SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

July 2014

We're on

ZS6HVB
Affiliated to the SARL

COMMUNICATION IS THE NAME OF THE GAME

The last meeting, on the 21 June, was a social get-together held at the QTH of Rex. A lot of members and visitors were in attendance. Also a big thanks to all the ladies who provided the nice eats.

The next official meeting takes place on the 19 July at the normal venue. There will be a talk given by Ken, ZS6BLI, on encryption.

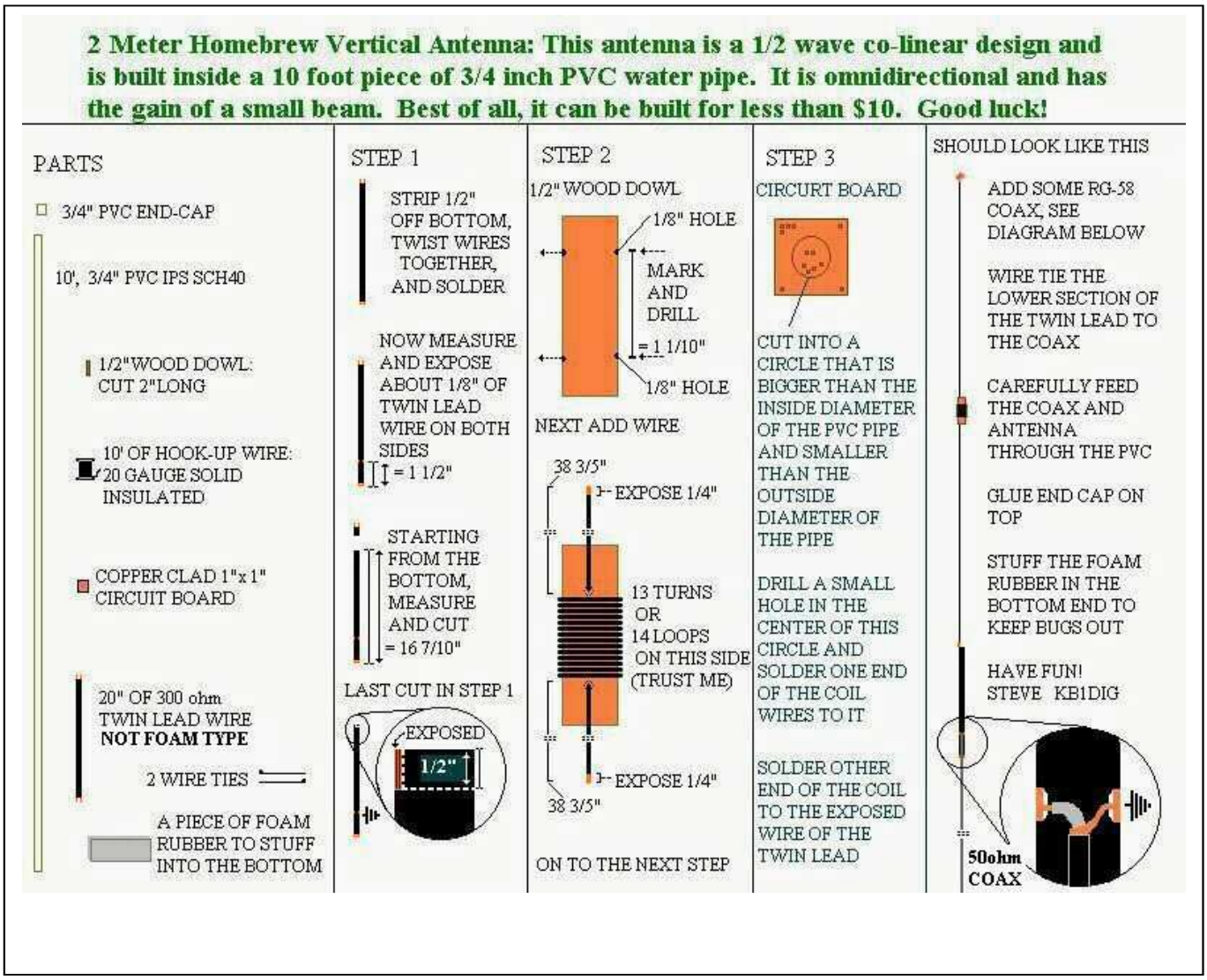
Testing of SCR, Thyristors

The circuit in the diagram is a very handy tool for rapidly checking all kinds of thyristor (SCR, triac, …). In case of a triac, all four quadrants are tested, which is done with S3, while in case of a standard thyristor, a positive power supply and trigger current need to be set, which is done with S1. The value of resistors R1 and R2 is chosen to obtain a current of about 28 mA, which is more than sufficient for most thyristors. The hold current is determined by R3, and is 125 mA, which is more than adequate to keep the thyristor in conduction after it has been triggered. Since D1 is a red, low-current LED, and D2 a green, low-current LED, it can be seen in a wink in which quadrant the thyristor conducts.
Testing is started with S2, and the circuit is reset with S4 after the test has been concluded. Three short lengths of circuit wire terminated into insulated crocodile clips on connector K1 will be found very convenient for linking any kind of thyristor to the circuit. Mind correct connections, though: in the case of a triac, MT1/A1 is linked to earth, the gate to S2 and MT2/A2 to R3; in the case of a standard thyristor, the anode is linked to R3, the cathode to earth, and the gate to S2. If, in a rare case the trigger current needs to be altered, this can be done by changing the value of resistors R1–R3 as appropriate. The trigger current may also be made variable by the use of a variable power supply. If that is done, make sure that the dissipation in the resistors is not exceeded.

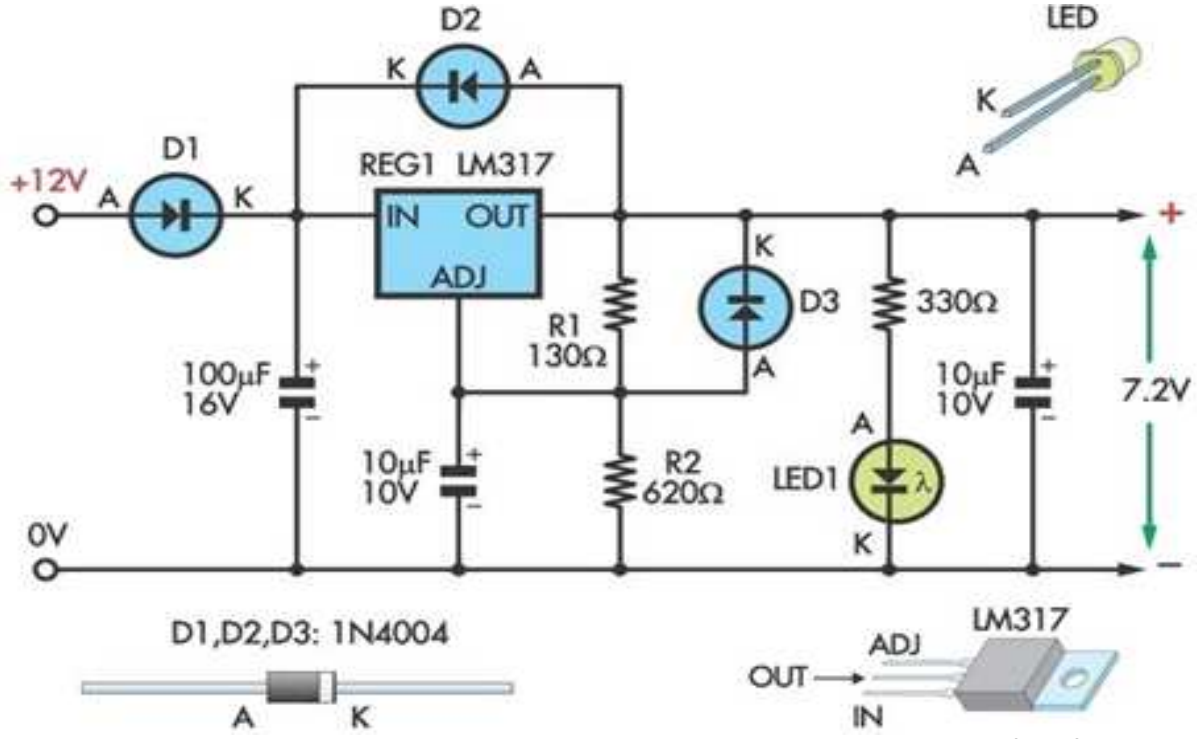
(Circuit on last page)

The businessman dragged himself home and barely made it to his chair before he dropped exhausted.
His sympathetic wife was right there with a tall cool drink and a comforting word. "My, you look tired," she said. "You must have had a hard day today. What happened to make you so exhausted?"
"It was terrible," her husband said. "The computer broke down and all of us had to do our own thinking."

Request for a reprint below



External power for an older type camcorder



(Continue on P3)

CMOS battery replacement on a computer

Occasionally we come across a computer motherboard that seems to eat those CR2032 batteries every 4 to 5 months. This is particularly frustrating because the computer works perfectly once booted but all the important BIOS settings are lost when the CR2032 battery fails. This is very irritating if the affected computer will not boot up with the default BIOS settings. A test revealed that the current drain on my CMOS battery was about 30 microamps. While this does not seem excessive, it is large enough to drain a CR2032 battery in a few months. The circuit in Figure 1 is an inexpensive rechargeable CMOS battery system that can be built from readily available parts. The heart of the circuit is the 3.6 volt rechargeable cordless phone battery pack. The particular brand used is not important only that it is a 3.6 volt (3 nicad cell) type. To get the necessary 5 volts from the computer power supply, a Y power connector is needed. One of the power leads has 12 volts and the other has 5 volts. Since wire colour coding schemes vary, use a voltmeter to connect to the right lead. The remaining two black leads go to ground. A connector will also be needed to connect the battery system to the external battery connector on the motherboard. It may be necessary to add or remove a jumper on the motherboard to use an external CMOS battery. Check the computer motherboard documentation for information on using an external CMOS battery. Resistor R1 is a 10 ohm ¼ watt resistor and D1 is a 1N4001 diode.

The resistor limits charging current to about 40 to 50 milliamps and diode D1 prevents the battery from discharging through the computer power supply when it is turned off. When the circuit is first installed it will be necessary to run the computer for several hours to get the battery pack charged up.

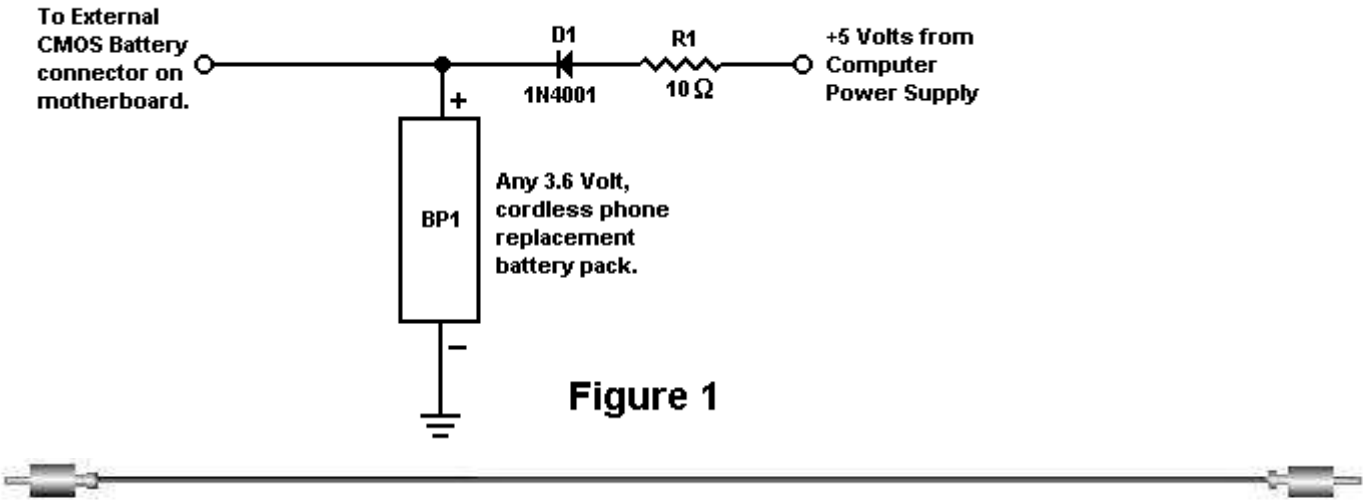
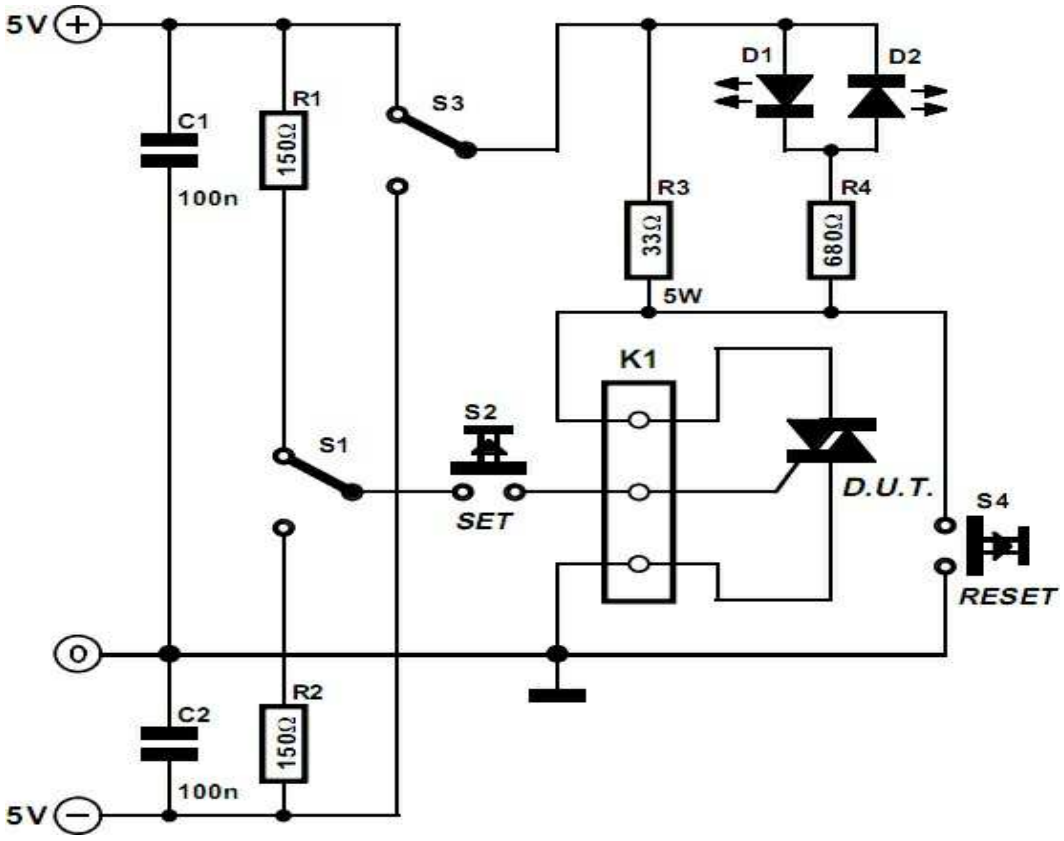


Figure 1

From P2

This circuit lets an external 12V SLA battery power a camcorder which normally has an inbuilt 7.2V battery. Such batteries can now be very difficult or expensive to obtain for earlier model camcorders. In essence, the circuit is a standard LM317 adjustable regulator with resistors R1 & R2 set to provide 7.2V (depending on the accuracy of the 1.25V internal reference). If the resulting output voltage is low, it can be increased by reducing the 130 resistor and vice versa. The circuit can be assembled on to the Eliminator PC board or the simple DC power supply PC board. The regulator should be fitted with a flag heatsink. Note that the circuit should be disconnected from the battery when not in use, otherwise its quiescent current (from the LED and regulator) will flatten the SLA battery.

From P1



Club Information

Postal address PO Box 19937 Sunward Park 1470

Website http://www.zs6hvb.za.net
Back Issues of Shacknews available on the club website
e-mail zs6hvb@zs6hvb.za.net
Repeater 145.1875 MHz input - 145.7875 MHZ output

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662Khz (Winter) 30M - 10.132Mhz (Sum)

Monthly meeting venue

Germiston Methodist Church
Room at back of the offices
Lady Duncan Rd
Germiston

3rd Saturday of the month at 14:30

Committee

Chairman	Vacant		
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
Shacknews Editor	Berridge Emmett	ZS6BFL	011-893-1291
Shacknews Printing	Harry Lautenbach	ZS6LT	011-888-5362

Club bank details
First National Bank - Current Account 62116557309. Branch Code for EFT 250655
Branch Code 201209 - Sunward Park