

MANUAL PART NUMBER: 400-0027-003  
PRODUCT REVISION: 1

## **MX2426CV**

# **COURT PC VIEW TRIAL PRESENTATION SWITCHER USER'S GUIDE**

## INTRODUCTION

Thank you for purchasing the **MX2426CV** Court-PC-View Trial Presentation Switcher. We are sure you will find it reliable and simple to use.

Superior performance for the right price, backed by solid technical and customer support is what Altinex has to offer.

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

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

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

**This manual covers:**

**MX2426CV** Court-PC-View Trial Presentation Switcher

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MX2426CV** Switcher. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MX2426CV** 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 MX2426CV

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the airflow through the devices' fan or vents.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

### 1.3 INSTALLATION

- For best results, place the **MX2426CV** 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 **MX2426CV** 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 **MX2426CV** Switcher carefully. Dropping or jarring can damage internal components.

- Do not place heavy objects on top of the **MX2426CV**. If the **MX2426CV** is to be mounted to a table or wall, use only Altinex made **DA1292FC** 1U High Rack Mount 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 close to the equipment as possible, and should be easily accessible.
- Do not pull the power cord or any cable that is attached to the **MX2426CV** Switcher.
- If the **MX2426CV** Switcher is not used for an extended period, disconnect the power cord from the power outlet.

### 1.4 CLEANING

- Unplug the **MX2426CV** 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 MX2426CV SWITCHER 2

Designed for courtroom applications, the **MX2426CV** Court PC View Trial Presentation Switcher handles the specific switching, distribution, and control needs of a typical trial presentation system. The **MX2426CV** Switcher offers two VGA (VGA/SVGA/XGA) inputs – each with buffered local monitor outputs – and six VGA main outputs to transmit signals to monitors and/or projectors throughout a courtroom. The inputs are typically used for displaying to each other's team as well as to the various other participants in a trial including the Judge, the Witness, the Jury, and the Media.

The front panel of the **MX2426CV** allows a user to select which input will be displayed and which of the outputs will be turned ON or OFF. There are also four memory settings that can store configurations and recall them at the touch of a button. These features make the **MX2426CV** Switcher ideal for a courtroom environment in which evidence may need to be previewed before being displayed to the jury or to a witness. The **MX2426CV** may also be controlled through RS-232, allowing it to be switched by a computer or other third-party control system.

An optional accessory, the Judge Override Button (part # **RC5206CV**), is currently usable with the **RC5251IR**. The Judge Override Button allows the Judge to immediately black-out all of the displays in the system to avoid displaying inadmissible evidence. The Monitor Status Display provides a manner of quickly determining which displays in a system are active, as the face of the displays may not always be visible.

The **MX2426CV** handles the requirements of a standard trial computer presentation system. For advanced systems, using the **MX2426CV** Switcher together with other Altinex products may expand its capabilities.

The **MX2426CV** offers an extremely low-profile design to reduce visual obstruction in the

courtroom when installed as a desktop unit. It may also be rack-mounted using optional hardware.

## TECHNICAL SPECIFICATION 3

FEATURES/DESCRIPTION	MX2426CV
<b>GENERAL</b>	
<b>No. of Inputs</b>	Two
Input Connector	15-pin HD Female
<b>No. of Outputs</b>	Two Local Monitor + Six Main Outputs
Local Monitor Output Connector	15-pin HD Female
Main Output Connector	15-pin HD Female
<b>Compatibility</b>	VGA, SVGA, XGA, RGBHV, RGSB, RGB, Component Video (Y, R-Y, B-Y), S-Video (Y/C) and Composite Video

Table 1. **MX2426CV** General

MECHANICAL	MX2426CV
Height (inches)	17.00in (432mm)
Width (inches)	1.75in (44mm)
Depth (inches)	9.00in (229mm)
Weight (pounds)	4.8lbs. (2.18kg)
Ship Weight (pounds)	7.0lbs. (3.18kg)
Material	0.1" Al
Finish	Gray
Front/Back Panels	Lexan
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000hrs (min.)

Table 2. **MX2426CV** Mechanical

ELECTRICAL	MX2426CV
<b>Input Video Signal</b>	
Analog Signal	-1.5V to +1.5V (+/-1.5V p-p max)
Impedance	75 Ohms
<b>Input Sync Signal</b>	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	10 k Ohms
<b>Output Video Signals</b>	
Analog Signal	-1.5V to +1.5V (+/-1.5V p-p max)

# SWITCHERS

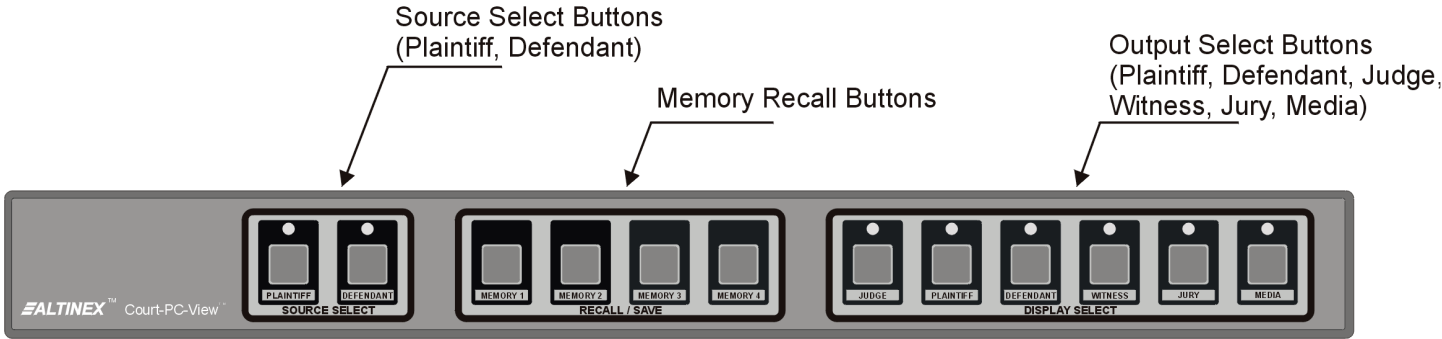
Rise/Fall Time (ns)	2.4
Impedance	75 Ohms
<b>Output Sync Signals</b>	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	22 Ohms
<b>Frequency Compatibility</b>	
Horizontal	15-200 kHz
Vertical	30-190 Hz

Minimum Video Bandwidth	175 MHz @ -3 dB
Typical Video Bandwidth	200 MHz @ -3 dB
<b>Cross-talk</b>	-48 dB @ 10 MHz
<b>Coupling</b>	DC
<b>Power</b>	90-140V/200-240V Selectable
<b>Power Consumption</b>	12 watts max

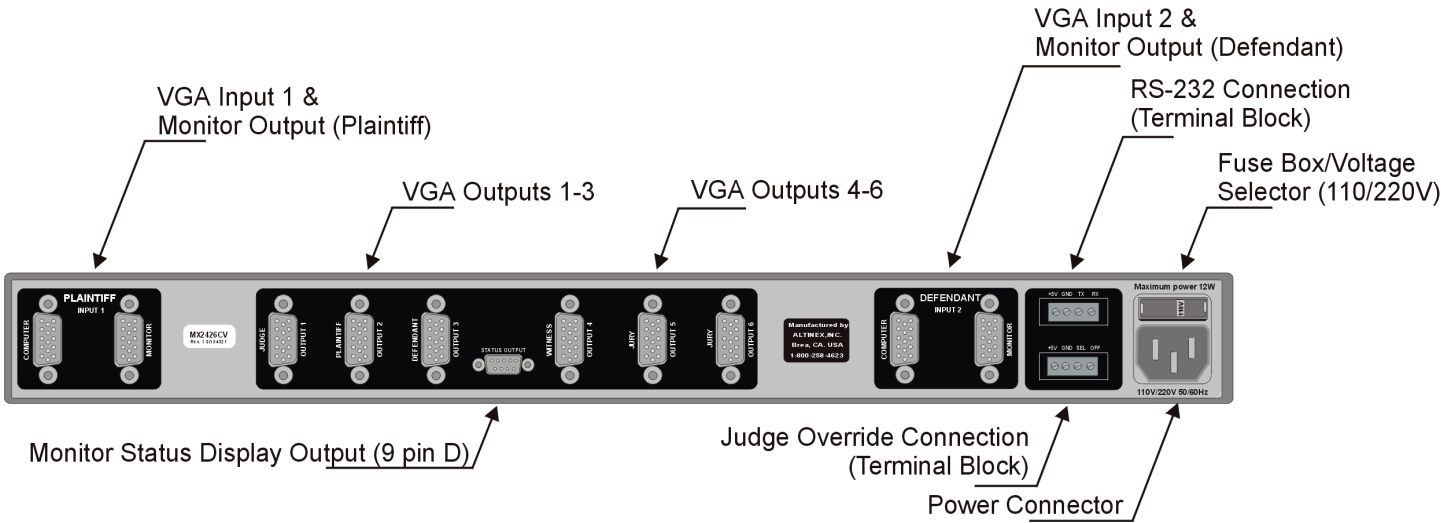
Table 3. MX2426CV Electrical

**MX2426CV DESCRIPTION** 4

### BACK PANEL OF MX2426CV



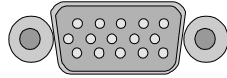
### BACK PANEL OF MX2426CV





## 4.1 INPUTS/OUTPUTS

All inputs and outputs of the **MX2426CV** use 15 pin HD female connectors. This allows easy installation of the system with PC computers and VGA type monitors.



## 4.2 COMPUTER INPUTS

The **MX2426CV** offers two computer inputs with buffered local monitor outputs. One input is for the Plaintiff/Prosecution team and the other is for the Defendant's team. The trial presentation system of either party can be connected to the **MX2426CV** and either one can be selected for presentation on the system.

## 4.3 DISPLAY OUTPUTS

The **MX2426CV** Switcher offers six outputs that distribute signals to the judge, attorneys for each side, the witness, the jury and the media. All outputs are amplified and can drive a signal through up to 100 feet of coaxial cable with minimal signal degradation. It is important to recognize that the type of coaxial cabling used may increase or decrease this distance. Altinex offers various lengths of high performance VGA type cables with various gender connectors. Use of these cables will insure a high quality image.

## 4.6 JUDGE OVERRIDE (BLACKOUT) BUTTON

In a courtroom environment, it is often critical to prevent an inadvertent display of the video information to the participants of the trial. A show of evidence to the jury against specific ruling of the court may, in some cases, result in a mistrial. To address this situation Altinex offers a Judge Override (Blackout Button) as an optional accessory. This device is designed to allow a judge to instantly turn OFF all video signals being displayed.

## 4.7 MONITOR STATUS DISPLAY

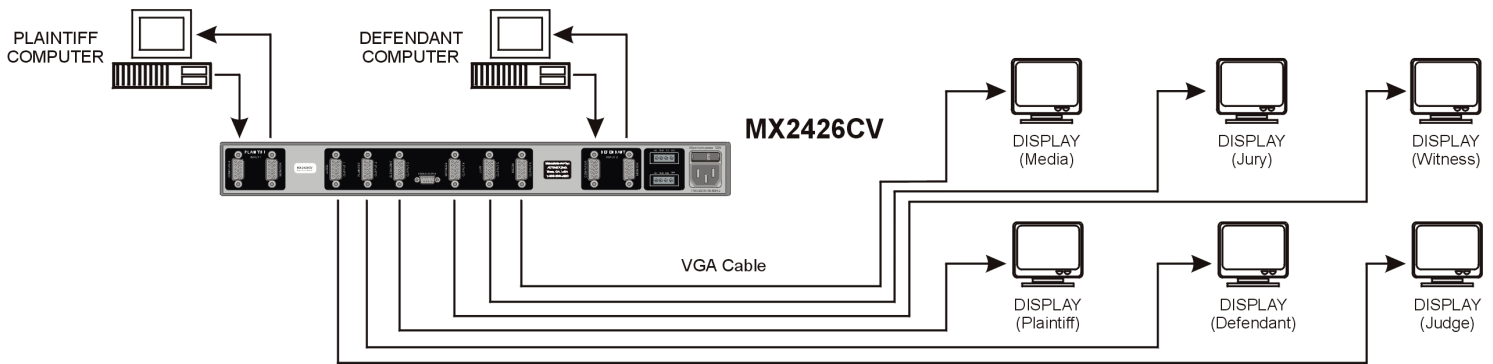
During a trial, it is important for various participants to have an instant knowledge of which displays are ON. To address this need, Altinex offers Output Status Display as an optional accessory to the **MX2426CV**. The

Output Status Display is connected to the status output port of the **MX2426CV** and has ON/OFF indicator lights for each of the outputs of the switcher. The status port can support up to 6 Output Status Displays interconnected in a daisy-chain fashion. The Output Status Display requires an external power adapter.

## 4.8 POWER

The **MX2426CV** has an internal power supply capable of accepting either 110V or 220V through a selection switch. This makes the product compatible with any power standard in the world. Power cords for England, Germany, and Australia are optionally available with the product.

## APPLICATION DIAGRAM 5



## INSTALLATION 6

- Step 1.** Make sure that the power input is set to the proper AC voltage for your country. An incorrect setting can 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 (computers) to the input channels, local monitors to the loop outputs and connect the output channels to the display devices (monitors or projectors). A Shielded, high, quality coaxial cable is recommended for video cable runs.
- Step 4.** Verify that the display and audio equipment operates properly and results in perfect images and sound.

**CONGRATULATIONS! YOU ARE DONE.**

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

## OPERATION 7

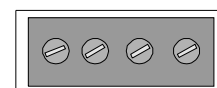
### 7.1 FRONT PANEL CONTROL

The front panel of the **MX2426CV** offers controls that are specifically designed for a courtroom environment. The SOURCE SELECT buttons allow a user to select between the presentation systems of the plaintiff or the defendant. The DISPLAY SELECT section of the switcher allows a user to turn ON or OFF, display devices connected to the respective ports. The RECALL/SAVE section of the control panel allows a user to store various presets in memory and recall them at the push of a button. To save a preset select the outputs to be controlled by one button and store the preset in any one of four memories by holding the memory button for 2 seconds. To recall just press the memory button.

### 7.2 MASTER DISABLE CONTROL

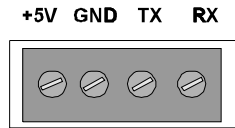
The **MX2426CV** is also equipped with a master disable control that allows disabling of the unit. This port is used to connect the Judge Override button. See the description below. The connection is accomplished by connecting one wire to the OFF pin and the other to the GND pin. When the OFF pin is shorted to ground, all video signals are terminated. INPUT SELECT SECTION

+5V GND SEL OFF



## 7.3 RS-232 CONTROL

A computer through RS-232 port can remotely control the **MX2426CV**. A terminal block connector is used to make interconnection in the field easy. The RS-232 commands are written using ASCII character format. This makes it simple to program and control the **MX2426CV**.



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

Typically, a control system or computer will offer an RS-232 connection on a 9-pin D connector. The following are two typical cable pin-out designations for RS-232 connections. Always confirm the pin-outs for your system to insure proper wiring.

IBM PIN No.	<b>MX2426CV</b> Contact
3	RX
2	TX
7	GND

Connection IBM-PC 25-pin D to **MX2426CV** Terminal Block

IBM PIN No.	<b>MX2426CV</b> Contact
2	TX
3	RX
5	GND

Connection IBM-PC 9-pin D to **MX2426CV** 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):	2400
Data Bits:	8
Parity:	None
Stop Bits	1

There is no software or hardware flow control implemented. The RS-232 input has a 6-character buffer and will not execute additional commands until the previous command is fully processed.

## 7.4 RS-232 PROTOCOL:

Standard RS-232 is used to control the switcher. Control can be accomplished either through a computer or through a control system.

### RS-232 Protocol:

- [AOFF]** All channels off. Turns all monitor outputs off. This command does not affect source selection.
- [RSET]** Resets the unit to the POWER ON condition. During POWER ON all monitors are turned OFF. This is done to preclude accidental monitor connection during the power glitch.
- [FSET]** This command initializes the unit to the factory condition. All memories are reset. Do not use this command unless it is absolutely necessary.
- [INP0]** Turns all input sources to the OFF position. After executing this command input 1 and input 2 are disconnected from the outputs.
- [INP1]** Select input 1. This is the Plaintiff side.
- [INP2]** Select input 2. This is the Defendant side.



**[MONbk]** Turns selected outputs in the ON or OFF position

b = monitor number

k = ON/OFF control.

1 = monitor is in the ON position  
0 = monitor is in the OFF position

Monitor number counts from left to right. 1 - Judge, 2 - Plaintiff, 3 - Defendant, 4 - Witness, 5 - Jury, and 6-Media.

An example of the command would be [MON11] – turns Judge’s monitor in the ON position. [MON60] – turn Media output in the OFF position.

**[RCLn]** Recall status memory location

n = 1, 2, 3, 4

**[SAVn]** Save status memory location

n = 1, 2, 3, 4

Commands must be issued as shown, in ALL CAPS and with brackets [ ] included in the command string.

After processing a valid command, an [OK] string will be returned, followed by a command echo. For instance, a command of [INP1] will have [OK] as a return string.

If a command is not recognized, an error string, [ERR], will be returned.

When a key is pressed on the front panel, a feedback string is transmitted. This is done to inform a control system that the key has been pressed. (This feature allows several switchers to be grouped together to operate in tandem).

## FREQUENTLY ASKED QUESTIONS

8

No	Question	Answer
1	How do I know which monitors are ON if I am not next to the switcher?	We have an optional accessory, the Monitor Status Display (part # <b>RC5206CV</b> ), which is currently available for the <b>MX2426CV</b> . The Monitor Status Display provides a manner of quickly determining which displays in a system are active, as the face of the displays may not always be visible.
2	How do I shut down all monitors at once?	We also have currently available, the Judge Override Button (part# <b>RC5205CV</b> ). The Judge Override Button allows the Judge to immediately black out all of the displays in the system to avoid displaying inadmissible evidence.
3	Are there differences between the Plaintiff and Defendant inputs?	No, the <b>MX2426CV</b> offers two of the same VGA inputs – each with buffered local monitor outputs.
4	Can I use this product in non-court applications?	Yes, you can use the <b>MX2426CV</b> in non-court applications. This product consists of a 2-in 1-out switcher and a 1-in 6-out distribution amplifier. All inputs and all outputs are the same.
5	Can I do presets for different monitors to be ON for each preset?	Yes, the <b>MX2426CV</b> has four memory settings that can store configurations and recall them at a touch of a button.
6	Can I control the <b>MX2426CV</b> from my PC?	Yes, we have available software in optional accessories.

7	Can power input be configured for 220V?	The <b>MX2426CV</b> has an internal power supply capable of accepting either 110V or 220V through the selection switch, changing the location of the fuse box.
8	May I rack mount this unit?	Yes, if desired, you may order Rack Ears for single unit (part# <b>DA1292FC</b> ) from optional accessories.

## CABLES AND ACCESSORIES 9

Model No.	Description
<b>RACK MOUNTING ACCESSORIES</b>	
<b>DA1292FC</b>	1U Rack mount ears for single unit.
<b>POWER CABLES</b>	
<b>PC5301US</b>	Power cable for US
<b>PC5302UK</b>	Power cable for England
<b>PC5303AU</b>	Power cable for Australia
<b>PC5304GR</b>	Power cable for Germany
<b>RC5205CV</b>	Judge Override Button (with 50 feet cable)
<b>RC5206CV</b>	Monitor Status Display
<b>MALE TO MALE VGA CABLE</b>	
<b>CB3703MR</b>	3 feet
<b>CB3706MR</b>	6 feet
<b>CB3712MR</b>	12 feet
<b>CB3725MR</b>	25 feet
<b>CB3750MR</b>	50 feet
<b>CB3775MR</b>	75 feet
<b>CB37100MR</b>	100 feet
<b>CB37150MR</b>	150 feet
<b>FEMALE TO FEMALE VGA CABLE</b>	
<b>CB3803HR</b>	3 feet
<b>CB3806HR</b>	6 feet
<b>CB3812HR</b>	12 feet
<b>CB3825HR</b>	25 feet
<b>CB3850HR</b>	50 feet
<b>CB3875HR</b>	75 feet
<b>CB38100HR</b>	100 feet
<b>CB38150HR</b>	150 feet
<b>MALE TO FEMALE VGA CABLE</b>	
<b>CB3903HR</b>	3 feet
<b>CB3906HR</b>	6 feet
<b>CB3912HR</b>	12 feet

<b>CB3925HR</b>	25 feet
<b>CB3950HR</b>	50 feet
<b>CB3975HR</b>	75 feet
<b>CB39100HR</b>	100 feet
<b>CB39150HR</b>	150 feet
<b>VGA TO RGB ADAPTER CABLES</b>	
<b>MS8102CA</b>	15-pin HD Male to 5 BNC Male, 6 feet
<b>MS8104CA</b>	15-pin HD Male to 5 BNC Male, 12 feet
<b>MS8105CA</b>	15-pin HD Male to 5 BNC Male, 50 feet
<b>MS8106CA</b>	15-pin HD Male to 5 BNC Female, 6 feet
<b>GENDER CHANGERS</b>	
<b>MS8144MG</b>	15-pin HD/VGA Male to Male
<b>MS8145MG</b>	15-pin HD/VGA Female to Female

## TROUBLESHOOTING GUIDE 10

- Please make sure that the 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 are less than 1.5 V
  2. HSYNC & VSYNC are less than 5.0 V
- Please use the appropriate the input voltage: 110 VAC or 220 VAC.
- Make sure that the cable is made according to the manual, where RX pin of the **MX2426CV** is connected to TX pin of the computer.
- If controlling the unit by RS-232 command, make sure there is minimum delay of 100 millisecond before sending the next command.
- If you do not see picture on the screen make sure you have selected both sources (Plaintiff or Defendant) and one out of six displays.
- 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.

## 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 that 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 concerning 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 meets your expectations. In the unlikely event, that an Altinex product needs to be returned please follow the policies below:

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

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

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

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

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

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

## 11.3 CONTACT INFORMATION

### Sales Department

Phone: 714-990-2300

Fax: 714-990-3303

### Accounting Department

Phone: 714-990-6088

Fax: 714-990-5778