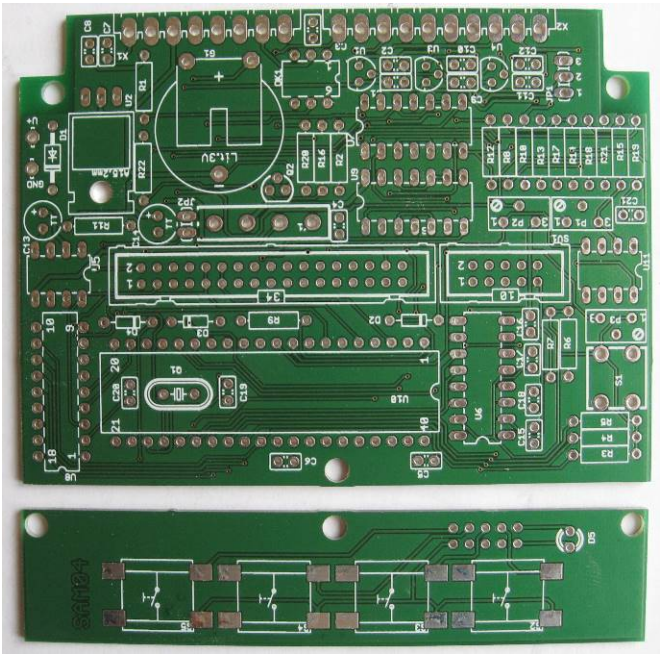
SAM-III Kit Parts Identification:

Use only for parts identification and not inventory. Images not scaled.

Printed Circuit Boards: Main Controller PCB (upper) & Keyboard PCB (lower). Various colors including blue, green and red.

Early versions had the keyboard connected to the main PCB with webs that required cutting with a hobby saw.



Keyboard Components: Pushbutton, Surface mounted. S2, S3, S4, S5.

Keyboard Components: LED, Red. Long lead is Anode.

Keyboard Components: 10-pin Connector. Note polarizing notch – use only center notch for proper placement.

Power Supply Components: Resistors ~ Some may have solid body color with value marked, some may be color-coded with stripes. See **Resistor Chart** at end. Check all values with an ohmmeter.

Power Supply Components: Ceramic Capacitors ~ Capacitance value marked as code 104 or 100n. Body color may be blue or gold.

Power Supply Components: Electrolytic Capacitors ~ Capacitance value & voltage marked on body. Long lead positive +; negative – marked on body. Various body colors including blue, black and gray.

Power Supply Components: 1N4148 Diode ~ Type marked on body. Stripe indicates Cathode.

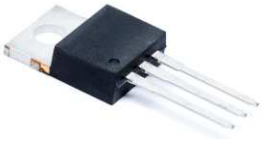
Power Supply Components: 1N5819 Diode ~ Type marked on body. Stripe indicates Cathode.

Power Supply Components: 1N4007 Diode ~ Type marked on body. Stripe indicates Cathode.

Power Supply Components: Connectors, 34-pin & 10-pin. Note polarizing notch. Use only the center polarizing notch for proper placement.

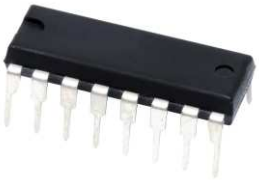
Integrated Circuits: 78L05 Voltage Regulator. Type marked on body. U1, U3, U4

Integrated Circuits: 7805 Voltage Regulator. Type marked on body. U2



Integrated Circuits: 7660 Voltage Converter. DIL-8. Type marked on body. Pin 1 lower-left corner below end-notch. U5

Integrated Circuits: MAX232x or SP232x Transceiver. DIL-16. Type marked on body. Pin 1 lower-left corner below end-notch. U6



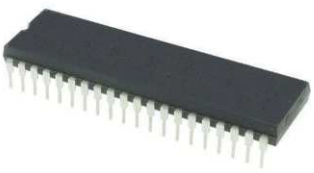
Integrated Circuits: 74HC00 NAND Gate. DIL-14. Type marked on body. Pin 1 lower-left corner below end-notch. U7 & U9

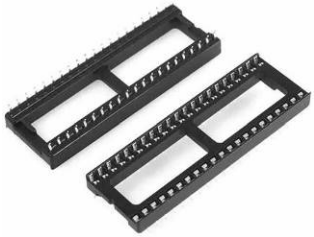
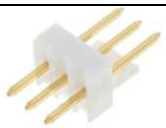
Integrated Circuits: RTC72421x Real-Time Clock. DIL-18. Type marked on body. Pin 1 lower-left corner below end-notch. U8

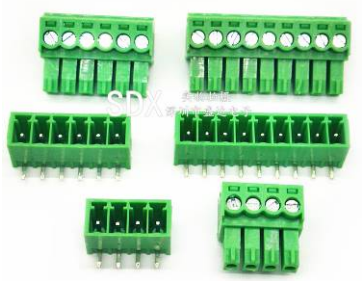
Integrated Circuits: LM358x Op-Amp. DIL-8. Type marked on body. Pin 1 lower-left corner below end-notch. U11

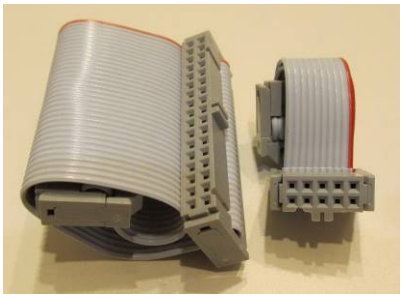
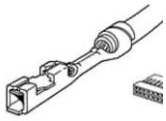
Integrated Circuits: CY17F-1 Opto-Isolator. DIL-6. Type marked on body. Pin 1 lower-left corner below end-notch or chamfered ridge. OK1

Integrated Circuits: Microcontroller PIC16F877-20/P. Pin 1 lower-left corner below end-notch. U10



Integrated Circuits: 40-Pin Socket for Microcontroller. Pin 1 lower-left corner below notch or chamfered ridge. U10	
Electromechanical 1: Male Header 3-Pin, Latching Type. JP1	
Electromechanical 1: Male Header & Shorting Block, 2-Pin. Various colors. JP2	
Electromechanical 1: Single Inline (SIL) Relay. K1	
Electromechanical 1: Tactile Pushbutton Switch. S1	
Electromechanical 1: Trimmer resistor. 50k or 47k. Value marked on body. Body color may be blue or gray. Image shows example. P1	
Electromechanical 1: Trimmer resistor. 10k. Value marked on body. Body color may be blue or gray. Image shows example. P2, P3	
Electromechanical 1: Ceramic Capacitor. Value marked on body, typically 22. Body color may be blue or gold. C19 & C20	
Electromechanical 1: Quartz Crystal. Q1	
Electromechanical 1: Transistor. BC337. Q2	
Electromechanical 1: 4-40 hardware. 4-40x5/16 inch machine screw, flat washers, split lock washer, small pattern hex nut.	

Electromechanical 2: Pluggable Terminal Block. 8-pin & 10-Pin. Various colors including green and black. Images shows examples. X1 & X2, XP1 & XP2.	
Electromechanical 3: Male Header, Latching, Modified. 3-position, 2-pin, 3-0-1 Configuration (center pin removed). Image is typical. Power connector. Electromechanical 3: Female Wire Housing. 4-positions but only the two outer terminal positions are used. Power connector. Electromechanical 3: Crimp Socket Contact. Use contact only with above wire housing. Electromechanical 3: Power Plug & Jack, 2.1 x 5.5 mm. Plug with locking ring shown although non-locking type may be supplied. Electromechanical 3: Heat-Shrink Tubing. Various colors and sizes, nominal diameter 1/16 inch.	    
Battery: 3-Terminal PCB Mount, BR2032/GUN. G1	
LCD Module with Modified 34-Position Connector: Screen color may be blue-white or yellow-green-gray.	

Ribbon Cables: Preassembled.	
Serial Cable Connector: DB-9M Panel-Mount Connector with Solder Cups. Serial Cable Connector: Wire Housing, 3-Pin with Latching Ridge and polarizer. Serial Cable Connector: Spring-Type Crimp Terminal Contact. Use contact only with the above wire housing	  
Fluxgate Sensor: FG-3+ sensor. Fluxgate Sensor: Female Wire Housing, 4-Pin. Fluxgate Sensor: Crimp socket Contact. Use contact only with the above wire housing. Fluxgate Sensor: Filter Capacitor, Tantalum. Value marked on body. Long lead is positive +. Positive polarity symbol also marked on body.	   

Fluxgate Sensor: Filter Capacitor, Ceramic. Value marked on body as a code 104 or 100n. Body color may be blue or gold.	

Resistor Charts

The SAM-III Kit may include resistors with solid body color or color coded. Because of poor color contrast on many resistors, always verify values with an ohmmeter.

Value	Solid Body Marking
68R1 or 68.1 ohms	Always colored coded
1k or 1000 ohms	102
2k2, 2.2k or 2200 ohms	222
10k or 10 000 ohms	103
39k or 39 000 ohms	393
100k or 100 000 ohms	104
470k or 470 000 ohms	474