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# ne570 audio compressor circuit tests.

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# ne570 audio compressor circuit tests

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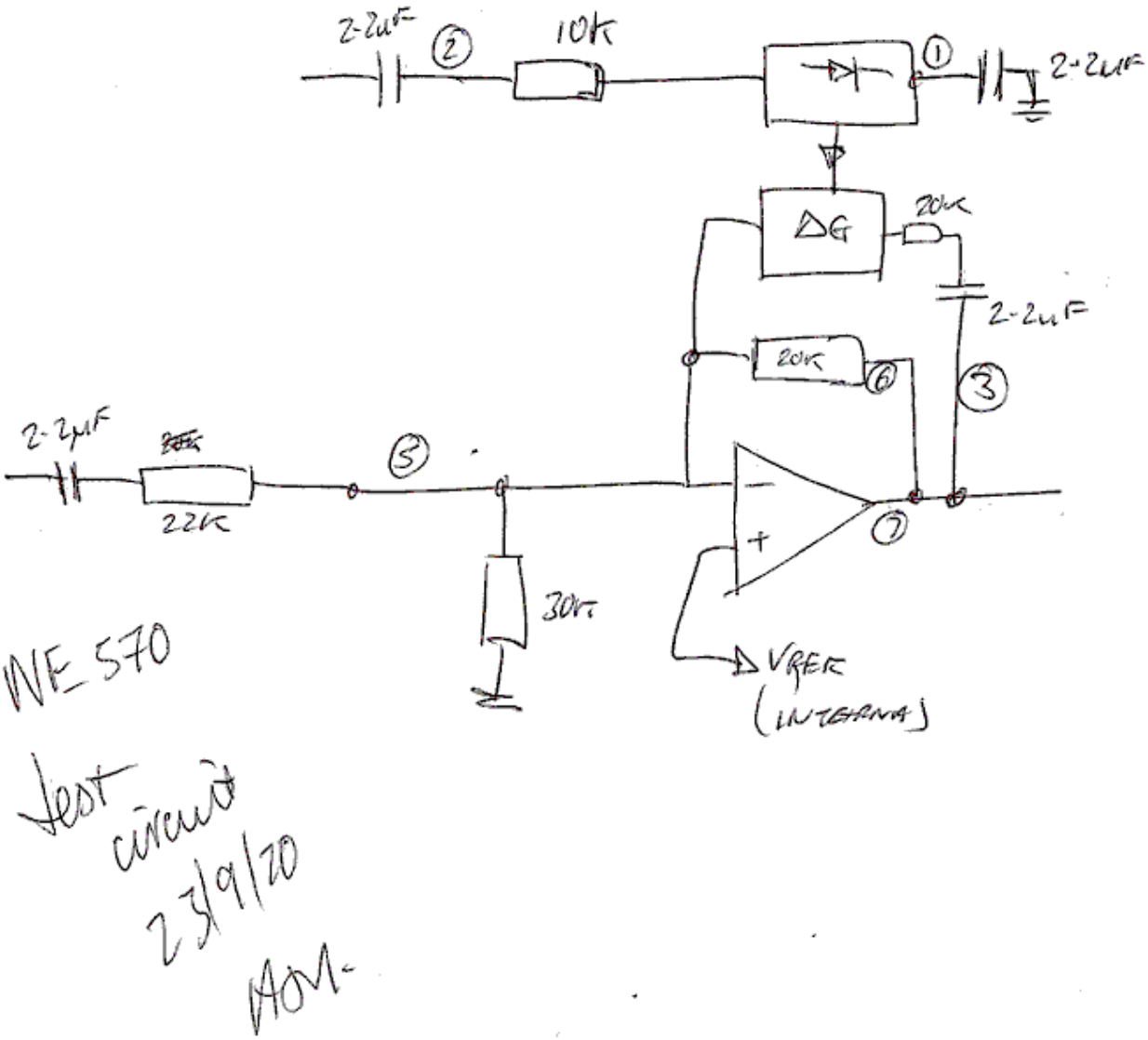
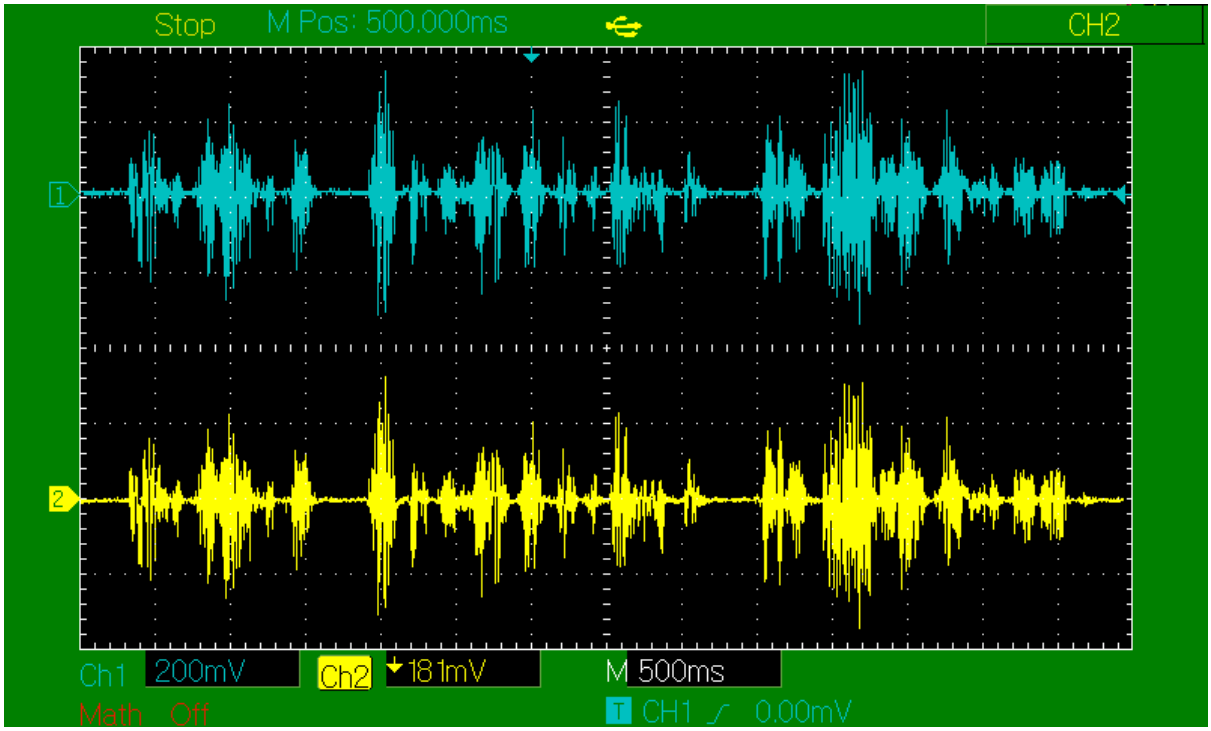
Examine the ne570 test circuit arrangement:



The first test was to determine the through put signal performance without the agc feedback connected.

Plot 1/

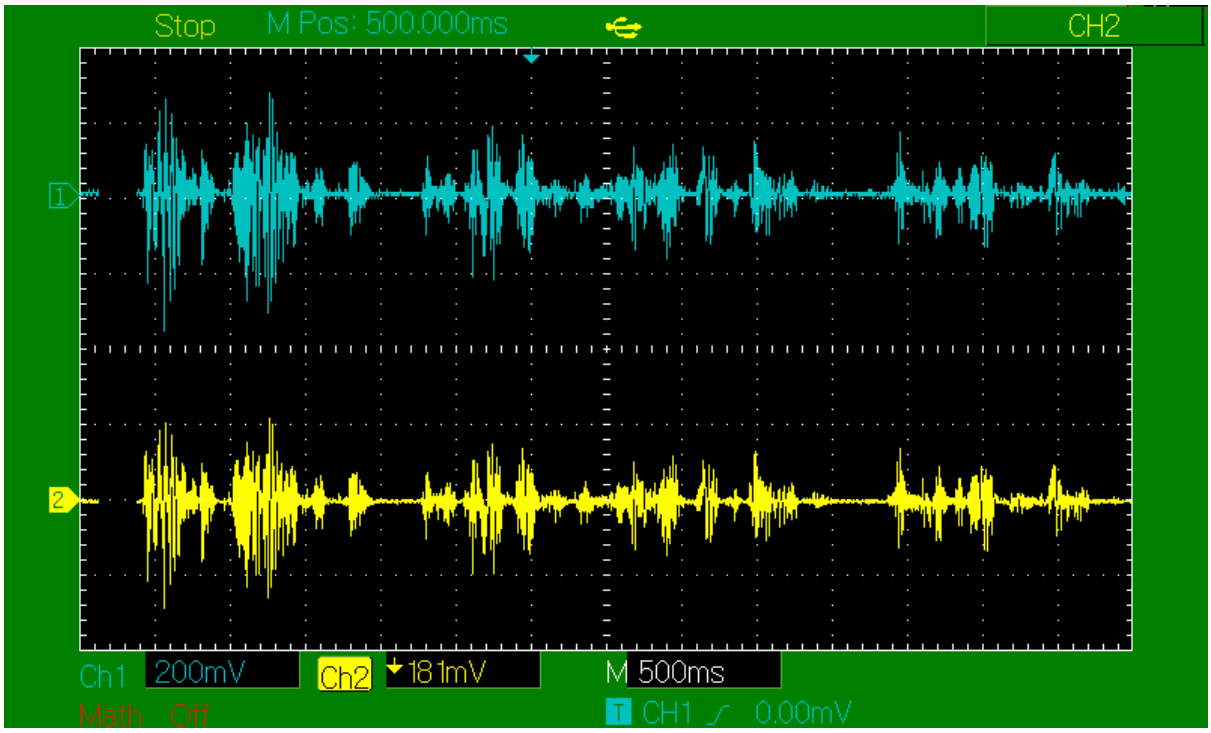



The above diagram plot illustrates the unity gain from the ne570 audio processing circuit. The difference between ch1 and ch2 voltage plot per square, was to calibrate the circuits unity gain signal through put.

The test circuit arrangement has a little signal reduction, perhaps due to the input resistor used to determine the amplifier signal gain. The adjustment from “200mV / square” to “181mV / square”, now allows us to measure the audio compression value.

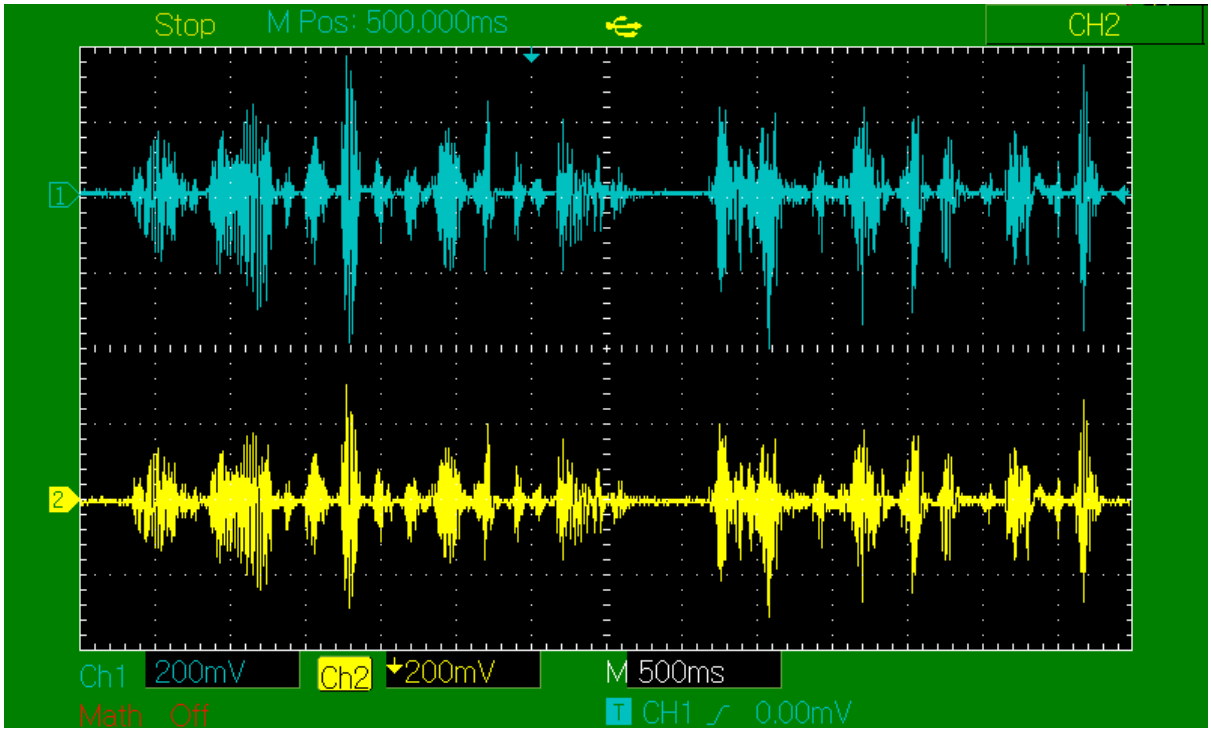
Below illustrates the audio signal compression with the agc input connected to the microphone input resistor.

Plot 2/




Having compensated for the unity gain value, the audio compression can be clearly seen. Should the agc input connection be instead connected to the circuit output, the following is shown.

Plot 3/




Both plots 2/illustrates a 2.7dB compression, and plot 3/ shows a similar compression value.

The compression is measured by first calculating the signal voltage into a power wattage, then comparing the two plotted values for the compression value in ”dB”.

However, the circuit arrangement essentially auto compresses the audio signal, but perhaps the more appropriate method would be to generate an external agc voltage, to then use as the input agc signal into pin 2 of the ne570 chip circuit.

This would then allow the ne570 circuit to only compress the audio signal when the external agc voltage indicated that an audio compression was required.

This would allow a top level of microphone signal voltage to be limited. If the microphone operator voice level was too loud, then the external agc voltage into pin 2 would thus then reduce or compress the audio signal down to a more manageable audio level for the radio set.

An advantage for the external generated agc voltage, that if the ne570 chip circuit is used within the receiver circuit, then the compression function can then be used as an impulse noise suppressor circuit.

The ne570 chip application, contains two such compressor / expander amplifiers within one chip circuit, contained within a 16pin “dil” package.

This gives an advantage to use one half of the ne570 chip as the microphone audio compressor, while the second half could be used as the receiver noise impulse “filter / compressor”, in addition to as a receiving audio agc circuit so as to not over load the final audio amplifier stage circuit to the radio speaker.