

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 ES31 - Stereo Output Module Full Kit

Item	Description	Qty	Designator	Package
	HARDWARE			
1	M3 Thumbscrew	4		-
			NB: Construct-A-Rack	
2	M3 x 6mm Bolt PH	4		-
			NB: Doefper Compatible Rails	
	PANEL			
3	ES31 - Stereo Output Front Panel A	1		-
	KITS			
4	ES31 - Stereo Output Module PCB Set V0.0	1		-
5	ES30 - Stereo Panner Mixer PCB Set V0.0	1		-
6	ES30 - Stereo Panner Mixer Hardware Kit V0.0	1		-
7	ES30 - Stereo Panner Mixer Component Kit V0.0	1		-
8	ES31 - Stereo Output Module Hardware Kit V0.0	1		-
9	ES31 - Stereo Output Module Component Kit V0.0	1		-

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Column 1 Column 1

Item	Description	Qty	Designator	Package
CAPACITOR				
1	100nF Ceramic	2	C201, C202	RAD-0.2N
CONNECTOR				
2	IDC16 RA Box Header	1	J201	2.54MM
3	1x4 Pin 9mm Header	1	J102	2.54MM
4	1x4 Pin 16mm Header	1	J202	-
5	8-pin IC Socket 0.3inch	3	Q1, Q2, Q3	DIP-8
6	14-pin IC Socket 0.3inch	1	U101	DIP-14
DIODE				
7	1N4148	1	D101	DIODE-0.3
HARDWARE				
8	9mm Earth Tag	1	PANEL_GND	-
LINEAR				
9	LM3900 - Quad Norton Amplifier	1	U101	DIP-14
POTENTIOMETER				
10	50KB LIN - 18T Spline	3	P101, P102, P105	ALPHA 16MM
RESISTOR				
11	1M87	1	R104	0805
12	5K11 1% 0.5W Metal Film	4	R110, R112, R116, R118	AXIAL-0.4
13	16K2 1% 0.5W Metal Film	1	R123	AXIAL-0.4
14	33K 1% 0.5W Metal Film	1	R124	AXIAL-0.4
			NB: Fit across J102	
15	37K4 1% 0.5W Metal Film	2	R107, R113	AXIAL-0.4
16	57K6 1% 0.5W Metal Film	2	R109, R115	AXIAL-0.4
17	63K4 1% 0.5W Metal Film	1	R108	AXIAL-0.4
18	200K 1% 0.5W Metal Film	2	R119, R121	AXIAL-0.4
19	240K 1% 0.5W Metal Film	2	R120, R122	AXIAL-0.4

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Column 1 Column 1

Item	Description	Qty	Designator	Package
	RESISTOR - continued			
20	402K 1% 0.5W Metal Film	1	R103	AXIAL-0.4
21	470K 1% 0.5W Metal Film	2	R111, R117	AXIAL-0.4
22	806K 1% 0.5W Metal Film	1	R102	AXIAL-0.4
23	1M5 1% 0.5W Metal Film	1	R106	AXIAL-0.4
24	10M 1% 0.5W Metal Film	3	R101, R105, R114	AXIAL-0.4
	TRIMPOT			
25	50K 25TH Cermet	2	P103, P104	T93XA
	UNITS			
26	Matched PNP [DS] Assembly	3	Q1, Q2, Q3	-

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Column 2 Column 2

Item	Description	Qty	Designator	Package
CAPACITOR				
1	100nF Ceramic	2	C201, C202	RAD-0.2N
CONNECTOR				
2	IDC16 RA Box Header	1	J201	2.54MM
3	1x4 Pin 9mm Header	1	J102	2.54MM
4	1x4 Pin 16mm Header	1	J202	-
5	8-pin IC Socket 0.3inch	3	Q1, Q2, Q3	DIP-8
6	14-pin IC Socket 0.3inch	1	U101	DIP-14
DIODE				
7	1N4148	1	D101	DIODE-0.3
LINEAR				
8	LM3900 - Quad Norton Amplifier	1	U101	DIP-14
POTENTIOMETER				
9	50KB LIN - 18T Spline	3	P101, P102, P105	ALPHA 16MM
RESISTOR				
10	1M87	1	R104	0805
11	5K11 1% 0.5W Metal Film	4	R110, R112, R116, R118	AXIAL-0.4
12	16K2 1% 0.5W Metal Film	1	R123	AXIAL-0.4
13	33K 1% 0.5W Metal Film	1	R124	AXIAL-0.4
			NB: Fit across J102	
14	37K4 1% 0.5W Metal Film	2	R107, R113	AXIAL-0.4
15	57K6 1% 0.5W Metal Film	2	R109, R115	AXIAL-0.4
16	63K4 1% 0.5W Metal Film	1	R108	AXIAL-0.4
17	200K 1% 0.5W Metal Film	2	R119, R121	AXIAL-0.4
18	240K 1% 0.5W Metal Film	2	R120, R122	AXIAL-0.4
19	402K 1% 0.5W Metal Film	1	R103	AXIAL-0.4
20	470K 1% 0.5W Metal Film	2	R111, R117	AXIAL-0.4
21	806K 1% 0.5W Metal Film	1	R102	AXIAL-0.4

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Column 2 Column 2

Item	Description	Qty	Designator	Package
	RESISTOR - continued			
22	1M5 1% 0.5W Metal Film	1	R106	AXIAL-0.4
23	10M 1% 0.5W Metal Film	3	R101, R105, R114	AXIAL-0.4
	TRIMPOT			
24	50K 25TH Cermet	2	P103, P104	T93XA
	UNITS			
25	Matched PNP [DS] Assembly	3	Q1, Q2, Q3	-

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Main Main

Item	Description	Qty	Designator	Package
CAPACITOR				
1	82pF 5% Ceramic	4	C103, C106, C203, C206	RAD-0.2N
2	33nF 63V Polyester	4	C102, C105, C202, C205	RAD-0.2
3	100nF Ceramic	6	C303, C304, C305, C306, C307, C308	RAD-0.2N
4	330nF 63V Polyester	4	C101, C104, C201, C204	RAD-0.2
5	10uF 35V Electrolytic	2	C301, C302	RB-D5.0-P2.0
CONNECTOR				
6	IDC16 Receptacle	2	J102, J201	-
7	IDC16 Box Header	2	J101, J202	2.54MM
8	8-pin IC Socket 0.3inch	2	U102, U202	DIP-8
9	14-pin IC Socket 0.3inch	1	U102	DIP-14
10	16-pin IC Socket 0.3inch	2	U101, U201	DIP-16
LINEAR				
11	TL074 Quad JFET Opamp	1	U102	DIP-14
12	LM13700 - Dual OTA	2	U101, U201	DIP-16
INDUCTOR				
13	Ferrite Bead - 0.45uH 7A	2	L301, L302	AXIAL-0.3
RESISTOR				
14	330R 1% 0.5W Metal Film	2	R207, R214	AXIAL-0.4
15	22K 1% 0.5W Metal Film	8	R102, R104, R108, R110, R202, R204, R209, R211	AXIAL-0.4
16	47K5 1% 0.5W Metal Film	4	R101, R107, R201, R208	AXIAL-0.4
17	68K 1% 0.5W Metal Film	8	R105, R106, R111, R112, R205, R206, R212, R213	AXIAL-0.4
18	10M 1% 0.5W Metal Film	4	R103, R109, R203, R210	AXIAL-0.4
TRIMPOT				
19	2K 25TV Cermet	4	P101, P102, P201, P202	T93YA

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Main Main

Item	Description	Qty	Designator	Package
CAPACITOR				
1	47pF 5% Ceramic	8	C201, C203, C301, C303, C401, C403, C501, C503	RAD-0.2N
2	100nF Ceramic	8	C603, C604, C605, C606, C607, C608, C609, C610	RAD-0.2N
3	10uF 35V Electrolytic	2	C601, C602	RB-D5.0-P2.0
4	10uF Bipolar Electrolytic	8	C202, C204, C302, C304, C402, C404, C502, C504	RB-D6.3-P2.5
CONNECTOR				
5	1x4 Pin 9mm Header	1	J203	2.54MM
6	IDC16 Box Header	2	J102, J601	2.54MM
7	8-pin IC Socket 0.3inch	4	U201, U301, U401, U501	DIP-8
8	3-way 0.1inch Straight Header	2	J401, J501	2.54MM
9	3-way 0.1inch Crimp Housing	2	J401, J501	2.54MM
LINEAR				
10	TL072 Dual JFET Opamp	2	U201, U301	DIP-8
11	OPA2134 - Opamp	2	U401, U501	DIP-8
INDUCTOR				
12	Ferrite Bead - 0.45uH 7A	2	L601, L602	AXIAL-0.3
POTENTIOMETER				
13	100KB LIN - 18T Spline	1	P101	ALPHA 16MM
RESISTOR				
14	100R 1% 0.5W Metal Film	6	R208, R308, R405, R409, R505, R509	AXIAL-0.4
15	20K 1% 0.5W Metal Film	20	R201, R202, R203, R205, R206, R301, R302, R303, R305, R306, R401, R402, R403, R406, R407, R501, R502, R503, R506, R507	AXIAL-0.4
16	100K 1% 0.5W Metal Film	8	R204, R207, R304, R307, R404, R408, R504, R508	AXIAL-0.4
UNITS				
17	Panther - IDC16 - 14cm	1	J102	-
18	Panther - IDC16 - 24cm	1	J601	-

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 - Output Board Output Board

Item	Description	Qty	Designator	Package
CAPACITOR				
1	1nF 5% C0G Ceramic,	1	C2	RAD-0.2N
2	100nF Ceramic	1	C1	RAD-0.2N
CONNECTOR				
3	FASTON 6.3mm x 0.8mm PCB TAB	1	J4	-
4	1x3 Pin 9mm Header	1	JP1	2.54MM
RESISTOR				
5	100R 1% 0.5W Metal Film	1	R1	AXIAL-0.4

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 ES31 - Stereo Output Module Hardware Kit

Item	Description	Qty	Designator	Package
	CONNECTOR			
1	3.5mm Mono PCB Socket - White	2	J202, J204	-
2	3.5mm Mono PCB Socket - Blue	1	J101	-
3	6.35mm Stereo Socket Switched - Insulated, VPC	2	J401, J501	-
4	3.5mm Mono PCB Socket - Black	2	J201, J203	-
	HARDWARE			
5	KNOB - Panther Hi-contrast Blue	1	P101	18T SPLINE

Bill of Materials for ES31 - Stereo Output Module Full Kit V0.0 ES30 - Stereo Panner Mixer PCB Set

Item	Description	Qty	Designator	Package
	PCB			
1	ES30 - Stereo Panner Mixer Set PCB V0.0	1		-
2	Panther Carrier PCB V1	4		-
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