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
LIMITED WARRANTY

Rose Electronics® warrants the Xcion Switch Mode Extender to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

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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

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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.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product. (See limited warranty.)

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

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.

---

Table 1. Connectors on the Xcion DVI Models

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dvi-in</td>
<td>Use the supplied DVI cable to connect to the DVI port on the source computer.</td>
</tr>
<tr>
<td>dvi-out</td>
<td>Connect a DVI monitor to this port for a local display, if desired.</td>
</tr>
<tr>
<td>usb</td>
<td>Use the supplied USB cable to connect to a USB port on the source computer.</td>
</tr>
<tr>
<td>kvm-link</td>
<td>Connect the CATx or Fiber interconnect cable, based on the model, to the Ethernet switch being used to form the matrix.</td>
</tr>
<tr>
<td>dc</td>
<td>Connect one of the supplied Power Supply Units here, and connect it to an AC power supply.</td>
</tr>
<tr>
<td>in</td>
<td>Connect an analog stereo audio cable from this port to the line out audio port (green) on the source computer.</td>
</tr>
<tr>
<td>out</td>
<td>Connect an analog audio cable from this port to the microphone input port (pink) on the source computer.</td>
</tr>
<tr>
<td>com</td>
<td>Connect a serial cable from this port to the serial device that issues the controlling RS-232 commands.</td>
</tr>
</tbody>
</table>
HDMI CATx Model

Figure 6. Xcion HDMI Rear View

Connector Description HDMI Model

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 7. Connectors on HDMI Transmitter

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

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.

<table>
<thead>
<tr>
<th>LED Color</th>
<th>Link Present</th>
<th>Video Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Orange</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Green</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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 13).
**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](image.png)

**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.

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.

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 into two sub-menus depending on whether the setting is stored on the Transmitter (PC) unit or Receiver (console) unit.

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

![Remote Extender Settings Screen](image)

**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.

![Extender Settings / VGA Parameters Submenu](image)

**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)](image)

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](image)

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

**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.

<table>
<thead>
<tr>
<th>Baud Rate</th>
<th>Parity</th>
<th>Stop Bits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4800</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>9600</td>
<td>Odd</td>
<td>2</td>
</tr>
<tr>
<td>19200</td>
<td>Even</td>
<td></td>
</tr>
<tr>
<td>38400</td>
<td>Mark</td>
<td></td>
</tr>
<tr>
<td>57600</td>
<td>Space</td>
<td></td>
</tr>
<tr>
<td>115200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>230400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

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.

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 5xScoll 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.

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

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](image)

**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.

![Connections Overview](image)

**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.

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.

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.
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.

![Console Extender List Screen](image)

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.

![PC Extender List Screen](image)

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.

![Figure 33. Master View / Multi-Head Configuration Screen](image)

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.

![Figure 34. Master View / Multi-Head Detail Screen](image)

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 Menu](image)

**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 Screen](image)

*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.

![Sample Switching Screen](image)

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.

![Figure 38. Firmware Update Screen](image)

The table below describes the terminology used in this section.

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Firmware</td>
<td>This is the firmware that an extender is currently running.</td>
</tr>
<tr>
<td>Saved Firmware</td>
<td>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.</td>
</tr>
<tr>
<td>Bitmap</td>
<td>Firmware updates are provided in the form of a bitmap image. The pixels in the image encode the data required for the update.</td>
</tr>
<tr>
<td>Source Extender</td>
<td>The extender that holds the firmware to be copied to other extenders</td>
</tr>
<tr>
<td>Target Extender</td>
<td>The extender that is to have its firmware updated.</td>
</tr>
</tbody>
</table>

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.

![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.

![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.

![Figure 41. Commencing of Automatic Update](image1)

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

![Figure 42. Automatic Update Complete](image2)

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 Source 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.

![Network Update Screen](image)

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.

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.

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

<table>
<thead>
<tr>
<th>LED Indication</th>
<th>Cause(s)</th>
<th>Solution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED does not light up</td>
<td>The extender has no power</td>
<td>Ensure that the unit is connected to a power source.</td>
</tr>
<tr>
<td>LED lights up red</td>
<td>No connection detected between Transmitter and Receiver</td>
<td>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.</td>
</tr>
<tr>
<td>LED lights up orange</td>
<td>No video</td>
<td>■ Ensure that the local (PC) cable is connected securely.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Ensure that the remote (monitor) cable is connected securely.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ If both are connected securely, but no picture appears yet, cycle power to the units.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ If the menu system is visible, press the O key to invoke the DDC Options menu and select an appropriate screen resolution.</td>
</tr>
<tr>
<td>LED lights up green</td>
<td>Video appears on monitor, but keyboard does not work</td>
<td>■ 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Check all USB connections on the Transmitter and Receiver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ If the keyboard is still not working, unplug and plug back in the keyboard once more, and cycle power to the units.</td>
</tr>
<tr>
<td></td>
<td>Video disturbances like flickering, artifacts, incorrect display occur, or screen goes blank</td>
<td>Units may have incorrect firmware. Contact Rose Electronics for the latest firmware release.</td>
</tr>
<tr>
<td>No audio (Xcion DVI models only)</td>
<td></td>
<td>■ Connect the OUT port of the Transmitter to the audio input of the PC (pink).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Connect the audio output of the PC (green) to the IN port of the Transmitter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Connect the OUT port on the Receiver to the headset or speaker.</td>
</tr>
<tr>
<td>LED is blinking green</td>
<td>■ Different firmware revisions on Transmitter and Receiver</td>
<td>Contact Rose Electronics for Technical Support</td>
</tr>
<tr>
<td></td>
<td>■ USB device is not compatible</td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Troubleshooting the Xcion Extenders
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.
# Appendix A – Specifications

## Physical Specifications (All Models)

<table>
<thead>
<tr>
<th>Dimension (W x D x H)</th>
<th>3.88 in x 4.17 in x 1.6 in / 98 mm x 106 mm x 41 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rackmount</td>
<td>Up to 4 Transmitters or Receivers in a 19” 1U rack</td>
</tr>
<tr>
<td>Weight</td>
<td>1.19 lb (540 g)</td>
</tr>
</tbody>
</table>

## Video

<table>
<thead>
<tr>
<th>Maximum Resolution (All Models)</th>
<th>1080p, 1920 x 1200 @ 60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input and Output Formats (DVI Models)</td>
<td>DVI</td>
</tr>
<tr>
<td>Input and Output Formats (HDMI Model)</td>
<td>HDMI, DVI with adapter</td>
</tr>
<tr>
<td>EDID Support (All Models)</td>
<td>Internal EDID; user updatable</td>
</tr>
</tbody>
</table>

## Cables

<table>
<thead>
<tr>
<th>CATx</th>
<th>Solid-Core, CATx5e/6/7. EIA/TIA568-A, 24AWG or greater. Use shielding, or use STP. Maximum Distance: 492 ft (150 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber</td>
<td>Duplex Multimode, 50/125µ, LC-type Maximum Distance: 1640 ft (500 m) Optional Single mode LC, Gigabyte LWL Maximum Distance : 65617 ft (20km)</td>
</tr>
</tbody>
</table>

## Configuration

<table>
<thead>
<tr>
<th>From OSD accessed from Receiver unit</th>
</tr>
</thead>
</table>

## 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

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>32°F to 113°F (0°C to 45°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature</td>
<td>-4°F to 158°F (-20°C to 70°C)</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0% to 80% relative, non-condensing</td>
</tr>
</tbody>
</table>

## Power

| 100-250VAC, 12VDC, 1A |

## Approvals

| FCC Class A, UL, CE, RoHS 2 |

---

Table 8. Xcion Extender Specifications
Appendix B – Part Numbers

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

Appendix C – Access Rights

<table>
<thead>
<tr>
<th>Feature</th>
<th>admin</th>
<th>master</th>
<th>user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Settings</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Interrupt Connection</td>
<td>Admin, master, user</td>
<td>master, user</td>
<td>user</td>
</tr>
<tr>
<td>User-PC Binding</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Appendix D – Hotkeys

<table>
<thead>
<tr>
<th>Hotkey (Ctrl+Alt+Function key)</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 to F8</td>
<td>Switch to indicated Favorite Number</td>
</tr>
<tr>
<td>F10</td>
<td>Display the Master View Connections Overview screen</td>
</tr>
<tr>
<td>F11</td>
<td>Disconnect and logout from network</td>
</tr>
<tr>
<td>F12</td>
<td>Display the switching list</td>
</tr>
</tbody>
</table>

Appendix E – Recommended Gigabit Network Switches

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>1G CATx</th>
<th>1G SFP</th>
<th>10G SFP+</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Link</td>
<td>DGS-1210-24</td>
<td>24</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>D-Link</td>
<td>DGS-1210-52</td>
<td>48</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>D-Link</td>
<td>DGS-1510-20</td>
<td>16</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>D-Link</td>
<td>DGS-1510-28</td>
<td>24</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>D-Link</td>
<td>DGS-1510-52X</td>
<td>48</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>TP-Link</td>
<td>TL-SG1016DE</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TP-Link</td>
<td>TL-SG108E</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TP-Link</td>
<td>TL-SG3216</td>
<td>16</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Barox</td>
<td>RY-LGSO25-28</td>
<td>4</td>
<td>24</td>
<td>4</td>
</tr>
</tbody>
</table>
CAT5/6/7 Cables

The pins are connected 1:1.

EIA/TIA-568 B Schema

<table>
<thead>
<tr>
<th>Pin</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orange / White</td>
</tr>
<tr>
<td>2</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Green / White</td>
</tr>
<tr>
<td>4</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>Blue / White</td>
</tr>
<tr>
<td>6</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>Brown / White</td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
</tr>
</tbody>
</table>

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 (\(\lambda\)) 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

<table>
<thead>
<tr>
<th>Starting Firmware Version</th>
<th>1100 – 1269</th>
<th>1273</th>
<th>4200+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100 – 1273</td>
<td>Direct Update to new version</td>
<td>Direct Update to new version</td>
<td>Direct Update to new version</td>
</tr>
</tbody>
</table>
| 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

<table>
<thead>
<tr>
<th>Starting Firmware Version</th>
<th>2000 – 2061</th>
<th>2066</th>
<th>4200+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 – 2066</td>
<td>Direct Update to new version</td>
<td>Not possible</td>
<td>Not possible</td>
</tr>
</tbody>
</table>
| 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 |