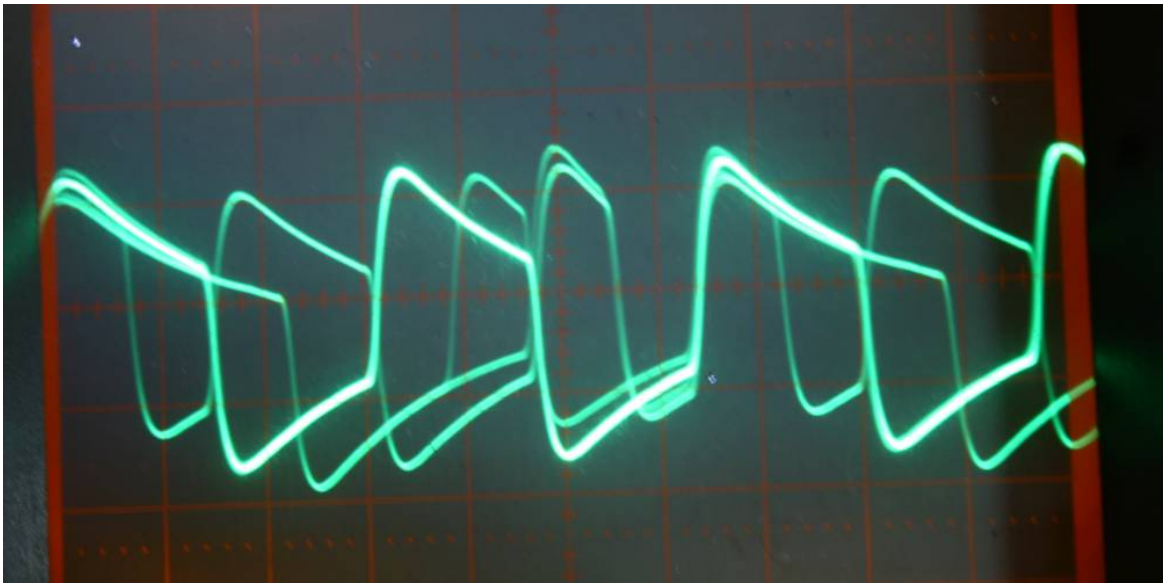
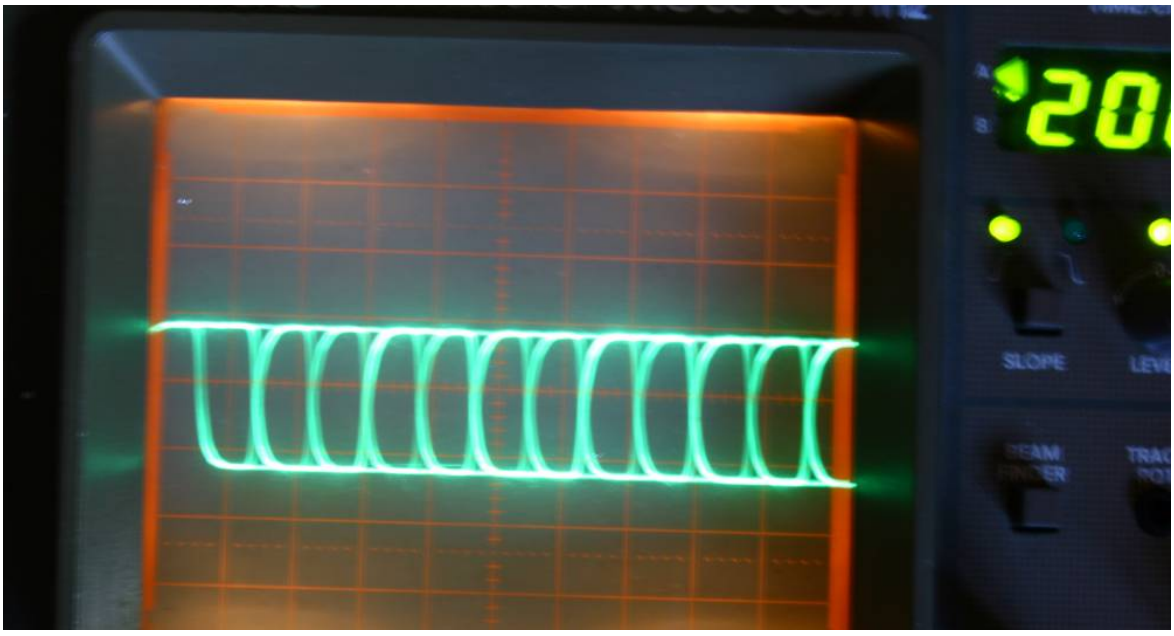
Introduction

I have been using computer as my primary music source for long time ago. Computer is always capable of producing very accurate sound but lacks of some important musicality integrity in the music. However, by using a tube digital buffer of the SPDIF signal the musical flow and integrity were realign with a perfect square wave that have been done by Mr. Lukasz Fikus on 2008. For example, Mr. Fikus had show an analysis of a Grundig 9009 CD Player's stock SPDIF signal and tube buffered signal.

BEFORE



AFTER



Why buffering SPDIF

I've gone through some browsing on the internet found that many people were saying that Sony CD players were sounding when using as a CD transport comparing to the others. Part of the reason that reveal by Mr. Fikus is that Sony were using transistor buffer in their SPDIF output.

So why buffer using a tube instead of transistor?

I personally have very good experience of using NOS (new old stock) tubes because always gives me a unique sound instead of using current production tubes and of course it is your choice.

According to Thorsten Loesch:

What makes the tubed USB to SPDIF converter better the non tubed version?

Answer:

The tubed output stage operates differently to the solid state logic one. The Tube stage operates as linear Class

Amplifier and does not "saturate". The normal logic IC based output buffer circuitry operates in "saturation" meaning it is slower to react to signal changes. The Tube stage also has much less input capacitance than CMOS logic IC's, so the rise-time of the signal is faster.

The technical result is a signal output that is cleaner and closer to the theoretically "ideal" SPDIF Signal.

As a result the DAC's SPDIF receiver can recover the signal and clock with less jitter, in technical terms. This in turn generally produces a better, more natural and non-fatiguing sound.

Building the tube stage

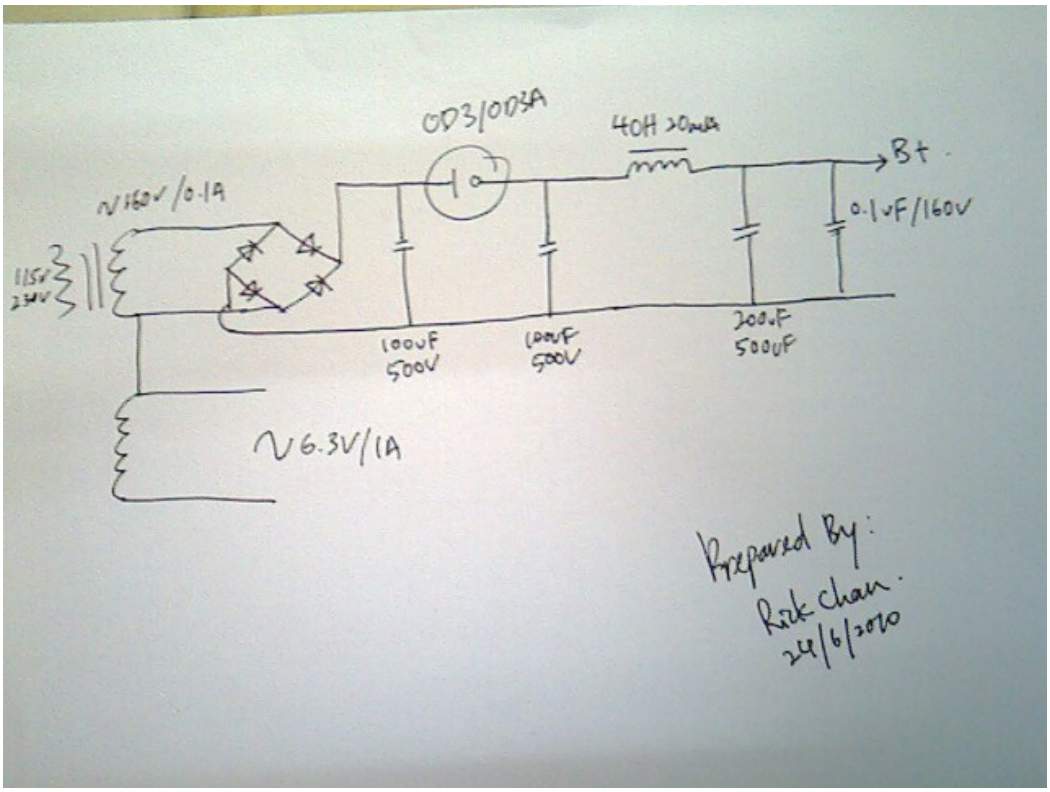
Things you need for TUBE signal circuit:

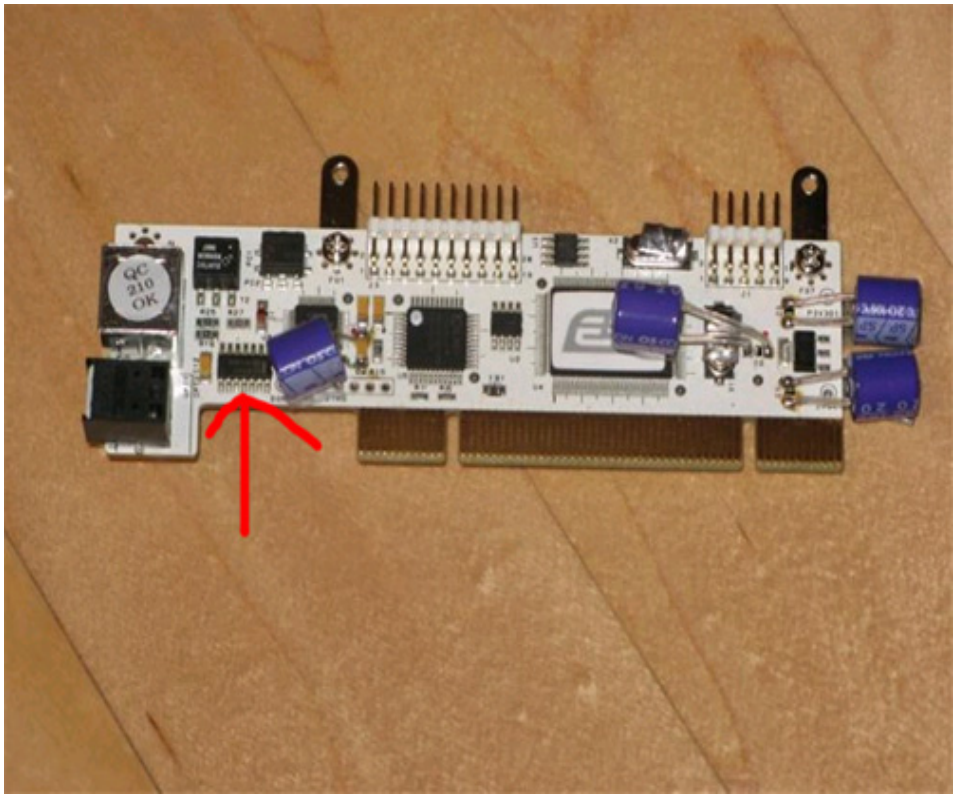
1. Hookup wires at your choice, preferably MOGAMI Internal Console cable W2944 for signal ONLY!!!
2. 1pcs 15K ohm 1/4W resistor, 2pcs 75Ohm 1/4W resistor
3. 1pcs 9pin tube socket
4. 1pcs 6N14P tube
5. 1pcs 0.01uF film capacitor or any except electrolytic and PIO
6. 1BNC socket
7. Some washers, bolts and chassis mount for the tube socket

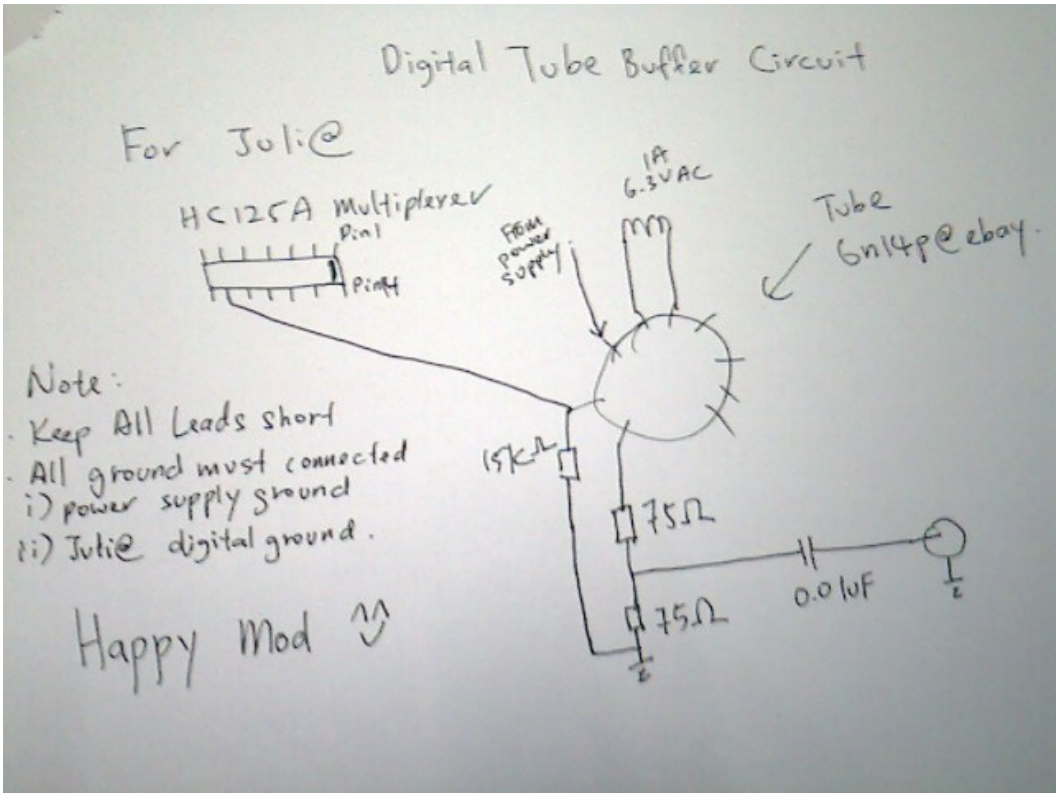
It is optional for users that have their own preferred circuit for the tube anode supply as long the voltage must not **EXCEED 150V.**

Things you need for TUBE power supply circuit:

1. 20va transformer, (PRI 120v/230v, SEC 6.3V/1A, 160V/0.085A)
2. 40H 20mA Choke
3. 2pcs 100uF/400V, 1pcs 200uF/400V capacitor, 1pcs 0.1uF/400V Capacitor
4. 4pcs Single Rectifier Diode 600V
5. 0D3A Voltage Regulator Tube



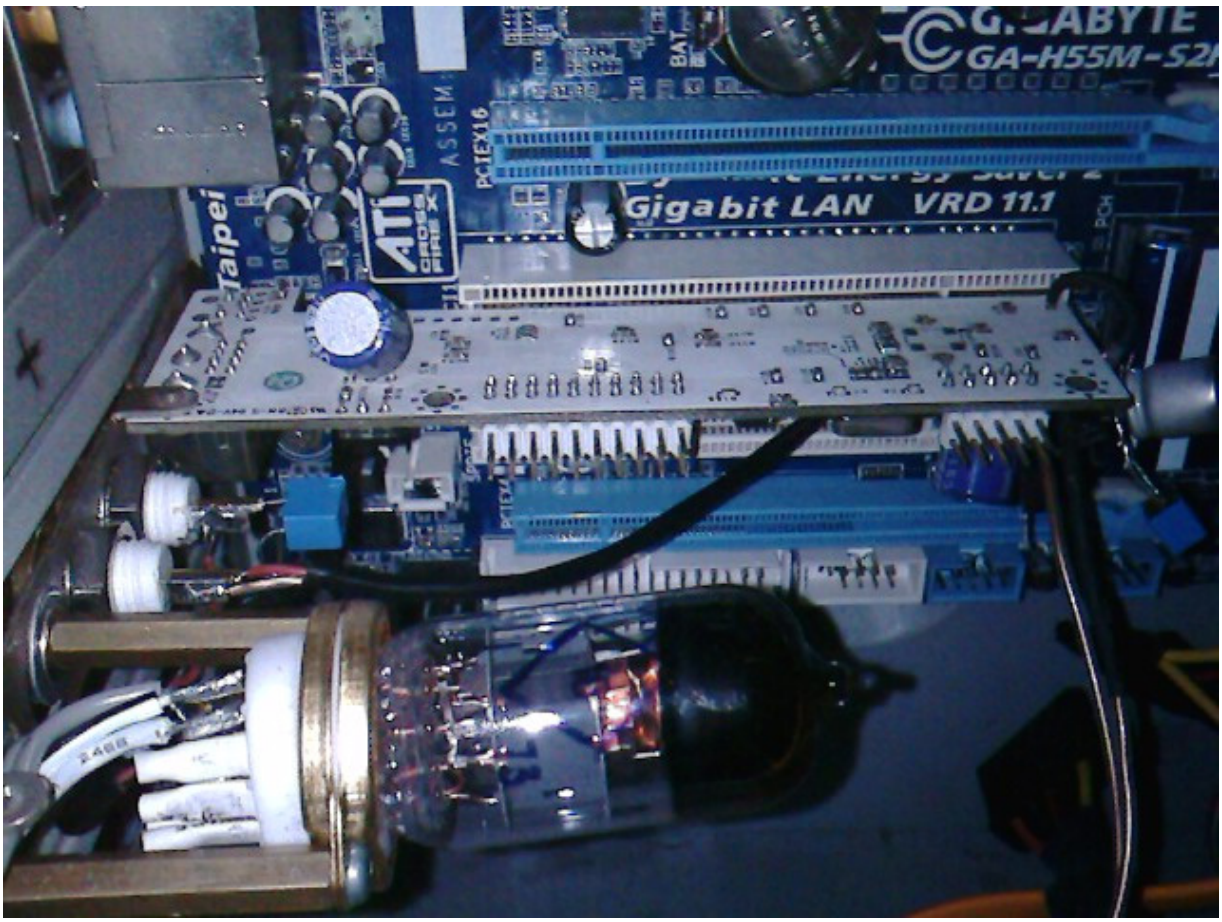



Digital Tube Buffer Circuit
For Juli@
HC125A Multiplexer
Pin1
Pin14
1A
6.3VAC
From power supply
Tube
6n14p@ebay
Note:
Keep All Leads short
All ground must connected
i) power supply ground
ii) Juli@ digital ground.
Happy Mod
15KΩ
75Ω
75Ω
0.01uF

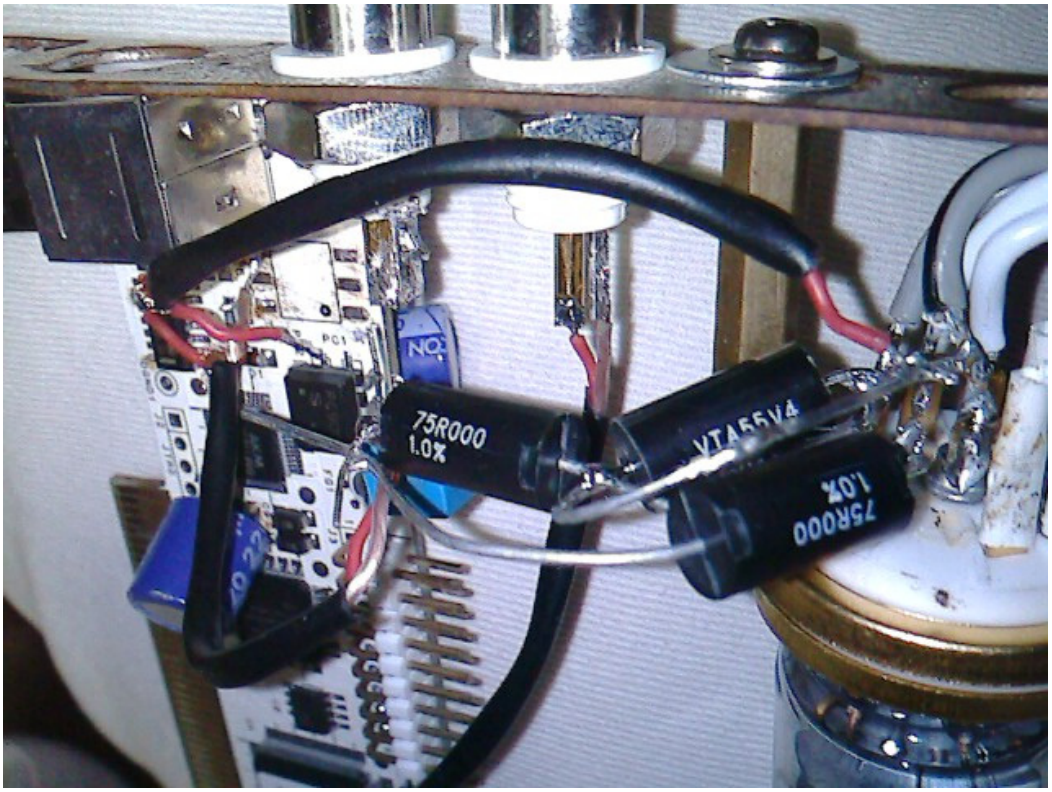
How is the sound?

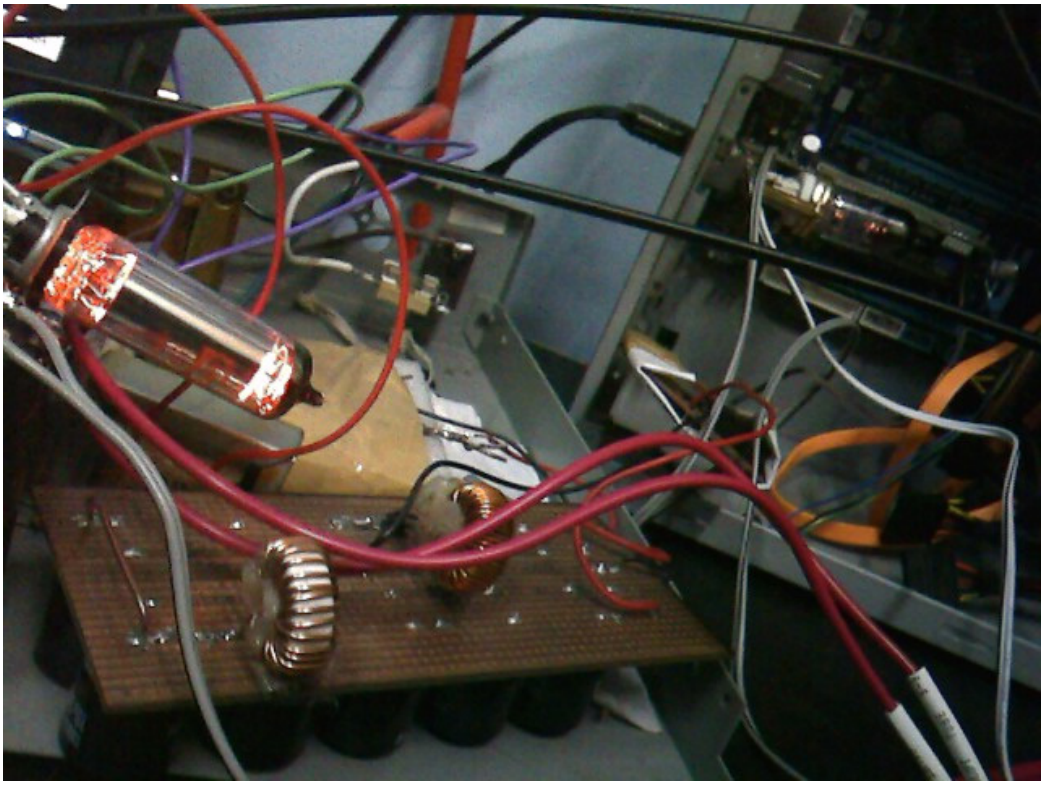
1. I find that is really QUIET until you can hear the acoustic of recording environment. (this might because of my power supply tube)
2. Soundstage is totally different, this is because of NOS tubes usually does this JOB. Not without a NOS tube.
3. Vocal were liquid, yes this should be the way HIFI reproduction.
3. Micro-details were pushed out.
4. Sound that you will not BELIEVE it is a CD or DIGITAL. Close to analog like TT.
5. Musicality like I mention.
6. Realistic, like you were seating in front of the recording room! It was actually realigns all every single sounds position, background.

This is how it ends up!



Some picture of process



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