



The Production Studios 194 - 195 - 196

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Open the Keynote in Preview and put it in Full Screen Mode (Control + Command+ F). Now use Option +Command + G to move to the appropriate page.



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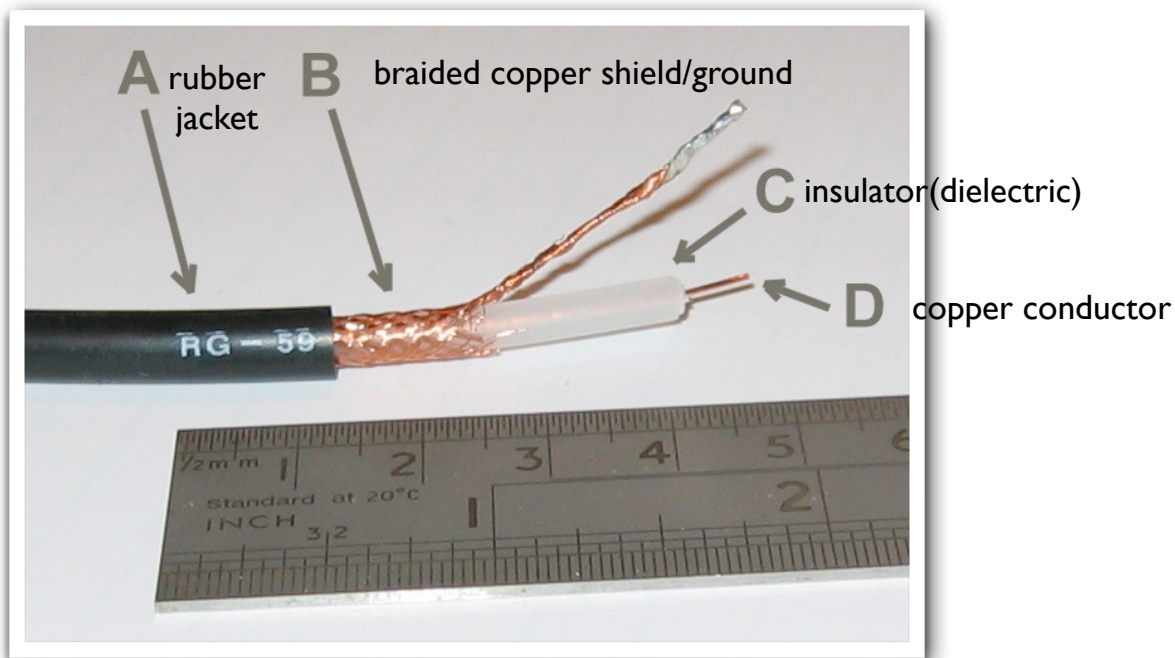
Digital & Analog Hardware Interconnections

The Lynx Aurora & Yamaha O2R-96

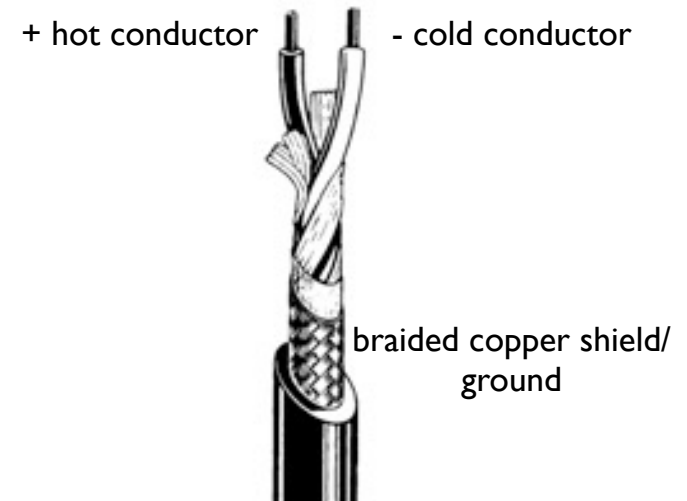


Digital and Analog Audio Cables

Coaxial Cable

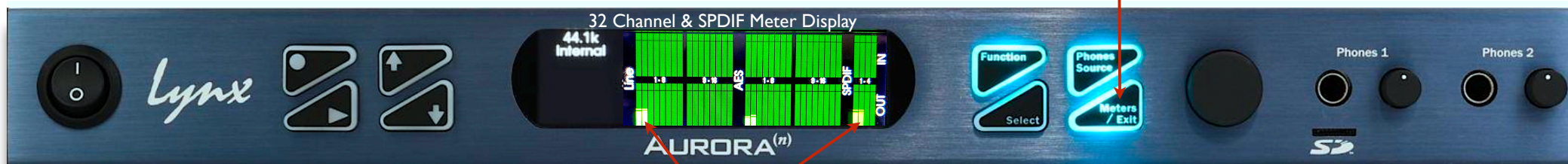


Twisted Pair Cable

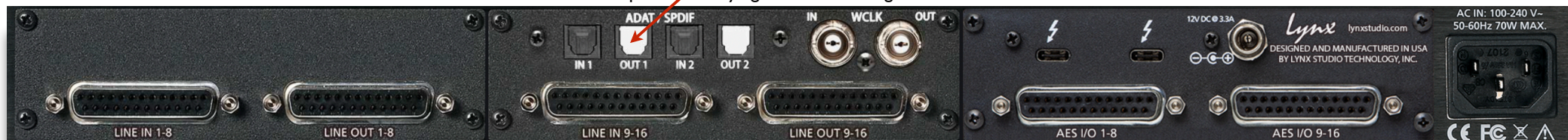


Lynx Aurora Overview

Meter Selection - Depress until the meter looks like this display.



SPDIF Outputs 1-2 carrying the Aline 1-2 signal to Yamaha Console



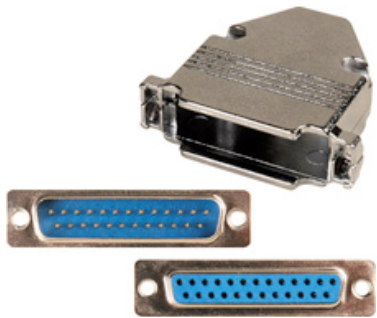
16 Analog Inputs & Outputs (Aline In/Out 1-16)

16 Digital Inputs/Outputs(AES I/O 1-16)

The Lynx Aurora syncs immediately to the Big Ben and provides 32 Channel I/O metering. Therefore, there is no need to use software to adjust these parameters. **Phones Source** is preset to Aline 1-2 for both Phones outputs.

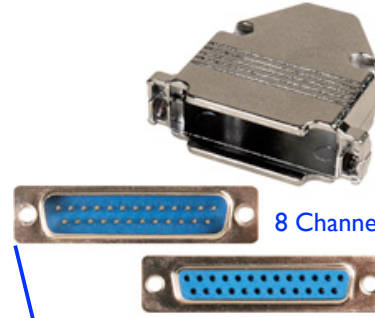
Analog and Digital I/O Connections

Connectors = 25 pin D-Sub



Cable = Balanced, 3 conductor, **Twisted Pair**, 70 Ohm

Connectors = 25 pin D-Sub



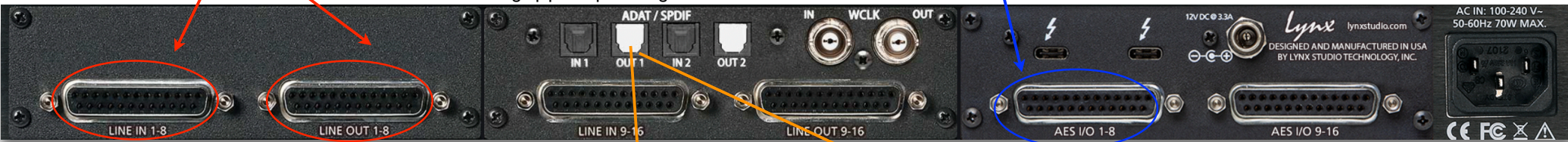
Cable = Balanced, 3 conductor, **Twisted Pair**, 110 Ohm

8 Channels - Bi Directional - **AES3** Digital Format

8 Channels - Uni Directional - **Line Level** Analog

Lynx Aurora

"Lightpipe", Optical, Digital Audio Connections



Connectors = Toslink

Cable = Optical



Optical "Lightpipe" to Coaxial Convertor

Connectors = RCA

Cable = Unbalanced, 2 conductor, **Coaxial**, 75 Ohm



Note: Both the Optical and Coaxial cables carry SPDIF data. They just use different technology to transmit this data!

2 Channels - Uni Directional - **SPDIF** Digital Format

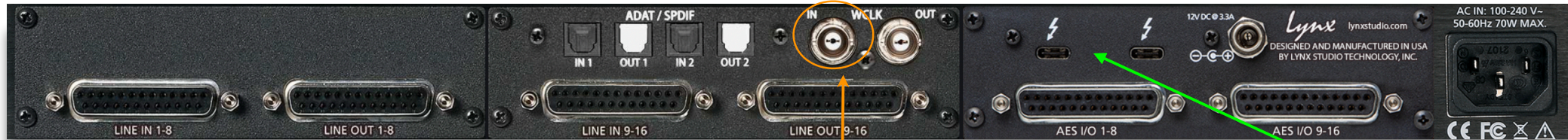
NB - The object of the "impedance" of a cable is to simply "carry" the source impedance to the load without changing it.

Word Clock & Computer Connections

Lynx Aurora

Word Clock Connections

Thunderbolt 3 Connections

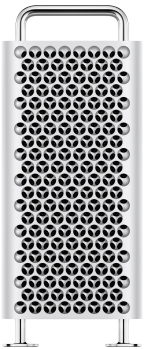


Uni Directional - Digital Word Clock x1 Format

Big Ben



To/From Mac Pro



Word Clock In Selected

Switch on 02R96

WORD CLOCK SELECT		IN	OUT	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
SLOT 1	4	4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 2	8	8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 3	4	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 4	0	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 5	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 6	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT 7	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SLOT 8	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Page on 02R96

02R96

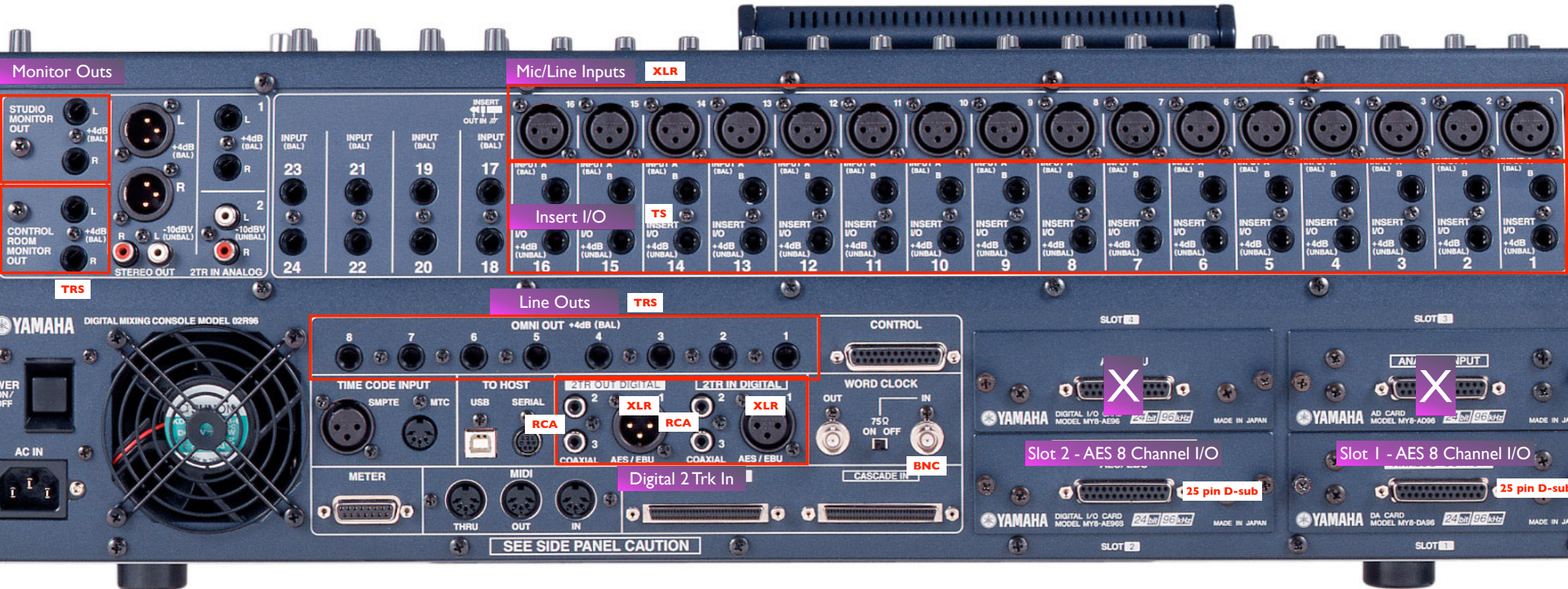


Cable = Unbalanced, 2 conductor, Coaxial, 75 Ohm

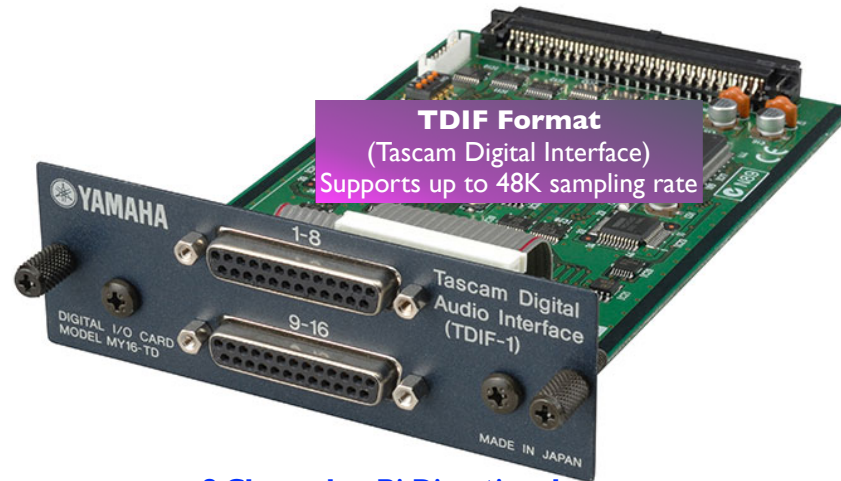
Connectors = BNC



Yamaha 02R96 Back Panel



Legacy Digital Audio Transfer Formats



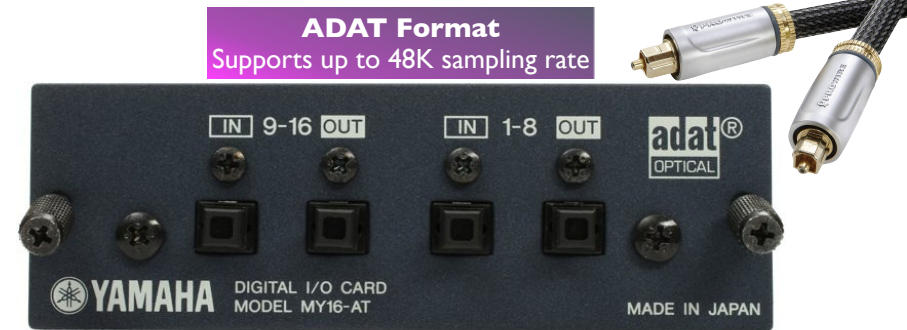
TDIF Format
(Tascam Digital Interface)
Supports up to 48K sampling rate

8 Channels - Bi Directional
DB-25 Connector - Twisted pair 110 Ohm cable

S/PDIF Format
(Sony/Philips Digital Interface)
Supports up to 192K sampling rate



2 Channels - Unidirectional
RCA connectors with coaxial cable
Toslink Connectors - Optical cable



ADAT Format
Supports up to 48K sampling rate

8 Channels - Unidirectional
Toslink Connector - Optical cable

Large Channel Count Digital Audio Transfer Formats

MADI Format
(Multichannel Audio Digital Interface)
Supports up to 192K sampling rate



64 channels - Unidirectional
Multimode SC Optical Connector -
Optical Cable

64 channels - Unidirectional
BNC Connector - Coaxial cable

DANTE Format
Supports up to 192K sampling rate



128 channels - Bidirectional
Ethernet Connector - CAT 5/6 cable



Equipment and Function

Lynx Aurora

SAC
Sonic Arts Center

The City College
of New York

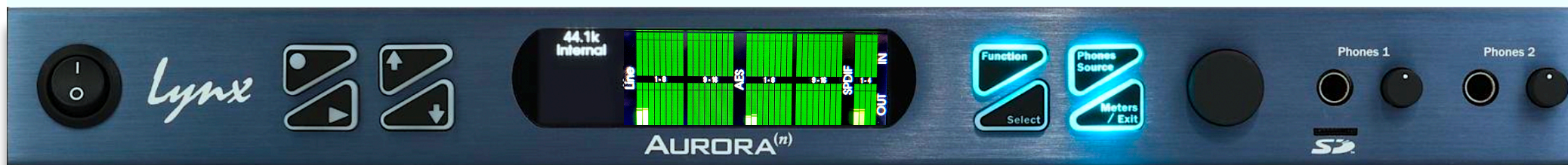
Main Functions of the Lynx Aurora

Provides input/output connections (digital and analog) for Logic and Pro Tools

A-D and D-A Conversion for Logic and Pro Tools

Provides interconnection to the computer

Lynx Face/Backplate



**From Patchbay
Channels 1-8**

**To Patchbay
Channels 1-8**

**From Patchbay
Channels 9-16**

**To Patchbay
Channels 9-16**

**To/From DM-2000, Slot 1
Channels 1-8**

**To/From DM-2000, Slot 2
Channels 9-16**

To DM-2000/02R96

From Big Ben

**To/From
Mac Pro**

Avid, Pro Tools I/O Routing

OUTPUTS

INPUTS

Input Output Bus Insert Mic Preamps H/W Insert Delay

Show Last Saved Setup

A - 1: Aurora(n)-TB3 Analog

Name	Format	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
✓ A Line 1-2	Stereo	L	R																																	
✓ A Line 3-4	Stereo			L	R																															
✓ A Line 5-6	Stereo					L	R																													
✓ A Line 7-8	Stereo							L	R																											
✓ A Line 9-10	Stereo									L	R																									
✓ A Line 11-12	Stereo											L	R																							
✓ A Line 13-14	Stereo													L	R																					
✓ A Line 15-16	Stereo															L	R																			
✓ A AES 1-2	Stereo																	L	R																	
✓ A AES 3-4	Stereo																			L	R															
✓ A AES 5-6	Stereo																				L	R														
✓ A AES 7-8	Stereo																					L	R													
✓ A AES 9-10	Stereo																						L	R												
✓ A AES 11-12	Stereo																							L	R											
✓ A AES 13-14	Stereo																								L	R										
✓ A AES 15-16	Stereo																									L	R									

Input Output Bus Insert Mic Preamps H/W Insert Delay

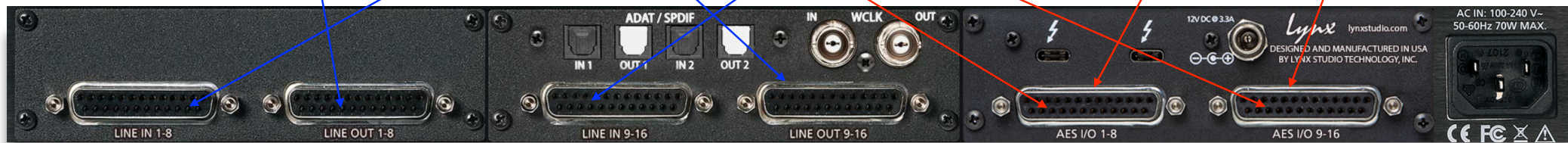
Show Last Saved Setup

A - 1: Aurora(n)-TB3 Analog

Name	Format	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
✓ A Line 1-2	Stereo	L	R																																	
✓ A Line 3-4	Stereo			L	R																															
✓ A Line 5-6	Stereo					L	R																													
✓ A Line 7-8	Stereo							L	R																											
✓ A Line 9-10	Stereo									L	R																									
✓ A Line 11-12	Stereo											L	R																							
✓ A Line 13-14	Stereo													L	R																					
✓ A Line 15-16	Stereo															L	R																			
✓ A AES 1-2	Stereo																	L	R																	
✓ A AES 3-4	Stereo																			L	R															
✓ A AES 5-6	Stereo																				L	R														
✓ A AES 7-8	Stereo																					L	R													
✓ A AES 9-10	Stereo																						L	R												
✓ A AES 11-12	Stereo																							L	R											
✓ A AES 13-14	Stereo																								L	R										
✓ A AES 15-16	Stereo																									L	R									

BLUE = ANALOG

RED = DIGITAL



Equipment & Function

Big Ben & 02R-96



Main Functions of the 02R96

Inputs/Outputs Connections (Digital & Analog)

Audio Routing and Signal Level Modification

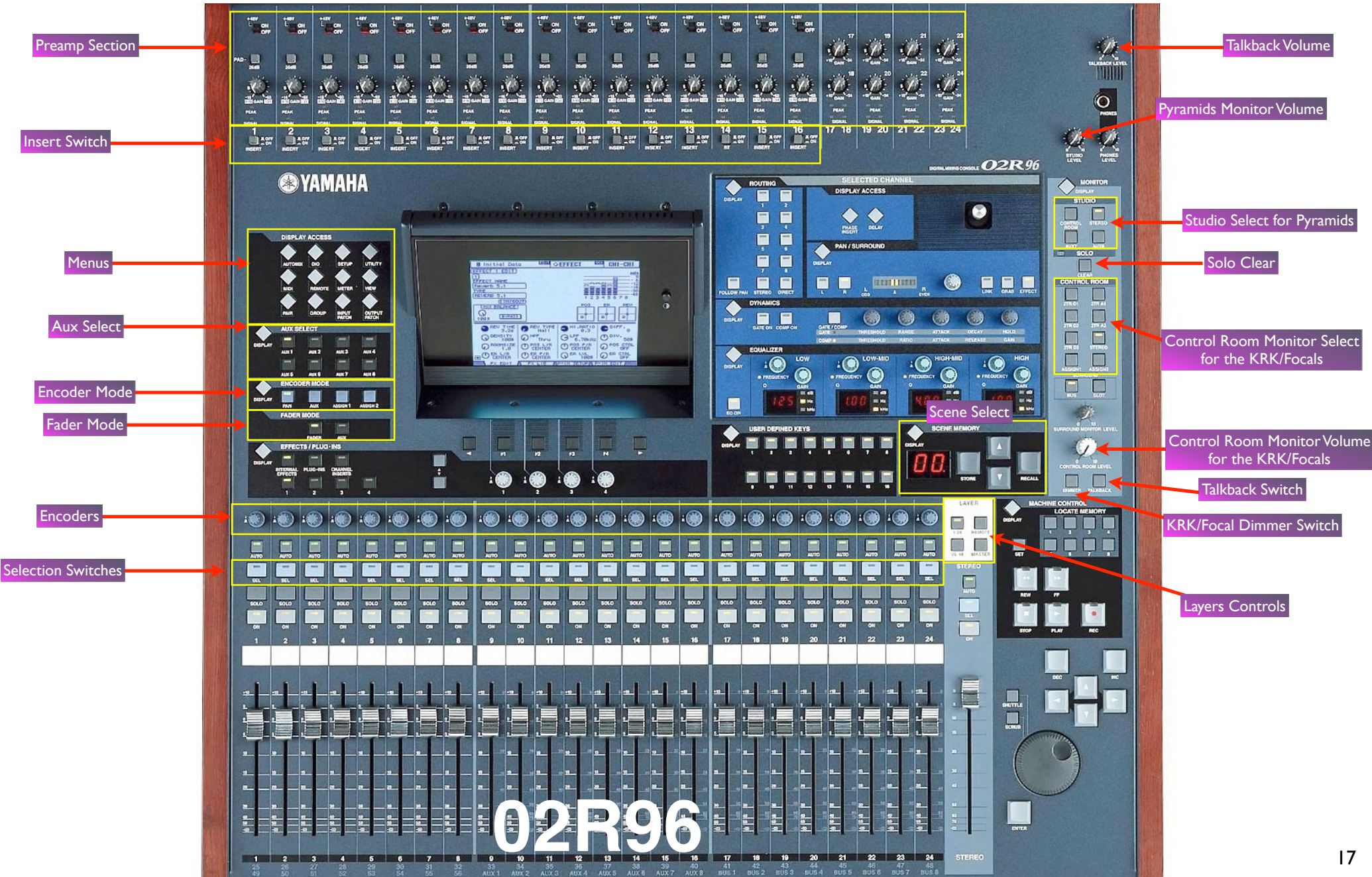
Preamplification

Remote Control

Signal Processing

Talkback

Audio Monitoring



Yamaha Layer

SAC Function

Yamaha I/O Connection

Lynx Aurora I/O

Layer 1-24

Scene 1 - Direct Outs from layer 1-16 go to the Lynx AES I-16 inputs

Microphone Inputs 1-16

Card Slots 1 & 2

To
Lynx AES Ins 1-16

Layer 25-48

Lynx Digital Returns 1-16 (headphones)

Card Slots 1 & 2

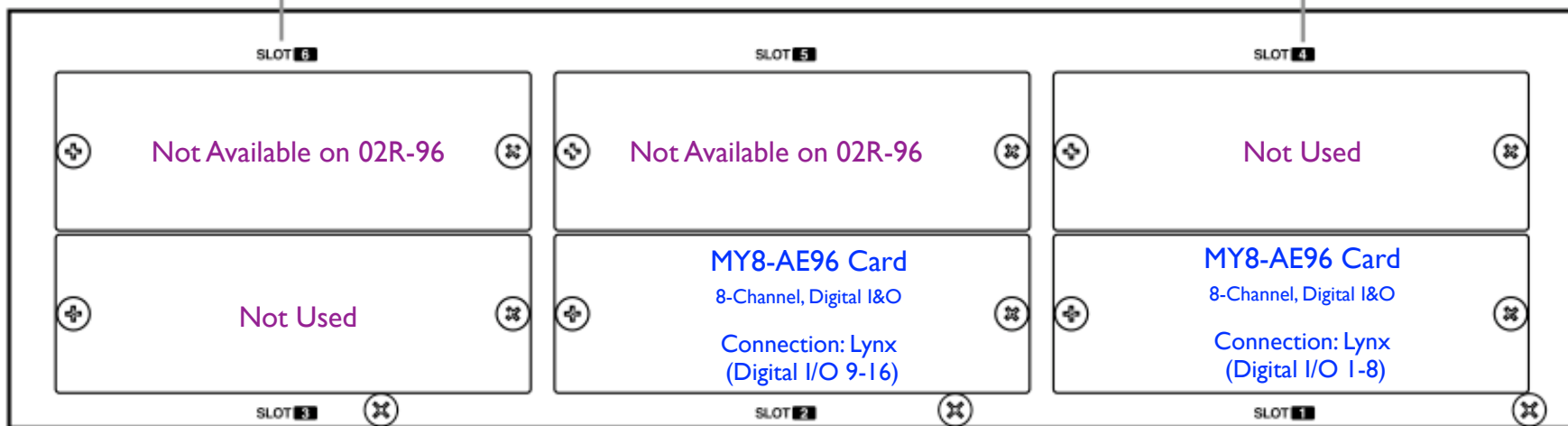
From
Lynx AES Outs 1-16

Remote

Remote

Master

Master Section

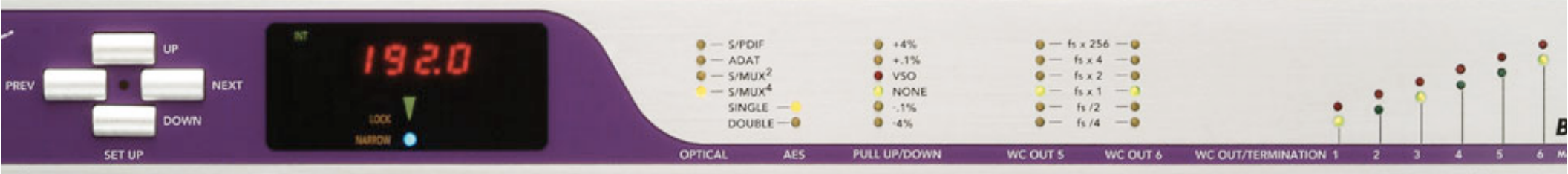


Yamaha 02R-96

Normalizing the 02R96 for a Recording Session

1. Reset the Scene Memory to **Scene 1**.
2. Normalize the hardware associated with the head amp (pot, 48v, pad, Insert) for all 16 channels
3. Set Input Metering Position to **Pre Eq**
4. Set Stereo meter to **Control Room**
5. Set **Control Room Monitor** Select to **Symphony**
6. Select **Layer 1-24**
7. Select **Fader** for Fader Mode.
8. Make sure the **Word Clock Select** is set to **Word Clock In** (see next page)

Apogee, Big Ben - Master



MASTER CLOCK PULSES



AUDIO BYTE/WORD (READ OR RECORDED) SLAVED TO THE MASTER CLOCK

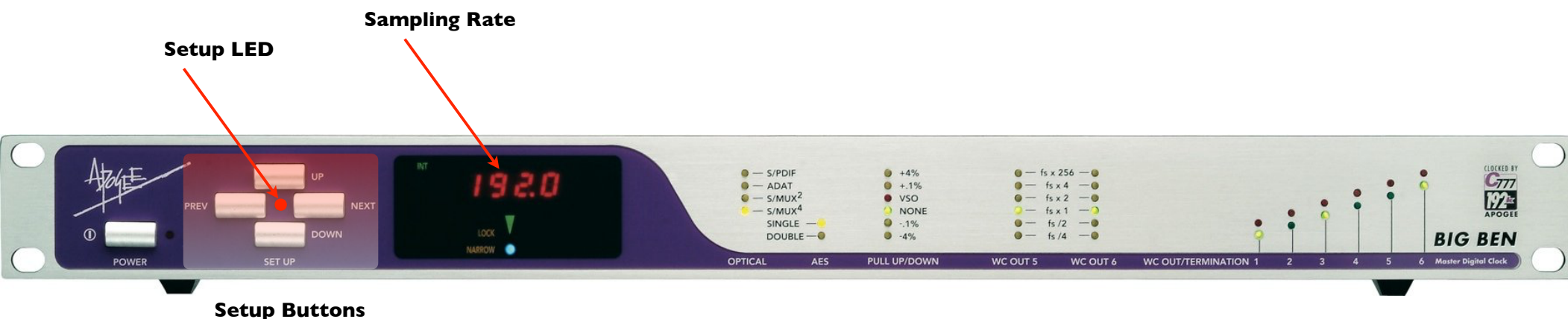
(In the DM-2000 and Apogee Symphony)

Main Function of the Big Ben

Provides the master clock to all digital audio hardware
(Lynx Aurora and DM-2000)

Establishing the Session Sampling Rate

Setting the Big Ben



- 1) Enable Setup Mode by simply pressing any of the SETUP buttons. The SETUP LED will illuminate and the value selected the previous time SETUP mode was enabled will flash (sampling rate if that was the last value selected)
- 2) Press either the PREV or NEXT button if sampling rate is NOT flashing. Press until sampling rate is flashing.
- 3) Press either the UP or DOWN buttons until the desired (sampling rate) is blinking.
- 4) Please Note: If no buttons are pressed for 2 seconds, after the initial press, Setup Mode will be disabled automatically and the value which was blinking will now illuminate solidly.
- 5) Once you have set the proper sampling rate the value will stop blinking and will be saved automatically.

02R-96 Word Clock Select Screen

96 Initial Data EDIT DIO 96k CH48-NAME

WORD CLOCK SELECT

SLOT TYPE	IN	OUT	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
SLOT1 adat	4	4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLOT2 AES/EBU	8	8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLOT3 TDIF	4	4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLOT4 D/A	0	4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLOT5 A/D	8	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLOT6 NO CARD	-	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

FS WC IN CAS.IN 2TRD1 2TRD2 2TRD3

96 kHz INT 44.1k INT 48k INT 88.2k INT 96k

WORD CLOCK DITHER CASCADE CAS. OUT

Switch In the **Display Access** Section

This must be the **Word Clock** source.

Page in DIO

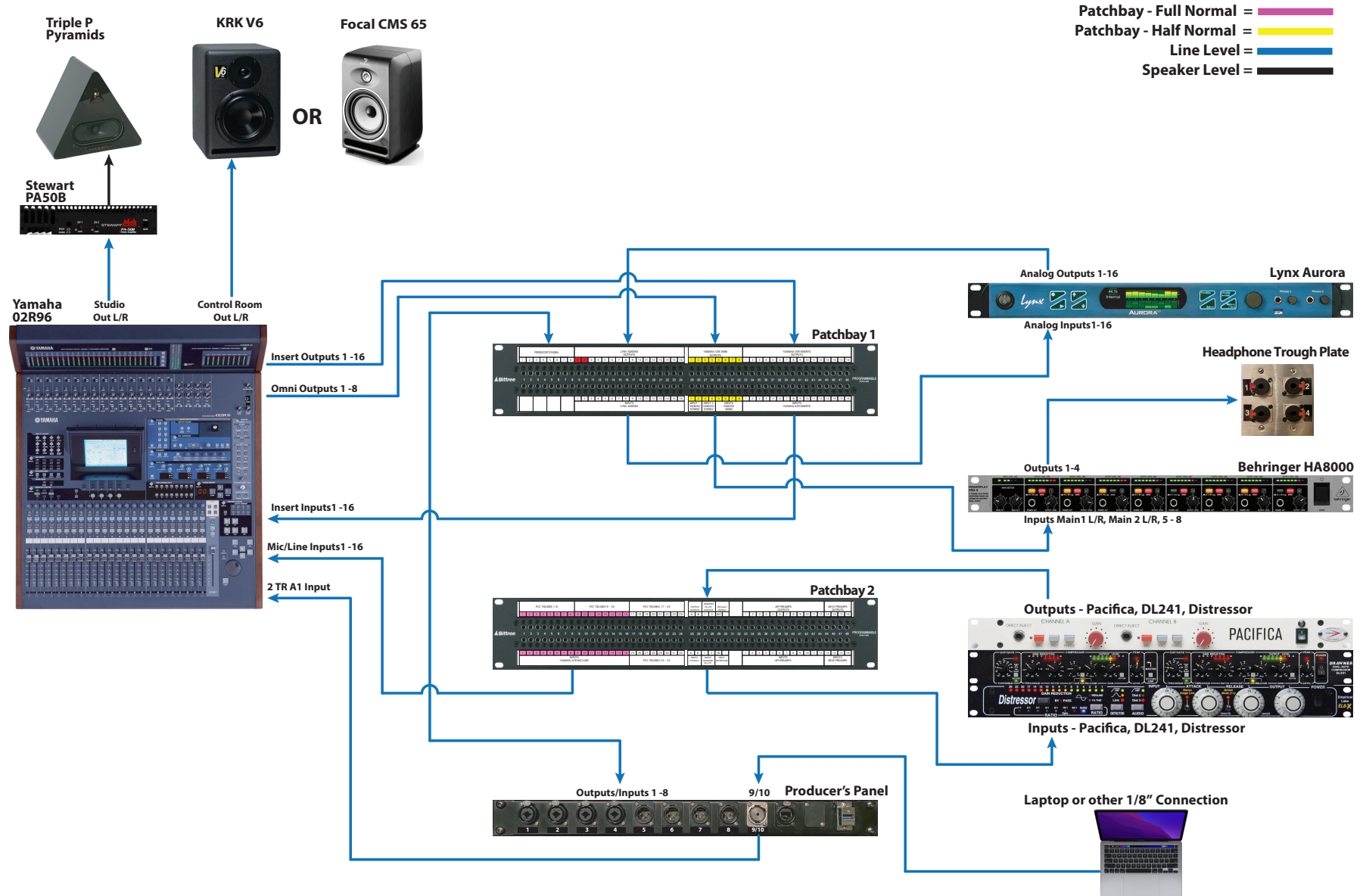
The source select buttons have the following indications:

- A usable wordclock signal is present at this input.
- No wordclock signal is present at this input.
- A wordclock signal is present, but it's out of sync with the current DM2000 clock.
- This is the currently selected wordclock source.
- This input was selected as the wordclock source, but no usable signal was received.
- This cannot be selected as the wordclock source because a wordclock signal cannot be sourced from this input on this type of I/O Card, or no I/O Card is installed.



Signal Flow Overviews



194 - 196 Analog Signal Flow



193 - 197 Digital Signal Flow

Digital Cable = 
 Word Clock = 

Apogee Big Ben



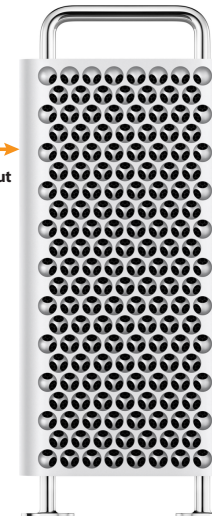
Word Clock Outs

Lynx Aurora



Thunderbolt In/Out

Apple Mac Pro



Thunderbolt In/Out

Yamaha
02R96 or
DM2000



Word Clock In

AES Card #2
In/Out 9-16

AES Card #1
In/Out 1-8

2TR D2 Input

Coaxial Output



Toslink Input

Toslink Out L/R

AES In/Out 1-8

AES In/Out 9-16

Word Clock In



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Analog Patchbays Overview



Yellow square = Half Normal

Pink square = Full Normal

Red square = Not Available

Room 194 - 196 Patchbays

Edited by Joe Popp 06.12.23

Patchbay 1

PRODUCER'S PANEL								LYNX AURORA OUTPUTS															
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
								1	2	3	4	5	6	7	8	INPUTS LYNX AURORA							

YAMAHA 02R OMNI OUTPUTS								YAMAHA 02R INSERTS OUTPUTS															
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INPUT 1 HA8000 STEREO		INPUT 2 HA8000 STEREO		INPUTS HA8000 MONO				INPUTS YAMAHA 02R INSERTS															

Patchbay 2

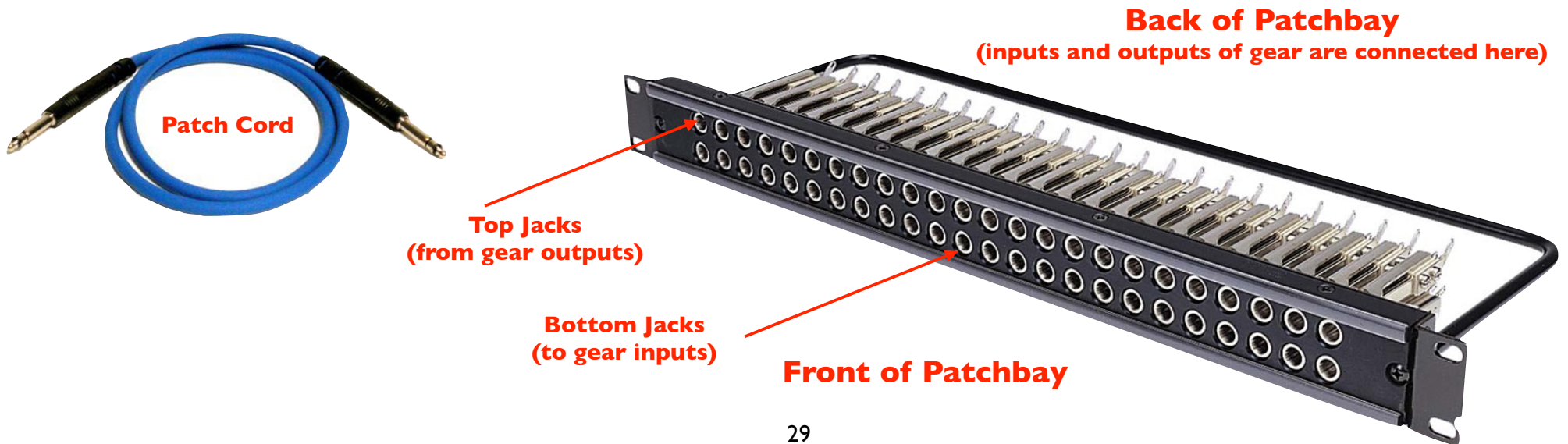
PCC TIELINES 1-8								PCC TIELINES 9 - 16								PCC TIELINES 17 - 24							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	25	26	27	28	29	30	31	32
INPUTS YAMAHA 02R MIC/LINE								PCC TIELINES 25 - 32															

PACIFICA OUTPUTS		DRAWMER DL-241 OUTPUTS		Distressor OUTPUT		API PREAMPS OUTPUTS								NEVE PREAMPS OUTPUTS							
A	B	1	2	OUT		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	B	1	2	IN		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INPUTS PACIFICA		INPUTS DRAWMER DL-241		INPUT DISTRESSOR		INPUTS API PREAMPS								INPUTS NEVE PREAMPS							

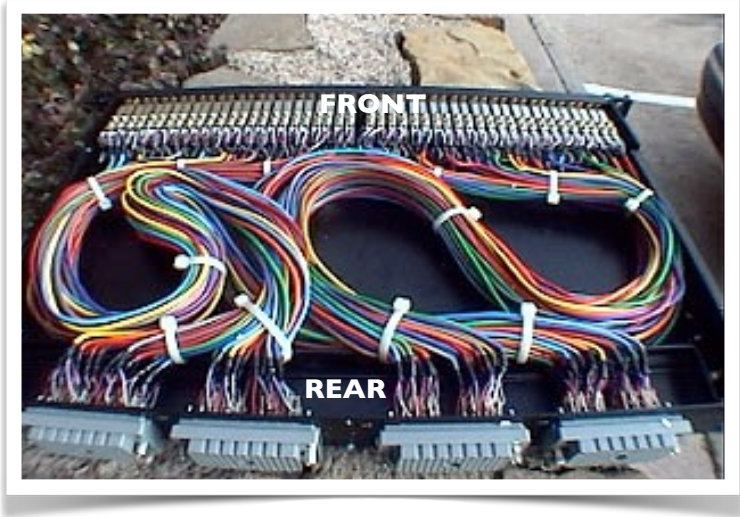
The Analog Patchbay Defined

An analog patchbay is a device that allows studio users to bring some or all of the analog Input & Output connections to a central place to allow for easy and flexible interconnections between various piece of analog equipment.

In general, patch bays consist of two rows of jacks, one on top of the other. The **top jacks** have **outputs** connected to them and the **bottom jacks** have **inputs** connected to them.



Termination: TT/Bantam with EDAC/ELCO & 25 Pin D-Sub



96 point TT/BANTAM patchbay with EDAC termination points



96 point TT/BANTAM patchbay with DB-25 termination points

Patch Cord Comparison



1/4" TRS

TT or Bantam

TT/Batam's low profile can allow for 96 point patch bays
 1/4" TRS can only accommodate 48 point patch bays

Termination: TT/Bantam with XLR - 1/4" RTS with Punch Block

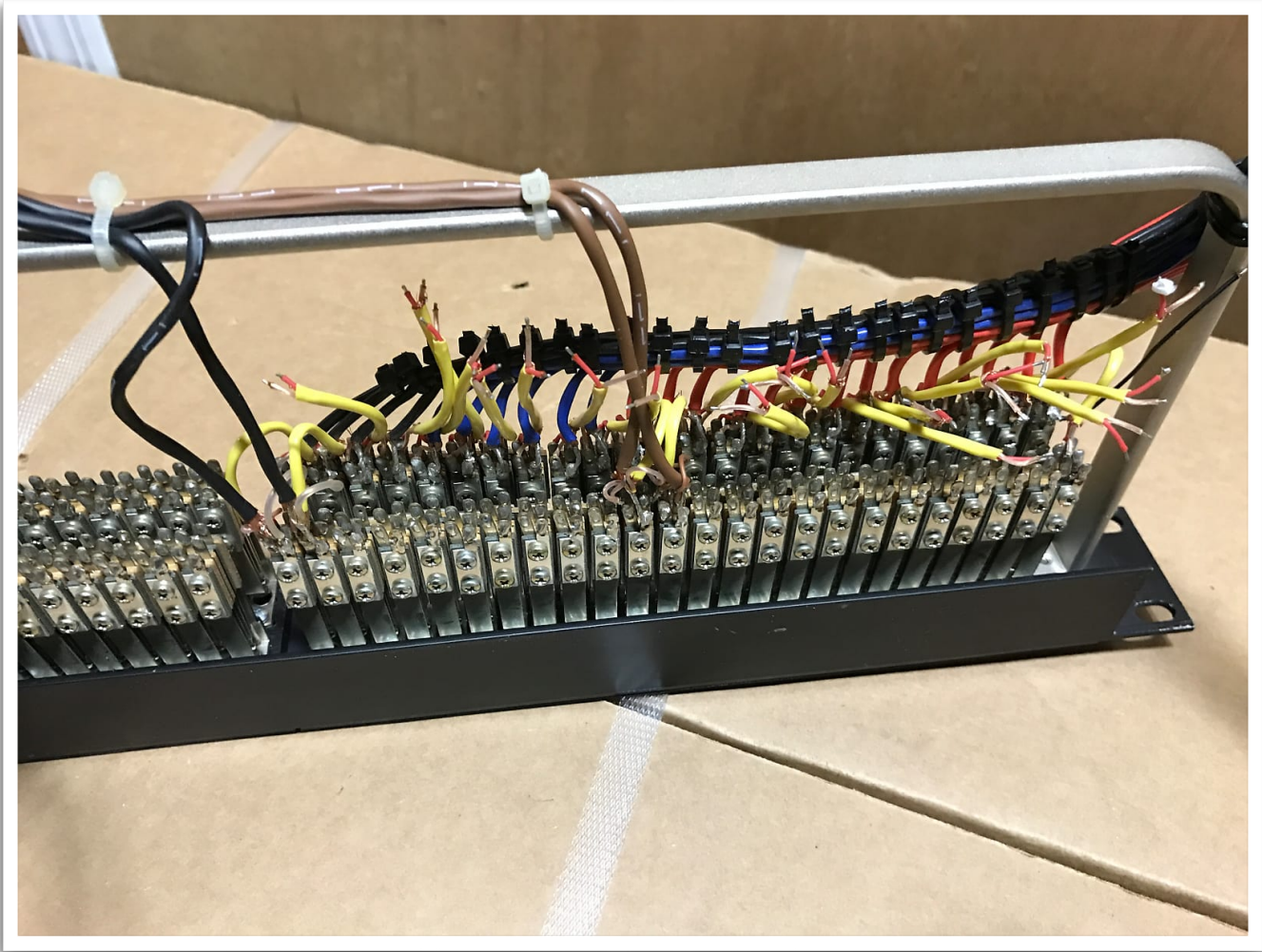


48 point 1/4" Ring-Tip-Sleeve patchbay with Punch Block termination (non normaling)



48 point 1/4" Ring-Tip-Sleeve patchbay with XLR Termination

Termination: TT/Bantam with Solder Connection Points



A photograph of two students in a studio setting. The student on the left is wearing a grey beanie, a white t-shirt, and a black Nike jacket, looking down at a piece of audio equipment. The student on the right is wearing a black beanie and a camouflage jacket, focused on connecting a black cable to a patchbay. The patchbay is a rack-mounted device with numerous ports and cables, including blue and green patch cables. The background is a plain, light-colored wall.

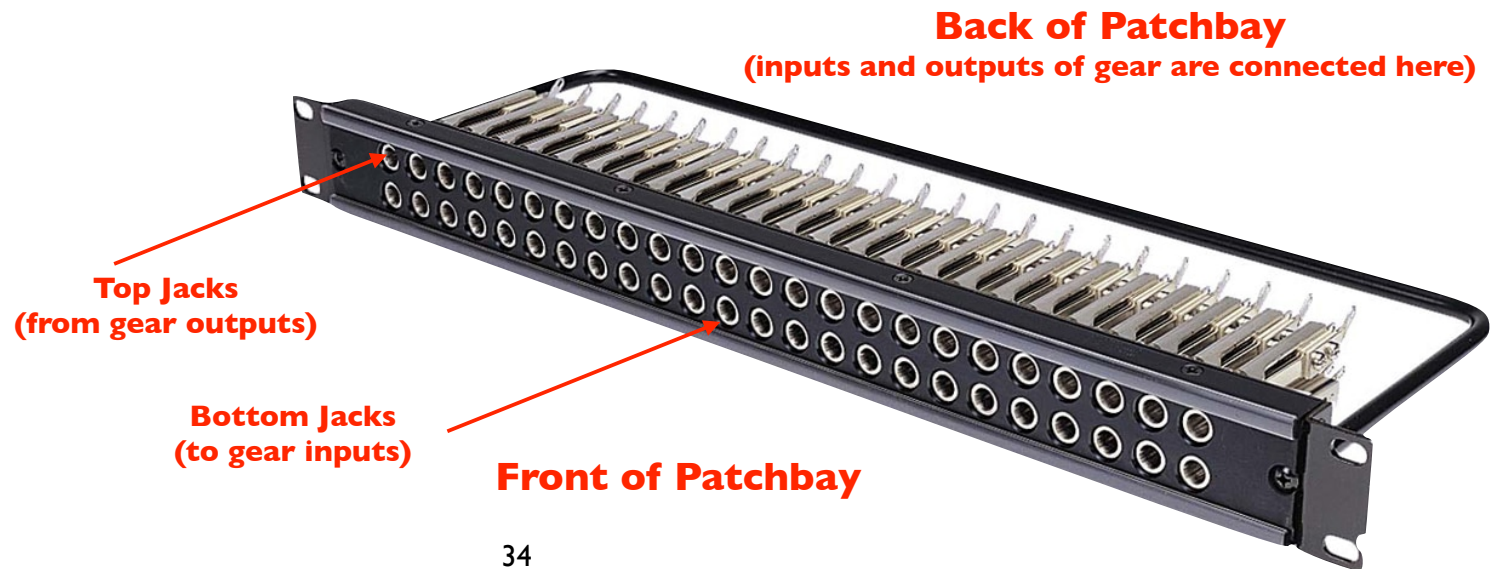
Analog Patchbay Normalizing

SAC
Sonic Arts Center

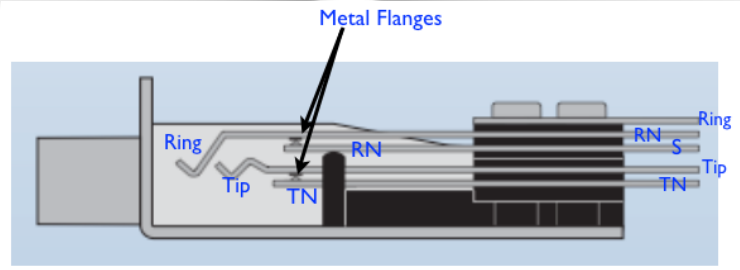
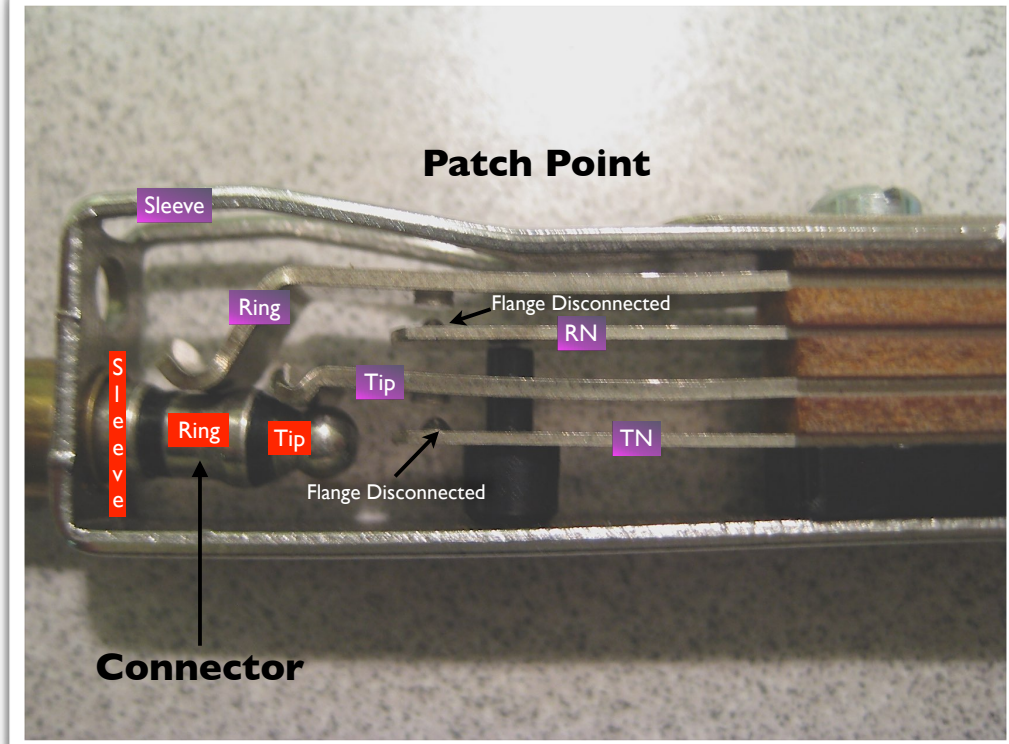
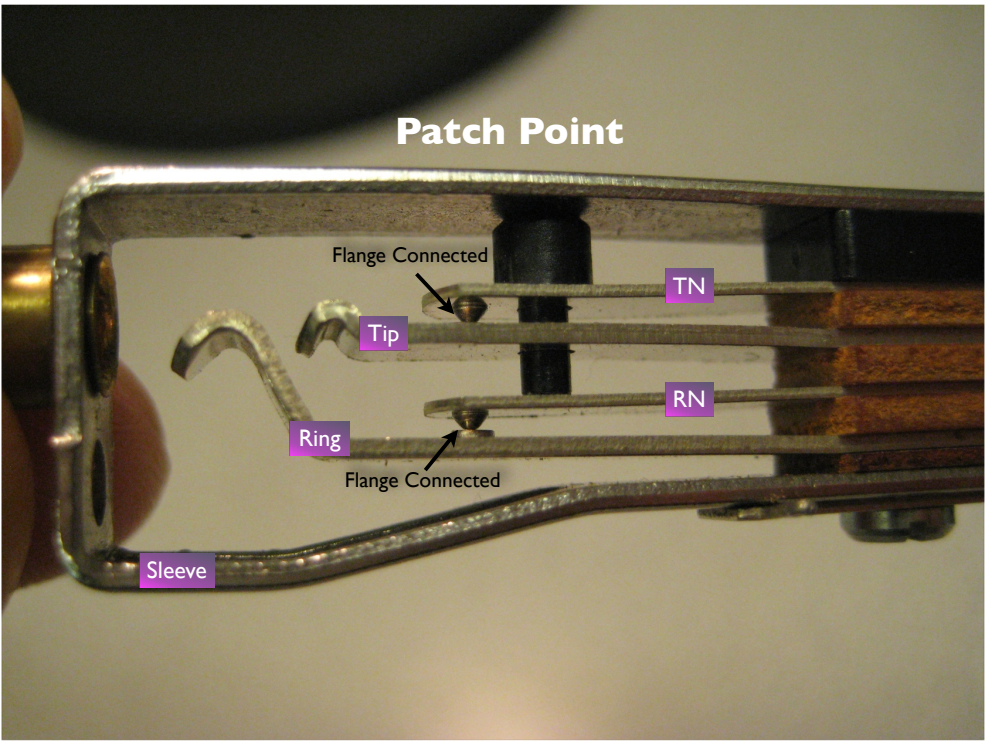
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Normalling

Normalling is creating a connection between the top and bottom jacks that do not require the use of a patch cord. Signal flows from the output of a piece of analog equipment to the top jack, down to the bottom jack, and out to the input of an analog piece of equipment.



Normalling Patchpoints Up Close



Anatomy of balanced Bantam/TT jack

Full and Half Normalled

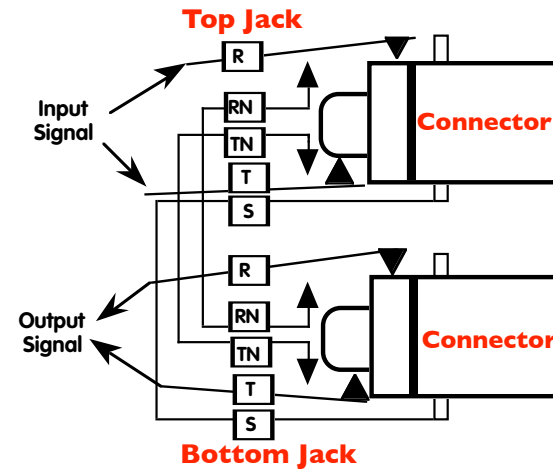
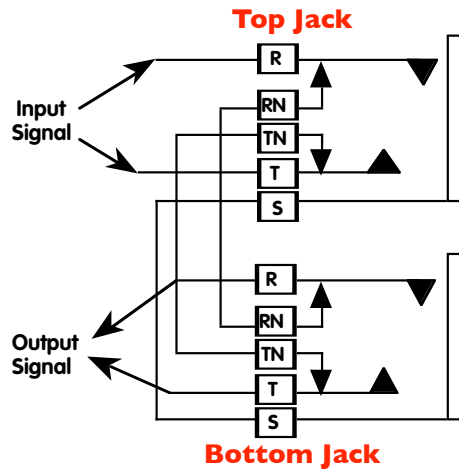
↑ = Metal Flange Connection

R = Ring
 RN = Ring Normalled
 T = Tip
 TN = Tip Normalled
 S = Sleeve/Ground

FULL-NORMALLED

(normal down)

Normals broken with jacks in either patch point



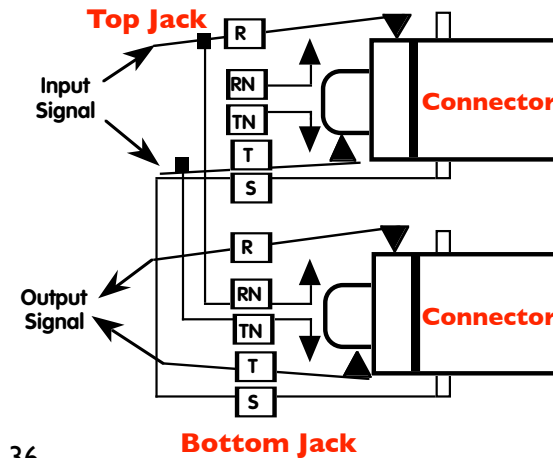
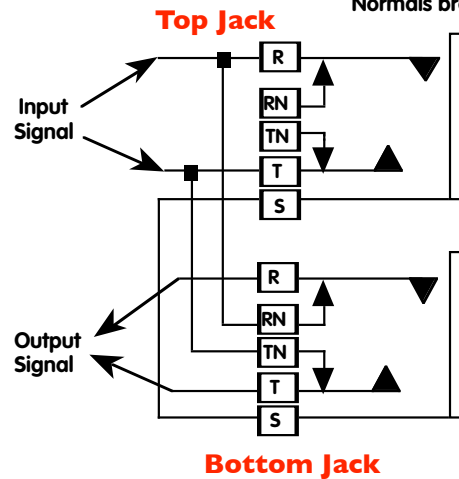
Ring and Tip are disconnected from RN and TN.

Ring and Tip are disconnected from RN and TN.

HALF-NORMALLED

(normal down)

Normals broken with jacks in bottom patch point only



Ring and Tip still connected to bottom RN & TN

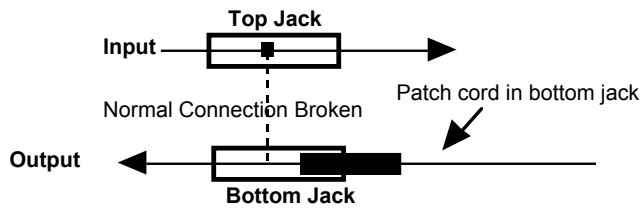
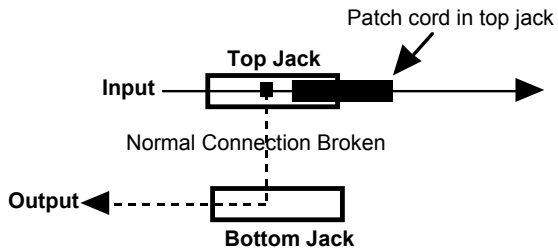
Ring and Tip disconnected from RN & TN

Patchbay Normals Signal Flow

FULL-NORMALLED

(normal down)

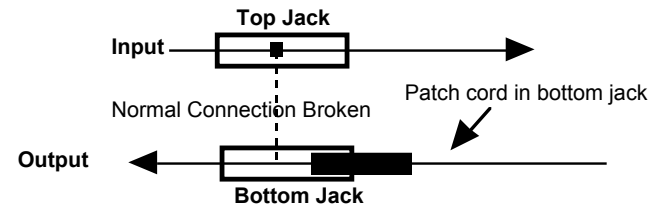
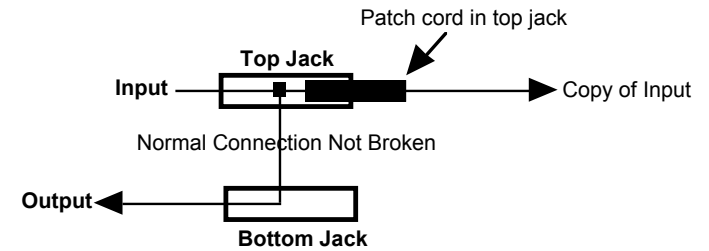
Normals broken with jacks in either patch point



HALF-NORMALLED

(normal down)

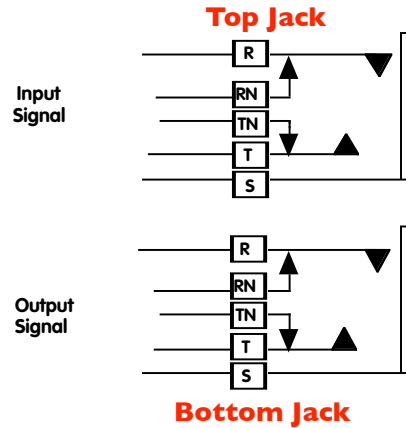
Normals broken with jacks in bottom patch point only



Everything Out, Non-Normalled, Mult/Parallel

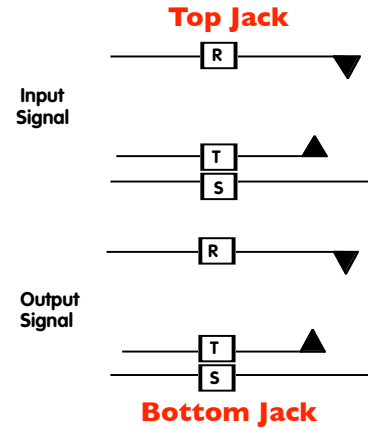
EVERYTHING OUT

Can be wired to be full-normalled or half-normalled



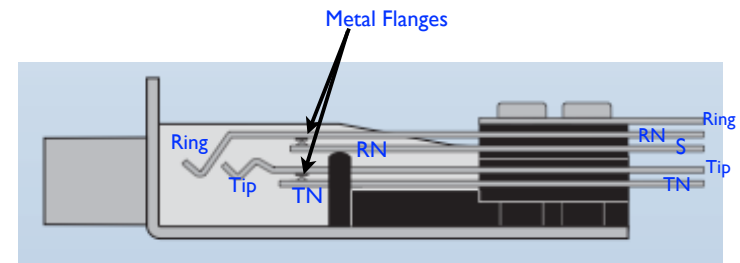
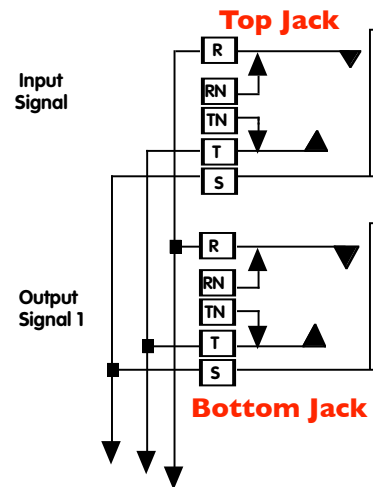
NON-NORMALLED

Can't be wired to do any normalling



MULT/PARALLEL

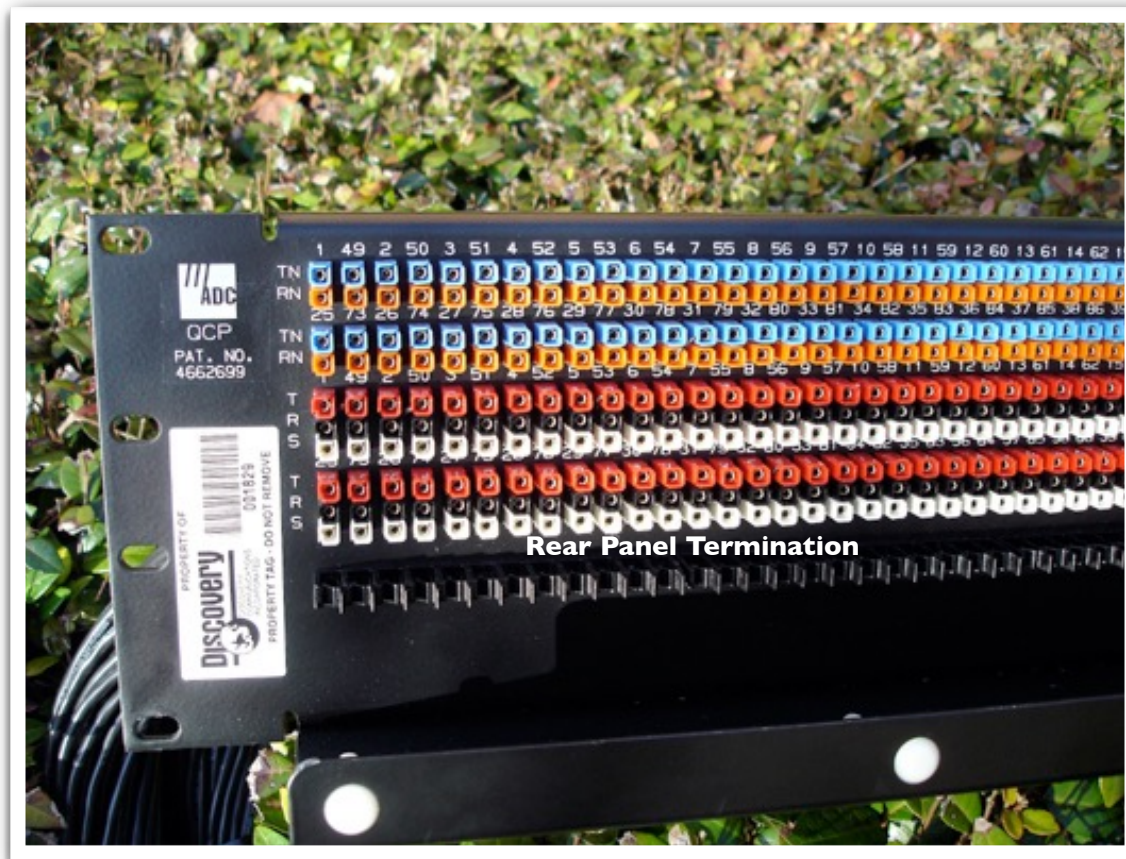
Patching into one jack multiplies the signal to the other connected jacks. Usually wired in sets of four jacks. Only one input signal should be used for each jack set.



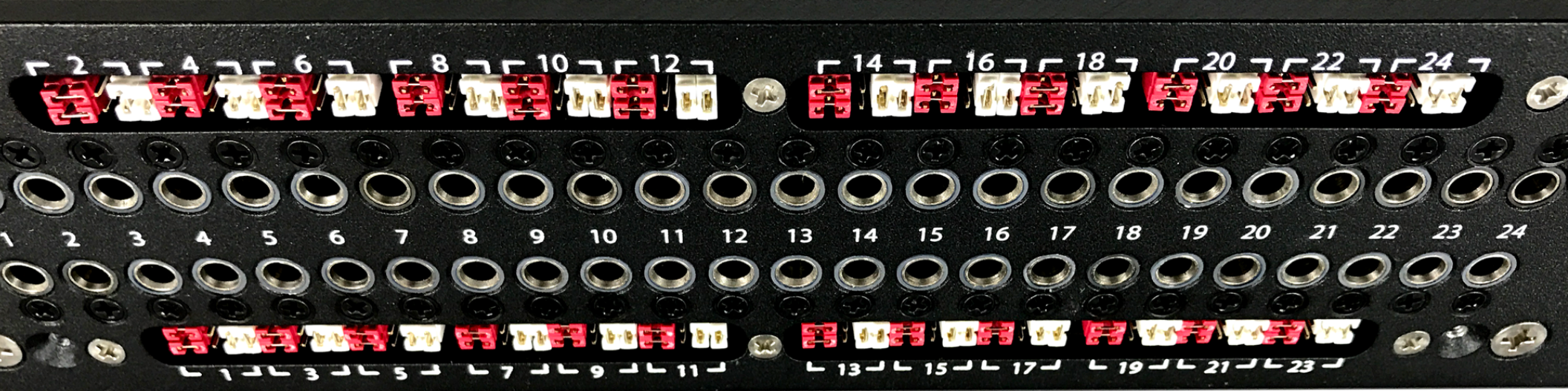
Anatomy of balanced Bantam/TT jack

To two other patch points which function as output signals 2 & 3

Termination for Normalling: Punch Block



Bittree Patchbay Normalling



Full Normalled Isolated Grounds	Full Normalled Looped Grounds	Full Normalled Bussed Grounds	Half Normalled Isolated Grounds	Half Normalled Looped Grounds	Half Normalled Bussed Grounds	Non Normalled Isolated Grounds	Non Normalled Bussed Grounds

For more info visit us at: bittree.com

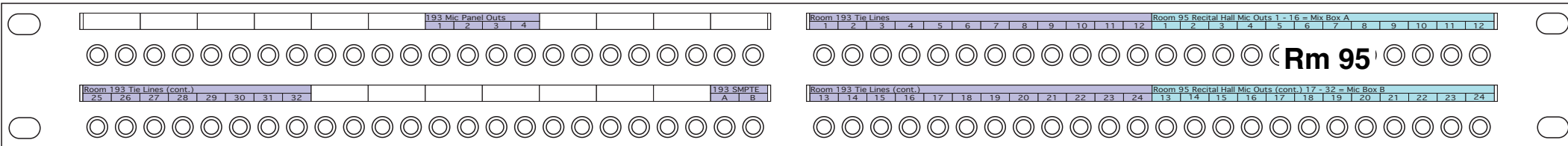
Bittree
High-Performance Patching Systems



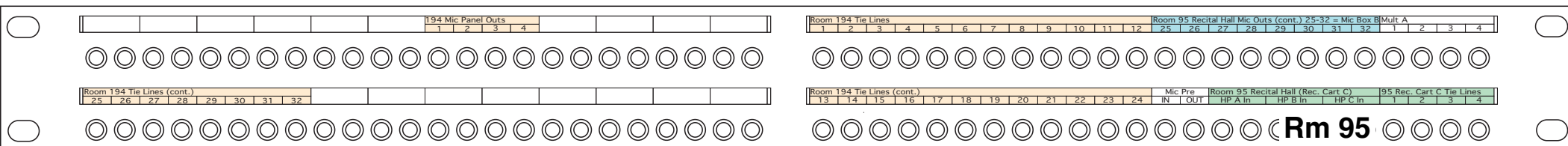
Patch Control Center Patchbays

Patch Control Center Patch Bays

Room 193 - Surround Production Studio



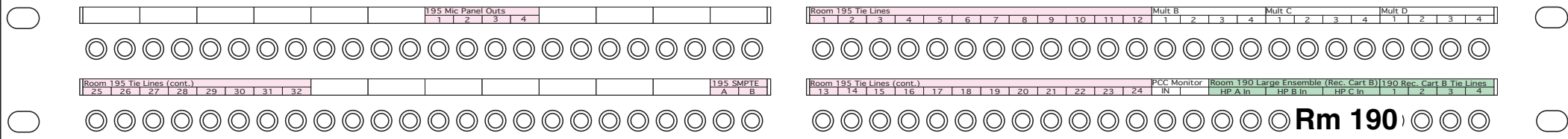
Room 194 - Production Studio



Room 95

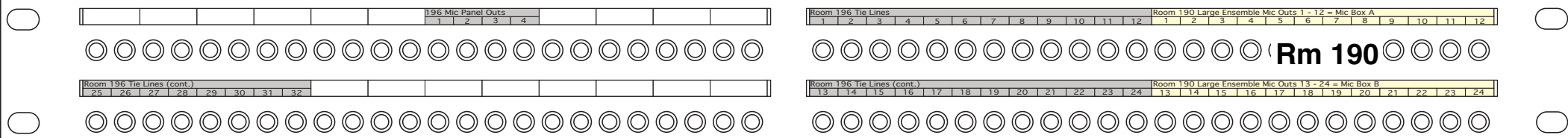
Mult

Room 195 - Production Studio



Mults

Room 196 - Production Studio

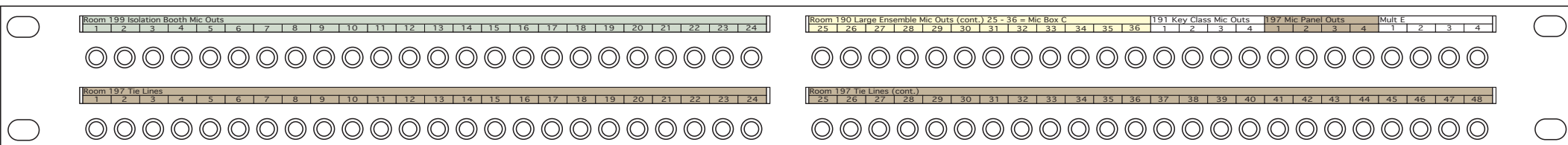


Patch Control Center Patch Bays

Room 199 - Isolation Booth

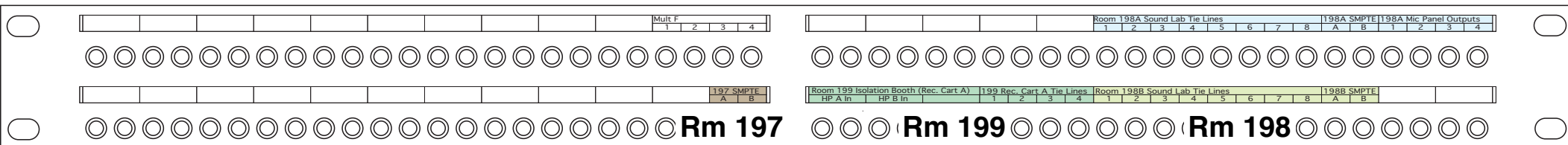
Rm 190

Rm 191



Room 197 - Control Room

Room 198 - Sound Lab

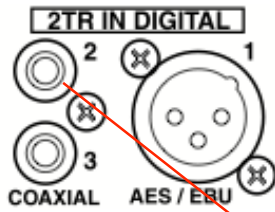


The 02R-96 Monitor Section

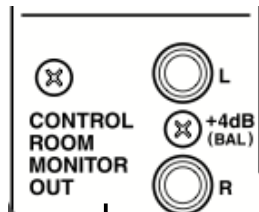


From:
Symphony

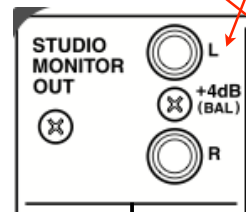
Yamaha 02R-96 connections



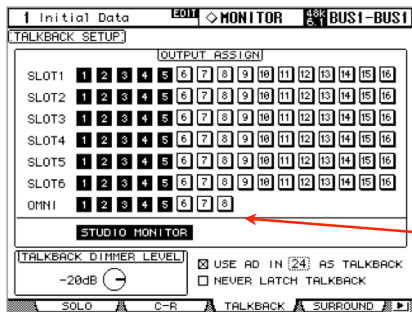
To:



To Monitors



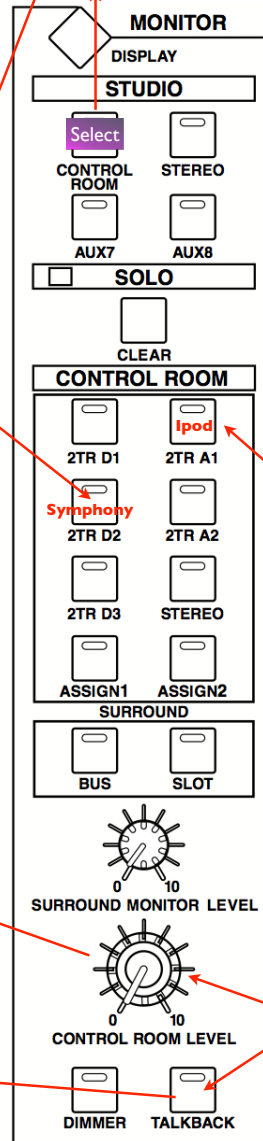
To Monitors



Talkback Setup Page



Pyramid Monitors Pot

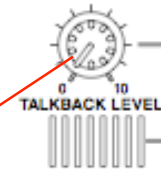


02R96 Monitor Section

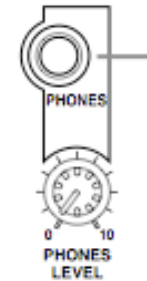
iPod jack on patchbay panel



(Top of Monitor Section)



Generally Set @ 1:00



Focal/KRK Monitors Pot

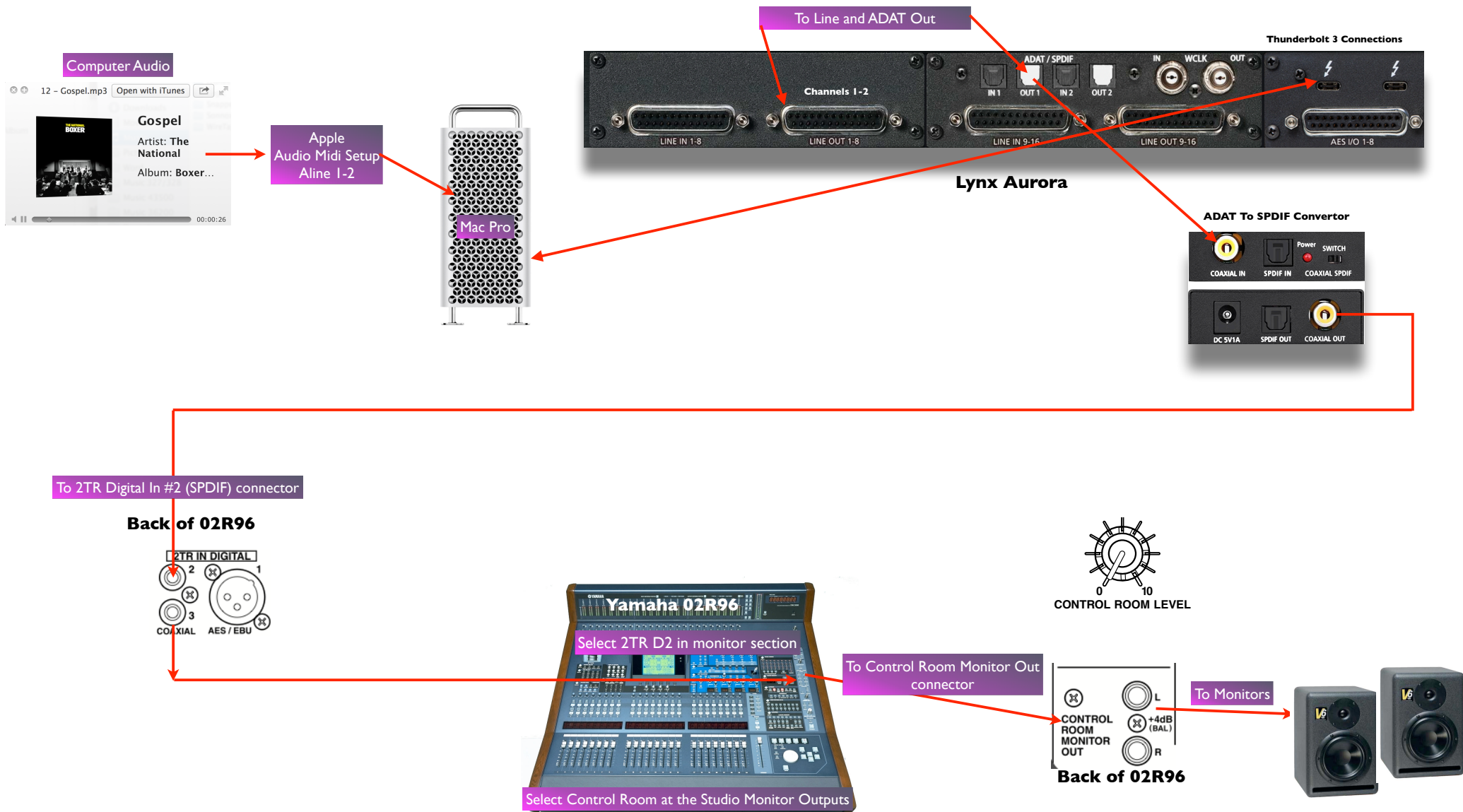


The City College
of New York

Monitoring the Computer Audio



Monitoring The Computer Audio Through the Lynx Aurora





The City College
of New York

Interconnections and Signal Flow Pro Tools with the Lynx Aurora

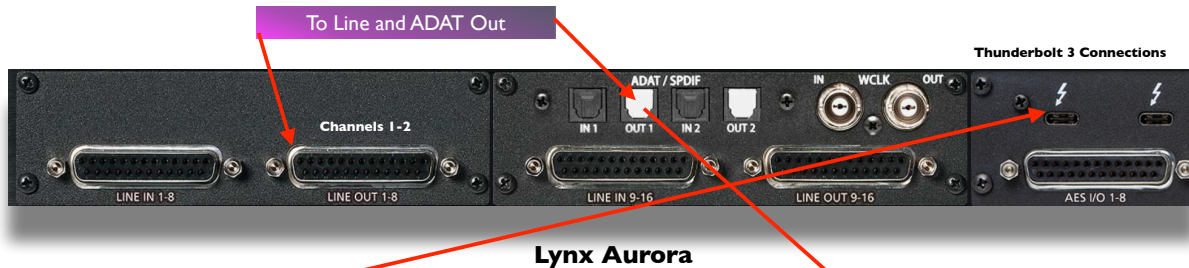


Monitoring Pro Tools Through the Lynx Aurora (Main Monitors)



Aline 1-2 outputs assigned to a track

Apple Audio Midi Setup Aline 1-2

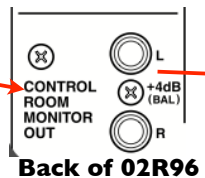


To 2TR Digital In #2 (SPDIF) connector

Back of 02R96



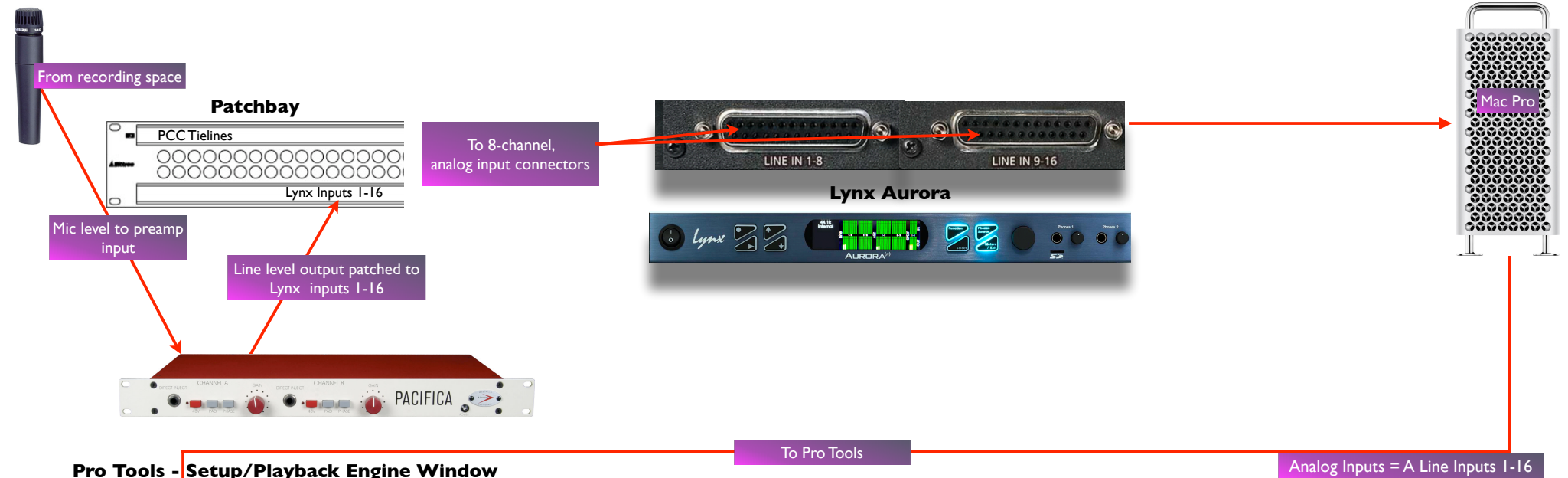
To Control Room Monitor Out connector



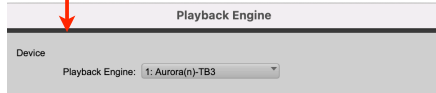
To Monitors



Recording in Pro Tools with the Lynx Aurora - Analog Inputs



Pro Tools - Setup/Playback Engine Window



In the Setup/Playback Engine Menu make sure Aurora is selected

The screenshot shows the 'Pro Tools I/O Setup' window. The 'Analog' section is expanded, showing 16 channels of stereo input (A Line 1-2 to A Line 15-16). A red box highlights these 16 channels, indicating they are selected for recording tracks.

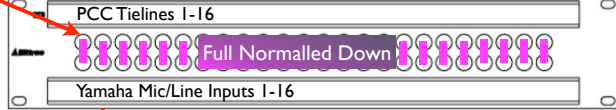


Recording in Pro Tools with the Lynx Aurora - Digital Inputs



From recording space

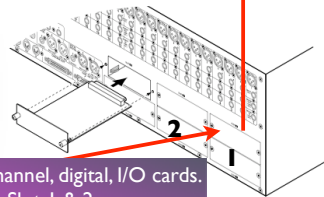
Patchbay



To Mic/Line Input Channels 1-16



Back of 02R96



To AES, 8-channel, digital, I/O cards. Slot 1 & 2

Through channel and fader to direct outputs

To AES, 8-channel, digital, I/O connector



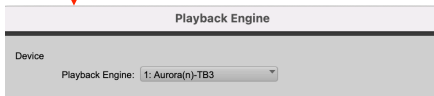
Lynx Aurora



Mac Pro

To Pro Tools

Pro Tools - Setup/Playback Engine Window



In the Setup/Playback Engine Menu make sure Aurora is selected

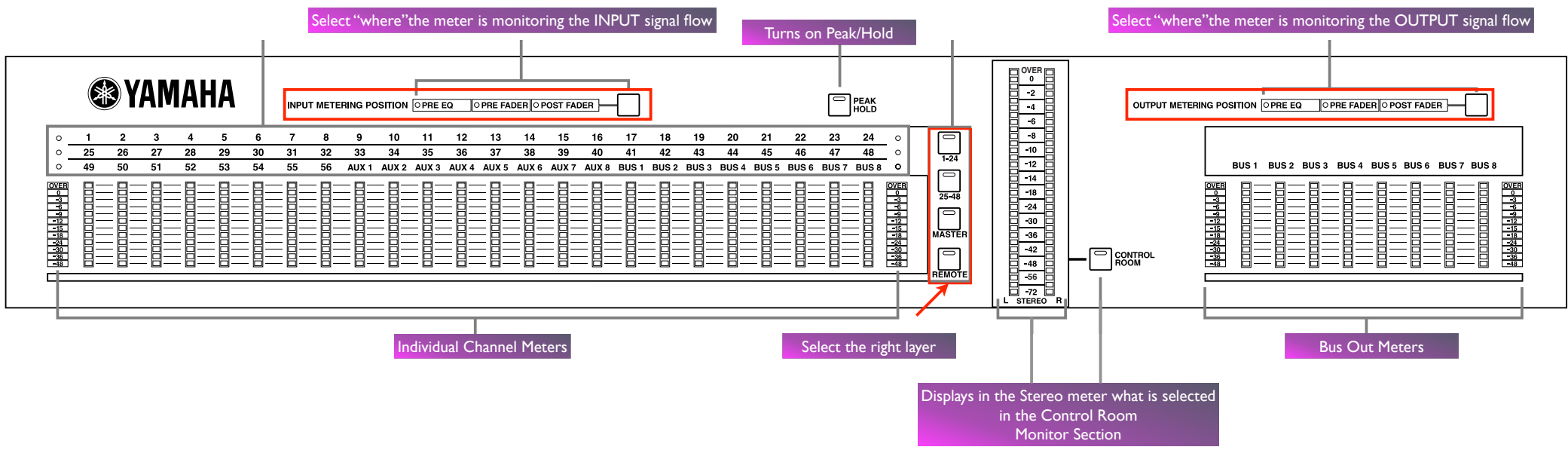
Input	Output	Bus	Insert	Mic Preamps	H/W Insert Delay	A - 1: Aurora(n)-TB3																															
						Analog																															
Name	Format	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
▶ A Line 1-2	Stereo			L	R																																
▶ A Line 3-4	Stereo					L	R																														
▶ A Line 5-6	Stereo							L	R																												
▶ A Line 7-8	Stereo									L	R																										
▶ A Line 9-10	Stereo											L	R																								
▶ A Line 11-12	Stereo													L	R																						
▶ A Line 13-14	Stereo															L	R																				
▶ A Line 15-16	Stereo																	L	R																		
▶ A AES 1-2	Stereo																			L	R																
▶ A AES 3-4	Stereo																					L	R														
▶ A AES 5-6	Stereo																							L	R												
▶ A AES 7-8	Stereo																									L	R										
▶ A AES 9-10	Stereo																											L	R								
▶ A AES 11-12	Stereo																												L	R							
▶ A AES 13-14	Stereo																													L	R						
▶ A AES 15-16	Stereo																														L	R					

Pro Tools I/O Setup

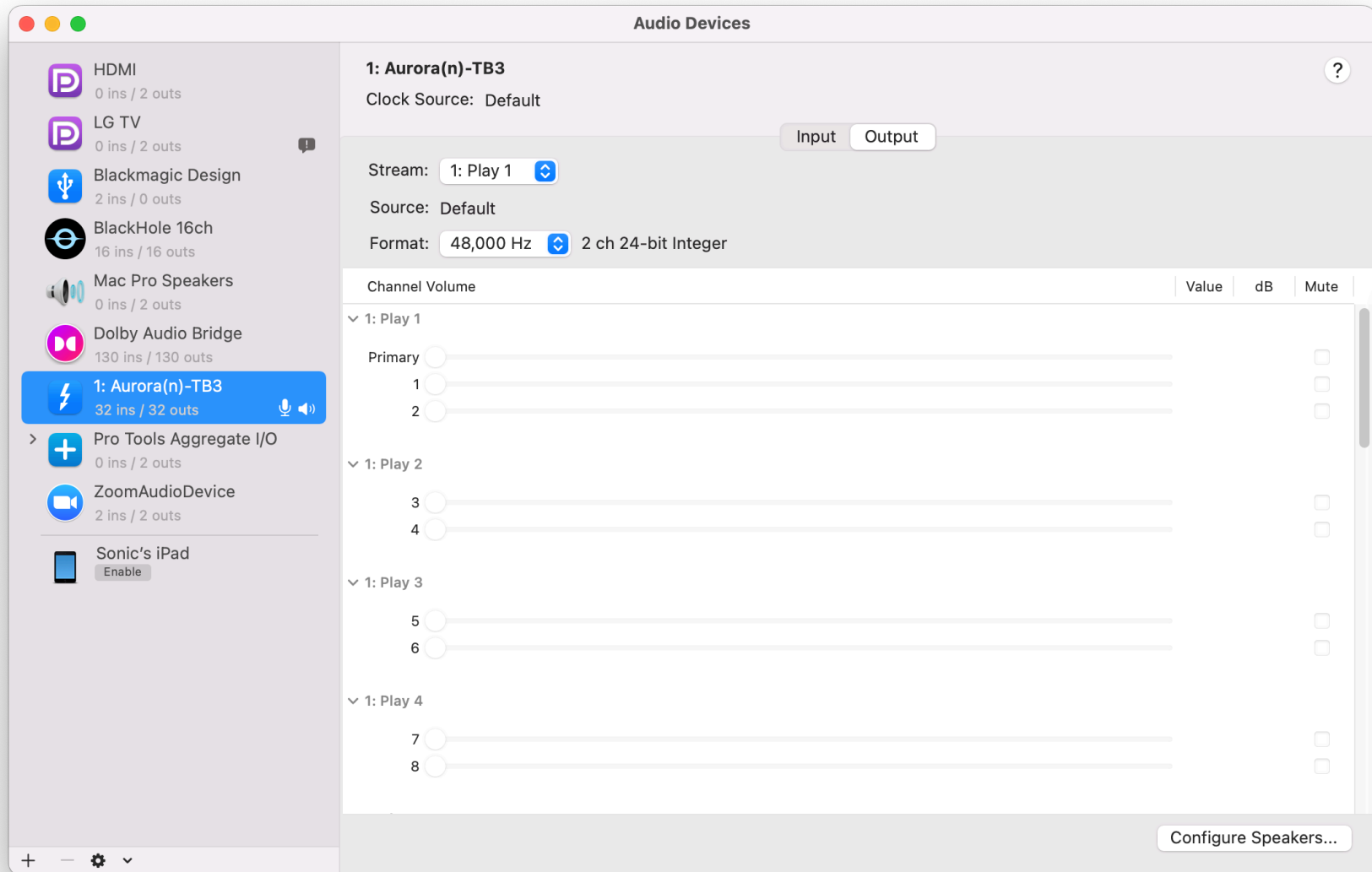


Select AES Inputs 1-16 for recording tracks.

“Follow the Lights” Signal Flow - 02R96



Apple Audio Midi Setup



A photograph of a recording studio. A person wearing a red shirt is seated at a desk, working on a computer. The desk is equipped with a large mixing console, two computer monitors displaying audio software, and two large studio monitors. To the left, there is a keyboard on a stand. The room has soundproofing panels on the walls and ceiling, and track lighting is visible. The overall atmosphere is professional and focused on audio production.

Interconnections and Signal Flow

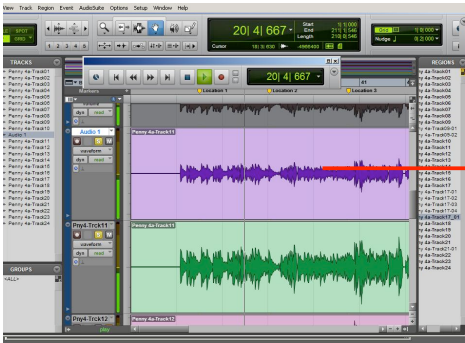
Headphone Mixes with Pro Tools & the Lynx Aurora



The City College
of New York

Headphone Mixes in Pro Tools Through the Lynx Aurora

Pro Tools



To AES 8 channel I/O connector



Lynx Aurora



These headphone outputs are preset to Aline 1-2 for stereo monitoring

1. Use buses and Aux Masters for Headphone mixes in the SAC Stereo Music Template.
2. The Aux Master Outs are assigned to **AES Outs 1-8**.

To 8 channel AES I/O Cards in Slots #1

Lynx Aurora digital returns assigned to Auxes
Preset in Scene 1.



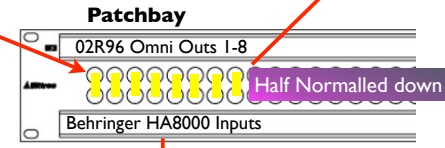
To layer 2, Lynx Aurora Digital Returns 1-8

NOTE
Layer 2 Inputs 1-8 are grouped together in pairs
Auxes 1-8 are grouped together in pairs as well.

Actual Patchbay

YAMAHA 02R OMNI OUTPUTS							
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
INPUT 1 HA8000 STEREO	INPUT 2 HA8000 STEREO	INPUTS HA8000 MONO					

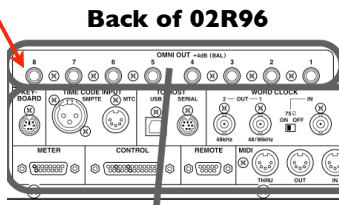
Patch Omni Outs to control room tie lines 41-48
to connect to recording rooms. (higher numbered tielines used for sends)



To Behringer HA8000

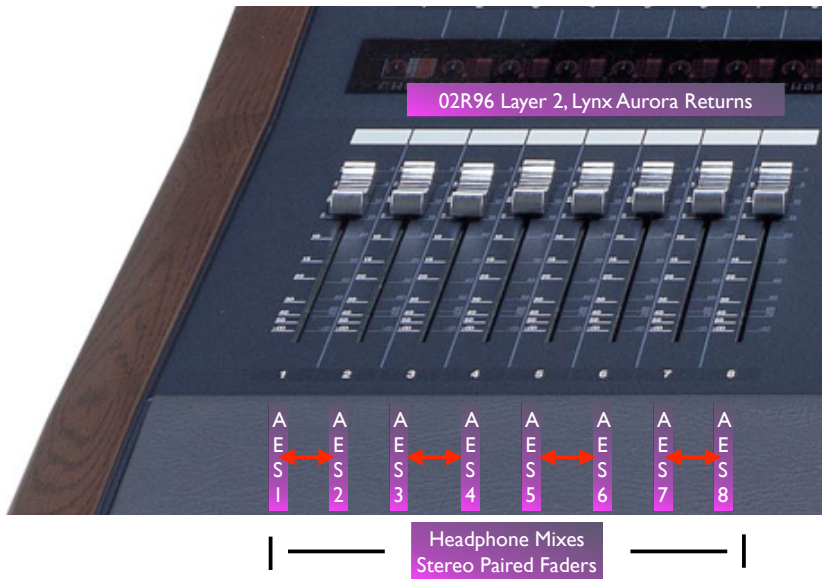


Back of 02R96

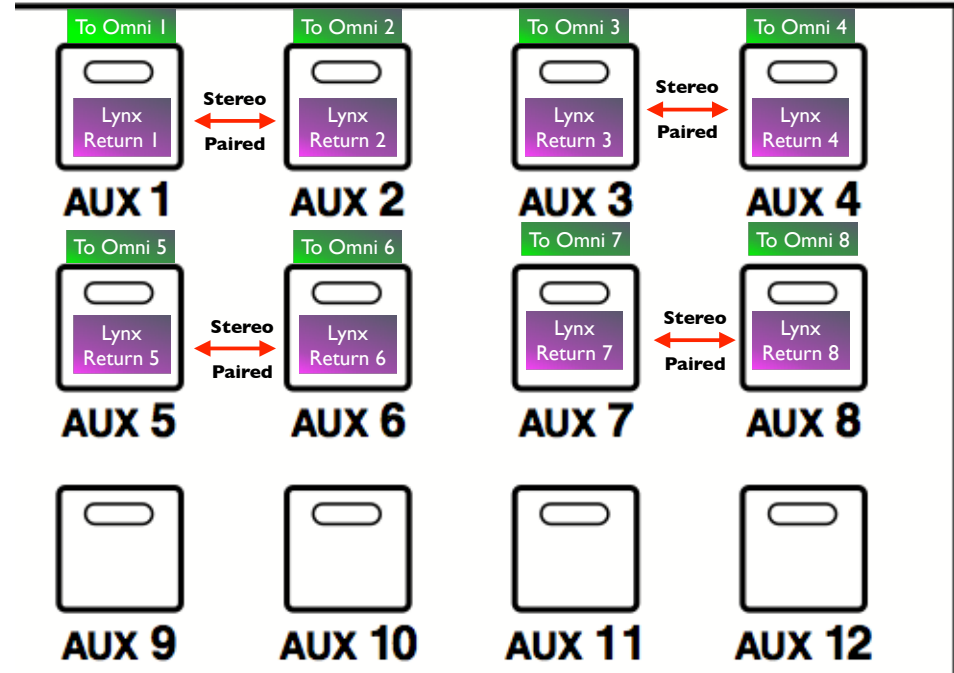


Omni Outs Connectors
(analog, line level)

Headphone Mixes Preset Assignments on the 02R96



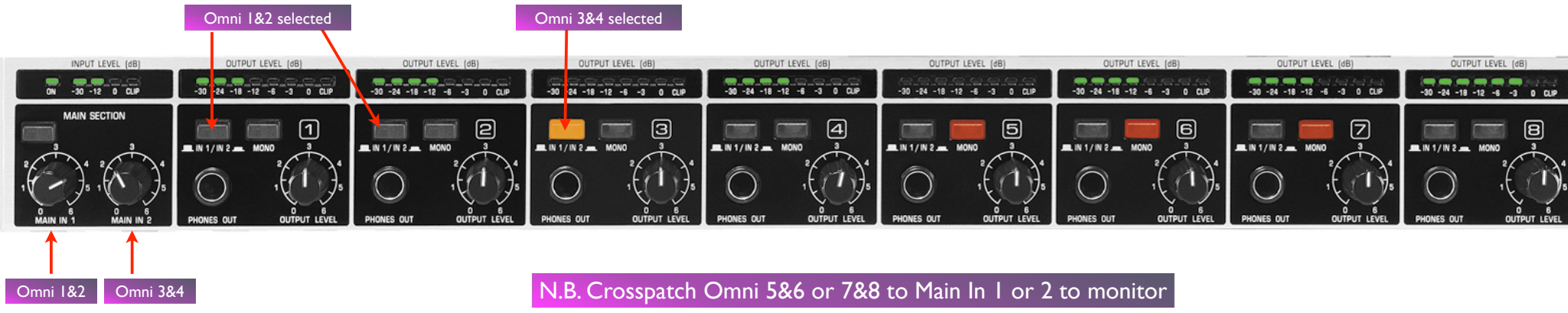
AUX SELECT



Assignment of Return Channels to Auxes
(Preset in Scene 1)

Assignment of Auxes to Omni Outs
(Preset in Scene 1)

Yamaha Omni Outs Assigned to Behringer Headphone Amp (Post 02R96)



Omni 1&2 Omni 3&4

Normalled at Pachbay

N.B. Crosspatch Omni 5&6 or 7&8 to Main In 1 or 2 to monitor

Patchbay

02R OMNI OUTPUTS							
1	2	3	4	5	6	7	8
1	2	3	4	5	6	7	8
HA8000 STEREO INPUT 1	HA8000 STEREO INPUT 2	HA8000 MONO INPUTS					

Headphone Gain Structure

Individual Sends controls



prefader

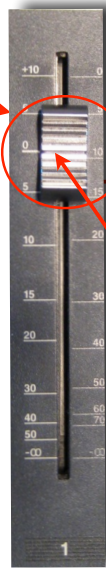
Send level adjusts individual channel sends and can be **grouped** to effect the global send level to the Aux. A Master Fader for the Bus can be used as a global control as well.

Important Tip

Changing the levels **ONLY** at the DAW sends or Master Fader will allow the gain structure to be perfectly replicated at all subsequent sessions

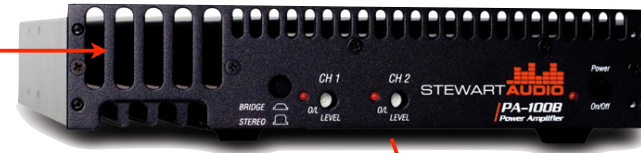


Set to unity gain/0



Aux faders on O2R960 set to unity gain/0

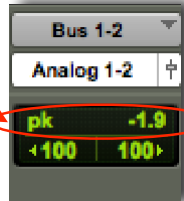
Preset input levels at headphone amp



Talent level control



View **peak levels** at Aux (Command-click on this display)



Adjust global bus level until you have about 10 dB of head room



Interconnections and Signal Flow

Interconnections to/from the Isolation Booth

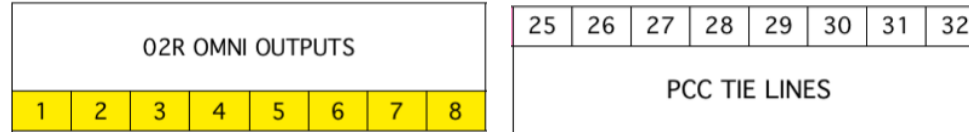


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Patching and Connecting Headphones to the Isolation Booth

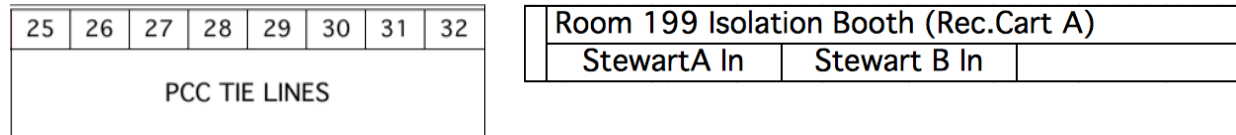
In the **Production Studio** patch OMNI Outputs 1-8 to PCC tie lines 25-32

Production Room



At the **Patch Control Center** patch the Production Room tie lines to the Headphone Amps in the Isolation Booth (Room 199)

Patch Control Center



In the **Isolation Booth** connect the Headphones amp to the Furman HR-2 headphone box

Isolation Booth



Each amp can be used for dual mono or stereo mixes



199 Recording Cart



Furman HR-2 Headphone Box



Tielines can be used for:



Remping
(Tie 1 or 3)



or Remote Amping
(Tie 2 or 4)

Each Headphone amp can provide a stereo (1&2) or two mono (1, 2) headphone mixes

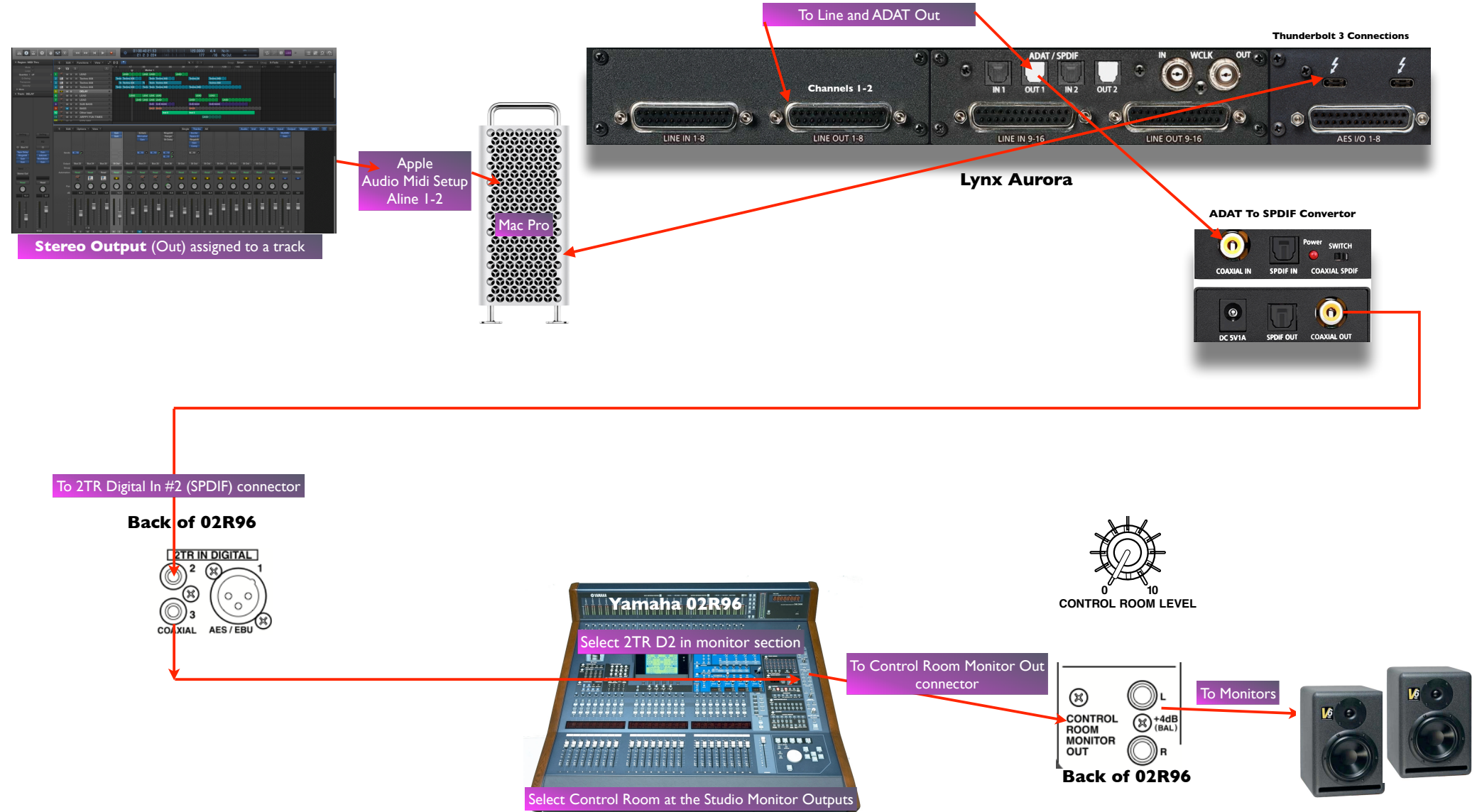


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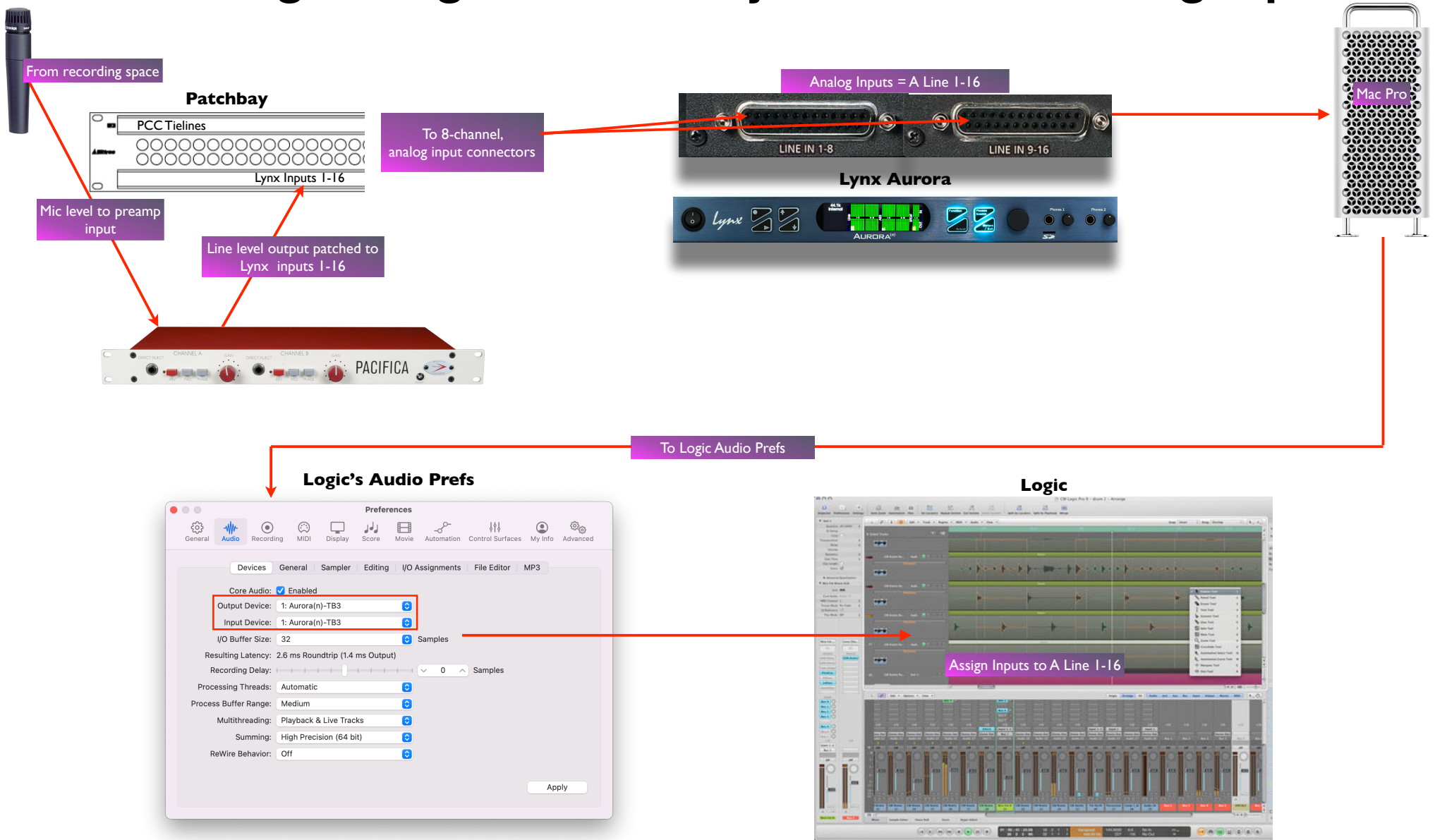
Interconnections and Signal Flow Logic and the Lynx Aurora



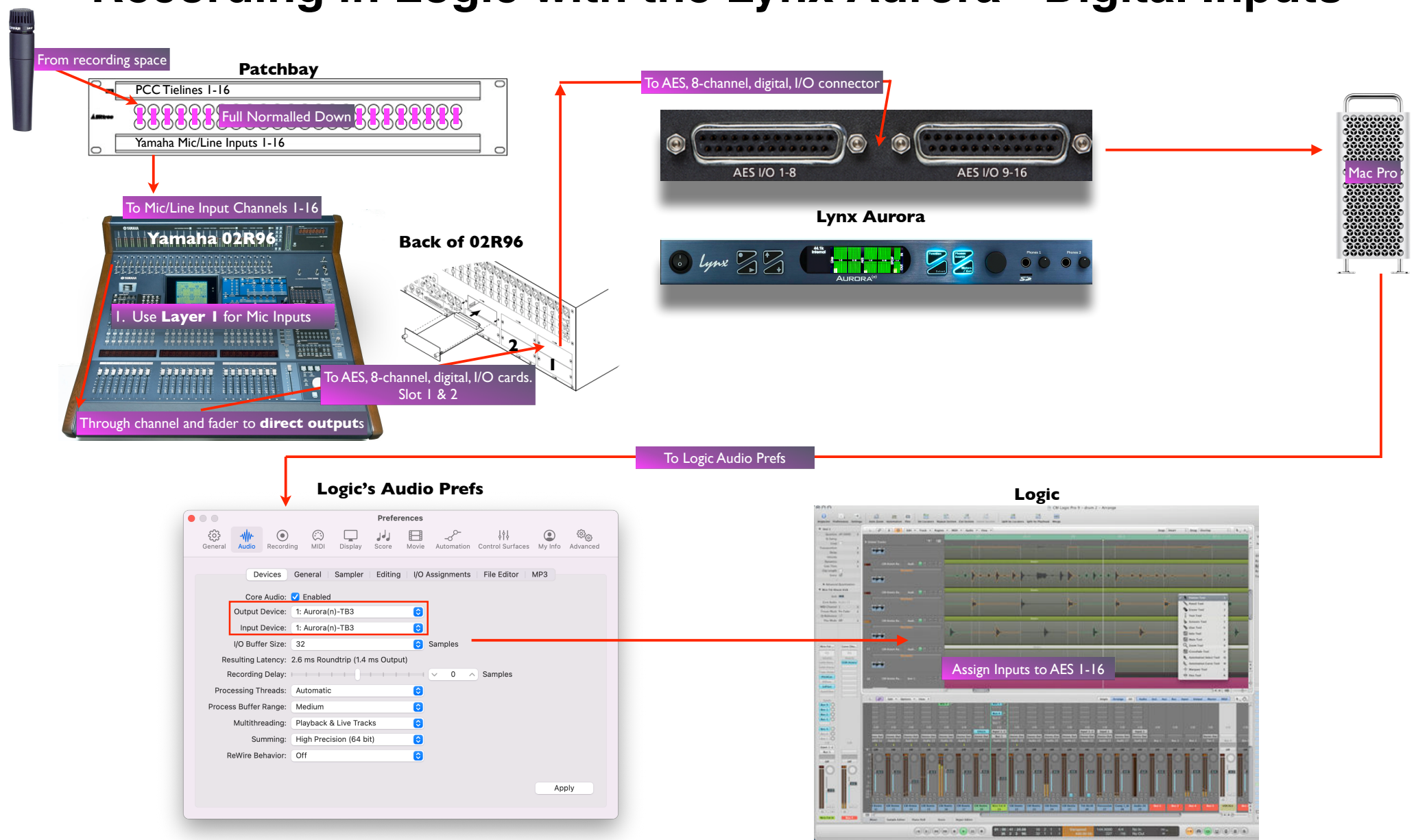
Monitoring Logic Through the Lynx Aurora



Recording in Logic with the Lynx Aurora - Analog Inputs



Recording in Logic with the Lynx Aurora - Digital Inputs





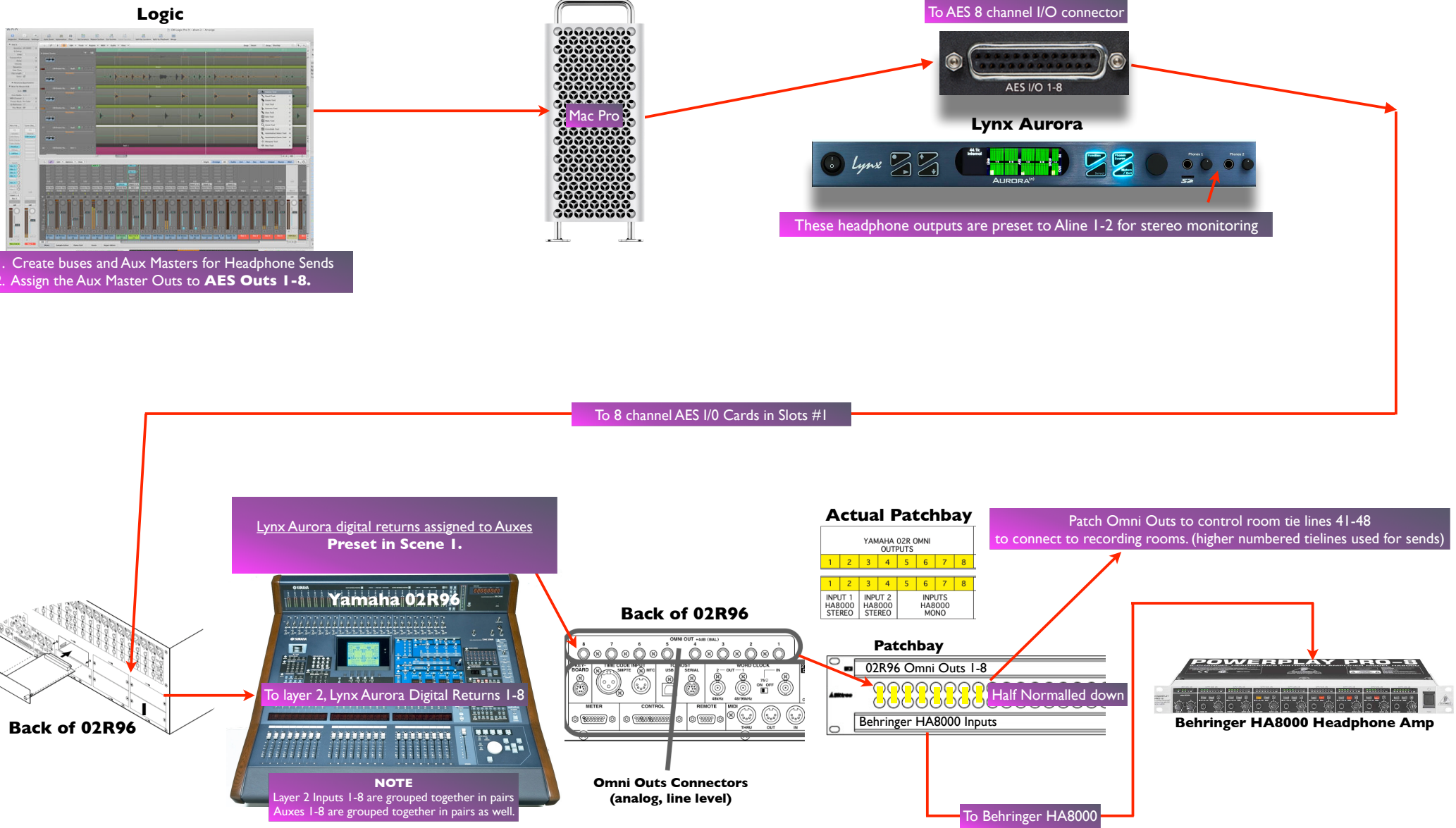
The City College
of New York

Interconnections and Signal Flow

Headphone Mixes with Logic & the Lynx Aurora



Headphone Mixes in Pro Tools Through the Lynx Aurora





The City College
of New York

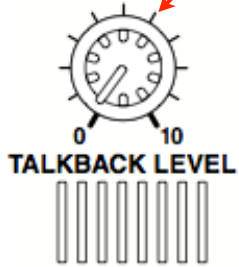
Interconnections and Signal Flow

02R-96 Talkback Controls



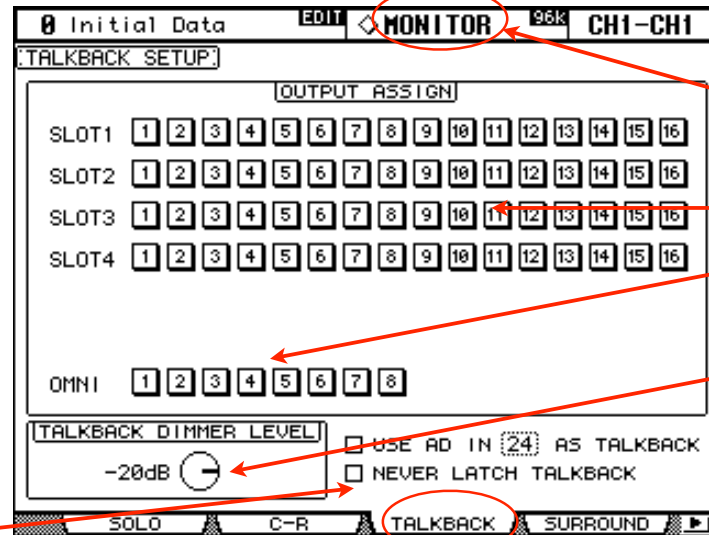
02R96 Talkback Controls

Talkback level control. Usually set around 1:00.



If **NEVER LATCH TALKBACK** is **selected**, the Talkback control must be held down throughout an announcement. **BEST OPTION!**

If **NEVER LATCH TALKBACK** is **NOT selected**, the Talkback control is turned on by depressing the control and turned off by depressing the control again.

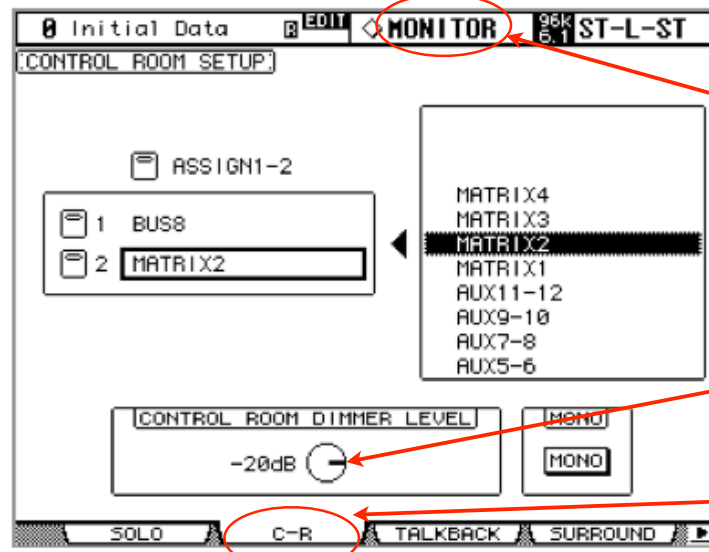


In the **Monitor Display** Section

Talkback assignment area

Sets the amount of dimming that takes place in the **HEADPHONE** mix when Talkback is engaged.

Page In the **Monitor Display** Section



In the **Monitor Display** Section

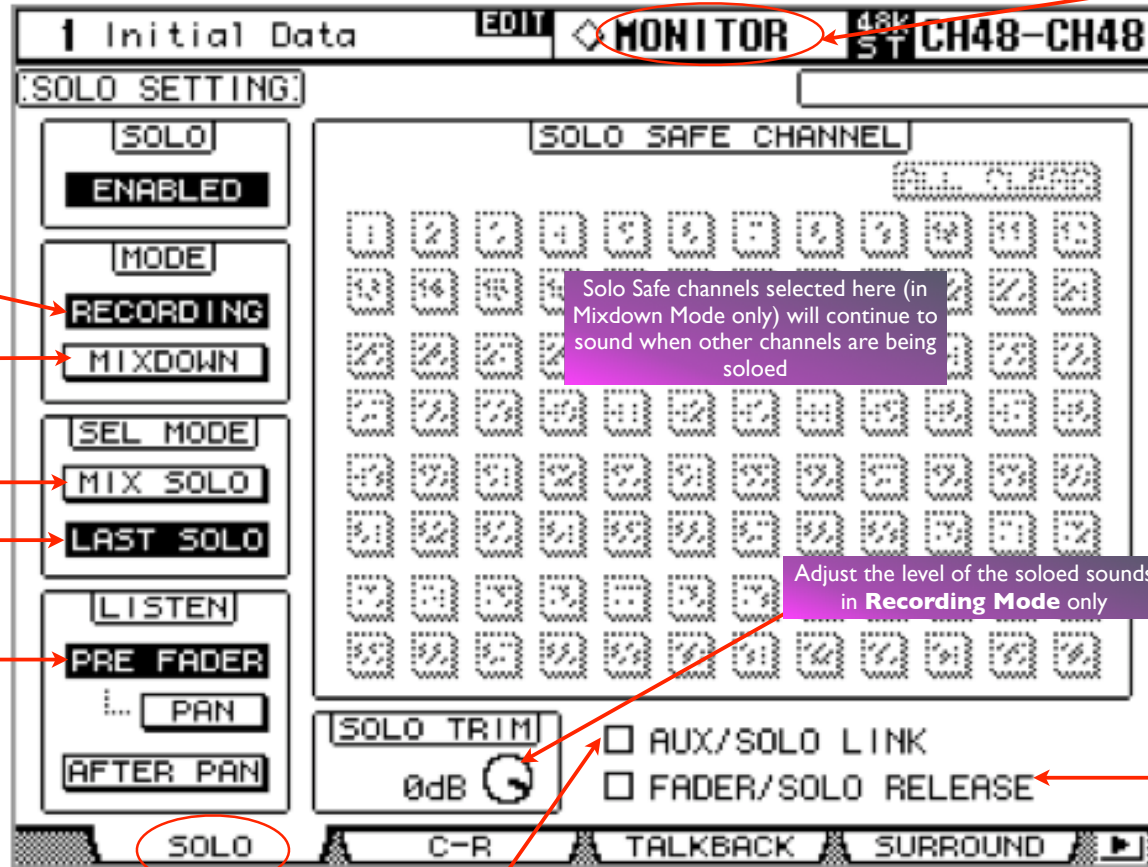
Sets the amount of dimming that takes place in the **CONTROL ROOM MONITORS** when talkback is engaged.

Page In the **Monitor Display** Section

O2R-96 Solo Modes

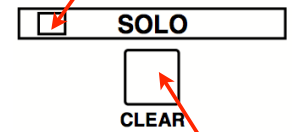


Solo Modes Selection on the 02R96



In the **Monitor Display** Section

A Solo is engaged when light is flashing



In the **Monitor** Section

Cancels all active Solos

Directs solo signals to the Control Room Monitors and out to the speakers. PFL and AFL are available

Engages SIP (Solo in Place) and the Solos Safe Channel controls.

Multiple solo buttons can be engaged

One solo at a time

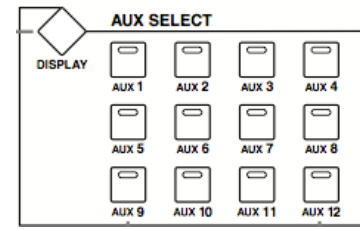
Sets **Recording Mode** to Pre Fader, Pre Fader with Pan, and Post/After Fader with Pan

Solo Safe channels selected here (in Mixdown Mode only) will continue to sound when other channels are being soloed

Adjust the level of the soloed sounds in **Recording Mode** only

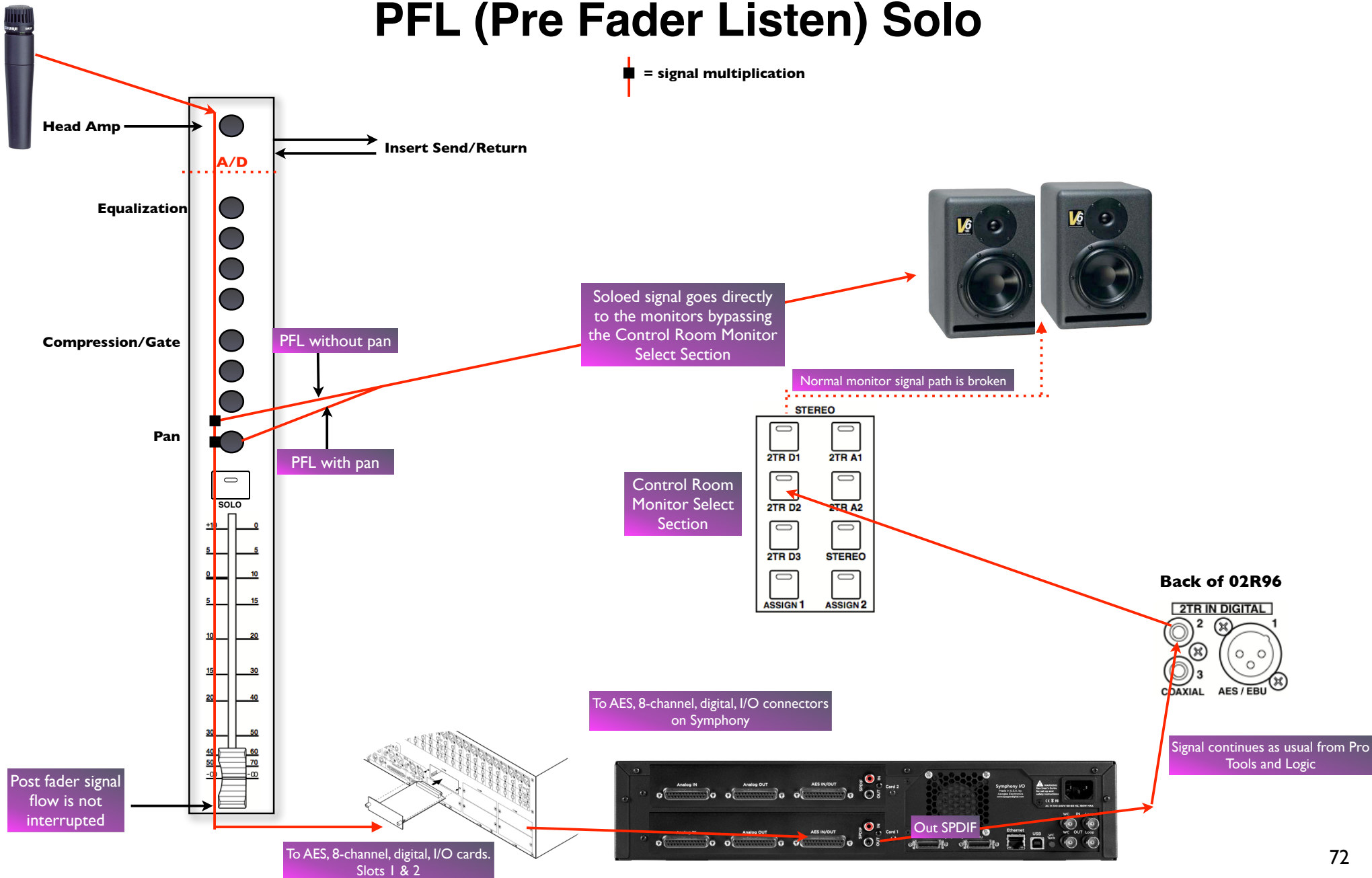
When fader is moved on a soloed channel the solo is immediately released/cancelled

Allows soloing of the Aux Master Sends by simply depressing the Aux controls in the **Aux Select Section**. Depress the appropriate Aux control to select it and then again to solo it. The Aux switch will flash. Grouped Auxes will have both switches flash.



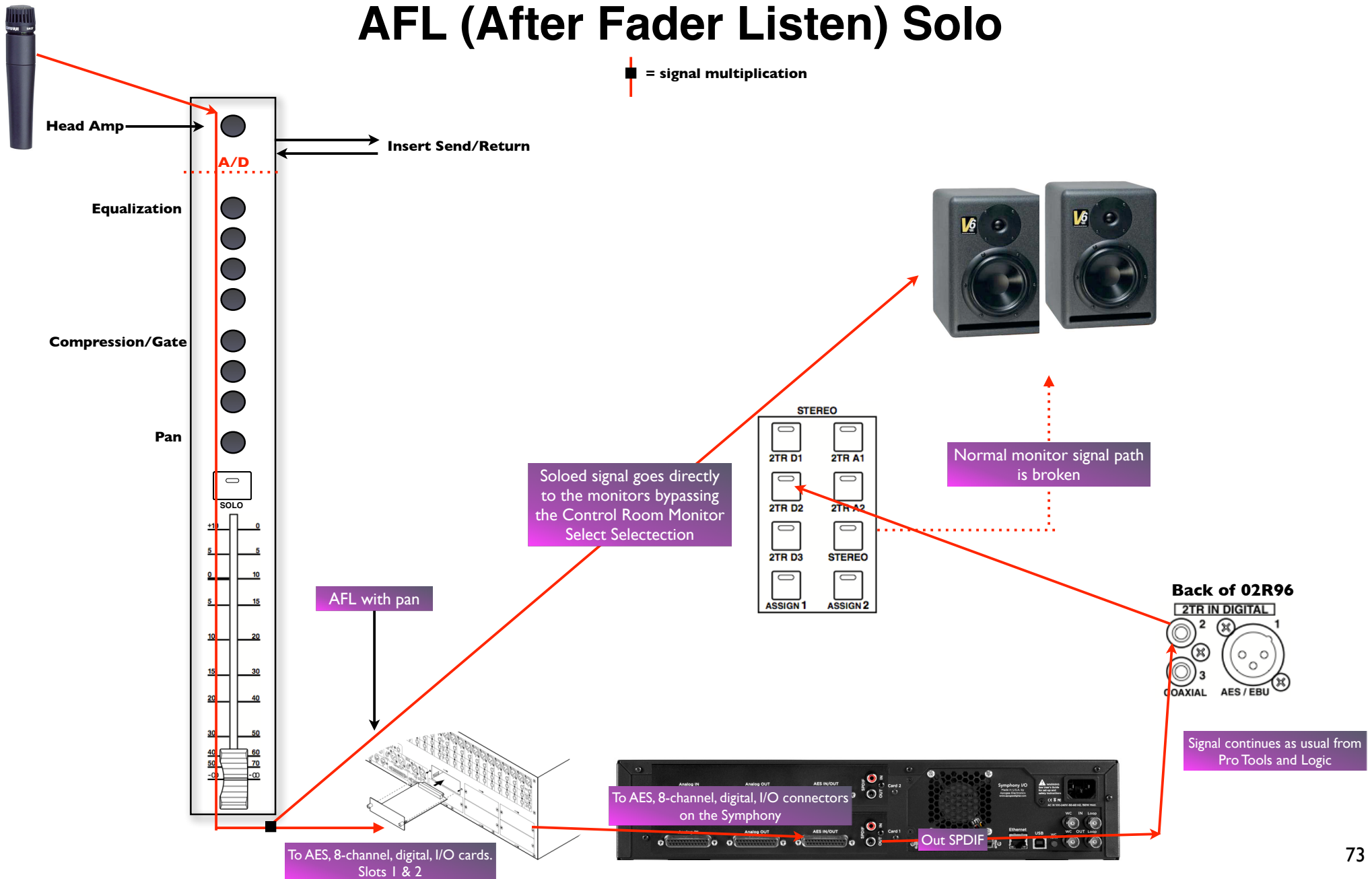
PFL (Pre Fader Listen) Solo

■ = signal multiplication



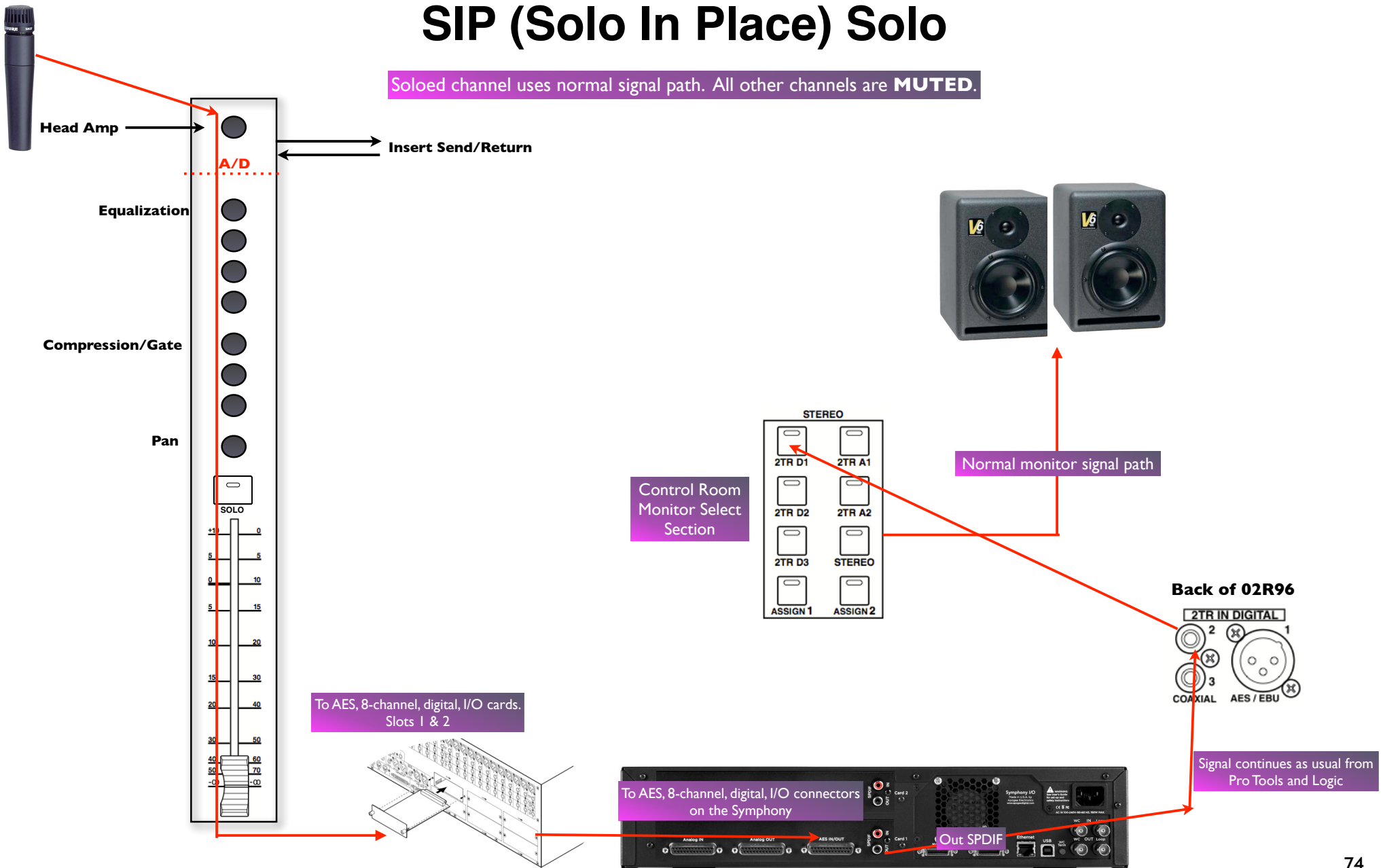
AFL (After Fader Listen) Solo

■ = signal multiplication



SIP (Solo In Place) Solo

Soloed channel uses normal signal path. All other channels are **MUTED**.



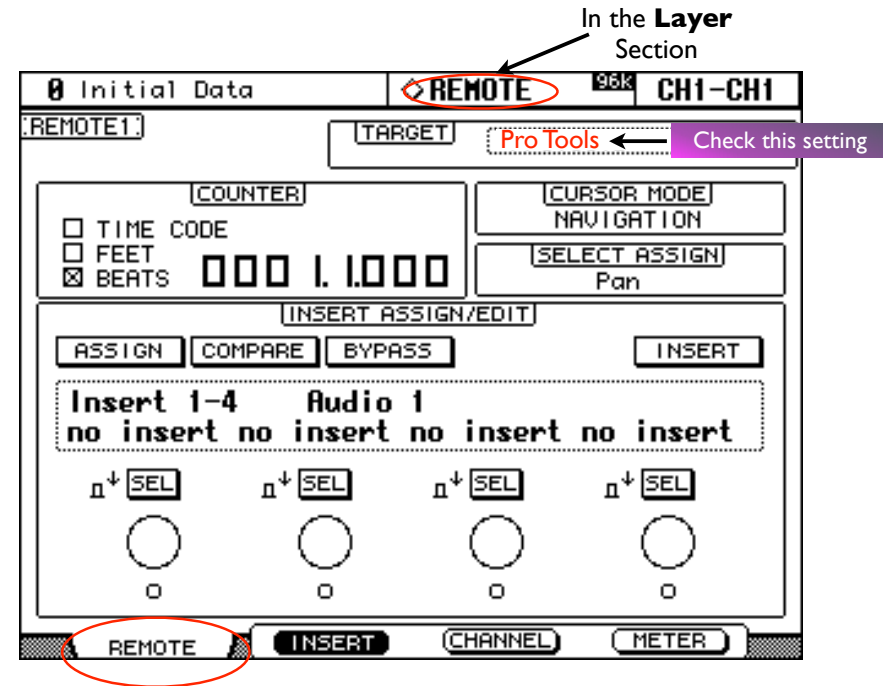
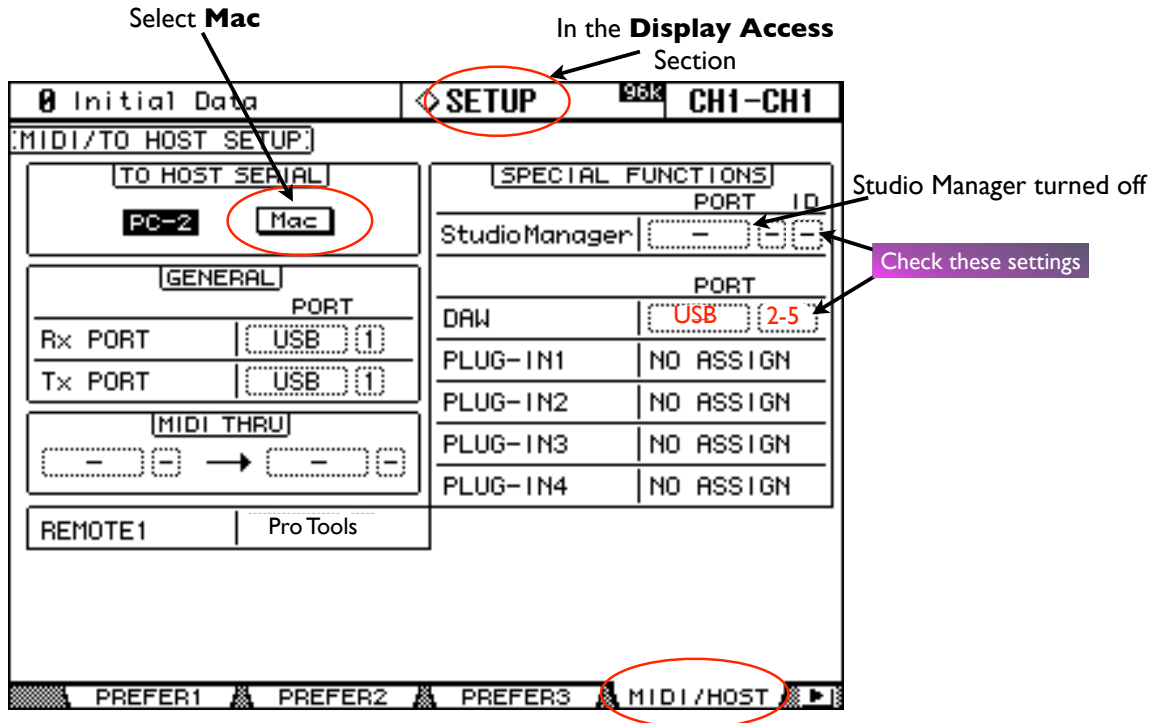


The City College
of New York

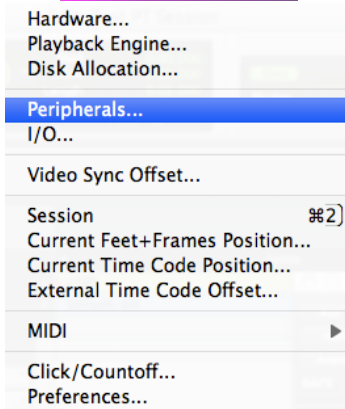
02R96 Remote Mode



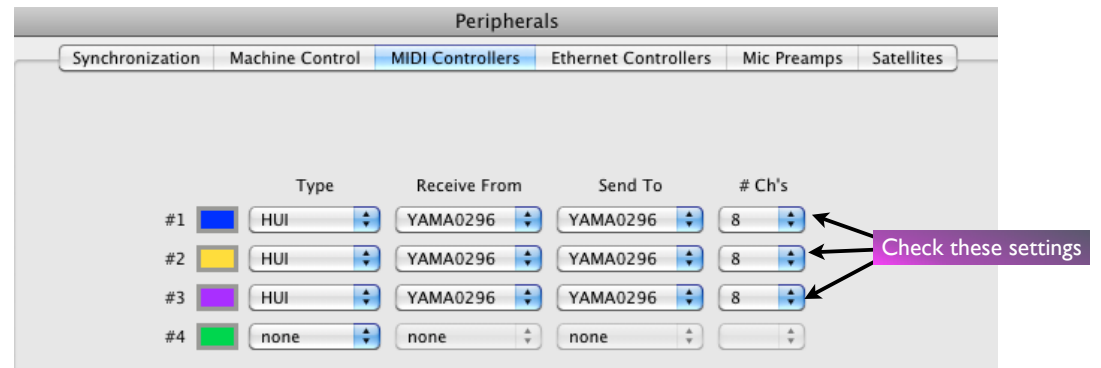
Pro Tools and the 02R96 Remote Mode



Pro Tools Setup Menu



Pro Tools Peripherals



02R96 Screens



Word Clock Select Screen

Initial Data **DIO** 96k CH1-CH1

WORD CLOCK SELECT:

SLOT TYPE	IN	OUT	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
SLOT1 DA96	0	8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT2 AD96	8	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT3 AE96	8	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SLOT4 AESIEBU	8	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FS WC IN CAS.IN 2TRD1 2TRD2 2TRD3

96kHz INT 44.1k INT 48k INT 88.2k INT 96k

WORD CLOCK DITHER CASCADE CAS OUT

In the **Display Access** Section

The source select buttons have the following indications:

- A usable wordclock signal is present at this input.
- No wordclock signal is present at this input.
- A wordclock signal is present, but it's out of sync with the current DM2000 clock.
- This is the currently selected wordclock source.
- This input was selected as the wordclock source, but no usable signal was received.
- This cannot be selected as the wordclock source because a wordclock signal cannot be sourced from this input on this type of I/O Card, or no I/O Card is installed.

Sampling Rate Converter Screen

The screenshot displays the 'Sampling Rate Converter' screen. At the top, it shows 'Initial Data' and 'D10' (circled) with an arrow pointing to '96k' and 'CH1-CH1'. Below this is the title '[SAMPLING RATE CONVERTER:]'. The main area contains three columns of settings, each with 'SRC' above and 'Unlock' below:

SRC	SRC	SRC
2TR IN D1 <input type="checkbox"/> OFF	2TR IN D2 <input type="checkbox"/> OFF	2TR IN D3 <input type="checkbox"/> OFF
AES/EBU	AES/EBU	COAXIAL

At the bottom left, there is a box containing 'FS' and '96kHz'. The bottom navigation bar includes a left arrow, 'SRC', and 'FORMAT'.

In the **Display Access** Section

Input Patching Screen

Initial Data				IN PATCH				98%	CH1-CH1
:INPUT CH1-48 PATCH:								CH1	
								AD IN 1	
1	2	3	4	5	6	7	8		
AD1	AD2	AD3	AD4	AD5	AD6	AD7	AD8		
9	10	11	12	13	14	15	16		
AD9	AD10	AD11	AD12	AD13	AD14	AD15	AD16		
17	18	19	20	21	22	23	24		
AD17	AD18	AD19	AD20	AD21	AD22	AD23	AD24		
25	26	27	28	29	30	31	32		
S1-1	S1-2	S1-3	S1-4	S1-5	S1-6	S1-7	S1-8		
33	34	35	36	37	38	39	40		
S2-1	S2-2	S2-3	S2-4	S2-5	S2-6	S2-7	S2-8		
41	42	43	44	45	46	47	48		
S3-1	S3-2	S3-3	S3-4	S3-5	S3-6	S3-7	S3-8		
CH1-48		CH49-56		INS1-48		INS49-56			

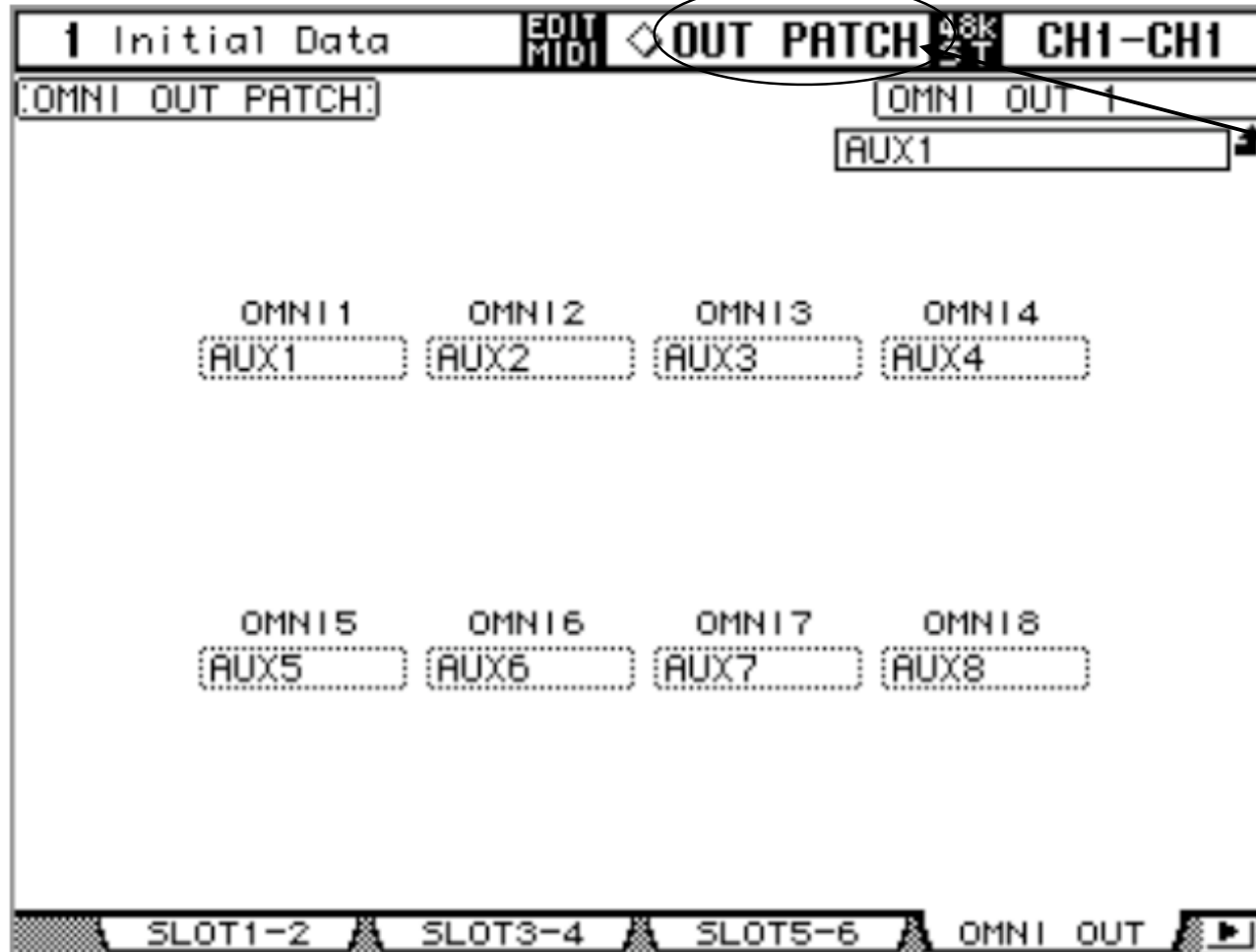
In the **Display Access** Section

Output Patching/Slots Screen

Initial Data	OUT PATCH	CH1-CH1	
.SLOT1-2 OUTPUT PATCH:		BUS1	
SLOT 1			
1	2	3	4
BUS1	BUS2	BUS3	BUS4
5	6	7	8
BUS5	BUS6	BUS7	BUS8
9	10	11	12
BUS1	BUS2	BUS3	BUS4
13	14	15	16
BUS5	BUS6	BUS7	BUS8
SLOT 2			
1	2	3	4
BUS1	BUS2	BUS3	BUS4
5	6	7	8
BUS5	BUS6	BUS7	BUS8
9	10	11	12
BUS1	BUS2	BUS3	BUS4
13	14	15	16
BUS5	BUS6	BUS7	BUS8
SLOT1-2	SLOT3-4	OMNI OUT	INS IN

In the **Display Access** Section

Output Patching/Omni Outs Screen



In the **Display Access** Section

Output Patching/Direct Out Screen

Initial Data **OUT PATCH** 96k CH1-CH1

[CH1-48 DIRECT OUT DESTINATION] CH1

Slot1 CH1 OUT

In the **Display Access** Section

1	2	3	4	5	6	7	8
S1-1	S1-2	S1-3	S1-4	S1-5	S1-6	S1-7	S1-8
9	10	11	12	13	14	15	16
S2-1	S2-2	S2-3	S2-4	S2-5	S2-6	S2-7	S2-8
17	18	19	20	21	22	23	24
S3-1	S3-2	S3-3	S3-4	S3-5	S3-6	S3-7	S3-8
25	26	27	28	29	30	31	32
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
33	34	35	36	37	38	39	40
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
41	42	43	44	45	46	47	48
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

DIRECT OUT PRE EQ PRE FADER **POST FADER**

D.OUT1-48 D.OUT49-56 ZTR OUT CH NAME

Output Patching/2-Track Out Screen

Initial Data	OUT PATCH 98%	CH1-CH1
2TR OUT DIGITAL PATCH:		2TR OUT Dig 1L
		STEREO
2TR OUT DIGITAL1		
L R		
[ST L] [ST R]		
2TR OUT DIGITAL2		
L R		
[ST L] [ST R]		
2TR OUT DIGITAL3		
L R		
[ST L] [ST R]		
D.OUT1-48	D.OUT49-56	2TR OUT CH NAME

In the **Display Access** Section

Input Channel Routing Screen

Initial Data **ROUTING** 98k CH1-CH1

:INPUT CH1-24 ROUTING:

ALL STEREO ALL BUS ALL CLEAR

1	2	3	4	5	6	7	8	9	10	11	12
PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN
12	12	12	12	12	12	12	12	12	12	12	12
34	34	34	34	34	34	34	34	34	34	34	34
56	56	56	56	56	56	56	56	56	56	56	56
78	78	78	78	78	78	78	78	78	78	78	78
50	50	50	50	50	50	50	50	50	50	50	50
13	14	15	16	17	18	19	20	21	22	23	24
PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN	PAN
12	12	12	12	12	12	12	12	12	12	12	12
34	34	34	34	34	34	34	34	34	34	34	34
56	56	56	56	56	56	56	56	56	56	56	56
78	78	78	78	78	78	78	78	78	78	78	78
50	50	50	50	50	50	50	50	50	50	50	50

SURROUND MODE **STEREO**

CH1-24 CH25-48 CH49-56 BUS TO ST

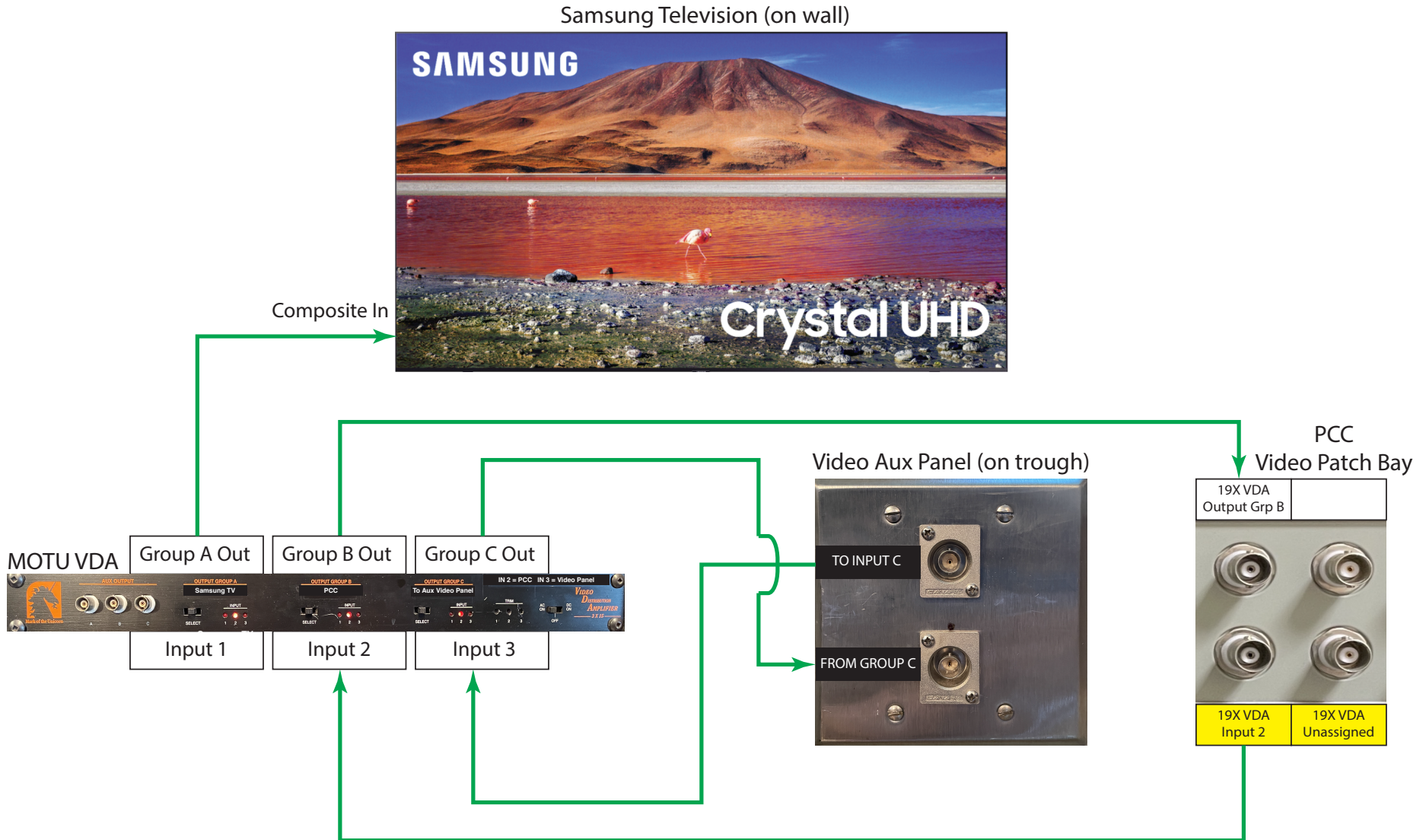
In the **Routing Display** Section



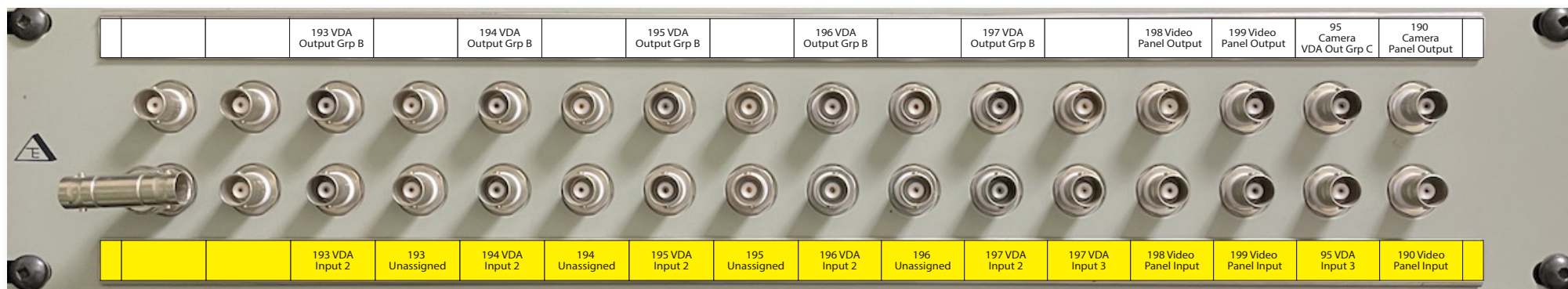
Production Rooms Video Connections

Rooms 193-196 - Analog Video Routing


Video Signal = ———



PCC Video Connections



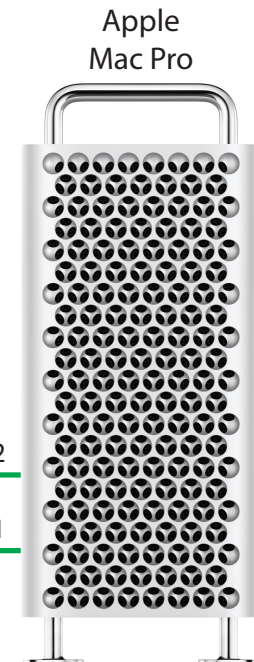
Rooms 193-196 - Digital Video Routing

Video Signal = 

Samsung Television (on wall)



Dell Ultrasharp U2711B



HDMI In

HDMI In

HDMI Out 2

HDMI Out 1

Room 95 - Analog Video Routing

Video Signal = 