Exhibit B

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Wengerter et al.

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(54) **CONSTELLATION REARRANGEMENT FOR ARQ TRANSMIT DIVERSITY SCHEMES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/633,421**

(22) Filed: **Dec. 5, 2006**

(65) **Prior Publication Data**

US 2007/0147531 A1 Jun. 28, 2007

Related U.S. Application Data

(63) Continuation of application No. 10/501,906, filed as application No. PCT/EP02/11694 on Oct. 18, 2002, now Pat. No. 7,154,961.

(51) **Int. Cl.**
H04B 7/02 (2006.01)

(52) **U.S. Cl.** **375/267**; 375/299; 375/298; 370/349; 714/748

(58) **Field of Classification Search** 375/267, 375/299, 295, 298, 308, 261; 370/349, 465; 714/748, 701, 786
See application file for complete search history.

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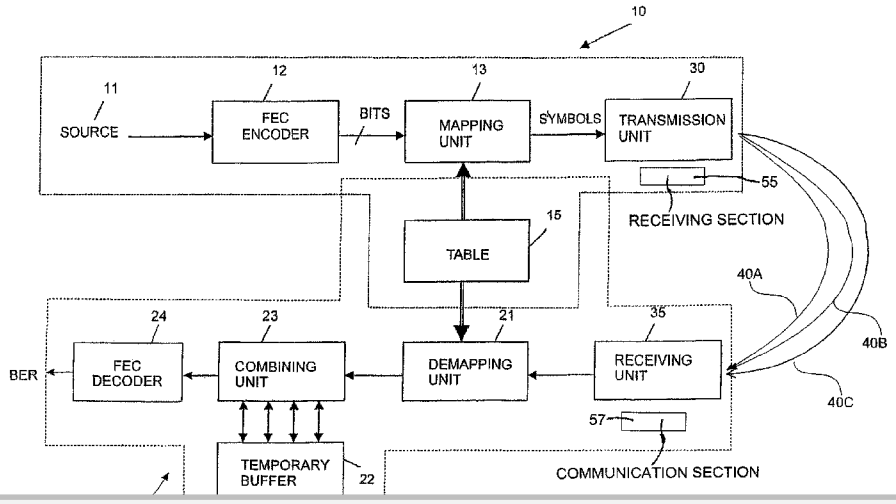
(57) **ABSTRACT**

An ARQ (re-) transmission method of transmitting data in a wireless communication system wherein data packets are transmitted from a transmitter to a receiver, using a first transmission and a second transmission based on a repeat request. The method comprises the steps of modulating data at the transmitter using a first signal constellation pattern to obtain a first data symbol. The first data symbol is transmitted as the first transmission to the receiver using a first diversity branch. Further, the data is modulated at the transmitter using a second signal constellation pattern to obtain a second data symbol. Then, the second data symbol is transmitted as the second transmission to the receive over a second diversity branch. Finally, the received first and second data symbol data symbol are diversity combined at the receiver. The invention further relates to a transmitter and a receiver embodied to carry out the method of the invention.

20 Claims, 6 Drawing Sheets



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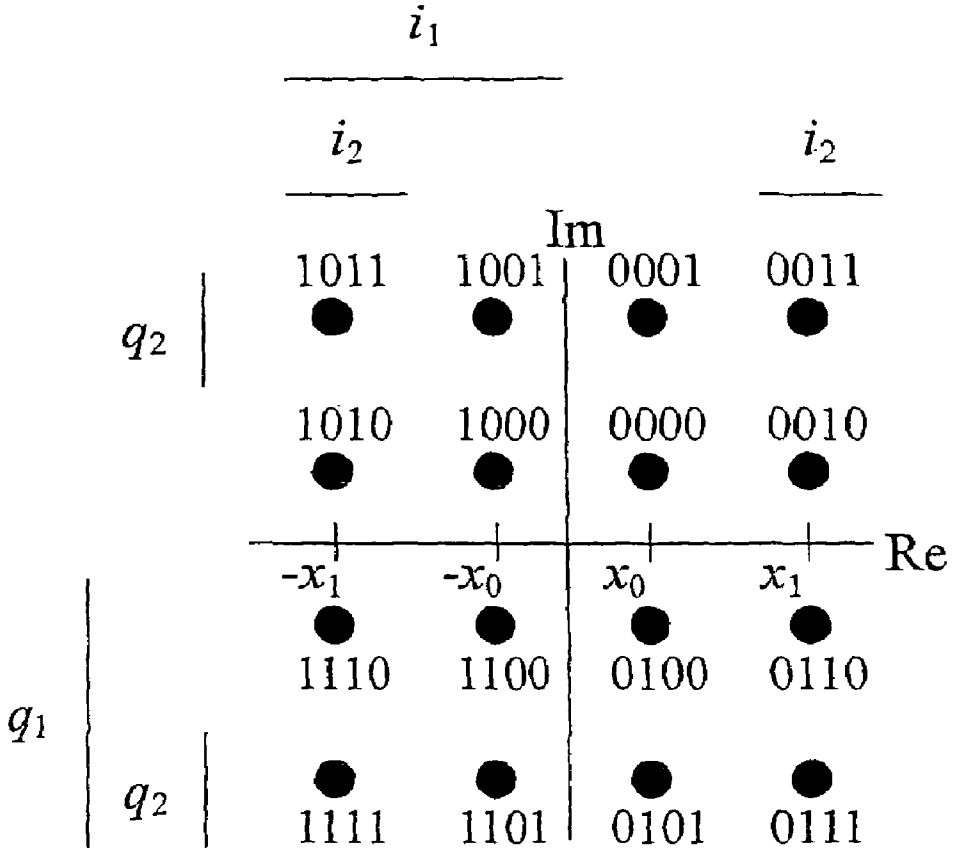
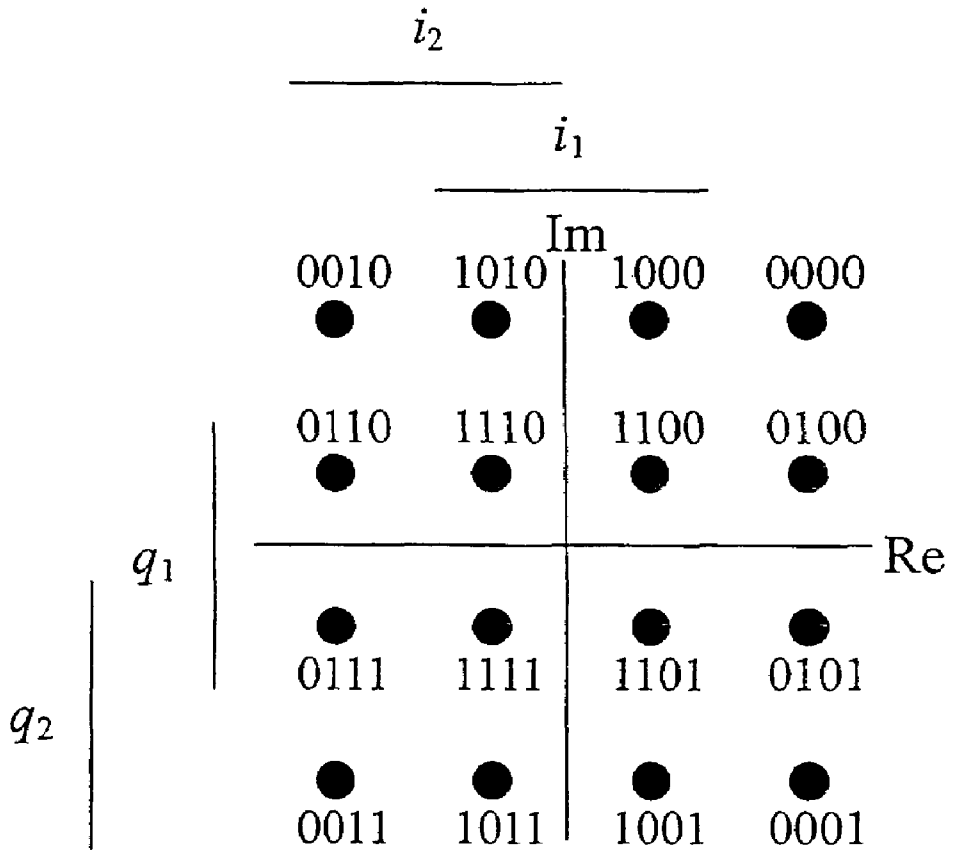


Mapping 1 (bit-mapping order: $i_1q_1i_2q_2$)

FIG. 1



Mapping 2 (bit-mapping order: $i_1 q_1 i_2 q_2$)

FIG. 2

DOCKET ALARM

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