

Snagging list

Söemtron ETR 220 Logic

The following list is for connections and signals for the - **logic diagrams** - that need checking during the reverse engineering of the Söemtron ETR 220 Calculator. It is provided solely as an information source as to the current problems that need investigating.

This list changes continually without notice.

Note - nets with a backslash (\) are negative logic.

Board #1 - pending

Gate K1 is also on Board 7, circuit shows as gate K65 on boards 7 and 4.

Check KBD(Lö) to keyboard (switch was missing).

Check LöSpe (sheet 2) not connected ?

Board #2 - none

Check net 3GR36-VE on gate K8 driver ZAC0 appears not connected

Board #3 - pending

Gate K28 split over boards 3/4 ?

Board #4 - none

Board #5 - none

Board #6 - none

Board #7 - pending

KBD(LO1) not connected to keyboard (switch missing).

Board #8 - pending

KBD(LO1) not connected to keyboard (switch missing).

Board #9 - pending

1. 9C48 / 9W10 is net DIV, enable resistor 9W10 on wrong side of 9C48 ?, also pulled to -12V ?

2. Resistor 9W20 pulled to -12V ?

KBD(LO1) not connected to keyboard (switch missing).

Board #10 - none

Board #11 - pending

Drawing to be finished

Board #12 - none

Display - none

Keyboard - pending

KBD(Lö) and KBD(Lö1) switch contacts and signals missing to page 7 &

Backplane - none

Söemtron ETR 220 Circuits - Snagging list

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Note - nets with a backslash (\) are negative logic.

Board #1 - pending

1. Check LöSpe (sheet 2) not connected ?

Board #2 - pending

1. Check net 3GR36-VE on gate K8 driver ZAC0 appears not connected

Board #3 - pending

1. Backplane net $\overline{B1}$ pin B26 connects to this board but is not used.
2. Backplane net $\overline{F6}$ pin B22 connects to this board but is not used.
3. Backplane net MZ pin A28 connects to this board but is not used.
5. Logic diagram net SYM pin A22 connects to PL6/A22 but is net AUSGN39. See note #6.1
6. K28 net K(LES, \overline{VER} , V) pin 15, also on board 4 as K(LES, \overline{VER} , V, UBER) pin14.

Board #4 - pending

1. Gate K62 logic shows 10k to pin 48 ($\overline{DGDRV0}$), board & circuit has GR60.
2. K65 is also on sheet 7 of GDR logics (UBER flip-flop), board 4 K65 looks correct from other gate numbering.
3. K28 net K(LES, \overline{VER} , V, UBER) pin14, also on board 3 as K28 net K(LES, \overline{VER} , V) pin 15.

Board #5 - pending

1. Backplane Net B33 pin B27 connects to this board but is not used.

Board #6 - pending

1. Net AUSGN39 pin A22 connects to PL3/A22 but is net SYM on the logic diagrams. See note #3.5

Board #7 - pending

1. F/f R, gate K141, net S16 i/p not from pin A2. S16 is pin A29, confirmed by K133 S16 i/p. Pin A2 is net KF11B4F.
2. Master Clear gate net KBD(CL1) Lõ has no gate #. Gate is split between boards 7, 8 & 9.
Also Lõ from power supply pin 16.
3. K65 is also on sheet 4 of GDR logics (UBER flip-flop), suspect it is K139, renamed as such.

Board #8 - pending

1. Backplane net $\overline{S1}$ pin A2 connects to this board but is not used.
2. K152 o/p pin B17 (48) is net K(\overline{R} , \overline{VOR} , MZ) connected to pin 48 is net K(\overline{R} , S16) from board 3 pin 46.
Net K(\overline{R} , \overline{VOR} , $\overline{F1}$, \overline{VER} , S16, MZ) Renamed as K(\overline{R} , $\overline{S16}$)
3. W78 is net KYCLER pin B25 (56), on logic diagram it is net CO connecting to pin B26 (57) on board 12.
4. Net CO pin B26 (57) connects to –
Pin 57 (B26) on board 8 – net K($\overline{A8}$, \overline{RU} , \overline{R} , S16, VLS, \overline{VOR}) – gate K160.
Pin 57 (B26) on board 9 – net K($\overline{A8}$, \overline{RU} , \overline{R} , S16, VLS, \overline{VOR} , AUSG) – gate K161.
Pin 57 (B26) on board 10 – net K($\overline{A8}$, \overline{RU} , \overline{R} , VLS, \overline{VOR} , AUSG) – gate K160.
5. Pin A10 net $\overline{KEYPRESS}$ not connected on board.
6. Backplane net G1 pin A10 connects to this board but is not used.
7. Backplane net B33 pin B28 connects to this board but is not used.
8. Master Clear gate net KBD(CL1) Lõ has no gate #. Gate is split between boards 7, 8 & 9.
Also Lõ from power supply pin 16.

Board #9 - finished

See note #8.4.

1. K161 o/p pin B26 (57) is net CO from board 8 pin 57 and board 10 pin 57, but is net $K(\overline{A8}, \overline{RU}, R, S16, VLS, \overline{VOR}, AUSG)$ on logic diagram.
2. K162 pull down W113 ? not connected to net M pin A9.
3. Net NUMKEYS was net Z/0 is connected to pin B17 (48) but logic diagram is pin B9 (40).

Board #10 - pending

See note # 8.4

1. Gate K155 o/p is net $K(\overline{F1F}, MUL, \overline{F}, S1)$ on logic diagram it is $K(F1F, MUL, \overline{F}, S1)$ F1F part is inverted
3. Gate K194 o/p is net $K(R, S)$ on logic diagram it is $K(R, S1)$, pin number is correct.

Board #11 - none

Board #12 - none

Display - none

Keyboard

1. Check relationship of net COM2 to switch KS9 (Register 3 Recall / clear) and net COM2 on boards 1 and 2.
2. Check COM2 connections back to power supply ?

Backplane - pending

1. Net LM4, (SK1/A24, SK2/A24, SK5/A25, SK6/A25) net names displaces suggesting a name change, check all connections.
2. Net \overline{MCLK} changed to S as per logic diagram, check backplane connections, Eg board 5 pin A20.
3. Net A44 SK6/A22 to SK3/A22 is net SYM on board 3 and AUSGN39 on board 6.
4. PL8/A29 connects to PL3/A28.
5. SK3/A6 joined to SK6/A6 as net A41 but not used on board 3 or board 6.

Power supply - pending

1. Check routing of PSU connector pin 16 Net L \ddot{o} , circuit shows as SK9/B19, Net KBD(CL1) on board 9.
Ties in with second 220 having a relay latched by pressing keyboard L \ddot{o} key, latching the relay turns on the display.