

M3SE 1.0 Customer BOM

Quantity	Description	PCB sites	Notes
1	M3SE 1.0 PCB		
4	Plastic board "feet"		
1	FPGA module, 28 pins x 4, Cyclone II EP2C5T144		Programmed and tested
1	WIZ830MJ Ethernet module, 28 pins x 2		Tested
1	Ribbon cable assy, 50 pins approx 21" length		Assembled and tested
1	Switching power supply, 5V 2A, 2.1/5.5mm center-positive barrel plug		Tested
1	Dual CF to 40-position IDE adapter		Tested
1	Compact Flash memory card, 2GB or greater		Programmed and tested
1	Installation floppy		
1	Holder for CR2032 coin cell battery	BAT1	Battery not included due to postal regulations
3	Capacitor, 10uF electrolytic 2mm lead spacing	C1-3	
2	Capacitor, 0.1uF MLCC 2.5mm lead spacing	C4,C7	
1	Capacitor, 47uF electrolytic 2.5mm lead spacing	C5	
1	Capacitor, 10uF MLCC 5mm lead spacing	C6	
1	Box header, 2x25 pin	CONN1	For ribbon cable assembly. Notch toward CONN7.
1	Box header, 2x20 pin	CONN2	For CF adapter. Notch toward R2.
6	Receptacle, 2x14 position	CONN3-8	FPGA and Ethernet modules
1	Socket, 8-pin DIP	IC1	
1	IC, DS1302, 8-pin DIP	IC1	
1	Voltage regulator, 3.3V 1A or greater, TO-220 package	IC2	
1	Heat sink, TO-220	IC2	For voltage regulator
1	Screw, #4/40, 1/4" length	IC2	Attach heat sink and voltage regulator
1	Hex nut, #4	IC2	Attach heat sink and voltage regulator
1	IC, AT24MAC402, 8-pin SOIC	IC3	
1	Connector, 9-pin D-SUB	J1	Joystick
1	Connector, 15-pin high-density D-SUB	J2	VGA output
1	Jack for 2.1mm/5.5mm barrel plug	J3	Power
3	Transistor, 2N3904 NPN bipolar	Q1-3	
1	Resistor, 3.6 kOhm, radial	R1	Orange-blue-black
1	Resistor, 5.6 kOhm, radial	R2	Green-blue-black
1	Resistor, 10 kOhm, radial	R3	Brown-black-black
1	Resistor network, 75 Ohm x 4 or x3 isolated, 8 or 6 pin SIP	RN1	For 6-pin package, do not use pins 7 and 8 on PCB site
2	Resistor network, 10 kOhm x 4 bussed, 5 pin SIP	RN2-3	
2	Resistor network, 470 Ohm x 3 isolated, 6 pin SIP	RN4-5	
1	DIP switch, 2 position	SW1	Switch numbers toward FPGA headers, "ON" marking toward VGA connector.
1	Crystal, 32.768 kHz 6pF	XTAL1	

Assembly Notes

- Negative lead of all electrolytic capacitors toward CONN1 edge of board
- Site J4 is intended for a 2-pin power header (not included) to facilitate attaching the IDE/CF adapter to CONN2 via a ribbon cable.

Suggested soldering order

- BAT1 socket, IC1 socket, C7, C3, J1, R1-3, J3, C5, C6, J2, RN1, RN4, Q1-3, RN5, SW1, CONN2, RN2-3, C1, CONN3-4, C2, CONN5-6
- Put on anti-static wristband before continuing
- IC2 + heat sink, IC3, C4, CONN1, CONN7-8, XTAL1