

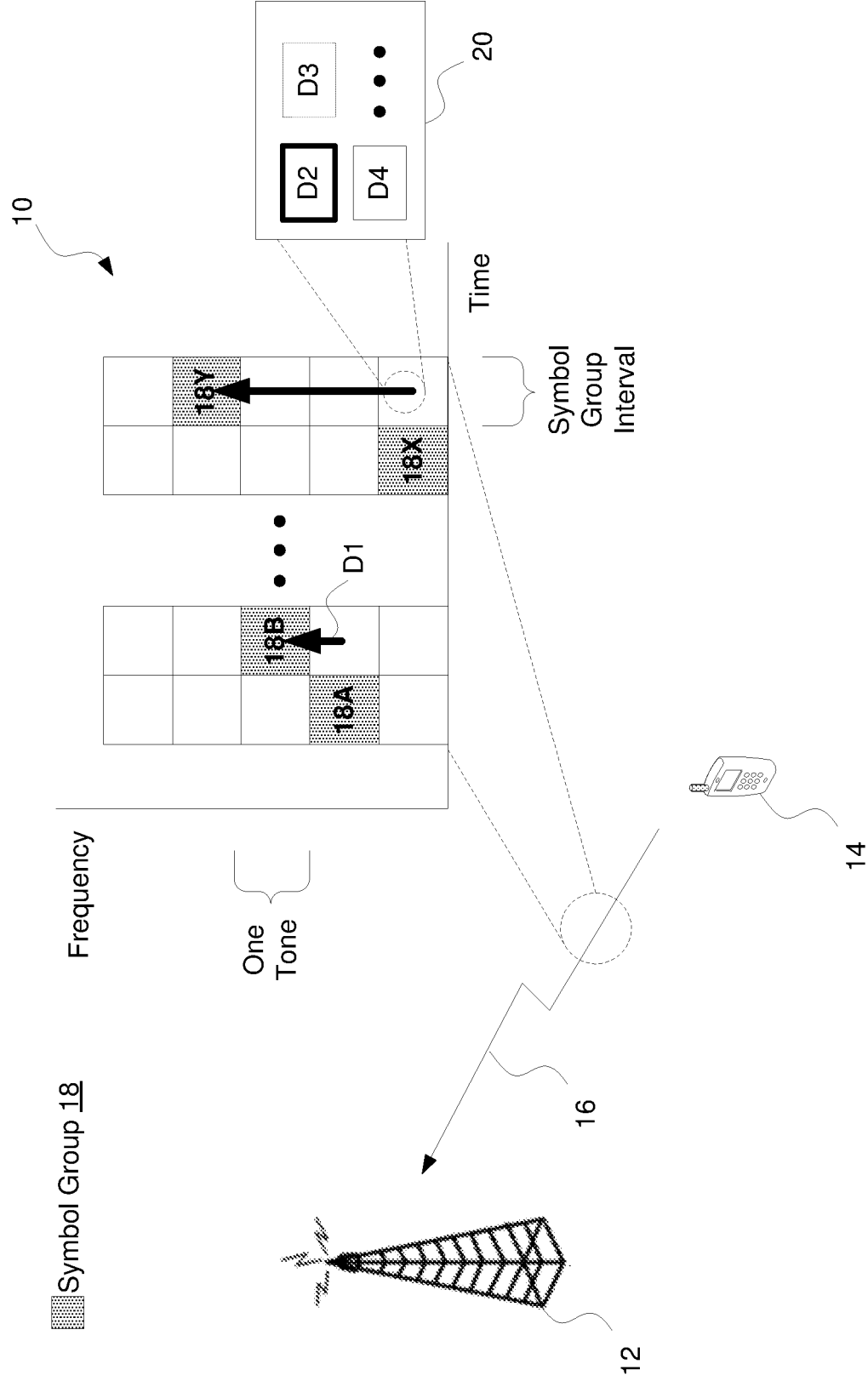


FIG. 1

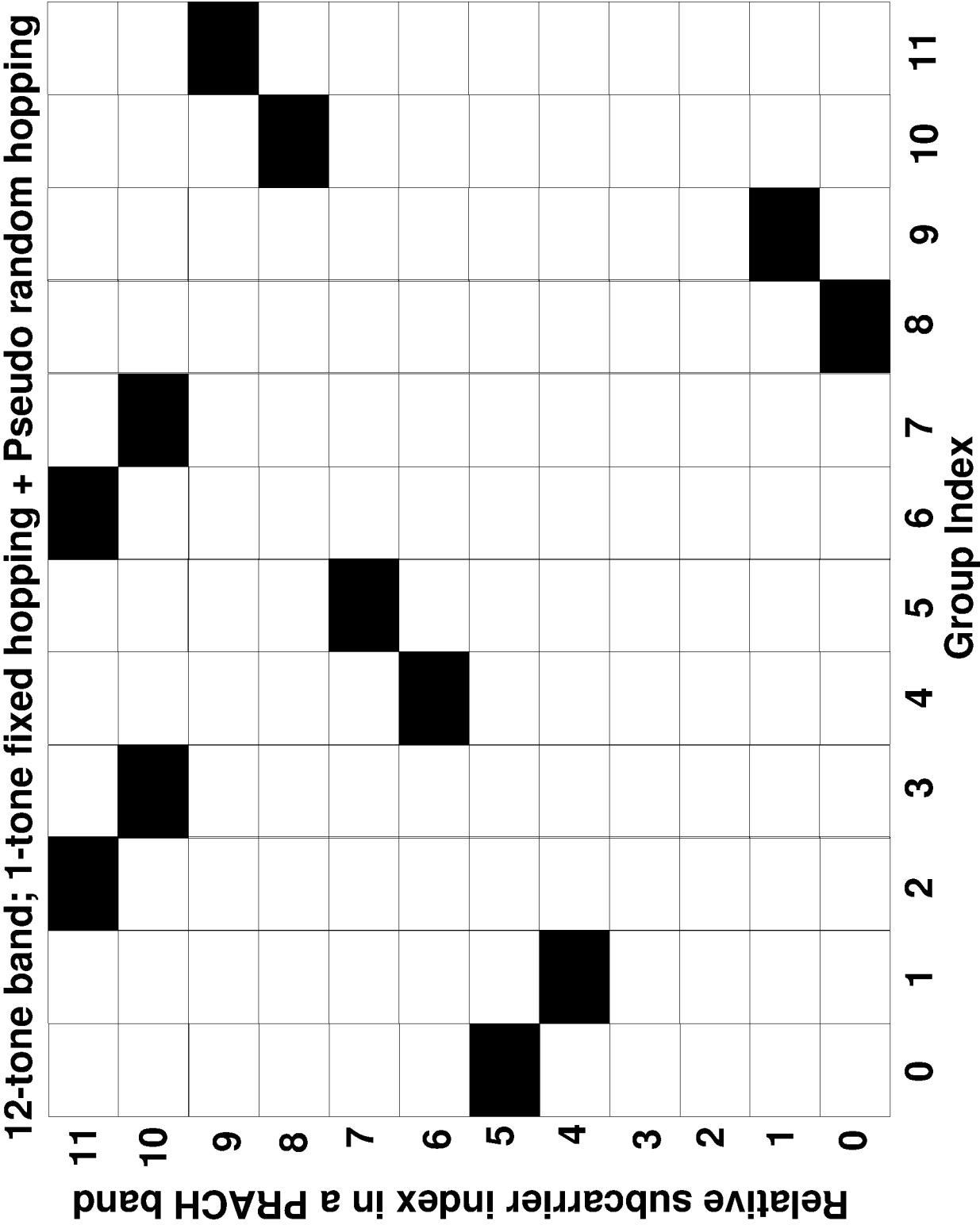


FIG. 2

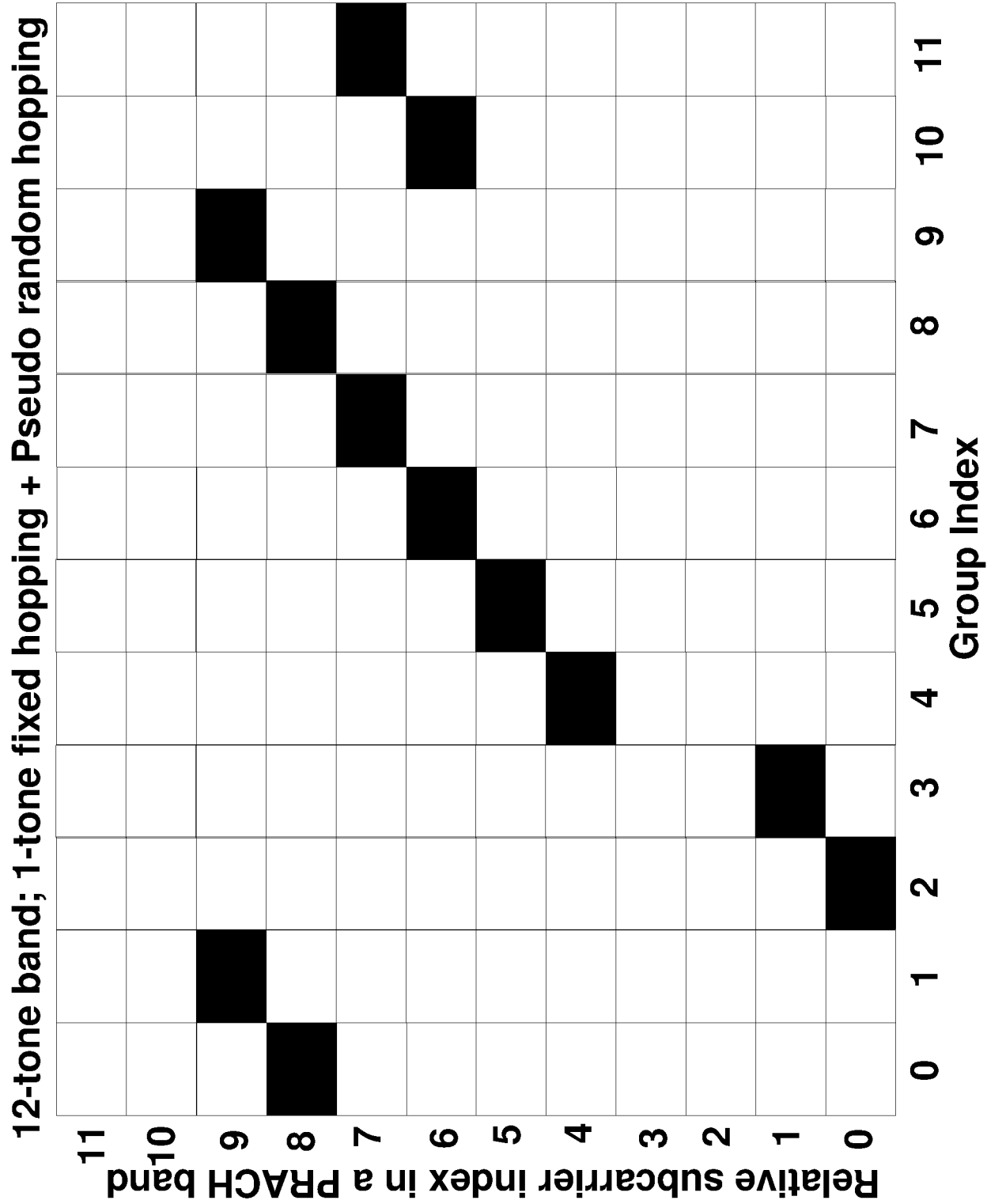


FIG. 3

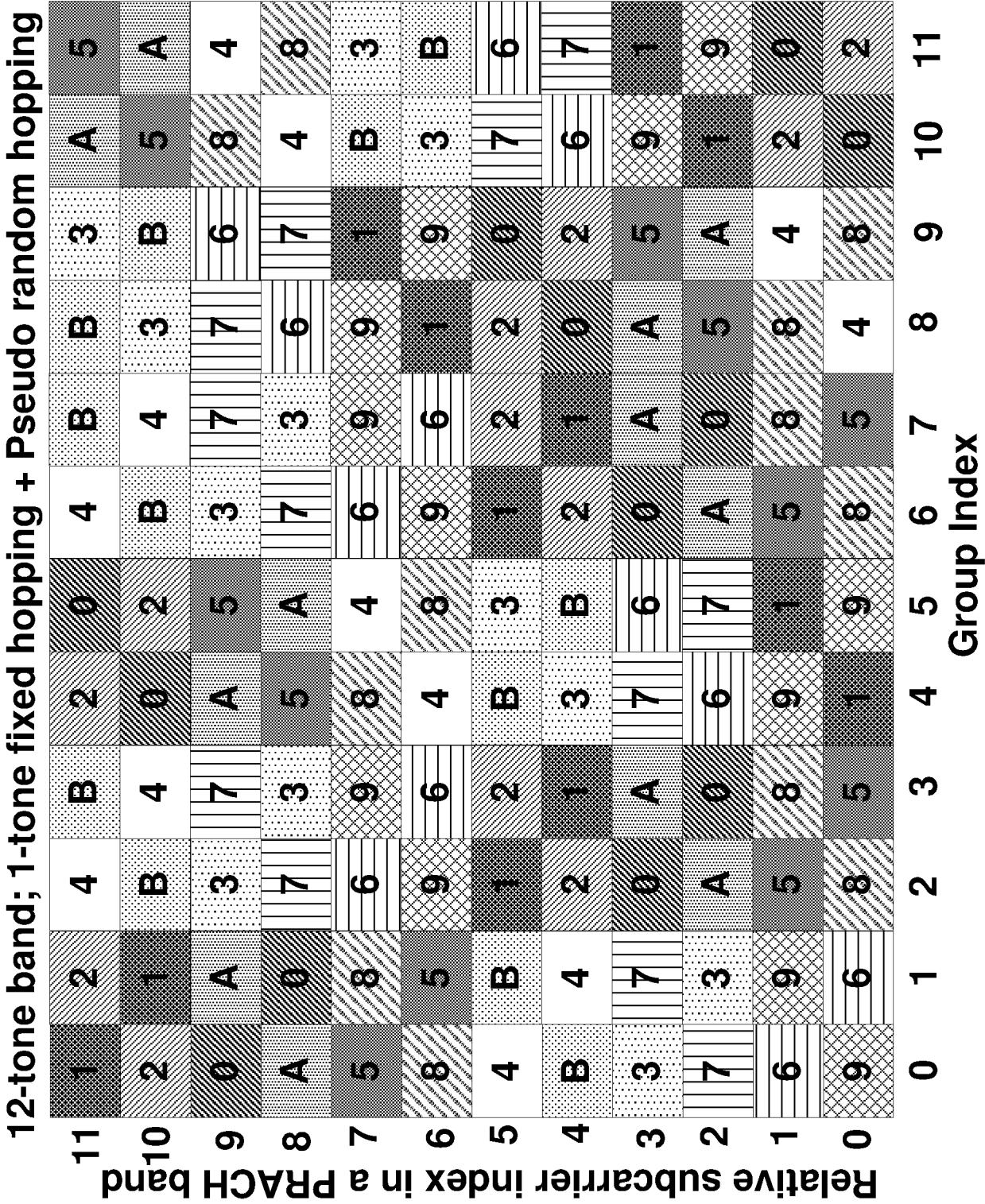


FIG. 4

12-tone band; 1-tone fixed hopping + Pseudo random hopping

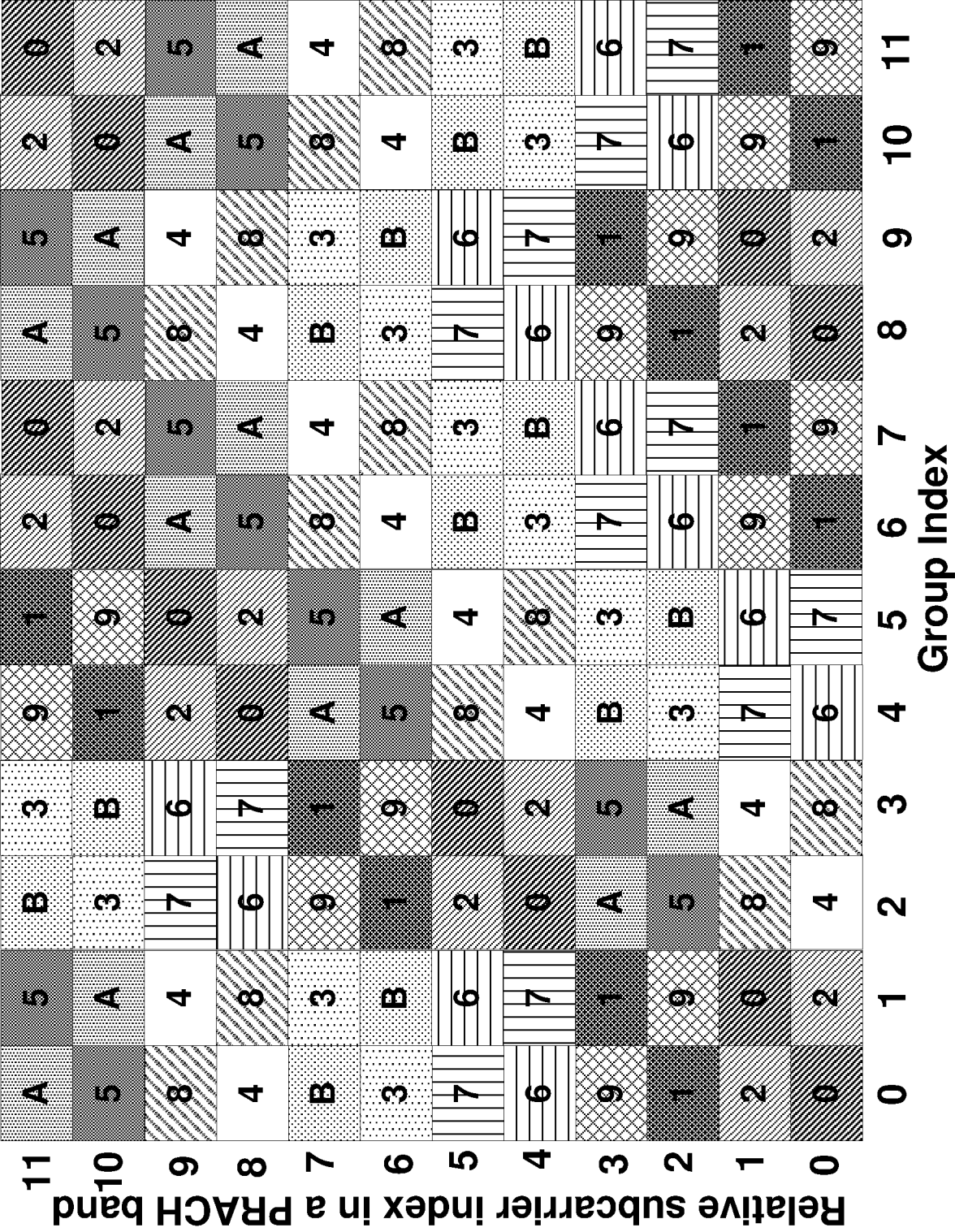


FIG. 5

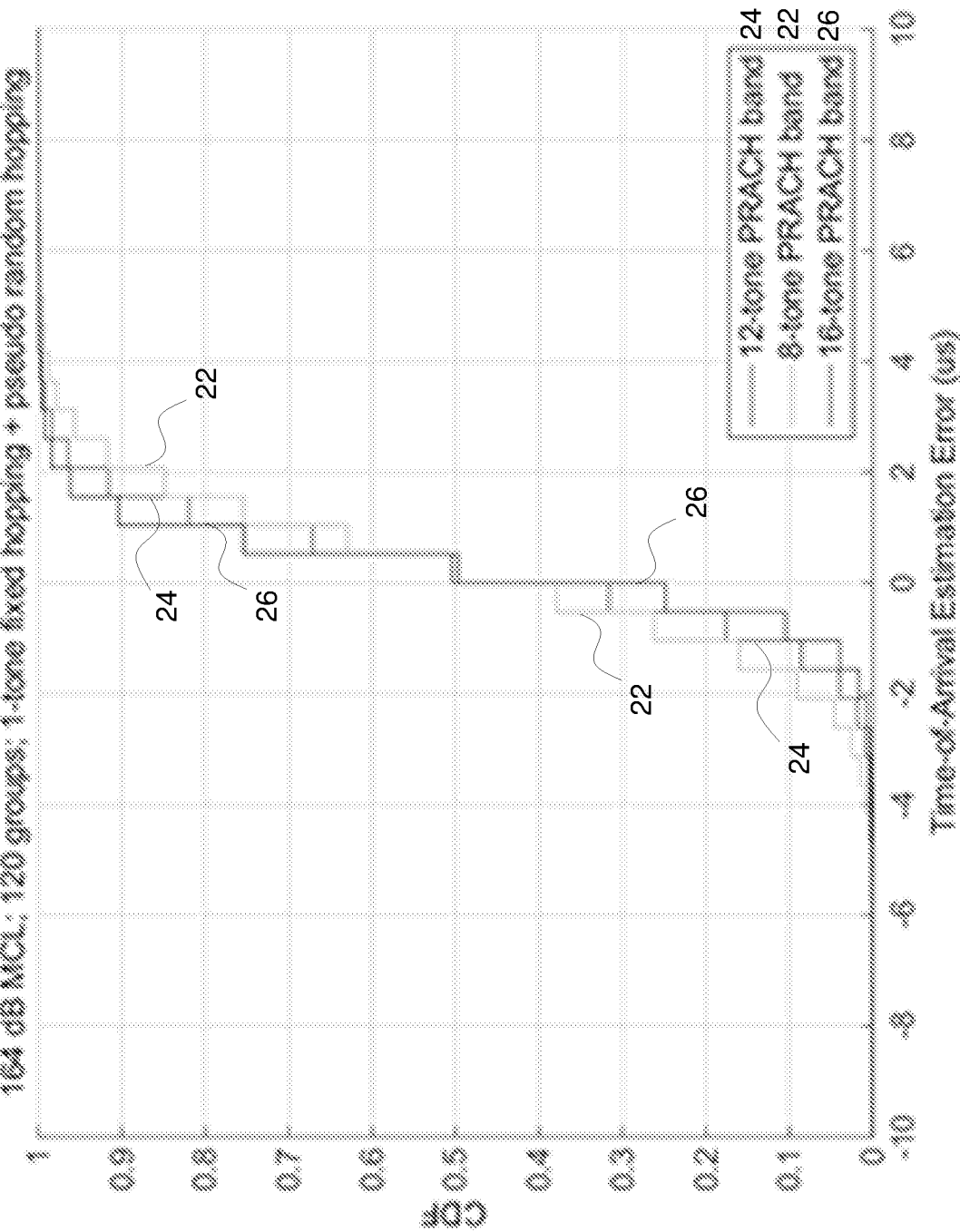


FIG. 6

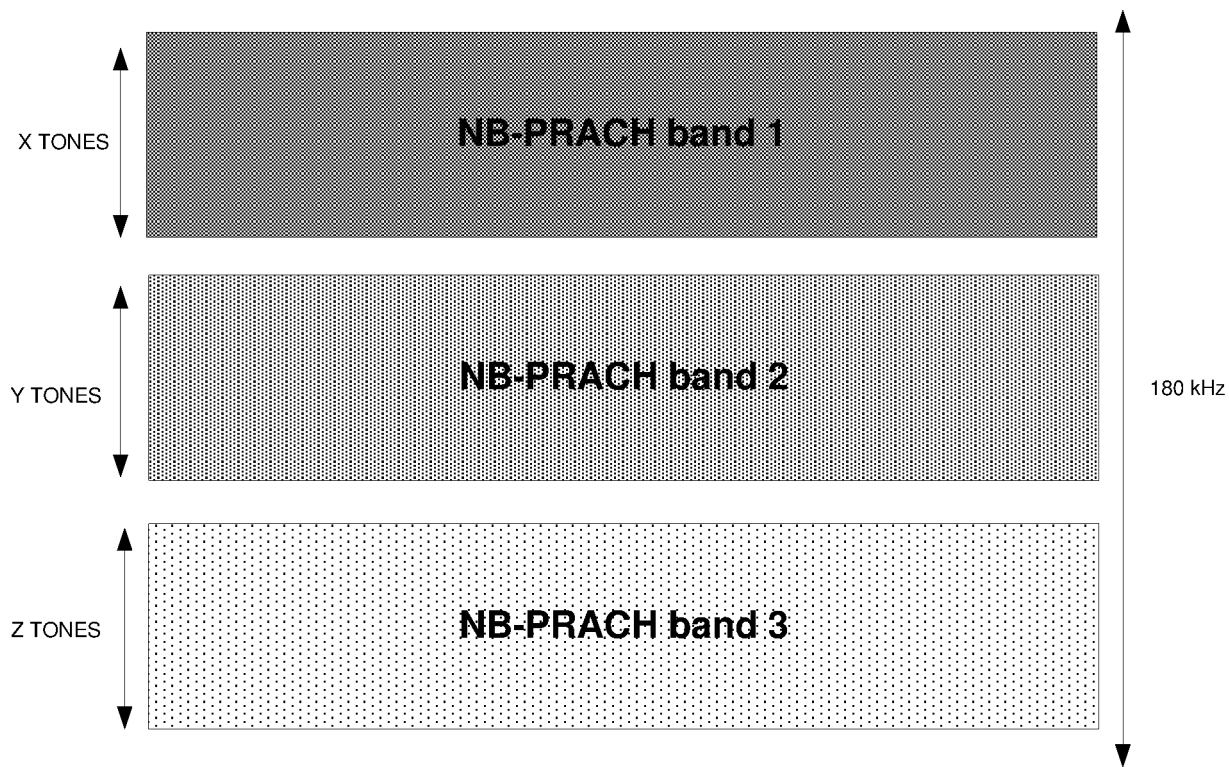


FIG. 7

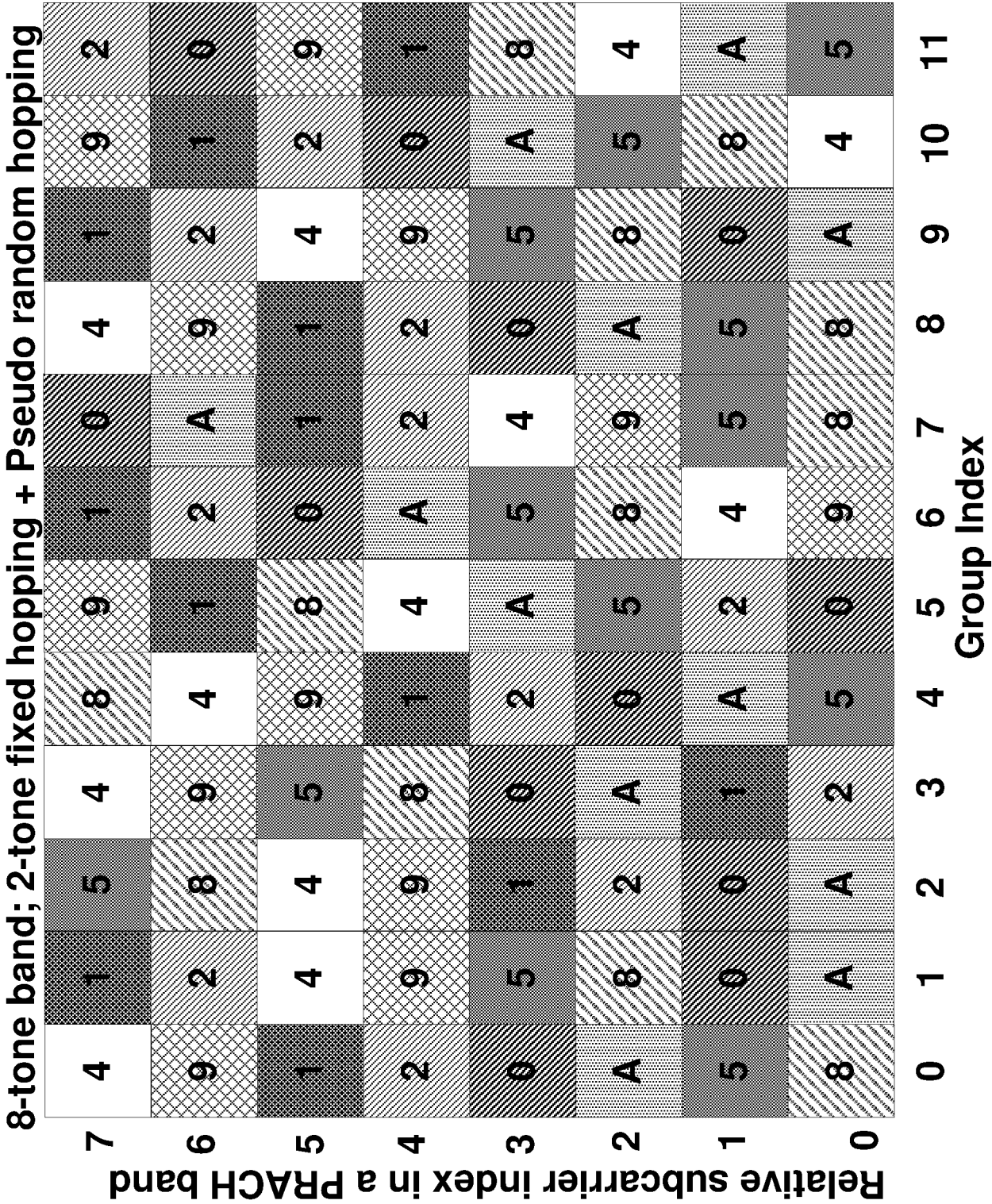


FIG. 8

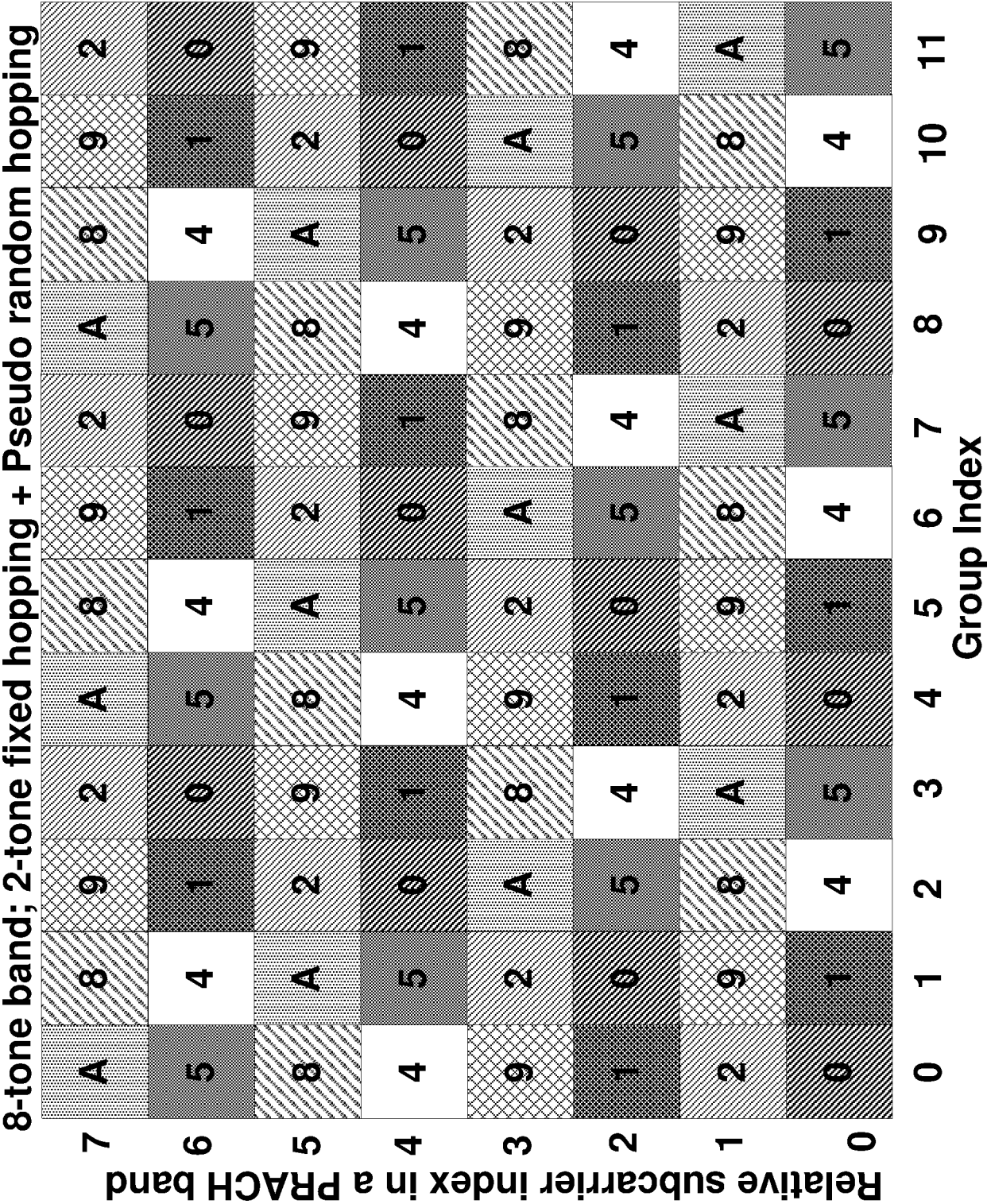
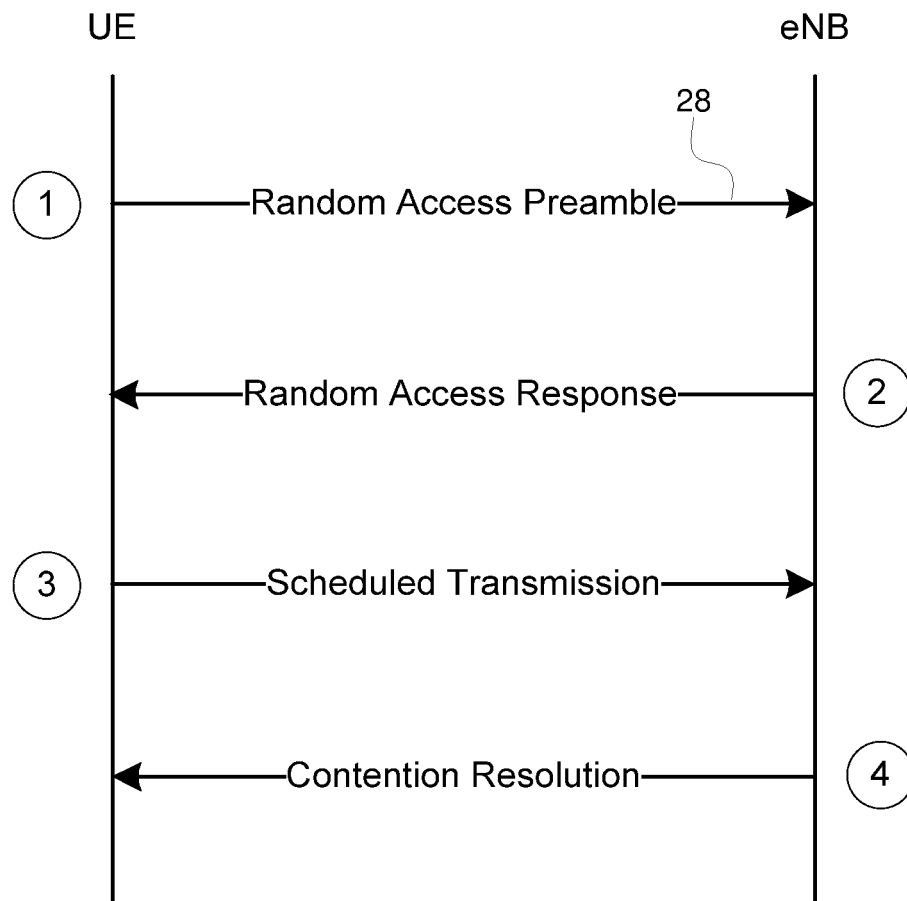


FIG. 9

*FIG. 10*

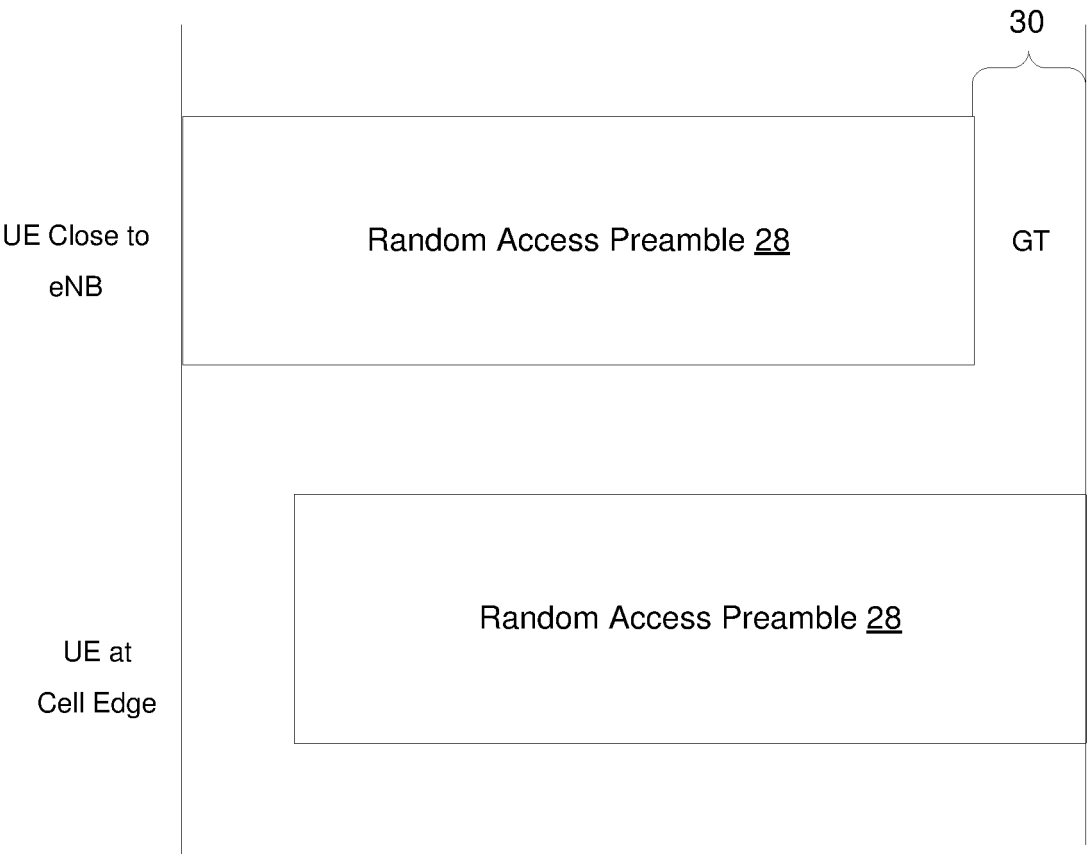
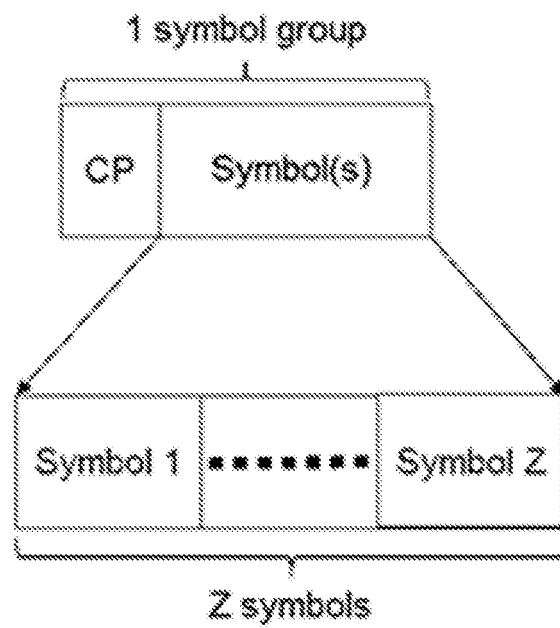
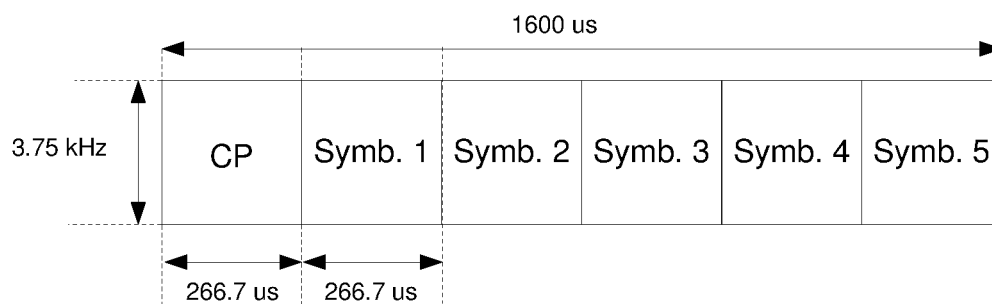


FIG. 11

*FIG. 12**FIG. 13*

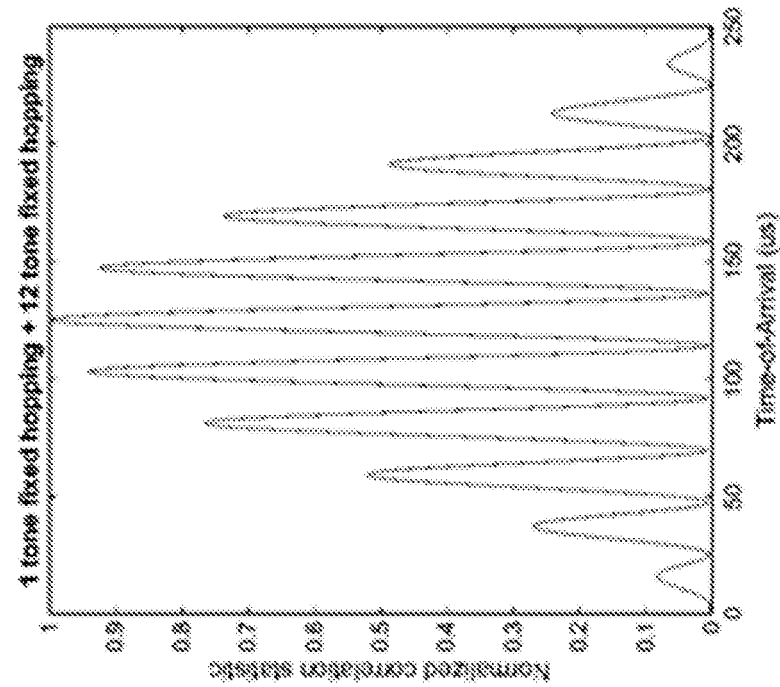


FIG. 14A

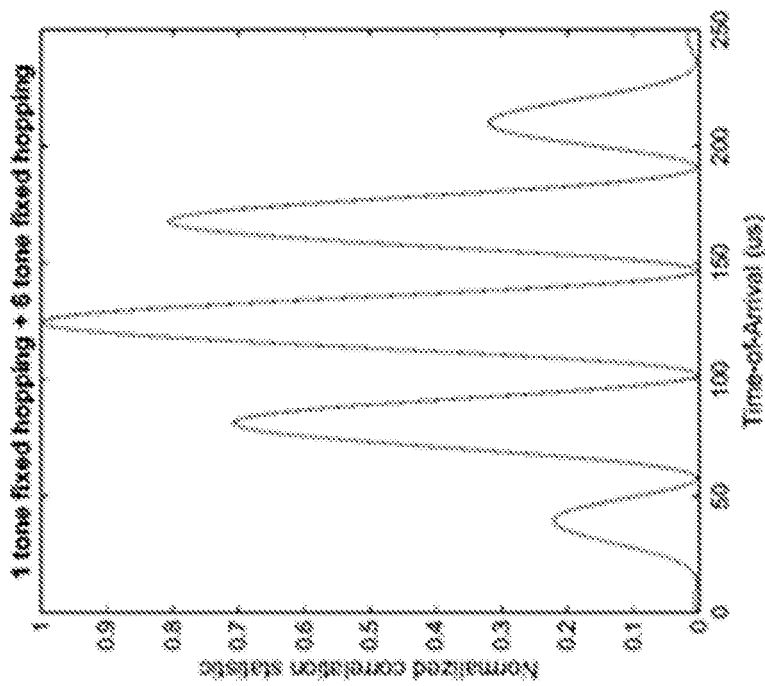


FIG. 14B

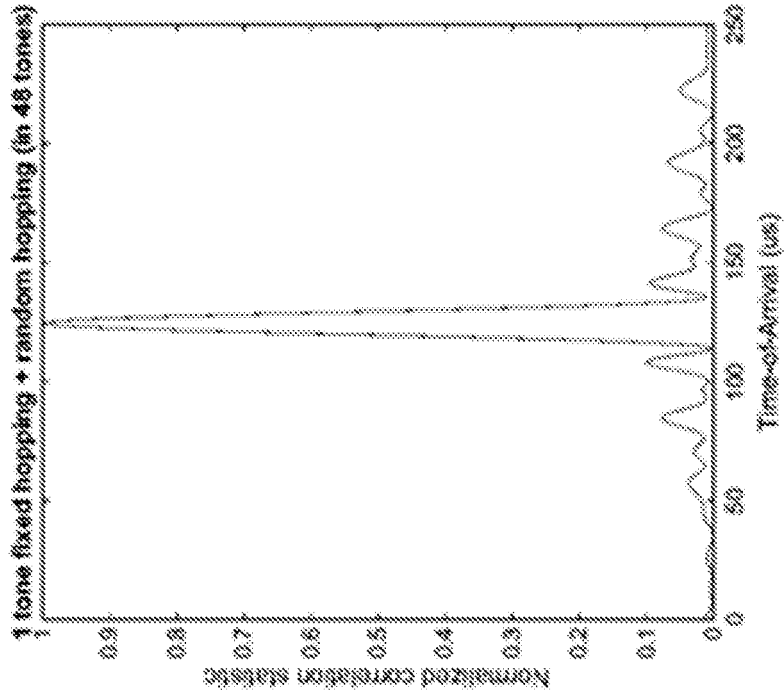


FIG. 14D

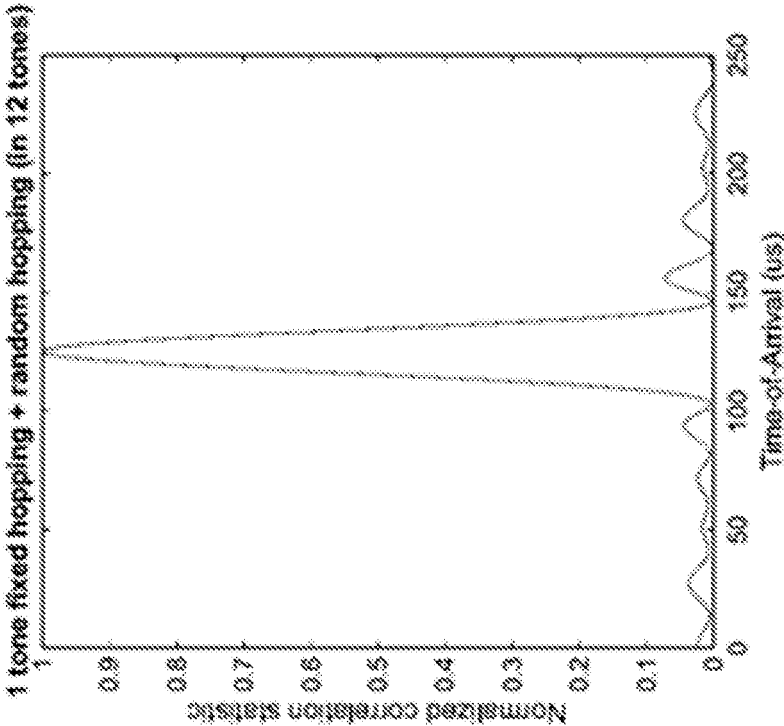


FIG. 14C

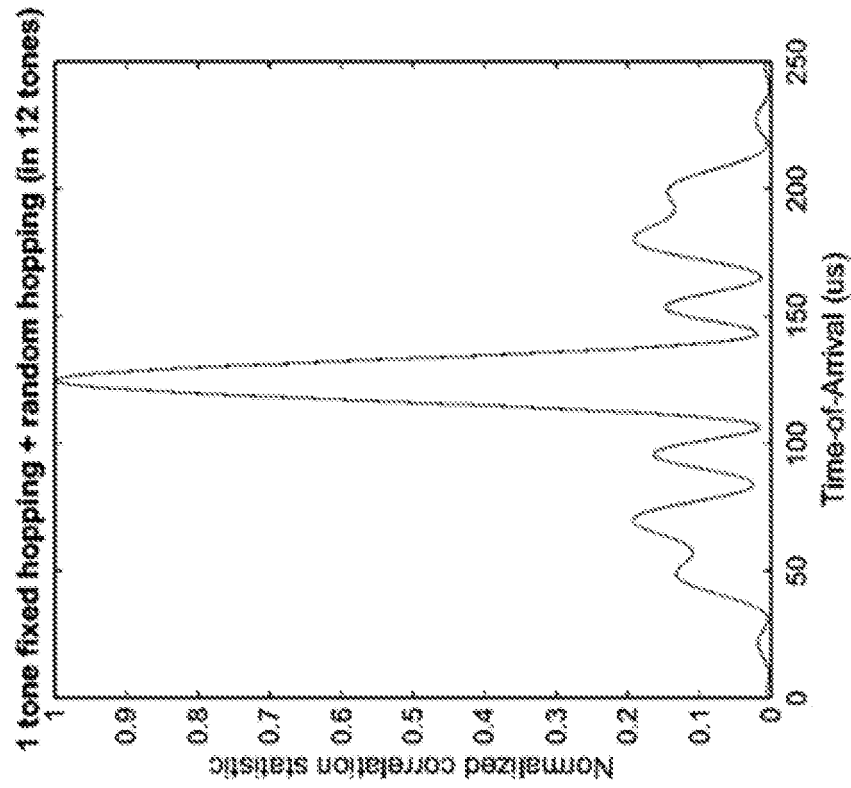


FIG. 15B

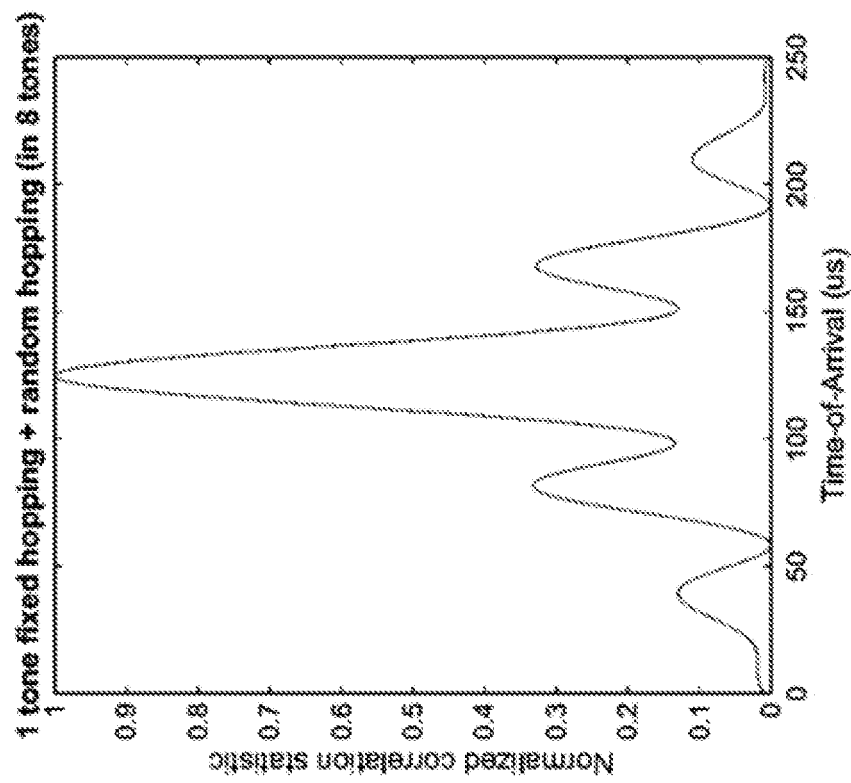


FIG. 15A

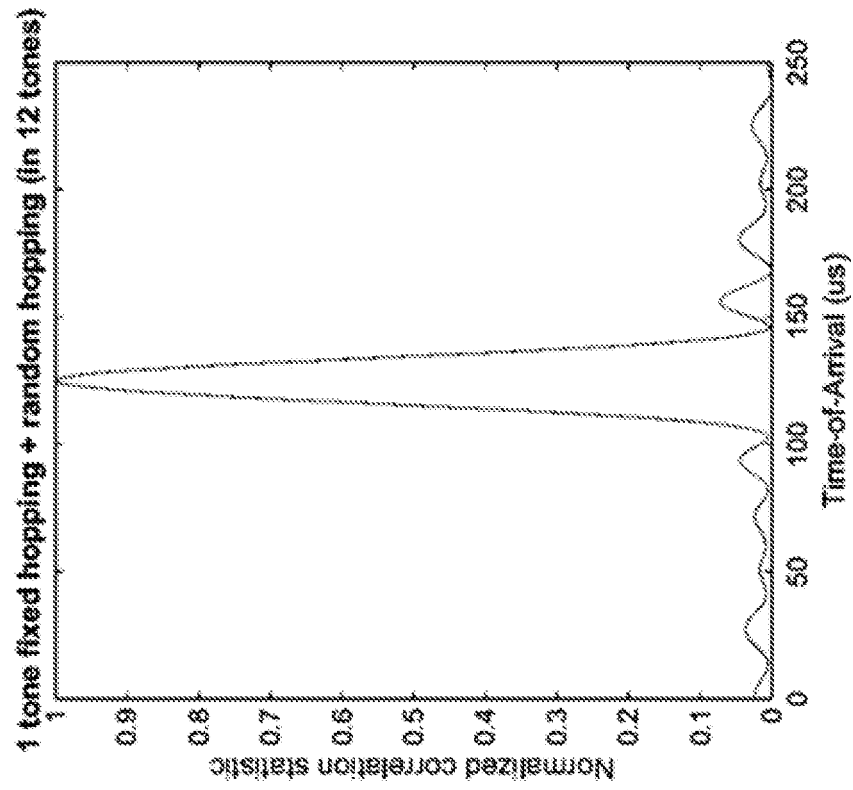


FIG. 15D

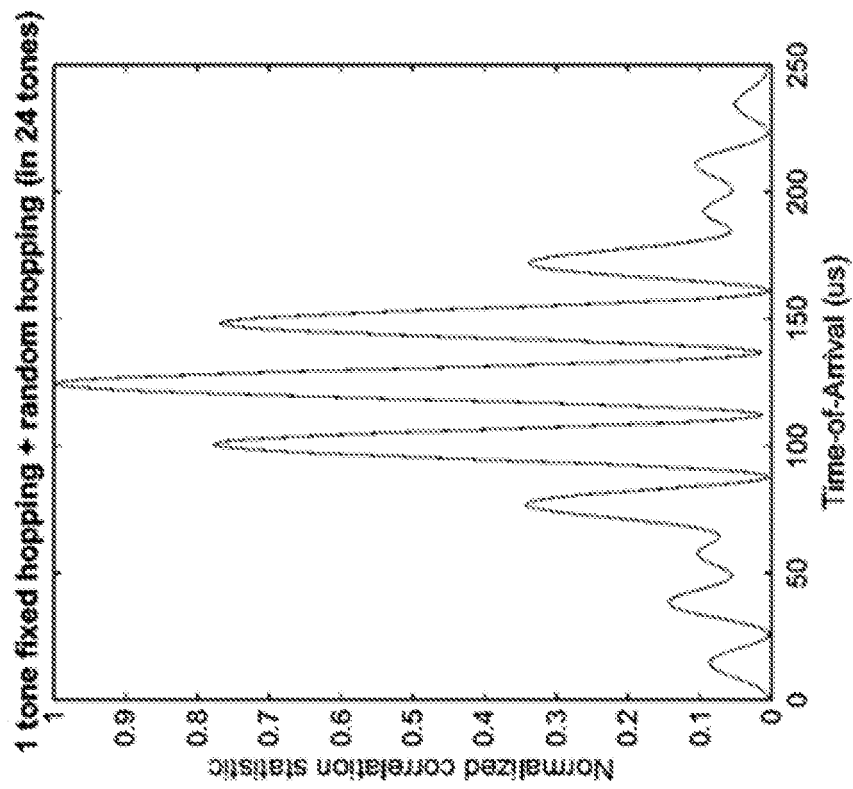


FIG. 15C

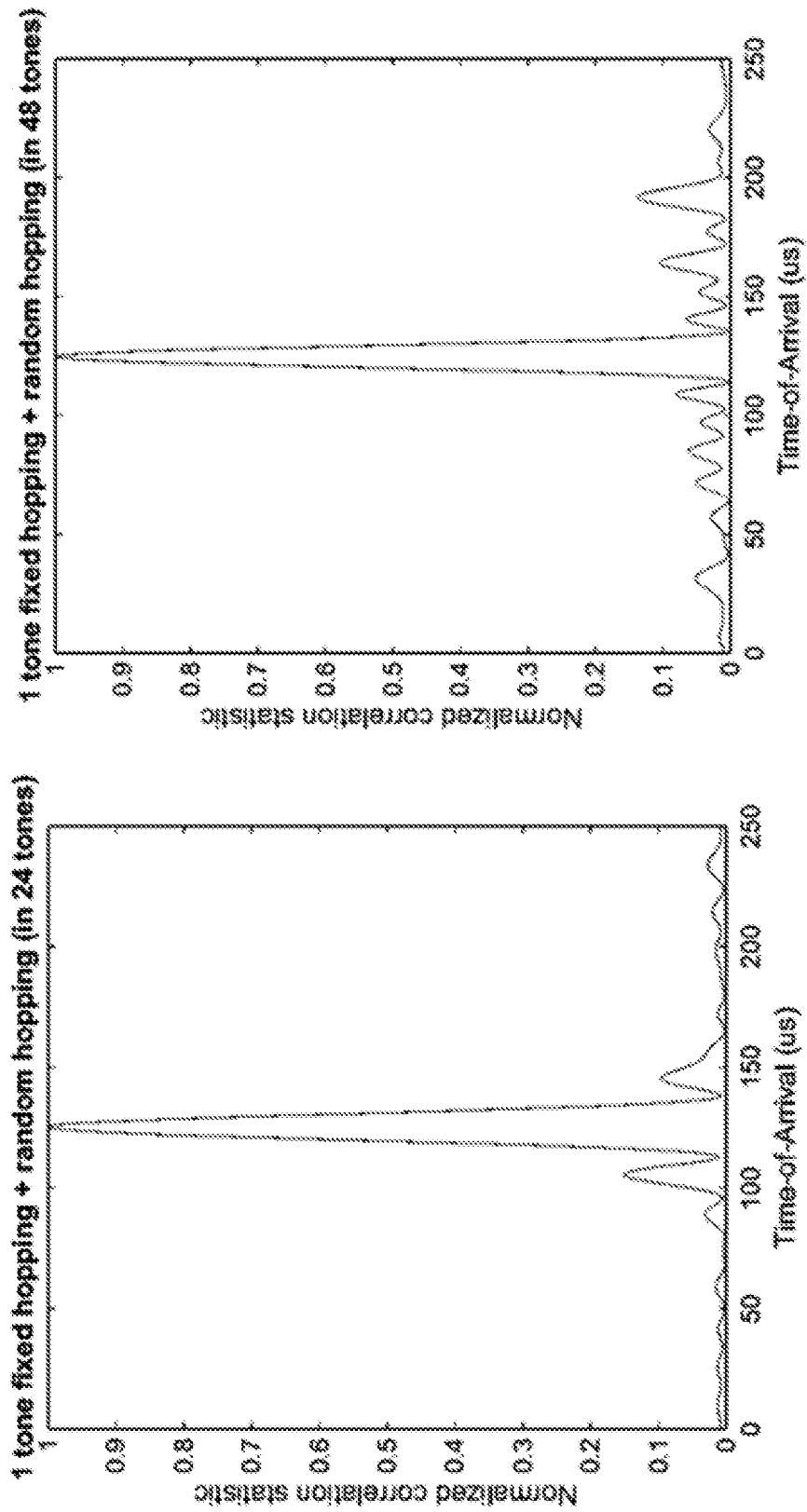


FIG. 15E

FIG. 15F

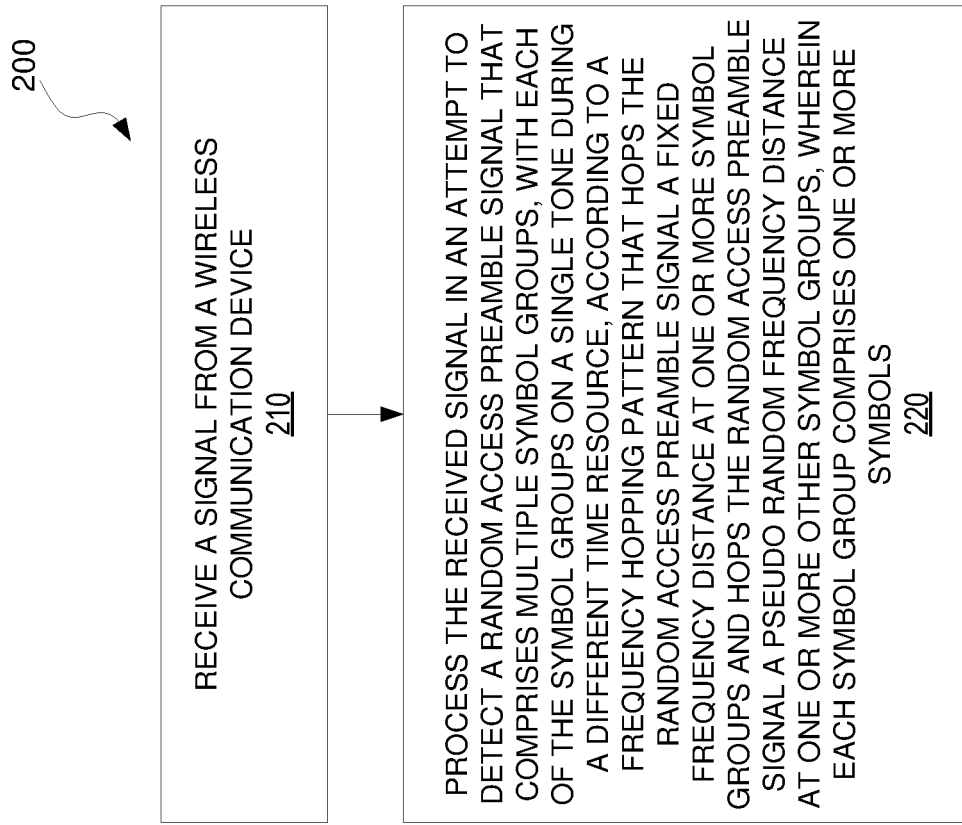


FIG. 16B

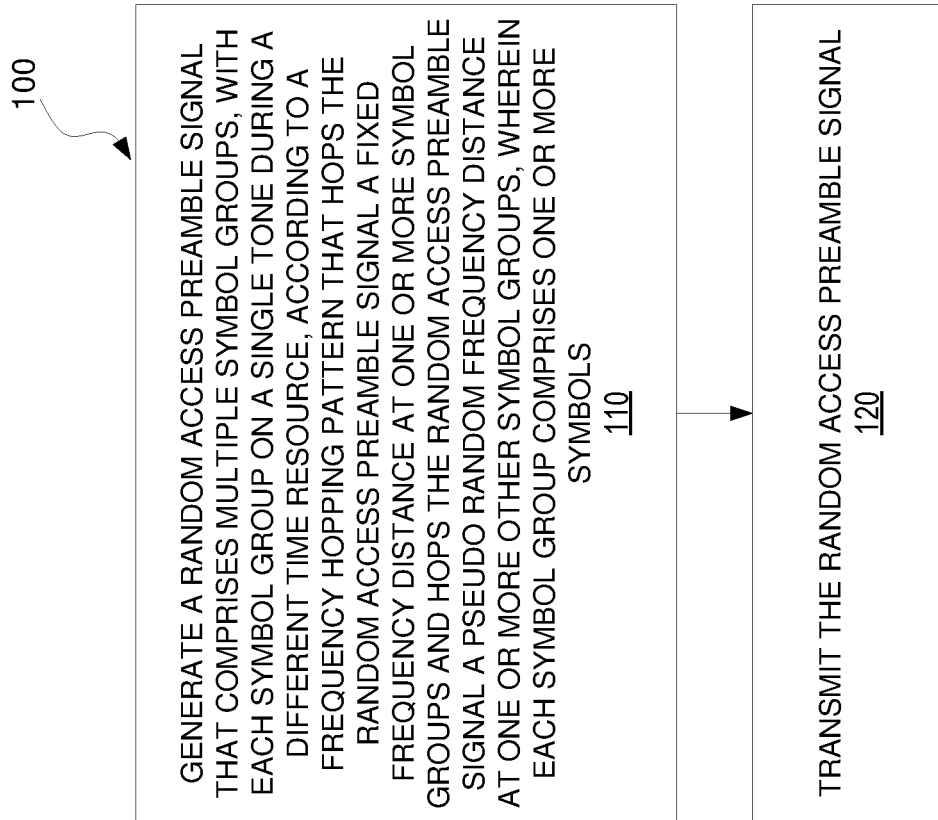


FIG. 16A

300

GENERATE CONFIGURATION INFORMATION
INDICATING ONE OR MORE PARAMETERS FOR A
FREQUENCY HOPPING PATTERN ACCORDING TO
WHICH THE WIRELESS COMMUNICATION DEVICE IS TO
GENERATE EACH OF THE SYMBOL GROUPS ON A
SINGLE TONE DURING A DIFFERENT TIME RESOURCE,
WHEREIN THE FREQUENCY HOPPING PATTERN HOPS
THE RANDOM ACCESS PREAMBLE SIGNAL A FIXED
FREQUENCY DISTANCE AT ONE OR MORE SYMBOL
GROUPS AND HOPS THE RANDOM ACCESS PREAMBLE
SIGNAL A PSEUDO RANDOM FREQUENCY DISTANCE
AT ONE OR MORE OTHER SYMBOL GROUPS
310

TRANSMIT THE CONFIGURATION INFORMATION TO
THE WIRELESS COMMUNICATION DEVICE
320

FIG. 17A

400

RECEIVE CONFIGURATION INFORMATION INDICATING
ONE OR MORE PARAMETERS FOR A FREQUENCY
HOPPING PATTERN ACCORDING TO WHICH THE
WIRELESS COMMUNICATION DEVICE IS TO GENERATE
EACH OF THE SYMBOL GROUPS ON A SINGLE TONE
DURING A DIFFERENT TIME RESOURCE, WHEREIN THE
FREQUENCY HOPPING PATTERN HOPS THE RANDOM
ACCESS PREAMBLE SIGNAL A FIXED FREQUENCY
DISTANCE AT ONE OR MORE SYMBOL GROUPS AND
HOPS THE RANDOM ACCESS PREAMBLE SIGNAL A
PSEUDO RANDOM FREQUENCY DISTANCE AT ONE OR
MORE OTHER SYMBOL GROUPS
410

CONFIGURE THE WIRELESS COMMUNICATION DEVICE
TO GENERATE THE RANDOM ACCESS PREAMBLE
SIGNAL ACCORDING TO THE RECEIVED
CONFIGURATION INFORMATION
420

FIG. 17B

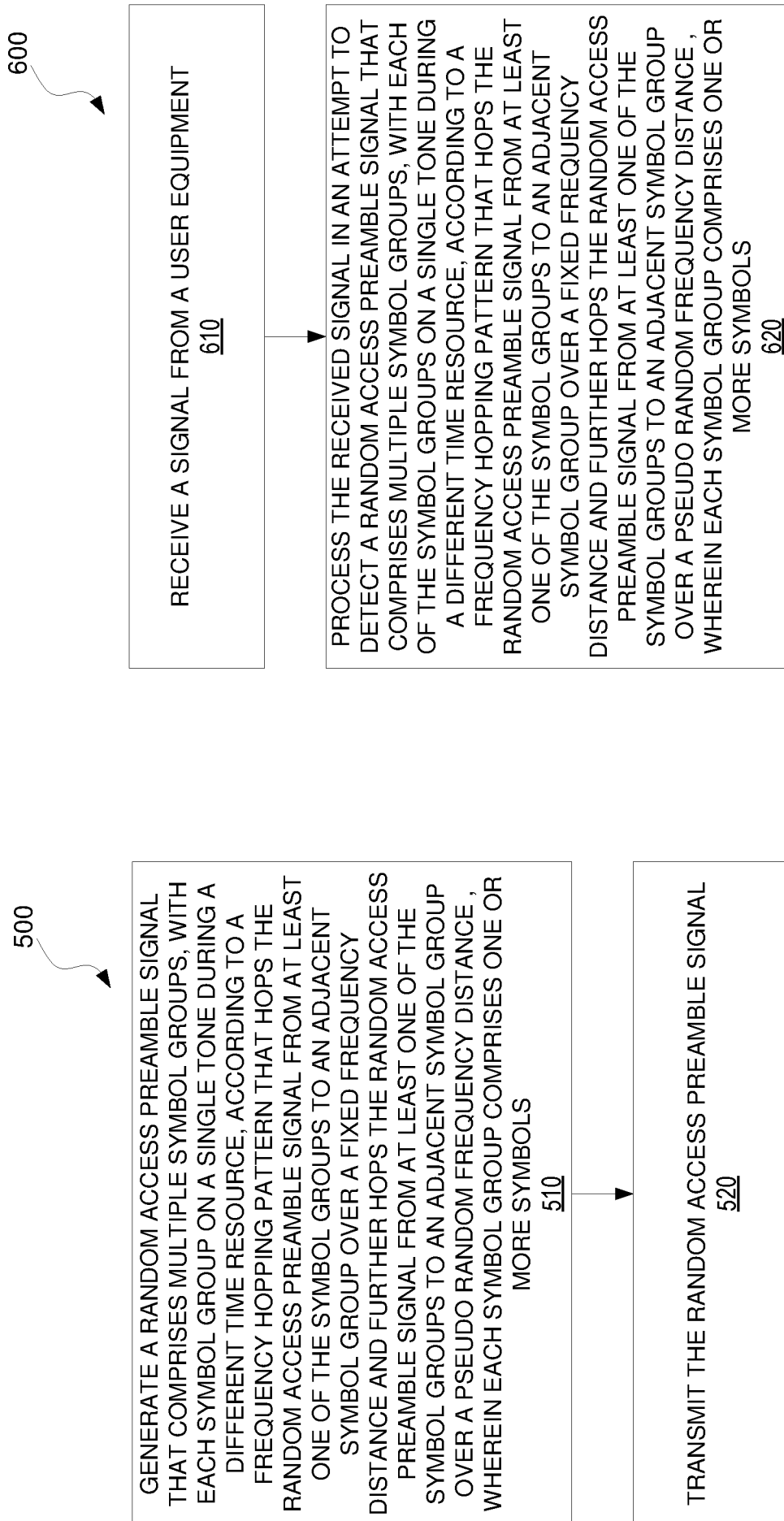


FIG. 18A

FIG. 18B

700

GENERATE CONFIGURATION INFORMATION INDICATING ONE OR MORE PARAMETERS FOR A FREQUENCY HOPPING PATTERN ACCORDING TO WHICH THE WIRELESS COMMUNICATION DEVICE IS TO GENERATE EACH OF THE SYMBOL GROUPS ON A SINGLE TONE DURING A DIFFERENT TIME RESOURCE, WHEREIN THE FREQUENCY HOPPING PATTERN HOPS THE RANDOM ACCESS PREAMBLE SIGNAL FROM AT LEAST ONE OF THE SYMBOL GROUPS TO AN ADJACENT SYMBOL GROUP OVER A FIXED FREQUENCY DISTANCE AND FURTHER HOPS THE RANDOM ACCESS PREAMBLE SIGNAL FROM AT LEAST ONE OF THE SYMBOL GROUPS TO AN ADJACENT SYMBOL GROUP OVER A PSEUDO RANDOM FREQUENCY DISTANCE

710

TRANSMIT THE CONFIGURATION INFORMATION TO THE USER EQUIPMENT

720

FIG. 19A

800

RECEIVE CONFIGURATION INFORMATION INDICATING ONE OR MORE PARAMETERS FOR A FREQUENCY HOPPING PATTERN ACCORDING TO WHICH THE WIRELESS COMMUNICATION DEVICE IS TO GENERATE EACH OF THE SYMBOL GROUPS ON A SINGLE TONE DURING A DIFFERENT TIME RESOURCE, WHEREIN THE FREQUENCY HOPPING PATTERN HOPS THE RANDOM ACCESS PREAMBLE SIGNAL FROM AT LEAST ONE OF THE SYMBOL GROUPS TO AN ADJACENT SYMBOL GROUP OVER A FIXED FREQUENCY DISTANCE AND FURTHER HOPS THE RANDOM ACCESS PREAMBLE SIGNAL FROM AT LEAST ONE OF THE SYMBOL GROUPS TO AN ADJACENT SYMBOL GROUP OVER A PSEUDO RANDOM FREQUENCY DISTANCE

810

CONFIGURE THE USER EQUIPMENT TO GENERATE THE RANDOM ACCESS PREAMBLE SIGNAL ACCORDING TO THE RECEIVED CONFIGURATION INFORMATION

820

FIG. 19B

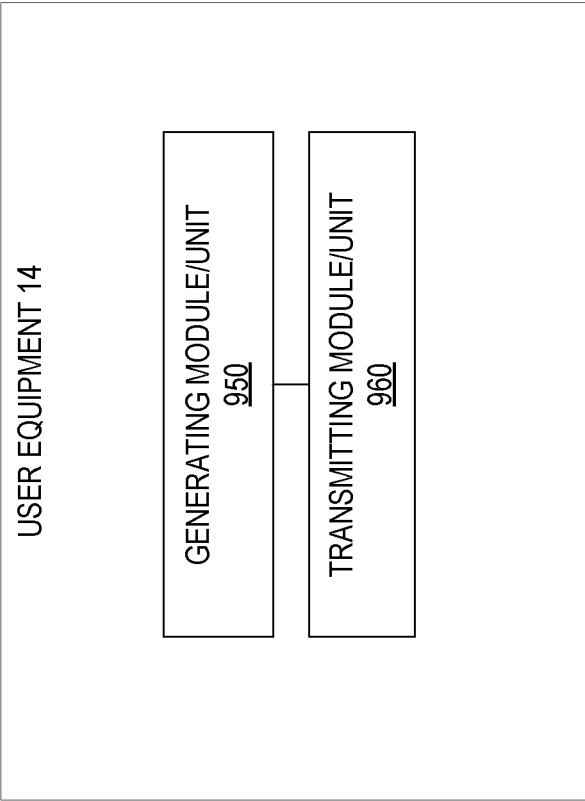


FIG. 20B

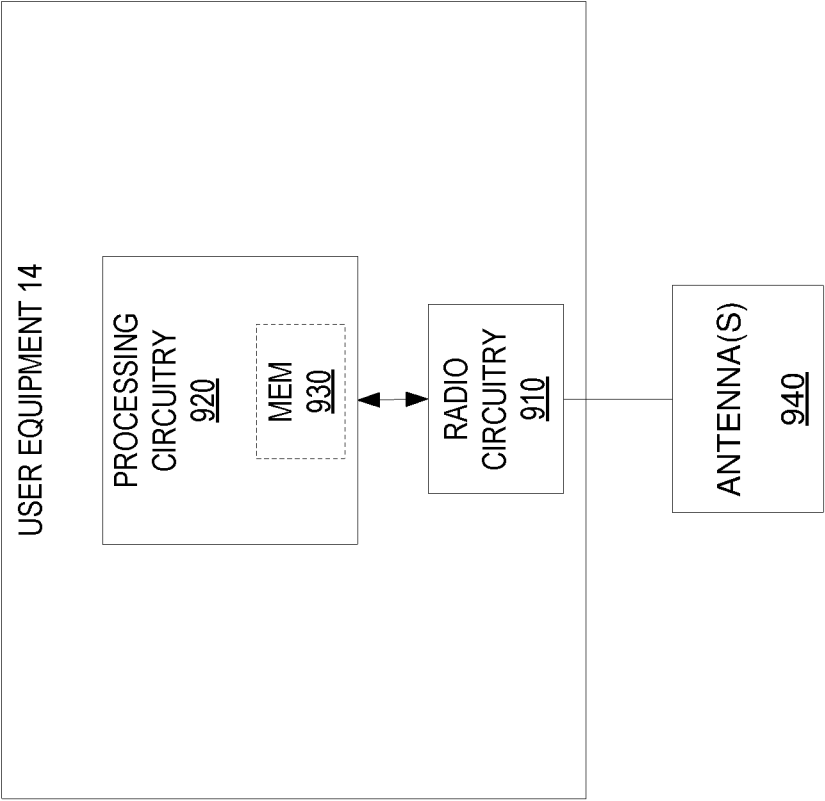


FIG. 20A

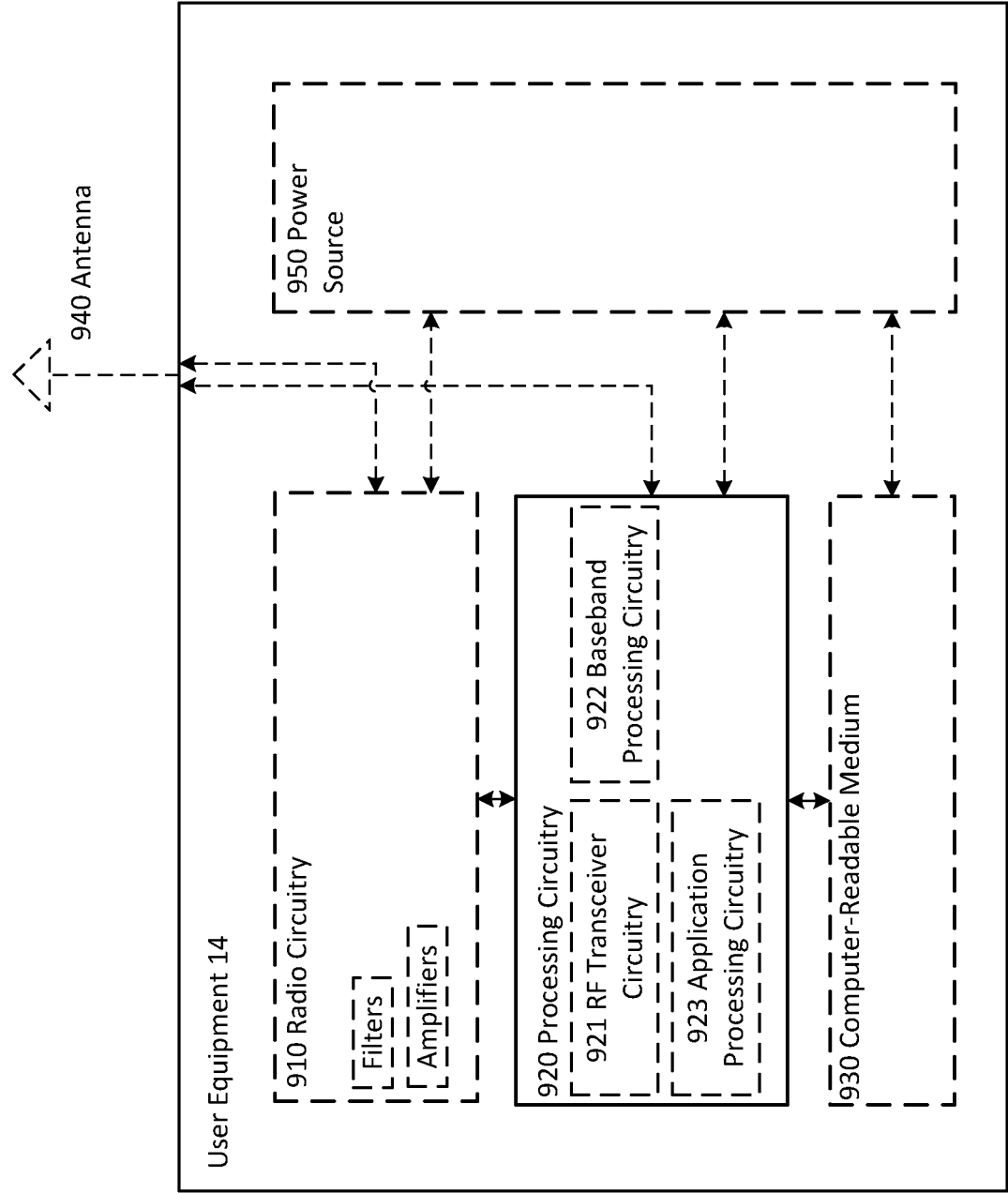


FIG. 20C

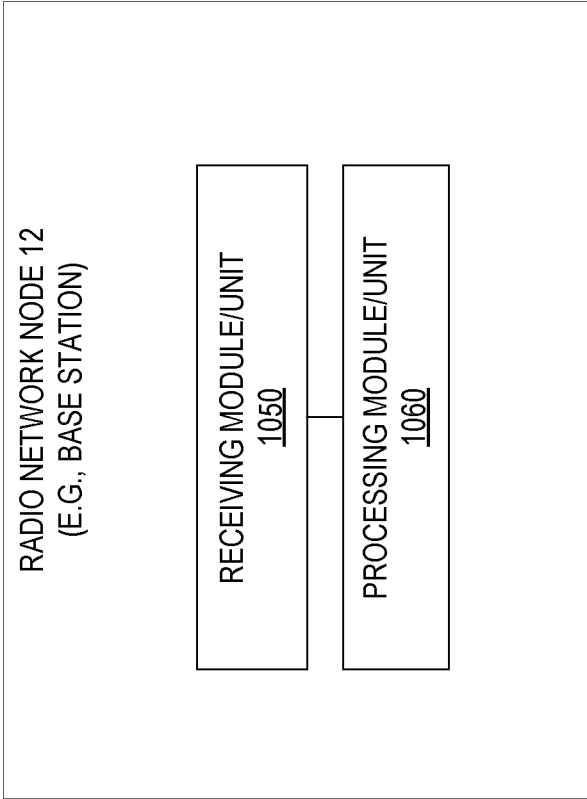


FIG. 21B

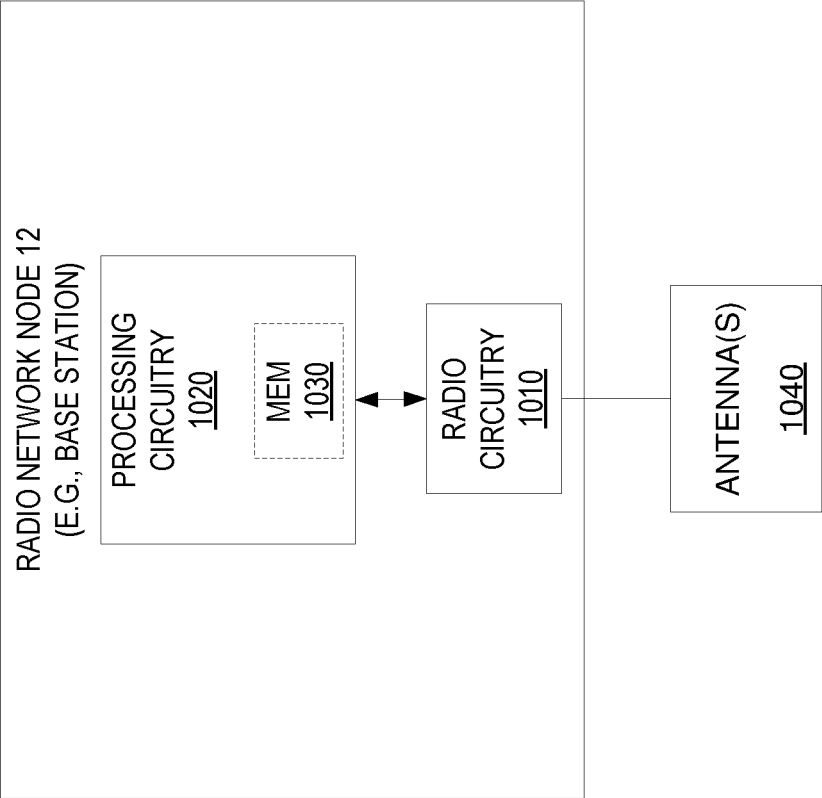


FIG. 21A

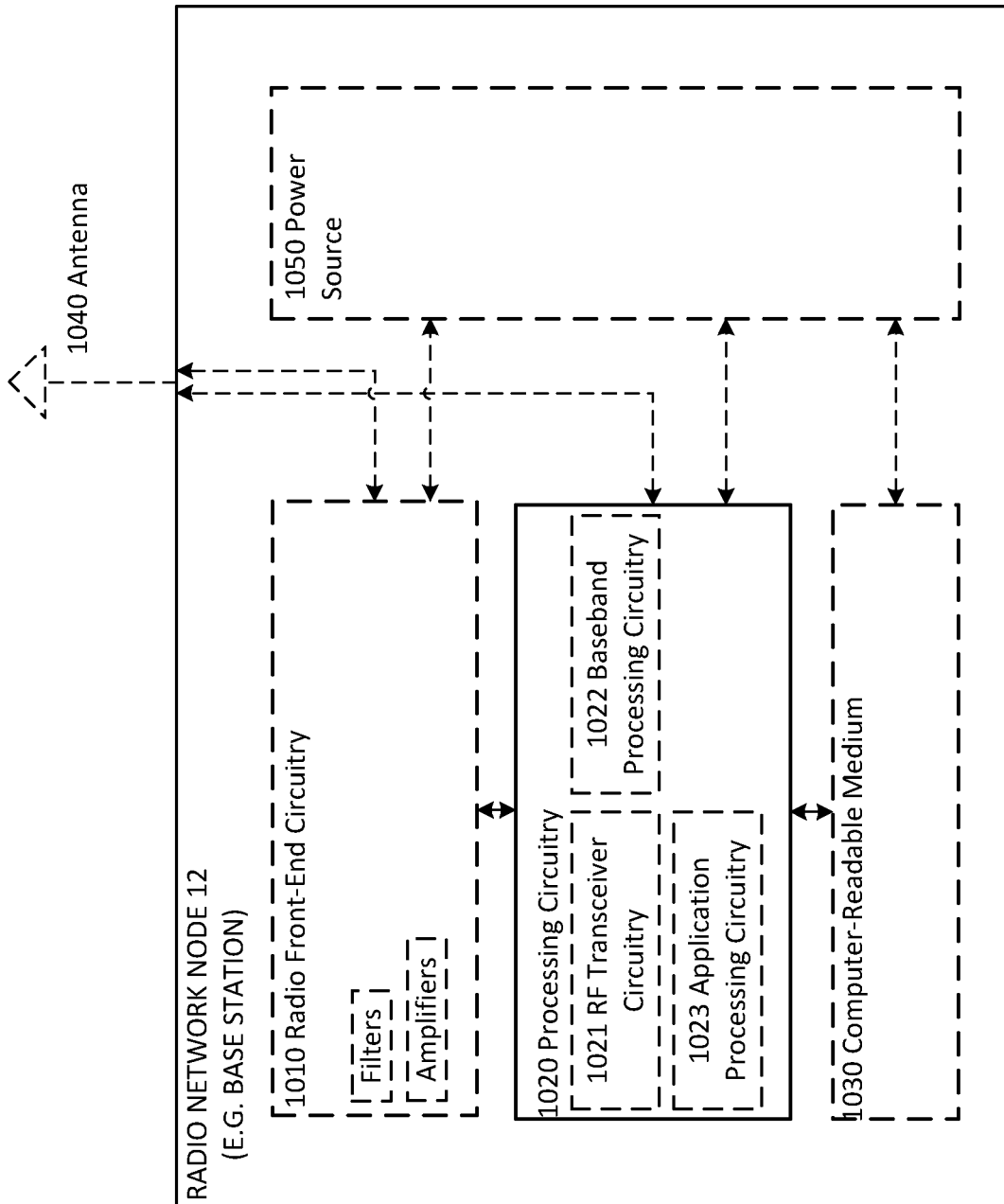


FIG. 21C

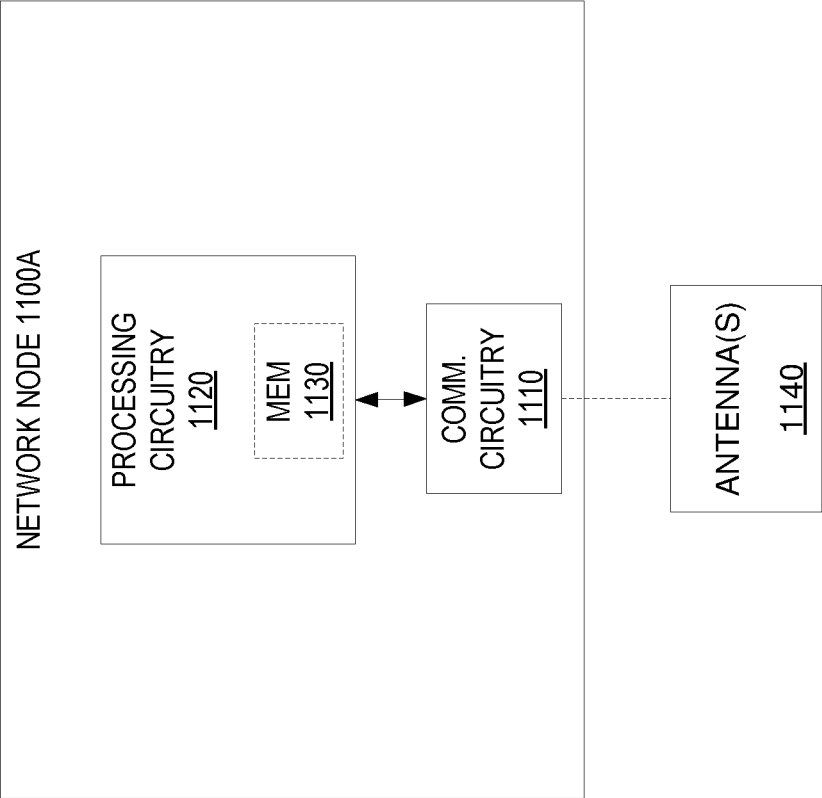


FIG. 22A

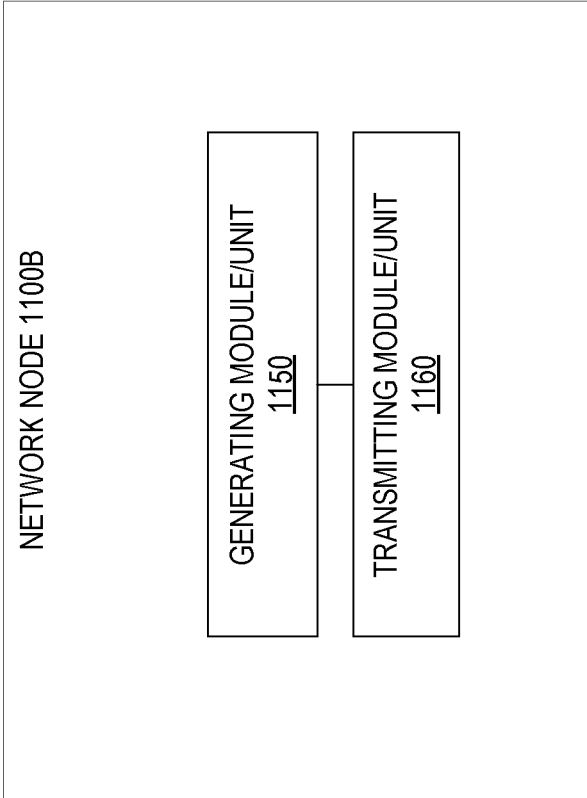


FIG. 22B

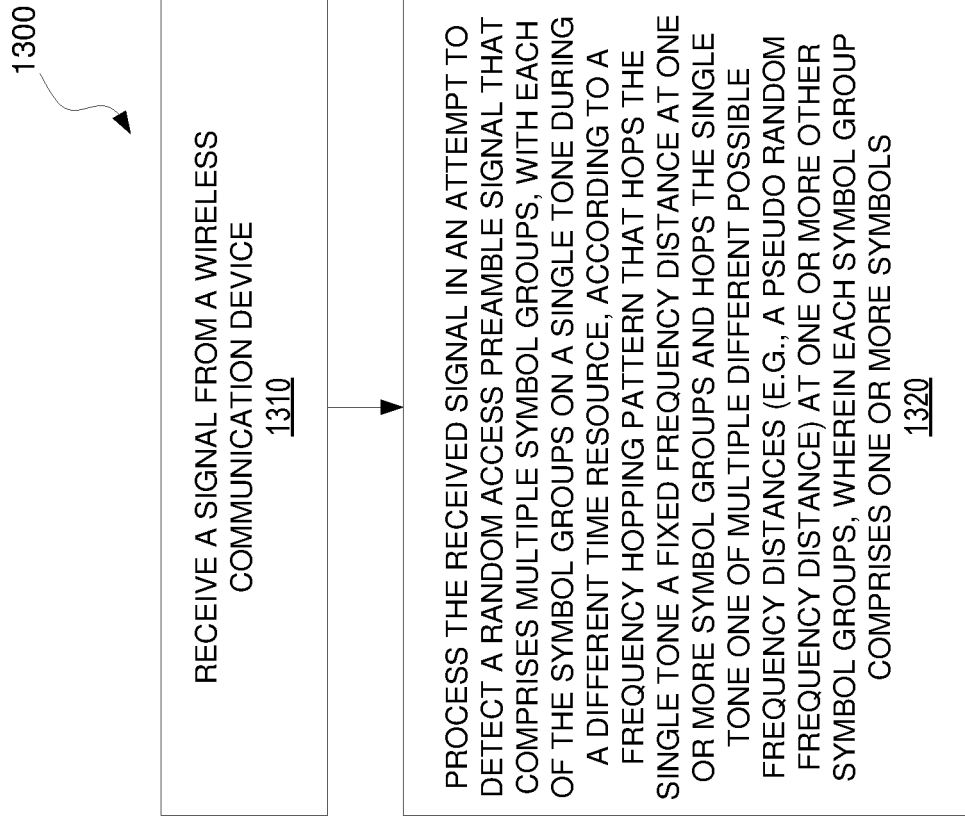


FIG. 23B

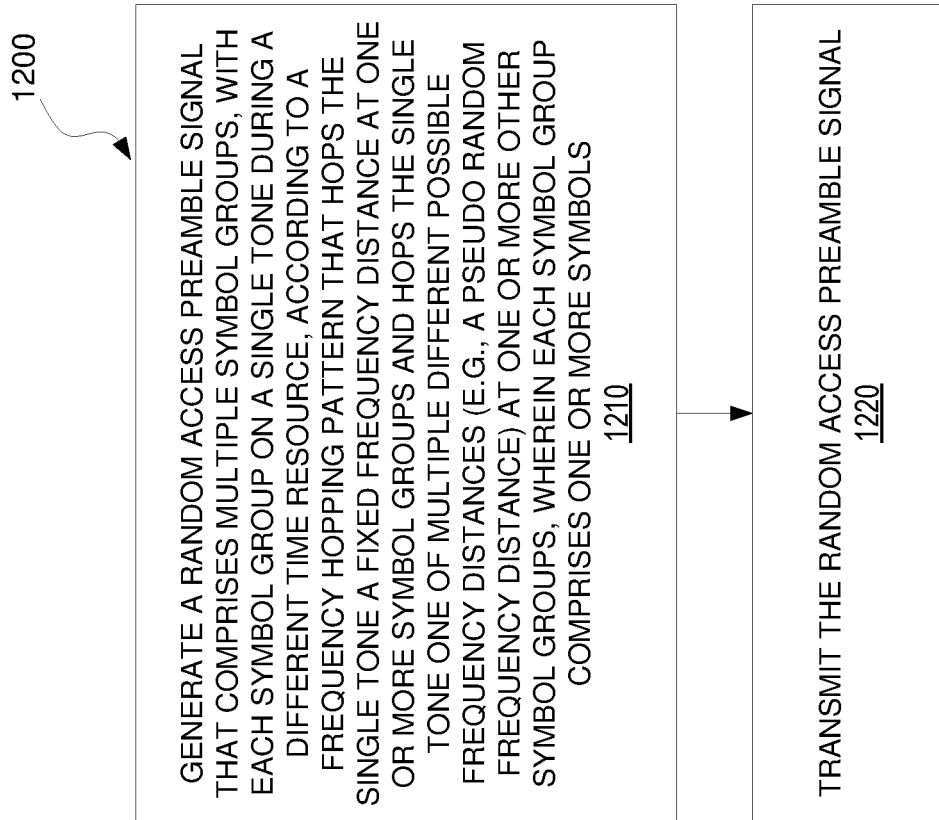


FIG. 23A

1400

GENERATE CONFIGURATION INFORMATION
INDICATING ONE OR MORE PARAMETERS FOR A
FREQUENCY HOPPING PATTERN ACCORDING TO
WHICH THE WIRELESS COMMUNICATION DEVICE IS TO
GENERATE EACH OF THE SYMBOL GROUPS ON A
SINGLE TONE DURING A DIFFERENT TIME RESOURCE,
WHEREIN THE FREQUENCY HOPPING PATTERN HOPS
THE SINGLE TONE A FIXED FREQUENCY DISTANCE AT
ONE OR MORE SYMBOL GROUPS AND HOPS THE
SINGLE TONE ONE OF MULTIPLE DIFFERENT
POSSIBLE FREQUENCY DISTANCES (E.G., A PSEUDO
RANDOM FREQUENCY DISTANCE) AT ONE OR MORE
OTHER SYMBOL GROUPS
1410

TRANSMIT THE CONFIGURATION INFORMATION TO
THE WIRELESS COMMUNICATION DEVICE
1420

FIG. 24A

1500

RECEIVE CONFIGURATION INFORMATION INDICATING
ONE OR MORE PARAMETERS FOR A FREQUENCY
HOPPING PATTERN ACCORDING TO WHICH THE
WIRELESS COMMUNICATION DEVICE IS TO GENERATE
EACH OF THE SYMBOL GROUPS ON A SINGLE TONE
DURING A DIFFERENT TIME RESOURCE, WHEREIN THE
FREQUENCY HOPPING PATTERN HOPS THE SINGLE
TONE A FIXED FREQUENCY DISTANCE AT ONE OR
MORE SYMBOL GROUPS AND HOPS THE SINGLE TONE
ONE OF MULTIPLE DIFFERENT POSSIBLE FREQUENCY
DISTANCES (E.G., A PSEUDO RANDOM FREQUENCY
DISTANCE) AT ONE OR MORE OTHER SYMBOL
GROUPS
1510

CONFIGURE THE WIRELESS COMMUNICATION DEVICE
TO GENERATE THE RANDOM ACCESS PREAMBLE
SIGNAL ACCORDING TO THE RECEIVED
CONFIGURATION INFORMATION
1520

FIG. 24B