

CELLCONV.TXT

SCANNER CONVERTERS FOR CELLULAR TELEPHONE

Written for P-80 Systems by THE RESEARCHER

This article is presented for information only. The new Electronic Communications Privacy Act makes it illegal to monitor cellular telephone calls.

A UHF TV tuner can be used as a converter to listen to cellular telephone calls. Salvage a UHF tuner from an old TV set. Connect it to a power supply. Typical voltage requirements are 12 - 25 volts. If the set is still working, measure the voltage before removing the tuner. Connect the output cable from the tuner to the external antenna input of a scanner or tunable monitor. Tune the scanner or monitor to a frequency between 41 and 46 MHz which is the IF output of the tuner. If you are within a few miles of a base station, a pair of test leads clipped to the antenna terminals of the tuner will serve as an antenna. Turn off the squelch on the scanner or monitor and carefully tune through UHF channels 70 - 83.

It is easier to use a tunable monitor than a scanner for this application because the monitor allows you to compensate for drift in the tuner. Either will provide an adequate means of checking out the cellular activity in your area.

There are several crystal controlled converters available which will convert cellular frequencies to the UHF range of many scanners. There is a slight problem involved with these. The spacing between cellular frequencies is 30 KHz. Most scanners have a stepping interval of 12.5 KHz at UHF. This means that on most channels the frequency tuned to by the scanner will not be a perfect match. I have been assured by one of the converter manufacturers that this is not a serious problem. When using this type of converter, the scanner can be used in scan or search modes as usual.

I wanted to find out how much discrepancy exists between the output of the converters and the tuning intervals of most scanners. I took the specs of a typical converter and put my computer to work doing the calculations. What follows is the result of this examination. Listed are the cellular base frequencies followed by the frequencies after conversion followed by the closest tuning point of a scanner with a tuning interval of 12.5 KHz. Each of the base frequencies listed is paired with a mobile frequency located 45 MHz lower. The mobile frequencies are not listed.

All 666 base frequencies were checked. Only the first 33 of these are listed. The pattern repeats throughout the list.

CELLULAR FREQ.	CONVERTER OUT	CLOSEST SCANNER FREQ.
870.030	486.030	486.0250
870.060	486.060	486.0625
870.090	486.090	486.0875
870.120	486.120	486.1250
870.150	486.150	486.1500
870.180	486.180	486.1750
870.210	486.210	486.2125
870.240	486.240	486.2375
870.270	486.270	486.2750
870.300	486.300	486.3000

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870.330	486.330	486.3250
870.360	486.360	486.3625
870.390	486.390	486.3875
870.420	486.420	486.4250
870.450	486.450	486.4500
870.480	486.480	486.4750
870.510	486.510	486.5125
870.540	486.540	486.5375
870.570	486.570	486.5750
870.600	486.600	486.6000
870.630	486.630	486.6250
870.660	486.660	486.6625
870.690	486.690	486.6875
870.720	486.720	486.7250
870.750	486.750	486.7500
870.780	486.780	486.7750
870.810	486.810	486.8125
870.840	486.840	486.8375
870.870	486.870	486.8750
870.900	486.900	486.9000
870.930	486.930	486.9250
870.960	486.960	486.9625
870.990	486.990	486.9875

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