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(54) **TRANSMITTER APPARATUS AND RECEIVER APPARATUS AND BASE STATION MAKING USE OF ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING AND SPECTRUM SPREADING**

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(57) **ABSTRACT**

An improved transmitter apparatus, a receiver apparatus and a base station implemented with the transmitter and receiver apparatuses are described. These apparatuses and the base station serves to establish communication by making use of an orthogonal frequency division demultiplexing demodulation and an inverse spectrum spreading demodulation in combination. The communication coverage thereof can be expanded by making use of an orthogonal frequency division demultiplexing demodulation and an inverse spectrum spreading demodulation in combination.

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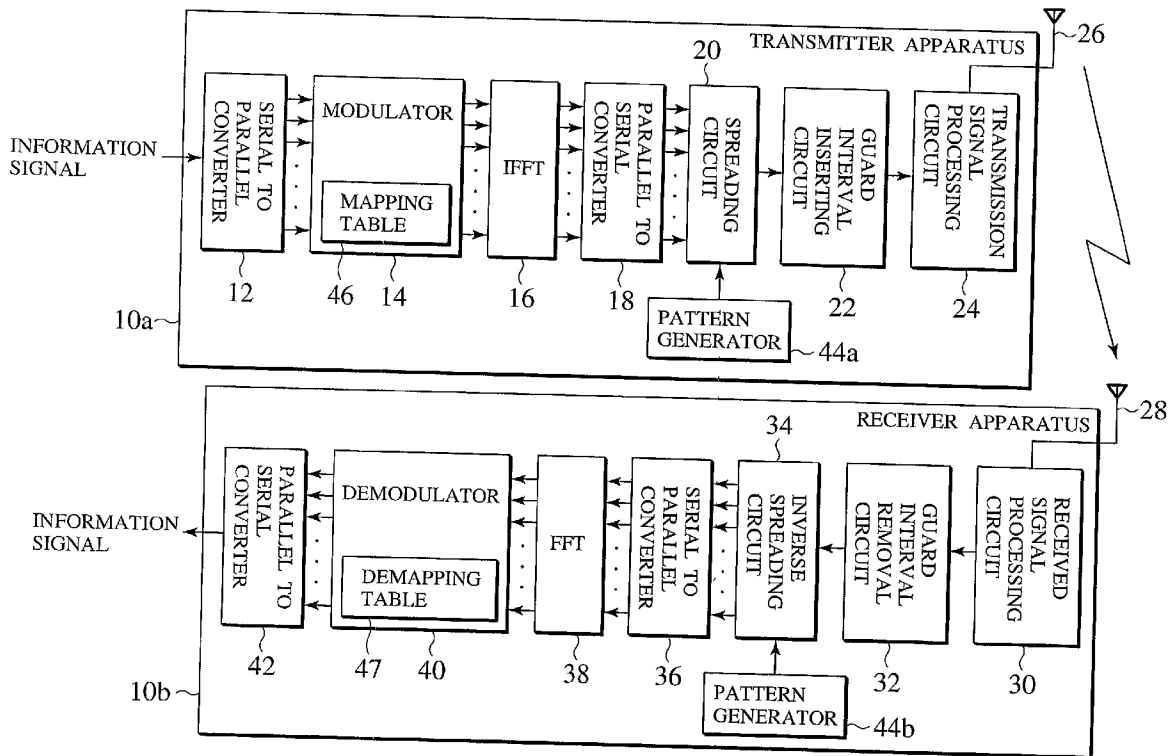


FIG. 1

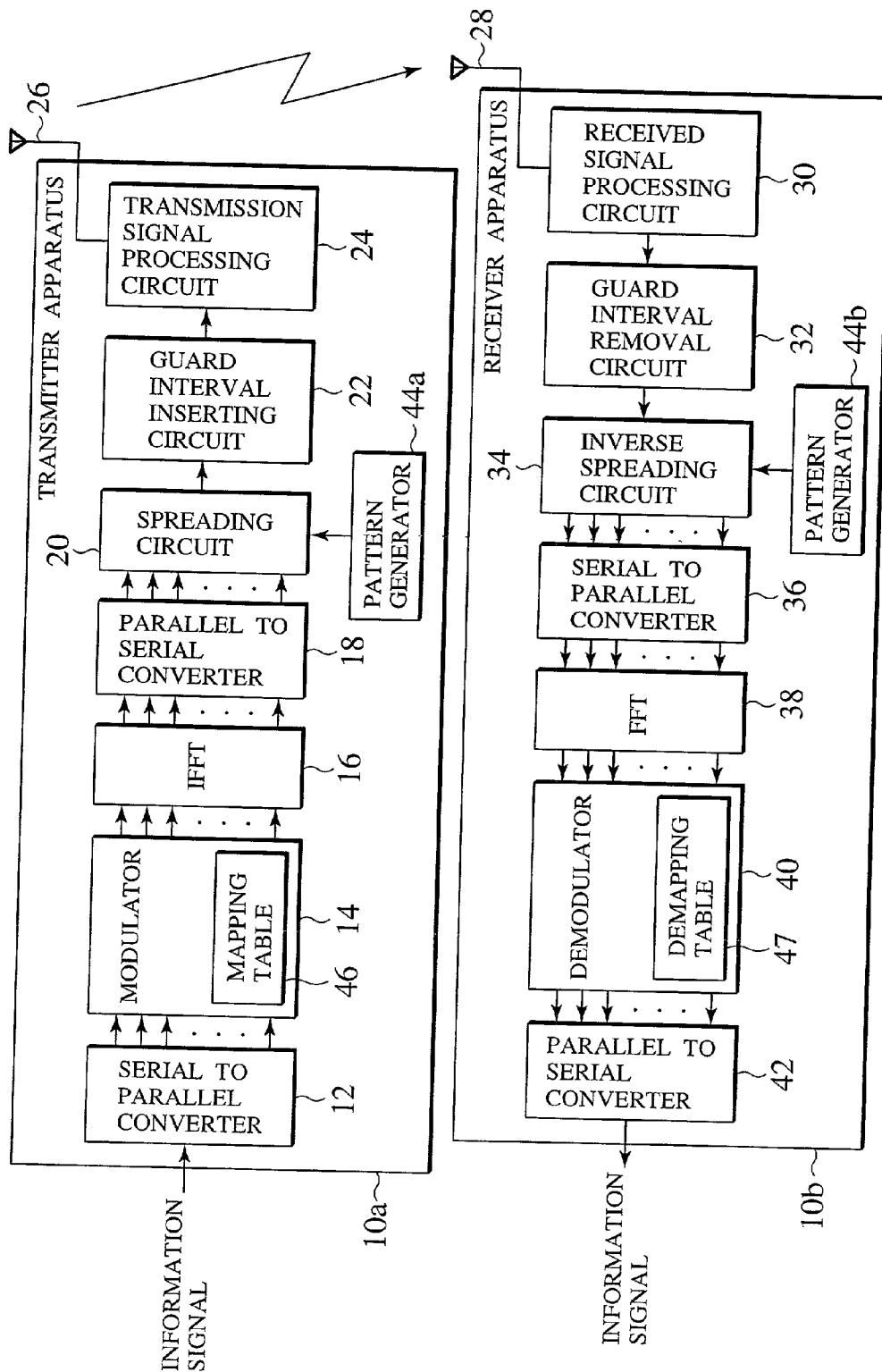


FIG.2

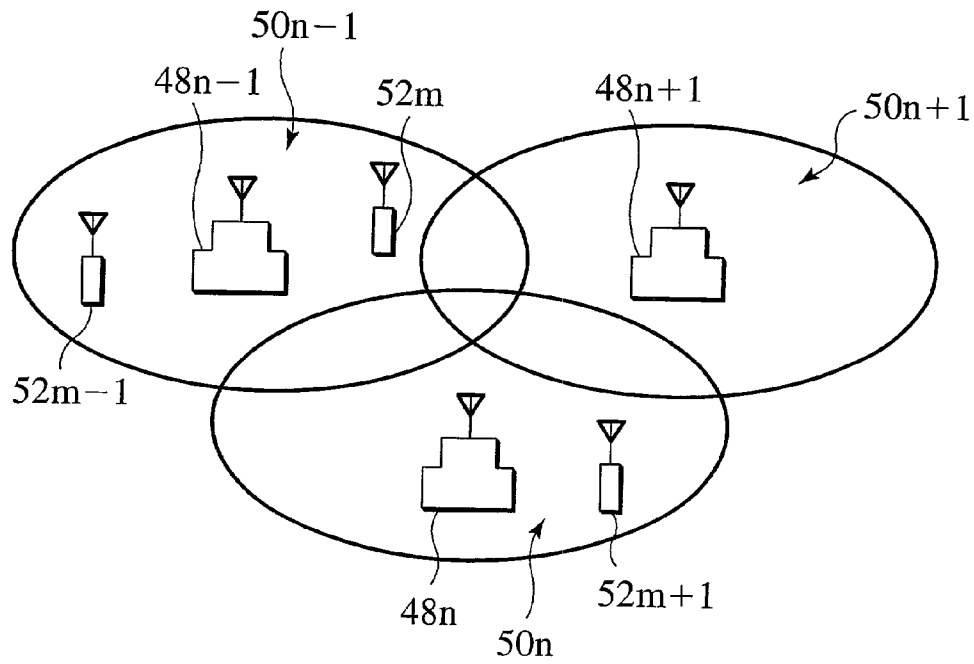


FIG.3

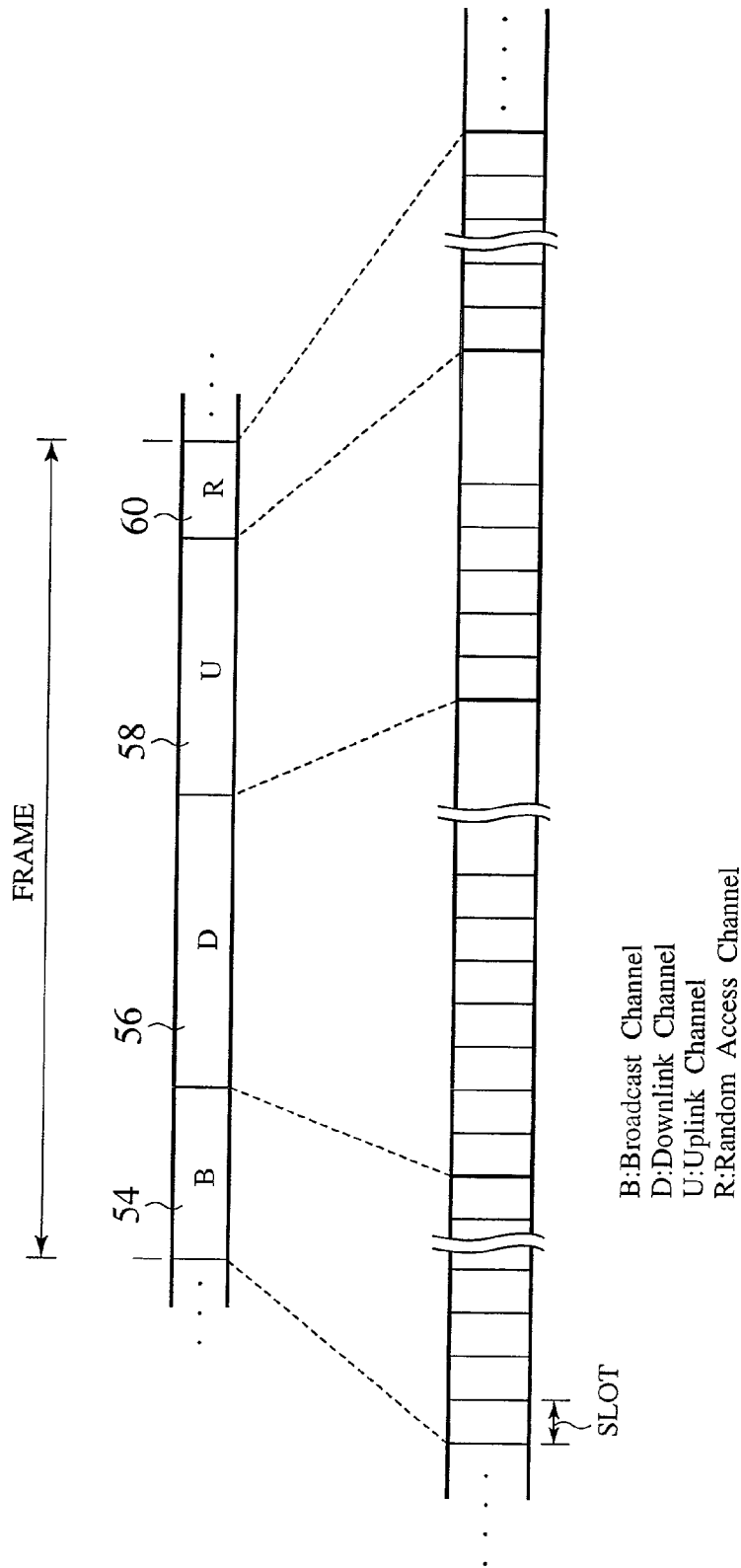
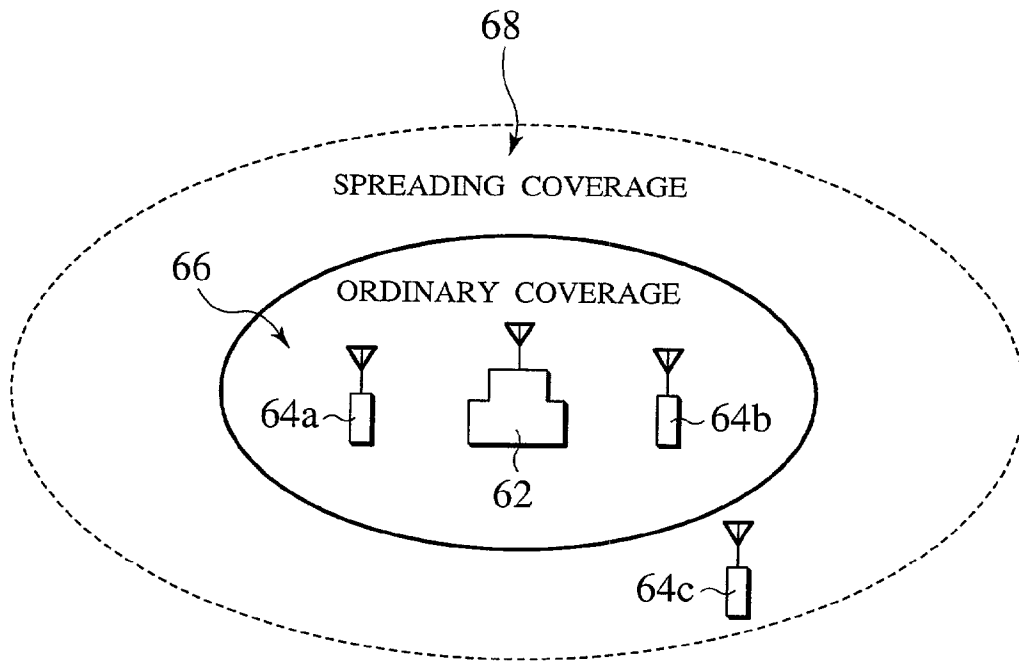


FIG. 4



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