

Heretical Unity gain line stage    Parts List    (2 Channels)

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Ref	PART NO.	DESCRIPTION	Package	Manufacturer	VENDOR	Price US\$	QTY	Total	
<b>LineStage PCB</b>									
<b>INPUT TRANSFORMER</b>									
T1,2	CMLI-15/15B	Line Input Transformer 1:1, 15Kohms I/O	R20,30 = 18K		Cinemaq	\$45.00	2	\$90.00	
Other Choice	JTP11-P1	Line Input Transformer 1:1, 13Kohms I/O	R20,30 = 15K		Jensen	\$79.00	0	\$0.00	
<b>SEMI-CONDUCTORS</b>									
U1		LM 317T, Adj. Volt Reg. Pos.	TO-220		Digikey	\$0.64	1	\$0.64	
U2		LM 337T, Adj. Volt Reg. Neg.	TO-220		Digikey	\$1.08	1	\$1.08	
U20,30		AD711, JFET Op-Amp	DIP-8		Newark	\$2.45	2	\$4.90	
D1-5		1N4007, Diode	DO-41		Digikey	\$0.05	5	\$0.25	
D20,30		1N4744A, Diode Zener, 15V, 1W	DO-41		Digikey	\$0.11	2	\$0.22	
LED1-3		Led, Red, 3MM HI-EFF DIFFUSED	T-1		Digikey	\$0.19	3	\$0.57	
LED2		Led, Green, 3MM HI-EFF DIFFUSED	T-1		Digikey	\$0.19	1	\$0.19	
V1	TUBEEH-64459	ECC88/6DJ8/6922, Dual Triode, Gold Pin	9 pins	ElectroHarmonix	PartsX	\$17.95	1	\$17.95	
Q1-4		Trans. 2N2222, NPN (or BC546)	TO-92		Digikey	\$0.33	4	\$1.32	
Q3,4	IRF510L-ND	Trans. IRF510, Mosfet	TO-220		Digikey	\$0.95	2	\$1.90	
Q20,30	89K0813	Trans. MJE340, VCE: 300V, NPN, TO-220	TO-220	SMTElect	Newark	\$0.33	2	\$0.66	
Q21,31	84K8811	Trans. MPSW42, NPN, VCE: 300	TO-92	ON	Newark	\$0.30	2	\$0.60	
<b>CAPACITORS</b>									
C1,2	505mkp20.1/100/5	Cap. 100nF, Wima MKP 100V	C3B5		Mouser	\$0.65	2	\$1.30	
C1-4,C25,35	38M4504	Cap.220uF, 35V, Rybicon ZL			Newark	\$0.15	6	\$0.90	
C7		Cap. 47uF, 25V, Nichicon			Local	\$0.00	1	\$0.00	
C8		Cap. 22uF, 25V, Nichicon			Local	\$0.00	1	\$0.00	
C20,30		Cap. 0.1uF, 160V, Film, MKP1837, Vishay	L10,W5		Diyaudio	\$0.76	2	\$1.52	
Other Choice	RELCAP-58800	Cap. 0.01uF, 200V, Teflon, RelCap	D.21" X L.53"		PartsX	\$25.45	0	\$0.00	
"	AURICAP- 68149	Cap. 0.01uF, 600V, Film, Auricap	D.36" X L.4"		PartsX	\$10.36	0	\$0.00	
"	MUNDORF- 70269	Cap. 0.01uF, 1200V, Silver Foil/Oil, Mundorf	D12 X L27		PartsX	\$23.20	0	\$0.00	
"	HOVLAND-51689	Cap. 0.01uF, 1600V, Film, Hovland	D.39 X L1.17		PartsX	\$10.75	0	\$0.00	
"	JENSEN-64482	Cap. 0.01uF, 630V, Copper Foil, Jensen	D.5" X L1.1"		PartsX	\$19.55	0	\$0.00	
C21,31		Cap. 0.68uF, 63V, Film, MKS3, Wima	L10,P7.5	Wima	Local	\$0.00	2	\$0.00	
Other Choice	MULTICAP-51413	Cap. 0.68uF, 200V, Film, MultiCap	L10,P7.5		PartsX	\$4.46	2	\$8.92	
C22,32	30K6778	Cap. 50uF, 250V, Film, (Axial)	D40XL55	ILC	Newark	\$24.66	2	\$49.32	
Other Choice	18C4646	Cap. 47uF, 200V, Electrolytic, (Axial)		Vishay	Newark	\$2.94	0	\$0.00	
C23,33	30K6756	Cap. 4.7uF, 400V, Film, (Axial)	D22XL46	ILC	Newark	\$4.31	2	\$8.62	
Other Choice	SOLEN-51550	Cap. 4.7uF, 400V, Film, (Axial)	D22XL33	Solen	PartsX	\$3.15	0	\$0.00	
C24,34		Cap. 1uF, 250V X2 MKP, Film, (Axial)	L30W18P28	Siemens	Local	\$0.00	2	\$0.00	
<b>RESISTORS - 1/4W, 1% (Otherwise Noted)</b>									
POT1		Pot. 100K, Stereo Log, Noble AP25		Noble	Percy	\$19.95	1	\$19.95	
POT2,3	3551P-501	Pot. 500R, 1T Lin.		Bourns	Local	\$0.00	1	\$0.00	
R1,2	1.0KXBK-ND	Res. 1K, 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R3,4	121XBK-ND	Res. 121R, 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R5,6	120W-5-ND	Res. 120R, 5W, 5%, WR	L24,D10	Yageo	Digikey	\$0.35	2	\$0.70	
R5a	P300W-2BK-ND	Res. 300R, 2W, 5%, MO	L12,D4	Panasonic	Digikey	\$0.29	1	\$0.29	
Other Choice	45F120-ND	Res. 120R, 5W, 1%, Silicone	L24,D10	Ohmite	Digikey	\$1.15	0	\$0.00	
R7,8	1.74KXBK-ND	Res. 1K74 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R9,10	562XBK-ND	Res. 562R, 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R11,14	4.75KXBK-ND	Res. 4K75 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R12,13	475KXBK-ND	Res. 475K, 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R20,30	15.0KXBK-ND	Res. 15K, 1/4W, 1%, MF, <b>see Note</b>	<b>RN55</b>	Yageo	Digikey	\$0.10	2	\$0.20	
R21,31,21a,31a	1.00MXBK-ND	Res. 1M, 1/4W, 1%, MF, MF25	<b>RN60</b>	Yageo	Digikey	\$0.10	4	\$0.39	
R22,32	100KXBK-ND	Res. 100K, 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R23,R33	1.00KXBK-ND	Res. 1K 1/4W, 1%, MF, MF25	<b>RN60</b>	Yageo	Digikey	\$0.10	2	\$0.20	
R24,34	221XBK-ND	Res. 221R, 1/4W, 1%, MF, MF25	<b>RN60</b>	Yageo	Digikey	\$0.10	2	\$0.20	
R25,35	100KXBK-ND	Res. 100K, 1/4W, 1%, MF, MF25	<b>RN60</b>	Yageo	Digikey	\$0.10	2	\$0.20	
R26,R36	8.2KW-1-ND	Res. 8K25, 1W, 5%, MO		Yageo	Digikey	\$0.15	2	\$0.30	
R27,29,37,39	15KW-1-ND	Res. 15K, 1W, 5%, MO		Yageo	Digikey	\$0.15	4	\$0.60	
R28,38	39KW-1-ND	Res. 39K, 1W, 5%, MO		Yageo	Digikey	\$0.15	2	\$0.30	
<b>HARDWARE &amp; MISC</b>									
	BER120-ND	HEATPAD TO-247 .009" SP600			Digikey	\$1.36	2	\$2.72	
	345-1030-ND	TO-220 Heatsinks, Vert, 7.5deg, with pin, Blk			Digikey	\$1.24	4	\$4.96	
<b>Power Supply</b>									
T1	VPS230-110	Transformer, Dual Prim, Sec: 120V, 022A		Triad	Digikey	\$13.70	1	\$13.70	
T2	229C34	Transformer, Dual Prim, Sec: 2X17V, .7A,24VA		Hammond	Newark	\$20.93	1	\$20.93	
EMI Filter		Re-used from supply				\$0.00	1	\$0.00	
D1-D8	77K9974	UF5408, Diode Soft Recovery, 3A,1000V	DO-201AD		Newark	\$0.32	8	\$2.56	
D9		1N4004, Diode Rectifier, 1A,400V	DO-41		Local	\$0.05	1	\$0.05	
C1-C4,C12,13		Cap. 0.1uF, 250V, X2 Rating				\$0.00	6	\$0.00	
C4-C8	505mkp20.1/100/5	Cap. 100nF, Wima MKP 100V	C3B5		Mouser	\$0.65	4	\$2.60	
C9		Cap. 470uF, 200V, Nichicon			Re-use	\$0.00	1	\$0.00	
C9a		Cap. 2.2uF, 250V, MKP, X2		Philips	Local	\$0.00	1	\$0.00	
C10,11		Cap. 3300uF, 35V, Nichicon CE	D30,P10,L25		Digikey	\$2.25	2	\$4.50	
C10a,11a		Cap. 1.5uF, 63V, MKP			Local	\$0.00	2	\$0.00	
R1	PPC470KW-1CT-ND	Res. 470K, 1W, 5%, MF		Vishay	Digikey	\$0.37	1	\$0.37	
R2,3	4.75KXBK-ND	Res. 4K75 1/4W, 1%, MF, MF25		Yageo	Digikey	\$0.10	2	\$0.20	
R4		Res. 10R, 3W, 5%, MO			Digikey	\$0.37	1	\$0.37	
Led1,2	67-1154-ND	Led, 3MM SUPER RED DIFF PANEL MT		Lumex Opto	Digikey	\$1.30	1	\$1.30	
RV1	S14K275E2	VARISTOR 275V RMS 14MM RADIAL	495-1430-ND		Digikey	\$0.68	1	\$0.68	
RLY1	G8P-1A4P-DC12	RELAY PC MNT SPST-NO 30A 12V,90ma	Z1008-ND	Omron	Digikey	\$3.14	1	\$3.14	
AC Input	Q210-ND	AC Input Conn.			Digikey	\$1.00	1	\$1.00	
S1	Power-On Switch	Switch SPDT			Local	\$0.00	1	\$0.00	
F1		Fuse, 1A, 250V, SB, 3AG			Local	\$0.00	1	\$0.00	
Fuse Socket		Fuse Socket 3AG			Local	\$0.00	1	\$0.00	