

The reset circuits R9/R10/C29/C30 should be installed. The termination circuits R3-6/C25-28 shouldn't be required. When wiring ribbon cables, the end attached to the ELO board should have two IDCs on it; there is no connection on the PCB for the clock/data etc. lines between the two pairs of displays.

+5V Power enters through J7 and D1. There is no connection to +5V on other headers, apart from J4 to potentially drive SRIO modules.

BOM v1.0

| Type | Part | Value | Device |
|------|------|----------|-----------|
| Caps | C1 | 10—100uF | CPOL-EU-1 |
| | C2 | 100n | C1206 |
| | C3 | 100n | C1206 |
| | C4 | 100n | C1206 |
| | C5 | 100n | C1206 |
| | C6 | 100n | C1206 |
| | C7 | 100n | C1206 |
| | C8 | 100n | C1206 |
| | C9 | 100n | C1206 |
| | C10 | 100n | C1206 |
| | C11 | 100n | C1206 |
| | C12 | 100n | C1206 |
| | C13 | 100n | C1206 |
| | C14 | 100n | C1206 |
| | C15 | 100n | C1206 |
| | C16 | 100n | C1206 |
| | C17 | 100n | C1206 |
| | C18 | DNF | |
| | C19 | 100n | C1206 |
| | C20 | 100n | C1206 |
| | C21 | 100n | C1206 |
| | C22 | 100n | C1206 |
| | C23 | 100n | C1206 |

| Type | Part | Value | Device |
|------|------|-------|---------------|
| | C24 | 100n | C1206 |
| | C25 | DNF | |
| | C26 | DNF | |
| | C27 | DNF | |
| | C28 | DNF | |
| | C29 | 10uF | CPOL-EUE2.5-5 |
| | C30 | 10uF | CPOL-EUE2.5-5 |
| | C31 | 5p | C-EUC1206 |
| | C32 | 5p | C-EUC1206 |
| | C33 | 5p | C-EUC1206 |
| | C34 | 5p | C-EUC1206 |
| | C35 | 5p | C-EUC1206 |
| | C36 | 5p | C-EUC1206 |
| | C37 | 5p | C-EUC1206 |
| | C38 | 5p | C-EUC1206 |
| | C39 | 5p | C-EUC1206 |
| | C40 | 5p | C-EUC1206 |
| | C41 | 5p | C-EUC1206 |
| | C42 | 5p | C-EUC1206 |
| | C43 | 5p | C-EUC1206 |
| | C44 | 5p | C-EUC1206 |
| | C45 | 5p | C-EUC1206 |
| | C46 | 5p | C-EUC1206 |
| | C47 | 10p | C-EUC1206 |
| | C48 | 10p | C-EUC1206 |
| | C49 | 10p | C-EUC1206 |
| | C50 | 10p | C-EUC1206 |
| | C51 | 10p | C-EUC1206 |
| | C52 | 10p | C-EUC1206 |
| | C53 | 10p | C-EUC1206 |
| | C54 | 10p | C-EUC1206 |
| | C55 | 10p | C-EUC1206 |
| | C56 | 10p | C-EUC1206 |
| | C57 | 10p | C-EUC1206 |
| | C58 | 10p | C-EUC1206 |
| | C59 | 10p | C-EUC1206 |
| | C60 | 10p | C-EUC1206 |
| | C61 | 10p | C-EUC1206 |
| | C62 | 10p | C-EUC1206 |
| | C63 | 1n | C-EUC1206 |
| | C64 | 1n | C-EUC1206 |
| | C65 | 1n | C-EUC1206 |
| | C66 | 1n | C-EUC1206 |
| | C67 | 1n | C-EUC1206 |
| | C68 | 1n | C-EUC1206 |

| Type | Part | Value | Device |
|--------|------|--------|-----------|
| | C69 | 1n | C-EUC1206 |
| | C70 | 1n | C-EUC1206 |
| | C71 | 1n | C-EUC1206 |
| | C72 | 1n | C-EUC1206 |
| | C73 | 1n | C-EUC1206 |
| | C74 | 1n | C-EUC1206 |
| | C75 | 1n | C-EUC1206 |
| | C76 | 1n | C-EUC1206 |
| | C77 | 1n | C-EUC1206 |
| | C78 | 1n | C-EUC1206 |
| | C79 | 10n | C-EUC1206 |
| | C80 | 10n | C-EUC1206 |
| | C81 | 10n | C-EUC1206 |
| | C82 | 10n | C-EUC1206 |
| | C83 | 10n | C-EUC1206 |
| | C84 | 10n | C-EUC1206 |
| | C85 | 10n | C-EUC1206 |
| | C86 | 10n | C-EUC1206 |
| | C87 | 10n | C-EUC1206 |
| | C88 | 10n | C-EUC1206 |
| | C89 | 10n | C-EUC1206 |
| | C90 | 10n | C-EUC1206 |
| | C91 | 10n | C-EUC1206 |
| | C92 | 10n | C-EUC1206 |
| | C93 | 10n | C-EUC1206 |
| | C94 | 10n | C-EUC1206 |
| | C95 | 100n | C1206 |
| | C96 | 100n | C1206 |
| | C97 | 100n | C1206 |
| | C98 | 100n | C1206 |
| | C99 | 100n | C1206 |
| | C100 | 100n | C1206 |
| | C101 | 100n | C1206 |
| | C102 | 100n | C1206 |
| Diodes | D1 | 1N5817 | 1N5817-B |
| | DD1 | BAV99 | BAV99 |
| | DD2 | BAV99 | BAV99 |
| | DD3 | BAV99 | BAV99 |
| | DD4 | BAV99 | BAV99 |
| | DD5 | BAV99 | BAV99 |
| | DD6 | BAV99 | BAV99 |
| | DD7 | BAV99 | BAV99 |
| | DD8 | BAV99 | BAV99 |
| | DD9 | BAV99 | BAV99 |
| | DD10 | BAV99 | BAV99 |

| Type | Part | Value | Device |
|----------|------|---------------------|--------------------|
| | DD11 | BAV99 | BAV99 |
| | DD12 | BAV99 | BAV99 |
| | DD13 | BAV99 | BAV99 |
| | DD14 | BAV99 | BAV99 |
| | DD15 | BAV99 | BAV99 |
| | DD16 | BAV99 | BAV99 |
| Encoders | EN1 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN2 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN3 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN4 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN5 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN6 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN7 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN8 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN9 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN10 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN11 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN12 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN13 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN14 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN15 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| | EN16 | ENCODER_NO_SWITCHSW | ENCODER_NO_SWITCH |
| ICs | IC1 | 74HC165D | SOIC16 |
| | IC2 | 74HC165D | SOIC16 |
| | IC3 | 74HC165D | SOIC16 |
| | IC4 | 74HC165D | SOIC16 |
| | IC5 | 74HC165D | SOIC16 |
| | IC6 | 74HC165D | SOIC16 |
| | IC7 | 74HC14D | SOIC14 |
| | IC8 | 74HC14D | SOIC14 |
| | IC9 | 74HC14D | SOIC14 |
| | IC10 | 74HC14D | SOIC14 |
| | IC11 | 74HC14D | SOIC14 |
| | IC12 | 74HC14D | SOIC14 |
| | IC13 | 74HC14D | SOIC14 |
| | IC14 | 74HC14D | SOIC14 |
| Headers | J1 | WS2812 | IN |
| | J2 | WS2812 | OUT |
| | J3 | SRIO IN | PAK100/2500-10 |
| | J4 | SRIO OUT | PAK100/2500-10 |
| | J5 | DISP1-2 | PINHD-2X54WALL |
| | J6 | DISP3-4 | PINHD-2X54WALL |
| | J7 | +5V | 22-23-2031 |
| Displays | LCD1 | 0.96_OLED | LCD_OLED_0.96_PINS |
| | LCD2 | 0.96_OLED | LCD_OLED_0.96_PINS |

| Type | Part | Value | Device |
|-----------|-------|-----------|--------------------|
| | LCD3 | 0.96_OLED | LCD_OLED_0.96_PINS |
| | LCD4 | 0.96_OLED | LCD_OLED_0.96_PINS |
| LEDs | LED1 | WS2812B | WS2812B |
| | LED2 | WS2812B | WS2812B |
| | LED3 | WS2812B | WS2812B |
| | LED4 | WS2812B | WS2812B |
| | LED5 | WS2812B | WS2812B |
| | LED6 | WS2812B | WS2812B |
| | LED7 | WS2812B | WS2812B |
| | LED8 | WS2812B | WS2812B |
| | LED9 | WS2812B | WS2812B |
| | LED10 | WS2812B | WS2812B |
| | LED11 | WS2812B | WS2812B |
| | LED12 | WS2812B | WS2812B |
| | LED13 | WS2812B | WS2812B |
| | LED14 | WS2812B | WS2812B |
| | LED15 | WS2812B | WS2812B |
| | LED16 | WS2812B | WS2812B |
| Resistors | R1 | 220-470R | R-EU_0204/7 |
| | R2 | DNF | |
| | R3 | DNF | |
| | R4 | DNF | |
| | R5 | DNF | |
| | R6 | DNF | |
| | R7 | DNF | |
| | R8 | DNF | |
| | R9 | 2k2 | R-EU_0204/7 |
| | R10 | 2k2 | R-EU_0204/7 |
| | R11 | 10k | R-EU_R1206 |
| | R12 | 10k | R-EU_R1206 |
| | R13 | 10k | R-EU_R1206 |
| | R14 | 10k | R-EU_R1206 |
| | R15 | 10k | R-EU_R1206 |
| | R16 | 10k | R-EU_R1206 |
| | R17 | 10k | R-EU_R1206 |
| | R18 | 10k | R-EU_R1206 |
| | R19 | 10k | R-EU_R1206 |
| | R20 | 10k | R-EU_R1206 |
| | R21 | 10k | R-EU_R1206 |
| | R22 | 10k | R-EU_R1206 |
| | R23 | 10k | R-EU_R1206 |
| | R24 | 10k | R-EU_R1206 |
| | R25 | 10k | R-EU_R1206 |
| | R26 | 10k | R-EU_R1206 |
| | R27 | 1M | R-EU_R1206 |

| Type | Part | Value | Device |
|------|------|-------|------------|
| | R28 | 1M | R-EU_R1206 |
| | R29 | 1M | R-EU_R1206 |
| | R30 | 1M | R-EU_R1206 |
| | R31 | 1M | R-EU_R1206 |
| | R32 | 1M | R-EU_R1206 |
| | R33 | 1M | R-EU_R1206 |
| | R34 | 1M | R-EU_R1206 |
| | R35 | 1M | R-EU_R1206 |
| | R36 | 1M | R-EU_R1206 |
| | R37 | 1M | R-EU_R1206 |
| | R38 | 1M | R-EU_R1206 |
| | R39 | 1M | R-EU_R1206 |
| | R40 | 1M | R-EU_R1206 |
| | R41 | 1M | R-EU_R1206 |
| | R42 | 1M | R-EU_R1206 |
| | R43 | 1M | R-EU_R1206 |
| | R44 | 1M | R-EU_R1206 |
| | R45 | 1M | R-EU_R1206 |
| | R46 | 1M | R-EU_R1206 |
| | R47 | 1M | R-EU_R1206 |
| | R48 | 1M | R-EU_R1206 |
| | R49 | 1M | R-EU_R1206 |
| | R50 | 1M | R-EU_R1206 |
| | R51 | 1M | R-EU_R1206 |
| | R52 | 1M | R-EU_R1206 |
| | R53 | 1M | R-EU_R1206 |
| | R54 | 1M | R-EU_R1206 |
| | R55 | 1M | R-EU_R1206 |
| | R56 | 1M | R-EU_R1206 |
| | R57 | 1M | R-EU_R1206 |
| | R58 | 1M | R-EU_R1206 |
| | R59 | 10K | R-EU_R1206 |
| | R60 | 10K | R-EU_R1206 |
| | R61 | 10K | R-EU_R1206 |
| | R62 | 10K | R-EU_R1206 |
| | R63 | 10K | R-EU_R1206 |
| | R64 | 10K | R-EU_R1206 |
| | R65 | 10K | R-EU_R1206 |
| | R66 | 10K | R-EU_R1206 |
| | R67 | 10K | R-EU_R1206 |
| | R68 | 10K | R-EU_R1206 |
| | R69 | 10K | R-EU_R1206 |
| | R70 | 10K | R-EU_R1206 |
| | R71 | 10K | R-EU_R1206 |
| | R72 | 10K | R-EU_R1206 |

| Type | Part | Value | Device |
|-------------------|------|---------------|--------------------|
| | R73 | 10K | R-EU_R1206 |
| | R74 | 10K | R-EU_R1206 |
| Resistor networks | RN1 | 10k | 652-4816P-T2LF-10K |
| | RN2 | DNF/see notes | |
| | RN3 | 10k | 652-4816P-T2LF-10K |
| | RN4 | 10k | 652-4816P-T2LF-10K |
| | RN5 | DNF/see notes | |
| | RN6 | 10k | 652-4816P-T2LF-10K |
| Touch sensors | TS1 | R-EU_TS | 0204TS |
| | TS2 | R-EU_TS | 0204TS |
| | TS3 | R-EU_TS | 0204TS |
| | TS4 | R-EU_TS | 0204TS |
| | TS5 | R-EU_TS | 0204TS |
| | TS6 | R-EU_TS | 0204TS |
| | TS7 | R-EU_TS | 0204TS |
| | TS8 | R-EU_TS | 0204TS |
| | TS9 | R-EU_TS | 0204TS |
| | TS10 | R-EU_TS | 0204TS |
| | TS11 | R-EU_TS | 0204TS |
| | TS12 | R-EU_TS | 0204TS |
| | TS13 | R-EU_TS | 0204TS |
| | TS14 | R-EU_TS | 0204TS |
| | TS15 | R-EU_TS | 0204TS |
| | TS16 | R-EU_TS | 0204TS |

Versions

v1.0: first release.

Assembly

Decide on the layout. Only four encoders are supported. ENSW1 and ENSW4 are always available; EN2/ENSW2 and EN3/ENSW3 share pins. The switch for ENSW2/ENSW3 is also shared. This way one can choose whether to have switched encoders or encoders illuminated with WS2812B LEDs.

If illuminated encoders are desired, install these and the associated capacitors first.

Next diodes and resistors/links. Align the diode band with the silkscreen legend. Next the two electrolytic caps.

OLEDs could be socketed using a right-angle pin header. This means a corresponding female header would need to replace the standard 7-pin one common to these displays.

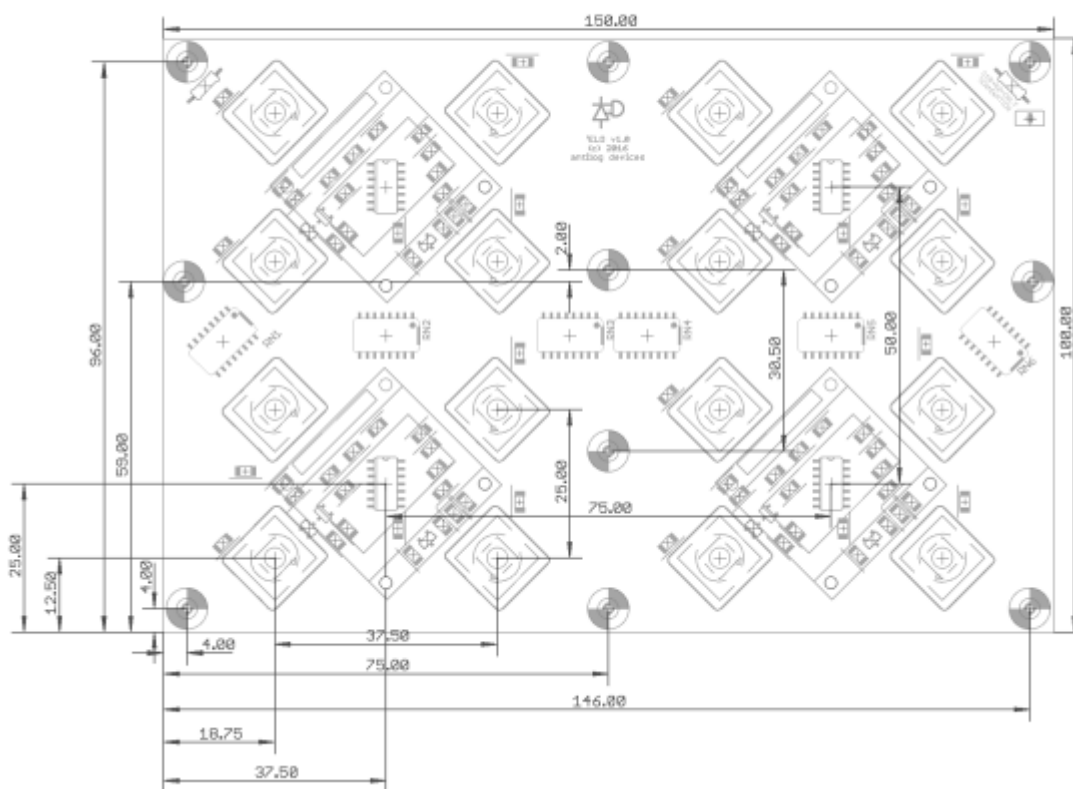
Headers, switches and encoders come last. Note the flat part of the switch, which must align with the DT6 switch body. Illuminated encoders should be raised up around 2mm to fit over the LED and still

turn freely.

Interconnection to Core

Headers are mentioned above. DIN/DOUT connect to DINX4/DOUTX4 or a DIOMATRIX. J10B to J10B

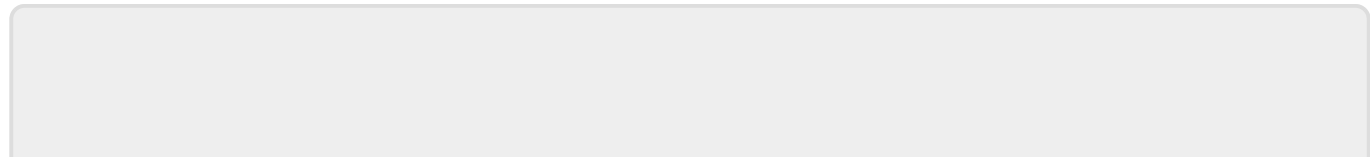
Dimensions



elo_v1.0_doku.zip

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