NOTES & ERRATA FOR PROJECTS PUBLISHED IN SILICON CHIP (2022)

Please note: errata apply primarily to the print edition of SILICON CHIP as online issues are normally changed when an error is identified. However some errata may still apply to the online edition; check carefully before making any changes to a project.

The Mysterious Mickey Oz, Vintage Radio, January 2022: The best sensitivity (without the problematic IF filter) was 7µV for 50mW output at 600kHz. However, the text states 70µV. 7µV is the correct value. (04/22)

Remote Control Range Extender, January 2022: (1) The ground for the Micro USB B connector is connected to the 4th pin instead of the 5th pin on the RevB PCB. To fix this, a solder or wire bridge connection needs to be made between the 4th and the 5th pins of CON2. The RevC PCB will have this corrected. (04/22)

(2) If needed, the optional pull-down resistor at pin 1 of the IC1 (PIC10LF322) on the transmitter should be 1kΩ rather than 100kΩ as originally specified. This lower value ensures the resistor is reliably detected and the internal pull-up is always disabled. (05/22)

Dual Hybrid Power Supply, February 2022: In Fig.7 on p29, the pinout diagram for the LM1084 is incorrectly labelled LM1048. Also, on page 31, a little more than halfway down the text, it refers to the pre-regulator as REG4 when it is actually REG5. (04/22)

Solid-State Tesla Coil, February 2022: In the circuit diagram, Fig.1, F1 and PTC1 were shown wired in series in the opposite order to how they are wired on the PCB. This does not have any effect on the circuit's behaviour. (04/22)

Vintage Radio, February 2022: The 100nF capacitor directly below the 6K8M valve in Fig.8 should connect to the GND rail instead of the AGC line. In that same figure, there's a 33µF 600V HT filter capacitor missing from the 250V rail to GND. (03/22)

Capacitor Discharge Welder, March & April 2022: (1) in Fig.4 on p31 of the March issue, the 220nF capacitor connected to pin 6 of IC6 should be an MKT type while the other 220nF capacitor should be ceramic. (09/22)

(2) The front panel drilling diagram, Fig.16, on page 109 of the April 2022 issue has two errors. It is shown as 130mm tall, while the base of the case, where the holes are drilled, is only 105mm tall. Also, the distance between the VOLTS and TIME holes is shown as 60mm but incorrectly drawn as 85mm. A revised diagram/template that fixes these errors can be downloaded from siliconchip.au/Shop/6/6306

Dual Hybrid Power Supply part two, March 2022: In Fig.11 on page 85, the metal sheet for the heatsink folds up where shown, not down. Also, the hole in the heatsink should be drilled 25mm from the left edge, not 30mm. Note that link LK1 on the control board, shown in Fig.13 on page 86, needs the shorting block in the upper RDO position, not the lower SDO4 position. Finally, instead of the 15µF tantalum capacitors specified, non-polarised 15µF 50V X7R M5750/2220 ceramics can be used. We supply those in the kits as they are superior to the tantalum caps in virtually every way. (05/22)

Model Railway Semaphore Signal, April 2022: (1) Trimpots VR1 & VR2 are 1kΩ, not 10kΩ as shown in Fig.8 on p56. (06/22)

(2) be aware that some vendors are selling DF9GMS-360 360° servos under the same model code as the DF9GMS 180° servos specified for this project. The 360° servo motors will not work. You need to use a 180° servo. (07/22)

500W Power Amplifier pt2, May 2022: Inductor L1 is wound using 13.5 turns of 1.25mm diameter wire, not 30.5 turns of 1mm diameter as stated in two places on p64 & p65. Around 900mm of wire will be consumed. (06/22)

AM-FM DDS Signal Generator, May 2022: (1) the 10nF capacitors connected to the A & B pins of rotary encoder RE1 should be increased to 100nF to provide more reliable operation with some encoders. (09/22)

(2) the gate bias for Mosfet Q1 is fixed at 1.5V. Since the threshold of Q1 can range from 1.0V to 2.5V, that might not suit all 2N7002 devices. If there is no output from IC3, the bias might be too low, in which case the 3.3kW resistor can be changed to 4.7kW (1.8V) or 6.2kW (2.0V). If there is output from IC3, but the modulation is weak, the bias might be too high, in which case the 3.3kW resistor can be changed to 1.8kW (1.05V). (06/23)

MOS Air Quality Sensors, June 2022: in the Useful Links box, the second-last link should be https://fs.keyestudio.com/KS0457 (07/22)

Spectral Sound MIDI Synthesiser, June 2022: the orientation of diode D2 in Fig.9 is incorrect. Install it with the cathode stripe facing to the right, as shown on the PCB silkscreen. (08/22)

Secure Remote Mains Switch, July & August 2022: the paragraph at the end of page 84 in the August 2022 issue says to use 10A-rated mains wire; however, some of the wiring can use 7.5A-rated mains wire, as explained later in the article.

iSoundbar with Built-in Woofer, August 2022: (1) the 1.2m-long lengths of DAR pine in the parts list should be 1.24m long to match the width of the sound bar. Also, the woofers are shown wired incorrectly in Fig.7; the two woofers should be wired negative-to-negative with the negative amp output and external subwoofer terminal going to the positive terminal of the left-hand woofer so they are phased correctly. (10/22)

(2): the part code for the Peerless tweeters should have been BC25SC55-04, not BC25SC55-06. Also, the sheet of 19-20mm plywood in the parts list is not required as all the pieces can be cut from the DAR pine lengths. (11/22)

AVO Valve Testers, August 2022: on page 92, the text refers to potentiometer VR2 as applying the specified grid voltage, this should instead read VR5 to match Fig.4. Similarly in the paragraph above RLY1 should be RLYA. (10/22)

WiFi DC Electronic Load, September & October 2022: (1) REG1 is shown reversed on the main Load PCB silkscreening and in Fig.10. Fit it the other way around, as shown in the photo on page 91 of the October 2022 issue.
(2) a design error on the main Load PCB means that the SDA line (pin 5 on the CONTROL header, CON1) is likely to be shorted to GND due to a GND via placed too close to that track. The via is just above and to the left of IC5 (labelled "DAC" on the PCB). Run a sharp knife between the GND fill and the SDA track to clear the short, or drill out the top side of that via with a small (eg, 2mm) drill bit.
(3) the sole 240W resistor on the main Load board should be 470Ω, to match the source impedance of pin 1 of IC3 (1kΩ || 1kΩ). If built with the 240Ω resistor, the resulting error will be minimal and likely cancelled out during calibration.
(4) IC3 & IC4 were incorrectly listed as the INA180B4 type (gain = 200) in the parts list. They must be the B1 type (gain = 20) for correct operation. (12/22)

LC Meter Mk3, November 2022: (1) the initial release of the PCB has a short circuit between the top middle terminal of S2 and the track above it going to pin D10 of the Nano. This will not stop it from working but will reduce the accuracy of capacitor measurements above about 800pF. The latest PCBs & kits have corrected PCBs; if yours has this fault, run a sharp knife along the short circuit and verify that the short circuit is gone. (2) the 330pF capacitor shown in the circuit diagram and PCB overlay, and in the parts list, should be 470pF instead. Kits were correctly supplied with two 470pF capacitors and no 330pF capacitors. (3) switch S1 (not used by the provided firmware) is not connected the same way on the PCB as shown in the circuit diagram. Neither of the 'NO' and 'NC' contacts are connected to GND, and the 15k# pull-down resistor is connected between them. If constructors wish to modify the firmware to use this switch, one end would need to be connected to GND. (4) the supplied HEX file can be uploaded to the Arduino Nano using AVRDUDESS, with the Programmer set to "Arduino" and a baud rate of 57600. (01/23)

Breadboard PSU Display Adaptor, December 2022: there was an error in the software (line 65 of main.c) that meant that the wrong analog channel was read during calibration of the second current setpoint. That did not affect regular operation but made calibration difficult. We have fixed this and updated the software to V7; the correct HEX file for programming the PIC16F18877 is now 0411222B.HEX. (11/23)

High-Performance Active Subwoofer, December 2022: in the parts list, two 3.7-4mm crimp eye terminals are required, not one, and the 377 × 140 × 1.5mm aluminium sheet listed is slightly too small. It needs to be at least 377 × 150mm.