NOTES & ERRATA FOR PROJECTS PUBLISHED IN
SILICON CHIP (2015)

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.

Currawong 2×10W Stereo Valve Amplifier, November 2014-January 2015: (1) The relays intended to switch the signal over from speakers to headphones do not operate correctly. Three components must be changed or added to fix this and these changes can be made without removing the PCB from the case. The two diagrams on page 104 of the March 2015 issue show the modifications to the circuit and PCB in red. The 10kΩ resistor can simply be shunted with a 470Ω resistor. The added capacitor is shown on its side for clarity however it should go above D6. Make sure the leads of the added diode can't short to the leads of the 560Ω resistor or pin 2 of REG1. With these changes, the relay holding voltage is around 3.6V which is sufficient. Finally, in the parts list on page 35 of the November 2014 issue, the 8×220µF 630V polyester capacitors should be 8×220nF 630V instead. (03/15)

   (2) In the November 2014 issue on page 32, circuit diagram Fig.2 shows T1's secondary voltages incorrectly. The two bottom windings should be shown as 15VAC, not 37VAC. (04/15)

6-Digit Retro Nixie Clock Mk2, February-March 2015: (1) The articles stated that GPS modules with RS-232 output levels were not suitable for use. However, we have now managed to incorporate support for such modules into the final software. Note that a resistor of around 4.7-10kΩ must be placed in series with the GPS module's TX line (ie, the wire to pin 3 of CON7, marked "TX" on the PCB) to avoid damaging the microcontroller. The micro will auto-detect inversion state and baud rate (4800 or 9600). Note also that there is no pull-up resistor on the MCLR pin (pin 1) of IC1; while the data sheet suggests one may be necessary, we have found it works fine without. If you want to add one, it can be soldered between pins 1 & 2 of CON3. (04/15)

   (2) The daylight savings calculations were wrong for some locations and this resulted in daylight savings time being used year-round. A revised version of the firmware, 1910215C.hex, is available which fixes this. Future clocks kits will be supplied with the new firmware. Users affected by this bug can set the manual time-zone override so that the unit shows the correct time or mail their PIC32 chip to our PO Box along with a return address for re-programming (be sure to note that the chip is for the Nixie Clock). In addition, care is required when fitting LED1 and the super-capacitor. The IR LED supplied may have its flat side towards the anode, not the cathode (as is usually the case and as shown in Fig.4). Check by referring to the longer of its two leads, which will be the anode. Also, as stated in the text, be sure to orientate the super-capacitor according to its polarity marking. Do not rely on the depiction in Fig.4 which may not be accurate for all super capacitors. (07/15)

   (3) An error was found in the routine which applies the time zone offset. This results in the clock displaying hour 24 rather than 00 after midnight. It can also result in an incorrect hour display for the first minute of each hour in time zones with a half-hour or quarter-hour offset. The latest version of the firmware (1910215D.hex), available on our website, fixes both problems. Users affected by these bugs can mail their PIC32 chip to our PO Box along with a return address for re-programming (be sure to specify that the chip is for the Nixie Clock). (09/15)

Spark Energy Meter, February-March 2015: The main circuit diagram shows D13 as a BAT46; this should be a 1N4004 silicon diode. The parts list should therefore be adjusted: 9 BAT46 diodes (not 10) and a 1N4004 added as D13. On the main component overlay (March), ZD31 is shown as 16V whereas it should be a 12V zener to agree with the circuit diagram and the parts list. On the Calibrator, if there is insufficient range adjustment for VR2 to set 250Hz, R1 can be changed to a lower (eg, 180kΩ) or higher (eg, 270kΩ) value, as required. (05/15)

Appliance Earth Leakage Tester, May 2015: The parts list includes one 100nF MKT capacitor but two are required. (11/15)

Driveway Monitor, July 2015: IC1 is incorrectly listed as an AD723AN in the parts list. It should be an AD623AN as shown on the circuit. This error has been corrected in the online edition of the magazine. (08/15)

Ultra-LD Mk4 Power Amplifier Module, July-September 2015: The parts list on page 38 of the August 2015 issue gave an incorrect part number for the 4.7V zener diodes. It should be BZX84B4V7-7-FDICT-ND. The ferrite bead type isn't critical but we suggest Digi-Key 240-2548-1-ND. (11/15)

Accurate Voltage/Current/Resistance Reference, August 2015: The caption for the PCB photos on page 43 is wrong. If diode D1 is fitted, its cathode goes to the positive battery terminal, not its anode. The photo shows the correct orientation. (09/15)

PICAXE-Based Mains Timer, Circuit Notebook, August 2015: The circuit shows D1-D2 as 1N4148s. D1-D5 are all 1N4004 types. (09/15)

9-Channel IR Remote Control Receiver, September 2015: A bug in the receiver code could cause the last used function to be repeated in the presence of interference. The revised code 1510815B.hex fixes this. (11/15)

Circuit Notebook, September 2015: In the item entitled "Benchtop Ignitor For Oxy-acetylene Welding", the IGBT's part number in the circuit is incorrect. It should be ISL9V5036P3. Note that this part is available from our Online Shop. (12/15)

Universal Loudspeaker Protector, November 2015: Article refers to a 70°C thermal cut-out from Jaycar, Cat. ST3831. This is incorrect, the correct catalog number is ST3833. (03/16)

(2) The SMD bridge rectifier pads on the published (RevB) PCB are not wired correctly. The negative terminal goes to GND rather than LK1. As a result, if LK1 is left out but the SMD bridge rectifier is fitted, it will burn out or a track will fuse. In this case, cut the track to the bridge rectifier's negative pad (coming from the left side). This is fixed with the RevC PCB, which will be supplied once the stock of RevB boards is exhausted. (04/16)

5-Element DAB+ Antenna, November 2015: The dimensions/drilling details shown in Fig.1 for the lower dipole elements have been slightly modified. The revised diagram is shown in the article on the Silicon Chip website. The changed dimensions are as follows: 292 -> 288; 330 -> 332; 6 -> 12 (only for the centre measurement) and the spacing between the two lower elements is 28mm. In addition, the 1.25-metre x 19mm square tubing for the boom should have a specified wall thickness of 1.2mm (not 1.8mm as shown in the parts list). (11/16)

High Visibility 6-Digit LED GPS Clock, December 2015 & January 2016: The parts list in the December issue should read:

9 BC547 (Q1-Q9)
10 BC337 (Q10-Q19)

These type numbers were transposed in the original parts list but were correct in Fig.1 & Fig.2. Note also that Fig.1 should show R8 as 68 ohms and the label on Fig.2 should read Q20-Q26 for the MPSA13 transistors (not Q20-Q16).

The following additional notes also apply:

(1) To calibrate the 32kHz crystal, set the XTAL menu option to between -512 (260ppm slower than default) and +511 (260ppm faster). This is adjusted automatically when a GPS module with a 1pps output is used.

(2) When the alarm goes off, use a long (1s+) press of either pushbutton, or a second press of the Escape button on the remote to cancel it altogether. A short/single press will simply activate the snooze function.

(3) Maximum alarm duration has been extended to up to 15 minutes with a default of 10 seconds.

(4) The unit can show the day of the week. Simply activate the date display function, then press the same button again.

(5) A new menu item, "GPSLCK", has been added to the options menu. If set to "IGNORE", the unit will use GPS time even if the satellite fix is not perfect. This will allow the unit to work in marginal signal areas although time accuracy may not be quite as good.

(6) A new brightness menu item, "CUR RD", shows the minimum/current/maximum raw LDR readings in 8-bit hexadecimal notation. The fourth digit decimal point lights when the data is going to be saved to flash memory and goes out once it's saved. This can be used to troubleshoot the autodim function. (02/16)

High Visibility 6-Digit LED GPS Clock, December 2015 & January 2016: Two bugs have been identified in the firmware. One causes the unit to display the incorrect time for 8pm and later when set to 12-hour mode. The other causes minutes to be shown as 60 rather than 00 for one minute if the current time zone has an offset that is not a whole number of hours.

Firmware v1.2 (revision C) fixes both problems and is available for download from our website. Affected users can send their PIC32 chips back in to be re-programmed if they are unable to do so themselves.

In addition, in Pt.2, the instructions for gluing the case together state "The front panel is rotationally symmetrical so its orientation is not important . . .". While the front panel is rotationally symmetrical, it does not have mirror symmetry so it is possible to glue it "flipped" such that the LED colons will slant in the wrong direction. Please pay attention to this possibility while assembling the case. (03/16)

High Visibility 6-Digit LED GPS Clock, December 2015 & January 2016: The circuit diagram (Fig.1) on page 39 of the December 2015 issue show R8 and R9 swapped. They are correct on the overlay diagram (Fig.2) on page 42. (04/16)