SP7512RC

SYNC PROCESSOR/VIDEO SHIFTER

USER'S GUIDE

ALTINEX

SiGNAL
MANAGEMENT
SOLUTIONS

SYNC PROCESSOR

INTRODUCTION

Altinex appreciates your purchase of the **SP7512RC** Sync Processor. We are sure you will find it a reliable and useful product.

Superior performance for the right price backed by solid technical and customer support is what we have to offer.

The product you are holding in your hands is designed using state-of-the-art technology and is superior to anything available on the market. You will find this and our other products reliable, long lasting, and simple to operate.

We are committed to providing our customers with solutions to the most demanding audio-visual installations at very competitive pricing.

We appreciate your selection of our products and are confident that you will join the ranks of our many satisfied customers throughout the world.

This manual covers:

SP7512RC – Sync Processor

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **SP7512RC** Sync Processor. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **SP7512RC** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Unauthorized personnel shall not open the unit since there are high-voltage components inside.

- Qualified Altinex service personnel, or their authorized representatives must perform all service.

1.2. SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE SP7512RC

- Maximum operating ambient temperature is 35 (degrees C).

- Never restrict the airflow through the devices' fan or vents.

- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.

- Connect the unit to a properly rated supply circuit.

- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

1.3 INSTALLATION

- For best results, place the **SP7512RC** Sync Processor on a flat, level surface in a dry area away from dust and moisture.

- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **SP7512RC** Sync Processor in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.

- Handle the **SP7512RC** Sync Processor carefully. Dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **SP7512RC**. If the **SP7512RC** is to be mounted to a table or wall, use only Altinex made mounting accessories like rack mount shelf **DA1298RM** or rack mount ears **DA1299RM** and cables for optimum setup.

- To turn off the main power, be sure to remove the adapter from the power outlet. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

- Do not pull the adapter or any cable that is attached to the **SP7512RC** Sync Processor.

- If the **SP7512RC** Sync Processor is not used for an extended period, disconnect the adapter from the outlet.

1.4 CLEANING

- Unplug the **SP7512RC** adapter before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.5 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- 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.

- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR SYNC PROCESSOR   2

Most of the large screen data displays and monitors use CRT technology (TV picture tube) for projecting images. Whenever a static image remains displayed on a CRT for a prolonged period the "burn in" occurs. The "burn in" phenomena is easily spotted if one looks carefully at the CRT when the full white screen is displayed. The shadow of the image appears as dark areas. The "burn in" reduces the life of the CRT. Most vivid examples of this are airport monitors, where the same small size text is displayed for a long period of time. The **SP7512RC** is designed for similar applications and may help to prolong the life of the CRT by rotating the image in a circular pattern and thus, reducing exposure of the CRT to a static image. In addition, **SP7512RC** is very helpful in matching the incoming signal to the input of a large screen data projector or monitor. The **SP7512RC** is capable of combining H&V sync into composite and separating composite sync into H&V sync.

TECHNICAL SPECIFICATIONS   3

FEATURES/DESCRIPTION	SP7512RC
GENERAL	
Input	
Horizontal/Composite Sync	Female BNC
Vertical Sync	Female BNC
Synchro Bus	Female BNC
Output	
Horizontal/Composite Sync	Female BNC
Vertical Sync	Female BNC
Synchro Bus	Female BNC
Compatibility	RGBHV & RGBS; **SP7512RC** passes only through HSYNC,

	VSYNC, or CSYNC. Red, Green, & Blue channels must be bridged around the **SP7512RC** using BNC barrels.

Table 1. **SP7512RC** General

MECHANICAL	SP7512RC
Width (inches)	4.63in (118mm)
Height (inches)	3.25in (83mm)
Depth (inches)	1.00in (25mm)
Weight (pounds)	0.6lb (0.27kg)
Ship Weight (pounds)	2.0lb (0.91kg)
Material	0.1" Al
Finish	Gray
Top Panel	Lexan
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **SP7512RC** Mechanical

ELECTRICAL	SP7512RC
Input Sync Signals	
Composite, Horizontal, & Vertical	TTL (+/-)
Impedance	10k Ohms
Output Sync Signals	
Composite, Horizontal, & Vertical	TTL (+/-)
Impedance	22 Ohms
Frequency Compatibility	
Horizontal	130 kHz
Vertical	180 Hz
Coupling	DC
Power	
External Power Adapter	9V-500mA
Power Consumption	2 watts max.

Table 3. **SP7512RC** Electrical

PRODUCT DESCRIPTION 4

HORIZONTAL/COMPOSITE SYNC
INPUT
VERTICAL SYNC
INPUT
SYNCHRONIZATION
I/O PORT

MODEL:
SERIAL NO:

POWER
3.5 mm, 9-12V 500MA
EXTERNAL POWER SUPPLY

HORIZONTAL/COMPOSITE
SYNC OUTPUT

VERTICAL
SYNC OUTPUT

SYNCHRONIZATION
I/O PORT

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SYNC PROCESSOR / VIDEO SHIFTER

POWER
9V 500MA

H/C - SYNC

V - SYNC

RC5251IR
Rev. 1 Sn. 36183

H/C - SYNC

V - SYNC

INPUT

OUTPUT

SYNCHRO

1 2 3 4 5 6 7 8 9 10

NOT USED
NOT USED
NOT USED
ENABLE H. SHIFT
ENABLE V. SHIFT
NOT USED
H&V OUT
H&V IN
MASTER
SLOW ORBITING

OFF   ON
1 2 3 4 5 6 7 8 9 10

DISABLE H. SHIFT
ENABLE V. SHIFT

COMP. OUT
COMP. IN
SLAVE
FAST ORBITING

4.1 VIDEO SHIFTER CAPABILITIES

It is important to understand the capabilities and limitations of the **SP7512RC**. The unit is designed to rotate a video image slowly and smoothly in a circular pattern. The image is shifted between 3 to 4 pixels (depending on the resolution of the signal) in a vertical and horizontal direction. Any static image with lines or letters less than 3 or 4 pixels wide will never be permanently displayed at the same location for a long period of time. In addition the **SP7512RC** is capable of combining H&V sync into composite sync and separating composite sync into H&V. The functions of the unit are controlled by properly setting the dip switches on the top panel.

4.2 DIP SWITCH SETTINGS

Switch	Function	ON	OFF
1	Not used		
2	Not used		
3	Not used		
4	Horizontal shift/orbiting	disabled	enabled (default)
5	Vertical shift/orbiting	disabled	enabled (default)

Switch	Function	ON	OFF
6	Not used		always
7	Output	Composite	H&V (default)
8	Input	Composite	H&V (default)
9	Select	Master Controller	Slave Orbiting (default)
10	Select	Fast Orbiting	Slow Orbiting (default)

4.3 ORBITING

Set dip-switch 4 to the OFF position to enable horizontal shifting of the image. Set dip-switch 5 to the OFF position to enable vertical shifting of the image. Set dip-switch 10 to the ON position during the alignment and change to the OFF position for normal operation.

4.4 SYNC SEPARATOR/COMBINER

This mode of operation allows separation of composite sync into horizontal and vertical sync or combining of the horizontal and vertical sync into composite sync. Select the positions of dip-switches 7 and 8 for desired input & output combination.

4.5 VIDEO SHIFT

The shifting of the image can be up and down (vertical), left and right (horizontal), and circular when both shifts are active at the same time. Set dip-switches 4 and 5 for a desired mode of video shift operation.

4.6 SYNCHRO

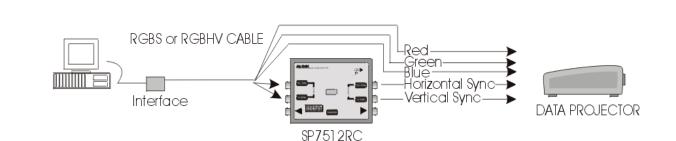For multiple sources, this function allows synchronized shifting of the video image on multiple displays.

4.7 CABLE REQUIREMENTS
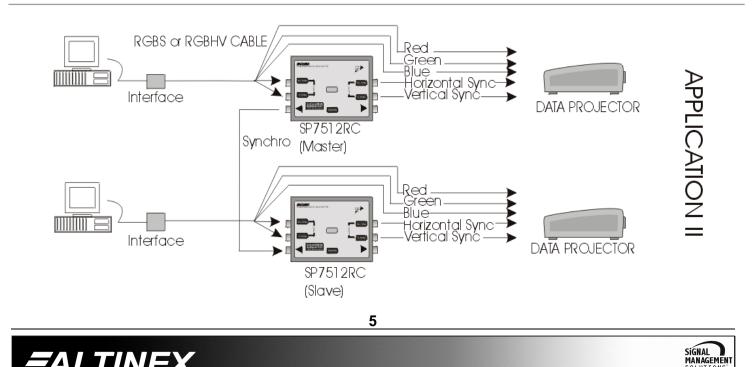
When making a connection to the **SP7512RC**, only coaxes carrying sync should be connected. There are no cables provided with unit.

APPLICATION DIAGRAM 5

COMPUTER INTERFACE VIDEO DISPLAY

APPLICATION I

RGBS or RGBHV CABLE
Interface
SP7512RC
Red
Green
Blue
Horizontal Sync
Vertical Sync
DATA PROJECTOR

APPLICATION II

RGBS or RGBHV CABLE
Interface
SP7512RC (Master)
Red
Green
Blue
Horizontal Sync
Vertical Sync
DATA PROJECTOR
Synchro
Interface
SP7512RC (Slave)
Red
Green
Blue
Horizontal Sync
Vertical Sync
DATA PROJECTOR

INSTALLING YOUR SYNC PROCESSOR   6

Step 1. Connect the sync cable to the input of the unit. Make sure that the dip-switch setting corresponds to the input type (Composite Sync or H&V Sync).

Step 2. Connect the output of the **SP7512RC** to the sync input of the projector or monitor. Again, make sure that the dip-switch setting corresponds to the projector or monitor input type. (Composite Sync or H& V Sync.)

Step 3. Connect the power adapter to the unit and plug it into the power receptacle.

Step 4. Set Dip-switch 10 to the ON position of the image. Set dip-switch 10 to the OFF mode. The fast motion should become unnoticeable, however, present.

For Multiple Units

Step 5. If multiple units are interconnected for synchronous operation, select the master unit and set dip-switch 9 to ON. Set dip-switch 9 to OFF on all other units.

Step 6. Connect the Synchro output of the master unit to the input of the slave units. The connection should be done in a daisy chain manner. All units will now rotate the image in a synchronized fashion.

CONGRATULATIONS! YOU ARE DONE.

> **If you experience any problems, please call 1-800-258-4623 or 1-714-990-2300 for international calls.**

OPERATION   7

7.1 COMPUTER VIDEO CARDS PINOUTS

PINS	MAC	VGA/XGA	SUN/SGI
A1	N/A	N/A	Red
A2	N/A	N/A	Grn
A3	N/A	N/A	Blue
1	Red Gnd	Red	N/C
2	Red	Grn.	N/C
3	C.Sync	Blue	Sense
4	ID Bit 01	ID Bit	Sense Rtn
5	Grn.	N/C	C. Sync Sens
6	Grn. Gnd.	Red Rtn.	N/C
7	ID Bit 02	Grn Rtn.	N/C
8	N/C	Blue Rtn.	N/C
9	Blue	No Pin	N/C
10	ID Bit 03	Gnd	N/C
11	C/V Gnd.	ID Bit	
12	V. Sync	ID Bit	
13	Blue Gnd.	H. Sync.	
14	H. Gnd	V. Sync	
15	H. Sync	N/C	

CABLES AND ACCESSORIES   8

Model No.	Description
	15-PIN VGA TO 5 BNC
MS8102CA	15-pin HD Male to 5 BNC-6ft
MS8106CA	15-pin HD Male to 5 BNC Female-6ft
MS8112CA	15-pin HD female to 5 BNC - 6ft
	4 BNC TO 4 BNC COAXIAL CABLE
CB4100MR	Bulk cable 4 coaxes (500 ft minimum)
CB4103MR	3 feet, 4 BNC to 4 BNC coaxial cable
CB4106MR	6 feet, 4 BNC to 4 BNC coaxial cable
CB4112MR	12 feet, 4 BNC to 4 BNC coaxial cable
CB4125MR	25 feet, 4 BNC to 4 BNC coaxial cable
CB4150MR	50 feet, 4 BNC to 4 BNC coaxial cable
	5 BNC TO 5 BNC COAXIAL CABLE
CB4200MR	Bulk cable 5 coaxes (500 ft minimum)
CB4203MR	3 feet, 5 BNC to 5 BNC coaxial cable
CB4206MR	6 feet, 5 BNC to 5 BNC coaxial cable
CB4212MR	12 feet, 5 BNC to 5 BNC coaxial cable
CB4225MR	25 feet, 5 BNC to 5 BNC coaxial cable
CB4250MR	50 feet, 5 BNC to 5 BNC coaxial cable

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ALTINEX POLICY   9

9.1 LIMITED WARRANTY

Altinex warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges pre-paid within 2 years (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. Altinex neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence or accident.

9.2 RETURN POLICY

It is very important to Altinex that you receive the products that you have ordered and that this product fulfills your need. In the unlikely event, that an Altinex product needs to be returned please follow the policies below:

Altinex will accept product returns for a period of 30 days from authorized Altinex dealers. Products must be returned in an unopened package.

If a product has been opened, the restocking fees will apply. For the restocking fee amount, please contact an Altinex Sales Representative.

If the product is in your possession for more than 30 days, the restocking fees will apply.

Altinex will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the actual repairs are done.

9.3 CONTACT INFORMATION

Sales Department
Phone: 714-990-2300
Fax: 714-990-3303

Accounting Department
Phone: 714-990-6088
Fax: 714-990-5778