

## FEATURES

- Use of the famous ASAHI KASEI 24/34-Bit DSP with built in 20-Bit AD/DA stereo converters
- A combination of low costs and high performance "DIGITAL AUDIO EFFECTS" are put into practice
- 20 Bit Delta Sigma 64x Oversampling AD converter (inside DSP)
- 20 Bit Delta Sigma 128x Oversampling DA converter (inside DSP)
- 64x Oversampling ADC Digital Filter (inside DSP)
- 128x Oversampling DAC Digital Filter (inside DSP)
- Sampling Rate 41.67 KHZ
- Only a single 5VDC power supply necessary
- Audio signal "Overshooting" indicator output on-board (CLIP-LED, only a LED is necessary)
- Effect ON / OFF circuit on-board (Audio output muting), executable with a single switch to GND
- Automatic audio muting activation during the "First Power ON" process
- The on-board extra 7-Bit AD converter in combination with an off-board 8 channel MUX offers low cost and easy made simultaneous effect parameter variation by four potentiometers.  
These are:
  - Delay time control
  - Delay repeat rate control (Feedback)
  - Reverb time control
  - Delay & Reverb volume balance mixing
- The previous defined parameters are independent and on the fly controllable
- No scratch effects or distorted audio sound appears during parameter variations
- Two additional switches offers an independent Delay and Reverb on / off control without the need to touch the balance control potentiometer.

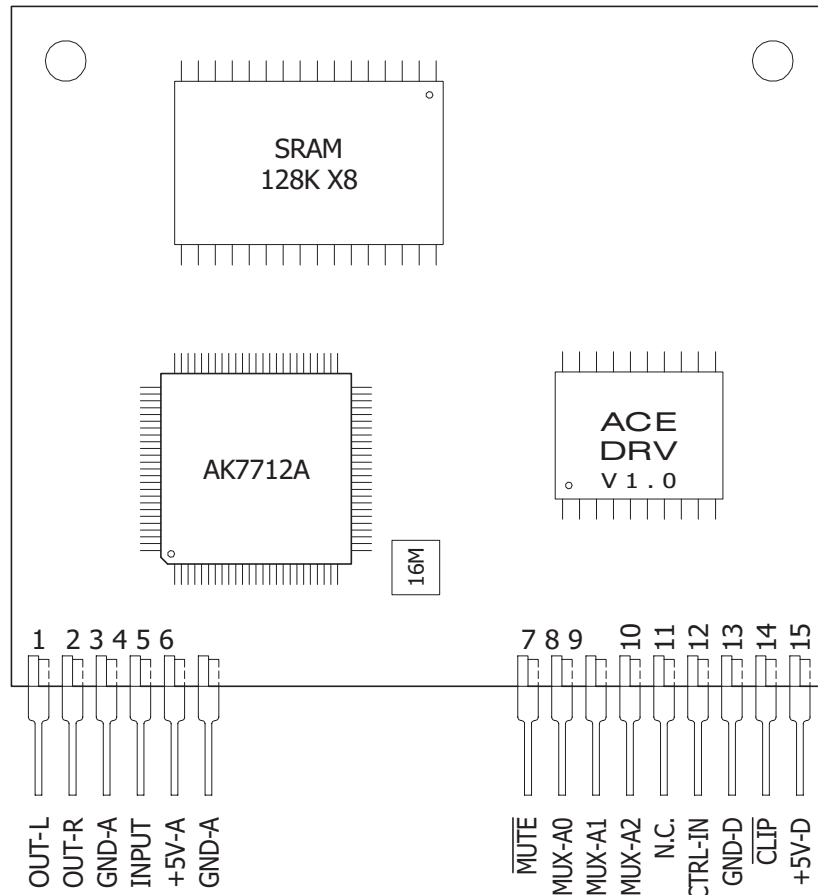
## APPLICATIONS

- Guitar- / Keyboard- / Entertainer Amplifiers / Combos
- Audio mixing consoles / Powered mixing consoles
- Karaoke systems
- Mono to Stereo converters for surround effect enlarging

## TECHNICAL DATA

Audio ADC / DAC resolution	: 20 / 20 Bit
DSP arithmetic	: 24 / 34 Bit
S/N (A-filtered)	: 95dB
Dynamic range	: 97dB
Frequency passband	: 70Hz - 20KHz (-3dB)
Maximum input voltage	: 4.0 Vp-p
Input impedance	: 100 Kohm
Maximum output voltage	: 3.2 Vp-p, Stereo single ended mode
Min. output load resistance	: 5 Kohm
Effect variation ADC	: 7 Bit / 8 channel MUX
MUX / ADC input voltage	: 0V - 5.0VDC
Supp. voltage / current con.	: +5VDC / 125 mA
Operating temp. range	: Min. -40°C, max. +85°C
Delay time control range	: 50 - 1000 ms
Delay feedb. control range	: 0% - 90%
Reverb time control range	: 0.5 - 10.0 sec.
Delay / Reverb vol. balance	: Full c.c.w. position > Max. Reverb volume (Delay off) Full c.w. position > Max. Delay volume (Reverb off) Center position > Delay & Reverb combined for max. volume

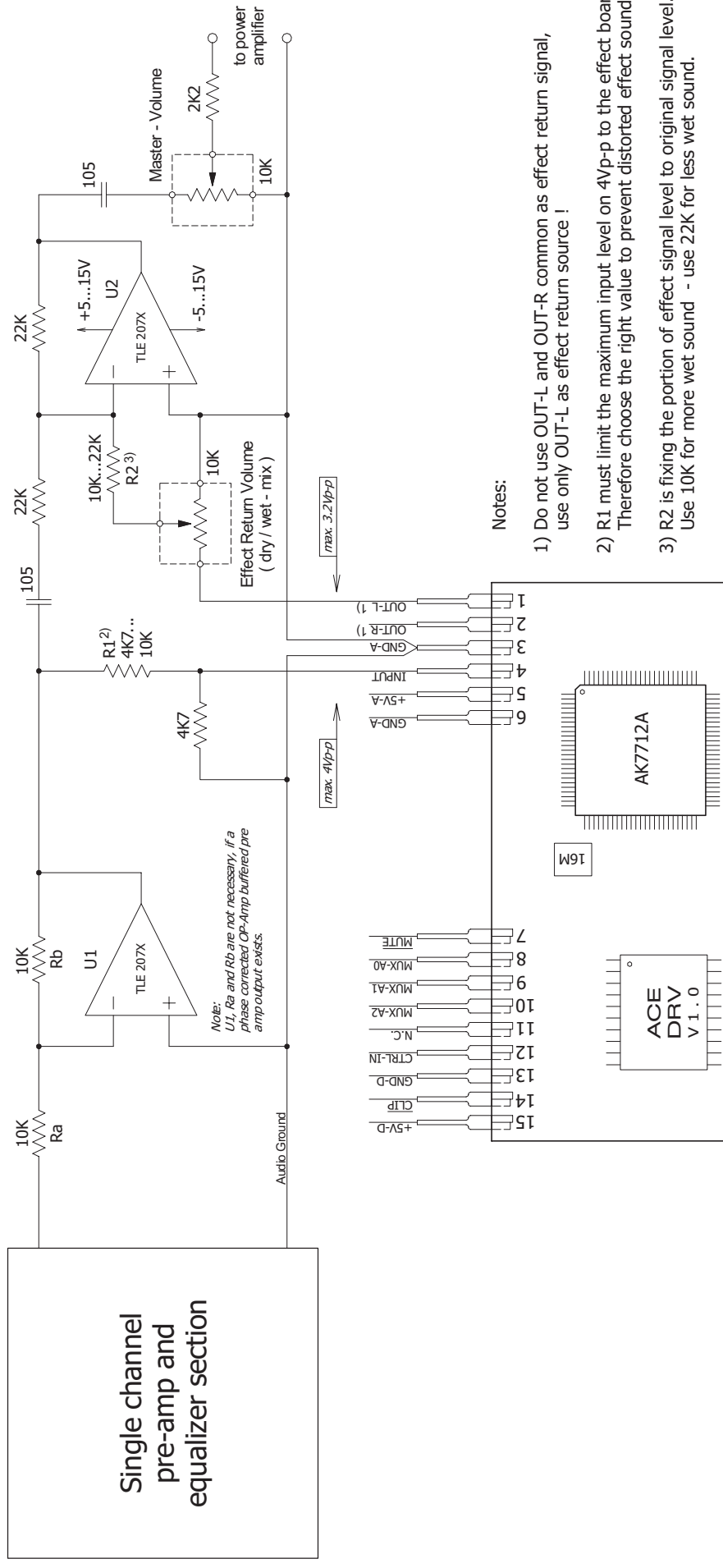
# Description of INPUT / OUTPUT Terminals



PIN#	GENERAL - FUNCTION	ALTERNATE - FUNCTION
1	Audio left channel output, single ended mode	---
2	Audio right channel output, single ended mode	---
3	Audio input / output ground reference	---
4	Audio signal input, single ended mode	---
5	+5VDC power supply for analog section	---
6	Power supply return (0V), analog section	---
7	Audio output 'ON/OFF' control; <i>Low = Output Off</i>	---
8	Multiplexer channel selection A0 output	---
9	Multiplexer channel selection A1 output	---
10	Multiplexer channel selection A2 output	---
11	No function, reserved for future use	---
12	Control voltage input for effect parameter variation	---
13	Power supply return (0V), digital section	---
14	Audio level 'Overshoot' indicator output, active low	---
15	+5VDC power supply for digital section	---



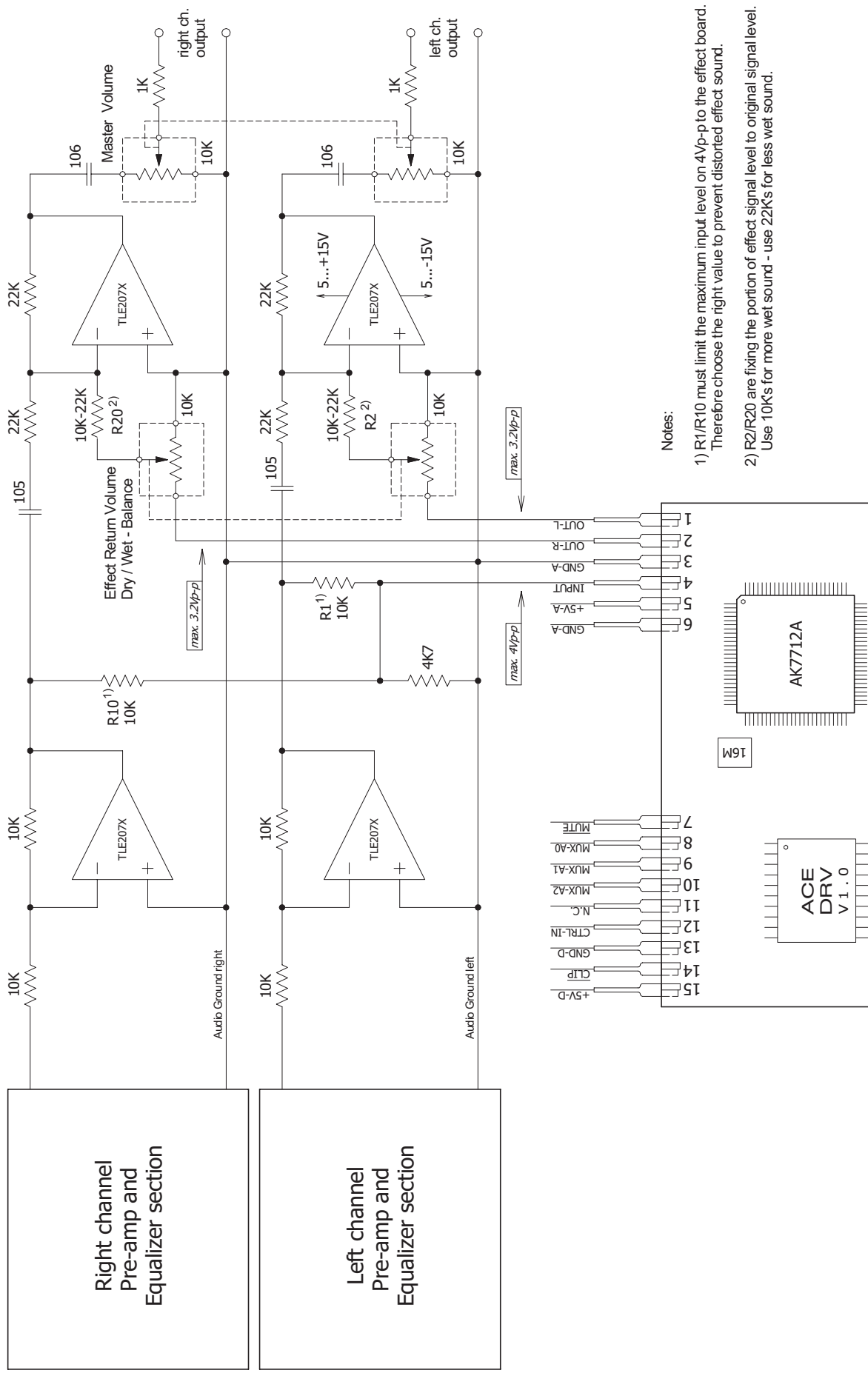
# Audio IN / OUT Application Example #1 - Mono Effect (FX) Return, no Effect Send Bus Recommended for Guitar- / Keyboard combo's





# Audio IN / OUT Application Example #3 - Stereo FX Send and Return Configuration, no FX Send Bus

Recommended circuit for stand-alone Stereo effect units and Karaoke systems



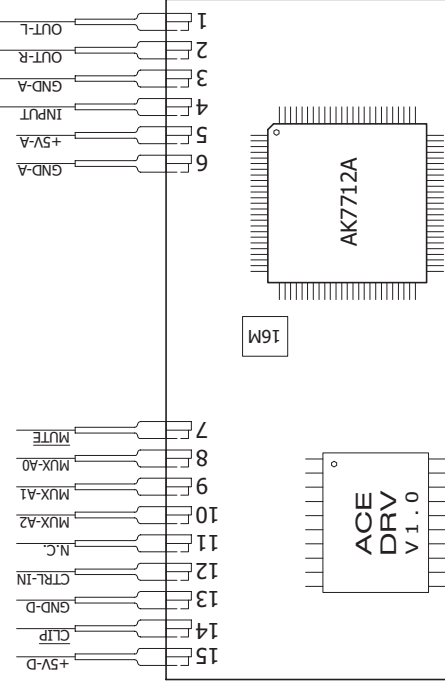
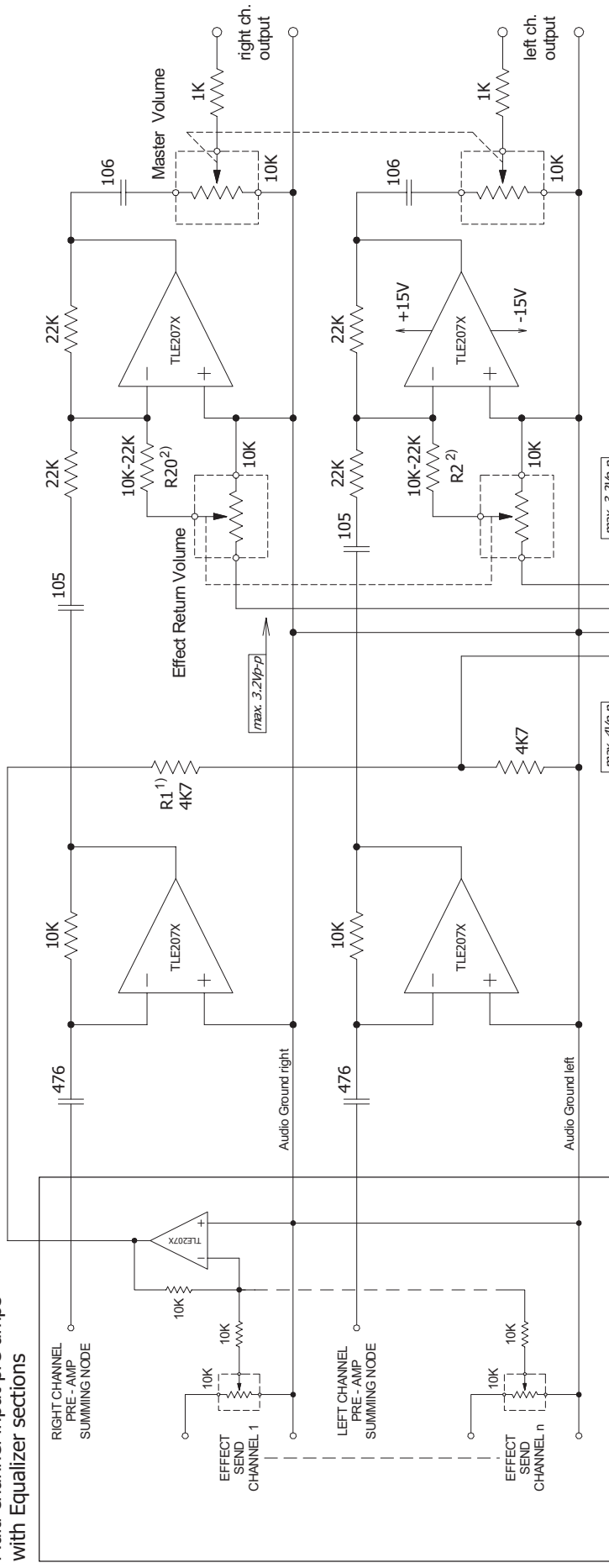
**Notes:**

- 1) R1/R10 must limit the maximum input level on 4Vp-p to the effect board. Therefore choose the right value to prevent distorted effect sound.
- 2) R2/R20 are fixing the portion of effect signal level to original signal level. Use 10K's for more wet sound - use 22K's for less wet sound.

# Audio IN / OUT Application Example #4 - Stereo FX Return Bus and Mono FX Send Bus Configuration

## Recommended circuit for mixing- and powered mixing consoles

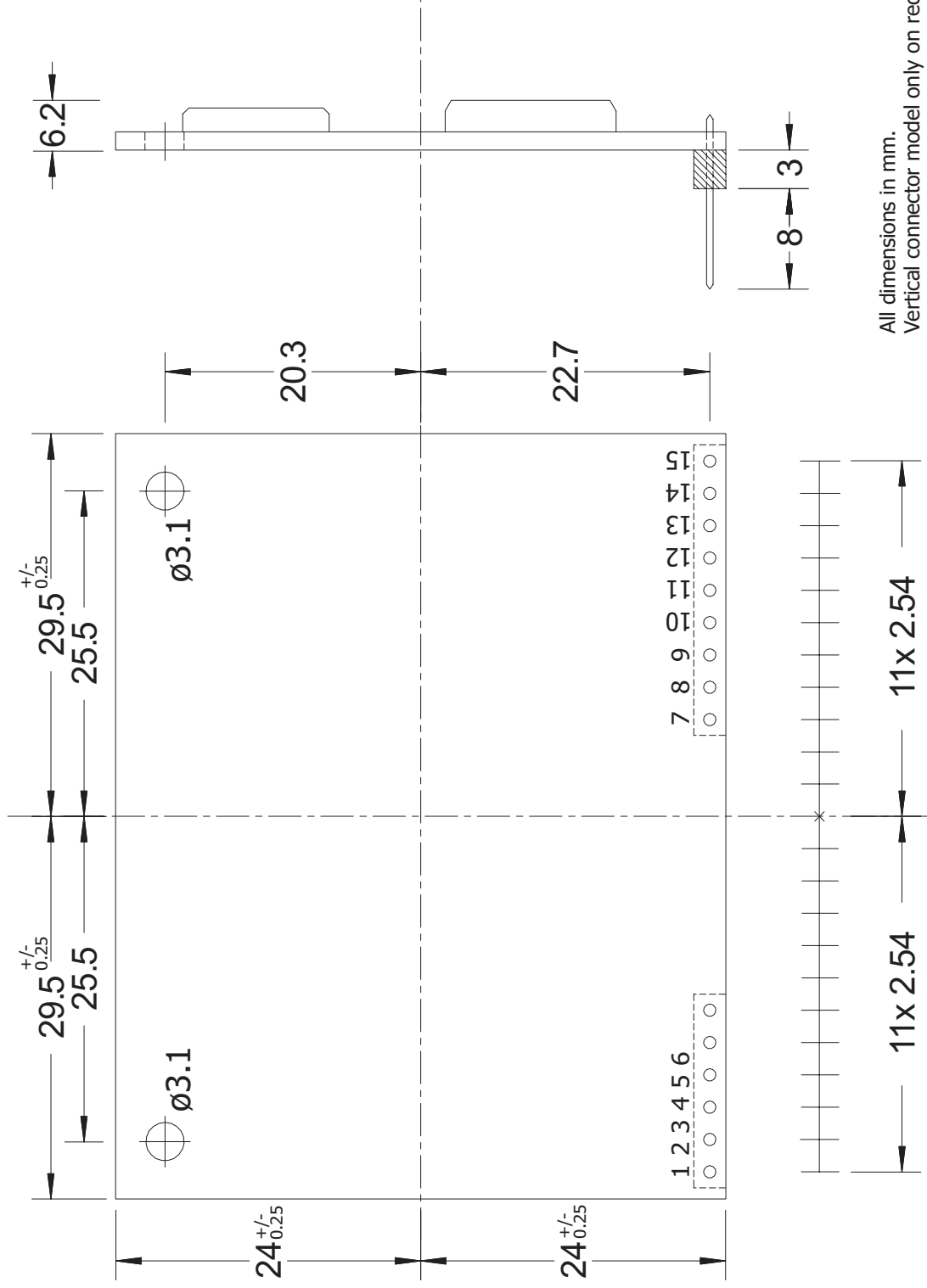
Multi channel input pre amps with Equalizer sections



Notes:

- 1) R1 must limit the maximum input level on 4Vp-p to the effect board. Therefore choose the right value to prevent distorted effect sound.
- 2) R2/R20 are fixing the portion of effect signal level to original signal level. Use 10Ks for more wet sound - use 22Ks for less wet sound.

# ACE-DRV's Board Dimensions - Horizontal Connector Model



All dimensions in mm.  
Vertical connector model only on request.