IRIS TECHNOLOGIES, Inc.

PX Visual Routing Systems

PX 64 and 128 User's Manual

IRIS TECHNOLOGIES, Inc.
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PX 64 and PX 128 User Manual

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Introduction

Thank you for choosing a Visual Routing system from IRIS Technologies. We're confident you'll find the PX Series II Visual Router to be a powerful solution that will meet your routing needs, and exceed your expectations.

Hardware Overview

The Video Commander PX Series II Visual Router is an intelligent routing matrix capable of routing either composite video, or balanced or unbalanced audio. The front panel shows LED indicators for any routing crosspoint board within the unit. This panel may be removed to access the crosspoint boards, for first-time configuration or for maintenance. The back of the Visual Router contains the input channels and output channels, as well as the host computer interface connectors, power connectors and synchronization connectors. Below, you'll find a table that shows all the various dimensions of our Video Commander Routing Systems.

Routing System	Rack Units	Dimensions
PX-128 Video	11	19.25x17x17
PX-128 Audio	11	19.25x17x17
PX-128 Power Supply	2	3.5x17x17
PX-64 Video	3	5.25x17x17
PX-64 Audio	3	5.25x17x17
PX-64 Power Supply	2	3.5x17x17

Technical Support

If you encounter any difficulty using the PX Series II Visual Router and are unable to find a solution within this manual, please take advantage of our trained technical support personnel by calling:

- (412) 832-9855 Ext. 2 during normal business hours, 8 am - 5 pm EST.
- (412) 832-9855 Ext. 5 for emergency calls, or when calling after normal business hours.

When calling for technical support, please call from a telephone near the routing unit. It is much easier for us to assist you if we can actually guide you through the steps as we go. If your question is software related, please call from a phone near your computer.

Installation

This chapter discusses the setup and configuration of your router. The unit has been shipped with the following items:

- Visual Router matrix box.
- Power supply unit.
- 110VAC power cord.
- DC power supply cable(s).

Cabling, appropriate for your situation, may also be packed with your unit. Generally this includes an RS-422 converter and cable, or a six conductor RS-422 extension cable. Check the “Please Open This First” package included with your unit. Go over the check list carefully to be sure all equipment is included. If you are making your own cables, refer to Appendix B.

Unit Installation

- Carefully unpack the unit and other components, making sure you have everything you need. You may want to save the carton, in case there is a future need to ship the unit.
- Mount both the Visual Router and the power supply in a 19" rack unit. Because these units are quite heavy, you should use every available mounting hole to ensure a secure fit.
- Plug a six-conductor power cable from any empty jack on the power supply to a power jack on the back of the Visual Routing unit. (If you purchased a PX 128 Series Visual Router with backup power supply, you may use the second cable and jack as well.)
- Make certain the power supply is turned off. (The power switch, or switches, show a green color for the “on” position even if no power is applied). Plug the 110VAC power cable into the connector on the power supply, and then plug this cord into a grounded three-prong receptacle.
- The unit is not configured yet, so do not turn the power on at this time.

Communications Cable Installation

IRIS Technologies' Visual Routers are designed to connect several different IRIS routing or control devices to the same computer communications port. This is accomplished through a multi-drop RS-422 interface.

The host computer must have an RS-422 interface. IRIS Technologies offers a standard RS-232C to RS-422 adapter which can serve this purpose. This interface is cabled to the “data 1" or ”data in" jack of any IRIS Technologies router or control unit.

A six-conductor modular cable is used to extend the RS-422 line from the “data 2" or ”data out" jack of one device to the “data 1" or ”data in" jack of another device. Many devices may be reliably connected together in this manner. Sixteen devices are generally a safe limit.

The RS-422 standard specifies that the last device (the one with nothing connected to it's “data 2" jack) should be terminated. This means that configuration switches within the device should be set to terminate the line, as described later in this chapter. (Some devices do not have termination switches, and require a special terminator plug instead.) In practice, this is only necessary with long cable runs or lots of devices. If you suspect that your RS-422 communications are not working reliably, you should set the termination switches in your router.

Dip Switch Configuration

This section describes the dip switch settings inside the router. Please check that they are set to the factory defaults listed below.

Default Settings For The 10 Positions Dip Switch

Router Size	1	2	3	4	5	6	7	8	9	10
PX-128 Video	On	Off	Off	Off	Off	On	Off	Off	Off	Off
PX-128 Audio	Off	Off	Off	Off	On	On	Off	Off	Off	Off
PX-64 Video	On	Off	Off	Off	Off	On	Off	Off	Off	Off
PX-64 Audio	Off	Off	Off	Off	On	On	Off	Off	Off	Off

Note: To set the dip switches, you must remove the front panel of the matrix box. The large crosspoint circuit board(s) are exposed. Each board has a set of dip switches, one with ten positions and another with four positions. You can damage the router by removing or inserting a crosspoint board while the power is on. For this reason, all PX Series II Visual Routers have a magnetic safety switch. The board will shut off if the magnet is removed.

Default Dip Switch Descriptions

- Video Levels, 1 = On, 2 = Off
- Video and audio levels, 3 = Off, 4 = Off
- 5: Processor select. This switch is set at the factory to match the processor type installed on the crosspoint board. All PX Series Audio Routers ship with the Motorola 80C31 processor and have this switch set to “on.” PX Series Video Router ship with the DS80C320 processor and have this switch set to “off”.
- 6, 7: Baud rate. 6 = On, 7 = Off as set by the factory default of a 9600 baud rate. The following settings are valid depending on the indicated baud rate:

Baud Rate	6	7
2400	Off	Off
9600	On	Off
19200 (19.2K)	Off	On
57600 (57.6K)	On	On

- 8, 9:RS-422 termination. 8 = Off, 9 = Off
- 10: Asynchronous execute. 10 = Off

Default Dip Switch Settings (4 Positions)

This set of four dip switches assigns an address to the PX unit. Each router, or matrix box on the same RS-422 cable must have a unique address. All four boards within the PX-128 must also be set to the same address. A PX-128 is typically set to address “0" at the factory; any other address must be set manually. The switch settings and corresponding numeric addresses for the four position switch are shown in the following table.

Address	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Switch 1	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On
Switch 2	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On	Off	Off	On	On
Switch 3	Off	Off	Off	Off	On	On	On	On	Off	Off	Off	Off	On	On	On	On
Switch 4	Off	Off	Off	Off	Off	Off	Off	Off	On	On	On	On	On	On	On	On

Power-up and Check-out

Once the unit is configured and the front panel secured, attach a few reliable source and destination devices to ensure everything works.

Connect the video and or audio signals you wish to test to input or output channels, as appropriate for the device.

Turn on the power supply. The front panel LEDs will illuminate after a moment. Each board has its own set of LEDs, from left to right they read, ”Hi-Temp", “CPU,” “+5,” “-5", ”+15", “-15", ”Proc", and “Com”. The “Hi Temp,” “Proc” and “Comm” lights should be off, the rest should show a steady glow. (The Proc lights should have been lit for a few seconds right after power was turned on).

If the lights do not match those described, you may need to contact IRIS Technologies, Inc. technical support. The specific LED meanings are listed in Appendix A.

If you do not currently own any computer software suitable for testing the router, you may choose to use an ASCII terminal or a terminal emulator. (Terminal emulator programs are included with, or available for, most kinds of computer systems. The “Terminal” accessory in Microsoft Windows and the “HyperTerminal” accessory in Microsoft Windows 95 are examples of this type of tool. See your system documentation for details.)

With a terminal of some kind connected to the other end of the RS-422 interface, set the following communications parameters: 9600 baud, eight data bits, one stop bit, no parity and no handshaking. (If “no handshaking” is not an option, choose “software handshaking” or “XON/XOFF handshaking”).

Once the terminal is set up correctly, send the following characters to the router, [C1,2] this means connect channel one output to channel two output. The first bracket means the beginning of the command string, the second means the end of the command string in video language. Try other channels if you like.

Substitute any input numbers you wish to use for the “1" and any output number you wish to use for the “2”. You may see a flicker of the Comm lights as each character is sent; you should see the Proc lights all blink when the closing bracket character is received. After that, the connection should be routed.

Verify with your equipment that the signal routed properly. If you have difficulties, don't go on. Re-check your switch settings, serial cabling and terminal settings. If these check out OK, phone IRIS Technologies technical support for assistance.

If these connections work, your hardware is set up correctly. You can go on to connect other devices you wish to route.

Synchronize Options

- The PX Series Visual Router offers two synchronization options for causing signal switches to occur cleanly.
- The first option is use of the “sync” jack. Providing any sort of composite video signal containing a standard vertical sync pulse will cause the router to always switch during the vertical blanking interval. This is particularly useful if your facility has a majority of devices synchronized to a single master signal. There are two sync jacks so you can chain the sync from unit to unit.
- The second option is the “exe” jack. This extends the PX-128's default behavior of requiring all four internal crosspoint boards to switch at the same time. To make more than one unit switch concurrently, run a cable between the exe jacks of two units. Each PX-128 has two exe jacks so you can combine as many units as you like.
- Both of these options are completely automatic, no special configuration is required to use or ignore these features. However, since the exe sync is an extension of a configurable internal option, the board(s) inside the matrix box must all have switch 10 turned off for this feature to work.

For either of these options, it does not matter for any unit which jack (top or bottom) you use, as the signals are common between all units cabled together.

Working with Visual Routing

IRIS Technologies has taken the old difficult task of controlling the routing of signals to the ultimate level by developing a PC-based system. The Video Commander is the world’s first Visual Routing System. What does that mean? It means you can forget about poorly labeled mechanical keypads and pulling or pushing patch cables. IRIS

Technologies has taken everything difficult about signal routing and replaced it with state-of-the-art hardware connected to the most amazing software you've ever seen. Confusing, coded labels are replaced with colorful "button" filled panels right on your PC screen. Buttons for each device in your facility not only say so in text, there's a picture of the device on it as well! To connect signals simply select buttons from the screen. Different colors let anyone see at a glance exactly what's routed and where. Best of all, you give up no signal quality in exchange for the convenience visual routing provides.

Failure Recovery

PX Visual Routers are designed to recover from both power failures and internal failures quickly and easily. The onboard microprocessor brain is designed to start up by restoring the crosspoint matrix to the same set of connections present before the failure.

A board can be reset without disconnecting power in either of two ways: with the "X" reset command (see the next chapter) or by pressing the reset switch mounted on the circuit board. The reset switch requires an operating router with the front panel removed, as described later in this chapter.

The Routing Matrix (PX-128 only)

For diagnostic or maintenance purposes, it is important to recognize the duties of each board within the PX-128.

- Top board. The top board handles all the crosspoints between inputs 1-64 and outputs 1-64. This board has the added job of providing all status information requested by the terminal or host computer.
- Second board. The second board from the top handles all of the crosspoints between 65-128 and outputs 1-64.
- Third board. The third board from the top handles all of the crosspoints between inputs 1-64 and outputs 65-128.
- Bottom board. The bottom board handles all of the crosspoints between inputs 65-128 and outputs 65-128.
- The four boards can each be commanded and queried independently if needed, as described in the next chapter.

Working with an Open Router

There may be times when, for purposes of diagnostic testing, you may need to operate the unit with the front cover removed. With care, this may be done.

Each PX Series II unit has been designed with a magnetic safety switch. In the case of the PX-128 there is also an interlock arm in front of each board, with a magnet at the end of the arm. If the arm is pulled down, the magnet is removed from the front of the board and the board automatically shuts off. These mechanisms are intended to prevent removal of a circuit board while powered.

Each board additionally posses an "override" push-button switch near the magnetic switch, which you can use to temporarily bypass this lockout.

It is important to remember why the interlock is there in the first place: **you can damage the unit by inserting or removing a board with the power on!** If you operate the unit with the front panel removed, be sure you do not unseat a circuit board. The damage caused by such an event will require costly repairs which may not be warranted by IRIS Technologies, Inc.

Ordinarily, there should be no need to operate the router without the front cover securely in place.

Swapping Crosspoint Boards

- In the unlikely case of damage to one of the crosspoint boards, you may need to install a replacement board.
- Unscrew and remove the front panel cover of the exposed board(s).
- Verify that the board to be installed has the same switch settings as the board to be removed. Make any corrections necessary.
- If you are working with a PX-128 model, pull the safety interlock away from the circuit board to be removed. (If the unit is running, power to that board will be cut off.)
- Using both hands, firmly pull the damaged board free from the case. The first half inch of travel is very tight, after which the board should slide easily.
- Slide the new board into the guides on either side of the case from which the damaged board came. Make sure the board is lined up and level. Using both hands, firmly press the new board into the socket at the back of the case. This may not be as easy as it sounds, you must push very hard, until you hear a a solid click.
- Restore the safety interlock in front of the board if you're working on a PX-128. Replace the front panel. You are now free to resume normal operations.

> Note: In some cases, you may want to swap a board while the unit is powered up and running. This is an acceptable procedure although, of course, one quadrant of active crosspoints will be lost during the swap. Also see the next section, “preserving connections across a board swap.”

Preserving Connections Across Boards

If you change circuit boards in the unit, (as described on the previous page), the current connection information for that board changes, since each board stores its own crosspoint information.

If you need to preserve that connection information when changing boards, you need to transfer the chip containing the information.

> Note: Connection information can only be preserved when moving between boards with the same component layout, switch settings and firmware version. Different configurations will cause the state information to be lost.

The chip you need is a large, blocky rectangle marked with “DS1220" or ”DS1225." While an old, damaged board and a new replacement board are both out of the case, you can move this chip from one to the other. Carefully remove the chip you want to keep, using a small, flat screwdriver to pry it free of its socket. Place the chip in the

matching socket on the board where you want the information transferred. The new board will now start up in the last known state of the old board.

Note: This process is not guaranteed. In some cases the chip's information is garbled, either from the failure of the old board or in the process of transferring the chip.

PX Visual Router Protocol

For any communication to exist, the terminal or host computer must be properly cabled to one or more PX series routers, and all of the connected devices must be using the same communications format (for all IRIS Technologies, Inc. hardware, the baud rate is selectable by eight data bits, one stop bit and no parity are always fixed). You should ensure that you have proper communications, as described in Chapter 2.

With minor variations, the command protocol described in this section applies to all IRIS Technologies, Inc. PX series routers. Compatibility issues are noted in the page to follow for anyone working with a variety of PX router models.

Plane Addresses

As described in Chapter 2, the PX unit is set to a particular "address number" through its internal switches. Each PX router plane on the same cable has a distinct address number, so the terminal or host computer can designate which unit is being addressed.

> Note: Addresses are for the plane, not the router box. A single box may have several planes, or a plane may span several boxes. A plane is a matrix of input and output channels which can be interconnected.

All PX commands accept a plane address as the last component of the command This allows multiple devices connected by one data cable to know which device is being addressed. For example: **[C1,2,0]**. The "C" specifies a connection on input 1 to output 2 on plane 0. (Plane 0 is the default factory setting for the PX-128.)

For some PX commands, the plane number is optional, meaning that any and all routers on the cable should act on the command. This example was given back in Chapter 2: **[C1,2]** As you might guess, this tells every plane to connect input 1 to output 2. This is a convenient shortcut when you only have a single router plane on the cable.

Additionally, for any command which considers the plane number to be optional, you can specify a list of plane numbers. For example, to connect input 1 to output 2 on planes 0, 1 and 2, the command would be: **[C1,2,0,1,2].**

Note: The ability to specify a list of planes works on all PX Series II Visual Routers, but not on the original PX Series.

Single-plane Commands

The plane number is not optional for all commands, for a simple reason: since every router is on the same cable, a command which expects a reply form a router can only go to one plane. Otherwise, several devices might attempt to answer at the same time on the same cable, and the terminal or host computer would see a very scrambled response.

Thus, any command which expects a response requires a single plane number. The “H” command, which requests a quick “help” list of the PX commands, is an example. To ask for the help list from plane 0, this command is valid: **[H0]**. However, neither of these commands will generate any response, because the H command requires a single plane: **[H]** or **[HO,1,2].**

Deferred Routing

While the PX-128 has a simple command for making a connection between a source and a destination, there are times when you may want to use a slightly less direct approach. This is called “deferred routing,” and allows several routing requests to be entered but not actually completed until a subsequent command instructs the router to do them all together.

If you wish to make a number of routes happen at the same time, this is the best way to go. The switch appears “cleaner” if everything happens together. Under computer program control, the deferred routing of several connections is actually faster, since the router only has to wait once for a vertical sync pulse and then reprogram all the crosspoint circuits.

Deferred routing uses a modified version of the connect called a “preset” to set up a connection but not actually do it. A separate command called a “take,” instructs the router to do all the pending operations.

On the PX Series II you can shortcut the process still further, because a normal connect command will also cause any pending operations to happen at the same time. Thus, to do three connections together, it is most efficient to send two preset commands and a connect command, rather than three presets and a take. (This shortcut does not work on some PX routers with firmware versions below 3.0, however.)

Basic Commands

All PX commands have several features in common. The same example we've been using, to connect an input, will serve as a demonstration of these features **[C1, 2,0]**.

Attention and End Character.

Every PX command begins with an attention character marking the beginning of the command, and an end character marking the end of the command. The attention character is either Ctrl + A (ASCII code 1) or the open

square brace character (“[”). The end character is either a Carriage Return (Ctrl+M, or ASCII code 13) or the close square brace character (“]”). The router uses these characters to identify a valid command sequence.

Command Character.

Immediately after the attention character is the command character, which is non-numeric and identifies a particular command to perform. The connect command for example, has the command character “C” and may also be called the “C” command.

Parameter Values.

Some (but not all) commands take numeric values which contain necessary information for the command. These values, when present, are separated by commas and/or spaces. The connect command for example, requires an input channel number and an output channel number.

Plane Address.

All commands accept at least one plane number after any parameters, again using commas and/or spaces to separate numbers. As discussed earlier, some commands accept multiple addresses or none at all.

Routing Commands

This section lists the PX commands which perform routing operations.

C - Connect

syntax: C source, dest{,plane}

This causes an immediate connection between the input channel identified by source and the output channel identified by dest. A source of zero specifies that the destination is to be disconnected from all sources. This command may be sent to any number of planes, and generates no response. Examples: **[C1,2]** or **[C1, 2, 0]** or **[C1, 2, 0, 1, 2]**.

P - Preset

syntax: P source, dest{,plane}

This sets up a connection for inclusion in a subsequent connect or take command. Apart from not occurring immediately, this command works the same as the connect command. This command may be sent to any number of planes, and generates no response. Examples: **[P1,2]**, or **[P1,2,0]**, or **[P1,2,0,1,2]**

T - Take Presets

syntax: T[plane{,plane}]

This causes any preset commands to occur at the same time. This command may be sent to any number of planes, and generates no response. Examples: **[T]**, **[T0**] or **[T0,1,2]**.

L - Clear Presets

syntax: L [plane {,plane}]

This causes any preset routes to be discarded, so that they are not included in any subsequent connect or take commands. This is a good command to send in to initialize a program, just in case there is something “left over” in the routers' preset tables. This command may be sent to any number of planes, and generates no response. Examples: **[L]**, or **[L0]**, or **[L0,1,2]**.

Z - Special Connects

syntax: Z [plane{,plane}]

This causes the router to set up a certain list of connections for diagnostic purposes, where input 1 is connected to output 1, input 2 is connected to output 2, and so on. This command is only useful for testing purposes. This command may be sent to any number of planes, and generates no response. Examples: **[Z]**, or **[Z0]**, or **[Z0,1,2]**.

R - Reset Connects

syntax: R[plane{,plane}]

This causes the router to disconnect all of the output channels so that nothing is routed. This command may be sent to any number of planes, and no response. Examples: **[R]**, **[R0]**or **[R0,1,2]**.

Information Commands

This section lists the PX commands which request information from the router plane.

M - Query Router

syntax: M plane

This requests a diagnostic message from the router concerning the router unit and the specified plane. This is intended for informational and diagnostic purposes; other commands in this section are better suited for gathering information within computer programs. Example: **[M0]**

Program = R3

Version = 3.2

Table = PX-128v2

Level = 00

Dip = 0000110

Size = 128x128

Signal = Audio

Manufacture = IRIS Technologies, Inc.

A - Query Plane

syntax: A plane

This requests a simple, one-line display of information about the specified plane. The response is the plane number, possibly followed by some flag characters, and equal sign (" = "), the plane dimensions, a colon, and a letter representing the signal type. This command is not supported and is not supported on older PX router models with firmware versions below 3.0. Example: [**A0]**.

0v = 128x128:A

V - Query Version

syntax: V plane

This requests a simple, one-line display of the firmware class and version used in the router containing the specified plane. Example: **[V0]**

R3 Ver = 3.2

I - Query Table Version

syntax: 1 plane

This requests a simple, one-line display of the routing setup table name and version used in the router containing the specified plane. This command is not supported on older PX routers with firmware versions below 3.0. Example: **[I0]**

PX-128 Ver = 2

S - Query Connection Status

syntax: S plane

This requests a complete display of a connected source to destination (if any are indeed connected). The list is finished with a line containing the word "END," to help a computer program process the list. A program which cannot accept that much data at once should use the Q command instead. Example: **[S0]**

Output = Input

001 = 031

002 = 000

003 = 117

...(lines omitted for example)

126 = 019

127 = 127

128 = 000

END

Q - Query Destination

syntax: Q dest, plane

This requests a one-line display of a destination and the source, if any, connected to it. The destination is shown first, then an equal sign, and then the source number (or zero). This is equivalent to a single line of the response from the S command. This command is not supported on older PX routers with firmware versions below 3.0. Example: **[Q3,0]**

003 = 117

H - Help

syntax: H plane

This requests a summary of the commands available in the router. The syntax is indicated in the same manner as in this manual, with square braces for optional elements and curly braces for optional, repeatable elements. Example: **[H0]**

—IRIS Router Commands—

C source, dest {,plane}Connect sou

P source, dest {,plane}Preset a con

X - Factory Reset

syntax: X [planes {,plane}]

This command causes the router to deliberately corrupt its internal memory tables and then trigger a power-on reset sequence via the watchdog timer. This will cause a full diagnostic self-test and will reinitialize all memory in the same fashion as the router does the very first time it is turned on. All current state information, virtual routers,

parallel routers and option settings are lost and the factory default state is restored. This command is primarily intended for diagnostics, as well as final checkout at IRIS Technologies Inc. Example: **[X]**.

Appendix A

This section lists the meaning of the individual LED indicators on the front panel of the PX-128. There is a set of LEDs for each of the four circuit boards; each of the boards LEDs have the same significance.

Front Panel LEDs

- Hi-Temp. This indicator goes on if the unit is too hot for reliable operation. This generally means that the rack unit containing the PX-128 requires better ventilation for the heat generated.
- CPU. This indicator should be on during normal operation, and indicates that the power supply for the microprocessor section is functioning reliably. If this LED, or any of the other four power LEDs, is not on, the power supply may be malfunctioning (all four boards should show the same LEDs off), or the power section of the board is malfunctioning. (In some cases, however, turning the power off, then back on, can bring a stuck power relay back on-line.)
- Power. The following four indicators should be on during normal operation, and indicate that the crosspoint circuitry power supplies are functioning reliably. See the discussion above for the CPU indicator if one or more are not lit.

  +5, -5, +15, -15

- Proc. This indicator is lit each time the microprocessor is processing a command. The indicator also stays lit when waiting for a vertical sync for a connect or take operation. Several error conditions may also be indicated with this LED, listed on the next page.
- Comm. This LED is lit during the transmission of characters across the serial line from the host terminal or computer to the router. Since the time for character or even lengthy command transmissions is very short, the LED will just appear to flicker a little bit during commands. (If communications problems occur, this LED can help determine whether any data is reaching the router.)

Proc Light Error Codes

This section lists additional error situations, which may be indicated by particular behavior of the Proc LED. During power-up, the unit checks for error conditions, and if any are found, the Proc light is used to communicate the error by blinking a certain number of times in a steady, repeating pattern.

Please contact IRIS Technologies Technical Support if these situations arise.

- One blink: bad CPU setting. This indicates that switch 5 on the bank of ten configuration switches is set incorrectly for the CPU type present. Change the switch setting to correct this problem.
- Two blinks: EPROM error. This indicates that the program chip for the board has been damaged (or, possibly, that the microprocessor circuitry has a bad signal line).
- Three blinks: memory error. This indicates that the memory chip is damaged, or that the current configuration requires more memory than is installed.
- Four blinks: table setup. This indicates that the system was unable to perform the necessary initial setup for the plane information stored in the 4 EPROM tables. This should never occur in a system, which has been shipped from IRIS Technologies, Inc.
- Five blinks: serial port problems. This indicates that something is wrong with the serial port used for communicating with the host system.
- Proc light stuck on. If the Proc light stays on for more than a few seconds, something is wrong. If the system was running fine before, try disconnecting any Sync and/or Exe cables connected to the back of the unit. A bad signal may be causing the boards to get “stuck” waiting for a chance to complete a “connect” or “take”. Otherwise, the microprocessor section is probably damaged and cannot begin (or continue) normal operation.

Appendix B

This section presents the cable and connector details so you can make any necessary cables for the PX-128 system.

PX-128 Cables

RS-422 Cables

The communications line from a host to a PX router, or between routers, is a six-conductor RJ-45 modular cable also used for multi-line telephone systems. An extension cable is simply a straight-through modular cable. If wiring from an RS-422 interface, the connections are as follows:

Pin	Color	Signal
1	White	RXDA (from host)
2	Black	Gnd
3	Red	TxDA (to host)
4	Green	TxDB (to host)
5	Yellow	n/c
6	Blue	RxDB (from host)

Power Cable

The power cable runs between two six-conductor “Phoenix” plugs. The connections are as follows:

Pin	Signal
1	GND
2	-20 VDC
3	+20 VDC
4	-10 VDC
5	+10 VDC
6	GND

Video Cable

The Video cable is a standard shielded cable with a BNC connector at the router end. The center of the connector is the video signal, and the outside of the connector (shield) is signal ground.

Audio Cable

The audio cable is a shielded one- or two-conductor cable which connects to the unit through a three-conductor “Phoenix” plug (see illustrations below). The plug can be configured for either balanced or unbalanced audio.

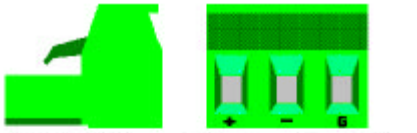
Balanced audio connections:

Pin	Signal
A (1)	Positive (+)
B (2)	Negative (-)
C (3)	Ground (Gnd)

Unbalanced audio connections:

Pin	Signal Input	Signal Output
A (1)	Audio Signal	Audio Signal
B (2)	Ground	No Connection
C (3)	No Connection	Ground

“Phoenix” Plug



Left Side View Wire Insertion View

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