ABSTRACT

EFFICIENT EMPLOYMENT OF DIGITAL UPSAMPLING USING IFFT IN OFDM SYSTEMS FOR SIMPLER ANALOG FILTERING

Systems and methods are provided for transmitting OFDM information via IFFT up-sampling components that transmit data at a higher sampling rate than conventional systems to simplify filter requirements and mitigate leakage between symbols. In one embodiment, an NL point IFFT is performed on a zero inserted set of frequency domain symbols. Ih another embodiment, the NL point IFFT is further optimized by exploiting the fact that (N-I) L of the frequency domain symbols are zero. This enables an embodiment that consists of a pre-processor that multiplies the input samples by complex phase factors, followed by L point IFFTs.

Figure 2