

HOW TO GET STARTED



THE STUDIO

PLAY | CREATE | DISCOVER

USER MANUAL

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SAFETY PRECAUTIONS

This manual is designed to help you safely and efficiently use the studio while maintaining a high functionality and protecting all of the equipment.

DO NOT:

1. Turn on or off any switches!
2. Remove or change any power cables from anywhere
(Please ask for assistance when handling power in the studio)
3. Touch the speakers for any reason. They have been calibrated to the correct level and placement for optimal use in our facility.
4. Use any equipment unless you are confident you know how to handle it. A lot of things in the studio are expensive to replace should you break them!
5. Bring food or drinks into the studio at any time.
6. Obstruct ventilation systems
7. Disregard rules and regulations of the building, studio and laws associated with health & safety
8. Smoke or vape. Both are strictly prohibited in the studio & inside of the building. There are no exceptions!
9. Plug in any device or piece of equipment that has not been cleared with a supervisor. All powered items must be tested & tagged before use in the studio.

DO:

1. Sign in as a visitor if you are to use the studio.
2. Read instruction manuals, labels & advice, safety instructions & proper use of equipment.
3. Maintain clear pathways to exits & emergency equipment
4. Keep studio areas clean & clutter free to avoid tripping hazards
5. Report hazards or safety concerns if you see them.
6. Ask for help if you are not sure about a procedure or task
7. Treat all equipment & facilities with care & respect like you would your own belongings!

8.

LOGIC PRO X

Logic Pro X is a professional full-featured Digital Audio Workstation (DAW) that you can use for every aspect of audio creation: recording, arranging, mixing, and more—everything from sketching your initial ideas to producing polished final mixes.

Follow this step by step process **IN ORDER** to ensure Logic software is functioning correctly with audio equipment.

1. *Open Logic software*

A new session will be created where Logic will ask you to add one new track. Click OK and wait for the session to open.

2. Click **Logic Pro** at the top left menu and select preferences.

3. Under the Audio tab, ensure core audio is enabled and **Apollo Twin X** is selected for both the input and output devices.

4. If this is not the case, check the box and select the interface from the dropdown before clicking **Apply** and exiting the Preferences window.

Logic is now set up with the hardware and ready to get creative!

In Logic, you can record audio, add virtual instruments, arrange and deliver professional sounding mixes for your own or client project.

DAVINCI RESOLVE



Follow this step by step process IN ORDER to ensure Davinci Resolve software is functioning correctly with audio equipment.

1. Open Black Magic's "Davinci Resolve" software
2. Click **Davinci Resolve** at the top left menu and select *Preferences*.
3. Under the Video & Audio I/O tab, ensure **Apollo Twin X** is selected as the I/O engine and both the Input & Output outputs show the correct interface.
4. Under the **Fairlight** tab at the top menu, select bus format to select your Stereo main output.

Davinci Resolve is now set up with the hardware and ready to get creative!

Explore some of Davinci Resolve's functions:

1. **Media** (Add video, photos & audio)
2. **Cut** (Organisation/Cutting)
3. **Edit** (Video Editing)
4. **Fusion** (Visual Effects)
5. **Color** (Correction & Grading)
6. **Fairlight** (Sound Mixing)
7. **Deliver** (Export)

EXTERNAL HARD DRIVES



If you want to open a previous session from a hard drive or USB you have brought in, you can use our data hub located on the desk.

Please DO NOT touch any of the connections on the computer itself as many of this equipment is required to make all of our tools function correctly.

Once your hard-drive has been recognised on the computer, you may open your Logic or Davinci Resolve sessions and begin working on your projects.

If you have started a project in this studio or want to save work you have been doing onto an external device, ensure you apply the following steps to include all elements required for taking the project to another facility, be it your home or another studio.

1. *Logic Pro X*: File > Save As > Destination > Save
Organising your project as a **Package** will retain all data in the project icon so you can open it with all of your files in tact the next time you need it.
(In advanced settings below, click all relevant file inclusions such as audio, movie and plugin settings)

2. *Davinci Resolve*: File > Save As > Destination > Save
Ensure all footage, audio clips and relevant files are saved on your hard drive in addition to the project file. This will make it easy to re-link the files from the original source material the next time you open the session at another facility.

APOLLO TWIN X



The Apollo Twin X is an audio interface. Its job as an A to D converter (analogue to digital) is to take signal from a sound source in the real world such as a microphone and convert it to digital so we can use it in the computer.

From there, it also functions as a D to A (digital to analogue) that allows sound to come out from the computer back through the interface and out to the speakers so we can monitor what is happening in the computer.

While this device has many many functions, these are its two primary operations.

Below are some common functions and how-to's on getting started with using the Apollo Twin in the studio.

1. Preamp mode (press to switch between inputs 1 & 2 with jog)
2. Monitor mode (press to switch between headphones & speakers)
3. Volume / Jog knob (use preamp or monitor modes to select)



USING VOLUME KNOB



When the computer is first turned on and all of the gear is active, the Apollo Twin will also receive power and automatically connect to the computer via thunderbolt.

To bring sound up using the interface, all you need to do it ensure the **monitor** button is pushed to select volume of the speakers (if you press it again, it will go to headphone volume) and proceed to turn the job knob to the desired level.



MODES

PREAMP MODE

- A. Input selection (channel 1 & 2 / Line / Hi-Z / Microphone)
- B. High-pass filter (Roll off below 75Hz)
- C. Phantom Power (+48V)
- D. -20db Pad (works for mic only, not hi-z or line)
- E. Polarity/Phase flip
- F. Link both channels together (for stereo pair etc)

MONITOR MODE

- A. Talkback (to headphone cues)
- B. Dim volume (assign amount in Console software)
- C. Switches the main monitor mix to an alternate set of outputs
- D. Not applicable with this studio (to be used with additional units)
- E. Mono sum of stereo channel outputs to one channel (monitors only)
- F. Mute stereo main outputs (monitors only)

A-D & D-A

INPUTS

Mic/Line Combo Inputs: (rear)

The input jacks for preamp channels 1 & 2 accept either a male XLR plug for connecting to the mic input, or a ¼” phone plug for connecting to the line input. The input jack that is used for the preamp channel (mic or line) is specified with the Input Select button.

Hi-Z Input (front)

Connect any guitar, bass or other high impedance instrument here. This jack automatically overrides the channel 1 mic & line inputs.





OUTPUTS

Monitor Outputs: (rear)

The left & right speakers are connected to the computer via outputs 1 & 2.

Line Outputs 3 & 4 (rear)

These 1/4" phone outputs are accessed via software (Console or DAW). Line outputs 3 & 4 are typically used to send audio to other equipment which can be accessed on the patch bay.

CONSOLE SOFTWARE

Console is a routing software that interfaces between the Apollo Twin X hardware and the DAW (Logic Pro) on the computer. If you need to make changes and are not sure how to do so, contact one of our team.



MONITORING

ADAM T8V NEAR FIELD MONITORS



- U-ART 1.9" Accelerated Ribbon Tweeter with HPS Waveguide
- Polypropylene 8" woofer and rear-firing bass-reflex port
- Cumulated Amp. Power RMS: 90 W
- Frequency Response: 33 Hz - 25 kHz
- Max. SPL Per Pair at 1 m: ≥ 118 dB
- Calibration: 79db SPL C-weighted

AUDIO TECHNICA M-50 HEADPHONES



- Exceptional clarity throughout an extended frequency range, with deep, accurate bass response
- Circumaural design contours around the ears for excellent sound isolation in loud environments
- 90° swivelling ear cups for easy, one-ear monitoring
- Professional-grade ear pad and headband material delivers more durability and comfort

MIDI KEYBOARD



MIDI is an acronym that stands for *Musical Instrument Digital Interface*. It's a way to connect devices that make and control sound such as synthesisers, samplers, and computers — so that they can communicate with each other, using MIDI messages.

In the studio we have what is called a MIDI Keyboard that can trigger notes as on a keyboard from libraries of sounds and instruments on the computer. Using this piece of technology, we can play the instrument in real time to capture performances that then output software generated sounds.

VSTs

VST MIDI plugins are like effects plugins in that they don't create audio, but are designed to work with MIDI data. These plugins can process MIDI data on their own, or modify it and then pass it to other plugins.



FADERPORT 16



The Faderport 16 by PreSonus is a control surface designed to help you operate in your studio recording & mixing software with ease in the real world. It offers tactile faders not unlike the large format mixing consoles that exist in bigger studios but with the added benefit of being able to synchronise with your Digital Audio Workstation.

When you open up a session, perhaps various faders on the screen may be at different levels from each other and mixing has begun, the Faderport will immediately bring up the physical faders to corresponding placements so that you can use real buttons and knobs to affect what is going on inside the computer.

This makes for a fast and easy workflow emulating an analogue feel while still maintaining the flexibility that digital technology has to offer.

The Faderport does not run any audio cables because it is simply a controller via USB to the computer. This reduces several issues that could potentially be the case with a real analogue console such as latency or signal degradation.



OUTBOARD GEAR



Introduction

Outboard gear such as hardware preamps, compressors, eq's or effects can be used in the studio via access at the patch bay.

You can use your own equipment in this arrangement and simply patch in without the need to unplug or re-wire the studio default setup.

In addition to this, we have a few classic staples for you to use here. They are listed below.

Warm Audio TB12 "Tone Beast" Tone Shaping Mic Pre (Black)



Warm Audio WA76 Discrete Compressor (Urei 1176 Clone)



Behringer Virtualizer FX2000 Multi-Engine Effects Processor



PATCH BAY



Introduction

Patch bays are a useful part of the studio because they offer flexibility to use various different pieces of gear and routing options while minimising the need to running cables all over the place.

Typically, patch bays have 24 channels per unit. They handle both input and output for each channel, which makes 48 “points” or connections.

Normalling

If you have connections on your patch bay that are semi-permanent, normalling allows the signal to pass through without using a cable. For instance, there’s no point in connecting every studio mic line output to every channel mic input. You could normal these connections, so the signal flows without having to make a patch.

Normalling comes in three different forms. Essentially, it controls how the patch bay reacts when a cable is plugged in.

Full-Normal

Signal passes from the outputs to the inputs, without the need for a cable. The signal is broken when a cable is plugged into either the top or bottom row.

	19 Half	20 Half	21 Full	22 Half	23 Half	24 Full
OUTPUT	X	Out 1	Out 2	X	Out 1	Out 2
INPUT	Mult 1 Input	X	X	Mult 2 Input	X	X

Half-Normal

Signal passes from the outputs to the inputs, without the need for a cable. *The signal is only broken when a cable is plugged into the bottom row.*

This allows you to “mult” a signal by plugging a cable into the top row and route it to another input. The original signal continues to the original input, as well as the “multed” input, creating a duplicate signal.

Non-Normal

Signal only passes when a cable is connected. Often used when the top row and bottom row are unrelated.

(Cardinia Shire Council Studio specific)



PATCH BAY LAYOUT

	1 Full	2 Full	3 Full	4 Full	5 Non	6 Non	7 Non	8 Non	9 Non	10 Non	11 Non	➔
OUTPUT	Apollo out 1	Apollo out 2	Apollo out 3	Apollo out 4	TB12 line out	TB12 send	WA76 Out	FX L	FX R	RCA Out L	RCA Out R	Empty slots
INPUT	Mon L	Mon R	Apollo in 1	Apollo in 2	TB12 line in	TB12 Return	WA76 In	FX R	FX R			Empty slots

CUSTOM MULT'S

In addition to half normalised points, you can mult to several outputs on the patch bay. This allows for maximum flexibility for up to 2 discrete outputs per channel for a stereo pair or 2 mono signals.

You may patch in & use your own equipment in the studio as long as it has been tested & tagged.

We remind you to treat all areas of the studio with care & respect without damaging anything as you insert your hardware into the system.

(Please do not take any unit out of the racks, they are permanently installed for general use of everyone. If you have brought your own hardware, you must bring your own portable rack/case to house it)



WA TB12 PREAMP



Ensure when you power the preamp on or off that the phantom power is also OFF. This will protect microphones that are hooked up to it.

Buttons

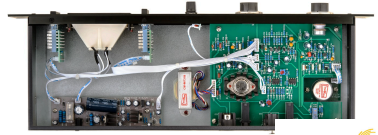
- Power ON/OFF Switch
- +48V Phantom Power ON/OFF
- Polarity / Phase Flip IN/OUT
- Tone Switch (Transformer) +6db ON/OFF
- Line Input (bypasses mic inputs) IN/OUT
- Insert circuit IN/OUT
- Instrument level input Hi-Z ON/OFF
- -20db Pad ON/OFF
- High Pass Filter ON/OFF
- Capacitor Vintage/Clean Control Switch
- Output Transformer -8db Bypass Switch

Pots

- +Discrete Amplifier - Vintage/Clean Pot
- Output Transformer Steel/Nickel Pot
- Input Gain/Saturation Pot
- Output Pot



WA76 COMPRESSOR



Buttons

- Ratio Switches
 - 4:1
 - 8:1
 - 12:1
 - 2-:1
- Meter
 - Off
 - +4db
 - +8db
 - Gain Reduction

Pots

- Input / Threshold
- Output / Makeup Gain
- Attack - Slow/Fast
- Release- Slow/Fast



VIRTUALIZER FX 20000



Main Effects

Other Effects

Standard Reverbs

Cathedral	Dense, long reverb of a large cathedral - often used on solo instruments and vocals
Gold Plate	Simulates the sound of plate reverberators - a classic for drums (snare) and vocals
Small Hall	Simulates a small, lively (strongly reflecting) performance hall
Room	Simulates the sound of reflections from the walls of a room
Studio	Effectively creates the reverberation of a small to mid-sized room
Concert	Recreates the sound reflection of a small theater or large hall
Stage	Well suited for dissipating the sound of a keyboard or acoustic guitar
Spring Reverb	Simulates the sound of the classic spring reverb
Ambience	Reproduces the sound of a room impression without late reflections
Early Reflections	Generates the clearly audible, initial reflections of a room

Specialty Reverb Selections

Gated Reverb	Reverb is synthetically turned off after predetermined amount of time
Reverse Reverb	Reverb envelope is reversed, slowly gets louder

Delay Selections

Stereo Delay	Delay processed across entire stereo image
Tape Echo	Simulates classic tape echo devices, predates digital delays
Ping Pong	Delay signal "bounced" from left to right at adjustable tempo

Modulation and Pitch Shifter FX

Stereo Flanger	Originally generated by playback of two synchronized "real to real" tape decks with finger rubbing flange of 1 take-up reel
Vintage Flanger	Simulates guitar flanger stomp box
Jet Stream Flanger	Simulates classic analog flanger
Stereo Chorus	Combines a slightly detuned signal with the original
Analog Chorus	Simulates guitar chorus stomp box
Vintage Chorus	Simulates classic analog studio chorus
Ultra Chorus	Creates sound of an 8-person chorus
Stereo Phaser	Combines additional, phase-shifted signal with original
Vintage Phaser	Simulates guitar phaser stomp box
Dual Phaser	Processes the left and right channels separately
Leslie	Simulates rotating speakers typically used on an organ - Slow or Fast
Pitch Shifter	Creates harmonies with original signal, or replaces it with altered pitch
Vibrato	Peak frequency of tone periodically and uniformly changed - Slow or Fast
Tremolo	Volume of tone periodically and uniformly changed - Slow or Fast
Auto Panning	Signal automatically sent from left to right, either once or multiple times

Dynamic FX

Compressor	Reduces signal dynamic range, maintains consistent level to avoid distortion from high input levels
Expander	Broadens dynamic range of signal, reduces background noise
Gate	Mutes sounds below threshold, very effective on drum/vocal mics
Analog Compressor/Limiter	Similar to Compressor, but limits maximum volume level
Ultrazimizer	Analyzes signal and applies automatic compression across 2 independent frequency bands
Denoiser	Eliminates or reduces noise and other interference
De-esser	Reduces or removes sibilance (Ssss sound) from signal
Wave Designer	Allows adjustment of attack and release of the signal envelope

Psychoacoustic FX

Exciter	Artificially adds overtones, increasing presence and perceived loudness without actually increasing volume
Enhancer	Dynamic EQ for improving clarity and stereo image, similar to Exciter
Ultra Bass	Sub-harmonic processor combined with bass Exciter and Limiter
Stereo Imager	Divides input into middle and side signals, so they can be amplified selectively and then placed within the stereo image
Ultra Wide	Creates much broader stereo image
Binauralizer	Creates broader stereo image with compensation for speaker crosstalk
Filter/EQ FX	
Auto Filter	3 filter options for changing the signal's frequency response: low pass, band pass and high pass
LFO Filter	Similar to Auto Filter, but modulated by an oscillator with variable wave types and speeds
Parametric EQ	Allows control of bandwidth, frequency and amplitude of signal
Graphic EQ	Signal content divided into 6 adjacent frequency bands, can be cut or boosted (fixed bandwidth)

Distortion FX and Amp Simulations

Vocal Distortion	Highly effective on vocals and drum loops, when combined with delay flanger
Tube Distortion	Simulates the sound of a wide range of vacuum tube types
Guitar Amp	Recreates the sound characteristics of a complete guitar amplifier
Tri-Fuzz	Simulates classic '60s guitar fuzz box using 3 separate frequency bands
Speaker Simulation	Adds the sound of a variety of loudspeaker configurations
Ring Modulator	Radical effect based on Frequency Modulation (FM), similar to robot voice
Lo-Fi	Generates warm, old-school analog signal with added noise and hum

Special FX

Vinylizer	Adds clicks and/or noise to signal, simulating old vinyl records and tape decks
Sampler	Allows recording and playback - up to 5 seconds
Vocoder	Allows input signal to modulate another signal (usually synthesizer) to create "talking synthesizer" effect
Voice Canceller	Removes mono vocals from stereo recordings for "Instant Karaoke"
Resonator	Simulates an oscillating system amplifying a specific frequency

FX Combinations

Chorus & Reverb	Phaser & Reverb
Flanger & Reverb	Chorus & Delay
Leslie & Reverb	Flanger & Delay
Pitch & Reverb	Pitch & Delay
Delay & Reverb	Tremolo & Delay
Tremolo & Reverb	

MICROPHONES



XLR Cables

XLR microphone cables for standard microphones.
(5-pin for tube mics etc not kept in the locker)



Microphone Stands

We have both tall and short microphone stands depending on your needs.



Microphones

Microphones can be used to record vocal performances and instruments in the studio. Talk to one of the council members or studio supervisors for access to the mic locker.

Leads, microphones & stands **MUST** be returned by the end of the day every day to be locked up safely. If you require them for consecutive time slots, it may be required that you organise multiple time slots for using microphones to ensure they are not lost or stolen.

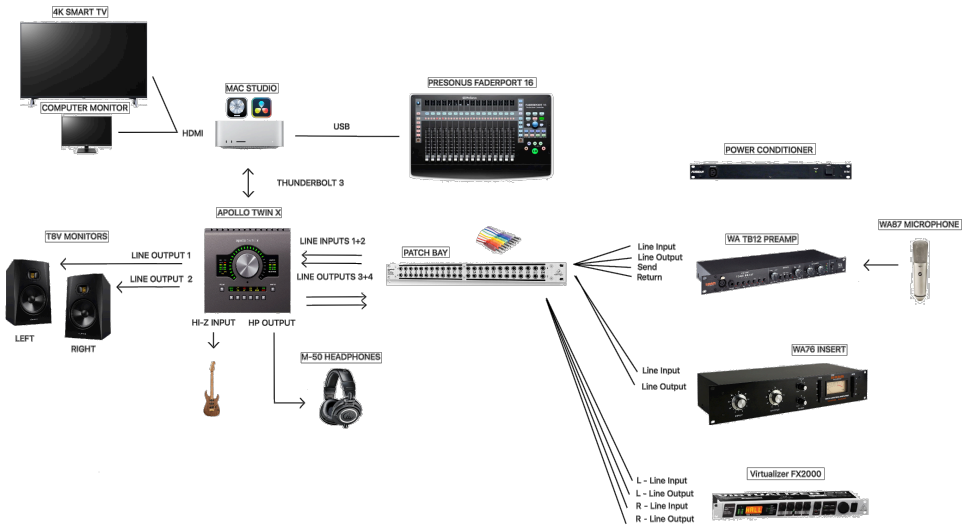
Below are a list of Microphones you can use at our studio.
Alternatively, you are welcome to bring and use your own if you own any.

- Shure SM58 Dynamic
- Shure SM57 Dynamic
- Sennheiser e609 Silver Dynamic
- Audio Technical AT2020 Condenser
- Behringer C2 Condenser (Matched Pair)



STUDIO SCHEMATIC

Below is a schematic showing how the studio is wired and how audio travels throughout the equipment.



SIGNAL FLOW: EXAMPLE - 1

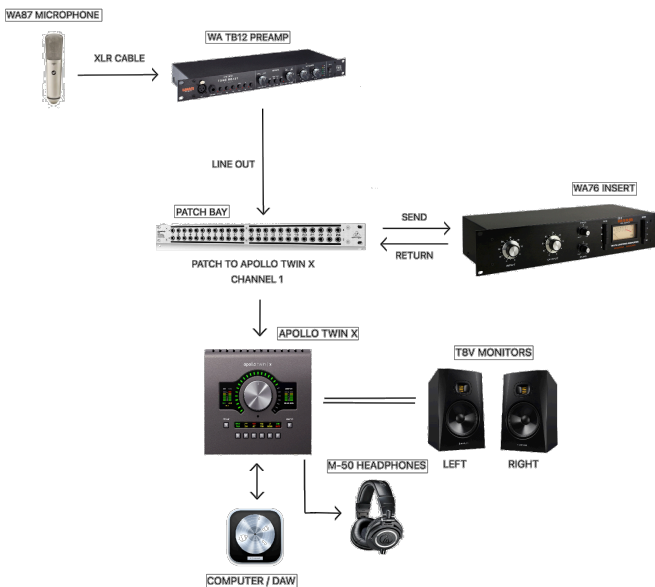
(RECORDING WITH A MICROPHONE)

Below is an example of how you might connect each part of the recording & mixing process with our studio.

1. Use an XLR cable to connect your microphone to the preamp.
(There should be a cable connected to the back of the studio TB12 preamp so there is no need to connect one to the front of the unit.)
2. To insert a hardware compressor between the input and output stage of the preamp, patch from the send output of the preamp to the compressor input. This can be done on the patch bay.
3. Patch from the compressor output to the return of the preamp.
4. Patch from the preamp line output to input 1 of the Apollo Twin X.

Your microphone is now connected to the preamp, running through a compressor and sending out to the converter and ready to record into the computer.

Recording this way will record the compressed signal without the ability to change it later so make sure you are happy with your settings before you press record.



PATCH BAY: EXAMPLE - 1

(RECORDING WITH A MICROPHONE)

Below is an example of how you might connect each part of the recording gear within our studio using the patch bay.

The colour coded dots on the below patch bay schematic represent 2 ends of a patch cable (located at the right side of the desk).

They look like this:
 You can use any colour cable.



	1 Full	2 Full	3 Full	4 Full	5 Non	6 Non	7 Non	8 Non	9 Non	10 Non	11 Non	→
					●	●	●					
OUTPUT	Apollo out 1	Apollo out 2	Apollo out 3	Apollo out 4	TB12 line out	TB12 send	WA76 Out	FX L	FX R	RCA Out L	RCA Out R	Empty slots
			●			●	●					
INPUT	Mon L	Mon R	Apollo in 1	Apollo in 2	TB12 line in	TB12 Return	WA76 In	FX R	FX R			Empty slots

- (ESSENTIAL)**
 RED: Line out of TB12 into Apollo Twin Input 1
- (Optional)**
 BLUE: Send microphone signal from TB12 into Compressor WA76
- (Optional)**
 GREEN: Return compressed signed from WA76 back to TB12

PATCH BAY: EXAMPLE - 2

(RECORDING A GUITAR)

Below is an example of two options you can use to connect a guitar up to the interface for recording.

The colour coded dots on the below patch bay schematic represent 2 ends of a patch cable (located at the right side of the desk).

They look like this:
 You can use any colour cable.



	1 Full	2 Full	3 Full	4 Full	5 Non	6 Non	7 Non	8 Non	9 Non	10 Non	11 Non	→
					●							
OUTPUT	Apollo out 1	Apollo out 2	Apollo out 3	Apollo out 4	TB12 line out	TB12 send	WA76 Out	FX L	FX R	RCA Out L	RCA Out R	Empty slots
			●									
INPUT	Mon L	Mon R	Apollo in 1	Apollo in 2	TB12 line in	TB12 Return	WA76 In	FX R	FX R			Empty slots

Ensure you use the instrument input on the TB12 & select the HI-Z button.

(OPTION 1)

RED: Line out of TB12 into Apollo Twin Input 1

(OPTION 2)

Plug guitar directly into the Apollo Twin guitar input.

PATCH BAY: EXAMPLE - 3

(MIXING WITH OUTBOARD EFFECTS)

Below is an example of how you might connect signal coming from your mix session to outboard equipment using the patch bay to record back in.

The colour coded dots on the below patch bay schematic represent 2 ends of a patch cable (located at the right side of the desk).

They look like this:
 You can use any colour cable.



	1 Full	2 Full	3 Full	4 Full	5 Non	6 Non	7 Non	8 Non	9 Non	10 Non	11 Non	→
			●	●				●	●			
OUTPUT	Apollo out 1	Apollo out 2	Apollo out 3	Apollo out 4	TB12 line out	TB12 send	WA76 Out	FX L	FX R	RCA Out L	RCA Out R	Empty slots
			●	●				●	●			
INPUT	Mon L	Mon R	Apollo in 1	Apollo in 2	TB12 line in	TB12 Return	WA76 In	FX L	FX R			Empty slots

(ESSENTIAL)

BLUE: Line out of Apollo Twin Output 3 to FX L input

(ESSENTIAL)

GREEN: Line out of Apollo Twin Output 4 to FX R input

(ESSENTIAL)

RED: Line out of FX L to Apollo Twin Input 1

(ESSENTIAL)

ORANGE: Line out of FX R to Apollo Twin Input 2