

Bill of Materials - System Support II

Board Revision "J" 2/13/2023

| References | Quantity | Value | Footprint | |
|--|----------|---------|-------------------------------------|------------------------------|
| C2, C4, C6, C8, C11, C13, C20, C22, C23, C24, C30, C33, C34, C35, C36, C37, C40, C42, C43, C44, C46, C47, C48, C49, C52, C54, C55, C56, C57, C58, C59, C60, C61, C62, C64, C66 | 36 | 0.1uf | Ceramic, 0.1", >=25v | |
| C5, C7, C9, C10, C16, C17, C18, C19, C21, C25, C26, C27, C28, C41, C51, C53, C63, C65 | 18 | 1uf | Ceramic, 0.1", >=25v | |
| C1, C38, C45 | 3 | 10uf | Al-Polymer, 0.1", Radial, >=35v | sub tantalum or electrolytic |
| C12, C29, C50 | 3 | 33uf | Al-Polymer, 3.50mm, Radial, >=25v | sub tantalum or electrolytic |
| C14, C15 | 2 | 47pf | Ceramic, 0.1", >=25v | |
| C3 | 1 | 220uf | Electrolytic, 3.50mm, Radial, >=25v | |
| C31 | 1 | 68pf | Ceramic, 0.1", >=25v | |
| C32 | 1 | 33pf | Ceramic, 0.1", >=25v | |
| C67 | 1 | 0.33uf | Ceramic, 0.1", >=25v | |
| R8, R11, R14, R22, R23, R25, R26, R27, R28, R31, R32, R33, R34, R36, R43, R44, R46, R48, R52 | 19 | 10K | 1/4w 5% | |
| R1, R3, R4, R5, R6, R37, R47 | 7 | 330 | 1/4w 5% | |
| R7, R12, R41, R49 | 4 | 47K | 1/4w 5% | |
| R9, R53 | 2 | 100 | 1/4w 5% | |
| R10, R38 | 2 | 560 | 1/4w 5% | |
| R2 | 1 | 680 | 1/4w 5% | |
| R29 | 1 | 10 | 1/4w 5% | |
| R30 | 1 | 3.3K | 1/4w 5% | |
| R35 | 1 | 1M | 1/4w 5% | |
| R39 | 1 | 1.8K | 1/4w 5% | |
| R40 | 1 | 120K | 1/4w 5% | |
| R45 | 1 | 2.2K | 1/4w 5% | |
| D6, D8, D9, D16, D17, D20 | 6 | 1N5819 | DO41 | |
| D12, D14, D18, D19 | 4 | 1N4149 | DO35 | |
| D10, D15 | 2 | Enabled | 3mm LED (yellow) | Use any preferred colors |
| D1 | 1 | 5V | 5mm LED (green) | |
| D2 | 1 | 9V | 3mm LED (blue) | |
| D3 | 1 | 5VA | 3mm LED (blue) | |

| | | | |
|-------------------------|---|---------------|----------------------------|
| D4 | 1 | LED2 | 3mm LED (red) |
| D5 | 1 | LED1 | 3mm LED (green) |
| D7 | 1 | A14 | 3mm LED (yellow) |
| D11 | 1 | LED | 3mm LED (red) |
| D13 | 1 | 1N4730 | DO41 |
| U3, U4, U5, U6 | 4 | 74HCT123 | DIP16 |
| U13, U14, U15, U38 | 4 | GAL16V8 | DIP20 |
| U29, U30, U31, U32 | 4 | 74LS73 | DIP14 |
| U1, U22 | 2 | LM7805 | Switched equivalent OK |
| U20, U34 | 2 | 74LS74 | DIP14 |
| U25, U36 | 2 | 74LS541 | DIP20 |
| U27, U33 | 2 | 74LS30 | DIP14 |
| U2 | 1 | LM386 | DIP8 |
| U7 | 1 | PCA9685PW | TSSOP28 SMD |
| U8 | 1 | MAX232 | DIP16 |
| U9 | 1 | LM741 | DIP8 |
| U10 | 1 | LM7805 | Must be linear - see notes |
| U11 | 1 | VDIP1 | DIP24 |
| U12 | 1 | MM54104 | DIP40 |
| U16 | 1 | 74LS540 | DIP20 |
| U17 | 1 | PCA9665 | TSSOP20 SMD |
| U18 | 1 | 27C256/28C256 | DIP28 |
| U19 | 1 | 74LS123 | DIP16 |
| U21 | 1 | 74LS14 | DIP14 |
| U23 | 1 | 16C550 | DIP40 |
| U24 | 1 | 74LS175 | DIP16 |
| U26 | 1 | 74LS640 | DIP20 |
| U28 | 1 | RTC-72421 | DIP18 |
| U35 | 1 | 74LS574 | DIP20 |
| U37 | 1 | 74LS03 | DIP14 |
| U39 | 1 | L78L33 | TO-92 3.3V 100ma |
| Y1 | 1 | 4MHz | ECS-040-20-4X-DU |
| X1 | 1 | 1.8432 MHZ | DIP8, ECS-2100A-018 |
| F1 | 1 | 200ma | Littelfuse 60R020XU |
| F2 | 1 | 1.1A PTC | Bel Fuse 0ZRR0110FF1A |
| RN1, RN2, RN3, RN6, RN7 | 5 | 10K | Bourns 4609M-101-103LF |
| BT1 | 1 | CR2032 | Keystone 103 holder |
| FB1 | 1 | FerriteBead | Fair-Rite 2743005111 |

| IC Sockets | |
|------------|----|
| DIP8 | 2 |
| DIP14 | 10 |
| DIP16 | 7 |
| DIP18 | 1 |
| DIP20 | 9 |
| DIP24 | 1 |
| DIP28 | 1 |
| DIP40 | 2 |

Requires TO220 insulated mounting kit
Can substitute V2DIP1-48 with firmware change

Programmed with Digitaltalker vocabulary

optional, if not using 3.3v from VDIP1

optional socket

| | | | | |
|---------------|---|------------------|-----------------------------|--|
| JP1 | 1 | WRITE | Generic, 1x3 | |
| JP2 | 1 | READ | Generic, 1x3 | |
| JP3 | 1 | ROM Type | Generic, 1x3 | |
| JP4 | 1 | ROM Enable | Generic, 1x3 | |
| JP5 | 1 | CTS-RTS | Generic, 1x2 | |
| JP6 | 1 | DSR-DTR | Generic, 1x2 | |
| JP7 | 1 | I2CINT | Generic, 1x2 | |
| JP8 | 1 | SERINT | Generic, 1x2 | |
| JP9 | 1 | RTCINT | Generic, 1x2 | |
| JP10 | 1 | VDIP 3.3V | Generic, 1x2 | |
| RN4 | 1 | 220 | DIP16, Bourns 4116R-221 | sub discrete x8, optional DIP16 socket |
| RN5 | 1 | 330 | DIP16, Bourns 4116R-331 | sub discrete x8, optional DIP16 socket |
| RV1 | 1 | 10K | Bourns 3386F | |
| TP2 | 1 | TestPoint | Keystone 5005 (5006-5009) | |
| J26, J27, J33 | 3 | INTX | Generic, 1x5 | |
| J9, J16 | 2 | H8_Bus_Connector | Molex 22-16-2250 | |
| J1 | 1 | I2C | Molex KK254 1x4 | |
| J2 | 1 | LED1 | Generic, 1x2 | |
| J3 | 1 | LED2 | Generic, 1x2 | |
| J4 | 1 | PWM | Molex KK254 1x10 | |
| J5 | 1 | Serial | Molex KK254 1x5 | |
| J6 | 1 | Speaker | Molex KK254 1x2 | |
| J7 | 1 | Remote LEDs | Molex KK254 1x10 | |
| J11 | 1 | USB | Molex 67643 | |
| J12 | 1 | I2C | Generic, 1x5 | |
| J13 | 1 | IRQ | Molex KK254 1x10 | |
| J14 | 1 | SERIAL | Generic, 1x5 | |
| J20 | 1 | H8-4 DCE | Generic, 1x15, .295" length | .295" length for KK254 WH8-41 cable |
| J21 | 1 | I2C_ADDR | Generic, 2x6 | |
| J22 | 1 | HS_IN | Generic, 2x3 | |
| J23 | 1 | HS-OUT | Generic, 2x2 | |
| J24 | 1 | ENABLE | Generic, 2x8 | |
| J28 | 1 | Serial | Generic, 2x5 | |
| J29 | 1 | H8-4 DTE | Generic, 1x15, .295" length | .295" length for KK254 WH8-41 cable |
| J31 | 1 | 0-3 IRQ | Generic, 1x5 | |
| J32 | 1 | 4-7 IRQ | Generic, 1x5 | |
| J34 | 1 | RTC | Generic, 1x5 | |

Additional components

| | |
|----|--------------------------------------|
| 20 | Shorting jumper plugs |
| 1 | H8 PCB mounting bracket |
| 1 | TO-220 insulated mounting kit |
| 2 | Screws/nuts for PCB bracket mount |
| 1 | (Optional) Socket for can oscillator |

Todd Goodman / RetroComputing
use with LM7805

NOTES:

Capacitor working voltage derated by 50%

Can sub switching regulator for LM7805 EXCEPT at U10. Zener diode used to offset voltage at this location is not fast enough to work with a switching regulator. You can also substitute an LM7809 regulator and omit R6, wire jump across D13 if you prefer. The TO220 insulator kit is not required with the LM7809.

DIP resistor packs are specified at RN4 and RN5. Substitute discrete 220 or 330 (0.25w, 5%) resistors OK.