# Ghent's Amplifiers Brief User Guide



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# <u>ICEpower 125ASX2 Module</u> (*Small size, Big power*)

- True to the ICEpower brand promise, the 125ASX2 delivers industry-leading audio performance, efficiency and power density, enabled by the latest ICEpower's technological breakthroughs.
- ICEpower125ASX2 module replaces the traditional amplifier and power supply assemblies in a range of applications, some of which are listed below:
  - Stereo amplification,
  - Active speakers and subwoofers,
  - Audio systems in performance flat-panel TV,
  - Musical instruments,
  - Professional speakers and studio monitors.
- ICEpower125ASX2 delivers the power output of:
  - 500W at BTL, 4Ω, 10% THD+N
  - 2 x 125W at SE, 4Ω, 1% THD+N

Configuration	SE			BTL	
Load	2Ω	4Ω	8Ω	4Ω	8Ω
125ASX2	200	125	65	500	250

Note: 2Ω drive should be limited to 1 channel.

#### **Power Supply Protection**

- The power supply of the ICEpower125ASX2 has 2 protection circuits; over temperature and over current.
- The temperature protection will be activated if the absolute temperature of the circuit is too high. This can be caused by high ambient temperature, high load (amplifier and AUX supply) for a long time or a combination of these two parameters.
- The over current protection will be activated if the output current to amplifier and/or AUX exceeds the limits. Please remember that the AUX supply is protected by a fuse which will blow if the supply is overloaded.
- If one of these protection features is triggered, the power supply either limits its output power or shuts down. In case of a shut down the power supply will rapidly try to restart if the circuit's temperature is acceptable.

#### **Amplifier Local Protection**

- The ICEpower125ASX2 has a local protection circuit for each of the two audio channels. This local protection handles HF protection, DC protection and saturation detection. If one of these protections features is activated on one channel it will only influence the channel where the error occurred.
- The HF protection circuit is implemented to protect the Zobel network against ultrasonic signals (greater than 20kHz). This protection circuit has a built-

#### **Amplifier Global Protection**

- There are two global protection features in the ICEpower125ASX2 amplifier; an over temperature protection and an over current protection.
- The over temperature protection will only occur if the PRMS is greater that the specified Continuous Output Power. In normal use the amplifier will not shut down if properly mounted.
- The over current detection circuit is included in the ICEpower chipset by detecting saturation of the control system. This condition will typically be allowed for 100ms to 500ms which is enough to avoid accidental shutdown at peak currents during high music output. The current limit is set to 30A.



# Brief about Ghent's Power Amplifier

According to the main feature of 125ASX2 module, we designed the following amplifiers:

# ■ A000 & A100 Amplifiers

	SE 125w x 2/ch	MonoBlock 550w x 1/ch		Transformer(1/ch)
	Via RCA	Via XLR	Via RCA	RCA in & XLR out
A000B	$\checkmark$	$\checkmark$		
A100B	~	$\checkmark$		
A100P	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$



# A200 Amplifiers

	SE 125w x 4/ch	MonoBloc	k 550w x 2/ch	Transformer(2/ch)
	Via RCA	Via XLR	Via RCA	RCA→XLR
A200B	$\checkmark$	$\checkmark$		
A200P	$\checkmark$	$\checkmark$	$\checkmark$	~





Sample connection of RCA→XLR transformer via XLR cable

#### Instruction of A000 & A100 Amplifier

## • Basic Layout of A100P Amplifier



Note: A100B are not equipped with RCA→XLR tranformers.

## Working Modes of A100 Amplifier

- A000B only support Mode 1 & 2
- A100B only support Mode 1 & 2
- A100P support Mode 1,2,3,4

# Mode 1 --- Stereo 125w x 2/ch (RCA Input)



# Mode 2 --- Monoblock 550w (XLR Input)



Mode 3 --- Monoblock 550w (RCA Input)



(The XLR cable connecting male & female XLR connectors is inside package)

# Mode 4 --- Individual RCA-->XLR Transformer



(A100P output balanced signals to other amps when run in Mode1 or Mode2) Important: Don't let RCA & XLR inputs together, you can only choose one kind of input each time

## Instruction of A200 Amplifier

- A200B are based on 2pcs 125ASX2 modules,
- A200P are based on 2pcs 125ASX2 modules, and 2pcs RCA→XLR transformers.



- Basically, all modules (125ASX2 and RCA→XLR transformer) inside A200 could run separately. That means, you can think:
  - A200B as two individual A100B amplifiers
  - A200P as two individual A100P amplifiers

# Note: the following connections are based on same diagram of A100P. A200B (BTL via only XLR)

- You might connect only Module-1 in SE mode to get 125w x 2/ch (Module 2 do nothing) (Please refer to Mode 1 diagram of A100 amplifier)
- Or connecting both modules in SE mode to get 125w x 4/ch (Please refer to Mode 1 diagram of A100 amplifier)
- Or Module-1 in SE and Module-2 in BTL (125w x 2/ch + 550w x 1/ch), 2.1HiFi System (Please refer to Mode 1 & 2 diagrams of A100 amplifier)
- Or both modules run in BTL (550w x 2/ch), via XLR (Please refer to Mode 2 diagram of A100 amplifier)

#### A200P Amplifier

Except all the above features of A200B amplifiers, A200P support:

- Monoblock via RCA Inputs;
   (Please refer to Mode 3 diagram of A100 amplifier)
- 2 Channels RCA→XLR transformer to other amps when run in SE or BTL via XLR (Please refer to Mode 4 diagram of A100 amplifier)

# **FAQ**

#### • How to open case?

Unscrewing following 4 screws, lifting top cover from both side, and put it aside





• What are the connectors onboard?



Please checking all cables & connectors firmly onboard, also the fuse firmly (Power-Off first)

## • Why no sound when power on?

In general, we already set the right power Jumper according to your local votage. Important: Please be sure to set the right power Jumper 115V or 230V before power on



# Connection Diagram of 125ASX2 Module

#### AC Header Specifications (P100)

Type: JST B2P3-VH				
PIN	Function	Description	Туре	
1	Live	Live AC	Input	
2	Neutral	Neutral AC	Input	

Table 1: AC connector specifications.

# Speaker Header Specifications (P101)

Type: JST B4P-VH				
PIN	Function	Description	Туре	
1	Vo+	Amplifier output channel 2	Output	
2	GND	GND <sub>channel2</sub>	GND	
2	GND	GND <sub>channel1</sub>	GND	
4	Vo+	Amplifier output channel 1	Output	

Table 2: Speaker connector specifications.

#### Signal Header Specifications (P102)

Type:	JST B8B-PH-K-S		
PIN	Function	Description	Туре
1	BTL Sync	Synchronization pin for amplifiers (used in BTL-mode)	Input
2	Enable	Amplifier enable	Input/Output
3	00	Monitor pin amplifier over current	Output
4	Thermal	Thermal monitoring pin	Output
5	Vin channel 2	Input signal channel 2	Input
6	GND	Ground terminal for the signal section.	GND
7	GND	Ground terminal for the signal section.	GND
8	Vin channel 1	Input signal channel 1	Input

Table 3: Signal connector specifications.

#### Auxiliary Supply Header Specifications (P103)

Type:	Type: JST B3B-PH-K-S				
PIN	Function	Description	Туре		
1	Vd <sub>aux</sub>	Positive unregulated auxiliary supply (typical +24V)	Output		
2	GND	Ground terminal for the auxiliary section.	GND		
3	Vs <sub>aux</sub>	Negative unregulated auxiliary supply (typical -24V)	Output		

# Schedule: Story about Ghent's DIY-Kits

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#### ICEPower 125ASX2 module

According to official datasheet, ICEPower 125ASX2 module support following modes:

- SE mode: 125w x 2/ch (4 Ω) or 65w x 2/ch(8Ω), or 200w x 2/ch(2Ω)
- BTL mode: **550w** x 1/ch (4  $\Omega$ ), via balanced signal input (XLR)

In year 2011, we have released the old-version DIY-Kit (A000 Basic-Kit), supported above two modes of 125ASX2 perfectly;

#### • RCA-->XLR Transformer

During year 2011, some friends asked to support BTL mode via RCA input;

Then, we developed RCA-->XLR transformer specific for 125ASX2 module to support 3rd mode:

BTL mode: 550w x 1/ch (4 Ω), via RCA Input

Also, our RCA-->XLR transformer is integrated individually inside case, just getting DC24V from 125ASX2 module. This means, you can even output real balanced signals to other amps while our Kits are running.

#### • DIY-Kits (Basic-Kit , Pro-Kit & Case-Kit)

Basically, we hope to provide different combinations of DIY-Kits to meet various requirements of HiFi users, with cost-effective prices and max- flexibility combinations:

- A000&A100 / A200 / A300 Kits, mean that kit separately include 1pc / 2pcs / 3pcs 125ASX2 modules
- Both Basic-Kit and Pro-Kit are completed DIY-Kit, you can assembly it to completed amp easily, but:
  - Basic-Kit include Case-Kit and only 125ASX2 module
  - Pro-Kit include Case-Kit, 125ASX2 module and RCA-->XLR transformer (also with male-to-female XLR cable, 30mm length)
- Case-Kit means Aluminum case with all cables, connectors (Binding posts, RCA, XLR), switch, and screws..etc, everything for assembling completed amp. (Case-Kits are for users who already have 125ASX2 modules;)
- The different between A000 and A100, is that A100 reserve the space and installation holes to install RCA→XLR converting module, other functions & sizes are same;

# Most-Flexibility Combinations, Most-Powerful DIY-Kit

Ghent's DIY-Kits are designed specific for 125ASX2 module, and fulfill most-powerful functions perfectly. For example, A200 Pro-Kit is a very compact amp, it support various and very interesting modes (4  $\Omega$ ):

- 2.1 HiFi system: 125w x 2/ch (L/R channels) + **550w** x 1/ch (Subwoofer)
- SE mode: 125w x 4/ch
- BTL mode: **550w** x 2/ch, via XLR inputs
- BTL mode: 550w x 2/ch, via RCA inputs
- BTL mode: **550w** x 2/ch, via 1/ch XLR input + 1/ch RCA input
- Individual balanced signal provider (1/ch or 2/ch), to other amps

So, HiFi users could easily build 2.1, 4,1, 5.1 or even 7.1 HiFi system with different combinations of Kits.

# Improvements soon:

