



SRA-9601

3G/HD/SD Reclocking Distribution Amplifier

User Manual



Video Production Technology

Thank you for choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
 - offer the best product quality and support
2. Make Cool Practical Technology
 - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at solutions@rossvideo.com.



David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

SRA-9601 User Manual

- Ross Part Number: **9601DR-004-02**
- Release Date: September 23, 2013.

The information contained in this manual is subject to change without notice or obligation.

Copyright

© 2013 Ross Video Limited. All rights reserved.

This work is proprietary and confidential to Ross Video Limited, its subsidiaries and its other affiliated corporations and may not be copied, distributed, sold or otherwise used or relied upon without the express written permission of Ross Video Limited. Reproduction or reverse engineering of copyrighted software is prohibited.



Patents

This product is protected by the following US Patents: 4,205,346; 5,115,314; 5,280,346; 5,561,404; 7,034,886; 7,508,455; 7,602,446; 7,834,886; 7,914,332. This product is protected by the following Canadian Patents: 2039277; 1237518; 1127289. Other patents pending.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

Trademarks

-  is a registered trademark of Ross Video Limited.
-  is a trademark of Ross Video Limited.
- Ross, ROSS, ROSS®, and MLE are registered trademarks of Ross Video Limited.
- VELCRO® is a registered trademark of Velcro Industries B.V.
- All other product names and any registered and unregistered trademarks mentioned in this manual are used for identification purposes only and remain the exclusive property of their respective owners.

Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, refer to the “**Important Safety Instructions**” listed below to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

Symbol Meanings



Protective Earth — *This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system’s protective earth (green or green/yellow) conductor.*



This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage or injury to persons or equipment.



Warning — *The symbol with the word “Warning” within the equipment manual indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.*



Caution — *The symbol with the word “Caution” within the equipment manual indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.*



Warning Hazardous Voltages — *This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.*



ESD Susceptibility — *This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.*

Important Safety Instructions



1. **Warning** – Read these instructions.
2. Follow all instructions.
3. Refer all servicing to qualified personnel.
4. The safe operation of this product requires that a protective earth connection be provided. A grounding conductor in the equipment's supply cord provides this protective earth. To reduce the risk of electrical shock to the operator and service personnel, this ground conductor must be connected to an earthed ground.
5. The AC appliance inlet on the product's power supply is the means to disconnect the supply from the AC Mains. It must remain readily operable for this purpose.



6. **Warning – Indoor Use: WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

EMC Notices

United States of America **FCC Part 15**

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe "A" est conforme à la norme NMB-003 du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

INTERNATIONAL

This equipment has been tested to **CISPR 22:2009** and found to comply with the limits for a Class A Digital device.

AUSTRALIA

This equipment has been tested to **AS/NZS CISPR 22:2009**, and found to comply with the limits for a Class A Digital device.

Maintenance/User Serviceable Parts

Routine maintenance to this GearLite product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the “Contact Us” section on the last page of this manual. All GearLite products are covered by a generous 3-year warranty and will be repaired without charge for materials or labor within this period. See the “Warranty and Repair Policy” section in this manual for details.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

Introduction

Overview

The SRA-9601 is a cost effective solution for 3G/HD/SD-SDI signal reclocking and distribution.

The SRA-9601 accepts one SDI signal and provides four reclocked SDI outputs on BNC connectors.

A dual LED provides SDI signal status information. When illuminated green, the SRA-9601 is locked to a valid SDI signal. If the LED is red, the unit is not locked to an SDI signal.

Power to the SRA-9601 is provided by an external AC adapter with locking DC connector supplied with the module.

Simplified Block Diagram

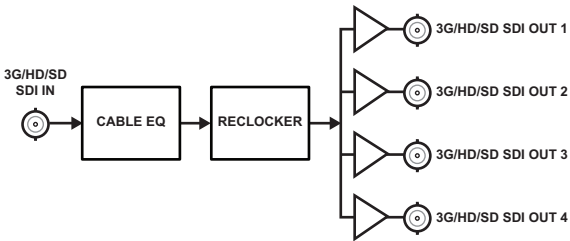


Figure 1 Simplified Block Diagram of SRA-9601 Functions

Features

The SRA-9601 includes the following features:

- Four BNC connectors for the reclocked SDI outputs
- One BNC connector for the SDI input
- Supports SDI Data Rates of 270Mbps, 1.485Gbps, 2.97Gbps
- Small brick form factor
- 5V universal adapter with locking DC connector
- 3-year warranty

Installation

Static Discharge

Whenever handling the SRA-9601 and other related equipment, please observe all static discharge precautions as described in the following note:



ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments, such as carpeted areas, and when wearing synthetic fiber clothing. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Unpacking

Unpack each SRA-9601 you received from the shipping container and ensure that all items are included. If any items are missing or damaged, contact your sales representative or Ross Video directly.

Mounting and Installation

The SRA-9601 can be mounted in any convenient location. However, to ensure long life for this product, observe the following precautions and operating requirements:

- Maintain an ambient temperature of 0°C to 40°C (32°F to 104°F).
- Allow for air circulation around the chassis for convectional cooling.

Many different mounting positions are possible with the included mounting hardware. Some installation options are permanent and require careful consideration of the final positioning before installation. Please note that in some mounting locations, the power adaptor must be affixed in a similar manner as the chassis.

Other possible options include the use of adhesive magnetic sheets (not included) affixed to the chassis and the power adaptor, for removable mounting on metal cabinets etc.

Surface Mount Strips

The included VELCRO® brand surface mount strips allow the GearLite module and power supply to be affixed to a permanent location during use and easily removed for adjustments. Carefully consider the installation location before

proceeding; the adhesive is very aggressive and is not easily removed. The adhesive will cure fully in 24 hours.

To install the Surface Mount Strips

1. Remove the **Protective Backing Film** from the adhesive on the bottom of the two **VELCRO® brand Surface Mount Strips**.
2. Adhere the **Surface Mount Strips** to the bottom side of the chassis. (**Figure 2**)

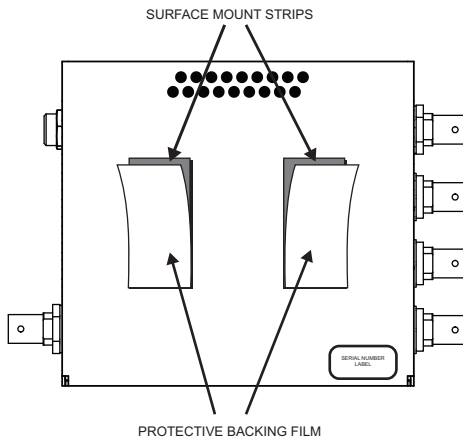


Figure 2 Surface Mount Installation Option

3. Remove the **Protective Backing Film** from the other side of the **VELCRO® brand Surface Mount Strip**.
4. Press the chassis into position on the surface you want to mount it to.



Operating Tip — An additional **VELCRO® brand Surface Mount Strip** is available to mount the power adapter.

Non-Slip Pads

Four non-slip adhesive pads have been supplied for desktop placements. Simply remove the protective backing film from the adhesive and affix one non-slip pad to each of the four corners on the bottom of the chassis.

Setup and Operation

Power Adaptor and Supply

Connect the PS-9000 power adaptor to the power supply connector. The PS-9000 provides regulated +5V DC (5%) @ up to 2A. The DC power cord has a locking connector that securely fastens into the power supply DC jack on the SRA-9601. The SRA-9601 has a standard miniature power jack (center pin positive). Refer to the section “**Important Regulatory and Safety Notices to Service Personnel**” at the front of this manual for details.

If using an adaptor other than the PS-9000, ensure that:

- the polarity is correct
- the voltage is +5V DC regulated to 5%
- sufficient current for the SRA-9601 is supplied



Caution — *Use of improper adaptors may damage the SRA-9601 and will void the warranty.*

Cable Connections Overview

There are four connections to the SRA-9601:

- Four BNC jacks for the SDI outputs
- One BNC jack for the SDI input
- A power supply connection to the GearLite PS-9000 power adaptor

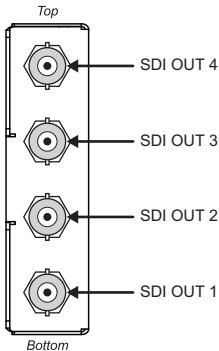


Figure 3 SDI Output Connections

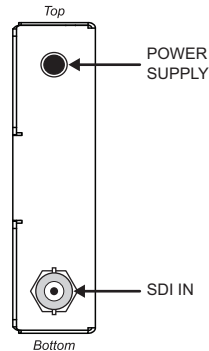


Figure 4 Power and SDI Input Connections

SDI Connections

Connect the SDI input cable to the SDI IN BNC.

Connect the SDI output cables to the OUT 1 to OUT 4 BNCs.

Status LEDs

The chassis faceplate of the SRA-9601 includes one LED that reports the SDI status. Refer to **Figure 5** for the LED location.

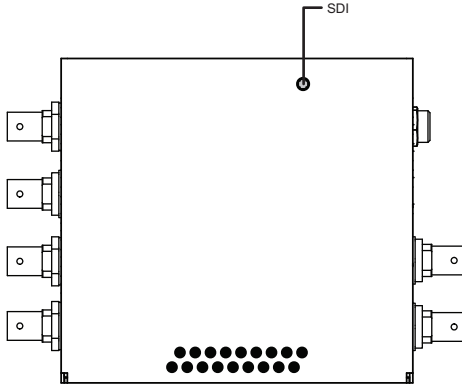


Figure 5 SRA-9601 Front Edge Status Indicator LED

Table 1 describes the status LED available on the SRA-9601.

Table 1 Status LED Descriptions

LED	Color	Function
SDI	Green	When lit green, this LED indicates the SRA-9601 is locked to a valid SDI signal.
	Red	When lit red, this LED indicates the SRA-9601 is not locked to a valid SDI signal.

Specifications

Specifications are subject to change without notification.

Table 2 SRA-9601 — Technical Specifications

Category	Parameter	Specification
SDI Input and Outputs	Standards	SMPTE 259M, SMPTE 292M, SMPTE 424M
	Level	800mV p-p +/-10%
	SDI Data Rates	270Mbps, 1.485Gbps, 2.97Gbps
	Impedance	75ohm
	Input Cable Equalization	>80m Belden 1694A cable to 2.97Gbps
	Return Loss	>10dB @ 2.97Gbps
Power	Required Voltage	+5v DC
	Current Consumption	2.1W
Other	Dimensions	3.938" x 2.656" x 0.813" (10cm x 6.75cm x 2.07cm)
	Weight	7.8oz (221g)

Service Information

Warranty and Repair Policy

The GearLite SRA-9601 is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of THREE (3) years from the date of delivery to the customer. In the event that your GearLite SRA-9601 proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this GearLite SRA-9601 has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the THREE (3) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This GearLite SRA-9601 User Manual provides all pertinent information for the safe installation and operation of your GearLite Product. Ross Video policy dictates that all repairs to the GearLite SRA-9601 are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your GearLite SRA-9601, please contact the Ross Video Technical Support Department. (Contact information is supplied at the end of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your GearLite SRA-9601. If required, a temporary replacement module will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

Notes:



Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

Technical Support

Telephone: +1 613 • 652 • 4886
After Hours Emergency: +1 613 • 349 • 0006
Email: techsupport@rossvideo.com

General Information

Telephone: +1 613 • 652 • 4886
Fax: +1 613 • 652 • 4425
Email: solutions@rossvideo.com
Website: <http://www.rossvideo.com>

Visit Us

Visit our website for:

- Company information and news
- Related products and full product lines
- Online catalog
- Testimonials



Video Production Technology