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Yu et al.

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(54) **APPARATUS FOR TRANSMITTING AND RECEIVING DATA TO PROVIDE HIGH-SPEED DATA COMMUNICATION AND METHOD THEREOF**

(58) **Field of Classification Search**
USPC 375/340, 267, 299, 260; 455/101; 370/240
See application file for complete search history.

(75) Inventors: **Hee-Jung Yu**, Daejeon (KR); **Taehyun Jeon**, Sungnam (KR); **Myung-Soon Kim**, Daejeon (KR); **Eun-Young Choi**, Daejeon (KR); **Sok-Kyu Lee**, Daejeon (KR); **Deuk-Su Lyu**, Daejeon (KR)

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Primary Examiner — Juan A Torres

(74) Attorney, Agent, or Firm — Hunton & Williams LLP

(73) Assignee: **Electronics and Telecommunications Research Institute**, Daejeon (KR)

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Foreign Application Priority Data

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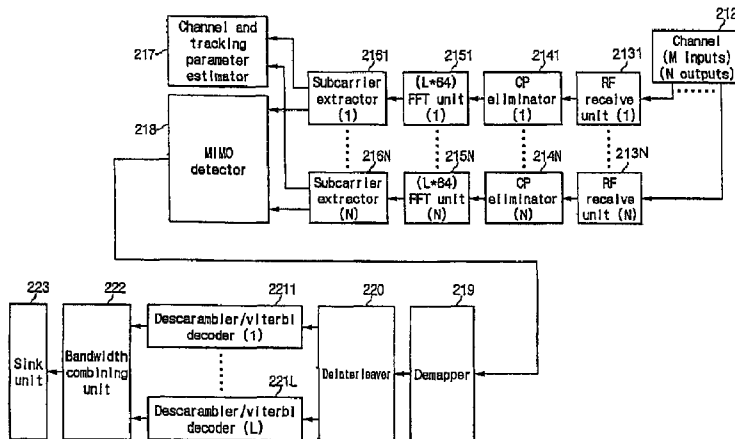
(51) **Int. Cl.**
H04L 27/06 (2006.01)

(52) **U.S. Cl.**
USPC **375/340; 375/267; 375/299; 375/260; 455/101; 370/240**

(57) **ABSTRACT**

In the present invention, data generated from a source unit are distributed to at least one bandwidth; the data distributed to the respective bandwidths are encoded in order to perform an error correction; the encoded data are distributed to at least one antenna; a subcarrier is allocated to the data distributed to the respective antennas, and an inverse Fourier transform is performed; a short preamble and a first long preamble corresponding to the subcarrier are generated; a signal symbol is generated according to a data transmit mode; and a frame is generated by adding a second long preamble between the signal symbol and a data field for the purpose of estimating a channel of a subcarrier which is not used.

59 Claims, 9 Drawing Sheets



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Fig. 1
(PRIOR ART)

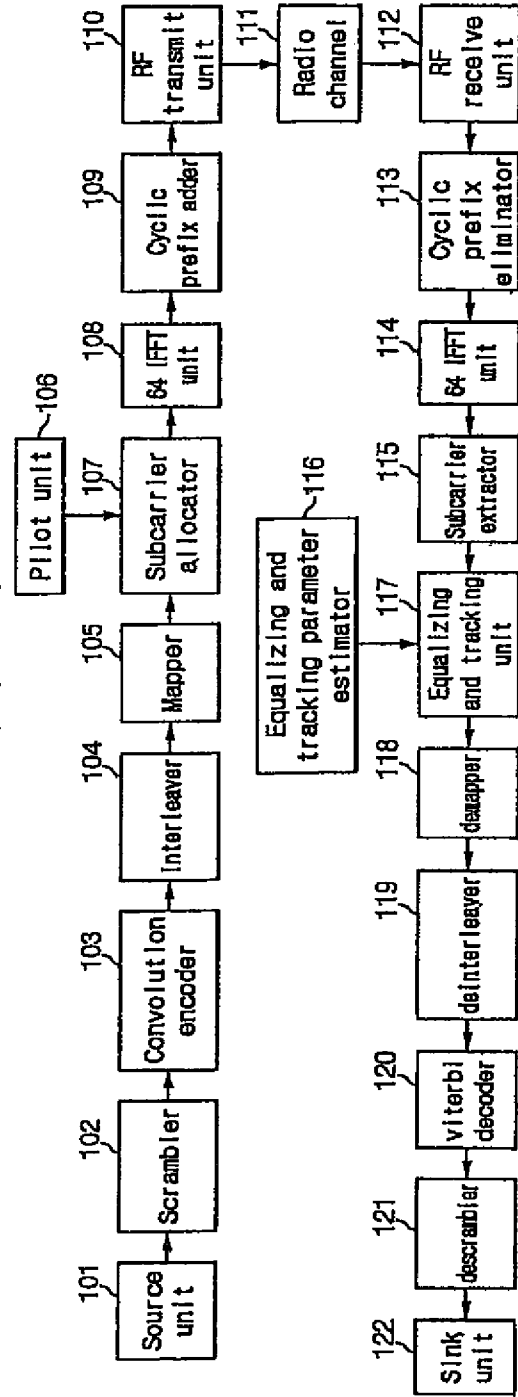


Fig. 2

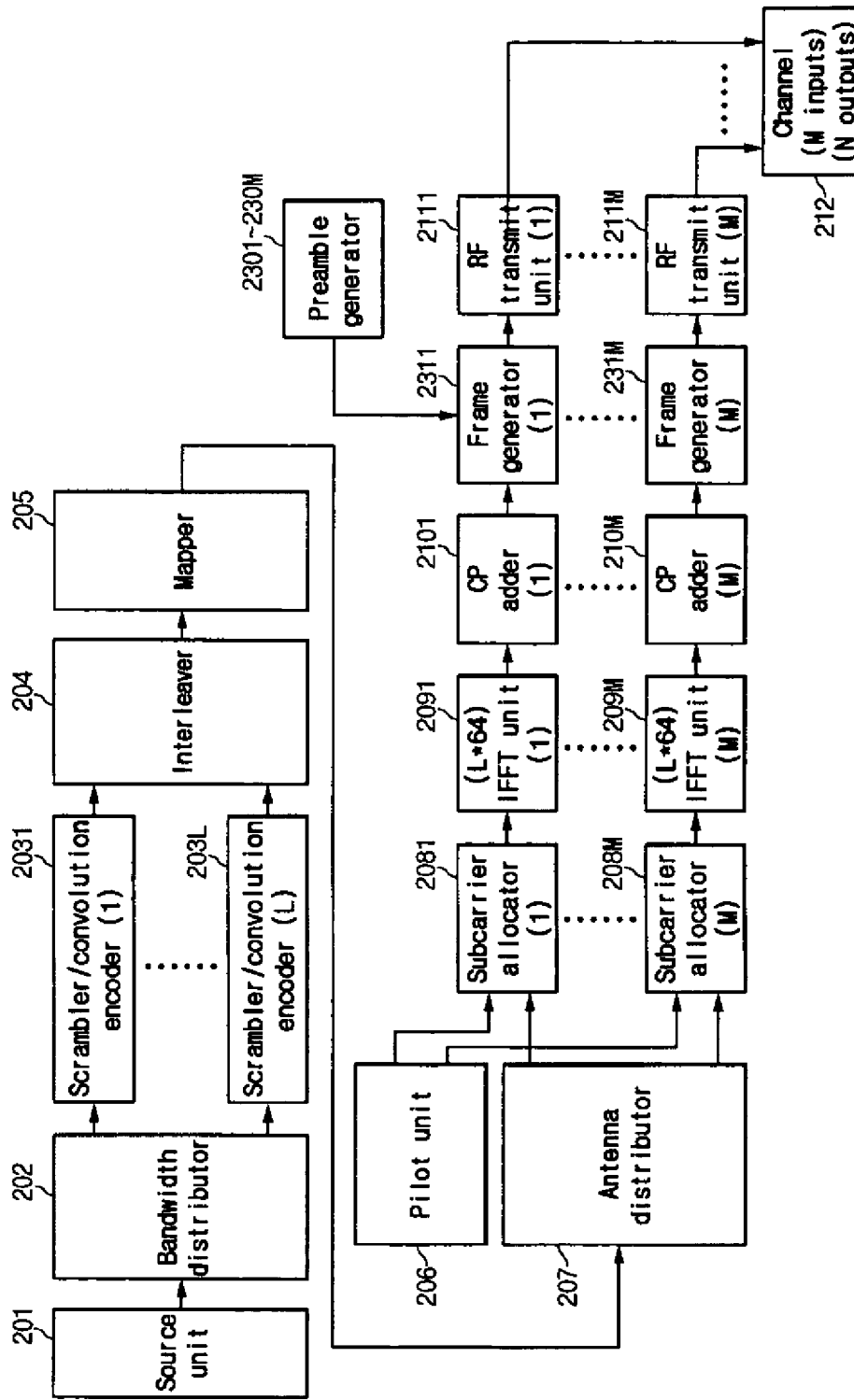
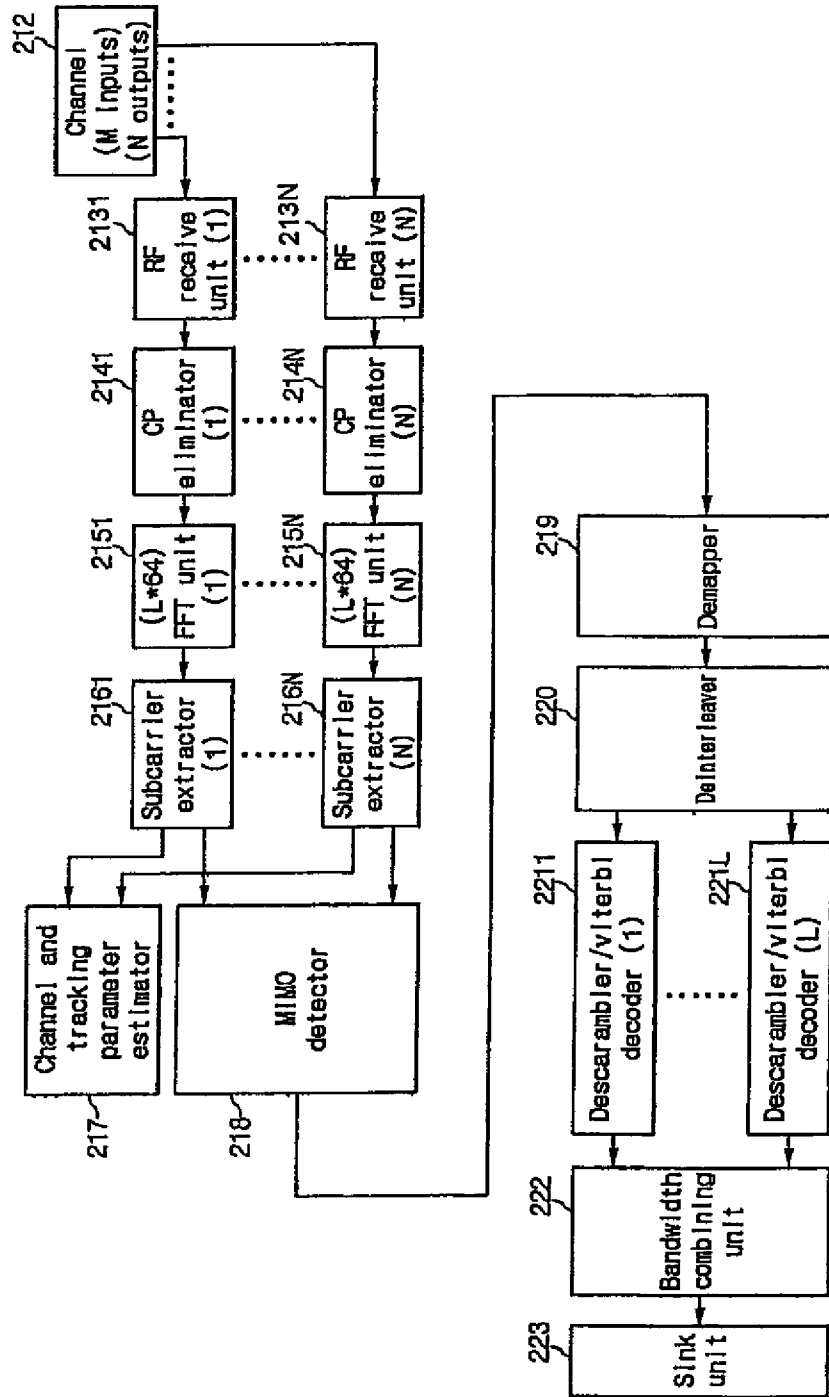


Fig. 3



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