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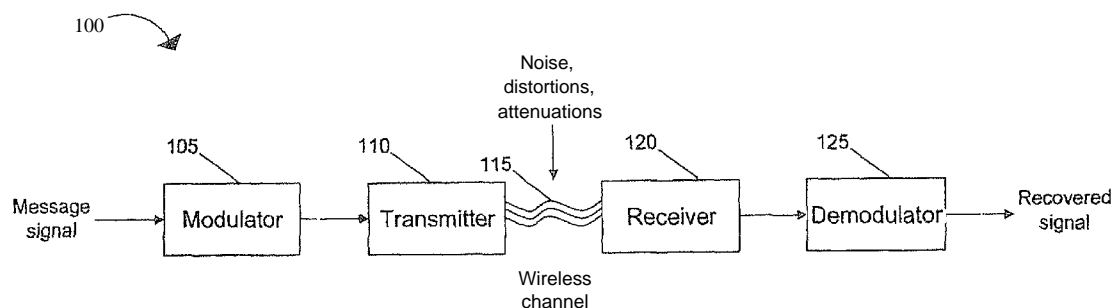
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(54) **Title:** HIGH-EFFICIENCY TRANSMISSION OF INFORMATION THROUGH NARROWBAND CHANNELS BASED ON ULTRA SPECTRAL MODULATION



(57) **Abstract:** Systems and methods for transmitting information at very high data rates through narrowband communication channels are provided. The systems and methods involve modulating a message signal with a novel non-return-to-zero, abrupt phase modulation technique and filtering the modulated signal with a sophisticated digital filter. The digital filter is designed based on a multiresolution decomposition of the frequency spectrum of the modulated signal.

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