



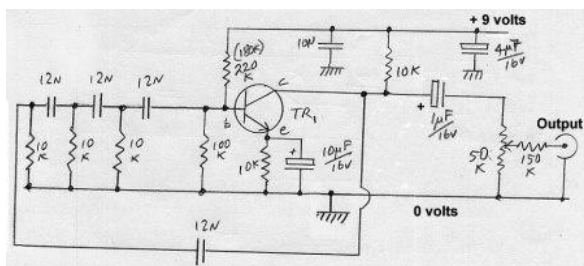
SHAK NOWTZ BY "MAD" FRANK - G3ZMF

SHAK NOWTZ No 12 – More useful circuit building blocks

Introduction

Here are some more circuits that I have built and work well.

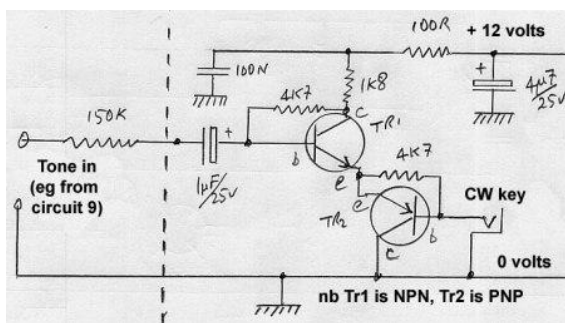
Circuit 9: Sine wave oscillator



Simple sine wave oscillator

In this circuit Tr1 can be a 2N3904, BC107, BC108 or BC109. It produces a signal of 2 volts p-p at 800 Hz. For a higher output level, it may be fed into the amplifier in Circuit 1 (see Shak Nowtz no.11).

Circuit 10: CW keying



CW keying circuit

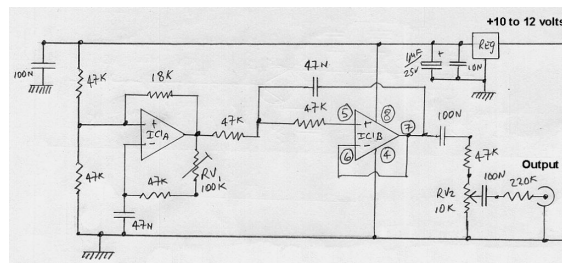
This circuit was designed by CATS member Mike, G8AAI. It enables a tone from a circuit such as Circuit 9 to be keyed into the microphone socket of a transmitter.

It works as follows: On "key up", the 4k7 resistor from the base to the emitter of Tr2 keeps the device turned off. On "key down" Tr2 is turned fully on, enabling Tr1 to conduct and provide output.

Output can be taken from the collector of Tr1 via a suitable non-polar capacitor. Anything in the range of 0.5 to 2.2 μF will do.

Tr1 can be BC107, BC108 OR BC109, etc while Tr2 is any small PNP device such as BC181, BC186, BC187, BC212, 2N3702 or 2N4126.

Circuit 11: Single Frequency CTCSS Unit



CTSS tone generator circuit

This is a modification of a Radcom circuit by G4NJU. It produces a CTCSS (Continuous Tone Coded Squelch System) tone to provide repeater access for older rigs that do not have CTCSS built in.

Output from this circuit should not be fed directly into a microphone socket as the rig's audio filtering will reject it. Instead it is recommended that you find the point in the circuit just before the deviation level control and feed it in there.

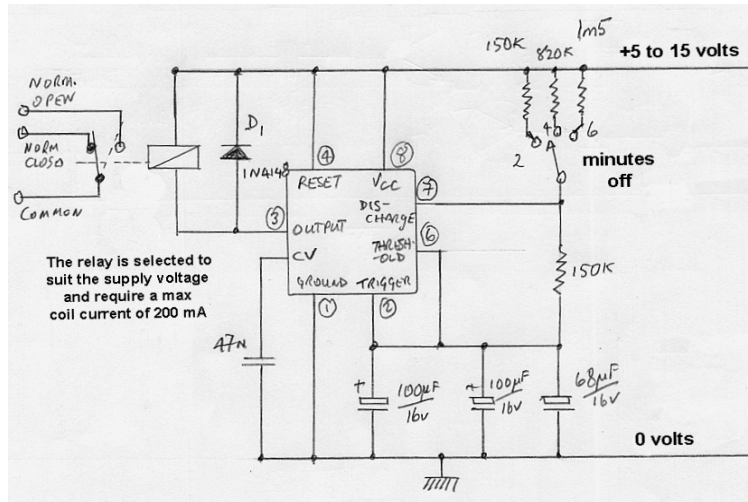
RV1 is used to set the frequency to access the repeater required. For example, the frequency needed to access the local Banstead 70 cm repeater, GB3NS, is 82.5 Hz. For other repeaters see:

www.ukrepeater.net/index.html

The CTCSS frequency must be set very precisely (generally the tolerance is ± 0.5 Hz) so a frequency counter is essential for this task. RV2 is used to adjust the output level as required.

SHAK NOWTZ No 12 – More useful circuit building blocks (continued)

Circuit 12: Simple Timer



Simple timing circuit

The circuit opposite provides an "On" period of 30 seconds and a selectable "Off" period of 2, 4 or 6 minutes. The IC is a 555 timer.

Have fun!

73 de Mad Frank G3ZMF
[1] RSGB Handbook, 4th Ed, page 9.60. ISBN 0 900612 63 0