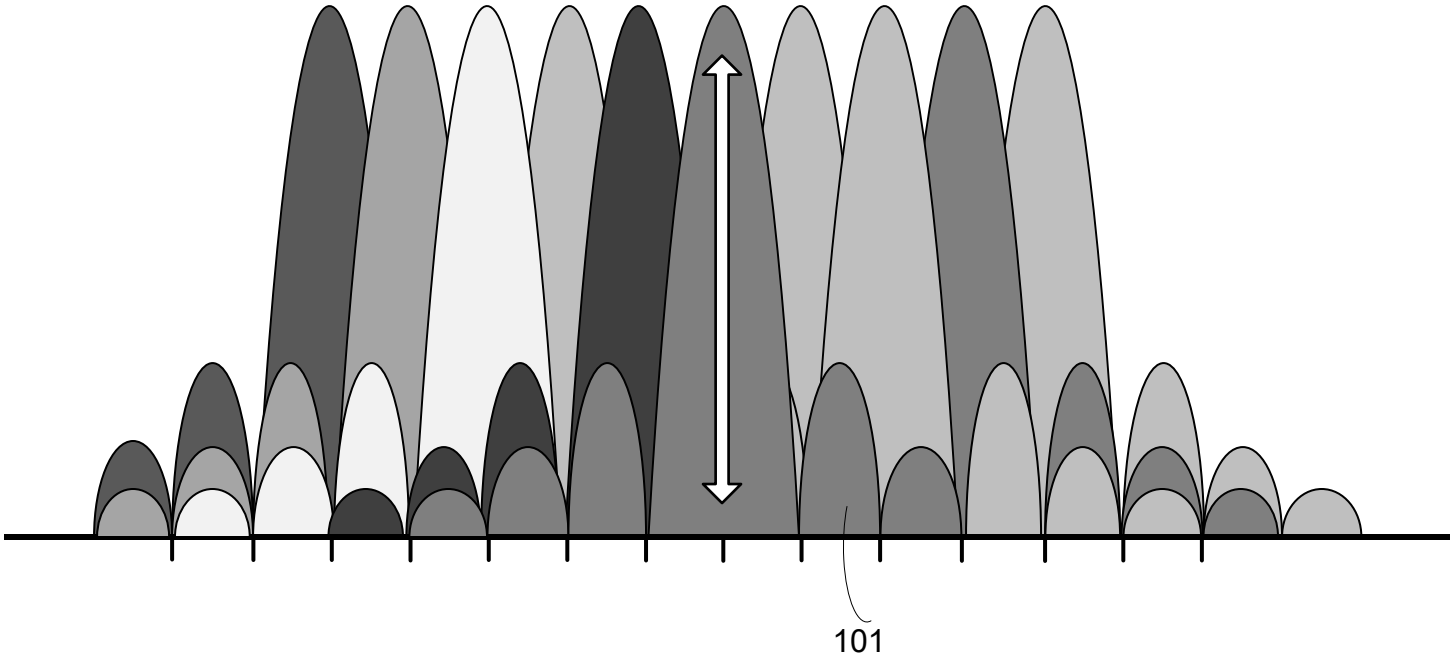


FIG. 1A

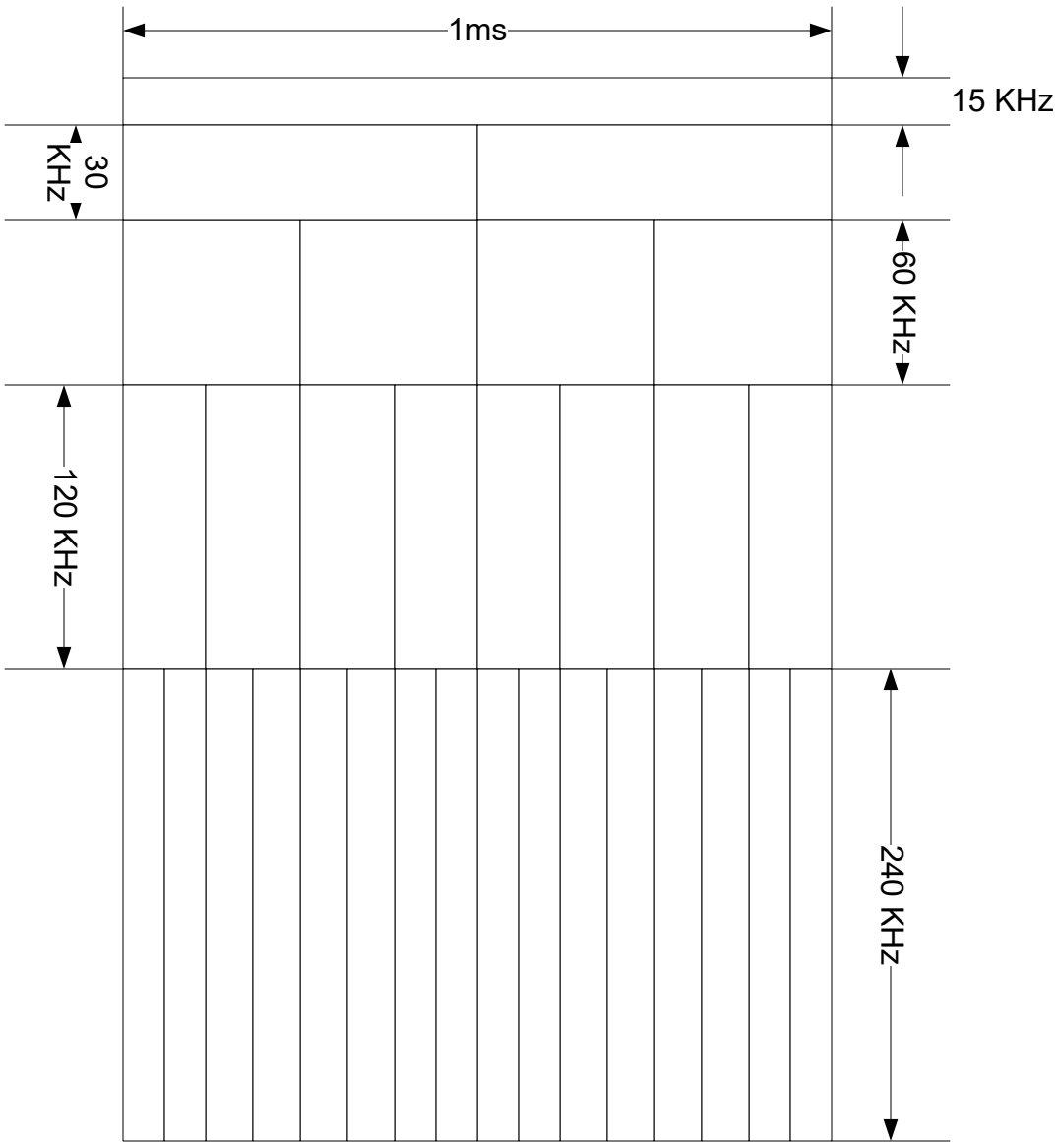


FIG. 1B

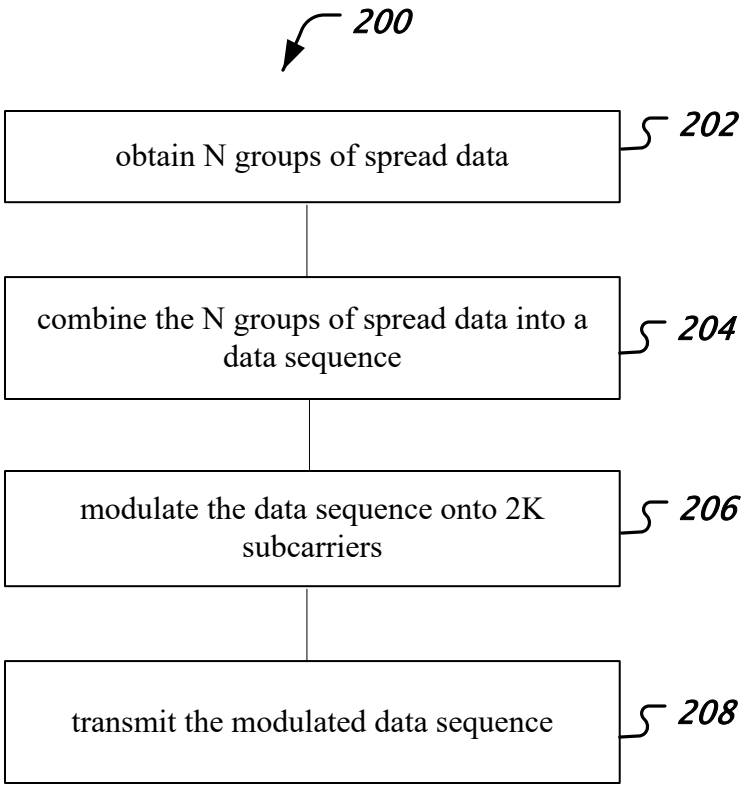

200
obtain N groups of spread data
202
combine the N groups of spread data into a data sequence
204
modulate the data sequence onto 2K subcarriers
206
transmit the modulated data sequence
208

FIG. 2A

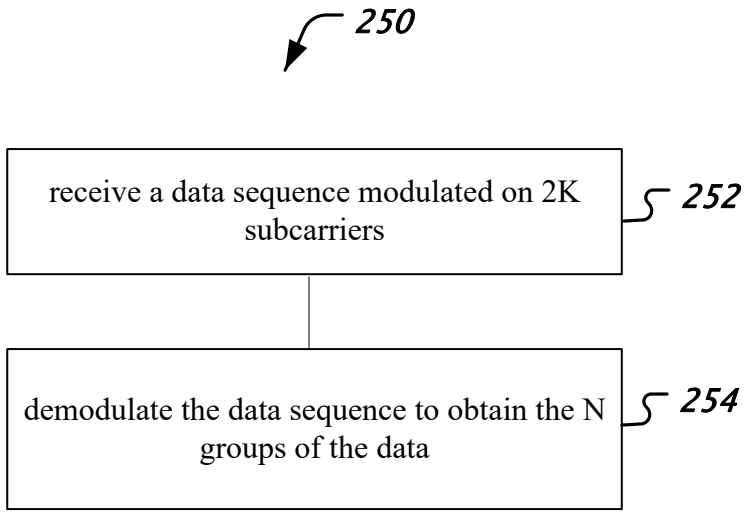

250
receive a data sequence modulated on 2K subcarriers
252
demodulate the data sequence to obtain the N groups of the data
254

FIG. 2B

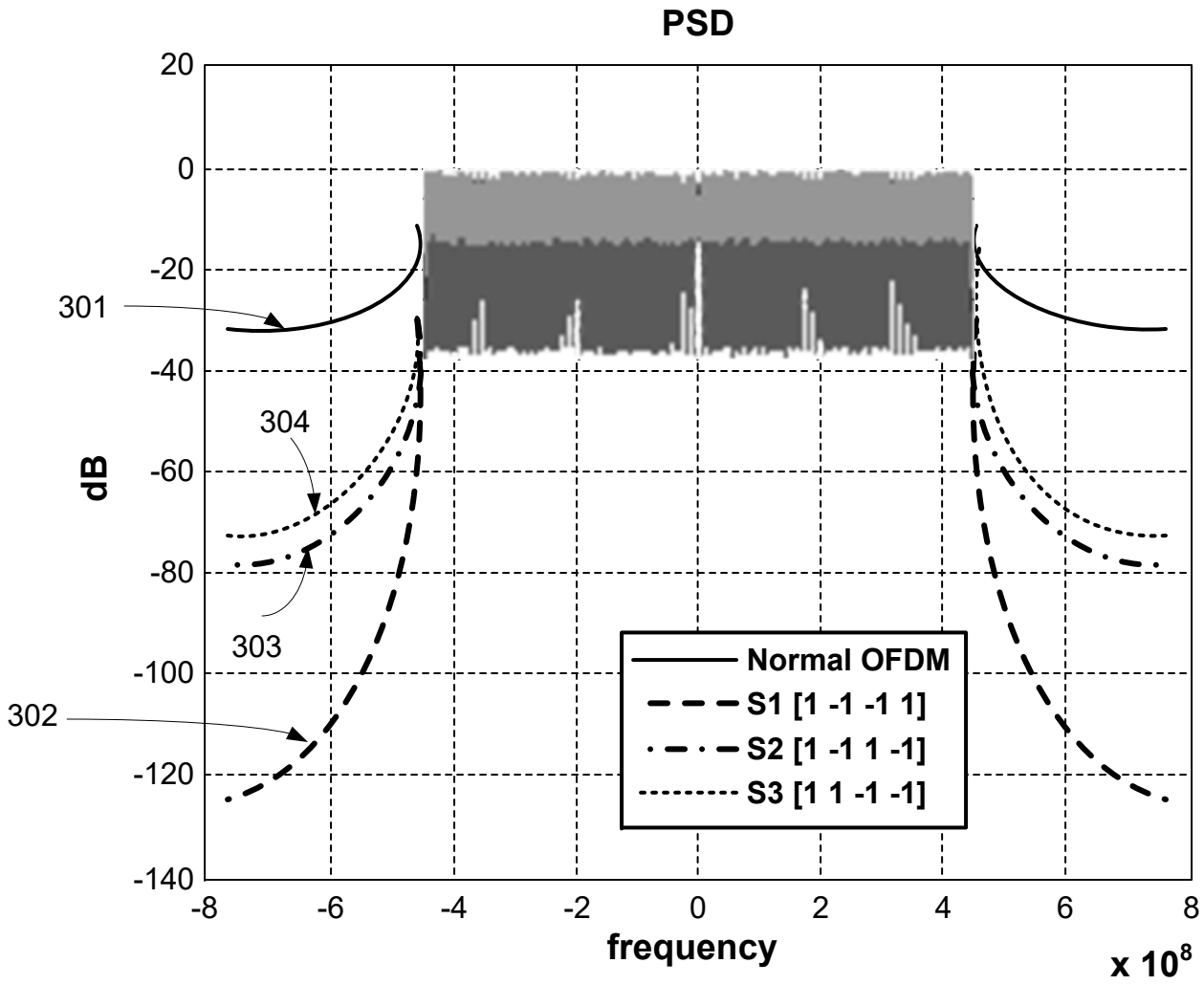

PSD
20
0
-20
-40
-60
-80
-100
-120
-140
dB
301
304
303
302
-8
-6
-4
-2
0
2
4
6
8
frequency
x 10^8
Normal OFDM
S1 [1 -1 -1 1]
S2 [1 -1 1 -1]
S3 [1 1 -1 -1]

FIG. 3A

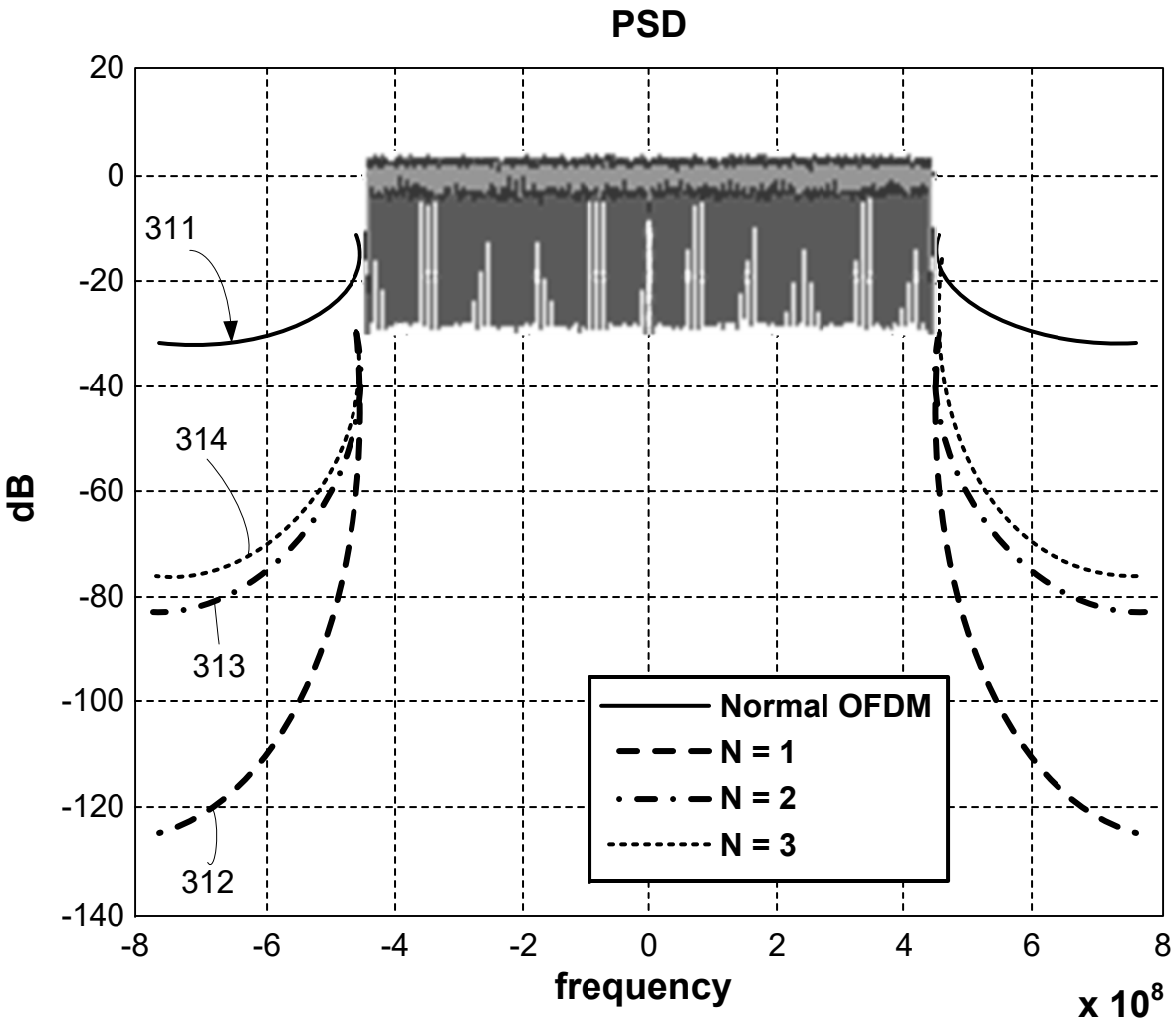

PSD
20
0
-20
-40
-60
-80
-100
-120
-140
dB
311
314
313
312
-8
-6
-4
-2
0
2
4
6
8
frequency
x 10^8
Normal OFDM
N = 1
N = 2
N = 3

FIG. 3B

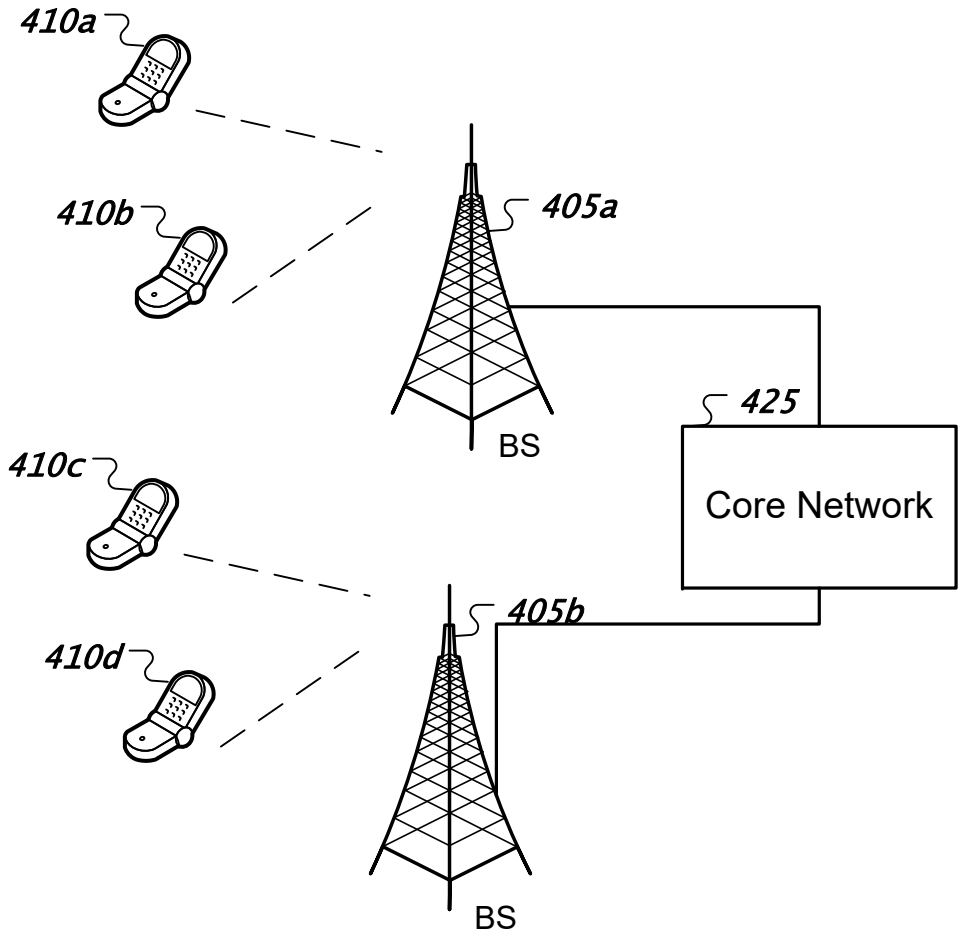


FIG. 4

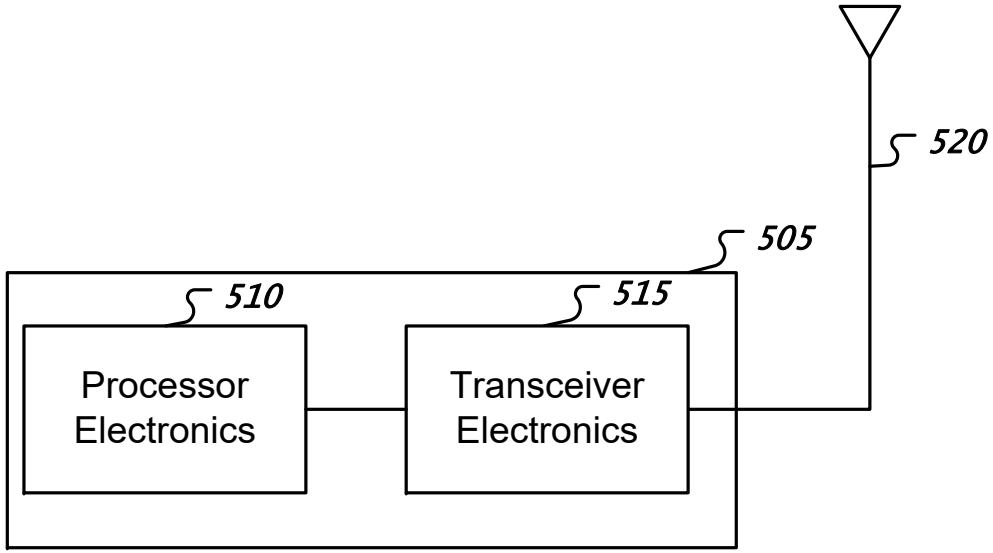

520
505
510
515
Processor Electronics
Transceiver Electronics

FIG. 5