FSR

INSTALLATION AND OPERATOR'S MANUAL

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Model MAS - 3200
Video Switcher / Scaler

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11/04 43874 LIT 1034A

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres To avoid explosion, do not operate this product in an explosive atmosphere.

PROPRIETARY INFORMATION
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CHAPTER 1
INTRODUCTION

- Features
- Proper Setup
- Package Contents

INTRODUCTION

You have aquired one of the most value packed scaling switchers from FSR. This unit is designed to convert Composite Video and S-Video signals to a variety of computer and HDTV resolutions for viewing on most LCD, Plasma and HDTV displays available today. The MAS-3200 has many advanced features to enhance performance.

FEATURES

• Video inputs are de-interlaced and scaled to the selected PC or HDTV resolution.
• Automatic detection of NTSC or PAL worldwide TV Standards.
• High performance Adaptive 3D Comb Filter.
• Per-pixel motion compensated de-interlacing for artifact-free video images.
• Automatic detection for 3:2 pulldown for 24fps film source material.
• Frame rate conversion of 50Hz to 60Hz for PAL input signals.
• Vertical Temporal (VT) Filter removes jagged artifacts.
• On Screen Display for easy setup and adjustment.
• Built in DCTI/DLTI circuit for Color/Luminance transient improvement.
• PC Input connector for easy integration into an existing system.
• Last memory feature retains the last settings used,
• Control by Front Panel Buttons, RS-232

GETTING THE BEST DISPLAYED IMAGE

There are many factors affecting the quality of results when Composite, or SVideo signals are up-converted to computer resolutions. Some basic precautions will ensure the best possible performance from your Video Scaler.

• **Output display device** – The quality of the output signal will depend largely upon the type and quality of display device used. For instance, some video projectors just look better than others.

• **Distance between the Video Scaler and the display device –** This plays a major role in the final result. Long distances are possible, but special measures should be taken in order to avoid cable losses. These include using high quality (coax-type) cables or adding cable equalizers, such as the FSR CDA-2EQA, CI-5UT, etc.

• **Output connection cables** – Low quality cables are susceptible to interference. They degrade signal quality due to poor matching and cause elevated noise levels. Therefore, cables should be of the best quality. Coax-type computer cables are recommended because of their superior internal shielding characteristics.

• **Interference from nearby electrical devices** – These can have an adverse effect on signal quality. For example, an older computer monitor often emits very high electromagnetic fields that can interfere with the performance of video equipment in its proximity.

CHECKING THE PACKAGE CONTENTS

The following items are contained in the shipping carton:
MAS-3200 Video switching scaler
AC power cable
User manual

SPECIFICATIONS

Input

Number	3; 1-Composite, 1 S-Video, 1 Computer Video Connector
Connector Type	Composite BNC
	S-Video 4 pin mini-DIN
	Computer HD-15 Female
Video Input Level	1 Vp-p
Computer Input Level	0.7 Vp-p + TTL Sync
Max Computer Resolution	1600x1200
Video Standards	NTSC 3.58, NTSC 4.43, PAL B/G/I/D
User Adjustments	Brightness, contrast, hue (NTSC), saturation,detail

Output

Number and Type	1 RGBHV / YpBpR (480P, 576P, 720P, or 1080I
Connector	HD-15 Female
Level	0.7 Vp-p + TTL Sync

PC output resolutions		Vert Rate	Horiz Rate	Format	Scan Type
VGA	640x480	59.94 Hz	31.469 KHz	RGBHV	Progressive
SVGA	800x600	60.32 Hz	37.880 Khz	RGBHV	Progressive
XGA	1024x768	60.00 Hz	48.360 Khz	RGBHV	Progressive
SXGA	1280x1024	60.20 Hz	63.981 Khz	RGBHV	Progressive

HDTV OUT Resolutions		Vert Rate	Horiz Rate	Format	Scan Type
480p	852x480	59.94 Hz	31.469 KHz	YpbPr	Progressive
576p	852x576	50.00 Hz	31.250 KHz	YpbPr	Progressive
720p	1280x720	59.94 Hz	44.995 KHz	YpbPr	Progressive
1080i	1920x1080	59.94 Hz	33.716 KHz	YPbPr	Interlaced

Remote Control

Type	RS-232
Connector	DB-9 Male
Protocol	See Chapter 3

Power Source 5VDC, 2 Amp universal input power supply

Size 1/2 RU

Weight 1.8 lbs

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CHAPTER 2
INSTALLATION

- Video Inputs
- Video Outputs
- Front Panel Controls

CONNECTING THE HARDWARE

The first step is to connect a video source to the input of the MAS-3200 and to connect its output to a display device. Below is a photograph of the rear panel of the unit.

Connecting the Video Inputs

The Video Scaler can accept a Composite Video, or S-Video input signal for scaling, as well as a computer signal input that can be passed through.

• **Composite Video** - use a BNC cable to connect the Composite Video output of the source equipment to the connector labeled “VIDEO” on the back of the unit.

• **S-Video** - use an S-Video cable to connect the S-Video output of the source video equipment to the connector labeled “S-VIDEO” on the back of the unit. S-Video provides improved performance over Composite Video and is recommended whenever possible.

• **PC Video** - connect the source computer’s VGA output signal to the HD15 connector labeled “PC IN” on the back of the unit. **Note** – This PC Input Signal is not scaled, but is available for pass-through when the PC Source is selected.

Connecting the Video Output

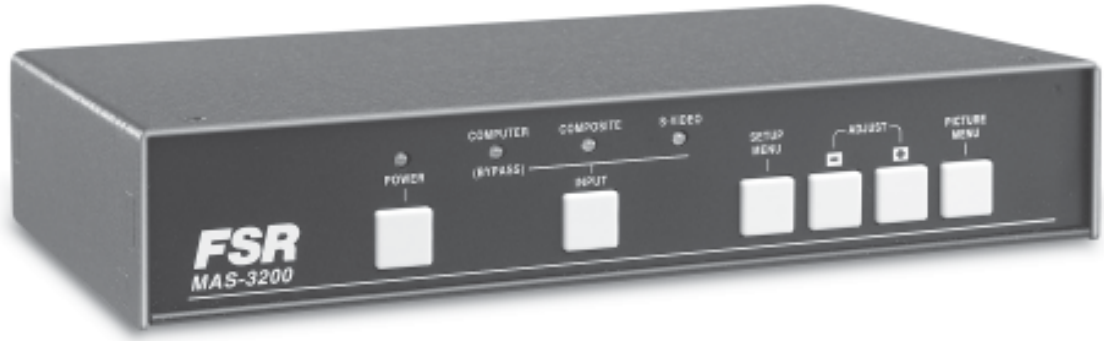
Connect the MAS-3200's output to the destination display device, such as an LCD computer monitor, video projector, HDTV Set or other device, via the HD15 connector on the back labeled “OUTPUT”.

Connecting Power to the Unit

The SC-1250 can accept 100-240VAC@50-60Hz. When the unit’s front panel Power Switch is turned On, the Power LED indicator on the front will illuminate.

FRONT PANEL CONTROL

The MAS-3200 is controlled via Front Panel Buttons and status is indicated by the OSD (on screen display).



Mode Button

Press the Mode Button repeatedly to toggle through the following controls, as shown on the OSD (On Screen Display) of the video display connected to the output of the unit.

• **Source Mode:** While in this mode, press the + or – Button to choose the desired input source from: Video, S-Video or Component Video.

• **Resolution Mode**: If the output is selected as RGB, press + or – Button to choose the output resolution from: VGA, SVGA, XGA or SXGA for PC output.

• **Output Mode**: Press + or – Button to select either PC (RGB) or HDTV (YPbPr) out.

• **Aspect Mode:** Press + or – Button to choose between Standard Aspect (4:3) and Wide Aspect (16:9) output.

• **Enhancement:** Turn the 3D Comb Filter function On or Off by with the + and - Buttons. Note – When VCR or non-standard video source is connected to the input, the output picture may jitter. If this occurs, please turn off the 3D Enhance function.

• **Digital NR Mode:** Turn the Digital Noise Reduction function On or Off by using the + and – Buttons.

Picture Button

Press the Picture Button repeatedly to toggle through the following picture adjustment parameters, then use the + and – Buttons to adjust the level.

• **Contrast:** The range of this adjustment is 0~48. The Factory Default is 40.

• **Bright:** The range of this adjustment is 0~48. The Factory Default is 24.

• **Saturation:** The range of this adjustment is 0~48. The Factory Default is 24.

• **Hue:** (NTSC Only) The range of this adjustment is 0~48. The Factory Default is 24.

• **Detail:** The range of this adjustment is 0~48. The Factory Default is 10.

Input Button

Press the Input Button to toggle through the input sources.

+ and - Buttons

Press these buttons for control or to set values as described above.

Power LED and Button
The Power LED illuminates when the unit has power on.

Factory Reset
When in the Picture Adjust Mode (5.2), simultaneously pressing and holding the + and – Buttons for 5 seconds returns the unit to all the Factory Default settings.

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CHAPTER 3

REMOTE CONTROL PROTOCOL RS 232

- Transmission Format
- Command Codes
- Response Codes

RS-232 REMOTE CONTROL PROTOCOL

RS-232 TRANSMISSION FORMAT

Baud Rate: 9600 bps
Data Bit: 8 bits
Parity: none
Stop Bit: 1 bit

Note - The connection between the video scaler and the remote controller requires an RS-232 modem cable

Video Scaler		Remote Controller	
PIN	Definition	PIN	Definition
1	NC	1	NC
2	TxD	2	RxD
3	RxD	3	TxD
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

RS-232 COMMAND CODES

The command and Response codes are a combination of 3 bytes. The first and second bytes are text and the third byte is a HEX value. No carraige return is necessary.

Remote Controller Command Codes

Code		Comment
'PW'+0		power off (standby)
'PW'+1	POWER	power on (normal)
'IN'+0		Composite video
'IN'+1		S video
'IN'+2		Not Used
'IN'+3	INPUT	PC bypass
'OU'+0		VGA
'OU'+1		480p
'OU'+2		SVGA
'OU'+3		XGA
'OU'+4		SXGA
'OU'+5		576p
'OU'+6		720p
'OU'+7	OUTPUT	1080i
'OS'+0	OSD	osd OFF
'OS'+1		osd ON
'DI'+0		display OFF
'DI'+1	DISPLAY	display ON

‘BR’+value	brightness	value = 0~48
‘CO’+value	contrast	value = 0~48
‘SA’+value	saturation	value = 0~48
‘SH’+value	detail	value = 0~48
‘TI’+value	hue	value = 0~48
‘RE’+0	reset	video adjustment reset
‘FP’+0		front panel lockout ON
‘FP’+1	PANEL	front panel lockout OFF
‘TD’+0		3 D enhance OFF
‘TD’+1	Three D	3 D enhance ON
‘NR’+0		Digital NR OFF
‘NR’+1	NR	Digital NR ON
‘AS’+0		aspect 16:9
‘AS’+1	ASPECT	aspect 4:3
‘AL’+0	retrive video scaler all status ‘PW’+? ‘IN’+? ‘OS’+? ‘OU’+? ‘DI’+? ‘IR’+? ‘FP’+? ‘BR’+? ‘CO’+? ‘SA’+? ‘SH’+? ‘TI’+? ‘TD’+? ‘NR’+? ‘AS’+?	

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CHAPTER 4

WINDOWS CONTROL PANEL

- Set up
- Normal Operation
- Settings

SETUP

To setup the windows control panel, insert the MAS-3200 CD-ROM into the drive. If your computer is set for auto run the setup program will automatically start. If not open the CD drive and double click on Setup.exe. Follow the directions and the program will be installed in\Program Files\FSR\MAS-3200 directory. The setup program will place a shortcut on the desktop, clicking on the shortcut will run the program.

NORMAL OPERATIONS

When the windows Control Panel comes up the following screen will be displayed:

The screen is divided into two sections,Sources and Output Resolutions. Clicking on the Composite button sends a message to the MAS-3200 that makes the Composite Source the current source. Pressing the S-Video, or Computer Video, makes S-Video or Computer Video sources active.
Pressing settings will display the following screen:

SETTINGS

The settings are divided into three sections, Video Settings, Adjustments, and Serial Port. To revert back to the main screen, press the settings button again.

Video Settings

Brightness, Detail(sharpness), Contrast, Hue (tint), and Saturation, are adjustable by moving the button on the appropriate slider.
Reset returns the video settings to their original settings.

Adjustments

Digital NR (noise reduction), Aspect, Enhancement, OSD (on screen display), Front Panel Lock, and Display can be enabled or disabled in this section.

Digital NR Turns on/off the Digital Noise Reduction function.

Aspect Choose between Standard Aspect (4:3), OR wIDE aSPECT (16:9)

Enhancement Turns on/off the 3D Comb Filter. Note: If a VCR or other non-standard video source is connected to the input the output picture may jitter. If this happens turn off enhancement.

OSD Turns on/off the On Screen Display.

Display Turns on/off the resolution display.

Front Panel Lock Locks/unlocks the front panel buttons.

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CHAPTER 5

TROUBLESHOOTING

9 TROUBLESHOOTING

If the recommended actions listed below do not result in satisfactory operation, please consult the FSR Technical Support Department or your equipment Dealer.

Problem and Possible Solution

No picture on the output monitor

If the LED is illuminated, check that there is a correct Video Input signal and that the display device connected to the output is switched on and set to the correct input and its Brightness and Contrast are set correctly.

Colors appear wrong on the output monitor

Try adjusting the Color, Tint, Contrast and Brightness settings on your display. These are usually set up for viewing computer images, which may be somewhat different from viewing images that have beenupconverted from video. Make sure your output cable assembly is not faulty, which could prevent either the Red, Green or Blue signal from being passed through the cable.

Too much smearing

Smearing usually occurs when a Composite Video input is used and is generally unavoidable, unless you can switch to using S-Video. Using good quality video cable will help towards reducing this affect.
Smearing that may not be noticeable on a small video monitor may become objectionable on a large screen video projector.

No color on the output monitor, only a black and white image

Check the condition of the cables being used. A faulty S-Video cable can often cause a black and white image. Ensure that the color controls on your computer monitor or video projector are all set correctly. Ensure that the color adjustment on the Video Scaler is not adjusted completely down. It may be necessary to reset the video levels by pressing the + and – Buttons simultaneously.

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CHAPTER 6

MISCELLANEOUS

- Regulatory Compliance
- Warranty
- Service

REGULATORY COMPLIANCE

The Video Scaler has been tested for compliance with: FCC.
The Power Supply has been tested for compliance with: UL, CSA,and CE.

WARRANTY POLICY

This product is warranted against failures due to defective parts or faulty workmanship for a period of one year after delivery to the original owner. During this period, FSR will make any necessary repairs or replace the unit without charge for parts or labor. Shipping charges to the factory or repair station must be prepaid by the owner, return-shipping charges, via UPS / FedEx ground, will be paid by FSR.

This warranty applies only to the original owner and is not transferable. In addition, it does not apply to repairs done by other than the FSR factory or Authorized Repair Stations.

This warranty shall be cancelable by FSR at its sole discretion if the unit has been subjected to physical abuse or has been modified in any way without written authorization from FSR. FSR's liability under this warranty is limited to repair or replacement of the defective unit.

FSR will not be responsible for incidental or consequential damages resulting from the use or misuse of its products. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date (if a Warranty Registration Card was mailed in at the time of purchase, this is not necessary). Before returning any equipment for repair, please read the important information on service below.

SERVICE

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem.

NOTE: all equipment being returned for repair must have a Return authorization (RMA) Number. To get a RMA Number, please call the FSR Service Department (973-785-4347). Please display your RMA Number prominently on the front of all packages.

CONTACT INFORMATION

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