Ships in the Box

- ☑ The SSG192 unit
- ☑ An IEC power cable
- ☑ The Quick Start

Getting Help

If you have questions beyond the scope of this guide, contact our Technical Service Group in any of the following ways:

- T USA customers 425-778-7728
International customers 01-425-778-7728
8:00 am to 4:30 pm Monday through Friday, Pacific Time
- F 425-778-7727
- E tech@lucidaudio.com
- W www.lucidaudio.com

Notational Conventions in this User Guide

Note Identifies information that needs extra emphasis. Generally supplies extra information to help you to better use the SSG192.

CAUTION Identifies information that, if ignored, may cause damage to the SSG192 unit or other equipment in your system.

WARNING Identifies information that, if ignored, may be hazardous to your health or that of others.

CAPS Controls, switches or other markings on the chassis of the SSG192.

Operator Safety Instructions

- Read these instructions
- Keep these instructions
- Heed all warnings
- Follow all instructions
- Clean only with dry cloth
- Use only attachments and accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- This apparatus shall not be exposed to dripping or splashing and objects filled with liquids, such as vases, shall not be placed on the apparatus.

Mains Voltage. The unit comes from the factory configured for the voltage range applicable to the locale it was shipped to. The Line Voltage selector switch is located internally. Changing its setting requires the services of competent service personnel. When first connecting the SSG192, ensure that the AC mains voltage in your installation is within the range marked on the rear of the unit.

There is no user accessible fuse.

Power Source. This product is intended to operate from a power source that does not apply more than 250 V rms between the power

supply conductors or between either power supply conductor and ground. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation.

Grounding. The chassis of this product is grounded through the grounding conductor of the IEC power cord. To avoid electric shock, plug the power cord into a properly wired receptacle before making any connections to the product. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation. Do not defeat the safety purpose of the grounding plug. The three-pronged grounded plug is provided for your safety. When the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Danger from Loss of Ground. If the protective ground connection is lost, all accessible conductive parts, including knobs and controls that may appear to be insulated, can render an electric shock.

Proper Power Cord. Use only the power cord and connector specified for the product and your operating locale. Use only a cord that is in good condition. Protect the power cord from being walked on or pinched, particularly at the plug, convenience receptacle, and the point where the cord exits from the apparatus.

Internal Fuse. There is an internal fuse that is considered not user replaceable. Should this fuse open, the unit will not operate. If the fuse opens, it is a sign of internal distress that simple fuse replacement will not fix. Seek qualified service for the unit.

Operating Location. Do not operate this equipment under any of the following conditions: explosive atmospheres, in wet locations, in inclement weather, improper or unknown AC mains voltage, or if improperly fused. Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Unplug this device during lightning storms or when unused for long periods of time.

Stay Out of the Box. To avoid personal injury, do not remove the product covers or panels. Do not operate the product without the covers and panels properly installed. Only use accessories specified by the manufacturer. Clean only with a dry cloth.

User Serviceable Parts. There are no user serviceable parts inside the SSG192. In case of failure, refer all servicing to the factory. Servicing is required when the SSG192 has been damaged in any way, such as when a power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Equipment Markings



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

SEE OWNERS MANUAL. VOIR CAHIER D'INSTRUCTIONS.
o user serviceable parts inside. Refer servicing to qualified service personnel
Il ne se trouve a l'interieur aucune piece pouvant etre reparatione l'usager.
S'adresser a un reparatione competent.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance instructions in this user guide.

CAUTION

To prevent electric shock, do not use the polarized plug supplied with the unit with any extension cord, receptacle, or other outlet unless the prongs can be fully inserted.

PRODUCT SUMMARY

THE SSG192 HIGH DEFINITION STUDIO SYNC GENERATOR is an extremely flexible and solid digital audio/video master clock generator for recording, mastering, postproduction, dubbing, and online video studios. With multiple clock rates and multiple (simultaneous) output formats, the SSG192 can handle any scenario. Proper synchronization of digital signals throughout a studio ensures the elimination of distortion causing jitter and audible artifacts.

Key Features

Output Formats	Simultaneously outputs Word Clock, 256X Superclock, 1024X Lucid UltraClock, and AES11 sync formats.
Synchronization Capability	Synchronizes to house video blackburst (NTSC 60 Hz, 59.94 Hz, PAL 50 Hz), AES3, AES11, or Word Clock.
Sample Rates Supported	Supports all standard digital audio sample frequencies from 32 kHz to 192 kHz.
Video Sync Generation	Syncs to internal audio clock of input device.
Compatibility	Compatible with equipment from Digidesign®, Sonic Solutions®, Mackie®, Yamaha®, Tascam®, and many other manufacturers of digital audio consoles, workstations, and recorders.

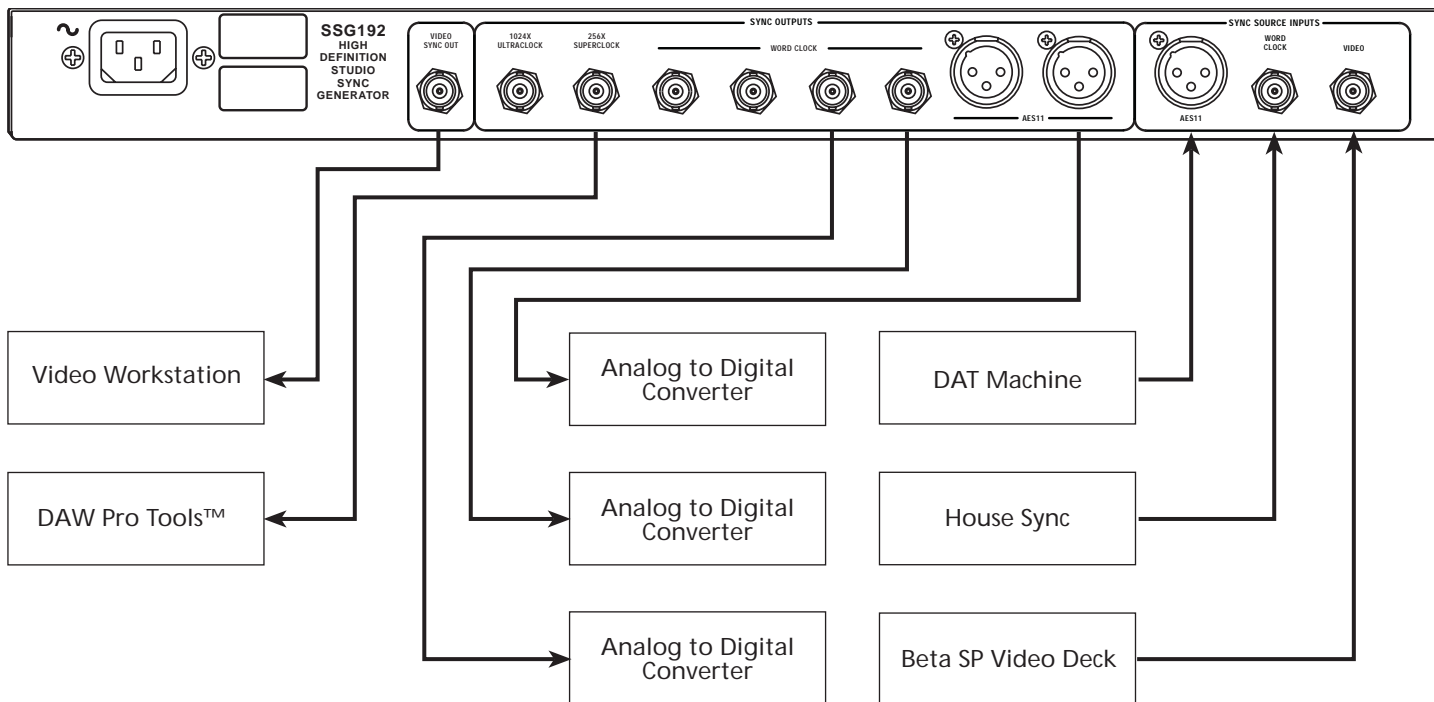
SSG192 USER'S GUIDE

OVERVIEW OF REAR PANEL CONNECTORS



CONNECTION		CONNECTOR TYPE	WHAT IT DOES
POWER INPUT		3-pin IEC	Connects to AC mains.
SYNC OUTPUTS Outputs are simultaneous	VIDEO SYNC OUT	BNC	Supplies a video sync signal at the frame rate selected on the front panel. Requires 75-ohm termination at the cable end.
	1024X ULTRACLOCK	BNC	Supplies output at 1024 times the selected sample rate. Use with other Lucid high definition digital products. Requires 75-ohm termination at the cable end.
	256X SUPERCLOCK	BNC	Supplies output at 256 times the selected sample rate. Use with ProTools® and other products. Requires 75-ohm termination at the cable end.
	WORD CLOCK	BNC	Supplies output at the selected sample rate. Requires 75-ohm termination at the cable end.
	AES11	XLR3 male	Supplies a 110-ohm (AES3 sync protocol) sync output.
SYNC SOURCE INPUTS Inputs selected from the front panel	AES11	XLR3 female	Allows using an AES3 digital audio signal as a sync source, with or without modulation. Any modulation is ignored. 110-ohm termination supplied internally.
	WORD CLOCK	BNC	Bridges the word clock input.
	VIDEO	BNC	Bridges the video sync input.

BASIC CONNECTION



UltraClock and Superclock outputs of the SSG192 can be jumpered to change them to other clock formats. They can be configured for UltraClock, Superclock or Word Clock.

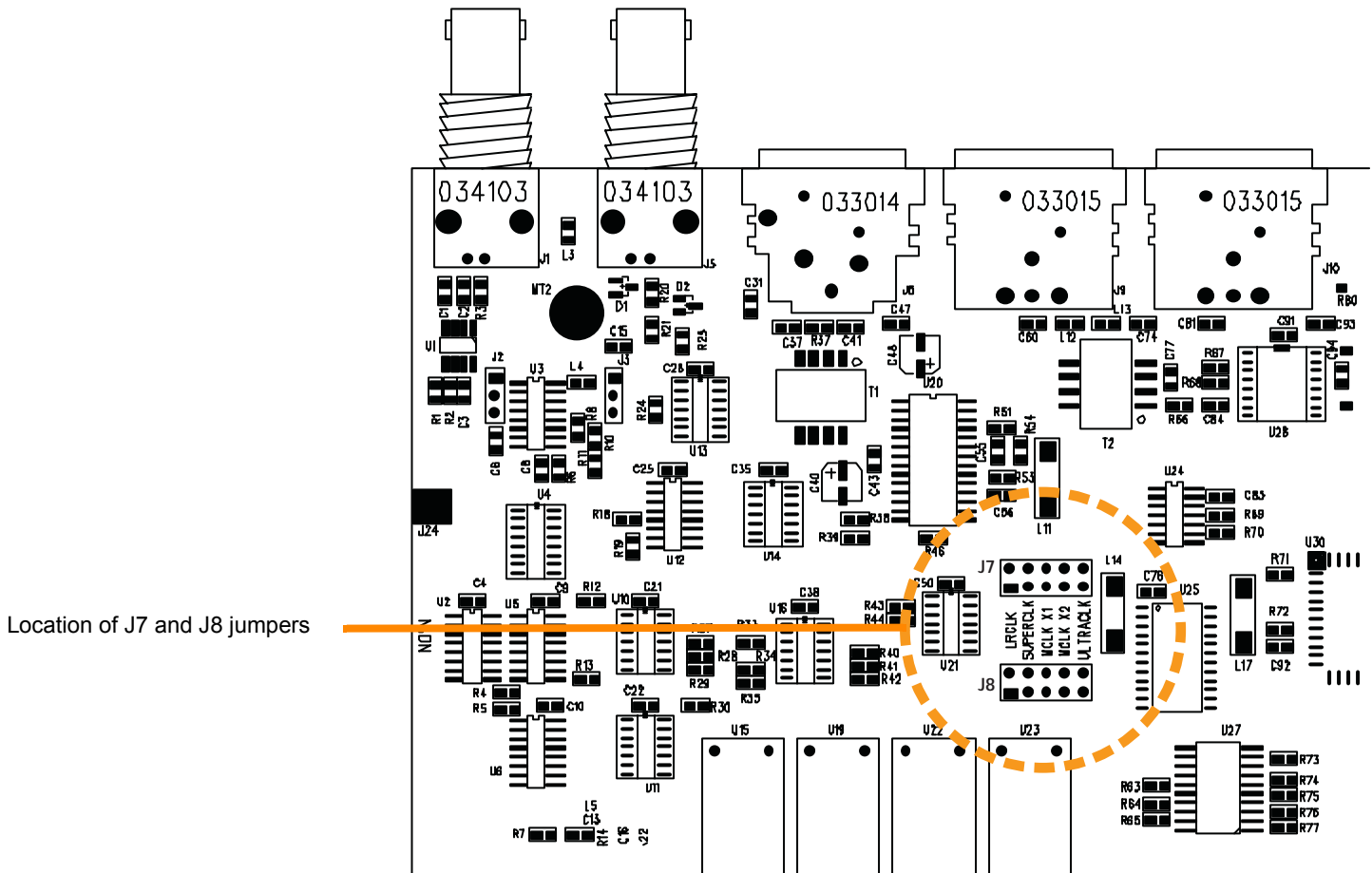
To change the jumper setting:

1. Disconnect the SSG192 from the AC mains source.
2. Remove the top cover by removing the 2 screws located at the rear edge of the cover, the 2 screws located at each end of the top cover, and 3 screws located on each side of the product. Lift the top cover free of the product and set it aside.
3. Find the jumpers which are located in the middle of the circuit board, behind the middle AES11 connector.

J7 affects the 256X Superclock output.

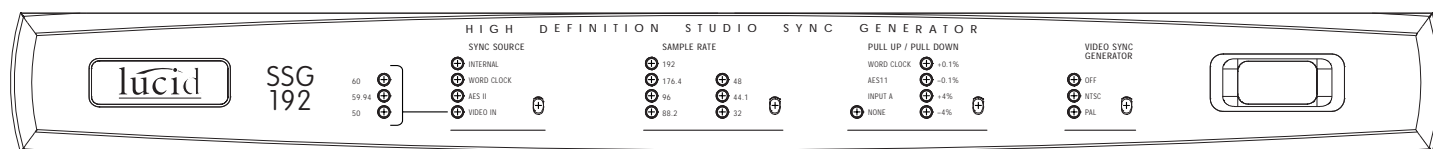
J8 affects the 1024X UltraClock output.

4. Move the jumper to the location corresponding to your requirements.
5. Reverse steps 2 and 1 to reassemble the unit.



OVERVIEW OF FRONT PANEL CONTROLS

CONTROL	SELECT SETTING	TOGGLE SWITCH PERFORMS THIS SYSTEM CONTROL FUNCTION
SYNC SOURCE	INTERNAL	Select for video when you want the SSG192 to be the master clock.
	WORD CLOCK	Select for the Word Clock input to be the master clock.
	AES11	Select for the AES11 input to be the master clock.
	VIDEO IN	Select for the video to be the master clock.
SAMPLE RATE	192 kHz, 176.4 kHz, 96 kHz, 88.2 kHz, 48 kHz, 44.1 kHz, 32 kHz	Select one audio sample rate. 192 kHz, 176.4 kHz, 96 kHz, 88.2 kHz for digital video disk; 96 kHz, also, for multitrack tape 48 kHz for professional multitrack tape and video 44.1 kHz for compact disk 32 kHz for broadcast audio
PULL UP / PULL DOWN	None, +0.1%, -0.1%, +4%, -4%	Option to select (only when Sync Source INTERNAL is selected) sample rates to correctly synchronize audio with video. Selections also work in tandem, i.e., +3.9%, +4%, +4.1%. Rates are automatically detected in Sync Sources WORD CLOCK and AES11.
VIDEO SYNC GENERATOR	OFF, NTSC (29.97 fps), PAL (25 fps)	Select specific video frame rate: OFF, NTSC (59.94 Hz/29.97 fps) or PAL (50 Hz/25 fps)
POWER SWITCH	1, 0	Turns the unit on or off.



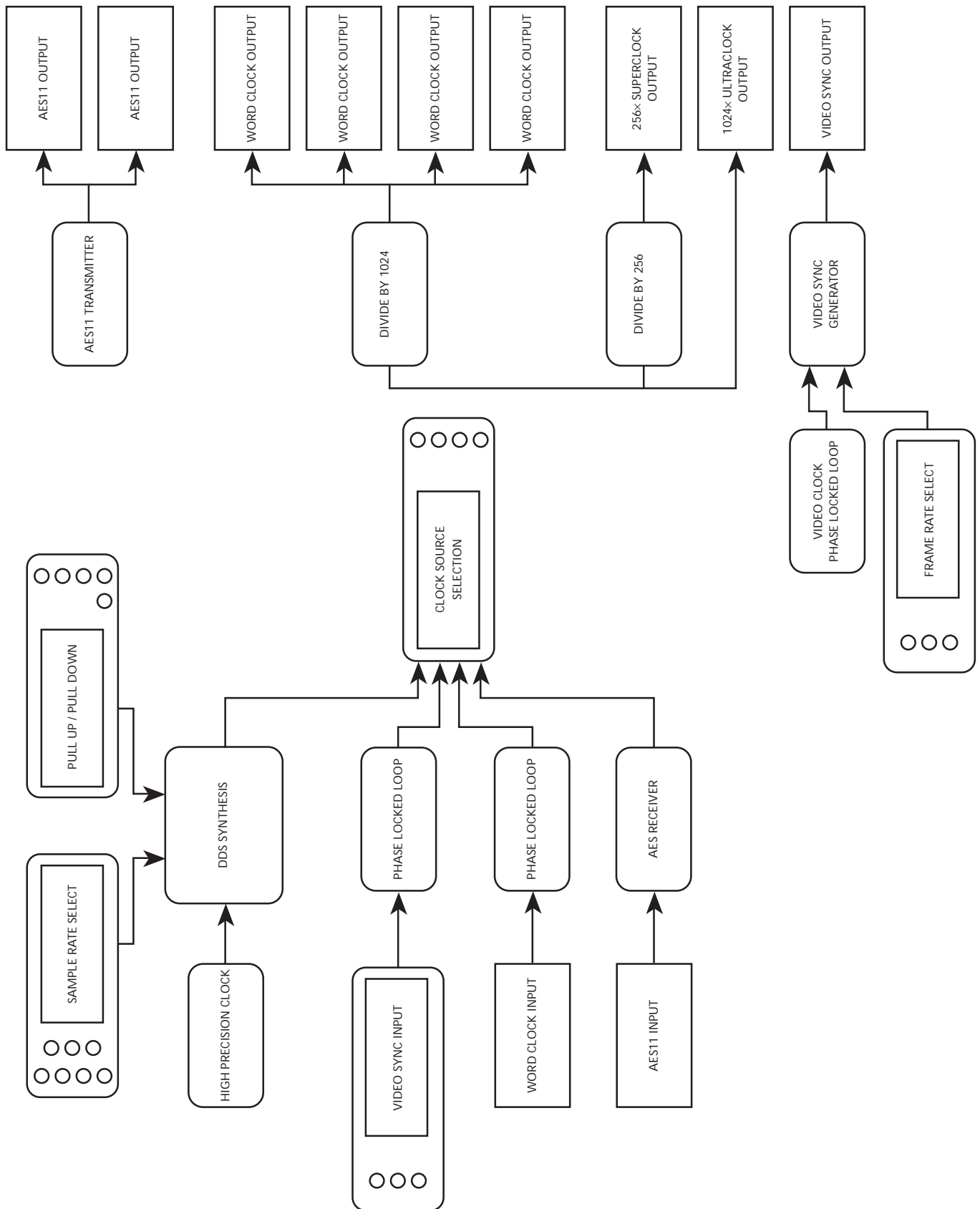
OPERATING THE SSG192

STEP 1	STEP 2	STEP 3	STEP 4
FRONT PANEL CONTROL SETTINGS			
SYNC SOURCE	SAMPLE RATE	PULL-UP/PULL-DOWN RATES	VIDEO SYNC GENERATOR RATES
INTERNAL	→ Select rate	→ Select rate	→ Select fps rate
WORD CLOCK	→ Select rate	→ Auto detects rate if one is needed	
AES11	→ Select rate	→ Auto detects rate if one is needed	
VIDEO IN	→ Select rate	→ Select rate	

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE / WHAT TO DO
No LEDs light	Device not plugged into AC mains.
INTERNAL sync has no output	Either output cable is unplugged or incorrectly terminated.
WORD CLOCK sync has flashing LED	Device for WORD CLOCK input is not plugged in or is out of signal range. Plug in the device for WORD CLOCK, with external 75 ohm termination. Ensure WORD CLOCK range is between 40 kHz and 100 kHz.
Toggle switch for SAMPLE RATE doesn't work	SYNC SOURCE not set to INTERNAL or VIDEO IN.
Manual operation of PULL UP/PULL DOWN toggle switch doesn't work	SYNC SOURCE not set to INTERNAL.
No output from VIDEO SYNC GENERATOR	Output device not plugged into VIDEO SYNC OUT. SYNC SOURCE not set to INTERNAL. VIDEO SYNC GENERATOR set to OFF.
My A/D converter doesn't lock to Word Clock output	A/D input is not connected and/or terminated. Check that the input is connected and terminated appropriately for your A/D converter. SSG192 is unlocked to selected input. Check input lock range.
AES11 sync has flashing LED	AES11 input is not connected. AES11 is out of frequency range. Correct AES11 source frequency range.
PULL UP/PULL DOWN switch doesn't work at 32 kHz	Feature not designed to work at 32 kHz.
VIDEO IN has no lighted LEDs	VIDEO input is not connected. VIDEO input is unlocked. Check to see that the frame rate is correct. VIDEO input signal sounds bad. Amplify external signal or correct signal integrity.
Device connected to VIDEO input has wrong LED lit for SYNC SOURCE	Video deck is set to wrong format or speed. Correct video deck settings.
WORD CLOCK or AES11 input lights wrong sample rate	WORD CLOCK or AES11 input rate is set incorrectly. Correct the source for WORD CLOCK or AES11 input sample rate.

SIGNAL FLOW DIAGRAM



SPECIFICATIONS

Performance	
Digital Audio Output Sample Rates	Internal Sync (kHz): 32, 42.336, 44.056, 44.1, 44.144, 45.937, 46.080, 47.952, 48, 48.048, 50, 88.2, 96, 100, 192 Word Clock: 30 kHz to 200 kHz AES11: 30 kHz to 100 kHz Video In: 30 kHz to 200 kHz @ 25 fps to 30 fps
Connectors	
Video Sync Input	1 x BNC, non-terminating Accepts sync or video, video modulation ignored
Video Sync Output	1 x BNC, 75-ohm source
Word Clock Sync Input	1 x BNC, non-terminating
Word Clock Sync Output	4 x BNC, 75-ohm source
AES11 Sync Input	1 x XLR3 female, 110-ohm terminating Accepts AES11 sync signals or AES3 audio signals, modulation ignored
AES11 Sync Output	2 x XLR3 male, 110-ohm source
256X Superclock Output	1 x BNC, 75-ohm source
1024X UltraClock Output	1 x BNC, 75-ohm source
Power Requirements	
Power In	3-pole IEC 105 VAC to 130 VAC, 50 Hz to 60 Hz 210 VAC to 260 VAC, 50 Hz to 60 Hz
Voltage Change Switch	Internal, requires technician
Physical	
Size (H x W x D)	1 U chassis, 1.72 in. x 19 in. x 6 in. / 4.37 cm x 48.26 cm x 15.24 cm
Shipping Weight	7.4 lbs

In the interest of continuous product improvement, Lucid reserves the right to alter, change, or modify these specifications without prior notice. For the latest specifications, visit www.lucidaudio.com. Go to the product page for the SSG192.

WARRANTY**The Lucid Limited Warranty**

Lucid expressly warrants that the product will be free from defects in material and workmanship for eighteen (18) months from the date the product is shipped from the factory. Lucid's obligations under this warranty will be limited to repairing or replacing, at Lucid's option, the part or parts of the product which prove defective in material or workmanship within eighteen (18) months from the date the product is shipped from the factory, provided that the Buyer gives Lucid prompt notice of any defect or failure and satisfactory proof thereof. Products may be returned by Buyer only after a Return Authorization number (RA) has been obtained from Lucid. Buyer will prepay all freight charges to return the product to the Lucid factory. Lucid reserves the right to inspect any products which may be the subject of any warranty claim before repair or replacement is carried out. Lucid may, at its option, require proof of the original date of purchase (dated copy of original retail dealer's invoice). Final determination of warranty coverage lies solely with Lucid. Products repaired under warranty will be returned freight prepaid via United Parcel Service by Lucid, to any location within the Continental United States. Outside the Continental United States, products will be returned freight collect.

The foregoing warranties are in lieu of all other warranties, whether oral, written, express, implied or statutory. Lucid, Inc. expressly disclaims any IMPLIED warranties, including fitness for a particular purpose or merchantability. Lucid's warranty obligation and buyer's remedies hereunder are SOLELY and exclusively as stated herein.

This Lucid product is designed and manufactured for use in professional and studio audio systems and is not intended for other usage. With respect to products purchased by consumers for personal, family, or household use, **Lucid expressly disclaims all implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose.**

This limited warranty, with all terms, conditions and disclaimers set forth herein, shall extend to the original purchaser and anyone who purchases the product within the specified warranty period.

Lucid does not authorize any third party, including any dealer or sales representative, to assume any liability or make any additional warranties or representation regarding this product information on behalf of Lucid.

This limited warranty gives the buyer certain rights. You may have additional rights provided by applicable law.

NOTE: Some Lucid products contain embedded software and may also be accompanied by control software intended to be run on a personal computer. Said software is specifically excluded from this warranty.

Limitation of Liability

The total liability of Lucid on any claim, whether in contract, tort (including negligence) or otherwise arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any product will not exceed the price allocatable to the product or any part thereof which gives rise to the claim. In no event will Lucid be liable for any incidental or consequential damages including but not limited to damage for loss of revenue, cost of capital, claims of customers for service interruptions or failure to supply, and costs and expenses incurred in connection with labor, overhead, transportation, installation or removal of products, substitute facilities or supply houses.

Servicing your Lucid product

If you have determined that your Lucid product requires repair services and you live outside of the United States please contact your local Lucid dealer or distributor for instructions on how to obtain service. If you reside in the U.S. then proceed as follows.

Return authorization

At the Lucid factory, Lucid will perform in-warranty or out-of-warranty service on any product it has manufactured for a period of three years from date of manufacture.

Before sending anything to Lucid, please contact our Customer Service Department for a return authorization (RA) number. The telephone number is (425) 778-7728. Additionally, support is available via E-mail through tech@lucidaudio.com or via the web site <http://www.lucidaudio.com>.

In-warranty repairs

To get your Lucid product repaired under the terms of the warranty:

1. Call us for an RA number. Have your serial number, contact name and phone number, shipping address and a brief description of the problem ready.
2. Pack the unit in its original packaging materials.
3. Write the RA number on the OUTSIDE of the box. Packages received without an RA number will be refused.
4. Ship the unit to Lucid, freight prepaid. We do not accept freight collect shipments.

Just do these four things, and repairs made in-warranty will cost you only one way freight charges. We'll pay the return freight.

If you don't have the factory packaging materials, we recommend using an oversize box. Wrap the unit in a plastic bag, surround it with bubble-wrap, and place it in the box surrounded by Styrofoam peanuts. Be sure there is enough clearance in the box to protect the rack ears. We won't return the unit in anything but Lucid packaging for which we will have to charge you. If the problem is due to operator misuse or error, you will have to pay for both parts and labor. In any event, if there are charges for the repair, you will pay for the return freight. All charges will be COD unless you have made other arrangements (prepaid, Visa or Mastercard).

Out-of-warranty repairs

If the warranty period has passed, you'll be billed for all necessary parts, labor, packaging materials, and freight charges.

DECLARATION of CONFORMITY

We, Lucid, a division of Symetrix, Inc.
6408 216th St. SW, Mountlake Terrace, Washington, USA,
declare under our sole responsibility that the product:

SSG192 High Definition Studio Sync Generator

to which this declaration relates, is in conformity with the following standards:

EN55103-1

Electromagnetic compatibility—Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.

Part 1 Emission

EN 55103-2

Electromagnetic compatibility—Generic immunity standard

Part 1: Residential, commercial, and light industry.

EN 60950

Safety requirements for mains operated electronic and related apparatus for household and similar general use.

The technical construction file is maintained at:

Lucid, a division of Symetrix, Inc.

6408 216th St. SW

Mountlake Terrace, WA 98043

USA

The authorized representative located within the European Community is:

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Date of issue: May 2001

Place of issue: Mountlake Terrace, Washington USA

Authorized signature:



Dane Butcher

President

Symetrix, Inc.