

By G8MNY
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

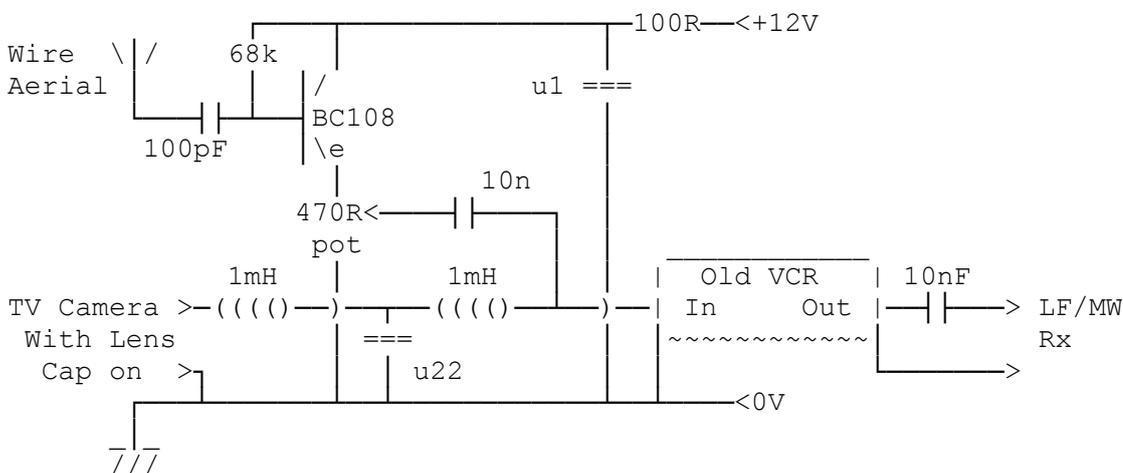
(Updated Feb 10)

Here is a system for recording 100kHz - 3MHz on an old VCR. A VCR can record 40dB Signal to Noise over that whole DC - 3MHz bandwidth, or 70dB S/N in each 3kHz, & that equates to about 60dB S/N in each 9kHz AM channel!

Old VCRs (not HiFi) are best for this, provided the tape speed & head drum are still good, as they do less clever video processing than later ones, so there is less to corrupt the RF signal.

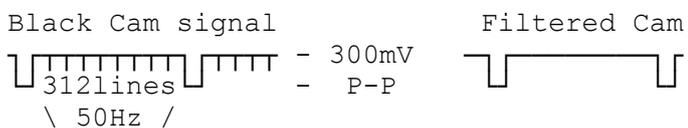
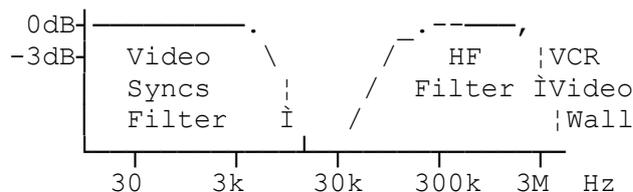
To get the right RF level into the 75Ω VCR input, an MF amplifier will be needed. Here a simple NPN follower to do that using any MF transistor. If you look at the VCR signal on a monitor you should see noise & patterning as bright as a normal picture, the VCR will have a few dB of AGC as well to keep the levels approximately right.

CIRCUIT



FILTER

The VCR is designed to lock up to 50Hz video syncs & the best way to get these is from a camera. Here the camera's HF is filtered off to not cause QRM. The RF signals need to peak to 700mV p-p to add to the 300mV of frame syncs.



MF Rx

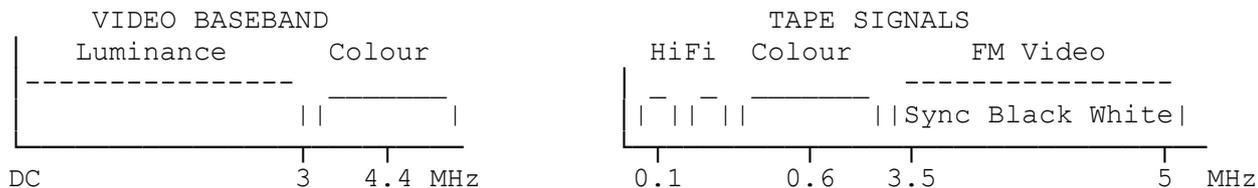
If your MF aerial supplies enough signals, without a too strong predominant one, it will be possible to tune into recorded LW & MW AM/DRM broadcast stations as well as 160M SSB/CW stations, but with some 25Hz FM due to the normal VCR head drum-tape instability! 80M will not be possible due to the 3MHz video wall filter on record & playback.

VCR SPECTRUM

The VCR converts the video baseband DC-3MHz to higher frequencies by modulating a FM carrier between 3.5-5MHz.

The AF is edge recorded or on hifi machines uses 2 lower FM carriers (around 100kHz) added into the head drum FM signal, these Hifi carriers could cause QRM in this application.

The complex 4.4MHz PAL colour signal is down converted to 600KHz & also added into the FM signal. All these added signals use the FM carrier as a record bias (like an AF tape recorder), again these converted PAL frequencies could cause QRM in a machine that can't drop to plain black & white mode.



Have fun trying this one out.

N.B. It will NOT work with any digital recorder as they only save a few % of the picture's information per frame is actually encoded & stored, they rely on similar picture storage of up to 15 frames to complete the task!!

If you want more bands try a down converter with 5MHz xtal & aerial BPF for 5-8MHz, that would be quite interesting!

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Comments:

> Hans PA0CX has done some experimenting, & he has published his findings in
> the Dutch magazine Electron Feb 1998 p59-63 De Luistermachine by pa0cx/f2zi

73 - Andre, PE1HWO @ PI8HGL

From : G6DTW
Date/Time : 15-Feb 2010
Title : mf video receive converter

IT WORKS!!!!
wonderful circuit; so easy: a good aerial helps tremendously.
much better than i thought it wd be not hifi, but then it IS MF.
THANKS AGAIN FOR A WONDERFUL IDEA
ALVIN

Why Don't U send an interesting bul?

73 De John G8MNY @ GB7CIP