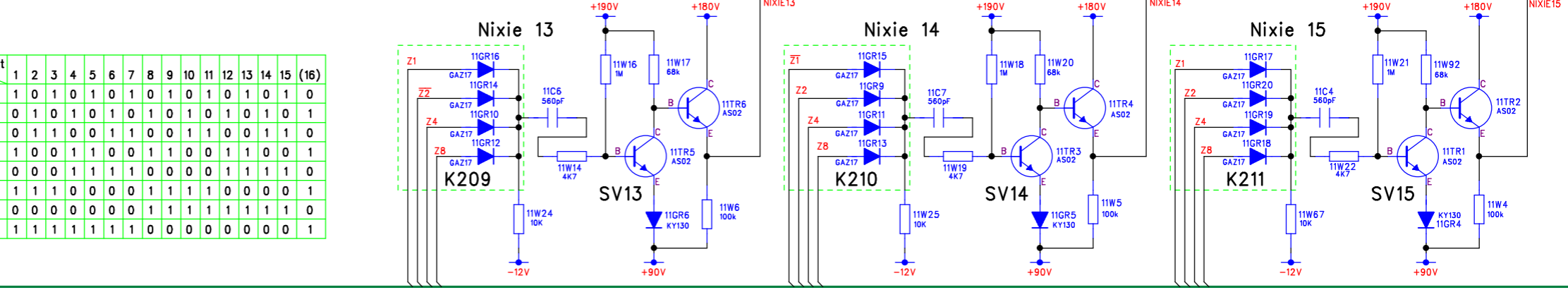
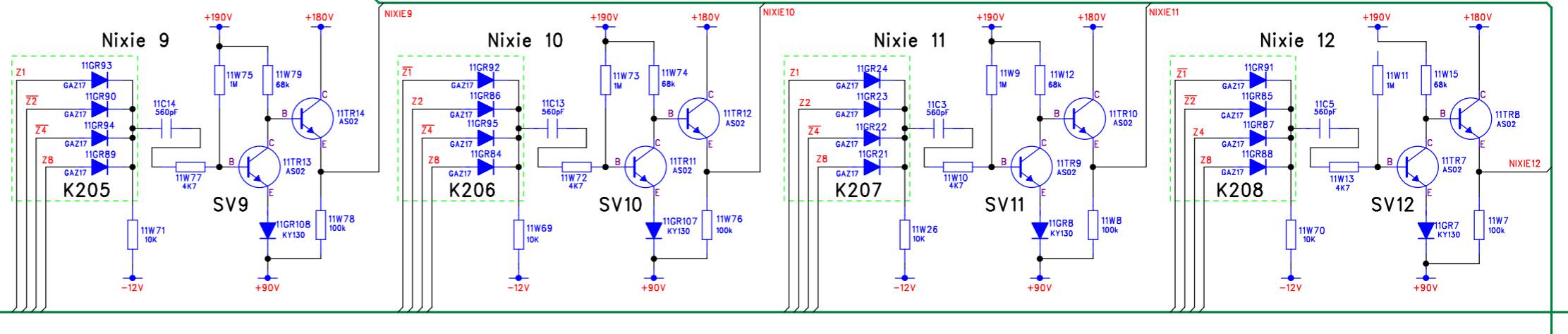
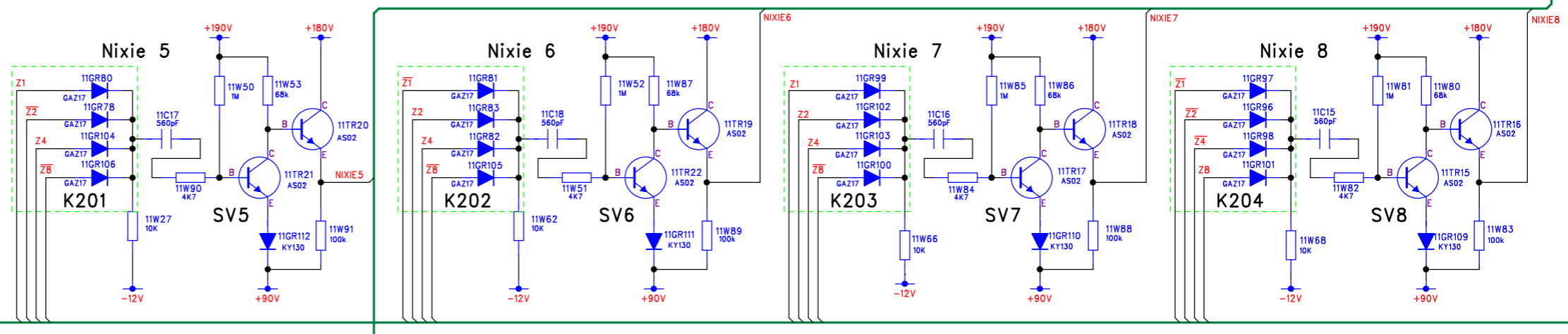
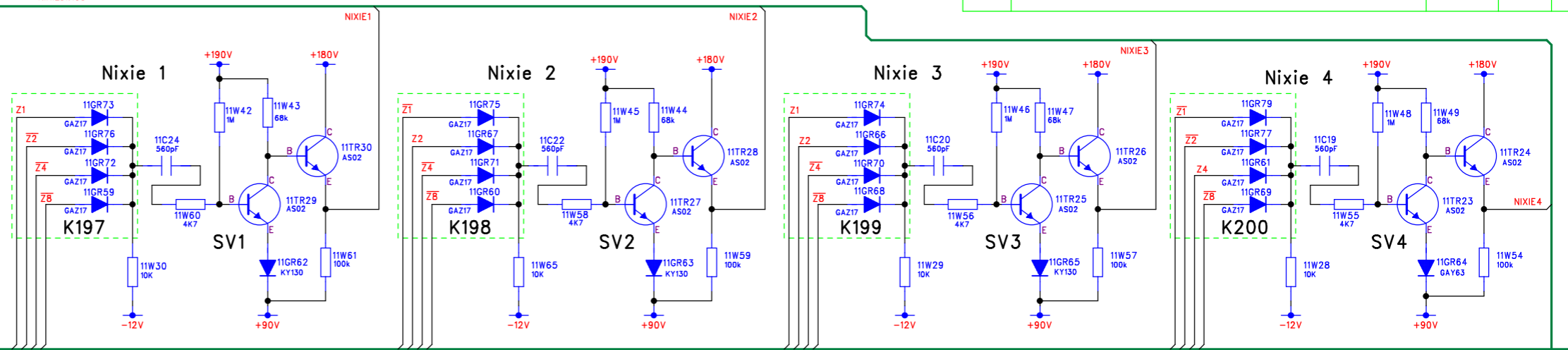
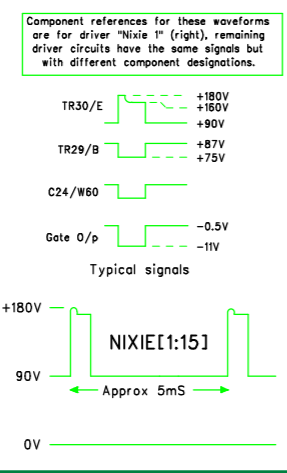


- KY(ADD/SUB) PL11-A1
- +90V PL11-A2
- KY(+/-) PL11-A3
- NIXIE1 PL11-A4
- NIXIE2 PL11-A5
- NIXIE3 PL11-A6
- NIXIE4 PL11-A7
- NIXIE5 PL11-A8
- NIXIE6 PL11-A9
- NIXIE7 PL11-A10
- DIGBUS4 PL11-A11
- NIXIE8 PL11-A12
- NIXIE9 PL11-A13
- +180V PL11-A14
- NIXIE10 PL11-A15
- NIXIE11 PL11-A16
- KBD(+2) PL11-A17
- KY(SUB) PL11-A18
- KBD(+3) PL11-A19
- N/c PL11-A20
- KBD(MINUS) PL11-A21
- KBD(PLUS) PL11-A22
- DIGBUS8 PL11-A23
- KBD(NEG) PL11-A24
- KBD(RC3) PL11-A25
- KBD(-3) PL11-A26
- KBD(+1) PL11-A27
- DIGBUS8 PL11-A28
- DIGBUS4 PL11-A29
- KBD(DIV) PL11-A30
- KBD(R3) PL11-A31
- KY(DIV) PL11-B1
- KBD(-1) PL11-B2
- KBD(-2) PL11-B3
- KBD(RAISE) PL11-B4
- KBD(R1) PL11-B5
- KBD(RC2) PL11-B6
- KBD(RC1) PL11-B7
- N/c PL11-B8
- KBD(R2) PL11-B9
- KBD(MULT) PL11-B10
- KBD(EQU) PL11-B11
- KY(EQU) PL11-B12
- ANYRGX PL11-B13
- KY(MUL) PL11-B14
- N/c PL11-B15
- N/c PL11-B16
- DIGBUS1 PL11-B17
- DIGBUS1 PL11-B18
- N/c PL11-B19
- DIGBUS2 PL11-B20
- DIGBUS2 PL11-B21
- SELREG2 PL11-B22
- SELREG1 PL11-B23
- NIXIE12 PL11-B24
- NIXIE13 PL11-B25
- NIXIE14 PL11-B26
- NIXIE15 PL11-B27
- FNCTKEY PL11-B28
- 0V PL11-B29
- +12V(+Up) PL11-B30
- 12V(-Un) PL11-B31



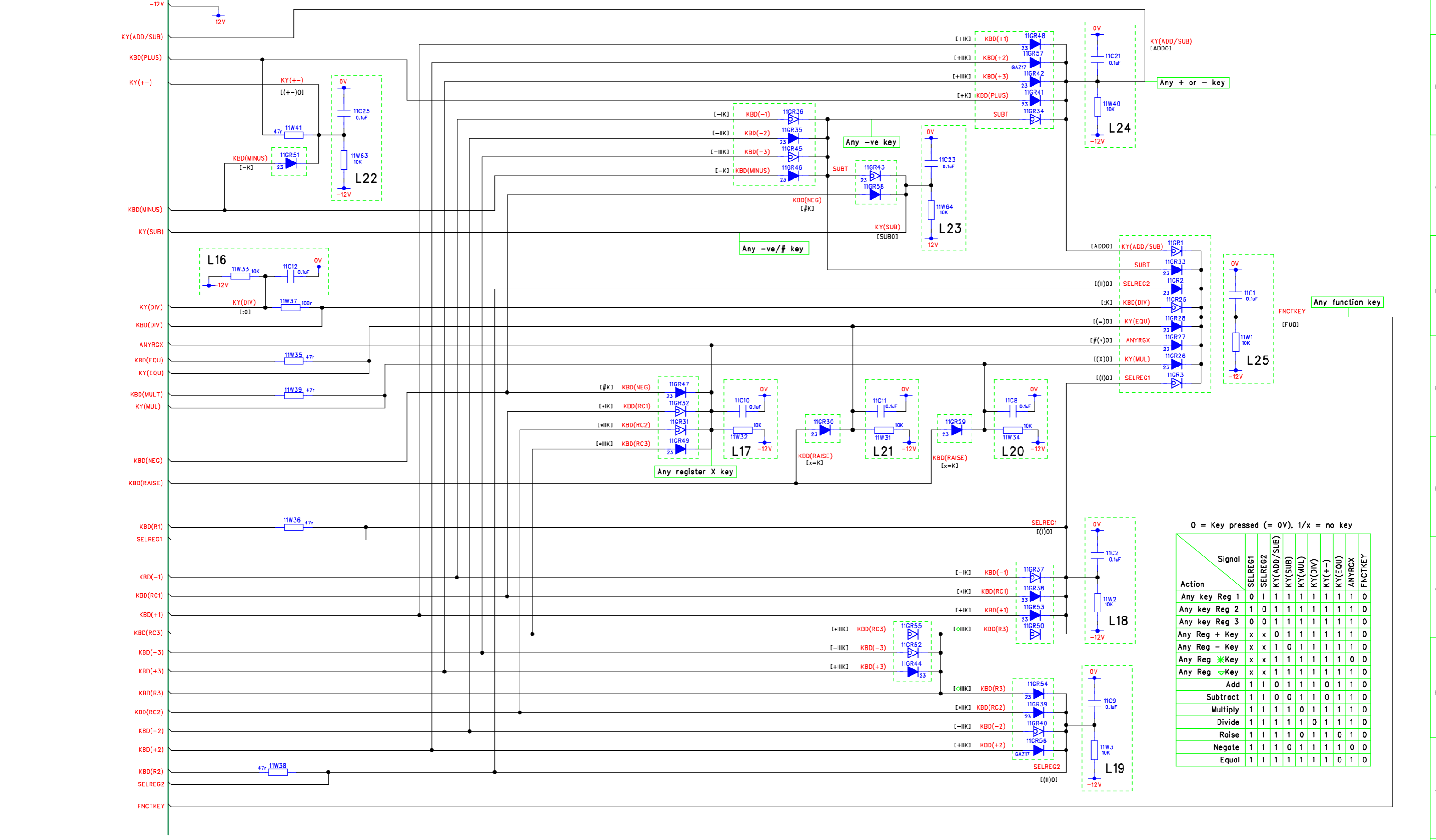
| Signal | Digit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | (16) |
|--------|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|------|
| Z1     | 1     | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1  | 0  | 1  | 0  | 1  | 0  | 1    |
| Z1     | 0     | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0  | 1  | 0  | 1  | 0  | 1  | 0    |
| Z2     | 0     | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1  | 0  | 0  | 1  | 1  | 0  | 0    |
| Z2     | 1     | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0  | 1  | 1  | 0  | 0  | 1  | 0    |
| Z4     | 0     | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1  | 1  | 1  | 0  | 0  | 1  | 0    |
| Z4     | 1     | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0  | 0  | 0  | 0  | 0  | 1  | 0    |
| Z8     | 0     | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 0  | 0    |
| Z8     | 1     | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0  | 1  | 0    |



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|                |          |            |                         |   |    |
|----------------|----------|------------|-------------------------|---|----|
| Pcb Dwg # =    |          | Scale      | Nts                     | Title   |    |
| Drawn          | MD Hatch | Date       | 12/10/2007              | Sheet   | 23 |
| Checked        | -        | Next Sheet | 24                      | Soemtron ETR 220 Calculator<br>#11 - Digit Decode & Anode Drive<br>BOARD 11 Sheet 1 |    |
| Drawing Number |          |            | Soemtron 220 A2 Issue A |   |    |

### Function & Register Key Encoder



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

| Signal        | SELREG1 | SELREG2 | KY(ADD/SUB) | KY(SUB) | KY(MUL) | KY(DIV) | KY(+/-) | KY(EQU) | ANYRGX | FNCTKEY |
|---------------|---------|---------|-------------|---------|---------|---------|---------|---------|--------|---------|
| <b>Action</b> |         |         |             |         |         |         |         |         |        |         |
| Any key Reg 1 | 0       | 1       | 1           | 1       | 1       | 1       | 1       | 1       | 1      | 0       |
| Any key Reg 2 | 1       | 0       | 1           | 1       | 1       | 1       | 1       | 1       | 1      | 0       |
| Any key Reg 3 | 0       | 0       | 1           | 1       | 1       | 1       | 1       | 1       | 1      | 0       |
| Any Reg + Key | x       | x       | 0           | 1       | 1       | 1       | 1       | 1       | 1      | 0       |
| Any Reg - Key | x       | x       | 1           | 0       | 1       | 1       | 1       | 1       | 1      | 0       |
| Any Reg *Key  | x       | x       | 1           | 1       | 1       | 1       | 1       | 1       | 0      | 0       |
| Any Reg /Key  | x       | x       | 1           | 1       | 1       | 1       | 1       | 1       | 1      | 0       |
| Add           | 1       | 1       | 0           | 1       | 1       | 0       | 1       | 1       | 0      | 0       |
| Subtract      | 1       | 1       | 0           | 0       | 1       | 1       | 0       | 1       | 1      | 0       |
| Multiply      | 1       | 1       | 1           | 1       | 0       | 1       | 1       | 1       | 1      | 0       |
| Divide        | 1       | 1       | 1           | 1       | 1       | 0       | 1       | 1       | 1      | 0       |
| Raise         | 1       | 1       | 1           | 1       | 0       | 1       | 1       | 0       | 1      | 0       |
| Negate        | 1       | 1       | 1           | 0       | 1       | 1       | 1       | 1       | 0      | 0       |
| Equal         | 1       | 1       | 1           | 1       | 1       | 1       | 1       | 0       | 1      | 0       |

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



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Pcb Dwg # =

|          |            |
|----------|------------|
| Name     | Date       |
| MD Hatch | 12/10/2007 |
| Checked  | -          |

|                |              |
|----------------|--------------|
| Scale          | Nts          |
| Sheet          | 24           |
| Next Sheet     | 25           |
| Drawing Number | Soemtron 220 |

|       |                                 |
|-------|---------------------------------|
| Title | Soemtron ETR 220 Calculator     |
|       | #11 - Keyboard Function Encoder |
|       | BOARD 11 Sheet 2                |
| Issue | A2                              |