

Bill of Materials for ES24 - Programmer Extension [4mm] Full Kit V0.0

Item	Description	Qty	Designator	Package
	<b>HARDWARE</b>			
1	M3 Thumbscrew	4		-
			NB: Construct-A-Rack	
2	M3 x 6mm Bolt PH	4		-
			NB: Doefper Compatible Rails	
	<b>PANEL</b>			
3	ES24 - Programmer Extension Front Panel A	1		-
	<b>KITS</b>			
4	ES24 - Programmer Extension [4mm] Hardware Kit V0.0	1		-
5	ES24 - Programmer Extension PCB Set V0.0	1		-
6	ES24 - Programmer Extension Component Kit V0.0	1		-

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage 1

Item	Description	Qty	Designator	Package
<b>CAPACITOR</b>				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
<b>CONNECTOR</b>				
4	IDC20 RA Box Header	1	J201	-
5	1x2 Pin 20mm Header	1	D103	2.54MM
<b>DIODE</b>				
6	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
<b>OPTO-ELECTRONIC</b>				
7	3mm Yellow LED	1	D103	2MA
<b>POTENTIOMETER</b>				
8	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
<b>RESISTOR</b>				
9	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
10	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
11	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
12	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
13	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
14	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
15	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
16	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
17	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
<b>TRANSISTOR</b>				
18	BC557B PNP Transistor	3	Q101, Q102, Q103	TO-92
19	BC547B NPN Transistor	1	Q104	TO-92

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage2

Item	Description	Qty	Designator	Package
<b>CAPACITOR</b>				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
<b>CONNECTOR</b>				
4	IDC20 RA Box Header	1	J201	-
5	1x2 Pin 20mm Header	1	D103	2.54MM
<b>DIODE</b>				
6	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
<b>OPTO-ELECTRONIC</b>				
7	3mm Yellow LED	1	D103	2MA
<b>POTENTIOMETER</b>				
8	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
<b>RESISTOR</b>				
9	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
10	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
11	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
12	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
13	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
14	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
15	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
16	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
17	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
<b>TRANSISTOR</b>				
18	BC557B PNP Transistor	3	Q101, Q102, Q103	TO-92
19	BC547B NPN Transistor	1	Q104	TO-92

Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage3

Item	Description	Qty	Designator	Package
<b>CAPACITOR</b>				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
<b>CONNECTOR</b>				
4	IDC20 RA Box Header	1	J210	-
5	1x2 Pin 20mm Header	1	D103	2.54MM
<b>DIODE</b>				
6	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
<b>HARDWARE</b>				
7	9mm Earth Tag	1	P101	-
<b>OPTO-ELECTRONIC</b>				
8	3mm Yellow LED	1	D103	2MA
<b>POTENTIOMETER</b>				
9	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
<b>RESISTOR</b>				
10	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
11	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
12	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
13	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
14	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
15	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
16	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
17	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
18	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4



Bill of Materials for ES24 - Programmer Extension Component Kit V0.0 - Stage 4

Item	Description	Qty	Designator	Package
<b>CAPACITOR</b>				
1	470pF 5% C0G	1	C101	RAD-0.2N
2	10nF 63V Polyester	1	C102	RAD-0.2
3	22nF 63V Polyester	1	C103	RAD-0.2
<b>CONNECTOR</b>				
4	IDC20 RA Box Header	1	J201	-
5	1x2 Pin 20mm Header	1	D103	2.54MM
<b>DIODE</b>				
6	1N4148	5	D101, D102, D104, D105, D106	DIODE-0.3
<b>OPTO-ELECTRONIC</b>				
7	3mm Yellow LED	1	D103	2MA
<b>POTENTIOMETER</b>				
8	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM
<b>RESISTOR</b>				
9	1K0 1% 0.5W Metal Film	1	R112	AXIAL-0.4
10	1K2 1% 0.5W Metal Film	1	R110	AXIAL-0.4
11	1K3 1% 0.5W Metal Film	1	R111	AXIAL-0.4
12	47K 1% 0.5W Metal Film	3	R101, R102, R109	AXIAL-0.4
13	100K 1% 0.5W Metal Film	1	R104	AXIAL-0.4
14	150K 1% 0.5W Metal Film	3	R105, R106, R108	AXIAL-0.4
15	220K 1% 0.5W Metal Film	3	R113, R114, R115	AXIAL-0.4
16	470K 1% 0.5W Metal Film	1	R107	AXIAL-0.4
17	1M0 1% 0.5W Metal Film	1	R103	AXIAL-0.4
<b>TRANSISTOR</b>				
18	BC557B PNP Transistor	3	Q101, Q102, Q103	TO-92
19	BC547B NPN Transistor	1	Q104	TO-92









Item	Description	Qty	Designator	Package
	<b>CONNECTOR</b>			
1	4mm PCB Socket c/w Nut - Yellow	1	J103	-
2	4mm PCB Socket c/w Nut - Red	1	J101	-
	<b>OPTO-ELECTRONIC</b>			
3	3mm Clear Lens Mount	1	D103	-
	<b>POTENTIOMETER</b>			
4	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM

Bill of Materials for ES24 - Programmer Extension [4mm] Hardware Kit V0.0 - Column 4

Item	Description	Qty	Designator	Package
<b>CONNECTOR</b>				
1	4mm PCB Socket c/w Nut - Yellow	1	J102	-
2	4mm PCB Socket c/w Nut - Red	1	J101	-
<b>OPTO-ELECTRONIC</b>				
3	3mm Clear Lens Mount	1	D103	-
<b>POTENTIOMETER</b>				
4	100KB LIN - 18T Spline	3	P101, P102, P103	ALPHA 16MM

Bill of Materials for ES24 - Programmer Extension PCB Set V0.0

Item	Description	Qty	Designator	Package
	<b>PCB</b>			
1	ES24 - Programmer Extension BackBoard PCB V0.0	1		-
2	Panther LED Carrier PCB V0.0	4		-
3	ES24 - Programmer Extension Stage PCB V0.2	4		-
4	Panther Carrier PCB V1A	8		-
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