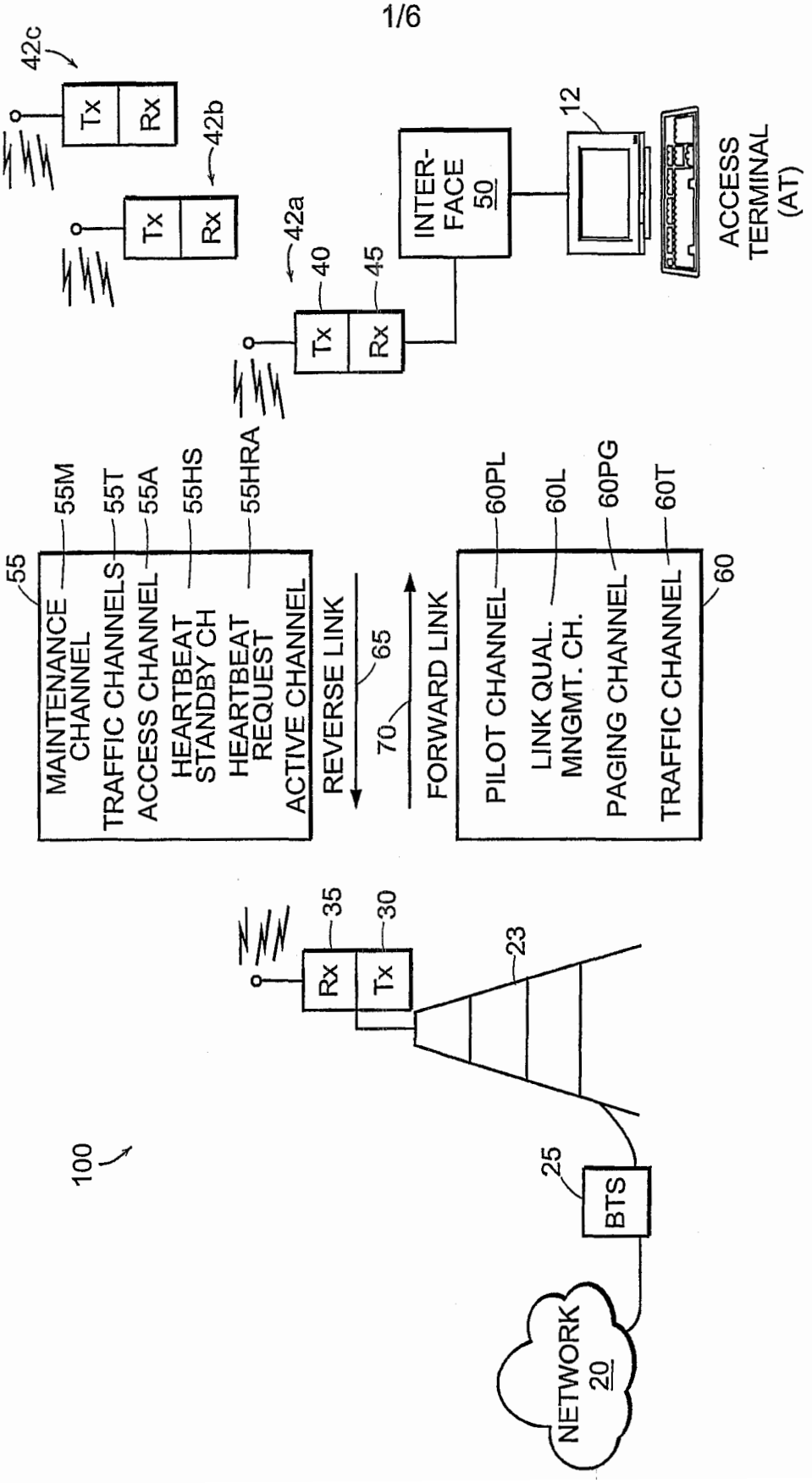
100
NETWORK 20
25
BTS
23
35
Rx
30
Tx
55
MAINTENANCE CHANNEL
55M
TRAFFIC CHANNELS
55T
ACCESS CHANNEL
55A
HEARTBEAT STANDBY CH
55HS
HEARTBEAT REQUEST
55HRA
ACTIVE CHANNEL
REVERSE LINK
65
70
FORWARD LINK
PILOT CHANNEL
60PL
LINK QUAL. MNGMT. CH.
60L
PAGING CHANNEL
60PG
TRAFFIC CHANNEL
60T
60
42a
40
Tx
45
Rx
INTER-FACE 50
12
ACCESS TERMINAL (AT)
42b
Tx
Rx
42c
Tx
Rx

FIG. 1

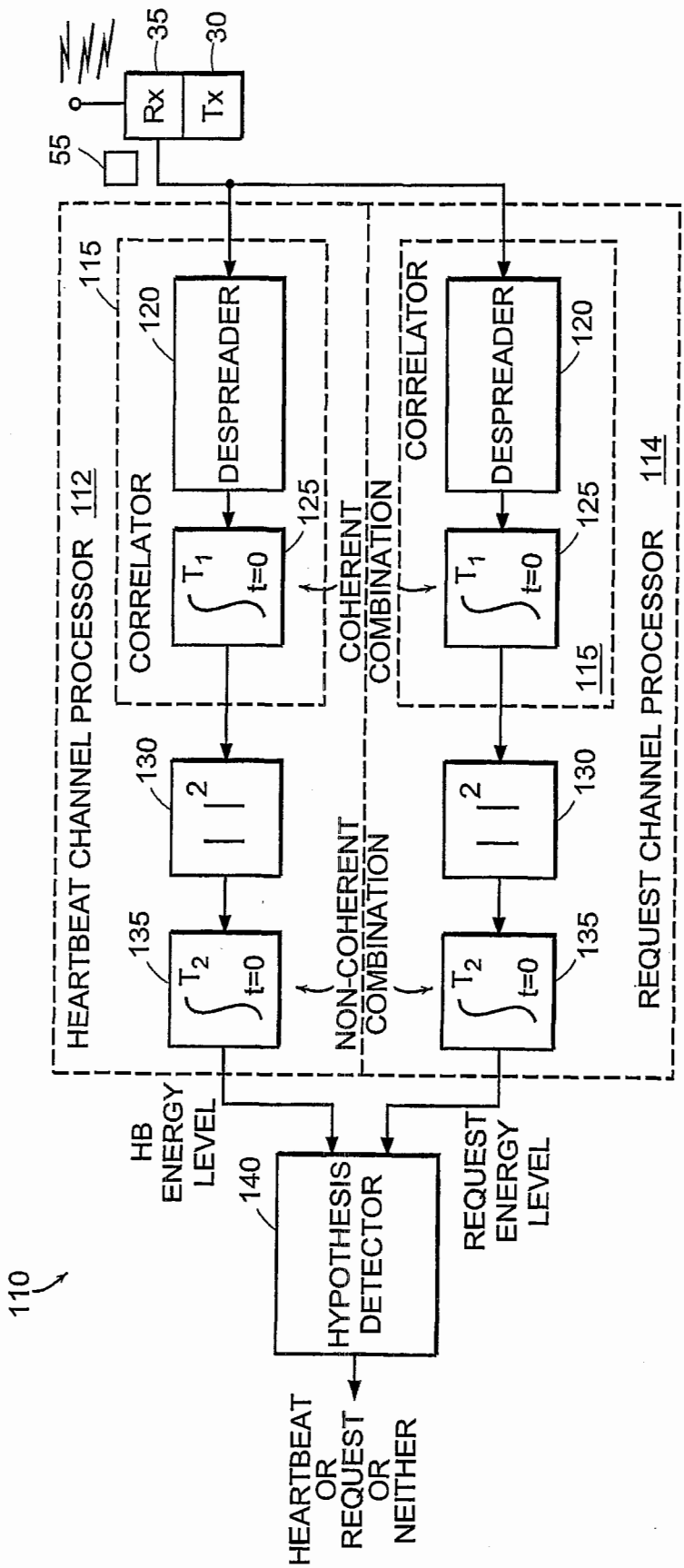
110
55
Rx
Tx
35
30
HEARTBEAT CHANNEL PROCESSOR 112
REQUEST CHANNEL PROCESSOR 114
115
CORRELATOR
DESPREADER
120
125
$\int_{t=0}^{T_1}$
COHERENT COMBINATION
130
$|\ |^2$
NON-COHERENT COMBINATION
135
$\int_{t=0}^{T_2}$
HB ENERGY LEVEL
REQUEST ENERGY LEVEL
140
HYPOTHESIS DETECTOR
HEARTBEAT OR REQUEST OR NEITHER

FIG. 2

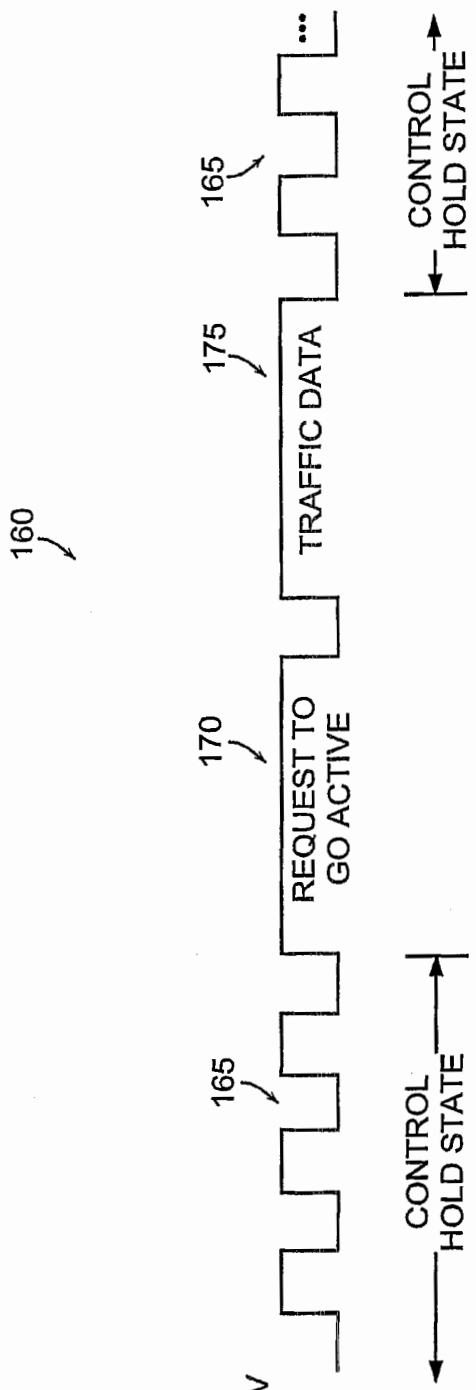
160
1xEV-DV
165
CONTROL HOLD STATE
170
REQUEST TO GO ACTIVE
175
TRAFFIC DATA
165
CONTROL HOLD STATE
...

FIG. 3A

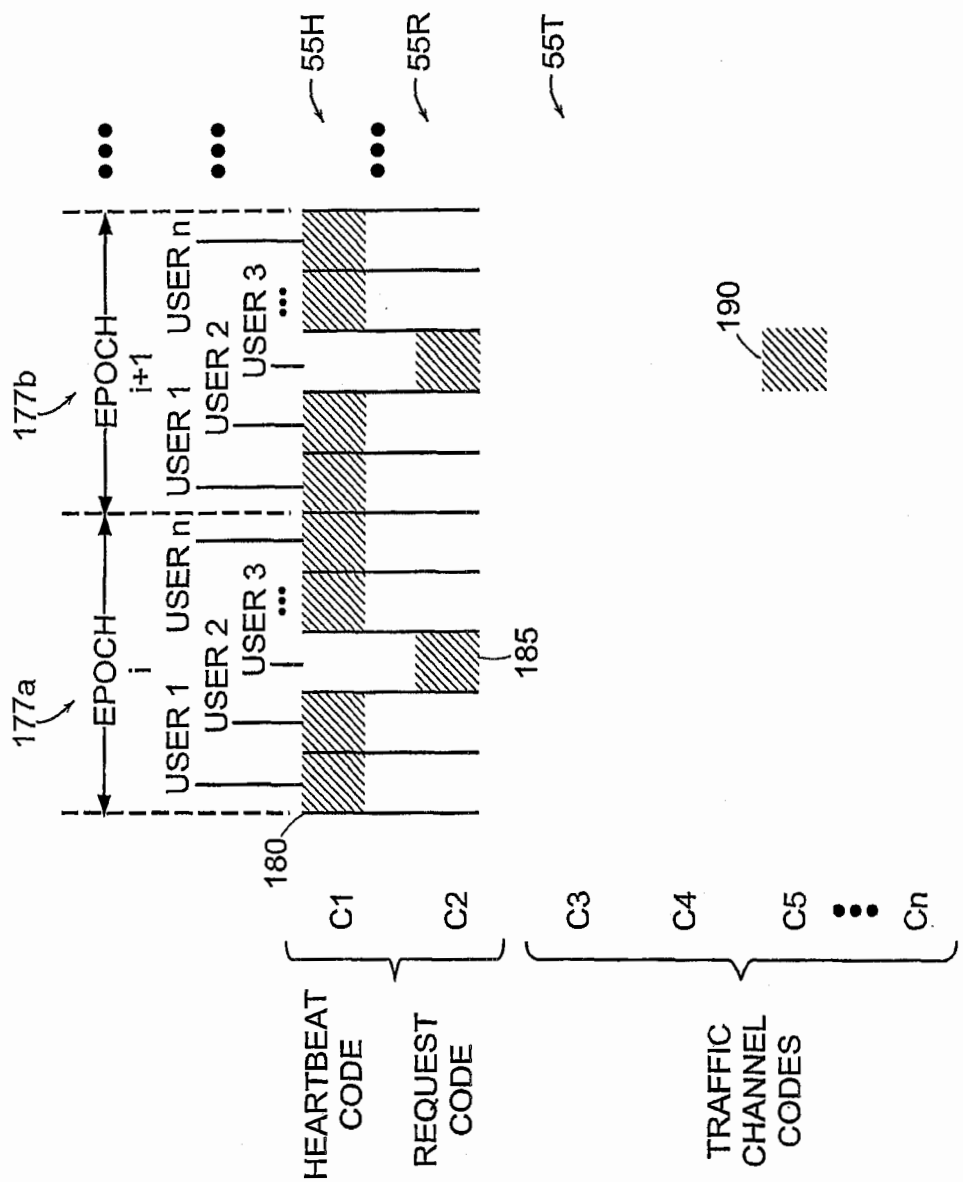
177a
EPOCH
i
177b
EPOCH
i+1
USER 1
USER 2
USER 3
USER n
55H
55R
55T
185
190
180
C1
C2
C3
C4
C5
Cn
HEARTBEAT CODE
REQUEST CODE
TRAFFIC CHANNEL CODES

FIG. 3B

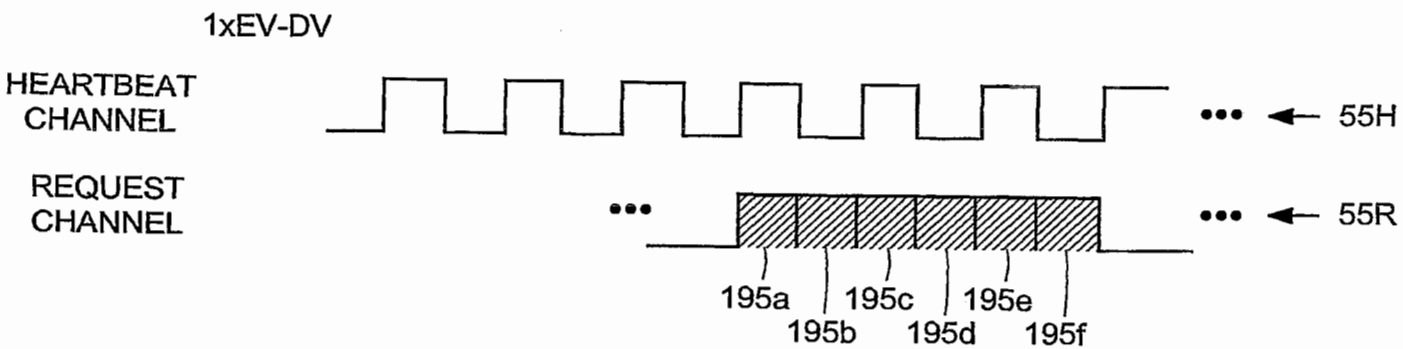
1xEV-DV
HEARTBEAT CHANNEL
REQUEST CHANNEL
55H
55R
195a
195b
195c
195d
195e
195f

FIG. 3C

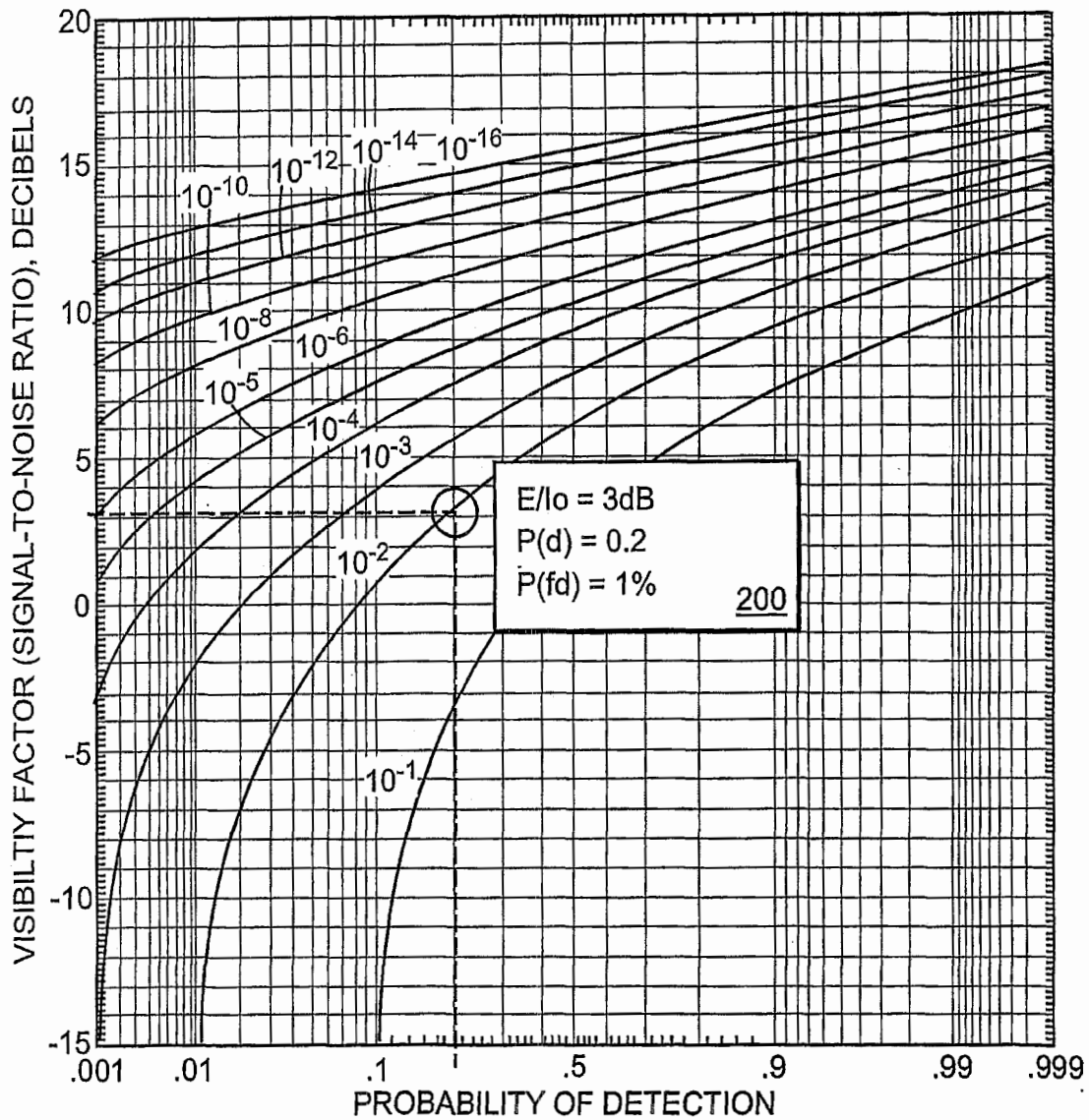
VISIBILTIY FACTOR (SIGNAL-TO-NOISE RATIO), DECIBELS
20
15
10
5
0
-5
-10
-15
10^{-10}
10^{-12}
10^{-14}
10^{-16}
10^{-8}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
E/Io = 3dB
P(d) = 0.2
P(fd) = 1%
200
.001
.01
.1
.5
.9
.99
.999
PROBABILITY OF DETECTION

FIG. 4