EXHIBIT 10

Section 2.1033 (c)(13) DISCRIPTION OF THE DIGITAL MODULATION SYSTEM

For equipment employing digital modulation techniques, a detailed description of the modulation system to be used, including the response characteristics (frequency, phase and amplitude) of any filters provided, and a description of the modulating wavetrain, shall be submitted for the maximum rated conditions under which the equipment will be operated.

Response

The SBEDRU employs a digital π/4-DQPSK modulation. The I & Q baseband signals are generated by a DSP. The DSP receives coded data and signaling bits for each of the 3 time slots. The DSP encodes the data into I & Q impulses and conditions them for AC level, DC offset, and phase. The DSP passes I & Q impulses through root raised cosine filters (α=0.35) implemented within the DSP. The root raised cosine filters have an impulse response of $\pm$4 symbols. The digital I & Q output data of the DSP are then converted to analog signals by a Digital-to-Analog converter (DAC). Reconstruction filters, which are low-pass filters, are used to smooth the DAC outputs. The generated analog I & Q signals are input to the Direct Quadrature modulator. The output of the modulator is a modulated RF signal within the NADC cellular frequency band. This RF signal is transmitted to the TCM.

The frequency responses of the reconstruction filter for the I & Q DACs are given in Figures 10-1 and 10-2 for analog mode and digital mode, respectively.
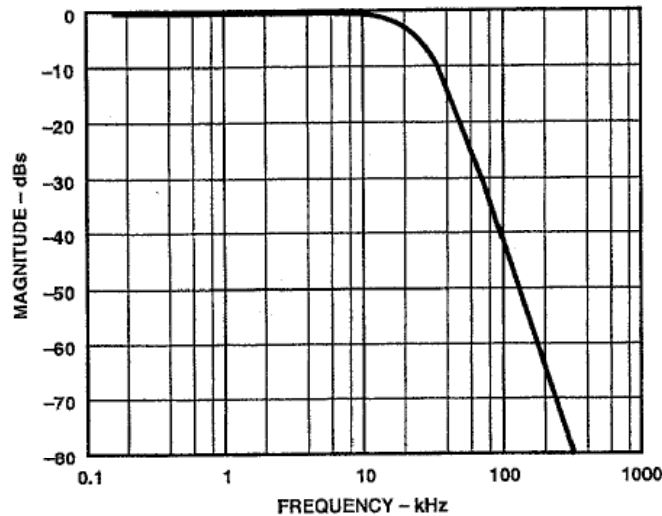

Figure 10-1. Reconstruction Filter Frequency Response for the I and Q DACs, MCLK = 2.56 MHz.
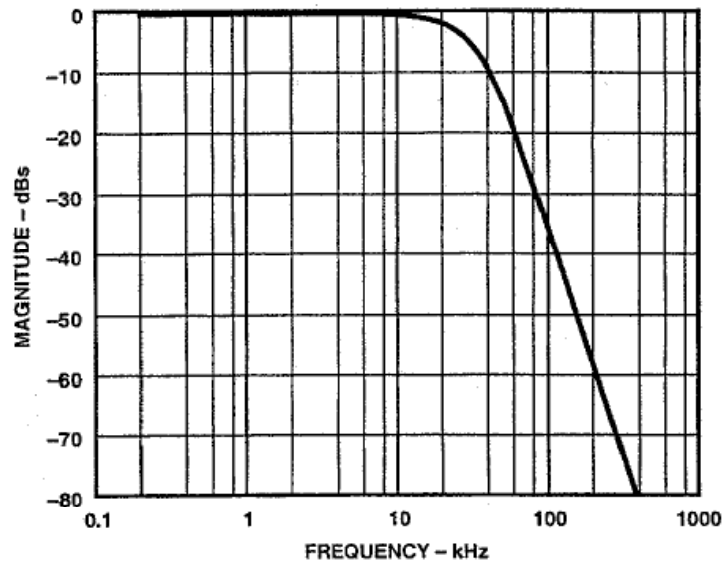
Figure 10-2. Reconstruction Filter Frequency Response for the I and Q DACs, MCLK = 3.1104 MHz.