

IPEX5000 Series Install Guide



This guide is for basic installation only.
For complete Digitalinx IP Deployment Guide go to www.libav.com or use a
QR reader to access the manual via QR code below.



Scan QR Code with your Smart-phone or Tablet

Important Safety Instructions

1. Read these instructions – All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions – The safety and operating instructions should be retained for future reference.
3. Heed all warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions – All operating and use instructions should be followed.
5. Do not use this apparatus near water – The appliance should not be used near water or moisture – for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized plug. A polarized plug has two blades with one wider than the other. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where it exits from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as; the power-supply cord or plug is damaged, liquid has been split or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. CAUTION: Servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
16. Do not install this equipment in a confined or built-in space such as a book case or similar unit. The equipment must remain in well ventilation conditions. Ventilation should not be impeded by covering the ventilation openings with items such as newspaper, table-cloths, curtains etc.
17. WARNING: Only use attachments/accessories (such as the battery etc.) specified or provided by the manufacturer.
18. WARNING: Refer to the information on the underside of the enclosure for electrical and safety information before installing or operating the apparatus.
19. WARNING: To reduce the risk of fire or electric shock do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and objects filled with liquids, such as vases, shall not be placed on apparatus.
20. CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
21. WARNING: The battery shall not be exposed to excessive heat such as sunshine, fire or the like.
22. WARNING: The all-pole mains switch located on rear panel is used as the disconnect device, the switch shall remain readily operable.
23. WARNING: DO NOT INGEST BATTERY. CHEMICAL BURN HAZARD.
24. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children.
25. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.



26. When the apparatus is not in use or during its relocation, take care of the power cord and plugs; e.g. tie up the power cord with cable tie or similar. The tie must be free from sharp edges and the like that might cause abrasion of the power cord. When put into use again ensure the power cord and plugs are not damaged. If any damage is found the power cord and plugs should be replaced by items either specified by the manufacturer or that have same characteristics as the original items.



27. This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

28. **WARNING:** To reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.



29. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.



30. Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.

31. **CAUTION:** To prevent electric shock hazard, replace grille. (CSA 60065, clause 5.3A)

Product Overview

IPEX5001 Encoder

The Digitalinx IP IPEX5001 transmits HDMI video and audio over a 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps with peak values up to 850Mbps. The IPEX5001 supports video signals up to 4K at 60 Hz 4:2:0 / 8 bit deep color, 4K at 24Hz 4:2:0 / 10 bit deep color for HDR10 support, HDCP 2.2 and multichannel audio support. An analog audio input port embeds analog audio with the video content, such as a DVI video source. An analog audio output port de-embeds stereo 2 channel audio from the HDMI content, while still passing stereo 2 channel audio to the HDMI output.

The IPEX5001 supports PoE power and can be powered remotely via PoE network switch eliminating the need for a nearby power outlet. The RS232 port relays commands from the IPEXCB controller and operates in a pass through mode to control a third party device such as a TV display or HDMI switcher. The USB host port connection is for connecting USB host devices such as a computer that is USB 2.0 Full Speed compliant up to 12Mbps that can communicate with client side devices connected to a decoder. USB routing follows the video route by default however USB communication can be free routed via API. The IPEX5001 features bi-directional IR support which follows the video route or can be routed freely via API command.

The IPEX5001 requires a single IPEX5002 for a point to point installation. When multiple IPEX5001 and/or IPEX5002 devices are in a system, an IPEXCB interface will be required.

IPEX5001-WP-W Encoder

The Digitalinx IP IPEX5001-WP-W transmits HDMI or VGA video and audio over a 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps with peak values up to 850Mbps. The IPEX5001-WP-W supports video signals up to 4K at 60 Hz 4:2:0 / 8 bit deep color, 4K at 24Hz 4:2:0 / 10 bit deep color for HDR10 support, HDCP 2.2 and multichannel audio support. An analog audio input port embeds analog audio with the video content, such as a DVI video source. An analog audio output port de-embeds stereo 2 channel audio from the HDMI content, while still passing stereo 2 channel audio to the HDMI output. The HDMI and VGA inputs on the IPEX5001-WP-W are auto switching and follow the last in / first out method and must be physically connected / disconnected to engage the auto switch.

The IPEX5001-WP-W supports PoE power and can be powered remotely via PoE network switch eliminating the need for a nearby power outlet. The RS232 port relays commands from the IPEXCB controller and operates in a pass through mode to control a third party device such as a TV display or HDMI switcher. The USB host port connection is for connecting USB host devices such as a computer that is USB 2.0 Full Speed compliant up to 12Mbps that can communicate with client side devices connected to the decoder. USB routing follows the video route by default however USB communication can be free routed via API. The IPEX5001-WP-W features a built in IR receiver built in on the plate, IR follows the video route or can be routed freely via API command.

IPEX5001-D Encoder

The Digitalinx IP IPEX5001-D transmits HDMI video and audio over a 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps with peak values up to 850Mbps. The IPEX5001-D is Dante enabled meaning that the encoder can on ramp two channel stereo audio either from the embedded HDMI audio stream or the analog audio 3.5mm input onto a Dante audio network. The multicast video and Dante audio IP streams are integrated into one Ethernet cable simplifying networked audio and video solution into one. An analog audio output port de-embeds stereo 2 channel audio from the HDMI two channel stereo embedded stream, while still passing stereo 2 channel audio to the HDMI output. The IPEX5001-D supports video signals up to 4K at 60 Hz 4:2:0 / 8 bit deep color, 4K at 24Hz 4:2:0 / 10 bit deep color for HDR10 support and HDCP 2.2 support.

The IPEX5001-D supports PoE power and can be powered remotely via PoE network switch eliminating the need for a nearby power outlet. The RS232 port relays commands from the IPEXCB controller and operates in a pass through mode to control a third party device such as a TV display or HDMI switcher. The USB host port connection is for connecting USB host devices such as a computer that is USB 2.0 Full Speed compliant up to 12Mbps that can communicate with client side devices connected to the decoder. USB routing follows the video route by default however USB communication can be free routed via API.

IPEX5002 Decoder

The Digitalinx IP IPEX5002 receives HDMI video and audio over a 1 gigabit network infrastructure using JPEG2000 encoding from the IPEX5001 and IPEX5001-WP-W encoder. The IPEX5002 outputs video signals natively from source or can be scaled to 1080p or 4K at 24/30Hz 4:4:4 with HDR10, HDCP 2.2 and multichannel audio support. An analog audio output port de-embeds stereo 2 channel audio from the HDMI content while still passing stereo 2 channel audio to the HDMI output. Depending on the needs of the installation, multiple IPEX5002 devices can be configured to make a video wall up to a 16x16 configuration.

The IPEX5002 supports PoE power and can be powered remotely via PoE network switch eliminating the need for a nearby power outlet. The RS232 port relays commands from the IPEXCB controller and operates in a pass through mode to control a third party device such as a TV display or HDMI switcher. The USB client port connections is for connecting USB client devices such as an interactive white board or HID devices that is USB 2.0 Full Speed compliant up to 12Mbps that can communicate with the host device connected to an encoder. USB routing follows the video route by default however USB communication can be free routed via API. The IPEX5001 features bi-directional IR support which follows the video route or can be routed freely via API command.

The IPEX5002 requires a single IPEX5001 for a point to point installation. When multiple IPEX50012 and/or IPEX5001 devices are in a system, an IPEXCB control box will be required.

Package Contents per Device

IPEX5001

1. Installation Guide
2. Power Supply with US, UK, EU, and AU adapters
3. 3-pin Removable Screw Terminal
4. Mounting Ears (2 ea)
5. IR Emitter
6. IR Receiver

IPEX5001-WP-W

1. Installation Guide
2. (1) Phoenix 2 pin male connector (3.5mm)
3. (1) 2 gang wall plate decora plastic cover with screws
4. (4) Mounting screws

IPEX5001-D

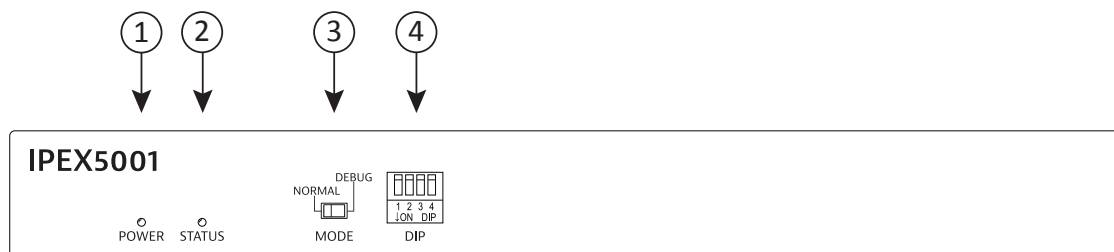
1. Installation Guide
2. Power Supply with US, UK, EU, and AU adapters
3. 3-pin Removable Screw Terminal
4. Mounting Ears (2 ea)
5. IR Emitter
6. IR Receiver

IPEX5002

1. Installation Guide
2. Power Supply with US, UK, EU, and AU adapters
3. 3-pin Removable Screw Terminal
4. Mounting Ears (2 ea)
5. IR Emitter
6. IR Receiver

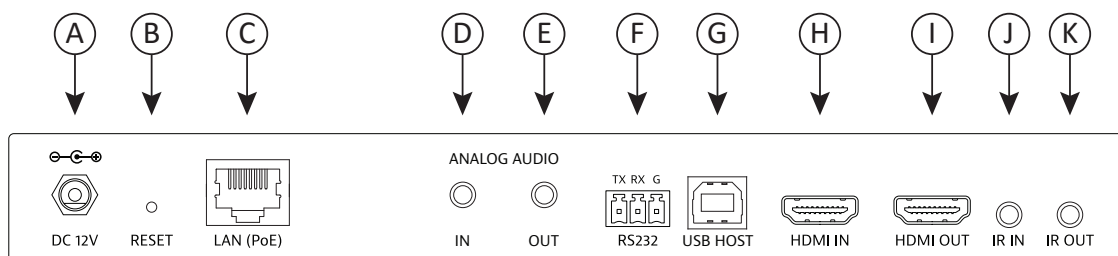
Front and Rear Panels

IPEX5001 Front Panel

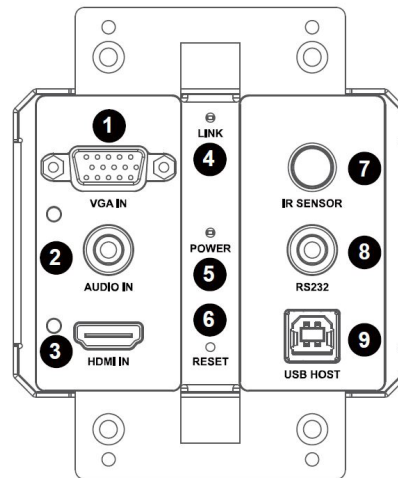


1. Power indicator
2. Status indicator
3. RS232 Function Switch
4. DIP Switch for ID Modes

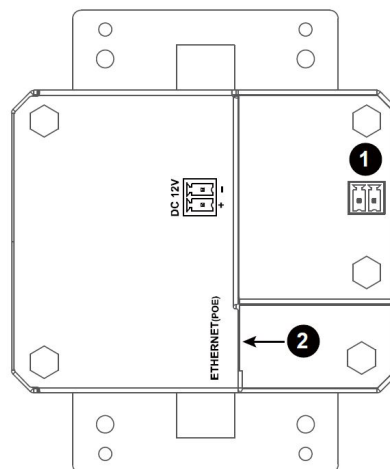
IPEX5001 Rear Panel



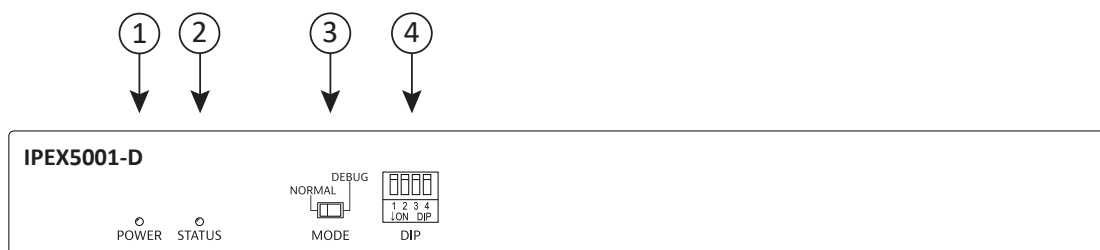
- A. 12V DC power input
- B. RESET button
- C. LAN connection with PoE support
- D. Analog audio input
- E. Analog audio output
- F. RS232 connection
- G. USB Host connection
- H. HDMI input
- I. HDMI output
- J. IR input
- K. IR output

IPEX5001-WP-W Front Panel

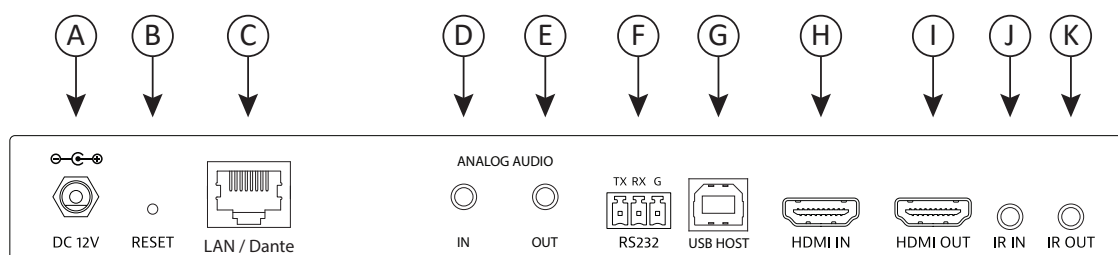
1. VGA input port
2. Audio input port (embedded with VGA source)
3. HDMI input port
4. Link LED
 - When *SOLID*: encoder is connected to both an active source and decoder
 - When *Blinking*: encoder is disconnected from an active source or decoder
 - When *OFF*: encoder is powered off or network is down
5. Power LED
 - When *SOLID*: device is powered on
 - When *OFF*: encoder is powered off or network is down
6. Factory reset
7. IR receiver / sensor
8. RS232 control port
9. USB host port

IPEX5001-WP-W Rear Panel

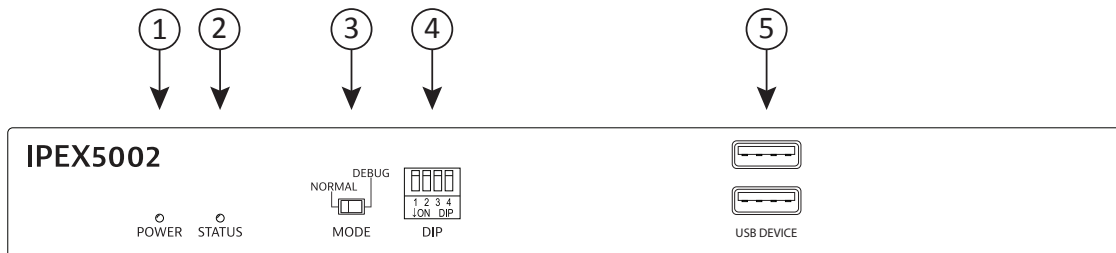
1. DC12 DC power input
2. LAN connection with PoE support

IPEX5001-D Front Panel

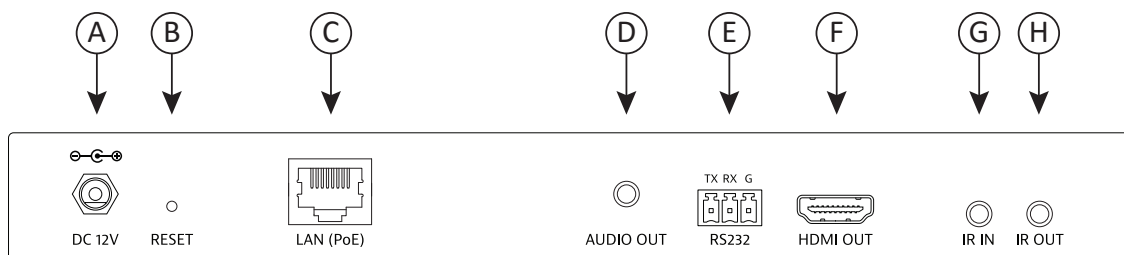
1. Power indicator
2. Status indicator
3. RS232 Function Switch
4. DIP Switch for ID Modes

IPEX5001-D Rear Panel

- A. 12V DC power input
- B. RESET button
- C. LAN / Dante connection with PoE support
- D. Analog audio input
- E. Analog audio output
- F. RS232 connection
- G. USB Host connection
- H. HDMI input
- I. HDMI output
- J. IR input
- K. IR output

IPEX5002 Front Panel

1. Power indicator
2. Status indicator
3. RS232 Function Switch
4. DIP Switch for ID Modes
5. USB ports for keyboard or mouse

IPEX5002 Rear Panel

- A. 12V DC power input
- B. RESET button
- C. LAN connection with PoE support
- D. Analog audio output
- E. RS232 connection
- F. HDMI output
- G. IR input
- H. IR output

System Considerations

Gigabit Switch Features

A high quality, managed Level 2 gigabit PoE switch with a high bandwidth backplane should be used in the installation. The two primary features to look for in the switch are support for multicast with jumbo frames and support for IGMP snooping, which are required technologies for stable video signals.

Be sure to verify the PoE gigabit switch can provide adequate wattage (PoE budget) to support all IPEX5000 devices connected to a switch. Each IPEX5000 requires 6w-9w of PoE budget to operate appropriately.

Gigabit Switch Size(s)

When calculating the size of switch needed, the following devices need to be considered:

1. Number of sources
2. Number of displays
3. IPEXCB
4. Wireless access point for iPad app or Windows app (optional)
5. Hardwire port for Windows app (optional)

System Bandwidth

250-850 Mbps should be considered when calculating the bandwidth for a 4k video stream. 150-750 Mbps should be considered when calculating the bandwidth for a 1080p/60 video stream. These values cover the encoded stream plus packet overhead. When using multiple encoders on a multi switch environments it is important to load balance the streaming encoders evenly on each switch to allow for proper throughput. A 10Gb uplink between one switch to another can typically accommodate 10-12 encoders streaming 4K video content in this type of network infrastructure.

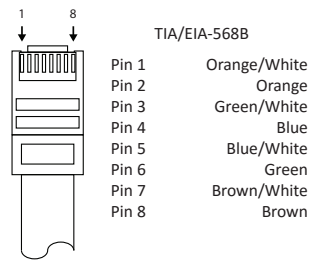
Due to the nature of JPEG2000 compression, the IPEX5000 encoding method is VBR (Variable Bit Rate). In a VBR stream, the encoder will transmit different bit rates of data depending on how much information is present in the particular frame of video, while averaging the stream to the bandwidth hardcoded into the chipset. A solid color frame will use less bandwidth than a multicolor frame of video.

External Devices

It may be necessary to use external HDMI devices in conjunction with the DigitalinXIP video system to create specific and customized functionality for an end user. When using devices such as audio de-embedders, extenders or HDMI distribution systems with DigitalinXIP devices it is suggested that custom HDMI circuits be tested before deployed in the field to address any interoperability, EDID and HDCP issues that may arise.

LAN Cabling

For all LAN cabling, the EIA/TIA-568B crimp pattern must be used on Category 5e or greater cable. In areas with large amounts of electromagnetic (EM) or radio frequency (RF) interference, a shielded variety of Category 5e or greater cable is recommended with shielded connectors on both ends of the selected cable. For high bandwidth content such as 4K content, it is suggest that Cat6 or greater be used.



IPEXCB Controller

In addition to the gigabit switch, the IPEXCB is required for the encoders and decoders to communicate with each other regardless of system layout, such as one to many.

System Control

There are multiple ways to control the system once installation is complete. There is the DigitalinxIP Control software for iPad and Windows. While not recommended, the IPEXCB can be controlled through a web browser. A third party controller can communicate directly with the IPEXCB via the LAN (CONTROL) port or via RS232.

Heat and Ventilation

All electronics generate heat, and excessive heat can cause electronic devices to fail prematurely. The IPEX5001 and IPEX5002 devices are passively cooled and should not be stacked on top of each other or other devices. Please leave at least 1 ½ inches (approximately 35-40 mm) of open space by the side vents to provide adequate airflow.

The gigabit switch will likely have active cooling. Please follow the manufacturer's installation instructions for proper mounting in an equipment rack.

Backup Power

It is always a good practice to install a high quality UPS (uninterruptible power supply) with line filtering with expensive electronics. The UPS can provide "clean" power to all the devices in the equipment rack while also providing enough time to properly shut down connected devices in the event of an extended power failure.

HDMI CEC

The IPEX5002 can turn on and turn off connected displays via CEC. This technology has been a part of the HDMI specification for years. The Digitalinx IP Control software for Windows and iPad can turn on and off the displays for easy end user control.

Source Content Resolution

Even though the IPEX5000 series devices support 1080i, this resolution may cause artifacts through the encoding process. Please set the output resolution of devices showing 1080i content to 720p or 1080p.

Installation Instructions

Point to Point Installation - IPEX5001 / IPEX5002

1. Connect Category 5E or greater twisted pair cable with the TIA/EIA-568B crimp pattern between the LAN port on the encoder (IPEX5001) and the decoder (IPEX5002).
2. Set the DIP switches on the front of the IPEX5001 and IPEX5002 to the same value, other than all up.
3. Connect the included power supply to the 12V DC power input of the encoder and decoder.
4. Connect an HDMI cable between the display and the decoder (IPEX5002).
5. Connect an HDMI cable between the source and the encoder (IPEX5001).
6. Power on attached audio/video devices.
7. Connect the included power supply connected to the encoders and decoders to an AC outlet.

This method will also work with a one to many installation.

Reset Point to Point Installation to Factory Default

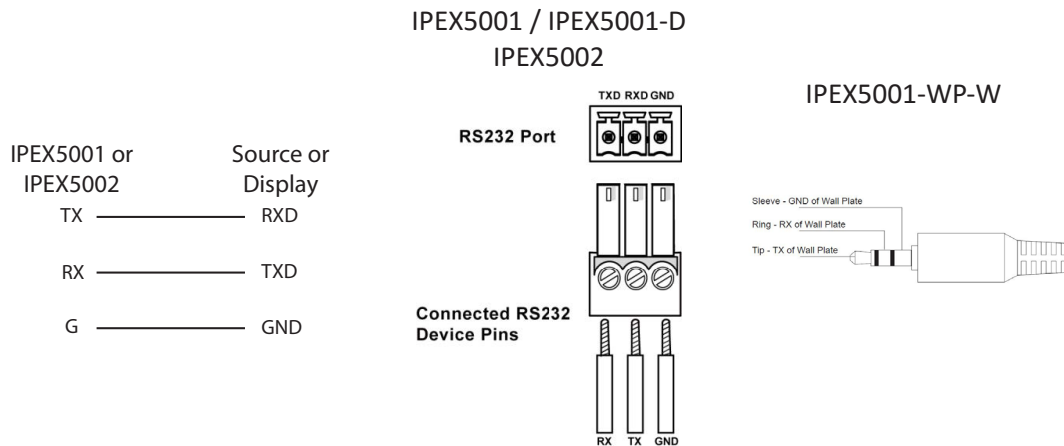
1. Disconnect power from the IPEX5001 and IPEX5002.
2. Set the DIP switches on the front of the IPEX5001 and IPEX5002 to all up.
3. Continue with Basic Matrix Installation instructions.

Basic Matrix / Networking Installation

1. Configure the gigabit switch for IP video operation. Liberty has guides for many common switch manufacturers on the IPEXCB product page on the Liberty website (www.libav.com).
2. Turn off power and disconnect the audio/video equipment by following the manufacturer's instructions.
3. Turn off power to the configured switch.
4. Connect Category 5E or greater twisted pair cable with the TIA/EIA-568B crimp pattern between the LAN port on the encoder(s) (IPEX5001 / IPEX5001-WP-W / IPEX5001-D) and the gigabit switch.
5. Connect Category 5E or greater twisted pair cable with the TIA/EIA-568B crimp pattern between the LAN port on the decoder(s) (IPEX5002) and the gigabit switch.
6. If the gigabit switch cannot provide power or enough power to the IPEX5001 / IPEX5001-WP-W / IPEX5001-D or IPEX5002, connect the included power supply to the 12V DC power input of the device. If the gigabit switch cannot provide enough power, disable the PoE function of the connected LAN ports on the switch.
7. Connect an HDMI cable between the display and the decoder (IPEX5002).
8. Connect an HDMI cable between the source and the encoder (IPEX5001 / IPEX5001-WP-W / IPEX5001-D).
9. Power on attached audio/video devices.
10. Apply power to the gigabit switch.
11. If the gigabit switch cannot provide power to the encoders or decoders, connect the included power supply connected to the encoders and decoders to an AC outlet.

RS232 Connections

To use the RS232 control transport capabilities of the IPEXCB or the RS232 extension capabilities of the encoders and decoders, connect the TX, RX, and ground control signal wires to the removable 3-pole terminal block. Consult the manual of the source or display device(s) to determine which pins the TX and RX signals are carried on. Be sure to always connect TX to RX and RX to TX.



Analog Audio Connections

The analog audio input and output connections on the IPEX5001 / IPEX5001-D and the analog audio output connections on the IPEX5002 use standard 3.5 mm TRS connectors.

Note: Two channel audio in/out capability is only achieved when using the 2CH Stereo EDID setting in the Digitalinx IP Configurator software under *EDID SETTINGS*. Please see the Digitalinx IP Deployment Guide for configuring this functionality.

USB Connections

The IPEX5000 system is USB 2.0 Full Speed compliant up to 12Mbps

The USB Host port on the IPEX5001 / IPEX5001-D / IPEX5001-WP-W is provided to allow control of a PC source from a remote location. The USB Device ports on the IPEX5002 are provided to add keyboard, mouse or interactive white board control for the host PC connected to the routed encoder.

The USB signal from the decoder to the encoder follows the video route by default however this can be free routed using the DigitalinxIP API. See DigitalinxIP Programming Guide online at libav.com

IR Connections

The IR connections on the IPEX5000 encoders and IPEX5002 provide a means to control remote IR equipment. The IR signals between the IPEX5000 encoders and IPEX5002 follow the video route however IR can be free routed via API. See DigitalinxIP Programming Guide online at libav.com

Please ensure power is disconnected from the encoders and decoders before connecting the IR receiver to the IR input ports on the devices.

IPEX5001 Technical Specifications

Input/Output Connections	
HDMI Input	One (1) HDMI Type A Receptacle
HDMI Output	One (1) HDMI Type A Receptacle
LAN	One (1) 8P8C port (Shielded RJ45)
Power	One (1) 5.5 mm OD, 2.6 mm ID Threaded Barrel
RS232 Port	One (1) 3-pin Removable Terminal Block Connector
USB Device	One (1) USB Type B Port
Audio Input	One (1) 3.5 mm TRS Receptacle
Audio Output	One (1) 3.5 mm TRS Receptacle
IR Input	One (1) 3.5 mm TRS Receptacle
IR Output	One (1) 3.5 mm TRS Receptacle
Reset	One (1) Momentary Push Button
Mode	One (1) Two Position Slider Switch
DIP	One (1) Four Position DIP Switch
Supported Audio, Video and Control	
Video Resolutions	SMPTE: 480p, 576p, 720p, 1080i, 1080p, 2160p/30 (4:4:4), 2160p/60 (4:2:0) VESA: Resolutions up to 1920x1200 Color Depth: 24, 30, 36 bit
Video Compliance	HDMI 1.4 and HDCP 1.4/2.2
Embedded Audio	Up to PCM 8 channel, Dolby Digital True HD, DTS-HD Master Audio, Dolby Atmos and DTS-X
ARC (Audio Return Channel)	No
HEC (HDMI Ethernet Channel)	No
CEC (Consumer Electronics Control)	No
Supported Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
USB Compliance	USB 2.0 Full Speed up to 12Mbps
Streaming Signal Characteristics	
Maximum Distance (point to point)	100 m (328 ft)
Cable Requirements	Category 5e or greater with TIA/EIA-568B crimp pattern
Encoding Data Rate	2160p: Average; 250 Mbps 1080p: Average; 150 Mbps
Encoding Method	VBR
End to End Latency	17-33 ms (1-2 fps)
Chassis and Environmental	
Construction	Black Steel
Dimensions (H x W x D)	25 mm x 220 mm x 130.2 mm (0.98in x 8.66 in x 5.13 in)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Power and Regulatory	
Power Input	12V DC 1A or 48V DC PoE (Power over Ethernet)
Power over Ethernet (PoE) Compatibility	802.3af Alternative A
Power Consumption	6 watts
ESD Protection	8kV air, 4kV contact
Regulatory	FCC, CE, RoHS
Other	
Warranty	5 years
Diagnostic Indicators	Power and Status
Included Accessories	Installation Guide, Power Supply with US, UK, EU and AU adapters, 3-pin Removable Screw Terminal, Mounting Ears (2 ea), IR emitter, IR receiver
IP Controller	IPEXCB
Compatible Decoder	IPEX5002

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

IPEX5001-WP-W Technical Specifications

Input/Output Connections	
Video Input	One (1) HDMI (Type A Receptacle), One (1) VGA (DB-15)
LAN	One (1) 8P8C port (Shielded RJ45)
Power	One (1) 2 pin phoenix connector
RS232 Port	One (1) 3.5mm
USB Device	One (1) USB Type B Port
Audio Input (VGA)	One (1) 3.5 mm TRS Receptacle
Reset	One (1) Momentary Push Button
Supported Audio, Video and Control	
Video Resolutions	SMPTE: 480p, 576p, 720p, 1080i, 1080p, 2160p/30 (4:4:4), 2160p/60 (4:2:0) VESA: Resolutions up to 1920x1200 Color Depth: 24, 30, 36 bit
Video Compliance	HDMI 1.4 and HDCP 1.4/2.2
Embedded Audio	Up to PCM 8 channel, Dolby Digital True HD, DTS-HD Master Audio, Dolby Atmos and DTS-X
ARC (Audio Return Channel)	No
HEC (HDMI Ethernet Channel)	No
CEC (Consumer Electronics Control)	No
Supported Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
USB Compliance	USB 2.0 Full Speed up to 12Mbps
Streaming Signal Characteristics	
Maximum Distance (point to point)	100 m (328 ft)
Cable Requirements	Category 5e or greater with TIA/EIA-568B crimp pattern
Encoding Data Rate	2160p: Average; 250 Mbps 1080p: Average; 150 Mbps
Encoding Method	VBR
End to End Latency	17-33 ms (1-2 fps)
Chassis and Environmental	
Dimensions (H x W x D)	105.6 mm x 89 mm x 43.5 mm (4.1in x 3.5 in x 1.7 in)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Power and Regulatory	
Power Input	12V DC 1A or 48V DC PoE (Power over Ethernet)
Power over Ethernet (PoE) Compatibility	802.3af Alternative A
Power Consumption	6 watts
ESD Protection	8kV air, 4kV contact
Regulatory	FCC, CE, RoHS
Other	
Warranty	5 years
Diagnostic Indicators	Power and Status
Included Accessories	Installation Guide, (1) 2 pin phoenix connector, (1) 2 gang decora wall plate cover with screws, (4) mounting screws
IP Controller	IPEXCB
Compatible Decoder	IPEX5002

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

IPEX5001-D Technical Specifications

Input/Output Connections	
HDMI Input	One (1) HDMI Type A Receptacle
HDMI Output	One (1) HDMI Type A Receptacle
LAN	One (1) 8P8C port (Shielded RJ45)
Power	One (1) 5.5 mm OD, 2.6 mm ID Threaded Barrel
RS232 Port	One (1) 3-pin Removable Terminal Block Connector
USB Device	One (1) USB Type B Port
Audio Input	One (1) 3.5 mm TRS Receptacle
Audio Output	One (1) 3.5 mm TRS Receptacle
IR Input	One (1) 3.5 mm TRS Receptacle
IR Output	One (1) 3.5 mm TRS Receptacle
Reset	One (1) Momentary Push Button
Mode	One (1) Two Position Slider Switch
DIP	One (1) Four Position DIP Switch
Supported Audio, Video and Control	
Video Resolutions	SMPTE: 480p, 576p, 720p, 1080i, 1080p, 2160p/30 (4:4:4), 2160p/60 (4:2:0) VESA: Resolutions up to 1920x1200 Color Depth: 24, 30, 36 bit
Video Compliance	HDMI 1.4 and HDCP 1.4/2.2
Embedded Audio	Up to PCM 8 channel, Dolby Digital True HD, DTS-HD Master Audio, Dolby Atmos and DTS-X
ARC (Audio Return Channel)	No
HEC (HDMI Ethernet Channel)	No
CEC (Consumer Electronics Control)	No
Supported Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
USB Compliance	USB 2.0 Full Speed up to 12Mbps
Streaming Signal Characteristics	
Maximum Distance (point to point)	100 m (328 ft)
Cable Requirements	Category 5e or greater with TIA/EIA-568B crimp pattern
Encoding Data Rate	2160p: Average; 250 Mbps 1080p: Average; 150 Mbps
Encoding Method	VBR
End to End Latency	17-33 ms (1-2 fps)
Chassis and Environmental	
Construction	Black Steel
Dimensions (H x W x D)	25 mm x 220 mm x 130.2 mm (0.98in x 8.66 in x 5.13 in)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Power and Regulatory	
Power Input	12V DC 1A or 48V DC PoE (Power over Ethernet)
Power over Ethernet (PoE) Compatibility	802.3af Alternative A
Power Consumption	6 watts
ESD Protection	8kV air, 4kV contact
Regulatory	FCC, CE, RoHS
Other	
Warranty	5 years
Diagnostic Indicators	Power and Status
Included Accessories	Installation Guide, Power Supply with US, UK, EU and AU adapters, 3-pin Removable Screw Terminal, Mounting Ears (2 ea), IR emitter, IR receiver
IP Controller	IPEXCB
Compatible Decoder	IPEX5002

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

IPEX5002 Technical Specifications

Input/Output Connections	
HDMI Input	One (1) HDMI Type A Receptacle
HDMI Output	One (1) HDMI Type A Receptacle
LAN	One (1) 8P8C port (Shielded RJ45)
Power	One (1) 5.5 mm OD, 2.6 mm ID Threaded Barrel
RS232 Port	One (1) 3-pin Removable Terminal Block Connector
USB Device	Two (2) USB Type A Port
Audio Output	One (1) 3.5 mm TRS Receptacle
IR Input	One (1) 3.5 mm TRS Receptacle
IR Output	One (1) 3.5 mm TRS Receptacle
Reset	One (1) Momentary Push Button
Mode	One (1) Two Position Slider Switch
DIP	One (1) Four Position DIP Switch
Supported Audio, Video and Control	
Video Resolutions	SMPTE: 480p, 576p, 720p, 1080i, 1080p, 2160p/30 (4:4:4) VESA: Resolutions up to 1920x1200 Color Depth: 24, 30, 36 bit
Video Compliance	HDMI 1.4/2.0 and HDCP 1.4/2.2
Embedded Audio	Up to PCM 8 channel, Dolby Digital True HD, DTS-HD Master Audio and Dolby Atmos and DTS-X
ARC (Audio Return Channel)	No
HEC (HDMI Ethernet Channel)	No
CEC (Consumer Electronics Control)	Yes
Supported Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
USB Compliance	USB 2.0 Full Speed up to 12Mbps
Streaming Signal Characteristics	
Maximum Distance (point to point)	100 m (328 ft)
Cable Requirements	Category 5e or greater with TIA/EIA-568B crimp pattern
Encoded Data Rate	2160p: Average; 250 Mbps 1080p: Average; 150 Mbps
Encoded Method	VBR
End to End Latency	17-33 ms (1-2 fps)
Maximum Video Wall Size	16x16
Chassis and Environmental	
Construction	Black Steel
Dimensions (H x W x D)	25 mm x 220 mm x 130.2 mm (0.98in x 8.66 in x 5.13 in)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Power and Regulatory	
Power Input	12V DC 1A or 48V DC PoE (Power over Ethernet)
Power over Ethernet (PoE) Compatibility	802.3af Alternative B
Power Consumption	6 watts
ESD Protection	8kV air, 4kV contact
Regulatory	FCC, CE, RoHS
Other	
Warranty	5 years
Diagnostic Indicators	Power and Status
Included Accessories	Installation Guide, Power Supply, 3-pin Removable Screw Terminal, Mounting Ears (2 ea), IR emitter, IR receiver
IP Controller	IPEXCB
Compatible Encoder	IPEX5001

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

Thank you for your purchase.

For Technical Support please call our toll free number at
800-530-8998 or email us at supportlibav@libav.com

www.libav.com

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