# NOTES & ERRATA FOR PROJECTS PUBLISHED IN
# SILICON CHIP (1993)

**2kW 24VDC/240VAC Sinewave Inverter, October 1992 - February 1993:** this project is now obsolete as the transformer bobbins are no longer available. (07/03)

**AM Micromitter/Flea-Power AM Radio Transmitter, January 1993:** the PC board code in the parts list is incorrect. It should be 06112921.

**LED Flasher for Bicycles, January 1993:** the circuit on page 41 shows pins 1 & 4 of IC1 swapped. The PC board and wiring diagram are correct.

**Simple Traffic Light Simulator, February 1993:** the wiring diagram on page 29 shows the two ICs oriented in the wrong direction.

**Simple Train Controller, February 1993:** the circuit on page 27 shows incorrect connections to the polarity changeover switch, S2. It should be wired as shown in the diagram on page 92 of May 1993.

**Audio Mixer for Camcorders, March 1993:** the 2.2μF capacitors in series with the 10k resistors (in the feedback network) in both channels are shown wrongly polarised on the wiring diagram on page 51. The circuit diagram is correct.

**Solar-Powered Electric Fence, April 1993:** C4 should be increased from 10μF to 470μF to improve the supply decoupling and prevent erratic operation of the inverter circuitry.

**Nicad Cell Discharger, May 1993:** transistor Q2 is incorrectly labelled on the circuit diagram (Fig.1) as a BC328. It should be a BC338 NPN type, as shown in the parts list. The parts list should also be amended to show 1 x 2.7kΩ resistor and 2 x 1.5kΩ (not 1 x 1.5kΩ) resistors.

**Woofer Stopper, May 1993:** unfortunately, the uncorrected wiring diagram (page 28) found its way into the article. This contains several errors: (1) Q2 is shown upside down; (2) the 100kΩ resistor to the right of IC5 should be deleted; and (3) the 100kΩ resistor below D2 should be 220Ω. The correct overlay pattern is shown on page 94 of the June 1993 issue. The published PC pattern is correct.

**Digital Voltmeter for Cars, June 1993:** the digital readout board has a missing track between pins 12 & 16 of IC3. These must be linked together for the circuit to work.

**Single Chip Sound/Message Recorder, July 1993:** the distributor for the ISD audio recorder chip is Adilam Electronics, which has branches in most Australian states as well as New Zealand. Modifications to this design for use in your car can be found in the Circuit Notebook section of the September 1997 issue.

**Amateur Radio, August 1993:** the article on satellites requires a number of corrections. In Fig.1(a) page 73, the equations for apogee and perigree are transposed. Perigee height = a(1-e) - 6378km; apogee height = a(1+e) - 6378km. In Fig.1(b), the velocity of a low orbit satellite should be approximately 26,000km/h not 13,000km/h. On page 74, in the paragraph beginning "AO-21 is a LEOS .. ", the sentence referring to apogee and perigee heights should read: "Apogee and perigee heights are 1000km and 958km respectively".

**Colour Video Fader, August 1993:** there are several anomalies between the circuit and the wiring diagram. Also, due to spreads in the 4030/4070 XOR gates, it has been found necessary to make a number of changes. These corrections and changes are included on the revised wiring diagram reproduced on page 94 of the September 1993 issue and this must be followed if you are building the project. Kitset suppliers have been advised of these changes. The changes are as follows: the 22kΩ resistor between the base of Q5 and the +5V supply rail should be 2.2kΩ; the 1kΩ resistor between the base of Q5 and the emitter of Q3 should be 1.2kΩ; and the 220Ω resistor at the emitter of Q4 should be 100Ω. On the wiring diagram, the connections to the video input socket are reversed. The 220pF capacitor at pin 4 of IC2b should be changed to 270pF.

**Colour Video Fader, August 1993 (cont.)** The 10kΩ and 12kΩ resistors connected in series between the +5V supply and ground at pin 2 of IC1a should be replaced with a 20kΩ trimpot (VR3). This trimpot should

connect between the +5V and ground supply rails with the wiper connecting to pin 2 of IC1a. A hole will need to be drilled in the PC board to take the trimpot wiper. The trimpot will allow adjustment for correct sync pulse triggering by IC2a.

VR3 is set up by first applying a video signal to the video input and viewing the output signal on your TV set (via your VCR). Rotate the Fade and Wipe controls fully clockwise with the wipe direction switch in the R-L position. Initially, centre VR3, then adjust anticlockwise until the picture starts to roll. Note this position. Now adjust VR3 clockwise and note the position that the picture completely loses sync. Finally, set VR3 in-between these two positions. The picture now should be in lock and the wipe and fade controls should operate.

Having set the sync levels with VR3, the 10kΩ resistor at the base of Q3 may need to be adjusted to set the black level. You will only need to do this if the wipe and fade controls do not provide a satisfactory black picture. If the picture is still visible on full fade or wipe, reduce the value of the 10kΩ resistor to 8.2kΩ. If this value does not provide sufficient brightness when the fader control is fully anticlockwise you may need to use a value in-between 10kΩ and 8.2kΩ. This is achieved using paralleled values; eg, 10kΩ in parallel with 100kΩ will give 91kΩ, or try values across 10kΩ between 470kΩ and 82kΩ.

We also recommend earthing the potentiometer cases with a lead back to the video input socket as shown on the wiring diagram.

**Microprocessor-Controlled Nicad Battery Charger, September 1993:** a number of errors have come to light in the circuit on page 17. Pin 6 of IC2 should be labelled pin 1 in Fig.1 and the 330Ω resistor associated with Q3 should be in series with the emitter resistor. VR1 and the 30kΩ resistor are reversed compared with the PC board layout on page 20. The lower of the two series resistors to earth from pin 9 of IC1 should be 2.2kΩ. Finally, the 100μF capacitor at the output of the 5V regulator is shown with incorrect polarity on the wiring diagram on page 20 and the 12V relay has been omitted from the parts list.

**Stereo Preamplifier with IR Remote Control, September, October and November 1993:** on some units the bass control is liable to become noisy & produce a scratchy sound from the loudspeakers when it is rotated. This problem is caused by small DC voltage which appears across the bass control pot. This voltage is developed by the input bias current to pin 2 of IC6 & IC106. To prevent this problem, we recommend replacing IC6 & IC106 with OP27GP or LM627 op amps, which have significantly lower input bias currents than the NE5534s specified originally.

Note that the 10pF capacitors between pins 5 & 8 for both IC6 & IC106 should be removed from the PCB since the replacement op amps are internally compensated.

Finally, some early kits from Jaycar may have problems with the remote control not operating. The problem is due to a short between ceramic resonator X2 (on the main PC board) and ground, which prevents the oscillator inside IC23 from functioning.

To cure the problem, go to the 4.7kΩ resistor side of the X2 pad & cut the copper between this pad & the adjacent ground track with a sharp utility knife. The problem has been corrected on later kits.

**Remote Controller for Garage Doors, December 1993:** on page 21, in the last paragraph, the issue referred to as "April 1992" should read "April 1991".

**25W Amplifier Module, December 1993:** the wiring diagram for the single supply version (Fig.3) shows the 1μF input capacitor installed the wrong way around; the circuit diagram is correct. Also the 1μF input capacitor for the dual supply version should be a bipolar electrolytic or other non-polarised capacitor such as an MKT polyester.