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(54) **METHOD AND APPARATUS FOR INCREASING DATA THROUGHPUT IN A MULTIPLE ANTENNA COMMUNICATION SYSTEM USING ADDITIONAL SUBCARRIERS**

(52) **U.S. Cl. 375/260**

(57) **ABSTRACT**

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Methods and apparatus are provided for increasing data throughput in a multiple antenna communication system using additional subcarriers. The multiple antenna communication system includes at least one legacy system employing an N_1 point fast Fourier transform (FFT) within a bandwidth, BW_1 . Data is transmitted using an N_2 point inverse FFT within the bandwidth, BW_1 , wherein N_2 is greater than N_1 ; and subcarriers associated with the N_2 point inverse FFT are employed to transmit the data. Data can also be transmitted using an N_2 point inverse FFT within a bandwidth, BW_2 , wherein N_2 is greater than N_1 and the bandwidth, BW_2 , is greater than the bandwidth, BW_1 ; and subcarriers associated with the N_2 point inverse FFT are employed to transmit the data, wherein the employed subcarriers includes one or more additional subcarriers at outer edges of the bandwidth, BW_1 , relative to the legacy system and one or more additional subcarriers near DC relative to the legacy system.

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Publication Classification

(51) **Int. Cl.**
H04K 1/10 (2006.01)

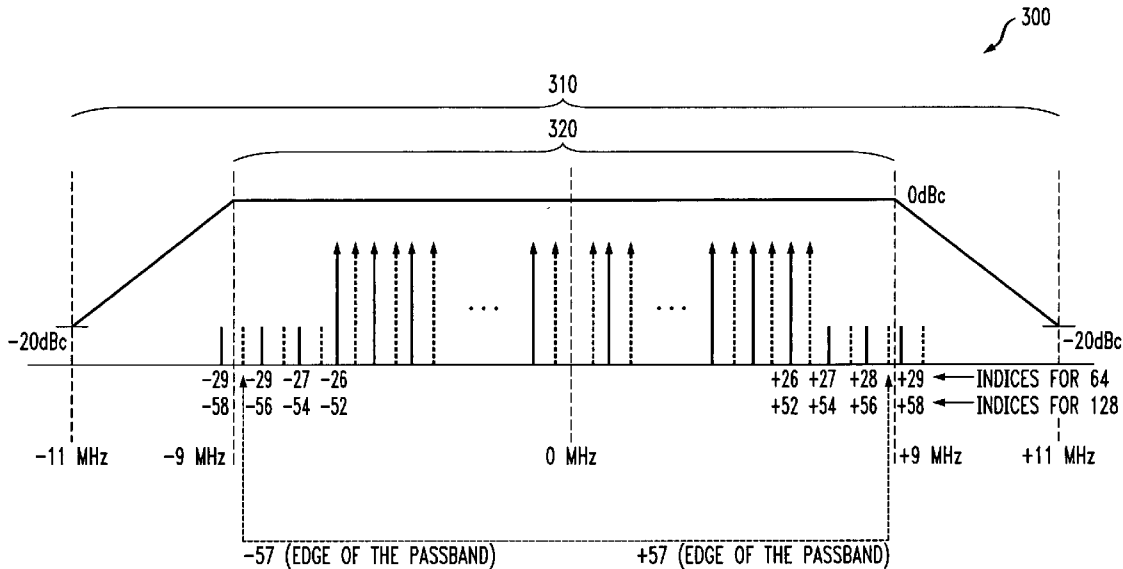


FIG. 1
PRIOR ART

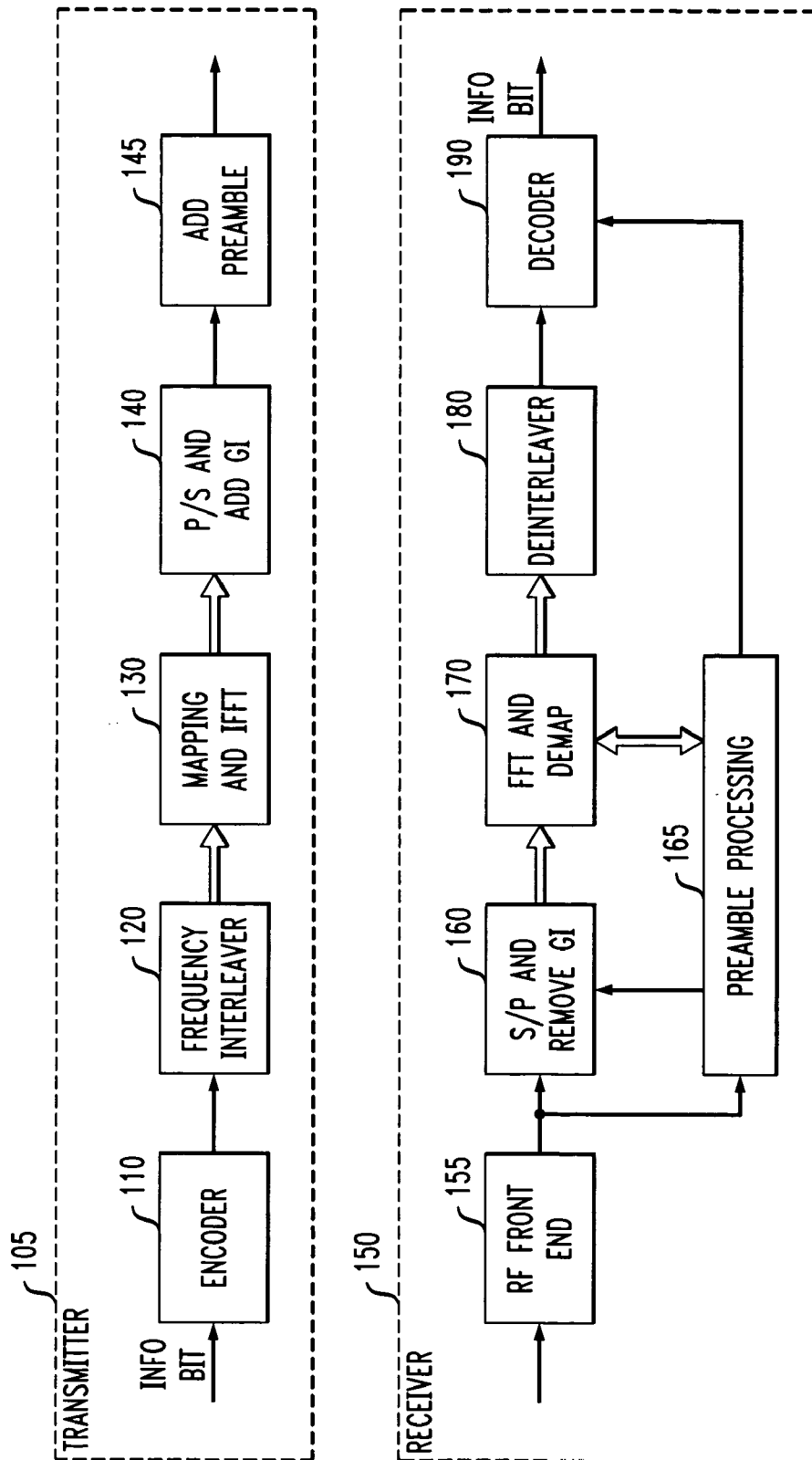


FIG. 2
PRIOR ART

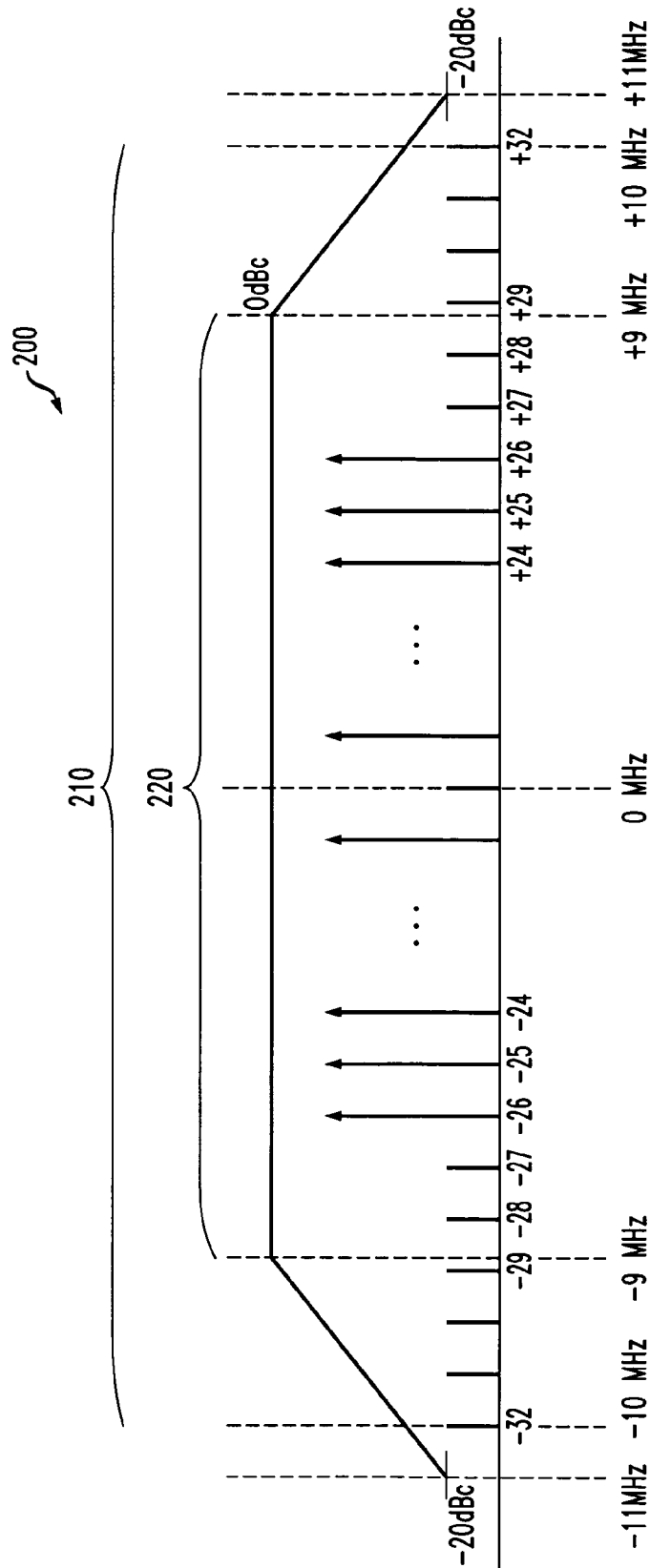


FIG. 3

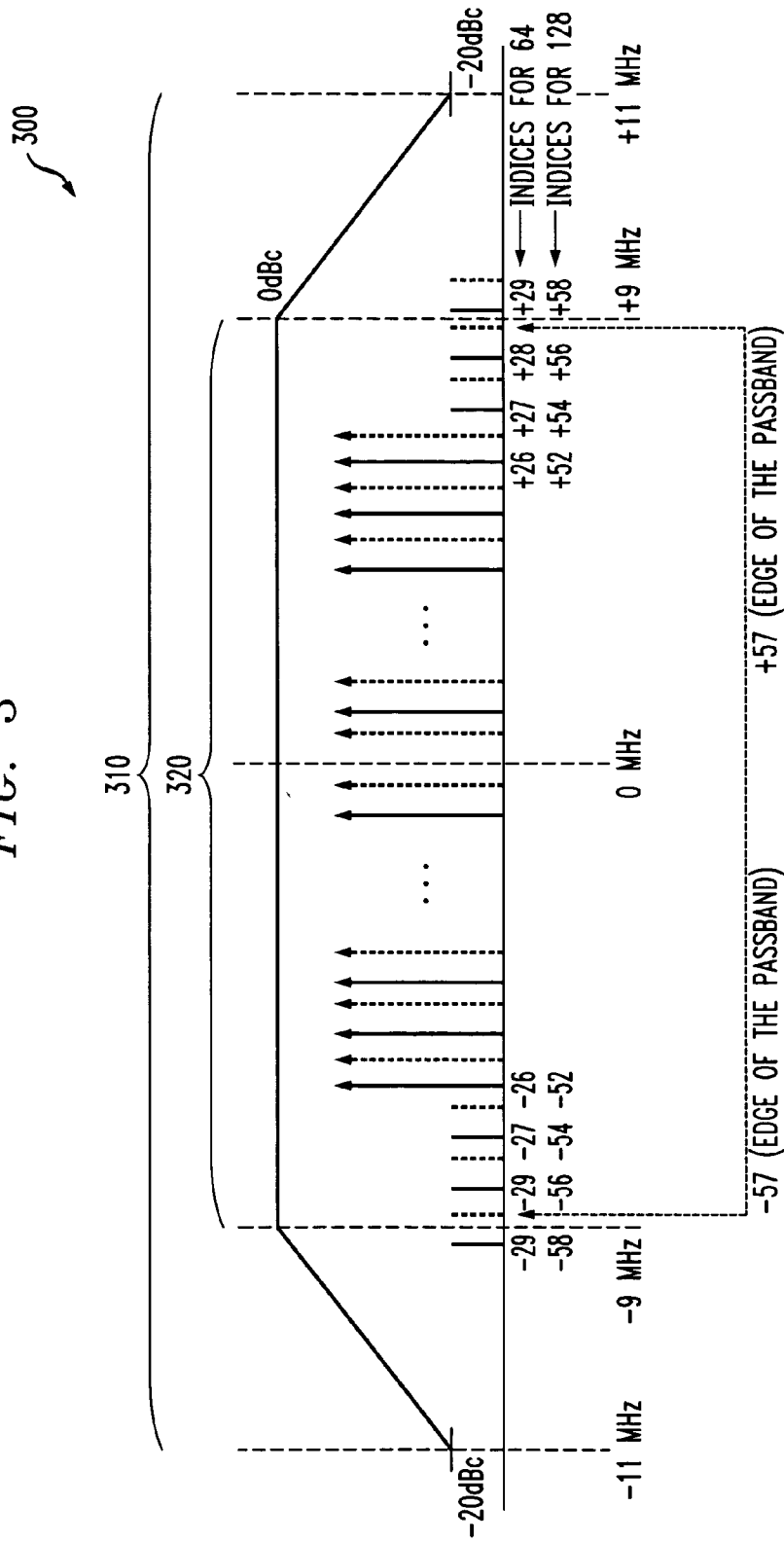
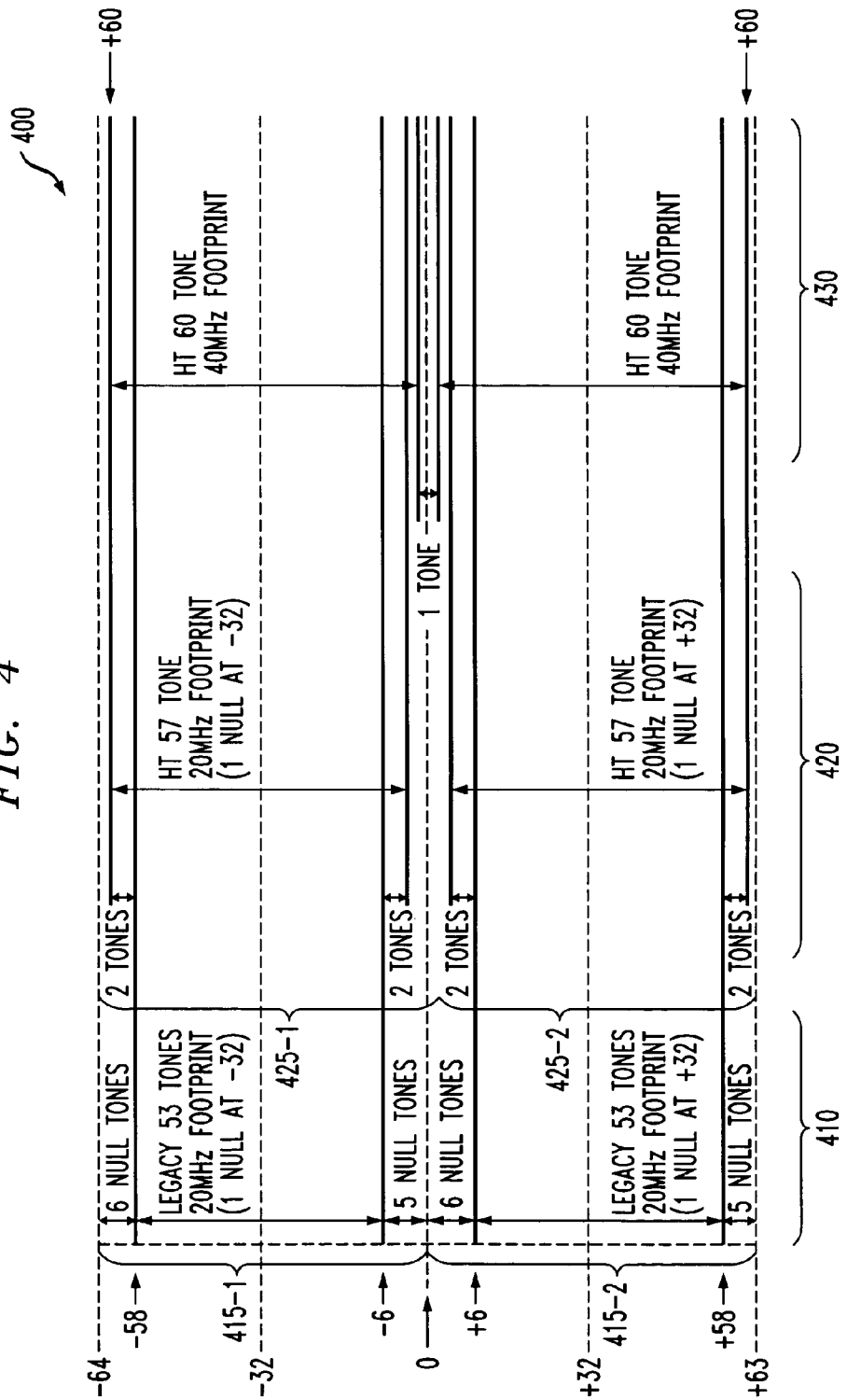


FIG. 4



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