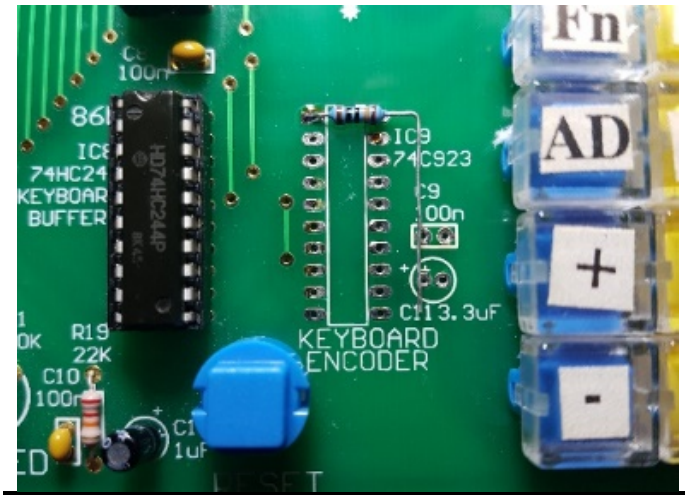
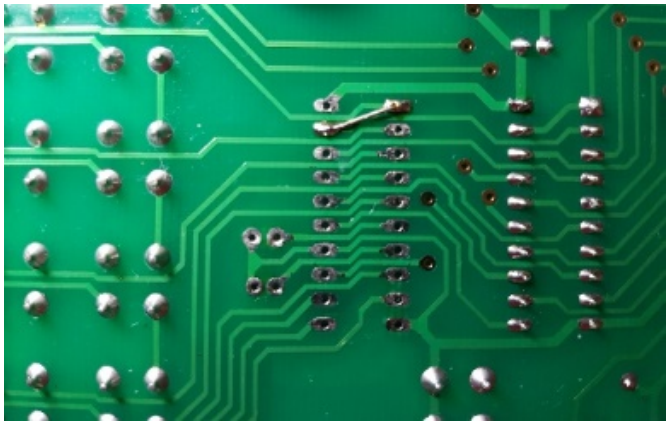
This procedure describes modifying the Southern Cross Computer, all PCB versions, to allow the use of a software scanned keyboard instead of the 74C923 Keyboard Encoder. The Southern Cross Monitor Versions 1.4 and above detect the keyboard type at power up.

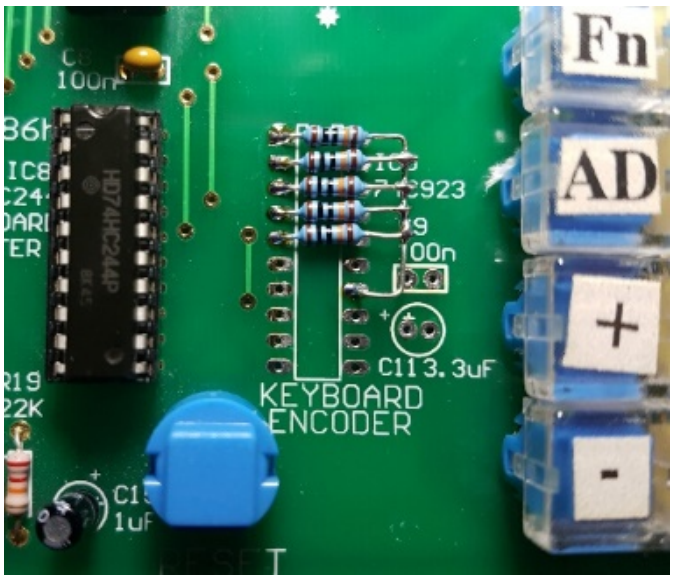


Connect the Y keyboard matrix lines (Y1 to Y5) to the Keyboard Buffer, IC8. Add pull down resistors to each input.

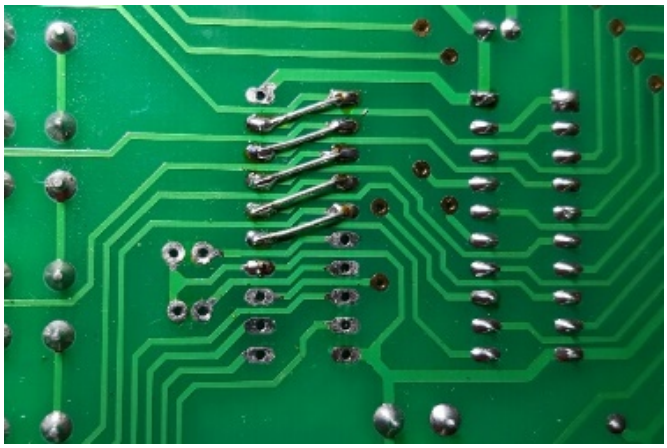
Bend one end of a 100k resistor lead at 90 degrees about 5mm from the end.
Bend the other end and poke it through the Pin 1 (Y1) pad, solder the resistor on the top side as shown.



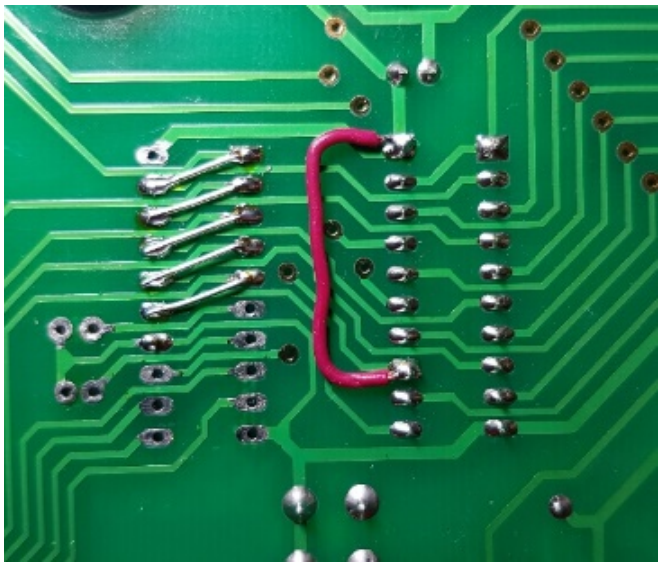
Bend the resistor leg and solder to the Pin 19 (A) pad on the bottom side of the board.



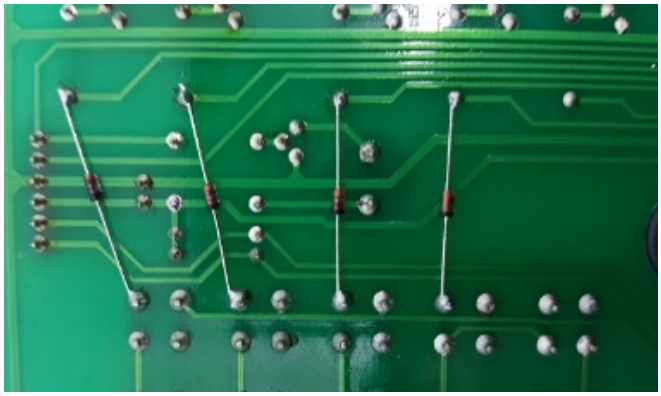
Repeat for;
Pad 2 (Y2) to Pad 18 (B),
Pad 3 (Y3) to Pad 17 (C),
Pad 4 (Y4) to Pad 16 (D)
and Pad 5 (Y5) to Pad 15 (E), trimming the excess lead and soldering to the previously bent right angled lead.
Connect the common lead to the Pin14 pad (GND).



Trim and solder the leads on the bottom side of the board as shown.



Connect Pin 20 (VCC) of IC8, 74HC244, to Pin 13.
This connects the former 74C923 DA output high at the Keyboard Buffer and is how the monitor detects which type of keyboard the board is wired for.

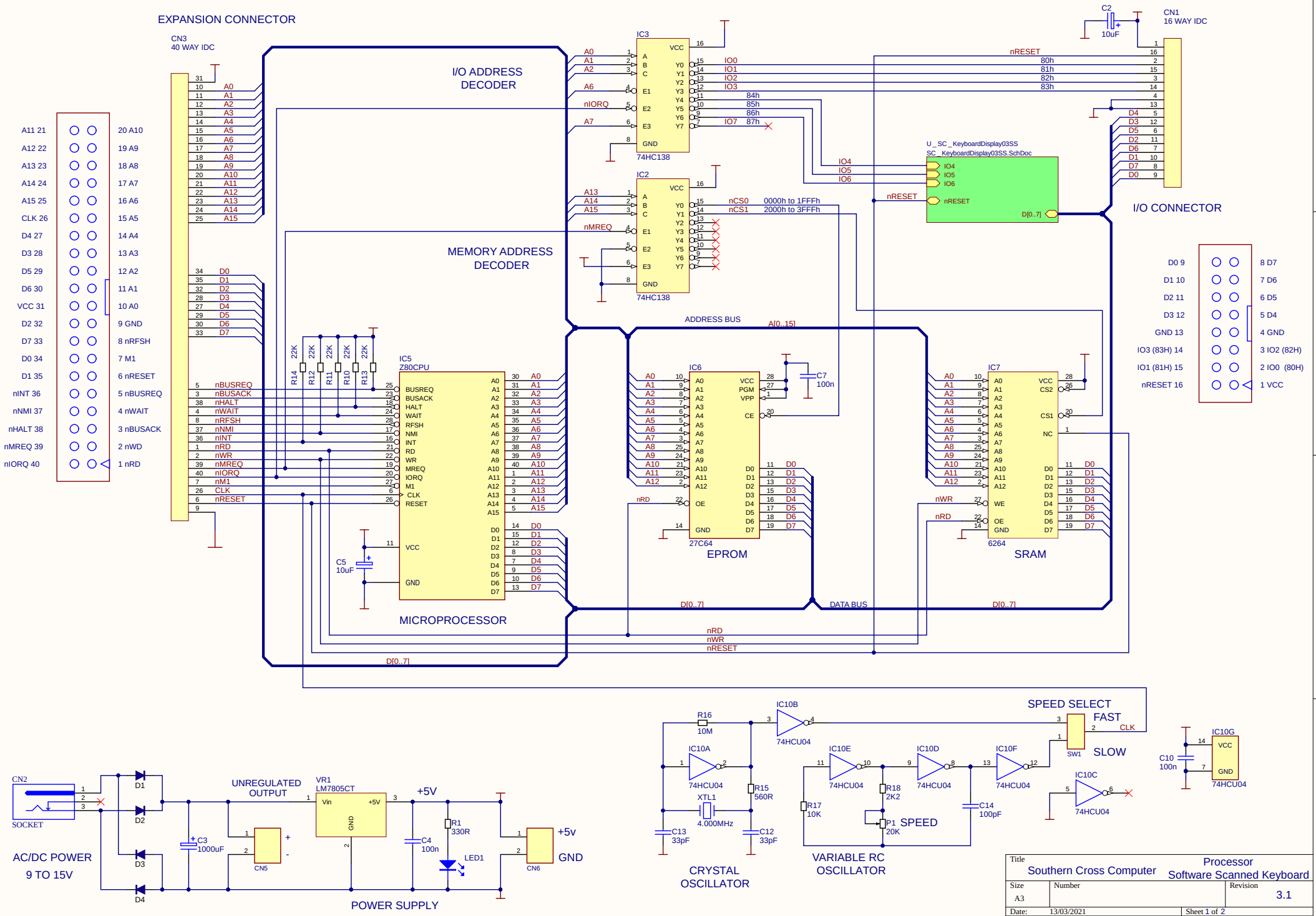


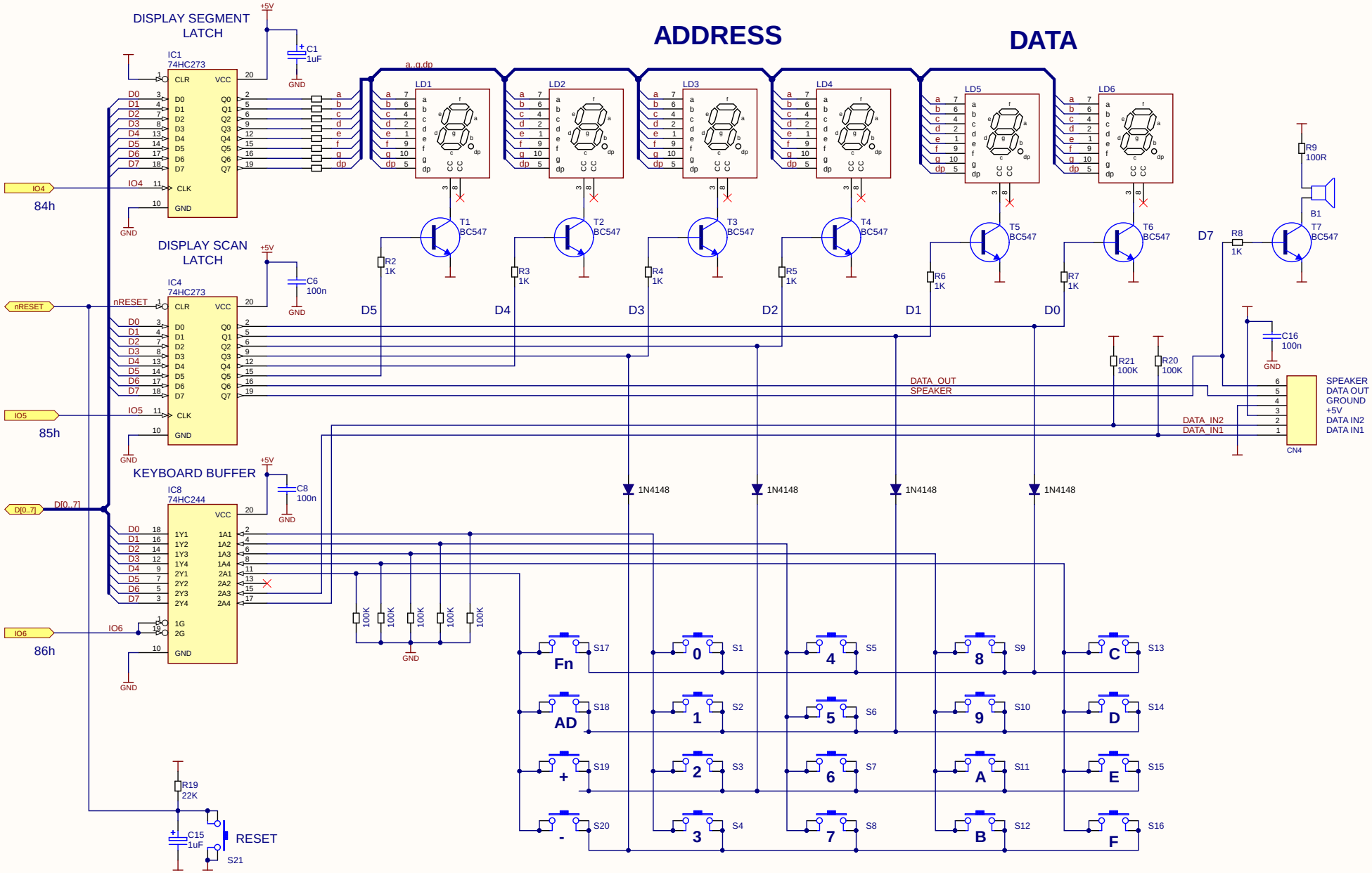
Connect four 1N4148 diodes from the base resistor to the keyboard buttons on the bottom of the board as shown.
Connect the Anode to the junction of IC4 pin 2 (D0) and R7 and the Cathode to the top left of the '3' button.

Connect the Anode to the junction of IC4 pin 5 (D1) and R6 and the Cathode to the top left of the '2' button.

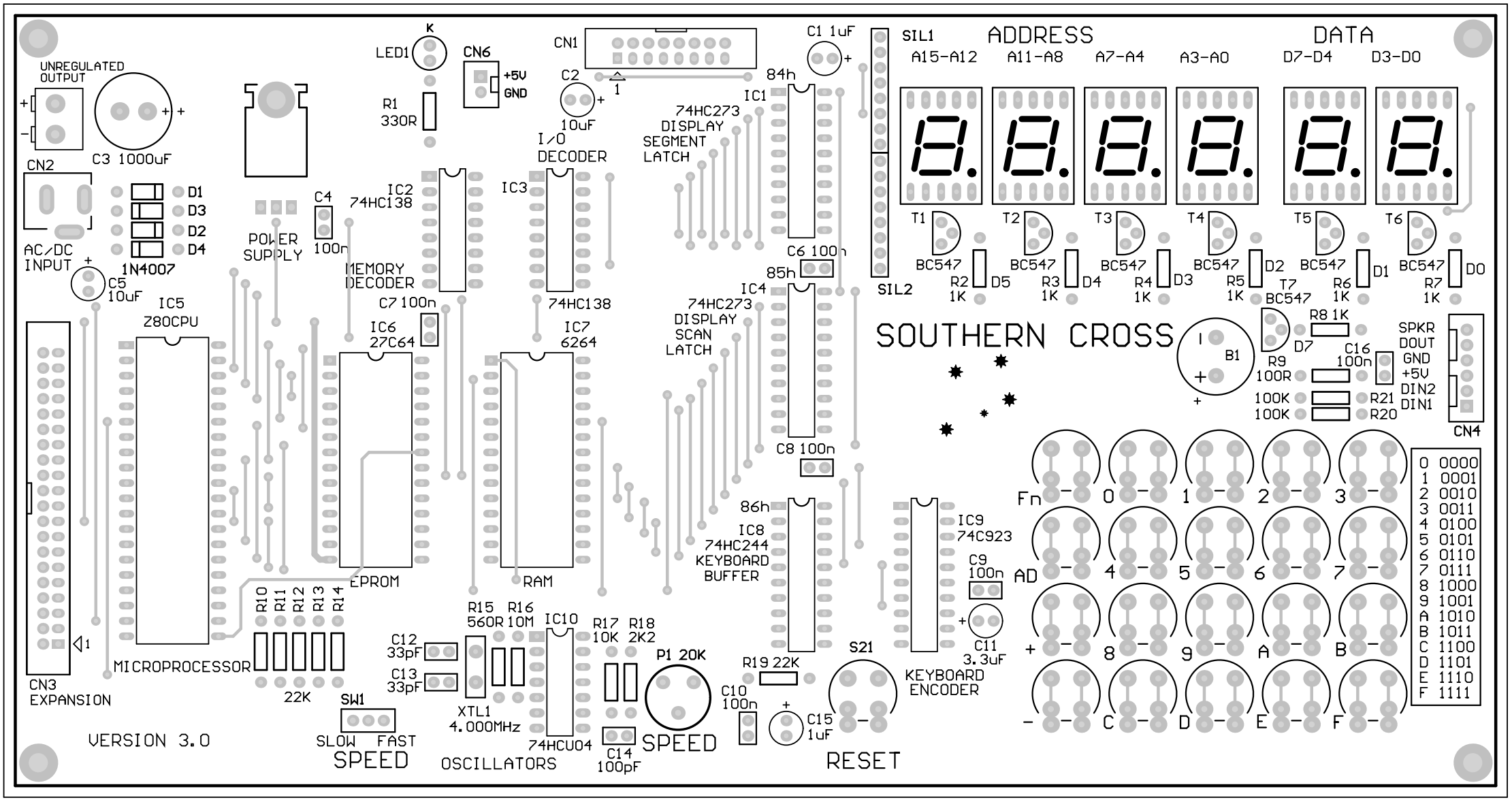
Connect the Anode to the junction of IC4 pin 6 (D2) and R5 and the Cathode to the top left of the '1' button.

And finally connect the Anode from the junction of IC4 pin 9 (D3) and R4 and the Cathode to the top left of the '0' button.


EXPANSION CONNECTOR
CN3
40 WAY IDC
I/O ADDRESS DECODER
MEMORY ADDRESS DECODER
IC3
74HC138
IC2
74HC138
IC5
Z80CPU
MICROPROCESSOR
IC6
27C64
EPROM
IC7
6264
SRAM
ADDRESS BUS
A[0..15]
DATA BUS
D[0..7]
nRD
nWR
nRESET
C2
10uF
CN1
16 WAY IDC
I/O CONNECTOR
U_SC_KeyboardDisplay03SS
SC_KeyboardDisplay03SS.SchDoc
C5
10uF
C7
100n
R14 22K
R12 22K
R11 22K
R10 22K
R13 22K
CN2
SOCKET
AC/DC POWER
9 TO 15V
D1
D2
D3
D4
C3
1000uF
UNREGULATED OUTPUT
VR1
LM7805CT
+5V
C4
100n
R1
330R
LED1
CN5
CN6
GND
POWER SUPPLY
R16
10M
IC10A
74HCU04
IC10B
74HCU04
XTL1
4.000MHz
C13
33pF
C12
33pF
R15
560R
CRYSTAL OSCILLATOR
IC10E
74HCU04
IC10D
74HCU04
IC10F
74HCU04
IC10C
74HCU04
IC10G
74HCU04
R17
10K
R18
2K2
P1
20K
SPEED
C14
100pF
VARIABLE RC OSCILLATOR
SPEED SELECT
FAST
SLOW
CLK
SW1
C10
100n
Title
Southern Cross Computer
Processor
Software Scanned Keyboard
Size
A3
Number
Revision
3.1
Date:
13/03/2021
Sheet 1 of 2
File:
D:\SC_30\SC_Processor03SS.SchDoc
Drawn By:
CRSJ



Title	Southern Cross Computer	Keyboard and Display Software Scanned Keyboard
Size	A3	
Number		
Revision	3.1	
Date:	13/03/2021	Sheet 2 of 2
File:	D:\SC_30\SC_KeyboardDisplay03SS.SchDoc	Drawn By: CRSJ



Southern Cross Computer Version 3.0 Component Overlay