

Logitek Electronic Systems

JetStream MINI Reference Manual



*Revision 2.4
Sep 2017*

Logitek Electronic Systems, Inc.
5622 Edgemoor Drive
Houston, Texas 77081
USA

Tel +1-713-664-4470

Fax +1-713-664-4479

Email support@logitekaudio.com

Web www.logitekaudio.com

Contents © 2011- 2012 Logitek Electronic Systems, Inc

Notice

Every effort has been made to supply complete and accurate information. However, Logitek Electronic Systems, Inc. assumes no responsibility for its use, nor any infringement of patents or other rights of third parties, which would result.

Worldwide rights reserved. Except for your own personal use, no part of this publication may be stored in a retrieval system, transmitted or reproduced in any way, including but not limited to photocopy, photograph, magnetic or other record, without the prior agreement and written permission of Logitek Electronic Systems, Inc.

Logitek is a trademark of Logitek Electronic Systems, Inc.

StudioHub+ is a registered trademark of Radio Systems, Inc. and is used with permission.

All other trademarks acknowledged.

All specifications are subject to change without notice.



Document Revisions

Date	Revision	Author	Notes
October 2010	1.0	John Davis, CBNT	First release of JetStream MINI v1.0 Reference Manual
December 2011	1.1	John Davis, CBNT	Corrected Appendix D to add command for HSM-MIC-DB
February 2012	2	John Davis, CBNT	Added information regarding second generation JSM chassis & PC
August 2012	2.1	John Davis, CBNT	Added Master/Slave synchronization information
September 2012	2.2	John Davis, CBNT	Added Livewire Compatability Mode
September 2012	2.3	John Davis, CBNT	Added JetSet Configuration
September 2017	2.4	John Davis	Removed AE Config 3.6 Information

Contents

Document Revisions	3
Contents	4
1 Introduction	7
About this Manual.....	7
Intended Audience	7
Manual Conventions	7
About the JetStream MINI	8
System Requirements.....	9
System Architecture	9
2 Unpacking	10
Parts List.....	10
Unpacking	10
Contacting Logitek	10
3 Physical Installation	11
Installation	11
Cabling	11
Audio Cable.....	11
Data Cable.....	12
Pre Assembled Cables	12
4 System Components	13
Power Supply Unit.....	13
LED Display	14
Rear Panel Connections – First Generation (s/n 1-199)	15
Rear Panel Connections – Second Generation (s/n 200-299)	16
GPI Inputs & Outputs.....	18
External Sync	18
Synchronizing JetStreams (Master/Slave).....	18
Find Me Button.....	19
“Open” Control Protocol	19
Surface Connections – First Generation (s/n 1-199).....	19
Surface Connections – Second Generation (s/n 200-299)	19
Communication verification	20
Audio Cards	21
JSM-AIN-RJ Analog Input Card	21
JSM-AIN-DB Analog Input Card	21
JSM-MICIN-RJ Analog Input Card	22
JSM-MICIN-DB Analog Input Card.....	22
JSM-DIN-RJ Digital Input Card	22
JSM-DIN-DB Digital Input Card	22
JSM-AOUT-RJ Analog Output Card.....	22
JSM-AOUT-DB Analog Output Card	23

	JSM-DOUT-RJ Digital Output Card	23
	JSM-DOUT-DB Digital Output Card	23
5	Configuration	24
	Please Refer to the JetSet Manual.....	24
6	Operation	25
	Initial Power-Up.....	25
	Power Loss at Audio Engine	25
	Recovering From a Bad Upload	25
	Idle Reset.....	25
	Resets from AEConfig & JetStream Server.....	26
	Soft Reset.....	26
	Full Reset	26
7	Maintenance	27
	Warranty.....	27
	Firmware Updates.....	27
	LogMeIn Access	27
	Component Replacement	28
	Card swap-out	28
	Contacting Support	29
	North America	29
	Outside of North America.....	29
Appendix A	Specifications	30
	General.....	30
	Audio Processor Card.....	30
	GPIO Card	30
	Microphone Input Cards	30
	Analog Input Card.....	31
	Analog Output Card.....	31
	Digital Input Card	31
	Digital Output Card	32
	Network & Video Processor Card.....	32
Appendix B	Pinout Data	33
	Audio I/O with RJ-45 Connectors.....	33
	Audio I/O with DB Connectors	34
	Audio Inputs/Outputs.....	34
	GPIO	35
	DB-15 Connector 1 (top)	35
	DB-15 Connector 2 (upper middle)	35
	DB-15 Connector 3 (lower middle).....	35
	DB-15 Connector 4 (bottom)	35
	JSM-DSP (Surface).....	36
	Port 1 to 4 – RJ45	36
	Control Surfaces & Utility Panels.....	36

Artisan/Mosaic Surface RS-485 – RJ45.....	36
Remora Surface/BTN-12/RTE-3/RTE-XY/GST-20 Panel RS-485 – DB9.....	36
RJ-45 to DB-9 Adaptor Color Codes	37
Appendix C Microphone Phantom Power	38
Two Year Limited Warranty.....	39

1 Introduction

About this Manual

This manual describes the installation and operation of the **Logitek** JetStream MINI.

Intended Audience

This manual is aimed at Engineers and Technical Operators responsible for installing, configuring and supporting a **Logitek Networked Console System**.

In the context of a system installation, or to become familiar with the entire **Logitek Networked Console System**, the reader should also reference:

- Surface Reference Manual for each surface you are installing
- AEConfig Reference Manual
- JetStream Server Reference Manual (JetNet equipped systems)

It is assumed the person responsible for installing and configuring any PC application has a solid understanding of Microsoft Windows desktop operating systems, or has ready access to IT support.

Manual Conventions

The following conventions are used in this manual:

This text indicates a menu choice to be made, with an arrow separating a multi-level selection, eg Control Panel ➤ Users & Passwords. This can be a menu choice in a Logitek application, or within Windows.



Indicates a “see-also” section in this manual, or another Logitek manual.



The exclamation symbol signifies an important note or critical information.

This text represents a command, script block example, instruction to be typed, or directory path.

 **TIP:** A useful tip from our knowledge base!

About the JetStream MINI

The heart of every **Logitek** digital console is the **JetStream** audio router. With 8 slots for microphone input cards, analog input cards, analog output cards, digital input cards, and digital output cards, one **JetStream Mini** easily handles all audio channels in a typical studio and is capable of mixing, routing, creating mix minuses, and all other functions of traditional consoles.

With the addition of **JetNet** audio networking, the **JetStream Mini** becomes an Audio over IP router, which allows for direct network transfer of audio to other **JetStream** devices, hard-disk playout systems, and other **Logitek JetNet** partners without using computer sound cards. Using standard IP protocols, **JetNet** is the simplest way to connect IP accessible devices to the audio network.

The **JetStream Mini** provides seamless integration of analog and digital sources or destinations. The **JetStream** can accept both digital and/or analog inputs and provide digital and/or analog outputs.

Logitek consoles retain the look and feel of traditional broadcast audio boards, adding input routing, multiple mix minus buses, dynamics, EQ controls, and more. Consoles supported by the **JetStream** as of this writing include the *Pilot*, *Remora*, and *Mosaic* surfaces. The **JetStream** can also drive multiple utility panels such as the *COM-12* intercom panel, *RTE-3* and *RTE-XY* rack-mount router control heads, *BTN-12* button panels, and *GST-20* and *GST-22* guest headphone amplifiers.

With the addition of the **JetNet** audio networking module, remote IP control of the **JetStream** is possible using the **Logitek vTools** software suite.

StudioHub+ wiring allows for rapid installation of the **JetStream** using standard CAT-5 cabling.

The following cards may be installed in a JetStream Mini's 8 I/O slots:

- JSM-MIC-RJ 4 channel microphone pre-amp card with StudioHub+ connectors
- JSM-MIC-DB 8 channel microphone pre-amp card with DB-25 connector
- JSM-AIN-RJ 4 stereo/8 mono analog input card with StudioHub+ connectors
- JSM-AIN-DB 4 stereo/8 mono analog input card with DB-25 connector
- JSM-AOUT-RJ 4 stereo/8 mono analog output card with StudioHub+ connectors
- JSM-AOUT-DB 4 stereo/8 mono analog output card with DB-25 connector
- JSM-DIN-RJ 4 AES/EBU or S/PDIF digital input card with StudioHub+ connectors
- JSM-DIN-DB 8 AES/EBU or S/PDIF digital input card with DB-25 connector
- JSM-DOUT-RJ 4 AES/EBU or S/PDIF digital output card with StudioHub+ connectors
- JSM-DOUT-DB 8 AES/EBU or S/PDIF digital output card with DB-25 connector

System Requirements

The JetStream Mini is designed to be installed in a standard 19" equipment rack. It is two rack-units high. The unit is convection-cooled without a fan, therefore it is suitable for mounting inside a studio near operators and microphones. For best performance, leave at least one rack-unit empty above the JetStream for proper cooling and design the rack to allow air to circulate.

System Architecture

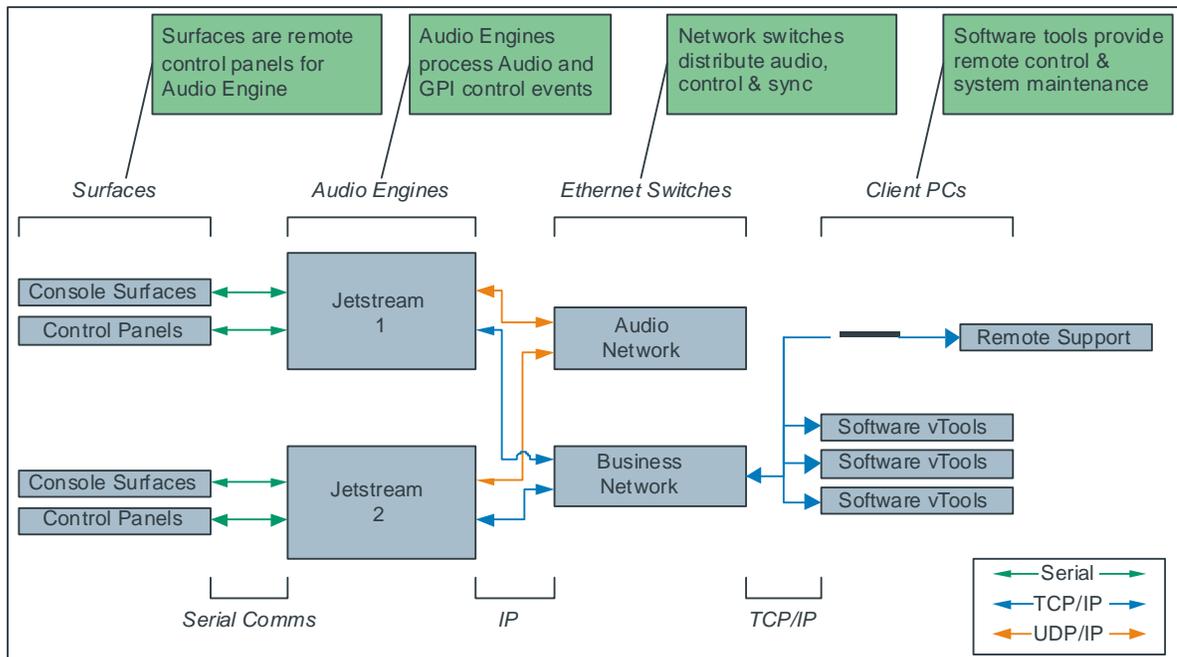


Figure 1 - Logitek System Architecture (v4.x)

Audio I/O cards plug into slots A-H on the JetStream. That audio is mixed on the JSM-DSP card (labeled "Surface") Consoles and utility panels connect directly to the JSM-DSP card via RS-485. All audio mixing, equalization, and dynamics processing is done on the DSP card. Local audio from the JetStream MINI is ready within two seconds of power-up.

The optional JetNet Audio Networking module is an embedded PC equipped with an Intel Atom processor and 1GB of RAM with a server-class dual Gigabit Ethernet card. Audio from the I/O cards is processed by the JSM-DSP card and streamed via USB 2.0 internally to the PC and sent to the network.

The PC runs Windows Embedded Standard and has been optimized for audio networking. No other applications should be installed on the PC.

JetNet networked audio is available within 90 to 120 seconds of power-up.

2 Unpacking

This section details what you should do when unpacking your newly arrived JetStream MINI.

Parts List

The exact list of parts received will vary depending on your order, but should generally include:

- 1x fully assembled *JetStream MINI* frame, containing cards and Power Supply/Supplies as ordered.

You will receive a parts list with the system that is specific to the JetStream and cards on your order.

Unpacking

Carefully unpack the cartons whilst looking for any signs of shipping damage. You may wish to save the shipping cartons until the operation of the system is verified.

Report any damage to the shipping carrier immediately. Verify that the contents of each box match the packing list and report any discrepancies immediately to **Logitek** in writing.

Contacting Logitek

In the event of a shipping problem, you can contact **Logitek Electronic Systems** in several ways:

U.S. Mail	Logitek Electronic Systems, Inc. 5622 Edgemoor Drive Houston, Texas 77081 USA
Telephone	877-231-5870 +1-713-664-4470 (outside U.S. and Canada)
Fax	+1-713-664-4479
Email	support@logitekaudio.com
Website	www.logitekaudio.com

3 Physical Installation

This chapter covers basic installation and cabling information, and details some cabling examples. As preferences and techniques for installation vary widely, this information should primarily be used as a starting point for planning your install.

Installation

The JetStream MINI is designed to be mounted in a standard 19" rack, and occupies two rack units.

The main power supply is mounted internally. A redundant 12 volt, 40 watt DC power supply, PSU-40W connects to the rear of the unit.

The *JetStream* should be mounted in a clean, dry and well-ventilated area. Because the unit is convection cooled and there is no cooling fan, leave at least one rack unit empty above and preferably one empty rack unit below the JetStream for best performance,

Cabling

All cables to the *JetStream* enter at the rear of the cabinet.

Audio Cable

Be sure to use properly rated digital cable for digital audio connections. For twisted pair, this is normally 110 ohm low capacitance cable such as **Belden 1800A** or **Gepeco 5524EZ**.

These cable types are also excellent for analog audio so using digital cable for all audio connections would be an acceptable and wise choice, negating the need to order separate types of cable.

For a neater installation, a multi-pair cable may be preferred. CAT5 cable is a popular alternative, due to its high availability and low cost. The impedance range of CAT5 cable fits entirely within the range allowed by the AES/EBU specification. The tightly matched wire resistance also makes CAT5 an excellent analog cable.

For installations where an intense AM RF field is present, shielded CAT5 cable may also be used.

JetStream I/O cards with RJ-45 connectors utilize the StudioHub+ wiring standard made popular by Radio Systems. Using a variety of dongles that connect to standard CAT5 network cable, installing a JetStream is as simple as plugging the cable into the I/O card, plugging the matching dongle into the other end, and connecting the studio equipment.

The StudioHub+ wiring standard calls for shielded CAT5 cable, and all Logitek StudioHub+ wiring kits come with a short length of pre-made shielded CAT5 cable for each input and output. Non-shielded CAT5 cable can work for most analog and digital connections. However, shielded CAT5 cable must be used with the JSM-MIC-RJ card without exception.

Data Cable

Recommended cable for the **Control Surface** data is CAT5 cable. The maximum length cable for **Control Surface** connections is 1000 feet (300 meters). Shielded cable can also be used if there is a risk of heavy interference to the signals, however this is normally not required.

Recommended cable for the **JetNet Audio Networking** module is CAT5e or CAT6 cable. The maximum length cable for network connections is 100 meters (roughly 328 feet). Shielded cable can be used if there is a risk of heavy interference to the signals, however this is normally not required.



See Appendix B for pinouts of all cards.

Pre Assembled Cables

Logitek offers pre-made cable assemblies to M-66 block, Krone block, XLR connectors, BNC connectors, or bare ends.

4 System Components

Power Supply Unit

A switching 110/220 volt power supply is mounted internally inside the **JetStream MINI**. Connect the mains to the standard IEC power inlet on the rear of the unit.



For redundancy, the optional PSU-40W power supply may be connected to the 12v DC power connector on the rear of the JetStream. This is a standard external power “brick.” The connector is wired with tip positive and sleeve negative.

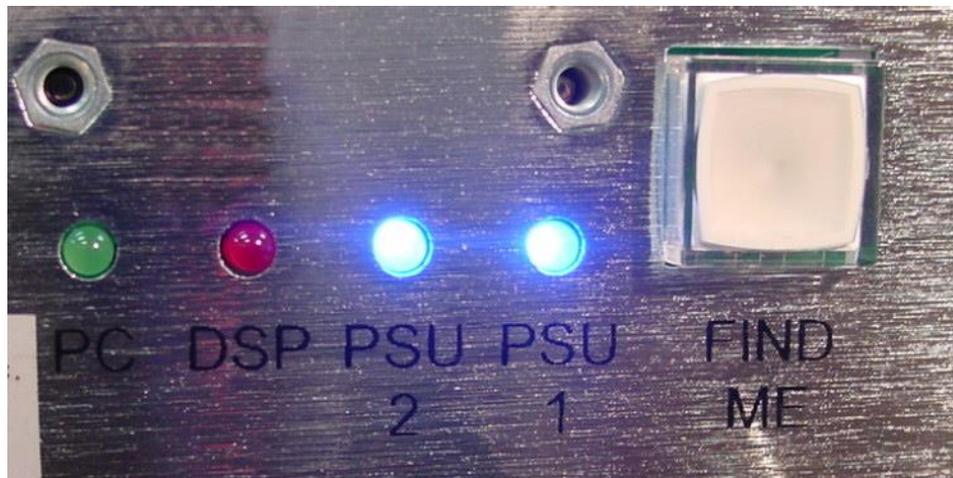
Each supply has a blue LED that lights on the front and rear of the *JetStream* when it is operating.

- 🔊 **TIP:** The use of an uninterruptible power supply (UPS) to power the *JetStream* is highly recommended to preserve stable operation and to avoid audio interruptions. Power consumption of the *JetStream* is approximately 20 watts. Size the UPS according to the length of time needed to protect against outage.

LED Display

The **JetStream MINI** has an LED display on the front and rear of the unit.

These LEDs show the status of the unit, and information is displayed on front and rear simultaneously.



PS1/PSU 1 – Main power supply. This blue LED lights when the power supply is operating.

PS2/PSU 2 – Redundant power supply. This blue LED lights when the redundant 12 volt power brick is connected and operating.

DSP – This red LED will blink when the JetStream is in an idle state and waiting for a configuration file to be uploaded.

PC – This green LED indicates that the unit is rate locked to either external sync or another JetStream.

Rear Panel Connections – First Generation (s/n 1-199)



VGA – (installed with purchase of *JetNet Audio Networking* option) Allows for connection of a computer monitor to the JetStream for configuration or for running Logitek vTools applications on the embedded PC.

NET 1 – (installed with purchase of *JetNet Audio Networking* option) Gigabit Ethernet port for primary audio network. Connect this port to an appropriate Ethernet switch or directly to another JetStream if connecting two units as an audio snake.

NET 2 – (Installed with purchase of *JetNet Audio Networking* option) Gigabit Ethernet port for administrative LAN or for secondary (redundant) audio network. Connect this port to an appropriate Ethernet switch.

USB – (Installed with purchase of *JetNet Audio Networking* option) 4 USB 2.0 ports for the embedded PC. Use for connecting a keyboard, mouse, or portable media.



Before removing a portable disk drive or flash drive from the JetStream Mini, make sure to click the Eject icon in the Windows system tray and wait for Windows to stop the drive. Networked audio will be interrupted if the drive is removed before Windows has stopped the drive and marked it as “safe to remove.”

If *JetNet Audio Networking* is not installed:

A USB to RS-485 Adaptor will be provided to connect the JetStream to a PC or laptop. The adaptor should connect to port 4 on the SURFACE card. See Appendix E.

RS-232 – (Installed on selected units only) Used in special installations for serial control of a video router.



If a Second Generation DSP/Network card is installed in a First Generation JetStream enclosure, NET 1 will be used for the ADMIN NET connection. The primary audio LAN connection will be on SURFACE port 3. The secondary audio LAN connection will be on SURFACE port 4. Contact Support if you have any questions after the upgrade.

Rear Panel Connections – Second Generation (s/n 200-299)



VGA – Used to connect a computer monitor with a VGA port. The VGA and DVI ports operate simultaneously.

DVI – Used to connect a computer monitor with a DVI port. The VGA and DVI ports operate simultaneously.

USB (3 ports) – Used to connect keyboards, mice, or portable media.



If a KVM switch is connected to the JetStream instead of a separate keyboard, the computer will display an error message saying that the keyboard was not found after the BIOS POST message. After 5 seconds, the message will clear and the computer will continue to boot. The keyboard on your KVM switch will function normally despite the error message.

AUDIO NET 1: Located on the DSP card. This is a gigabit Ethernet connection. When automatic failover is implemented, this will be the primary audio network. *As of this writing, this port is not used.*

AUDIO NET 2: Located on the DSP card. This is a gigabit Ethernet connection. When automatic failover is implemented, this will be the secondary audio network. *As of this writing, this is the only active audio network port. The audio network cable should be connected here.*

ADMIN NET: Located next to the USB ports. This is the administrative LAN connection used to configure and control the unit. No audio is passed on this network, therefore it may be connected to the office network without concern. This is a Gigabit Ethernet connection, although it can connect to a 10/100 network if Gigabit is not available.

RESET: Used to perform a hardware reset of the DSP card. The button is recessed; use a pen or pencil tip to depress.

Second Generation JetStreams do not have LED power, PC, or DSP lights on the back. Those indicators are only on the front panel.

GPI Inputs & Outputs

The **JetStream MINI** provides 12 logic input connections along with 16 relay closures for external device control. Three GPI inputs and four GPI outputs are on each of four DB-15 connectors.

-  **TIP:** The 4 GPIO connectors on the back panel plug into a circuit card with electronic relays on it inside of the JetStream. It is possible to pull the back of the frame away so the card with the relays does not make good contact with the card with the connectors if the JetStream is mounted in a rack without its top lid. We recommend that the lid always be fastened with all screws tightened down.



See Appendix B for connector pinouts.

External Sync

The **JetStream MINI** may be synchronized to an external sample clock, which is connected to the **Ext Sync** port. The external clock is an alternative to the internally set sample rate. For example, this would be used if all devices in a facility were to be tied to the same sample-rate and clock.

The **JetStream MINI** will accept any AES source and lock to it. The green PC light will turn on when external sync is present.

The **JetStream MINI** automatically matches any sample rate of digital inputs from approximately 25 KHz to over 50 KHz. The outputs can be set to sample rates of 32 KHz, 44.1 KHz, and 48 KHz or locked to an external clock source (at one of these frequencies).

When integrating a **JetStream MINI** with an AoIP system made by another manufacturer, you should connect an AES output from the other system to the External Sync input to rate lock the two systems together.



See Appendix B for connector pinouts.

Synchronizing JetStreams (Master/Slave)

By default, a JetStream is independent and will run on its own sample rate clock or external sync input as described above. In a networked environment, JetStreams can lock to each other across the network.

One JetStream can be set as Master by turning on device 26 bus 14. The red DSP LED on the rear and/or front of the unit will turn on to indicate that the JetStream is the master.

To set a JetStream as a slave, turn on device 26 bus 15. The green PC light will turn on to indicate that the JetStream is a slave.

If integrating the JetStream with an AoIP system made by another manufacturer, connect an AES output to the External Sync input of one JetStream as described above and set this unit as the master. The red and green lights will be lit on the rear and/or front of the unit. Set the other JetStreams as slaves. The green lights will be lit on those units. This will ensure that all AoIP devices are rate locked.

Contact support for assistance with turning on the Master/Slave busses.

Find Me Button

The **Find Me** button is used to put the JetStream into Idle mode, where the JetStream stops processing audio and waits for a new configuration to be uploaded to the DSP card.



See Chapter 6 for further details on Resets

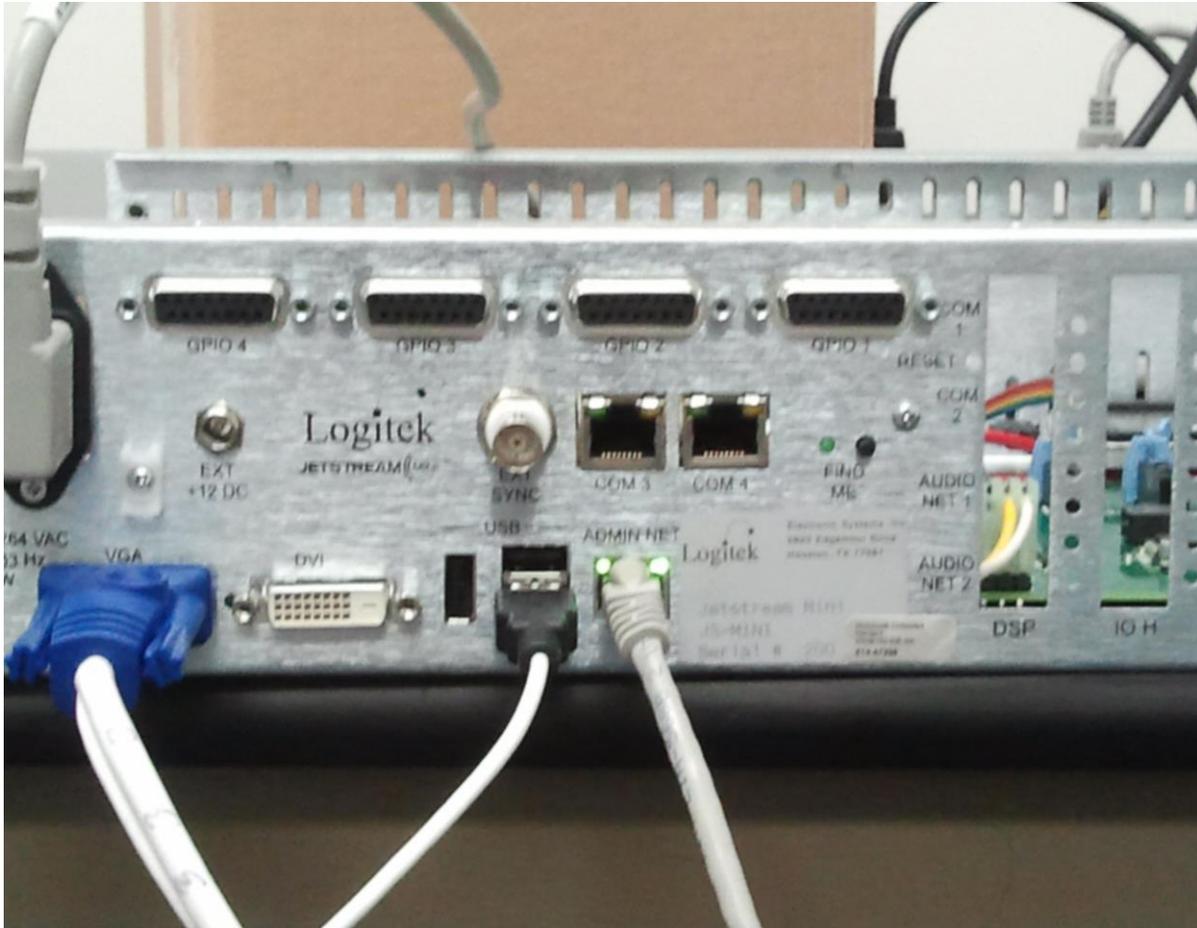
“Open” Control Protocol

The control protocol of the **JetStream MINI** is “open”. If a user wishes to write software control or to interface other devices through software control, contact **Logitek Electronic Systems, Inc.** for a copy of the protocol.

Surface Connections – First Generation (s/n 1-199)

Control Surfaces (Audio Consoles) and **Control Panels** (Guest Turrets and router control heads) connect via RS-485 to the JSM-DSP card, which is labeled as Surface. The ports are labeled 1 to 4, with the first port at the top.

Surface Connections – Second Generation (s/n 200-299)



Control Surfaces (Audio Consoles) and **Control Panels** (Guest Turrets and router control heads) connect via RS-485 to the JSM-DSP card, which is labeled as DSP, and the back panel. The first two ports, COM 1 and COM 2 are on the DSP card; the second two ports, COM 3 and COM 4 are on the rear panel as shown.



Although RJ-45 connectors are used for surface connections, these are NOT Ethernet connections. Use the CAT5 cable to connect the **JetStream MINI** directly to the control surface or panel. Do NOT connect the CAT5 cable from a *Surface* port to an Ethernet Switch.



See Appendix B for connector pinouts.

Communication verification

You can verify communications between the **JetStream Mini** and **Control Surface**, by watching the LED lamps on the Surface port. The top green LED is transmit and the bottom yellow LED is receive.

Audio Cards

The JetStream MINI will accept from one to eight audio cards in slots A-H, which can be either analog or digital.



JSM-AIN-RJ Analog Input Card

The JSM-AIN-RJ card provides 8 mono or 4 stereo inputs using RJ-45 connectors, following the StudioHub+ wiring standard. Trim pots to the left of the slot provide precise level adjustment. All JSM-AIN-RJ cards ship from the factory calibrated to a reference of +4 dBu. The reference level may also be set using AE Config software, although adjustments made to the analog cards in AE Config may not be as clean or as precise as by using the trim pots. The top LED on each connector will blink as an audio meter when audio is present on the left channel and the bottom LED will blink when audio is present on the right.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-AIN-DB Analog Input Card

The JSM-AIN-DB card provides 8 mono or 4 stereo inputs using a DB-25 connector. Trim pots to the left of the slot provide precise level adjustment. All JSM-AIN-RJ cards ship from the factory calibrated to a reference of +4 dBu. The reference level may also be set using AE Config software, although adjustments made to the analog cards in AE Config may not be as clean or as precise as by using the trim pots. LED lamps above the connector will flash as a meter to show audio presence.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-MICIN-RJ Analog Input Card

The JSM-MICIN-RJ card provides 4 microphone pre-amplified inputs using RJ-45 connectors, following the StudioHub+ wiring standard. Trim pots to the left of the slot provide precise level adjustment. The top LED will blink like a meter when audio is present and the bottom LED will turn on when Phantom Power is turned on.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-MICIN-DB Analog Input Card

The JSM-MICIN-DB card provides 8 microphone pre-amplified inputs using DB-25 connectors, following the StudioHub+ wiring standard. Trim pots to the left of the slot provide precise level adjustment. LED lamps above the connector will flash as a meter to show audio presence.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-DIN-RJ Digital Input Card

The JSM-DIN-RJ card provides 4 AES/EBU or S/PDIF digital inputs using RJ-45 connectors, following the StudioHub+ wiring standard. The reference level may only be set using AE Config software. The top LED will blink like a meter when audio is modulating; the bottom LED will turn on solid when a valid digital signal is present.



See Appendix B for connector pinouts.

JSM-DIN-DB Digital Input Card

The JSM-DIN-DB card provides 8 AES/EBU or S/PDIF digital inputs using a DB-25 connector. The reference level may only be set using AE Config software. LED lamps above the connector will flash as a meter to show audio presence.



See Appendix B for connector pinouts.

JSM-AOUT-RJ Analog Output Card

The JSM-AOUT-RJ card provides 8 mono or 4 stereo inputs using RJ-45 connectors, following the StudioHub+ wiring standard. Trim pots to the left of the slot provide precise level adjustment. All

JSM-AOUT-RJ cards ship from the factory calibrated to a reference of +4 dBu. The reference level may also be set using AE Config software, although adjustments made to the analog cards in AE Config may not be as clean or as precise as by using the trim pots. The top LED on each connector will blink as an audio meter when audio is present on the left channel and the bottom LED will blink when audio is present on the right.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-AOUT-DB Analog Output Card

The JSM-AOUT-DB card provides 8 mono or 4 stereo outputs using a DB-25 connector. Trim pots to the left of the slot provide precise level adjustment. All JSM-AIN-RJ cards ship from the factory calibrated to a reference of +4 dBu. The reference level may also be set using AE Config software, although adjustments made to the analog cards in AE Config may not be as clean or as precise as by using the trim pots. LED lamps above the connector will flash as a meter to show audio presence.

 **TIP:** The trim pots must be used for gain changes of more than 4 dB to preserve the signal to noise ratio!



See Appendix B for connector pinouts.

JSM-DOUT-RJ Digital Output Card

The JSM-DOUT-RJ card provides 4 AES/EBU or S/PDIF digital outputs using RJ-45 connectors, following the StudioHub+ wiring standard. The reference level may only be set using AE Config software. The top LED will blink like a meter when audio is modulating; the bottom LED will turn on solid when a valid digital signal is present.



See Appendix B for connector pinouts.

JSM-DOUT-DB Digital Output Card

The JSM-DOUT-DB card provides 8 AES/EBU or S/PDIF digital inputs using a DB-25 connector. The reference level may only be set using AE Config software. LED lamps above the connector will flash as a meter to show audio presence.



See Appendix B for connector pinouts.

5 Configuration

Please Refer to the JetSet Manual

Up to date information regarding using a web browser to configure the JetStream as well as the JetStream Server program is now in a separate manual. Refer to the JetSet manual and the JetStream Quick Start Guide for further instructions.

6 Operation

This chapter covers the basic operation of the **JetStream Mini**.

Initial Power-Up

Depending on your distance from **Logitek Electronic Systems'** factory, your **JetStream** may have had a long journey to get to you. It's always a good idea to re-seat all I/O cards prior to powering on your unit.

Power Loss at Audio Engine

In the event of loss of power at the **JetStream**, upon the resumption of power, it will return to the same state it was in prior to the power failure.

Audio from local sources will begin to play within 3 seconds of power up. It can take up to two minutes for networked **JetStreams** to find each other and begin streaming after a power failure. Networked sources will remain silent until they automatically restore the connection..

Recovering From a Bad Upload

If the configuration stored on the **JetStream** is corrupted for any reason, the DSP will refuse to start. When this occurs, all LED lamps on all I/O cards and on the DSP (Surface) card will light simultaneously and no audio will be present. After a few seconds, the DSP will restart; the lamps will shut off and turn back on again, and the process will repeat every few seconds. You may hear a popping noise in your monitor speakers as the unit resets.

Recover from this condition with an idle reset.

Idle Reset

Unplug the power to the unit. Press and hold the **Find Me** button on the back of the **JetStream** and apply power. Release the **Find Me** button when you see the DSP lamp begin to blink. You may now upload a good configuration to the **JetStream** to resume operation.

- 🔊 **TIP:** If the **JetStream** is constantly rebooting, you can often force an Idle Reset by pressing and holding Find Me while it reboots without pulling the power. If you're not successful doing an Idle Reset with this method, pulling the power cord and holding Find Me during a power up will definitely work.

Resets from AEConfig & JetStream Server

The following resets are performed from the JetStream Server and AEConfig PC applications:

Soft Reset

A **Soft Reset** is executed by clicking *Soft Reset* from the *JetStream Log* page in *JetStream Server* or during the upload process in *AEConfig*. This reset will tell JetStream to read its current routing table and perform every route again. This reset will also ask JetNet to refresh its list of network routes.



A **Soft Reset** will NOT read the default route table. (A default route is anything in Surface Settings or Output Selections in AE Config with an I mark on the grid.) Therefore, if you are changing a default route, it will not take effect until a full reset is performed. Also, any changes made to the Mix Minus grid on AEConfig's *System Page* will not take effect until a Full Reset.

🔊 **TIP:** A **Soft Reset** does not interrupt audio. Therefore, if you need to change default routes but do not wish to interrupt programming, do a Soft Reset, then force the routing change manually using the *JetStream State* page in *JetStream Server*.

Full Reset

A **Full Reset** is executed by clicking **Full Reset** from the *JetStream Log* page in *JetStream Server* or during the upload process in *AEConfig*.

A **Full Reset** copies the default startup state of the last configuration saved, erasing any routing, level or on/off information currently held in memory. This function is required to activate the routing portion of a new configuration file or to clear the current state memory if it becomes corrupted.



A **Full Reset** will tell *JetNet* to remove all of its network routes, unplug the USB connection to the DSP card, and then restore all of its network routes. It can take up to 30 seconds for this process to take place before network routes are restored.

🔊 **TIP:** As a **Full Reset** will reset to default routes and turn off all faders, audio interruption will likely result.

7 Maintenance

The **Audio Engine** uses multi-layer boards with surface mount technology. As such, the majority of the engine and its cards are not user-serviceable. However, there are some basic tasks that can be performed by suitably qualified technical personnel.

Warranty

Logitek Electronic Systems, Inc. will honor the warranty of the system when conducting field maintenance, provided:

- Repairs or updates only relate to recommended and documented procedures
- Care is taken and procedures are followed
- Repairs are conducted by suitably trained or experienced service personnel

If you do not feel comfortable performing maintenance or repairs, please do not proceed. If you would like advice prior to attempting a repair, please contact **Logitek Electronic Systems** or your reseller.

Firmware Updates

Each card has a firmware chip that is field upgradeable. **Logitek Electronic Systems, Inc.** or your value-added reseller may from time-to-time supply firmware updates to add new features or fix bugs.

Firmware is uploaded via the embedded JetNet PC or via a PC connected by USB for non-JetNet systems. **Logitek Support** will contact you if your system's cards need an update.

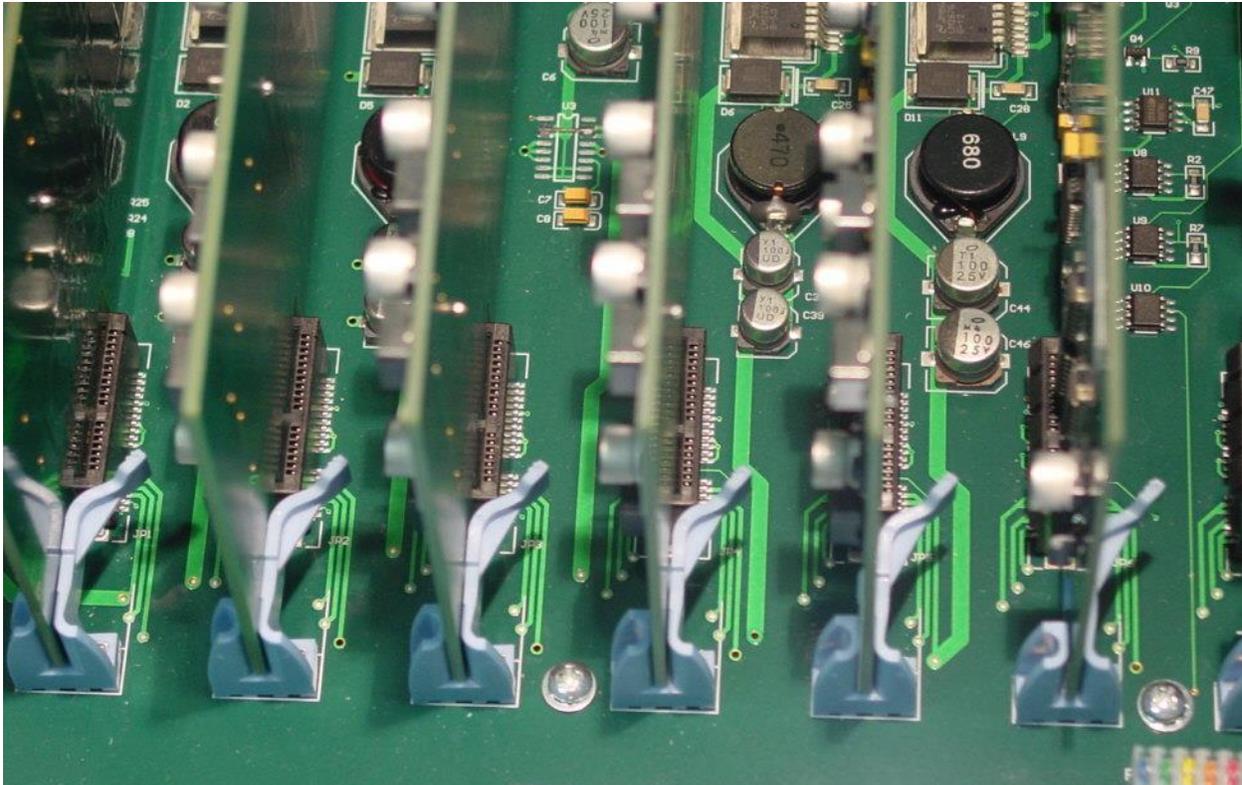
LogMeIn Access

Logitek installs the LogMeIn utility to the JetNet embedded PC prior to shipping in order to provide remote support. Please contact **Logitek Support** if you would like to be granted remote access to your machines.

Component Replacement

Card swap-out

If you need to swap a card with an on-site spare, you can simply unhook the blue tab from the card, pull up on the card to remove it, insert the replacement and snap it in. Be sure to push the RJ-45 or DB-25 connector firmly through the rear panel slot prior to inserting the card into the edge connector.



Cards are fully hot-swappable. Rack rails are available from Logitek to make maintenance easier.



As the Engine config is stored within the JSM-DSP (“Surface”) card, when swapping a JSM-DSP, the config will need to be reloaded before normal operation can be resumed.

Contacting Support

North America

Contact the factory directly via phone: (877) 231-5870 Toll Free or +1-713-664-4470 or email support@logitekaudio.com

Outside of North America

Contact your local Logitek dealer for factory-trained assistance.

Appendix A Specifications

General

Card slots: 1 Audio processor, 1 Network processor, 1 GPIO, 8 Audio I/O
Local audio I/O: 64 channels max (mono RJ-45) on 8 I/O cards
112 channels max (mono DB-25) on 8 I/O cards
Power: 95 - 120 volt or 220-240 volt, 47-63 Hz single phase (25 watts maximum)
Backup power: Connection for external backup PSU
Start up time: 3 sec to local audio, 120 sec to networked audio
Cooling: Convection only, requires 1RU empty space above unit
Environmental: 10°C – 38°C, 10 – 90% RH (non-condensing)
Dimensions Actual - 19" w x 11.5" d x 3.5" h (2RU) (48.2 cm w x 29.2 cm d x 8.9 cm h)
Weight fully loaded - 10 lbs.

Audio Processor Card

DSP: 32 bit floating point processing
Mixing: 36 channels (stereo) shared between 1 to 4 consoles
EQ & Dynamics: 24 channels allocated to either inputs or outputs
Profanity delay: 2x delays, 9 sec stereo each
Mix-Minus outputs: 24 channels mono, may be combined for stereo
0 VU Reference Level: -20 or -18 dBFs
Factory default reference: 0VU = +4 dBu = -20 dBFs (+20 VU = +24 dBu = 0 dBFs)
Internal sampling rate: User selectable 32K, 44.1K, or 48K (Sample/Sec)
External sync input: AES3-1992 or word clock, 44.1k or 48K (Sample/Sec)
Console connections: 4 serial ports with activity indicators

GPIO Card

Inputs: 12 channels
Input level: +3.3 volts, ground to activate, reverse voltage and over voltage protected
Outputs: 16 channels
Outputs format: optical isolated relay, non-polarized (50 volt, 500 milliamp max load)
Functionality: assigned in setup program

Microphone Input Cards

Number of Channels: 4 microphones (RJ) or 8 microphones (DB)
Connectors: 4 StudioHub format RJ-45 sockets with audio presence & phantom power indicators
or 1 DB-25 with audio presence indicators
Phantom power: +48 volts switched via software
Normal input level: -65 to -30 dBu, rear panel trim-pot adjustable
Input impedance: 4k ohms balanced
Common mode rejection ratio: -90 dB (1 kHz)
THD+N: .01% (-35 dBu input, +4 dBu output, 20 Hz to 20 kHz)
Frequency response: +/- .2 dB (20 Hz to 20 kHz)
Equivalent input Noise: < -124 dB (-60 dBu input, +4 dBu output, 20 Hz to 20 kHz)
Conversion resolution: 24 bits

Analog Input Card

Number of Channels: 8 mono inputs, may be combined for stereo
Connectors: 4 StudioHub format RJ-45 sockets with audio presence indicators
or 1 DB-25 with audio presence indicators
Signal format: Balanced or unbalanced
Maximum input level: +24 dBu
Normal input level: -20 to +8 dBu, rear panel trim-pot adjustable
Factory preset level: +4 dBu, +20 dB headroom
Input impedance: 50k ohms balanced or 25k ohms unbalanced
Common mode rejection ratio: -90 dB @ 1 kHz
THD+N: < .01% (0 dBu input, +4 dBu output, 20 Hz to 20 kHz)
THD+N: < .008% (+4 dBu input, -20 dBFs output, 20 Hz to 20 kHz)
Frequency response: +/- .2 dB (20 Hz to 20 kHz)
Signal to Noise Ratio: > 80 dB (+4 dBu input, +4 dBu output, 20 Hz to 20 kHz)
Conversion resolution: 24 bits

Analog Output Card

Number of Channels: 8 mono outputs, may be combined for stereo
Connector: 4 StudioHub format RJ-45 sockets with audio presence indicators
or 1 DB-25 with audio presence indicators
Signal format: Balanced or unbalanced
Maximum output level: +24 dBu into 600 Ohms
Normal output level: -20 to +8 dBu, rear panel trim-pot adjustable
Factory preset level: +4 dBu, +20 dB headroom
Output impedance: 60 Ohms
THD+N: < .01% (+0 dBu input, +4 dBu output, 20 Hz to 20 kHz)
THD+N: < .008% (-20 dBFs input, +4 dBu output, 20 Hz to 20 kHz)
Frequency response: +/- .2 dB (20 Hz to 20 kHz)
Signal to Noise Ratio: > 80 dB (+4 dBu input, +4 dBu output, 20 Hz to 20 kHz)
Conversion resolution: 24 bits
Stereo Separation: > 80 dB (+23 dBu input, +23 dBu output, 20 Hz to 20 kHz)
Inter-Channel Crosstalk: > 90 dB (+23 dBu input, +23 dBu output, 20 Hz to 20 kHz)

Digital Input Card

Number of channels: 4 inputs (RJ) or 8 inputs (DB) (stereo input may be split into 2 mono)
Connector: 4 StudioHub format RJ-45 sockets with audio presence & sync indicators
or 1 DB-25 with audio presence indicators
Digital format: AES3-1992 or S/PDIF
Rate conversion: All inputs, 24 bit resolution, 24kHz to 96kHz, switchable in or out
Input sample rate: same as audio processor card when rate conversion turned off
Precision: up to 24 bits
Input impedance: 110 ohms, transformer balanced and isolated
THD+N: < .004% (-20 dBFs input, -20 dBFs output, 20 Hz to 20 kHz)
Frequency response: +/- .1 dB (20 Hz to 20 kHz)
Dynamic range: 140 dB
Subcode detection: validity bit, audio/no audio bit

Digital Output Card

Number of channels: 4 outputs (RJ) or 8 outputs (DB) (2 mono may be combined into 1 output)

Connector: 4 StudioHub format RJ-45 sockets with audio presence indicators
or 1 DB-25 with audio presence indicators

Digital format: AES3-1992 or S/PDIF, user switchable

Sample rate: same as audio processor card

AES output compliance: 24 bits

Output impedance: 110 ohms, transformer balanced and isolated

THD+N: < .004% (-20 dBFs input, -20 dBFs output, 20 Hz to 20 kHz)

Frequency response +/- .1 dB (20 Hz to 20 kHz)

Dynamic range 140 dB

Subcode generation: copyright not asserted when in SPDIF mode

Network & Video Processor Card

Embedded processor: 1.6 GHz, 1Meg DDR2

OS: XP embedded

Video: VGA, 1280 x 1024 resolution

Video application: vScreen user configurable meter bridge replacement GUI

USB: 2 ports for pointing devices or memory sticks

Ethernet: 2 wired Gigabit ports

Simultaneous audio streams: 64 per JetStream

System size: 2000 streams total

Network delay: 1 mSec max

Fault tolerance: dual redundant networks when using two network switches

Snake Mode: up to 3 JetStream units can be directly connected without a switch

Streaming protocols: RTP, multicast and unicast

Network sync: user settable address & port, packet rate 1 Hz to 3 KHz

Sync rate is independent of audio sample rate

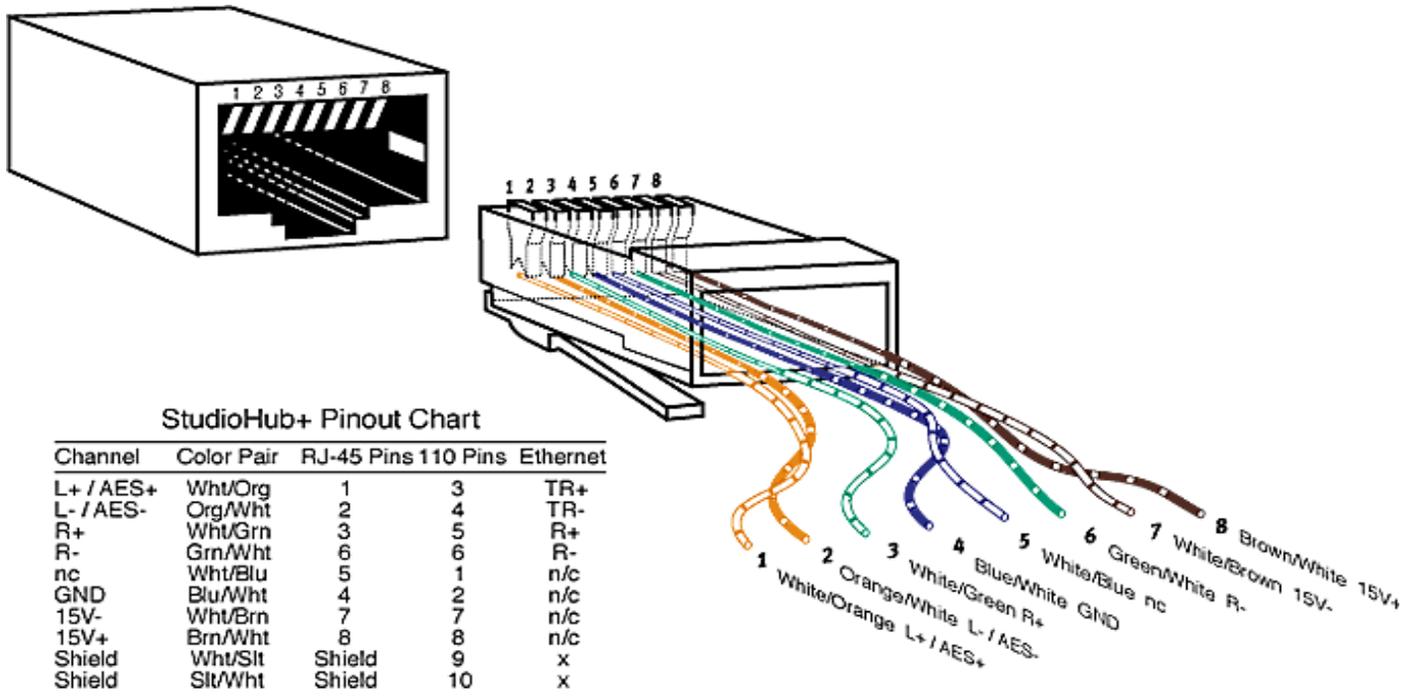
Network can be locked to house sync input via a single JetStream

Automatic system master selection, automatic failover

**** Specifications are subject to change ****

Appendix B Pinout Data

Audio I/O with RJ-45 Connectors



 **TIP:** The StudioHub+ standard calls for all connections being electronically balanced.

 **TIP:** Pre-wired CAT-5 cables may swap the orange and green pairs.

Audio I/O with DB Connectors

DB25M plugs are required.

Audio Inputs/Outputs

Pin	Connection	Pin	Connection
1	I/O 1 +	14	I/O 2 +
2	I/O 1 -	15	I/O 2 -
3	Ground	16	Ground
4	I/O 3 +	17	I/O 4 +
5	I/O 3 -	18	I/O 4 -
6	Ground	19	Ground
7	I/O 5 +	20	I/O 6 +
8	I/O 5 -	21	I/O 6 -
9	Ground	22	Ground
10	I/O 7 +	23	I/O 8 +
11	I/O 7 -	24	I/O 8 -
12	Ground	25	Ground
13	No connect		

TIP: If using unbalanced input connections, jumper the negative pins to ground. For unbalanced output connections, leave the negative pins unconnected.

GPIO

There are four DB-15 connectors, with 3 GPI inputs and 4 GPI outputs each. The contacts of the internal electronic relays are rated at 50 volts DC maximum and 500 milliamps maximum. Higher voltages should be connected to larger external relays.

DB-15 Connector 1 (top)

Pin	Connection	Pin	Connection
1	IN 1-A (+)	9	IN 1-B (gnd)
2	IN 2-A (+)	10	IN 2-B (gnd)
3	IN 3-A (+)	11	IN 3-B (gnd)
4	Out 1 A	12	Out 1 B
5	Out 2 A	13	Out 2 B
6	Out 3 A	14	Out 3 B
7	Out 4 A	15	Out 4 B

DB-15 Connector 2 (upper middle)

Pin	Connection	Pin	Connection
1	IN 4-A (+)	9	IN 4-B (gnd)
2	IN 5-A (+)	10	IN 5-B (gnd)
3	IN 6-A (+)	11	IN 6-B (gnd)
4	Out 5 A	12	Out 5 B
5	Out 6 A	13	Out 6 B
6	Out 7 A	14	Out 7 B
7	Out 8 A	15	Out 8 B

DB-15 Connector 3 (lower middle)

Pin	Connection	Pin	Connection
1	IN 7-A (+)	9	IN 7-B (gnd)
2	IN 8-A (+)	10	IN 8-B (gnd)
3	IN 10-A (+)	11	IN 10-B (gnd)
4	Out 9 A	12	Out 9 B
5	Out 10 A	13	Out 10 B
6	Out 11 A	14	Out 11 B
7	Out 12 A	15	Out 12 B

DB-15 Connector 4 (bottom)

Pin	Connection	Pin	Connection
1	IN 10-A (+)	9	IN 10-B (gnd)
2	IN 11-A (+)	10	IN 11-B (gnd)
3	IN 12-A (+)	11	IN 12-B (gnd)
4	Out 13 A	12	Out 13 B
5	Out 14 A	13	Out 14 B
6	Out 15 A	14	Out 15 B
7	Out 16 A	15	Out 16 B

JSM-DSP (Surface)

Port 1 to 4 – RJ45

Pin	Cable Color	Connection
1	White/Orange	Cue -
2	Orange	Cue +
3	White/Green	RS-485 Tx -
4	Blue	RS-485 Rx -
5	White/Blue	RS-485 Rx +
6	Green	RS-485 Tx +
7	White/Brown	No connect
8	Brown	Ground

 **TIP:** Pre-wired CAT-5 cables may swap the orange and green pairs.

Control Surfaces & Utility Panels

Pinouts for **Logitek Control Surfaces** are also included below. For further information see the relevant manual for the **Surface** you are connecting.

Artisan/Mosaic Surface RS-485 – RJ45

Pin	Connection
1	Cue -
2	Cue +
3	RS-485 Rx -
4	RS-485 Tx -
5	RS-485 Tx +
6	RS-485 Rx +
7	No connect
8	Ground

 **TIP:** Pre-wired CAT-5 cables will match the JetStream pin for pin.

Remora Surface/BTN-12/RTE-3/RTE-XY/GST-20 Panel RS-485 – DB9

Pin	Connection
1	Cue +
2	RS-485 Tx +
3	RS-485 Rx +
4	No connect
5	Ground
6	Cue -
7	RS-485 Tx -
8	RS-485 Rx -
9	No connect

 **TIP:** There is no cue audio available on a RTE-3, RTE-XY, or GST-20, so pins 1 and 6 may be omitted on those panels.

 **TIP:** Using a pre-wired CAT-5 cable and a RJ-45 to DB 9 adapter is a fast way to wire these surfaces and panels.

RJ-45 to DB-9 Adaptor Color Codes

Pin	Color
1	Orange
2	Yellow
3	Green
4	(no connect)
5	White
6	Blue
7	Black
8	Red
9	Brown

Appendix C Microphone Phantom Power

Phantom Power on the JSM-MIC-DB or JSM-MIC-RJ cards may be enabled by checking Yes on the Phantom Power setting when editing the input

Two Year Limited Warranty

Logitek Electronic Systems, Inc. warrants its professional equipment (excluding Logitek Software, which is covered by a separate warranty) against defects in materials and workmanship for two years pursuant to the following terms and conditions. The warranty extends to the original purchaser only.

LOGITEK will repair or replace, at its option, at its factory without charge professional equipment if a defect in materials or workmanship develops during the first two years following purchase, when the equipment is returned to the factory or LOGITEK authorized service centers freight prepaid with a description of the nature of the failure. No reimbursements can be made for repair charges that are not factory authorized. After repair or replacement, LOGITEK will return the equipment to the purchaser freight prepaid.

In the event that any part of this professional equipment becomes defective during the first two years following purchase, and purchaser wishes to attempt repair, purchaser may obtain a replacement part by notifying LOGITEK of the part of the equipment which has failed. LOGITEK will thereafter ship a replacement part, freight prepaid. LOGITEK may require the purchaser to return the defective part to LOGITEK freight prepaid as a condition of such replacement, either before or after LOGITEK ships the replacement part. LOGITEK shall not be responsible for any other charges or liabilities associated with purchaser-made repairs.

No part or equipment shall be considered defective if it fails to operate due to exposure to extreme temperatures or excessive moisture in the atmosphere.

Light bulbs, batteries, potentiometers or other equipment not manufactured by Seller shall carry only the warranty, if any, of the original equipment manufacturer in effect at the time of shipment of this order; and Seller's obligation under this warranty shall be limited to such adjustment as Seller may obtain from the original manufacturer.

This limited warranty is void if equipment is modified or repaired without authorization; subjected to misuse, abuse, accident, water damage or other neglect; or has had its serial number defaced or removed.

No obligation is assumed by LOGITEK to update previously manufactured equipment. Specifications are subject to change without notice. **EXCEPT AS SPECIFICALLY PROVIDED HEREIN, LOGITEK MAKES NO WARRANTY, REPRESENTATION, PROMISE, OR GUARANTEE, EITHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE EQUIPMENT, USER DOCUMENTATION OR RELATED TECHNICAL SUPPORT, INCLUDING THEIR QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL LOGITEK BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, TORT, ECONOMIC, COVER, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE LOGITEK PRODUCTS, EQUIPMENT, OR SERVICES, INCLUDING, WITHOUT LIMITATION, DAMAGES OR COSTS RELATING TO THE LOSS OF PROFITS, BUSINESS, GOODWILL, DATA OR COMPUTER PROGRAMS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE SHALL LOGITEK 'S LIABILITY FOR MONEY DAMAGES EXCEED THE AMOUNT PAID BY YOU FOR THE LOGITEK EQUIPMENT OUT OF WHICH SUCH CLAIM AROSE. THE FOREGOING LIMITATIONS SHALL NOT APPLY TO CLAIMS RELATING TO DEATH OR PERSONAL INJURY WHICH ARISE OUT OF PRODUCTS DEEMED TO BE CONSUMER GOODS UNDER APPLICABLE LAW.**

Some states or provinces do not allow the exclusion or limitation of implied warranties or limitation of liability for incidental or consequential damages, so the above exclusion or limitation may not apply to you.

The warranty and remedies set forth herein are exclusive and in lieu of all others, oral or written, express or implied. No Logitek dealer, distributor, agent, or employee is authorized to make any modification or addition to this warranty.