

GOD CITY INSTRUMENTS – Socialist Jr. V1.1 Build guide

The God City Instruments (GCI) Socialist Jr. is a highly modified interpretation of the original Brutalist Jr. DIY distortion PCB. A number of revisions and additions have been made to incorporate common mods and to improve performance. The resulting circuit is a highly versatile, high gain distortion pedal with some clever EQ controls and a wide range of saturation.

This is the build guide for Version 1.1. Build guide for V1.0 can be found here:

<https://kurtballou.com/docs/GOD%20CITY%20INSTRUMENTS%20-%20Socialist%20Jr.%20V1.0%20Build%20guide.pdf>

V1.1 more closely resembles the Brutalist Jr. circuit. Either version can be built on either board and, aside from a couple of diode omissions in V1.1, all of the part numbers are the same for each. It will be slightly easier to build using V1.1 values on a V1.1 PCB, but the differences are small.

Please note, all switches used in this PCB are PCB-pin style and not solder-lug. “Mid” shift is a on/on DPDT, “dark” switch is an on/on SPDT, and “clip” is na on/off/on SPDT. If an on/on SPDT is used for clip, the middle position won’t work and D2 doesn’t need to be populated.

This pedal is an easy build, but this guide is intended for people who have some experience building pedals. Component sourcing, component identification, assembly techniques, wiring stomp switches, etc. is not covered. The GCI Brutalist Jr. assembly guide has helpful information for less experienced builders. That guide can be found here:

<http://www.kurtballou.com/brutalistjr/>

A complete parts kit is not available at this time, but check this Google sheet for ordering information from many parts used in this PCB. It lists one possible brand and supplier for all parts commonly used by GCI, but many other brands and suppliers will work just as well.

docs.google.com/spreadsheets/d/1gRTF1VFbeBc9FX1ohjrtKPWFhw_TVHnxki03l3m7lcU/edit?pli=1#gid=27209130

Available separately is the GCI 3PDT utility PCB for PCB pin 3PDT footswitches. This PCB makes footswitch wiring quick and easy. Not compatible with solder lug style switches.

Don’t forget to connect the ground pad of the PCB to the ground lug of the input, output, and DC power jacks! And the long leg of the status LED should go through the square pad.

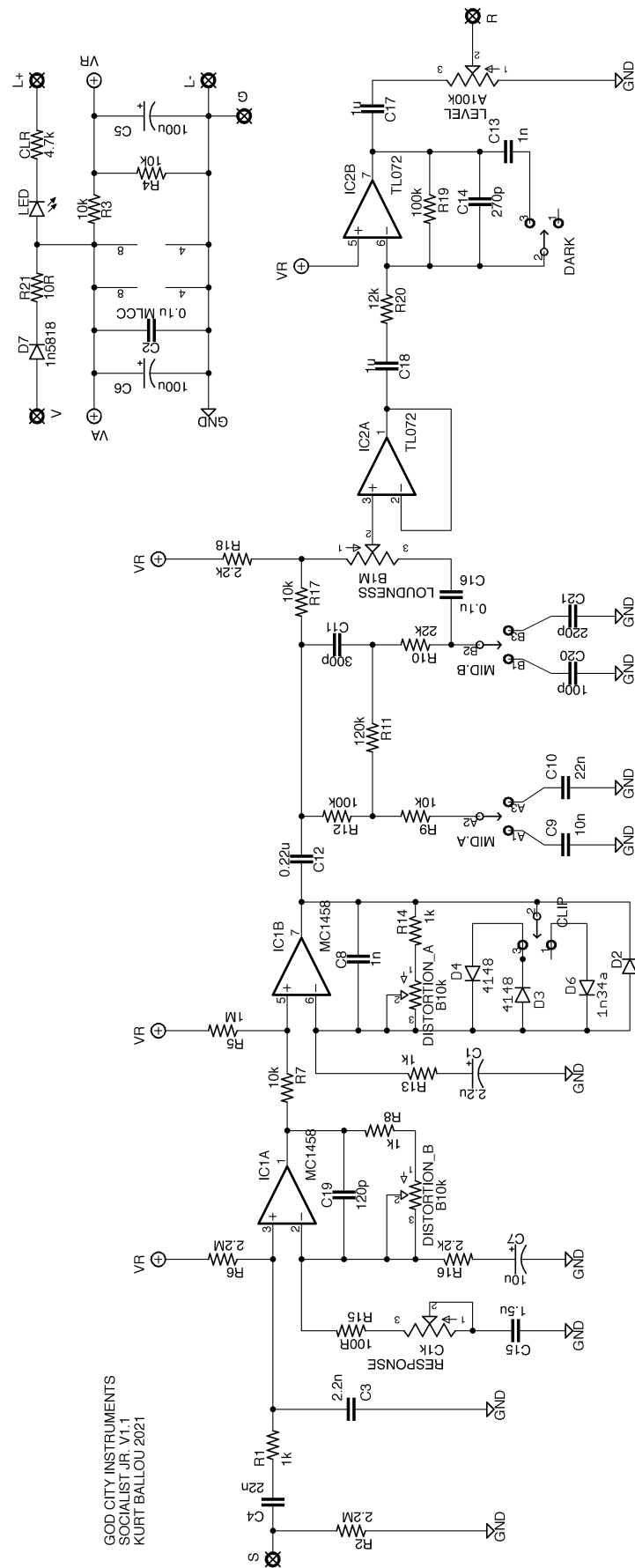
Due to the scope of this project, technical support is not available. However, consider joining the GCI DIY PCB Builders group on Facebook to get advice from and share your work with other builders. We require that all group members agree to the rules before being accepted into the group.

<https://www.facebook.com/groups/2454786551255317/>

Component values for the PCB as well as some alternate values are listed below. This is a BOM for the PCB only. Resistors and diodes are 6.3mm leg spacing, film and ceramic capacitors are 5.08mm leg spacing, and electrolytic capacitors are 2.54mm leg spacing. I/O jacks, DC jack, switch, enclosure, and knobs are not listed. The schematic and a drill template for a 125BB (1590BBM) sized enclosure are also attached.

Part	Value	Description	Substitute	Substitution Notes
C1	2.2u	electrolytic cap	1u-4.7u	Forms HPF with R13. Bigger = more bass/mud.
C2	0.1u	MLCC		
C3	2.2n	film cap	1n-4.7n	Forms input LPF with R1. Bigger = mud, smaller = possible RF.
C4	22n	film cap		
C5	100u	electrolytic cap	47u-220u	power filter cap
C6	100u	electrolytic cap	47u-220u	power filter cap
C7	10u	electrolytic cap	4.7u-22u	Forms HPF with R16. Bigger = more bass/mud.
C8	1n	MLCC	680p-2.2n	Smooths high frequencies related to clipping of ssecond stage.
C9	47n	film cap		
C10	27n	film cap		
C11	300p	MLCC		
C12	0.22u	film cap		
C13	1n	film cap	470p-2.2n	Switchable system LPF
C14	270p	film cap	100p-470p	System LPF
C15	1.5u	film cap	1u-2.2u	Forms HPF with R15 and Response. Bigger = more mud.
C16	0.1u	film cap		
C17	1u	film cap		
C18	1u	film cap		
C19	120p	MLCC	47p-470p	Smooths high frequencies related to clipping of first stage.
C20	470p	MLCC		
C21	270p	MLCC		
D2	Yellow	3mm LED		
D3	1n4148	Si diode		
D4	1n4148	Si diode		
D6	1n34a	Ge diode		
D7	1n5818	Scottky diode	1n5817, 1n4001	Any suitable polarity protection diode
LED	L1	LED		
IC1	MC1458	dual op amp	TL072, TLC2272, LM833	Pin compatible dual op amp
IC2	TL072	dual op amp	TLC2272, NE5532, OPA2132	Pin compatible dual op amp
CLR	4.7k	1/4 watt resistor		
R1	1k	1/4 watt resistor		
R2	2.2M	1/4 watt resistor		
R3	10k	1/4 watt resistor		
R4	10k	1/4 watt resistor		
R5	1M	1/4 watt resistor		
R6	2.2M	1/4 watt resistor		
R7	10k	1/4 watt resistor		
R8	1k	1/4 watt resistor		
R9	10k	1/4 watt resistor		
R10	22k	1/4 watt resistor		
R11	120k	1/4 watt resistor	68k-180k	Affects mid frequency. Lower value = lower frequency.
R12	100k	1/4 watt resistor	4.7k-33k	Affects output volume. Smaller = more volume. May cause clipping

R13	1k	1/4 watt resistor	470R-3.3k	Affects gain and bass in 2nd stage. Smaller = brighter and gainier.
R14	1k	1/4 watt resistor		
R15	100R	1/4 watt resistor		
R16	2.2k	1/4 watt resistor		
R17	10k	1/4 watt resistor		
R18	2.2k	1/4 watt resistor		
R19	100k	1/4 watt resistor	12k-220k	Affects output volume. Bigger = more volume. May cause clipping
R20	12k	1/4 watt resistor		
R21	10R	1/4 watt resistor		
CLIP	SPDT.PINS	on/off/on		3 position switch!
MID	DPDT.PINS	on/on		2 position switch!
DARK	SPDT.PINS	on/on		2 position switch!
DISTORTION	B10k	DUALGANG 16mm pot		
RESPONSE	C1k	16mm pot		
LOUDNESS	B1M	16mm pot		
LEVEL	A100k	16mm pot		
S	PAD	send to PCB		
L+	PAD	LED+		
L-	PAD	LED-		
R	PAD	return from PCB		
V	PAD	9V input		
G	PAD	ground		



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