



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

Third Quarter 2019

We're on

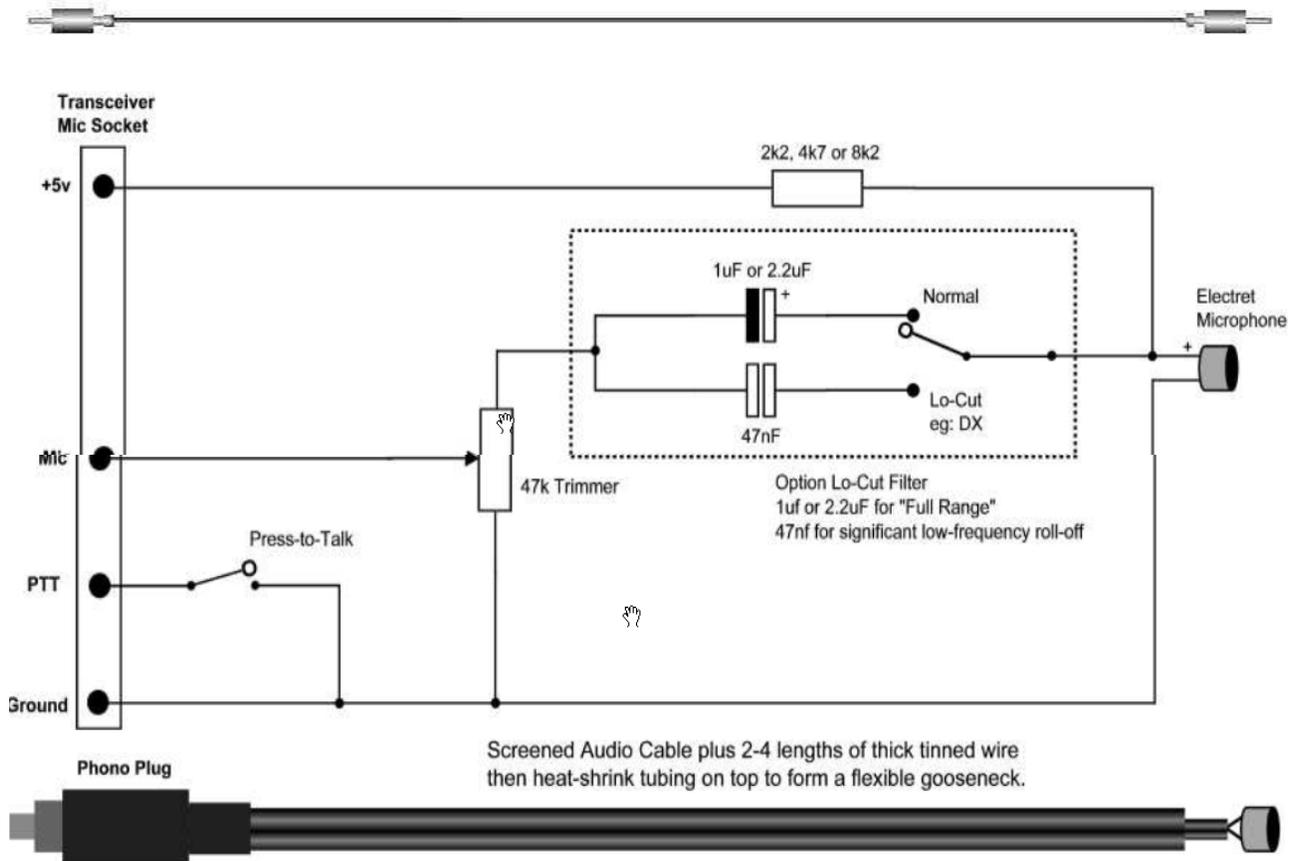
ZS6HVB
Affiliated to
the SARL

COMMUNICATION IS THE NAME OF THE GAME

The third quarter meeting of the club will be held at the qth of Rex, ZS6REX, on Saturday 21 September at 14:00.

Normal catering for the meeting will apply.

For a trial period the club Sunday bulletins can also be found on Echolink. ZS6HVB-R. Give it a try.



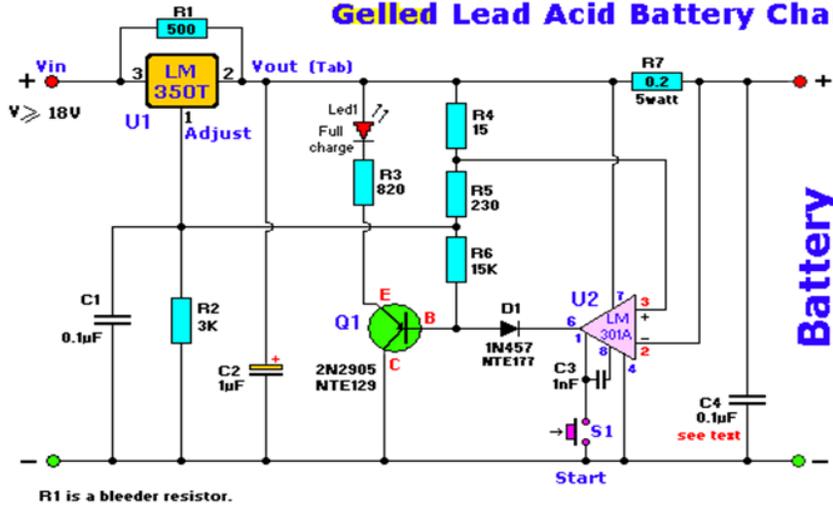
Simple Desk Microphone

Component values are not critical but if you omit the filter option, ensure that you use a 1uF cap to get the full audio range of the microphone.

The trimmer pot may be required if your radio has an overly sensitive mic input or if you like moving around and wish to alter the output level from time-to-time.

A small plastic box, PTT toggle switch and slide switch for the filter completes the unit and you have a cost-effective desk microphone.

Gelled Lead Acid Battery Charger



All resistors are carbon, 1/4 watt, 5% tolerance, unless otherwise indicated.

- | | | |
|----------------------|--------------------------------|------------------------|
| R1 = 500 ohm | C1 = 0.1uF (100nF), ceramic | U1 = LM350T |
| R2 = 3K | C2 = 1uF/40 volt | U2 = LM301A |
| R3 = 820 ohm | C3 = 1000pF (1nF), ceramic | S1 = Pushbutton switch |
| R4 = 15 ohm | C4 = 0.1uF, ceramic (see text) | |
| R5 = 230 ohm | D1 = 1N457 (or equiv.) | |
| R6 = 15K | Led1 = Red, 5mm, ultra-bright | |
| R7 = 0.2 ohm, 5W, WW | Q1 = 2N2905, PNP, TO-39 case | |

This high-performance circuit first quickly starts (and holds) the charge at 2 amp, but as the voltage rises the current will consequently decrease.

When the current falls below 150mA, the charger automatically switches to a lower 'Float' voltage to prevent overcharging.

At the point that a full charge is reached, Q1 will bias and the LED will light.

The LM301A is a 8-pin OpAmp. Transistor Q1 is a PNP, Silicon, AF-Out type with a TO-39 metal case and can be substituted for a NTE or ECG129. Diode D1, a Si, GP Det. type, can be substituted with a NTE177 or ECG177. The LM350 (U1) needs to be cooled.

The input voltage should equal or about 18volts.

R1's function is to bleed some of the input voltage to the output and vice-versa. A 1N4002 or similar diode can be used also.

R2 and R5 are actually metal-film type resistors. To get the 3K for R2 use two 1K5 (1500 ohm) resistors in series. For R5 use two 470 ohm resistors in parallel. Or whatever combination to get to these values. For R1, 500 ohm, you can use two 1K in parallel or 470 + 33 ohms in series.

R7, the 0.2 ohm resistor, is a 5 watt wire-wound type. Do **not** use the standard carbon type.

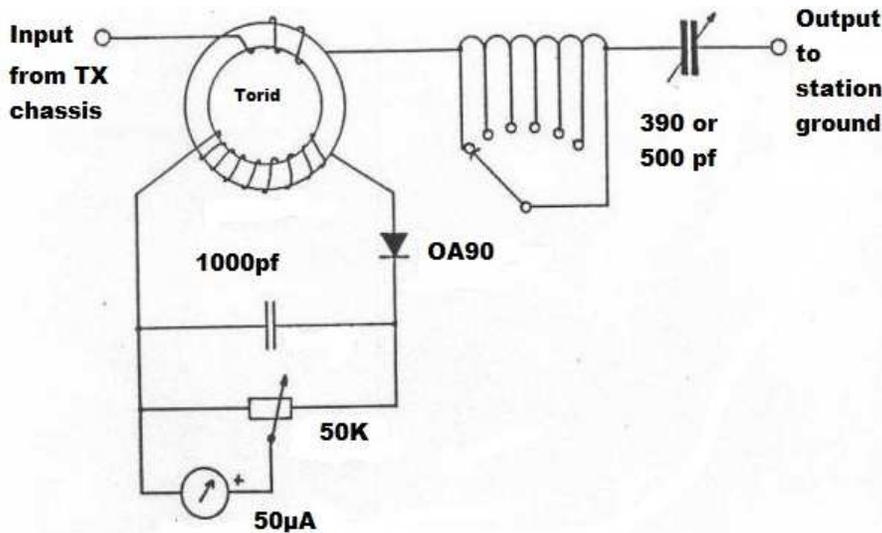
C4: This (optional) 0.1uF (100nF) Ceramic capacitor needs to be mounted over the power lines and as close to the LM301 (U2) as possible. It will filter off any possible residue hf ripple, which otherwise may prevent this op-amp from working properly. Use only if you have problems with the LM301 not switching off.

S1 is a subminiature pushbutton switch, normally open. It shows an 'open' switch with the arrow indicating a 'momentary' connection when pushed.

Nothing out of the ordinary here folks and a standard symbol for electronics...

When the start switch is pushed, the output of the charger goes to 14.5 V. As the battery approaches full charge, the charging current decreases and the output voltage is reduced from 14.5V to about 12.5V, terminating the charging process. Transistor Q1 then lights the led as a visual indication of a full charge.

Tunable earth (no description)



Field Strength Meter No1

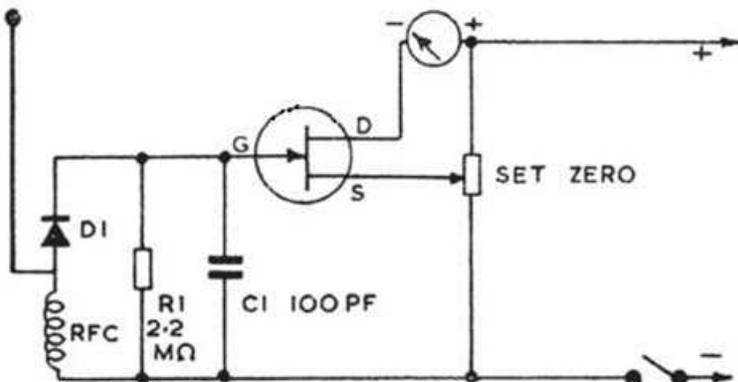
The device will operate at any frequency up to 250MHz or even higher if necessary. A short whip, rod, telescopic or other aerial picks up radio frequency energy, and rectification by diode D1 provides a positive voltage for the FET gate, across R1. This FET is only operating as a DC amplifier, and the 2N3819 and other general-purpose transistors will be satisfactory.

The "Set Zero" potentiometer may be 1k to 10k. With no RF signal present, it allows gate/source potential to be adjusted so that the meter shows only a small current, which rises in accordance with the strength of the RF present. For high sensitivity, a 100uA meter can be fitted. Alternatively, a meter of lower sensitivity, such as 25uA, 500uA or 1mA can be used, and will provide enough indication in most circumstances.

Should the field strength meter be wanted for VHF only, a VHF choke can be used, but for general usage over lower frequencies, a short wave choke is necessary. An inductance of about 2.5mH is satisfactory for 1.8MHz and higher frequencies.

The device can be constructed in a small insulated or metal box, with the aerial projecting vertically. In use, it allows tuning up a transmitter final amplifier and aerial circuits, or the adjustment of bias, drive and other factors, to secure maximum radiated output.

The effect of adjustments will be shown by the rise or fall of the reading of the, field strength meter.



Some statistics

Spaghetti was invented in China and brought to Italy by Marco Polo.

The pits on a DVD are 1/10th the depth of a fingerprint

Any month that starts on a Sunday will have a Friday the 13th in it. (this September does)

A mole can dig over 76 metres of tunnel in soft soil in a single night.

A snail takes 20 hours to crawl one measured kilometre

A chameleon's tongue is twice the length of its body.

Eyeglasses first appeared in Italy in the 14th century.

There are 6 muscles in the human ear.

The flying fish has been known to glide up to 90 yards.

Sea otters have 2 coats of fur.

A lungfish can stay alive in suspended animation for as long as three years on dry land.

20% of the trees in the world are Siberian larch trees

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 & 7162 KHz @ 08h45.
Also on Echolink ZS6HVB-R

Monthly meetings

Venue to be advised

Every Third month
On the *3rd Saturday of
the month at 14:30.*

Chairman:

Vacant

Secretary/Treasurer:

Berridge Emmett

ZS6BFL

011-893-1291

Shacknews Editor:

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