

WTX500 Service Manual



EDEN[®]
Bass Amplification

Part Number: 4031.006

NEVER COMPROMISE[™]

WTX500 Service Manual

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Section 1

System Overview

At 4.3 lb's (less than 2 Kg) the WTX500 is the true original lightweight bass amplifier. Not only is this little amp easy to transport, but with a maximum power output of 500W at 4Ω, this amplifier is more than capable of holding its own in a live band situation. So while the rest of the band struggles to set their gear up and drag flight cases in from the van, you can simply take the WTX500 out from your gig bag and either plug into a cabinet or use the DI output and go straight into the front of house!



1. Edén Logo - Illuminates to indicate that power is applied and the unit is switched on.
2. Gain - Controls the preamp level of your amplifier. Pull to activate the Pad circuit.
3. Set Level LED - Indicates when the auto-compressor would be active if not bypassed.
4. Enhance - Edén tailored EQ modifier, adjust this to shape your overall EQ. Pull to bypass the internal compressor circuit.
5. Bass - Use this control to select the amount of cut or boost you require in the low frequency range. Pull to engage the Bass Boost circuit to achieve added low end.
6. Mid - Use this control to select the amount of cut or boost you require in the low frequency range. Pull to select where the mid frequency range will be cut or boosted.
7. High - Use this control to select the amount of cut or boost you require in the low frequency range. Pull to move the DI send to the post EQ setting.
8. Limit LED - Indicates when the amplifier has reached its maximum output.
9. Master - Controls the overall level of your amplifier.
10. Input - Connect your instrument here.
11. Mute - Press to activate the mute circuit. The LED illuminates when the mute circuit is active.
12. Send - Take your signal for an external processor or effects chain here.
13. Return - Return your signal for an external processor or effects chain here.
14. Aux L - Input your left auxiliary input signal here.
15. Aux R - Input your right auxiliary input signal here.
16. Tuner - Connect your rack or pedal tuner here.

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Section 2 Specifications

Output Power: 500 watts @ 4 ohms (45vrms) 10% THD

Input: -44.5dB

Aux In: -19.5dB

Return: -25.5dB

Tuner Out: -43.5dB

Send: -25.5dB

Bandwidth: 35Hz - 20KHz (+/-3dB)

Phones Output: 100mv @ 8 ohms

Weight: 4.3lbs

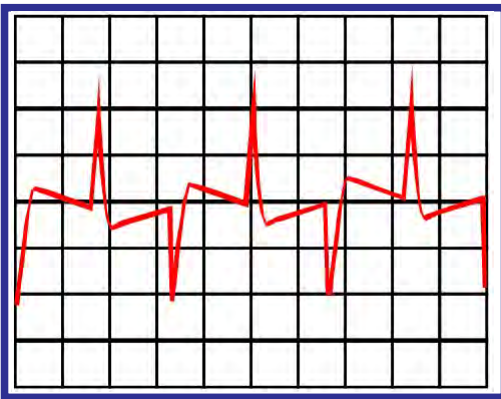
Dimensions: 8"W x 2.5"H x 9"D

Below Tests conditions: Input 1KHz Square wave, controls all centered except the control being tested.

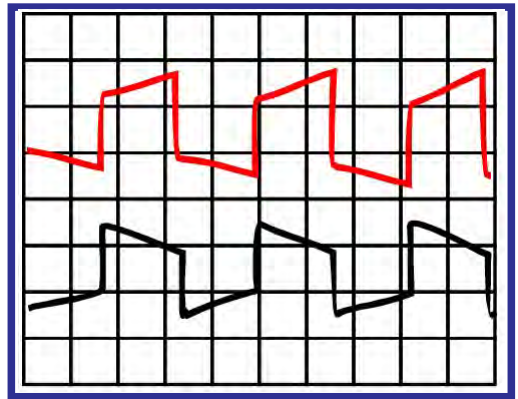
all controls centered



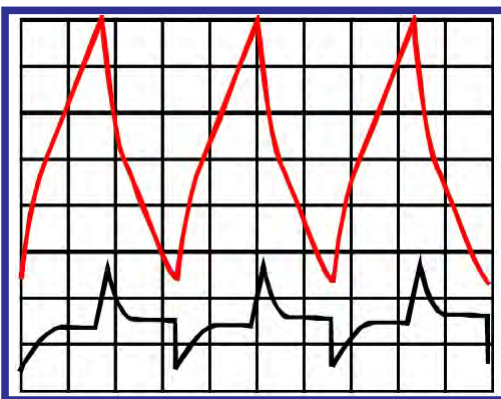
Enhance Control



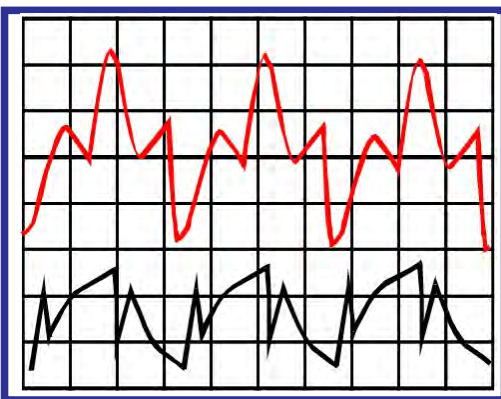
Bass, Low Control



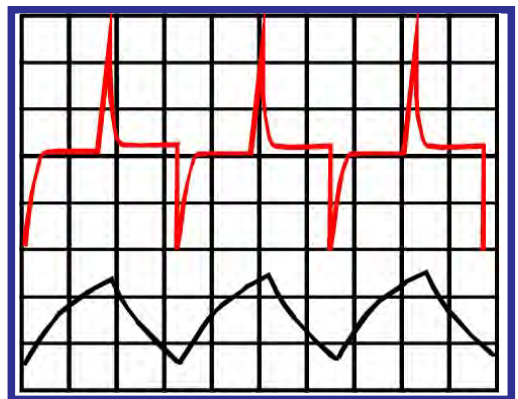
Mid Control [550Hz]



Mid Control [2.2KHz]

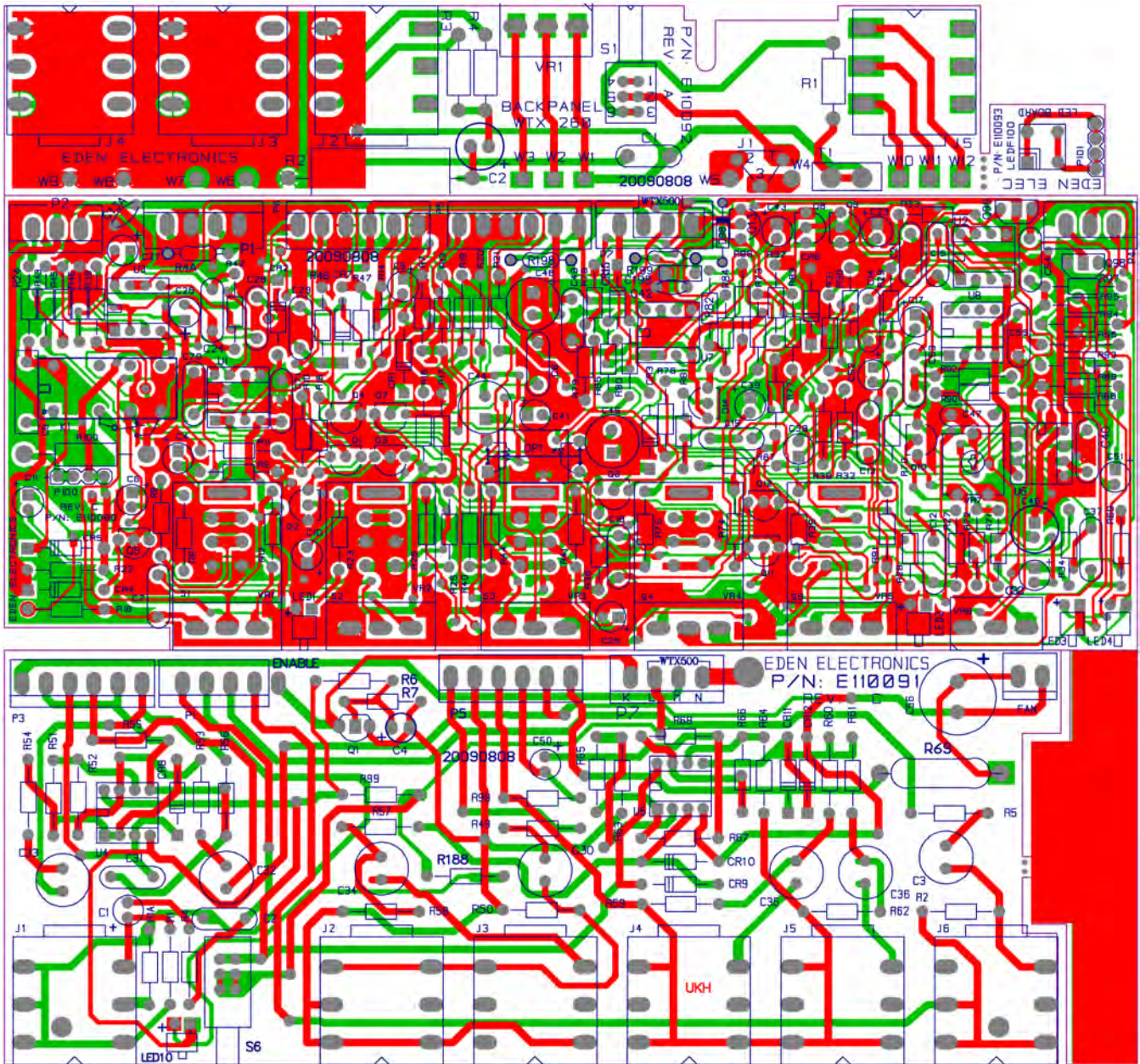


High Control



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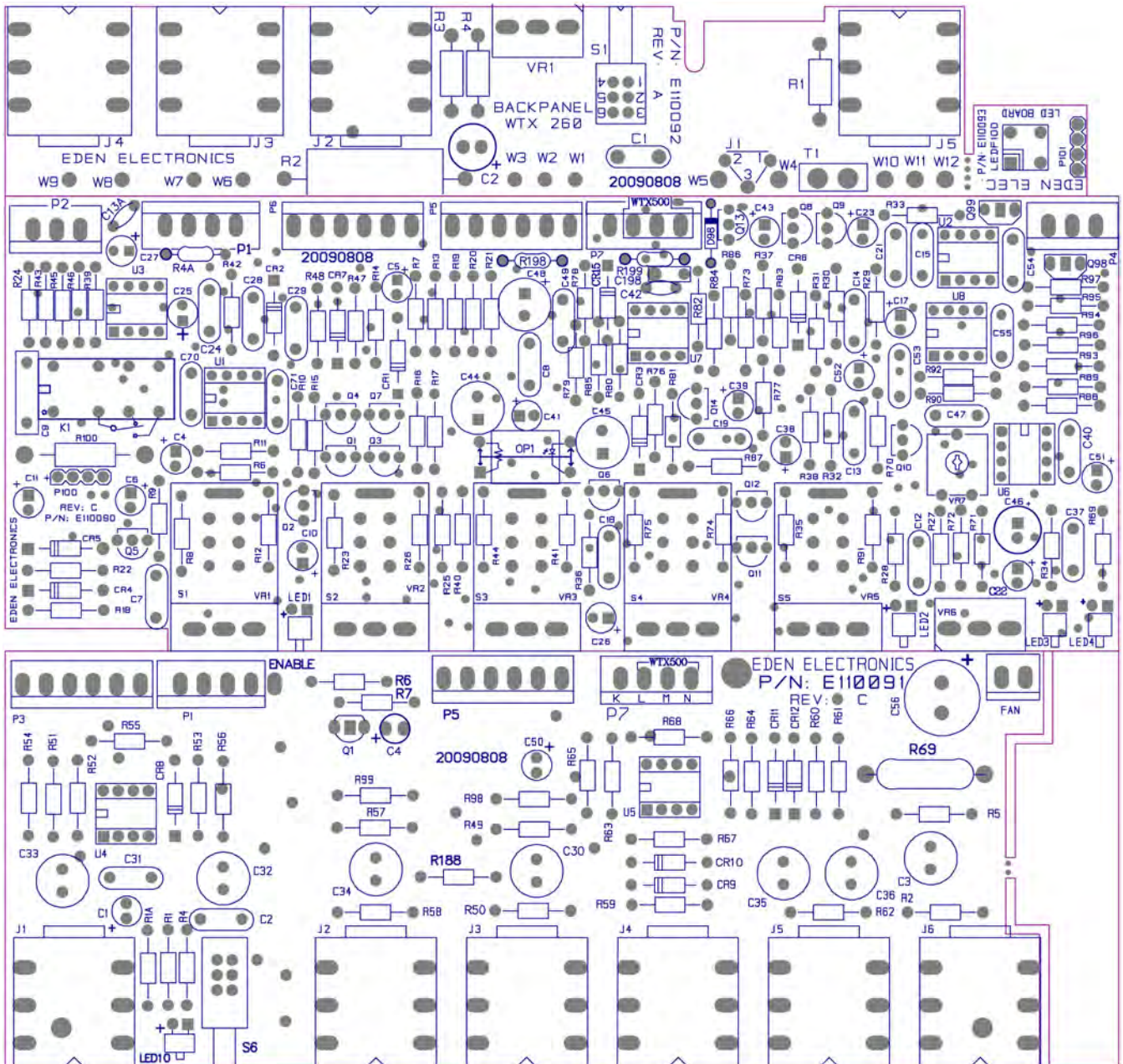
Section 4 Preamp PC Board Layout



WTX500-ALL LAYERS.

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Section 4 Preamp PC Board Layout



WTX500-TOP OVERLAY.

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PARTS LIST

Item #	Part no.	Material Name	Specifications	Qty	Unit	Remark
1	KITS-70022	Button	EG1195-ND	2	PCS	
2	ASSY-70034	Power Amp Module	ICEPOWER125ASX2	1	PCS	
3	1-01-000671	Resistor, Carbon Film	22Ω 1/4W ±5%	2	PCS	
4	KITS-70176	Capacitor, Ceramic	0.1UF 50V ±10%	4	PCS	
5	KITS-70216	IC, Voltage Regulator	NJM7815A TO-220F	1	PCS	
6	KITS-70217	IC, Voltage Regulator	NJM7915A TO-220F	1	PCS	
7	KITS-70485	AC Inlet	HF-301	1	PCS	
8	1-04-000490	Neutrik Jack, Speaker	HP-06-EP	1	PCS	
9	KITS-70293	Power Cord	EL202+EL701A VDE H05VV-F 0.75/3C 6FT BK	1	PCS	
10	KITS-70296	Power Cord	EL206+EL701A SAA H05VV-F 0.75/3C 6FT BK	1	PCS	
11	KITS-70299	Power Cord	EL210+EL701A UK H05VV-F 0.75/3C 6FT BK	1	PCS	
12	KITS-70303	Power Cord	EL302+EL701A SVT 18AWG/3C 6FT BK	1	PCS	
13	KITS-70490	Power Cord	EL406+EL701A VCTF 0.75/3C 6FT BK	1	PCS	
14	1-07-000054	Switch, Power	RF-1003-BRG3E2X1T 4 Pin	1	PCS	
15	1-11-000021	Fan	DC24V 0.12A XH 1007 22A 300MM	1	PCS	60x60x15mm
16	1-11-000022	Fan Cover, Chrome	60*60mm	1	PCS	
17	1-12-000789	Chassis	WTX500-2 LED	1	PCS	
18	1-12-000790	Top Cover	WTX500-3 028	1	PCS	
19	KITS-70346	Screw, Machine	M3*10	2	PCS	
20	KITS-70352	Nut	M4	2	PCS	
21	KITS-70356	Washer, Tooth	4φ	2	PCS	
22	KITS-70357	Screw, Machine English	6#*8BM	10	PCS	
23	KITS-70363	Screw, English	6#*3	4	PCS	
24	KITS-70365	Screw, Tapping English	3.5*9BM	2	PCS	Used to mount the XLR jack.
25	KITS-70381	Screw, Machine English	4#*8BM	4	PCS	
26	KITS-70384	Screw, English	4#*3	4	PCS	
27	KITS-70387	Screw, Machine English	4#*8FM	6	PCS	
28	KITS-70389	Screw, Tapping English	3.2#*12.5FA	2	PCS	
29	1-16-000461	Screw, Machine English	6*25BM	4	PCS	
30	1-17-000497	Shield	WTX500-4	1	PCS	
31	KITS-70404	Rubber Feet	SF-006 3M	4	PCS	
32	KITS-70405	Knob	RKN-42	7	PCS	
33	1-24-000066	Plexiglass logo	WT-3 EDEN 14mm, 22*22mm	1	PCS	
34	KITS-70457	Cable Ties	3*100mm	20	PCS	
35	ASSY-70016	PC Board, Rear Panel	E110092	1	PCS	
36	KITS-70002	Potentiometer	RA16N1-W10K-L15KC/DCS/41PC/NS/GN	1	PCS	VR1 DI Output Level
37	1-01-000514	Resistor, Power	270Ω 5 Watt ±5%	1	PCS	R2
38	KITS-70045	Resistor, Carbon Film	0Ω 1/4 Watt ±5%	1	PCS	R1
39	1-01-001517	Resistor, Carbon Film	56Ω 1/2 Watt ±5%	2	PCS	R3,4
40	KITS-70164	Capacitor, Electrolytic	100uF 35vdc ±20% 8φ*11mm	1	PCS	C2

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Item #	Part no.	Material Name	Specifications	Qty	Unit	Remark
41	KITS-70186	Capacitor, Ceramic	0.01uF 1Kvdc +80/-20%	1	PCS	C1
42	1-04-000151	Jack, XLR	DY-04 90°/CT3-06M-EP	1	PCS	J1
43	KITS-70290	Jack, 1/4"	P/6180 LJB0661-G06/K6J50-AA-6-G	4	PCS	J2,3,4,5 Spkr Outs, Phones, Footswitch
44	KITS-70321	Switch, Push	KAN2-Z2	1	PCS	S1
45	ASSY-70022	PC Board, Upper Preamp	E110090 WTX500	1	PCS	
46	KITS-70024	Opto-Coupler	LCR0203-A	1	PCS	OP1
47	KITS-70003	Potentiometer	RA16N1-W100K-L15KC/41PC/NS/DCS/GN	1	PCS	VR6 Master
48	KITS-70051	Resistor, Carbon Film	150Ω 1/4 Watt ±5%	2	PCS	R7,70
49	KITS-70056	Resistor, Carbon Film	680Ω 1/4 Watt ±5%	1	PCS	R24
50	KITS-70058	Resistor, Carbon Film	1KΩ 1/4 Watt ±5%	6	PCS	R16,17,37,38,85,86
51	1-01-000706	Resistor, Carbon Film	2.4KΩ 1/4 Watt ±5%	1	PCS	R36
52	KITS-70064	Resistor, Carbon Film	2.7KΩ 1/4 Watt ±5%	2	PCS	R13,87
53	KITS-70065	Resistor, Carbon Film	3.3KΩ 1/4 Watt ±5%	6	PCS	R15,23,46,74,77,83
54	KITS-70070	Resistor, Carbon Film	6.8KΩ 1/4 Watt ±5%	1	PCS	R45
55	KITS-70071	Resistor, Carbon Film	8.2KΩ 1/4 Watt ±5%	4	PCS	R35,79,80,90
56	KITS-70072	Resistor, Carbon Film	10KΩ 1/4 Watt ±5%	7	PCS	R12,18,19,20,41,78,R199
57	KITS-70073	Resistor, Carbon Film	12KΩ 1/4 Watt ±5%	6	PCS	R42,82,84,88,96,97
58	KITS-70075	Resistor, Carbon Film	15KΩ 1/4 Watt ±5%	3	PCS	R32,34,47
59	KITS-70076	Resistor, Carbon Film	18KΩ 1/4 Watt ±5%	4	PCS	R26,28,69,73
60	KITS-70078	Resistor, Carbon Film	22KΩ 1/4 Watt ±5%	4	PCS	R39,40,93,92
61	KITS-70080	Resistor, Carbon Film	27KΩ 1/4 Watt ±5%	2	PCS	R27,29
62	KITS-70081	Resistor, Carbon Film	33KΩ 1/4 Watt ±5%	1	PCS	R8
63	KITS-70083	Resistor, Carbon Film	47KΩ 1/4 Watt ±5%	3	PCS	R43,94,95
64	1-01-000736	Resistor, Carbon Film	51KΩ 1/4 Watt ±5%	1	PCS	R89
65	KITS-70084	Resistor, Carbon Film	56KΩ 1/4 Watt ±5%	1	PCS	R33
66	KITS-70085	Resistor, Carbon Film	68KΩ 1/4 Watt ±5%	2	PCS	R25,31
67	KITS-70087	Resistor, Carbon Film	100KΩ 1/4 Watt ±5%	7	PCS	R6,21,22,30,76,81,R198
68	KITS-70090	Resistor, Carbon Film	180KΩ 1/4 Watt ±5%	1	PCS	R48
69	KITS-70092	Resistor, Carbon Film	220KΩ 1/4 Watt ±5%	1	PCS	R91
70	KITS-70093	Resistor, Carbon Film	330KΩ 1/4 Watt ±5%	2	PCS	R14,75
71	KITS-70094	Resistor, Carbon Film	390KΩ 1/4 Watt ±5%	1	PCS	R44
72	KITS-70097	Resistor, Carbon Film	1MegΩ 1/4 Watt ±5%	5	PCS	R4A,10,11,71,72
73	KITS-70105	Resistor, Carbon Film	3.9KΩ 1/2 Watt ±5%	1	PCS	R100
74	1-01-001025	Resistor, Carbon Film	11KΩ 1/4 Watt ±5%	1	PCS	R9
75	KITS-70129	Potentiometer	RA16S5-W100K-15KC/NS/GN	4	PCS	VR1,2,3,5 Gain, Enhance, Bass, Treble
76	KITS-70138	Trim Pot	TG805SC-B25K/GN	1	PCS	VR7
77	KITS-70144	Potentiometer	RA16S5-W10K-15KC/NS/GN	1	PCS	VR4 Middle
78	KITS-70158	Capacitor, Electrolytic NP	10uF 100vdc ±20% 8Φ*12mm	2	PCS	C44,45
79	KITS-70164	Capacitor, Electrolytic	100uF 35vdc ±20% 8Φ*11mm	2	PCS	C48,46

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Item #	Part no.	Material Name	Specifications	Qty	Unit	Remark
80	KITS-70166	Capacitor, Electrolytic	0.47uF 50vdc ±20% 5φ*11mm	2	PCS	C25,26
81	KITS-70167	Capacitor, Electrolytic	1uF 50vdc ±20% 5φ*11mm	2	PCS	C17,27
82	KITS-70168	Capacitor, Electrolytic	2.2uF 50vdc ±20% 5φ*11mm	6	PCS	C4,5,6,11,38,39
83	KITS-70169	Capacitor, Electrolytic	3.3uF 50vdc ±20% 5φ*11mm	1	PCS	C51
84	KITS-70170	Capacitor, Electrolytic	4.7uF 50vdc ±20% 5φ*11mm	2	PCS	C22,52
85	KITS-70179	Capacitor, Polyester Film	0.0022uF 100vdc ±5%	1	PCS	C19
86	KITS-70186	Capacitor, Ceramic	0.01uF 1Kvdc +80/-20%	3	PCS	C8,70,71
87	KITS-70188	Capacitor, Ceramic	47pF 1Kvdc ±10%	2	PCS	C24,53
88	KITS-70189	Capacitor, Ceramic	100pF 1Kvdc ±10%	1	PCS	C21
89	KITS-70190	Capacitor, Ceramic	150pF 1Kvdc ±10%	1	PCS	C15
90	KITS-70196	Capacitor, Metalized Film	0.1uF 250vdc ±10% P=10 MER	1	PCS	C9
91	KITS-70197	Capacitor, Polyester Film	0.027uF 100vdc ±10%	1	PCS	C18
92	1-02-000501	Capacitor, Ceramic	33pF 1Kvdc ±10%	1	PCS	C7
93	KITS-70200	Capacitor, Electrolytic	10uF 100vdc ±20% 6φ*11mm	4	PCS	C10,23,41,43
94	KITS-70201	Capacitor, Ceramic	820pF 1Kvdc ±10%	1	PCS	C13A
95	KITS-70202	Capacitor, Polyester Film	0.0047uF 100vdc ±5%	2	PCS	C12,55
96	KITS-70203	Capacitor, Polyester Film	0.01uF 100vdc ±5%	1	PCS	C54
97	KITS-70204	Capacitor, Polyester Film	0.022uF 100vdc ±5%	1	PCS	C13
98	KITS-70205	Capacitor, Polyester Film	0.1uF 100vdc ±5%	4	PCS	C28,29,47,49
99	KITS-70210	Capacitor, Metalized Film	0.01uF 100vdc ±5%	1	PCS	C198
100	1-02-000599	Capacitor, Ceramic	0.01uF 50vdc +80/-20%	1	PCS	C42
101	1-02-000731	Capacitor, Ceramic	0.0022uF 1Kvdc ±20%	1	PCS	C14
102	KITS-70213	Capacitor, Ceramic	68pF 1Kvdc ±10%	2	PCS	C37,40
103	KITS-70215	IC	NJM072D	5	PCS	U2,3,6,7,8
104	KITS-70219	LED, Square	LT6U13-AH-Uec1 5φ	1	PCS	LEDF100
105	KITS-70223	LED	3φ LT1U74-43-M18-S05 /3R4S1TR702	1	PCS	LED2
106	KITS-70224	LED	3φ LT1US4-43-S06	1	PCS	LED1
107	KITS-70225	FET	J112	3	PCS	Q1,5,10
108	KITS-70236	Diode	1N4004	1	PCS	CR5
109	KITS-70238	Diode	1N4148	8	PCS	CR1,2,3,4,6,7,15,D98
110	KITS-70244	Transistor	MPSA56 TO-92	8	PCS	Q2,3,4,8,9,11,12,13
111	KITS-70245	Transistor	MPSA06 TO-92	2	PCS	Q7,14
112	KITS-70247	FET	J174 TO-92	3	PCS	Q6,98,99
113	KITS-70255	IC	OPA2604AP	1	PCS	U1
114	KITS-70260	Socket, IC	8 Pin / Dip	6	PCS	U1,2,3,6,7,8
115	KITS-70324	Relay	DSY2Y-S-224L/G5V-2-24VDC/RS-24L	1	PCS	K1
116	ASSY-70023	PC Board, Lower Preamp	E110091 WTX500	1	PCS	
117	1-01-000096	Resistor, Power	270Ω 2 Watt ±5%	1	PCS	R69
118	KITS-70056	Resistor, Carbon Film	680Ω 1/4 Watt ±5%	2	PCS	R53,54

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PARTS LIST

Item #	Part no.	Material Name	Specifications	Qty	Unit	Remark
119	KITS-70058	Resistor, Carbon Film	1K Ω 1/4 Watt \pm 5%	2	PCS	R5,49
120	KITS-70065	Resistor, Carbon Film	3.3K Ω 1/4 Watt \pm 5%	2	PCS	R1A,R4
121	KITS-70070	Resistor, Carbon Film	6.8K Ω 1/4 Watt \pm 5%	1	PCS	R188
122	KITS-70072	Resistor, Carbon Film	10K Ω 1/4 Watt \pm 5%	6	PCS	R63,64,65,66,67,68
123	KITS-70073	Resistor, Carbon Film	12K Ω 1/4 Watt \pm 5%	2	PCS	R51,52
124	KITS-70078	Resistor, Carbon Film	22K Ω 1/4 Watt \pm 5%	2	PCS	R6,57
125	KITS-70083	Resistor, Carbon Film	47K Ω 1/4 Watt \pm 5%	3	PCS	R7,60,61
126	KITS-70087	Resistor, Carbon Film	100K Ω 1/4 Watt \pm 5%	2	PCS	R55,56
127	KITS-70097	Resistor, Carbon Film	1Meg Ω 1/4 Watt \pm 5%	7	PCS	R1,2,50,58,59,62,98
128	1-01-000766	Resistor, Carbon Film	3.3Meg Ω 1/4 Watt \pm 5%	1	PCS	R99
129	KITS-70158	Capacitor, Electrolytic NP	10uF 100vdc \pm 20% 8 ϕ *12mm	7	PCS	C3,30,32,33,34,35,36
130	KITS-70160	Capacitor, Electrolytic	47uF 25vdc \pm 20% 5 ϕ *11mm	1	PCS	C4
131	KITS-70165	Capacitor, Electrolytic	1000uF 35vdc \pm 20% 13 ϕ *21mm	1	PCS	C56
132	KITS-70168	Capacitor, Electrolytic	2.2uF 50vdc \pm 20% 5 ϕ *11mm	1	PCS	C1
133	KITS-70169	Capacitor, Electrolytic	3.3uF 50vdc \pm 20% 5 ϕ *11mm	1	PCS	C50
134	KITS-70187	Capacitor, Ceramic	22pF 1Kvdc \pm 10%	1	PCS	C31
135	KITS-70191	Capacitor, Ceramic	470pF 1Kvdc \pm 10%	1	PCS	C2
136	KITS-70215	IC	NJM072D	2	PCS	U4,5
137	KITS-70223	LED	3 ϕ LT1U74-43-M18-S05 /3R4S1TR702	1	PCS	LED10
138	KITS-70238	Diode	1N4148	5	PCS	CR8,9,10,11,12
139	KITS-70247	FET	J174 TO-92	1	PCS	Q1
140	KITS-70260	Socket, IC	8 Pin / Dip	2	PCS	U4,5
141	KITS-70290	Jack, 1/4"	P/6180 /LJB0661-G06/K6J50-AA-6-G	6	PCS	J1,2,3,4,5,6
142	KITS-70321	Switch, Push	KAN2-Z2	1	PCS	S6