

Table A-1 Apple's Video Parameters

Parameter	Broadcast Standard	Apple II		
		Rev. 0	Rev. 1	Rev. 7 and RFI
Interlacing	2:1	No		
Lines per Field	262.5	262		
Line Rate	15.734 kHz (Color) or 15.750 kHz (B&W)	15.700 kHz		
Field Rate	59.94 Hz (Color) or 60 Hz (B&W)	59.92 Hz		
Color Subcarrier	3.579545 MHz	3.579545 MHz		
Burst Length	9 Cycles ¹ (2.24 μS min)	14 Cycles (3.9 μS)		
Front Porch	1.27 μS min	7.9 μS		3.9 μS
Hor Sync Pulse	4.45–5.08 μS	7.8 μS		
Breezeway	381–735 nS	70 nS		
Color Backporch	1.27 μS min	5.0 μS	8.9 μS	
B & W Backporch	4.25 μS min	8.9 μS	12.8 μS	
Sync to Blanking End	9.2 μS min	16.7 μS		
Sync to Burst End	7.78–7.94 μS	11.7 μS	7.8 μS	
Hor Blanking	10.5 μS min	24.6 μS		
Sync to Burst Start	5.3 μS ¹	7.9 μS	4.0 μS	
Vert Serration	4.5 μS	None	8.9 μS ²	
Vert Blanking	1.14 mS min	4.48 mS		
Vertical Sync Pulse	190 μS (3H) ³	1.02 mS (16H)	255 μS (4H)	
Intended Output Load Impedance	75 Ω	75 Ω		
Peak-Peak Level into 75 Ω	1.0 V	0–1.4 V (Adjustable)		
Black Level	+7.5 Units ⁴	0 Units		
White Level	+100 Units	+110 Units		
Sync Level	–40 Units	–30 Units		
P–P Burst Level	20 Units	25 Units		

Is it impossible to catch the horizontal sync signal on the digital generation display?

The horizontal sync pulse width of the LCD display is 3.6–6.0 μsec according to my research. I could go this way.

Notes: ¹ Recommendation.
² Rev. 7 vertical serration is a double pulse, see Fig. B-2*.
³ H = 1 horizontal line.
⁴ Level relative to blanking. 140 Units = peak-peak signal amplitude.

Circuit Diagram (Before and After Rewiring)

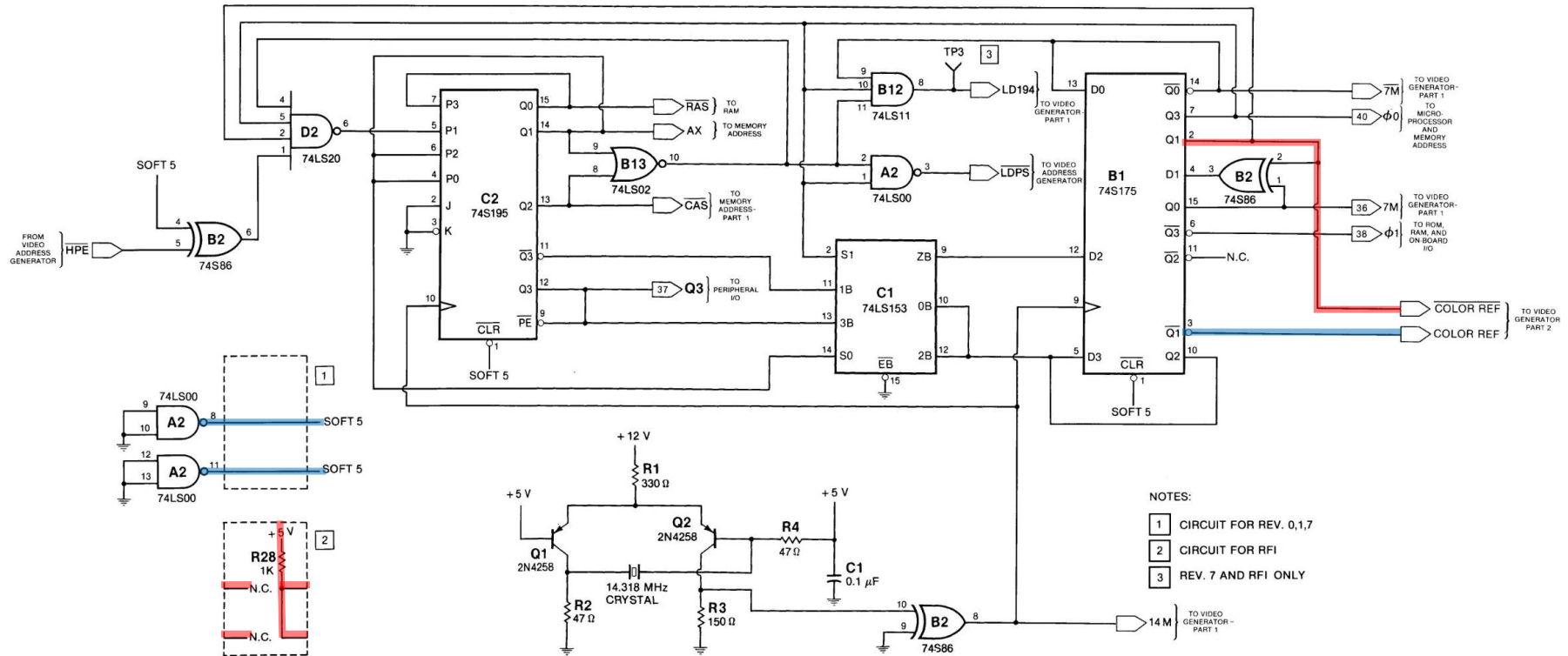


Fig. C-2. Clock generator (all revisions).

The blue line represents the wiring before rewiring and the red represents after rewiring.

Circuit Diagram Rev.4 (Before Rewiring)

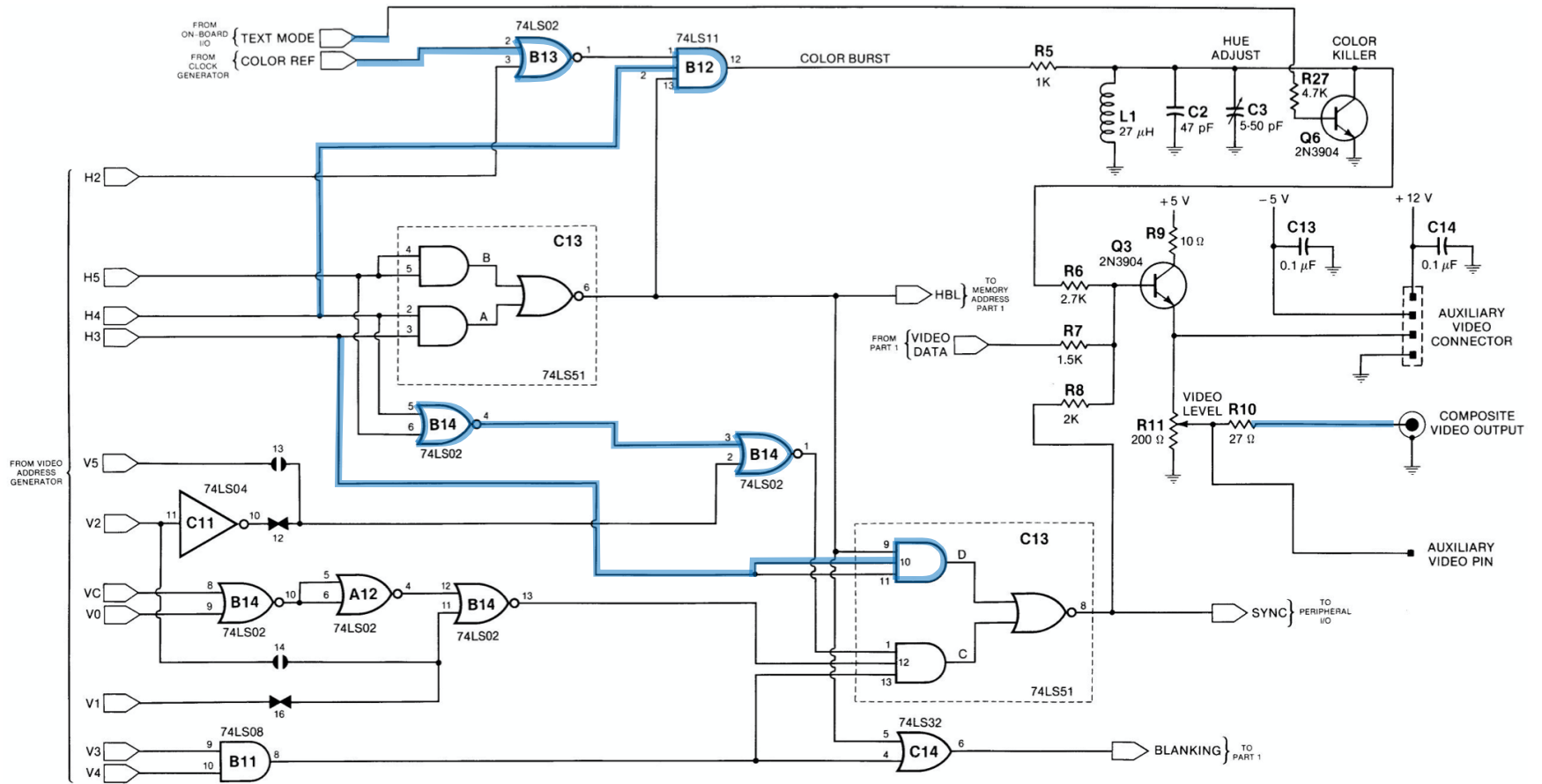


Fig. C-18. Video generator—part 2 (Rev. 1).

Circuit Diagram RFI (After Rewiring)

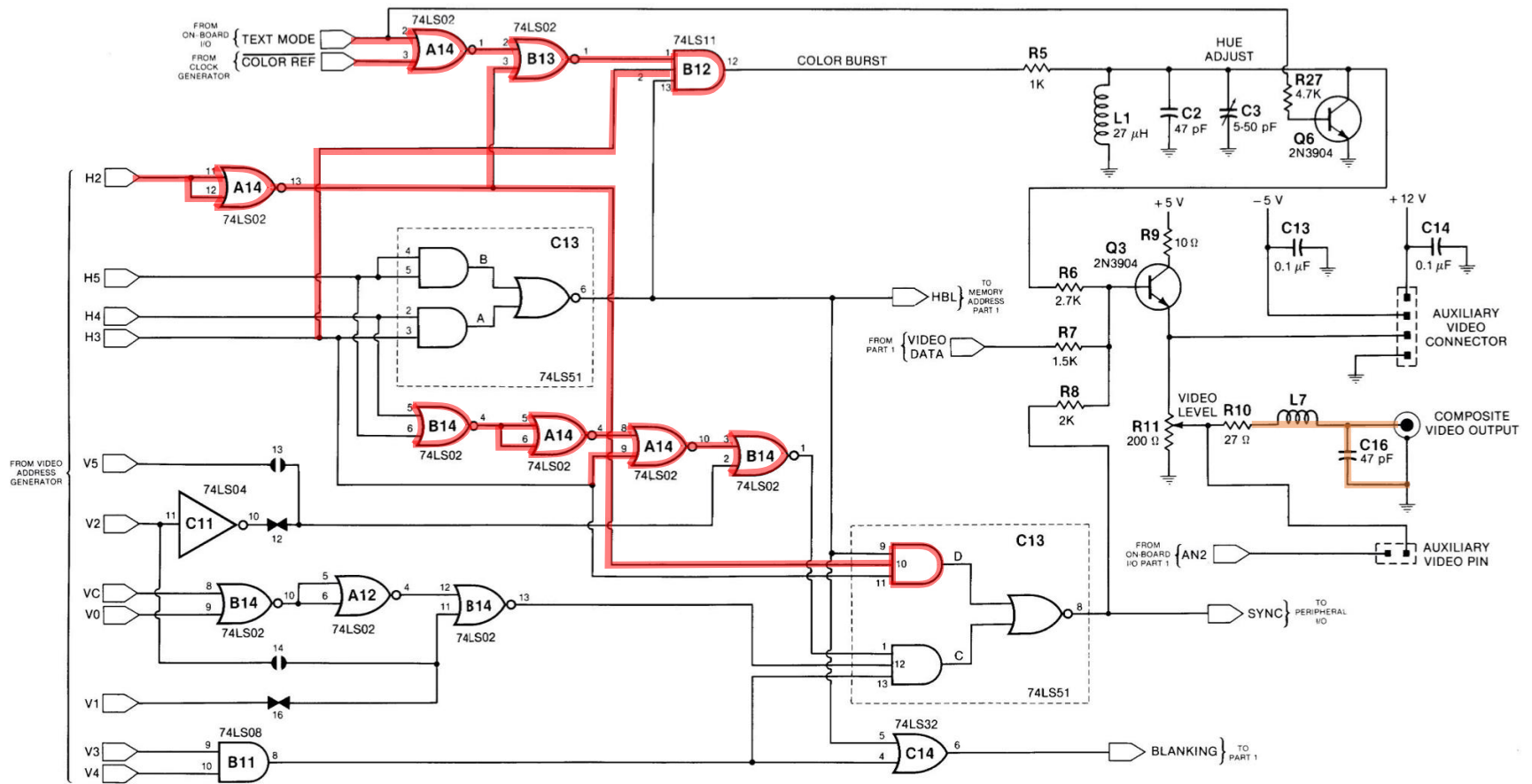
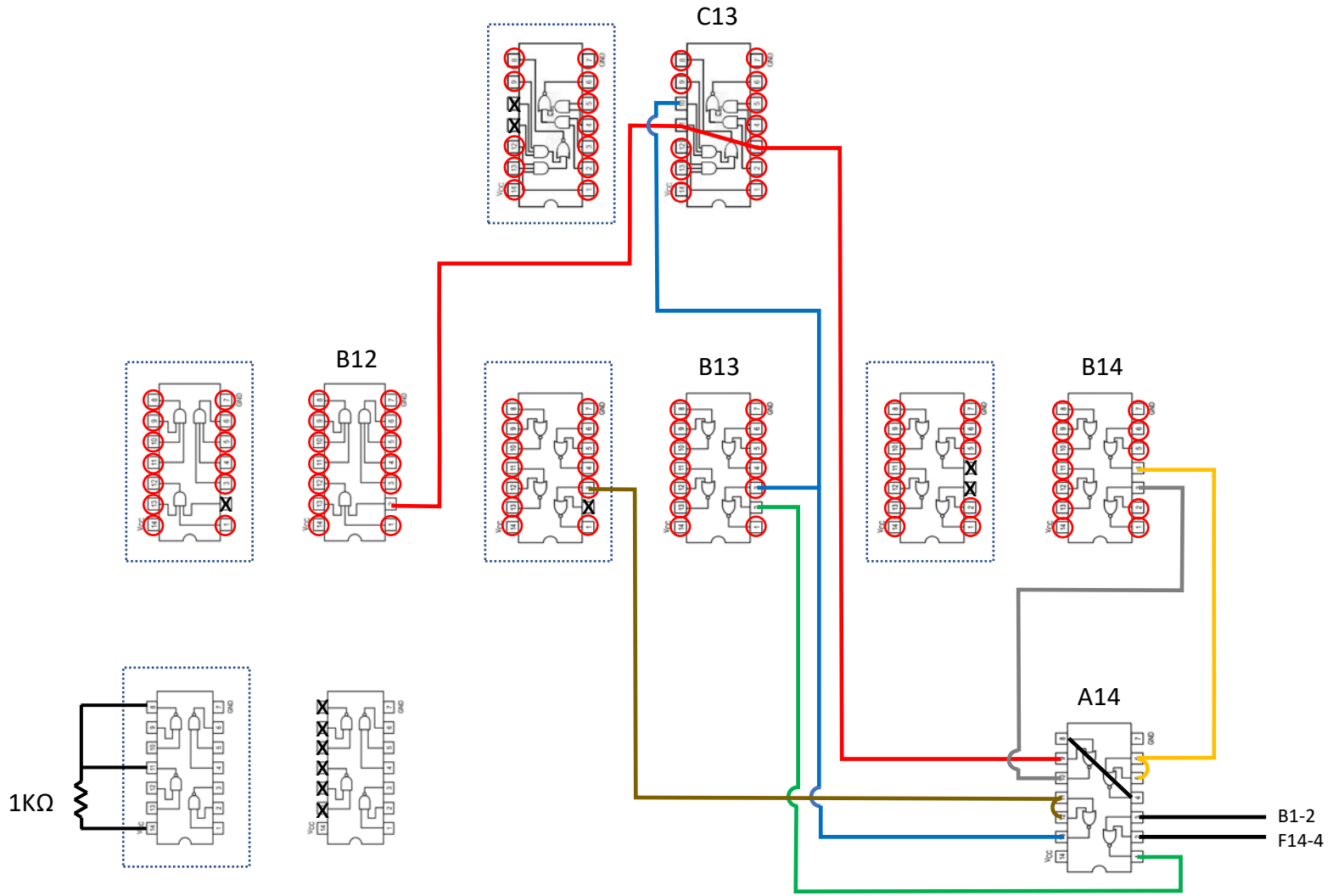
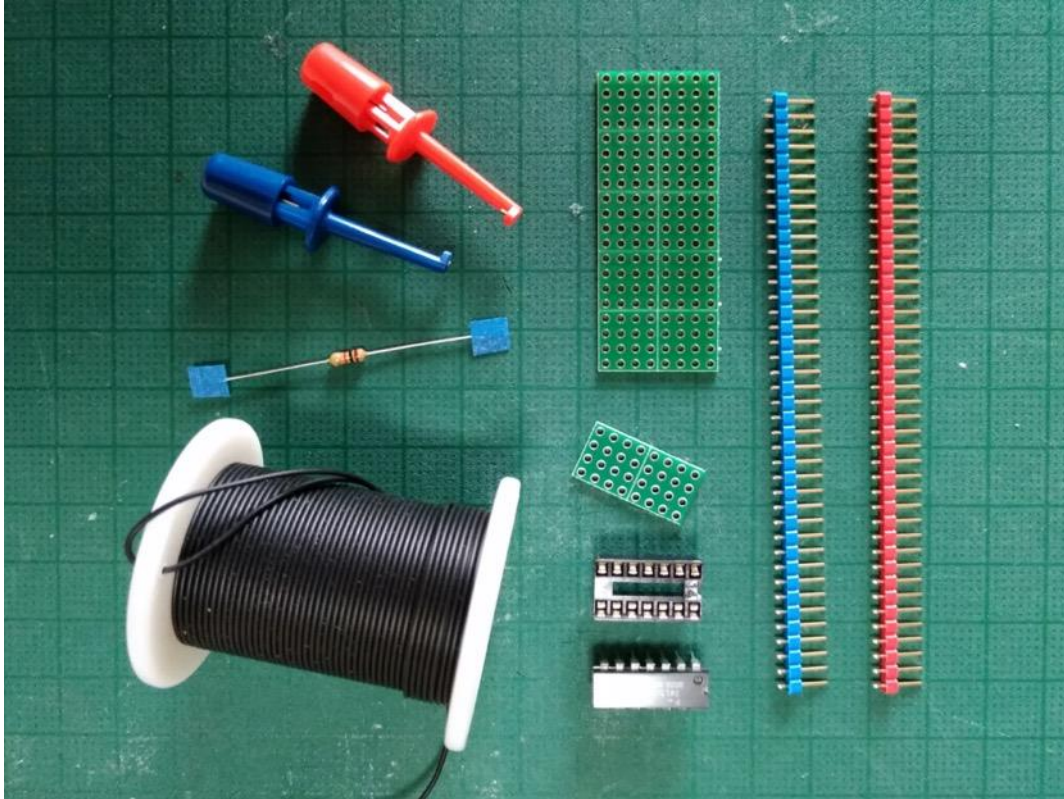


Fig. C-20. Video generator—part 2 (RFI).

Wiring Diagram



Parts List



TTL IC 74LS02 x 1

Resistor 1 K Ohm x 1

IC socket 14pin x 6

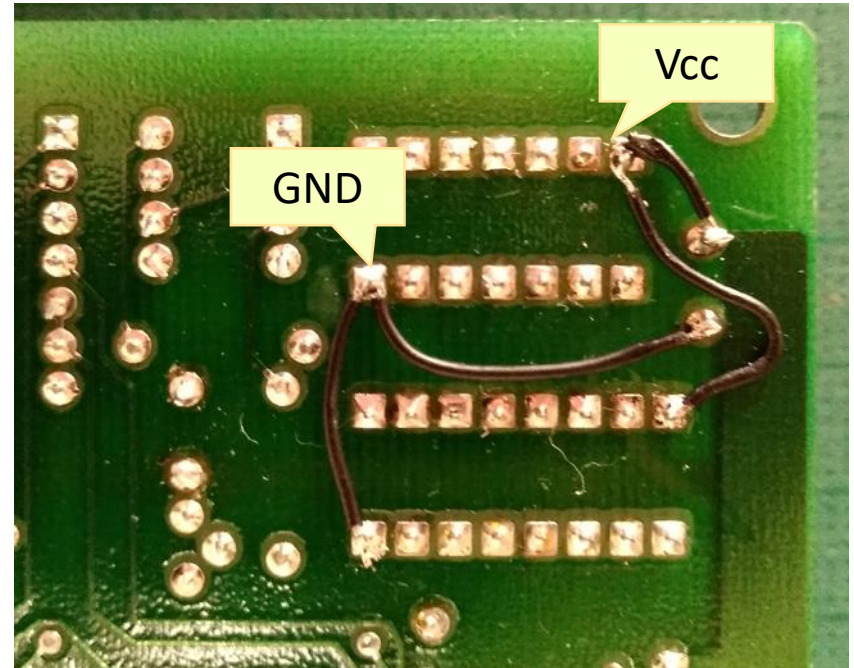
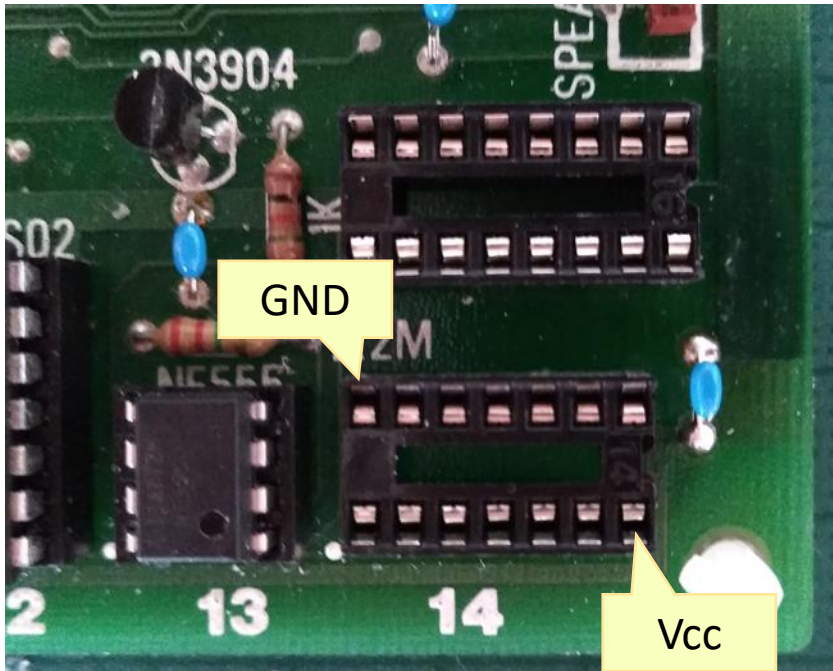
Universal Circuit Board 8 x 4 holes x 6

Pin Header 7pin (Distance between pins: 2.54mm, 0.46mm square pins) x 12

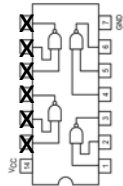
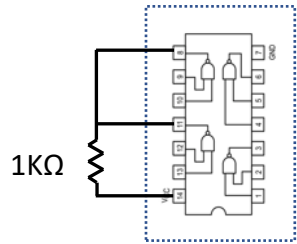
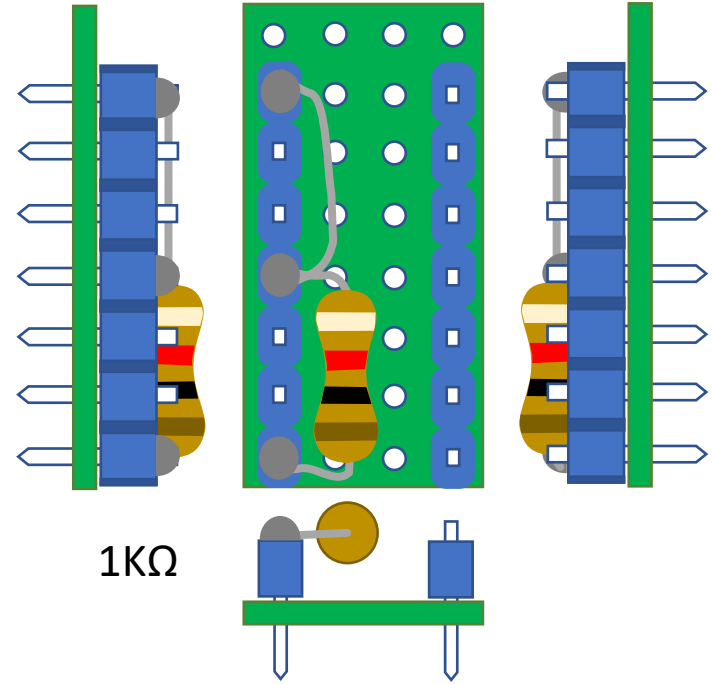
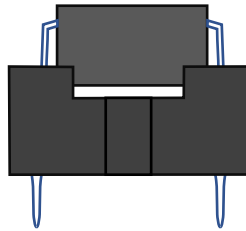
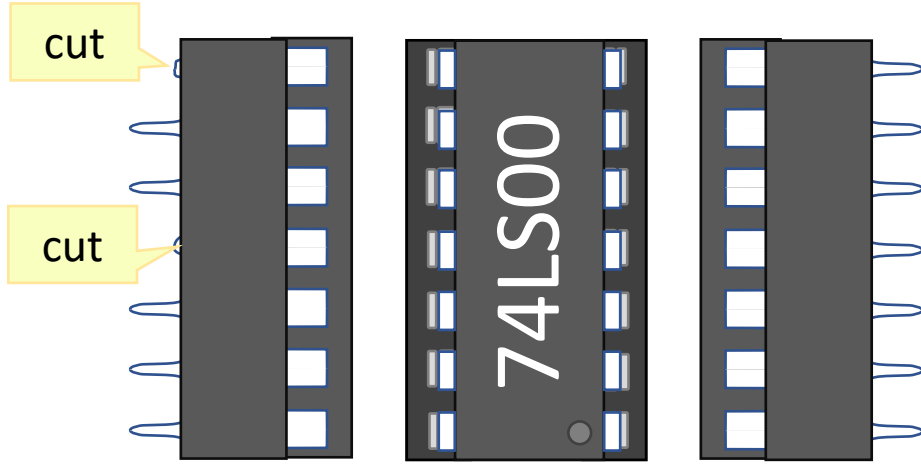
Test Clip x 2

Wires

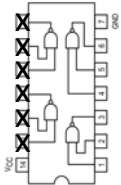
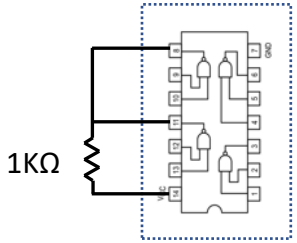
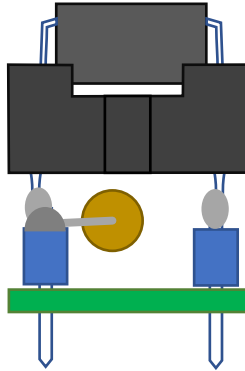
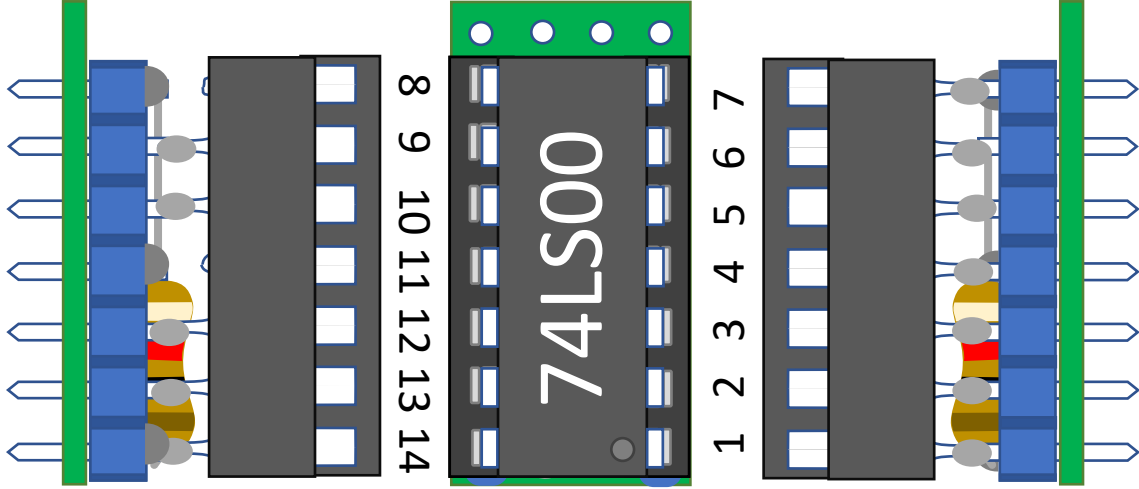
Installing the IC socket at A14



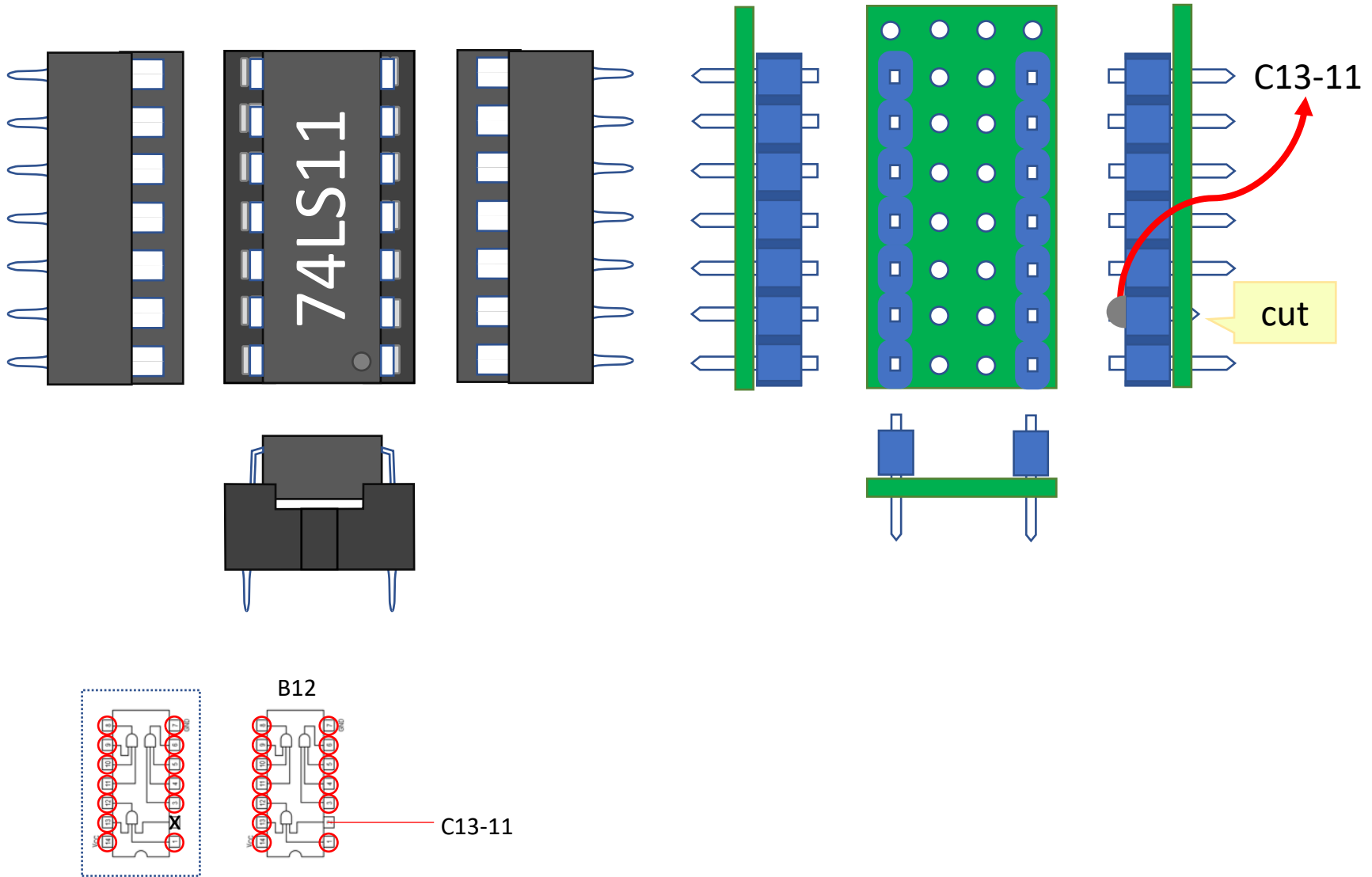
A2(74LS00) Assembly #1



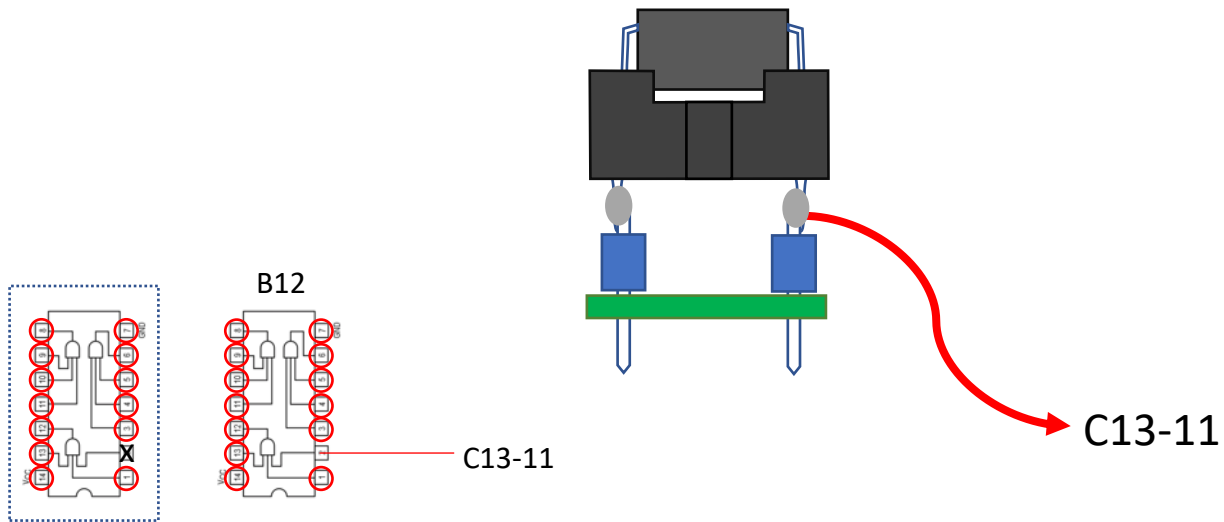
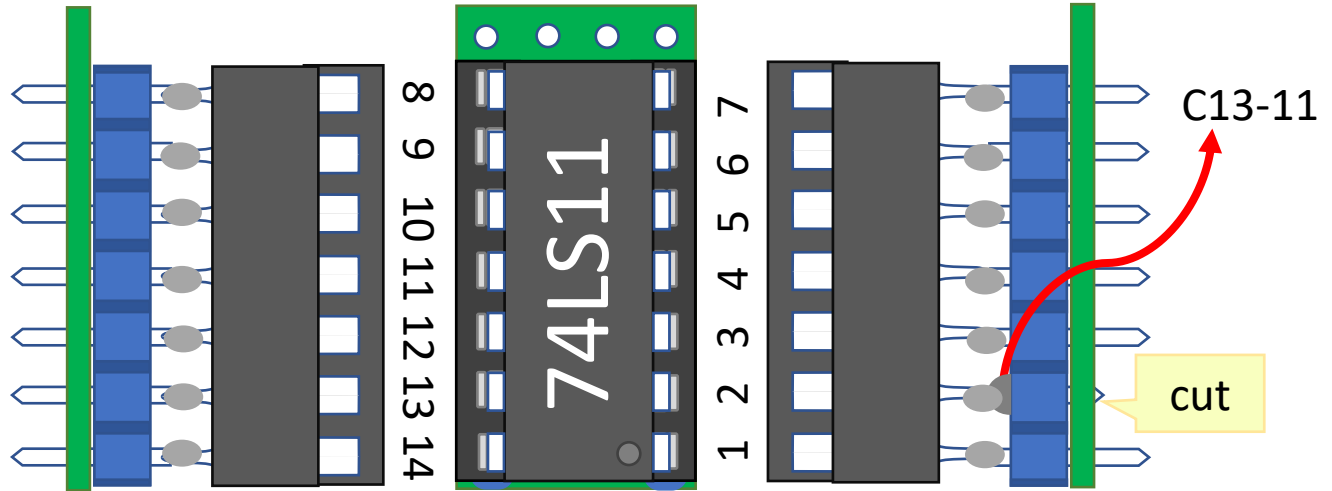
A2(74LS00) Assembly #2



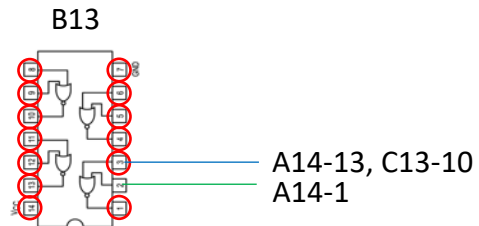
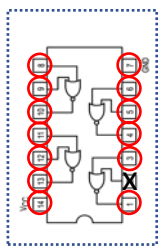
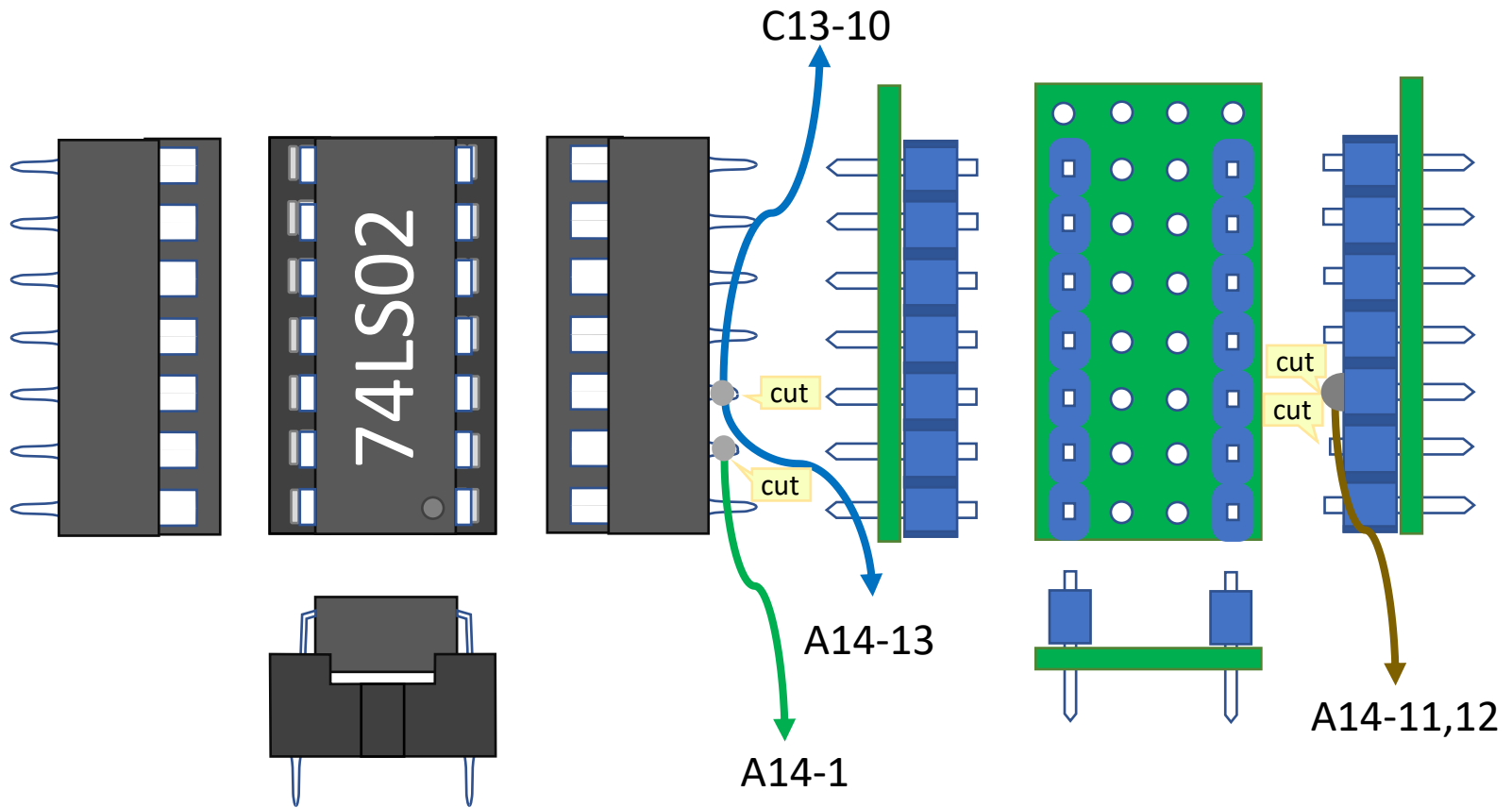
B12(74LS11) Assembly #1



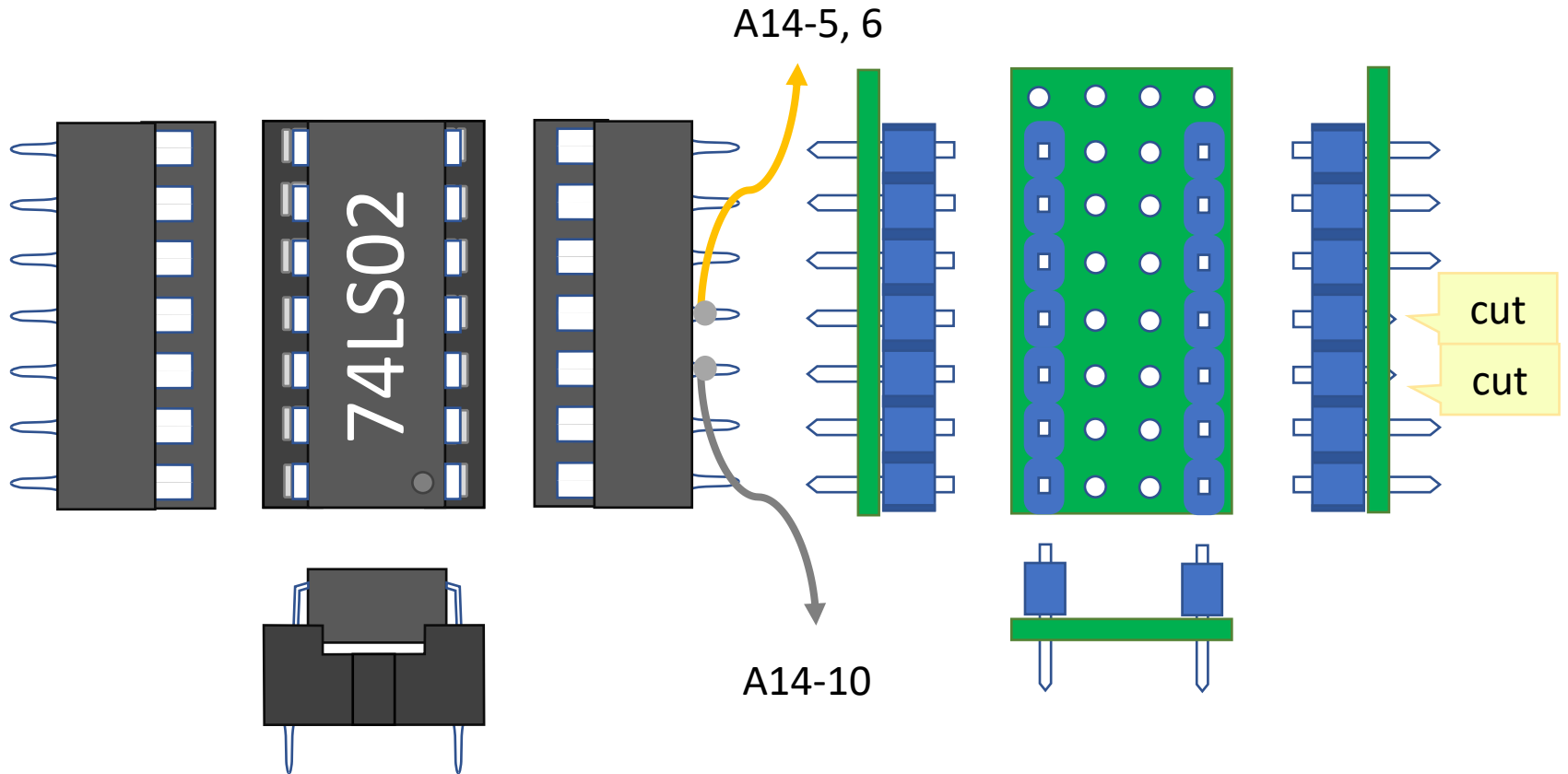
B12(74LS11) Assembly #2



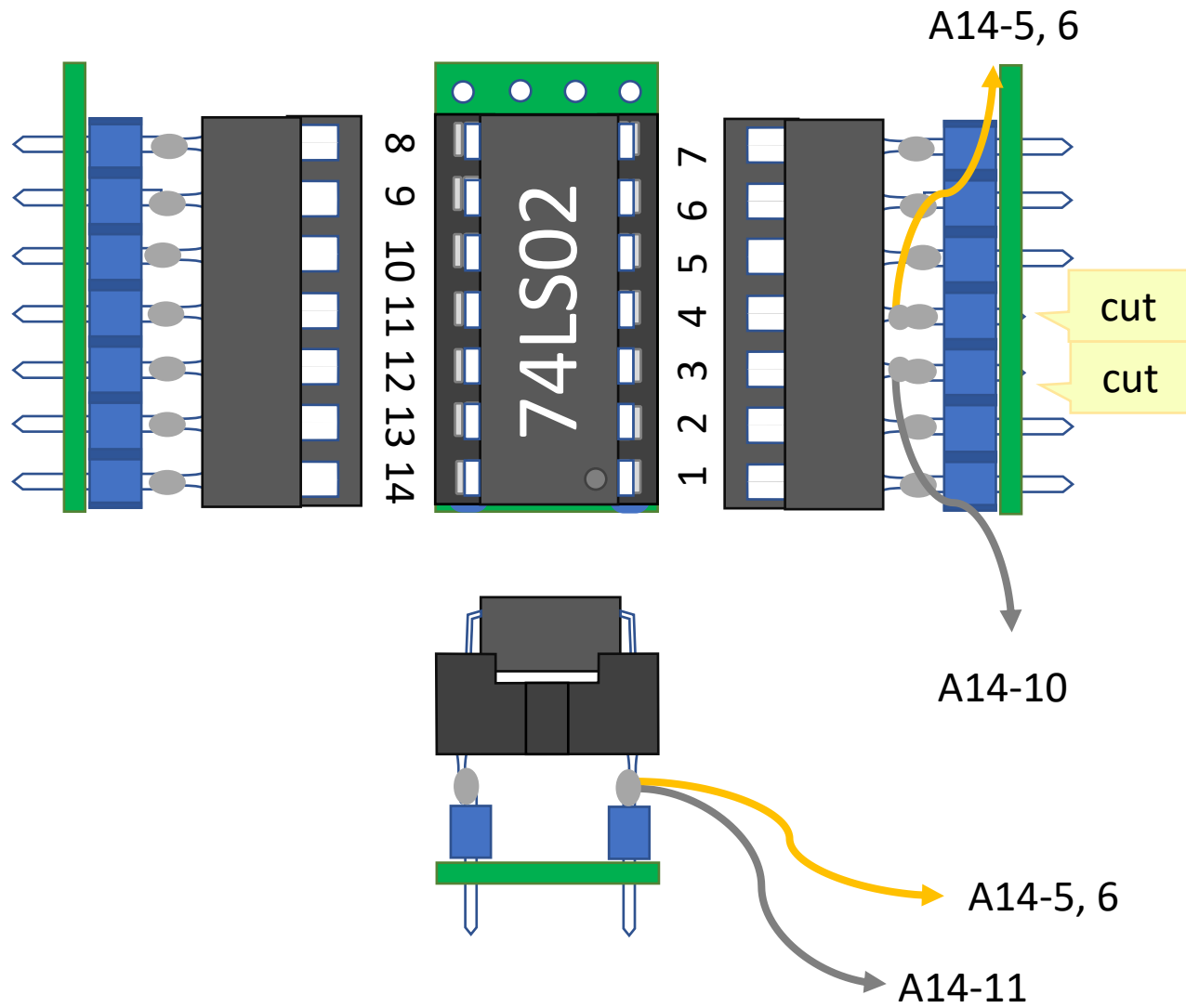
B13(74LS02) Assembly #2



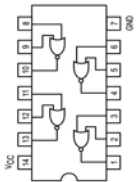
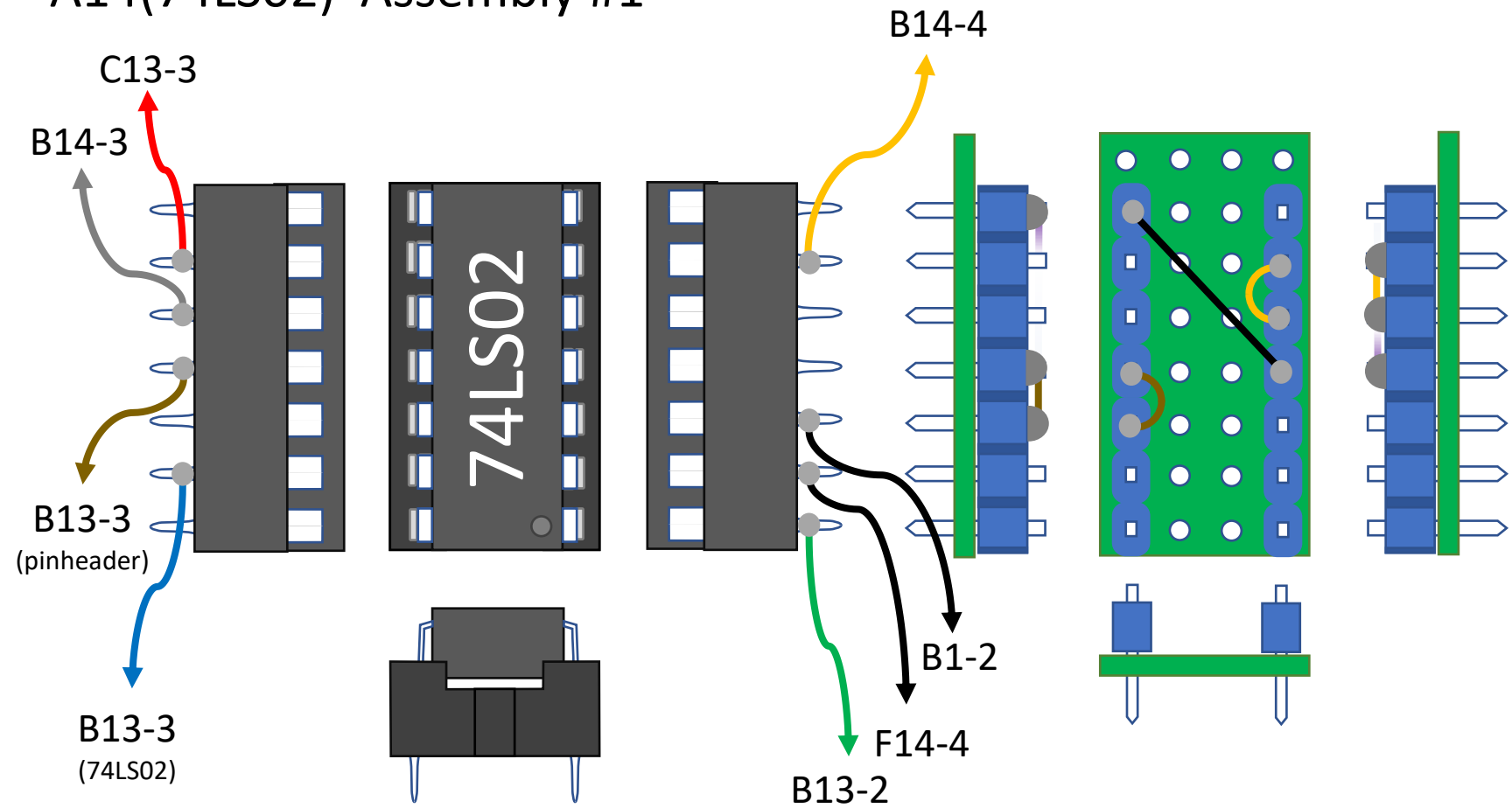
B14(74LS02) Assembly #2



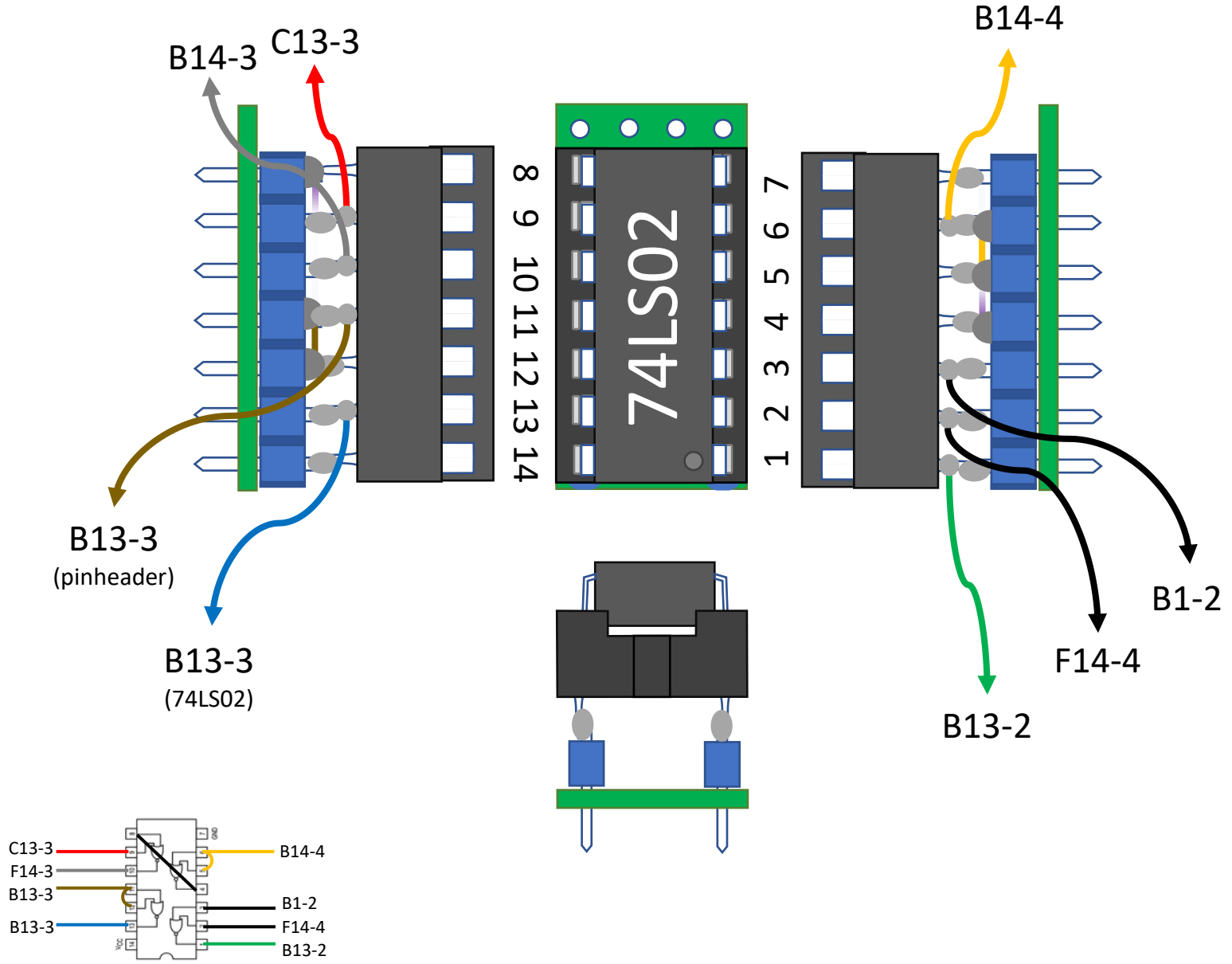
B14(74LS02) Assembly #2



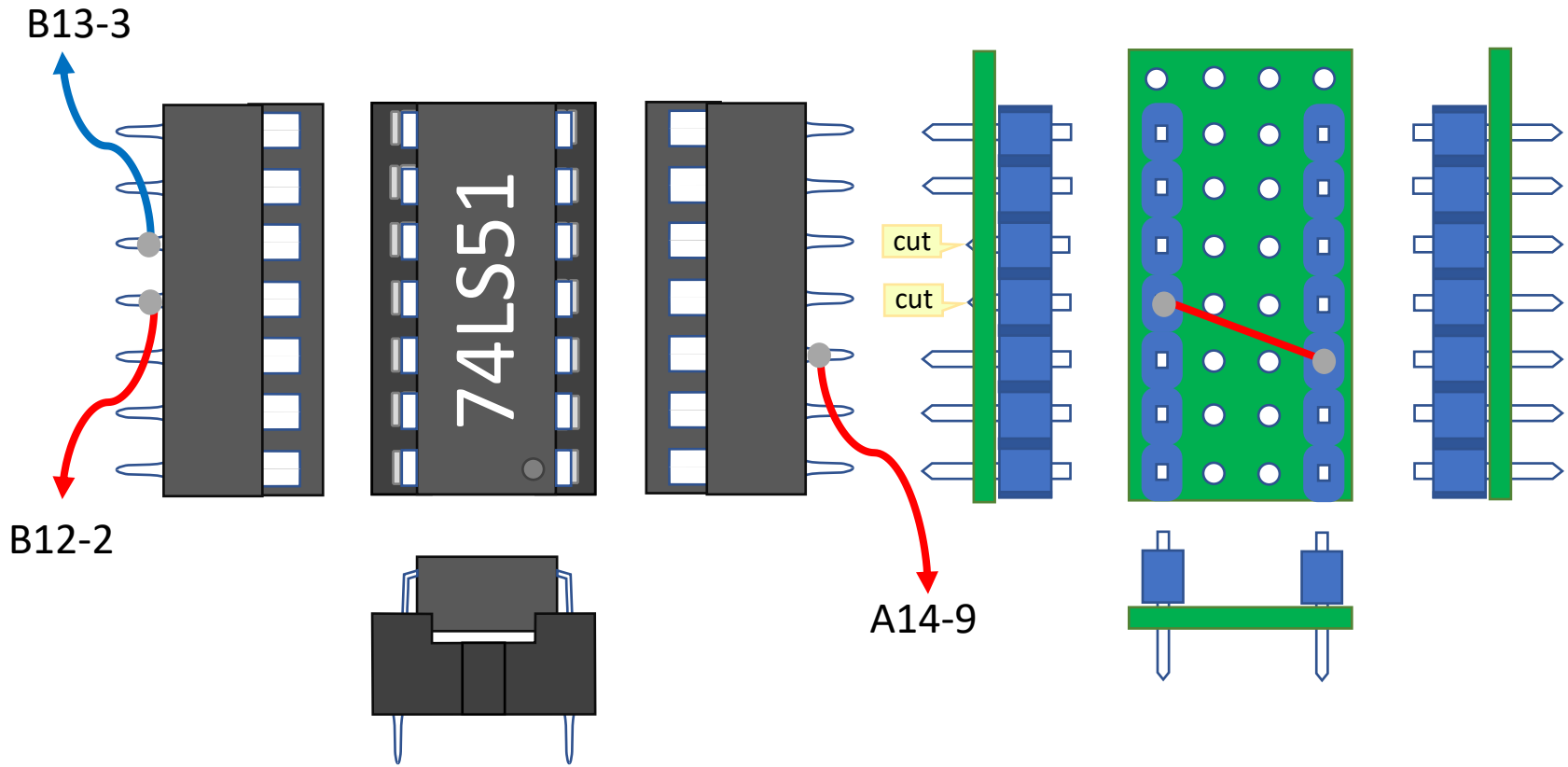
A14(74LS02) Assembly #1



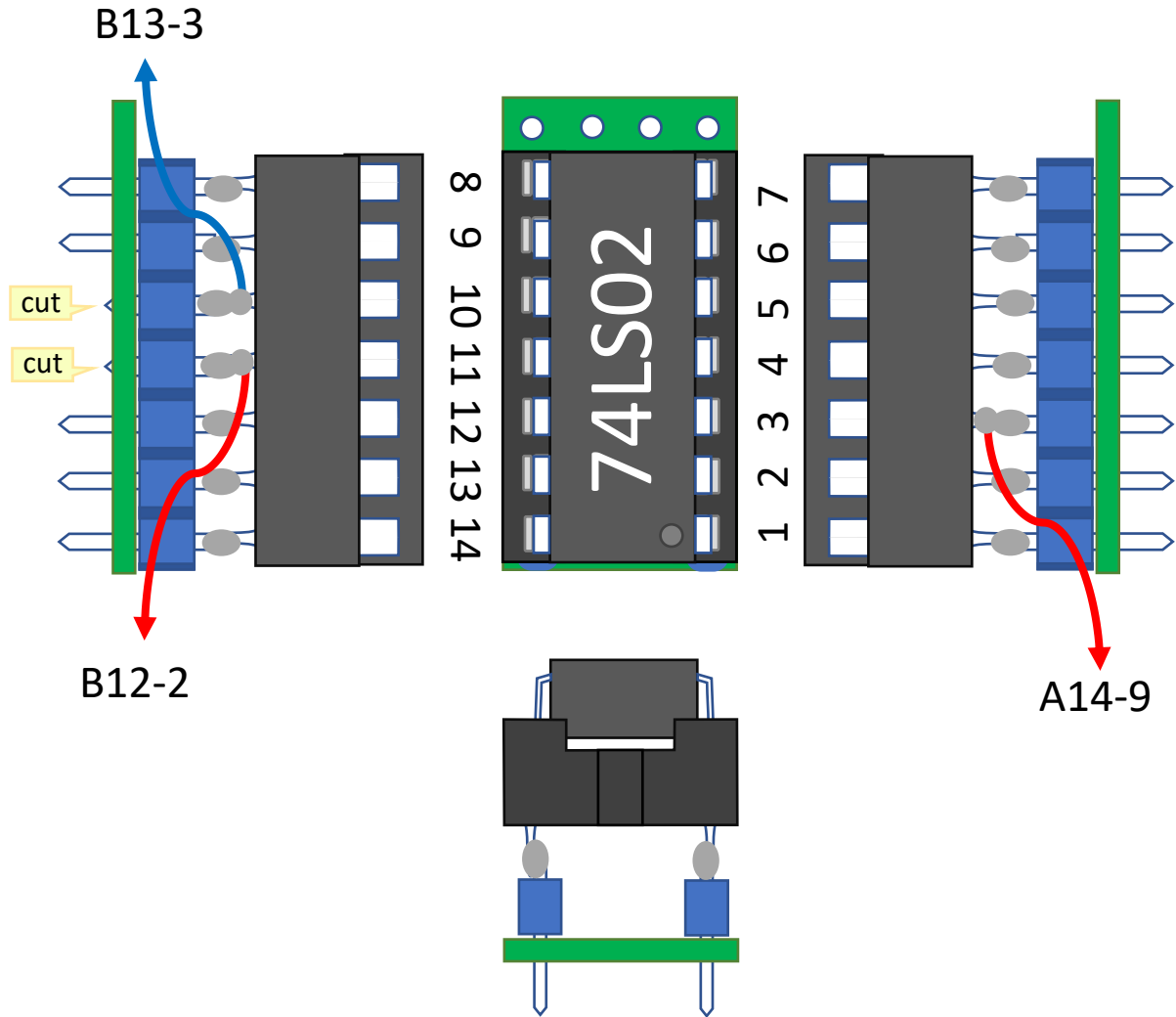
A14(74LS02) Assembly #2

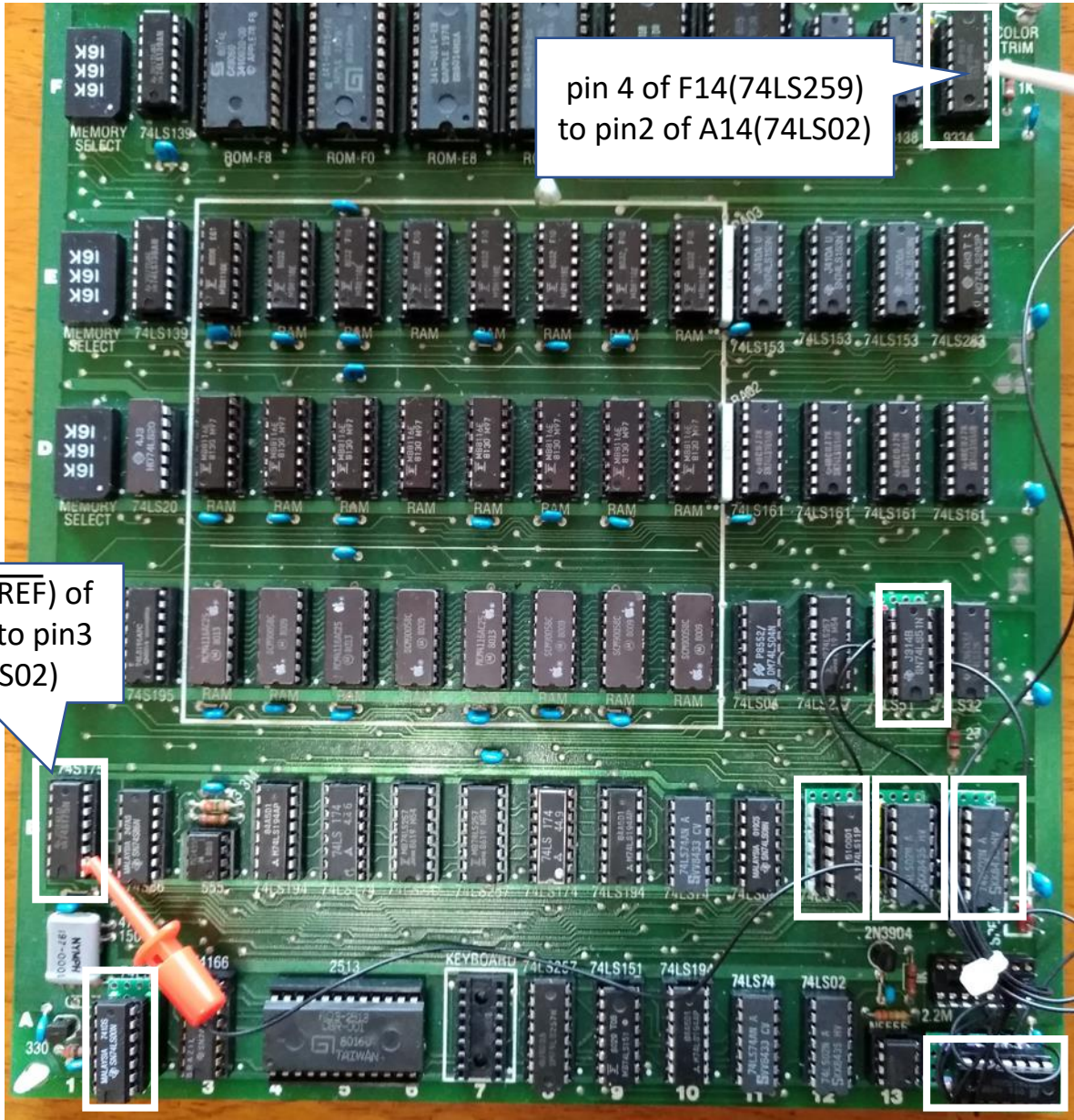


C13(74LS51) Assembly #1



C13(74LS51) Assembly #1





pin 4 of F14(74LS259)
to pin2 of A14(74LS02)

pin 2(COLOR REF) of
B1(74LS175) to pin3
of A14(74LS02)

