Roll Your Own 3xVCA 1.0 BOM

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Qty	Value	Parts	Comment
1	5x2 pin	POWER	
2	6 pin	CON1, CON2	90 degree angled
1	3.3k	R3	1/4W
2	10R	R1, R2	1/4W
3	330R	R34, R35, R36	
6	22k	R22, R23, R24, R25, R26, R27	
9	10k	R7, R8, R9, R10, R11, R12, R28, R29, R30	
15	100k	R4, R5, R6, R13, R14, R15, R16, R17, R18, R19, R20, R21, R31, R32, R33	R13 to R15, R19 to R21 = 1%
1	1N750, 1N4732 or 1N5230	D3	4.7V
2	1N5818 or SB130	D1, D2	
3	1k	VR7, VR8, VR9	3296W compatible
6	50k	VR1, VR2, VR3, VR4, VR5, VR6	3296W compatible
3	15pF	C16, C17, C18	Ceramic 2.5mm-0.1in pin pitch
13	100nF	C1, C2, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15	Ceramic 2.5mm-0.1in pin pitch
2	10uF	C3, C4	Electrolytic 2mm pin pitch, 5mm dia, 5mm height
2	DIP16 socket	IC3, IC4	
2	LM13700	IC3, IC4	
3	DIP14 socket	IC1, IC2, IC5	
2	TL084 or TL074	IC1, IC5	
1	LM324	IC2	Rail-to-rail output on -V side.
9	PJ301B(M)	J1, J2, J3, J4, J5, J6, J7, J8, J9	
1	Power Cable	IDC 16pin – 10pin	
1	Faceplate	PCB material, black, 2mm.	
2	PCB	One PCB split into two with v-cut.	
2	Mounting Screws	Black pozi M3x6.	

Calibration
Top VCA

Step 1
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR1** until OUT is roughly 2.5V.

Step 2
Feed 5.00V to CV in.
Feed 0.00V to signal IN.
Measure OUT.
Trim **VR7** until OUT is 0.00V.

Step 3
Feed 0.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR4** until OUT is 0.00V.

Step 4
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR1** until OUT is 5.00V.

For even more precision repeat step 2-4 until satisfied.

Middle VCA

Step 1
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR2** until OUT is roughly 2.5V.

Step 2
Feed 5.00V to CV in.
Feed 0.00V to signal IN.
Measure OUT.
Trim **VR8** until OUT is 0.00V.

Step 3
Feed 0.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR5** until OUT is 0.00V.

Step 4
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR2** until OUT is 5.00V.

For even more precision repeat step 2-4 until satisfied.

Bottom VCA

Step 1
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR3** until OUT is roughly 2.5V.

Step 2
Feed 5.00V to CV in.
Feed 0.00V to signal IN.
Measure OUT.
Trim **VR9** until OUT is 0.00V.

Step 3
Feed 0.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR6** until OUT is 0.00V.

Step 4
Feed 5.00V to CV in.
Feed 5.00V to signal IN.
Measure OUT.
Trim **VR3** until OUT is 5.00V.

For even more precision repeat step 2-4 until satisfied.