ex·tend·it

MONITOR & KEYBOARD EXTENDERS

Professional SERIES

PCX 150

USER MANUAL
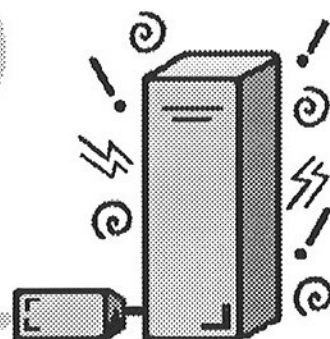
Gefen Inc.

ASKING FOR ASSISTANCE

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General Information

INTRODUCTION

Thank you for purchasing Gefen Systems' PCX150 Series. The PCX150 extends your computer monitor, keyboard, and mouse device up to 250 feet away from the location of your PC.

The PCX150 system consists of two units, the PCX150S Sender which resides next to the computer and the PCX150R Receiver, which resides next to the extended monitor and keyboard.

The PCX150 supports up to 1152 x 870 resolution and the video bandwidth is greater then 350 MHz.. The PC video is divided into three color outputs, red, green, and blue (RGB) and two sync signals, which are buffers and are extended by five 75 ohms BNC connectors. A 75 ohms multiconductor cable is required between the Sender and Receiver.

The PCX150 supports a Serial or PS/2 mouse and AT or PS/2 keyboard. The signals controlling the keyboard and mouse devices are extended by an RJ-48 connector, using an 8 conductor Teleco cable.

The PCX150 allows you to customize settings for user privileges. Access only local keyboard and mouse, or access only extended keyboard and mouse. Keyboard and mouse switching between local vs. extended workstations can be set automatically. Keyboard and mouse must be inactive before another workstation can take control. The setting switch offers four preset times; 1, 3, 5, and 10 seconds.

Added to the PCX150 is a sharpness select switch, with nine settings, that corrects bandwidth loss in the RGB cable. The bandwidth loss will increase in length, and vary by manufacturer. The loss of bandwidth causes fuzzy or out-of-focus problems. To offset this loss, an equalization circuit has been incorporated, which can be customized for best picture quality at high resolution.
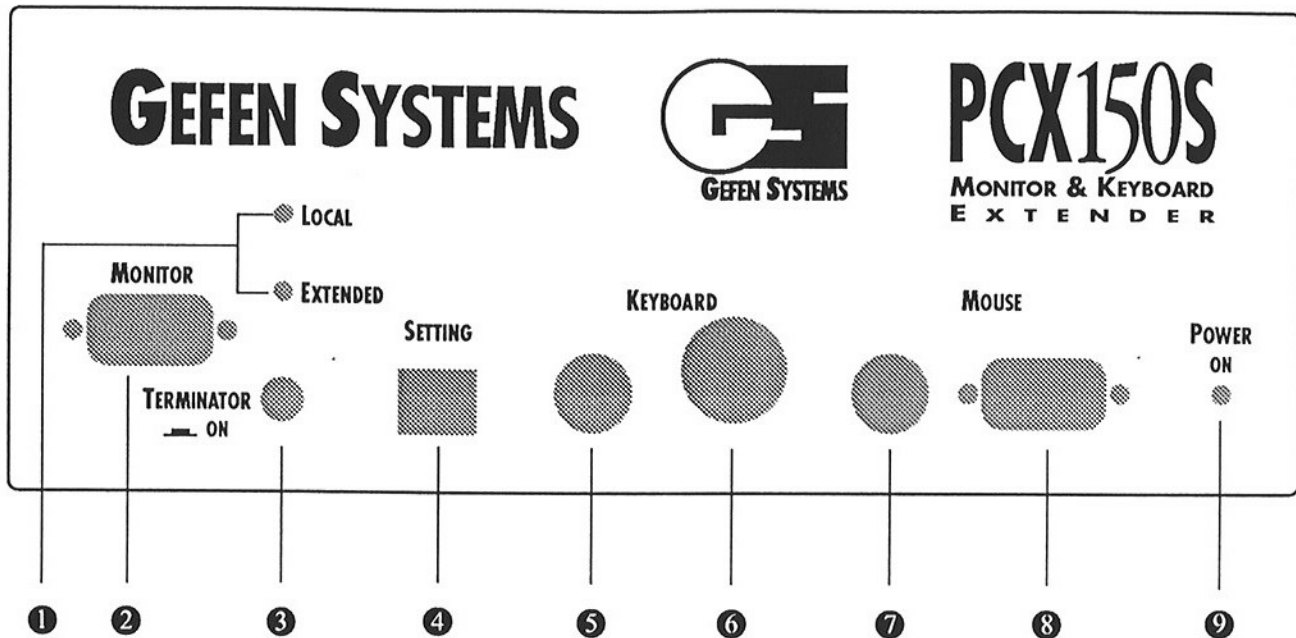
OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE PCX150 SYSTEM.

WARNING!: The PCX150 units are designed to operate on IBM and PC/AT compatible computers. Do not attempt to use this equipment with any other type computers.

1. Power down your computer.

2. **PCX150 Sender Unit**
   Remove keyboard, mouse, and monitor cable from computer. Install supplied keyboard, mouse, and monitor cable from computer to PCX150S (Sender unit) on back panel.
   WARNING: Only use same type cable on your keyboard and mouse.

3. **Local Workstation**
   Install your local workstation keyboard, mouse, and monitor on the PXC150S (Sender unit) front panel. Set terminator switch off for local monitor.

4. **Extension Cables**
   Install multiconductor RGB cable to the five BNC connectors on the back panel of the PCX150S and connect the RJ-48 Link cable. Connector the other ends of cables to the PCX150R unit (extended workstation).

5. **Extended Workstation**
   Install your extended workstation keyboard, mouse, and monitor on the PXC150R (Receiver unit) front panel.

6. **Setting Switch Configuration**
   Setting switches need to be configured for your application. Please refer to page 9.

6. **Power Up**
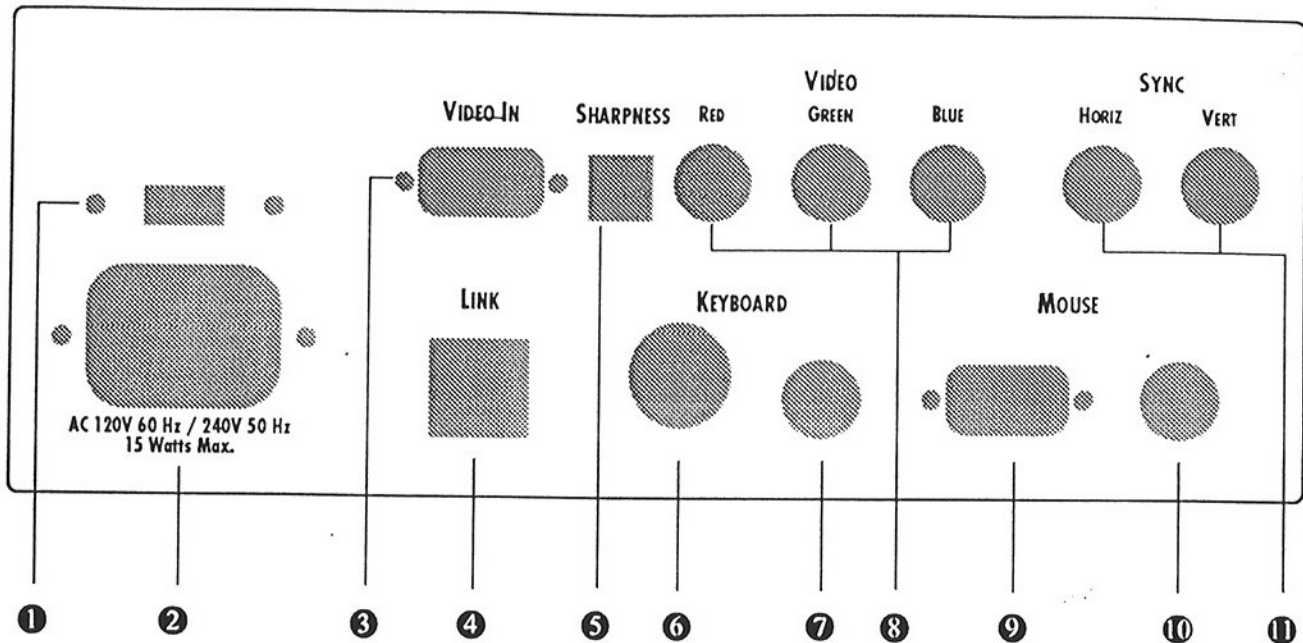   Power up your computer, and test.

PCX150S SEND FRONT PANEL LAYOUT

GEFEN SYSTEMS

GEFEN SYSTEMS

PCX150S
MONITOR & KEYBOARD
E X T E N D E R

LOCAL

MONITOR

EXTENDED

SETTING

KEYBOARD

MOUSE

POWER ON

TERMINATOR ON

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

FRONT PANEL FUNCTION DESCRIPTIONS

❶ **Status Indicator**
Indicates that the Local or Extended workstation is active.

❷ **Monitor**
HD-15 female connector which interfaces to your Local monitor.

❸ **Terminator Switch**
Terminates the video input if local monitor is not used. (**On** position with no monitor connected)

❹ **Setting**
The four dip switches set up the PCX150S switching configuration. Refer to page 9 for details.

❺ **PS/2 Keyboard**
Mini din 6 pin connector which connects to the PS/2 type keyboard (Local).

❻ **AT Keyboard**
Din 5 pin connector which connects to the AT type keyboard (Local).

❼ **PS/2 Mouse**
Mini din 6 pin connector which connects to the PS/2 type mouse (Local).

❽ **Serial Mouse**
DB-9 connector which connects to the serial type mouse (Local).

❾ **Power On Indicator**
Indicates that the unit is on and plugged in.

PCX150S SENDER BACK PANEL LAYOUT

BACK PANEL FUNCTION DESCRIPTIONS

❶ Voltage Selector Switch
Selector switch for 110-120 volts AC 60Hz or 220-240 Volts AC 50Hz.

❷ AC Input
Three Pin IEC receptacles.

❸ Video In
HD-15 Male connector which connects to the computer monitor port.

❹ Link
RJ-48 Modular Jack 8 pin connector which interfaces to a PCX150R (Receiver Unit).

❺ Sharpness
Controls the sharpness of the monitor being extended. Refer to page 10 for details.

❻ AT Keyboard
Din conector (5 pin) which connects to the computer keyboard port.

❼ PS/2 Keyboard
Mini Din conector (6 pin) which connects to the computer keyboard port.

❽ Video Output
RGB video outputs signal using 75 ohms BNC connectors which connects to the PCX150R unit.

❾ Serial Mouse
DB-9 female connector which connects to the computer com 1 or com 2 serial mouse port.

❿ PS/2 Mouse
Mini Din conector (6 pin) which connects to the computer PS/2 mouse port.

⓫ H/V Sync Outputs
Horizontal and vertical sync output signal using 75 ohms BNC connectors which connect to the PCX150R unit.

PCX150R FRONT PANEL LAYOUT

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GS GEFEN SYSTEMS

PCX150R
MONITOR & KEYBOARD
E X T E N D E R

MONITOR   KEYBOARD   MOUSE   POWER ON

❶   ❷   ❸   ❹   ❺   ❻

FRONT PANEL FUNCTION DESCRIPTIONS

❶ **Monitor**
HD-15 female connector which interfaces to
your Local monitor.

❷ **PS/2 Keyboard**
Mini din 6 pin connector which connects to the
PS/2 type keyboard (Local).

❸ **AT Keyboard**
Din 5 pin connector which connects to the AT
type keyboard (Local).

❹ **PS/2 Mouse**
Mini din 6 pin connector which connects to the
PS/2 type mouse (Local).

❺ **Serial Mouse**
DB-9 connector which connects to the serial
type mouse (Local).

❻ **Power On Indicator**
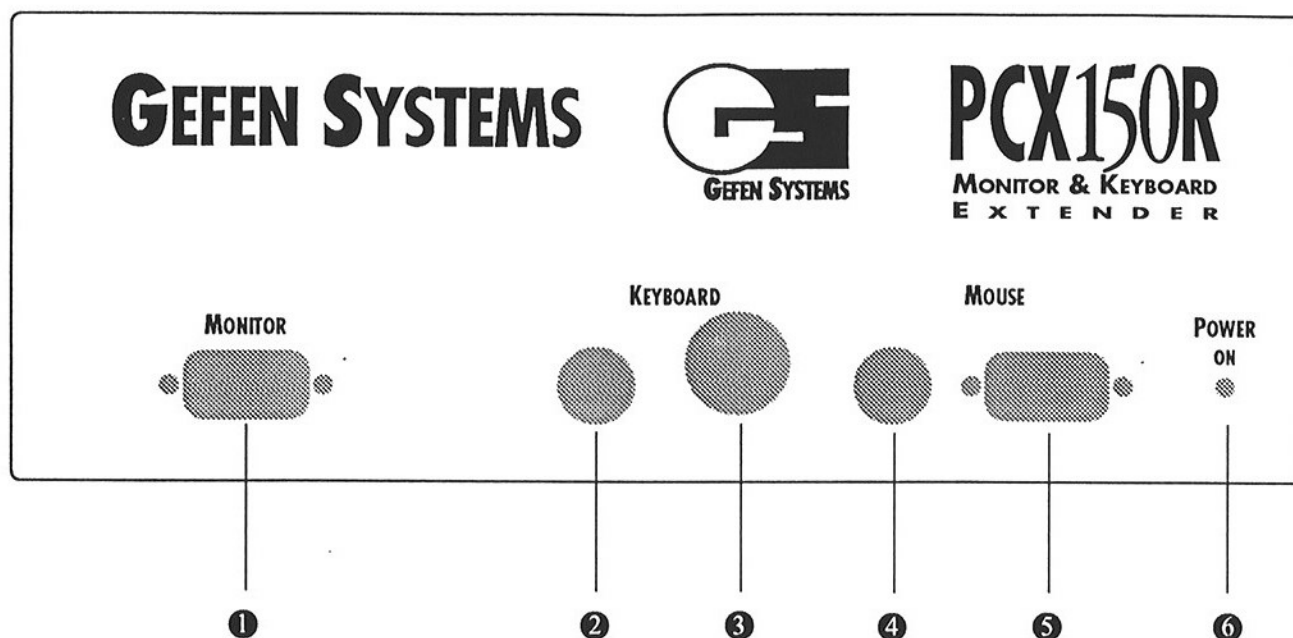Indicates that the unit is on and plugged in.

PCX150R BACK PANEL LAYOUT
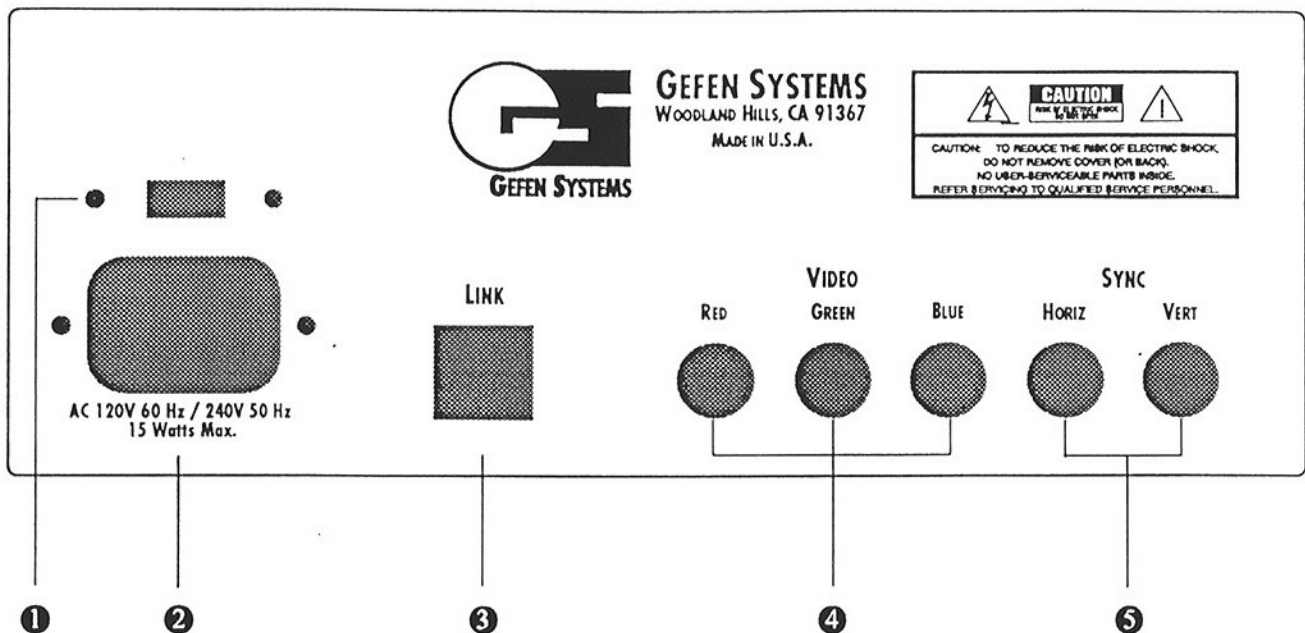
BACK PANEL FUNCTION DESCRIPTIONS

❶ Voltage Selector Switch
Selector switch for 110-120 volts AC 60Hz or
220-240 Volts AC 50Hz.

❷ AC Input
Three Pin IEC receptacles.

❸ Link
RJ-48 Modular Jack 8 pin connector which
interfaces to a PCX150S (Sender Unit).

❹ RGB Video Inputs
RGB video inputs signal using BNC connectors
which interface to the PCX150S.

❺ H/V Sync Inputs
Horizontal and vertical sync inputs signal using
BNC connectors which connect to the PCX150S
unit.

FRONT PANEL SETTING DESCRIPTION

SETTING

ON

OFF

1 2 3 4
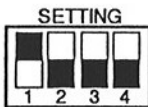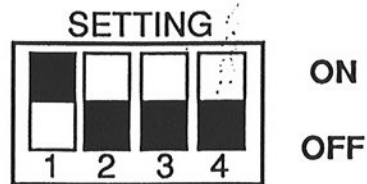
❶ **Dip Switch 1 ON**
Extended workstation keyboard & mouse is active only.
Local side is inactive.
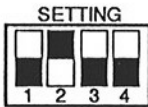
❷ **Dip Switch 2 ON**
Local workstation keyboard and mouse is active only.
Extended side is inactive.
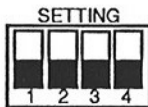
❸ **Dip Switches 1 & 2 OFF**
This mode allows both keyboard and mouse to switch
station control. Based on time setting switches 3 & 4.
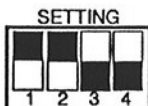
❹ **Dip Switches 1 & 2 ON**
This mode allows only keyboard to switch station control.
Based on time setting switches 3 & 4.
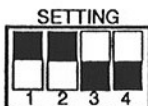
❺ **Dip Switches 3 & 4 OFF**
This mode sets a one second delay for switching between
workstation control.

❻ **Dip Switches 3 ON**
This mode sets a three second delay for switching between
workstation control.
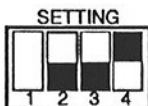
❼ **Dip Switches 4 ON**
This mode sets a five second delay for switching between
workstation control.
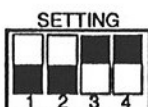
❽ **Dip Switches 3 & 4 ON**
This mode sets a ten second delay for switching between
workstation control.

SHARPNESS SETTING DESCRIPTION

Sharpness

The Sharpness selector switch can be selected for the RGB cable length shown below on the chart. Starting with (0) as an off position and 9 preset positions. Each position is based on 50 feet increments, or can be customized for best picture sharpness. The setting can vary based on the type of RGB cable bandwidth loss property being used. The chart below is based on Gefen Systems' RGB cable.

Installation Setup

1. **Set switch to (0) position.**
2. **View picture using text on white background.**
3. **Note if characters are fuzzy or not focused.**
4. **Start with position 1 and view picture (LOOKING FOR SHARPNESS).**
5. **Increment position for best picture sharpness.**

Switch Position #

RGB Cable Length
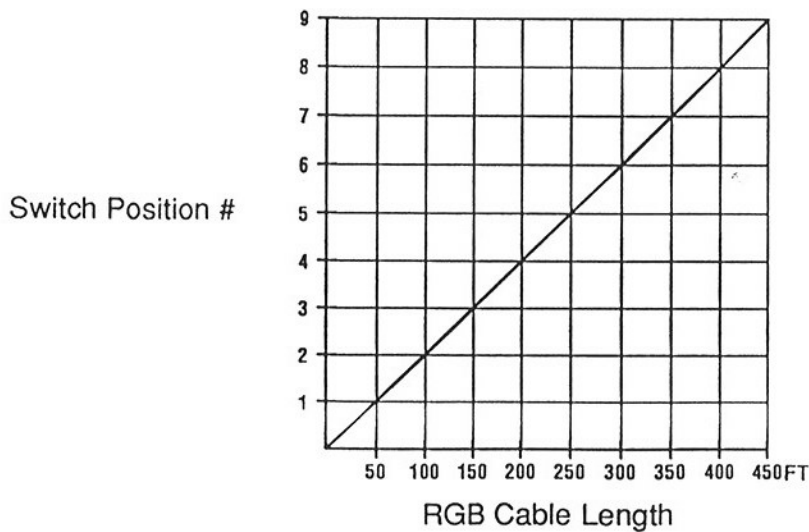
1 WORKSTATION EXTENDED - WIRING DIAGRAM
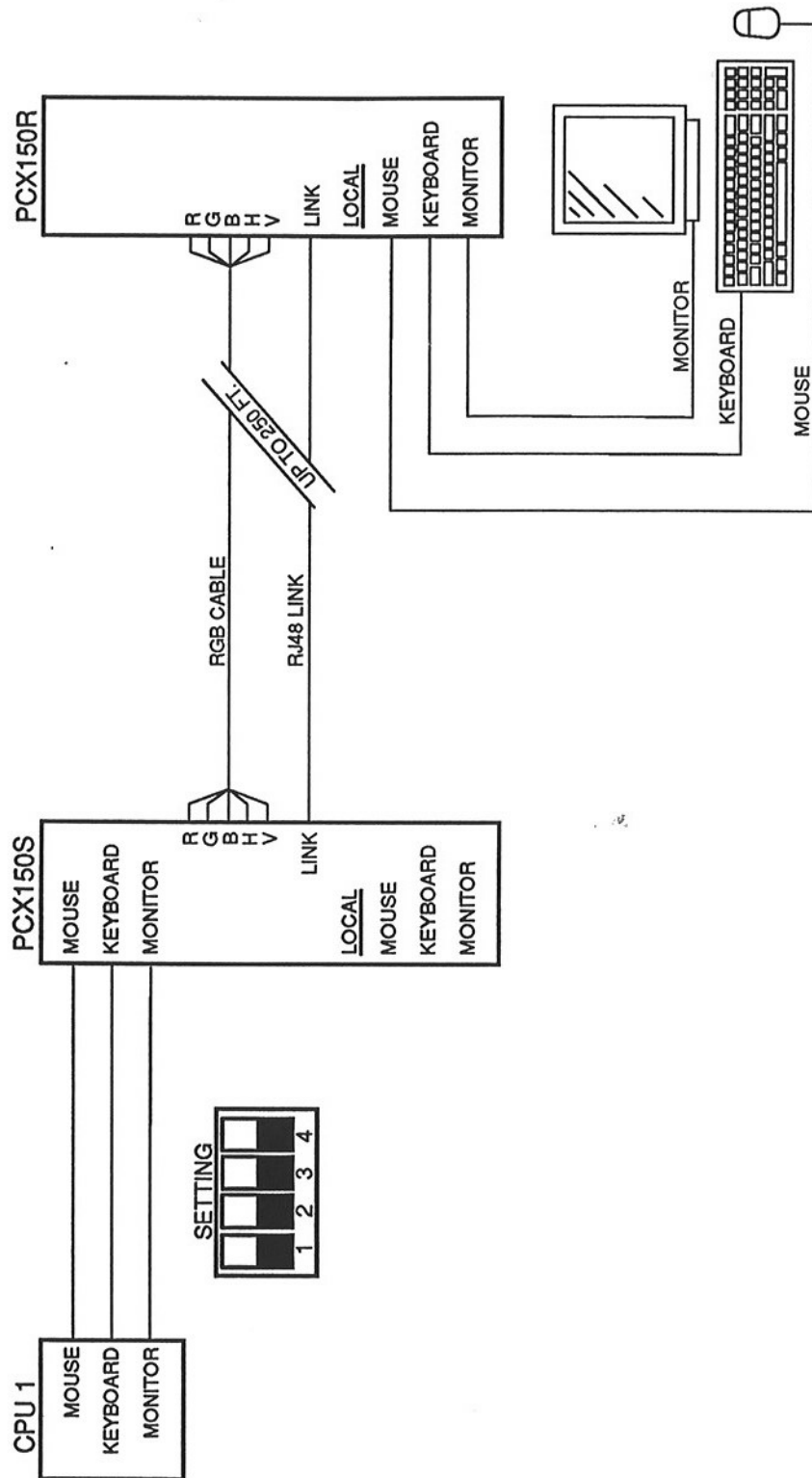
2 STATION - WIRING DIAGRAM
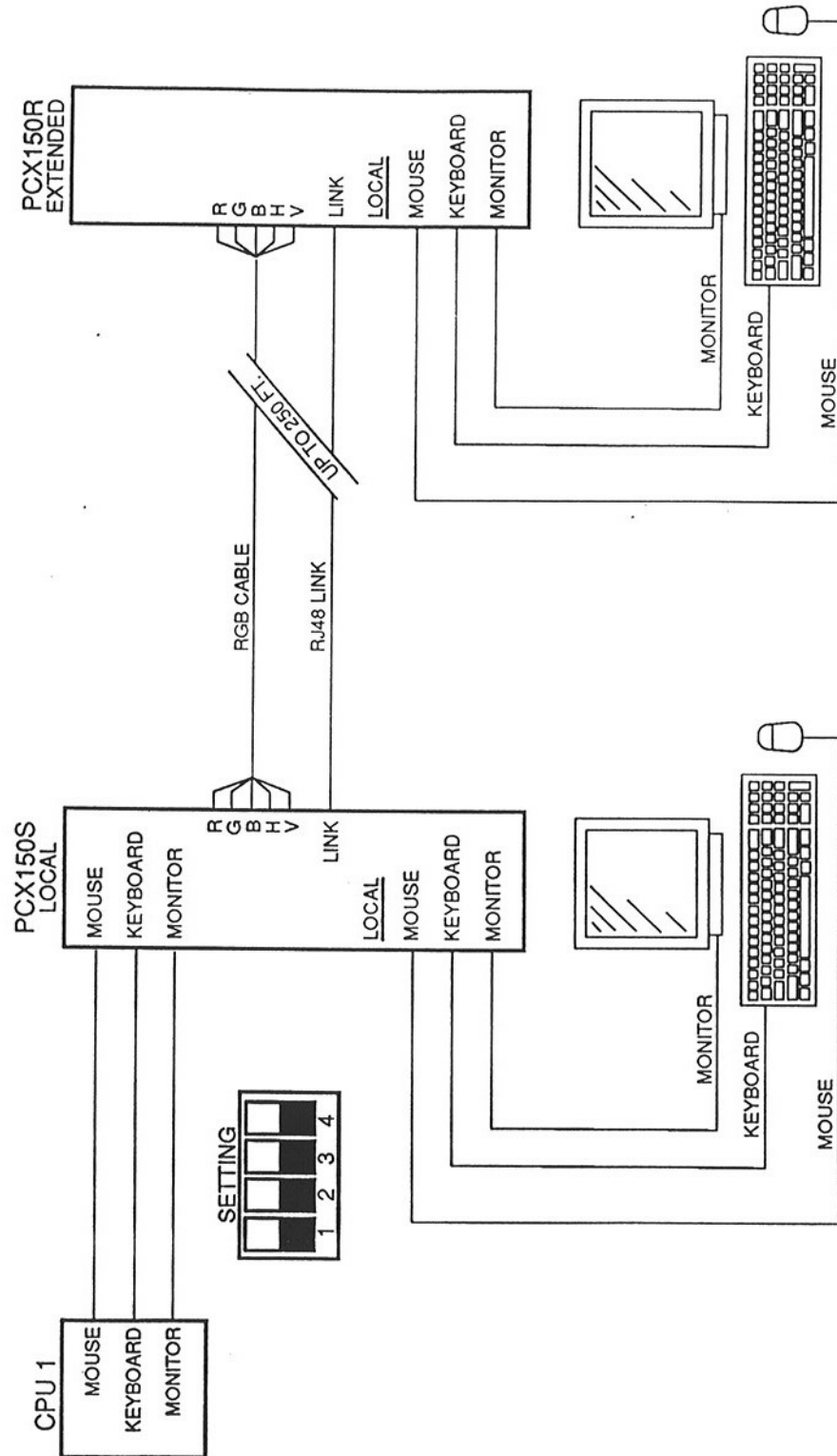
CONNECTOR PINOUTS

The illustrations below show the connectors as seen from the PXC150 unit or looking directly into the connector. The pin numbers and signals are standard.

AT KEYBOARD

MALE   5 DIN   FEMALE

PIN #	SIGNAL	PIN#	SIGNAL
1	Clock	4	Ground
2	Data	5	+5 v
3	NC		

PS/2 KEYBOARD / MOUSE

MALE   6 miniDIN   FEMALE

PIN #	SIGNAL	PIN#	SIGNAL
1	Data	4	+5 v
2	NC	5	Clock
3	Ground	6	NC

SERIAL MOUSE

MALE   9 PIN D SUB   FEMALE

PIN #	SIGNAL	PIN#	SIGNAL
1	N/C	6	N/C
2	RX	7	RTS
3	TX	8	N/C
4	DTR	9	N/C
5			

VGA VIDEO

MALE   15 HD   FEMALE

PIN #	SIGNAL	PIN#	SIGNAL
1	Red	9	N/C
2	Green	10	GND
3	Blue	11	ID0
4	ID2	12	ID1
5	GND Test	13	Horiz Sync
6	RED GND	14	Vertical Sync
7	GRN GND	15	ID3
8	Blue GND		

SPECIFICATIONS

Video Amplifier Bandwidth .... 350 MHz

Actual Bandwidth .... 120 MHz

Input Video Signal .... 1.2 volts p-p

Input Sync Signal .... 5 volts p-p (TTL)

Horizontal Frequency Range .... 15-100 KHz

Vertical Frequency Range .... 30 - 170 Hz

BNC Output Impedance .... 75 Ohms

Sharpness Control .... 25 to 450 Ft.

RGB output Gain .... +1 dB Gain

Link Connector .... RJ-48 Teleco

Keyboard Connectors .... PS/2 or AT

Mouse Connectors .... PS/2 or Serial

Power Consumption .... 15 Watts (max.)

Power Supply .... 100-240 volts

Dimensions .... 3.2"H x 8.4"W x 6"D

Rack Mountable .... 2 Rack spaces

Shipping Weight .... 8 lbs. (3.6 kg)

WARRANTY

Gefen Systems warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen Systems is notified within one (1) year from the date of shipment, Gefen System will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications.

Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen Systems assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen Systems, be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding PCX150 features and specifications is subject to change without notice.

ex•tend•it PCX Series Troubleshooting

Thank you for your recent purchase of our ex•tend•it PCX series monitor & keyboard extenders.
Please follow this sheet carefully before calling us, and we guarantee you'll be ex•tend•iting in no time!
If you still have any questions, you can reach our technical support staff at:

M-F 8:30am-5:30pm Pacific Standard Time
(818) 884-6294

Steps for a successful installation:

1 - Read the Manual !!!

2 - Check if all the cable connectors are firmly secured and also that all the cables supplied are
connected to and from the ex•tend•it boxes to the computer, monitor, keyboard and mouse.

• •

If you don't see a picture at the extended side, here is a simple test to try...

~The fix~

1- Connect the monitor to the loop-through connection on the PCX100S or PCX150S side and reboot the computer.

2- If you see a picture on the local side, now take the monitor to the extended side and you should see a picture there as well.

3- If you don't see a picture, it is a wiring problem, disconnect the cables and reconnect them back. You should see a picture now.

- -

If the mouse not moving or the keyboard not functioning...

~The fix~

1- Connect the keyboard and mouse to the local side, set the dip switch to all OFF and reboot the computer.

2- If the keyboard and mouse work, now connect the keyboard and mouse to the extended location, reboot the computer again and verify that it works at the extended side as well.

3- If it doesn't work at the extended side, check the wiring again by disconnecting and re-connecting the cables, reboot again... It should work now. (Try also setting the dip switch to remote only).

ex·tend·it PCX Series Troubleshooting

I see a picture, but the picture looks washed out!!

~The fix~

1- On the PCX100S or PCX150S "Sender" side, push the terminator switch to ON

My monitor is not getting the resolution I expected.

~The fix~

1- You may need to use a different monitor driver to set the screen resolution. (Select this from the PC control panel settings)

2- You may need to increase the VRAM or replace the video card.

3- Try using a lower monitor setting using the PC control panel setting to see if you get a good picture. If the picture looks good in lower resolution, try using another video driver with a higher resolution setting. (Select this from the PC control panel settings)

I connected two monitors one on the local side and one on the remote side But I get only one monitor to come up.

~The fix~

1- Connect the monitor to the loop-through connection on the PCX100S or PCX150S side and set the terminator switch to OFF.

2- Check the cables to verify that they are firmly secured and that they are making good contact.

3- Make sure that both monitors have the ability to sync to the same frequency setting.

What do I do if the picture is fuzzy?

~The fix~

1- The PCX150S sender unit incorporates a "Sharpness" control pot which can be adjusted to bring you the clearest picture possible

2- The PCX100S unit requires opening of the top lid and placing a jumper to the appropriate cable length equalization (see manual)

3- Try setting to a different video driver (Select this from the PC control panel settings)

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