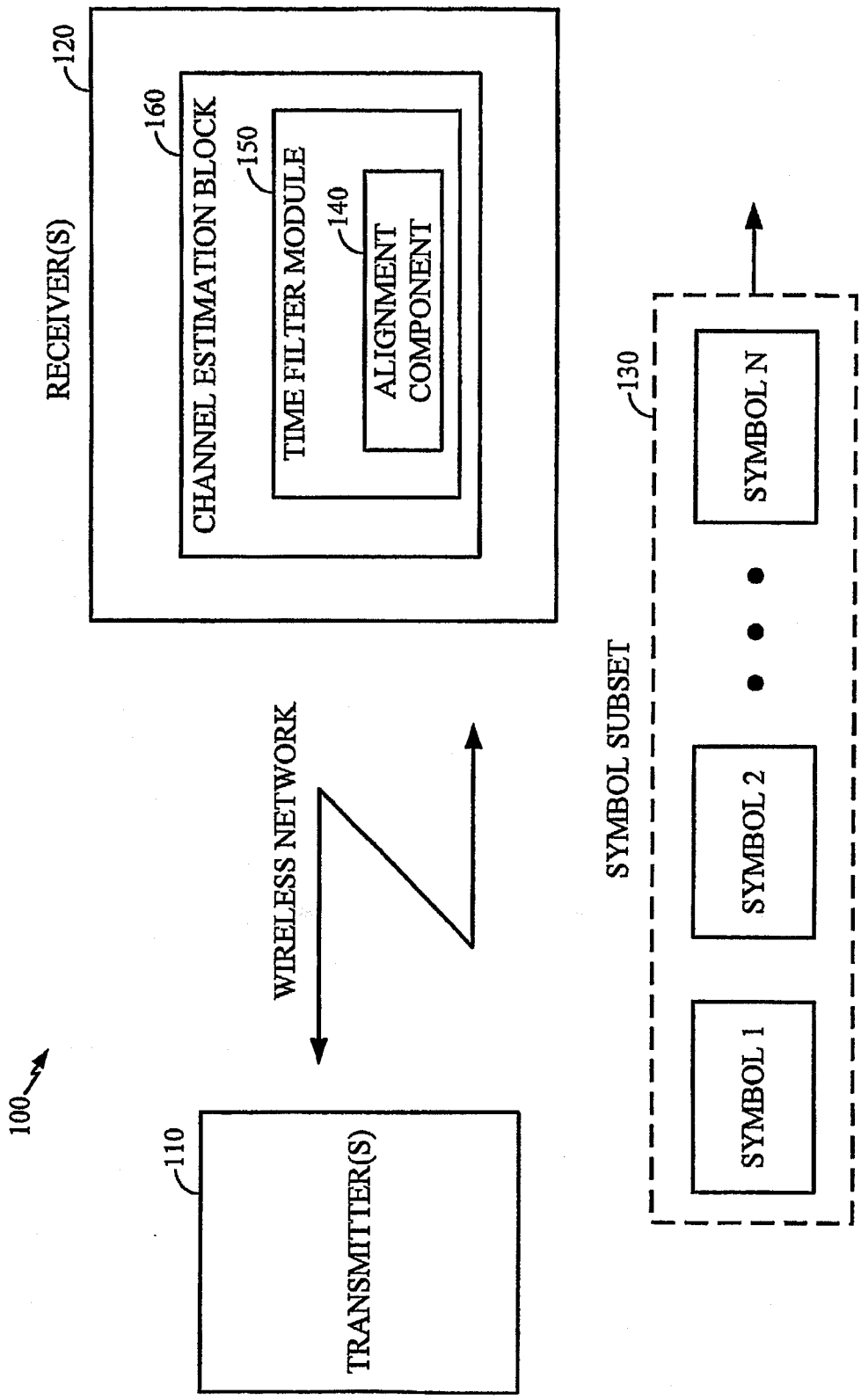

100
110
TRANSMITTER(S)
WIRELESS NETWORK
120
RECEIVER(S)
160
CHANNEL ESTIMATION BLOCK
150
TIME FILTER MODULE
140
ALIGNMENT COMPONENT
130
SYMBOL SUBSET
SYMBOL 1
SYMBOL 2
SYMBOL N

FIG. 1

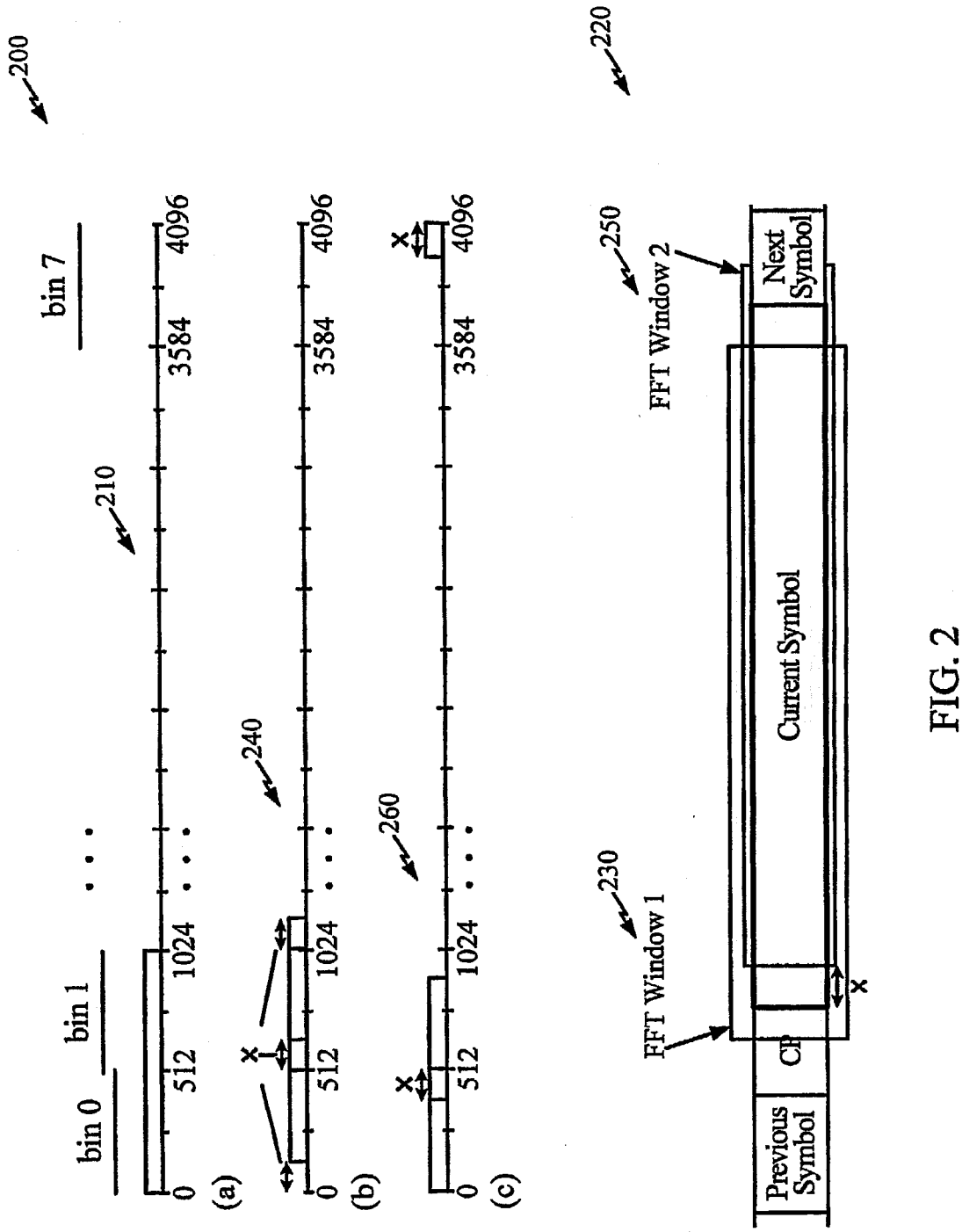
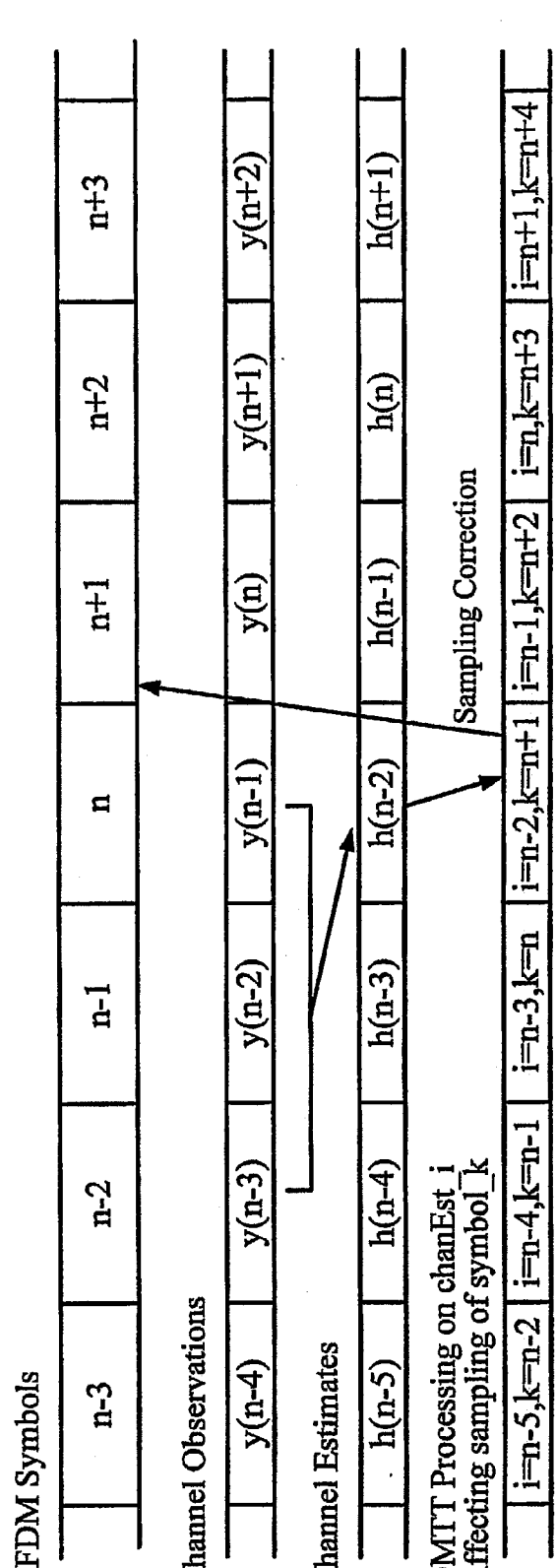

200
bin 0
bin 1
bin 7
210
0
512
1024
3584
4096
(a)
240
X
(b)
260
(c)
220
250
FFT Window 2
230
FFT Window 1
Previous Symbol
CP
Current Symbol
Next Symbol

FIG. 2



1. Cyclic shift on h(n) before demodulating symbol n
2. Apply correction on y(n-1) and y(n) before calculating h(n)

FIG. 3

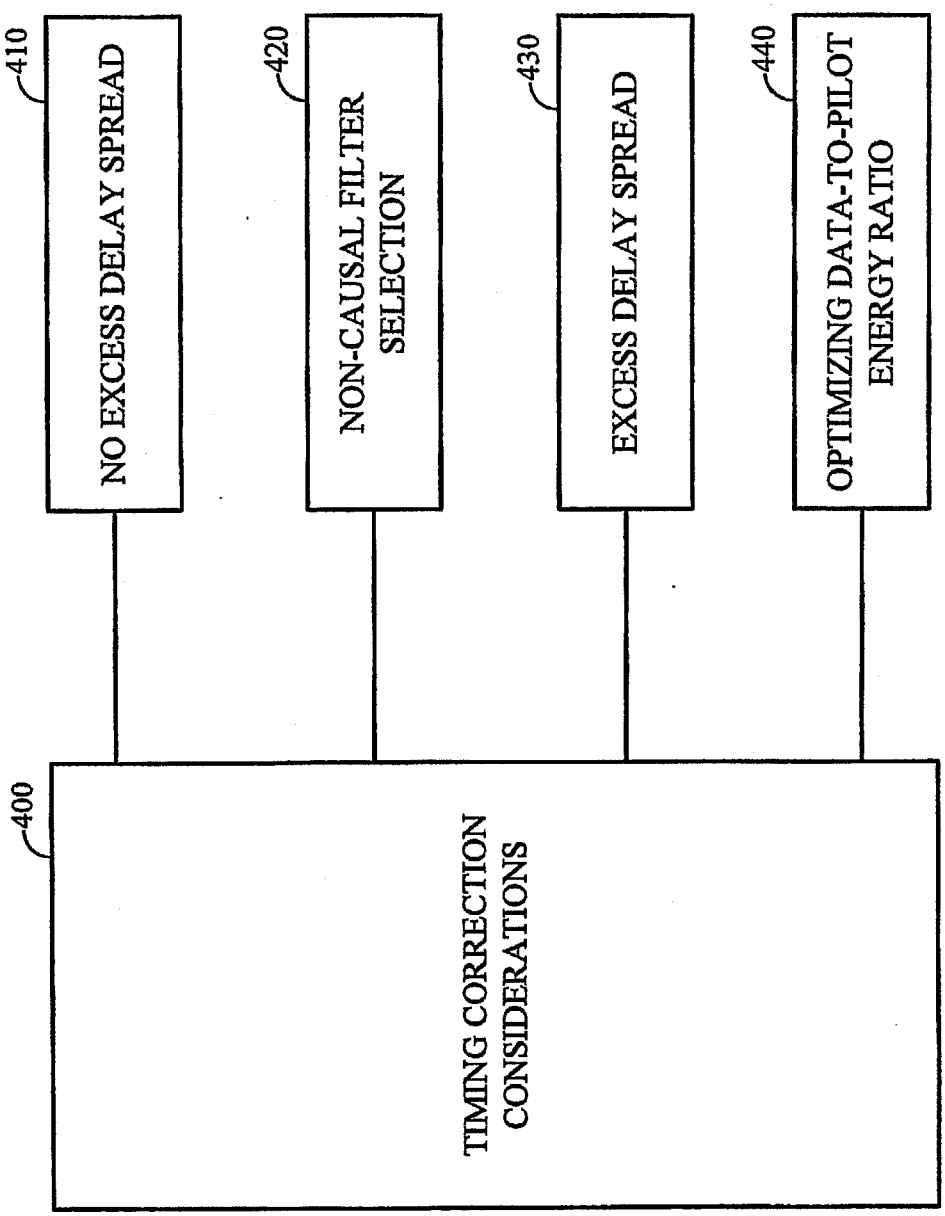

400
TIMING CORRECTION CONSIDERATIONS
410
NO EXCESS DELAY SPREAD
420
NON-CAUSAL FILTER SELECTION
430
EXCESS DELAY SPREAD
440
OPTIMIZING DATA-TO-PILOT ENERGY RATIO

FIG. 4

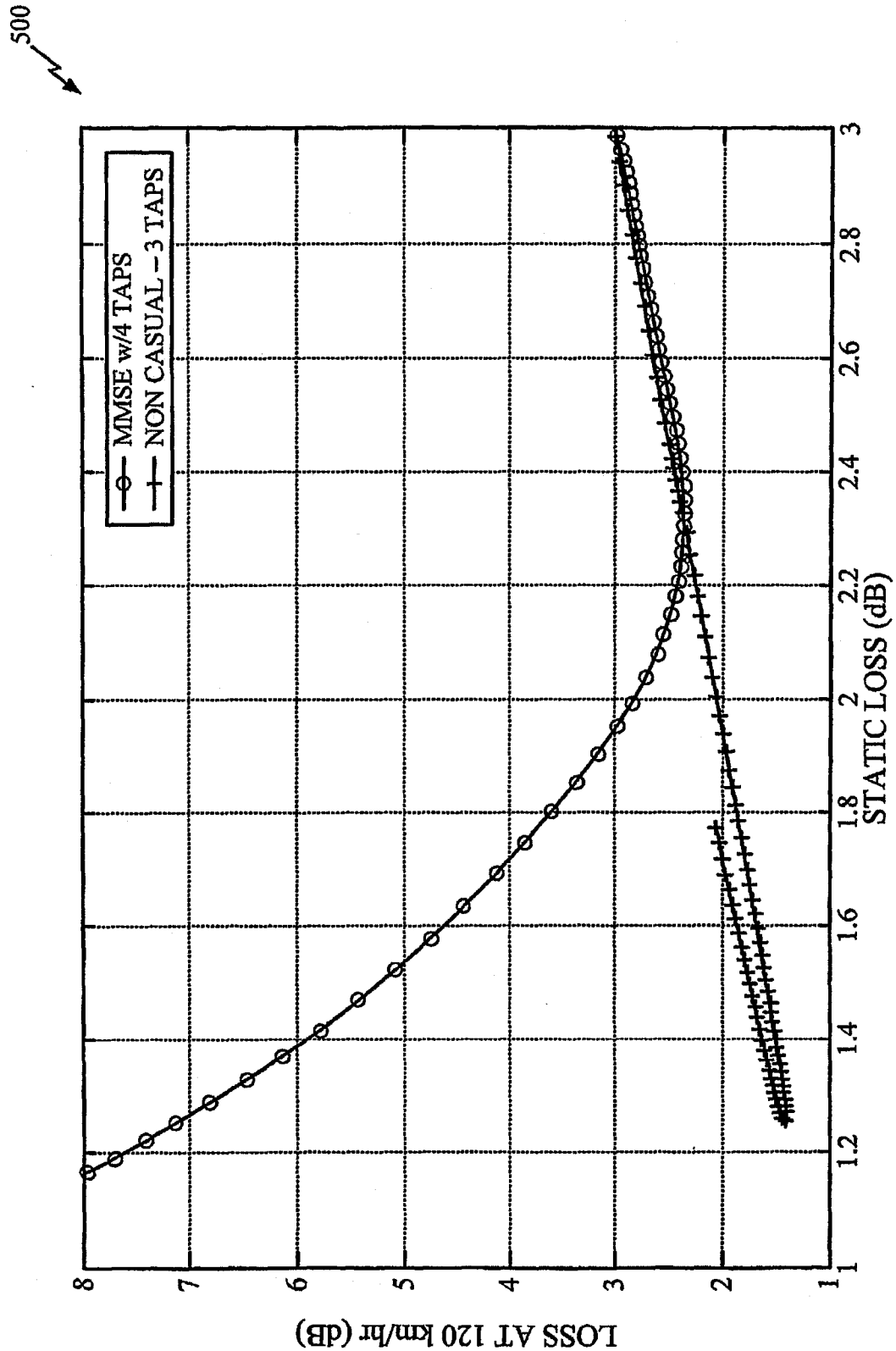

500
MMSE w/4 TAPS
NON CASUAL – 3 TAPS
LOSS AT 120 km/hr (dB)
STATIC LOSS (dB)
8
7
6
5
4
3
2
1
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3

FIG. 5

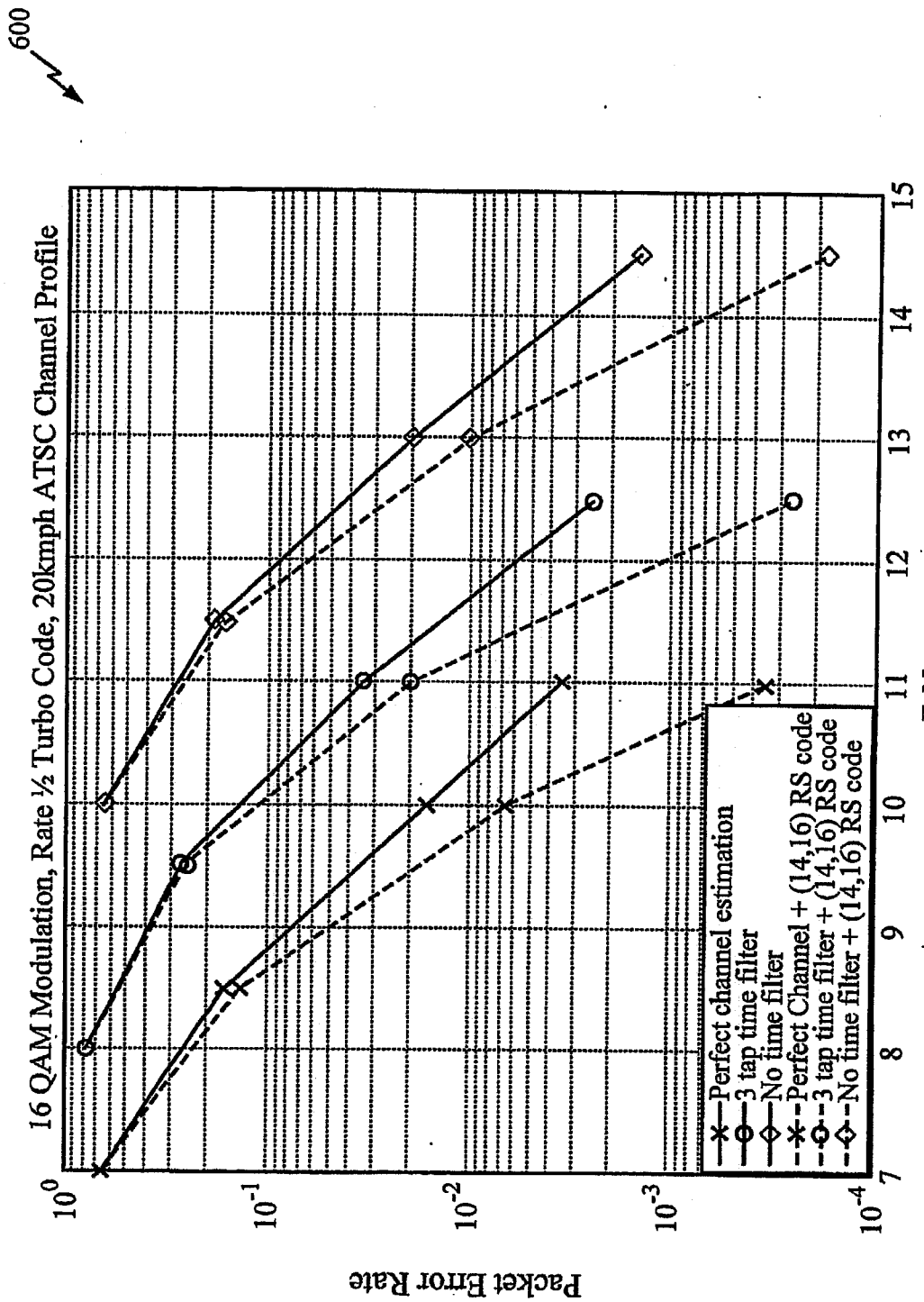

600
16 QAM Modulation, Rate ½ Turbo Code, 20kmph ATSC Channel Profile
Packet Error Rate
EsNo
Perfect channel estimation
3 tap time filter
No time filter
Perfect Channel + (14,16) RS code
3 tap time filter + (14,16) RS code
No time filter + (14,16) RS code

FIG. 6

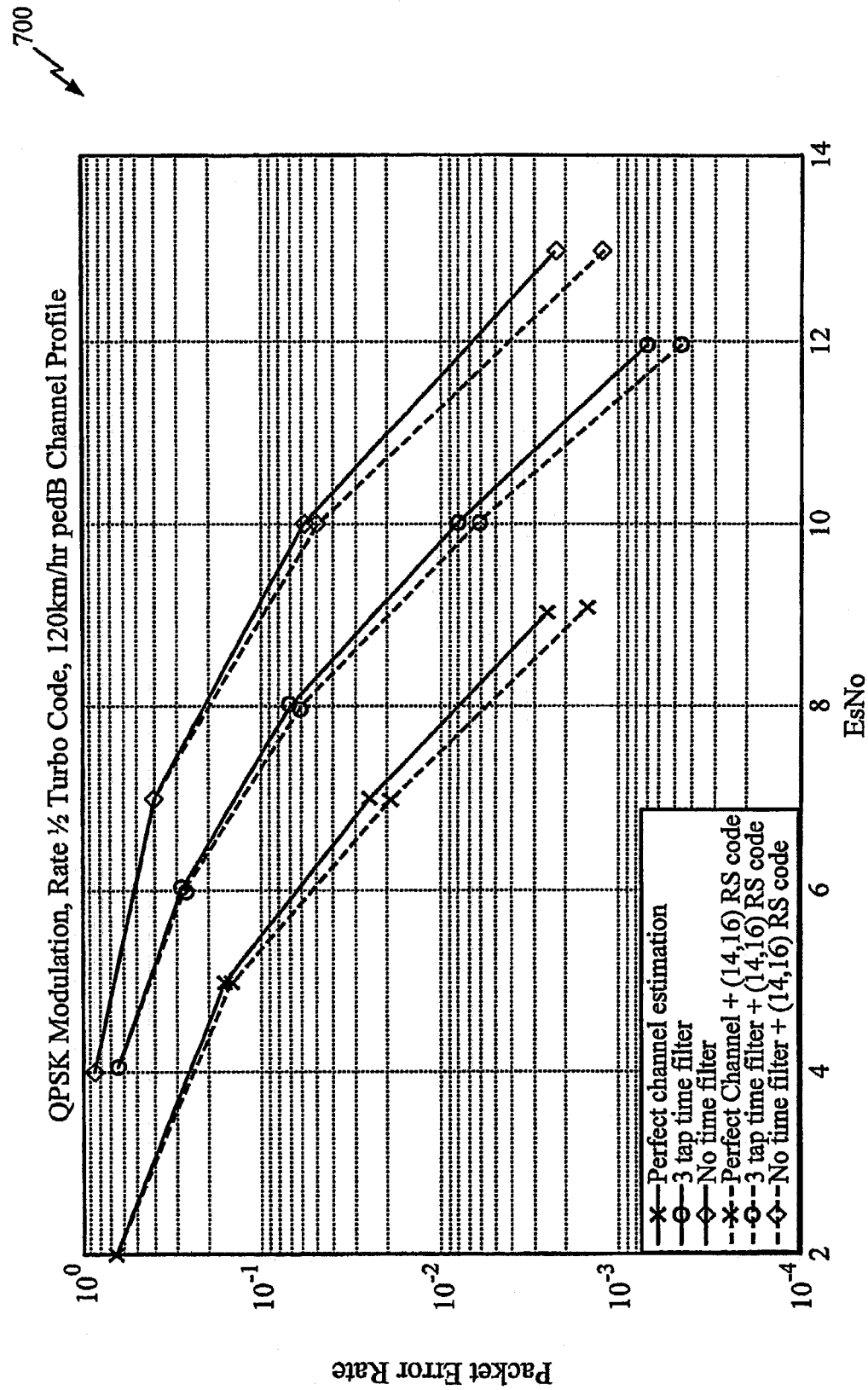

700
QPSK Modulation, Rate ½ Turbo Code, 120km/hr pedB Channel Profile
Packet Error Rate
EsNo
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2
4
6
8
10
12
14
Perfect channel estimation
3 tap time filter
No time filter
Perfect Channel + (14,16) RS code
3 tap time filter + (14,16) RS code
No time filter + (14,16) RS code

FIG. 7

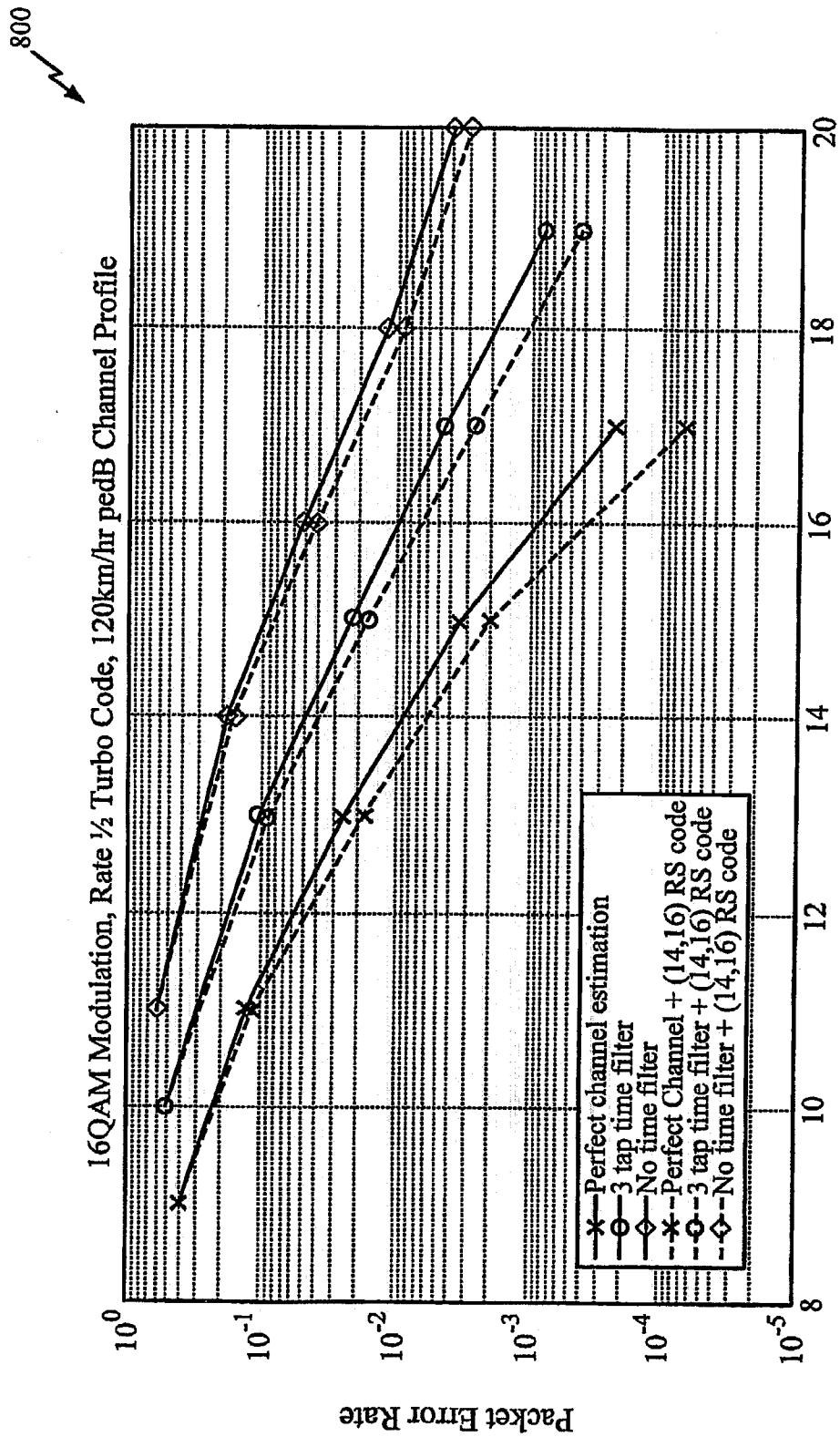

800
16QAM Modulation, Rate ½ Turbo Code, 120km/hr pedB Channel Profile
Packet Error Rate
EsNo
Perfect channel estimation
3 tap time filter
No time filter
Perfect Channel + (14,16) RS code
3 tap time filter + (14,16) RS code
No time filter + (14,16) RS code

FIG. 8

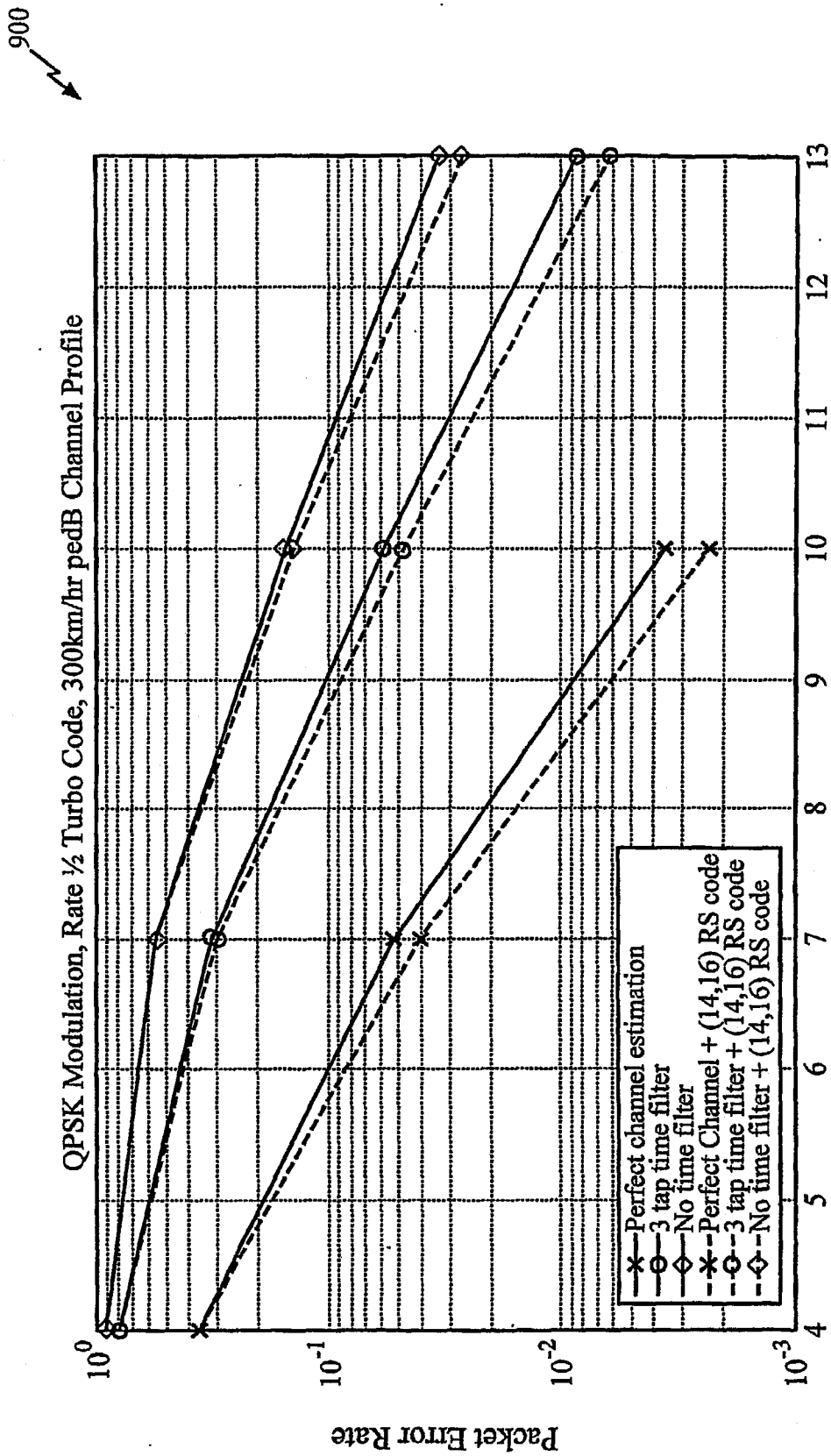

900
QPSK Modulation, Rate ½ Turbo Code, 300km/hr pedB Channel Profile
Packet Error Rate
10^{0}
10^{-1}
10^{-2}
10^{-3}
4
5
6
7
8
9
10
11
12
13
EsNo
Perfect channel estimation
3 tap time filter
No time filter
Perfect Channel + (14,16) RS code
3 tap time filter + (14,16) RS code
No time filter + (14,16) RS code

FIG. 9

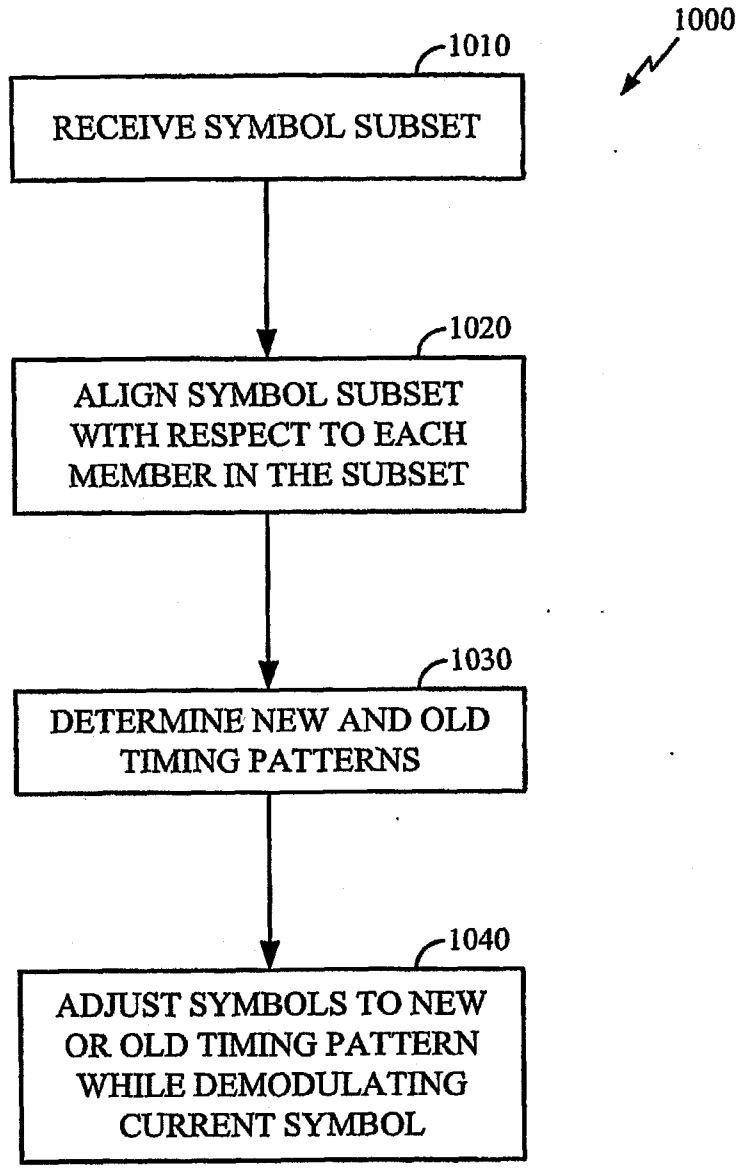

1000
1010
RECEIVE SYMBOL SUBSET
1020
ALIGN SYMBOL SUBSET WITH RESPECT TO EACH MEMBER IN THE SUBSET
1030
DETERMINE NEW AND OLD TIMING PATTERNS
1040
ADJUST SYMBOLS TO NEW OR OLD TIMING PATTERN WHILE DEMODULATING CURRENT SYMBOL

FIG. 10

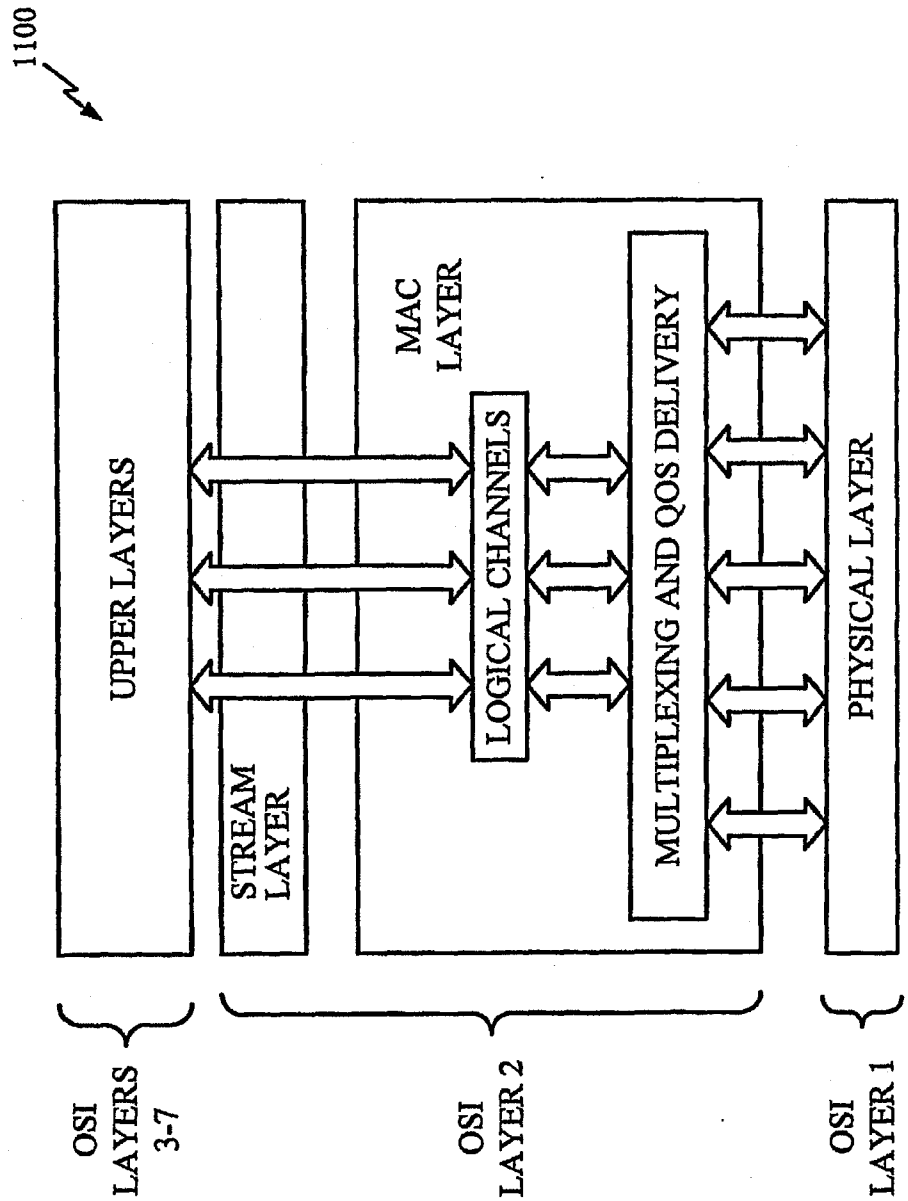

1100
UPPER LAYERS
STREAM LAYER
MAC LAYER
LOGICAL CHANNELS
MULTIPLEXING AND QOS DELIVERY
PHYSICAL LAYER
OSI LAYERS 3-7
OSI LAYER 2
OSI LAYER 1

FIG. 11

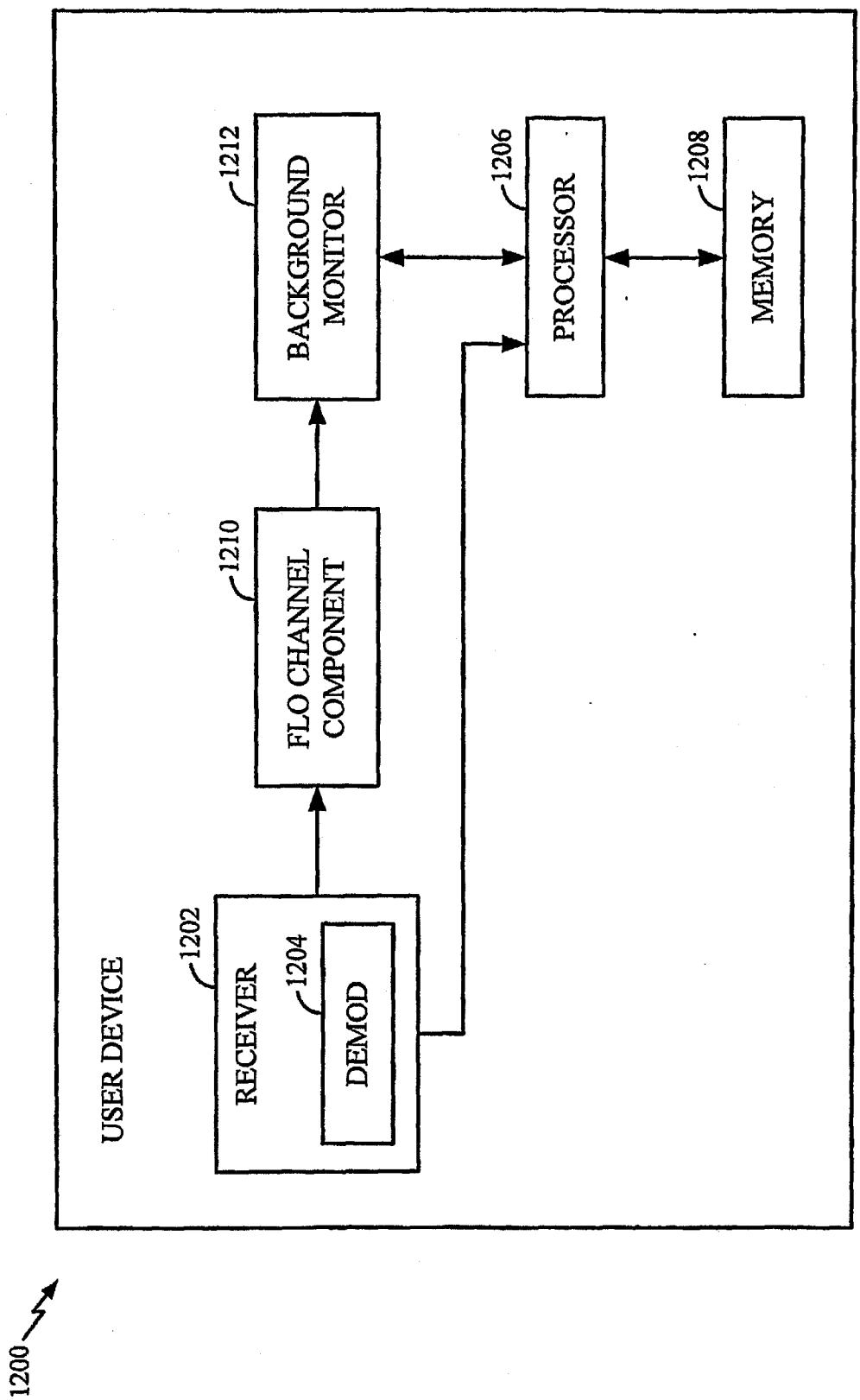

1200
USER DEVICE
1202
RECEIVER
1204
DEMOD
1210
FLO CHANNEL COMPONENT
1212
BACKGROUND MONITOR
1206
PROCESSOR
1208
MEMORY

FIG. 12

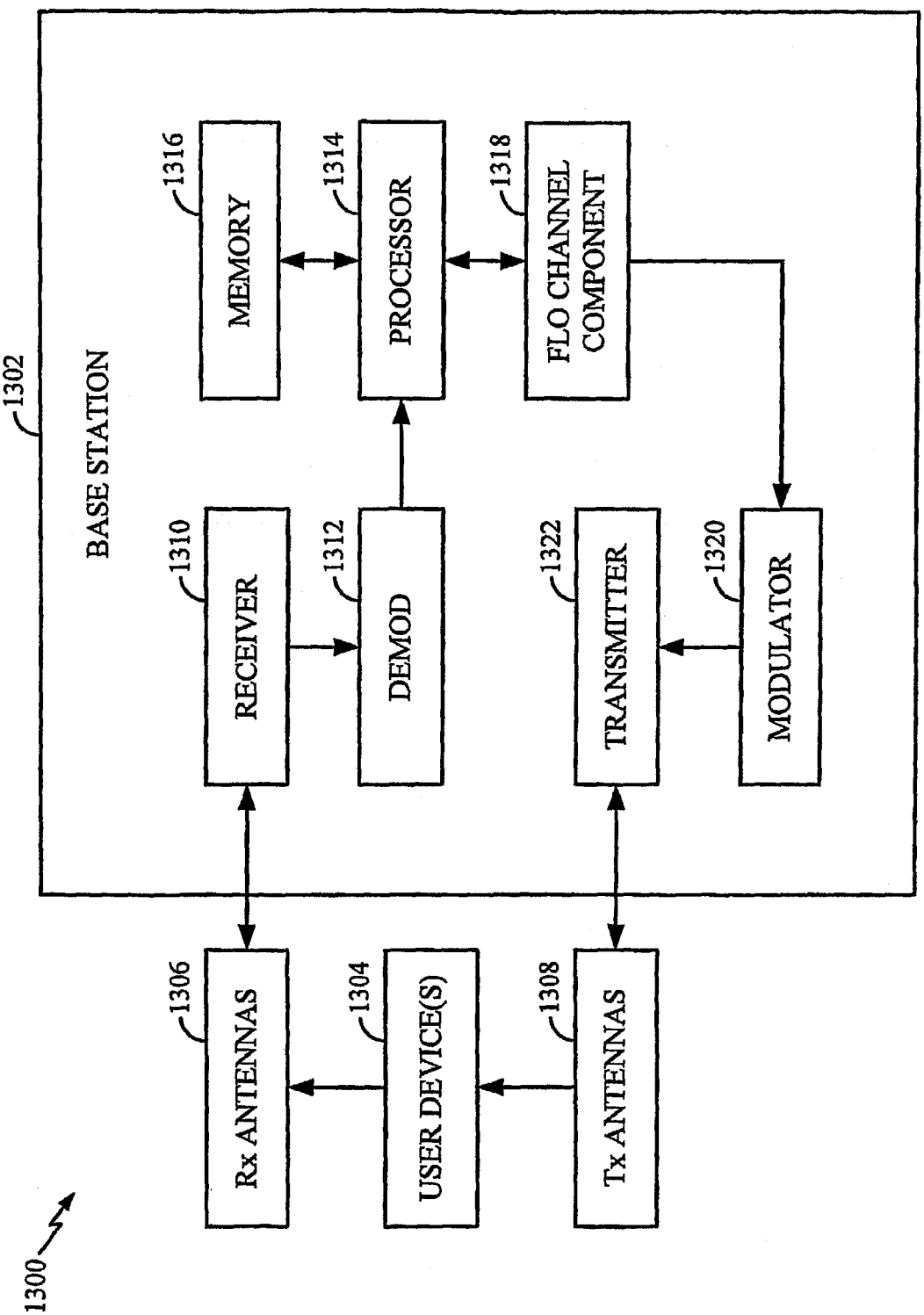

1300
1302
BASE STATION
1306
Rx ANTENNAS
1304
USER DEVICE(S)
1308
Tx ANTENNAS
1310
RECEIVER
1312
DEMOD
1314
PROCESSOR
1316
MEMORY
1318
FLO CHANNEL COMPONENT
1320
MODULATOR
1322
TRANSMITTER

FIG. 13

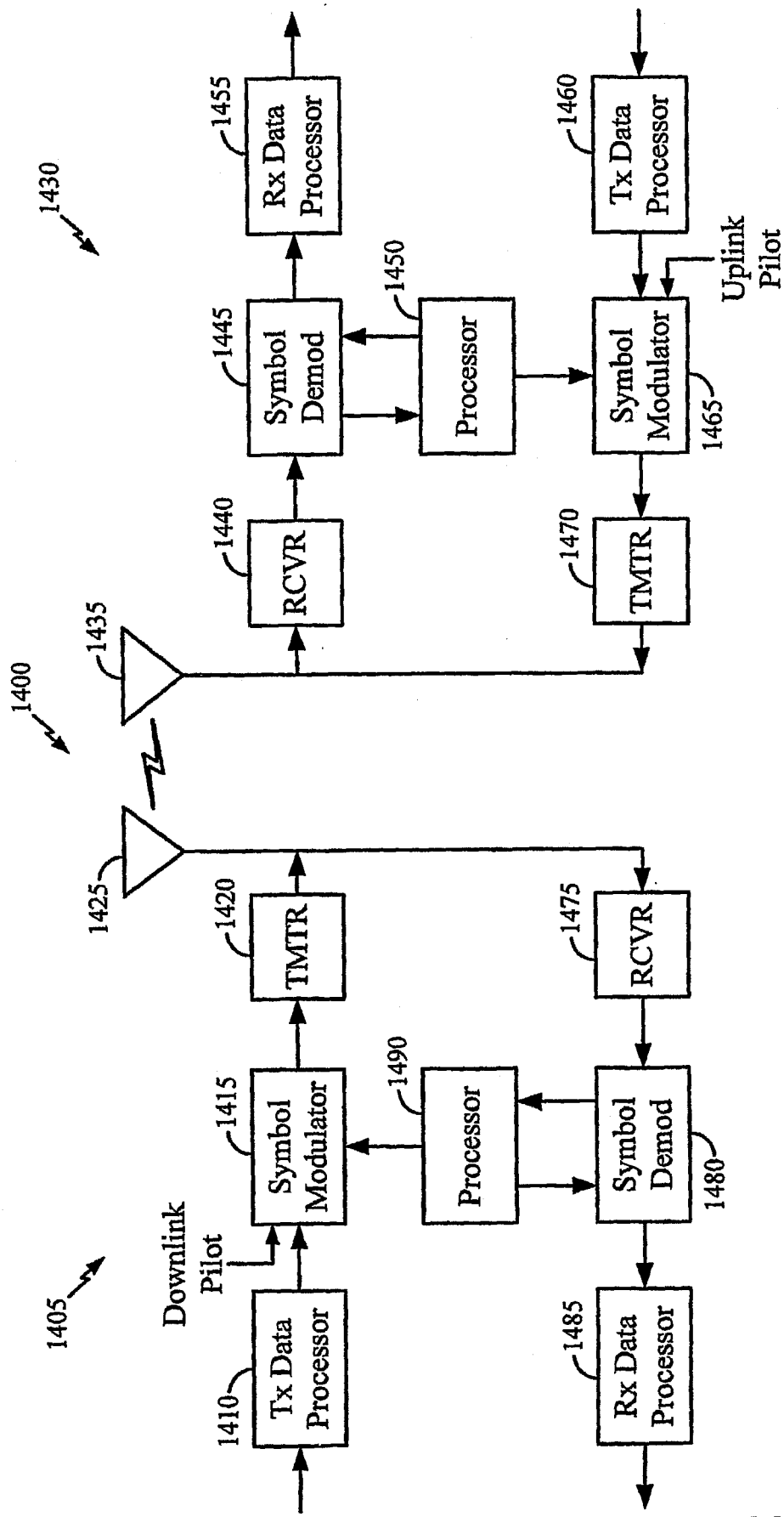

1405
1410
Tx Data Processor
Downlink Pilot
1415
Symbol Modulator
1420
TMTR
1425
1400
1435
1430
1440
RCVR
1445
Symbol Demod
1450
Processor
1455
Rx Data Processor
1460
Tx Data Processor
Uplink Pilot
1465
Symbol Modulator
1470
TMTR
1475
RCVR
1480
Symbol Demod
1485
Rx Data Processor
1490
Processor

FIG. 14