Parts List For 8 Bit Computer Project ELTR-190

| Clock Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 3 |  | LM555CNNS/NOPB-ND | [555 timer](https://eater.net/datasheets/lm555.pdf) IC | LM555CN/NOPB (8) |
|  | 1 |  | 296-1629-5-ND | [74LS04 Hex inverter](https://eater.net/datasheets/74ls04.pdf) |  |
|  | 1 |  | 296-1633-5-ND | [74LS08 Quad AND gate](https://eater.net/datasheets/74ls08.pdf) |  |
|  | 1 |  | [74LS32](https://eater.net/datasheets/74ls32.pdf)  296-2062-ND | [74LS32 Quad OR gate](https://eater.net/datasheets/74ls32.pdf) | CD4071BE |
|  | 6 |  |  | 1kΩ resistor |  |
|  | 1 |  |  | 220Ω resistor |  |
|  | 1 |  |  | Blue LED |  |
|  | 3 |  |  | 0.01µF capacitor |  |
|  | 3 |  |  | 0.1µF capacitor |  |
|  | 1 |  |  | 1µF capacitor |  |

| A Register Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 2 |  | 296-33970-5-ND | [74LS173 4-bit D register](https://eater.net/datasheets/74ls173.pdf) |  |
|  | 1 | 5 | 296-1655-5-ND | 74LS245 (Octal bus transceiver) |  |
|  | 8 |  |  | 220Ω resistor |  |
|  | 8 | N |  | Red LED |  |
|  | 1 |  |  | 0.1µF capacitor |  |

| B Register Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 2 |  | 296-33970-5-ND | [74LS173 4-bit D register](https://eater.net/datasheets/74ls173.pdf) |  |
|  | 1 | 5 | 296-1655-5-ND | 74LS245 (Octal bus transceiver) |  |
|  | 8 |  |  | 220Ω resistor |  |
|  | 8 | N |  | Red LED |  |
|  | 1 |  |  | 0.1µF capacitor |  |

| Instruction Register Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 2 |  | 296-33970-5-ND | [74LS173 4-bit D register](https://eater.net/datasheets/74ls173.pdf) |  |
|  | 1 | 5 | 296-1655-5-ND | 74LS245 (Octal bus transceiver) |  |
|  | 8 |  |  | 220Ω resistor |  |
|  | 4 | N |  | Blue LED |  |
|  | 4 | N |  | Yellow LED |  |
|  | 1 |  |  | 0.1µF capacitor |  |

| ALU Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 2 |  | 296-1669-5-ND | [74LS86 Quad XOR gate](https://eater.net/datasheets/74ls86.pdf) |  |
|  | 1 |  | 296-1655-5-ND | [74LS245 Octal bus transceiver](https://eater.net/datasheets/74ls245.pdf) |  |
|  | 2 |  | 296-33987-5-ND | [74LS283 4-bit adder](https://eater.net/datasheets/74ls283.pdf) |  |
|  | 1 |  | 296-14874-2-ND  296-14874-1-ND  296-14874-6-ND | [74LS02 Quad NOR gate](https://eater.net/datasheets/74ls02.pdf) |  |
|  | 1 |  | 296-1633-5-ND | [74LS08 Quad AND gate](https://eater.net/datasheets/74ls08.pdf) |  |
|  | 1 |  | 296-33970-5-ND | [74LS173 4-bit D register](https://eater.net/datasheets/74ls173.pdf) |  |
|  | 10 |  |  | 220Ω resistor |  |
|  | 8 | N |  | Red LED |  |
|  | 2 | N |  | Green LED |  |
|  | 2 |  |  | 0.1µF capacitor |  |

| Memory Address Register Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 1 |  | 296-1645-5-ND  74F189PC-ND | [74LS157 Quad 2-to-1 selectors/multiplexer](https://eater.net/datasheets/74ls157.pdf) | SN74HC157N |
|  | 1 |  | 296-33970-5-ND | [74LS173 4-bit D register](https://eater.net/datasheets/74ls173.pdf) |  |
|  | 2 |  |  | 1kΩ resistor |  |
|  | 6 |  |  | 220Ω resistor |  |
|  | 4 | N |  | Yellow LED |  |
|  | 1 | N |  | Green LED |  |
|  | 1 | N |  | Red LED |  |
|  | 1 |  |  | SW\_SPDT |  |
|  | 1 |  |  | 4-position DIP switch |  |
|  | 1 |  |  | 0.1µF capacitor |  |

| RAM Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 1 |  | 296-1626-ND | [74LS00 Quad NAND gate](https://eater.net/datasheets/74ls00.pdf) |  |
|  | 2 |  | 296-1629-5-ND | [74LS04 Hex inverter](https://eater.net/datasheets/74ls04.pdf) |  |
|  | 3 |  | 296-1645-5-ND  74F189PC-ND | [74LS157 Quad 2-to-1 selectors/multiplexer](https://eater.net/datasheets/74ls157.pdf) | SN74HC157N |
|  | 2 |  | 74F189PC-ND | [74189 64-bit RAM](https://eater.net/datasheets/74189.pdf) |  |
|  | 1 |  | 296-1655-5-ND | [74LS245 8-bit bus transceiver](https://eater.net/datasheets/74ls245.pdf) |  |
|  | 1 |  |  | 1kΩ resistor |  |
|  | 8 |  |  | 220Ω resistor |  |
|  | 8 | N |  | Red LED |  |
|  | 2 |  |  | 0.1µF capacitor |  |
|  | 1 |  |  | 0.01µF capacitor |  |
| * 1 | 1 |  |  | SW\_Push |  |

| Program Counter Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 1 |  | 296-1646-5-ND | [74LS161 4-bit binary counter](https://eater.net/datasheets/74ls161.pdf) |  |
|  | 1 |  | 296-1655-5-ND | [74LS245 8-bit bus transceiver](https://eater.net/datasheets/74ls245.pdf) |  |
|  | 4 |  |  | 220Ω resistor |  |
|  | 4 | N |  | Green LED |  |
|  | 1 |  |  | 0.1µF capacitor |  |

| OutPut Register Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 1 |  | LM555CNNS/NOPB-ND | [555 timer](https://eater.net/datasheets/lm555.pdf) |  |
|  | 1 |  |  | [74LS08 Quad AND gate](https://eater.net/datasheets/74ls08.pdf) |  |
|  |  |  | 296-33952-5-ND  296-2085-5-ND | [74LS107 Dual J/K flip-flop](https://eater.net/datasheets/74ls107.pdf)  [(substitute for 74LS76; check pinout!)](https://eater.net/datasheets/74ls107.pdf) | 74HCT109 |
|  | 1 |  | 296-1640-5-ND | [74LS139 Dual 2-to-4 line decoder/demultiplexer](https://eater.net/datasheets/74ls139.pdf) |  |
|  | 1 |  | 296-33970-5-ND | [74LS273 8-bit D register](https://eater.net/datasheets/74ls273.pdf) |  |
|  | 1 |  |  | [28C16 16K EEPROM](https://eater.net/datasheets/28c16.pdf) |  |
|  | 1 |  |  | SW\_SPDT |  |
|  | 1 |  |  | 10kΩ resistor |  |
|  |  |  |  |  |  |
|  | 2 |  |  | 0.01µF capacitor |  |
|  | 2 |  |  | 0.1µF capacitor |  |

| CPU Control Logic Module: | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | QN | QIn | **DigiKey Part Number** | **Description** | **Alternate Part** |
|  | 1 |  | 1988-1060-ND | Breadboard |  |
|  | 1 |  | 296-1626-ND | [74LS00 Quad NAND gate](https://eater.net/datasheets/74ls00.pdf) |  |
|  | 2 |  | 296-1629-5-ND | [74LS04 Hex inverter](https://eater.net/datasheets/74ls04.pdf) |  |
|  | 1 |  | 296-1646-5-ND | [74LS161 4-bit binary counter](https://eater.net/datasheets/74ls161.pdf) |  |
|  | 1 |  | DM74LS138N-ND | [74LS138 3-to-8 line decoder/demultiplexer](https://eater.net/datasheets/74ls138.pdf) |  |
|  | 2 |  |  | [28C16 16K EEPROM](https://eater.net/datasheets/28c16.pdf) |  |
|  | 1 |  |  | 1KΩ resistor |  |
|  | 24 |  |  | 220Ω resistor |  |
|  | 5 | N |  | Green LED |  |
|  | 16 | N |  | Blue LED |  |
|  | 2 |  |  | 0.1µF capacitor |  |