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(54) **SYSTEM AND METHOD FOR TRANSMITTING/RECEIVING SIGNAL IN A FREQUENCY OVERLAY COMMUNICATION SYSTEM**

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(57) **ABSTRACT**

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A method for transmitting a signal by a transmitter in a frequency overlay communication system. The method includes generating y first signal groups by shuffling input information data with a length yN on an N -by- N grouping basis according to a first shuffling scheme; generating y second signal groups by performing N -point IFFT on each of the first signal groups; generating y third signal groups by multiplying each of the second signal groups by preset values; generating N fourth signal groups by de-shuffling the third signal groups on a y -by- y grouping basis according to a de-shuffling scheme; generating N fifth signal groups by performing y -point IDFT on each of the fourth signal groups; generating y sixth signal groups by shuffling the fifth signal groups according to a second shuffling scheme, and serial-converting the sixth signal groups; and performing a transmission RF process on the serial-converted signal and transmitting the RF-processed signal to a receiver.

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See application file for complete search history.

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34 Claims, 9 Drawing Sheets

