OPERATION MANUAL

IN3808 / IN3808DS

8-Input / 4-Output
Presentation Switchers

Installation and Safety Instructions

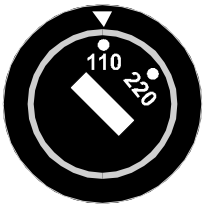
For Models without a Power Switch:

The socket outlet shall be installed near the equipment and shall be accessible.

For Models with 110 / 220V Power Selector:

Caution: Before applying power to this unit, the voltage selector must be set to the appropriate setting to match local A/C line voltage. Improper setting of the voltage selector may cause damage to the unit and create a potential fire hazard.

The voltage selector is a round switch located next to the A/C power input connector which looks like this:



Using a straight slot screwdriver or small coin, rotate the selector to the correct position so that the arrow lines up with 110 or 220 as appropriate for local power line voltage as indicated in the chart below:

Local A/C Voltage	Voltage Selector Setting
110 ~ 120 VAC	110
220 ~ 240 VAC	220

For all Models:

No serviceable parts inside the unit. Refer service to a qualified technician.

For Models with Internal or External Fuses:

For continued protection against fire hazard, replace only with same type and rating of fuse.

For IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Caution: Double pole / neutral fusing.

For all Models with Integral Lithium Battery:

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Instructions d'installation et de sécurité

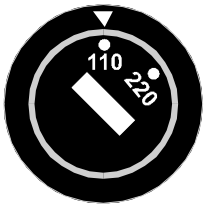
Pour les modèles sans interrupteur de courant:

La prise de courant d'alimentation sera installé près de l'équipement et sera accessible.

Pour les modèles avec un sélecteur d'alimentation 110V/220V:

Attention: Avant de connecter l'appareil au circuit d'alimentation, le sélecteur de courant doit être positionné sur la sélection appropriée correspondant au voltage du circuit de courant alternatif local. Une mauvaise sélection peut engendrer des dommages à l'appareil et créer un danger d'incendie.

Le sélecteur d'alimentation est un commutateur rond positionné près du connecteur d'alimentation. Il se représente comme suit:



A l'aide d'un tourne-vis plat ou d'une pièce de monnaie, le sélecteur peut être tourné dans la position adéquate en veillaut que la flèche corresponde avec 110 ou 220, en fonction de la valeur du circuit de courant local. (Voir tableau ci-dessous)

Circuit local AC	Position Sélecteur
110 ~ 120 VAC	110
220 ~ 240 VAC	220

Pour tout les modèles:

Pas de composants à entretenir à l'intérieur. Confiez toute réparation à un technicien qualifié.

Pour les modèles équipés de fusibles internes ou externes:

Afin d'éviter tout danger d'incendie, ne remplacer qu'avec le même type et la même valeur de fusible.

Pour IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

Attention: Double pôle / fusible au neutre.

Pour tout les modèles avec une batterie au lithium interne:

Attention: Danger d'explosion si la batterie est incorrectement remplacée. Ne remplacez la batterie qu'avec le même modèle, ou avec un modèle recommandé par le constructeur. Traitez les batteries usagées selon les instructions du fabricant, ou selon les normes écologiques en viguer.

Installations und Sicherheitshinweise

Für Geräte ohne Netzschalter:
Die Netzsteckdose soll in de Nähe des Gerätes installiert und frei zugänglich sein.

Für Geräte mit 110 / 220V Spannungswähler:

Achtung: Bevor Sie dem Gerät Spann ung zuführen, muß der Spannungswähler entsprechend der Spannung des lokalen Wechselspannungsnetzes eingestellt werden. Die falsche Stellung des Spannungswählers kann eine Beschädigung des Gerätes und möglicherweise ein Feuer verursachen.

Der Spannungswähler ist ein runder Schalter in der Nähe der Netzeingangsbuchse mit folgendem Aussehen:

Drehen Sie den Wähler mit einem normalen Schraubenzieher oder einer kleinen Münze so, daß der Pfeil auf die 110 oder 220 zeigt, entsprechend der Spannung Ihr es lokalen Netzes wie hier angezeigt:

Lokale Netzwechselspannung	Stellung des Spannungswählers
110 ~ 120 V	110
220 ~ 240 V	220

Für alle Geräte:
Keine Wartung innerhalb des Gerätes notwendig. Reparaturen nur durch einen Fachmann!

Für Geräte mit interner oder externer Sicherung:
Für dauernden Schutz gegen Feuergefahr darf die Sicherung nur gegen eine andere gleichen Typs und gleicher Nennleistung ausgewechselt werden.

Für IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:
Achtung: Allpolige Absicherung

Für alle Geräte mit eingebauter Lithium Batterie:
Achtung: Explosionsgefahr bei falschem Batterieeinsatz. Batterie nur erstzen durch den gleichen oder entsprechenden Typ wie vom Hersteller empfohlen. Entsorgung verbrauchter Batterien nur nach den Anweisungen des Herstellers.

Instalacion E Instrucciones de Seguridad

Modelos Sin Interruptor:
La conexión debe ser instalada cerca del equipo y debe ser accesible.

Modelos con Selector de Voltaje de 110/220V:
Precaución: Antes de operar esta unidad, el selector de voltaje debe instalarse de forma que corresponda a la linea de voltaje local. Instalación inadecuada del selector de voltaje puede causar daño a la unidad y originar un incendio.

El selector de voltaje es un cambia vía redondo localizado cerca de la conexión electrica, como se ve en el dibujo:

Use un destornillador comun o una moneda pequeña, mueva el selector a la posición correcta, de forma que las flechas indiquen 110 o 220 de acuerdo con el voltaje local, como esta indicado a continuación.

Voltaje Local A/C	Selector de Voltaje
110 ~ 120 VAC	110
220 ~ 240 VAC	220

Para Todos Los Modelos:
Dentro de la unidad , no hay partes para reparar. Llame un tecnico calificado.

Modelos con Fusibles Internos o Externos:
Para prevenir un incendio, reemplace solo con el mismo tipo de fusible.

Modelos IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:
Precaución: Double Polo / Fusible Neutral.

Modelos con Bateria de Lithiun Interna:
Precaución: Peligro de explosión si la batería es reemplacada incorrectamente. Reemplace solamente con la misma clase de batería, o una equivalente recomendada por el fabricante. Deseche las baterías usadas de acuerdo con las instrucciones del fabricante.

CE COMPLIANCE

All products exported to Europe by Inline, Inc. after January 1, 1997 have been tested and found to comply with EU Council Directive 89/336/EEC. These devices conform to the following standards:

EN50081-1 (1991), EN55022 (1987)
EN50082-1 (1992 and 1994), EN60950-92

Shielded interconnect cables must be employed with this equipment to ensure compliance with the pertinent Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) standards governing this device.

CE

FCC COMPLIANCE

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide against harmful interference when equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

Table of Contents

Product Overview

DESCRIPTION

The **IN3808 / IN3808DS** Presentation Switcher combines the easy operation and serial control capabilities of a projector switcher with the flexibility of a matrix switcher. Featuring RGBHV + stereo audio matrix switching, 300 MHz bandwidth and two switching modes, the **IN3808 / IN3808DS** is ideal for permanent installations, rentals, complex staging operations and any other display system requiring a high performance, economical matrix switcher.

Direct Switching Mode - In the Direct Mode, the **IN3808 / IN3808DS** acts as a projector switcher, routing composite, S-Video and RGB signals to the appropriate outputs. The user simply presses one of the input buttons and that input signal is automatically routed to the pre-programmed output(s). The **IN3808 / IN3808DS** can also store and transmit commands to a data display device. This communication can be used to switch inputs and / or recall a memory convergence.

Matrix Switching Mode - For advanced applications requiring multiple outputs, the **IN3808 / IN3808DS** can operate as a true 8 x 4 matrix switcher. In the Matrix Mode, users press an output button followed by an input button and a new patch is immediately executed.

Dual Output Connectors - With two sets of BNC connectors on each of its four outputs, the **IN3808 / IN3808DS** lets you connect up to 8 display and output devices without additional outboard distribution amplifiers. The dual connectors are ideal for double-stacked projector installations and for connecting cue or preview monitors found in complex presentation and staging systems.

Projector Control - The **IN3808 / IN3808DS** can store and transmit serial control commands to projectors, INLINE products or other serial controlled AV equipment in the RS-232, RS-422 or RS-485 formats. Windows™ software provided with the switcher makes it easy to set up the unit and store control codes. *All serial codes are provided by the installation technician.*

DIFFERENCES BETWEEN IN3808 AND IN3808DS

The **IN3808** and **IN3808DS** are virtually identical. The only difference between the two units is their audio capability. The key differences between the two units are outlined in the chart below.

	IN3808	**IN3808DS**
Stereo Audio Compatibility	Inputs and Outputs Compatible with Unbalanced Audio Only	Inputs and Outputs Compatible with Balanced or Unbalanced Audio
Input / Output Connectors	4-Pin Captive Screw	5-Pin Captive Screw

Operations

FRONT PANEL CONTROLS

INPUT 1 - 8: Selects the designated input.
BLANK: Selects no input (Blanks the selected output.)
OUTPUT 1 - 4: Selects the designated output for the Matrix mode. Operates as Function Keys F5 - F8 for the Direct mode.
SAVE / RECALL: Used to save or recall a memory configuration (for the Matrix mode.)
MUTE: Mutes the audio for the selected output.
VOLUME ⋏: Increases the volume.
VOLUME ⋎: Decreases the volume.
F1, F2, F3 and F4: Sends the programmed code out through the projector port.

SWITCHING - CONNECTING INPUTS & OUTPUTS (FRONT PANEL)

Direct Mode - Press the button of the input you desire and the signal will automatically be sent to the appropriate output(s) (see DIRECT MODE SETUP on page 3 for more details).

Matrix Mode - To make a connection between an input and an output, you must first select the output and then assign it an input. This may seem backwards at first, but if you think about it you will see that it is not. A routing matrix switcher can have a single input going to several outputs simultaneously, but an output can only have a single input (unless you want to see multiple images on top of each other). Therefore, it is logical to select the output, and then the input you would like to connect to it.

Press the button of the output you would like to change. The LED on the Output Button will illuminate (only one output can be selected at a time). The LED of the input presently being sent to that output will illuminate as well. To select a different input simply press the button of the input you desire. To blank the output, press the Blank Button. Once you have an output selected you can change the input as many times as you like.

Group Configuration - The **IN3808 / IN3808DS** can have up to 3 groups of switchers. Each group is treated as an independent switcher within the unit, and can be controlled independently via RS-232. The factory default is to have all boards assigned to Group 1 so that they switch together.

One of the most common uses of assigning multiple groups is to switch audio independent of video. Assigning the RGB and sync boards to Group 1 and the audio to Group 2 will accomplish this. Now, Group 1 and Group 2 can be switched independent of each other.

Switching and defining multiple groups is only feasible if the unit is controlled via RS-232 (see CNF commands on page 7). The front panel can only switch Group 1.

RGB DELAY

RGB Delay is a key feature of the **IN3808 / IN3808DS**. It provides an adjustable delay time between switching the sync and RGB boards. The delay time can be set in 0.5 second intervals from 0 to 4 seconds with the front panel and 0 to 6 seconds using a Power On setting or an RS-232 command. RGB delay prevents the display device from showing resizing and other spurious on-screen effects which often occur while the display is adjusting to the new signal.

When RGB delay is engaged, the sync signals are connected first and the RGB and audio signals are blanked for the delay time to allow the display device to lock up to the new signal. After the delay time, the RGB and audio signals are connected. At 0 seconds, the RGB, the sync and the audio will switch at the same time.

AUDIO

The **IN3808 / IN3808DS** routes stereo audio along with the video. In the Matrix mode, the audio for the selected input is routed to the selected output. However, in the Direct mode, the audio of the selected input is sent to all of the active outputs. The **IN3808 / IN3808DS** has Volume Up and Down Buttons as well as a Mute Button. These buttons function as follows:

Volume Up/Down - The Volume Up Button increases the output volume, the Volume Down Button decreases it.

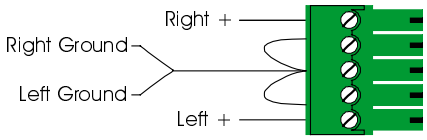
> **Matrix Mode:** The volume is increased / decreased for the currently selected output. The output button's LED flashes to indicate a change. The LED stops flashing when the maximum or minimum level is reached.
>
> **Direct Mode:** The volume is increased / decreased for all outputs. The output button's LED flashes to indicate a change. The LED stops flashing when the maximum or minimum level is reached.

Mute - The Mute Button silences the audio signal. When the audio is muted (no audio) the LED turns on. The audio will remain muted until the button is pressed again. In the Matrix mode, the audio of the currently selected output is muted. In Direct mode, all outputs are muted.

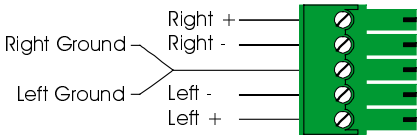
Input Volume - Pressing and holding the Mute Button while pressing the Volume Up or Down Buttons regulates the audio level of the currently selected input. Adjusting the volume allows users to equalize the audio levels of the various inputs. This is important so the volume level does not increase / decrease dramatically when switching between inputs.

AUDIO INPUT / OUTPUT CONNECTIONS

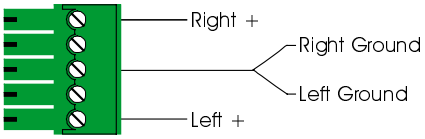
For Unbalanced Stereo Audio Input



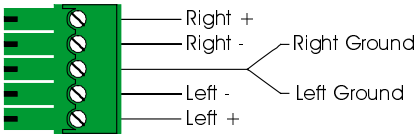
For Balanced Stereo Audio Input



For Unbalanced Stereo Audio Output



For Balanced Stereo Audio Output



DIRECT MODE SETUP (FRONT PANEL)

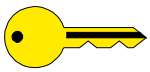
In the Direct mode, inputs are assigned to a designated output and automatically routed to the output(s) when selected. This section describes the procedure to assign inputs to outputs via the front panel.

1. Enter the Direct Mode Setup with the appropriate power-on setting (see Power-On Settings section on page 4 for more details.) Once in the Setup mode, all output LEDs will flash. To exit the setup with no changes, press the Save / Recall Button.
2. Press the Output Button of the output you would like to assign inputs to. That output's LED will turn on.
3. Press the Input Button(s) of the input(s) you would like to assign to that output. The input LED(s) will turn on. To deactivate the assignment, simply press that Input Button again.
4. Repeat steps 2 and 3 for all outputs.
5. Press and hold the Save / Recall Button until the LED flashes to save your changes and exit the setup.
6. Press an Input Button to activate the connection to the programmed output.

SAVING AND RECALLING SETUP MEMORIES FOR THE MATRIX MODE

The **IN3808 / IN3808DS** can store and recall up to 9 setup memories. A memory stores input to output connection information, and, when recalled, executes all of the switch connections.

KEY CONCEPT



When the **IN3808 / IN3808DS** is turned on, it uses setup #1 as the default, and this cannot be changed. If you plan on turning off the **IN3808 / IN3808DS**, make certain to store the initial settings in Setup #1.

Saving a Setup Memory - To save a memory configuration, make the desired input to output connections and then press and hold the Save / Recall Button until the Input Button LEDs start to flash. Press the Input Button number of the memory you would like to save. For example, press the **INPUT 3** Button to save to memory number 3. Use the Blank Button for memory number 9. If you would like to exit the Save mode without saving anything, press the Save / Recall Button.

Recalling a Setup Memory - To recall a memory configuration, push the Save / Recall Button. The LED for this button will light, and all you need to do to recall a memory is press the appropriate Input Button. For example, to recall memory 4 press the Input 4 Button.

POWER-ON SETTINGS

The **IN3808 / IN3808DS** utilizes Power-On settings to access certain parameters of the unit. To access a Power-On adjustment, you must hold down a specific button continuously while turning the unit's power switch to "ON" (if power is already on, the user can hold down the indicated button and switch the power off and then back on.)

Reset to Factory Default - To reset the unit to the factory default setting, hold down the number F1 Button while turning on the unit. The factory default settings are as follows:

Switching Mode	Matrix Mode
Front Panel Operation	*
RGB Delay	0.0 seconds
Audio Levels	Normalized to Default
RS-232 Baud Rate	1200
Command Code:	[ ]

If the front panel has been disabled, the Mute Button **must be depressed during power up in order to enable the front panel.*

Matrix / Direct Mode Selection - To toggle between the Matrix mode and the Direct mode, hold down the Save / Recall Button while turning on the unit. When you enter the Direct mode, the unit will automatically enter the Direct Mode Setup. *Warning: While switching between the Matrix mode and the Direct mode, all configurations, including projector port memories, will be lost.*

Direct Mode Setup - While in the Direct mode, you can enter the Direct Mode Setup by holding down the Output 1 Button while turning on the unit.

RGB Delay - Hold down the appropriate button while turning on the unit as indicated in the table below:

DELAY TIME (SECONDS)	BUTTON
0.0	INPUT 1
0.5	INPUT 2
1.0	INPUT 3
1.5	INPUT 4
2.0	INPUT 5
2.5	INPUT 6
3.0	INPUT 7
3.5	INPUT 8
4.0	BLANK

USING RS-232 CONTROL

Communication Protocol - The baud rate that the **IN3808 / IN3808DS** operates at is selectable from 1200 to 19,200 baud (changes can only be made via RS-232.) Communication parameters are as follows:

1200 baud (factory default setting)
No parity
8 data bits
1 stop bit

Protocol Structure - All commands sent to the unit must contain a leading character, the actual command and an ending character. Each command must be completely executed by the **IN3808 / IN3808DS** before it will accept a new command. When a command is executed, the unit provides the response [OK] to indicate that the command was received. However, the **IN3808 / IN3808DS** requires at least 200 milliseconds (2/10 of a second) to execute the command. Users must allow ample time for the unit to carry out the designated function before executing the next command, otherwise there may be a conflict (see RS-232 COMMAND PROTOCOL tables on pages 6-10). The response [ERR] indicates that there was a problem and the command was not executed. To send multiple commands see the Multiple Commands section below.

The **IN3808 / IN3808DS** can recognize one of four sets of leading and ending characters, also called the Command Codes. These are: [ ] { } ( ) < >. The factory default for the Command Code is [ ]. The Command code can be changed via RS-232.

A complete command string consists of:
- [- The leading character
- CALL2 - The actual command.
-] - The ending character

Some sample command codes follow:
- [CALL1] - Recall setup memory 1
- [RGB3.0] - Set RGB Delay to 3 seconds

Multiple Commands - Multiple commands can be sent in one string if a comma separates the commands. The following example shows a typical command:

[PT1O01I01,PT1O02I01,PT1O03I02]

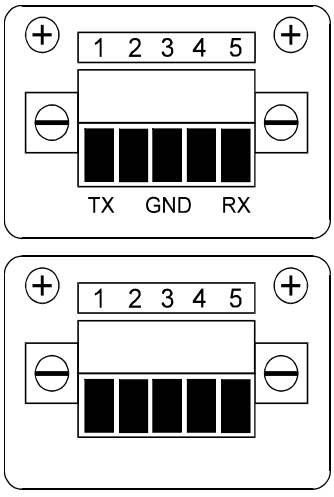
The code above switches input 1 to outputs 1 and 2, and input 2 to output 3.

You can group as many as three commands together as long as the total number of characters (including the command codes and commas) does not exceed 80.

Note: Do not string separate commands together such as:

[L102030405],[SW]

Serial Port Pin-outs - The **IN3808 / IN3808DS** utilizes a 5-pin captive screw terminal block. The top connector is the RS-232 Input Port to control the **IN3808 / IN3808DS**. The bottom connector is the External Communication Port to communicate with an external device. The pin configurations are as follows:



RS-232 Input Port

Pin #	Signal
1	Transmit
3	Ground
5	Receive

RS-232/485 External Communication Port

RS-232		RS-484	
Pin #	Signal	Pin#	Signal
1	Transmit	1	Transmit +
3	Ground	2	Transmit -
		3	Ground

EXTERNAL COMMUNICATION PORT

The External Communication Port can be used to control a piece of equipment via RS-232, RS-422 or RS-485. The communication parameters of the port are set via RS-232 (see RS-232 COMMAND PROTOCOL below for details.) When the **IN3808 / IN3808DS** performs certain actions, a code is transmitted out the communication port. Codes are sent as follows:

Matrix Mode:

Input and Output Codes - Each input and output can store a code. These codes are sent out whenever a switch is made. If just the input is changed (the output does not change) only the input code is sent. If the output and input change, the output code is sent first, followed by the input code.

Function Buttons - Function Buttons F1, F2, F3 and F4 each hold two codes. One code is sent when the button is activated (the LED turns on) and the other is sent when it is deactivated.

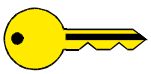
Recall Codes - When you recall a memory a code may be sent. Codes can be stored for memories 1 - 9.

Direct Mode:

Input and Output Codes - Each input and output can store one code. These codes are sent out whenever a switch is made. The input code is always sent, and the output code is sent whenever an output is activated.

Function Buttons - Function Buttons F1, F2, F3 and F4 each hold two codes. One code is sent when the button is activated (the LED turns on) and the other is sent when it is deactivated. In addition, Output Buttons 1 through 4 operate as Function Buttons F5, F6, F7 and F8.

KEY CONCEPT



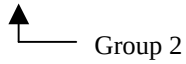
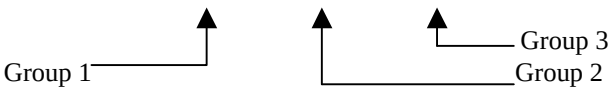
Time Delay: The delay between commands varies with the baud rate and the cable length. The examples below are measured for 40' of cable at 9600 baud. The delay will vary for each installation.

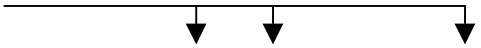
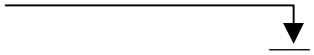
RS-232 Command Protocol

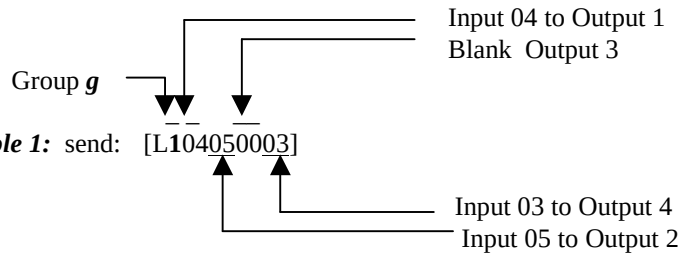
*Note: Operating the **IN3808 / IN3808DS** at a baud rate of 9600 will minimize transmission delays. Users should allow at least a 200 millisecond delay between all commands, except where noted.*

COMMAND[1]	DESCRIPTION	RESPONSE
ACI3	Set to 1200 baud rate, *default setting* ***Example*:** send: [ACI3]	[OK]
ACI4	Set to 2400 baud rate	[OK]
ACI5	Set to 4800 baud rate	[OK]
ACI6	Set to 9600 baud rate	[OK]
ACI7	Set to 19200 baud rate	[OK]
CALL*s* *(500 ms)*	Recall configuration from SETUP*s* *s*: 1 byte ASCII code, ranges from 0 – 9 ***Example:*** send: [CALL1] Sets up configuration stored in memory location 1. **IN3808 / IN3808DS** is now configured with values stored location in 1	[OK]
SAVE*s* *(500 ms)*	Save current configuration to SETUP*s* *s*: 1 byte ASCII code, ranges from 0 – 9 ***Example:*** send: [SAVE1] Saves configuration in memory location 1.	[OK]

[1] Leading and ending codes not shown for clarity.

COMMAND[1]	DESCRIPTION	RESPONSE
CMDCD0	Set the command code to [ ], *default setting* ***Example:*** send: [CMDCD0] Command delimiters are set to brackets "[ ]".	[OK]
CMDCD1	Set the command code to { } ***Example:*** send: [CMDCD1] Command delimiters are set to apostrophe "{ }".	[OK]
CMDCD2	Set the command code to ( ) ***Example:*** send: [CMDCD2] Command delimiters are set to parenthesis "( )".	[OK]
CMDCD3	Set the command code to < > ***Example:*** send: [CMDCD3] Command delimiters are set to "< >".	[OK]
CNF*xxyyzz*	Configure the system boards into three separate groups for individual control over the RGB, sync and audio boards (RS-232 control only!) *xx*: Represents boards in Group 1 *yy*: Represents boards in Group 2 *zz*: Represents boards in Group 3 where *xx*, *yy* and *zz* are as follows: 01 Video boards only 08 Sync boards only 20 Audio boards only 09 Video and sync boards 21 Video and audio boards 28 Sync and audio boards 29 All boards (Video, sync and audio boards) No boards  ***Example 1:*** send: [CNF09<u>2</u>0<u>0</u>0]  Assign: video and sync boards to Group 1 and the audio boards to Group 2. ***Example 2:*** send: [CNF<u>2</u>90000] Assign all boards to Group 1. See the Pt***g*O***mm*I*nn*** command and load command below. NOTE: ONCE A BOARD IS ASSIGNED TO A GROUP, THAT BOARD CANNOT FUNCTION SEPARATELY IN ANOTHER GROUP.	[OK] [OK]
CNF *(500 ms)*	Query: returns the Board Group number for Group 1, Group 2 and Group 3. If the Group is not assigned a number, two zeros are returned. ***Example:*** for a group assignment [CNF092008] : [CNF][CNF:0408<u>09</u>0004082<u>0</u>0004080<u>8</u>0000000000000000000000000000]  	

COMMAND[1]	DESCRIPTION	RESPONSE
In***nn***	For the **Direct Mode** select input ***nn***. ***nn***: Input #, a 2 byte ASCII code. If nn = 00, no input is selected, resulting in a blank output. ***Example:*** send: [IN02] response: INPUT 2 LED LIGHTS INPUT 2 SELECTED The **IN*nn*** command is used only after the **IO$o_n i^1_n \ldots i^8_n$** command has set up the connection relationships between the inputs to outputs.	[OK]
IO$o_n i^1_n \ldots i^8_n$ *(750 ms)*	For the **Direct Mode**, assign input(s) i_n to output o_n (No switching is done with this command, assignment only.) See example 4 below for an exception. o_n: Output channel number to assign input to i_n: Input channel number to assign to output o_n Where ***n*** = number between 1 and 8. ***Example 1:*** send: [IO**1***1234*] Assign Inputs *1, 2, 3 and 4* to Output **1**. Input 3  ***Example 2:*** send: [IO**1***1234*,IO**2***3456*,IO**3***78*,IO**4***12345678*] Assign: Inputs *1, 2, 3 and 4* to Output **1**; Inputs *3, 4, 5 and 6* to Output **2**; Inputs *7 and 8* to Output **3**; Inputs *1, 2, 3, 4, 5, 6, 7 and 8* to Output **4**. ***Example 3:*** The command [IN03] will connect Outputs 1, 2 and 4 to Input 3 as shown in Example 2. The IN03 command at the end will cause an immediate switch to occur. **IN03** inserted at the end  ***Example 4:*** [IO**1***11234*,IO**2***3456*,IO**3***78*,IO**4***12345678*,**IN03**] will have the same effect as in Example 3. The switch is immediate.	[OK] [OK],[OK], [OK],[OK], [OK]
Pt***g*****O***mm*****I***nn*	MATRIX MODE Execute an immediate switch **within a group**. Connect Output *mm* to Input *nn* for Group *g*. *g*: Group #, a 1 byte ASCII code ***g*** ranges from 1 - 3. *mm*: Output #, a 2 byte ASCII code *nn*: Input #, a 2 byte ASCII code. If nn = 00, no input is selected, resulting in a blank output. Group g  Output *mm* ***Example:*** send: [PT**1O***04*I*02*]  Input *nn* Action: Connects Input 2 to Output 4 for the boards in Group 1	[OK]

COMMAND[1]	DESCRIPTION	RESPONSE
L***g*****O^1_n O^2_n O^3_n O^4_n** *(750 ms)*	**Load** a new path connection for Group ***g***. For **MATRIX MODE** only. A new path can be within a group or to a new group. Use the Pt*g*O*mm*I*nn* to switch to another group. ***g*** ranges from 1 - 3. See CNF*xxyyzz* above. The switch is not executed until the "**[SW]**" command is sent. ***O^1_n***: 2 byte ASCII code representing the Input ***n*** to be connected to output 1. (there are four outputs) ***O^4_n***: 2 byte ASCII code representing the Input ***n*** to be connected to output 4, etc. ***n*****:** is a number between 0 – 8.  ***Example 1:*** send: [L**1**04050003] (**see CNF command** page 10.) Load a new path for Group 1 as follows: Input 4 to Output 1, Input 5 to Output 2, Input 0 to Output 3 (disconnect), and Input 3 to Output 4. ***Example 2:*** send: [L**1**02010103,L**2**03010007] Load a new path for Group 1 as follows: Input 2 to Output 1, Input 1 to Output 2, Input 1 to Output 3, Input 3 to Output 4. Load a new path for Group 2 as follows: Input 3 to Output 1, Input 1 to Output 2, blank Output 3, Input 7 to Output 4 ***Example 3:*** send: [L**1**02010103,L**2**03010007,SW] The switch is immediate. Group 1 configuration is connected with Output 1 enabled.	[OK] [OK],[OK], [OK]
SW	Execute all switch connections as defined by the L command. ***Example:*** send: [SW] (Switch times will vary - see key concept on page 6)	[OK]
RGB*x.x*	Set RGB delay to *x.x* seconds. *x.x*: ranges from 0.0 to 4.0 in 0.5 second intervals. ***Example:*** send: [RGB3.5] RGB delay is set to 3.5 seconds.	[OK]
MUTE***o***0	Disable audio mute for output ***o*** (get volume back.) ***o*** is a number between 1 – 4. Volume output for channel selected is set to previous value.	[OK]
MUTE***o***1	Enable audio mute for output ***o*** (no volume.) Send: [MUTE**o**1]	[OK]
VOL***o***+	Increase volume for output ***o***. send: [MUTEo+]	[OK]
VOL***o***-	Decrease volume for output ***o***. send: [MUTEo-]	[OK]

COMMAND[1]	DESCRIPTION	RESPONSE
FP *	Enable and disable the front panel operation (toggle between FP0 and FP1. Send: [FP].	[OK]
FP0 *	Disable the front panel operation. All front panel buttons will be disabled.	[OK]
FP1 *	Enable the front panel.	[OK]
MODE0 (MODE Zero)	Put the **IN3808 / IN3808DS** in the Matrix mode. Send: [MODE0] All programmed configurations and Projector Control Codes will be lost	[OK]
MODE1	Put the **IN3808 / IN3808DS** in the Direct mode. Send: [MODE1] All programmed configurations and Projector Control Codes will be lost	[OK]
MODE	Returns a zero "0" for Matrix Mode and returns a one "1" for Direct Mode	0 : Matrix, 1 : Direct
INF0 (INF Zero)	Get firmware version. Send: [INF0]	[**IN3808 / IN3808DS** Vx.x]
VID	Get the output status for video for all outputs. ***Exp:*** The **IN3808 / IN3808DS** is set with the following configuration: Input 2 to Output 1, Output 2 is blank, Input 6 to Output 3, Input 8 to Output 4 Send: [VID] The response would be: [VID02000608]	[VID*aabbccdd*] where: *aa* = input going to output 1 *bb* = input going to output 2 *cc* = input going to output 3 *dd* = input going to output 4
SETUP	QUERY: (MATRIX MODE ONLY) This command returns the audio connection status for each board group. The status is returned in two bytes: 1st byte: 4 or 0 the second byte contains the input. A "4x" shows input x as enabled. Two "00" shows that output is disabled. This command has the same structure as the [L***g*O$^{1}_{n}$ O$^{2}_{n}$ O$^{3}_{n}$ O$^{4}_{n}$**] ***Example 1:*** Configure groups one thru three, then issue the SETUP command. Input 8 to output 1, input 7 to output 2, input 6 to output 3, etc. [L108070605,L204030201,L301020304,SW] Group 2 [SETUP][**47**4645**44**43**42**41**40**40**41**42**43**00000000……..] Group 1 Group 3 47 = Input 8, 46 = Input 7, 45 = Input 6, 44 = Input 5, etc. ***Example 2:*** [CNF290000] => All boards in group one [L108070605,SW] => make connections [SETUP][47464544000000000000000000000000……..] Inputs are shown as 0 –7 for inputs 1 – 8.	

PROJECTOR CONTROL CODE VERIFICATION

The following commands allow a programmer to verify what codes are stored in the **IN3808 / IN3808DS**. These commands prompt the **IN3808 / IN3808DS** to send out a specific command when requested using the PCCblk commands as detailed below.

PCC*blk*	Send out the stored code in Projector Control Code Block *blk*.			[OK]
	blk	**DIRECT MODE**	**MATRIX MODE**	
	40	Input 1 Code	Input 1 Code	
	41	Output 1 Code	Recall 1 Code	
	42	Input 2 Code	Input 2 Code	
	43	Output 2 Code	Recall 2 Code	
	44	Input 3 Code	Input 3 Code	
	45	Output 3 Code	Recall 3 Code	
	46	Input 4 Code	Input 4 Code	
	47	Output 4 Code	Recall 4 Code	
	48	Input 5 Code	Input 5 Code	
	49	Not used	Recall 5 Code	
	4A	Input 6 Code	Input 6 Code	
	4B	Not used	Recall 6 Code	
	4C	Input 7 Code	Input 7 Code	
	4D	Not used	Recall 7 Code	
	4E	Input 8 Code	Input 8 Code	
	4F	Not used	Recall 8 Code	
	50	F5 Key On Code	Output 1 Code	
	51	F5 Key Off Code	Not used	
	52	F6 Key On Code	Output 2 Code	
	53	F6 Key Off Code	Not used	
	54	F7 Key On Code	Output 3 Code	
	55	F7 Key Off Code	Not used	
	56	F8 Key On Code	Output 4 Code	
	57	F8 Key Off Code	Not used	
	58	F1 Key On Code	F1 Key On Code	
	59	F1 Key Off Code	F1 Key Off Code	
	5A	F2 Key On Code	F2 Key On Code	
	5B	F2 Key Off Code	F2 Key Off Code	
	5C	F3 Key On Code	F3 Key On Code	
	5D	F3 Key Off Code	F3 Key Off Code	
	5E	F4 Key On Code	F4 Key On Code	
	5F	F4 Key Off Code	F4 Key Off Code	
	64	Blank Key Code	Blank Key Code	
	65	Not used	Recall 9 Code	

PROJECTOR CONTROL PORT CODES

The following commands allow the control parameters to be set for the projector control port.

PCPP*xx*	Set projector port as follows:				[OK]
	BAUD	**PARITY**	**RS-232**	**RS-485**	
Examples:			xx	xx	
PCPP00	1200	None	00	80	
	1200	Odd	10	90	
	1200	Even	20	A0	
	2400	None	01	81	
	2400	Odd	11	91	
PCPPA1	2400	Even	21	A1	
	4800	None	02	82	
	4800	Odd	12	92	
	4800	Even	22	A2	
PCPP03	9600	None	03	83	
	9600	Odd	13	93	
PCPPA3	9600	Even	23	A3	
	19200	None	04	84	
	19200	Odd	14	94	
	19200	Even	24	A4	
	38400	None	05	85	
	38400	Odd	15	95	
	38400	Even	25	A5	
	57600	None	06	86	
	57600	Odd	16	96	
	57600	Even	26	A6	
PCPD*x*	Set code delay where *x* is as follows: 0 0 seconds 1 1 msec 2 5 msec 3 10 msec 4 20 msec 5 50 msec 6 100 msec				[OK]
PCP0	Disable external communication port				[OK]
PCP1	Enable external communication port				[OK]

RS-232 AUDIO VOLUME COMMANDS

COMMAND	RESPONSE
[MDVOL0]	Sets volume settings control to normal front panel operation. Only the up arrow or down arrow will increment or decrement the audio settings.
[MDVOL1]	Sets volume control to respond to serial commands only. Front panel volume control is Disabled in this mode.
[VOLxYYY]	Sets the output gain on port "x" to "YYY" for both left and right channel. Where 1 <= x =< 4 and 000 <= YYY <= 255 decimal. This value is stored in memory and applied to the x output when x becomes active. **See Table Below for YYY values**
[VOLLxYYY]	Sets the left channel output gain on port "x" to "YYY". Where 1 <= x =< 4 and 000 <= YYY <= 255 decimal. This value is stored in memory and applied to the x output when x becomes active.
[VOLRxYYY]	Sets the right channel output gain on port "x" to "YYY". Where 1 <= x =< 4 and 000 <= YYY <= 255 decimal. This value is stored in memory and applied to the x output when x becomes active.

Audio Level Control Settings for Balanced / Unbalanced Mode

Decimal Value YYY	Gain (dB)	Decimal Value YYY	Gain (dB)	Decimal Value YYY	Gain (dB)
213	10.5	192	0.0	171	-10.5
212	10.0	191	-0.5	170	-11.0
211	9.5	190	-1.0	169	-11.5
210	9.0	189	-1.5	168	-12.0
209	8.5	188	-2.0	167	-12.5
208	8.0	187	-2.5	166	-13.0
207	7.5	186	-3.0	165	-13.5
206	7.0	185	-3.5	164	-14.0
205	6.5	184	-4.0	163	-14.5
204	6.0	183	-4.5	162	-15.0
203	5.5	182	-5.0	161	-15.5
202	5.0	181	-5.5	160	-16.0
201	4.5	180	-6.0	159	-16.5
200	4.0	179	-6.5	158	-17.0
199	3.5	178	-7.0	157	-17.5
198	3.0	177	-7.5	156	-18.0
197	2.5	176	-8.0	155	-18.5
196	2.0	175	-8.5	154	-19.0
195	1.5	174	-9.0	153	-19.5
194	1.0	173	-9.5	152	-20.0
193	0.5	172	-10.0	151	-20.5
				0	-95.0

ERROR CODE RESPONSE	
[OK]	Command accepted.
[ERR]	Illegal command. The command cannot be interpreted by the firmware.
[ERR1]	Illegal parameters. The parameters are not recognized by the firmware or are out of range.
[ERR2]	Command is legal, but does not apply to the current configuration.

FRONT PANEL FEEDBACK COMMANDS AND RESPONSE CODES

The following commands allow an external controller to receive a change of status through the RS-232 port whenever a front panel button is pressed on the **IN3808 / IN3808DS**. The following table lists the corresponding response that is sent by the **IN3808 / IN3808DS** for each front panel button that is pressed.

RS-232 COMMAND	RS-232 RESPONSE
[KEYECHO]	Disable Feedback Function for Front Panel Keypad Presses
[KEYECHO1]	Enable Feedback Function for Front Panel Keypad Presses

INPUTS	FEEDBACK CODE
1	[00]
2	[01]
3	[02]
4	[03]
5	[04]
6	[05]
7	[06]
8	[07]
BLANK	[12]

OUTPUTS	FEEDBACK CODE
1	[08]
2	[09]
3	[0A]
4	[0B]
FUNCTION	**FEEDBACK CODE**
1	[0C]
2	[0D]
3	[0E]
4	[0F]

MEMORY	FEEDBACK CODE
RECALL / SAVE	[14]

AUDIO	FEEDBACK CODE
UP	NO RESPONSE
DOWN	NO RESPONSE
MUTE	NO RESPONSE

Specifications

IN3808 / IN3808DS Presentation Switcher	
RGBHV Input	
Connectors	(8) Sets of 5 Female BNC
Impedance	Video: 75 Ohms Sync: High Impedance
RGB Level	0.7 Vp-p Nominal
Sync Level	5 V Max.
Coupling	DC coupled. Any input signal DC offset should be limited to ±0.5 VDC to allow for an acceptable signal swing without distortion.
Audio Input	
Connectors	(Phoenix brand captive screw terminal) **IN3808:** 4-pin / **IN3808DS:** 5-pin
Impedance	High Impedance (10 KOhms)
Level	Line Level
RGBHV Output	
Connectors	(8) Sets of 5 Female BNC
Impedance	75 Ohms
RGB Bandwidth (-3dB)	300 MHz
RGB Gain	1.0± 5% 75 Ohm terminated (Maximum output voltage is ±3 V unloaded, ±1.5 V 75 Ohm terminated)
Sync Output	1.0± 5% with high impedance load. 0.5± 5% 75 Ohm terminated. (Maximum output voltage is ±4 V.)
Audio Output	
Audio Connectors	(Phoenix brand captive screw terminal) **IN3808:** 4-pin / **IN3808DS:** 5-pin
Audio Impedance	600 Ohms
Gain:	1.0 ± 5% with high impedance load.
Frequency Response	DC to 20 KHz
General	
RS-232 Input Port	RS-232 at 1200, 2400, 4800, 9600 or 19200 baud, no parity, 8 bit, 1 stop bit
External Comm. Port	RS-232 or RS-485 at 1200, 2400, 4800, 9600, 19200, 38400, or 57600 baud no parity, odd parity or even parity, 8 bit, 1 stop bit
Power:	96 - 260 VAC, 47 to 90 Hz (universal)
Power Consumption	15W Max.
Size	17”W x 12.2”D x 5.25”H (excluding mounting flanges)
Weight	10 lbs.
Regulatory Compliance	
Safety	UL 1950, 3rd Ed.; CE: EN60950-92; CAN/CSA-22.2 No. 950 3rd Ed.
EMI	FCC class A; CE: EN50081-1, EN55022, EN50082-1

Warranty

- INLINE warrants the equipment it manufactures to be free from defects in materials and workmanship.
- If equipment fails because of such defects and INLINE is notified within two (2) years from the date of shipment, INLINE will, at its option, repair or replace the equipment at its plant, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications.
- Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of re-shipment to the Buyer.
- This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

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