NOTES & ERRATA FOR PROJECTS PUBLISHED IN SILICON CHIP (2019)

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.

Isolated Serial Link, January 2019: If using the device for isolating circuitry at mains potential, observe the following precautions:
(1) It must be mounted in an Earthed metal or double-insulated case before connecting it to the mains-powered equipment (ideally within the same enclosure). Only the isolated connections should be brought outside the case. If mounting in a separate case, the wiring to the mains-powered equipment must be mains-rated and properly insulated at both ends.
(2) Either omit the isolated power supply circuitry or build the version using MOD1, not transformer T1.
(3) If using MOD1, lengthen the slot underneath it until it nearly touches OPTO1 (the slot is lengthened on RevH boards). (02/19)

Motion-sensing 12V Power Switch, February 2019: The vibration switches can become unreliable (stuck 'on') due to contact welding. To solve this, solder a 100Ω resistor in series with one of the sensor leads (we suggest the thinner one). This value works well but is a compromise; it must be low enough to discharge the capacitor quickly but high enough to avoid contact welding. (11/22)

DAB+/FM/AM Radio, January-March 2019: (1) In the parts list on p85 of the February issue, we described BC817 transistors as PNP and BC807 as NPN. BC817s are NPN and BC807s are PNP. The type numbers and part designators given are otherwise correct. Also, note that the 5.5 turn side of T1 is terminated on the CON6 side, as described in the text; this is not clear from Fig.2. (04/19)
(2) The PCBs we have supplied for this project are marked RevC, but they are actually RevD boards, with the extra resistors as described in the article. They were simply mislabelled. No RevC boards have been sent to customers. (05/19)

Four-Channel Sound System Using A Single Woofer, Circuit Notebook, February 2019: The circuit diagram does not show the part type for ICs3-9. The author recommends LM833 although NE5532 should also be suitable. (04/19)

Versatile Trailing Edge Dimmer, February-March 2019: The infrared remote control specified for this project (Little Bird SF-COM-14865) has been changed to emit different remote control codes. This new version looks slightly different from the original as it has dotted white circles around the buttons. If you have this version of the remote, you will need to use the revised version of the firmware (1011119B.HEX) which has been modified to expect the new set of remote control codes. (08/19)

Multi Diode Curve Plotter, March 2019: In Fig.2 on page 67, the resistor to the left of and slightly above diode D1 (in the middle of three labelled 10kΩ) should be 1kΩ. The circuit diagram and silkscreen on the PCBs sold in our Online Shop is correct. (05/19)

Ultra Low Noise Remote Controlled Stereo Preamp, March & April 2019: On page 44 of the April 2019 issue, endstop adjustment trimpot VR4 is incorrectly referred to in several places in the text as VR2. (07/20)

Bridge-Mode Audio Amplifier Adaptor, May 2019: In Fig.30 on page 70, the negative terminal of CON4 is incorrectly drawn as being connected to both pins 1 & 2 of CON5. The positive terminal of CON4 only connects to pin 1 of CON5, and the negative terminal only connects to pin 2. (09/19)

433MHz Data Range Extender, May 2019: The dimensions of the Jaycar LO1242 powdered-iron core are 15 × 8 × 6.5mm, not 25 × 15 × 10mm as mentioned in the article. (10/19)

Low-Distortion DDS, May 2019; DSP Active Crossover/Parametric Equaliser, May-July 2019 and DIY Oven Reflow Controller, April-May 2020: The connections between IC11 and IC12 are shown incorrectly on the CPU circuit diagram, but are wired correctly on the PCB. The correct connections are: IC12 pins 2, 5 & 6 go to pins 5, 6 and 4 on IC11 respectively. In other words, SO connects to SDI_SDI2, SI to SDI_SDO2 and SCK to SDI_SCK2. (06/20)

DSP Active Crossover/Parametric Equaliser, May-July 2019: (1) In the ADC circuit diagram on pages 30 & 31 (Fig.4) of the May issue, two pairs of 22µF capacitors are shown between the ±9V rails and ground but only one pair actually exists. Also, one 10µF bypass capacitor is shown on the +5V rail but there are actually two, with the other located close to IC4/IC5. Finally, the two 47µF coupling capacitors after FB1/FB2 are actually polarised, with the positive ends to FB1 & FB2. (06/19)
(2) In the June issue, the parts list indicates that the 128×64 pixel LCD has a 16-pin connector. It actually has a 20-pin connector, and so instead of the 13×2 pin and 16-pin headers, you need 10×2 pin and 20-pin headers. The caption for Fig.14 also incorrectly describes it as having 16 pins, rather than 20. (02/20)

AM/FM/CW HF/VHF RF Signal Generator, June-July 2019: (1) The second article describes the core for transformer T1 as 7mm long in some places and 14mm long in others. It should be 7mm, while a 14mm core will work, it's harder to fit. Also, if you use the Jaycar Cat QP55**16** LCD with DIL pin header, you need to swap the pin 1 & 2 connections from the PCB (by replacing those two pins with short lengths of wire) as its pinout is slightly different from the Altronics Cat Z7018 LCD. This is not necessary for the Jaycar Cat QP55**21** LCD which has a SIL header. Finally, some constructors have found that the 1kΩ resistor next to Q4 on the PCB (connected to its collector) needs to be increased in value (eg, to 10kΩ) so that the unit can be switched off by pressing S3. (09/19)
(2) Some rotary encoders look identical but work differently, resulting in erratic operation. The V14 firmware addresses this; by default, it works with pulse-type encoders. You can identify these by testing continuity across the two internal switches; if they are both always open when the encoder is at rest, it is a pulse-type. With the level type, one or both switches may be closed at rest, depending on the encoder's rotation. If you have a level-type encoder and the V14 software, solder a 100kΩ resistor from pin 28 of the Atmel chip to ground, on the underside of the PCB. That will change the software mode to work with level-type encoders. (Updates errata published in March 2020.) (04/20)

Dual 12V Battery Isolator, July 2019: If you use the specified LP2950 regulator, it is necessary to add a 4.7kΩ resistor between 5V and GND for the unit to work properly. It will also work with a 78L05 regulator in place of the LP2950, although that will increase the quiescent current by around 3mA, compared to adding the resistor which only increases it by around 1mA. Future PCBs supplied will have a location to fit this extra resistor. (09/19)

Vintage Radio (National AKQ), July 2019: In the circuit diagram on page 95, both batteries are shown with the wrong polarity. This has been fixed in the online version of the magazine. (10/19)

Fluid Logic, Fluidics and Microfluidics, August 2019: On page 17, images for Fig.8 & Fig.9 are swapped. (09/19)

Voice Modulator for Sound Effects, Circuit Notebook, August 2019: The diodes in the bottom half of both bridges should be reversed in polarity to form 'rings'. Also, the 180kΩ resistor should be changed to 150kΩ. (10/19)

LoRa Chat Terminal, Circuit Notebook, August 2019: The connections from IC2 to the LCD12864 display module are incorrect. The correct connections are: 1) pins 1-8 on IC2 go to pins 7-14 on the LCD; 2) pins 23-25 on IC2 go to pins 15-17 on the LCD; 3) pins 26-28 on IC2 go to pins 4-6 on the LCD. (01/20)

Gamer's Simulation Seat (High-current H-bridge), September 2019: The 74LS08 IC in the H-bridge should be replaced with a 74HC08 as the LS-series chip has an insufficiently high output voltage to drive the IRFZ44N Mosfets properly. Ideally, those Mosfets should also be changed to a logic-level equivalent such as the CSD18534KCS (Silicon Chip Online Shop Cat SC4177) to ensure they switch on fully with a 5V supply. (10/19)

Six-decade Resistor Sorter, Circuit Notebook, September 2019: Pin 8 of IC1-IC3 must be connected to the anode of LED7, not the cathode, for the circuit to work correctly. (10/19)

Micromite Explore-28, September 2019: In Fig.4 on page 56, the pinout shown for REG1 is incorrect. Pin 1 is the input (IN) while pin 2 and the tab connect to GND. (12/19)

Vintage Radio (Kriesler 31-2), September 2019: The vibrator circuit (Fig.2) shown on page 115 was incorrectly redrawn. The vibrator reed should be shown not touching either of the two contacts. (11/19)

Arduino-Based Digital Audio Millivoltmeter, October 2019: In the circuit diagram (Fig.3) and PCB overlay (Fig.5), the 220nF capacitor between pin 3 of IC3 and pin 4 (GND) should be a 1µF 50V through-hole ceramic or MKT as in the parts list. The overlay incorrectly labels the PCB as 04106191 when it should be 04108191. The PCBs we sell have all these correctly marked on the silkscreen. (12/19)

45V 8A Bench Supply, October 2019-December 2019: (1) In the circuit diagram (Fig.3) on pages 26 & 27 of the October issue, the 1nF capacitor between pins 1 & 2 of IC1a should be 100nF; D6 is an SB380 type; IC1 should have a 100nF bypass capacitor from its negative supply (pin 4) to ground; the 68Ω resistor below Q3 is a 1W type; the four 0.1Ω resistors are 1W, not 5W; the 100µF capacitor at the input of REG1 has a 63V rating; and if electrolytics are used for the two 1µF capacitors, their negative leads go to ground. (11/19)

(2) In the PCB overlay diagram (Fig.6) on page 70 of the November issue, the types and labels for diodes D5 and D6 are swapped. D5 is on the left and should be a 1N5404 type, while D6 is closer to the edge of the board and should be an SB380. The PCBs supplied for this project have the same error on their silkscreen printing. The circuit will still function correctly if both diodes are SB380s. (01/20)

(3) In the parts list on page 74 of the November 2019 issue, the correct part code for transistors Q4-Q7 is FJA4313, not FJA4314. The full part code we used (and supply) is FJA4313OTU. (11/20)

(4) The circuit diagram (Fig.3) on p27 of the October 2019 issue shows the cathode of D5 connecting to the wrong location. It should connect to the VCC rail, which includes the positive ends of the 4700µF capacitors and the collectors of Q4-Q7. (03/23)

Shunt Regulator for Wind Turbines, Circuit Notebook, November 2019: The drain and source of Q9 have been reversed. Q9 is not used for reverse polarity protection, but instead to regulate the supply voltage to IC1 and for the fan, to around 12V. (12/19)

Discrete Pump Timer, Circuit Notebook, November 2019: The diodes are all shown correctly orientated, however the anode ("A") and cathode ("K") markings have all been swapped. Also note that the 12V version of the Cyclic Pump Timer was in the July 2017 issue, not July 2016. (01/20)

Super-9 FM Radio, November & December 2019: (1) In the circuit diagram (Fig.4, pp32-33, November issue), the 4.7pF capacitor above and to the right of Q4 actually connects to Q4's base, not its emitter. This signal is 10.7MHz above the tuned station, not fixed at 10.7MHz. Also, the 10nF capacitor shown connected between pin 13 of IC3 and ground is not present on the PCB, and not needed. Finally, the text refers to VREF from pin 10 of IC3 being applied to the anode of VC3, but it actually goes to the cathode. (12/19)

(2) The BB156 varicap used in this design has been discontinued and may become difficult to obtain. The 1SV304TPH3F varicap, still in production, is a suitable replacement. Also the Jaycar catalog code given for potentiometers VR1 & VR6 in the parts list on page 36 of the November issue is wrong. They should be Cat RP7510, not RP7610. Finally, in the alignment procedure described on page 67 of the December issue, where it says to adjust transformer T2, it should instead read inductor L6. (02/20)

(3) The parts list on p36 of the November 2019 issue called for 1m of 0.25mm diameter ECW for winding T1 & L6 while the winding instructions on p63 of the December issue say 0.125mm diameter. You can use either diameter; if using 0.25mm diameter, wind the first layer on T1 & L6 in two layers. If using 0.125mm diameter, you should be able to fit the turns in one layer. (06/20)

(4) The NXP BB156 Varicap diode used in this project is being discontinued. While it is currently still available, should it become difficult to source, the Toshiba 1SV304TPH3F is a suitable substitute. (07/20)