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From: brett@comdev.cc
To: norwoodpatterson@msn.com
Subject: answers for manuals
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Norwood,

Here are the answers to the 4 questions that you requested. If you need anything more please give me a call.

-Brett

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1) Description of the oscillator circuit and how the temperature effect is stabilized

The oscillator circuit is referenced to an oven controlled crystal oscillator. The oven controlled crystal oscillator has a 0.5ppm frequency stability over the temperature range of -30 degrees C to 60 degrees C.

2) Description of the audio limiting circuit

The audio limiting circuit is implemented in a Digital Signal Processor. The signal input into the audio limiting circuit has a range of [-1,1). The reference level used through the system is a 1kHz tone with an amplitude of +/- $2^{(-6.5)}$ produces a FM modulated carrier with 2.9kHz peak frequency deviation. The audio limiting circuit thus limits the peak signal amplitude to +/- 0.04578.

3) Description of the audio low pass filter

The audio low pass filter is implemented in a Digital Signal Processor. The filter is a 25 tap interpolate-by-5 FIR filter with a cut-off frequency of 3kHz.

4) Description of the RF spurious filter

The RF spurious filtering is performed by two components: the high power cavity tune combiners, and the transmit bandpass filter. The high power cavity tune combiners provide 20-30dB attenuation 300kHz outside the channel. The transmit bandpass filter attenuates spurious emissions outside the transmit cellular band of 870MHz - 894MHz.

