

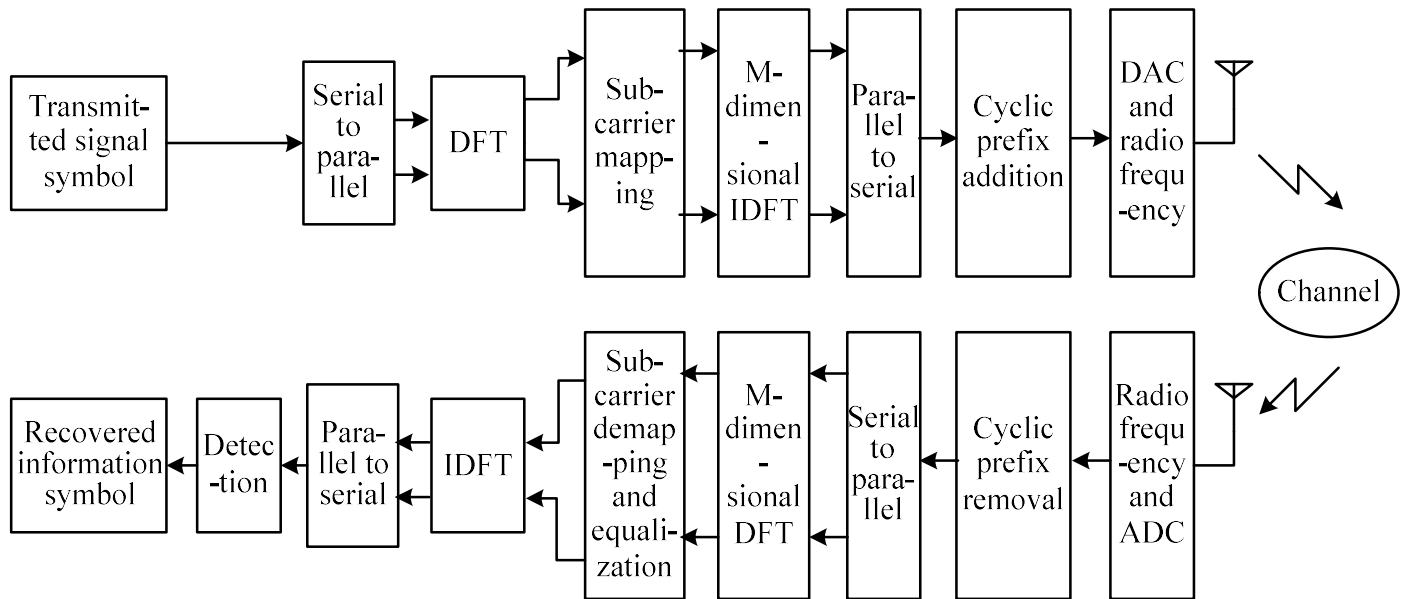


FIG. 1

OFDM

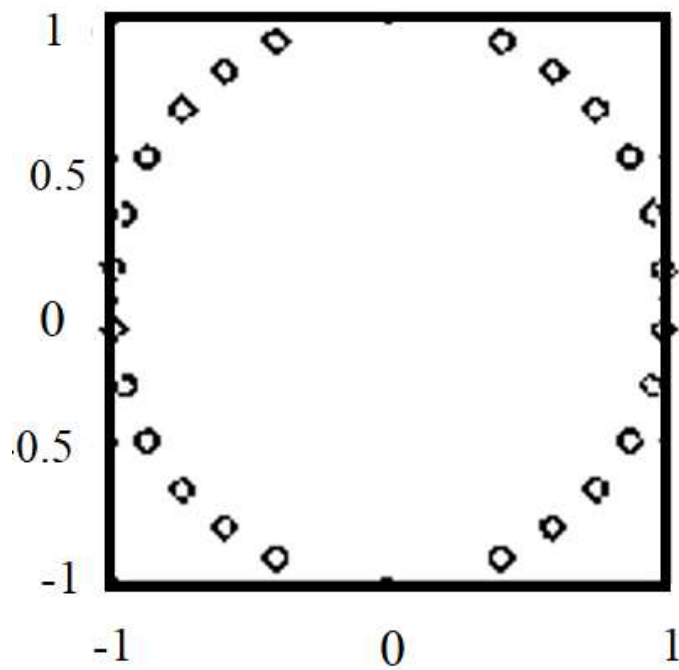
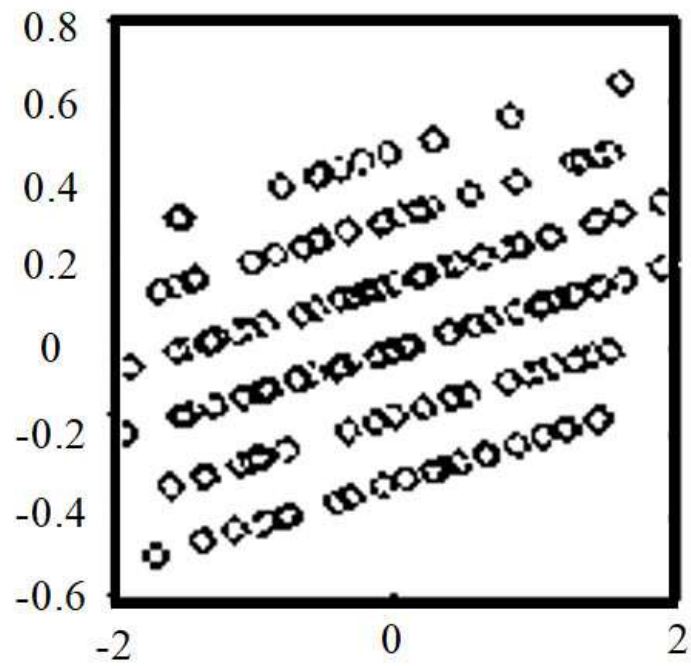
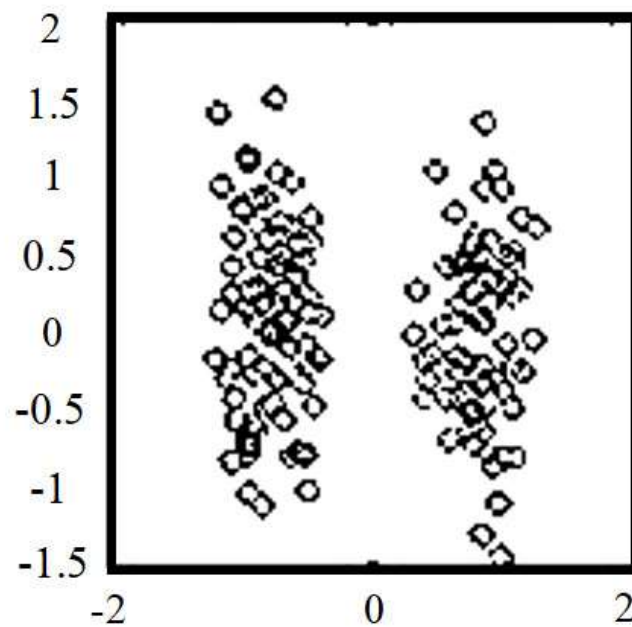


FIG. 2A

DFT-based OFDM

**FIG. 2B**

OFDM based on orthogonal transformation

**FIG. 2C**

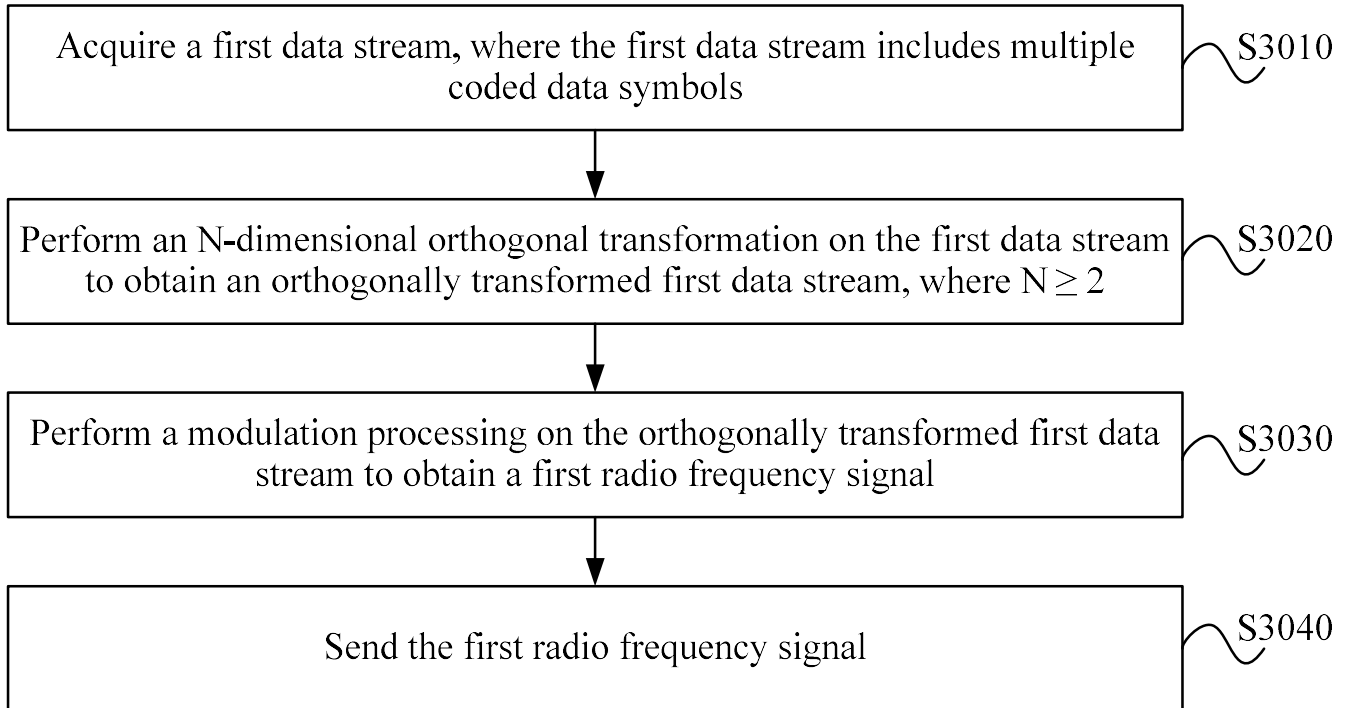


FIG. 3

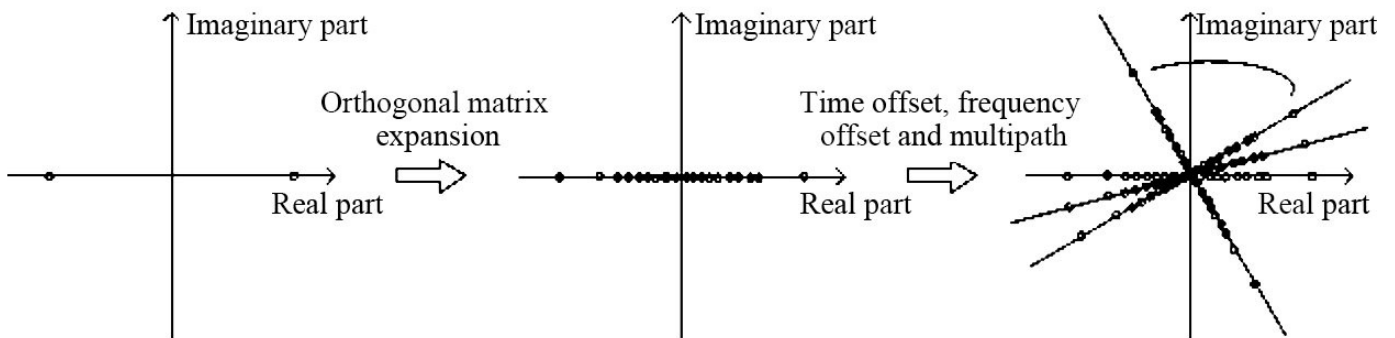


FIG. 4

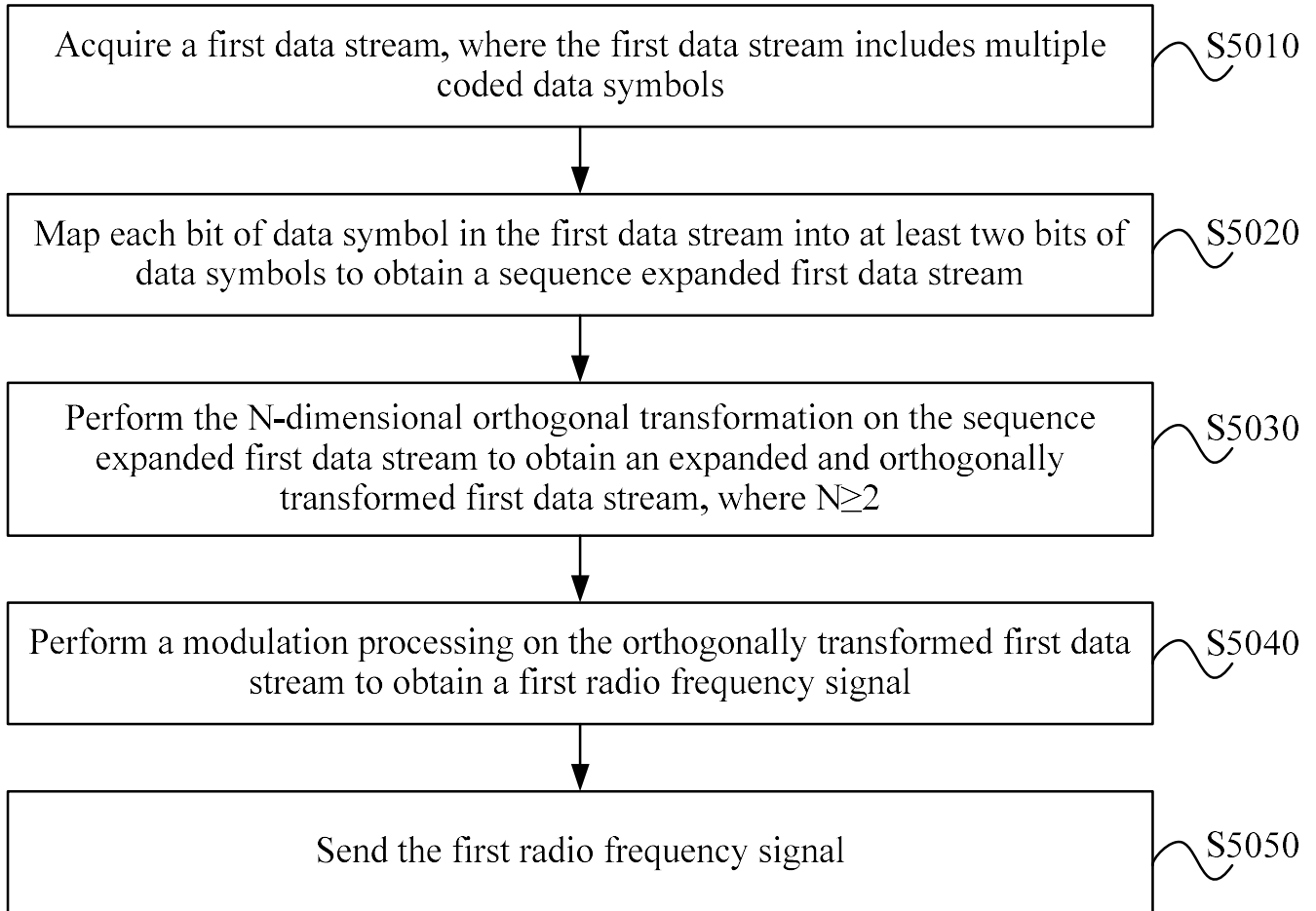
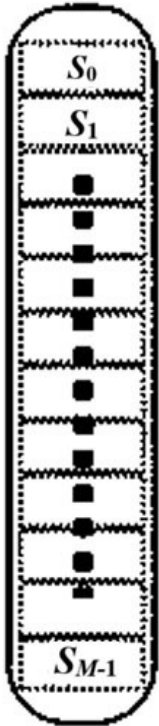


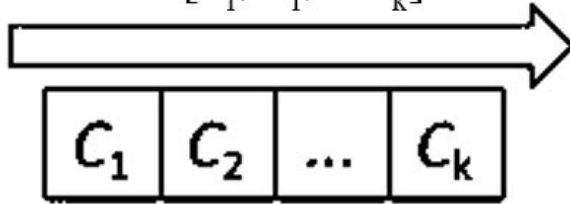
FIG. 5

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

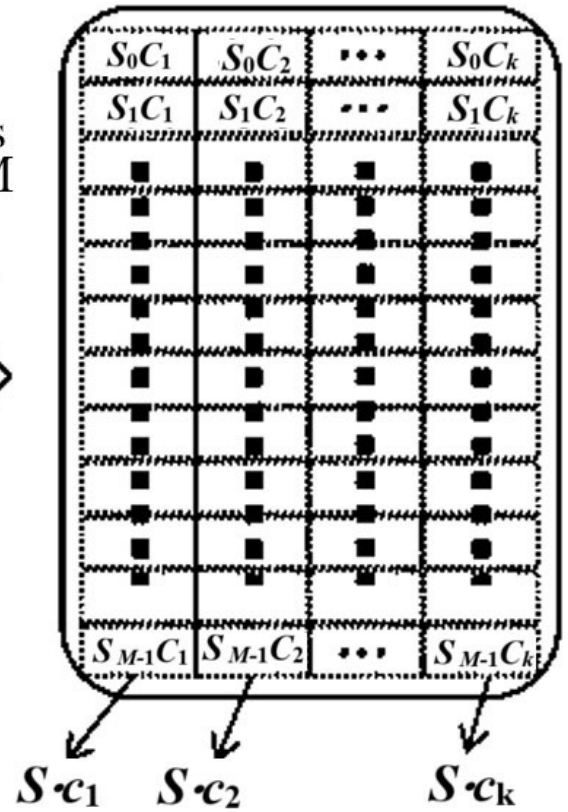


FIG. 6

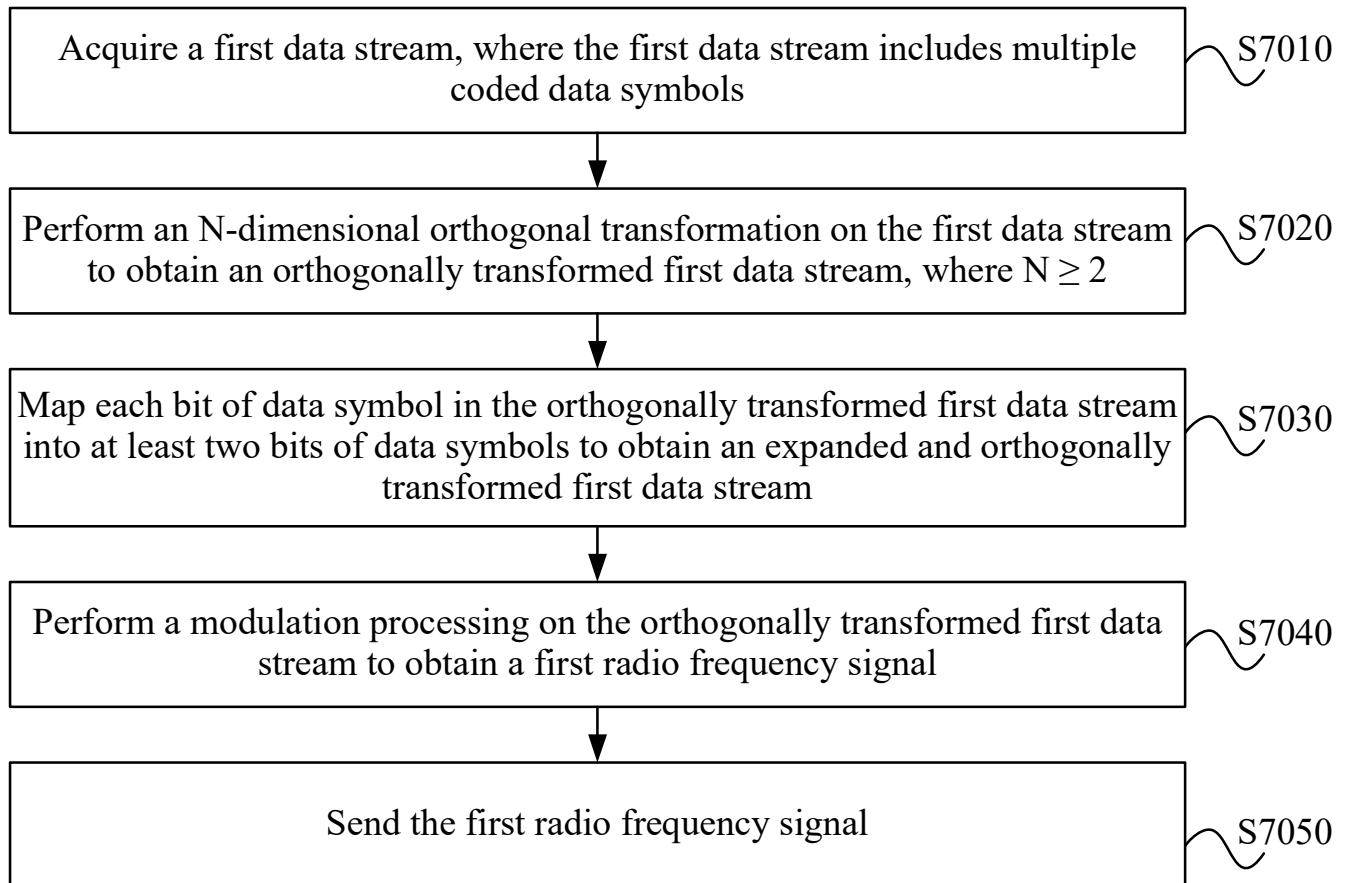


FIG. 7

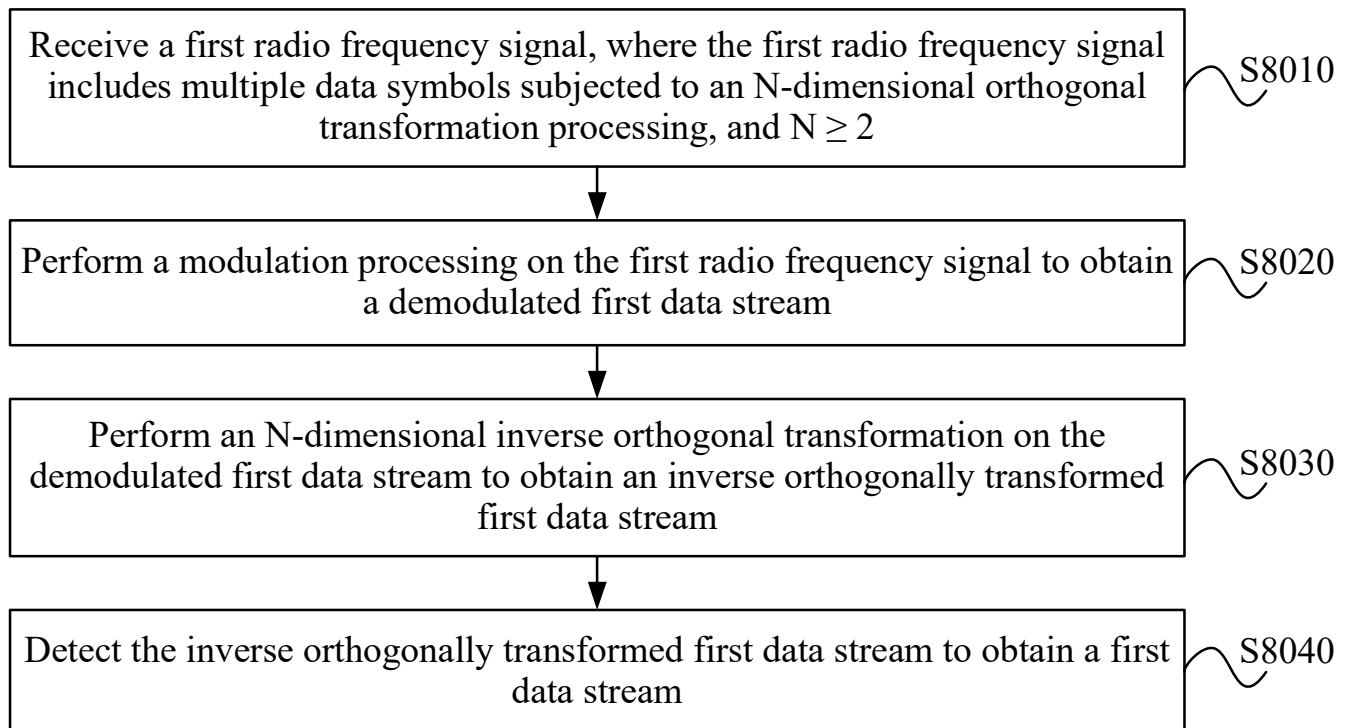
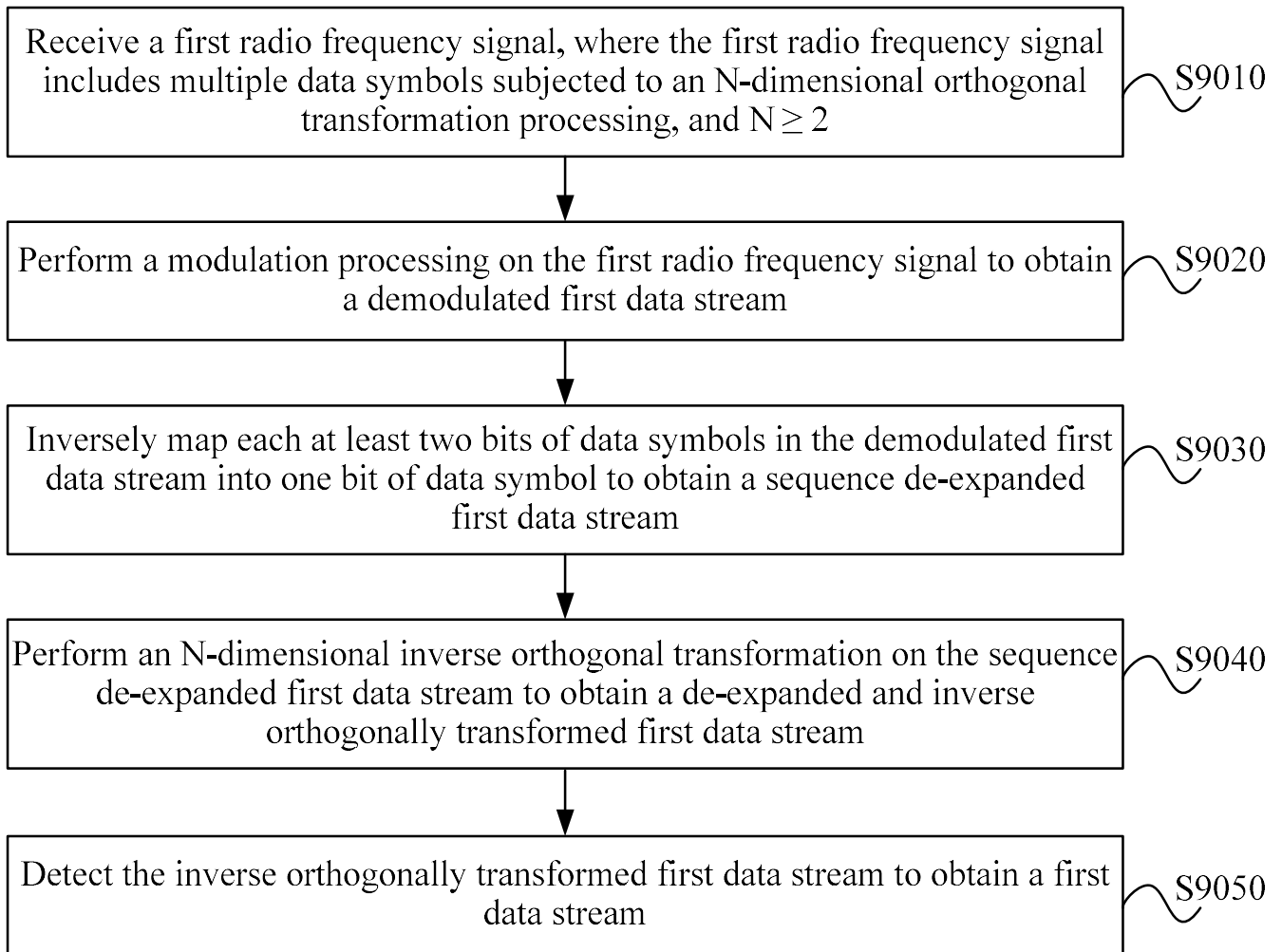


FIG. 8

**FIG. 9**

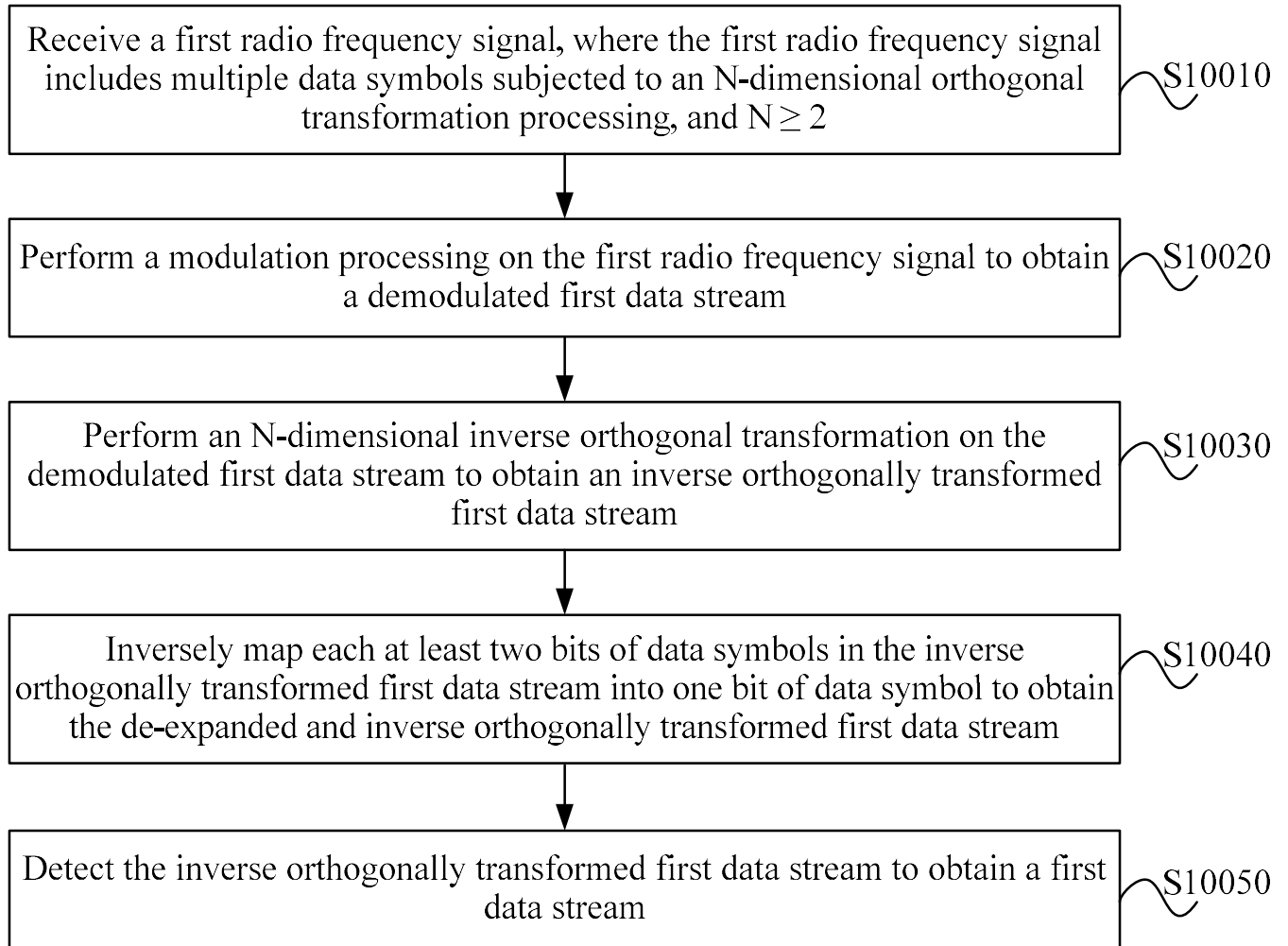


FIG. 10

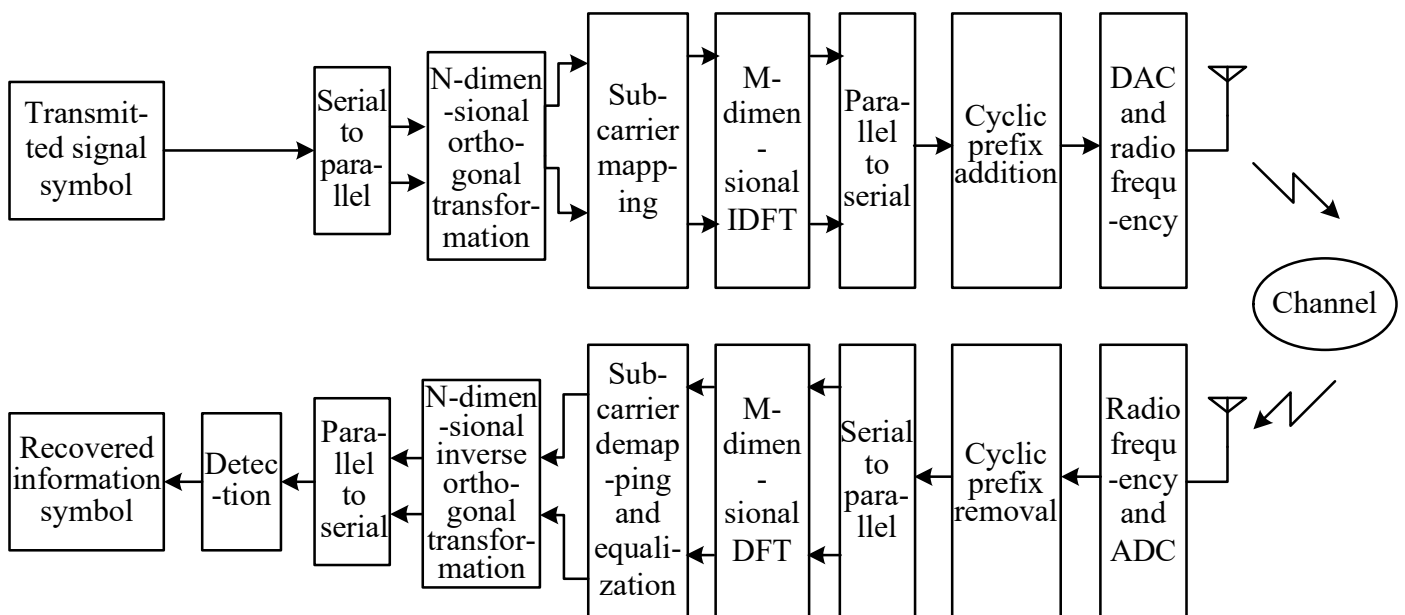


FIG. 11

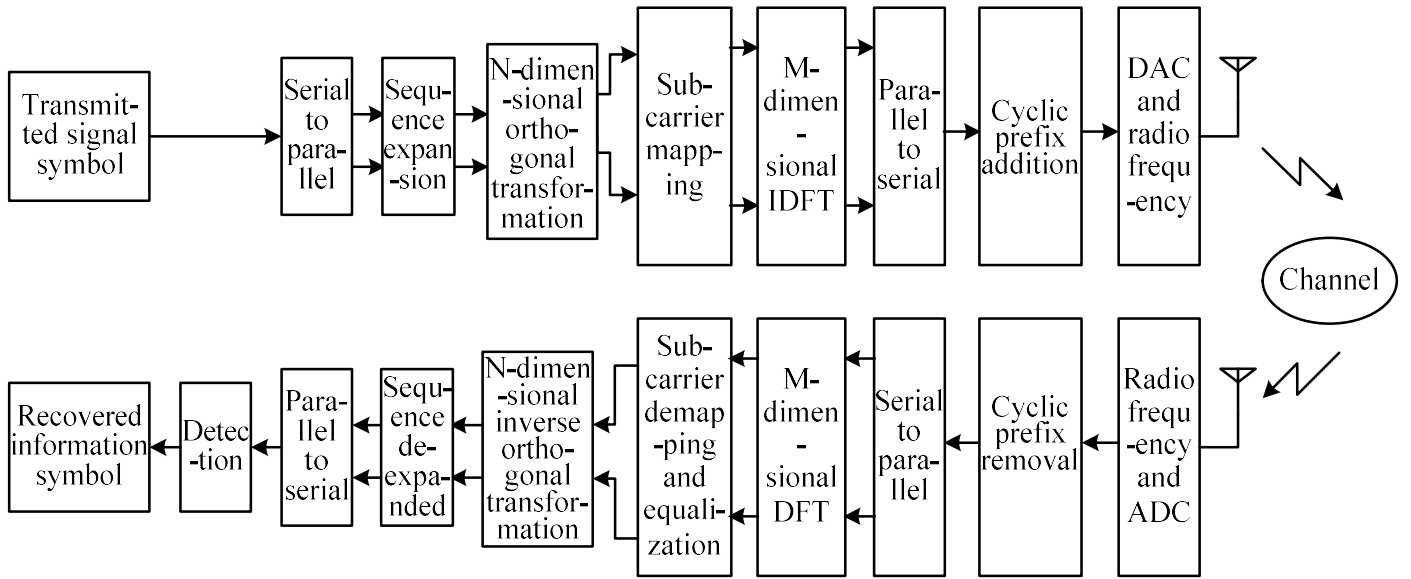


FIG. 12

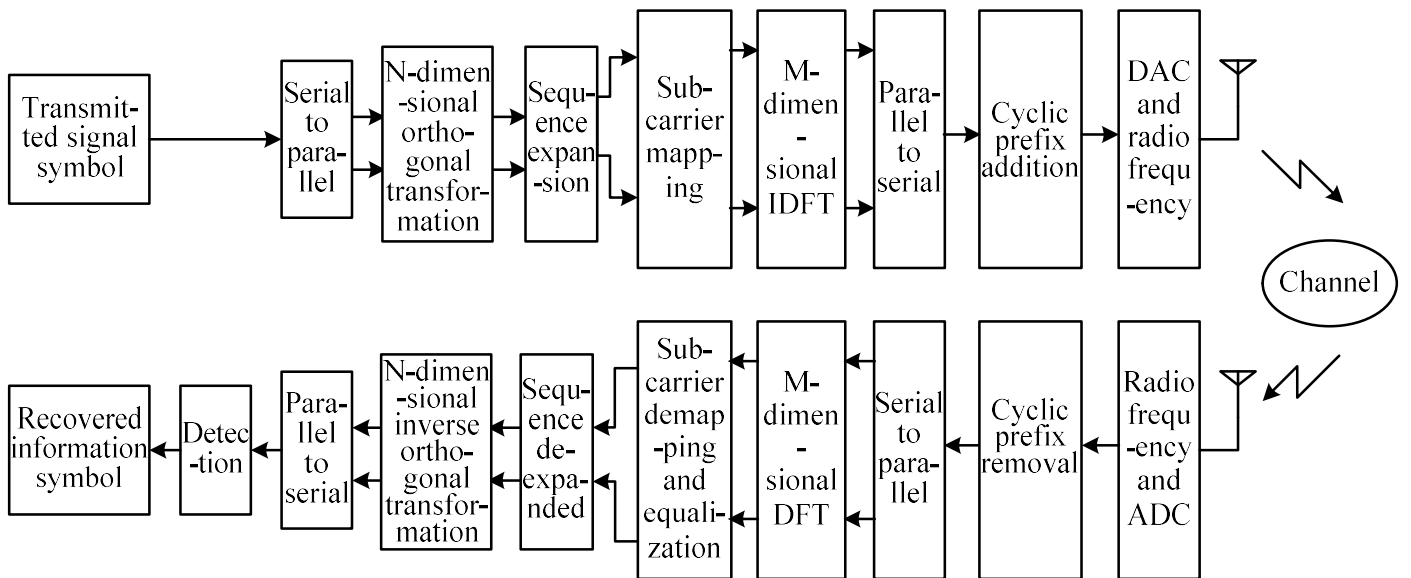


FIG. 13

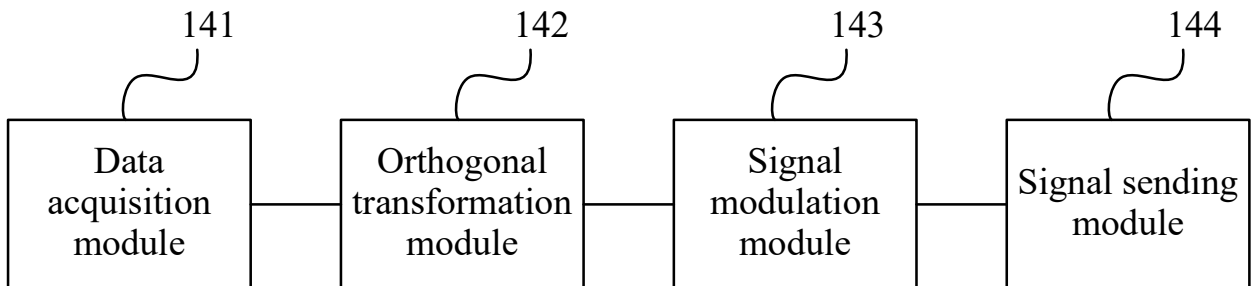


FIG. 14

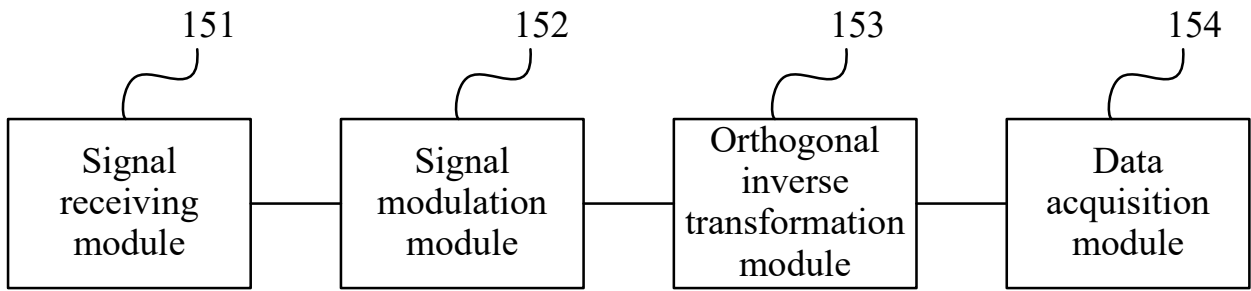


FIG. 15

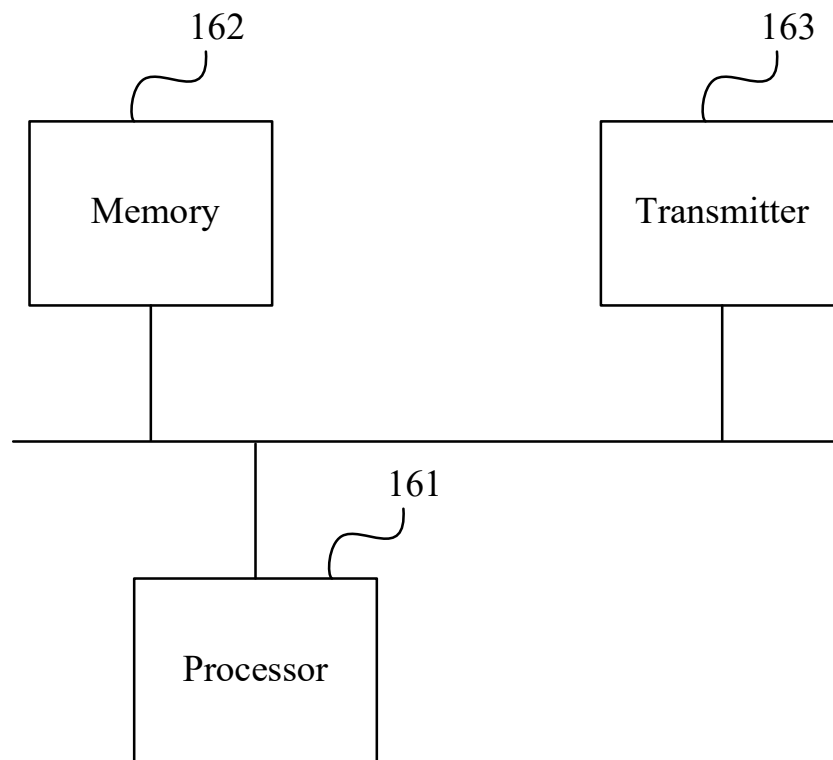


FIG. 16

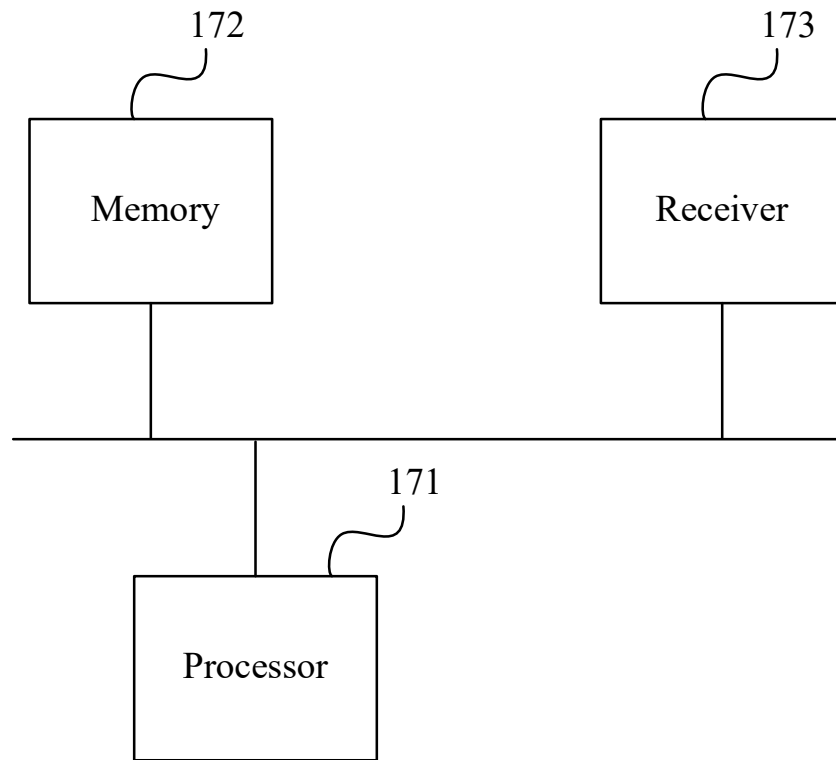


FIG. 17