CH' TI LAMPeS

LND Booster Analysis

LND Booster V2

2020-11-21



CH' TI AMPS

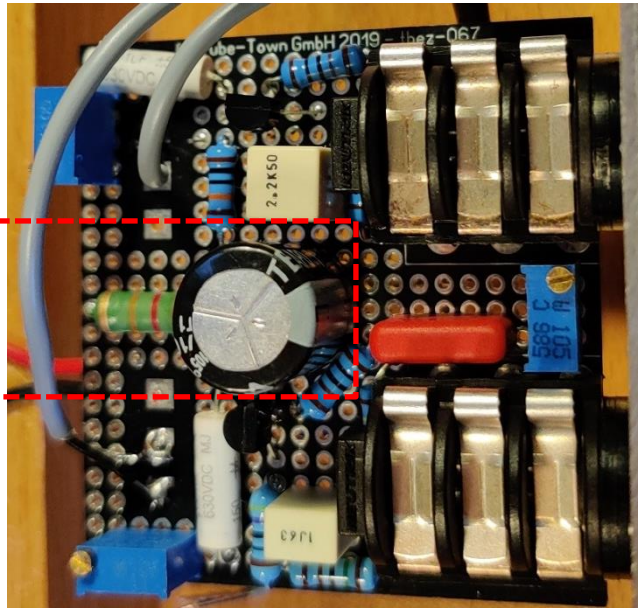
LND Booster Analysis

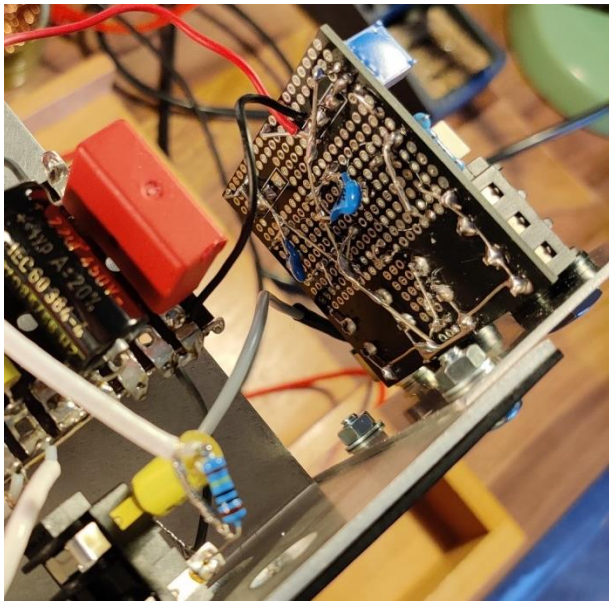
Prototype build

„Straight-forward“ configuration

Power supply

„Headroom“ configuration





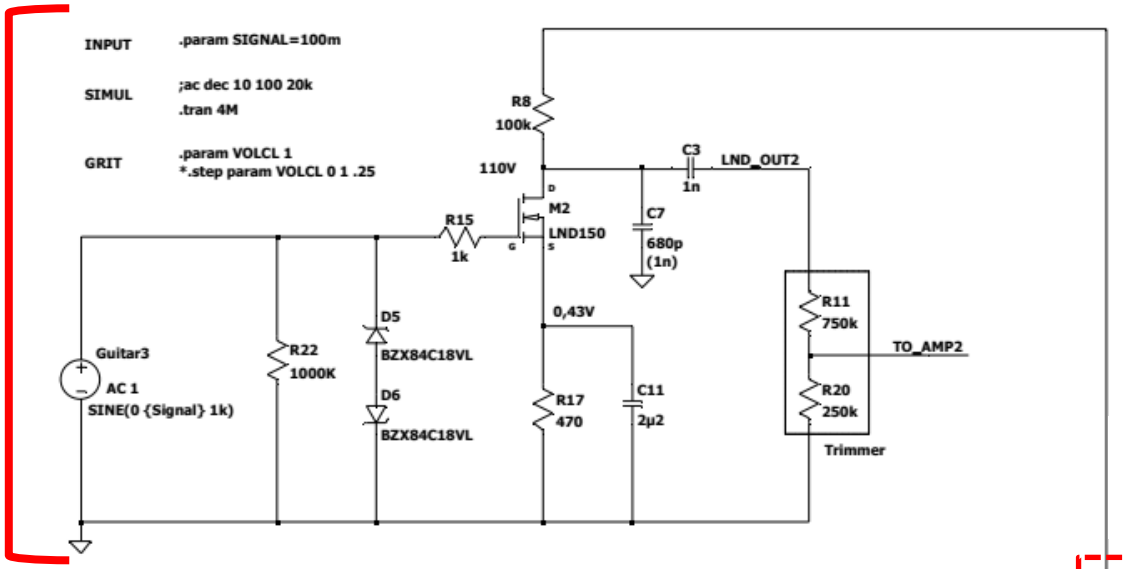
Prototype in place in the amp

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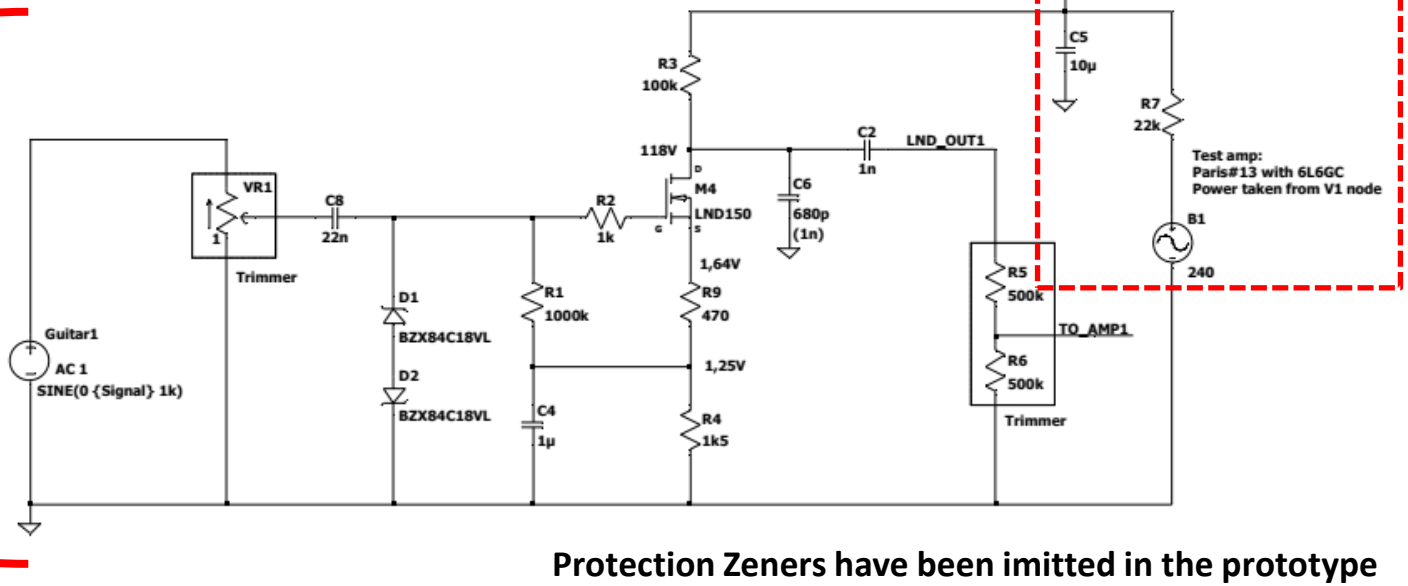
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Schematics of both types

„Straight-forward“ configuration



„Headroom“ configuration



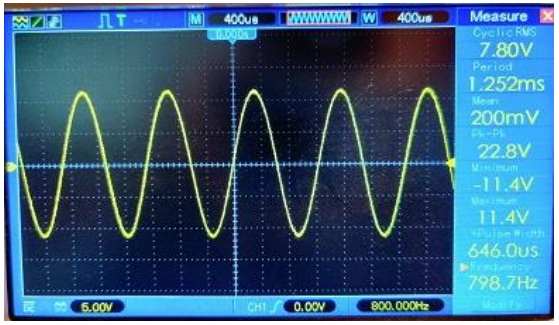
Power supply from test amp

Protection Zeners have been imitted in the prototype

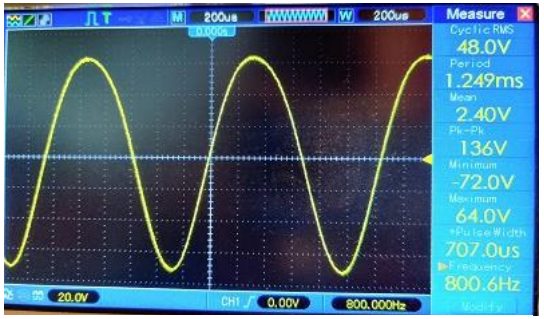
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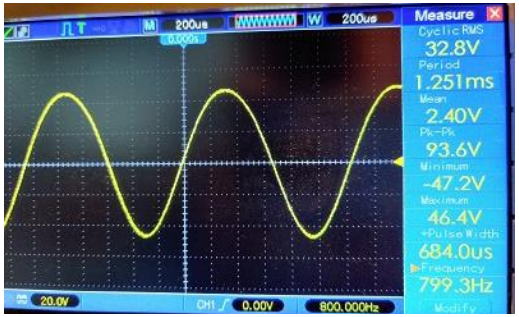
„Straight-forward“ configuration



100mVp input – signal „clean“

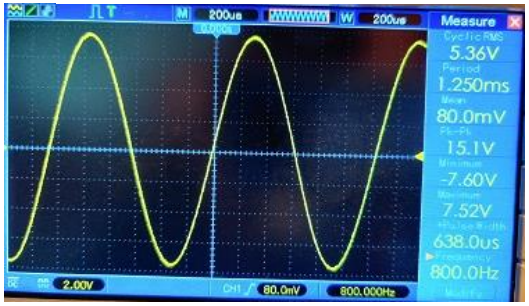


500mVp input – already compressed

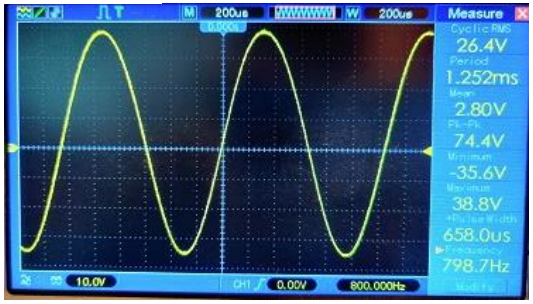


750mVp input – limit before cut-off

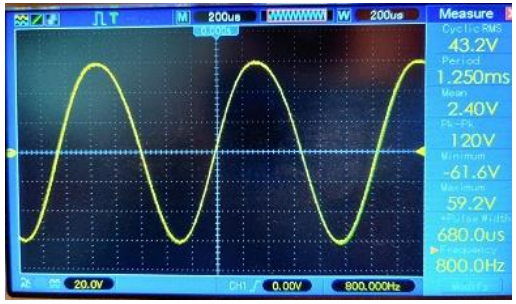
„Headroom“ configuration



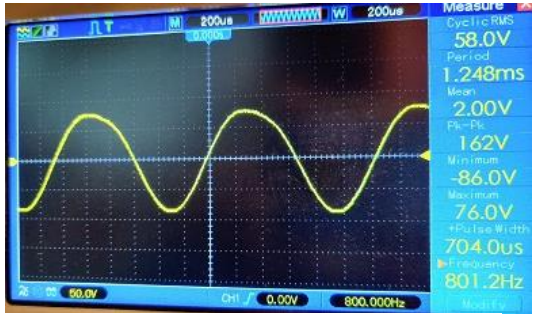
100mVp input – signal „clean“



500mVp input – still lightly compressed
Strangely signal was symmetrical before taking the pic...



800mVp input – limit before compression



1,25Vp input – limit before cut-off

SHOWCASE AT LND150
OUTPUT AFTER COUPLING CAP

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CONCLUSION OF MEASUREMENTS

The „Straight-forward“ configuration is ok for low to mid- output guitar pickups. Its simplicity as well as the less components in the signal chain are an advantage.

The „Headroom“ configuration has definitely more headroom at the input. This is an advantage for high output guitar pickups.

A soundcheck needs to be performed to confirm which variant is better.
For that the output of both types have been adjusted to be equal. As reference a signal of 400mVpp has been taken. Both outputs to the amp have been adjusted to 16Vpp (gain of 40).

After all, I should have set the amplification of the straight-forward version to match the one of the headroom configuration. The divider of the straight-forward version is ridiculous compared to the other version.
This can be changed later on.

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CONCLUSION AFTER A SHORT GUITAR TEST

„Straight-forward“ configuration :

+++ Lot of punch & responsiveness, seems to be more than with the headroom configuration.

+/- With single coils PU‘s the noise is way too much. Without noise gate, this cannot be used. Amplification factor of the LND is too much. Better to reduce Drain resistor to a lower value (100k used here) – CAN BE ADAPTED

--- Too much compression with active PU‘s (Seymour Duncan Blackouts used). Signal must be reduced on the guitar, which lowers the punch and the attack (feeling)
Similar issue applies with hot PU‘s (DiMarzio D-Activator X) with little less compression as the OU has less output than a active one.

„Headroom“ configuration :

+++ Much lower noise floor than the other variant. This is due to the lower gain of the stage. If a similar gain is defined on the „straight-forward“ configuration, similar noise floor will be reached.

--- Also compression with active & hot PU‘s but less than with the other configuration. A reduction of the input (let say 20%) could be the key.

CONCLUSION :

The straight-forward version would be better because of the punch & responsiveness. Needs to be confirmed after longer test. Therefore the amplification of the stage has to be lowered and an input volume could help standardize the application for all types of pickups.