

Avocet



OPERATOR'S MANUAL

Version (-0.1) rough data
Surround information included



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“Avocet” is designed to solve the problems of accurate monitoring and volume control as required by workstation users, studios and mastering rooms alike. Avocet is a stereo controller with three digital inputs, three analog inputs and a headphone system. All digital signals are up-sampled and jitter reduced to ensure highest accuracy during D/A conversion. Options are available to change the D/A mode, all though the default mode has been chosen as more accurate.

Avocet’s many features including; dim, mute, phase, mono, and 16 bit truncation functions, plus a speaker select switch that sends line level balanced audio to one of three outputs. The six input sources have on the fly gain trim capability.

An accessory connector has extra functions for the technically minded. They are; buffered stereo output, mono output, talk back mic output, headphone bus output, and several input control functions such as; talk back enable, mute and input selection control that could be used for a pre-listen or solo command. This connector is also used to tie audio boxes together for surround operation.

The internal headphone amplifier can be fed from the program source or an external input. Provisions for a talk back function are included.

The three headphone sources are;

- The analog AUX input
 - Main, meaning the audio source selected by the input button
 - Program, meaning the audio source selected by the input button.
- However the level control, mono and phase buttons also apply to the program source.

All three phone sources have individual gain settings controlled by the green knob.

The talkback mic (not supplied and there is no phantom power) is hooked into the xlr connector on the remote. There is a mic level trim pot next to the xlr connector. The talk back mic signal is mixed into the headphone amplifier along with the selected headphone source. By sending a cue mix to the Aux input you can use the headphone system for doing overdubs in the studio and have communication to the artist. At the same time the main audio path can operate independently of the headphone system

SURROUND

By using 3 two channel audio boxes Avocet will function as a 5.1 system, and 4 audio boxes makes a 7.1 system. See the speaker setup information. This function allows intergrating, both surround and stereo speaker systems. A metering system is under discussion. A specially made accessory cable connects the audio boxes when working surround.

FIRST TIME POWER UP

The first time that Avocet is powered up, it should be initialized. This is done by pushing all three output select buttons at the same time. This sets up the remote for proper operation. It also resets the user settings:

- All gains, main and phones are set to zero
- Output 1 is the selected output
- DAW is the input selected
- Phones are set to the Aux input
- Stereo speaker selection is selected
- All offsets are cleared

The remote cable must be attached and screwed down before power up.

Take the time to look at the following pages and see how the buttons work. After that, you should be good to go.

Almost all user selections and gains are remembered by Avocet and restored on power up. The headphone button and the talk button positions are not remembered

The talkback mic gain is adjusted with a small trim pot that is next to the mic's xlr connector.

AUDIO PATH

The main audio path is discrete class A electronics with a stepped attenuator for gain control. All switching and gain control functions in the main audio path is done with relays. Yes they make acoustic clicks when operating.

The headphone audio path is done with high quality integrated circuits. The D/A converter uses the latest technology interrogated circuits.

POWERED MONITORS, POWER AMPS WITH NO GAIN CONTROL

Most powered monitors do not have a level control that is meaningful. This results in the need to trim Avocet's output gain. In order to do this and not add any amplifier stages an output pad is supplied. This pad is to be placed at the input of the power amp. Not at Avocet's connector. The pad has a range of 6 to 20 db of loss and is preset to a 10 db loss.

Truncates the digital input to 16 bits. For checking what 16 bits sounds like

Channel Selection to 7.1 surround

Enables Headphone control mode - shift functions

Selects which speaker output

Talk back button sends the talk mic into the head-phone output. It is push-on push-off, however holding it for 2 seconds allows quick release - non latching

Changes the phase of one channel

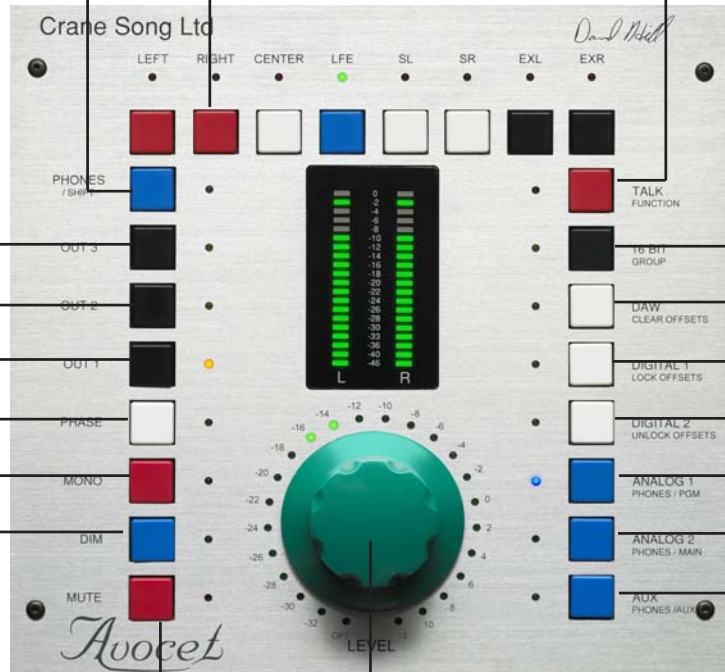
Monos the stereo source

Dims the main audio path. The dim level is set by turning the level while dim mode is active. Selection of phones is over ridden by selecting dim.

Mute kills the main output. On power up Avocet is muted

Input level when Phones or Dim modes are not selected

Input selection



Gain Trim

Phones \ Shift key to enable gain trim, offset control



Gain trim offset clear

Gain trim offset lock

Gain trim unoffset lock

must be in shift mode
to enable these functions

If one presses and holds the input select button a second time it will enable the input gain trim mode. It requires about one half second of hold time to enter the trim mode. Trim mode allows changing the input level on the selected input relative to all other inputs. Gain trim has an offset range of plus or minus 10 db. By pressing the input button a third time, the input will return to normal operation while remembering the gain trim. Selecting any other input will also exit the trim adjust mode.

Gain trim can be cleared, locked or enabled by using the function-shift key to reach the desired selection.

The mono function also has a gain trim for level matching in surround. After selecting mono, if one presses and holds (for one half second) the mono select button it will enter the input gain trim mode. To leave the gain trim mode press and hold the button for one half second. Pressing the button for less time will cause the gain trim to be remembered and the mono mode to be exit.

In normal operation all input gains will track. At the end of the stepped attenuator range the offset gains could reach a limit where they will not change. As an example if you trim an input up by 10 db and then move the main gain to max that input will be max +10 which is not possible. Bringing the main gain back down, the 10db offset will still exist. The same thing will happen on the bottom end of the control range.

In normal operation one should set the power amp gain, so that your normal listening level is with the gain knob at 1 o'clock. There is a supplied adjustable pad for powered monitors and power amps that have no gain control.

Speaker selects - Mute and Solo

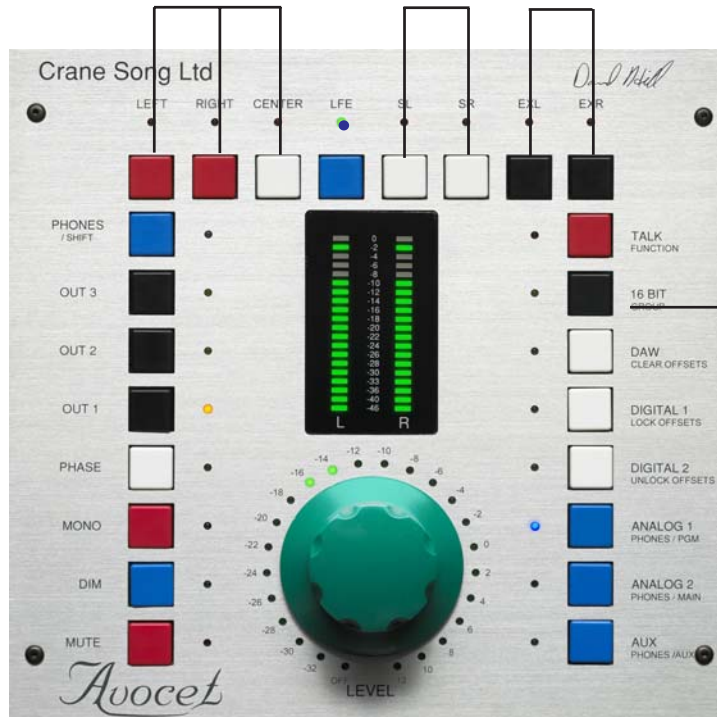


Channel or speaker control is determined by the top row of buttons. The channel is on when the led is on. This applies to all modes of operation. The channels are Left, Right, Center, LFE, Surround Left, Surround Right, Extra Left, Extra Right.

If one holds down a channel select button for one half second or more the selected channel will be soloed. The led on the soloed channel will flash indicating that this is the soloed channel. Other channels can be turned on and off in the solo mode. By holding down the flashing / soloed channel a second time (for one half second) the system will return to the pre-soloed speaker selection. If one holds down a different channel select for the one half second time period un-soloing returns to the selected channels prior to having selected a new soloed channel.

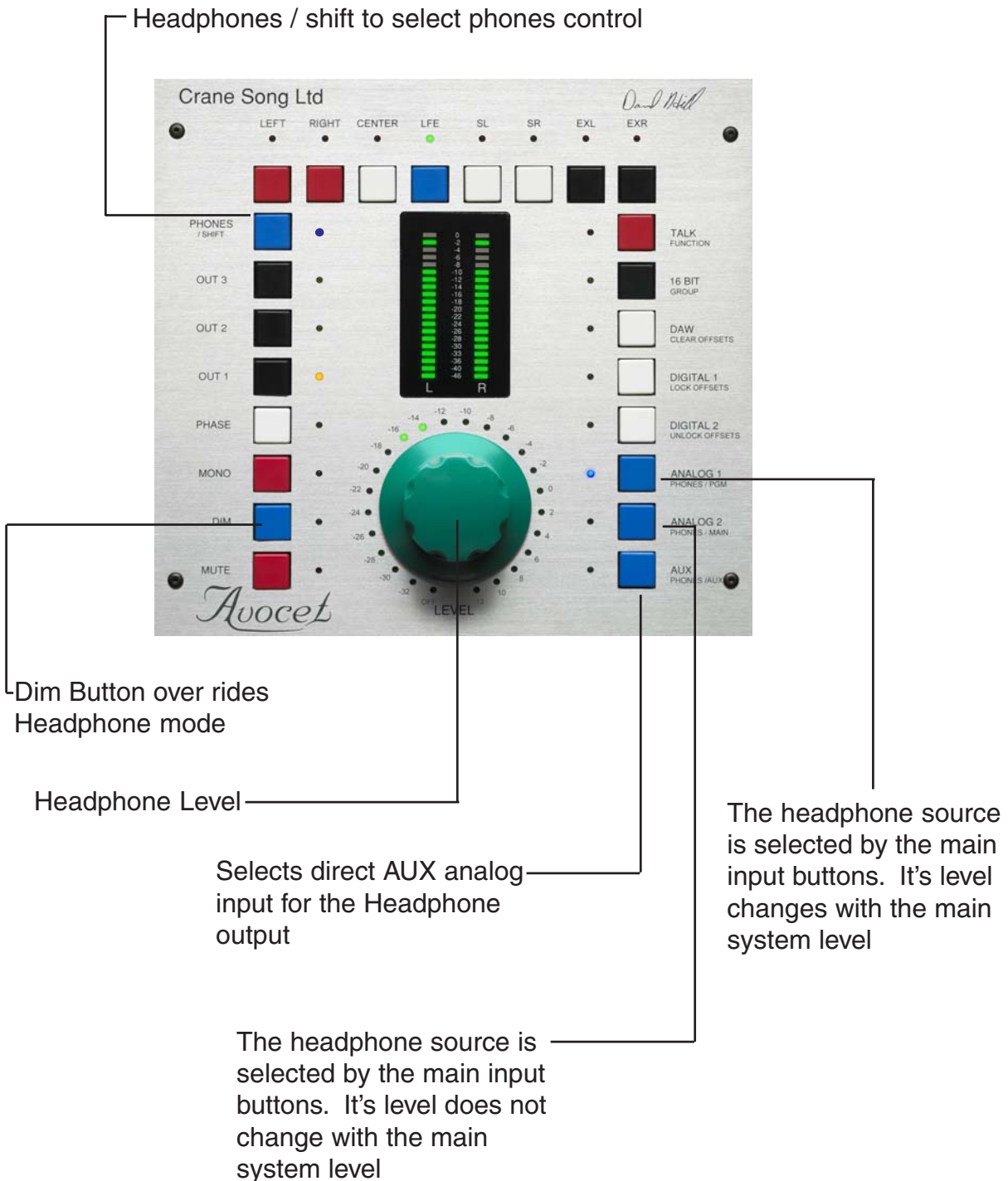
Group Function

This shows the key grouping



The group function is reached by the phones / shift button and then selecting the group button. What it does, is in surround mode, it groups together Left, Right, Center to function as one button, Surround Left and Surround Right as one button, and Extra Left and Extra Right as one button

Headphone Mode



Talkback Mode

Talk mic is on when the LED is on. It has push-on, push-off operation or latching. However if the talk button is held for one half second, talk back releases when the button is released, non latching

Talkback mic gain trim on back panel



The monitor level can be set when the talkback button is pushed. The monitors can be dimmed to off or a level that is below feedback. This will allow comminution in both directions while in talk mode.

Functions that can change

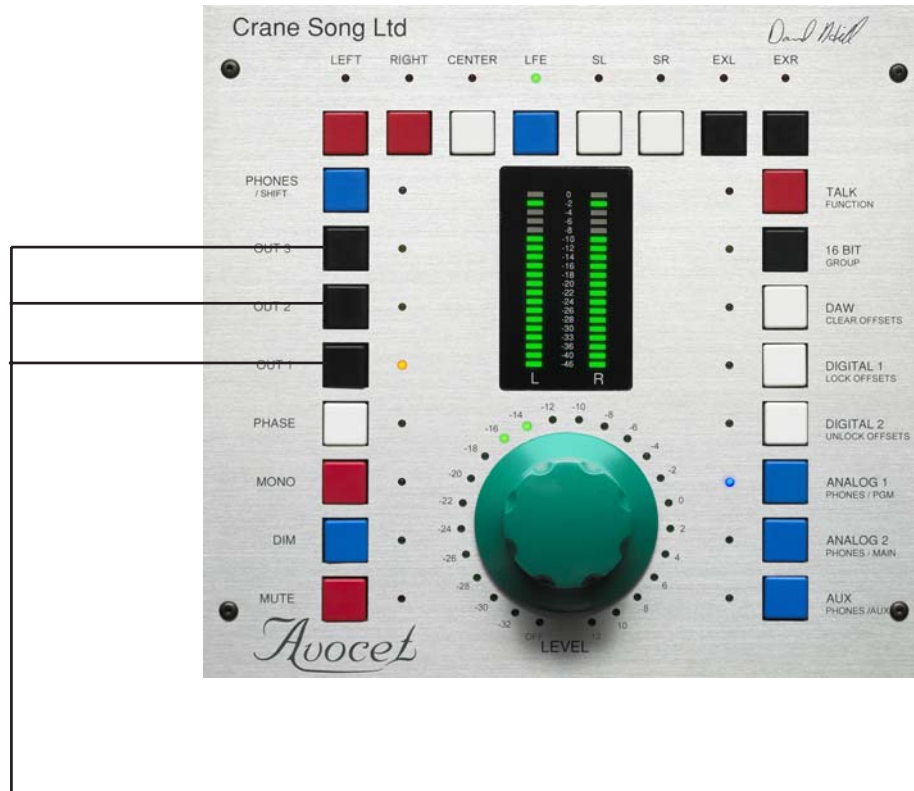
The meter can display input level. Which is how Avocet is shipped. Or it can also display output level. There is an internal jumper in the main unit for this selection.



There are trim pots on the back of the main unit for the analog gain trim. These have a range of 8 db

There is a high gain mode selected by an internal jumper. This will add 14 db of gain to the Analog 2 input. There is a small pop that can be heard when the gain changes by 14 db. This is a result of the switch contacts and happens only when high gain is selected

Changing the speaker setup from Stereo to Surround



By pressing any one of the speaker select buttons and holding it for 5 seconds will put Avocet into the speaker set up mode.

Pressing the center channel button will make the center channel be the mono speaker when the mono function is selected. This is the surround mode of operation

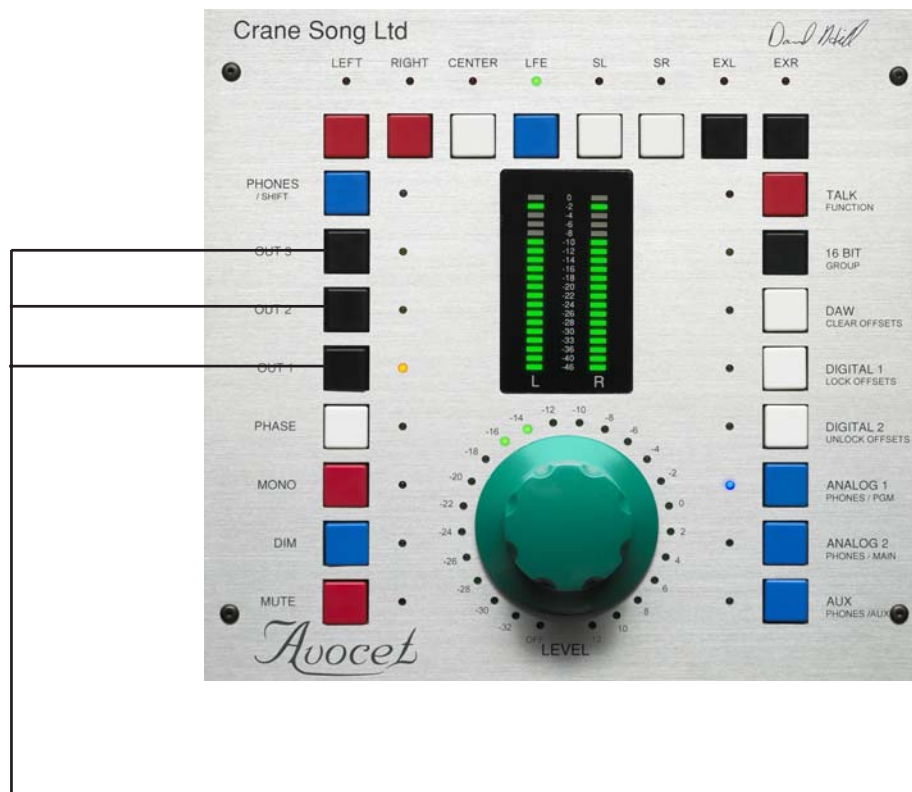
Selecting the left, right, or both, left and right will disable the surround channels and select which channel is the mono speaker, or speakers, when the mono function is selected. This is the stereo mode of operation

To exit the setup mode touch the output select a second time

Once set up, switching between the speaker systems will be transparent.

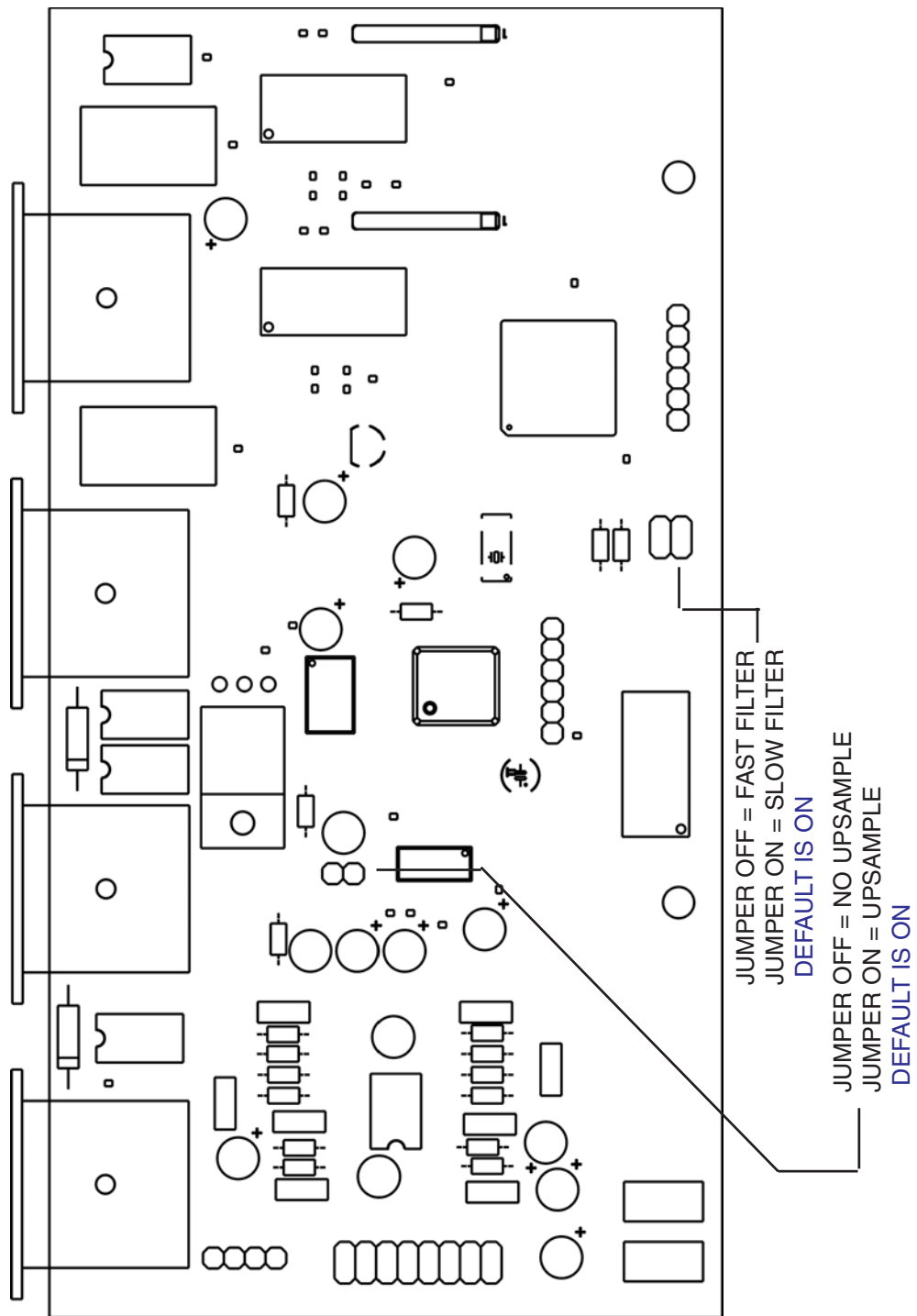
There is no channel summing when going from surround down to stereo.

Clearing the internal settings - System Reset

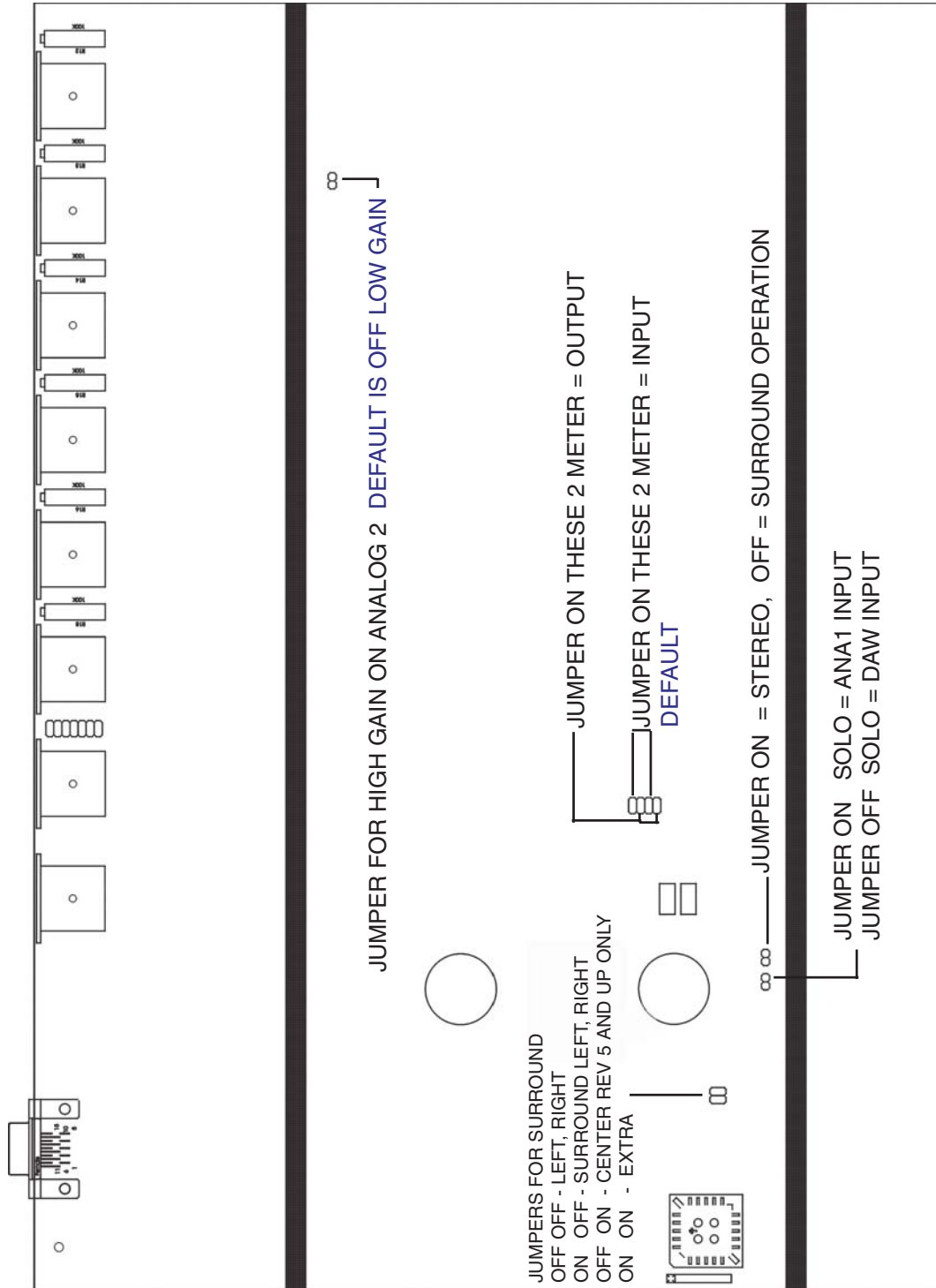


By pressing all three output selection buttons at the same time Avocet will reset all of it's internal settings. This is the same as rebooting the remote.

All gains, main and phones are set to zero
Output 1 is the selected output
DAW is the input selected
Phones are set to the Aux input
Stereo speaker selection is selected
All offsets are cleared



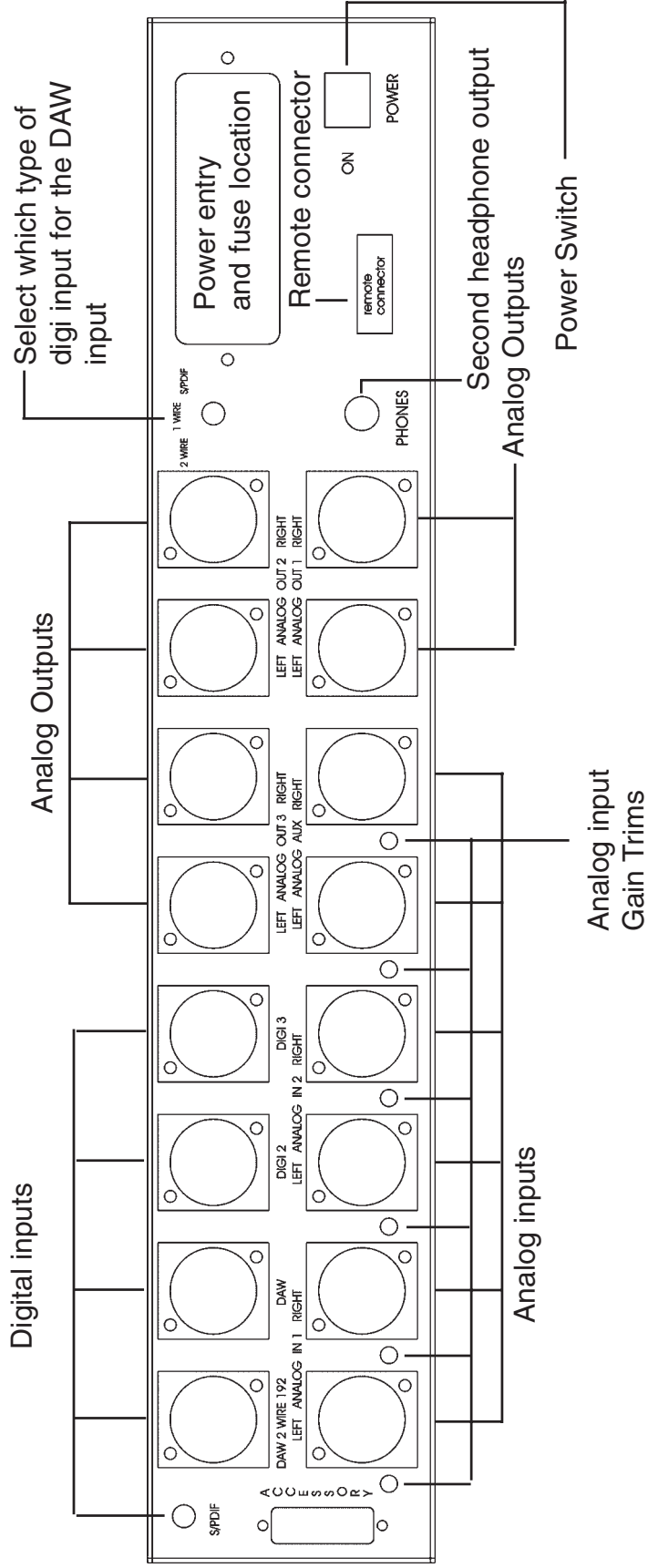
Do not change jumpers or adjust the trim pots unless you are sure of what you are doing

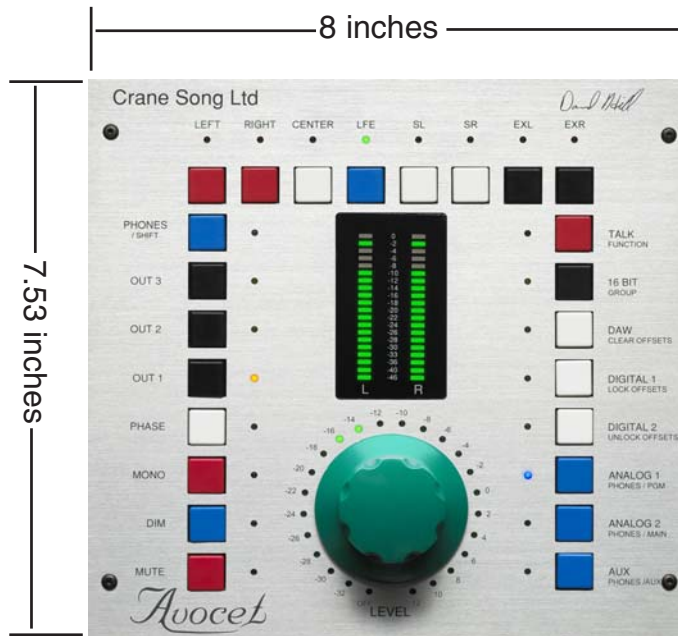


REV 4 pcb

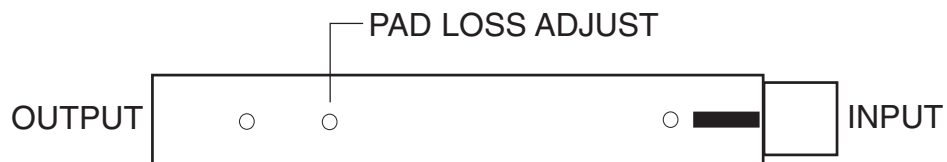
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Depth not counting the knob is 1.62 inches



XLR OUTPUT PAD

This is an adjustable pad for use with amplifiers or powered monitors that have no gain control. The pad has a range of 6 to 20 db of loss. It is preset to 10 db

ACCESSORY CONNECTOR

1	Right Channel out
2	gnd
3	gnd
4	talk mic output - When talk button is pushed
5	Right phones out
6	Left phones out
7	gnd / ground
8	data I/O do not connect
9	gnd
10	gnd
11	gnd
12	Surround mono input 6
13	Surround mono input 5
14	Left Channel out
15	mono out
16	talk command in - enable by tying to gnd
17	mute+
18	mute-, solo-
19	solo+
20	internal signal interconnect do not use from rev5 and on, solo- on rev4 units
21	gnd
22	Surround mono input 1
23	Surround mono input 2
24	Surround mono input 3
25	Surround mono input 4

To use the external mute or solo inputs 5 to 15 volts needs to be applied to the control input lines. Polarity must be followed. These inputs are optical isolated.

The mute control is push on - push off, the talk input is also push on - push off or latching. The solo switching remains in the soloed state as long as the control voltage is applied. A jumper is provided on the main pcb that selects either the solo is the DAW or ANA1 input as the solo input.

Starting with the rev5 pcb the low connection for mute and solo has changed