

Amped S-bass

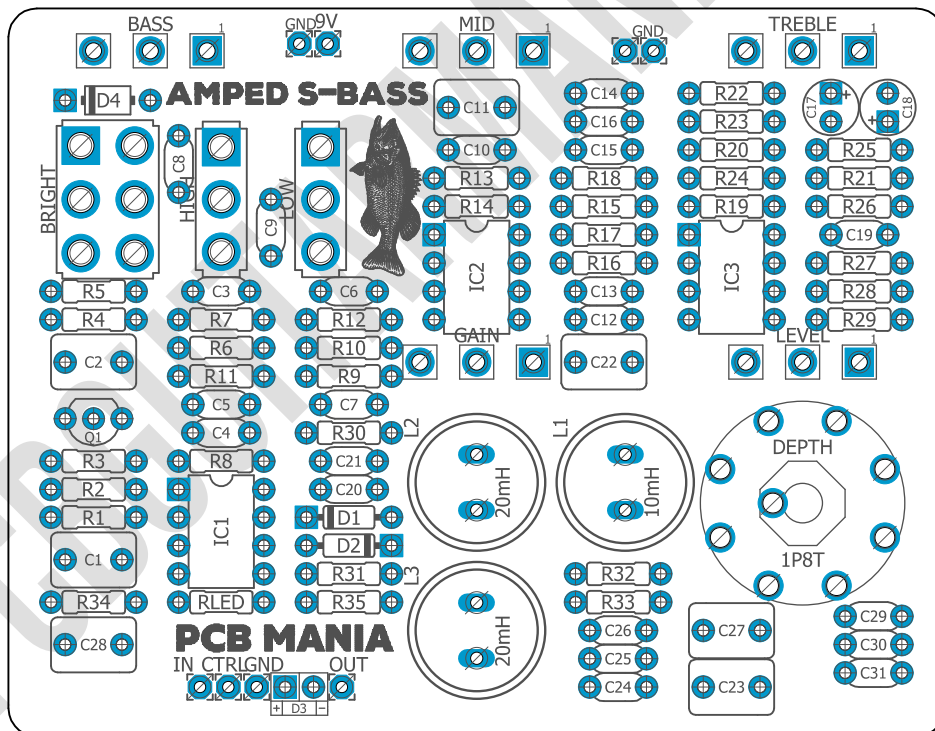
Based on:
Ampeg SVT
Effect type:
Bass /Overdrive Pre-amp
Build difficult:
Advanced

Number of parts:
High, total 87 components
Technology:
Op Amps, JFET transistor
Power consumption:
9V

Enclosure type:
1590bb
Get your board at:
[Amped S-bass](#)
Get your kit at:
[Das Musikding \(Europe\)](#)

Project overview:

Our Amped S-bass preamp revitalizes the harmonically rich sound and legendary performance of the Ampeg SVT. Get five frequency bands mid boost / cut rotary switch and an improved mid-frequency boost/cut frequencies slightly – 220Hz, 440Hz, 880Hz, 1k8Hz, and 3k5Hz – that gets as close as possible to octaves of “A 440 “.



Index

1. Project overview
2. Index, Introduction & Controls
3. Bills of Materials, BOM
4. Shopping Lists
5. Schematic
6. Components, Build Notes, Wiring Diagram
7. Drill Template, Licensing and Usage

Introduction

The legendary Ampeg SVT is a bass guitar amplifier designed in 1969 to be a stand-alone amplifier or "head" as opposed to a "combo" unit comprising amp and speaker(s) in one cabinet. What made it a vital amp for bands playing in large venues was its prolific sounding and capability of 300 watts output at a time when most amplifiers couldn't exceed 100 watts output.

The amp has been through many design changes over the years but is still in production today, maintaining its status as one of the greatest amps of all time. Now, you can have it in the shape of a pedal!

The original version uses one 1P8T rotary switch offering 5 different eq responses. However, this leaves 3 positions with no effect at all.

This was improved on version 1v1, where we replace the 1p8t for a 1p12t which you can configure through the washer for using only 5 positions.

Controls

Potentiometers

- Bass
- Gain
- Level
- MID
- Treble

Switches

- Bright
- High
- Low
- MID Freq

Bill of materials

Resistors	
Part	Value
R1	1M5
R2	1M
R3	100K
R4	1M
R5	4K7
R6	10K
R7	330K
R8	4K7
R9	820R
R10	6K8
R11	15K
R12	15K
R13	4K7
R14	820R
R15	22K
R16	2K2
R17	12K
R18	100K
R19	5K6
R20	47R
R21	750R
R22	68R
R23	22K
R24	4K7
R25	680R
R26	82k
R27	4K7
R28	820R
R29	2K2
R30	100K
R31	1K
R32	22K
R33	22K
R34	10K
R35	10K
RLED	2K2

Capacitors	
Part	Value
C1	1u
C2	1u
C3	220n
C4	680p
C5	22n
C6	22n
C7	22n
C8	180p
C9	5n
C10	680p
C11	1u
C12	10n
C13	100n
C14	470p
C15	100n
C16	180n
C19	100n
C20	100n
C21	2n2
C22	1u
C23	1u
C24	180n
C25	270n
C26	200n
C27	3u3
C28	1u
C29	2n2
C30	330p
C31	10n

Electrolytics Capacitors	
Part	Value
C17	10u
C18	10u

Potentiometers	
Part	Value
BASS	100K A
GAIN	100K B
LEVEL	100K B
MID	10K B
TREBLE	100K A

Diodes	
Part	Value
D1	1N4148
D2	1N4148
D3	3mm red LED
D4	1N5817

Switches	
Part	Value
BRIGHT	DPDT ON-ON
HIGH	SPDT ON-ON
LOW	SPDT ON-ON
MID FREQ	1P8T

IC	
Part	Value
IC1	TL072
IC2	TL072
IC3	TL062

Transistors	
Part	Value
Q1	J201

Inductors	
Part	Value
L1	10mH
L2	20mH*
L3	20mH*

Shopping list

Resistors		
Qty	Value	Parts
3	100K	R3, R18, R30
3	10K	R6, R34, R35
1	12K	R17
2	15K	R11, R12
1	1K	R31
2	1M	R2, R4
1	1M5	R1
4	22K	R15, R23, R32, R33
3	2K2	R16, R29, RLED
1	330K	R7
1	47R	R20
5	4K7	R5, R8, R13, R24, R27
1	5K6	R19
1	68R	R22
1	680R	R25
1	6K8	R10
1	750R	R21
3	820R	R9, R14, R28
1	82k	R26

Capacitors		
Qty	Value	Parts
4	100n	C13, C15, C19, C20

2	10n	C12, C31
2	180n	C16, C24
1	180p	C8
6	1u	C1, C2, C11, C22, C23, C28
1	200n	C26
1	220n	C3
3	22n	C5, C6, C7
1	270n	C25
2	2n2	C21, C29
1	330p	C30
1	3u3	C27
1	470p	C14
1	5n	C9
2	680p	C4, C10

Electrolytics Capacitors		
Qty	Value	Parts
2	10u	C17, C18

Potentiometers		
Qty	Value	Parts
2	100K A	BASS, TREBLE
2	100K B	GAIN, LEVEL
1	10K B	MID

Switches		
Qty	Value	Parts

1	DPDT ON-ON	BRIGHT
1	SPDT ON-ON	HIGH
1	SPDT ON-ON	LOW
1	1P8T	MID FREQ

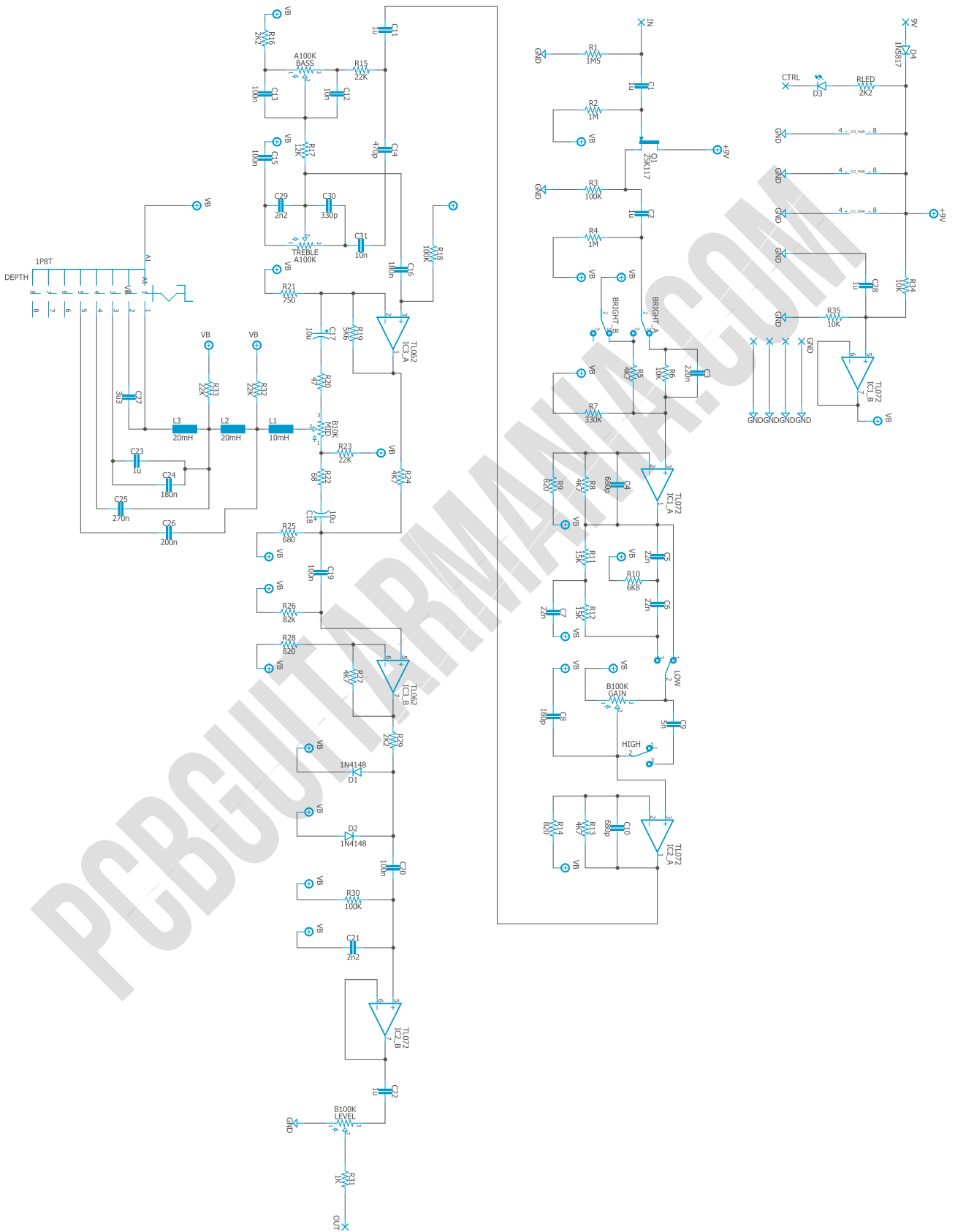
IC		
Qty	Value	Parts
1	TL062	IC3
2	TL072	IC1, IC2

Transistors		
Qty	Value	Parts
1	J201	Q1

Inductors		
Qty	Value	Parts
1	10mH	L1
2	20mH*	L2, L3

Diodes		
Qty	Value	Parts
2	1N4148	D1, D2
1	1N5817	D4
1	3mm red LED	D3

Schematic



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

20mH*

You can choose a 22mH instead of a 20mH inductor; either value is good.

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).

Drill Template

This Project has been planned to fit into a 1590bb enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania - Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

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