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92121-1714 (US). **SOLIMAN, Samir, S** [US/US]; 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

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(74) Agent: **VELASCO, Jonathan, T.**; 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

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(71) Applicant (for all designated States except US): **QUALCOMM INCORPORATED** [US/US]; ATTN: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

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(72) Inventors; and

(75) Inventors/Applicants (for US only): **CHRABIEH, Rabih** [LB/US]; 5775 Morehouse Drive, San Diego, California

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(54) Title: CHANNEL ESTIMATION USING FREQUENCY SMOOTHING

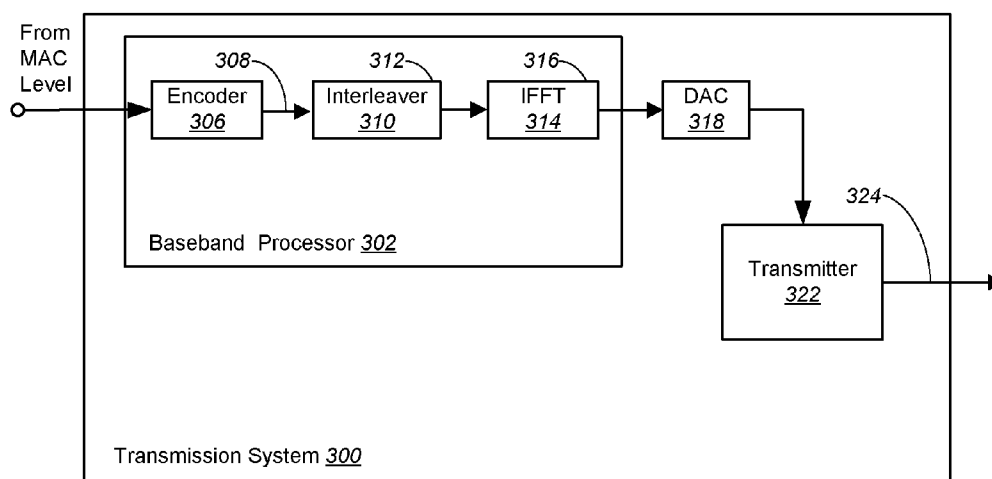


Fig. 3

(57) Abstract: A system and method are provided for supplying a frequency-smoothed communications training signal. The method generates a frequency-smoothed unbiased training signal in a quadrature modulation transmitter. The frequency-smoothed unbiased training signal includes a plurality of pilot signal products, where each pilot signal product includes complex plane information represented by a reference frequency subcarrier, multiplying complex plane information represented by mirror frequency subcarrier. The sum of the plurality of pilot signal products is equal to zero. The method supplies the frequency-smoothed unbiased training signal so that it may be transmitted within a single symbol period. System and methods are also provided for using a frequency-smoothed training signal in the calculation of a receiver channel estimate.



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