

# The Fun is in the Discovery!

**Xonar Essence STU Tweaking kit**



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# Disassemble and assemble the cover



Remove the 6 underside screws



Push against the front panel and insert your nails to the side, to lift the top cover



Remove the top cover from the front using both hands



Gently push down on the top cover, you will hear a click if it's fastened



When putting everything back, align the front side of the top cover with the inner side of the front panel



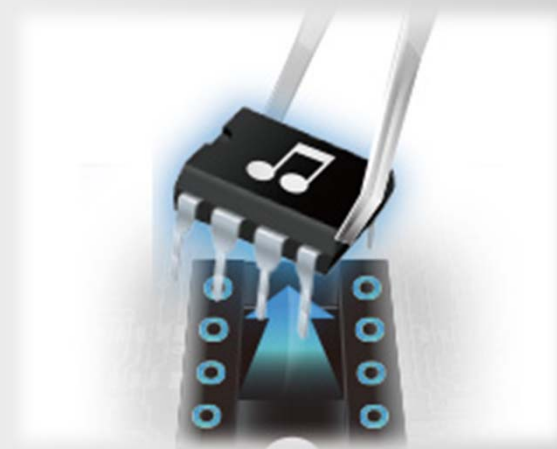
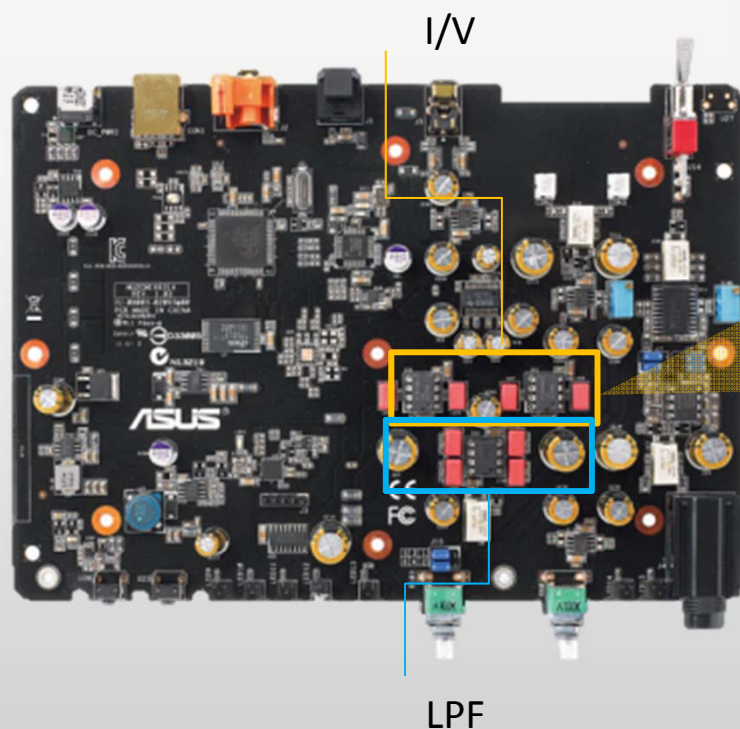
Remove the top cover

# Swappable Op-Amps

## Convenient tonal tuning

Download our Op-Amp swap guide from ASUS support site:

[http://dlcdnet.asus.com/pub/ASUS/Audio\\_Card/Xonar\\_Essence\\_STU/E8333\\_Xonar\\_Essence\\_STU\\_Op\\_amp.pdf](http://dlcdnet.asus.com/pub/ASUS/Audio_Card/Xonar_Essence_STU/E8333_Xonar_Essence_STU_Op_amp.pdf)



※ To avoid reversion, ensure that the circle pin (upper left corner) on the Op-Amp facing the same direction of the socket opening

# Rolling fun!

Thanks to ClieOS for detailed combination testing  
on Head-Fi review:

<http://www.head-fi.org/products/asus-xonar-essence-stu/reviews/9307>

## **I/V rolling (Stock LPF: LM4562)**

LM49720 Stock– well balanced, clean, airy and open but slightly to the warm side.

LM49720 ‘Metal Can’– almost identical to stock, but just a tap fuller in body.

OPA2604 – denser, not as airy and open as stock.

OPA2209 – bass note is a little lean, good height.

OP270 – Also dense, but a little better soundstage than OPA2604.

OP275 – Leaner and brighter than stock, almost grainy. Good soundstage.

AD8066 – Even brighter than OP275, but without the graininess. Slightly flat in soundstage but good width.

OPA2227 – Forward, full and bright, slightly grainy.

OPA2134 – More mid centric, lack soundstage.

MUSES01 – Similar to Stock, with better dynamic and impressive soundstage.

MUSES920 – full and forward, like smoother OPA2227.

## **LPF rolling ( Stock I/V: LM49720)**

LM4562 – stock, again: well balanced, clean, airy and open but slightly to the warm side.

LM49720 ‘Metal Can’ – Similar to stock, slightly less dense and more open in the mid.

OPA2604 – thick and slow, grainy.

OPA2209 – Full, similar to OPA2604 but without being overly thick and slow.

OP270 – Lean, slightly lacking in bass, slightly bright.

OP275 – Well balanced, though soundstage isn’t great.

AD8066 – Very airy and open, great soundstage but a little bright.

AD8620 – Like a tuned down version of AD8066, with better body and smoother presentation.

OPA2227 – warm and slightly dull, but sparkly on the top.

OPA2134 – similar to OPA2227, more mid centric and not as sparkly.

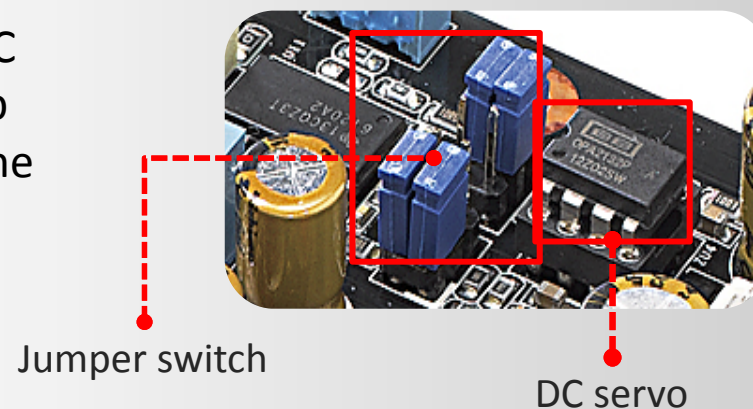
MUSES01 – Similar to stock, but slightly better dynamic and soundstage.

MUSES8920 – somewhere between OPA2227 and OPA2134.

# DC servo headphone output

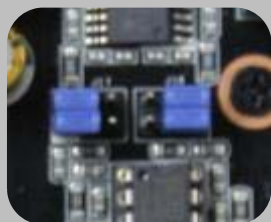
## Filters out unwanted pop noise

Many music enthusiasts choose to solder a DC servo on their DAC to minimize power-up pop noise on the renowned TPA6120A2 headphone amplifier. The dedicated DC servo on Xonar Essence STU offers a convenient and solder-free alternative.

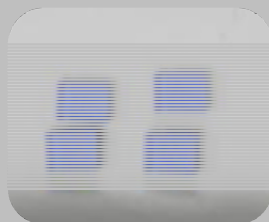


### ✂ How to switch to DC servo headphone output mode?

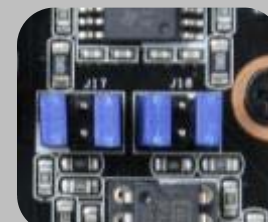
1 Default setting:  
non-DC servo mode



2 Remove four  
jumpers



3 Place jumpers back on  
pins as shown below

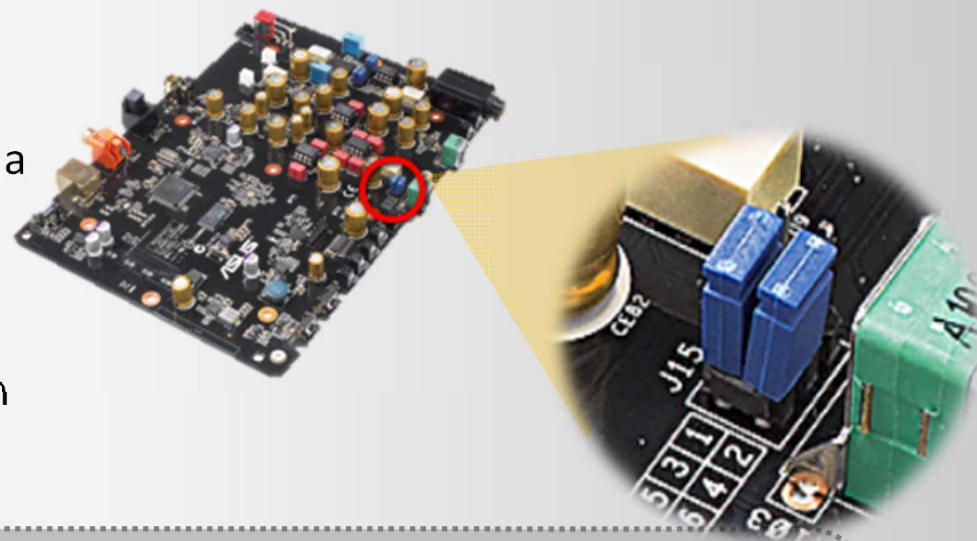




# Volume bypass mode

## Ease of use

The jumper switch re-routes sound and allows Xonar Essence STU to be used as a pre-amplifier in conjunction with a dedicated power amplifier. You can opt to adjust master volume directly on the power amplifier without having to reach Xonar Essence STU controls.



### ✂ How to switch to the volume bypass mode?

1 Default setting:  
non-bypass mode



2 Remove two  
jumpers



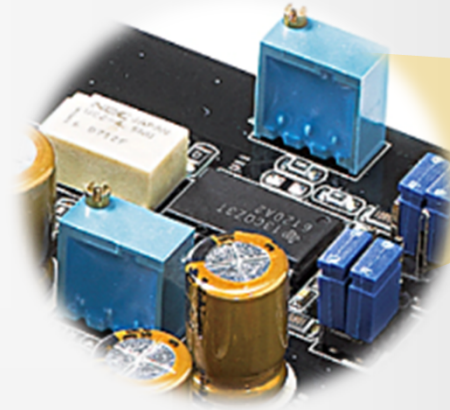
3 Place jumpers back  
on pins as shown  
below



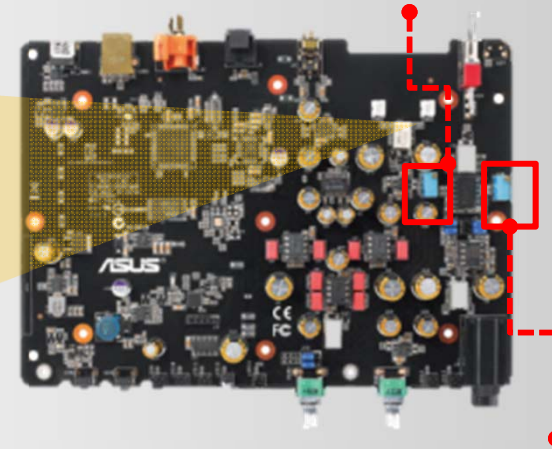
# Variable resistor calibration

## Convenient tool for checking right/left balance

Dedicated variable resistors are designed for left/right channel calibration of speakers or headphones. Users can tune them to find balance levels they prefer.



Variable resistor for RCA-out (right channel)



Variable resistor for HP-out (left channel)

### ※ How to calibrate resistors and check balance?



▲ Turn the screw on the resistor by using a flathead screwdriver.

- Clockwise rotation: higher volume
- Counter clockwise rotation: lower volume



▲ Post-calibration, you can use a multimeter to check if the output voltage of the right/left channels is balanced.