Xcion Extender
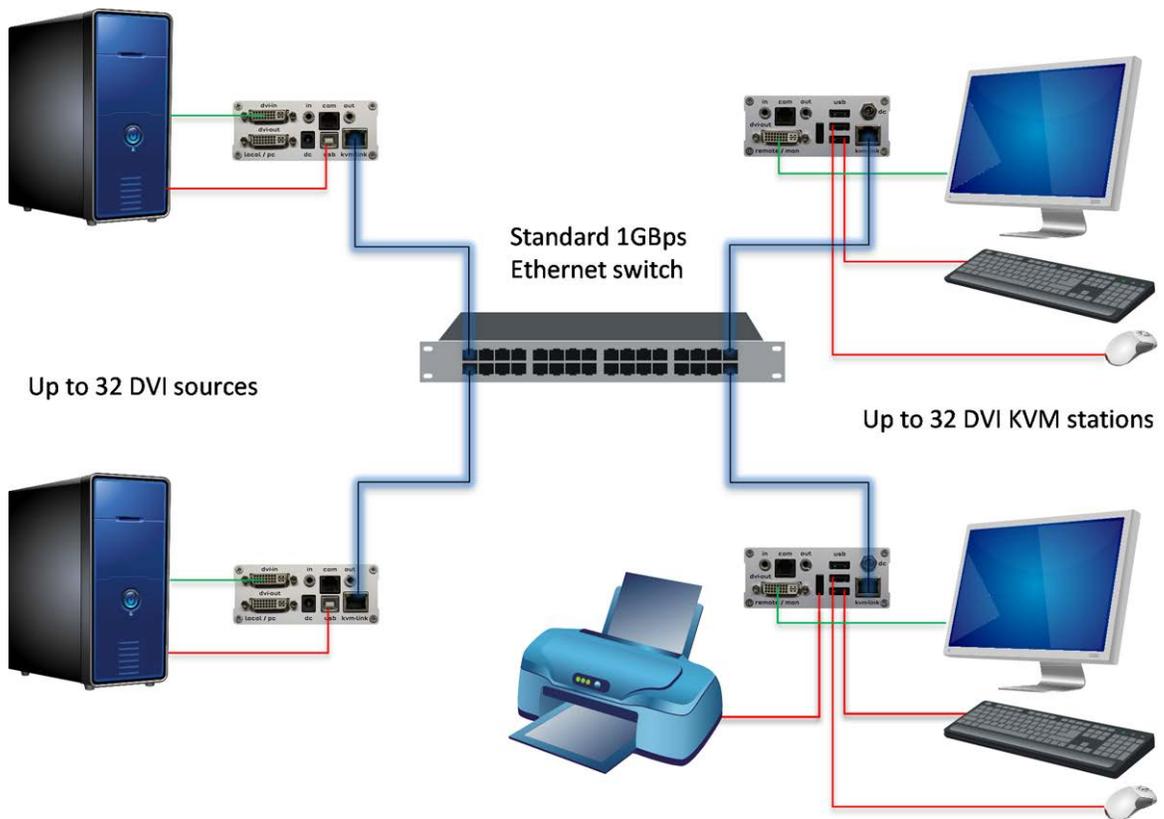
DVI / VGA / HDMI Switchable KVM Extender over CATx or Fiber

Switching Options Installation and Operation Manual

Up to 32 DVI sources

Standard 1GBps Ethernet switch

Up to 32 DVI KVM stations

ROSE ELECTRONICS

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DECLARATIONS OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, together with the specified cables, the Units listed in APPENDIX B are shielded against the generation of radio interferences in accordance with the application of Council Directives 2006/95/EC and 2004/108/EC, as well as these standards:

- EN 55022: 2010 (Class A)
- EN 55024: 2010
- EN 61000-3-2:   2014
- EN 61000-3-3:   2013
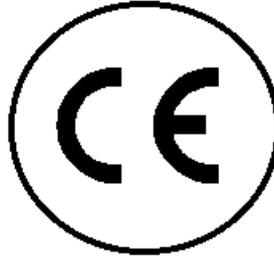
This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, 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 their own expense.

The product safety of the devices is proven by their compliance with the following standards:

- EN 60950-1:   2006+A2:2013
- IEC 60950:   2005
- LASER CLASS 1: EN 60825-1:2007 compatible with IEEE 803.3z

These devices comply with Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2, RoHS II). The device labels carry a respective marking.

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INTRODUCTION

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

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System Introduction

Thank you for choosing the Xcion Switch Mode family of extenders. They are the result of Rose Electronics commitment to providing state-of-the-art solutions for today's demanding workplace. The Xcion Switch Mode Extender is the ideal device for extending HDMI, DVI or VGA video and USB with no loss of video quality.

The Xcion Switch Mode Extender is available in three models offering a choice of DVI or VGA extension over CATx or Fiber, or HDMI extension over CATx. Signals can be extended up to 492 ft (150m) over CATx or 1640 ft (500m) over multi-mode fiber cables. Video resolutions up to full HD 1080p and 1920 x 1200 @ 60Hz are supported.

The Receiver unit supports up to 4 directly connected USB1.1 and USB2.0 devices at speeds up to 12Mbps. Devices such as keyboards, mice, touch screens, tablets, scanners, integrated hub-type keyboards, or printers can be connected. Optional USB storage device support can be added by entering an "unlock code" in the OSD menu. The remote USB hub is a built-in 4-port USB high speed Hub.

The Switching Option offers the ability to use a Gigabit Ethernet switch to effectively transform a group of DVI or HDMI extenders into a KVM matrix switch. By connecting the switching Xcion extenders to an Ethernet switch, each Receiver acts as a KVM station that can connect to any computer connected to a Transmitter in the group. Up to 48 ports can be connected in this way. This affordable solution requires just once license for each Receiver in the setup.

The versatile Xcion Switch Mode Extender allows for DVI and HMI extenders to be mixed in the system. DVI Transmitters and HDMI Receivers, or any other combination of the two may be connected to the Gigabit Ethernet switch, and will work seamlessly together.

Users can be set up with access rights and passwords to provide secure access to the system. User groups can also be created with different access levels.

Switching between computers on can be accomplished through On-Screen Menus, hotkeys or over external serial or Ethernet interfaces. Switching is instantaneous with no discernible delay. The units have perfect video transmission with minimal latency. The switching extenders have dual-head and multi-head support for up to 10 monitors.

Every Xcion Switch Mode extender is packaged in a compact steel chassis, ideal for use in industrial applications and at installation sites requiring a robust and durable product. The Transmitter and Receiver chassis can be rack mounted in a rack cabinet, with up to 4 units side-by-side on a 1U shelf, as well as wall, table or DIN rail mounted.

Features

- Extends full HD 1080p and 1920 x 1200 @ 60 Hz digital or analog video with no loss of quality
- Transparently extends USB 1.1 and 2.0 devices at speeds up to 12Mbps
- Extensions distances up to 492 ft (150 m) over CATx or 1640 ft (500 m) over multi-mode fiber
- Optional Serial RS232 and analog audio support in the DVI/VGA models
- Local video/monitor connection at the transmitter
- Choice between 5 internal EDID sets, plus the ability to select either remote or local monitor EDID via the OSD menu
- 4 units can be mounted in a 1U 19" rack
- Multiple PCs can be controlled from a single workstation
- Multiple workstations can be connected with multiple PCs, up to a maximum of 48 ports
- Dual- and multi-head support for up to 10 monitors
- Switching can be performed through the On-Screen Menu, hotkeys or over external RS232 or Ethernet interfaces
- Convenient password system and user-rights management for increased security
- Groups of users with different access rights can be set up
- Can be configured to automatically switch to a backup PC if the primary PC goes down
- Switching is instantaneous
- Distributed intelligence across every endpoint
- Sharing mode allows multiple KVM stations to simultaneously access the same computer
- Perfect video transmission with minimal latency
- Name identification of computers allows them to be relocated to different ports, with the system staying correctly configured
- A mixture of VGA and DVI video signals can be used
- A mixture of fiber and copper devices, as well as different device types can be connected together
- Only one license is required per Receiver

Package Contents

The package contents consist of the following:

- 1 x Transmitter
- 1 x Receiver
- 1 x DVI cable or 1 x HDMI cable, depending on the model
- 1 x USB Cable
- 2 x 12V 1 Amp Power Supply Units
- 4 x Mounting Pads
- 4 x Rubber Feet
- Manual

Additional cables are usually ordered separately. If the package contents are not correct, contact Rose Electronics or your reseller so the problem can be quickly resolved.

MODELS

Xcion Models

The Xcion is available in three distinct models as described below.

Front View All Models

Figure 1. Xcion Extenders Transmitter and Receiver Front View

Rear View DVI CATx and Fiber Models
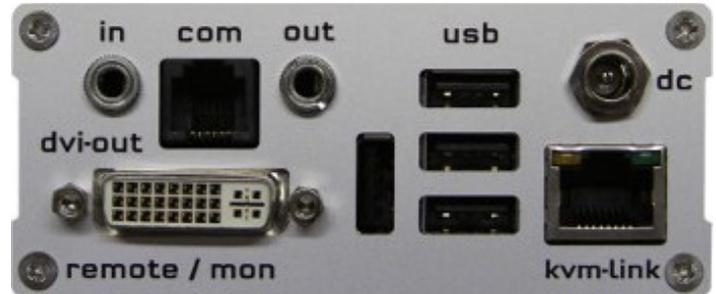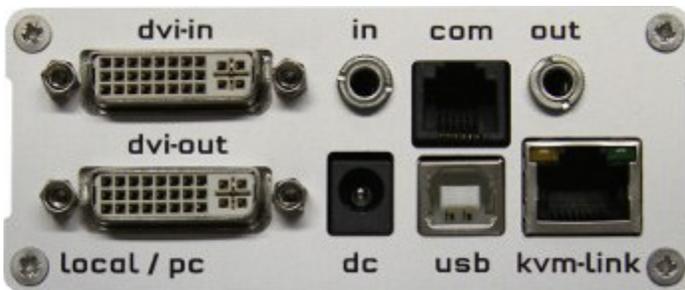
Figure 2. Xcion DVI CATx Receiver and Transmitter Rear View
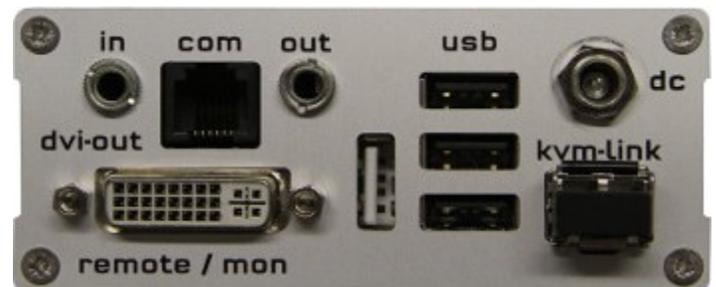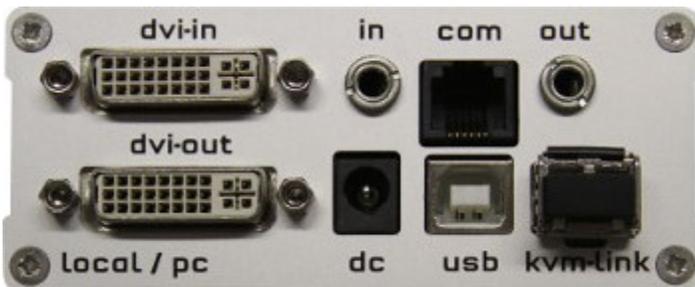
Figure 3. Xcion DVI Fiber Transmitter and Receiver Rear View

Connector Description DVI Models
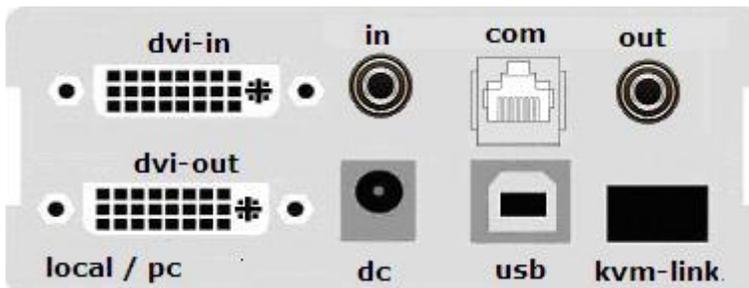
Figure 4. Connectors on DVI Transmitter

1. *dvi-in:* Use the supplied DVI cable to connect this port to the DVI port on the source computer.

2. *dvi-out:* Connect a DVI monitor to this port for a local display, if desired.

3. *usb:* Use the supplied USB cable to connect to a USB port on the source computer.

4. *kvm-link:* Connect the CATx or Fiber interconnect cable, based on the model, to the Ethernet switch being used to form the matrix.

5. *dc:* Connect one of the supplied Power Supply Units here, and connect it to an AC power supply.

If the Sound Option has been enabled

6. *in:* Connect an analog stereo audio cable from this port to the line out audio port (green) on the source computer.

7. *out:* Connect an analog audio cable from this port to the microphone input port (pink) on the source computer.

If the Serial Option has been enabled

8. *com:* Connect a serial cable from this port to the serial device that is to be controlled with serial commands.
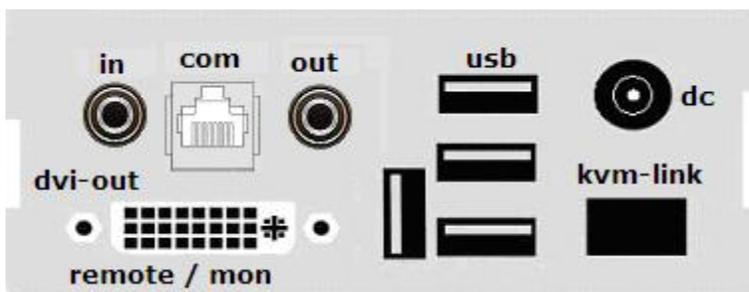
Figure 5. Connectors on DVI Receiver

1. *dvi-out:* Connect the output DVI monitor to this port.

2. *usb:* Connect to USB 1.1 and 2.0 devices including keyboard and mouse. If the USB memory option has been enabled, hard disks and flash drives can also be connected here.

3. *kvm-link:* Connect the CATx or Fiber interconnect cable, based on the model, to the the Ethernet switch being used to form the matrix.

4. *dc:* Connect one of the supplied Power Supply Units here, and connect it to an AC power supply.

If the Sound Option has been enabled

5. *in:* Connect an analog microphone to this port.

6. *out:* Connect a stereo speaker system to this port.

If the Serial Option has been enabled

7. *com:* Connect a serial cable from this port to the serial device that issues the controlling RS-232 commands

Table 1. Connectors on the Xcion DVI Models

HDMI CATx Model
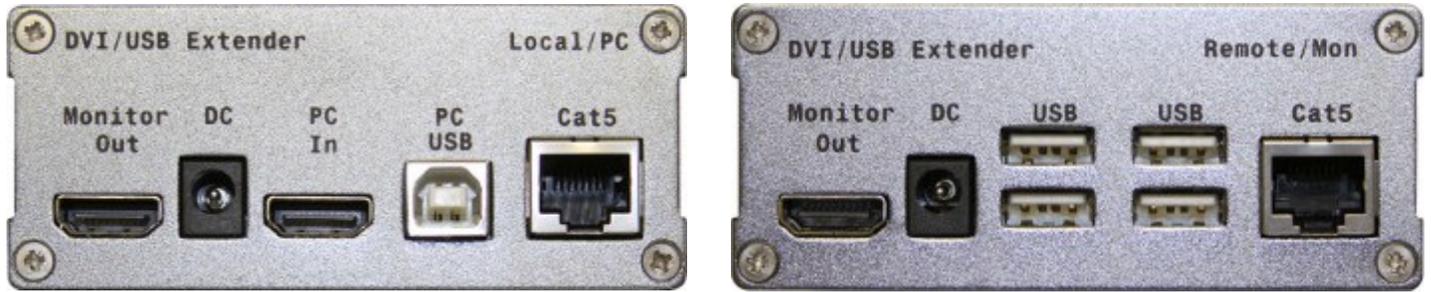
Figure 6. Xcion HDMI Rear View

Connector Description HDMI Model
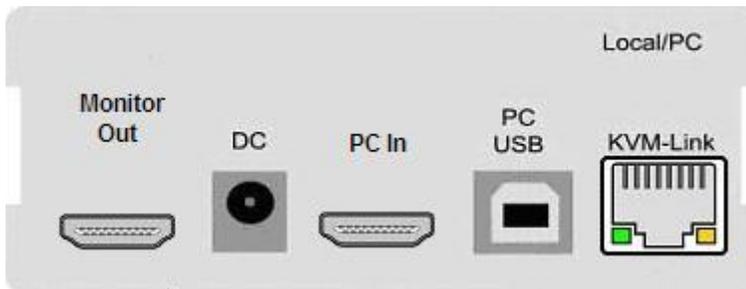
Figure 7. Connectors on HDMI Transmitter

1. *PC In:* Use the supplied HDMI cable to connect this port to the HDMI port on the source PC.

2. *Monitor Out:* Connect an HDMI monitor to this port for a local display, if desired.

3. *PC USB:* Use the supplied USB cable to connect to a USB port on the source PC.

4. *KVM-Link:* Connect a CATx interconnect cable to this port to establish a connection to the Ethernet switch being used to form the matrix.

5. *DC:* Connect one of the supplied Power Supply Units here, and connect it to an AC power supply.

Figure 8. Connectors on HDMI Receiver

1. *Monitor Out:* Connect the output HDMI monitor to this port.

2. *USB:* Connect to USB 2.0 devices including keyboard and mouse. With optional USB memory option, hard disks and flash drives can also be connected here.

3. *KVM-Link:* Connect a CATx interconnect cable to this port to establish a connection to the Ethernet switch being used to form the matrix.

4. *DC:* Connect one of the supplied Power Supply Units here, and connect it to an AC power supply.

Table 2. Connectors on the Xcion HDMI Model

INSTALLATION

Installation

Easy installation allows the Xcion Switch Mode to be set up as a KVM matrix quickly. Connect the Transmitter to the host computer using the supplied video cable (DVI or HDMI) and the USB cable. Connect a display to the local video output port, if desired. If the DVI model has the Audio option enabled, connect the Audio In and Audio Out ports to the pink and green audio ports on the computer. Connect the Receiver to the DVI or HDMI output monitor and to USB keyboard and mouse. If the DVI model's Audio option is enabled, connect an analog microphone to the Audio In port, and connect a stereo speaker to Audio Out port.

Depending on the model purchased, the Transmitter and the Receiver are connected to the Gigabit Ethernet switch with either CATx or multi-mode fiber cables. Configuration of the switch can be made in the Receiver OSD.

On the CATx models, plug the CATx cable with the appropriate RJ45 plug into the RJ45 socket. See APPENDIX F for cable specifications. Check that the plug is properly latched in place to prevent faults. To remove the CATx cable, press the latch down and slowly pull the cable out.

The standard DVI Fiber model is equipped with a multimode SFP module. If a different SFP module is used, remove the black dust protector from the SFP module and pull the metal latch of the module forward until it is at a right angle, then remove the SFP module. Follow the same steps in reverse to plug in a new SFP module. When connecting the fiber cable, check that dust protector has been removed and insert the fiber cable in until the latch has clicked into place. To remove the fiber cable, press on the latch and slowly remove the cable.

An individual DVI Transmitter and Receiver setup is shown the figure below.
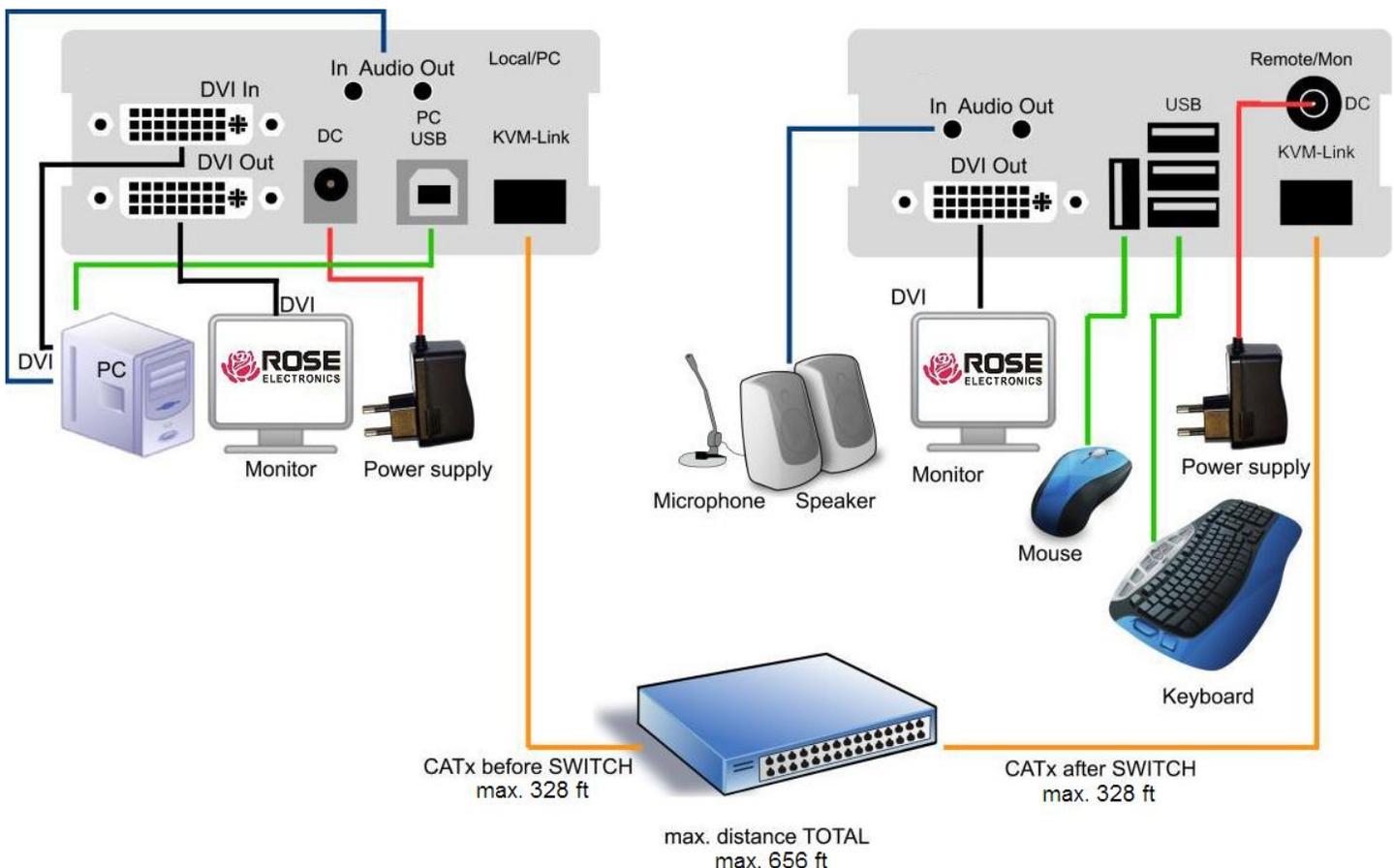
Figure 9. Xcion DVI Switch Mode Installation

An individual HDMI Transmitter and Receiver setup is shown the figure below.
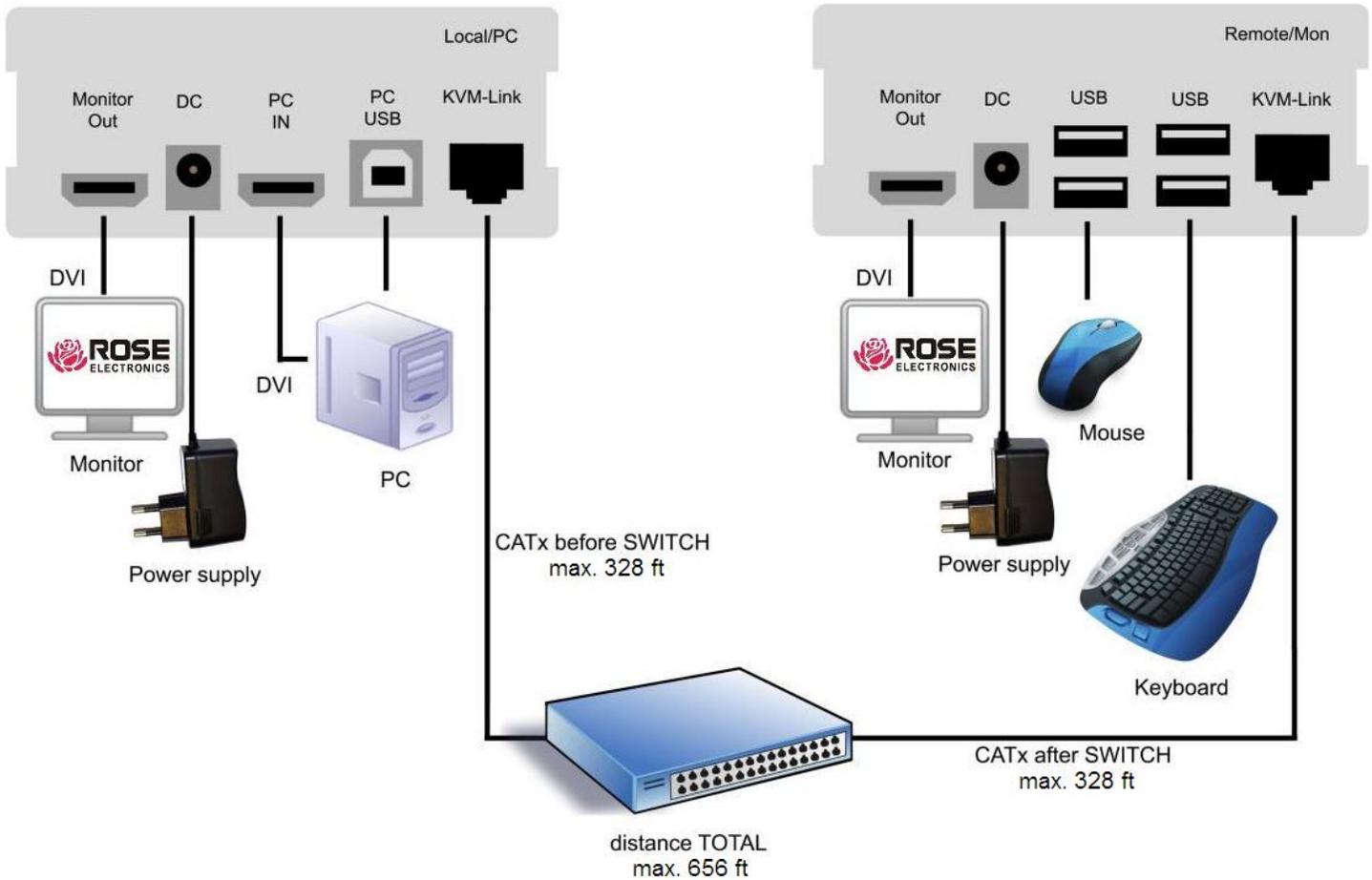
Figure 10. Xcion HDMI Switch Mode Installation

Connect all the computers, monitors, USB and Sound devices in this manner to the Transmitters and Receivers that are intended to be part of the KVM matrix. Then, connect the Transmitters and Receivers to the Ethernet switch. This will appear as in the figure below.
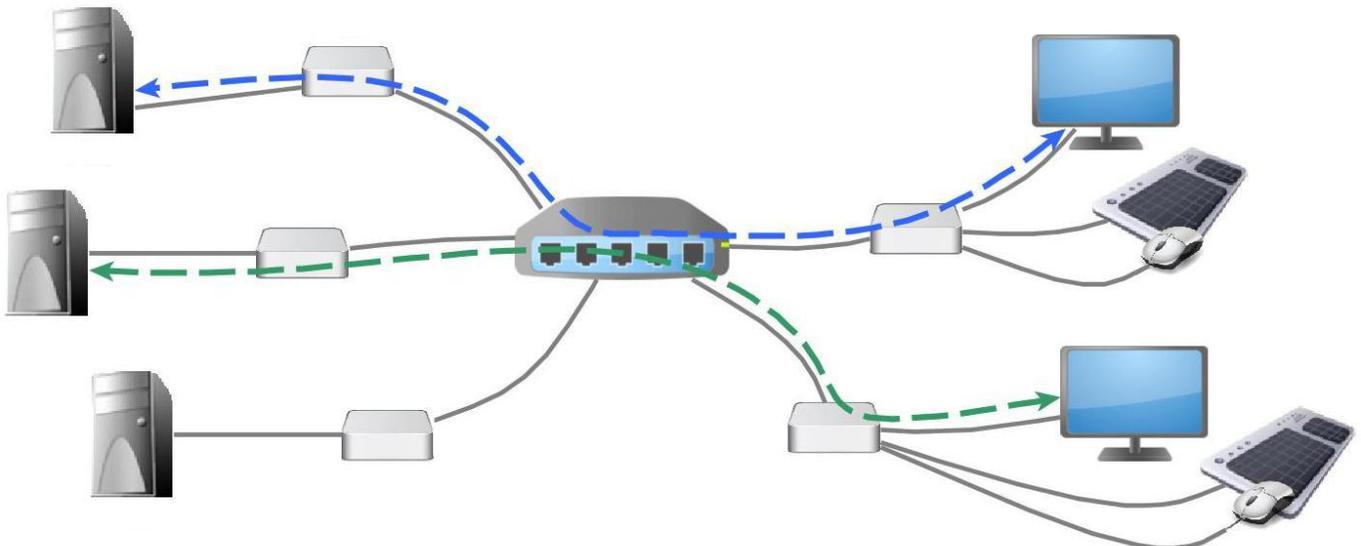
Figure 11. Connecting All Transmitters and Receivers

It is important to note that the entire switching network system requires its own dedicated network. For security reasons it cannot be integrated into an existing company network. The network switch must be a 1 Gigabit Switch, with true port to port transfer rates of 1 Gigabit/second.

A listing of Gigabit Network Switches that have been tested with the Xcion Switch Mode Extender system can be found in APPENDIX E .

Start Up

Apply power to all units. Transmitter and Receiver units will start an automated initialization process, signified by a blinking Red Status light on the front panels. This may take a few seconds. When the status light turns green, all signals will be transmitted.

The Status LED on the front panel will light Red, Orange or Green. These lights indicate the following conditions.

LED Color	Status	
	Link Present	Video Present
Red	✘	✘
Orange	✓	✘
Green	✓	✓

Table 3. Front Panel Status Indicators

Status Overview

The Status Overview Screen provides the user with the most important information about the status of the extender in a single screen. This will appear automatically whenever no video is being transmitted, but can also be opened manually through the OSD menu (see Figure 13FIGURE 13 on page 9).

```
Connected to        <untitled>
DDC Opt             remote monitor
Video Mode          DVI
Resolution          1920x1080
USB Status          High Speed
Options:            Mem Switch
Rem FW Ver          4267
Local FW Ver        4267


    [Link]      [Conn]      [Video]     [USB]
```
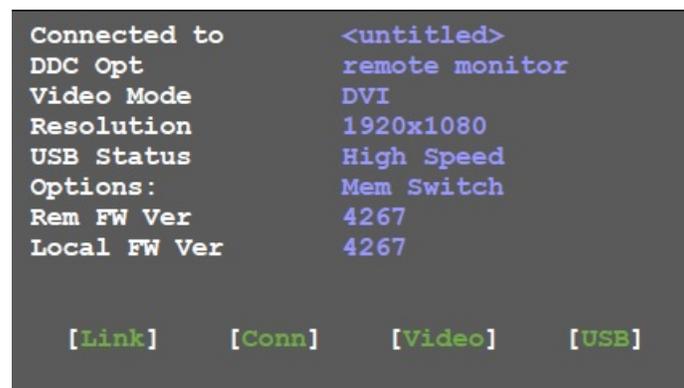
Figure 12. Status Overview Screen

The row at the bottom shows the status of four subsystems as being either active (green) or inactive (red).

- *Link*: Indicates whether there is a physical link between this Receiver and another device through the CATx or fiber interconnect
- *Conn*: Indicates whether this Receiver unit has negotiated a connection with a Transmitter unit
- *Video*: Indicates whether video is currently being transmitted from the Transmitter unit to the Receiver unit
- *USB*: Indicates whether a transparent USB connection been established between the Receiver unit and the Transmitter unit's PC.

OPERATION

Xcion Menu System

This section deals with the menu system of the Xcion Switch Mode Extenders, and the functionality it provides. Various operations to set up the network, audio, video and serial ports can be performed from these menus. In addition, operations such as enabling the USB memory and Serial options, and updating the flash firmware are performed here.

The menu system on the Xcion DVI Extender is accessed from a keyboard connected to the Receiver. Press the *Scroll Lock* key five times in quick succession to bring up the menu as shown below.

```
Menu
 T = Status Overview
 U = Update Flash FW
 M = Option Overview
 O = DDC Option (remote monitor)
 W = Network Settings
 G = Extender Settings
 L = Switching List
 Q = Exit

Remote (Con) FW Ver = 4245
Local  (PC)  FW Ver = 4245
```

Figure 13. Xcion Switch Mode Main Menu

Submenus are accessed by pressing the indicated key to the left of the desired menu. The bottom of the main menu displays the current revision of the firmware on the Transmitter and Receiver units.

The following subsections detail how the menu operations are performed in the Xcion Extender.

Update Flash Firmware

Press the *U* key on the keyboard to initiate the upgrade of the flash firmware on the Transmitter and Receiver. The latest version of the flash firmware can be obtained from Rose Electronics. All update files are accompanied by a detailed description of the update process to assist in performing this operation.

The available methods to perform firmware update on the Xcion Switch Mode Extenders are described in the section FIRMWARE UPDATE INSTRUCTIONS found on page 28 .

Option Overview

Press the *M* key on the keyboard to display the extender's activated options. The status is indicated by the colors: green for activated, and red for not activated.

Figure 14. Xcion DVI and HDMI Options Overview Menu

The Menu displays the *Device ID* of the extender. To purchase an option, please contact Rose Electronics or your distributor with the *Device ID* number, as well as the Serial Number located on the side of the device. If the option has been purchased, the activation code for the desired option will be sent. This activation code can be entered by pressing the *M* key on the keyboard once again. This will not alter other options that have already been activated. Press the *Esc* key to return to the main menu.

DDC Options

Press the *O* key on the keyboard to select which EDID is to be used for the Xcion system. This can be selected from the *DDC Options* Menu.
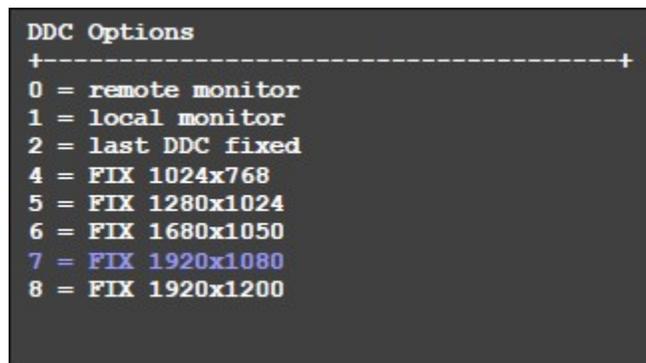
Figure 15. DDC Options Menu

The available options are as follows.

- Press *0* to use the DCC information of the monitor connected to the Receiver unit.
- Press *1* to use the DDC information of the monitor connected to the Transmitter unit.
- Press *2* to save the currently used DDC so that the units can continue using it even after being restarted.
- Pressing keys *4* through *8* will use the corresponding preset resolutions.

Press the *Esc* key to return to the main menu.

Network Settings

Press the *W* key on the keyboard to bring up the *Network Settings* Menu. The menu includes the preferences and settings for the switching option. It is described in detail in the SWITCHING MENU GUIDE / SETTINGS section found on page 17.

Extender Settings

Press the *G* key on the keyboard to display the *Extender Settings* menu. This menu presents a range of further preferences. They are divided in to two sub-menus depending on whether the setting is stored on the Transmitter (PC) unit or Receiver (console) unit.


```
Extender Settings
+-----------------------------------+
 L = Local Settings
 R = Remote Settings

 Q = Return to Main Menu
```

Figure 16. Extender Settings Menu

The Local Settings are accessed by pressing the *L* key on the keyboard.


```
Local Settings
+-----------------------------------+
 V = VGA parameters
 U = USB Compatibility Mode (disabled)

 Q = Return to Main Menu
```

Figure 17. Local Extender Settings Menu

The Remote Extender Settings are accessed by pressing the *R* key on the keyboard.

```
Remote Settings
+-------------------------------------+
 A = Audio Input Gain (5)
 R = RS232 Baudrate (up to 9600)
 S = Show Last Image (disabled)
 I = Monitor Sync (disabled)
 L = Lock Menu (disabled)
 P = Power Save (enabled)
 K = Keyboard Locale (EN)
 O = Keyboard Fallback Mode (0)
 H = Keyboard Shortcuts
 Q = Return to Main Menu
```

Figure 18. Remote Extender Settings Screen

Local Extender Settings

This section describes the available Local Extender Settings.

VGA Parameters (DVI Model Only)

Press the *V* key on the keyboard to modify VGA settings.

```
Shift        up F1   F4 down   0
Shift       <- F2   F3 ->      0
Zoom       out F5   F6 in      2200
Pixelfine    - F7   F8 +       0

Space = 1/10 steps
M = Video Mode Auto
K = Automatic seek
I = Init VGA Table
S = Save - exit
Q = Quit - no save
```

Figure 19. Extender Settings / VGA Parameters Submenu

The available settings are given below. Press the appropriate key on the keyboard to access them.

- Press *F1* to move the video up or *F4* to move the video down.
- Press *F2* to move the video left or *F3* to move the video right.
- Press *F5* to scale up the video size or *F6* to scale down the video size to get the best fit within the monitor's display area.
- Press the Space Bar on the keyboard to change the increment by which the above settings are modified. Repeatedly pressing the Space Bar cycles this increment value back to 1.
- Press *M* to select the desired video mode, which are
- *Auto*, where the video mode is automatically detected and set by the extender,
- *DVI*, where only DVI input is detected, and
- *VGA*, where only VGA input is detected.
- Press *K* to initiate automatic positioning and adjustment of the video.
- Press *I* to reset these parameters to default values.
- Press *S* to save the settings and exit to the main menu, or *Q* to discard all changes and exit to the main menu.

USB Compatibility Mode

Press the *U* key on the keyboard to enable or disable USB Compatibility Mode. The USB Compatibility Mode allows the Transmitter to go to USB Low-Speed mode if needed. One scenario for activating this setting is when the PC has problems initializing the keyboard in its BIOS. This could happen when the USB initialization in the PC's BIOS is imperfect, and cannot correctly initialize USB Hi-Speed devices. This is the case in HP Z400 Series PCs. When USB compatibility mode is activated the Transmitter first tries to initialize in Hi-Speed mode. If several attempts fail, the Transmitter then enters Low-Speed mode, which should solve the problem. Under normal operation, this setting should remain deactivated.

Remote Extender Settings

This section describes the available Remote Extender Settings.

Audio Input Gain (DVI Model Only)

Press the A key on the keyboard to set the volume of the audio input for a microphone connected to the Receiver.


```
Audio Input Gain (5)

0     = Off
1 - 9 = Amplification Level
```
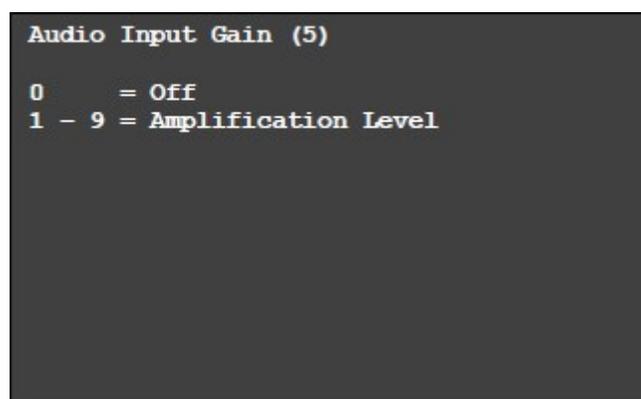
Figure 20. Extender Settings / Audio Input Gain Submenu

The default audio level is *5*. It ranges from *1* to *9*. If the audio level is set to *0*, audio input from the Receiver is disabled.

RS232 Settings (DVI Model Only)

The following signals are transferred; the pin numbers refer to the RJ12 *com* connector. The remote interfaces are DTE.

Figure 21. RS232 RJ12 Port

Pin	Signal Name	Abbrev.	Direction	Description
1	Data Set Ready	DSR	Input	Reserved (not used)
2	Data Terminal Ready	DTR	Output	Pulled high with 1 kΩ resistor
3	Transmit Data	TD	Output	Serial data from port
4	Signal Ground	SGND	N/A	DC ground reference
5	Receive Data	RD	Input	Serial data to port
6	Request to Send	RTS	Output	Pulled high with 1 kΩ resistor

Table 4. RS232 RJ12 Pinouts

The transmission baud rate can be set in the submenu. There is a universal setting for baud rates up to 9600, which transmits all different RS232 configurations transparently.

To achieve higher baud rates, the following settings are available in the submenu.

Baud Rate	Parity	Stop Bits
4800	No	1
9600	Odd	2
19200	Even	
38400	Mark	
57600	Space	
115200		
230400		

Table 5. RS232 Transmission Rates

Show Last Image

Press the *S* key on the keyboard to enable or disable this option. When enabled, the display on the Receiver will not show a black screen when the connection to the Transmitter has been disconnected. Rather, the last displayed image will be retained. This image will have flashing red borders to indicate that it is not real-time video. Press the *Esc* key to return to the main menu.

Monitor Synchronization

Press the *I* key on the keyboard to enable or disable monitor synchronization. When enabled, the refresh rate of the graphics card on the source computer and the remote monitor are adjusted to match one another. This ensures smooth video transmission when the screen content changes rapidly, as when playing a video.

Not all monitors can support this function, so this option is disabled by default. Enable this option by pressing *1* on the keyboard. If the monitor starts to flicker when this option is enabled, press the *0* key on the keyboard to disable it. Press the *Esc* key to return to the main menu.

Lock Menu

Press the *L* key on the keyboard to lock or unlock the Xcion menu system. When Lock Menu is enabled, the OSD menus will be only be accessible for five minutes after powering up. This prevents unauthorized access to the Xcion menu system. The units should be turned off and on again to resume menu operation. The *Lock Menu* submenu is shown below.


```
Lock Menu 5 Min after
Power-On is disabled


Enter  1 for enable or
       0 for disable:
```
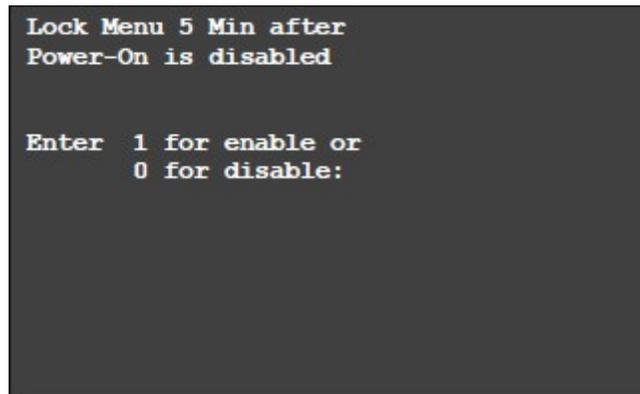
Figure 22. Extender Settings / Lock Menu Submenu

Enable this option by pressing *1* on the keyboard, or *0* to disable it. Press the *Esc* key to return to the main menu.

Power Save

Press the *P* key on the keyboard to enable or disable the Power Save setting on the Xcion. When enabled, the Receiver will turn off its video output signal when no video has been received by it for over a minute. This allows a monitor to enter sleep mode, if the monitor supports it. The Receiver can be woken up from Power Save mode by pressing any key on the keyboard.

Menu Item "H" – Keyboard Shortcuts

Press the *H* key on the keyboard to open the *KEYBOARD SHORTCUTS* screen. In this menu alternative keyboard shortcuts can be defined.

```
KEYBOARD SHORTCUTS
+----------------------------------+
> Main Menu       5x<scroll>
  Switching List <L-Ctrl><L-Alt><F12>
  Conn. Overview <L-Ctrl><L-Alt><F10>
  Disconnect     <L-Ctrl><L-Alt><F11>
  Favourites     <L-Ctrl><L-Alt><F1>


  Use arrows to scroll up and down.

  E = Edit
  Q = Exit
```

Figure 23. Keyboard Shortcuts Screen

By default, only one shortcut can be modified - the one to open the OSD. It should be noted that if new shortcut is assigned for opening the OSD, the 5x*Scroll Lock* will still continue to function. If the Switching Option is enabled then further shortcuts can be defined to open the *Switching List*, *Disconnect* from the current connection, open the *Connection Overview* screen, and connect to a favorite extender.

A shortcut can be either a combination of modifier keys (i.e. *Shift*, *Ctrl*, *Win* and *Alt*) with another key, for example, *Ctrl+Shift+Home*; or it can be tapping a single key multiple times, for example double tap *Caps Lock*. If a single key is entered, the number of key presses required is changed by pressing the left and right arrow keys.

Keyboard Fallback Mode

Press the *O* key to cycle between the options of the *Keyboard Fallback Mode*. The available options are 0, 1 and 2. The *Keyboard Fallback Mode* setting applies to the operation of the keyboard connected to the Receiver with the OSD and when using keyboard shortcuts. Under normal conditions, this remote extender setting is not required. In certain exceptional circumstances, a few PC / keyboard combinations will result in keyboard input not being recognized. In other cases, a non-keyboard device may produce data that is interpreted as keyboard input. In these cases, using this setting may alleviate the problem.

Keyboard Locale

Press the *K* key on the keyboard to select between keyboard layouts for navigating the OSD. The available layouts are French (Azerty), English (Qwerty) and German (Qwertz).

Switching List

Press the *L* key on the keyboard to access the switching list. The switching list is discussed in the SWITCHING BETWEEN COMPUTERS section found on page 26.

Quit

Press the *Q* key to exit the *Extender Settings* Menu.

SWITCHING Menu Guide / Settings

The Switching Option settings can be accessed by pressing "W" in the main menu of the OSD where the network can be configured. Please note that this menu item is only active when the Switching Option has been unlocked on the Receiver. Unlocking an option is described in the OPTION OVERVIEW section found on page 10.

In order to prevent unauthorized access to the *Network Settings* menu, it is protected by a username and password. Access is only allowed for users with administrator rights. The units come with a default administrator username of *admin* and password *admin*.

```
Enter User/Password
+------------------------------------+


 > USER:        admin-------

 > PASSWORD:   admin------




ESC = Cancel
```

Figure 24. Network Settings Login Screen

When the login credentials have been authenticated, the *Network Settings* Menu is displayed.

```
NETWORK SETTINGS
+------------------------------------+
V = Master View (Device Configuration)
M = Network Mode

T = Set Timeout (Immediately)




Q =  Save and Exit
```

Figure 25. Network Settings Menu

The network is set up in two parts – the first part involves configuring the devices that make up the network, and the second part involves setting up parameters for the network as a whole. Both of these are accessed from this menu, and described in detail below.

Master View (Device Configuration) Menu

Press the *V* key in the *Network Settings* menu to display the *Master View* Menu. This menu provides the administrator with the ability to view, add, edit or remove user, console and computer information.

```
MASTER VIEW menu
+--------------------------------------+
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration

R = Restart All Extenders


Q = Exit
```

Figure 26. Network Settings / Master View Menu

Master View / Connections Overview

Press the *O* key on the keyboard to display the *Connections Overview* screen. It provides an overview of the current connections, as well as the free PCs and consoles on the network.

```
MASTER VIEW connections overview
+--------------------------------------+
> SERVER 1          <-->   CONSOLE 1
  SERVER 2          <-->   CONSOLE 2
  SERVER 3          <-->   CONSOLE 3
                           CONSOLE 4



I = Show Details
Q = Exit
```

Figure 27. Master View / Connections Overview Screen

To view more details of a connection, use the arrow keys on the keyboard to select one of the connections and press the *I* key. This brings up the *Master View Connections Detail* Submenu where more information about the connection can be viewed.

```
MASTER VIEW connections detail
+--------------------------------------+
> Computer:        SERVER 1
  Workstation:     CONSOLE 1
  User:            <None>



D = Force Disconnect
E = Select PC for workstation
Q = Exit
```

Figure 28. Master View / Connections Detail Screen

Here, a console can be disconnected remotely from a PC, or a PC and a console connection can be created.

Master View / User List

Press the *U* key on the keyboard to display the *User List* screen. Here, user details, rights and groups can be managed. If User-PC Binding is enabled, the list displayed will resemble the one on the right below.

```
MASTER VIEW user list
--USER----------+---GROUPS---+-RIGHTS-+
> admin         | 1,2,3,4,5..| admin
  master        | 1,2        | master
  user          | 1          | user
                |            |
                |            |
                |            |
                |            |
A = Add            R = Remove
I = Info           Q = Exit
```

```
MASTER VIEW user list
--USER----------+---BOUND PC----------+
> admin         | <None>
  User1         | SERVER 1
  User2         | SERVER 2
                |
                |
                |
                |
A = Add            R = Remove
I = Info           Q = Exit
```

Figure 29. Master View / User List Screens

Use the arrow keys on the keyboard to select a user. The following options are available to edit the user list.

- Press the *A* key to add a new user.
- Press the *R* key to delete a user.
- Press the *I* key to display and edit user details.
- Press the *Q* key to exit the *User List* screen.

When the *I* key, has been pressed, the *User Detail* screen is displayed, where user configuration can be set up or modified.

```
MASTER VIEW user detail
+--------------------------------------+
> USER:        admin
  FULL NAME:   Administrator
  PASSWORD:    admin
  RIGHTS:      *** (admin)
  GROUPS:      1,2,3,4,5,6,7,8
  Bound PC:    SERVER 1


A = Add              R = Remove
I = Info             Q = Exit
```

Figure 30. Master View / User Detail Screen

The following user characteristics may be edited in this screen.

User
Assign each user a login name with maximum length of 16 characters.

Full Name
The full name of a user may be entered for clarity. This name is displayed when informing other users who interrupted their connection.

Password
Each user requires a password for the login. The password can have a maximum length of 16 characters

Rights
There are three types of rights: *user*, *master* and *admin*. By pressing the + key the rights of the selected user can be changed. The rights control access to the *Network Settings* Menu (only a user with *admin* rights may do so), and which users may interrupt the connection of which other users.

The hierarchy of rights is as follows:
admin > master > user

A user at a higher level can interrupt the connection of users at the same or lower level unless the connection is private. For example, a user with *admin* rights can interrupt the public connection of a user with *admin*, *master* or *user* rights, while a *user* can only interrupt the public connection of another user with *user* rights. When a user has his / her connection interrupted, he / she can reclaim the original connection.

Groups
Each user can join up to 8 user groups. Each computer is defined as belonging to one user group. By default, all computers are in the same user group. This system makes it possible to allow or deny different users access to a computer. The user's group access is set by pressing the buttons 1 – 8.

Bound PC
When in User-PC Binding mode (see the
NETWORK MODES / User-PC Binding section on page 24) each user must have a PC bound to them. That user will only be able to connect to that PC. When selected the User Detail menu, press "RETURN" a list of PCs on the network will be displayed to select from.

Master View / Console Extender List

Press the *C* key on the keyboard to display the *Console Extender List* screen. Here, all console extenders (Receivers) in the switching network, and their current status can be viewed.

```
MASTER VIEW console extender list
--NAME----------------------+-STATUS-+
> Workstation1              | this
  Workstation2              | in use
  Workstation3              | free
                            |
                            |
                            |


R = Remove (Disconnected Only)
I = Info              Q = Exit
```

Figure 31. Master View / Console Extender List Screen

The Console Extenders can be in one of the following statuses:

- *this* shows which console is displaying *this* menu;
- *in use* indicates consoles in use by other users;
- *free* indicates consoles not in use at this time.

Each console extender can be assigned a name. Press the *I* key to access the submenu.

Master View / PC Extender List

Press the *P* key on the keyboard to display the *PC Extender List* screen. Here, all PC extenders (Transmitters) in the switching network and their current status can be viewed.

```
MASTER VIEW PC extender list
--NAME---------------+-GROUP-+-STATUS-+
> SERVER1            |   1   | conn'd
                     |       |
                     |       |
                     |       |
                     |       |
                     |       |
                     |       |

R = Remove (Disconnected Only)
I = Info              Q = Exit
```

Figure 32. Master View / PC Extender List Screen

PC Extender characteristics like extender name and user group can be change in the next screen invoked by pressing the *I* key.

Master View / Multi-Head Configuration

If multiple monitors are used with a PC, then individual local and remote extenders can be grouped together using Multi-Head settings. This allows them to be switched as a single unit.

To aid in identification of the extenders, it is recommended that every extender is first named through the *PC Extender List* and *Console Extender List* screens described above. To help identify the extenders, when in these menus, the selected extender will start blinking red-green.

It is recommended that prior to performing the final installation, all the extenders be brought to a single location and connected to a single switch for network configuration.

This configuration setup requires a monitor, a keyboard and a network switch. To start, press the *M* key to display the *Multi-Head Configuration* Screen.

```
MASTER VIEW multi-head configuration
--MULTI-HEAD SET-----+---TYPE---+-SIZE-+
> MULTIHEAD SERVER   |    PC    |  3
  DUALHEAD CONSOLE   | Console  |  2
  DUAHLHEAD SERVER   |    PC    |  2
  MULTIHEAD CONSOLE  | Console  |  3
                     |          |
                     |          |
                     |          |
A = Add              R = Remove
I = Info             Q = Exit
```

Figure 33. Master View / Multi-Head Configuration Screen

To create a new Multi-Head set, press the *A* key. This opens the *Multi-Head Detail* screen, where the Multi-Head Set can be given a name, and extenders added to it.

```
MASTER VIEW multi-head detail
+---------------------------------+
> Name:     mhs1
  Type:     Undefined
  Heads:    0
--Module List----------------------
  SERVER 1/1                | conn'd
  SERVER 1/2                | in use
  SERVER 1/3                | in use

A = Add Module      E = Edit
Q = Exit and Save
```

Figure 34. Master View / Multi-Head Detail Screen

In the Multi-Head Detail screen, individual extenders can be added to the set by pressing the *A* key. The extender type is automatically determined once the first extender has been selected. An extender can be removed from the Multi-Head set by pressing the *R* key. Save and exit this screen by pressing the *Q* key.

Note:
Highly recommended (on DVI models only):
In order to ensure that USB is always available, it is highly recommended that the first extender in every multi-head set is the one with USB connectivity.

In the Multi-Head Configuration screen, an existing multi-head set can be viewed and edited by selecting it and pressing the *I* key. A dismantled or altered Multi-Head set can be removed from the system by selecting it in the menu and pressing the *R* key.

Network Mode

Network modes are used to define how the network system is to operate. Each of the modes available may individually be activated or deactivated by pressing the appropriate key. More than one may be selected depending on their function. Some modes require others, while others are incompatible with each other. The system will automatically recognize this, and inform the user.

Press the *M* key in the *Network Settings* menu to display the *Network Modes* Menu.

```
NETWORK MODES
+-------------------------------------+
P = Passwords ............... [Enabled ]
C = Auto Connect ............ [Disabled]
V = Private Connections ..... [Disabled]
B = User-PC Binding ......... [Disabled]
D = Discon on PC Power Down . [Disabled]
H = Hide Info Display ....... [Disabled]
T = Reconnect on Startup .... [Disabled]
S = Video Sharing ........... [Disabled]

Q = Exit
```

Figure 35. Network Modes Screen

Network Modes / Reset to Factory Default

In the Network Modes menu, press the *R* key to reset all Network Modes to factory settings.

Note:
All user / console / computer data will be deleted.

Network Modes / Passwords

Press the *P* key to enable or disable Password protection on the network. By turning on the *Password* system, user groups and rights and login access will be activated as described in the MASTER VIEW / USER LIST section found on page 19.

It should, however, be noted that access to the network settings is always protected by a login and password, even when the password system is disabled.

Network Modes / Auto Connect

Press the *C* key to enable or disable the *Auto Connect* facility on the system. When *Auto Connect* is enabled, a user whose connection is interrupted by another user will have the switching system automatically connect him/her with a free computer.

This function is unavailable while Password protection is enabled.

Network Modes / Private Connections

Press the *V* key to enable or disable *Private Connections* in the system. When *Private Connection* is enabled, users can set up a private connection with a computer, which can't be interrupted by other users.

To establish a private connection, hold down the *Shift* key when selecting a new connection either through the switching menu or by pressing the hotkey combination shown in APPENDIX D . The switching menu is described in more detail in the SWITCHING BETWEEN COMPUTERS section on page 26.

Network Modes / User-PC Binding

Press the *B* key to enable or disable the *User-PC Binding* facility on the system. When in the *User-PC Binding* mode, the switching system behaves in a different manner. Each console starts unconnected, and displays the NETWORK SETTINGS LOGIN SCREEN (FIGURE 24) found on page 17. The switching menu and switching hot keys will not be available.

The admin must configure each user to have a specific PC bound to them, as described in the MASTER VIEW / USER LIST section found on page 19. When a user logs on, he /she will be automatically connected to his / her bound PC. If another user wishes to use the console, the first user must disconnect and logout with the *Ctrl+Alt+F11* key combination.

Users with *admin* or *master* rights are able to access the switching menu as normal once they've entered their login details.

Network Modes / Discon on PC Power Down

Press the *D* key to enable or disable the *Disconnect on PC Power Down* facility on the system. When this feature is enabled, any Transmitter which is connected to a PC that gets powered down will automatically break its connection, allowing the Receiver to find a different Transmitter to connect to.

Network Mode / Hide Info Display

Press *H* key to enable or disable the *Hide Info Display* facility on the system. This suppresses the OSD display when it hasn't been deliberately invoked by a user. For example, when no connection exists, a Status screen or switching screen is displayed. Enabling this option suppresses display of these screens. This is useful when external software is used to control the switching network.

Network Modes / Reconnect on Startup

Press the *T* key on the keyboard to enable or disable the *Reconnect on Startup* facility on the system. When this option is enabled, after power or network is restored from a failure, the Receivers will try and connect with the same Transmitters they were connected to prior to the failure.

Network Modes / Video Sharing

Press the *S* key to enable or disable the *Video Sharing* facility on the system. Video Sharing is described in the VIDEO SHARING section found on page 27.

Set Timeout

When Passwords are enabled, the *Set Timeout* facility defines the conditions under which a user will be required to enter their login credentials when switching. This facility is invoked in the *Password Timeout* screen, accessed by pressing the *T* key.

```
Password Timeout

See product manual
For explanation

 > I – Immediately
   N – Never
   T – Time in mins


Press ESC to exit
```

Figure 36. Password Timeout Screen

The available options are as follows.

- *I – Immediately*: The username and password must be entered for each switch.

- *N – Never*: The username and password are not required until the current user logs out.

- *T – Time in min:* The number of minutes allowed to elapse after switching before a user must enter their username and password to switch again. This allows a user to enter their credentials once to switch, and then continue to switch without being prompted for username and password until the specified time has passed.

Switching Between Computers

The menu for the switching option is accessed from a USB keyboard on the Receiver. Press *Ctrl+Alt+F12* to display the switching screen, or display the Main Menu and press the L key. An example of a switching screen is shown below.

Figure 37. Sample Switching Screen

The switching menu lists all the computers (Transmitters) connected to the switching network. These computers can have one of four statuses as described below.

conn'd
This status is displayed in blue, and indicates the computer to which the user is currently connected.

in use
The status is display in white, and indicates a computer that is connected to another console (Receiver).

free
The status is displayed in green, and indicates a computer in the switching network that isn't connected to any console (Receiver).

discon
The status is displayed in red, and indicates a computer which was once in the switching network but isn't currently available. This usually means that the Extender has been disconnected from the network. If this is the case, the computer can be removed from the switching menu by pressing the *Delete* key.

The switching list can be navigated by pressing the ↑ and the ↓ keys. The currently selected computer is indicated by the > symbol on the left edge of the OSD. Press the *Enter* key to switch to the selected computer.

The left column shows the Favorites list, and provides each computer with a Favorite Number. Each Favorite Number corresponds to a hotkey combination which can be used to quickly connect to the desired computer without having to access the switching menu. For example, Favorite *1* has the hotkey combination *Ctrl+Alt+F1*, Favorite *2* is *Ctrl+Alt+F2,* and so on up to Favorite *8* with *Ctrl+Alt+F8*. All other computers can still be accessed via the switching screen.

If the Password system is active, the currently logged in user's username is displayed at the bottom. Press the *X* key to manually logout or the *D* key to disconnect from the current computer.

Video Sharing

With Firmware version 4245 and later, when Video Sharing mode is enabled, users can share their screen or view the screen of another user on the network. Control over the Transmitter depends on whether the Transmitter has an active connection to a Receiver or not.

Video Sharing can occur in two ways as described below. Both are accessed in the MASTER VIEW / CONNECTIONS OVERVIEW screen described on page 18. This can be reached with the hotkey combination *Ctrl+Alt+F10.*

1. A user needs his/her screen to be mirrored to other consoles:
   Select the console that should display the user's screen and press the *P* key. In this case, *P* stands for "push to screen". Such a command is only valid if the console which initiates the mirroring is currently connected to a PC extender, and has video. It should also be noted that the video can only be pushed to a console that is not currently connected to a PC extender. If the console to which the video is desired to be pushed is connected, it has to be disconnected first.

   Follow the steps below to push the video from one console to another

   a) Using the Up and Down arrow keys on the keyboard, move the selection cursor to the desired console, where the video is to be pushed.
   b) If the console is free, it will be displayed in green. If so, proceed to Step f).
   c) If the console is currently connected, press the *I* key to display the MASTER VIEW / CONNECTIONS DETAIL SCREEN.
   d) Press the *D* key to perform a *Force Disconnect* of the console.
   e) On the MASTER VIEW / CONNECTIONS OVERVIEW screen, once again select the desired console using the Up and Down arrow keys.
   f) Press the *P* key to push the video from the user's console to the desired console.
   g) There may be a slight delay before the video is displayed on the console which received the pushed video.

2. A user needs to see the screen of other consoles on the network:
   Select the PC extender whose video the user wishes to have displayed on his/her console, and press the *G* key. *G* stands for "get screen". If the console extender from which this command is executed is currently connected to another PC extender, a disconnect is executed before the video of the new PC extender is displayed. If the selected PC extender currently isn't connected, a connection including USB, etc. is established.

When Video Sharing is to be ended, press the *D* key to disconnect.

For help press "Ctrl+H"

Firmware Update Instructions

Firmware update on the Xcion Switch Mode Extender can be performed in one of three ways as follows.

- Direct Update
- Automatic Update
- Network Update.

These methods are available in the *UPDATE* screen, which is accessed from the main menu (*Figure 13*) by pressing the *U* key on the keyboard. This screen displays the current firmware on the extenders.

```
UPDATE
+-----------------------------------+
Console module running          4212




N    Network Update
A    Automatic Update
U    Direct Update
Q    Return to Main Menu
```

Figure 38. Firmware Update Screen

The table below describes the terminology used in this section.

Terminology	Description
Active Firmware	This is the firmware that an extender is currently running.
Saved Firmware	This firmware is saved on the extender, but is not currently running. It may or may not be the same version as the Active Firmware. During the update process, the new firmware is first stored as Saved Firmware before it is transferred in to Active Firmware.
Bitmap	Firmware updates are provided in the form of a bitmap image. The pixels in the image encode the data required for the update.
Source Extender	The extender that holds the firmware to be copied to other extenders
Target Extender	The extender that is to have its firmware updated.

Table 6. Firmware Update Terminology

Each method of firmware update is described in detail in the following sections. APPENDIX G describes the appropriate methods of upgrading firmware for different versions of the Xcion Switch Mode extender.

Direct Update

Direct Update was previously the only method of updating the Xcion extenders. It is designed to update a pair of extenders (one Transmitter and one Receiver). The update is initiated on the Receiver. Direct update is accomplished by following the steps outlined below.

1. Display the firmware bitmap file in 1:1 resolution and full color in an image viewer like Microsoft Paint or a web browser. Make sure that the image is fully displayed, and not partially hidden by scrollbars or another application.

2. If the Receiver has been powered up for more than 5 minutes, cycle power to it. This is for safety purposes. The update menu can only be activated in the first 5 minutes after power up.

3. Press the *Scroll Lock* key 5 times on the keyboard to invoke the OSD.

4. Ensuring that the cursor is not over the bitmap, press the *U* key on the keyboard to initiate the *Direct Update*.
   Important: Do not interrupt the update, else both units may have to be returned to the factory for repair.

5. Once the units have rebooted, the actual firmware version can be checked in the OSD menu.

Note for Windows 7: Some display drivers reduce the video level by about 10% at full HD resolution (1920 x 1080); this will cause a CRC error when trying to update the extender.
Workaround: Reduce the resolution to 1280x1024 for the update.

Automatic Update

An *Automatic Update* will transfer the *Saved Firmware* of a source extender to the *Saved Firmware* of a target extender. The target extender will then transfer its new *Saved Firmware* in to its *Active Firmware*, completing the update.

In order to perform an *Automatic Update*, the following requirements must be met.

- The *Source Extender* must have firmware 4180 or above.

- Both extenders must be of the same type (DVI CATx to DVI CATx, DVI Fiber to DVI Fiber, or HDMI to HDMI).

- If the the *Target Extender* is a Xcion HDMI extender, it must have firmware version 4180 or above. A target HDMI extender having firmware version below 4180 cannot be updated using this method.

- If the the *Target Extender* is a Xcion DVI extender, it can have any firmware version.

- It does not matter if the *Source Extender* and the *Target Extender* are both Receivers, both Transmitters, or a mixture.

Automatic Update is a feature that is disabled by default. It can be enabled or disabled for the Receiver or Transmitter from the Automatic Update screen. It is highly recommended that a Receiver is used as the *Source Extender*.

Figure 39. Automatic Update Settings Screen

Important: If the *Source Extender* does not have a *Saved Firmware*, then *Automatic Update* cannot be performed. To load firmware in to *Saved Firmware* from a firmware bitmap file follow the instructions given in the LOAD NEW VERSION FROM BITMAP section found on page 33.

Figure 40. Saved Firmware Required for Automatic Update

Automatic Update is performed by following the steps outlined below.

1. Connect a monitor to the *Source Extender*.

2. Connect the *Source Extender* to the *Target Extender* through the appropriate interconnect cable (CATx or Fiber). The extenders must be connected directly to each other and not through a switch!

3. Apply power to the *Source Extender* and the *Target Extender*.

4. Both extenders will initially have a red blinking LED, which will go to solid red on the *Source Extender*, and to blinking orange on the *Target Extender*.

5. After about 30 seconds the OSD on the monitor will indicate that the *Automatic Update* process has begun, as shown in the figure below. The LED on the *Target Extender* will now blink very slowly green.

```
**** AUTOUPDATE START ****
Copying Data
```
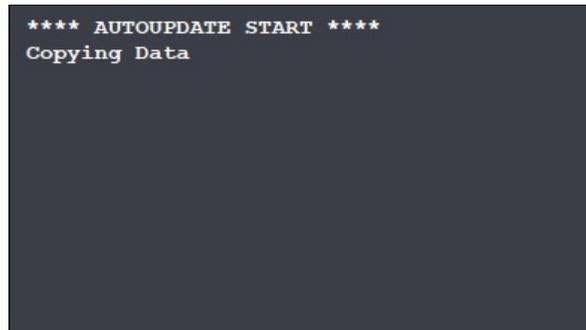
Figure 41. Commencing of Automatic Update

6. The *Target Extender* will take around 2 minutes to update and restart. Once this process is complete, the OSD will display *COMPLETE.*

```
**** AUTOUPDATE START ****
Copying Data ####
Installing   #

Waiting for other extender to restart
and complete install.

COMPLETE!

  Press ANY key
```

Figure 42. Automatic Update Complete

7. At this point, the *Target Extender* has been updated and may be unplugged.
8. If the OSD instead displays *FAIL*, and the LED of the *Target Extender* is off, then restart the *Target Extender* and leave it for a minute to complete the update.

Network Update

This is the preferred method of updating extenders on a switching network. A new update may be distributed to the extenders on the network with minimal impact on the network. Here, the *S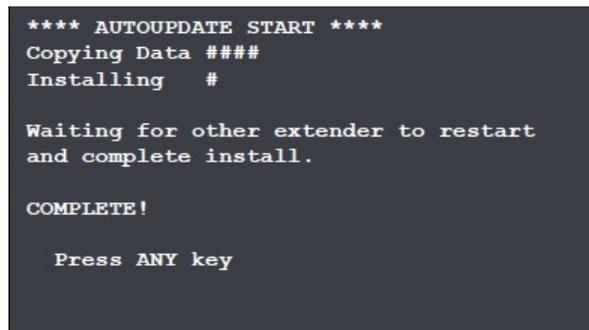ource Extender* can load a firmware update from a bitmap, then transfer the update to any or all extenders on the network, and tell those extenders to update to the new firmware.

In order to perform a *Network Update*, the following requirements must be met.

- The extenders must all be connected to a single GB network switch, and have the Switching Option installed.

- The extenders must all have firmware version 4180 or above.

- The extenders must all be of the same type (all DVI CATx, all DVI Fiber or all HDMI).

The Network Update menu is accessed by pressing the *N* key on the keyboard in the UPDATE screen.

```
UPDATE - Network Overview
+-------Module-----------+-Act--+-Save-+
   (PC)  Server 1         | 4176 | none ■
>  (PC)  Server 2         | 4176 | 4176 ■
   (Con) Workstation 1    | 4176 | 4176 □
   (Con) Workstation 2    | 4176 | 4177 □

A    Mark All          Space Mark Selected
L    Load New Version from Bitmap
S    Send Saved Version to marked modules
U    Update All Marked Modules
Esc  Return to Update Menu
```

Figure 43. Network Update Screen

This screen lists all the extenders currently on the network. This list can be scrolled through using the ↑and ↓ keys. The Receiver that the user is working on is marked in green. The *Active Firmware* and *Saved Firmware* version numbers are listed for each extender.

While scrolling up and down the list, press the *<Space Bar>* key to select or unselect an extender in the list. Alternatively, press the *A* key to select all extenders in the list. A selected extender has a filled rectangle next to it, while an unselected one has an empty rectangle.

Once the extenders to be updated have been selected, the three operations at the bottom of the screen are to be performed. They are to be done in the following order: first *Load New Version from Bitmap*, then *Send Saved Version to marked modules*, and finally update *All Marked Modules*. Each of these operations is described below.

Load New Version from Bitmap

This operation will transfer firmware from a bitmap file to the *Saved Firmware* of the Receiver on which the user is working (marked in green). For this to work, the bitmap must be open and visible on the monitor.

- It does not matter if the On Screen Display obscures it.
- The bitmap must have zoom level at 100% (i.e. 1 to 1).
- It should be approximately in the middle of the screen and slightly towards the left.
- If the *Cannot find Bitmap* error occurs, then try moving the image slightly and try again.
- If this error persists, then reducing the screen resolution may resolve the issue.

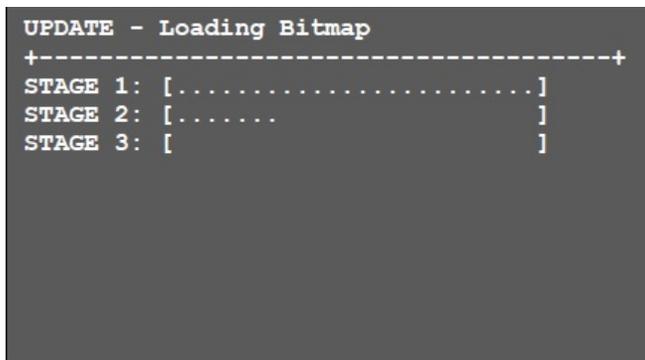Press the *L* key to commence loading the firmware update.


```
UPDATE - Loading Bitmap
+----------------------------------+
STAGE 1: [........................]
STAGE 2: [.......                  ]
STAGE 3: [                         ]
```

Figure 44. Load New Version from Bitmap Screen

Once the operation is complete the new firmware version will show in the *Saved Firmware* of this extender.

Send Saved Version to marked modules

Press the *S* key to transfer the *Saved Firmware* from the Receiver the user is working on to the *Saved Firmware* of any extenders that have been selected. The Receiver the user is on cannot accept further inputs during this process, but all other extenders on the network, including those to which the firmware is being transferred, can be used and switched as normal.

Update All Marked Modules

Press the *U* key to transfer the *Saved Firmware* on all selected extenders to their *Active Firmware*. Note that this process will disrupt the network. Any extenders that are updated will become briefly unusable before restarting in with the new *Active Firmware*. This process will take several seconds

TROUBLESHOOTING

Troubleshooting

The Power / Status LED on the Front Panel of the Transmitter and Receiver indicate trouble-free working of the system, or various error conditions. The table below describes the error conditions the LED indicates, root causes of these conditions, and provides solutions to resolve them.

LED Indication	Cause(s)	Solution(s)s
LED does not light up	The extender has no power	Ensure that the unit is connected to a power source.
LED lights up red	No connection detected between Transmitter and Receiver	Ensure that the interconnect cable (CATx or Fiber) is connected securely on both ends. A clicking noise should be heard when plugging in the cable. Contact Rose Electronics if the problem still occurs.
LED lights up orange	No video	■ Ensure that the local (PC) cable is connected securely. ■ Ensure that the remote (monitor) cable is connected securely. ■ If both are connected securely, but no picture appears yet, cycle power to the units. ■ If the menu system is visible, press the *O* key to invoke the *DDC Options* menu and select an appropriate screen resolution.
LED lights up green	Video appears on monitor, but keyboard does not work	■ Unplug the keyboard and then plug it back in. Wait a few seconds for the USB keyboard to be recognized, and try to use it again. ■ Check all USB connections on the Transmitter and Receiver ■ If the keyboard is still not working, unplug and plug back in the keyboard once more, and cycle power to the units.
	Video disturbances like flickering, artifacts, incorrect display occur, or screen goes blank	Units may have incorrect firmware. Contact Rose Electronics for the latest firmware release.
	No audio (Xcion DVI models only)	■ Connect the OUT port of the Transmitter to the audio input of the PC (pink). ■ Connect the audio output of the PC (green) to the IN port of the Transmitter. ■ Connect the OUT port on the Receiver to the headset or speaker.
LED is blinking green	■ Different firmware revisions on Transmitter and Receiver ■ USB device is not compatible	Contact Rose Electronics for Technical Support

Table 7. Troubleshooting the Xcion Extenders

SAFETY

Safety

The Xcion extender system, like all electronic equipment, should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface.
- Provide proper ventilation and air circulation.
- Keep connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapter and connection cables designed for this Unit.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from the power source before cleaning.

Remove power from the Unit and refer servicing to a qualified service center if any of the following conditions occur:

- The connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

SERVICE AND MAINTENANCE

Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics

Attn: RA_____

10707 Stancliff Road

Houston, Texas 77099 USA

Technical Support

If you are experiencing problems, or need assistance in setting up, configuring or operating your Xcion extenders, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone : (281) 933-7673

E-mail : TechSupport@rose.com

Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

APPENDICES

Appendix A – Specifications

Physical Specifications (All Models)	
Dimension (W x D x H)	3.88 in x 4.17 in x 1.6 in / 98 mm x 106 mm x 41 mm
Rackmount	Up to 4 Transmitters or Receivers in a 19" 1U rack
Weight	1.19 lb (540 g)
Video	
Maximum Resolution (All Models)	1080p, 1920 x 1200 @ 60Hz
Input and Output Formats (DVI Models)	DVI
Input and Output Formats (HDMI Model)	HDMI, DVI with adapter
EDID Support (All Models)	Internal EDID; user updatable
Cables	
CATx	Solid-Core, CATx5e/6/7. EIA/TIA568-A, 24AWG or greater. Use shielding, or use STP. Maximum Distance: 492 ft (150 m)
Fiber	Duplex Multimode, 50/125µ, LC-type Maximum Distance: 1640 ft (500 m) Optional Single mode LC, Gigabyte LWL Maximum Distance : 65617 ft (20km)
Configuration	From OSD accessed from Receiver unit
LEDs	1 x Power / Status LED on Front Panel: Red = No Link, Orange = no video, Green = Video and USB
Audio	
DVI CATx and Fiber Models	Optional Analog Audio Stereo transmission in CD quality Resolution: 16 bit, 44.1 kHz Line in / Line out Microphone input on remote client with +20 dB boost function
HDMI Model	Audio over USB; requires external USB adapters
Serial	
DVI CATx and Fiber Models	Optional RS-232 Serial V24 Serial Interface Unlimited parity and number of bits 57600 baud maximum transfer rate 6-pin RJ12 connector Transmits all modem signals (DCD, DTR, DSR, RTS, CTS and RI)
HDMI Model	RS-232 Serial over USB, requires external USB adapters
Environmental	
Operating Temperature	32°F to 113°F (0°C to 45°C)
Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Relative Humidity	0% to 80% relative, non-condensing
Power	100-250VAC, 12VDC, 1A
Approvals	FCC Class A, UL, CE, RoHS 2

Table 8. Xcion Extender Specifications

Appendix B – Part Numbers

Product	Part Number
Xcion, DVI/USB Extender Kit, CATx	XCK-2DTXUD1D
Xcion, DVI/USB Extender Kit, Multi-mode Fiber	XCK-2DFMUD1D
Xcion, DVI/USB Extender Kit, Single-mode Fiber	XCK-2DFSUD1D
Xcion, HDMI/USB Extender Kit, CATx	XCK-2DTXUH1H
Audio/Serial Option	/AS
USB 2.0 High Speed Option (64Mbps)	/T
VGA Input Option	/V
Switch Mode Option	/SM

Appendix C – Access Rights

Feature	admin	master	user
Network Settings	Yes	No	No
Interrupt Connection	Admin, master, user	master, user	user
User-PC Binding	No	No	Yes

Appendix D – Hotkeys

Hotkey (Ctrl+Alt+Function key)	Function
F1 to F8	Switch to indicated Favorite Number
F10	Display the Master View Connections Overview screen
F11	Disconnect and logout from network
F12	Display the switching list

Appendix E – Recommended Gigabit Network Switches

Brand	Model	Number of Ports		
		1G CATx	1G SFP	10G SFP+
D-Link	DGS-1210-24	24	4	
D-Link	DGS-1210-52	48	4	
D-Link	DGS-1510-20	16	2	2
D-Link	DGS-1510-28	24	2	2
D-Link	DGS-1510-52X	48		4
TP-Link	TL-SG1016DE	16		
TP-Link	TL-SG108E	8		
TP-Link	TL-SG3216	16	2	
Barox	RY-LGSO25-28	4	24	4

Appendix F – Cable Specification

CAT5/6/7 Cables

The pins are connected 1:1.

EIA/TIA-568 B Schema

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

Table 9. CATx Cable Pins

Notes:

- The pins are connected to EIA/TIA-568A (rare) or EIA/TIA-568 B (common) pairs. Erroneous assignments cannot be found with a simple cable tester.

- The pins for the green pair of wires are not placed adjacent to one other. The cable must at the very least meet the CAT5 specifications and be suitable for Gigabit transmission.

Shielded installation cable with min. cross section of 24AWG throughout the length, shield is contiguous and connected to both ends. Shielded patch cable is allowed for connection to the device.

Applicable standards: Class D ISO/IEC 11801:2002 or EN 50173-1:2002

Fiber Cables

Multi-Mode (Standard):
The Xcion Fiber Model is supplied with a LWL Multimode SFP Modules, which allow transmissions up to a distance of 1640 ft (500m). It requires a dedicated fiber connection with cable type Duplex Multimode 50/125μ (OM2), LC connector.

Single-Model (Optional):
Optionally, the Xcion can be supplied with LWL Single mode SFP Modules, which are bidirectional and allow transmissions up to 65617 ft (20 km). It requires a dedicated fiber connection, cable type Single mode, LC connector.

Wavelength (λ) 850nm in multimode
            1310nm TX – 1550nm RX in single mode

Appendix G – Appropriate Firmware Update Methods

This Appendix lists the different methods to upgrade firmware from a particular version to a later version.

Firmware Update of Xcion DVI Switch Mode Extenders

		Starting Firmware Version		
		1100 – 1269	1273	4200+
Target Firmware Version	1100 – 1273	*Direct Update* to new version	*Direct Update* to new version	*Direct Update* to new version
	4200+	■ If an extender with 4200+ is available, use this to perform an *Automatic Update* ■ Otherwise, perform a *Direct Update* to 1273 followed by a Direct Update to 4200+	■ If an extender with 4200+ is available, use this to perform an *Automatic Update* ■ Otherwise, perform a *Direct Update* to new version	■ If extenders are in a matrix switch, use *Network Update*. ■ If updating only one pair of extenders, perform a *Direct Update*. ■ If updating many extenders, then perform a *Direct Update* on one pair, and then use them to perform *Automatic Updates* on the others

Firmware Update of Xcion HDMI Switch Mode Extenders

		Starting Firmware Version		
		2000 – 2061	2066	4200+
Target Firmware Version	2000 – 2066	*Direct Update* to new version	Not possible	Not possible
	4200+	Perform a *Direct Update* to 2066, followed by a *Direct Update* to 4200+	*Direct Update* to new version	■ If extenders are in a matrix switch, use *Network Update*. ■ If updating only one pair of extenders, perform a *Direct Update*. ■ If updating many extenders, then perform a *Direct Update* on one pair, and then use them to perform *Automatic Updates* on the others

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