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

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **KRISHNAMOORTHI, Raghuraman** [IN/US]; 8730 Costa Verde Boulevard, San Diego, California 92122 (US).

(74) Agents: **WADSWORTH, Philip R.** et al.; 5775 Morehouse Drive, San Diego, Califonia 92121 (US).

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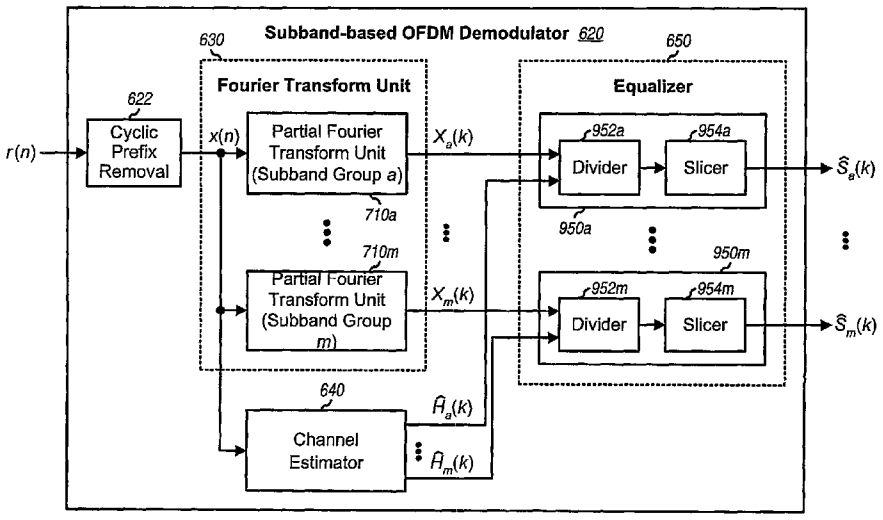
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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,*

[Continued on next page]

(54) Title: SUBBAND-BASED DEMODULATION USING REDUCED FOURIER TRANSFORM FOR AN OFDM-BASED COMMUNICATION SYSTEM



(57) Abstract: For subband-based OFDM demodulation, a "partial" Fourier transform is performed on a sequence of N input samples for an OFDM symbol to obtain N_c received symbols for a group of N_c data subbands, where N_c $L = N$ and $L > 1$. For the partial Fourier transform, the N input samples are rotated with a phasor to obtain N rotated input samples, which are accumulated (for each set of L samples) to obtain N_c time-domain values. An N_c-point FFT is performed on the N_c time-domain values to obtain the N_c received symbols. Channel gain estimates for the data subbands are also obtained, for example, by performing a partial Fourier transform to obtain received pilot symbols, an inverse FFT to obtain time-domain channel gain values, and an FFT to obtain channel gain estimates for the data subbands. The received symbols are processed with (e.g., equalized by) the channel gain estimates to obtain recovered data symbols.

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