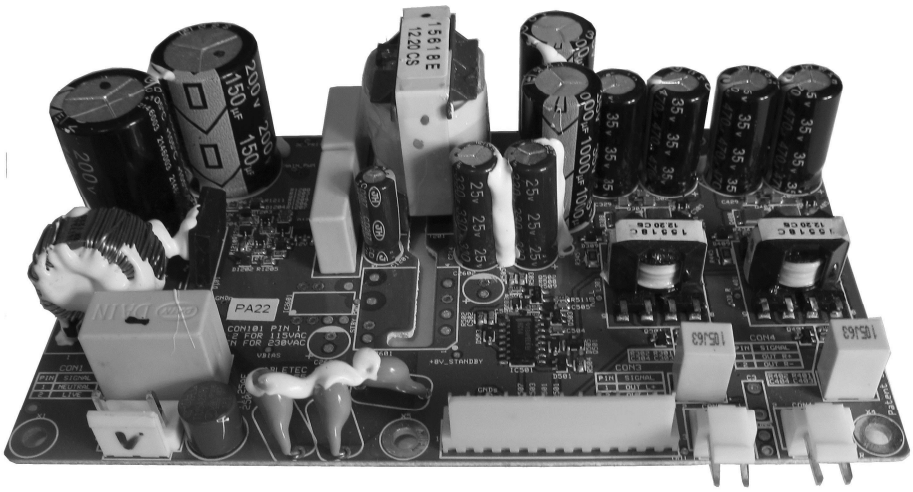
ANAVIEW

A MEMBER OF THE ETAL GROUP

PRODUCT SPECIFICATION
AUDIO LINE COMBINATION
ALC0100-2X00



SCOPE

These technical specifications describes the functionalities and features of the Anaview Audio Line Combination ALC0100-2500, an integrated audio solution combining high-end amplifier and power supply technology, capable of delivering 2x50W into 4Ω @1%THD, 2x25W into 8Ω @1%THD or 1x100W into 8Ω bridged. Instantaneous peak power 170W BTL 6Ω. Typical applications are audio receivers, powered speakers and residential audio system.

The ALC0100 exists in four models;
ALC0100-2200: Without standby converter, DISABLE function and hanger possibility
ALC0100-2300: With standby converter and DISABLE function, without hanger possibiliy
ALC0100-2400: Without standby converter and DISABLE function, with hanger possibility
ALC0100-2500: With standby converter, DISABLE function and hanger possibility

Disclaimer

The data sheet contains specifications that may be subject to change without prior notice. Responsibility for verifying the performance, safety, reliability and compliance with legal standards of end products using this subassembly falls to the manufacturer of said end product.

ANAVIEW products are not authorized for use as critical components in life support devices or life support systems without the express written approval of the president of ETAL Group AB. As used herein:
1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labelling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

GENERAL

Environmental conditions

Humidity	5 – 85% RH non condensing
Ambient Operating Temperature	0°C to +50°C
Normal operation ambient temperature	0°C to +45°C
Storage Temperature	-40°C to +85°C

Regulations and compliances

EMC	Emission	Conducted Emission FCC 15V, Sec. 107 Class ÒBÓ Radiated Emission FCC 15V, Sec. 109 Class ÒBÓ Conducted Emission EN 55022 (2010) Class ÒBÓ Telecom Conducted Emission EN 55022 (2010) Class ÒBÓ Radiated Emission EN 55022 (2010) Class ÒBÓ Power Line Harmonics EN 61000-3-2 (2006) + A1 (2009) + A2 (2009) Power Line Flicker EN 61000-3-3 (2008)	0.15 MHz ï 30 MHz 30 MHz ï 1 GHz 0.15 MHz ï 30 MHz 0.15 MHz ï 30 MHz 30 MHz ï 1 GHz
	Immunity	ESD Immunity IEC 61000-4-2 (2008) Radio Frequency Immunity IEC 61000-4-3 (2006) + A1 (2007) + A2 (2010) Electrical Fast Transient Immunity IEC 61000-4-4 (2004) + A1 (2010) Surge Immunity IEC 61000-4-5 (2005) RF Common Mode Immunity IEC 61000-4-6 (2008) Power Frequency Magnetic Field IEC 61000-4-8 (2009) Voltage Dips and Short Interruptions IEC 61000-4-11 (2004)	Criterion A Criterion A Criterion B Criterion A Criterion B Criterion A Criterion B and C
Safety	LVD	IEC 60065:2001 + A1:2005 + A2:2010 EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011 UL 60065 7th Ed. Revised 2012-09-21 CAN/CSA C22.2 No. 60065-03, 1st Ed., 2006-04 + A1:2006 + A2:2012	
Power Loss	EuP Energy Star	Designed to enable system compliance with: 2005/32/EC ï 1275/2008: Standby/Off Mode Loss, Annex II Point 2 Energy Star ï Consumer Audio Products, Phase II	

Miscellaneous product specifications

Cooling	Convection cooling
Mounting of the unit	See Figure 1 Board outline, dimensions (page 10).
IEC Protection Class	Class II - Double insulation
Efficiency	82% at 230Vac, 1kHz 2x50W into 4Ω
Idle power consumption	6W typ. (8W max) at 230VAC
Standby mode power consumption	<500mW typ. when remote shut down by DISABLE input and delivering 20mA on V1.
Manufacturing according to workmanship standard	IPC-A-610, Revision D, February 2005

Model selection chart

Model	Standby Converter*	Accepts Hanger Module†	Application
ALC0100-2200			2-channel amplifier with ability to BTL for mono applications
ALC0100-2300	✓		2-channel amp with standby supply; meets Energy Star 2.0 and EuP
ALC0100-2400		✓	2-channel amplifier with ability to power 3rd channel for 3 channel, 2.1 systems and BTL + SE systems ideal for 2-way LF/HF active speakers.
ALC0100-2500	✓	✓	Full featured model with standby supplies meeting Energy Star/EuP and ability to power 3rd channel.

* Standby Converter Option - offers Aux V1 8V keep-alive supply, ability to place module in standby mode (i.e. DISABLE)
† Hanger Module Option – offers Aux V4 and V5 high voltage rails to power an optional Hanger Module amplifier channel.

ELECTRICAL SPECIFICATIONS

Input specifications:

Mains input voltage (*1)	Nominal rating: ~ 115 / 230 VAC, TBDA/TBDA Absolute min/max: ~ 90-132 / 180-264 VAC	
Mains input freq.	45-63 Hz	
DISABLE (*2)	Discrete input signal. Active high. To Disable Amp: Apply +8VDC (typ.) >3.0VDC (min) <15VDC (abs max) Max sourcing current needed : 100uA Alternately, connect STDBY_DC (if present) to DISABLE. To Enable Amp: Leave pin unterminated or put to GND <1.0VDC (max)	
MUTE (*3)	Discrete input signal. Active high. To MUTE : Apply +8VDC (typ.) >3.5VDC (min) <15VDC (abs max) Max sourcing current needed : 100uA Alternately, connect STDBY_DC (if present) to MUTE. To UNMUTE: Leave pin unterminated or put to GND <1.5VDC (max)	
IN_L+/_L-	0 - 1.42Vrms (2.0Vpk) max (*4) Balanced audio input, left channel	
IN_R+/_R-	0 - 1.42Vrms (2.0Vpk) max (*4) Balanced audio input, right channel	
Input impedance (*5)	**<u>Single ended input signal</u>** IN_L+ (CON2:10) Signal IN_L- (CON2:11) Ground Input impedance = 12k5 IN_R+ (CON2:12) Signal IN_R- (CON2:13) Ground Input impedance = 2k5 Input signal ground must also be connected to GND (CON2:8,9) to avoid large potential difference between ALC0100-2x00 and source, since ALC0100-2x00 is floating (not connected to protective earth).	**<u>Balanced input signal</u>** IN_L+ (CON2:10) Signal+ IN_L- (CON2:11) Signal- GND (CON2:8,9) Signal Ground Input impedance L+ = 12k5 Input impedance L- = 1k4 IN_R+ (CON2:12) Signal+ IN_R- (CON2:13) Signal- GND (CON2:8,9) Signal Ground Input impedance R+ = 1k4 Input impedance R- = 12k5

(*1) Mains AC input voltage range selectable with jumper.
Minimum startup voltage is 100VAC / 200VAC

(*2) DISABLE turns off everything except AUX V1, i.e. places the unit in standby mode. Function only available on ALC0100-2300 and ALC0100-2500.

(*3) MUTE only turns off the amplifiers but leaves all AUX voltages available. This function can be used during start-up or when awakened from standby mode to let source/preamplifier powered by the AUX voltages settle before allowing any sound through the amplifier, and thereby avoid pop-noise. Function available on all models.

(*4) At 230VAC mains input voltage. Maximum signal input voltage is given by output power rating factor, as described in the *Output Specifications*.

(*5) Signal source output impedance must be symmetrical for IN+ and IN- on both channels or there will be a difference in gain between the channels and common mode rejection will be compromised. (see application notes for more information)

Output specifications:

Audio outputs (*1)(*2)	Max output voltage	Typ. cont. output power	Typ. output power FTC cond. (*3)	Max output power	Instantaneous peak output power	THD
OUT_L+/_L- OUT_R+/_R-	**SE mode**					
	0- 14Vrms	2x6.25W 4Ω	2x40W 4Ω	2x50W 4Ω 2x25W 8Ω	2x70W 4Ω 2x40W 8Ω	1%
	BTL mode					
	0- 28Vrms	12.5W 8Ω	80W 8Ω	100W 8Ω	140W 8Ω	1%

(*1) Mains input voltage 115/230VAC. Output power of RMS load current. Due to the non-regulated nature of the internal PSU, the output power depends on the mains input voltage. Hence the power rating follows the equation: % Power change = (% voltage change)^2

(*2) Both channels driven

(*3) 1 hour pre heating with 1/8 of specified load and subsequently 5 min. with specified load at 120/230Vac, 1kHz input, ambient temp. 25°C still air. Open frame. Board mounted vertically.

AUX outputs (*1)	Nom. voltage	Voltage fluctuation		I Max cont.	Comments
		Min	Max		
AUX output supply voltage V1 : (STBY_DC)	+8VDC	+7VDC	+9VDC	25mA	Optional feature
AUX output supply voltage V2: (VA+)	+14VDC	+7.5VDC	+16.5VDC	600mA *2)	Max capacitive load 330uF
AUX output supply voltage V3: (VA-)	-14VDC	-7.5VDC	-16.5VDC	600mA *2)	Max capacitive load 330uF
AUX output supply voltage V4: (VS+)	+26VDC	+11.5VDC	+30.0VDC	1000mA *3)	Optional feature
AUX output supply voltage V5: (VS-)	-26VDC	-11.5VDC	-30.0VDC	1000mA *3)	Optional feature

(*1) The ALC0100-2500 AUX outputs are unregulated and vary with load and AC input voltage. The AUX output supply voltage V1 (STBY_DC) is 8VDC while the unit is running and approximately 7.5VDC when in standby mode.

(*2) Maximum continuous output current on VA+ and VA- is in sum 600mA. This allows for any load combination between the two outputs in total giving 600mA, i.e. at most 600mA on one and 0mA at the other.

If these outputs are shorted a fuse (F200) blows and has to be replaced, see page 19.

(*3) Maximum continuous output current on VS+ and VS- is fused to 1000mA each. These outputs are used to power a 50W 4Ω hanger module for 3 channel or BTL + SE operation.

Maximum load for EuP and Energy Star compliance

Compliance	Comment	STBY_DC	VA+/-	
ErP compliance	Maximum load to ensure <500mW standby consumption. Measured at 230VAC.	25	-	mA
Energy star	Maximum load (VA+ and VA- combined) to ensure <10W total idle consumption. Measured at 115/230VAC	25	240	mA

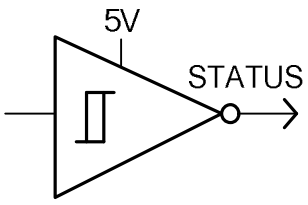
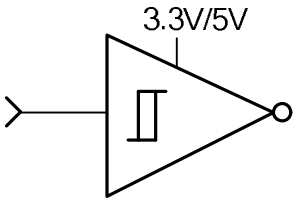
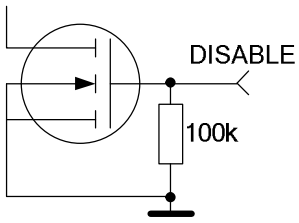
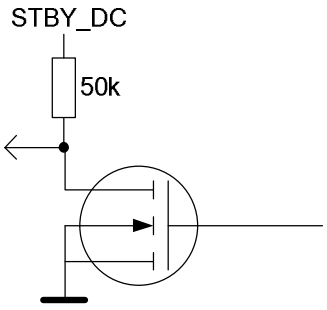
Protections and functions:

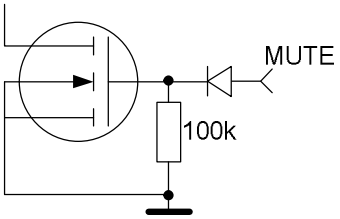
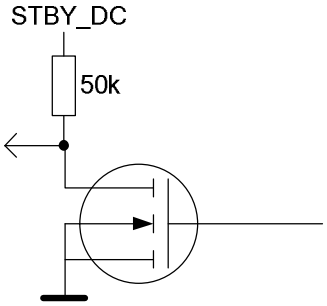
Mains input fuse	T1.25AL (time lag)
Over temperature protection	Power shut down by over temperature. Threshold temperature : 90(min) - 95(typ) - 100(max)°C Sensor connected to drain tab of high side power FET. The shutdown time is short, only parts of seconds to start with, but increases as the module heats up. This is because when the temperature difference between the MOSFETs and the PCB is large, the MOSFETs will cool down very fast after shutdown, but as the PCB gets warmer it will take longer. This protection mode will be heard as very short interrupts to the sound.
Over voltage protection	Amplifier shut down during over voltage on output voltage rails. This can happen if the mains voltage exceeds the maximum rated level or during railpumping (due to DC on inputs or when generating subsonic frequencies). Immediately when the voltage has decreased the amplifier will start again. This protection mode will be heard as very short interrupts to the sound.
Over current protection	Treshold current : 8A (0.5Ω load, 1kHz burst). There are two modes of over current protection. 1. Constant current mode. The output will behave as during voltage clipping i.e. the output voltage will be cut off on the top to maintain an allowed current. 2. If the over current mode persists during a longer period (several periods of music) it is assumed that there is an error and the amplifier will shut down for a while and then restart.
Protection output status	Status output: CON2 pin 6 "STATUS" Goes high during: 1. Over temperature shutdown 2. Over voltage shutdown Note that over current protection will not generate a STATUS flag.
Remote shut down to standby mode	Shut down input: CON2 pin 5 "DISABLE" Shut down by: Apply +8VDC (+3.0<V<+15VDC) on DISABLE input Normal operation : Leave pin floating or put to GND (V<+1.0VDC)
Remote shut down to mute mode	Mute input: CON2 pin 7 "MUTE" Mute by: Apply +8VDC (+3.5<V<+15VDC) on DISABLE input Normal operation : Leave pin floating or put to GND (V<+1.5VDC)
Anti rail pumping	Right audio input channel is internally inverted before amplification in order to consume power symmetrically from both power rails. This prevents rail pumping, since the bass of recordings is usually equally mixed into both channels. The output of the right channel is correspondingly internally inverted, such that this feature is transparent to the user. This is seen in fig. 2 When using one channel only it is still possible to generate full span of power at 20Hz into 4Ω at nominal mains voltage. The lower frequency that is being generated the more the rails will be pumped (DC being the extreme where even a few hundred millivolts can cause over voltage shutdown).

Audio specifications:

Offset voltage (open inputs)	5mV typ. (40mV max)
Switching frequency (idle)	400kHz typ. (370-430kHz min-max)
Switching recidual	350mVpk typical
Recommended load	4Ω (SE mode), minimum load 2Ω 8Ω (BTL mode), minimum load 4Ω
Gain (f =1kHz)	20.0dB typical
Idle noise	25uV typical (A-weighted 20Hz < f < 20kHz)
Upper BW limit (-3dB)	>60kHz
Lower BW limit (-3dB)	0Hz (requires 100% identical use of both channels)
Output impedance (100Hz)	6mΩ typical
Residual noise vs freq	See figure 3
Crosstalk vs freq	See figure 4
THD vs PWR	See figures 6-10
THD vs freq	See figure 11
Freq response	See figure 12

Proposed interfaces:

Input/output	**ALC circuit**	**Proposed interface**
STATUS (output) Goes high during over voltage conditions due to rail pumping or during amplifier over temp conditions.		
DISABLE (input) Pull up to STBY_DC to set the module in standby mode (power supply and amplifiers disabled). Leave floating or pull down to ground to enable.		

MUTE (input) Pull up to STBY_DC or VA+ to set the module in mute mode (amplifiers disabled). Leave floating or pull down to ground to enable.		

CONNECTIONS

Mains connector	CON1 : 2 pin 0.312" (7.92mm) locking header (JST B2P3-VH (LF) (SN)) Suggested mating connector : JST VHR-3N or similar Suggested crimp terminal: SVH-41T-P1.1 or similar Pinning Pin1 : AC_N (Neutral) Pin2 : AC_L (Live)

Mains input range connector	CON101 : 2pin 0.156" (3.96mm) locking header (JST B2P-VH (LF) (SN)) Suggested mating connector : JST VHR-2N or similar Suggested crimp terminal : SVH-41T-P1.1 or similar Short Pin1 to Pin2 for 115VAC operation, leave open for 230VAC. Can be done with a remote switch, with possible impact on EMI. Therefore if remote switch is used, EMC must be verified.

Signal connector	CON2 : 13pin 0.100" (2.54mm) header (Molex 2227-2131) Suggested mating connector : Molex KK series 2695-13 or similar Suggested crimp terminal: Molex 4809 or similar	
	Pinning:	Description:
	Pin 1 : STBY_DC	AUX output voltage V1. (Standby voltage)
	Pin 2 : VA+	AUX output voltage V2.
	Pin 3 : GND	Secondary side ground.
	Pin 4 : VA-	AUX output voltage V3
	Pin 5 : DISABLE	Standby input signal.
	Pin 6 : STATUS	Status output signal.
	Pin 7 : MUTE	Mute input signal.
	Pin 8 : GND	Secondary side ground.
	Pin 9 : GND	Secondary side ground.
	Pin 10 : IN_L+	Left audio channel positive input.
	Pin 11 : IN_L-	Left audio channel negative input.
	Pin 12 : IN_R+	Right audio channel positive input.
	Pin 13 : IN_R-	Right audio channel negative input.

Loudspeaker connectors	CON3 : 2pin 0.156" (3.96mm) locking header (JST S2P-VH (LF) (SN)) CON4 : 2pin 0.156" (3.96mm) locking header (JST S2P-VH (LF) (SN)) Suggested mating connector : JST VHR-2N or similar Suggested crimp terminal: SVH-41T-P1.1 or similar Pinning: — Description: CON3 Pin1 : OUT_L+ — Left audio channel positive output. Pin2 : OUT_L- — Left audio channel negative output. CON4 Pin1 : OUT_R+ — Right audio channel positive output. Pin2 : OUT_R- — Right audio channel negative output.

Hanger connector *optional	CON3001 : 3 pin 0.156" (3.96mm) locking header (JST B3P-VH (LF) (SN)) Suggested mating connector : JST VHR-3N or similar Suggested crimp terminal: SVH-41T-P1.1 or similar Pinning: — Description: Pin 1 : VS- — AUX output voltage V5. Pin 2 : GND — Secondary side ground. Pin 3 : VS+ — AUX output voltage V4.

MECHANICAL OUTLINE

Size (l x w x h)	130x75x30mm, see Figure 1. Board outline, dimensions below. Max component height/lead length on PCB bottom side: 4.0 mm 30mm height measured from bottom side of PCB to highest component on top side. For total height of unit add the 4mm max component height/lead length on PCB bottom side, i.e. 34mm.
Weight	140-150g depending on model
Mounting hole dia.	X1, X2 (non-plated): 3.5mm X3, X4, X5 (plated): 3.5mm
IP figures, encapsulation IP XY (X=Solids, Y=Liquids)	Open frame
Coloring, design and branding	ALC0100-2x00, black PCB

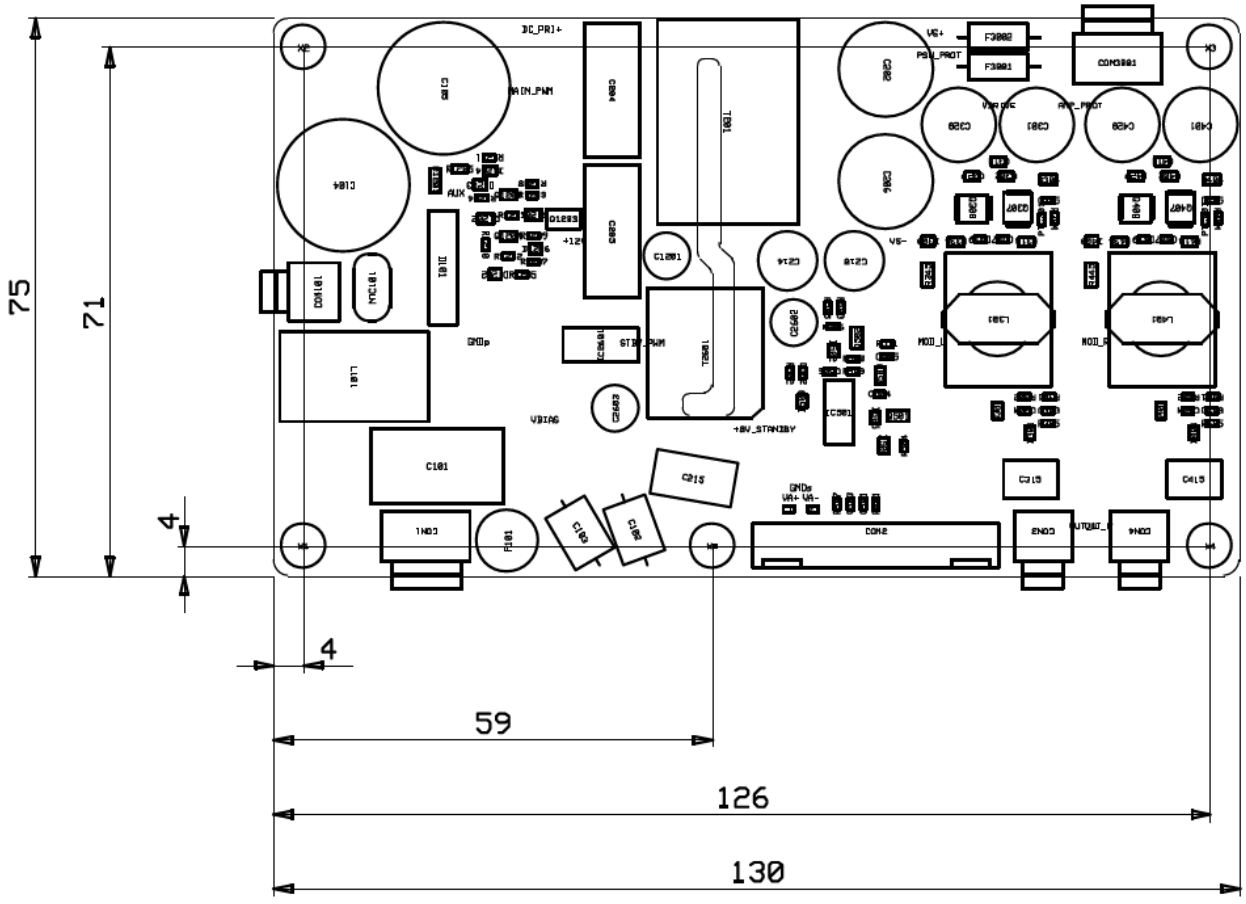


Figure 1. Board outline, dimensions and mounting holes.

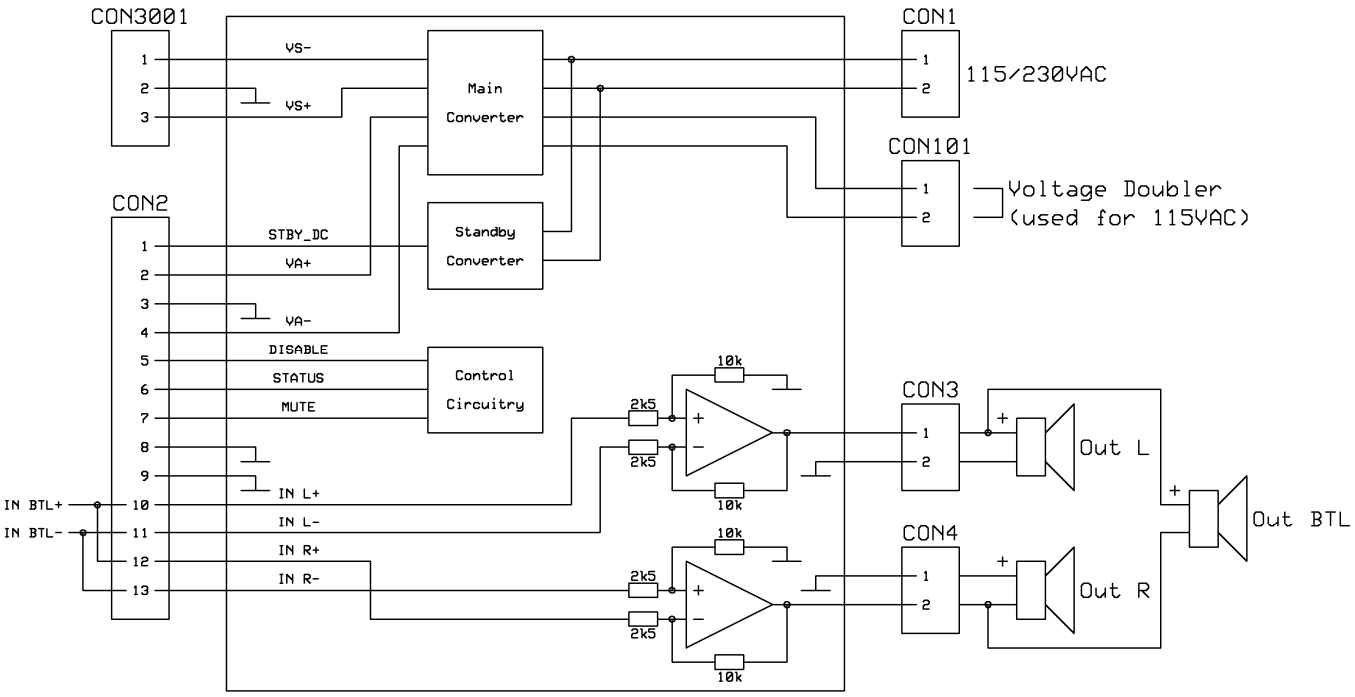


Figure 2. Connection diagram.

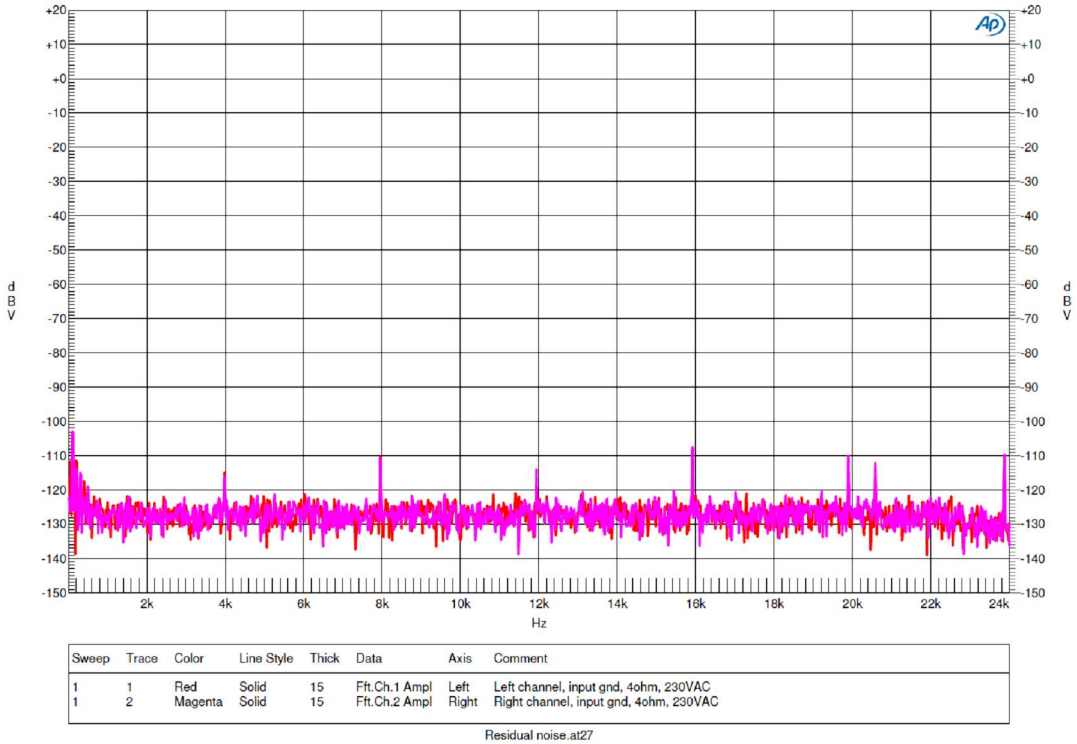
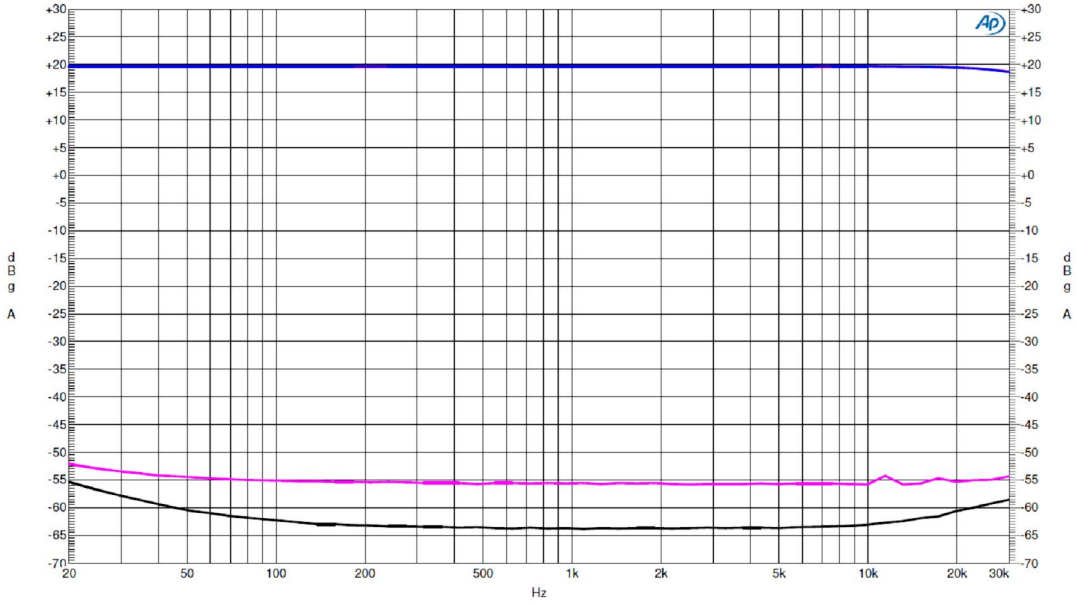
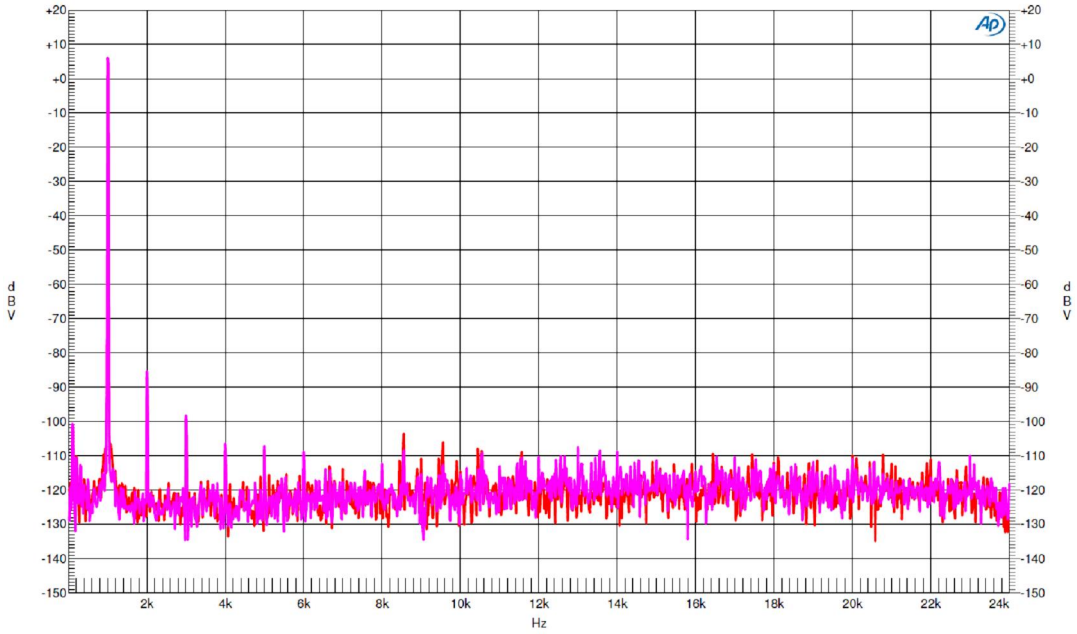


Figure 3. Residual noise.



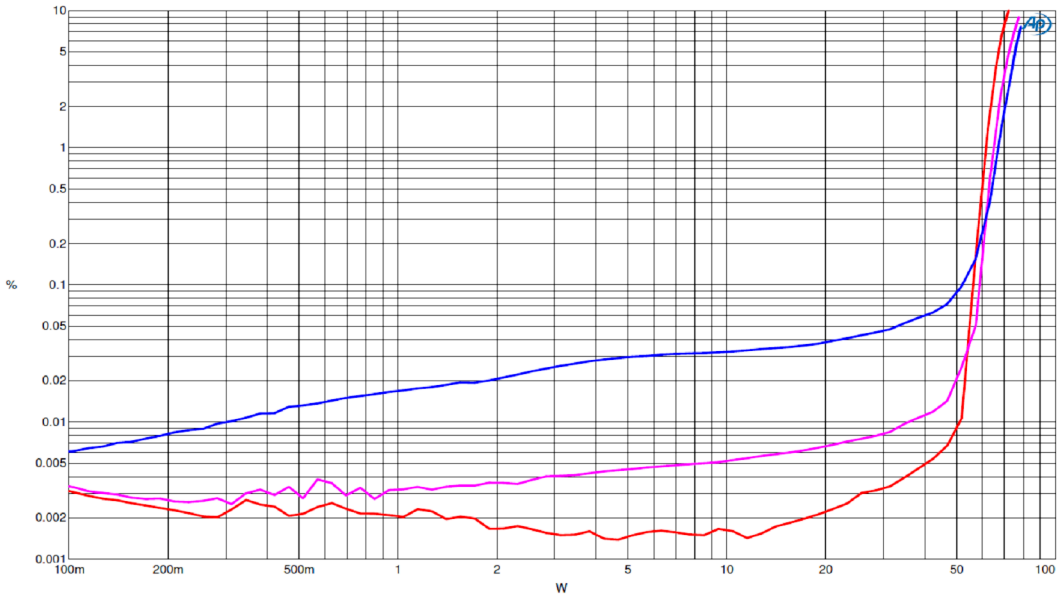
Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.Level A	Left	Left channel, 1W, 4ohm, 230VAC
1	2	Magenta	Solid	15	Anlr.Level B	Right	Right channel, input gnd, 4ohm, 230VAC
2	1	Blue	Solid	15	Anlr.Level A	Left	Left channel, 10W, 4ohm, 230VAC
2	2	Black	Solid	15	Anlr.Level B	Right	Right channel, input gnd, 4ohm, 230VAC

Figure 4. Crosstalk 1W, 10W 4Ω 230VAC.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Fft.Ch.1 Ampl	Left	Left channel, 1W, 4ohm, 230VAC
1	2	Magenta	Solid	15	Fft.Ch.2 Ampl	Right	Right channel, 1W, 4ohm, 230VAC

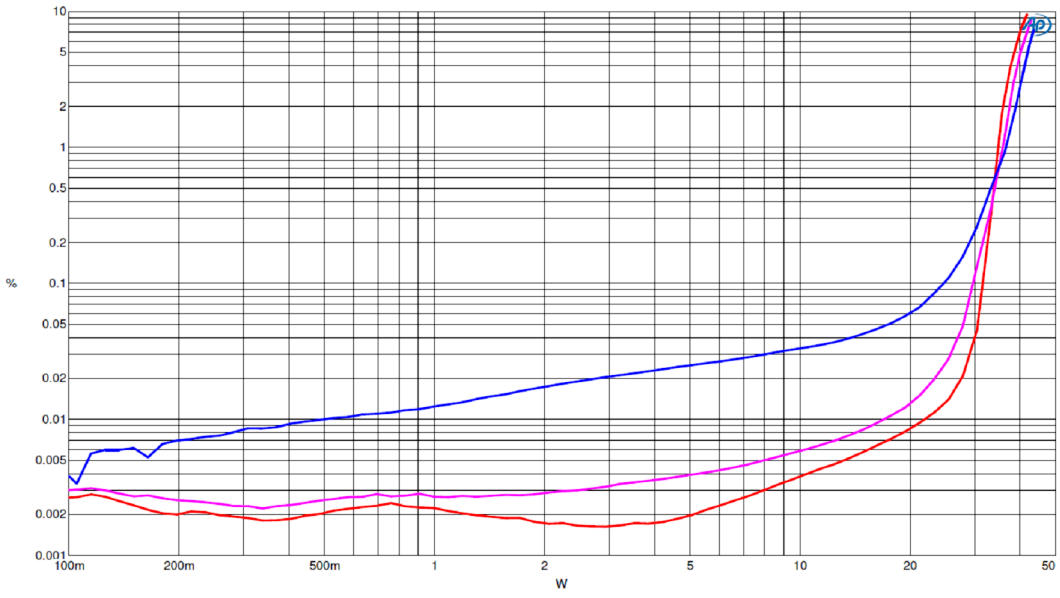
Figure 5. FFT 1W 4Ω 230VAC.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 100Hz, 230VAC
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 1kHz, 230VAC
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 6,67kHz, 230VAC

THDvsPWR-4ohm, single channel, left.at27

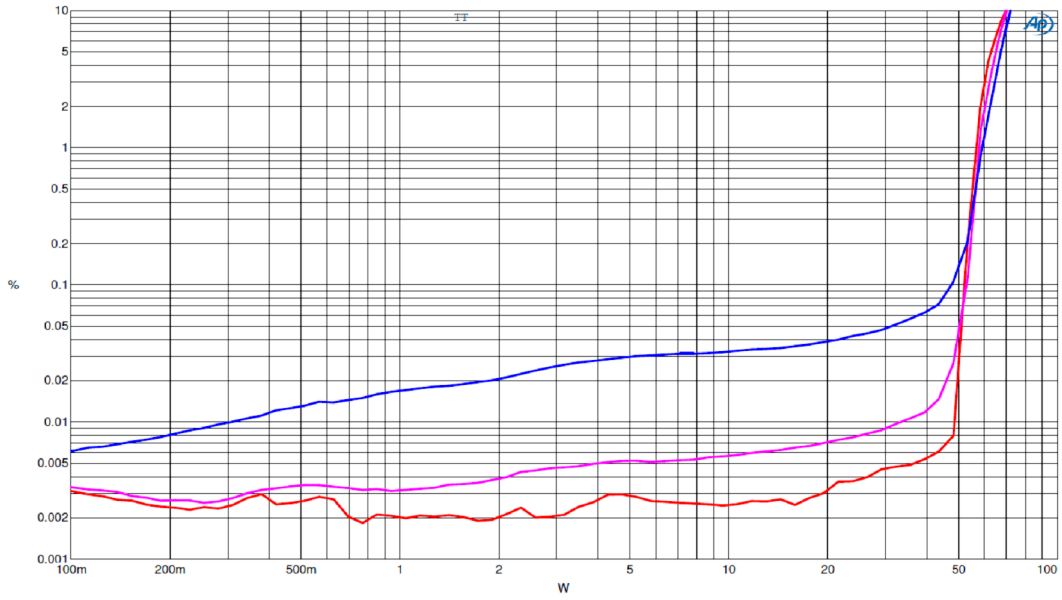
Figure 6. THD vs power, 4Ω 230VAC, one channel driven.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	8ohm, 100Hz, 230VAC
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	8ohm, 1kHz, 230VAC
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	8ohm, 6,67kHz, 230VAC

THDvsPWR-8ohm, single channel.at27

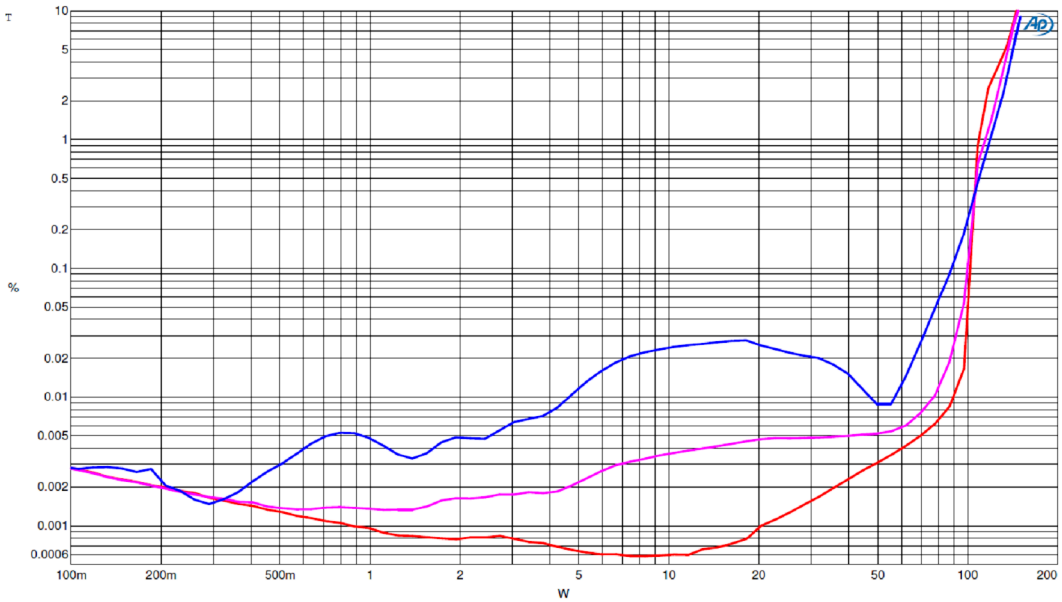
Figure 7. THD vs power, 8Ω 230VAC, one channel driven.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 100Hz, 230VAC, both channels driven
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 1kHz, 230VAC, both channels driven
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 6,67kHz, 230VAC, both channels driven

THDvsPWR-4ohm, both channels.at27

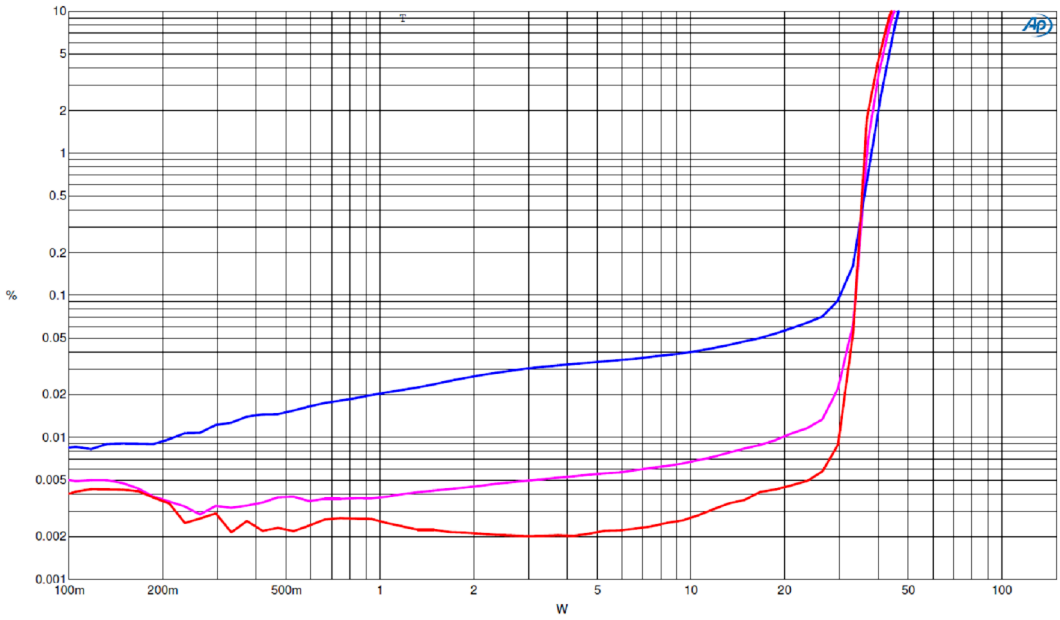
Figure 8. THD vs power, 4Ω 230VAC, both channels driven.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	8ohm BTL, 100Hz, 230VAC, 47nF between outputs
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	8ohm BTL, 1kHz, 230VAC, 47nF between outputs
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	8ohm BTL, 6,67kHz, 230VAC, 47nF between outputs

THDvsPWR-8ohm BTL 47nF between outputs.at27

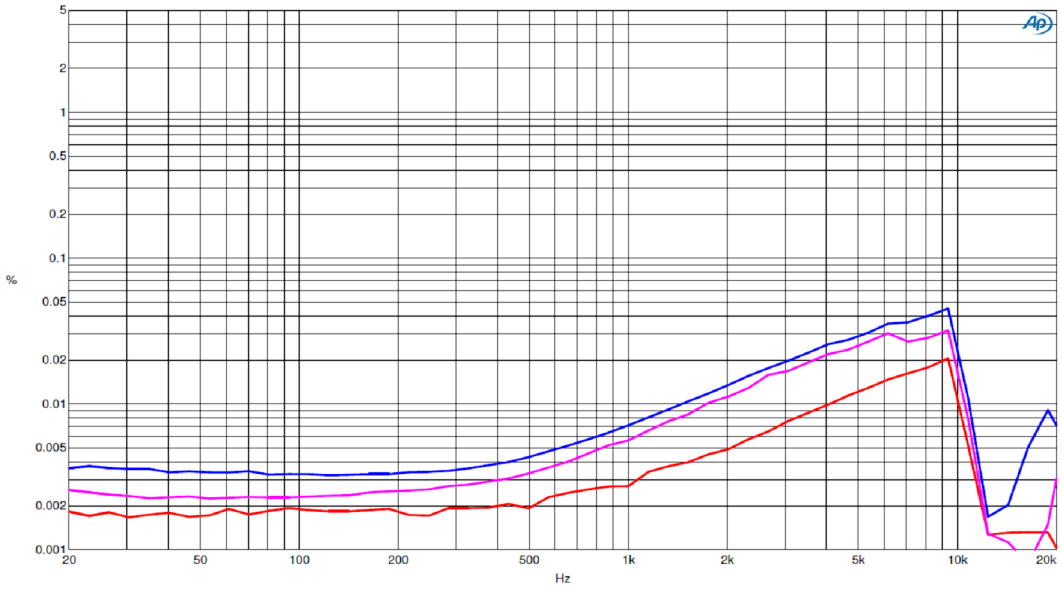
Figure 9. THD vs power, BTL mode 8Ω 230VAC. 47nF added between outputs.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 100Hz, 185VAC, both channels driven
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 1kHz, 185VAC, both channels driven
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	4ohm, 6,67kHz, 185VAC, both channels driven

THDvsPWR-4ohm,185VAC.at27

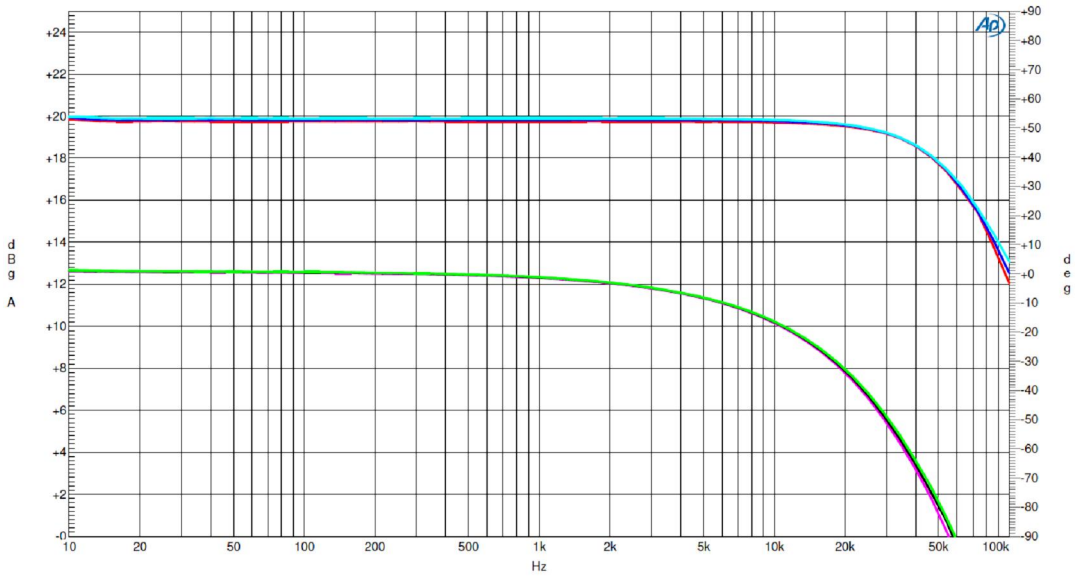
Figure 10. THD vs power, 4Ω 185VAC, both channels driven.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.THD+N Ratio	Left	1W, 4ohm, 230VAC, both channels driven
2	1	Magenta	Solid	15	Anlr.THD+N Ratio	Left	10W, 4ohm, 230VAC, both channels driven
3	1	Blue	Solid	15	Anlr.THD+N Ratio	Left	20W, 4ohm, 230VAC, both channels driven

THDvsFRQ-4ohm, 1W, 10W, 20W.at27

Figure 11. THD vs frequency, 4Ω 230VAC, both channels driven.



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	15	Anlr.Level A	Left	Gain 4ohm
1	2	Magenta	Solid	15	Anlr.Phase	Right	Phase 4ohm
2	1	Blue	Solid	15	Anlr.Level A	Left	Gain 8ohm
2	2	Black	Solid	15	Anlr.Phase	Right	Phase 8ohm
3	1	Cyan	Solid	15	Anlr.Level A	Left	Gain Open load
3	2	Green	Solid	15	Anlr.Phase	Right	Phase Open load

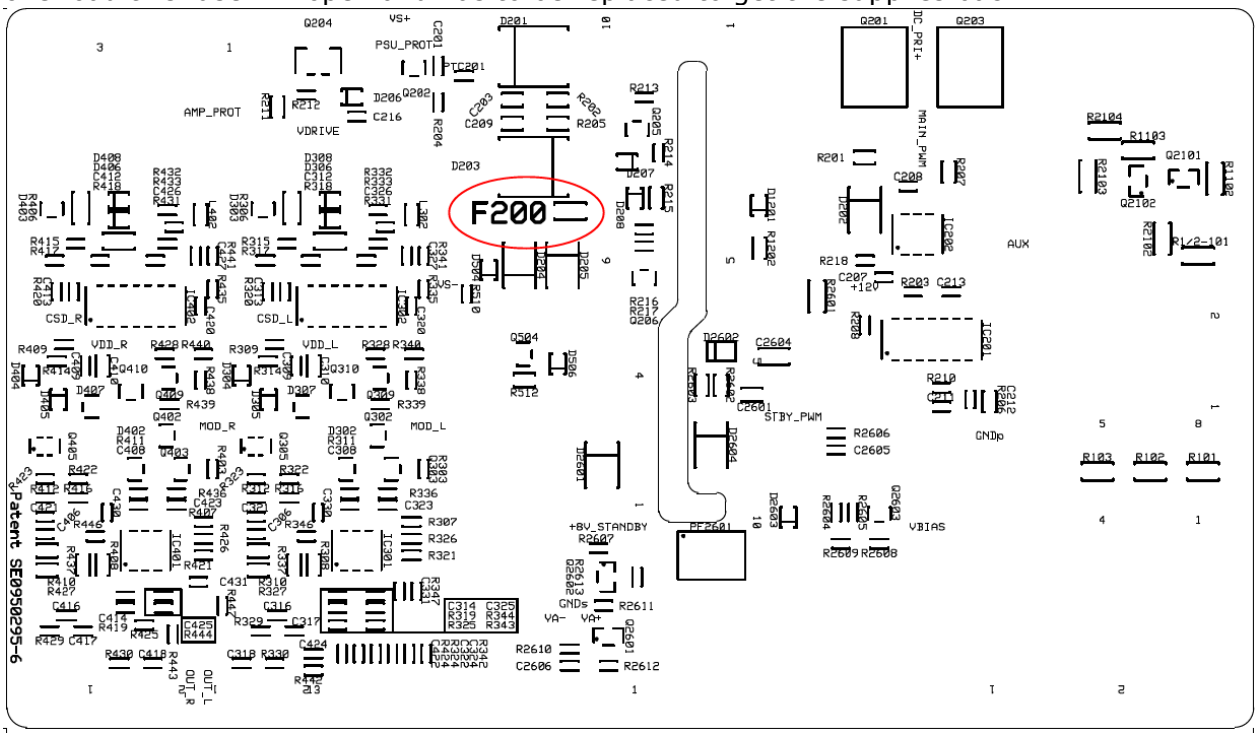
Frequency response, 4ohm, 8ohm, open load.at27

Figure 12. Frequency response.

INSTRUCTIONS

Replacing the VA+/- fuse

The auxiliary supplies VA+/- are protected by a surface mounted fuse. In case of overload this fuse will open and has to be replaced to get the supplies back.



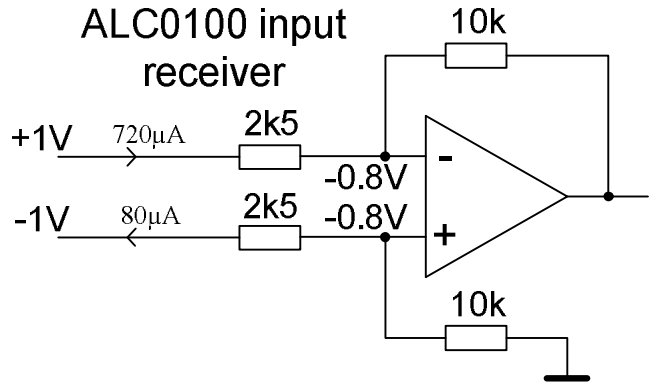
F200 is a 4A fast acting fuse from Littelfuse with article number 0440004.WR.

The maximum load on VA+/- can be seen in the table on page 13. The fuse value of 4A was choosen to tolerate the start-up charge energy of a capacitive load.

APPLICATION NOTES

Optimizing input stage CMRR

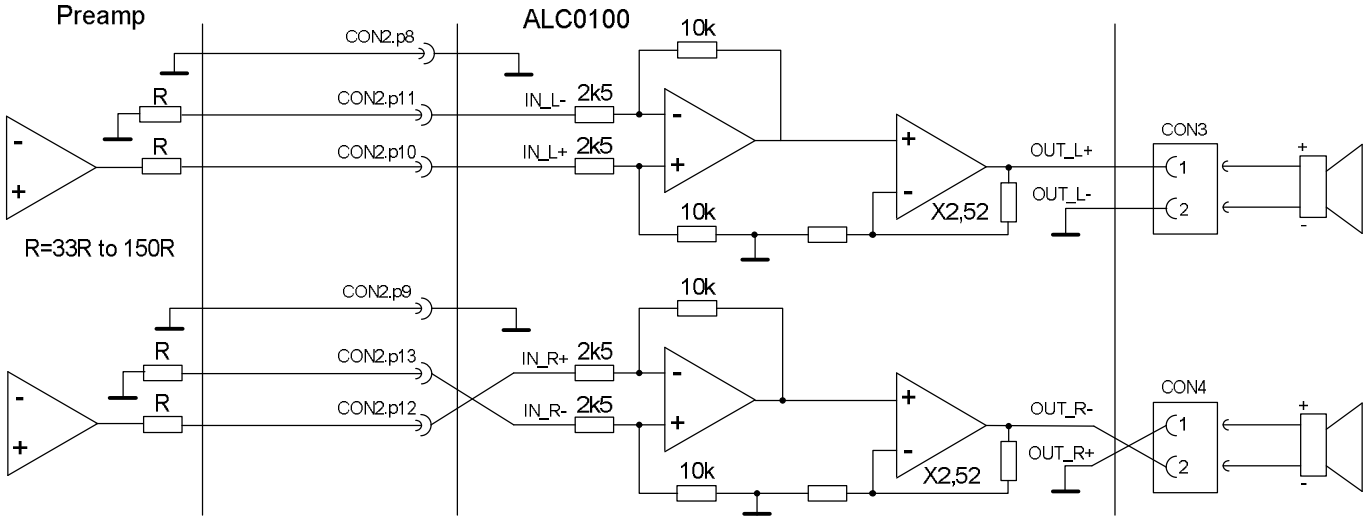
This is simplified drawing of the input of ALC0180. It is a typical circuit which is often used where the source impedance is well known and does not vary too much. Input currents are calculated when a balanced signal is applied. As can be seen the input impedance is not the same on both inputs and depending on which type of signal is applied (single ended or balanced) the input impedance changes.



This is however not a problem as long as a few precautions are made. Common mode rejection CMRR will be significantly improved by having the same source resistance on both the inputs.

Impedance balancing with single ended signal

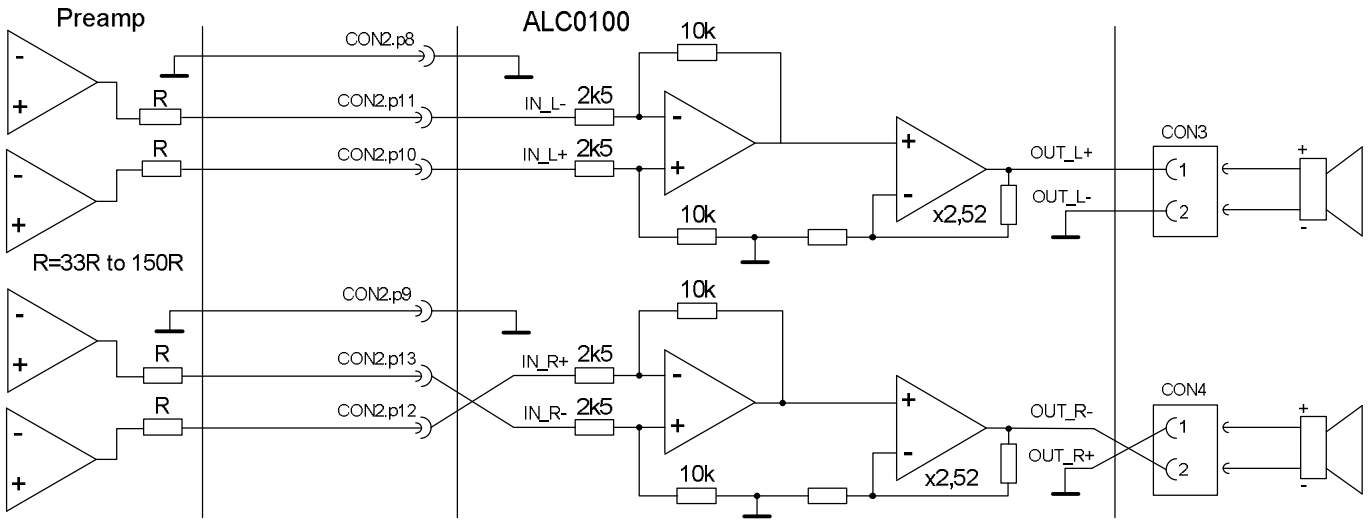
Below is shown a setup with an impedance balanced single ended source. This requires a balanced cable.



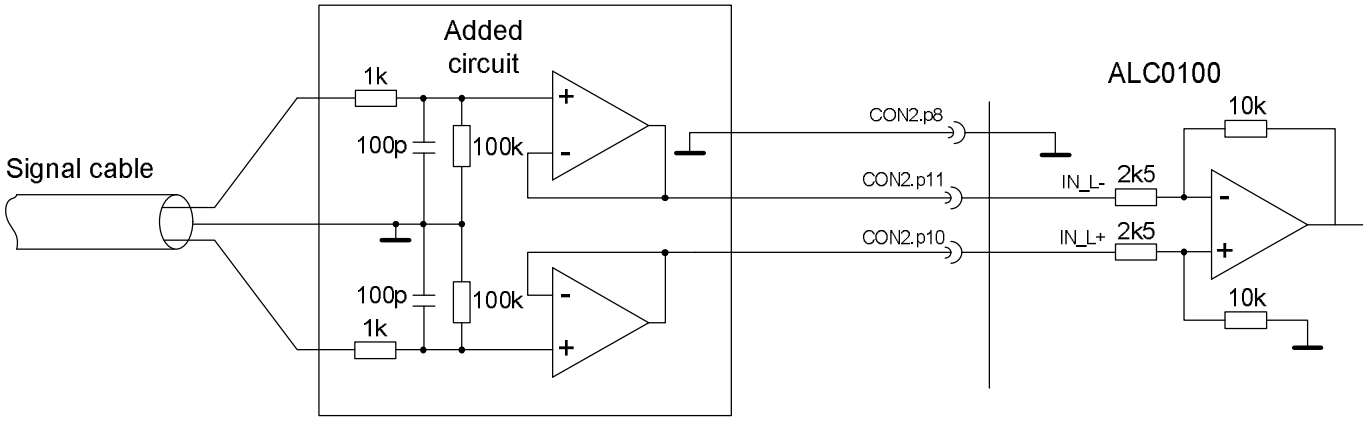
It is quite common to have a series resistance of 50ohm or more on the signal output so if the same resistance is placed in the opposite side of the signal of either sending or receiving side of the cable the CMRR rejection is intact.

Balanced input signal

If a balanced signal source is used the following setup applies.

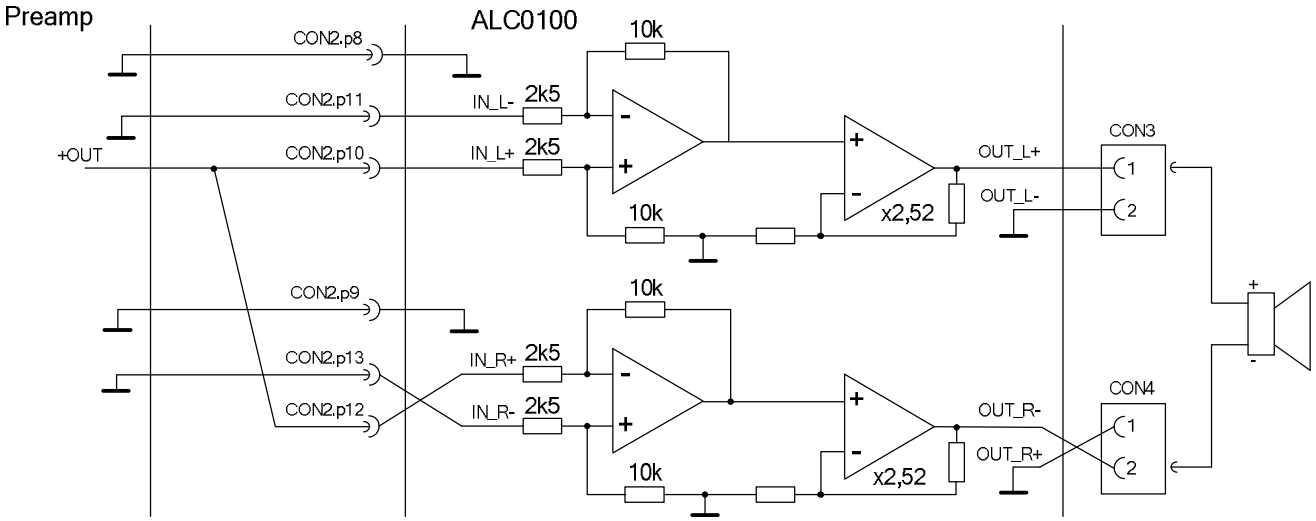


If long cables are used the cable impedance itself can contribute in a non insignificant way to the series impedance and since that impedance is not very well defined (symmetrically) it can be an advantage to increase both the diff mode and common mode input impedance. In such a case an additional circuit as below can be added before the AMS module.

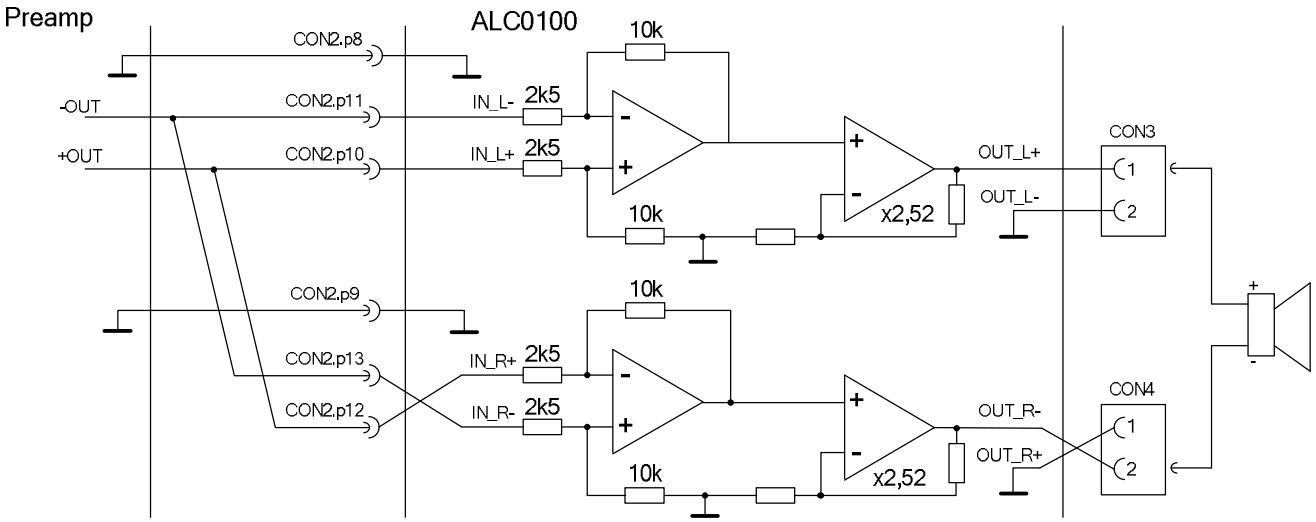


BTL setup

SE input signal



Balanced input signal



REVISIONS LOG

Rev.	Date	Item	Sign
A	2010-11-16	- First revision	MC
B	2010-12-07	- Output current reduced to 8A - Fuse changed to T1.25AL - Outline picture updated - Changed Max sourcing current needed to MUTE	MC
C	2011-06-01	- Changed min DISABLE and MUTE activation voltage to 2VDC - Updated all figures - Updated almost all numbers - Added information about different variants - Important: this technical spec is still in draft form; information & specifications are subject to change.	MC
D	2011-12-02	- Updated connection figure to also show BTL connection and input resistor values - Added crimp terminal information to mating connectors - Added further description of MUTE and DISABLE function - Added figure with output power at 185VAC mains input voltage - Added customer approval box - Updated AP plots	MC
E	2013-05-17	- Updated to Anaview standards	MD
F	2013-10-15	- Further updated to Anaview standards - Name change to PDS ALC0100-2X00 - Updated Safety Standards	JN PB
G	2014-02-13	- Added application notes on input stage - Added information about VA+/- fuse - Added proposed interfaces for inputs/outputs - Added information in protection and audio specifications sections. - Changed PCB color to black. - Updated specs for VA+/- - Added specs for Energy Star compliance - Recalculated input impedance in INPUT SPECIFICATIONS - Updated EMC info	PB JN
G1	2014-04-07	- Updated thresholds in protections sections - Updated pictures in interfaces section	PB
H	2015-08-11	- Updated VA+/- fuse and information about replacement. - Changed connectors from B2P-VH to S2P-VH	RK

A MEMBER OF THE ETAL GROUP

ANAVIEW CONTACT INFORMATION

For further information about Anaview's products and technology please contact:
Email: info@anaview.com
Website: www.anaview.com

Anaview (Europe, APAC)
Södergatan 4
25225 Helsingborg
Sweden

Anaview (North America)
PO Box 459
Manasquan, NJ 08736
New Jersey
USA

Part of
ETAL Group AB
Fagerstagatan 3
SE-163 53 SPÅNGA
SWEDEN