Every track and pad checked against the original artwork

T0.5 and T22.5 were flipped, change them around as shown

Spare gates

1. Inputs for all unused gates connected to GND

| RefDes | Part No | Supplier |
|---|---|---|
| U1 | 74LS00 | |
| U2 | 74LS10 | |
| U3 | 74LS04 | |
| U4 | 74LS10 | |
| U5 | 74LS00 | |
| U6 | 74LS20 | |
| U7 | 74LS00 | |
| U8 | 74LS259 | |
| U9 | 74LS00 | |
| U10 | 74LS00 | |
| U11 | 74LS00 | |
| U12 | 74LS00 | |
| U13 | 74LS00 | |
| U14 | 74LS04 | |
| R1 | 2.2K 1/4 Watt resistor | |
| C1 | 100nF 50v Polyester | |
| C2 | - | |
| C3 | - | |
| C4 | - | |
| C5 | - | |
| C6 | - | |
| C7 | - | |
| C8 | - | |
| C9 | - | |
| C10 | - | |
| C11 | - | |
| C12 | - | |
| C13 | - | |
| C14 | - | |
| C15 | 100uF 35v electro | |
| C16 | 100uF 35v electro | |

| Part No | Type | QTY |
|---|---|---|
| 74LS00 | Quad NAND | 8 |
| 74LS04 | Hex Inverter | 2 |
| 74LS10 | 3 input NAND | 2 |
| 74LS20 | 4 input NAND | 1 |
| 74LS259 | Addressable 8 bit latch | 1 |
| C1-14 | 100nF 50v Polyester | 14 |
| C15-16 | 100uF 35v electro | 2 |
| R1 | 2.2K 1/4 Watt resistor | 1 |

| CONNECTION TABLE | | | |
|---|---|---|---|
| CARD EDGE 1 | | | DB25 |
| Pin No | Function | J | Pin No |
| 1 | GND | 1 | 1 |
| 2 | +5V DC | 1 | 14 |
| 3 | T22.5 | 1 | 2 |
| 4 | I/O_DEVICE_SELECT | 1 | 15 |
| 5 | I/O GATING | 1 | 3 |
| 6 | CLEAR_IOT_FLAG | 1 | 16 |
| 7 | SKIP ON IOT FLAG | 1 | 4 |
| 8 | T0.5 | 1 | 17 |
| 9 | T14-21 | 1 | 5 |
| 10 | T14-21 | 1 | 18 |
| 11 | IOT SHIFT | 1 | 6 |
| 12 | T2-9 | 1 | 19 |
| 13 | T2-9.(TAD+IAC+CMA) | 1 | 7 |
| 14 | T2-9.ISZ | 1 | 20 |
| 15 | JMS+DCA | 1 | 8 |
| 16 | OPR+IOT | 1 | 21 |
| 17 | T14-21(JMS+JMP) | 1 | 9 |
| 18 | T14-21.SKIP | 1 | 22 |
| 19 | DEFER | 1 | 10 |
| 20 | - | 1 | 23 |
| 21 | EXECUTE | 1 | 11 |
| 22 | F+DEP+EXM | 1 | 24 |
| 23 | MEM.ENABLE | 1 | 12 |
| 24 | HLT | 1 | 25 |
| 25 | RAR | 1 | 13 |
| 26 | SMA | 2 | 1 |
| 27 | SZA | 2 | 14 |
| 28 | IAC | 2 | 2 |
| 29 | RAL | 2 | 15 |
| 30 | CMA | 2 | 3 |
| 31 | CLA | 2 | 16 |
| 32 | OPR | 2 | 4 |
| CARD EDGE 2 | | | |
| Pin No | | | |
| A | AND | 2 | 17 |
| B | TAD | 2 | 5 |
| C | ISZ | 2 | 18 |
| D | DCA | 2 | 6 |
| E | JMS | 2 | 19 |
| F | JMP | 2 | 7 |
| G | IOT | 2 | 20 |
| H | OPR | 2 | 8 |
| J | MB0 | 2 | 21 |
| K | MB1 | 2 | 9 |
| L | MB2 | 2 | 22 |
| M | MB3 | 2 | 10 |
| N | MB4 | 2 | 23 |
| P | MB5 | 2 | 11 |
| Q | MB6 | 2 | 24 |
| R | MB7 | 2 | 12 |
| - | +5V | 2 | 25 |
| - | GND | 2 | 13 |

| Unused gates | | | | |
|---|---|---|---|---|
| Part No | Gate | Input pins | Out | |
| U2 | A | 1 | 2 | NAND |
| U4 | B | 3 | 4 | NAND |
| U14 | A | 1 | 2 | INVERTER |
| U14 | B | 3 | 4 | INVERTER |
| U14 | C | 5 | 6 | INVERTER |



# INSTRUCTION DECODER

Sheet: /
File: educ 8 decoder.kicad_sch

Size: A2 | Date: | Rev:
KiCad E.D.A. kicad (6.0.4-0) | Id: 1/1