

0 = Key pressed (= 0V), 1 = no key

Signal	SELREG1	SELREG2	KY(ADD/SUB)	KY(SUB)	KY(MUL)	KY(EQU)	KY(+)	KY(-)	KY(+)	KY(RC)	ANYRGR	FNCTKEY
Any key Reg 2	1	0	1	1	1	1	1	1	1	1	1	0
Any key Reg 3	0	0	1	1	1	1	1	1	1	1	1	0
Reg 1 +	0	1	1	1	1	1	0	1	1	1	1	0
Reg 1 -	0	1	1	1	1	1	0	0	1	1	1	0
Reg 2/3 +	x	x	0	1	1	1	1	1	1	1	1	0
Reg 2/3 -	x	x	0	0	1	1	1	1	1	1	1	0
Any Reg *	x	x	1	1	1	1	1	1	1	1	1	0
Any Reg v	x	x	1	1	1	1	1	1	1	1	1	0
(S18) Add	1	1	0	1	1	1	1	1	0	1	1	0
(S22) Subtract	1	1	0	0	1	1	1	1	0	1	1	0
(S17) Multiply	1	1	1	0	1	1	1	1	1	1	1	0
(S21) Divide	1	1	1	0	0	1	1	1	1	1	1	0
(S4) Negate	1	1	1	0	1	1	1	1	1	1	1	0
(S19) Recall	1	1	1	1	1	1	1	1	0	1	1	0
(S16) Exchange	1	1	1	1	1	1	1	1	1	1	0	0
(S20) Equal	1	1	1	1	0	1	1	1	1	1	1	0

### Function & Register Key Encoder

These diagrams are referenced to 0V - Logical 1 = -12V, logical 0 = 0V



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Pcb Dwg # =

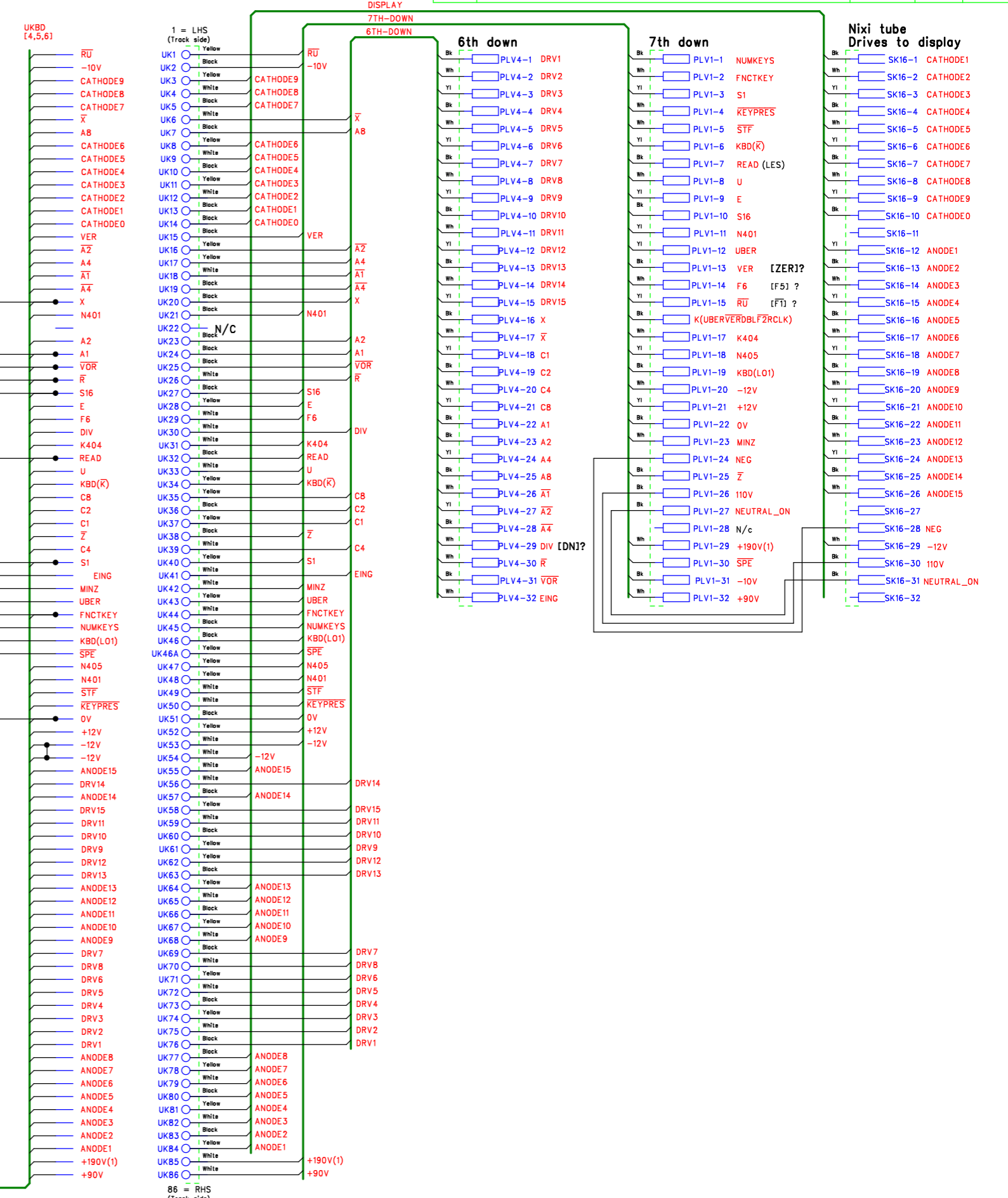
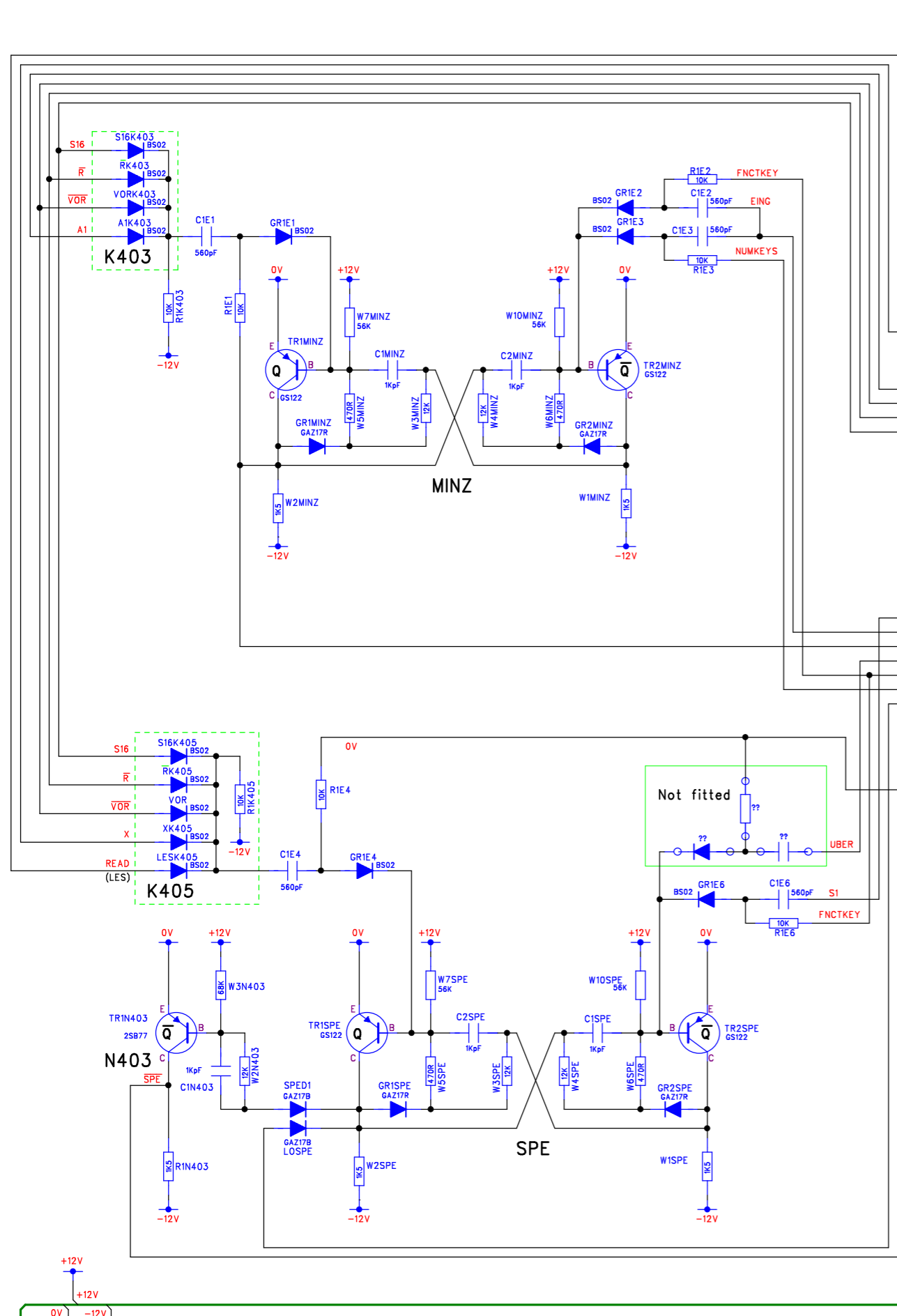
Name	Date
MD Hatch	15/8/2017
Checked	-

Scale	Nts
Sheet	2
Next Sheet	3
Drawing Number	Soemtron 222

Title	Soemtron ETR 222 Calculator Keyboard Function Encoding Circuit Diagram
Issue	A2
By	A

PCB = 05-222-0000-5b (comp)  
 PCB = 05-222-0000-5a (track)

RevNo	Revision note	Date	By	Checked
-	-	-	-	-



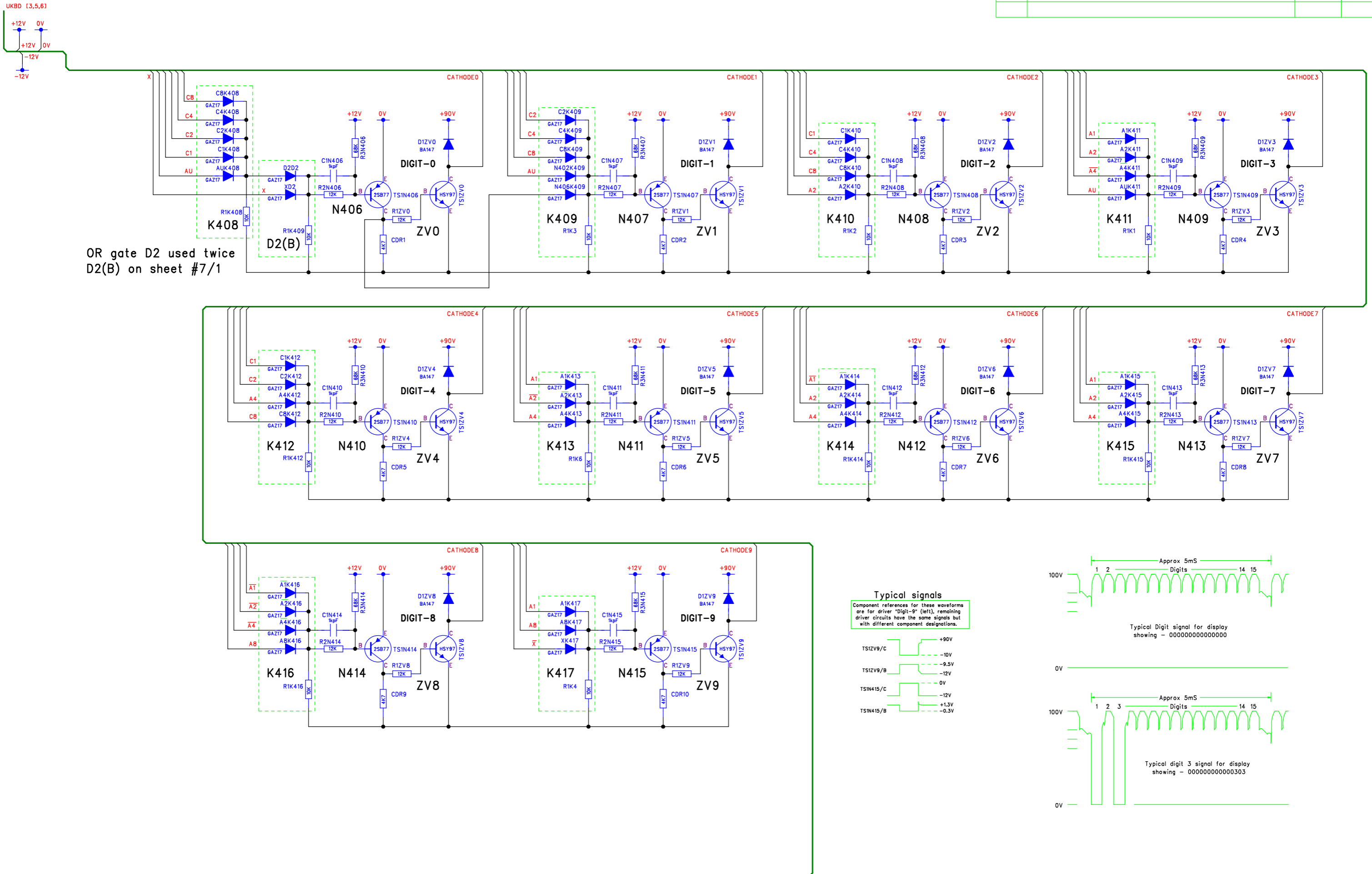
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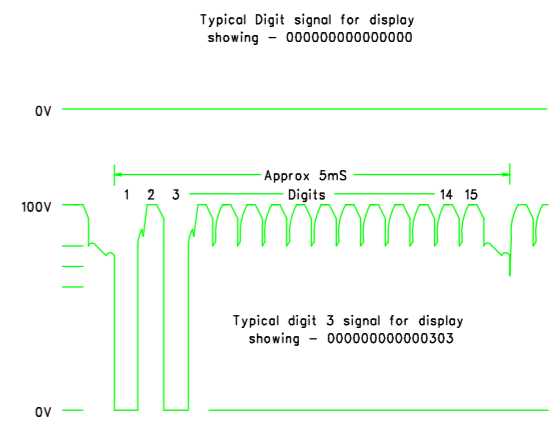
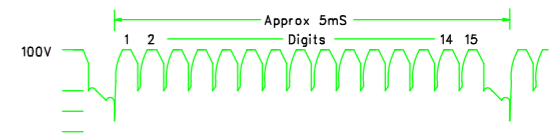
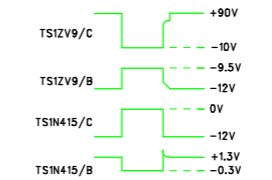
Pcb Dwg # =		Scale	Nts	Title	
Drawn	Name	Sheet	3	Soemtron ETR 222 Calculator	
Checked	Date	Next Sheet	4	Display Drivers Under Keyboard PCB	
		Drawing Number		Display Drivers PCB - FF + Connections	
				Soemtron 222	A2 Issue A

RevNo	Revision note	Date	By	Checked
-	-	-	-	-

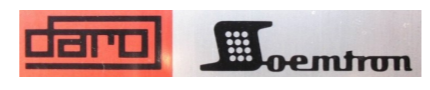


OR gate D2 used twice  
D2(B) on sheet #7/1

**Typical signals**  
Component references for these waveforms are for driver 'digit-9' (left), remaining driver circuits have the same signals but with different component designations.



- Notes:
- All wire 24 AWG minimum unless specified otherwise
  - All mains wire to be 18 AWG, 600V



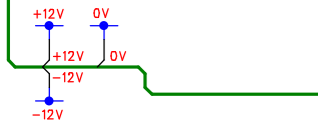
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Unit 1, The Royston Centre  
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Tel : 01252 531444 / Fax: 01252 531446  
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Pcb Dwg # =		Scale		Nts		Title	
Drawn	Name	Date	Sheet	4	Soemtron ETR 222 Calculator		
Checked	MD Hatch	20/11/2018	Next Sheet	5	Transcribed Misc Circuits		
Drawing Number				XXXX		A2 Issue A	

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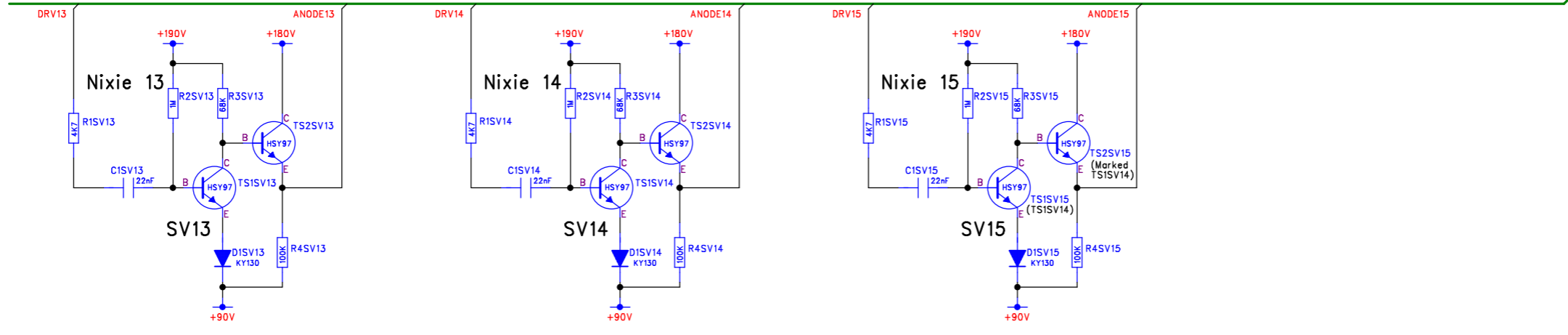
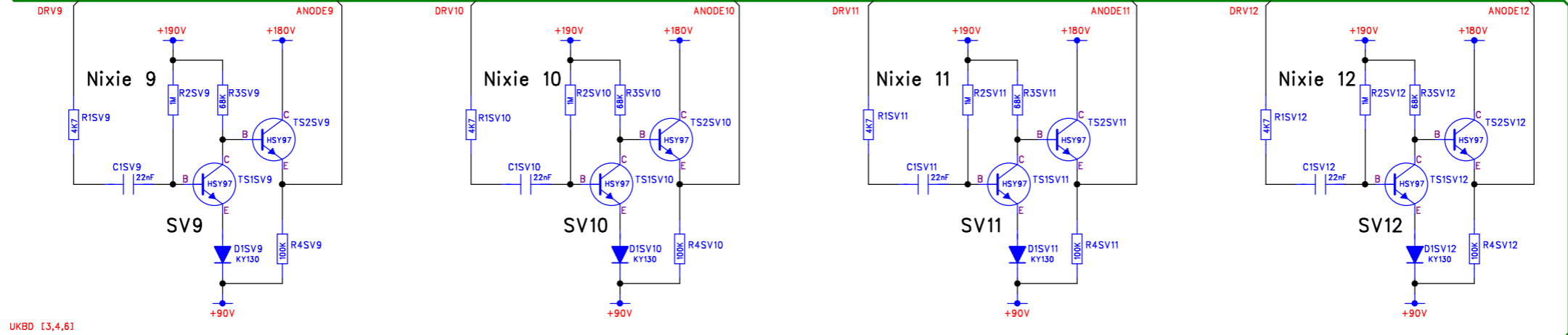
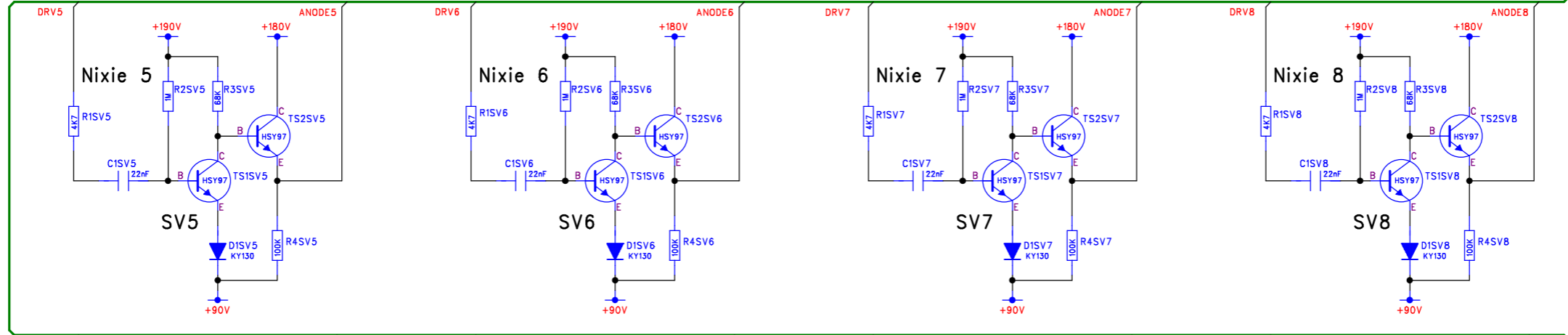
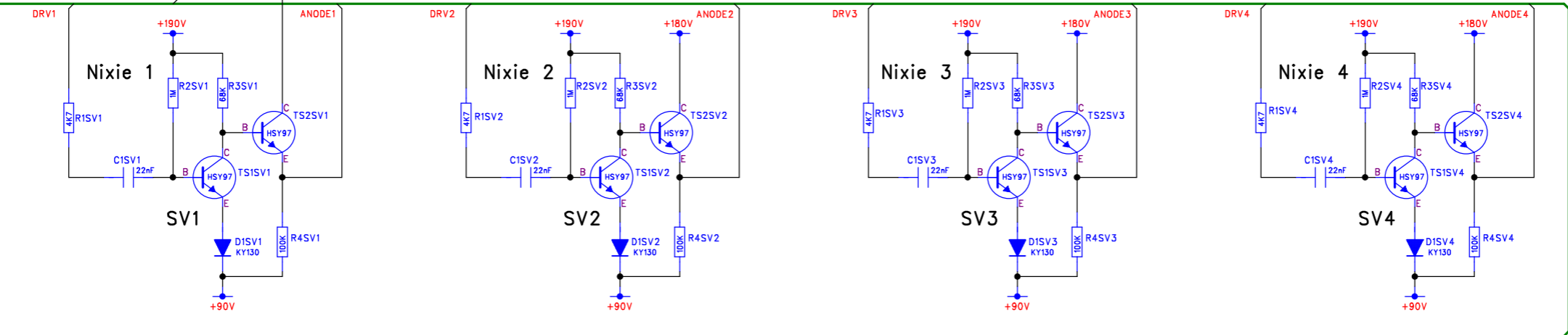
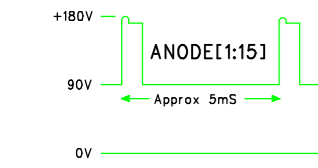
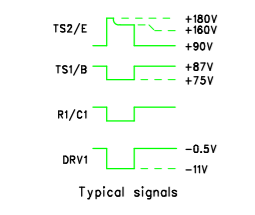
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UKBD [3,4,6]



RevNo	Revision note	Date	By	Checked
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Component references for these waveforms are for driver "Nixie 1" (right), remaining driver circuits have the same signals but with different component designations.



These diagrams are referenced to 0V - Logical 1 = -12V, logical 0 = 0V

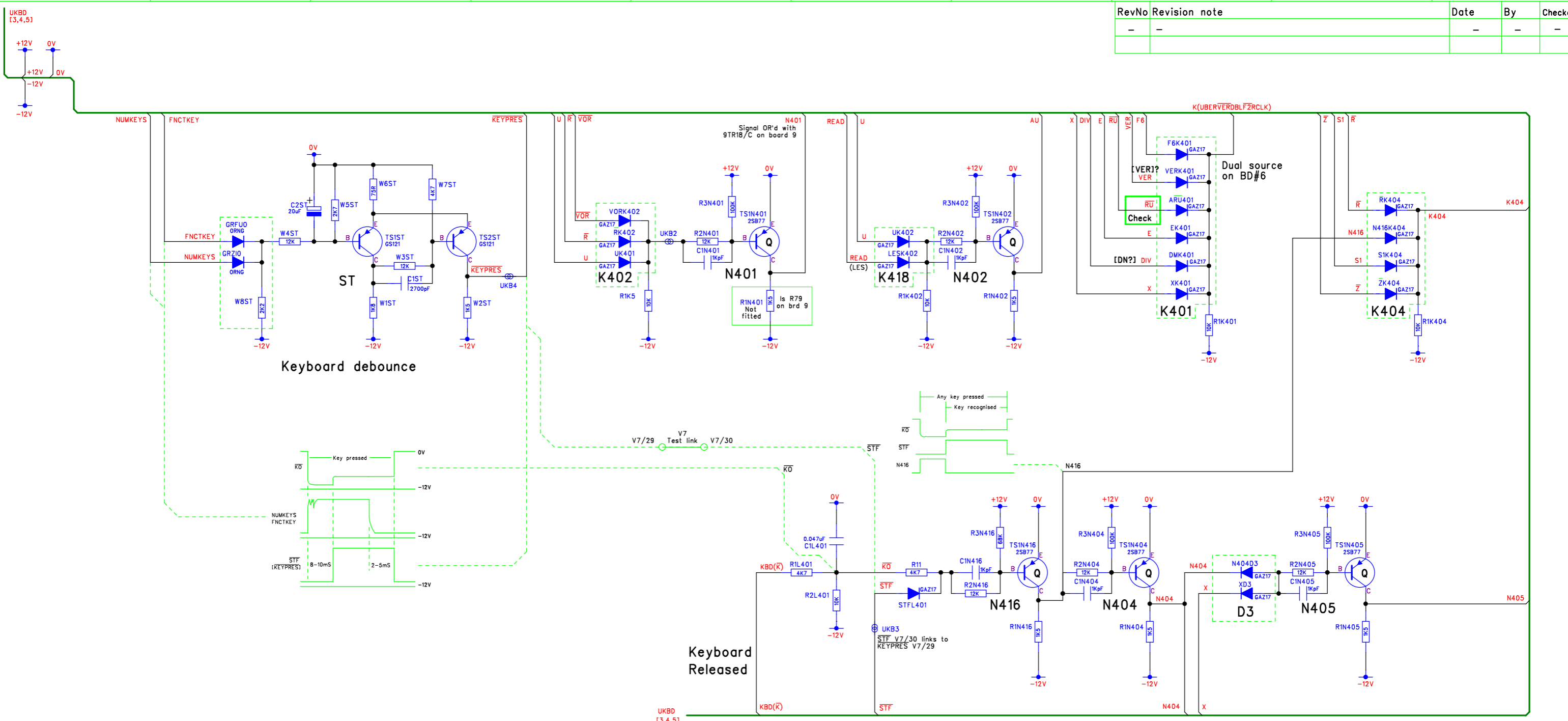


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Pcb Dwg # =		Scale	Nts	Title <b>Søemtron ETR 222 Calculator</b> Transcribed Misc Circuits
Drawn	Name MD Hatch	Date 20/11/2018	Sheet 5	
Checked			Next Sheet 6	Display Drivers PCB - Anode Drivers
Drawing Number			Soemtron 222	A2 Issue A

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RevNo	Revision note	Date	By	Checked
-	-	-	-	-



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Pcb Dwg # =		Scale	Nts	Title Soemtron ETR 222 Calculator Transcribed Misc Circuits Display Drivers PCB - Misc
Drawn	MD Hatch	Sheet	6	
Checked	-	Next Sheet	4	Drawing Number Soemtron 222
		Date	20/11/2018	
				A

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