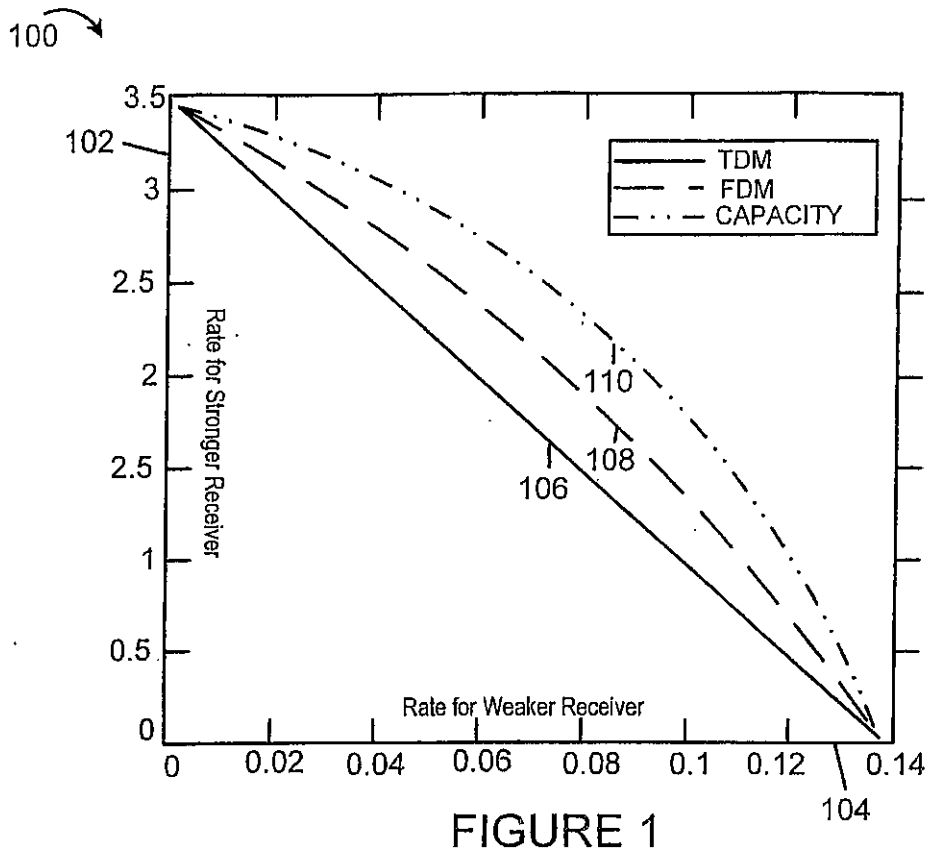


FIGURE 1

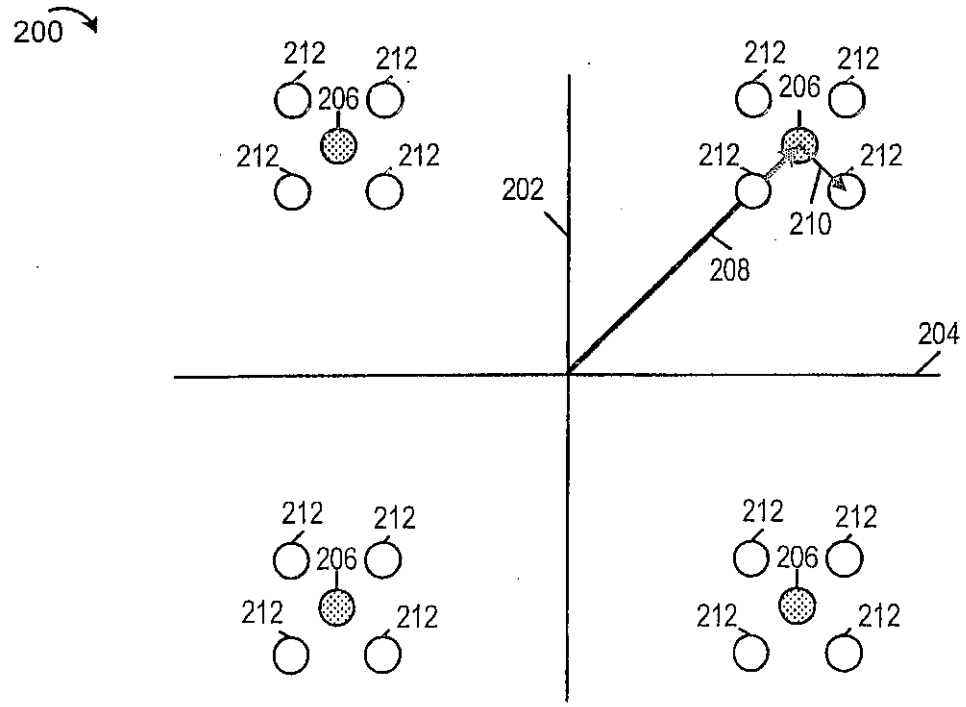


FIGURE 2

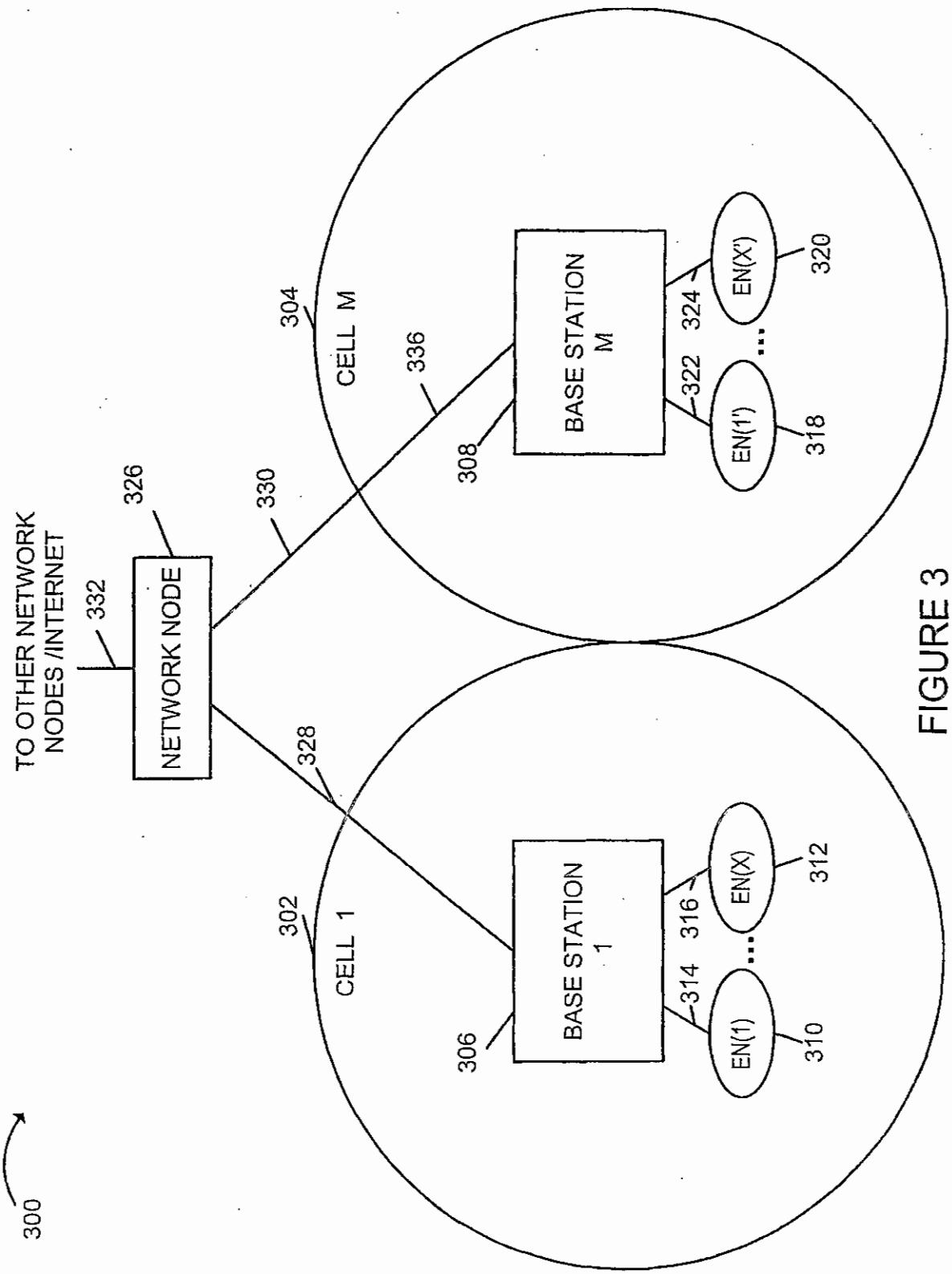

300
TO OTHER NETWORK NODES /INTERNET
332
NETWORK NODE
326
330
328
336
308
304
CELL M
BASE STATION M
EN(1')
318
322
EN(X')
320
324
302
CELL 1
BASE STATION 1
306
EN(1)
310
314
EN(X)
312
316

FIGURE 3

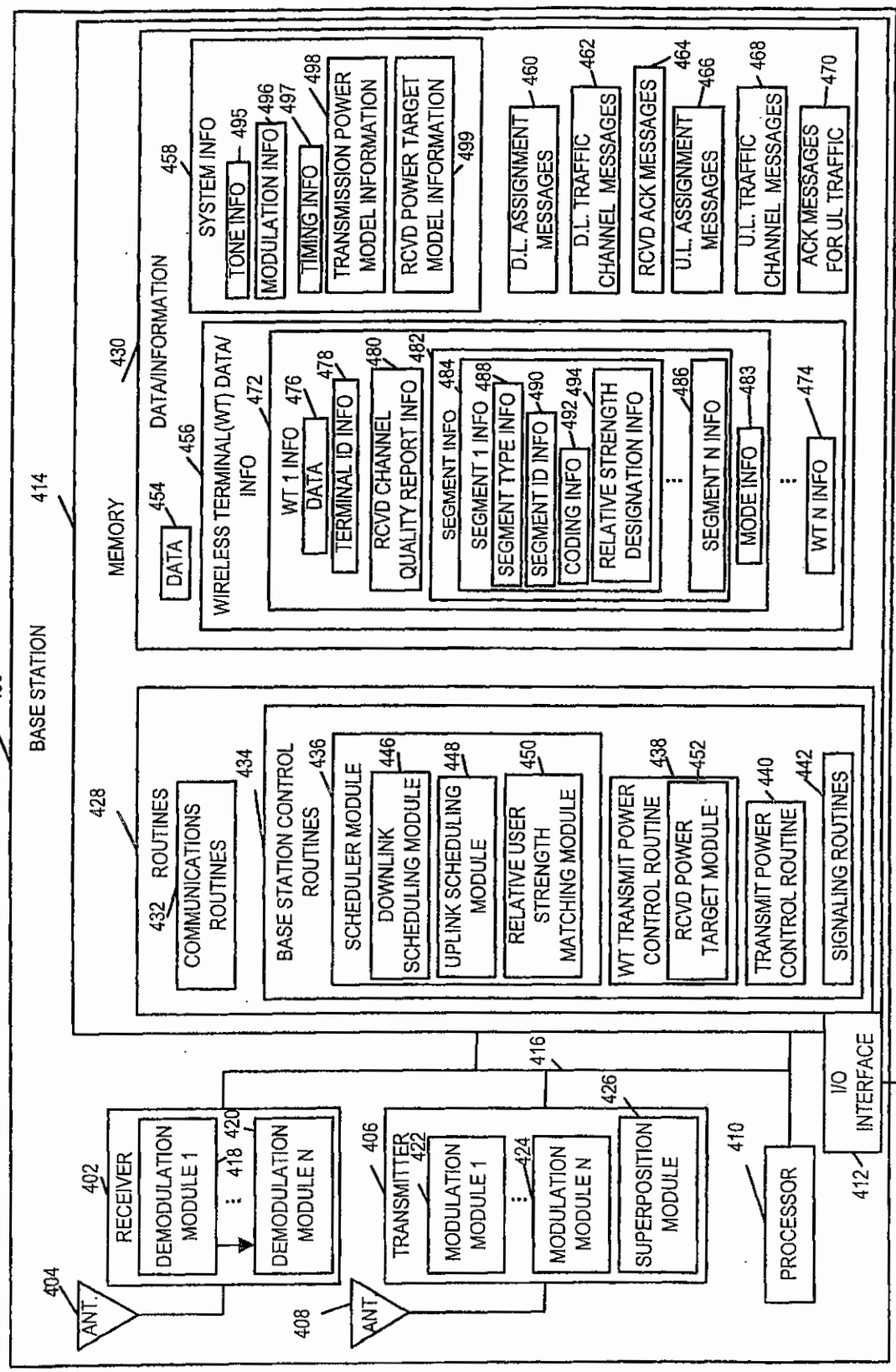

400
BASE STATION
414
MEMORY
430
DATA/INFORMATION
458
SYSTEM INFO
TONE INFO
495
MODULATION INFO
496
TIMING INFO
497
TRANSMISSION POWER MODEL INFORMATION
498
RCVD POWER TARGET MODEL INFORMATION
499
454
DATA
456
WIRELESS TERMINAL(WT) DATA/ INFO
472
WT 1 INFO
476
DATA
TERMINAL ID INFO
478
RCVD CHANNEL QUALITY REPORT INFO
480
SEGMENT INFO
484
SEGMENT 1 INFO
488
SEGMENT TYPE INFO
SEGMENT ID INFO
490
CODING INFO
492
RELATIVE STRENGTH DESIGNATION INFO
494
SEGMENT N INFO
486
MODE INFO
483
WT N INFO
474
D.L. ASSIGNMENT MESSAGES
460
D.L. TRAFFIC CHANNEL MESSAGES
462
RCVD ACK MESSAGES
464
U.L. ASSIGNMENT MESSAGES
466
U.L. TRAFFIC CHANNEL MESSAGES
468
ACK MESSAGES FOR UL TRAFFIC
470
428
ROUTINES
432
COMMUNICATIONS ROUTINES
434
BASE STATION CONTROL ROUTINES
436
SCHEDULER MODULE
446
DOWNLINK SCHEDULING MODULE
448
UPLINK SCHEDULING MODULE
450
RELATIVE USER STRENGTH MATCHING MODULE
WT TRANSMIT POWER CONTROL ROUTINE
438
RCVD POWER TARGET MODULE
452
TRANSMIT POWER CONTROL ROUTINE
440
SIGNALING ROUTINES
442
416
I/O INTERFACE
412
TO INTERNET
426
SUPERPOSITION MODULE
406
TRANSMITTER
422
MODULATION MODULE 1
424
MODULATION MODULE N
410
PROCESSOR
402
RECEIVER
DEMODULATION MODULE 1
418
420
DEMODULATION MODULE N
404
ANT.
408
ANT

Figure 4

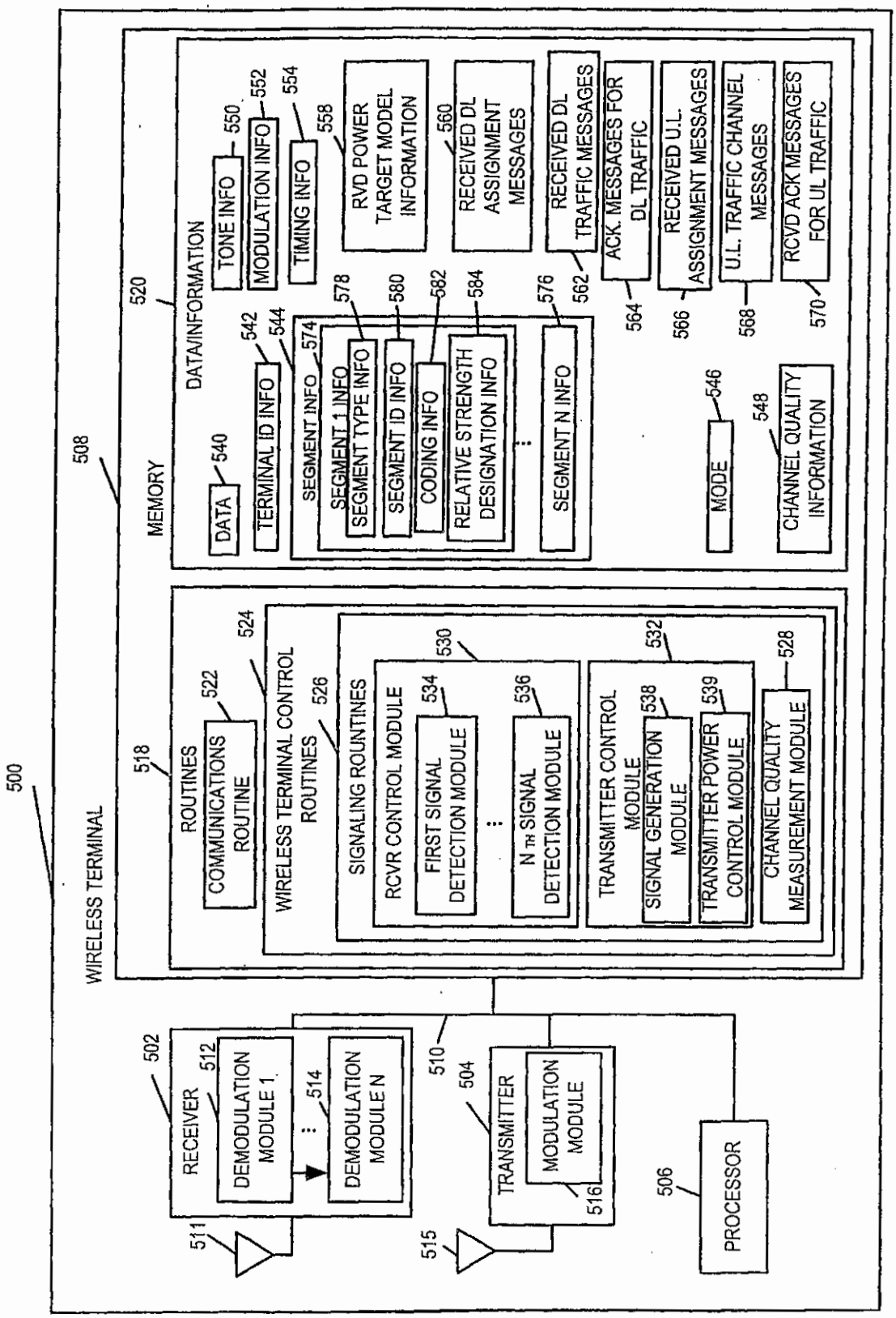

500
WIRELESS TERMINAL
508
MEMORY
520
DATA/INFORMATION
DATA 540
TERMINAL ID INFO 542
SEGMENT INFO 574
SEGMENT 1 INFO 578
SEGMENT TYPE INFO
SEGMENT ID INFO 580
CODING INFO 582
RELATIVE STRENGTH DESIGNATION INFO 584
SEGMENT N INFO 576
TONE INFO 550
MODULATION INFO 552
TIMING INFO 554
RVD POWER TARGET MODEL INFORMATION 558
RECEIVED DL ASSIGNMENT MESSAGES 560
RECEIVED DL TRAFFIC MESSAGES 562
ACK. MESSAGES FOR DL TRAFFIC 564
RECEIVED U.L. ASSIGNMENT MESSAGES 566
U.L. TRAFFIC CHANNEL MESSAGES 568
RCVD ACK MESSAGES FOR UL TRAFFIC 570
MODE 546
CHANNEL QUALITY INFORMATION 548
518
ROUTINES
COMMUNICATIONS ROUTINE 522
524
WIRELESS TERMINAL CONTROL ROUTINES
526
SIGNALING ROUNTINES
RCVR CONTROL MODULE 530
FIRST SIGNAL DETECTION MODULE 534
N TH SIGNAL DETECTION MODULE 536
TRANSMITTER CONTROL MODULE 532
SIGNAL GENERATION MODULE 538
TRANSMITTER POWER CONTROL MODULE 539
CHANNEL QUALITY MEASUREMENT MODULE 528
502
RECEIVER
DEMODULATION MODULE 1 512
DEMODULATION MODULE N 514
511
510
504
TRANSMITTER
MODULATION MODULE 516
515
506
PROCESSOR

FIGURE 5

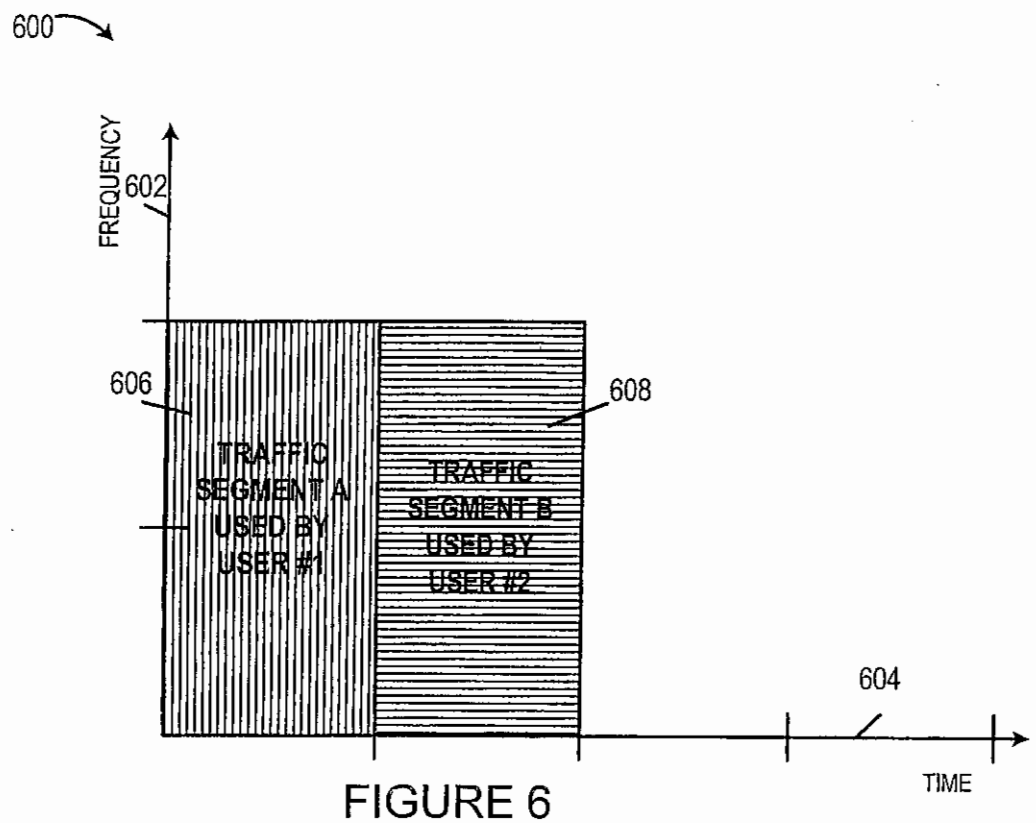


FIGURE 6

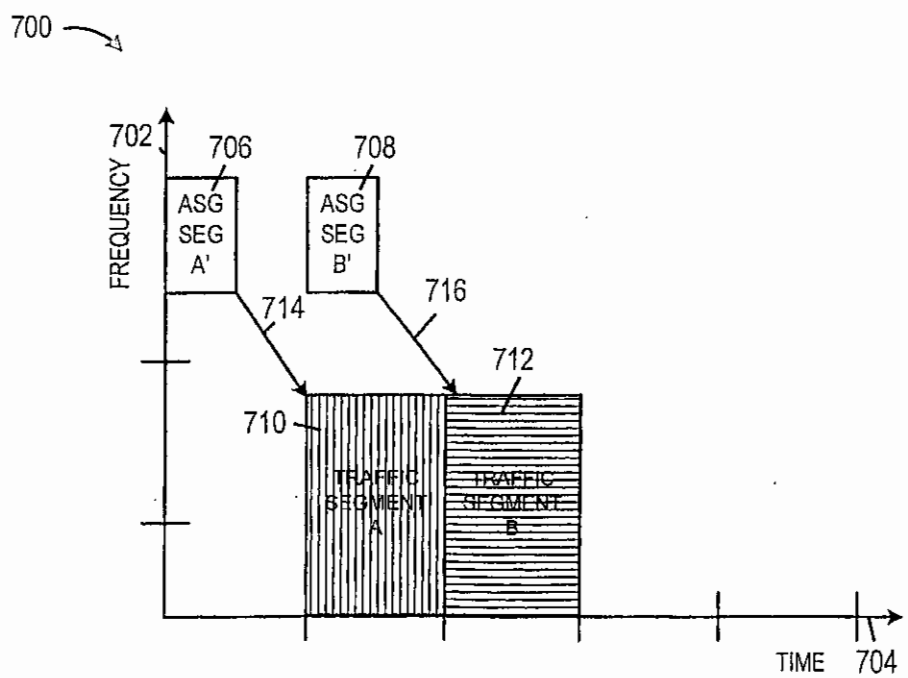


FIGURE 7

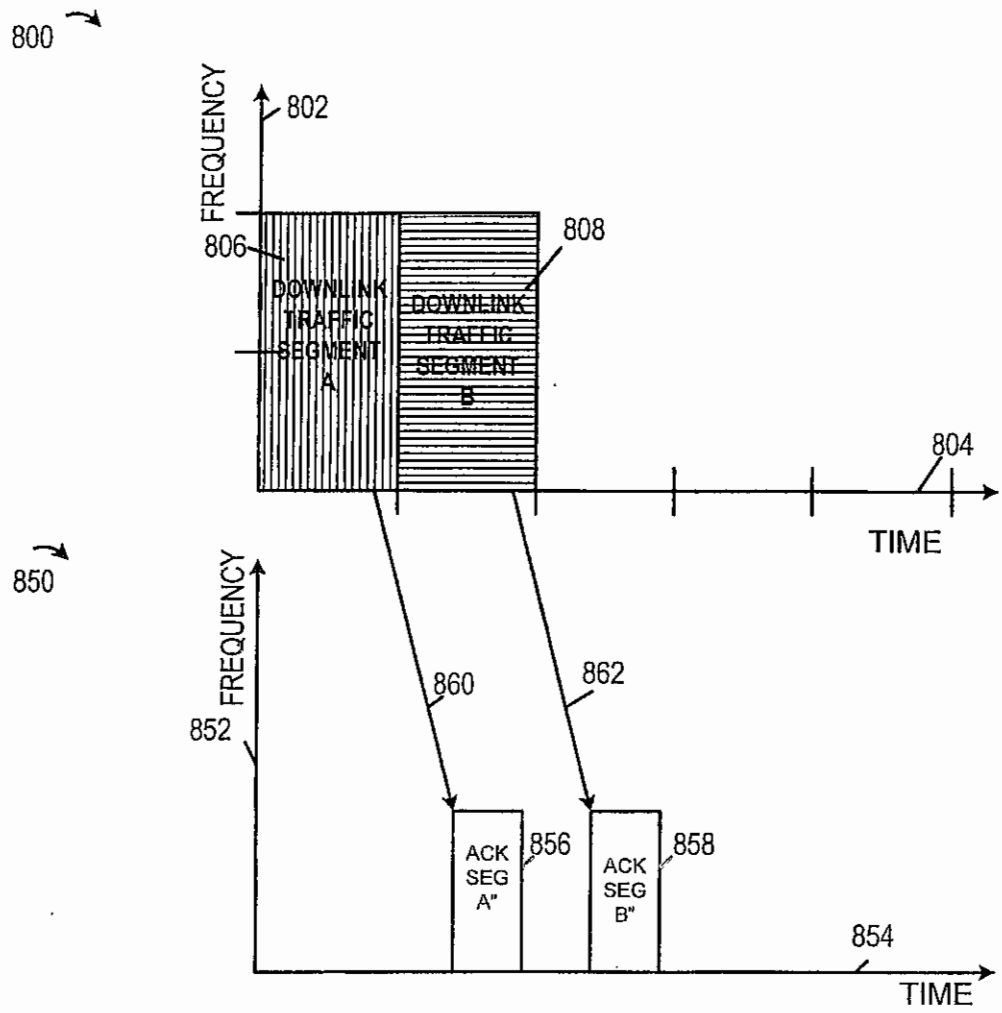

800
FREQUENCY
802
806
808
DOWNLINK TRAFFIC SEGMENT A
DOWNLINK TRAFFIC SEGMENT B
804
TIME
850
FREQUENCY
852
860
862
ACK SEG A"
856
ACK SEG B"
858
854
TIME

FIGURE 8

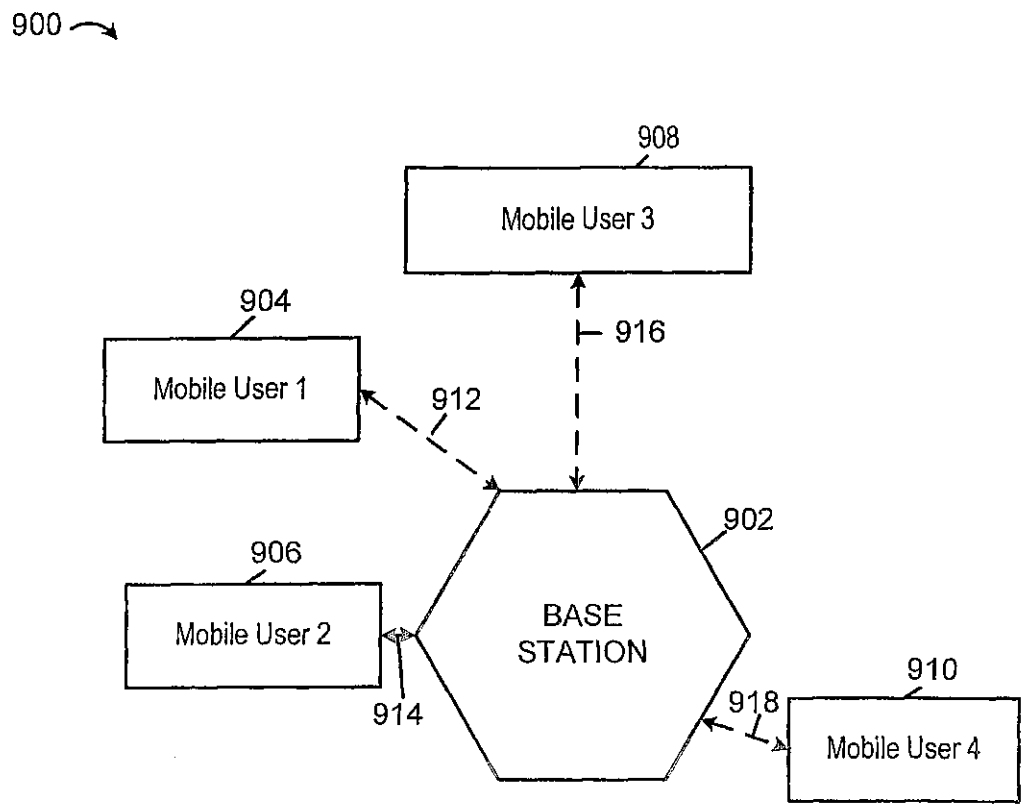

900
908
Mobile User 3
904
916
Mobile User 1
912
902
906
BASE
STATION
Mobile User 2
914
910
918
Mobile User 4

FIGURE 9

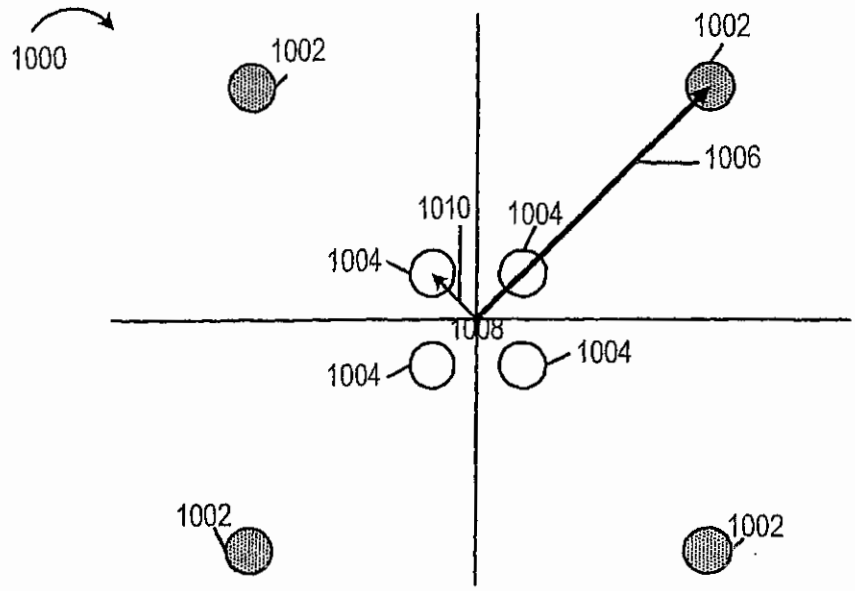


FIGURE 10

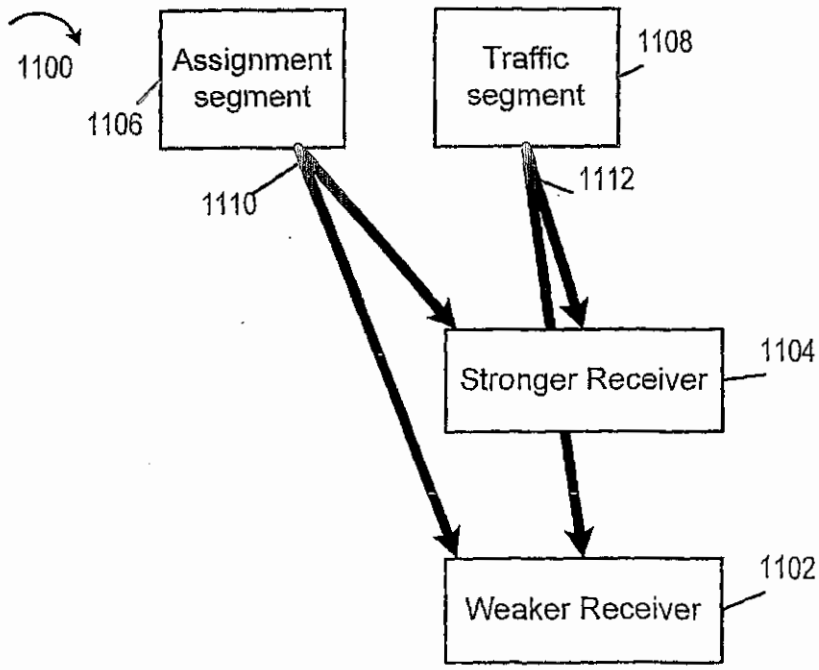


FIGURE 11

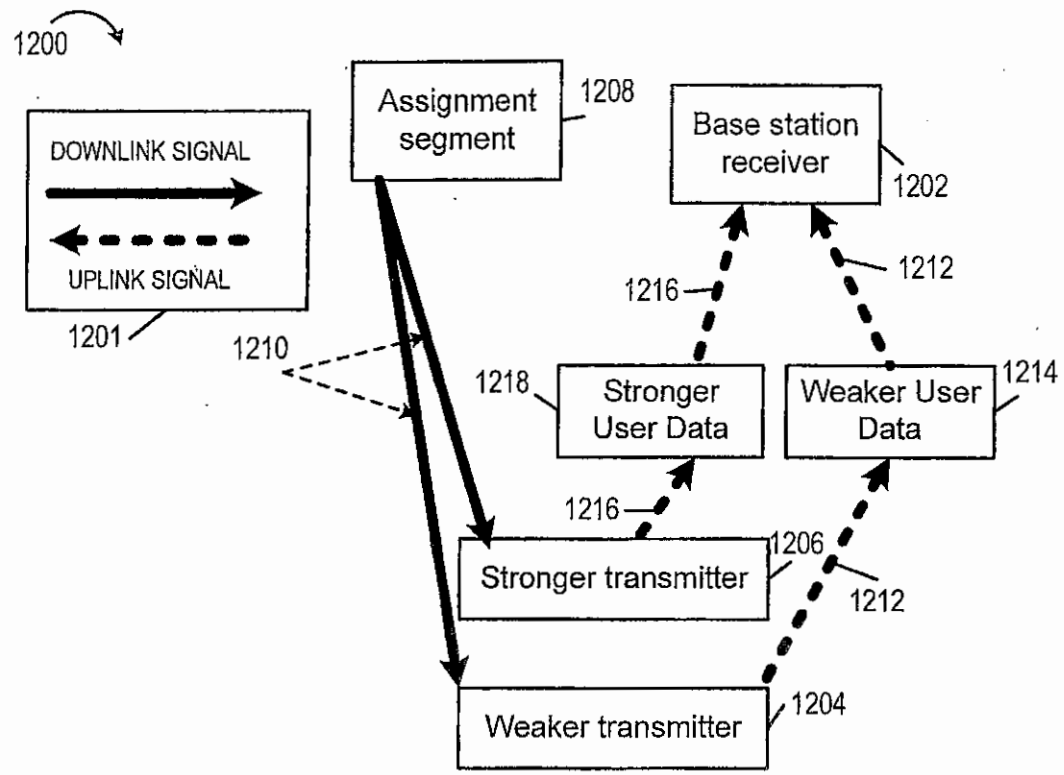


FIGURE 12

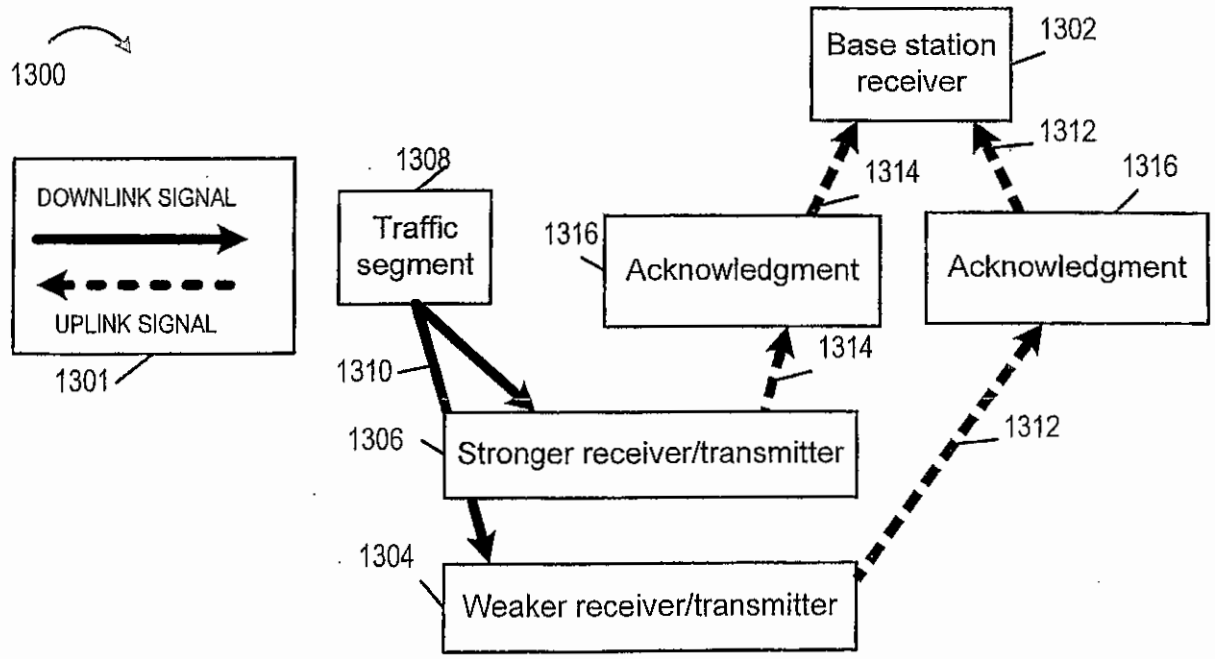


FIGURE 13

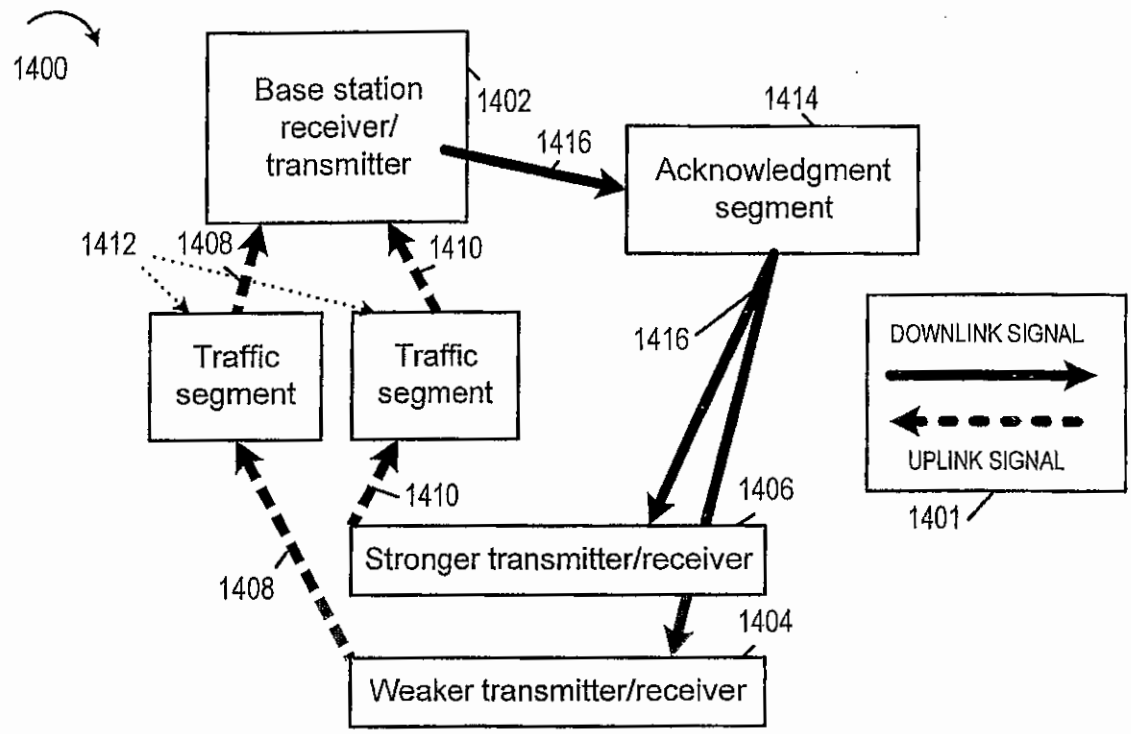


FIGURE 14

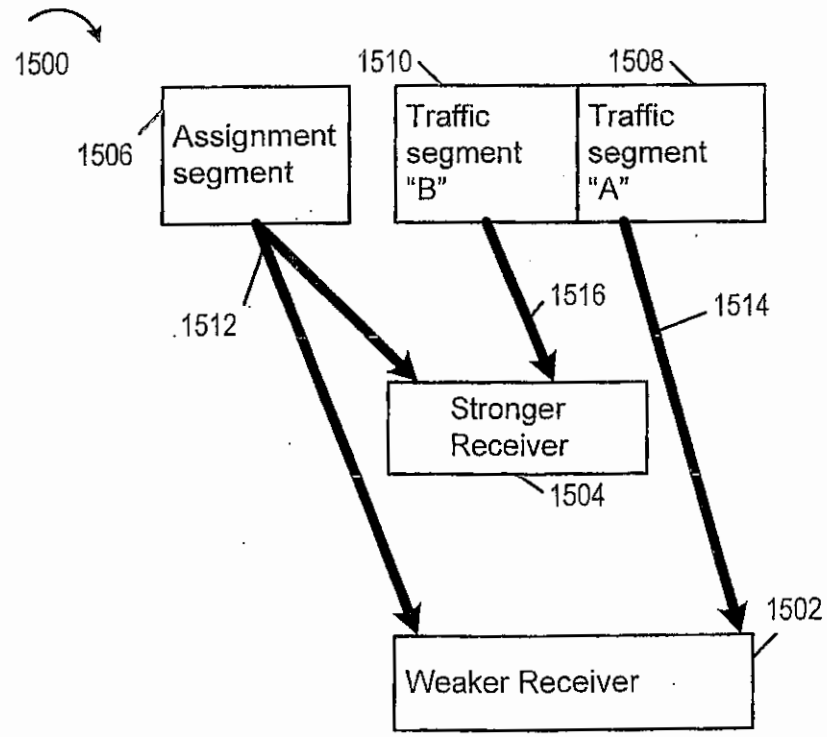


FIGURE 15

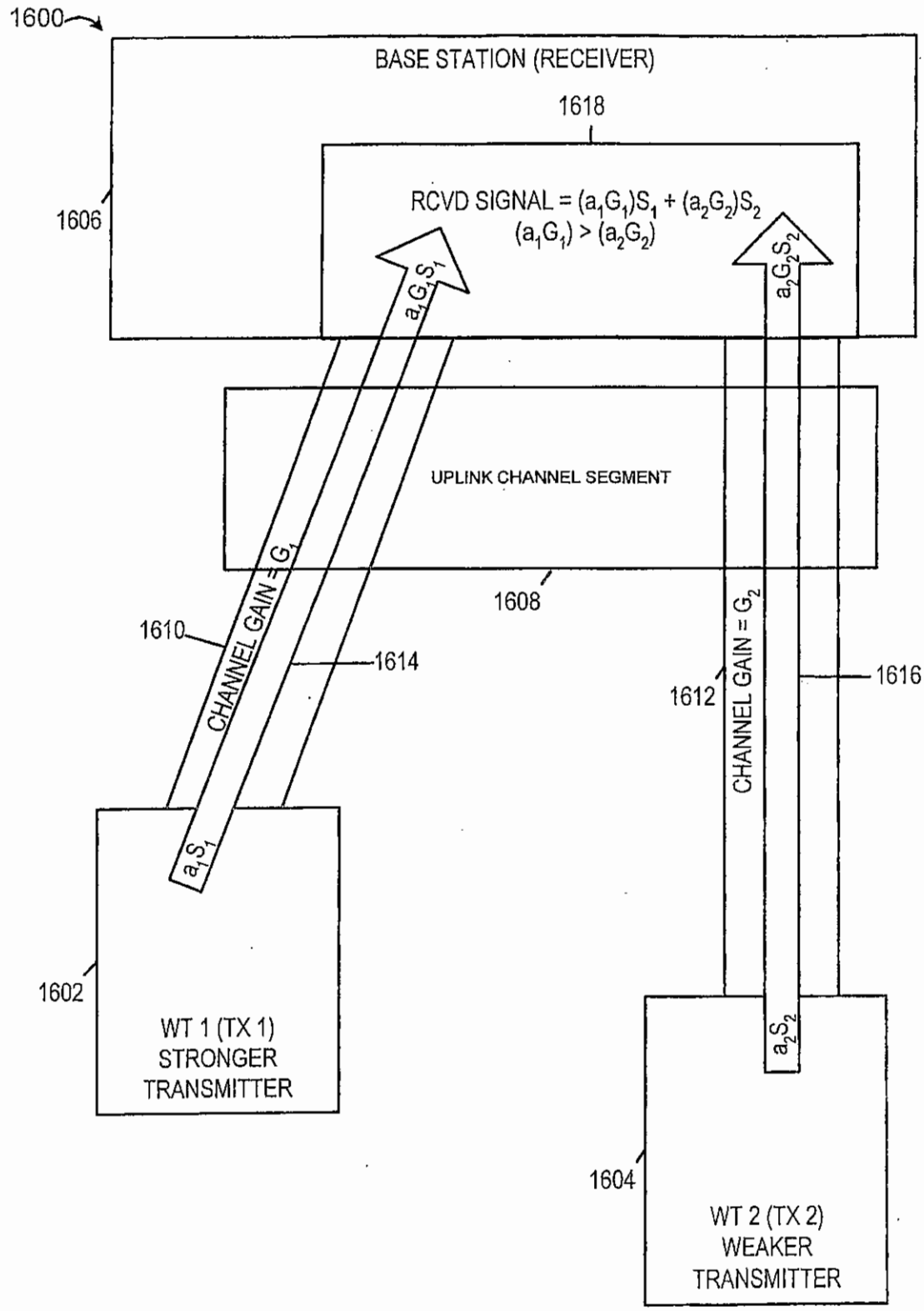

1600
BASE STATION (RECEIVER)
1618
1606
RCVD SIGNAL = $(a_1G_1)S_1 + (a_2G_2)S_2$
$(a_1G_1) > (a_2G_2)$
$a_1G_1S_1$
$a_2G_2S_2$
UPLINK CHANNEL SEGMENT
1608
1610
CHANNEL GAIN = G_1
1614
1612
CHANNEL GAIN = G_2
1616
a_1S_1
a_2S_2
1602
WT 1 (TX 1)
STRONGER
TRANSMITTER
1604
WT 2 (TX 2)
WEAKER
TRANSMITTER

FIGURE 16

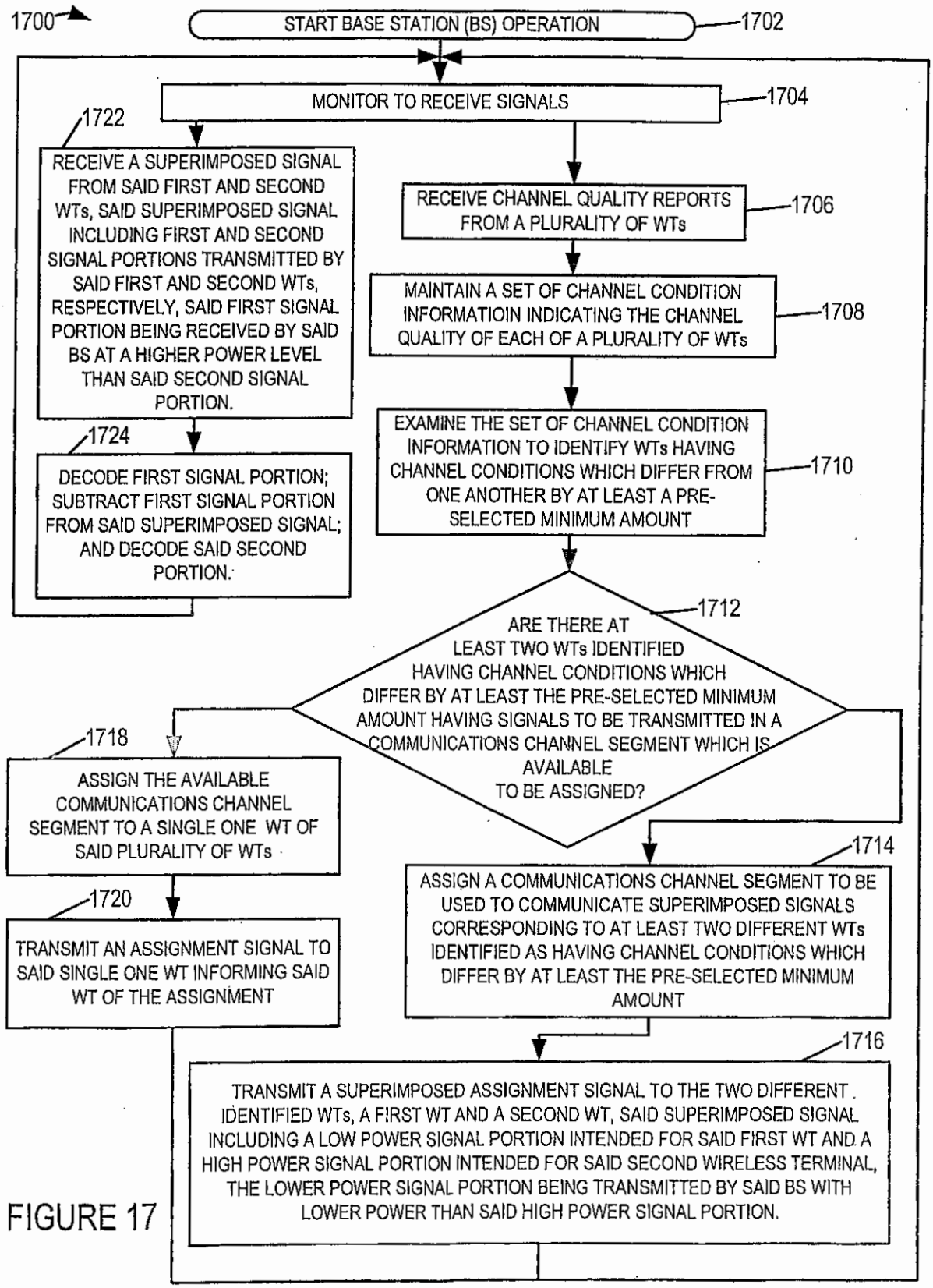

1700
START BASE STATION (BS) OPERATION
1702
MONITOR TO RECEIVE SIGNALS
1704
1722
RECEIVE A SUPERIMPOSED SIGNAL FROM SAID FIRST AND SECOND WTs, SAID SUPERIMPOSED SIGNAL INCLUDING FIRST AND SECOND SIGNAL PORTIONS TRANSMITTED BY SAID FIRST AND SECOND WTs, RESPECTIVELY, SAID FIRST SIGNAL PORTION BEING RECEIVED BY SAID BS AT A HIGHER POWER LEVEL THAN SAID SECOND SIGNAL PORTION.
1724
DECODE FIRST SIGNAL PORTION; SUBTRACT FIRST SIGNAL PORTION FROM SAID SUPERIMPOSED SIGNAL; AND DECODE SAID SECOND PORTION.
RECEIVE CHANNEL QUALITY REPORTS FROM A PLURALITY OF WTs
1706
MAINTAIN A SET OF CHANNEL CONDITION INFORMATIOIN INDICATING THE CHANNEL QUALITY OF EACH OF A PLURALITY OF WTs
1708
EXAMINE THE SET OF CHANNEL CONDITION INFORMATION TO IDENTIFY WTs HAVING CHANNEL CONDITIONS WHICH DIFFER FROM ONE ANOTHER BY AT LEAST A PRE-SELECTED MINIMUM AMOUNT
1710
1712
ARE THERE AT LEAST TWO WTs IDENTIFIED HAVING CHANNEL CONDITIONS WHICH DIFFER BY AT LEAST THE PRE-SELECTED MINIMUM AMOUNT HAVING SIGNALS TO BE TRANSMITTED IN A COMMUNICATIONS CHANNEL SEGMENT WHICH IS AVAILABLE TO BE ASSIGNED?
1718
ASSIGN THE AVAILABLE COMMUNICATIONS CHANNEL SEGMENT TO A SINGLE ONE WT OF SAID PLURALITY OF WTs
1720
TRANSMIT AN ASSIGNMENT SIGNAL TO SAID SINGLE ONE WT INFORMING SAID WT OF THE ASSIGNMENT
1714
ASSIGN A COMMUNICATIONS CHANNEL SEGMENT TO BE USED TO COMMUNICATE SUPERIMPOSED SIGNALS CORRESPONDING TO AT LEAST TWO DIFFERENT WTs IDENTIFIED AS HAVING CHANNEL CONDITIONS WHICH DIFFER BY AT LEAST THE PRE-SELECTED MINIMUM AMOUNT
1716
TRANSMIT A SUPERIMPOSED ASSIGNMENT SIGNAL TO THE TWO DIFFERENT IDENTIFIED WTs, A FIRST WT AND A SECOND WT, SAID SUPERIMPOSED SIGNAL INCLUDING A LOW POWER SIGNAL PORTION INTENDED FOR SAID FIRST WT AND A HIGH POWER SIGNAL PORTION INTENDED FOR SAID SECOND WIRELESS TERMINAL, THE LOWER POWER SIGNAL PORTION BEING TRANSMITTED BY SAID BS WITH LOWER POWER THAN SAID HIGH POWER SIGNAL PORTION.

FIGURE 17

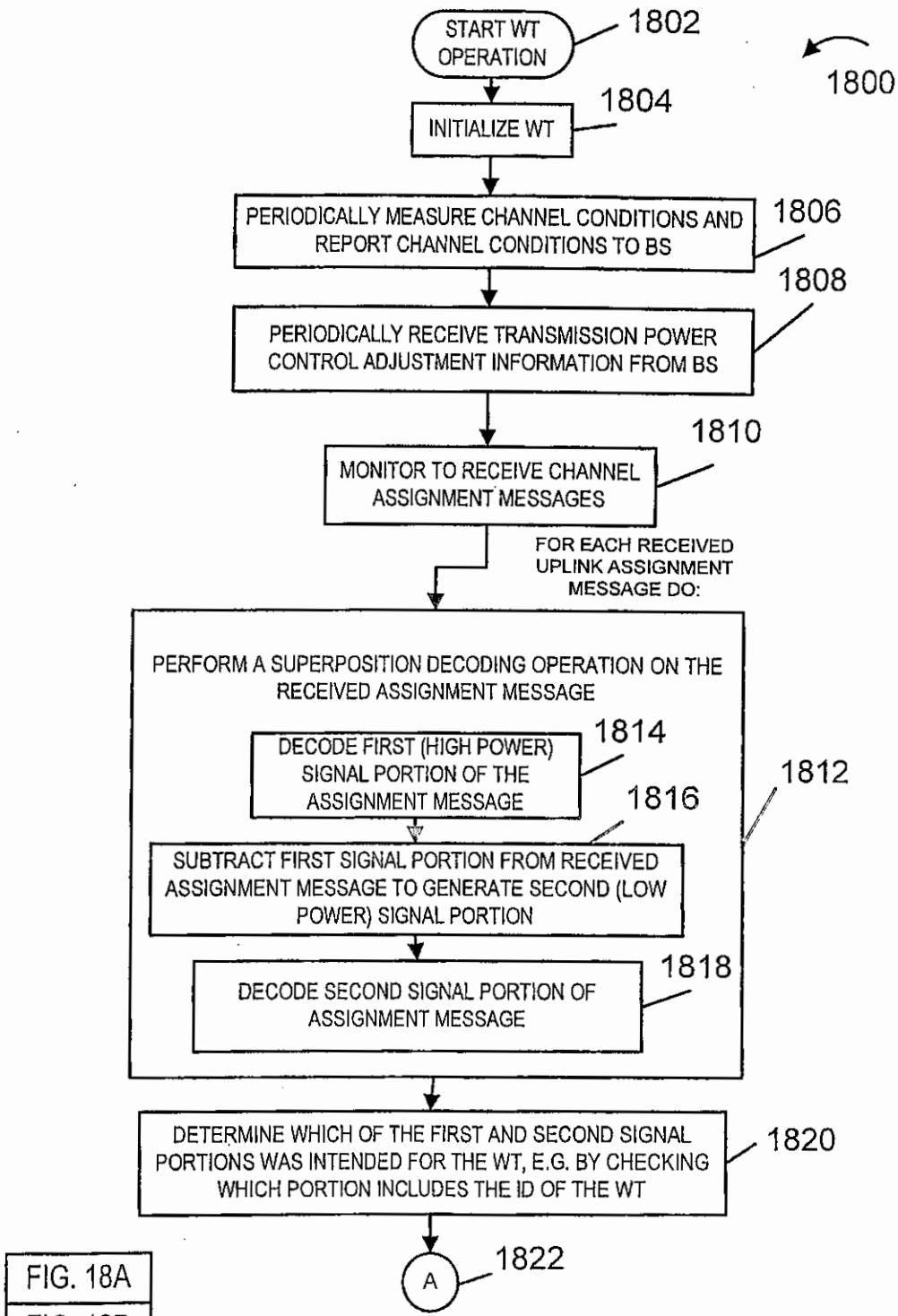


FIG. 18A
FIG. 18B
FIG. 18

Fig. 18A

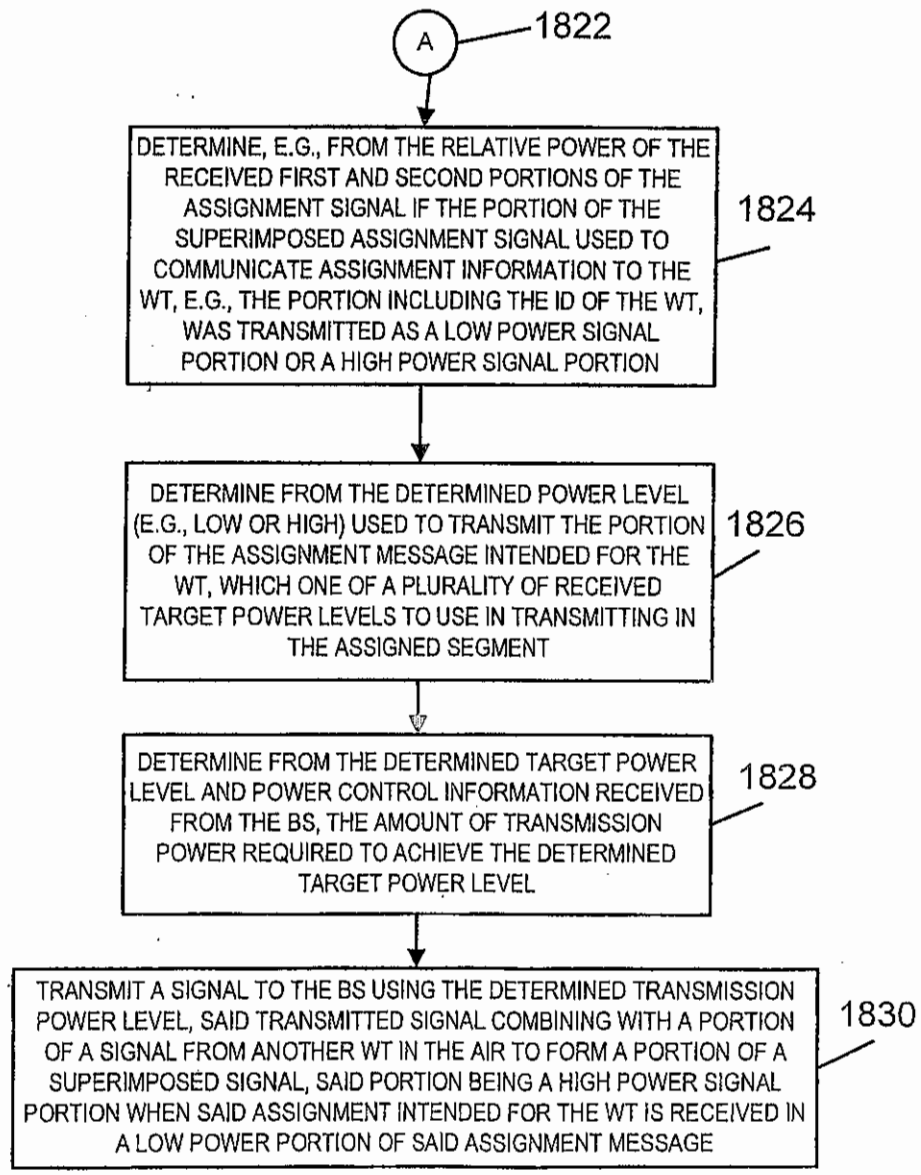

A
1822
DETERMINE, E.G., FROM THE RELATIVE POWER OF THE RECEIVED FIRST AND SECOND PORTIONS OF THE ASSIGNMENT SIGNAL IF THE PORTION OF THE SUPERIMPOSED ASSIGNMENT SIGNAL USED TO COMMUNICATE ASSIGNMENT INFORMATION TO THE WT, E.G., THE PORTION INCLUDING THE ID OF THE WT, WAS TRANSMITTED AS A LOW POWER SIGNAL PORTION OR A HIGH POWER SIGNAL PORTION
1824
DETERMINE FROM THE DETERMINED POWER LEVEL (E.G., LOW OR HIGH) USED TO TRANSMIT THE PORTION OF THE ASSIGNMENT MESSAGE INTENDED FOR THE WT, WHICH ONE OF A PLURALITY OF RECEIVED TARGET POWER LEVELS TO USE IN TRANSMITTING IN THE ASSIGNED SEGMENT
1826
DETERMINE FROM THE DETERMINED TARGET POWER LEVEL AND POWER CONTROL INFORMATION RECEIVED FROM THE BS, THE AMOUNT OF TRANSMISSION POWER REQUIRED TO ACHIEVE THE DETERMINED TARGET POWER LEVEL
1828
TRANSMIT A SIGNAL TO THE BS USING THE DETERMINED TRANSMISSION POWER LEVEL, SAID TRANSMITTED SIGNAL COMBINING WITH A PORTION OF A SIGNAL FROM ANOTHER WT IN THE AIR TO FORM A PORTION OF A SUPERIMPOSED SIGNAL, SAID PORTION BEING A HIGH POWER SIGNAL PORTION WHEN SAID ASSIGNMENT INTENDED FOR THE WT IS RECEIVED IN A LOW POWER PORTION OF SAID ASSIGNMENT MESSAGE
1830

Fig. 18B