CISCO SYSTEMS

Cisco Video Surveillance Stream Manager Services Platform Software and Hardware

Quick Start, Installation and Operations Guide

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Section 1

INTRODUCTION

ABOUT THIS GUIDE

Thank you for purchasing the Cisco Systems Stream Manager Services Platform Software and Hardware.

This guide is designed to provide you with the necessary information to install your module. It can be easily installed with minimal tools and will provide maintenance-free operations for years to come.

FEATURES

Flexible design – unit can be used to as a Services Platform to manage Direct Attached Storage (DAS) devices or as stand-alone storage device.

Network connectivity – Tri-state network interface provides three interface speeds, 10/100/1000T

CPU – operating at 2.4 GHz.

1 GB RAM memory – ensures maximum throughput of video.

Completely scalable storage – available storage options range from 300GB to over 16TB with optional DAS configuration.

PRODUCT AT A GLANCE
1 Rack Unit Services Platform REAR VIEW
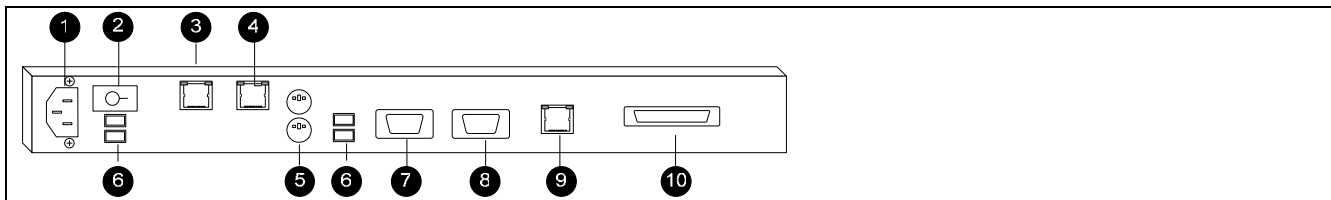
FIGURE 2
Rear View

1. **Power Input**
   This connector accepts any AC power cord with an IEC-320-C13 plug.
2. **Power Switch**
3. **Keyboard Connector**
   This is an RJ-45 type connector used to interface the module with a CCTV keyboard. NOTE: Wiring pin outs may differ for switch and keyboard manufacturers.
4. **Switch Connector**
   This is an RJ-45 connector used to interface with a matrix switch. NOTE: Wiring pin outs may differ for switch and keyboard manufacturers.
5. **Mouse and QWERTY Keyboard Connector**
   This is a PS/2 style connector used to connect an optional mouse and keyboard.
6. **Video Inputs**
   These USB type connectors can be used for additional camera inputs via a USB interface module.
7. **Serial Connector**
   This connection provides a 9 pin interface to a serial device.
8. **Monitor Connector**
   This connection provides a signal to an optional (SVGA) monitor to display Linux OS command line.
9. **Network I/O Connector**
   This is an RJ-45 connector that serves as the video output port for the unit. All units in the system should be interconnected via a 100 BASE-TX network switch.
10. **SCSI/Fiber Channel Connector**
    This connector is used to connect a Direct Attached Storage (DAS) device to the Services Platform.

Modules may look slightly different then the illustrations shown.

BEFORE YOU BEGIN

To ensure a quick, easy, and trouble-free installation, please read all instructions, notes and drawings completely before attempting to install the module.

CAUTION: Important safety, electromagnetic compatibility, and regulatory information are contained in this section. The installation and use of this product must be in accordance with the information contained within these sections of this manual.

UNPACKING THE MODULE

Inspect the outer shipping container for any damage that may have occurred in shipping and report any sign of damage to the appropriate shipping agency.

Remove the module and any additional components from the shipping container; save the shipping container, packing material, and any anti-static bags --- returning the module in any other container may void its warranty.

Inspect the module thoroughly. If any signs of damage are seen, notify the factory, your sales representative, and/or the shipping agency.

OPERATING CONDITIONS

As with any electronic device, to assure normal operation and avoid any unnecessary maintenance, avoid placing the equipment where it will be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site selected should meet the following requirements:

The ambient operating temperature must be between 5°C and 40°C (41°F and 104°F)

The relative humidity must be between 0% and 90%, non-condensing.

Make sure the module(s) are kept away from heating sources.

Do not place any objects on top of the module(s).

Make sure no water or moisture enters the module(s). If necessary, use a dehumidifier to reduce humidity near the module(s).

The module(s) should not be exposed to excessive amounts of dust or other debris.

The mounting location(s) should be adequate enough to reduce interference of operation from Electromagnetic Interference (EMI) or Radio Frequency Interference (RFI) of nearby electrical equipment. Examples of these types of interferences are relays, motor starters, and large power transformers.

When a module is mounted within an enclosure, the enclosure should be in accordance with all local electrical codes.

Make sure that the equipment receives adequate ventilation. Never block any ventilation area on the equipment.

This equipment includes a battery to preserve the time/date settings when the equipment is disconnected from its power supply. Replace only with the same or equivalent type. Dispose of used batteries according to the instructions provided by the battery manufacturer.

NOTE: Please visit us at www.cisco.com to register your product and become eligible for various support services and product information updates!

Section

2

INITIAL SET-UP

The initial set-up of the system includes physical cabling, (detailed below) and software configuration, (see Section 3)

CABLE CONNECTIONS

As shown in Figure 3, the video data flows as follows:

From Camera to Convergence Chassis equipped with IP Gateway encoders with USB ports (CardCage) via COAX

From CardCage to Services Platform via USB

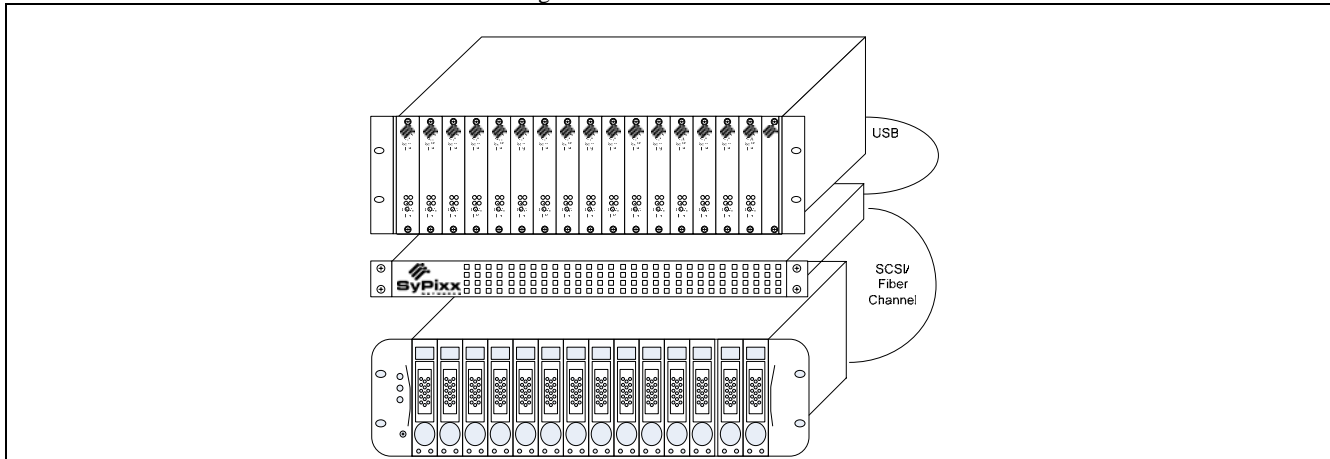From Services Platform to Direct Attached Storage- DAS via SCSI or Fiber Channel

FIGURE 3
System Wiring Diagram

Connection Notes

1. **CVG16 Convergence Chassis** – Please refer to the CVG16 Convergence Chassis manual for detailed connection instructions related to video and power.
2. **Services Platform** –
   a. Four (4) independent USB cables are used to connect the CardCage to the Services Platform. **Use all four**.
   b. Use a CAT5 TPE cable to connect the network switch to the network port on the Services Platform.

3. **Direct Attach Storage / Storage Array** –
   a. Connect the SCSI cable from the Services Platform into "Host0" of the DAS unit.
   b. Use a CAT5 TPE cable to connect the network switch to the network port on the DAS.
4. **Power Input -**
   Using the supplied power cord, connect power to the unit.

CAUTION: Connect the unit only to a properly rated supply circuit.   Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. Optional power line conditioning equipment is recommended to protect and safeguard the unit against severe power line fluctuations.

OPTIONAL CONNECTIONS

1. **Keyboard Connector** - At least one Services Platform or INTEGRATED SERVICES PLATFORM (AKA X-VCR) must be connected in-line between the matrix switch and keyboard. Detailed pin outs for the keyboard interface cable and the matrix switch interface cable depend on the brand of matrix switch. See the INTEGRATED SERVICES PLATFORM (AKA X-VCR) manual for detailed instructions covering keyboard configuration and connection
2. **IP Gateway Decoder** – At least one CISCO VIDEO SURVEILLANCE IP GATEWAY DECODER must be connected in-line between the Network Switch and the Matrix Switch to enable video playback. Connect the CISCO VIDEO SURVEILLANCE IP GATEWAY DECODER to the network switch and the matrix switch using Cat5 and RG59 coax cable, respectively.

3. **Other Connections** - Although monitor, mouse, and keyboard connections are included, these are optional and not required to install the INTEGRATED SERVICES PLATFORM (AKA X-VCR).

Section 3

STREAM MANAGER CONFIGURATION

Following is a brief overview of the Stream Manager Configuration application, used to setup and administer your INTEGRATED SERVICES PLATFORM (AKA X-VCR) system. A detailed installation and users guide is included with the software.

START-UP SCREEN

Upon loading the application, Stream Manager Configuration will search for all Cisco Systems equipment and show the Start – up screen, consisting of two sections:
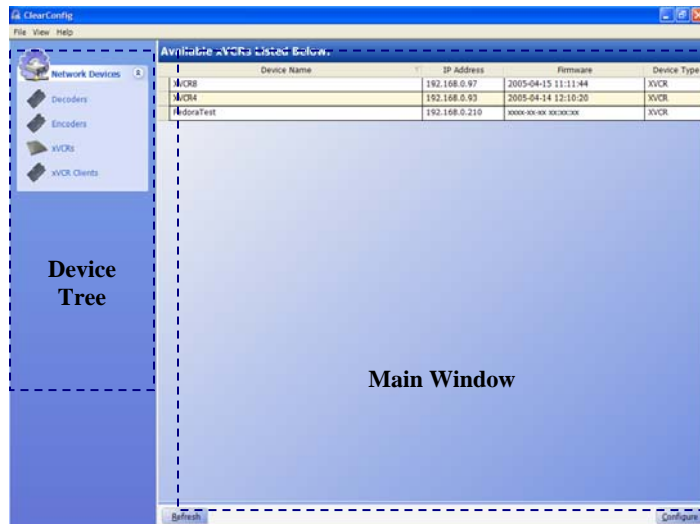
FIGURE 7
Main Screen

1. **Device Tree** – displays a listing of all device types that can be configured by Stream Manager Configuration. Select a device type to query and display a list of all devices in the Main Window (see below).

2. **Main Window** – enables configuration of any of the devices shown. The display can be sorted by clicking the column header. Double click the device or highlight and select **Configure** at the bottom of the screen.

NOTE: To ensure that all devices are shown in the Main Window, refresh the screen by selecting **Refresh**

DEVICE CONFIGURATION SCREEN

The Device Configuration Screen includes two (2) sections.
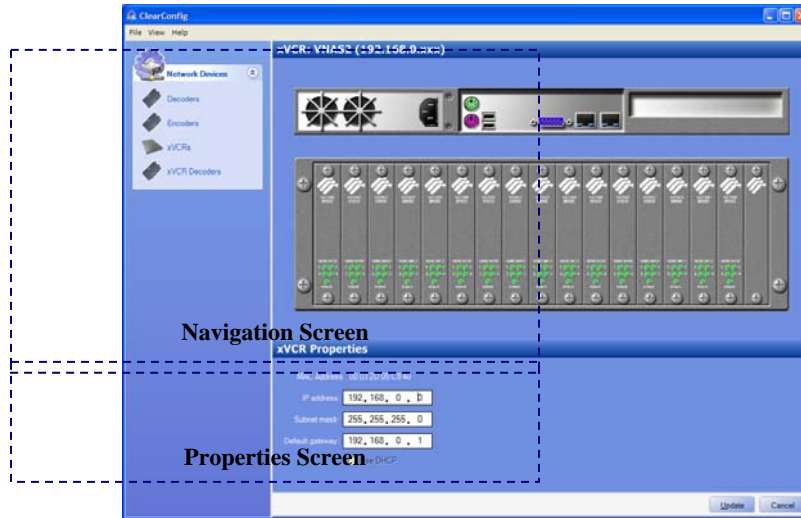
FIGURE 8
Device Configuration Screen

1. **Navigation Screen -** provides a graphical representation of the selected device. To configure a video, serial, or LAN port, click on the desired port. Once the desired element is chosen, the Properties Screen (see FIGURE 3) will reflect the current settings of the selected element and accept settings changes.

2. **Properties Screen -** shows a dynamic display of the configurable parameters of the element selected in the Navigation Screen.

Note – Click on an individual panel of CISCO CVG16 CONVERGENCE CHASSIS WITH IP GATEWAY ENCODERS to configure each video port. See video configuration screen below. (Figure __)

FIGURE __
Video Configuration Screen

A summary of the parameters for each element of the CISCO CVG16 CONVERGENCE CHASSIS WITH IP GATEWAY ENCODERS is noted below.

ELEMENT	PARAMETERS	OPTIONS
Entire Device	Device Name	User input necessary
	Device Type	Provided by device; no user input necessary
Video Port	Camera ID	Camera number used by matrix switch
	Video Standard	NTSC PAL
	Resolution	D1 4CIF 2CIF CIF
	Frame Rate	User input 1 to 30 images per second
	Bit Rate Model	Fixed Variable
	Quality	User input 0 to 100% (80% recommended)
Serial Port	Video Matrix	Sensormatic / AD Pelco Philips / Bosch None
	Playback Timeout	User input of the playback duration (in seconds) before the device switches back to live view (default = 300).
	Instant Replay	User input to select the number of seconds back from the current time the instant replay will start from (default = 10).
LAN Port	IP Address	User input necessary based on LAN configuration
	Subnet Mask	
	Default Gateway	
	Use DHCP (check box)	Enables IP setup from DHCP server

IMPORT / EXPORT CONFIGURATION FILES

For large installations it is often more efficient to import device names, camera numbers, and other configuration data from existing databases maintained by the system administrator. Often this information is contained in Comma Separated Value (CSV") or MS Excel file format.

 The specific data transfer procedures for the customer system will differ, but the process will be as follows:

1. Connect all Cisco Systems edge devices (INTEGRATED SERVICES PLATFORM (AKA X-VCR), encodes, decoders) to the network and assign IP addresses using either DHCP or Stream Manager Configuration™.
2. Select File / Export Configuration to download an inventory of all the edge devices. The listing will be an MS Excel file (.xls) with the following field format:
    a. Camera number
    b. Camera name
    c. INTEGRATED SERVICES PLATFORM (AKA X-VCR) number
    d. INTEGRATED SERVICES PLATFORM (AKA X-VCR) port
    e. Frame rate
    f. Bit Rate
    g. Bit rate model
    h. Compression quality
2   The export function will download any information currently stored in the equipment. Empty or outdated fields can be updated from information contained in the CSV file using cut and paste commands in the Excel application.

FINISH - UP
When all parameters are updated, select **Update**.

Section

4

OPERATION

The Services Platform is designed facilitate video recording and playback using either a Video Keyboard or Stream Manager Video Viewing PC Client.

Following is an overview of the keyboard interface.

THEORY OF OPERATION

The Cisco Systems software evaluates communications between the keyboard and switch. When certain keys are pressed, the keyboard input is directed to the INTEGRATED SERVICES PLATFORM (AKA X-VCR) and acted upon. All other keyboard functions are passed onto the traditional matrix switch for normal operation.

KEYBOARD FUNCTIONS

BUTTON DESCRIPTION	INTEGRATED SERVICES PLATFORM (AKA X-VCR) RESPONSE		
	LIVE MODE	PLAYBACK MODE	TIME / DATE SELECTION
Instant Replay	Instant replay of live camera	Returns to live mode	Returns to live mode
Time / Date Search	Displays Time / Date Selection Screen	Returns to live mode	Returns to live mode
Next >>	NA	Advance one (1) field	Move to next input field
Previous <<	NA	Rewind one (1) second	Move to previous input field
Play / Pause	NA	Toggle between play and pause mode	Execute the video search
Overlay Display	NA	Show / hide navigation overlay	NA

Section 5

APPENDIX

WIRING CONFIGURATIONS

Each keyboard needs a Cabling Harness to interconnect the Keyboard, INTEGRATED SERVICES PLATFORM (AKA X-VCR) and Matrix Switch. In addition, certain switches need a data converter box (485/232) which is included with the wiring harness. See general cabling diagram below.
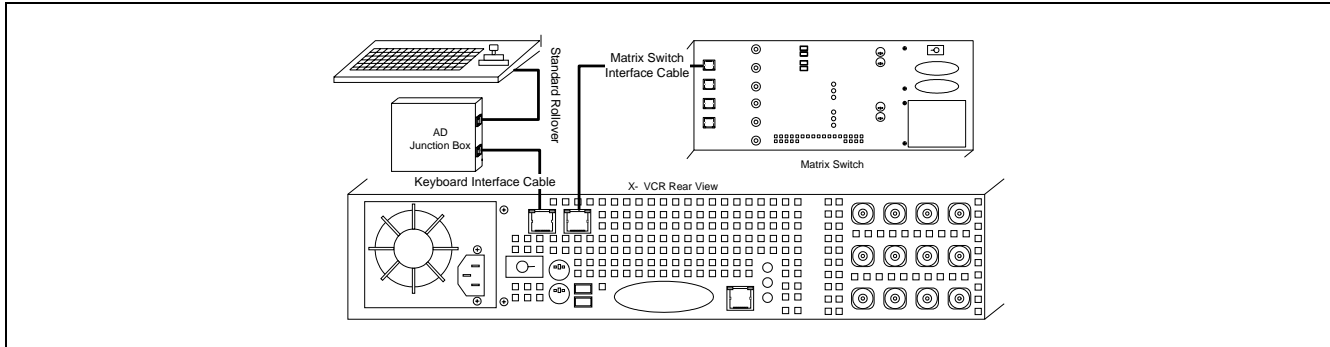

FIGURE 9
General Cabling Diagram

NOTE - Cable harnesses are uniquely configured based on the type of Matrix switch used.   If additional cable length is needed simply extend the harness with straight through CAT5 cable using the coupler supplied. Alternatively, Pin-out diagrams are provided for each Matrix Switch to create a custom cable.

Manufacturer Specific Information
Each brand of matrix switch uses a unique combination of command protocol, physical wiring and communication protocol to interface between a keyboard and switch. Following are unique characteristics of each brand.

AMERICAN DYNAMICS (2088):
Keyboard configuration
None needed

Communication Protocol Conversion
None needed

Cable Connections
Each cable used to interconnect the Integrated Services Platform (aka X-VCR) with the Matrix and Keyboard is color coded. Match the color of the Terminal to the corresponding color of the INTEGRATED SERVICES PLATFORM (AKA X-VCR) and/or Junction Box.   Detailed pin-out diagrams are included in Appendix 2.

FIGURE 10
AD Cable Connections

PELCO (CM9760):

Keyboard configuration

Select keys need to be programmed to emit the following ASCII Data. See Appendix, for set-up instructions related to the Pelco Keyboard.

Communication Protocol Conversion

422 to 232

Cable Connections

Each cable used to interconnect the INTEGRATED SERVICES PLATFORM (AKA X-VCR) with the Matrix and Keyboard is color coded. Match the color of the Terminal to the corresponding color of the INTEGRATED SERVICES PLATFORM (AKA X-VCR) and/or Junction Box.   Detailed pin-out diagrams are included in Appendix 2.
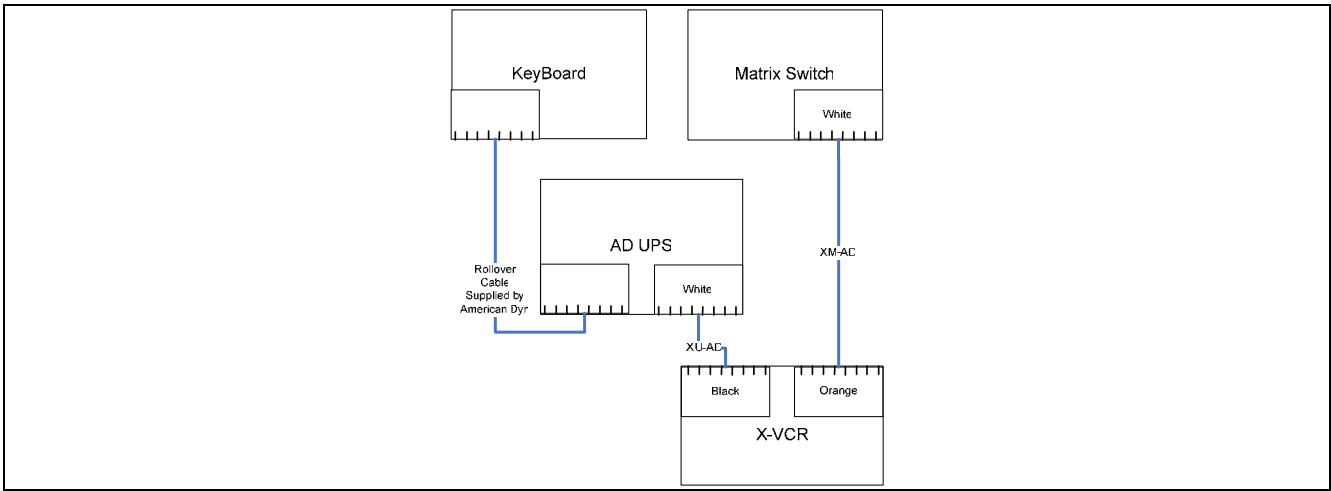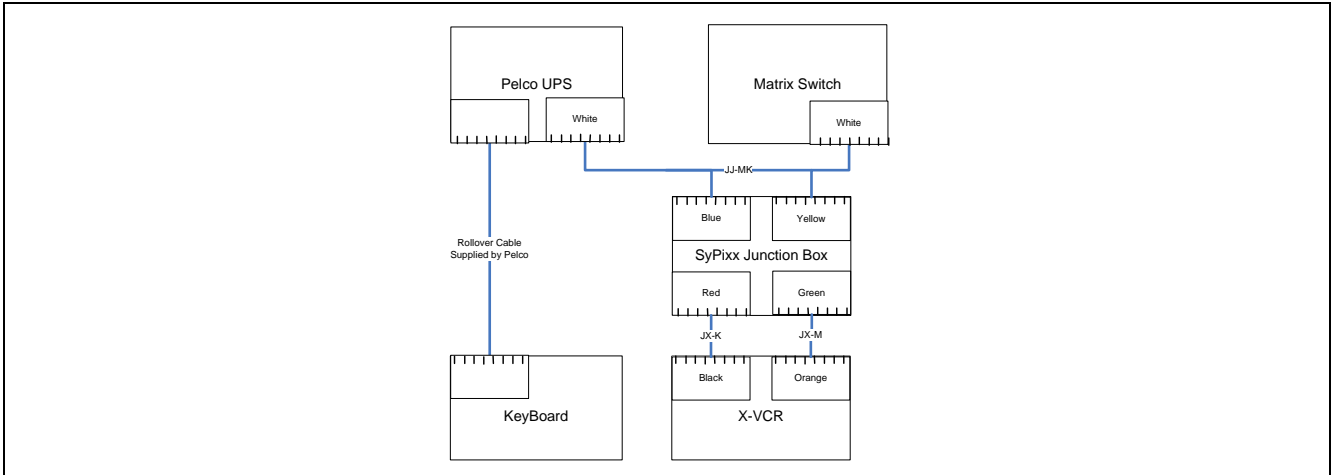

FIGURE 11
Pelco Cable Connections

BOSCH (INTUIKEY):

Keyboard Configuration

An IntuiKey Configuration (.int) file must be uploaded into the keyboard to enable its "Softkeys" to interact with the INTEGRATED SERVICES PLATFORM (AKA X-VCR).   See Section 2, above for set-up instructions for the Bosch Keyboard.

Communication Protocol Conversion

485 to 232 via Cisco Systems Keyboard Adapter (aka SyPixx Junction Box)

Cable Connections

Each cable used to interconnect the INTEGRATED SERVICES PLATFORM (AKA X-VCR) with the Matrix and Keyboard is color coded. Match the color of the Terminal to the corresponding color of the receptacle.
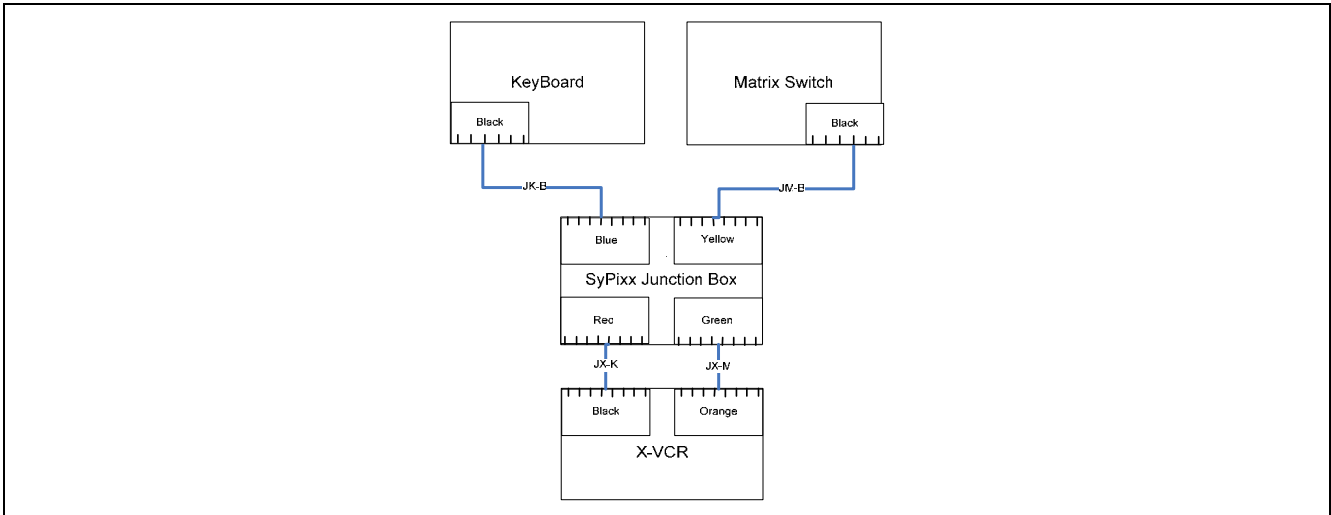

FIGURE 12
Bosch Cable Connections
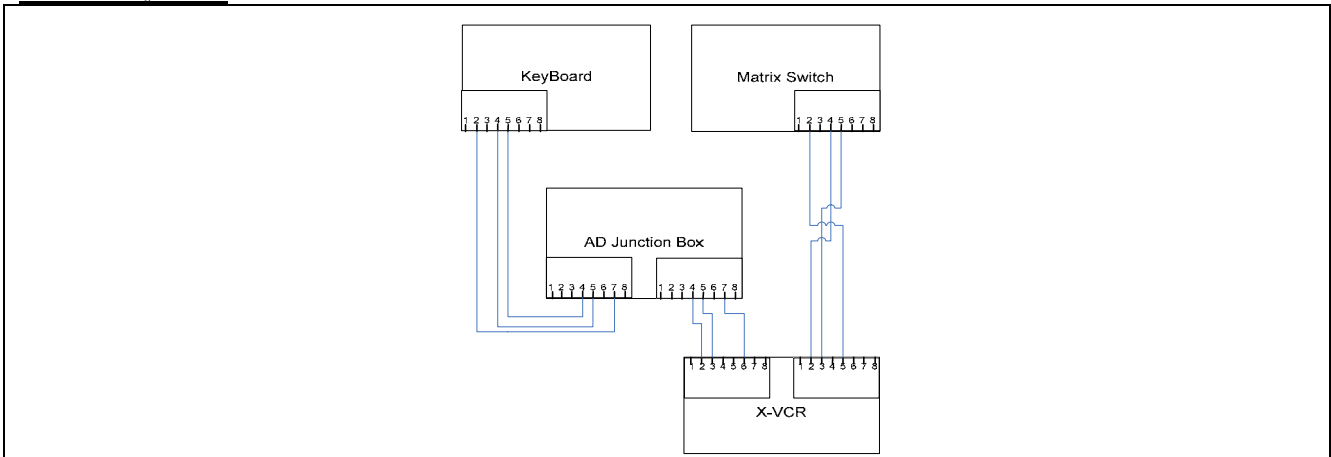
WIRING HARNESS PINOUT GUIDE

American Dynamics
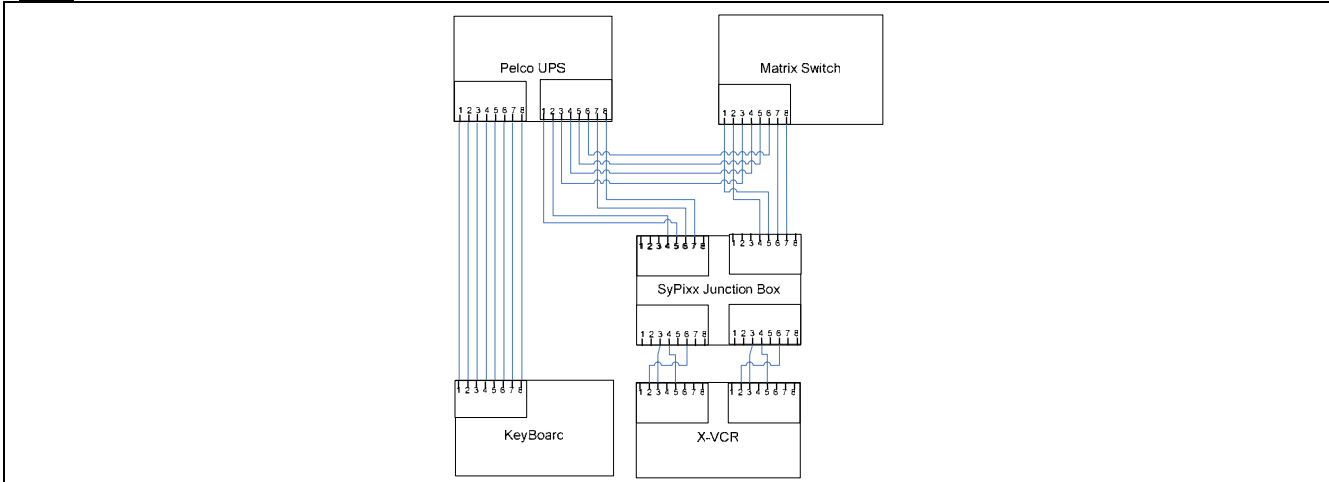

FIGURE 13
AD Wiring Harness Pin-Out

Pelco

FIGURE 14
Pelco Wiring Harness Pin-Out

Bosch
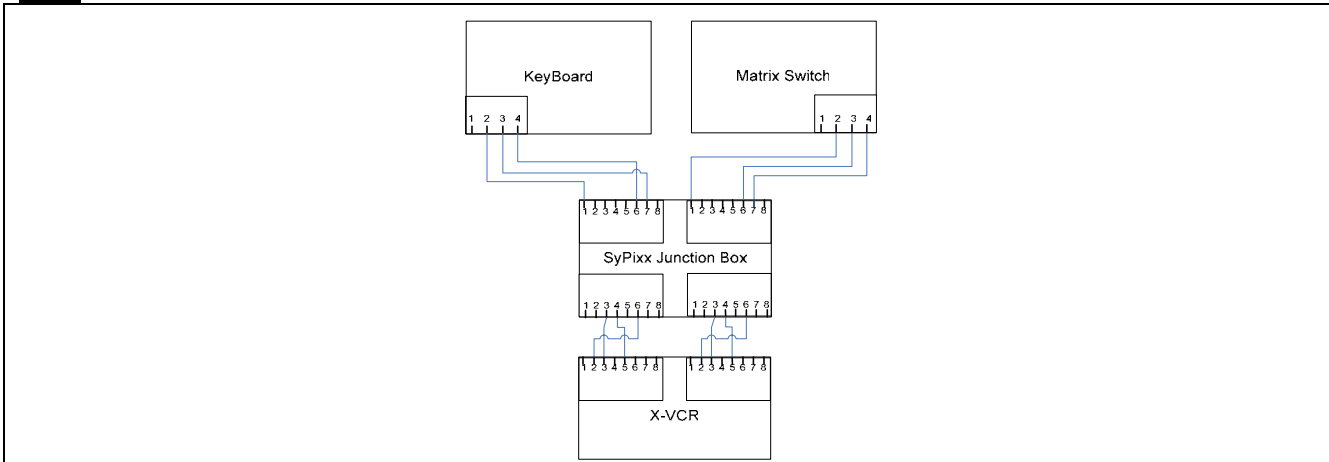
FIGURE 15
Bosch Wiring Harness Pin-Out

KEYBOARD PROGRAMMING INSTRUCTIONS

Many keyboards may be customized to interface with the Cisco Systems INTEGRATED SERVICES PLATFORM (AKA X-VCR).
Programming guides may be found at the Keyboard Manufacturer's web site.

A quick start guide of select keyboards is included here.

Pelco (CM9760)

Step 1: Putting the keyboard in Setup Mode

Note: Make sure that the keyboard is connected directly with switch (not via the INTEGRATED SERVICES PLATFORM (AKA X-VCR)).

1. Flip Dip Switch 2 (underneath the keyboard)
2. Login (usually with 1234)
3. Looking at the row of blue keys, hit the left most key (not the esc key)
4. Continue hitting the left most key until the cursor is aligned next to FNC70

Step 2: Programming the keys

Function	INTEGRATED SERVICES PLATFORM (AKA X-VCR) Command
Instant Replay	99
Time/Date Search	98
Next field (Time/Date search)	97
Prev field (Time/Date search)	96
Play / Pause	95
Toggle GUI	94
Single Frame FF	93
Single Frame RW	92

For each of the keys listed in the table above, use the following procedure:

1. Press the chosen programmable key
2. Press the blue key that is 3rd from the left
3. Press the blue key that is beneath the "Def Num" menu entry
4. Using the numeric keypad, enter the INTEGRATED SERVICES PLATFORM (AKA X-VCR) Command from the table above
5. Press the blue key that is beneath the "Def Num" menu entry again

Step 3: Saving the keys

When all the keys have been programmed, hit the blue key that is beneath the "Save" menu entry. Then continue hitting the right most blue key until prompted to flip Dip Switch 2. Flip the switch, and then re-login to the keyboard.

Bosch (IntuiKey)

The Bosch "softkeys" may be repurposed by uploading the Cisco Systems customized ".ini" file into the IntuiKey keyboard. Following are steps to perform the upload.

Step 1: Assemble software and Installation Utilities
1. Download and install IntuiKey Downloader program on to PC.
2. Download the INTEGRATED SERVICES PLATFORM (AKA X-VCR) setup file from the Company's website into Downloader program folder location.
3. Run the original files in order to uncompress them into "S20" formats.
4. Connect a serial RS-232 "null modem" cable between the keyboard and an available PC com port.

Step 2: Putting Keyboard in Setup Mode

1. Place keyboard into 'bootloader' mode per instructions in "Readme" file supplied with "IntuiKey_Downloader" program. The technique to place the keyboard into 'bootloader' mode depends on the keyboards current bootloader version, so review the instructions carefully.

Step 2: Transfer INTEGRATED SERVICES PLATFORM (AKA X-VCR) Overlay File to Keyboard

1. Open the "IntuiKey_Downloader" program. Select the appropriate PC Com port number and the desired "S20" file to transfer into the keyboard. Use the 'Browse' button, if necessary to select the correct file name.
2. After the transfer has finished, power keyboard off/on.

COMMUNICATIONS REGULATION INFORMATION

FCC COMPLIANCE STATEMENT
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 Cisco Systems instructions, may cause harmful interference with radio communications. Operations 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 or her own expense.

IMPORTANT: Changes or modifications to this product not authorized by Cisco Systems, Inc., could void the EMC compliance and negate your authority to operate the product.

INDUSTRY CANADA STATEMENT
Complies with the Canadian ICES-003 Class B specifications.
Cet appreil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CISPR 22 & EN55022 STATEMENT
WARNING: This is a class B product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

REVISION HISTORY:

Manual Number	Date	Comments
INTEGRATED SERVICES PLATFORM (AKA X-VCR) rev-.inst	3/14/05	Original version
INTEGRATED SERVICES PLATFORM (AKA X-VCR) rev a.inst	5/14/05	Manufacturer info
INTEGRATED SERVICES PLATFORM (AKA X-VCR) rev b.inst	6/16/05	Important Safety info
INTEGRATED SERVICES PLATFORM (AKA X-VCR) rev b.inst	4/16/06	Initial Cisco Doc Format Conversion

IMPORTANT SAFETY INSTRUCTIONS

1. Read and follow all instructions

2. Keep the instructions for future reference

3. Heed all notes and warnings

4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

5. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades and a third grounding prong. The wide blade or the third prong is provided for safety. If the provided plug does not fit into the desired outlet, consult an electrician for replacement of the obsolete outlet.

6. Protect the power plug from being walked on or pinched particularly at plugs, receptacles, and at the point where it exits from the module.

7. Refer all servicing to:
   Cisco Systems, Inc.
   108 Bank Street
   Waterbury, CT 06702
   Servicing is required when the module has been damaged in such a way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the module, the object has been exposed to rain or moisture, does not operate normally, or has been dropped.

8. WARNING: To reduce the risk of electric shock, do not expose the module to rain or moisture.

9. Installation should be done only by qualified personnel and conform to all local codes.

10. The socket – outlet shall be installed near the equipment and shall be easily accessible.

11. A readily accessible disconnect device shall be incorporated in the building installation wiring.