Hollasynth Scanner Bill of Materials, 12 October 2019

Part	Quantity	Designators	Note
Resistors			All 1%, 250mW.
1M	4	R20,R21,R26,R27	
1k	2	R2,R48	
6k8	1	R6	
10k	2	R57,R58	
11k	4	R37,R39,R41,R49	
33k	1	R9	
51k	4	R4,R11,R13,R42	
100R	5	R1,R7,R12,R14,R15	
100k	30	R3,R8,R18,R22,R23,R24,R25,R28,R30,R31,R32,R33,R34,	
		R35,R36,R38,R40,R43,R50,R51,R52,R53,R54,R55,R56,R59,R61,R63,R65,R101	
200k	1	R10	
220R	8	R5,R19,R29,R44,R60,R62,R64,R66	
330R	5	R16,R17,R45,R46,R47	
Ferrites			
BEAD	2	L1,L2	Ferrite bead, or omit and use wire link
Trimmers			
100k	4	TR1,TR2,TR3,TR4	Bourns 3362P style
200R	1	TR5	Bourns 3362P style
Capacitors			
22p	5	C15,C16,C17,C18,C19	Ceramic cap, C0G, 5mm lead spacing
100n	3*	C7*,C8*,C24	Ceramic cap, 5mm lead spacing. C7, C8 optional,
10u	2	C2,C4	Electrolytic, 25V or higher rating
100n 0805 SMD	14	C1,C3,C5,C6,C9,C10,C11,C12,C13,C14,C20,C21,C22,C23	X7R, 25V or higher
Active components			
TL072	1	U4	
TL074	2	U1,U2,U3	
LM13700	2	U5,U6	
1N4148	10	D1,D2,D3,D4,D5,D6,D7,D8,D9,D10	
LM4040-N-5.0	1	U7	
2N3906	13	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10,Q11,Q12,Q13	
LEDs			
LED	4	LED1,LED2,LED3,LED4	3mm lead spacing, high brightness
LED Lenses	4		To suit your LEDs
Switches			
SPST switch	1	SW1	miniature toggle switch. Can use SPDT
Potentiometers			
100k linear	14	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8,VR9,VR10,VR11,VR12,VR13,VR14	9mm vertical alpha style
Jacks			
Black banana jack	9	J1,J2,J3,J4,J5,J6,J7,J8,J9	
Blue banana jack	5	J10,J11,J12,J13,J14	
Connectors			
7 pin 0.1" pin header male	1		
7 pin 0.1" pin header female	1		
2 pin 0.1" pin header male	1		
2 pin 0.1" pin header female	1		
5 pin 0.1" pin header male	1		
5 pin 0.1" pin header female	1		
4 pin 0.1" pin header male	3		
4 pin 0.1" pin header female	3		
8 pin (4 x 2) 0.1" pin header male	1		
8 pin (4 x 2) 0.1" pin header female	1		
MTA-156 4-pin	1	X1	Power input

Notes

Capacitors C7 and C8 provide a bit of slew / low-pass filtering to the scan CV. They are optional. Use them if you find that applying stepped CV to the scan input results in "popping" on the output. This feedthrough should be minimal if the VCAs are trimmed precisely, though.

I use X7R ceramics for all the 100n capacitors and C0G for the 22pF ones. If I installed C7 and C8 I would probably use C0G there too.

LEDs: it is important to use high brightness LEDs. The maximum current that they will receive is about 0.5mA, and this cannot readily be adjusted because it is also the control current for the LM13700 VCAs. These ones are good: Rapid Truopto 3mm pastel LEDs

Pin headers: it is cheapest to buy long strips of header and cut them to size. The 2x4 header can be made from two single-row 4-position headers.