CONSTRUCTION OF CODE*STAR KIT

Introduction. The CODE*STAR kit is intended for intermediate to advanced kit builders. Its construction requires good workmanship and attention to detail. Please look over the entire manual before proceeding. If you feel the job is beyond your capabilities, you may wish to return the unassembled kit for a refund (less handling charges).

Use a small tipped soldering iron of 25-30 watts. Do not use a solder gun! Use a good grade of rosin core solder. Do not use acid core solder. Good soldering techniques are important. Take your time and check your work carefully. Construction begins with the main PC board and ends up with the final wiring of the chassis.

Main PC Board. This is a single-sided board. Components are mounted on the top and soldered on the foil side. Refer to the diagrams and notes in this manual for parts placement as well as the silk screened legend on the board itself. *(Note: The section of PC board labeled OPTION-01 is reserved for the optional ASCII port and no parts should be place in that section.)*

1. Install the sockets for IC2,IC3 and IC4 and solder. (The ICs will be installed later.)
2. Install all fixed resistors and solder. Save scrap leads.
3. Use four scrap leads to form jumper wires. Install jumpers in place of D3 and D4 and solder. Also install jumpers in J1 and J2 and solder.
4. Install rectifiers D1,D2,D5 and D16. Make sure cathode end (band) corresponds to layout. Solder.
5. Install diodes D6-D15. Make sure cathode (band) corresponds to layout.
6. Install all of the ceramic capacitors and solder.
7. Install the mylar capacitors and solder. Do not mix up C33 with the others.
8. Install the electrolytic capacitors and solder. Observe the polarity markings.
9. Install the small transistors and solder. Carefully observe the orientation of the emitter (e), base (b) and collector (c) to correspond to layout. Do not mix up the 2N3906 with the 2N3904 types.
10. Install the trimmer resistors R30 and R53 and solder. Sometimes the trimmers are hard to solder. Before installing, sand or file the trimmer leads to help the solder adhere.
11. Attach the heatsink to IC1 with a 4-40 screw and nut. Install IC1 vertically on the board and solder. It should be oriented with its backside toward the rear panel.
12. Install the crystal CR1 and solder. Do not overheat it.
13. Cut an insulated length of wire to 8 inches Strip and tin each end 1/8 inch. Install this jumper wire on the top side of board between point marked "+8" near IC1 and point marked "+8" near C26.
14. Solder lengths of insulated wire to the board at the locations noted below for connection to the off-board parts. Wire goes in top of board and is soldered on foil side. The specific wire needed and a suggested color code and length follows:
    - a. GND wire, color green, length 6 inches.
    - b. G wire, color green, length 4 inches.
    - c. +12 wire, color red, length 6 inches.
    - d. RECEIVER wire, any color, length 5 inches.
    - e. KEY wire, any color, length 7 inches.
    - f. LED + wire, any color, length 4 inches.
    - g. LED - wire, any color, length 4 inches.
    - h. SPEAKER (2 wires), any color, length 8 to 9 inches each.
    - i. Rotary switch wires marked on board as L,M,N,O,Q,T,W (7 wires). Use any color, length 7 to 8 inches each.