



RAVEN

Slate Control User Manual

This guide contains information on the expanded functions of the SLATE CONTROL, diagrams of connections and basic functions, and some example setups.

Overview

The Slate Control includes several expanded features, some of which are hiding in plain sight and some of which are actually hidden. They are described in detail in this document, as well as basic functionality.

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Tools

★ Most of the SLATE CONTROL features require no extra tools, however it is handy to have the following:
  - Multimeter
  - #2 Phillips driver
  - Tone Generator
  - Tweaker (Small, non-magnetic flat blade screwdriver used for aligning electronics)
  - Analyzer (A Minilyzer from NTI is great
  - Multifunction Generator (A Minirator from NTI is great)

SLATE CONTROL FUNCTIONS

CONTROL HEAD FUNCTIONS WITH EXAMPLE SETUP

USB HUB

High current USB hub. Powered even when not connected to a computer. USB connection on Control Head rear.

Selects the source for the LOCAL HEADPHONES and sets the level. Global for all three LOCAL HEADPHONE outputs. Selections are CR, MIX 2, CUE A/B, CUE C/D, EXT1, EXT2 OR ⅛".

LOCAL HEADPHONE control

Selects the source for the CUE C/D and SLS (Studio Loudspeakers) outputs and sets the level. Global for all CUE C/D and SLS outputs. Selections are OFF, CR, LOCAL HEADPHONES, CUE C/D, EXT1, EXT2 OR ⅛".

CUE C/D control

Internal Talkback mic with preamp adjustment, external talkback mic selector, master talkback level, REVERSE TALKBACK enable and level. REVERSE TALKBACK injects the REV TB MIC into the CONTROL ROOM whenever TALKBACK is enabled.

TALKBACK CONTROL & SOURCE

TB AUTO

Latches TALKBACK in the ON position, unless signal is presented at AUTO TB Inputs on EXT INPUT DB25

⅛" INPUT

TRS input sized for phones, players, laptops, etc. Level is bumped from -10 to +4. Selectable for the CR, LOCAL HEADPHONES and CUE C/D.

ENABLES SLS OUTPUT

CR 2 CUE A/B

At CUE A/B output, replaces CUE A/B signal with the selected CONTROL ROOM SOURCE.

CONTROL ROOM SOURCE SELECTIONS

LOCAL HEADPHONES

Source and level selected in the HEADPHONE AREA. Third output on the rear of the control head.

TALKBACK PRESET

This is where you decide WHO you are talking to when you press TALK. CUE A/B, CUE C/D, LOCAL HEADPHONES, and SLATE (Mix outputs) are INDEPENDANTLY selectable.

EXPANDED CONTROL ROOM FUNCTIONS
See manual for detailed descriptions

CAL MODE
Disables CONTROL ROOM VOLUME. Control Room level is set at CAL trimpot

B & C SPEAKER Trims
Allows tweaking of B & C speaker pair volumes relative to the A speaker level.

DIM

Scalable CONTROL ROOM DIM. Lowers the Control Room volume by the level set on the knob. Still functional in CAL mode. Switched on automatically when TALKBACK is engaged.

TALKBACK
Press this to talk! Assignments are handled in the TALKBACK PRESET area. Momentary switch, use TB FOOTSWITCH or TB AUX for latching.

CONTROL ROOM VOLUME

Relay switched in 1db increments

SPEAKER SELECTION

Selects which speaker pairs (A, B or C) is sent the CONTROL ROOM source. Controlled by CONTROL ROOM VOLUME. LFE ENABLE per speaker pair.

SLATE CONTROL CONNECTIONS

STEREO MONITOR CARD WITH EXAMPLE SETUP

DAW RETURN, MIX DECK, HEADPHONE AMP, ETC.

DAW RETURN, MIX DECK, HEADPHONE AMP, ETC.

EXTERNAL HEADPHONE AMP

EXTERNAL HEADPHONE AMP

MIX 1 output always carries the MIX 1 input and carries talkback when TB TO SLATE is selected. Line Level.

MIX 2 output always carries the MIX 2 input and carries talkback when TB TO SLATE is selected. Line Level.

CUE A/B output always carries the CUE A/B input, except when "CR to CUE A/B" is selected. It then carries the CR Source. CUE A/B Carries talkback when TB to CUE A/B is selected. Line Level.

The CUE C/D output is selectable on the CONTROL HEAD from the following sources: Control Room (CR), Local Headphones (HP), CUE C/D input, External 1, External 2, ⅛" input, Off. Level is also controlled on the CONTROL HEAD. Carries talkback when TB to CUE C/D is selected. Line Level.

MIX 1

MIX 2

CUE A/B

CUE C/D

This DB9 provides thorough access to the Talkback system, for various customizations to the user's system. Use this to create a remote producer talkback station, for instance. Pinouts are described in the user manual.

Pre-fader Control Room output for connecting to external VU meters. Voltage and Solo System Logic are available here as well. Pinouts are described in the user manual.

This DB25 connects the SLATE CONTROL to your speakers. Carries the selected source to speaker pairs A B & C, and the SLS source to the SLS (Studio Loudspeaker) outputs. Switched at the CONTROL HEAD.

This DB25 carries the MIX and CUE outputs for connecting to an external cue system, external headphone amps, mixdown decks, or other line-level inputs determined by the user.

Line level, TRS mirror of the local headphone feed to the CONTROL HEAD. Same source and level control as the CONTROL HEAD's headphones. Connect to an external headphone amp or other line-level input. Carries talkback when TB to HP is selected.

EXTERNAL HEADPHONE AMP

DB9
TALKBACK AUX

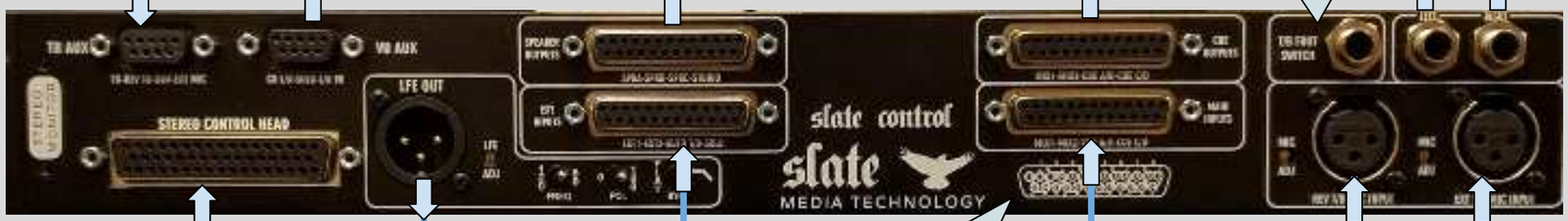
DB9
VU AUX

DB25
SPEAKER OUTPUTS

DB25
CUE OUTPUTS

¼" TRS
LOCAL HEADPHONE
LINE OUT

TALKBACK FOOTSWITCH



DB25 PINOUT printed right on the chassis

Connects to
CONTROL HEAD

XLR-M
LFE OUTPUT

DB25
EXTERNAL INPUTS

DB25
MAIN INPUTS

XLR-F
EXTERNAL & REVERSE
TALKBACK INPUT

DB50 Cable connection to the CONTROL HEAD. Bi-directional control voltage, ⅛" and local headphone signals travel over this cable.



Ships with a 25' cable, 50' cable is available.

LFE (subwoofer) output, with LPF & crossover point, phase and level. Selectable per speaker pair on the CONTROL HEAD.

Inputs for two external stereo sources, plus inputs to the SOLO system & the AUTO TALKBACK system.

These four stereo inputs come directly from your DAW and are labeled MIX 1, MIX 2, CUE A/B & CUE C/D.

This input provides for REVERSE TALKBACK as described in the user manual. Phantom power is not provided.

Use this input if you wish to use an external talkback mic instead of the built-in mic on the control head. Phantom power is not provided.

Control Room Panel Expanded Features

- ★ Cut Left
  - Cuts (as in disables, mutes, turns off, etc.) the LEFT speaker output, with no change to the input signal. Engaging this during normal, stereo monitoring will result in hearing the RIGHT channel of the selected input source coming out of the RIGHT speaker only. During MONO monitoring, results in hearing the MONO SUM of the selected input source in the RIGHT speaker only.
- ★ Cut Right
  - Cuts (as in disables, mutes, turns off, etc.) the RIGHT speaker output, with no change to the input signal. Engaging this during normal, stereo monitoring will result in hearing the LEFT channel of the selected input source coming out of the LEFT speaker only. During MONO monitoring, results in hearing the MONO SUM of the selected input source in the LEFT speaker only.
- ★ Mono
  - Sums the selected input source to MONO in the CONTROL ROOM ONLY. Handy for judging stereo image, phase correlation, and general awesomeness of your mix among other things. As described above, sums BEFORE the speaker cuts to allow true MONO mixing on ONE SPEAKER.
- ★ Left Pol
  - Flips the polarity (phase) of the LEFT CHANNEL of the selected input source. Handy for checking phase coherence of a mix, stereo width, etc. When combined with MONO will play only the difference (side) information from a stereo signal summed to the center channel.
- ★ CAL Mode
  - Disables the CONTROL ROOM VOLUME and replaces it with the CAL pot, accessible with a tweaker on the front panel. Use this to pre-set a reference level, either with a sound level meter or by feel, to ensure exacting level reproduction. Very useful when mixing for film & television. CAL mode is still affected by the DIM control.

VU AUX DB9

- ★ This DB9 deals largely with the VU meter outputs, which are provided as a courtesy for those who wish to purchase or build a glowing set of wonderful VU meters.
  - Two pins on the VU AUX DB9 carry signals to drive a pair of VU meters. They are derived from the selected CONTROL ROOM SOURCE and are PRE FADER. Pin 4 carries the left signal and pin 9 carries the right.
  - Ground is available on pins 1 and 5.
  - +15 volts is available on pin 2, - 15 volts on pin 6.
  - +12 volts for meter lamps is available on pin 3.
  - This DB9 contains the switching logic for the SOLO SYSTEM, described below. Connect pin 8 to pin 7 to engage the SOLO SYSTEM.
  - Pin configuration:
    1. Ground
    2. +15 volts
    3. +12 Volts
    4. VU Left
    5. Ground
    6. -15 volts
    7. Solo Logic -
    8. Solo Logic +
    9. VU Right

TB AUX DB9

★ This DB9 is packed full of things to make a remote talkback station for the producer. Use them in this way or split them up as you see fit. Here is what you'll need to know:
  - You can add another EXTERNAL TALKBACK MIC on this connector. It is parallel with the EXTERNAL TALKBACK XLRF on the rear of the card, so use caution if connecting both at the same time. Phantom power is NOT provided. Pin 2 is Mic -, Pin 6 is Mic +, Pin 7 is Mic Ground.
  - The TALKBACK preamp signal is available on pin 8, in case you would like to send it to the front desk, another studio, an underground AM radio station, or any such place that suits you.
  - TALKBACK and DIM are switchable on this connector. Pin 4 is TALKBACK logic, pin 3 is DIM logic. Connect either to the ground on pin 9 to remotely switch their function.
  - +5 volts is available on pin 5 for LED indicators, or other functions as needed.
  - Pin Configuration:
    1. Ground
    2. Mic -
    3. Dim Logic
    4. Talkback Logic
    5. +5 Volts
    6. Mic +
    7. Mic Ground
    8. Talkback Preamp Output
    9. Logic Ground

Solo System

★ The SLATE CONTROL is designed to function not only as a stand-alone monitor controller, but also as the center-section of a modular console. To that end, it has been fitted with a SOLO SYSTEM that may be incorporated into said modular console, used in conjunction with your DAW, or used in any number of creative ways.
  - On the EXT INPUT DB25, cable pairs 5 & 6 input to the SOLO SYSTEM. When using the logic circuit described above on the VU AUX DB9, engaging the SOLO SYSTEM will replace the CONTROL ROOM SOURCE with the SOLO SYSTEM INPUT. When the SOLO SYSTEM is active, the MIX 1 lamp will turn purple if MIX 1 is selected, red if any other source is selected.

Auto-Talkback System

★ The SLATE CONTROL is equipped with an AUTO TALKBACK system. When T/B AUTO is selected on the control head panel, Talkback will latch on until signal is presented to the AUTO T/B INPUT on cable pairs 7 and/or 8 of the EXT INPUT DB25. Suggested uses:
  - Mult the MIX 1 signal or your DAW's main mix out to the input. When playback stops, talkback will open up. If using this method, an open mic going through the MIX 1 or your DAW main mix outputs may result in closing the talkback momentarily. This may actually be desirable when working with a singer or band, but if it is not an alternative method is listed below.
  - Print a tone to a pair of tracks in your DAW (or a single track) and send this output exclusively to the AUTO T/B Input. When playback is active, Talkback will drop out. When playback is stopped, Talkback will engage and stay latched REGARDLESS of any throughput on MIX 1 or any other input.

Reverse Talkback System

★ It is often desirable to inject a signal *into the CONTROL ROOM* when TALKBACK has been activated. For instance, let's say you have a band out in the live room. The drummer is surrounded by drum mics, so you may be able to hear them speak through them, but the bass player may be nowhere near an open mic. In a situation such as this, one would simply put a microphone out in the live room, connect it to the REV T/B MIC INPUT, engage REV T/B on the CONTROL HEAD, and voila! Using the REV T/B level control, you can inject the microphone you placed in the live room into the CONTROL ROOM whenever TALKBACK is engaged. No more giving up a channel of D/A and muting/unmuting the signal inside your DAW. True large-format console functionality at your fingertips!

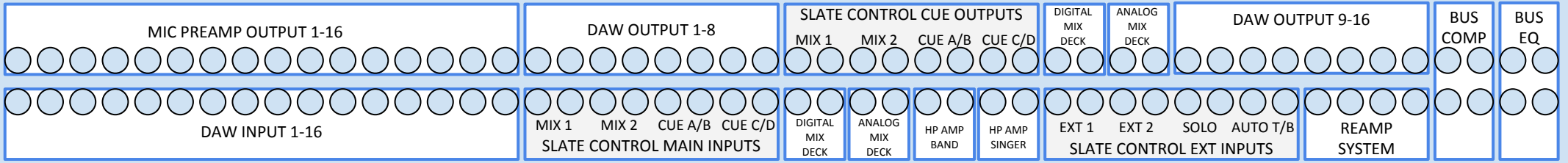
Mute Cue when Talkback is active

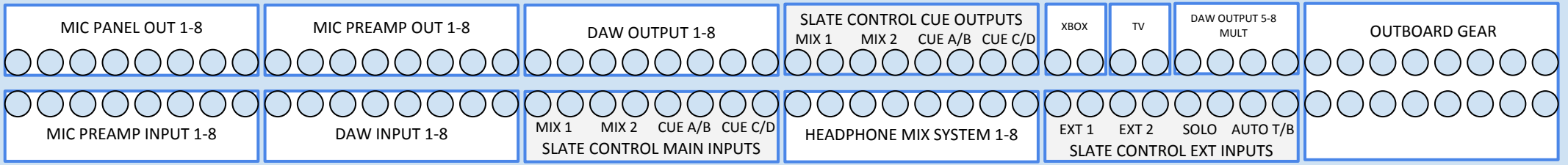
★ There is an internal option on a small jumper to mute the CUE OUTPUTS whenever TALKBACK is engaged. Use this option if you wish to fully interrupt the signal going out CUE A/B and CUE C/D when talkback is engaged. The jumper is located on the main STEREO MONITOR card.

Example Patchbay Layouts

★ These two layouts represent how a simple studio using only one 96-point TT patchbay can take advantage on the full power of the SLATE CONTROL!

★ Many other choices are, of course, equally valid. These are simply options to get you thinking…


MIC PREAMP OUTPUT 1-16
DAW OUTPUT 1-8
SLATE CONTROL CUE OUTPUTS
MIX 1
MIX 2
CUE A/B
CUE C/D
DIGITAL MIX DECK
ANALOG MIX DECK
DAW OUTPUT 9-16
BUS COMP
BUS EQ
DAW INPUT 1-16
MIX 1
MIX 2
CUE A/B
CUE C/D
SLATE CONTROL MAIN INPUTS
DIGITAL MIX DECK
ANALOG MIX DECK
HP AMP BAND
HP AMP SINGER
EXT 1
EXT 2
SOLO
AUTO T/B
SLATE CONTROL EXT INPUTS
REAMP SYSTEM


MIC PANEL OUT 1-8
MIC PREAMP OUT 1-8
DAW OUTPUT 1-8
SLATE CONTROL CUE OUTPUTS
MIX 1
MIX 2
CUE A/B
CUE C/D
XBOX
TV
DAW OUTPUT 5-8 MULT
OUTBOARD GEAR
MIC PREAMP INPUT 1-8
DAW INPUT 1-8
MIX 1
MIX 2
CUE A/B
CUE C/D
SLATE CONTROL MAIN INPUTS
HEADPHONE MIX SYSTEM 1-8
EXT 1
EXT 2
SOLO
AUTO T/B
SLATE CONTROL EXT INPUTS

Pin Configurations

There are four DB25s on the main card. These are the **cable pair** designations based on the standard pinout.

1. Main Inputs
    1.1. Mix 1 Left
    1.2. Mix 1 Right
    1.3. Mix 2 Left
    1.4. Mix 2 Right
    1.5. Cue A
    1.6. Cue B
    1.7. Cue C
    1.8. Cue D
2. Cue Outputs
    2.1. Mix 1 Left
    2.2. Mix 1 Right
    2.3. Mix 2 Left
    2.4. Mix 2 Right
    2.5. Cue A
    2.6. Cue B
    2.7. Cue C
    2.8. Cue D
3. Speaker Outputs
    3.1. Speaker A Left
    3.2. Speaker A Right
    3.3. Speaker B Left
    3.4. Speaker B Right
    3.5. Speaker C Left
    3.6. Speaker C Right
    3.7. SLS Left
    3.8. SLS Right
4. Aux I/O
    4.1. External 1 Left
    4.2. External 1 Right
    4.3. External 2 Left
    4.4. External 2 Right
    4.5. Solo System In L
    4.6. Solo System In R
    4.7. Auto Talkback Signal 1
    4.8. Auto Talkback Signal 2

Pin Configurations Continued

There are two DB9s. These are the **pin numbers** in a standard DB9.

1. T/B Aux
    1.1. Gnd
    1.2. External TB Mic -
    1.3. Dim Logic
    1.4. Talkback Logic
    1.5. +5v
    1.6. External TB Mic +
    1.7. External TB Mic Gnd
    1.8. Talkback Preamp Out
    1.9. Logic Ground
2. VU Aux
    2.1. Ground
    2.2. +15v
    2.3. +12v
    2.4. Left VU Driver
    2.5. Ground
    2.6. -15v
    2.7. Solo Logic Ground
    2.8. Solo Logic
    2.9. Right VU Driver

SLATE MEDIA TECHNOLOGY

Declaration of Conformity (DoC)

In accordance to: ISO/IEC 17050-1 EN 17050-1

***EMC Directive** 2014/30/**EC** - **FCC** PART 15 SUBPART B SECTION 15.107 & 15.109*
***Low Voltage Directive**: 2014/35/EU - **RoHS** 2011/65/EU-*
***REACH Regulation** EC 1907/2006 – **WEEE** 2012/19/EC*

SLATE MEDIA TECHNOLOGY/ Steven Slate:

8331 Lookout Mountain
Los Angeles, CA 90046
323-656-2050

Product Specifications:

Trade Name: Slate Media Technology
Model: Raven MTX mk2; Slate Control
Description: 46" Touch Display Panel; Monitor Controller

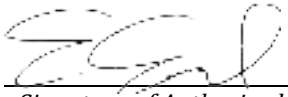
We hereby declare under our sole responsibility that the product herein identified, to which this declaration relates, is in conformity with the *essential requirements* and *other relevant requirements* of the European Parliament, European Council, and meets all requirements of the Canadian Interference-Causing Equipment Regulations. (*Cet appareil numérique de la classe B respecte toutes lecs exigences du Règlement sur le matérial brouilleur du Canada*), EMC Directive 2014/30/EC, FCC Part 15 subpart eB section 15.107 & 15.109 LVD 2014/35/EU, RoHS 2011/65/EU, REACH Regulation EC 1907/2006, WEEE 2012/19/EC. The product is compliant with the following standards and/or other normative documents:

Radiated Emissions /Immunity:	***EN 55032 (2012) +C1; Class B, EN 6100-3-2 (2014), EN 61000-3-3 (2013)***
	EN 6100-4-3 (2006)+A1+A2, EN 6100-4-2 (1995)+A1+A2, EN 6100-4-6 (2007)
Safety:	**EN 6100-4-5 (2006), EN 6100-4-11 (2004)**
	EN 60065: 2002 A1 (2006) +A2 (2010) +A12 (2011) +AC (2007)
	IEC 6065 (ed.7), IEC 60065 (ed.7), IEC 60065 9ed.7), am2
	UL 60065 Edition 7 – Revision Date 2013/07/24
Environmental:	**CSA C22.2 NO 60065-03 (incl. amendments 1&2)**
	EN 50581: 2012

Supplementary Information:

Notified Body Involved:	*NB0976, CKC Certification Services, LLC Report No.: 98060-5,6*
Technical File Creation by:	*Intertek as per IEC62321 and in compliance with EN50581*

The undersigned declares on behalf of the manufacturer the equipment named above has been designed to comply with the relevant sections of the above referenced specification:



Signature of Authorized Person	*Place and Date of Issue (of this DoC)*
Erika Earl	*Director of Hardware Engineering*
Written Name	*Title*