Comms Noise Squelch IC

By G8MNY

(Correction Nov 09)
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

This is an old circuit that was published in Sept 1982 Electronic's World
By LJ Forrest.

I have used a HiFi version on the HiFi sound channel on 23cms ATV repeater
GB3HV in an attempt to remove radar zips, as well as providing a squelch.

It uses an KB4432, KB4436 or TDA1001(A) IC, that has 5 NPN emitter follower
buffers, an FET switch, a Schmitt Trigger, a monostable & a regulator. So it is
possible to make up the circuit with discreet components if you can't source
this old IC.

```
+ve ───100──┬────┬─────┬─────────────────┬───────────┬─────┬────────────┐
│  +===   150k     47n      ===220n     1K8    │            │
│ 47u├─────)────────┤├─┐     ├─────5k6───┤
+     │          │/e
┌─────)────)─────)─────┐     │     ├───────────)─────)────6K8───┤T1
│     │ ┌──┤     ├──┤├─┤     │     │           │     │          │
│     │ ┴  │     │1n  4k7   3k3    │     ┌─────)─────)────┬──┐    │
│     │ 16├─68k─┤15   │14   │13   │12   │11   │10   │ 330   │
│     │  ┌─┼─────┼─────┼─────┼─────┼─────┼─────┼─────┼─┐ 6k8 │2n2 │
│     │  │
-ve    │     │ ┌───┴─────┴──┐ ┌┴─────┴┐  reg │  │ ===   │
│     │  │       └─┤>──┴─┤ shcmit agc ├
│    33k │               └────────────┘ └───┬───┘      │         6k8
│     │  │                   fet┌───────────┘          │          │
Rx   │     │  │ ┌─┤>──┐     ┌─┤>──┬─o/'o┬──┤>─┐     ┌──┤>─┐ │          │
Input│     │  └─┼─────┼─────┼─────┼─────┼─────┼─────┼─────┼─┘          │ Output
>─┤├─)─3k3─┴────┤1    │2    │3    │4    │5    │6    7     8            │  +
├───────
├───────)──┤├─┤     └─12k─┤    1k8
│                │  │ 1uF
47k         │  1n └──12k──────┘     │           T2├─┬───┬───┬──6k8─┤ 6k8
Pre        ===                     ===6n8       e/│ un 6k8+ │10u  +│  │
Sens│       n22│
────┴──────────┴───────────────────────┴───────────┴───┴───┴───┴──────┴──┴───
```

HOW IT WORKS

The input signal is fed via a RF filter to biased up the emitter follower amp
on Pin 1. Pin 2 output feeds two paths 1/ the audio path, where it goes to a
low pass Butterworth filter Pin 3 & 4 amp, & 2/ the noise path, where it feeds
an adjustable high pass Butterworth filter on Pin 15 & 16 amp. The noise amp
feeds the Schmitt trigger with a level following AGC. With no noise the
monostable is not triggered. The un triggered mono stable operates the FET hold
level switch that lets the audio pass to the storage CR & to the last buffer
amp Pin 5 & 6.

With impulsive noise present, the high frequency content will operate the
Schmitt & triggers the short time mono, which turns off the FET path for a few
mS. During this time, the mean level stored on CR is used to hold the AF level
during the break into the last buffer.

With constant noise the Schmitt trigger output also drives PNP T1 that after a
fraction of a second charges up the squelch time constants to operate NPN T2
that mutes the output.

See my Tech bul "Simple Carrier Squelch"
Why don't U sent an interesting Bul?
73 De John, G8MNY @ GB7CIP

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