

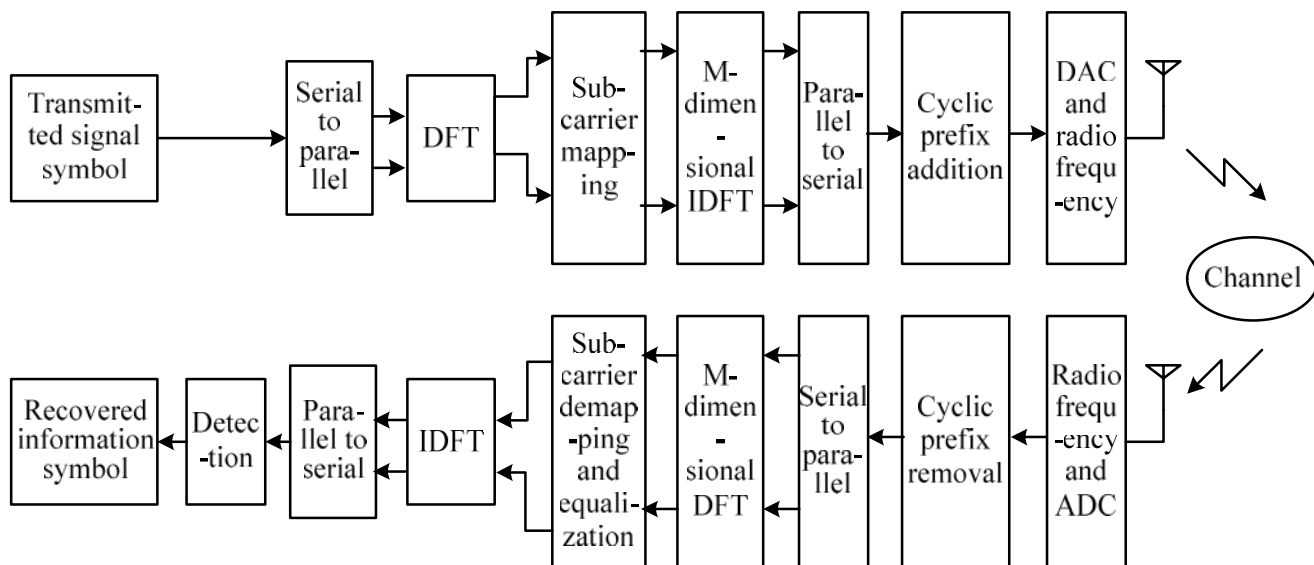


FIG. 1

OFDM

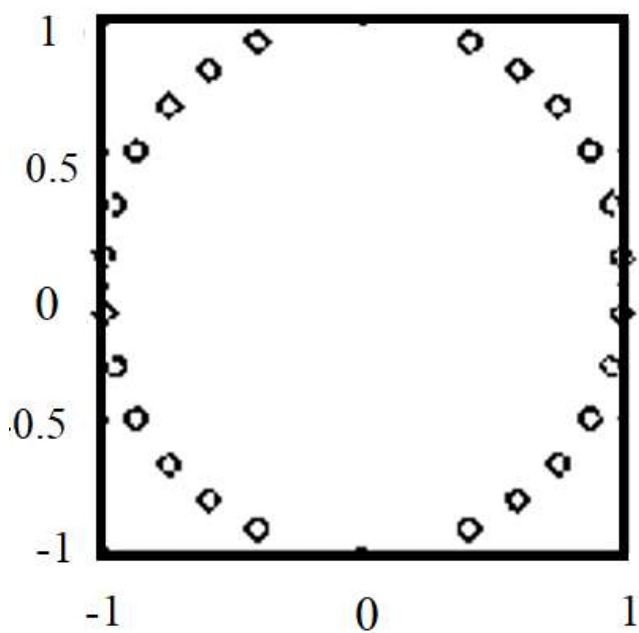


FIG. 2A

DFT-based OFDM

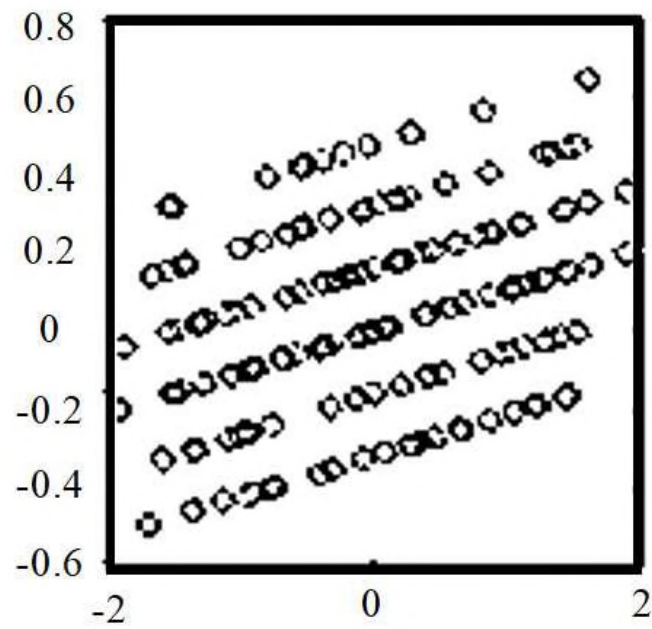


FIG. 2B

OFDM based on orthogonal transformation

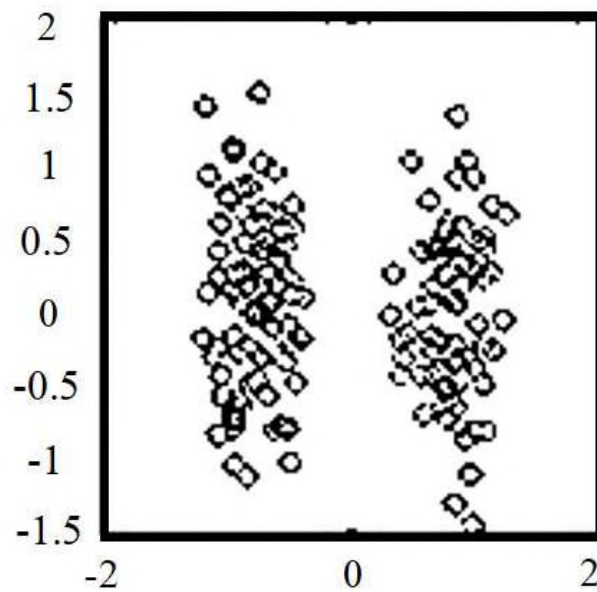


FIG. 2C

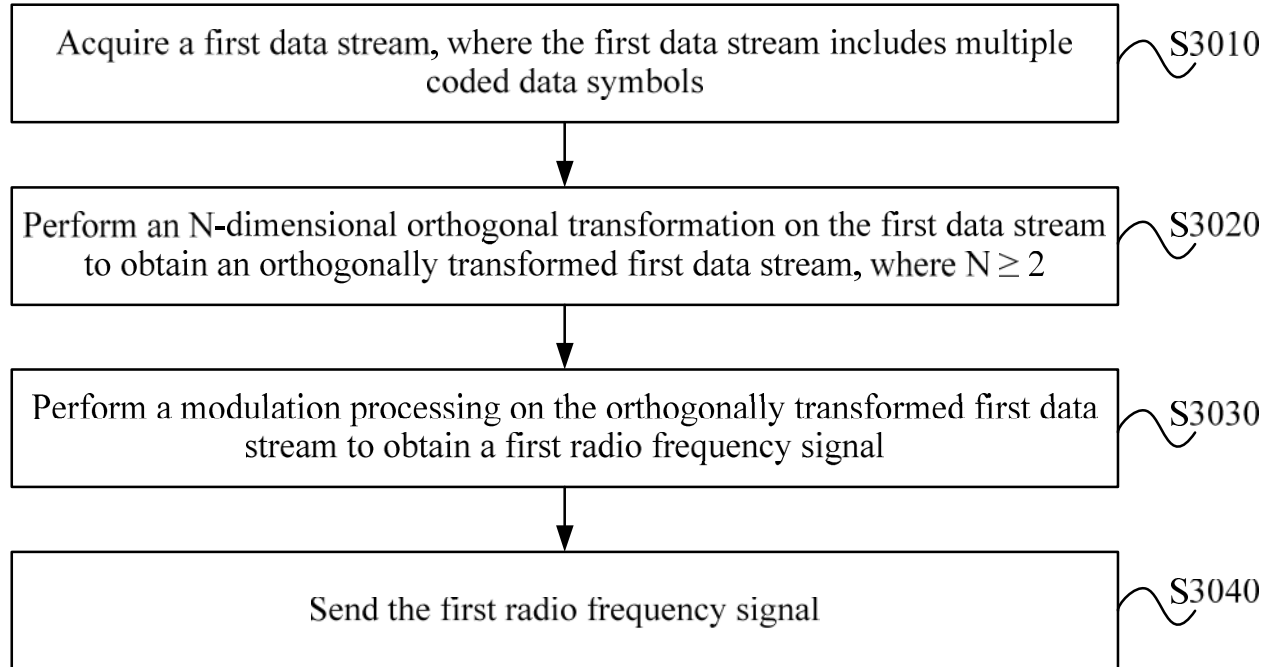


FIG. 3

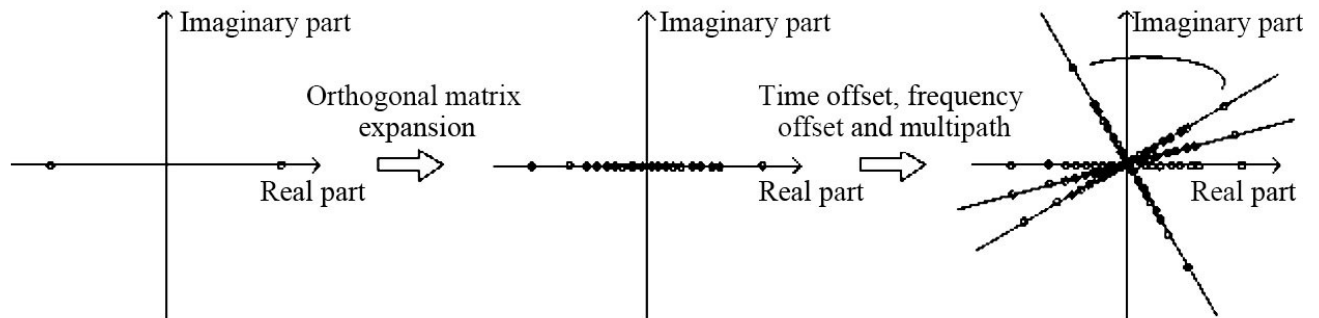
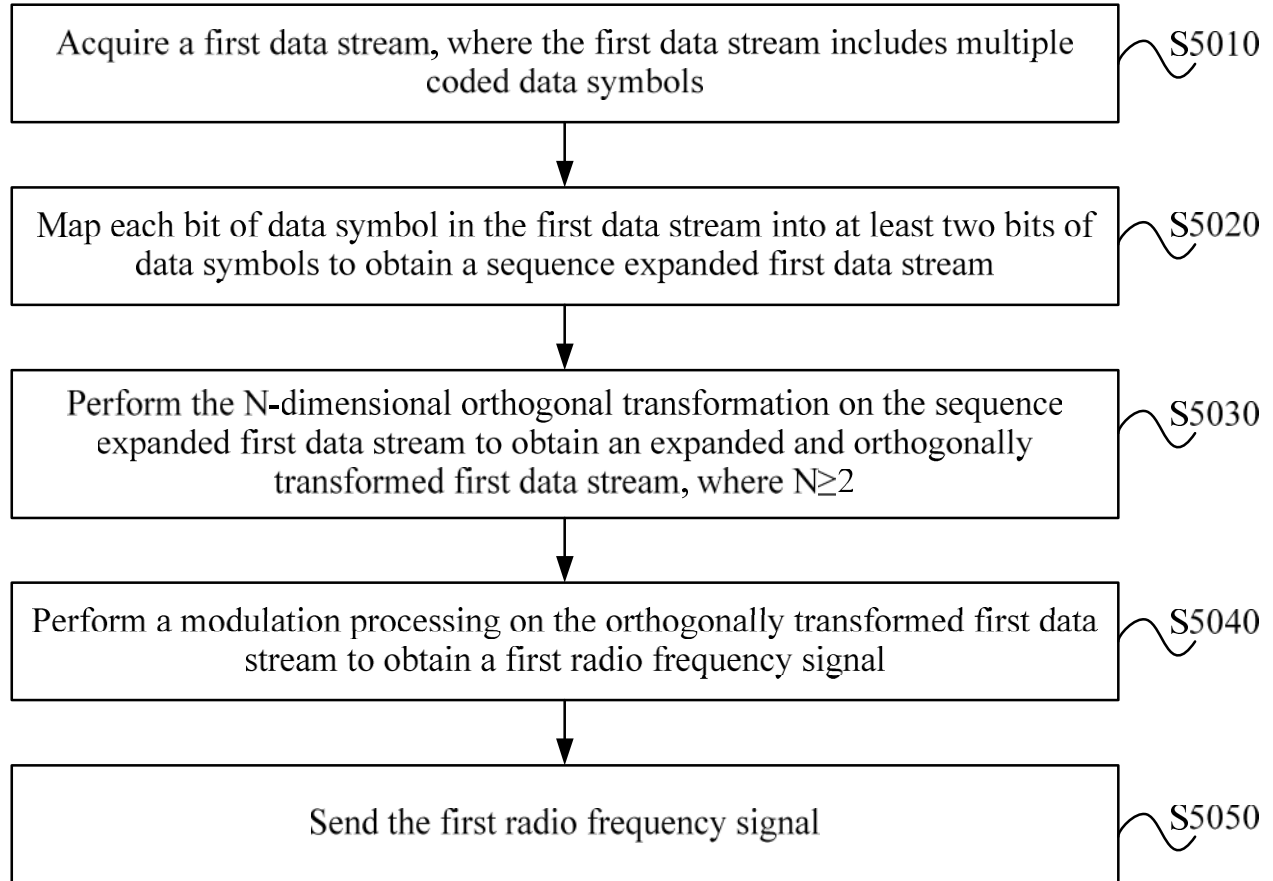
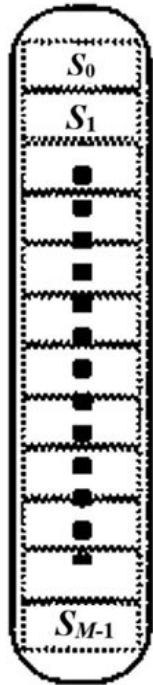


FIG. 4

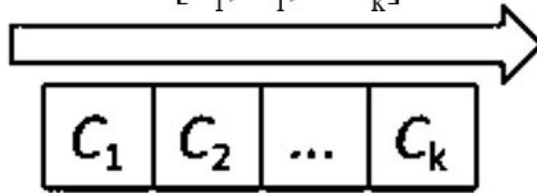
**FIG. 5**

Before expansion

 S

An one-bit OFDM symbol is expanded into a k -bit OFDM symbol, the k -bit long expanded sequence is used

$$C=[c_1, c_1, \dots, c_k]$$



Expanded sequence

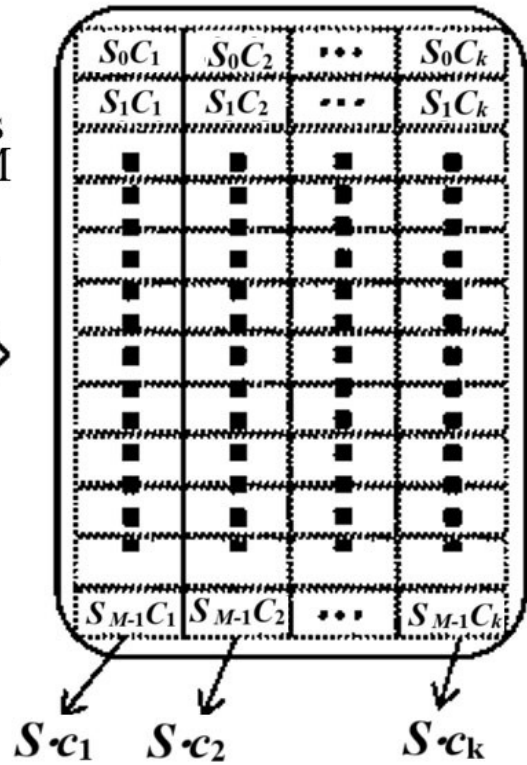


FIG. 6

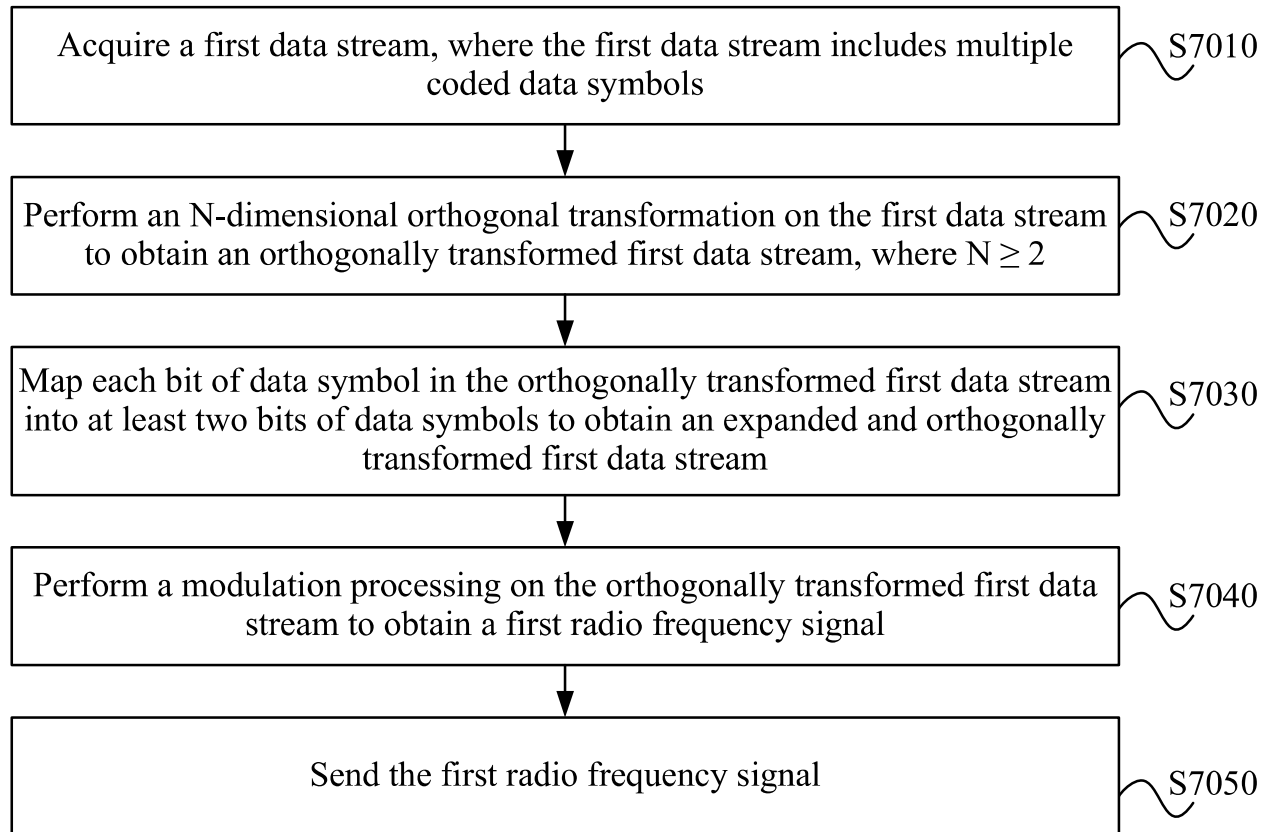


FIG. 7

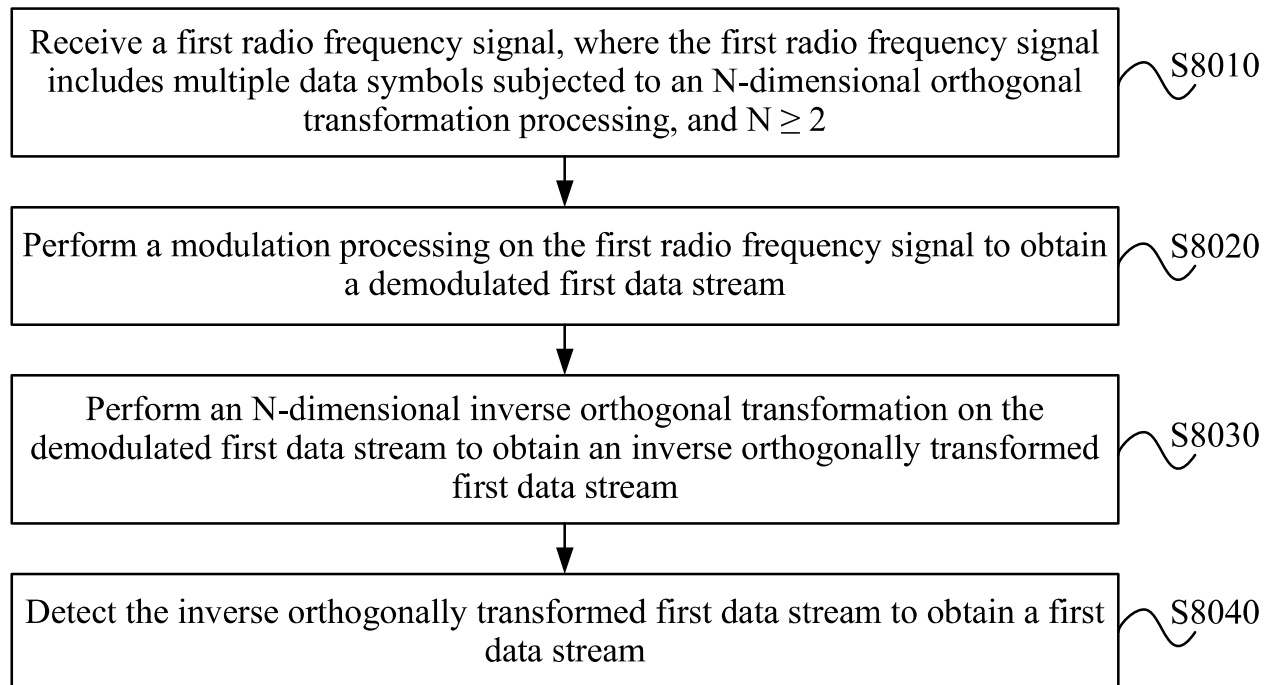


FIG. 8

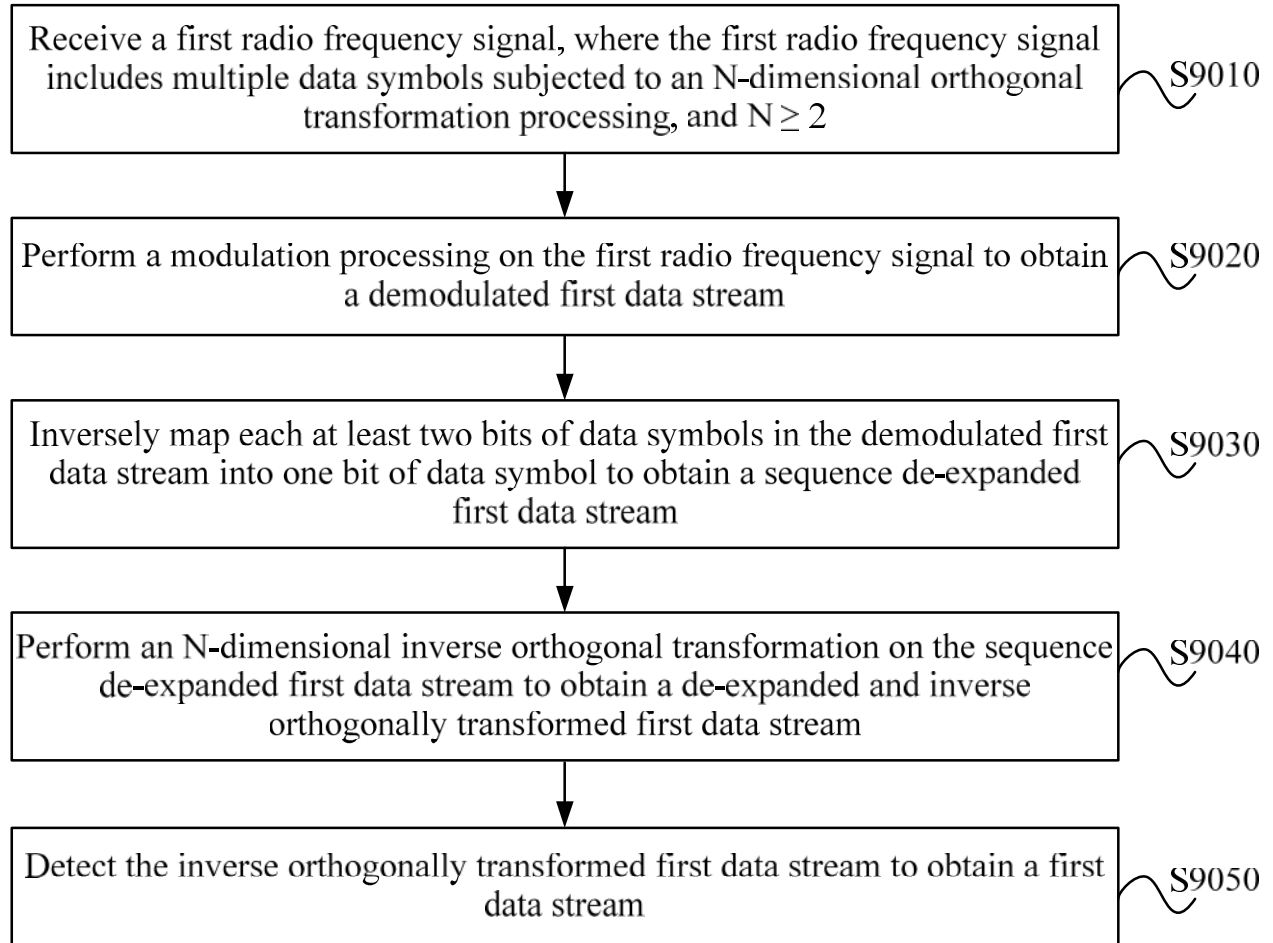


FIG. 9

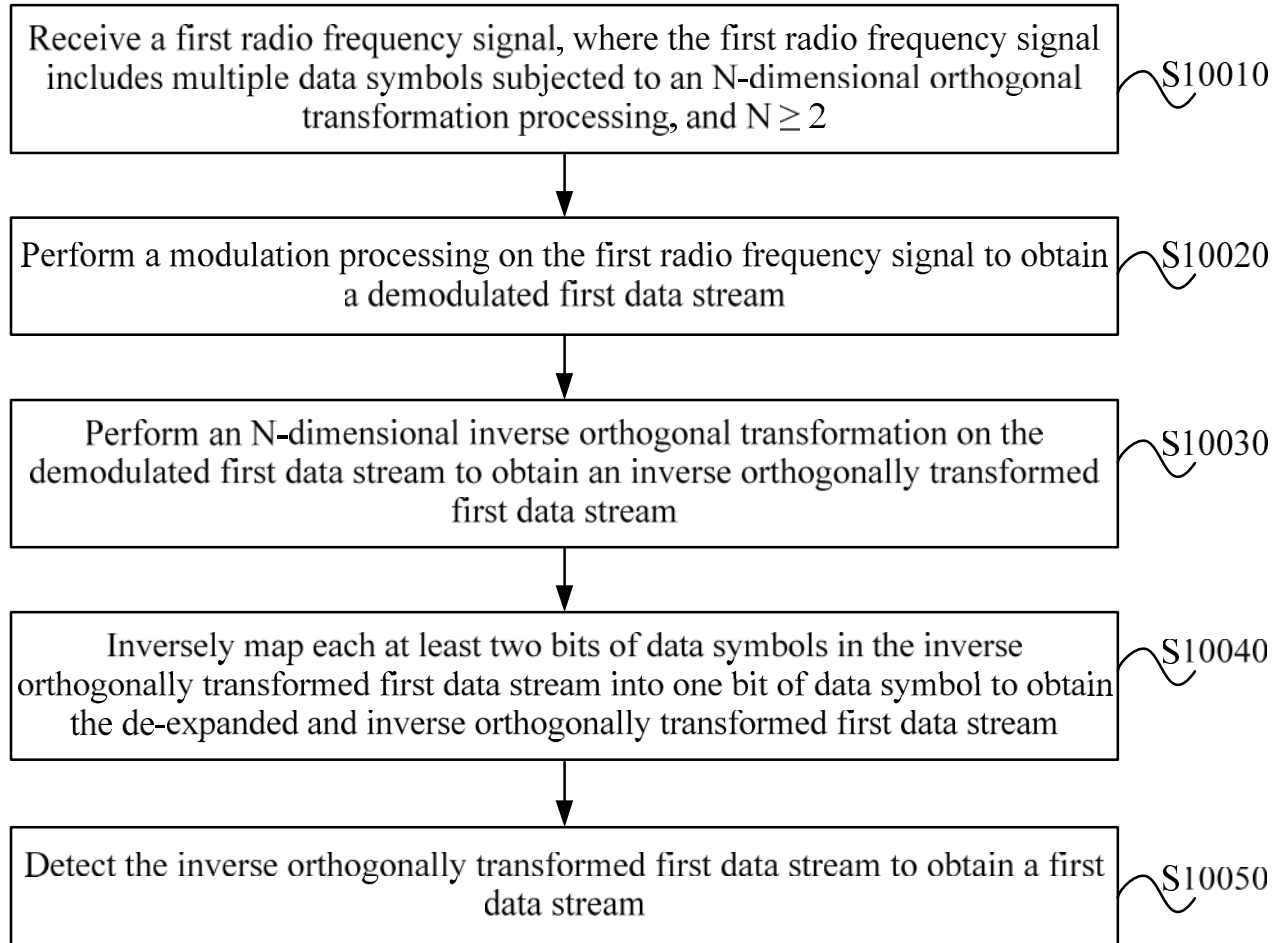


FIG. 10

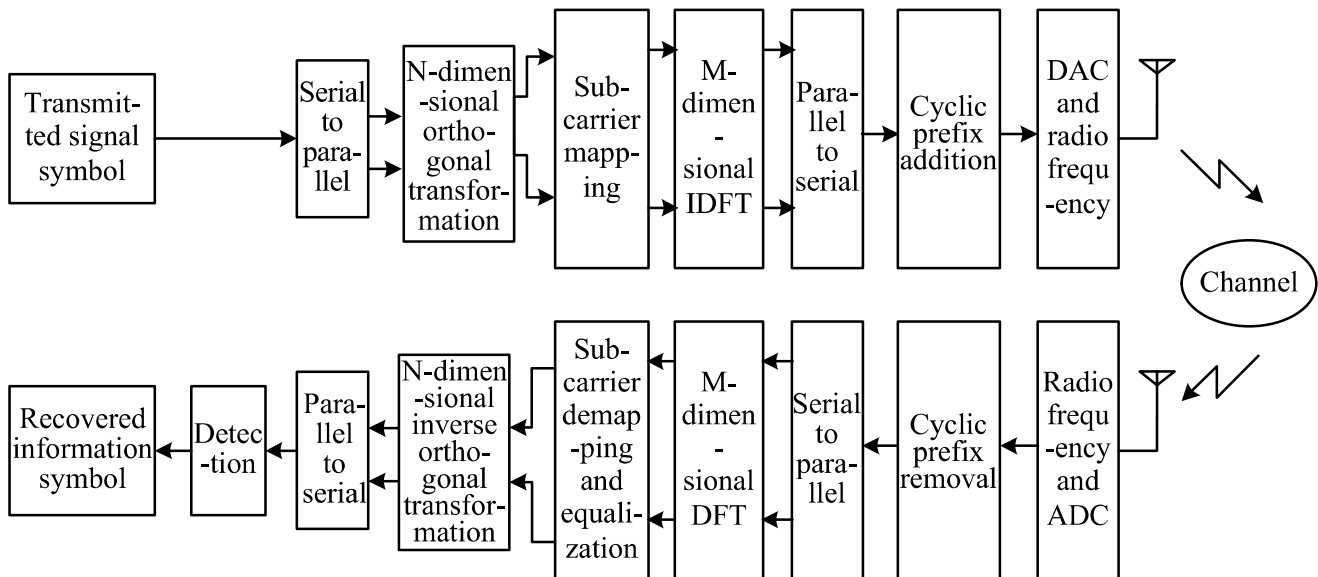


FIG. 11

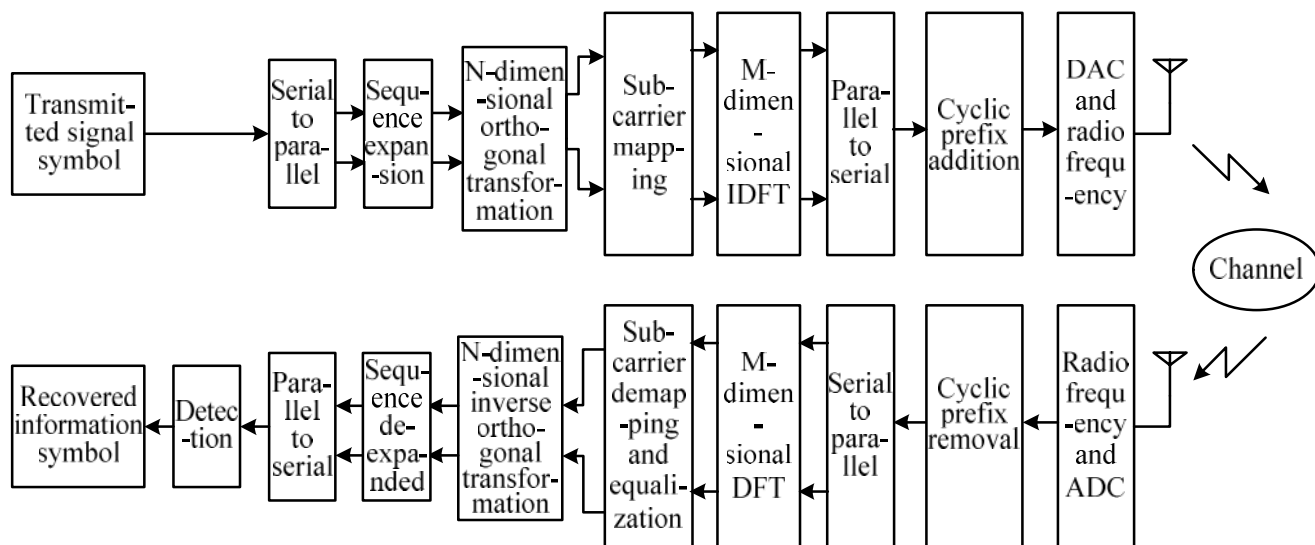


FIG. 12

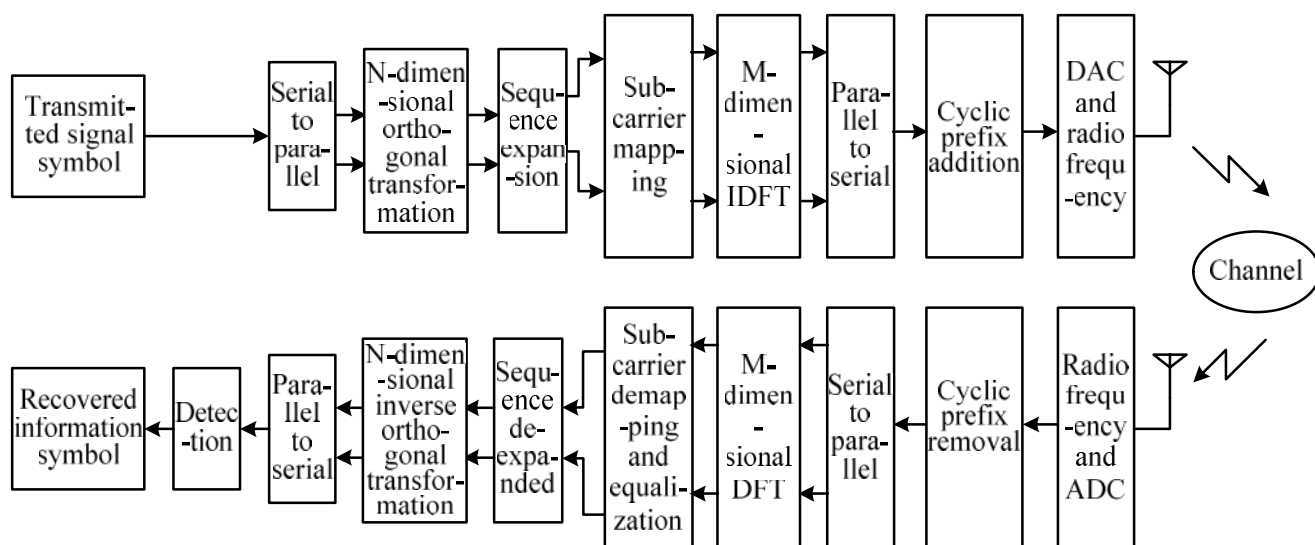


FIG. 13

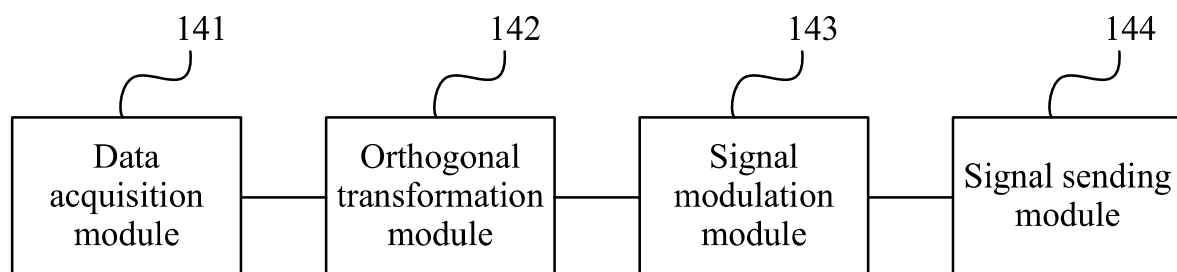


FIG. 14

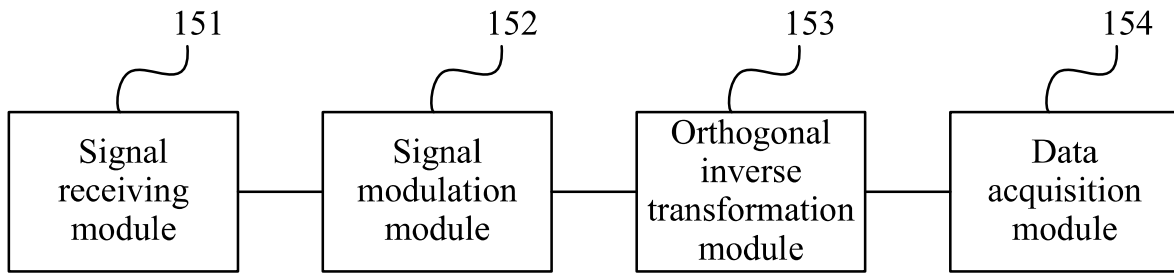


FIG. 15

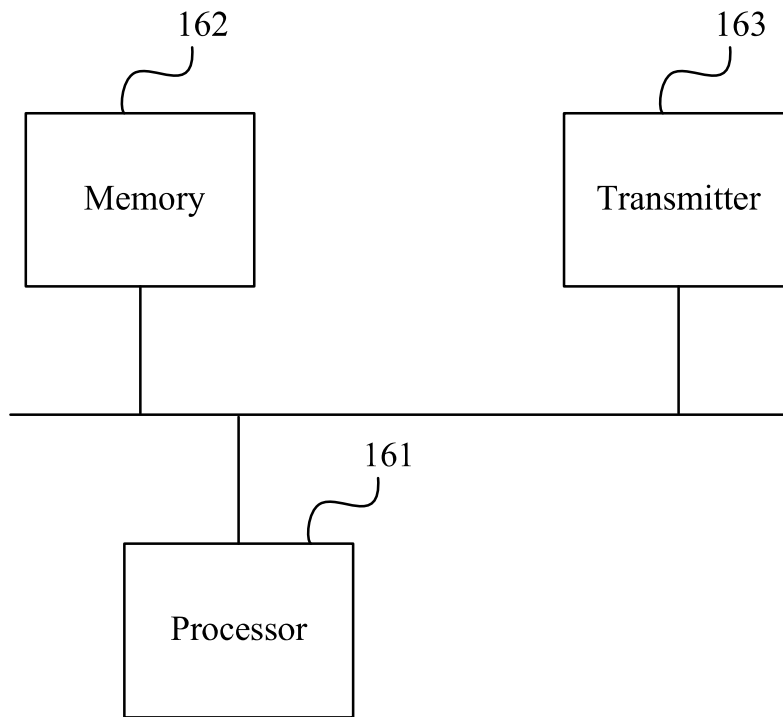


FIG. 16

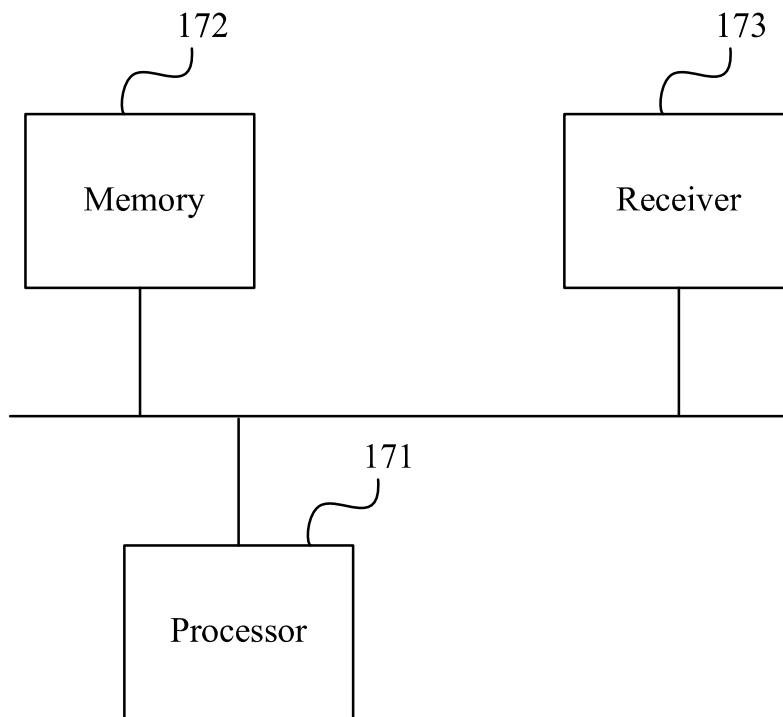


FIG. 17