Avocet

Operator's Manual

Version (-0.4) rough data for rev4 pcb

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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.

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

An upgrade path has been planned in Avocet to get to surround. This is being worked on, with no finish date at this time. The audio box will work as two of the audio channels and the remote can drive multiple audio boxes. The remote will need different programming for some different functions and thus different labeling. If you have requests of what you would like to see function wise send email to:
davehill@cranesong.com
subject line “SURROUND” there will most likely not be a response, this is for information gathering since surround is not a very well defined standard. All e-mails are appreciated and will be read. Some ideas will be used and some not.

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

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

Take the time to look at the following pages that show 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 convertor used 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 10 to 30 db of loss. It is preset to 20 db

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

Enables Headphone control mode

Talk back button sends the talk mic into the headphone output. It is push-on push-off

Selects which speaker output

Changes the phase of one channel

Monos the stereo source

Input selection

Input level when Phones or Dim modes are not selected

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 Gain Trim

If one presses the input select button a second time it will enable the gain trim mode. This will allow changing the input level on the selected input relative to all other inputs. Gain trim has a plus or minus 10 db range. By pressing the input button a third time, the gain will return to normal operation while remembering the gain trim.

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.

Headphone Mode

Headphone Selected

Buttons Disabled in phones mode

Dim Button over rides Headphone mode

Headphone Level

Selects direct AUX analog input for the Headphone output

The headphone source is selected by the main input buttons. It's level does not change with the main system level

The headphone source is selected by the main input buttons. It's level changes with the main system level

Talkback Mode

Talkback mic gain trim on back panel

Talk mic is on when the LED is light. It is push-on, push-off operation

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.

An internal jumper in the main unit allows the selection of one or both speakers when mono operation is selected

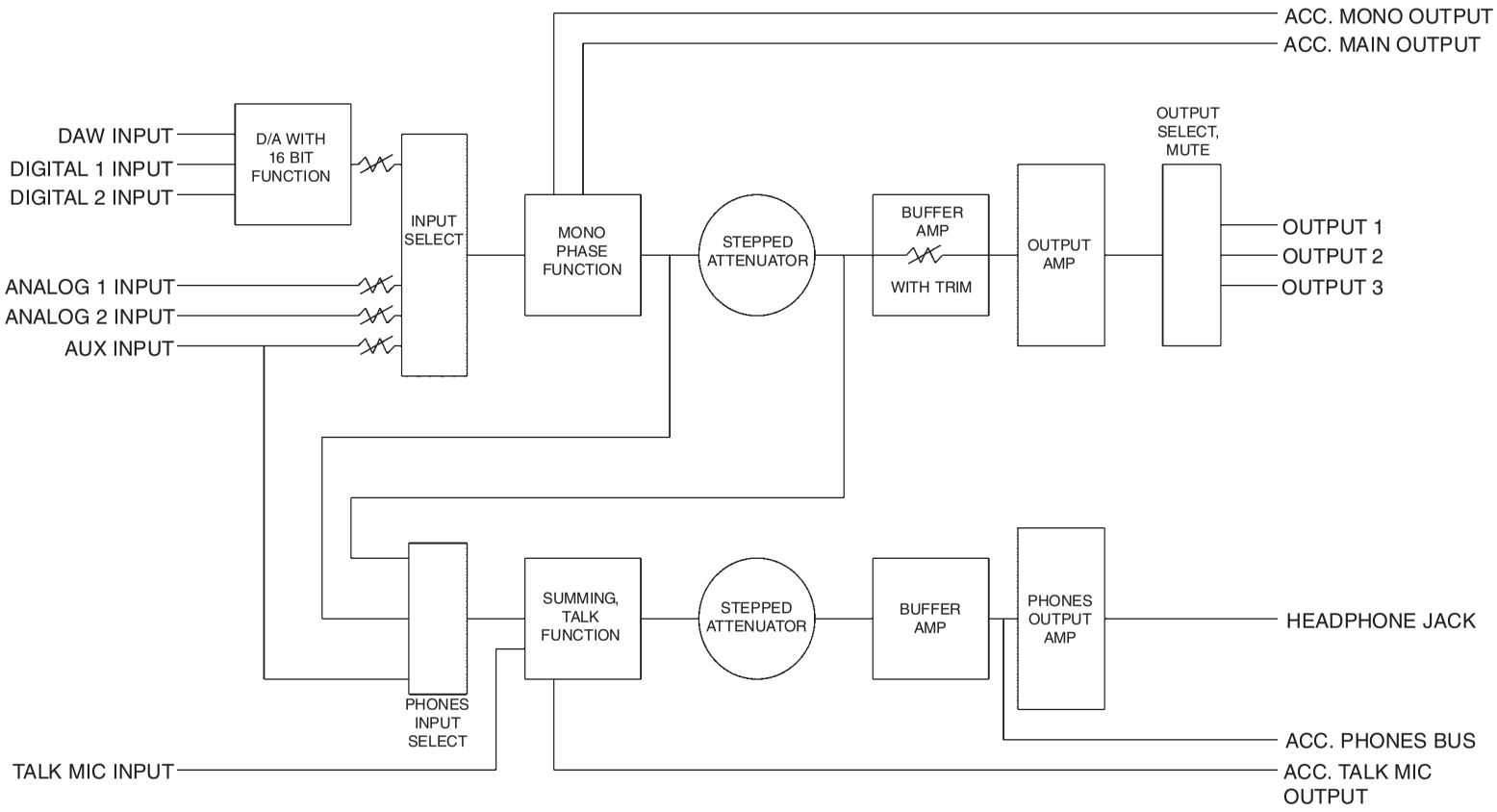
There are trim pots on the back of the main unit for the analog gain trim. These have a range of 8 db

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

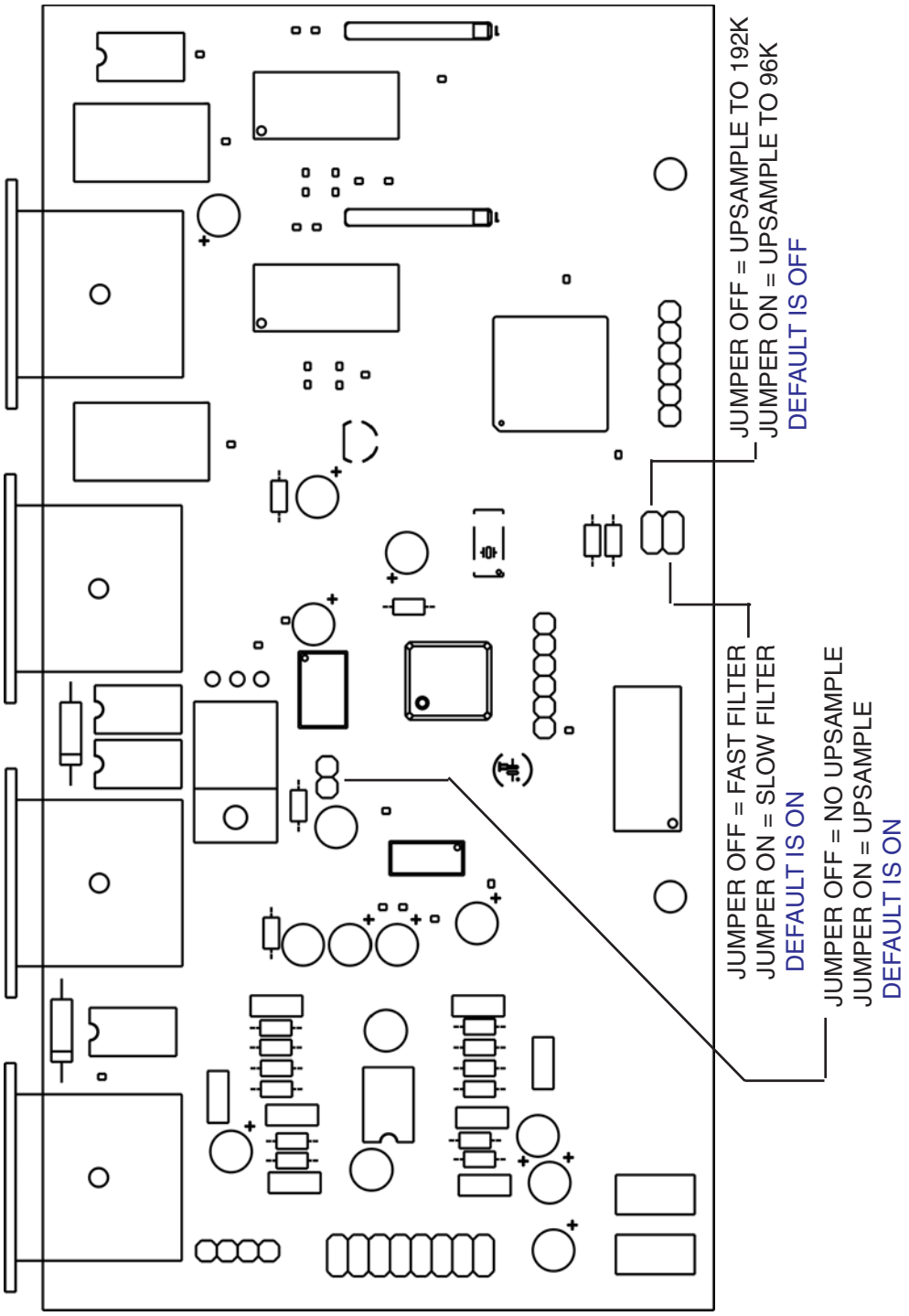
Clearing the internal settings

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.

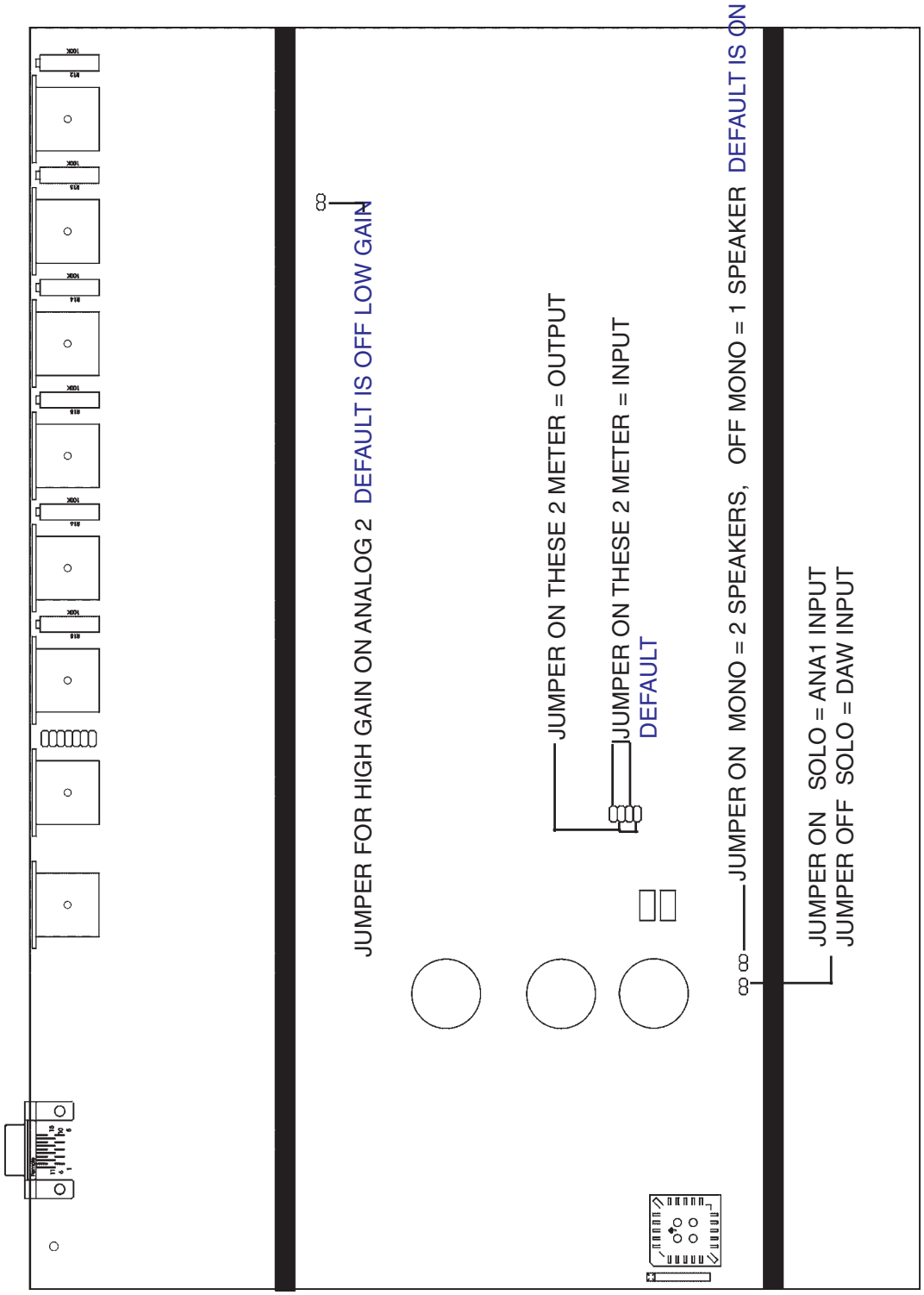
All gains, main and phones are set to zero
Output 1 is the selected output
DAW is the input selected
Phones are set to the Aux input



This is a signal flow reference for Avocet. The main audio part is discrete class A amplifiers. Air flow around the unit is recommended



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



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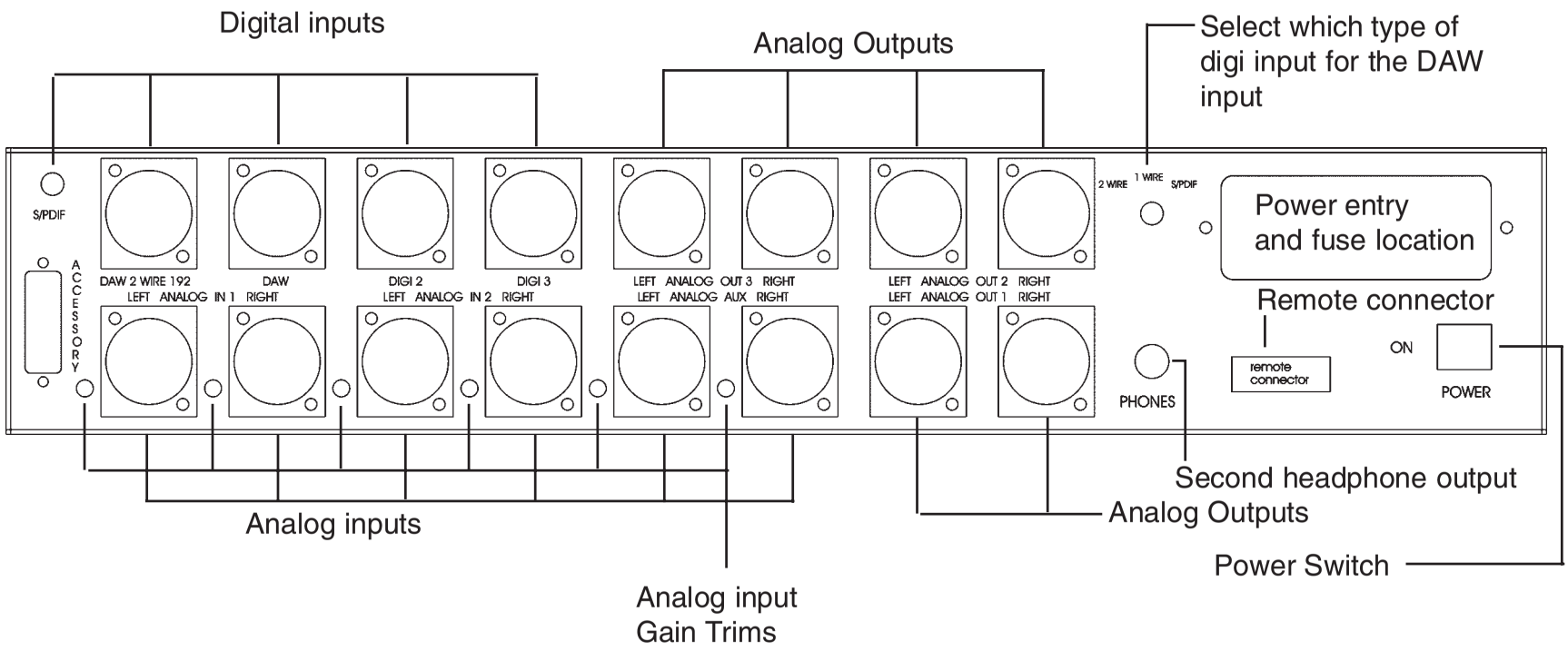
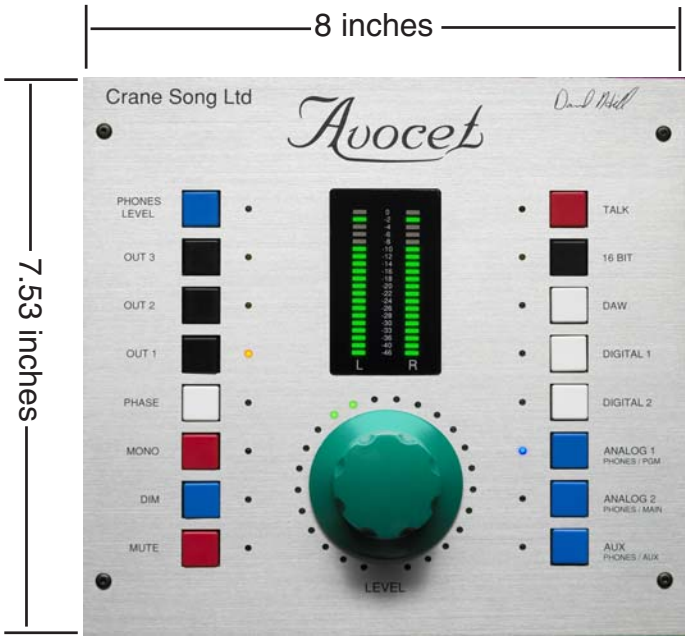
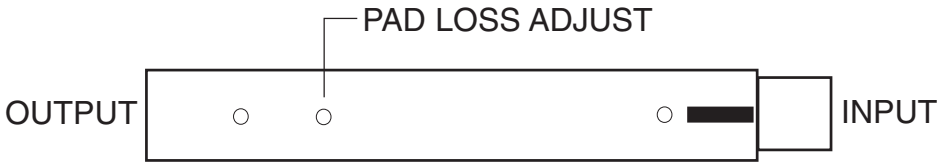

Digital inputs
Analog Outputs
Select which type of digi input for the DAW input
S/PDIF
ACCESSORY
DAW 2 WIRE 192
LEFT ANALOG IN 1 RIGHT
DAW
DIGI 2
LEFT ANALOG IN 2 RIGHT
DIGI 3
LEFT ANALOG OUT 3 RIGHT
LEFT ANALOG AUX RIGHT
LEFT ANALOG OUT 2 RIGHT
LEFT ANALOG OUT 1 RIGHT
2 WIRE
1 WIRE
S/PDIF
Power entry and fuse location
Remote connector
remote connector
ON
POWER
PHONES
Second headphone output
Analog inputs
Analog Outputs
Power Switch
Analog input Gain Trims



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-
19	solo+
20	solo-
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 talk control tie the talk input line to ground to enable talk back.
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. The solo control disables all input level controls but the one that is selected by the jumper on the main board.