Analysis of Interpolation Factor in Pulse Shaping Filter on MRC for CDMA 2000 Systems

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Abstract : Code Division Multiple Access 2000 operates on various RF channel bandwidths 1.2288 or 3.6864 Mcps. CDMA offers high bandwidth and wireless broadband services but the efficiency gets decreased because of many interfering factors like fading, interference, scattering, diffraction, refraction, reflection etc. To reduce the spectral bandwidth is one of the major concerns in modern day technology and this is achieved by pulse shaping filter. This paper investigates the effect of diversity (MRC), interpolation factor in Root Raised Cosine (RRC) filter for the QPSK and BPSK modulation schemes. It is made possible to send information with minimum inter symbol interference and within limited bandwidth with proper pulse shaping technique. Bit error rate (BER) performance is analyzed by applying diversity technique by varying the interpolation factor for Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK). Interpolation factor increases the original sampling rate of a sequence to a higher rate and reduces the interference and diversity reduces the fading.

Keywords : CDMA2000, root raised cosine, roll off factor, ISI, diversity, interference, fading
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