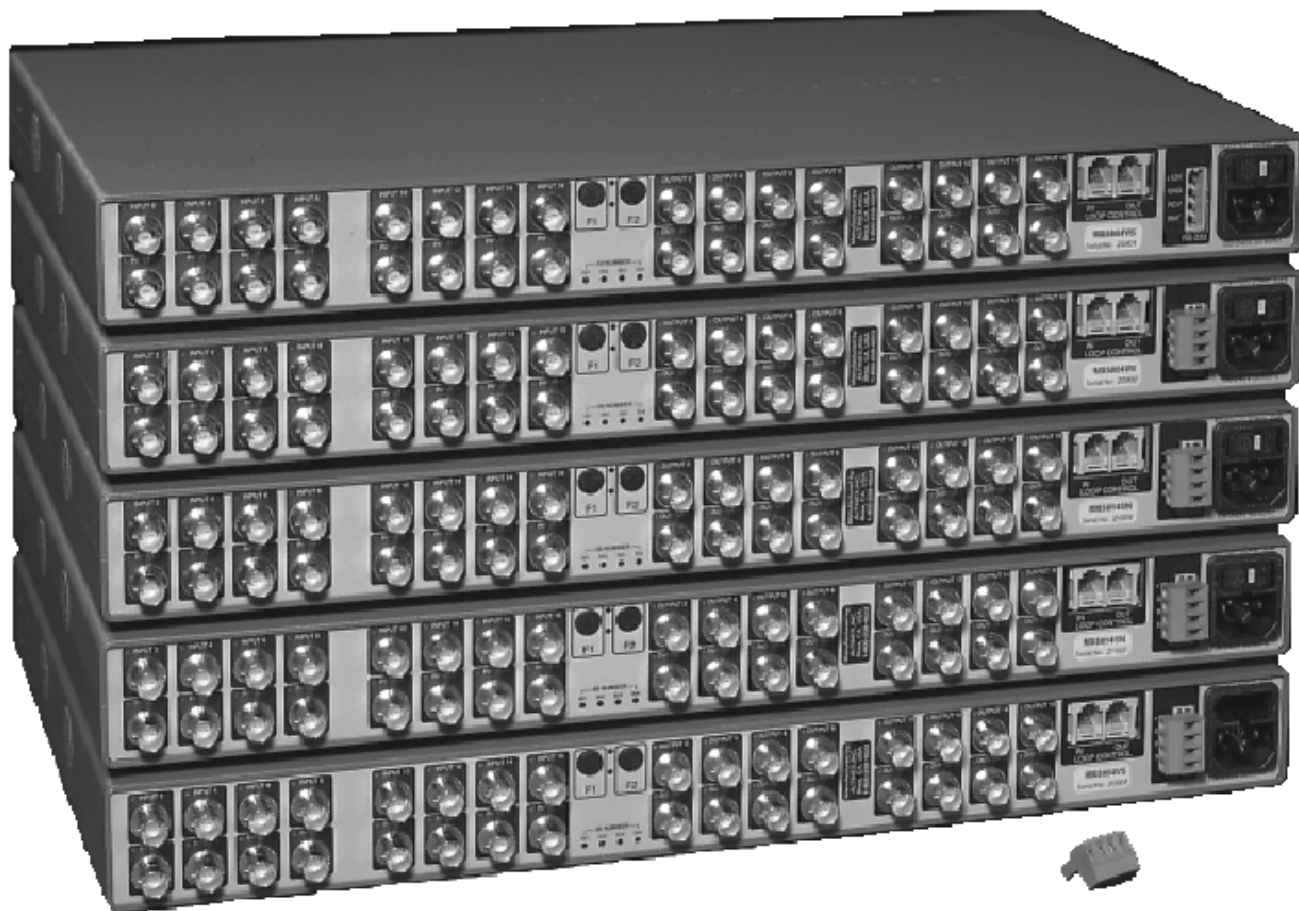


MATRIX SWITCHERS



MANUAL PART NUMBER: 400-0026-004
PRODUCT REVISION: 2

HOMERUN SERIES

MATRIX SWITCHERS

USER'S GUIDE

ALTINEX

SIGNAL
MANAGEMENT
SOLUTIONS

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MATRIX SWITCHERS

INTRODUCTION

Thank you for purchasing a **HOMERUN** Series Matrix Switcher. We are sure you will find it to be reliable and simple to use.

The **HOMERUN** Series Matrix Switchers are designed using state-of-the-art technology and offer a unique combination of features not available anywhere else.

We are committed to providing our customers with signal management solutions to the most demanding audio-visual installations.

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:

(**HOMERUN** Series model no.)

HMAxxyy – VmAn

HMVxxyy – VmAn

HMRxxyy – VmAn

Where

HMA Audio (Mono / Stereo) **HOMERUN** Switcher

HMV 200MHz Video (Composite, S-Video & Component) **HOMERUN** Switcher

HMR 300 MHz Video (High resolution RGsB, RGBS, RGBHV) **HOMERUN** Switcher

xx number of inputs per each **HOMERUN** Switcher module

yy number of outputs per each **HOMERUN** Switcher module

m number of **HOMERUN** Video Switcher modules in the system

n number of **HOMERUN** Audio Switcher modules in the system

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MATRIX SWITCHERS

PRECAUTIONS/SAFETY WARNINGS 1

Please read this manual carefully before using your **HOMERUN** Series Matrix Switcher. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **HOMERUN** Series Matrix Switcher 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 INSTALLATION

- For best results, place the **HOMERUN** Series Switchers 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.
- Handle your **HOMERUN** Switcher carefully. Dropping or jarring can damage the internal components. Do not place heavy objects on top of the **HOMERUN** Switcher.
- Do not place the **HOMERUN** Switcher in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components. Do not pull the power cord or any signal cables that are attached to the **HOMERUN**. If the **HOMERUN** is not used for an extended period of time, disconnect the power cord from the power outlet.

1.3 RACK-MOUNT INSTALLATION

- Use only Altinex supplied rack-mount ears for mounting the **HOMERUN** Switcher into a rack.
- The maximum operating ambient temperature is 45 degrees Centigrade.
- When installing the **HOMERUN** Series Switcher into a rack, distribute individual units evenly, otherwise hazardous conditions may be created by an uneven weight distribution. Allow

1-U rack space for every 4 **HOMERUN** Switcher modules for air circulation. This will reduce heat build up and will prolong the life of the **HOMERUN** Switcher.

- Connect the **HOMERUN** Series Switcher to a properly rated power outlet.
- Reliable grounding of the **HOMERUN** Series Switcher should be maintained by using the provided 3-prong power cord only. Furthermore, make sure that the rack is properly grounded.

1.4 CLEANING

- Unplug the **HOMERUN** Series Switcher's power cord 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 NOTICE

- This device complies with the 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 that may cause undesired operation.
- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.
- 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 in which case the user will be required to correct the interference at his own expense.

MATRIX SWITCHERS

ABOUT YOUR HOMERUN MATRIX SWITCHER

2

The **HOMERUN** Matrix Switcher is a state-of-the-art product designed to route up to 16 inputs to 16 outputs. The **HOMERUN** Matrix Switcher consists of 1-U high rack wide modules. Combining multiple modules can create larger configurations. The **HOMERUN** Switcher is designed to switch Composite Video, S-Video, RGsB, RGSB, RGBHV analog video signals, and mono or stereo audio signals. The individual video modules are combined to form a RGsB, RGSB or RGBHV configuration. Audio modules are used to add mono or stereo audio. The specified video bandwidth of the switcher is 300 MHz for high resolution video and 200 MHz for broadcast video. Equipped with simple to use, yet sophisticated control functions, the **HOMERUN** is an elegant solution for boardroom systems, training rooms or other large size presentation systems. Its design offers extensive and powerful control capabilities through RS-232 port for easy remote control of the unit using a computer or control system.

Several control options are available with the product including Front Panel, Remote Control pad/rack panel and Touch LCD control.

Manual switching on the back panel allows easy operation of the module during testing and installation.

TECHNICAL SPECIFICATIONS

3

FEATURES/ DESCRIPTION	HMR, HMV Series (VIDEO)	HMA Series (AUDIO)
Signals (Inputs & Outputs)		
Analog Video/Sync Input	Isolated	–
Analog Video/Sync Output	–	Buffered/ Balanced
Analog Audio Output	–	Balanced
Technical Specifications		
Bandwidth	300/200 MHz	20 kHz
Rise Time/ Fall Time	1.6ns	1.6ns

FEATURES/ DESCRIPTION	HMR, HMV Series (VIDEO)	HMA Series (AUDIO)
Switching Time	<1ms	<1ms
Gain	1.01	6dB
Power		
Internal Power Supply	90-260VAC	
Power	50W max	
Input		
Video	BNC (F)	
Audio	–	Terminal Block
Level	1.2V p-p	+/-5V p-p
Impedance	75 Ohms	600 Ohms +/-1%
Coupling	DC	DC
Output		
Video	BNC (F)	–
Audio	–	Terminal Block
Impedance	75 Ohms	600 Ohms +/-1%
DC on Outputs	60 mV	+/-60mV
Level	1.2Vp-p max	–
Coupling	DC	DC
Adjustments/Controls		
RS-232	x	x
Back Panel Switching	x	x
Special Functions		
Vertical Interval Switching	(Optional)	–
SYNC Delay	(Optional)	–
Enclosure		
Material	Aluminum	
Height (inches)	1.75in (44.4mm)	
Width (inches)	17.00in (431.80mm)	
Depth (inches)	11.04in (280.42mm)	
Weight (pounds)	6.4lbs (3.0kg)	
Ship Weight (pounds)	7.8lbs (3.6kg)	
Included		
Manual	x	
Rack Mount Brackets	x	
Power Cord	x	
Loop Cable	x	

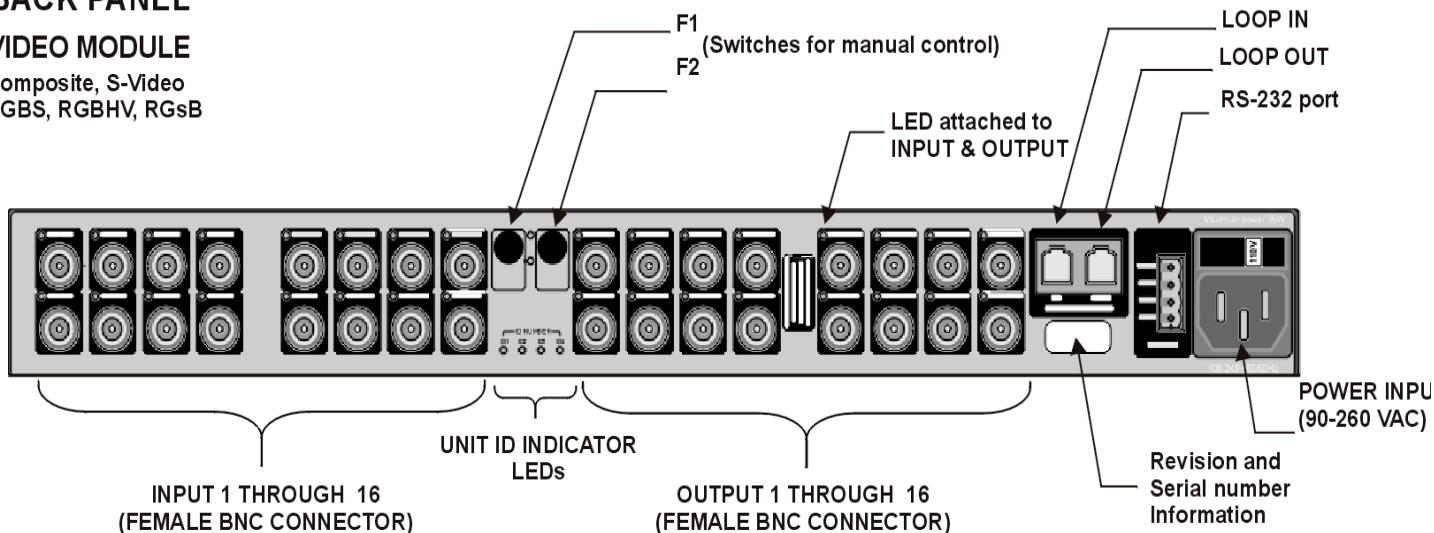
MATRIX SWITCHERS

DIAGRAM OF FRONT/BACK PANEL 4

BACK PANEL

VIDEO MODULE

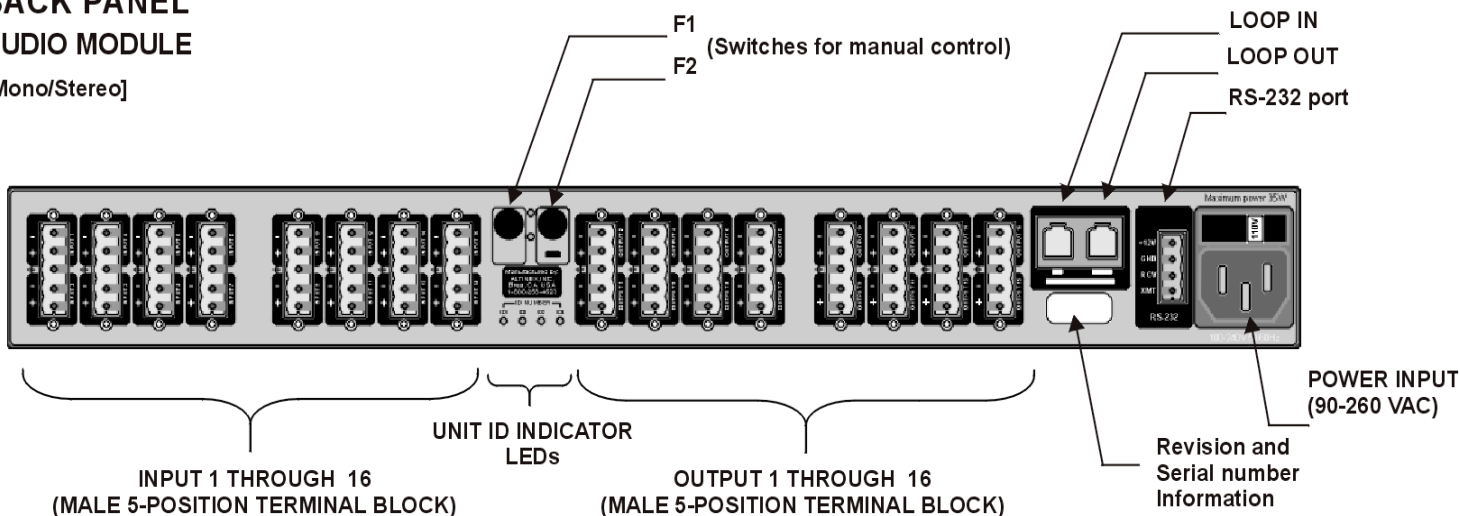
Composite, S-Video
 RGBS, RGBHV, RGsB



BACK PANEL

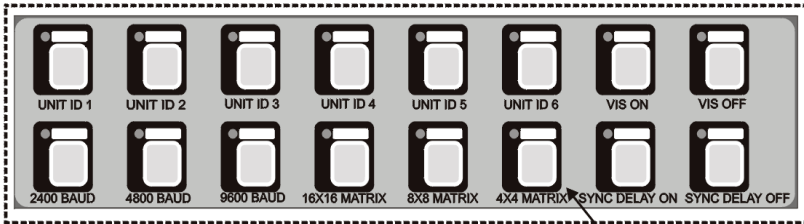
AUDIO MODULE

[Mono/Stereo]



MATRIX SWITCHERS

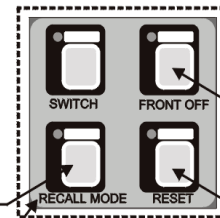
CP- 01 FRONT PANEL (OPTIONAL)



NORMAL MODE : BUTTONS 1 THROUGH 16 : OUTPUT SELECTION

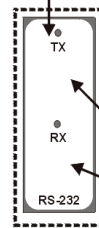
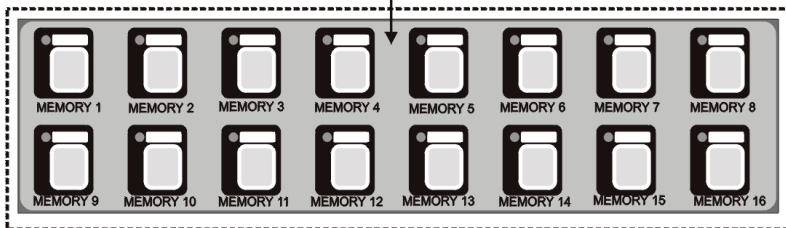
SETUP MODE : BUTTONS 1 THROUGH 6 : SET UNIT ID
 : BUTTONS 7 & 8 : TURN VIS ON/OFF
 : BUTTONS 9 THROUGH 11 : SET BAUD RATE

TO SWITCH TO
 RECALL MODE
 (PRESS & HOLD)



TO DISABLE
 FRONT PANEL

TO RESET THE UNIT
 (PRESS & HOLD)
 TO SWITCH TO
 SETUP MODE
 (PRESS & RELEASE)



THESE LEDs INDICATE
 EXCHANGE OF TX & RX
 SIGNAL FROM HOMERUN
 SWITCH THROUGH
 RS-232 PORT

NORMAL MODE : BUTTONS 1 THROUGH 16 : INPUT SELECTION

RECALLTUP MODE : BUTTONS 1 THROUGH 16 : RECALL FROM THAT
 MEMORY LOCATION

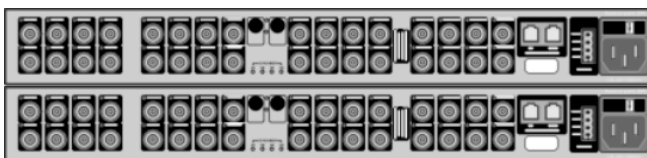
APPLICATION DIAGRAM

5

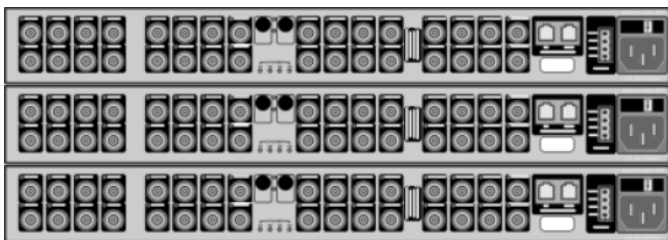
Single Video/Sync module can be used as a Composite Video or TTL/ECL Matrix Switcher.



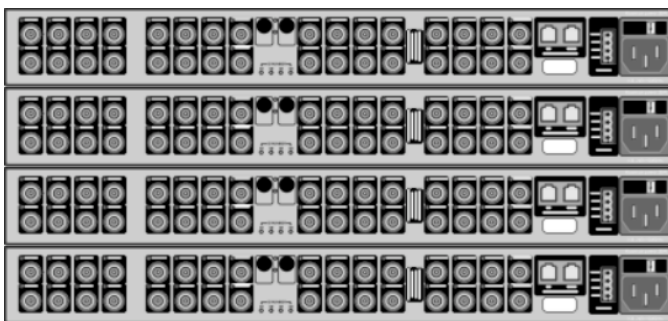
Two modules interconnected together can be used as an S-Video Matrix Switcher.



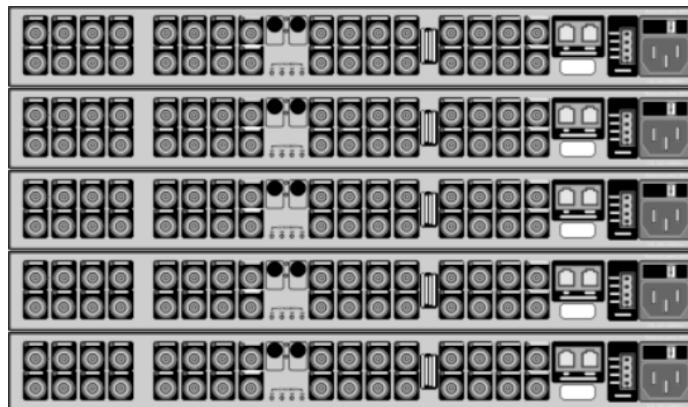
Three interconnected modules can route any analog component video signals such as RGsB.



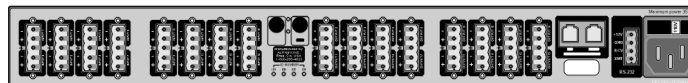
Four interconnected modules would be used for RGBS signals.



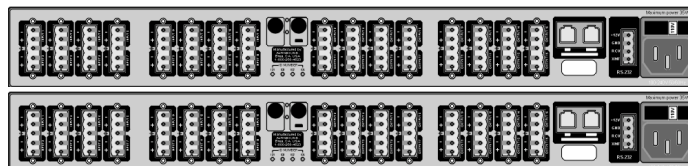
Five interconnected modules would be used for RGBHV Signals.



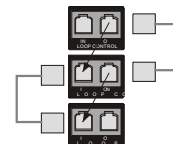
A single Audio Module is designed to route a Balanced Mono Audio signal.



Two Audio modules interconnected can be used to route Stereo Audio Signals.



The video and audio modules can be combined to form a Video/Audio matrix.



Up to 14 modules can be interconnected and switched simultaneously as a single matrix system by using the RJ11 input/output jacks to create a remote control loop.

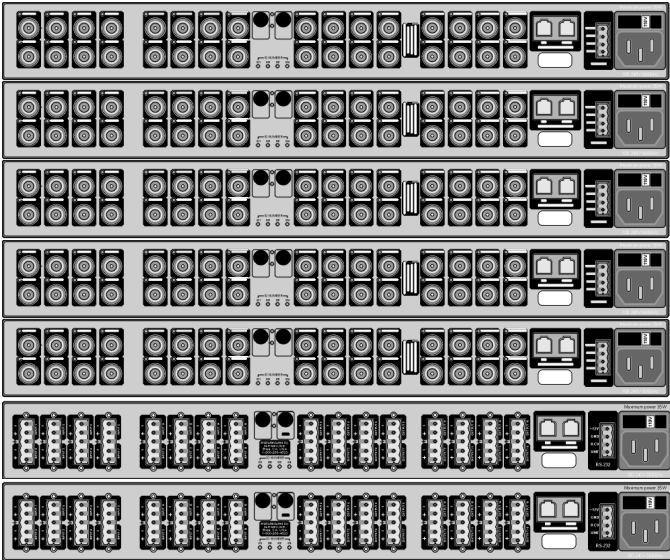
6

MATRIX SWITCHERS

INSTALLING YOUR SWITCHER 6

Step 1. Stack together the modules that are required to form a matrix for switching the desired signals.

Allow 1-U rack space every 4 units for air circulation. This will reduce heat build up and will prolong the life of your system.



16x16 RGBHV + Stereo Audio System

Step 2. Connect the **HOMERUN** modules together using the loop control cables provided with the unit. Always connect the loop output of the first unit to the input of the next unit and so on until the input of the last unit has been connected.

Step 3. Connect power to all modules with the power cords provided. The power supply is universal and will work throughout the world with voltages between 100V-260V.

Step 4. For video modules, connect cables from the video sources (computers, VCR, others) to inputs 1 through 16 and connect the display devices (i.e. monitors or projectors) to outputs 1 through 16. For audio modules connect cables from the audio sources to inputs

1 through 16, and the outputs to audio receivers.

CAUTION:

All video inputs to HOMERUN Video Modules are DC coupled for best performance. Even though the video inputs are fully isolated, verify with an electrician that all of the grounding is proper and that GROUND LOOP problems are minimized. Severe Ground loop type conditions can damage equipment.

**MAXIMUM VIDEO/SYNC INPUT: +/- 5 VOLTS
MAXIMUM AUDIO INPUT: +/- 5 VOLTS**

Step 5. If a control system is used to control the unit connect the RS-232 port to the control system or an RS-232 card. Make sure that the transmit pin of the control system is connected to the receive pin of the switcher.

RS-232 port of HOMERUN switcher	Computer or Control System
XMT (Transmit)	Receive
RCV (Receive)	Transmit
GND (Ground)	Ground
+12V	N/C

Table 1. RS-232 connections of the **HOMERUN** Switcher

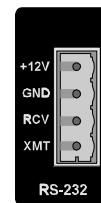


Figure1: RS-232 Port Terminal Block Connector

Step 6. Turn on the power. After a series of beeps the unit is now operational. You should observe lit LED's on the back panel and a lit power LED on the front panel. You are ready to either program your switcher or perform switching from the rear panel.



Figure 2: HOMERUN Video Module

OPERATION

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7.1 BACK PANEL MANUAL CONTROL

Two switches (F1 and F2) are provided in the center of the back panel as shown below. During installation or troubleshooting these switches provide a simple manner of controlling the module from the back of the rack.

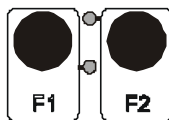


Figure 3: Back Panel control switches

SELECT INPUT: With the F1 switch, the desired input is selected by pressing the switch until the LED of the selected input is lit. As F1 is repeatedly pressed, the switcher scrolls through each of the inputs and the corresponding LED is lit.

SELECT OUTPUT: With the F2 switch, the desired output is selected by pressing the switch until the LED of the selected output is lit. As F2 is repeatedly pressed, the switcher scrolls through each of the outputs and the corresponding LED is lit.

CONNECT INPUT to OUTPUT: To connect the selected input to the selected output, simply hold either F1 or F2 for 2 seconds until you hear a beeping sound. This operation can be repeated, as many times as needed, until all desired inputs are connected to all desired outputs.

DISABLE SELECTED OUTPUT: Press F1 until all input LED's are OFF. This occurs when the input positioned between input 16 and input 1 is selected. Select the output that you want to disable and hold F1 or F2 for approximately 2

seconds until you hear a beeping sound and release the button. This will disable the selected output.

RESET SELECTED CHANNELS: Press the F1 & F2 switches simultaneously and release them quickly to reset the connection of the selected input & output.

RESET TO DEFAULT: To reset the unit to its default status (power-on stage) press and hold the F1 & F2 switches simultaneously for approximately three seconds until you hear a beeping sound. This will disconnect all current inputs and outputs and load settings stored in memory location #1. If memory location #1 is empty it loads the condition where there is no input is connected to any output.

INITIALIZE MATRIX SIZE AND OFFSET TO FACTORY DEFAULT: To initialize the matrix size and offset of the switcher to the factory default, a POWER ON function must be used through switch F2. First turn OFF the unit. Then while pressing down the F2 switch, turn the power ON for the unit. Wait until several beeps are heard and then release the F2 switch. This step will initialize the matrix size to 16x16 and the offset for both input & output to 0.

This step will not clear the memory or disconnect the inputs and outputs. This procedure is used for resetting the switcher to factory matrix and offset default condition and should not be part of the program to operate the switcher.

INITIALIZE MEMORY & BAUD RATE TO FACTORY DEFAULT: To initialize the connection memory and communication baud rate, a POWER ON function must be used through switch F1. To initialize the unit without changing the size and offset; first turn the unit OFF. Then while holding down the F1 switch, turn the unit back ON. Wait until several beeps are heard before releasing the F1 switch. This step will disconnect all inputs from outputs, clear all memories and set the baud rate to 2400 for RS-232 communication.

This procedure is used to initialize the switcher and should not be part of the normal program to operate the switcher.

MATRIX SWITCHERS

PRESS	FUNCTION
F1	Selects input (confirmed by "ON" LED)
F2	Selects output (confirmed by "ON" LED)
F1+HOLD	Connects selected input to selected output
F2+HOLD	Connects selected input to selected output
F1+F2 together (Press & Release)	Resets selected input and output channels
F1+F2+HOLD (Press & Hold)	Resets switcher and loads memory #1 setting after a series of beeps
F1 or F2 + HOLD (All input LED's OFF)	Disconnect selected output
F1+HOLD+Power ON	Initializes baud rate, input-output connections and clears memory after a series of beeps
F2+HOLD+Power ON	Initializes matrix size to 16x16 and offset to 00 for input and output

Table 2. Summary of F1 and F2 functions

7.2 RS-232 CONTROL OF THE SWITCHER

The **HOMERUN** Matrix Switcher has many advanced remote control capabilities which are accessible through a standard RS-232 port through terminal block connectors provided on the back of the module. The actual controlling can be accomplished through a computer, control system or any other device capable of sending RS-232 commands.

The function of each pin is described on the back panel next to the connector. Each module has its own RS-232 port. However, only one port should be used to control all units, if they are attached through loop cables.

Test each module outside of the rack prior to installation to insure that you have established communication.

7.2.1 RS-232 PROTOCOL:

The RS-232 protocol for the **HOMERUN** Matrix Switcher uses a simple ASCII character format.

1. Square brackets "[" & "]" are part of the command, unless they are changed through the [CODEn] command.
2. Use uppercase letters for all commands.
3. Make sure that the transmit pin of the control system is connected to the receive pin of the switcher and connection done as per Table 1.
4. Make sure that there is a delay of 50 ms between two consecutive commands.

The factory default settings are 2400 baud, 8 bits, 1 stop, and no parity. There is no software or hardware flow control implemented.

The **HOMERUN** Matrix Switcher requires 50ms of processing time after each command is sent. So please keep a 50ms delay between two consecutive commands except the [RSET] command, which requires 1 second of processing time.

Example: [RSET]*, wait 1 second, * [I01O02]* wait 50ms, *[I12O09]*

The RS-232 input has a 16-character buffer and will not execute any command longer than 16-characters. Any additional commands are ignored until the previous command is fully processed. After processing a valid command an [OK] string will be returned, if requested by the feedback command. If an invalid command is entered the [ERR] string will be returned if requested by the feedback command.

7.2.2 PROGRAMMING COMMANDS

NOTE:

These programming commands are used for programming the switcher; they should not be used as part of a program to operate the switcher. The programming setting changes done through these commands are stored in a non-volatile memory. Typically these commands can be issued 10,000 times before the memory needs to be replaced.

[SETIDn]

n = level/module ID number; 0 to 9

MATRIX SWITCHERS

This command sets a unique ID number to each **HOMERUN** module and allows control of multiple modules through a single RS-232 port.

In order to control multiple modules independently with one RS-232 port, the unit ID is used. Setting the unit ID allows a user to send the same command to multiple modules, but the module processes that command with the indicated ID number only. The factory default unit ID=1.

Each **HOMERUN** Matrix Switcher system may have a different number of levels (modules). Each level corresponds to an individual component of the signal. For example, the RED video signal is considered to be one level (module) and the BLUE video signal is considered to be a different level in a RGBHV matrix switcher.

If red, green and blue signals are switched individually, then you would set level ID 2 for red, ID 3 for green and ID 4 for blue. But if you want red, green and blue signals to switch simultaneously, then you should set the same ID for each module.

If the ID level is set to 1 then all units will always switch regardless of the select level command issued. From the factory all new units are shipped with ID number 1. If level ID is set to 0, then the unit will not respond to any command other than **[SETIDn]**. This command is used for programming the switcher; it should not be used as part of a program to operate the switcher.

[BAUDn]

n	- 4	2400
	- 5	4800
	- 6	9600 (used for remote terminal – CP-02)

Select the baud rate for communication between the **HOMERUN** Matrix Switcher and the Control System or PC.

The default or factory reset baud rate of the switcher is 2400bps. Hand held remote control units operate at 9600 baud only.

[CODEn]

n	- 1-[]
	- 2 - ()
	- 3 - { }
	- 4 - : ;
	- 5 - < >
	- 6 - : /

This command is used to allow changes in command delimiters (start and end codes). This feature can be properly used only at the 2400 and 4800 baud rates. At 9600 baud, only n=1 should be used. The factory default is **[CODE1]**, so each command will start with [and end with].

This command is used for programming the switcher; it should not be used as part of a program to operate the switcher.

[lkkOmmS]

kk	= Total number of inputs; 00 to 96
mm	= Total number of outputs; 00 to 96

Set the maximum number of inputs and outputs used in a particular module/level of the switcher. This command is used at the factory at the time of set up.

This command is used for programming the switcher. It should not be used as a part of a program to operate the switcher. There is no feedback provided for this command.

[lkkOmmA]

kk	= Input offset number; 00 to 96
mm	= Output offset number; 00 to 96

This command defines offset for input and output. This command is used when the matrix switcher needs to be expanded to a larger size. Default is kk=0 and mm=0. For example, if more than 16 inputs are required, the input offset of the second switcher is the series set to 16, so that its inputs start from 17. If more than 32 inputs are required then the offset is set to 32 for the next switcher in the series. The same is applied to the outputs. With this offset command, matrix switchers can be built with sizes up to 96x96.

This command is used for programming the switcher. It should not be used as part of a program to operate the switcher. There is no feedback provided for this command.

[IkkOXXS]

kk = input offset; 00 to 96

This command sets the maximum number of inputs on the **HOMERUN** Switcher without changing the maximum number of outputs. This command will change the default settings for the unit. This command should be issued only once. This command is used for programming the switcher; it should not be used as part of a program to operate the switcher. There is no feedback provided for this command.

[IkkOXXA]

kk = input offset; 00 to 96

This command sets the offset number for inputs. It is used when multiple switchers are connected to form a larger matrix. The default is kk=0. For example, if two switchers are used to form a 32 by 16 matrix, the first switcher will have input addresses of 01 to 16 and the second switcher needs to have input addresses from 17 to 32 for a continuous addressing range. This command will provide an offset of 17 for the input and then the second switcher can be addressed by using standard I/O commands like [I18O12], [I17O05] or [I31O16].

This command is used for programming the switcher; it should not be used as part of a program to operate the switcher. There is no feedback provided for this command.

[IXXOmmS]

mm = output number; 00 to 16

This command sets the maximum number of outputs on the **HOMERUN** Switcher without changing the maximum number of inputs. This command will change the default (power-on and after reset) setting of 16 for the switch. This command should be issued only once. This command is used for programming the

switcher; it should not be used as part of a program to operate the switcher. There is no feedback provided for this command.

[IXXOmmA]

mm = output offset; 00 to 96

This command sets the offset number for outputs. It is used when multiple switchers are connected to form a larger matrix. The default is mm=0. For example, if two switchers are used to form a 32 by 16 matrix, the first switcher will have output addresses of 01 to 16 and the second switcher will have output addresses from 17 to 32 for a continuous addressing range. This command will provide an offset of 17 for the output and then the second switcher can be addressed by using standard I/O commands like [I13O18], [I12O24] or [I04O32].

This command is used for programming the switcher; it should not be used as part of a program to operate the switcher. There is no feedback provided for this command.

[IkkOnnL]

nn - loop offset number 00 to 16

kk - do not care (any number for 00 to 99)
this number is not checked

This command defines loop offset for the switcher. This command is used when looping several switchers together to increase the number of inputs. First make sure that number of outputs is the same on all units and the output offset is set to zero. Then set the input offset the same as the number of the last input of previous unit. Then use [IkkOnnL] command to set up a loop parameter. After this command is issued, looped units can be controlled by a single command [IxxOyy] where xx is any number from 01 to 99. Without the loop command, units can be controlled with the [IxxOyy] command but several commands will be sent with some delay between two consecutive commands. To avoid problems, make sure that these steps are taken:

1. The number of outputs must be the same on all units used in the loop.

MATRIX SWITCHERS

2. Output offset is zero for both units.
3. The input offset must be set for all units except the first one. The offset for input should be the same as the last input number of the previous unit.
4. The number of inputs available on second unit for direct connection is the difference between the maximum number of inputs of the second unit, and the number of looped outputs.
5. Set the loop offset separately for each unit. The loop offset is zero for the first unit. For other units it is the number of outputs of the previous unit.

Example: If one wants to create a 28x4 switcher, there is a need for 2 16x4 **HOMERUN** Switchers. Connect output 1 through 4 of the first unit to the last four inputs of a second unit in increasing order. Please program the switcher using the following table:

PARAMETER	UNIT A	UNIT B
Size	[I16O04S]	[I16O04S]
Offset	[I00O00A]	[I16O00A]
Loop Command	[I00O00L]	[I00O04L]

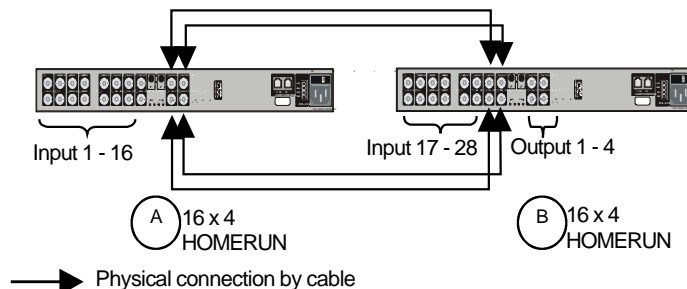
Now if you send the commands as follows, the active connectors will be as follows on both units:

COMMAND	UNIT A Connection	UNIT B Connection
[I02O02]	2 – 2	14 – 2
[I09O04]	9 – 4	16 - 4
[I16O04]	16 - 4	16 – 4
[I17O01]	NONE – 1	1 – 1
[I28O04]	NONE – 4	12 – 4
[I29O03]	NONE – 3	NONE – 3

[RSET] - Reset Switcher

This command initializes all outputs (clears all current connections of inputs to outputs), and recalls memory #1 to switch appropriate inputs

to outputs, as saved in memory position #1. There is no feedback provided, but the unit will beep after execution of this command. This command is the equivalent of turning ON the unit.



[RSETD] – Default Reset switcher

This command initializes all functions, clears all memories, sets baud rate to 2400, sets the number of input/outputs to 16, resets offset to 00, and recalls memory #1 to switch the appropriate inputs to outputs. There is no RS-232 command feedback provided, but the unit beeps after execution of this command. This command resets the **HOMERUN** Switcher to the same as the factory condition.

[RSETC] - Configuration Reset of switcher

This command initializes only the number of inputs to outputs and offset to factory condition default. There is no RS-232 command feedback provided, but the unit beeps until this command is executed.

[RSETS] - System Reset switcher

This command initializes everything except the number of inputs, outputs and the offset. This command initializes all functions, clears current input to output connections changes baud rate to 2400bps and clears all current memories. There is no feedback provided, but the unit beeps until this command is executed.

[VERN] – Version

This command provides the current version of the firmware used in connected switchers. There is no need to add an F at the end of the command. There is no feedback of [OK] or

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[ERR], just the version number; for example [3.2] or [3.5].

[VISn]

n = 1 Enable VIS

n = 0 Disable VIS

This command enables or disables vertical interval switching, if the option is installed on the **HOMERUN** Matrix Switcher.

7.2.3 CONTROL COMMANDS

These control commands are used for controlling the switcher. They can be part of a normal program to operate the switcher. These command actions are lost if power is disconnected from the unit, or if the unit is reset in any way.

[xxxxxF] - Send feedback.

Adding F at the end of any command will provide feedback in the form of **[OK]** or **[ERR]**. Otherwise there will be no feedback, except with the **[VERN]** command.

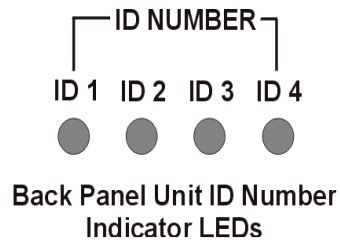
[UIDn]

n = Unit ID number. It could be any number from 1 to 9.

This command sets the unit ID number. A total of up to 10 unit ID's can be assigned to **HOMERUN** modules, using ASCII code, for individual control of each unit. Additional units can be controlled using hex codes.

If n=1, the switcher listens to all commands. If n=0, the switcher does not listen to any command.

Table 3 provides the relation between the Unit ID number and the LED's on the back panel of the unit. In other words, once an ID number is assigned to any module through an RS-232 command or the Front Panel, this module can be identified by the illuminated LED's located on the back panel switcher.



UNIT ID - n	ID NUMBER LED's			
	ID1	ID2	ID3	ID4
0	off	off	off	off
1	on	off	off	off
2	off	on	off	off
3	on	on	off	off
4	off	off	on	off
5	on	off	on	off
6	off	on	on	off
7	on	on	on	off
8	off	off	off	on
9	on	off	off	on

Table 3 Unit ID LED's of Back Panel

The Unit ID command will allow only units with the same ID number to respond to any RS-232 commands. This command allows independent switching of various modules.

When independent switching of various modules is required first issue the **[UID1]** command to make all modules respond to common commands. Then issue different **[UIDn]** commands to each group of switchers to communicate with particular modules. The **[UIDn]** command only should be issued once prior to communicating with the individual modules.

[UIDnE]

n = Unit ID number 2 to 9

This command selects the exclusive switcher level to control. The level is controlled based on the Unit ID number-n. The default during power-on is set to Unit ID 1 regardless of the actual ID number on the unit. This means that all units (levels) will be controlled simultaneously after power on. This command disables all units except the one in the

command. The [UIDnE] command should be used to disable all levels and enable only the unit that needs to be controlled. This command can not be used with unit ID 0 or 1.

For example, at power up, all units can be controlled. To control level 3 only, issue the command - [UID3E].

[lkkOmm]

kk = input number 01 to 16
mm = output number 01 to 16

This command connects the specified input to outputs and switches them immediately.

For example, if you want to connect input 2 to output 11 and switch, type [I02O11]. If input number 00 is used, that input is disconnected from the selected output. The connection stays active until those particular inputs or outputs are disabled or the unit is reset.

[lkkOmmP]

xx = input number 01 to 16
mm = output number 01 to 16
P = path

This command loads input to output connections, but does not switch. Through this command input to output connections are loaded (path is set), but not switched until a [SW] command or a direct connection command of [lxxOmm] is sent. This command is used to select multiple inputs and multiple outputs without switching. This is a very useful command for scene or salvo switching. If input number 00 is used that input is disconnected from the selected output

For example, If you want to connect input 2 to output 11 and do not switch, type [I02O11P]

[lkkOmmUn]

kk = Input number 01 to 16
mm = Output number 01 to 16
n = Unit ID# (n=2 to 9)

This command allows any input to be connected individually to any output within the HOMERUN module with a specific Unit ID. For

example, in a RGBHV + Mono Audio combination where RGB = Unit ID2, HV = Unit ID3, and Mono Audio = Unit ID4, the [I12O10U2] command will connect input 12 to output 10 on RGB units and not on HV or audio modules. [I03O10U4] will connect input 3 to output 10 on audio modules and not on RGBHV units.

If n = 1, units will respond to any command. If n= 0, then none of the units will respond to any issued command.

[lkkOmmUnP]

kk = Input number 01 to 16
mm = Output number 01 to 16
n = unit ID# (n=2 to 9)
P = path

This command allows any input to be connected to any output on a particular module, but not switched. For example, in an RGBHV + Mono Audio combination where RGB = Unit ID2, HV = Unit ID3, and Mono Audio = Unit ID4, by putting n=3, one can easily load H&V signals only for switching or by using n=4 one can easily load only audio for switching. No switching take places until any of the switch [SW] or [lxxOmm] or [lxxOmmUn] commands are received. This command is very helpful in large matrix systems or when using PC based software.

If n = 1, units will respond to any command and if n= 0, then none of the units will respond to any issued command.

[lkkOXX]

kk = specific input to be controlled
01-16

This command selects the input to control. Once the input number to be controlled is set by this command, that input can be connected to multiple outputs through the connect command, [lXXOmmC].

[lXXOmm]

mm = output number 00 to 16

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This command selects the output to control. Once the output number to be controlled is set through this command, this output can be connected to several inputs. If output 00 is selected then disconnect all inputs to be specified through the connect command, **[IkkOXXC]**.

[IkkOXXC]

kk = input number 01 to 16

This command connects a specified input to the previously selected output through the **[IXXOmm]** command. A set of these commands will allow switching different inputs to a previously fixed output. For example, the sequence of commands would be:

[IXXO05][I06OXXC][I09OXXC][I12OXXC], which means that output 5 is first selected and then connected to input 6, 9, and 12.

[IXXOmmC]

mm = output number 00 to 16

This command connects a specified output to a previously selected input through the **[IkkOXX]** command. This command fixes the specific input. A set of these commands will allow switching different outputs to a previously fixed input. For example, the sequence of commands would be as follows:

[I03OXX][IXXO06C][IXXO09C][IXXO12C], which means that input 3 is first selected and then connected to outputs 6, 9 and 12.

[CAAnnxxkpp...zz]

Connect All. Connect any of the 16 inputs to any of the 16 outputs. The "CA Switch All" command is used to make a quick switch of all inputs and outputs. The position identifies output number and the value identifies the input number. The input number can be from 01-16. Value X can be used if no switching is required for a specific output. If 00 is used, it disconnects that output. For an 8x8 **HOMERUN** Switcher, connect will have all 16 position but positions, 9 through 16 will have either XX or 00

For example, to connect input 2 to 3, 8 to 10 & leave other outputs as the same as the command will be issued as follows, **[CAXXXX02XXXXXXXXXX02XX02XXXXXXXXXX XXX]**. To connect input 1,4,6,9, and 12 to the same numbered outputs (1-1, 4-4, 6-6, 9-9, 12-12) and ignore all other connections the command will be issued as follows **[CA01XXXX04XX06XXXX09XXXX12XXXXXXXXXX]**. If you want to connect input 1, 4, 6, 9 & 12 to same outputs but disconnect other outputs, then the command issued will be: **[CA01000004000600000900001200000000]**

[IXXOXXX]

This command provides feedback on all connections. The feedback is in the form of 16 2-byte ASCII characters. This can be used to determine the current status of the switcher.

The feedback format is as follows: xxnxxnxxnxxnxxnxxnxxnxxnxxnxxnxxn. The position determines the output and the number shows the input that is connected to this output. If the **HOMERUN** Matrix Switcher is 8x8 then the feedback of only the first 8 outputs will be provided, others will be 00.

[IkkOXXX]

kk = specific input number; 01 to 16

This command is used to get information from the switcher on the current connection of the specified input. The return string identifies which output is connected to the specified input. The return string is a multiple of mm, where mm is the current output connected to the specified input. For example, **[I02OXXX]** can return 030104, which means outputs 3, 1, 4 are connected to input 2. **[I04OXXX]** can return 00, which means there is nothing connected to Input 4.

[IXXOmmX]

mm = output number 00 to 16

This command is used to get information from the switcher on the current connection of the specified output. The return string identifies which input is connected to the specified output. The return string is a multiple of mm,

where mm is the current input connected to the specified output.

For example, the [IXXO02] command can return 04 indicating that input #4 is currently connected to output #2. [IXXO03] can return 00, which means that nothing is currently connected to output #3.

[SW] - Switch

The switch command immediately connects inputs and outputs simultaneously which are previously set with the path command.

This command initiates the switching sequence of the [lxxOmmP] or [lxxOmmUnP] commands.

[SAVnn] - Save Memory.

nn = memory to save 00-16

The **HOMERUN** Switcher contains 16 memories. Each memory is capable of storing one preset (scenes or salvos). The preset (scenes or salvos) can consist of a group of connections between different inputs and outputs. These memories can be saved using the Front panel, a remote control panel or through RS-232 commands. For example, [SAV12] command will save current input to output connections in memory space #12.

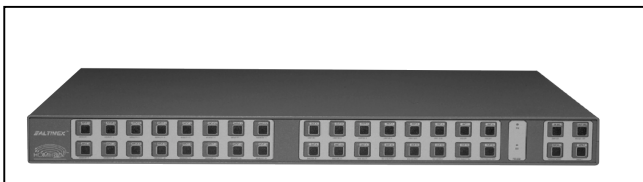
[RCLnn] - Recall Memory.

nn = memory to recall 00-16

The **HOMERUN** Switcher is capable of storing one preset (scene or salvo) per each of 16 memory locations. The preset (scene or salvo) consists of a group of connections between different inputs and outputs. The preset of connections stored in each memory can be recalled using the front panel, a remote control panel, or through RS-232 commands.

7.3 FRONT PANEL OPERATION

CP-01 HOMERUN Front Panel (OPTIONAL)



CONTROL OPERATION

Connect any input to any output:

Press the desired input, 1 through 16. The input LED will flash slowly. The LED on the outputs that are already connected to the selected input will flash quickly. The outputs that are not connected to the selected input will have LED OFF. Press the desired output 1 through 16. Input and output LED's will remain ON showing the current connections.

Input to output order must always be followed. First, press the input button and then press the output button. If the unit has only 8 outputs installed, the output buttons above 8 will not be operational.

Disconnect any input from any output:

Press the desired input button on the front panel. The outputs that are connected to this input will have its LED flashing quickly, so select the desired output that should be disconnected and press that output button.

Save current configuration

Press any input button, 1 through 16, and hold it for 2 seconds to save current input to output connections into any of the 16 memory locations of the **HOMERUN** Matrix Switcher.

The unit will beep and the switcher status (current input to output connections) will be saved. Memory #1 is always recalled during power-up or during the reset. This sequence only saves the configuration of the switches. It does not save any system variables like baud rate, Unit ID number, etc.

Recall saved memory:

When the RECALL button is pressed, all input LED's will flash quickly, indicating that an action is required from the operator. Press INPUT 1 through INPUT 16 to recall a selected memory location, 1 through 16.

Pressing 1 will make the input to output connections the same as during Power ON.

One button operation of the recall function:

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Press the RECALL button and hold for 2 seconds. The unit will beep and switch into the recall mode. This mode is indicated by the RECALL LED flashing slowly. Press INPUT 1 through INPUT 16 to recall the desired memory location. Output buttons do not work anymore in this operation.

Press and hold the RECALL button for 2 sec. again to disable the recall function.

Disable/Enable Front Panel:

Press the OUT SEL button and hold it for 2 seconds. The front panel will be disabled. Press and hold it again to enable the front panel.

Preview of Connection

When any output is selected through the Front Panel **CP-01** buttons, the input/inputs that are connected to that particular output will show its LED ON. Similarly if any input is selected on the Front Panel **CP-01**, then the output to outputs connected to this input will show a flashing LED.

PROGRAMMING OPERATION

This programming operation is only performed for changing module settings and should not be part of a general control operation. All the **HOMERUN** modules that are connected through a loop cable to the **HOMERUN** Switcher module with a **CP-01** Front Panel will be reprogrammed.

Enable Vertical interval switching:

This function operates only if the VIS function is installed. Press the SETUP button. The SETUP LED will start to flash. Press OUT 7 to enable the VIS function. The VIS function operates only with NTSC or PAL type video signals. Input #1 is the reference input for the purposes of VIS switching. If Input #1 is not present the **HOMERUN** will switch without VIS even though VIS is enabled.

Disable vertical interval switching:

This function operates only if the VIS function is installed. Press the SETUP button. The SETUP LED will start to flash. Press OUT 8 to disable the VIS function.

Set Unit ID numbers

This function is used to control individual levels of the **HOMERUN** Matrix Switcher, such as switching video and audio separately. If the **HOMERUN** Switcher is set to unit ID 1 then the switcher will respond to all commands through the RS-232 port regardless of the UID command. The factory default is unit ID =1.

To set the unit ID number, press the SETUP button. The SETUP LED will start to flash. Press the OUT1 through OUT6 buttons to select the proper unit ID number. The switcher will reset after this operation.

This command will set unit ID numbers on the master unit and also on all units attached to the master unit.

Therefore only the units that need to have changes in unit ID number should be attached to the master unit during the set-up phase through the loop cable.

Suggested Unit ID assignment if individual control is required:

- Unit ID 2 Red, Green and Blue channels (All three channels should have the same Unit ID number)
- Unit ID 3 Horizontal, Vertical or Composite sync channels (All sync channels should have the same Unit ID number)
- Unit ID 4 Composite video signal channel
- Unit ID 5 S-Video type video signal channels (Both Luma and Chroma should have the same Unit ID numbers)
- Unit ID 6 Left and right audio channels should have the same Unit ID numbers.

SETUP +OUT 1	UNIT ID #1
SETUP +OUT 2	UNIT ID #2
SETUP +OUT 3	UNIT ID #3
SETUP +OUT 4	UNIT ID #4
SETUP +OUT 5	UNIT ID #5
SETUP +OUT 6	UNIT ID #6

Set Baud Rate:

Baud rate determines communication between the control system and **HOMERUN** Matrix Switchers and also the rate between individual modules of the **HOMERUN**. Setting all interconnected modules to the same baud rate is essential for proper operation of the complete system.

It is recommended that baud rate is changed for all modules when the **HOMERUN** Switcher's modules are connected together. For example if the Red, Green, Blue and Sync modules are connected together, then the baud rate is changed to affect all 4 modules at the same time.

To set Baud Rate number, press the SETUP button. The SETUP LED will start to flash. OUTPUT 1 through 16 LED's will show current status of the switcher. Press OUT 9 through OUT 11 to select the desired baud rate. The unit will beep to confirm your selection.

SETUP +OUT 9	2400 bps
SETUP +OUT 10	4800 bps
SETUP +OUT 11	9600 bps

7.4 CP-02 REMOTE TERMINAL CONTROL

Remote Terminal Operation

Before you Begin:

The **HOMERUN** Matrix Switcher must be set to operate at 9600 baud (the default setting is 2400 baud). This is the baud rate at which the Remote Terminal communicates with the **HOMERUN** Switcher. The baud rate of the **HOMERUN** Switcher can be set to 9600-baud through a computer, a Windows Hyper Terminal program or through **HOMERUN** Control Video software by designed by Altinex.

WINDOWS HYPER TERMINAL PROGRAM:

1. Connect the computer communication port (COM1, COM2), found on the back of your computer (It will be either a 9-pin D or 25-pin D connector) to the RS-232 port of the **HOMERUN** Matrix Switcher as per Table 1.

Turn Power ON for all connected **HOMERUN** modules.

2. Go to Accessories in Windows 95 and select Hyper Terminal.
3. Select PROPERTIES from the FILE menu.
4. Select desired communications port, e.g. COM1, COM2.
5. Click on the PORT SETTINGS/CONFIGURE button and a new window for the COM port's properties will pop-up.
6. Select the following settings:
Bits per second: 2400
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None
7. Select OK button.
8. Select Setting, Tab.
Set the Hyper Terminal to VT100 emulation.
Set back scroll buffer lines to 500.
9. Select the OK button.
Select the call option from CALL menu. You are now ready to change the baud rate of the **HOMERUN** unit.
10. Type following command to set the **HOMERUN** baud rate: **[BAUD6F]**. Now by pressing RETURN key, command is executed and the unit will respond with a beep and [OK]. If there is no beep the unit has not accepted the command. Keep in mind that once the command is accepted, to continue to communicate with the Homerun computer, the COM port needs to be configured to communicate at a 9600-baud rate.
11. After the baud rate has been changed, disconnect the RS-232 cable between the terminal block on the back of the **HOMERUN** switcher and the computer.
12. Using the special cable supplied by Altinex, make sure the 9 Pin D connector is securely fastened to the **CP-02** terminal. The other

end of the cable is connected to the RS-232 port of the **HOMERUN** Matrix Switcher.

ALTINEX HOMERUN CONTROL PROGRAM

- 1 Follow Step 1 of previous option.
2. Load the **HOMERUN** control program on WINDOW 95 from the START UP button, PROGRAM option and Altinex tab.
- 3 Go to the SETUP TAB and verify that current baud rate is set at 2400 baud (default). Then from SET Baud Rate section select 9600 baud and click the program button to program the baud rate into all attached **HOMERUN** modules.

Note: The **HOMERUN** Control Software can be downloaded from the Altinex website www.altinex.com in the Download section.

CP-02 DB-9 pin connector	Signal description	Connection to HOMERUN Switcher's RS-232 port
1	Power Ground	Ground
2	Receive	Transmit
3	Transmit	Receive
5 (short to 6)	CTS (short to pin 6)	-
6 (short to 5)	DTR (short to pin 5)	-
7	Signal Ground	Ground
8	Power Input (+5V)	-
9	Power Input (8-12V regulated)	+12V

Table 4. **CP-02** pin outs and connection to **HOMERUN** Switcher

Terminal Set-up

The **CP-02** remote terminal must be properly set up before it will operate with the **HOMERUN** Matrix switcher. To set up the terminal, turn power "ON" while holding the (●) period button on the keypad, and the terminal will enter into set-up mode. The high contrast liquid crystal display will briefly flash the following message:

VW=7

VW	set LCD viewing angle	0 through 7
TM	terminal mode	0
TD	turnaround delay	0
BR	baud rate	2
DF	data format	4
HS	handshake	0
LE	local echo	0
EN	line terminator	1
KC	key click	0
KR	key repeat	0
CU	cursor	0

To save changes Press **Recall 01**.

The **OK** message will be displayed on the screen for 1 second.

1. Turn power to the **HOMERUN** OFF and back ON. Press the **ENTER** key.
2. The display will read: Altinex, Inc. 3.2 or the current software version.

Altinex. Inc. 3.2

Congratulations! Your **CP-02** terminal set up is completed!

A. Power ON:

Turn ON the power to the **HOMERUN** by plugging in the power cord.

Observe the **CP-02** going into self-test mode for about 5-6 seconds.

The display will flash the following message:

Vol 1. Test OK

The **CP-02** remote terminal is now ready to control the **HOMERUN** Matrix Switcher.

B. Function Keys description:

CONNECT	Allows user to make connections between inputs and outputs.
SAVE	Permits the connections between inputs and outputs

	to be saved in any of the 16 available memories.
RECALL	Allows recalling the saved connections from memory 01 through 16.
SPACE	Reserved for future use.
DELETE	Reserved for future use.
CLEAR	Reserved for future use.
Recall 01,02,03	Allows the end user to recall the first three settings by pressing just one button.
ENTER	To complete and execute a command.

C. Making Connections:

Making connections with the **CP-02** remote terminal is really quite simple.

1. Press the **CONNECT** key. **IN?** will appear on LCD display.

IN:?

2. Enter a two digit INPUT number. For example: to connect input 5, enter: **05 IN: 05 OUT?** will appear on the display.

IN:05 OUT?

3. Enter a two-digit OUTPUT number. For example: to connect output 11, enter **11 OUT: 11** will appear on the screen.

IN:05 OUT:11

4. Press the **CONNECT** key again to enter the next connection.
5. Continue this process until all connections are made.

D. Saving Your Settings:

The **CP-02** remote terminal has 16 memories that can store preset configurations. To save your settings use the **SAVE** key.

1. Press the **SAVE** key. **SAVE?** will appear on the LCD display.

SAVE?

2. Type in a two-digit memory number in which the setting is to be stored. Memories available are 01 through 16.

SAVE? 05

E. Recalling Your Settings:

There are two ways to recall your settings: Quick Recall and Standard Recall. Quick Recall is available for the first three stored configurations. The recall is accomplished by simply pressing the Recall 01, Recall 02 or Recall 03 keys.

1. Press **Recall 01** to recall setting stored in memory 01
2. Press **Recall 02** to recall setting stored in memory 02
3. Press **Recall 03** to recall setting stored in memory 03

Standard Recall is accomplished by pressing the **RECALL** key and entering a memory number in which a particular setting was stored.

1. Press the **RECALL** key. **RECALL?** will appear on LCD display

RECALL?

2. Enter a two-digit memory number from which the setting is to be recalled.

RECALL? 05

3. Press the **ENTER** key.

Note that when the recall function is used, because the settings can include multiple connections, the LED's on the back of the **HOMERUN** will not reflect the connections recalled by the memory, but rather the last connection made.

7.5 WINDOWS BASED CONTROL SOFTWARE

This software is available from Altinex website at www.altinex.com, in the Download section.

MATRIX SWITCHERS

ACCESSORIES 8

Model No.	Description
	RACK MOUNTING BRACKETS
DA1292RM	19"-1U Rack mount ears for rack wide units
	TABLE MOUNT BRACKETS
TM1277	3U High, 1 Rack-Wide
	4 BNC TO 4 BNC COAXIAL CABLE
CB4100MR	Bulk cable 4 coaxes (500 ft minimum)
CB4106MR	6 feet
CB4112MR	12 feet
CB4125MR	25 feet
CB4150MR	50 feet
CB4175MR	75 feet
CB41100MR	100 feet
	5 BNC TO 5 BNC COAXIAL CABLE
CB4200MR	Bulk cable 4 coaxes (500 ft minimum)
CB4206MR	6 feet
CB4212MR	12 feet
CB4225MR	25 feet
CB4250MR	50 feet
CB4275MR	75 feet
CB42100MR	100 feet
	4 BNC TO 4 BNC COAX (Super High Res.)
CB4300MR	Bulk cable 4 coaxes (500 ft minimum)
	5 BNC TO 5 BNC COAX (Super High Res.)
CB4400MR	Bulk cable 5 coaxes (500 ft minimum)
	OPTIONAL CONTROL ACCESSORIES
CP-01	Front Panel control
CP-02	Remote control pad w/cable
CP-03	Touch screen LCD Display control panel w/cable

FAQ (Frequently Asked Questions) 9

No:	Question	Answer
1	How do I know what input is connected to what output?	This information must be maintained by the control system. The present version of the software does not track that information.

2	My modules do not communicate with each other?	When you experience lack of communication check the following: 1. Cable connections. 2. Unit ID settings. 3. Same Baud rate settings.
3	Can I control multiple switchers with one RS-232 card?	Yes. You can control up to 14 different groups of switchers. Just connect the Loop out port to the next switcher's Loop in port using provided cables.
4	Does the HOMERUN come with the rack mounts?	Yes, two 1-U high rack mounts are included with each module. Please check the packaging carefully.
5	How does one increase the number of inputs or number of outputs on the switcher?	To increase the number of inputs one can add second switcher and loop some of the outputs (say 8) of the first switcher to the 8 inputs of the second switcher, thus creating a 24x8 Matrix Switcher. To increase the number of outputs use a second switcher and a VA6834FC interface with dual output, or 1 in 2 out DA at each of the inputs. This will increase the matrix size to 16x32. For other configurations call Altinex.
6	Can I switch each module independently?	Yes. Using proper RS-232 commands, one can control each level of switching independently by assigning a unique ID number
7	If I need to use a switcher to switch RGBHV, Composite Video, S-Video and/or Audio	Yes, the HOMERUN Switcher can switch RGBHV, Composite Video, S-Video and/or Audio at the same time. Contact Altinex if you have

MATRIX SWITCHERS

	at the same time, can this be done with this product?	a challenge to connect.
8	Can I use contact closure to control the switcher?	No. The unit should be controlled using RS-232 commands or through the optional CP-01/CP-02/CP-03
9	Is the HOMERUN Switcher capable of controlling various projectors?	It is not recommended in large size systems to control a projector through the switcher. It is expected that a control system is available to control both switcher and projector or projectors independently. If a control system is not being used, the switcher can be connected to the projector and control commands can be passed through the switcher to the projector. Call Altinex for programming information.

TROUBLESHOOTING GUIDE 10

- First, make sure, that power is connected into the power input connector and input power is within the range of 90-260 VAC.
- Make sure that cables are connected properly and snugly. Please immediately replace any defective or damaged cables.
- If an RS-232 connection is used to control the **HOMERUN** Switcher, then please make sure that the connection to each pin of the RS-232 port located on the back of the unit is described in Table 1.
- In the Video module please make sure that the Input level of the Video signal RGB is 1.2 V p-p. In the Audio module the Input level of the Audio signal is 5 V p-p.
- If the RS-232 control, or Front Panel **CP-01**, or Touch LCD **CP-03** control is not working or responding, please verify that the unit works through Back Panel switches F1 and F2. If the **HOMERUN** Switcher is working properly through the Back panel, please verify that control cable connections are connected to the control system, and sources and displays are properly connected.
- If a control system is used to control the switcher through an RS-232 port, make sure that, there is at least a 50 ms delay between two adjacent commands being sent. Also make sure that all commands have a Square bracket '[' before and ']' after each command.
- Please verify that the correct ID number is assigned to each unit. If a particular group of modules needs to be controlled then the unit ID number must be same for all the modules in that group. Unit ID number 0 will have the **HOMERUN** Switcher unit not respond to any command, while unit ID number 1 in the command will have all units follow the command.

If you are using RS-232 control for this unit, please follow connection instructions as described in the manual and verify operation with the downloaded software for PC's from the

DOWNLOAD section from the Altinex website www.altinex.com.

ALTINEX POLICY

11

11.1 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 prepaid 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.

11.2 RETURN POLICY

It is very important to Altinex that you receive 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 the 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 actual repairs are done.

11.3 CONTACT INFORMATION

Sales Department

Phone: 714-990-2300

Fax: 714-990-3303

Accounting Department

Phone: 714-990-6088

Fax: 714-990-5778