NOTES & ERRATA FOR PROJECTS PUBLISHED IN SILICON CHIP (2004)

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.

High-Efficiency Power Supply For 1W Star LEDs, January 2004: The PC board number given in the parts list is incorrect. The correct board number is 11101041. (02/04)

Weather Satellite VHF Preamp, January 2004: To prevent parasitic oscillation of the preamp at UHF, inductor RFC1 should be replaced with a 100kΩ 0.25W resistor. We also recommend adding three 2.2nF SMD capacitors under the board as shown in the April 2004 issue, to provide improved bypassing for the source and G2 of the BF998 MOSFET. (04/04)

Studio 350 Power Amplifier Module, January 2004: The 470µF 100V electrolytic capacitor connected to the -70V rail (adjacent to fuse F2) is shown reversed on the circuit diagram (Fig.7). (02/04)

Studio 350 Power Amplifier Module, February 2004: The ±70V power supply wiring colours shown on the overlay diagram (Fig.1) disagrees with the wiring colours shown on the power supply wiring diagram (Fig.6). In all cases, the +70V wiring should be red and the -70V wiring blue. The ±70V markings on the PC board and diagrams are correct. The wiring diagram for the ***SILICON CHIP ONLINE*** website is correct. (04/04)

Studio 350 Amplifier, January & February 2004: Several constructors have reported that during initial testing, their amplifier's DC output voltage measured close to the full negative supply rail (ie, the output stage is saturated). If you have this problem, check that transistors Q2 & Q3 are the genuine Renesas (Hitachi) 2SA1084 devices, marked "A1084D" or "A1084E" on the flat face of the package. We understand that Jaycar Electronics have sold some kits with non-Renesas parts for Q2 & Q3, apparently with incompatible pinouts. According to Jaycar, most purchasers have been notified of the problem and replacement transistors provided. For more information, contact **kits@jaycar.com.au**, quoting your kit batch number. (04/06)

Simple DC Power Supply, March 2004: A track is missing on the PC board layout between the anode of D5, cathode of D6 and the output of REG1. The corrected PC board pattern is shown in on page 89 of the May 2004 issue. This error was also present in the PSU.ZIP design files mentioned in the article. An updated version can be downloaded from **siliconchip.com.au** (05/04)

PICAXE-18X 4-Channel Datalogger, March 2004: In the Humidity Program listing (Fig.4 on page 80), saving the scratch-pad value back to the temperature word overwrites the whole degree value. The fix is to preserve the LSB in a separate variable. That way, the stored data can be retrieved and simply multiplied by 0.0625 to recover the fractional temperature at full resolution. A modified program incorporating this change is available from **siliconchip.com.au** (08/04)

3V-9V DC-DC Converter, March 2004: When the trickle charge circuit (D2 & R4) is installed and the converter is powered from the plugpack input without a battery connected, the output voltage will fall short of 9V. This occurs because the trickle charge circuit is pulling the "SW" pin higher than the "V_{IN2}" pin, causing the TL499A to erroneously select the step-up switching regulator instead of the linear regulator.

If you must operate the unit from a plugpack without a battery installed, then you can solve this problem two ways: (1) remove the trickle charge components (D2 & R4), or (2) fit a 2-pin header so that the trickle charge circuit can be disabled (via a jumper shunt) at will. You will note on the circuit board layout that provision has been made for this directly below D2. First, remove D2 and cut the small track that joins the two square pads. Install a 2-pin header and refit D2, noting that you'll probably need a new diode with longer leads so that it can be positioned between the new header and L1. (09/04)

Ask *SILICON CHIP*, March 2004: On page 90 we mistakenly referred to a PICAXE phone intercom published in June 1992. This project was actually published in June 2003! Also, for information, the 10-station interphone (Aug-Nov 1992) PC board reference number is CE92MC (see **www.rcsradio.com.au** "Master List 1960 > Current Year" page).

LED Driver, March 2004: Pins 1 & 2, 5 & 6 and 8 & 9 of IC1 on the circuit on page 74 are all swapped. The PC board overlay diagram is correct. (10/04)

4-Wire Stepper Motor Driver, Circuit Notebook, March 2004: On page 37 the text states that "The original circuit's IRRZ44Ns can be replaced with IRF9530s". This should read "The original IRFZ44Ns can be replaced with IRF530s". (02/05)

Dog Silencer Mk2, April 2004: Some readers have had difficulty winding the transformer. The windings will only fit in two layers. (07/04)

StarPower Luxeon Star LED Power Supply, May 2004: Several constructors have reported that the sense voltage (set with VR1) could not be adjusted high enough when driving 3W and 5W Stars, resulting in insufficient LED current. This problem was resolved by replacing the MC34063A switchmode controller IC with an On Semiconductor (Motorola) branded part. (09/06)

Courtesy Light Delay For Cars, June 2004: The 1MΩ trimpot (VR1) has been omitted from the parts list. (07/04)

RFID Security Module, June 2004: (1) The photograph of the completed module on page 38 shows the microcontroller (IC1) reversed in its socket. The overlay diagram (Fig.3) shows the correct orientation for IC1. (07/04)

(2) On the overlay diagrams (Figs. 2 & 3), diode D3 should be labelled D2 and vice versa. (08/06)

Micropower Battery Protector, July 2004: The article stated that the MAX8212CPA voltage monitor (IC1) is available from Farnell. Unfortunately, Farnell has discontinued this part. Wiltronics currently have the part listed in their catalog. Check their website at **www.wiltronics.com.au** or phone 1800 067 674 for availability. Alternatively, you can order a kit of parts for the project from Dick Smith Electronics, Cat. K-3132.

SILICON CHIP has also recently become aware of a number of "bogus" MAX8212CPA chips that are being sold on the "grey" market. These devices are easily identified in-circuit because they behave in an opposite fashion to a properly functioning device.

In "bogus" devices, the output N-channel FET turns on when the voltage applied to the THRESH input (pin 3) is less than the internal reference voltage. This causes the MOSFET (Q1) to turn on when the input voltage is below the set point, rather than above this point. (09/04)

Video Formats: Why Bother? August 2004: A number of readers have asked where the PAL DVD test disc mentioned in the article can be obtained. Sanity currently stock the disc, on the web at **www.sanity.com.au** or phone 1300 722 121. Ask for the "Digital Video Essentials" DVD. (11/04)

Balanced Microphone Preamp, August 2004: Fig.3 on page 46 shows the 3-pin regulator (REG1) in the wrong way around. It should be mounted so that the metal tab faces away from D4. (01/05)

Add 7812T regulator (REG1) to parts list.

CFL/Fluoro Driver, September 2004: The circuit diagram on page 77 and the component overlay on page 78 both show a 470Ω 1W resistor connected across the transformer secondary. This component is not supplied in the kit and should not be present. Also, the output filter capacitor is 470pF and not 1nF, as referred to in the text. (10/04)

Programmable Robot, September 2004: There is an error in the circuit diagram of Fig.1 on page 65, concerning the programming cable socket (CON1). Earth should go to the tip of the 3.5mm socket while the junction of the 22kΩ & 10kΩ resistors goes to the ring. The sleeve connection is correct, as is the PC board layout on page 66. (11/04)

PICAXE-Controlled Battery Charger, Circuit Notebook, September 2004: (1) A sub-routine has been labelled Count. This is a reserved word, causing the compiler to stop with a line error. A simple fix is to change "count" to "counter" in the "red" sub-routine and also the label for the "count" routine (two places only). (01/05)

(2) The charger works as described if the battery has not been discharged below the normal terminal voltage range. However, the author has recently modified the program to detect and charge batteries that have been discharged down to 2V. This update can be downloaded from **siliconchip.com.au** Note that the new program ignores input 3 (pin 4), so if building the circuit from scratch, all components associated with this input can be omitted. (03/05)

Garage Door Controller, October 2004: (1) Some readers have wanted to use smaller motors with this kit. Oatley Electronics has advised that if R22 and R17 are changed to 82kΩ, the current is adjustable from 0-4A. Initially, set trimpots VR1 and VR2 to the centre positions, as the circuit may prematurely trip at the most sensitive settings. (11/04)

(2) The circuit diagram (page 78) shows the 10µF capacitor connected to IC2c (pin 10) with reverse polarity. Also, diode D10 and the 220kΩ resistor connected between this pin and +5V should in fact be connected between IC2d's input (pins 12 & 13) and +5V. The overlay diagram on page 79 is correct. Under "Circuit description" on page 77, the text refers to IC4 in one place instead of IC1. Also, the second paragraph on page 79 incorrectly describes the operation of the monostable circuit. It should read: "The counter (IC1) can be disabled by holding its OE input (pin 13) at +5V. The output of the monostable comprising Schmitt NAND gates IC2c & IC2d is normally low, thus enabling the counter to clock". (01/05)

RGB to Component Video Converter, October 2004: (1) The feedback resistor for IC2a should have a value of 1kΩ, not 510Ω. This resistor is located just in front of IC2 but on the top of the PC board. (02/05)

(2) The divider resistors at output pins 7 of IC1b and IC2b should be changed to 820Ω (upper) and 270Ω (lower), resulting in a gain of A = 4 to these stages, in order to achieve the required 2(R-Y) and 2(B-Y) signals at these pins. (10/19)

SMS Controller, October & November 2004: (1) Under the "Assembly" and "Controller Checkout" sections on page 34 (part 1) and page 74 (part 2), IC3 is referred to as IC4 and vice versa. (12/04)

(2) If a large SMS message is present in the "inbox" of the phone connected to the controller, it may fail to initialise. Instead, the "Comms Error" LED will come on for six seconds, go out for two seconds, then come on again, with the cycle repeating indefinitely. This situation is unlikely to occur in normal operation if the controller's phone number has never been used for any other purpose. However, if the phone number is known to others, there is always the possibility of receiving large, unsolicited messages. Therefore, we've modified the microcontroller program so that it can successfully delete even the largest messages. An update is available from the download section of the ***SILICON CHIP*** website. Updated controllers can be identified by their response to the "COUNT" command – a reply of "v=01.01" indicates the latest program version. Note that this error condition can be cleared manually by deleting any messages in the inbox.

Second, some constructors have reported a higher voltage than specified when measuring the phone power supply output with the 10Ω test resistor in place. This is due mainly to tolerances in the MC34063 and the 1.5Ω resistors and will result in a slightly higher charging current. If your measurement is 4.7V or less, it is within operating parameters and can be safely used as is. Alternatively, you can reduce the voltage to specified levels (3.6V - 3.9V) by replacing one of the 1.5Ω resistors with 1.8Ω.

We've received numerous reports of the controller not accepting commands after programming. In all cases, this has been due to the use of spaces after command words. As shown in the various examples and described in detail in the text, spaces must not be used immediately after commands (see page 77 of the November 2004 issue). This is not a bug! (03/05)

(3) The supplier mentioned in the article (mobileextras.com.au) no longer stocks the data cable needed to connect the phone to the controller board. The project requires a Nokia DAU-9P or compatible data cable with an RS232 serial (not USB) connector. Cellink market a suitable cable, part number MDC887. You may be able to obtain one of these through your local mobile phone accessory store, or you can order one from Wagner Electronics Services, phone (02) 9798 9233 or on the net at **www.wagner.net.au** (08/05)

(4) In certain circumstances, user commands such as EN and DIS may operate on the wrong input or output port. A firmware update (v1.2) is available from the website to correct this problem. Note that as this problem is only evident with certain combinations of long strings, there is no requirement to perform this update if your controller is operating satisfactorily. (12/06)

USB-Controlled Power Switch, November 2004: It has come to our attention that some motherboards power the USB even when in standby mode. Apparently, this feature has been introduced to allow recharging of various accessories, as well as to allow mice and keyboards to initiate a power-up request from standby. To use this project with a PC that powers the USB in standby mode, switch the mains power rather than relying on the "soft power" button on the front panel. This method has the added advantage of eliminating standby power usage, which saves you money!

Two small hardware changes have also been made to the project to improve user safety. Firstly, we've increased clearances between high voltage (mains) and low voltage (USB) tracks and pads on the PC board.

Secondly, we've modified the PC board so that the metal shells of the USB connectors are connected to mains earth. Earthing the on-board connectors ensures that the shields of any USB cables plugged into the power board are also earthed.

The overlay diagram on page 89 of the December 2004 issue (Fig.1) and photo show how to wire up the mains earth to the PC board. Use a short length of mains-rated green/yellow wire and strip enough insulation off one end so that you can wrap it around the earth bus bar one complete turn before soldering. Finally, secure the wiring using cable ties. (12/04)

Bidirectional Motor Speed Controller, December 2004: The text states that the circuit can operate from a 24V battery. However, due to the gate-source voltage limit of the Mosfets, it is only suitable for use at up to 16V DC (ie, from a 12V battery).

However, it should be possible to modify the circuit for 24V operation by fitting 16V zener diodes between the gate and source terminals of each of the Mosfets (Q3-Q6) (see ***SILICON CHIP***, July 2005, page 99). (07/05)

Temperature Switch, Performance Electronics for Cars, 2004: The labelling of zener diode ZD1 on the wiring diagram on page 79 shows A & K swapped. The circuit on page 78 is correct. (04/06)