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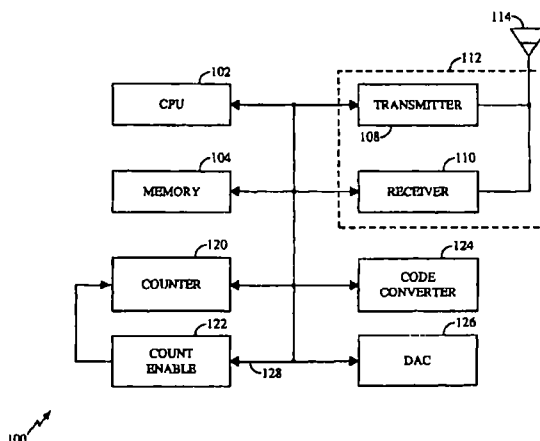
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- (71) Applicant: **QUALCOMM INCORPORATED** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).
- (72) Inventors: **SCHLEGEL, Nikolai**; 11995 Wilmington Road, San Diego, CA 92128 (US). **HOLENSTEIN, Christian**; 4424 Felton Street, San Diego, CA 92103 (US). **FILIPOVIC, Daniel**; 429 South Sierra Avenue, #341, Solana Beach, CA 92075 (US). **KASTURI, Nitin**; 859 University Avenue #16, Los Gatos, CA 95032 (US).
- (74) Agents: **MINHAS, Sandip, S.** et al.; QUALCOMM Incorporated, 5775 Morehouse Drive, San Diego, CA 92121 (US).
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(54) Title: APPARATUS AND METHOD FOR DC OFFSET COMPENSATION IN A DIRECT CONVERSION RECEIVER



(57) Abstract: An apparatus for coarse compensation of a direct current (DC) offset in a direct to baseband receiver architecture utilizes a serial analog to digital converter (ADC), such as a Delta-Sigma converter, to convert the received signal to digital form. The output of the ADC is sampled for a predetermined number of samples and a counter coupled to the ADC is incremented each time the sample generated by the ADC is a logic one. The counter is not incremented if the sample from the ADC is a logic zero. After the predetermined number of samples is obtained, the counter value is indicative of the DC offset in the received signal. The counter value may be converted by a code converter to a correction value for easy operation of a digital to analog converter (DAC). If the number of samples from the ADC is a power of two, the code converted may be readily implemented by simply inverting the most significant bit (MSB) from the counter to thereby generate a twos complement version of the counter value. The correction value is coupled to the DAC to generate a compensation signal, which is provided to the received signal path in the form of a feedback signal to compensate for the DC offset.

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