NOTES & ERRATA FOR PROJECTS PUBLISHED IN SILICON CHIP (2018)

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.

Lath-e-Boy High-Power Lathe Controller, January 2018: The wiring colours shown in the photos on pages 41 and 43 and in the lower-right corner of the circuit diagram on page 39 are not safe. The four wires to the induction motor should be colour coded red, white, dark blue (from pin 2 of CON7 to the motor) and brown. Green/yellow striped wire must be used for earthing the motor frame (and only for earth!). (03/18)

High-Power DC Fan Speed Controller, January 2018: The IPP80N06S2L-07 Mosfet is listed in the parts list as being in a TO-92 package but it is actually in a TO-220 package. (03/18)

Arduino Mega Box Music Player, February 2018: The Arduino Uno and Mega do not share the same SPI pin connections. Pins 50, 51 & 52 must be connected by flying leads to digital pins 12, 11 & 13 respectively before the SD card will work on the Mega. (03/18)

Making Power From Rubbish, February 2018: There is an error in the fourth paragraph. The generator produces 52MW, not 52MWh per year. (04/18)

WiFi Water Tank Level Meter, February 2018: The WeMos D1 R2 board we used in this project was actually a clone made by Robotdyn; the original D1 R2 does not have a connection for an external antenna. The boards in our shop (Cat SC4414) are the same as the board shown in the article. (05/18)

6-Element VHF TV Yagi Antenna, February 2018: A photo caption on page 40 says that the dipole ends are made using 39mm lengths of aluminium tubing but they are closer to 30mm; refer to Fig.1 on page 39 which correctly shows the distance between the semicircular cut-outs at each end as 27mm. (05/18)

Full Wave 10A Motor Speed Controller, March 2018: (1) The mains Active wiring to the fuse holder shown in Fig.2 should show the incoming mains wire (brown) connecting to the tip of the fuse holder rather than the side ring terminal. The wire through the current transformer should then connect to the side ring terminal of the fuse holder. Also, the paragraph before the "Current Feedback" cross-heading on page 39 refers to pin 2 connecting to the 4.7nF capacitor. It should say pin 5. These errors have been fixed in the online edition. (04/18)

(2) In the circuit diagram (Fig.1) on page 36, the "Active In" wire from FUSE1 is shown connecting to the top-most terminal of CON1 and it then goes through the core of transformer T1. This is incorrect; the wire from FUSE1 goes directly to T1, then to CON1 and on to the A1 terminal of TRIAC1. The overlay and wiring diagram (Fig.2) on page 40 is correct. (02/19)

(3) A bug in the original software (1010218A) prevents the feedback speed control from working after the soft-start period. Revised software (1010218B) is available online. In the circuit diagram (Fig.1), the electrolytic capacitor connected to the junction of the 10kΩ and 1kΩ resistors to the left of diode D5 should be 10µF, not 100µF. Some PCBs sold may also show this capacitor as 100µF but the overlay diagram, Fig.2, shows the correct value of 10µF. VR2 is also shown as 1kΩ in the circuit, but should be 10kΩ as in the parts list and overlay. (12/19)

AM Radio Transmitter, March 2018: (1) The circuit diagram on page 67 (Fig.2) shows the 10nF antenna coupling capacitor connected to the wrong end of antenna coil L1. Also, Mosfet Q3 has the wrong part number in the parts list. It should be IPP80P03P4L04, as in the circuit and overlay diagrams. (05/18)

(2) There is an error in the connection of the 2.2MΩ resistor in the first batch of PCBs sold. It is connected to the collector of Q2 rather than its base. If you have a RevB PCB, cut the track from the 2.2MΩ resistor to Q2 and bend the resistor lead over and solder it to the middle pin of Q2. Newer (RevC) boards will have this change incorporated. Also, in the circuit diagram (Fig.2), the 4.7nF capacitor and its 1kΩ series resistor between T1 and pin 10 of IC1 should be swapped. (07/18)

(3) On the PCB, the connections to pins 2 & 3 of Mosfet Q3 have been swapped, rendering the reverse polarity protection inoperative. This has been fixed on the RevD PCB. For earlier PCB revisions, these pins should be bent and crossed over, with one insulated using a short length of heatshrink tubing or similar. (08/19)

"GPS" Time Signal Generator, April 2018: The parts list gave an incorrect Jaycar part number for the D1 Mini ESP8266 module. It should be XC3802. (05/18)

Frequency Switch, May 2018: The +11.4V filter capacitor is shown as 10µF on the circuit diagram (Fig.2, page 38) but it should be 100µF, as on the PCB overlay diagram and parts list. (06/18)

USB Port Protector, May 2018: (1) In the circuit diagram on page 58 (Fig.1), the base resistor of Q2 should be 10kΩ and LED1's series resistor should be 47kΩ to be consistent with the PCB. [Note the PCB is also labelled incorrectly, with the 47kΩ resistor in series with LED1 mislabelled as a 10kΩ resistor (directly above Q1). The overlay diagram in the magazine is correct, and the parts supplied in the kit are also correct.] (06/18)

(2) TVS2 has a metal tab under its body which is not mentioned in the article, and depending on how you fit it, it could become shorted out. Make sure that this tab only makes contact with one of the two pads before soldering it in place. (04/19)

El Cheapo Modules 16 – ADF4351 4.4GHz Digitally Controlled Oscillator, May 2018: A reader identified a bug in the code which caused the output frequency to be wrong in some cases (see the Mailbag section for more details). Revised software is available for download from the Silicon Chip website which fixes this bug. (09/18)

800W+ Uninterruptible Power Supply, May-June 2018: (1) In Fig.1 on page 32 of the May issue, the wiring shown for RLY3 is wrong. A corrected block diagram has been published in the June 2018 issue, on page 65. (06/18)

(2) The Altronics chassis-mount LEDs mentioned in the parts list on page 33 of the May 2018 issue (Cat Z0222, Z0224 & Z0226) do not have integral current-limiting resistors. You will either need to solder a resistor of around 1kΩ in series with each LED or use chassis-mount LEDs which already have resistors, such as Jaycar Cat SL2644/SL2645 or Altronics Cat Z0264/Z0265. (02/19)

USB Flexitimer, June 2018: In the circuit diagram (Fig.1) on page 26, LED2 and LED3 are swapped. LED2 (ON) connects to pin 5 of IC1 via a 3.3kΩ resistor, while LED3 (OFF) connects to pin 2 via another 3.3kΩ resistor. (07/21)

Wide-range Digital LC Meter, June 2018: We forgot to mention in this article that the software may need to be modified if your I^2C LCD module has a different address. The default address used is 0x27 which suits an I^2C board using the PCF8574T IC and no jumper options set. If your I^2C module uses a PCF8574AT IC, you will need to change that address (on line 14 of the sketch) to 0x3F. We are in the process of developing a new version of the sketch which will automatically detect the display address. Once we have released that, you should not need to make any changes regardless of the I^2C address your module uses. (09/18)

Low-cost Automotive Ammeter, Circuit Notebook, June 2018: While not strictly necessary, it is a good idea to add two 2.2µF 16V Tantalum capacitors, across the inputs and outputs of the Mornsun Switchmode Converter to reduce hash (see the data sheet for more details). (09/18)

Philips Compact Cassette & EL3302 Cassette Recorder, July 2018: At the top of page 28 it states that the EL3302 had a battery comprising five AA cells but as shown in the schematic on page 30 (Fig.5), it actually used five C cells. (08/18)

Super Digital Sound Effects Module, August & September 2018: In Fig.6 on page 81 of the September issue, the 330kΩ resistor below the 1MΩ resistor next to REG1 is incorrectly labelled as 22kΩ. It is correct in the circuit diagram and on the production PCBs. Also, since publishing these articles, we discovered that there is an alternative version of IC3 (IS31AP4991), the IS31AP4991A. This was not mentioned in the original data sheet and it has a different pinout, so it will not work in our design. Avoid using that chip. Replacement chips have already been sent to those who would have received the incorrect IC from us. (11/18)

Steam Train Whistle / Diesel Horn, September 2018: In Fig.1, the 100kΩ resistor to the right of JP4 should be between JP4 and the mixing junction, with no connection to the 5V rail. On page 36, the text states that microcontroller IC1 generates the volume control signal but it is IC2 instead. On page 37, the reference to Fig.3 should be to Fig.2. On page 38, in the panel, it should read "... around eight seconds.", not "... around eight settings." Finally, the Jiffy box should be a UB5 type, not UB3. (10/18)

Arduino-Based Programmer for DCC Decoders, October 2018: There are some errors in the circuit diagram, Fig.1. The default state of the links between CON1 and CON2/3 have been swapped, ie, pin 6 of CON2 should connect to pin 6 of CON1, and pin 12 of CON3 should connect to pin 12 of CON1. Also, pin 6 of IC1 should directly connect to pin 7, not to pin 4. (06/20)

GPS-Synched Frequency Reference, October & November 2018: In the circuit diagram (Fig.2) on pages 30 & 31 of the October issue, REG1 should be included inside the red dotted box indicating the oven section. Also, some items are missing from the Parts list on page 33 of the October 2018 issue. Add one 18-pin female header socket and one 4-pin female header socket for connection to the BackPack module (CON1). Constructors may also need three female-female DuPont jumper leads, to cut in half and solder to the GPS module wiring for connection to the header on the main board. (01/19)

Low Voltage DC Motor & Pump Controller, October & December 2018: For PWM frequencies above 1kHz, a 30V+ schottky diode must be connected across the fan/pump, cathode to positive, with a current rating at least half the load's maximum. Solder it across the unit's outputs or the fan/pump terminals. This prevents the Mosfets from overheating when they absorb the back-EMF pulses. We also suggest that you solder 10µF 25V X5R capacitors on top of the 100nF bypass capacitors for IC2 and IC3 and add a 2200µF 25V low-ESR electrolytic between the +12VF and 0V (fan power input) terminals on the board. Note that the loads may run briefly when power is first applied; disconnect all loads before making a connection to CON2 (ICSP). (04/19)

Tinnitus & Insomnia Killer, November 2018: (1) On page 65, the text refers to Fig.2 as showing the pink noise output but it is actually shown in Fig.3. (12/18)

(2) There is an error in both versions of the PCB. The 68kΩ resistor in the Pink Noise Filter (above and to the right of IC1) is connected to the wrong end of the 1kΩ resistor immediately next to IC1. This results in the pink noise being slightly louder than intended. This error will be corrected on RevC PCBs. If you have a RevB PCB, you can fix it by cutting the bottom layer track between the nearest pads of these two components and wiring the now free end of the 68kΩ resistor to the opposite end of the 1kΩ resistor using a short piece of insulated wire. (03/19)

USB digital and SPI interface board, November 2018: The PCB design is missing a track from pin 10 of IC1 to pin 4 of CON4. It can be added using a short insulated wire link on the underside of the board, or you can use pin 3 of CON3 as MISO/DO instead. We will order PCBs with the corrected pattern (RevB) once the current batch (RevA) has sold out. (01/19)