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PRODUCT REVISION: 0

## **MX2436RM**

# **6-IN, 1-OUT COMPOSITE VIDEO & AUDIO SWITCHER USER'S GUIDE**

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MX2436RM** Switcher. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MX2436RM** 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 MX2436RM

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the air flow 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 **MX2436RM** Switcher 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 **MX2436RM** 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.
- Handle the **MX2436RM** Switcher carefully. Dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **MX2436RM**. If the **MX2436RM** is to be mounted to a table or wall, use only ALTINEX-made mounting accessories, such as rack mount shelf **DA1298RM** or rack mount ears **DA1292FC** and cables for optimum setup.
- To turn off the main power, be sure to remove the cord 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 power cord or any cable that is attached to the **MX2436RM** Switcher.
- If the **MX2436RM** Switcher is not used for an extended period, disconnect the power cord from the power outlet.

### 1.4 CLEANING

- Unplug the **MX2436RM** 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 / 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 MX2436RM 2

The **MX2436RM** is Video and Audio Switcher designed to handle the switching requirements of several multimedia applications.

The **MX2436RM** offers six BNC inputs with ground loop isolation, which promote individual equalization of video gain according to different cable lengths. Each of the BNC inputs can be connected to a single BNC output. The **MX2436RM** also provides six stereo or balanced audio inputs, which can be connected to a single stereo or balanced audio output.

The **MX2436RM** allows the non-simultaneous connection of six video sources to a monitor or projector and six audio sources to any audio system. In addition, the **MX2436RM** is controllable using its built-in front panel or through RS-232.

Using optional hardware, the **MX2436RM** can be rack mounted alone as a single unit or two units can be rack-mounted side by side.

## TECHNICAL SPECIFICATION 3

FEATURES/ DESCRIPTION	Audio	Video
<b>GENERAL</b>		
<b>Inputs</b>	6	8
Input Connector	Six 5 conductor terminal blocks	Eight BNC Female
<b>Outputs</b>	1	1
Output Connector	One 5 conductor terminal block	One 15-pin HD Female connector
<b>Compatibility</b>	Stereo or balanced audio	NTSC, PAL, SECAM, High Resol. Mono. Comp. Video (R-Y, B-Y)

Table 1. **MX2436RM** General

MECHANICAL	MX2436RM
Width (inches)	1.75in (44mm)
Height (inches)	17.00 in (432mm)
Depth (inches)	9.00in (229mm)
Weight (pounds)	5lbs (2.28kg)
Finish	Gray
Front/Back Panels	Lexan
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs (min)

Table 2. **MX2436RM** Mechanical

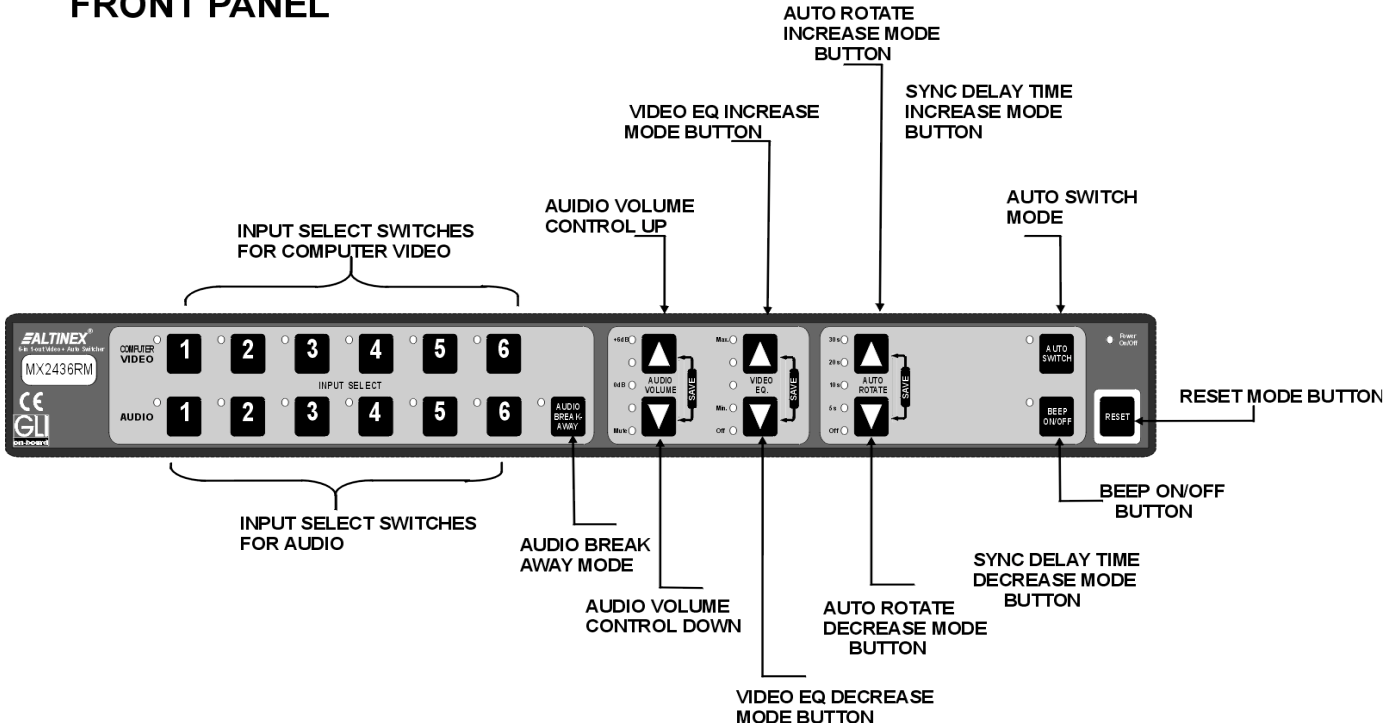
ELECTRICAL	Audio	Video
<b>Input Signals</b>		
Differential	1.8V p-p	-
Composite Video	-	1.5V p-p
Impedance	10 k Ohms	75 Ohms
CMRR	80dB @ 10 Hz to 20k Hz	-
<b>Output Signals</b>		
Analog	-	1.5V p-p
Fall/ Rise Time(ns)	-	less than 2.4ns
Impedance	600 Ohms	75 Ohms
Crosstalk	80 dB @ 1kHz	-
Differential	1.8Vp-p	-
Signal to Noise Ratio	More than 95 dB	-
Bandwidth	10 Hz – 40 kHz	300MHz
Stereo Signal Separation	More than 60dB @ 20 kHz	-
<b>Frequency Compatibility</b>		
Horizontal	-	15-200kHz
Vertical	-	47-200Hz
<b>Power</b>		
External Power	90V AC to 260V AC 50/60Hz	
Power Consumption	14 watts max	

Table 3. **MX2436RM** Electrical

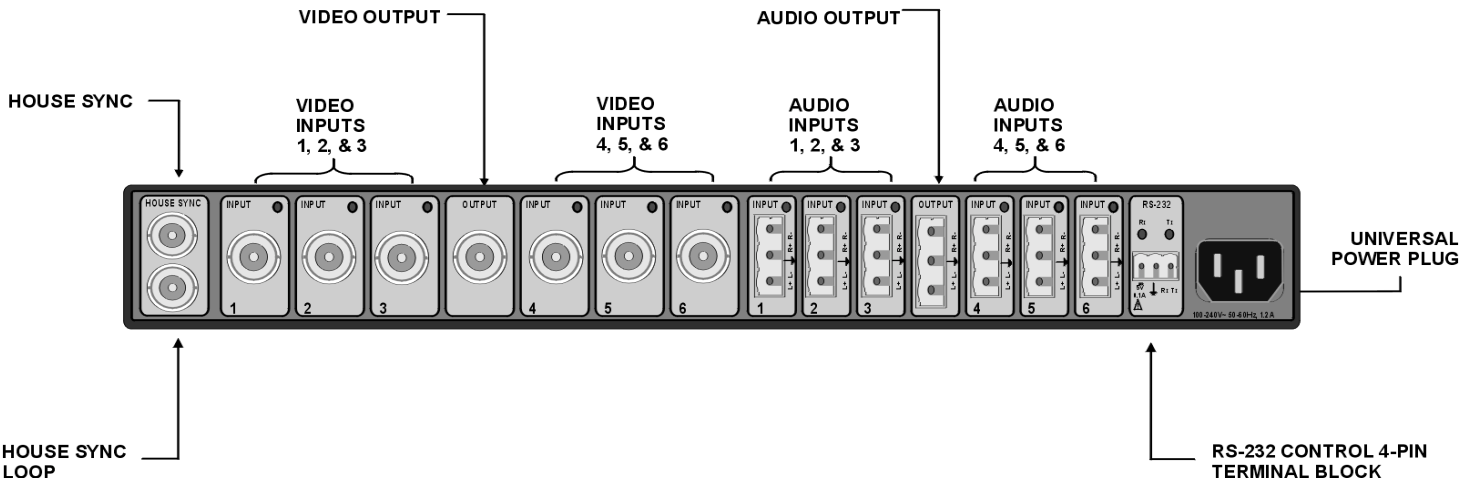
## DESCRIPTION OF MX2436RM

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### FRONT PANEL



### BACK PANEL



There are two sections on the front panel of the **MX2436RM**: input select and switcher control. The buttons within the input select section allow for the actual switching of the source signals. The buttons within the switcher control section allow access to the switcher setup features.

## 4.1. VIDEO SELECT MODE

Default video and audio inputs connect to video and audio outputs simultaneously, but if needed the user may select video and audio inputs separately using AUDIO BREAK AWAY mode. The user can select any video input by using the input select buttons located on the front panel.

## 4.2. AUDIO BREAK AWAY MODE

This mode allows independent selection of video and audio inputs. After choosing AUDIO BREAK AWAY mode the user may select any audio input for switching when the power is turned ON.

## 4.3. EQUALIZATION MODE

With video signals connected from input to output through a video amplifier along with an equalization circuit, the user can equalize video signals for each of the inputs according to the distance (cable length) from the video source (PC) to the switcher.

## 4.4. AUTO SWITCH MODE

If AUTO SWITCH mode is turned ON, the input which was previously selected by the incoming video signal will automatically connect to the output.

If the user does not previously select the AUDIO BREAK AWAY mode, the same number of audio inputs will be connected to the audio output.

## 4.5. AUTO ROTATION MODE

The user may select AUTO ROTATION mode with a preset rotation time. If this mode is selected, then all video inputs connected to the video output will be selected alternately. Audio inputs will simultaneously connect to the audio output along with video inputs if the user did not previously select AUDIO BREAK AWAY mode.

## 4.6 AUDIO VOLUME CONTROL

This feature allows the user to control the audio volume using the UP or DOWN buttons. To

increase the volume, push the UP button and to decrease the volume, push the DOWN button.

## 4.7. VERTICAL INTERVAL SWITCHING MODE

The VERTICAL INTERVAL SWITCHING mode will be activated automatically if the house sync BNC connector is connected to the house sync source or composite video is connected to Input 1. If House Sync is not connected and the Composite Video signal is present on Input 1, then the vertical interval switching process will be controlled by Vertical Sync from the composite video signal.

## 4.8. BEEP ON/OFF MODE

If the BEEP ON/OFF mode is selected, each control on the control panel, except the RESET mode will be without an accompanying beeper sound.

## 4.9. RESET MODE

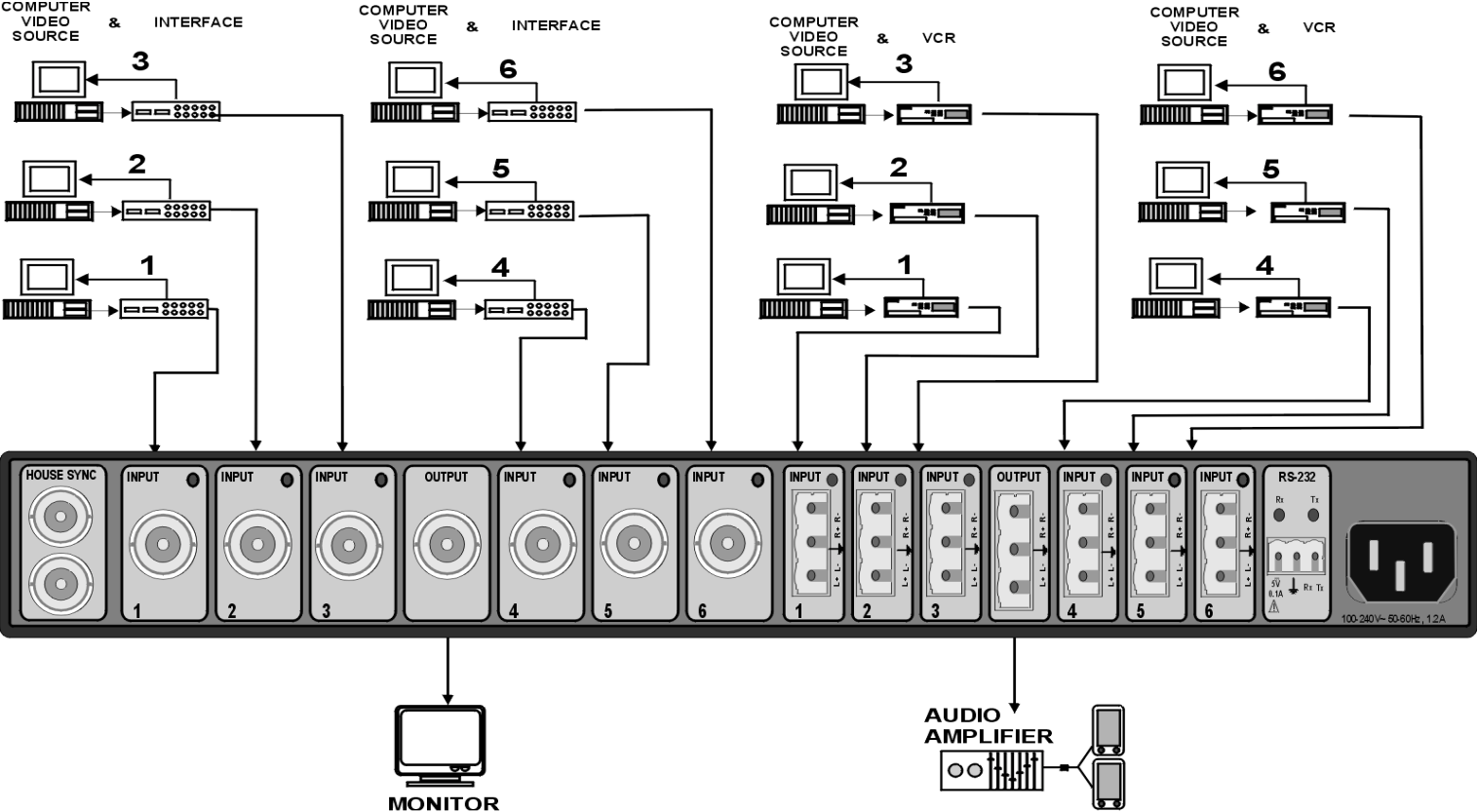
RESET mode sets the memory for the **MX2436RM** Switcher. To reset the switcher, press the RESET button. In the reset mode, video input 1 and audio input 1 will be active. *Auto Switch* mode will be disabled if previously active. Beep On/Off mode will return to the ON position if previously in the OFF position. The Reset mode button does not affect Audio Volume, Video Equalization, Auto Rotate or the Sync Delay mode.

## 4.10 FACTORY RESET MODE

This mode clears all data from memory, which was previously set by the user and returns the switcher to the factory-preset position. To return the switcher to the *Factory Reset* mode, turn OFF the power, press the *Reset* button, turn power ON and then release the *Reset* button.

## APPLICATION DIAGRAM

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## INSTALLING YOUR MX2436RM 6

- Step 1.** Make sure that the power input is set to the proper AC voltage for the country of usage. An incorrect setting may result in unit damage not covered by warranty.
- Step 2.** Connect the power cord to the unit and plug it into the power outlet.
- Step 3.** Connect the cables from the video sources and the audio sources (computers, VCR, etc.) to the input channels and connect the display devices (monitor or projector) and the appropriate audio equipment (mixer, amplifier, etc.) to the outputs. For better results use shielded, high quality coaxial cables.
- Step 4.** Test all the required switching features. If you experience difficulties or abnormal switching, you may wish to reset the unit to factory defaults to make sure that you have not entered an incorrect operation mode. To reset the switcher, turn OFF power and then turn power ON again while pressing and holding the "RESET" button. After a brief delay, all LED's should blink ON and OFF. A beeping sound will be heard several times indicating that the switcher has been set to the factory preset position.
- Step 5.** Verify that the display and audio equipment operates properly and results in perfect images and sound.

**For additional assistance, please refer to the FAQ Section or the Troubleshooting Guide.**

## OPERATION 7

### 7.1 CONTROL PANEL

1. When any of the buttons are pressed and released a beeper will sound once. If a button is pressed and held a beeper will sound several times.
2. Default video and audio inputs are selected simultaneously by pressing and releasing one of the video input buttons. LED's, which represent selected inputs on the control panel should turn "ON" The LED's that represent selected video and audio inputs on the connector board should also turn "ON".
3. When selecting audio inputs and video inputs separately, press the "AUDIO BREAK AWAY" mode button. If at any time, you need to return the **MX2436RM** Switcher to the previous mode position, press the "AUDIO BREAK AWAY" mode button.
4. Before setting the "VIDEO EQ" mode, you must determine the length of cable that is connected to each of the video inputs. To select the appropriate equalization, follow step a-d below.
  - a) Select Video Input
  - b) Press and release the "VIDEO EQ" UP button as many times as needed to turn the video equalizer to the correct position. Each time this button is pressed, it equalizes for the next 25 ft of cable. (For equalization of 100ft of cable, press the button four times; for cable 150ft, press button six times; and for cable 375ft, press the button fifteen times and so on.)
  - c) To set the selected equalization to memory, press and hold the "VIDEO EQ" "Up" and "Down" buttons simultaneously for 2 seconds.
  - d) Repeat step b and c for equalization of any video input.
5. To set the "AUTO ROTATE" mode, use the "AUTO ROTATE" Up and Down buttons for selecting the appropriate rotation time. Video inputs begin to rotate as they connect to the



output within the selected auto rotation time. Audio inputs will also rotate, if AUDIO BREAK AWAY mode was not previously selected (Equalization will remain active).

6. To activate the AUTO SWITCH mode, press the "AUTO SWITCH" button. The LED, which represents the AUTO SWITCH mode, will turn "ON".
7. The "AUDIO VOLUME" mode will control the audio stereo volume when the VOLUME UP or DOWN button is pressed and released. The AUDIO VOLUME UP or DOWN button is between a maximum volume of +6dB and a minimum volume of -6dB. From the minimum to maximum volume there are fifteen steps. Each step represents 0.8dB. After selecting the volume, press and hold the UP and DOWN buttons simultaneously.
8. To turn "OFF" the beeping sound, press and hold the "BEEP ON/OFF" button. The LED, which represents this button, should turn OFF. To activate sound, press and hold the "BEEP ON/OFF" button again.
9. To return the switcher to factory preset, press the "RESET" button. After a brief delay, all LED's should blink ON and OFF. A beeper will sound several times indicating that the switcher has been reset.

## 7.2 RS-232 CONTROL OF THE SWITCHER

The **MX2436RM** Switcher offers remote control capabilities through RS-232. RS-232 is the primary communication standard used by control systems and computers.

In fact, the **MX2436RM** offers more features using RS-232 than are currently available from the front panel of the unit.

The **MX2436RM** offers a terminal block using solder-free, screw-down contacts, making it extremely easy to connect the switcher to a control system or a computer in the field.

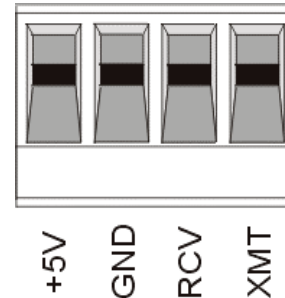


Figure 1. RS-232 Terminal Block

PIN No.	PIN Designation
1	+5V (not needed for RS-232 connection)
2	GND (Ground)
3	RCV (Receive)
4	XMT (Transmit)

Table 4. Pin Designations.

The terminal block is labeled with the appropriate contact designations: Transmit (XMT), Receive (RCV), and Ground (GND). Always remember that the Transmit pin from the control system or computer must be connected to the Receive pin on the control port of the switcher; do not connect Transmit to Transmit or Receive to Receive.

**Note:** the contact labeled +5V is not used for RS-232 connections. This contact provides DC voltage to other equipment installed within close proximity of the **MX2436RM**.

Typically, a control system or computer will offer RS-232 connections on a 9-pin D connector.

The following are typical cable pin-out designations for RS-232 connections on a 9-pin D connector. Always verify that the pin-outs for your system are correct to ensure the proper wiring.

IBM PIN No.	<b>MX2436RM</b> Contact
3	RX
2	TX
7	GND

Connection of IBM-PC 25-pin D to the **MX2436RM** Terminal Block

IBM PIN No.	MX2436RM Contact
2	TX
3	RX
5	GND

Connection of IBM-PC 9-pin D to the **MX2436RM** Terminal Block

Port setting preferences for the control system or computer being used to control the switcher should be set as follows:

BAUD RATE (Bits per second)	9600
Data bits	8
Parity	None
Stop Bits	1

## 7.2.1 RS-232 PROTOCOL:

The RS-232 protocol for the **MX2436RM** Switcher uses a simple ASCII character format.

1. Square brackets “[” & “]” are part of the 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 4.
4. Make sure that there is a delay of 50 ms between two consecutive commands.

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

The **MX2436RM** Switcher requires 50ms of processing time after each command is sent. So, please keep a 50ms delay between two consecutive commands.

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.

## 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 program 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.

### 1. [# SW n1 n2 n3 n4 n5 n6] - Video Switch Input

# = Switch number (no. from 1 to 9; default is 0).

n1 = Video input number (no. from 0 to 6)

n2 = Break Away code (0 = On; 1 = OFF)

n3 = 0, video key pressed

n4 = 0 Sync Delay. The **MX2436RM** Switcher is equal to zero. It is not necessary for the switch to delay.

n5 = Video Equalizer (Hexadecimal no. from 0 to F).

n6 = Audio Gain (Hexadecimal no. from 0 to F).

The [# SW n1 n2 n3 n4 n5 n6] command is the main command of the video input switcher containing all the information needed by the switcher to activate the video sources connected to the unit.

### Example:

Sending the **[8SW61040F]** command will activate switcher module **8**, Video Input number **6** and Audio Input **6** (because the breakaway code is 1). The zero (**0**) will notify the switcher that the video key was pressed with an interval of **4** (**2** seconds). The video equalizer was set to OFF and there is a maximum volume of **F**. Zero (**0**) = OFF and default is 8 for a normal volume or video).

## 2. [# SW n1 n2 n3 n4 n5 n6] - Audio Switch Input

# = Switch number (no. from 1 to 9; default is 0).

n1 = Audio input number (no. from 0 to 6).

n2 = Break Away code: (0 = On; 1 = OFF)

n3 = 1, audio key pressed

n4 = 0, Sync Delay. The **MX2436RM** Switcher is equal to zero. It is not necessary for the switch to delay.

n5 = Video Equalizer (Hexadecimal no. from 1 to F).

n6 = Audio Gain (Hexadecimal no. from 1 to F).

This is the main command of the audio input switcher containing all the information needed by the switcher to activate the audio sources connected to the unit.

### Example:

Sending the **[8SW6012F8]** command will activate switcher module **8** and audio input number **6** only (because the breakaway code is **0**). The "1" will let the switcher know that the audio key was pressed with an interval of **2** (1 second), video equalizer was set to a maximum and a normal volume of **8**. Zero (0) = OFF and default is 8 for normal volume or video).

## 3. [#RF] - Factory Reset

# = Switch number (default is 0)

This command will replace all the previously stored settings in the memory of the switcher module, which is indicated by the factory default setting. Note that previously stored settings will be lost.

### Example:

Sending the **[8RF]** command resets the Switcher module with ID number eight to the factory settings.

## 4. [#RO] - Operation Reset

# = Switch number (default is 0)

This command will reset the following:

- Audio and Video is set to input #1
- Auto Switch is set to the OFF position
- Beep is set to the ON position

The following will not be affected:

- Audio Volume
- Video Equalization
- Auto Rotate
- Sync Delay

### Example:

Sending the **[8RO]** command resets the Switcher module with ID number eight to the *Reset Mode*.

## 5. [# SA n] - Audio Breakaway

# = Switch number (default is 0)

n = 1 (ON) Audio Breakaway, Audio Input Video Input and switchers can be activated separately.

n = 0 (OFF) In this mode the switchers are activated simultaneously. For example, if Video Input 2 is pressed, Audio Input 2 will be automatically activated.

This command controls audio and video input numbers that will be sent simultaneously or separately allowing the control of Audio input and the video input independently.

### Example:

Sending the command **[1SA1]** will allow the user to select independently Audio Input from Video Input.

### Sync Delay

The **MX2436RM** Switcher is equal to zero. Therefore, it is not necessary for the switch to delay.

## 6. [#Bn] - Beep ON/OFF

- # = Switcher module ID number (default is 0)
- n = ON/OFF switch
- n = 1 (Turns switcher Beep ON)
- n = 0 (Turns switcher Beep OFF)

This command activates or deactivates the beeping sound when a key is pressed on the switcher module.

### Example:

Sending the command **[8B1]** set the beeper ON in the connected Switcher module with ID number eight.

## 7. [OASn] - Auto Switch

- n = ON/OFF switch
- n = 1 (Turns auto switcher ON)
- n = 0 (Turns auto switcher OFF)

The **[OASn]** command sets the switcher module to the ON position to auto detect the incoming audio or video signals or OFF to operate it manually or with a PC software.

### Example:

Sending the **[OAS1]** command will set the auto switch feature to the ON position, which will automatically detect the incoming video signal.

## 8. [0I#] - Change Identification Number

- 0 = Zero
- # = New Switcher module ID number (no. from 1 to 9).

This command sets a unique ID number to each **MX2436RM** Switcher module. A total of 9 unit ID's can be assigned.

### Example:

Sending the command **[0I8]** will reset the active Switcher module with the new ID number eight. In addition, by default the switcher still has ID number zero.

## 9. [#CA n1 n2 ] - Audio Gain Control Save Settings

- # = Switch number (default is 0; no. from 1 to 9).
- n1 = Audio input number (no. from 0 to 6).
- n2 = Audio Gain (Hexadecimal no. from 1 to F).

The **[#CA n1 n2 ]** command will save the volume settings for a specified audio input.

### Example:

After the **[8CA6F]** command has been executed, switcher module **8** and Audio Input number **6** will have a maximum volume of **F** (0 = OFF, default is 8 or normal volume).

## 10. [#CA n1 n2 ] – Video Equalization Save Settings

- # = Switch number (default is 0; no. from 1 to 9).
- n1 = Video input number (no. from 0 to 6)
- n2 = Video equalization. (Hexadecimal no. from 1 to F).

This command saves the settings of equalized video signals to compensate for cable lengths from the video source to the switcher.

### Example:

When sending the **[8CA58]** command, Switcher module **8** and Video Input number **5** will have a medium equalization range of **8** (0 = OFF).

## 11. [#VR] - Firmware Version

This command displays the firmware revision number that is installed into the microprocessor.

- # = Switch number (default is 0; no. from 1 to 9).

### Example:

When sending the **[8VR]** command the system will return the version number 8R1.0. When sending the **[0VR]** command the system will return the version number 8R1.0.

This command sets a unique ID number to each **MX2436RM** Switcher 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.

### 7.2.3 SUMMARY OF COMMANDS

1. [# SW n1 n2 n3 n4 n5 n6] - Video Switch Input
2. [# SW n1 n2 n3 n4 n5 n6] - Audio Switch Input
3. [#RF] - Factory Reset
4. [#RO] - Operation Reset
5. [# SA n] - Audio Breakaway
6. [#Bn] - Beep ON/OFF
7. [OASn] - Auto Switch
8. [0I#] - Change Identification Number
9. [#CA n1 n2 ] - Audio Gain Control Save Settings
10. [#CA n1 n2 ] - Equalization Save Settings
11. [#VR] - Firmware Version

## ACCESSORIES 8

Model No.	Description
	<b>TABLE MOUNT HARDWARE</b>
<b>TM1276</b>	Table Mount bracket for 2U ½ Rack-Wide
	<b>RACK MOUNTING ACCESSORIES</b>
<b>DA1298RM</b>	Rack mount shelf for two units side by side
<b>DA1292RM</b>	Rack mount ears for single unit.
	<b>HIGH RESOLUTION 5 BNC to 5 BNC COAXIAL CABLE</b>
<b>CB4200MR</b>	Bulk Cable 5 coaxes (500ft minimum)
<b>CB4203MR</b>	3 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4206MR</b>	6 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4212MR</b>	12 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4225MR</b>	25 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4250MR</b>	50 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4275MR</b>	75 feet, 5 BNC to 5 BNC coaxial cable
<b>CB42100MR</b>	100 feet, 5 BNC to 5 BNC coaxial cable
<b>CB42150MR</b>	150 feet, 5 BNC to 5 BNC coaxial cable
	<b>SUPER HIGH RESOLUTION 5 BNC to 5 BNC COAX</b>
<b>CB4400MR</b>	Bulk Cable 5 coaxes (500ft minimum)
<b>CB4406MR</b>	6 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4412MR</b>	12 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4425MR</b>	25 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4450MR</b>	50 feet, 5 BNC to 5 BNC coaxial cable
<b>CB4475MR</b>	75 feet, 5 BNC to 5 BNC coaxial cable
<b>CB44100MR</b>	100 feet, 5 BNC to 5 BNC coaxial cable
<b>CB44150MR</b>	150 feet, 5 BNC to 5 BNC coaxial cable
	<b>POWER CABLES</b>
<b>PC5301US</b>	Power cable for US
<b>PC5302US</b>	Power cable for U.K.
<b>PC5303US</b>	Power cable for Australia
<b>PC5304US</b>	Power cable for Germany

## FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1.	How do I know which input is connected to which output?	LED's that represent connected video and audio will light.
2.	Can the <b>MX2436RM</b> be rack mounted?	The <b>MX2436RM</b> can be rack mounted by itself or with two units side by side. The width of the unit is 1-U high. ALTINEX offers rack mount ears for single unit mounting (part # <b>DA1292RM</b> ) and rack shelf for mounting two units (part # <b>DA1298RM</b> ).
3.	How is the <b>MX2436RM</b> controlled?	Control can be made through RS-232 or through the control panel.
4.	Why is sync delay switching useful?	It eliminates the glitch normally associated with switching between high-resolution RGB type sources. This is accomplished by disconnecting the sync portion of a signal before the incoming video—making the glitch take place off-screen. The Sync Delay feature is only designed to work with RGBS and RGBHV signal formats.
5.	Can the <b>MX2436RM</b> Switcher be used outside of the United States?	Yes, the <b>MX2436RM</b> uses a universal internal power supply, enabling it to be used throughout the world. Please make sure to use the proper adapter cable for the country in which it will be used. Adapter cables for several countries are available through ALTINEX.

## TROUBLESHOOTING GUIDE 10

- Please make sure, that input signal formats are the same for the input (source) and the output (display).
- Please make sure that the input signal amplitude levels are as follows:
  1. RED, GREEN, and BLUE channels are less than 1.5V p-p.
  2. SYNC is the TTL level.
  3. Please use the appropriate input voltage 90 VAC to 260 VAC.
- Please make sure that the proper quality of cables is used. We recommended ALTINEX-made cables for the best results.
- If a problem arises after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct the problem.
- If a problem exists with the **MX2436RM** Switcher please reset the unit by pressing the RESET mode button for more than 2 seconds.

## ALTINEX POLICY

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### 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 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.

### 11.2 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 should 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.

### 11.3 CONTACT INFORMATION

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