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(54) **APPARATUS AND METHOD FOR TRANSMITTING/RECEIVING PILOT CODE PATTERN FOR IDENTIFICATION OF BASE STATION IN COMMUNICATION SYSTEM USING ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING SCHEME**

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(58) **Field of Classification Search** **370/210**
See application file for complete search history.

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(57) **ABSTRACT**

Provided are an apparatus and method for transmitting/receiving a pilot code pattern used to identify a base station. In the base station, a pilot code pattern determiner determines a code set that includes a number of spreading codes based on a specific ID of the base station. A first spreader spreads a pilot symbol mapped onto an FC with a corresponding spreading code according to the determined code set, and controls gain so as to transmit the pilot symbol at a higher signal level than data. A second spreader spreads data symbols mapped onto the FC with spreading codes of the code set except for the spreading code used for the pilot spreading. A mapper groups a spread signal from the first spreader and spread signals from the second spreader on a TFC basis, and outputs signals that constitute each TFC to points of sub-carriers. An IFFT unit performs an IFFT operation on signals output from the mapper. Because the pilot as well as the data is spread, it is easy to implement the base station. Also, it is possible to identify base stations according to the pilot spreading codes as well as a pilot hopping pattern.

9 Claims, 13 Drawing Sheets

