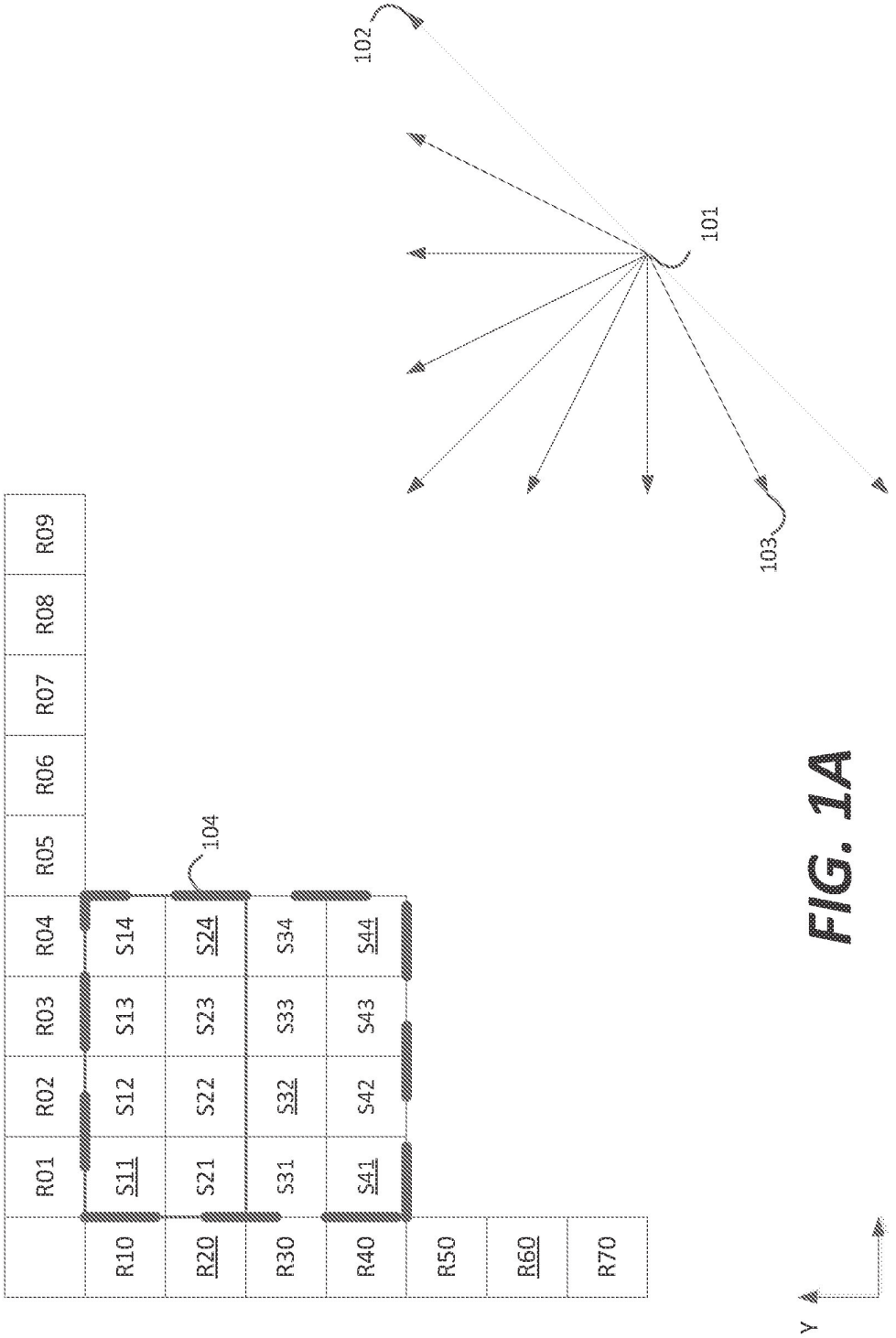

R01
R02
R03
R04
R05
R06
R07
R08
R09
R10
R20
R30
R40
R50
R60
R70
S11
S12
S13
S14
S21
S22
S23
S24
S31
S32
S33
S34
S41
S42
S43
S44
104
101
102
103
Y
X

FIG. 1A

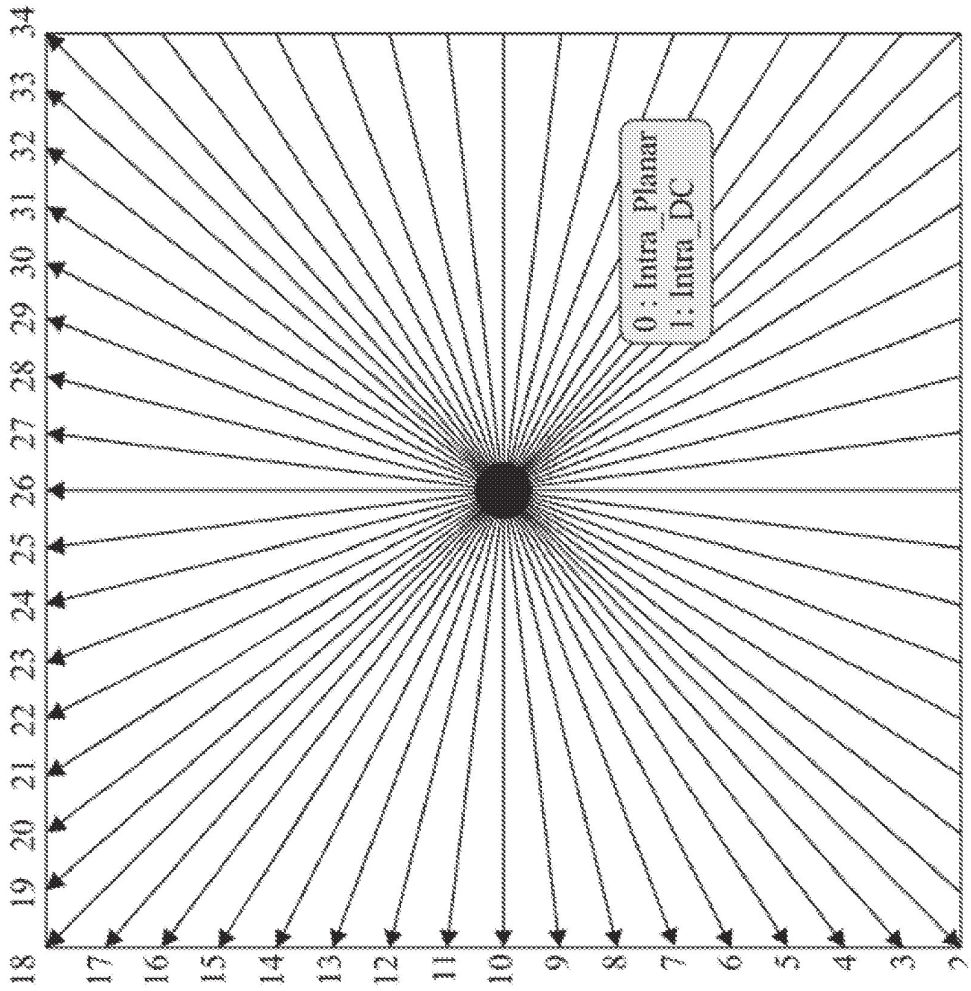

0: Intra_Planar
1: Intra_DC
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3

FIG. 1B

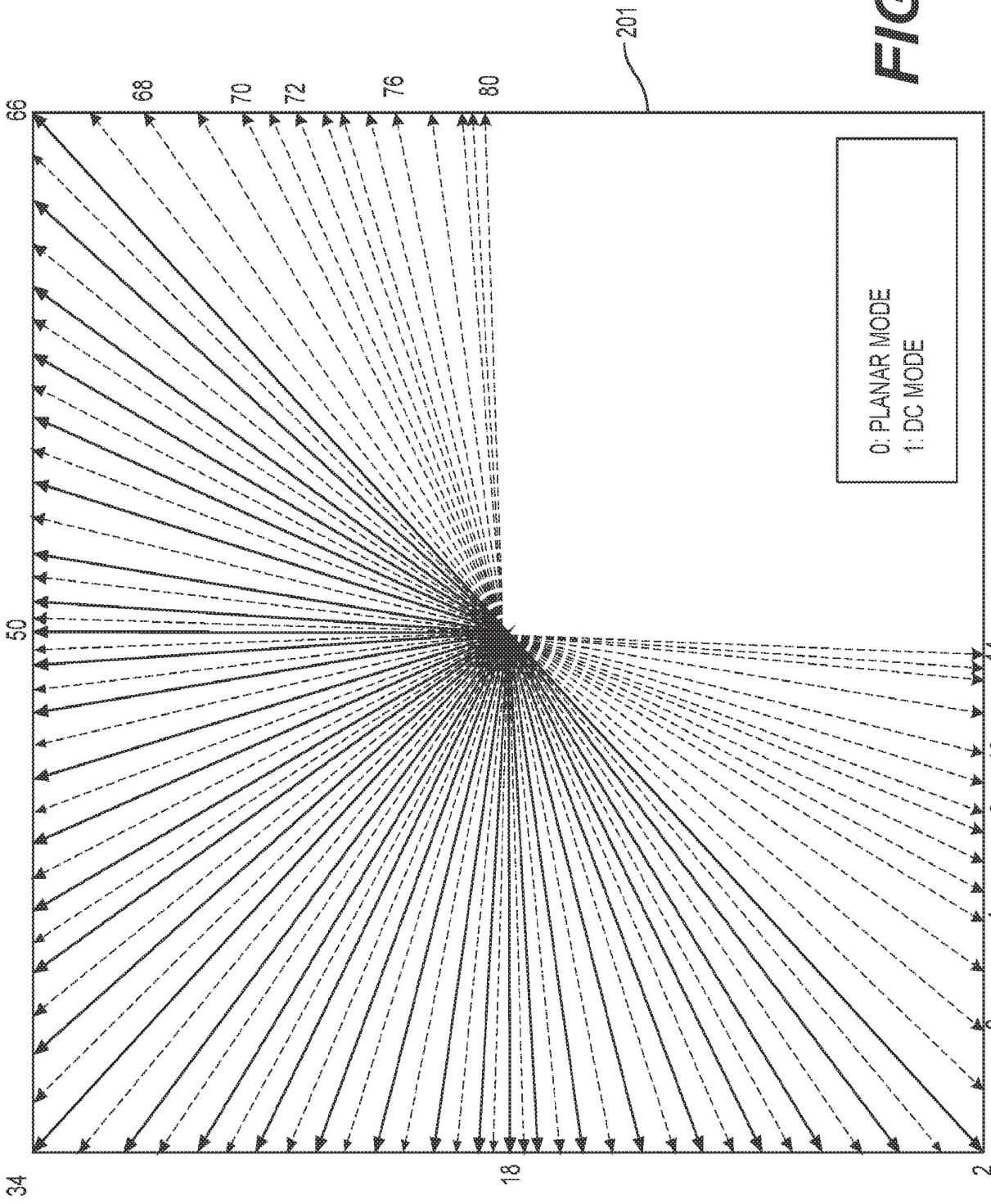



FIG. 1C

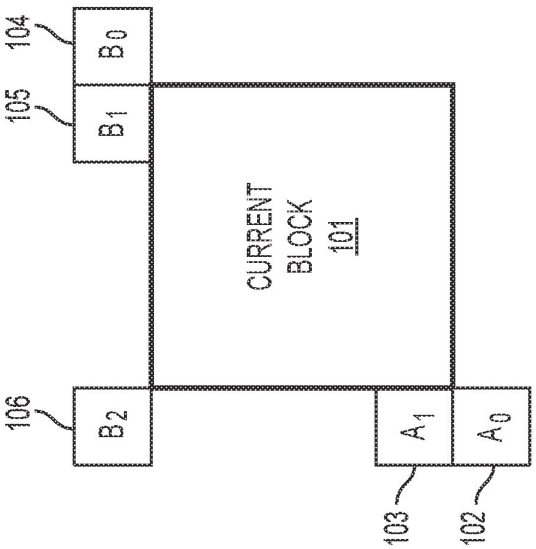



FIG. 1D

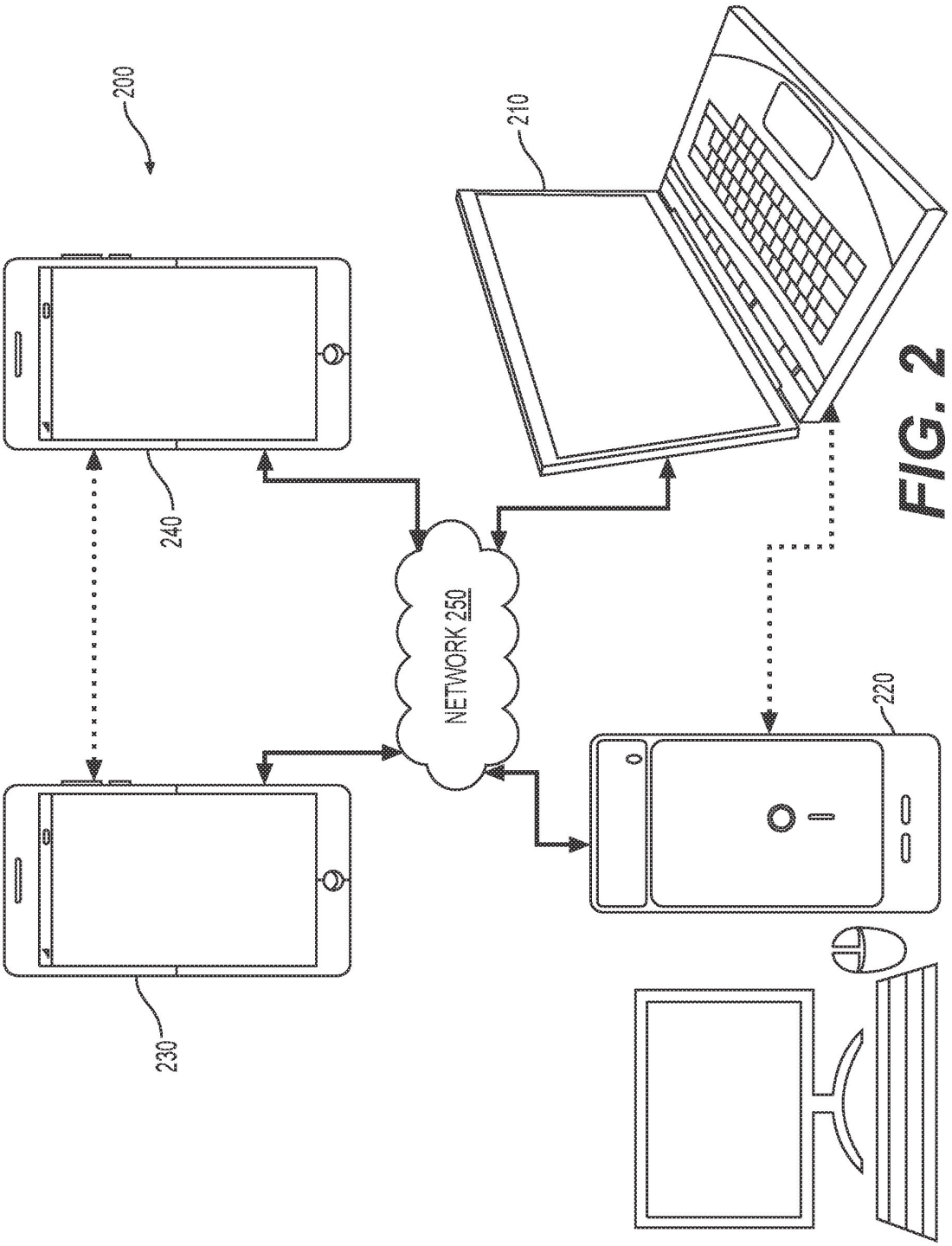



FIG. 2

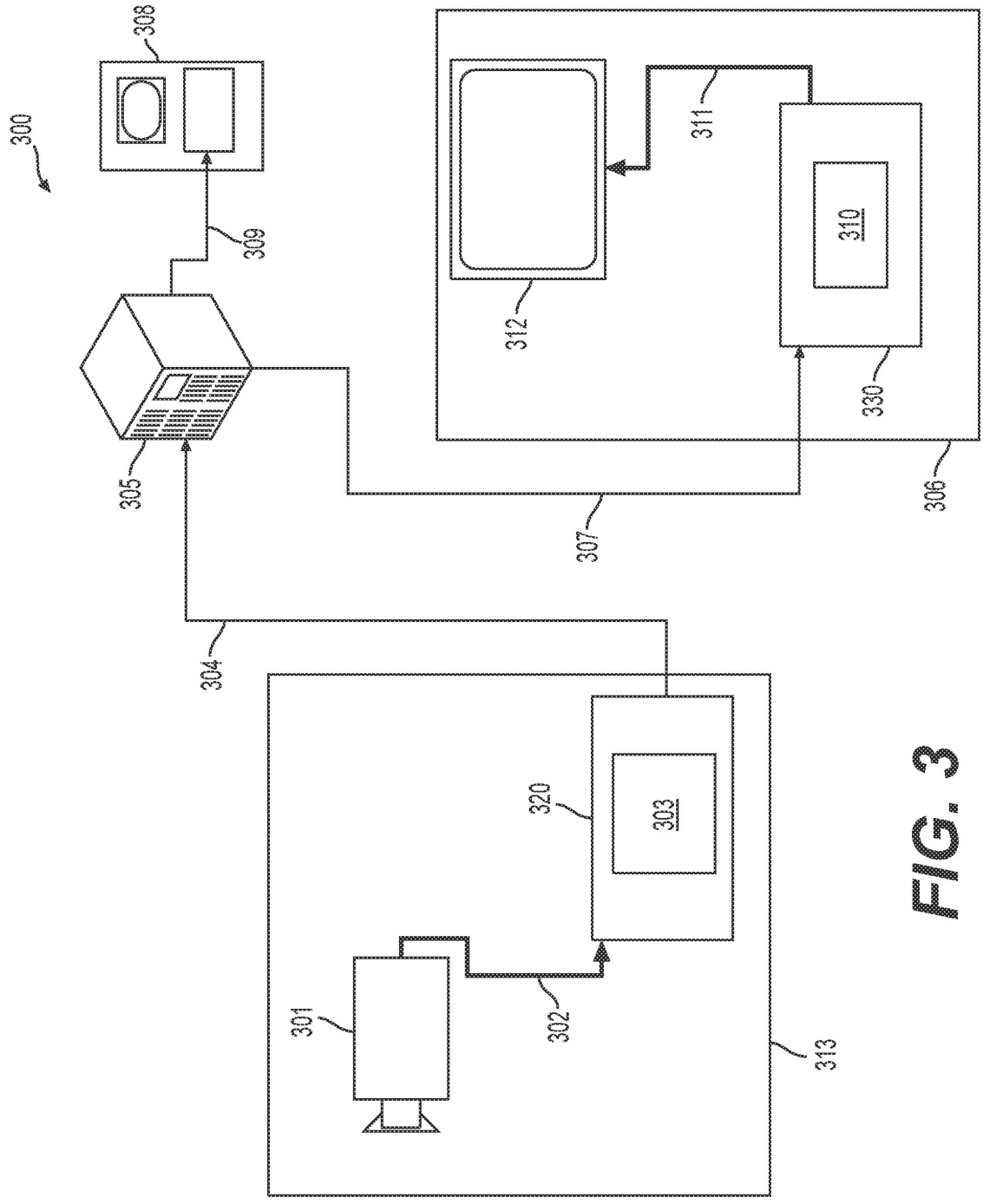



FIG. 3

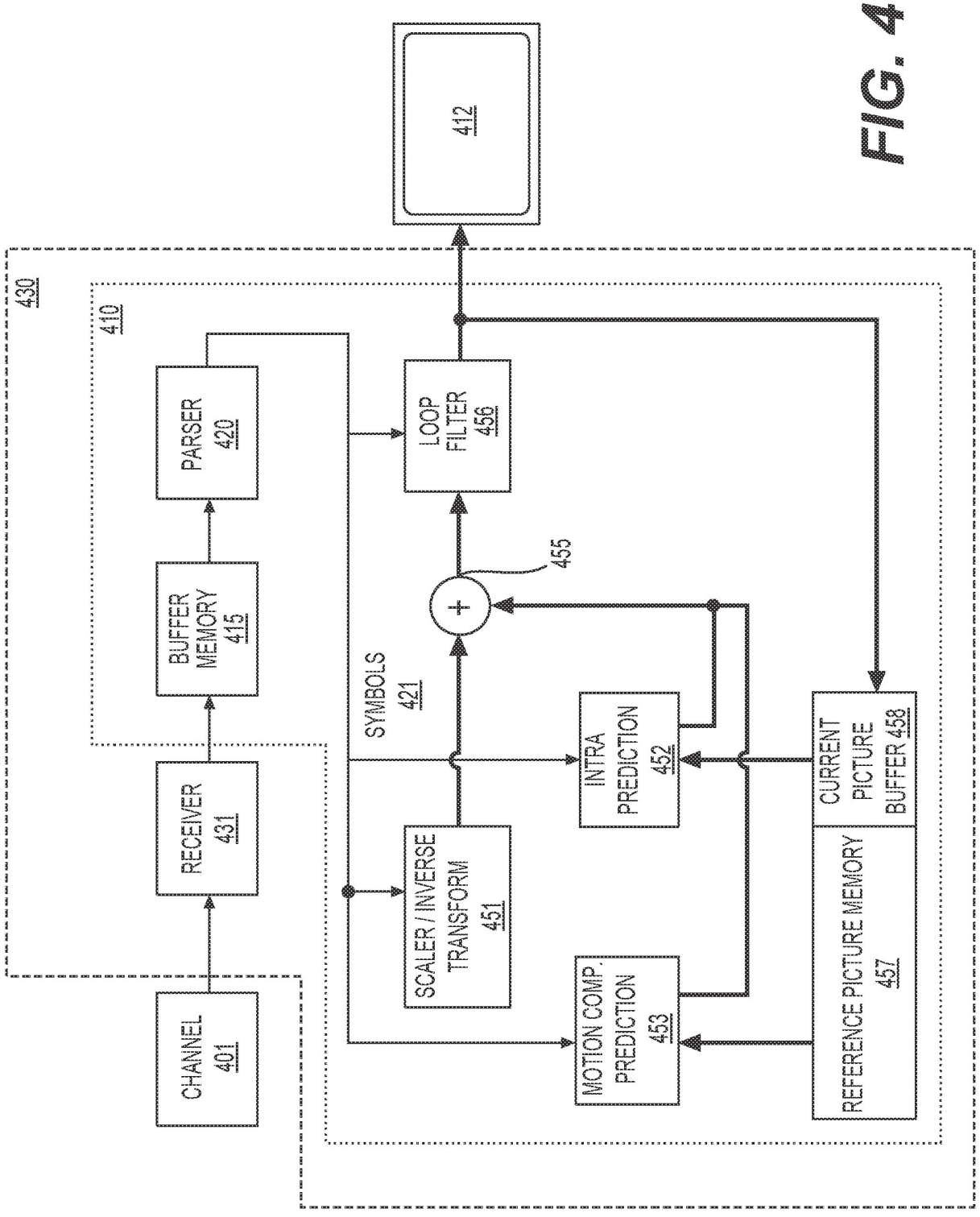

412
430
410
PARSER 420
BUFFER MEMORY 415
RECEIVER 431
CHANNEL 401
LOOP FILTER 456
455
+
SYMBOLS 421
SCALER / INVERSE TRANSFORM 451
INTRA PREDICTION 452
MOTION COMP. PREDICTION 453
CURRENT PICTURE BUFFER 458
REFERENCE PICTURE MEMORY 457

FIG. 4

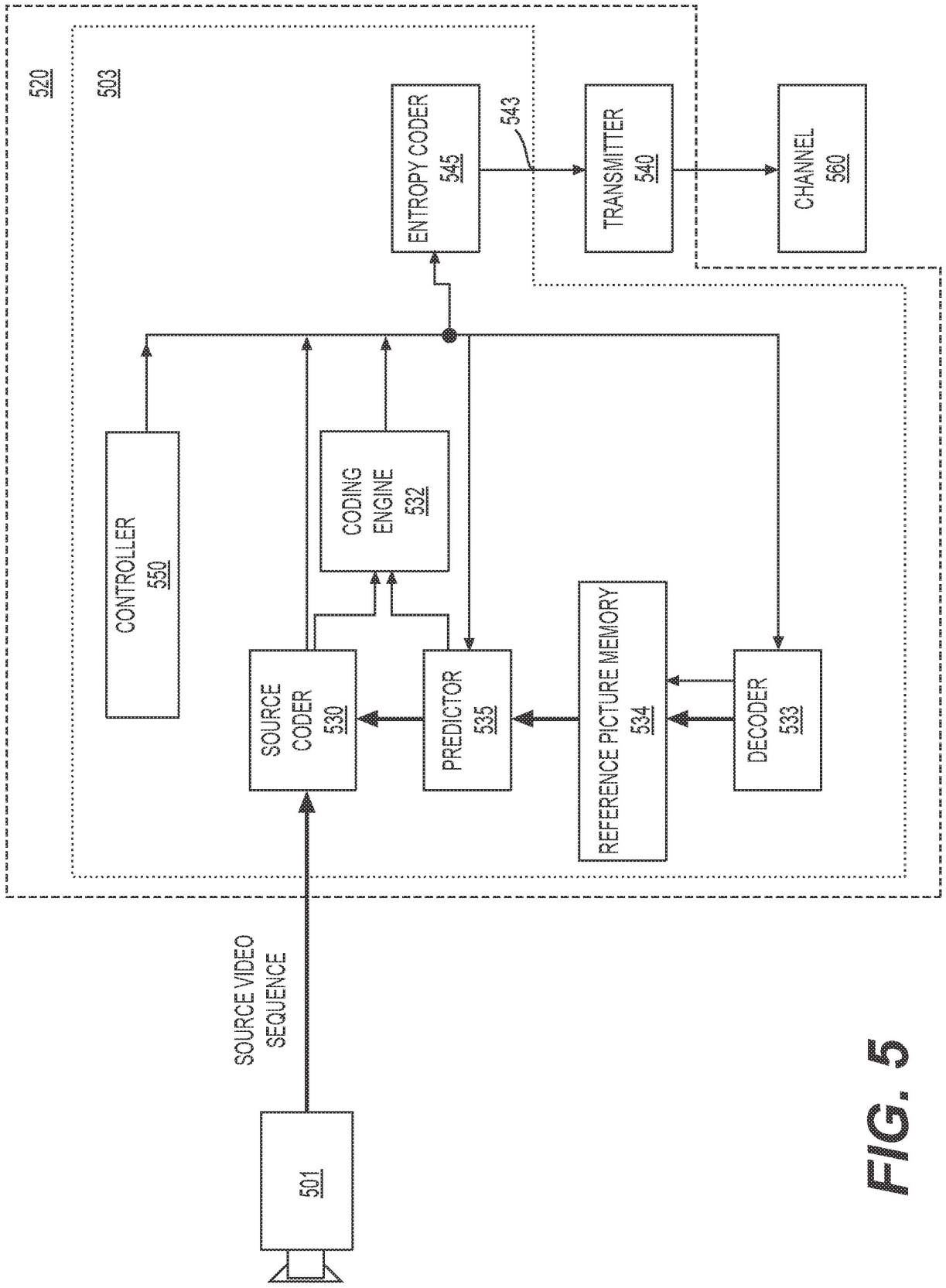

520
503
ENTROPY CODER
545
543
TRANSMITTER
540
CHANNEL
560
CONTROLLER
550
CODING
ENGINE
532
SOURCE
CODER
530
PREDICTOR
535
REFERENCE PICTURE MEMORY
534
DECODER
533
SOURCE VIDEO
SEQUENCE
501

FIG. 5

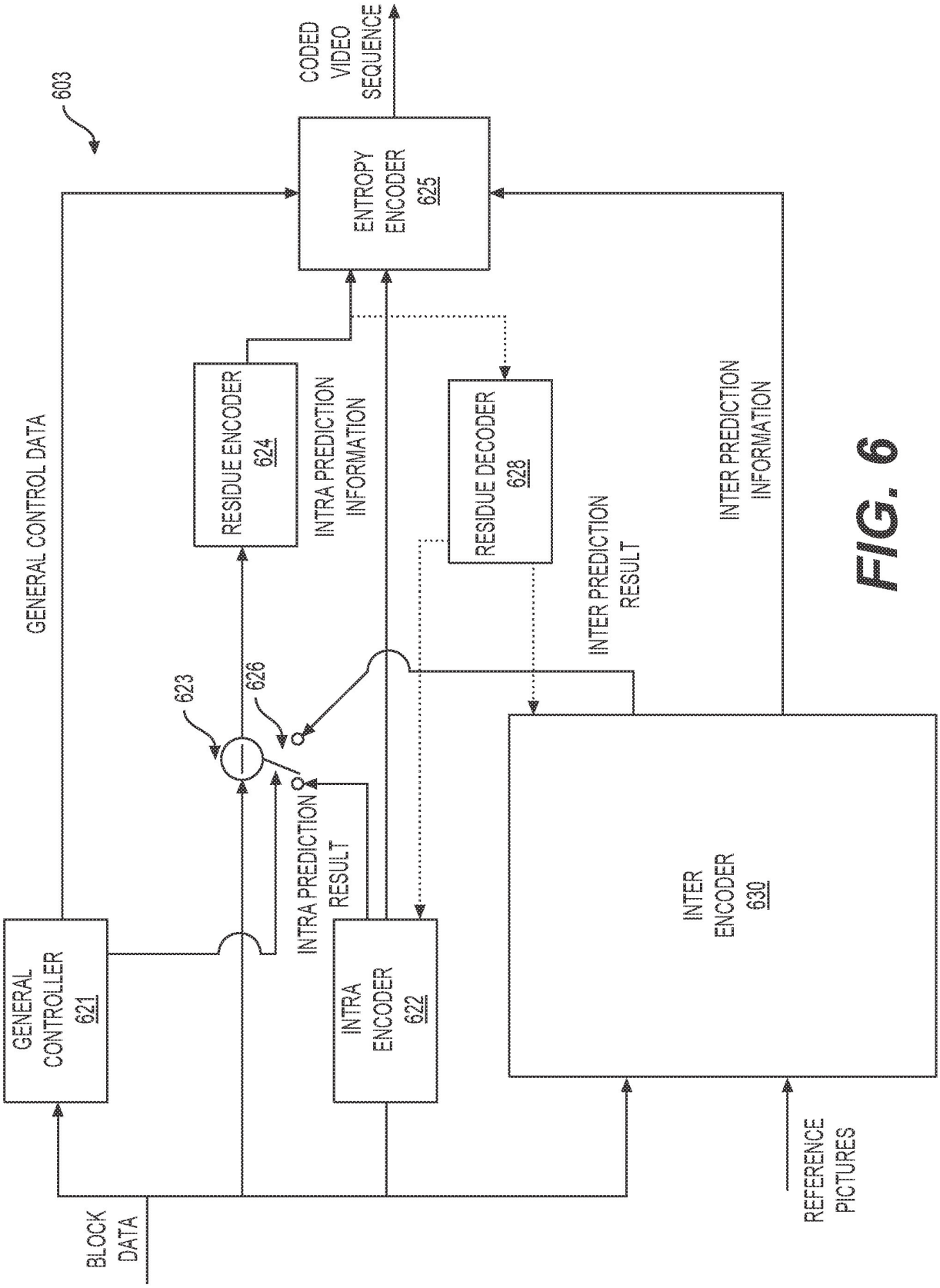

603
CODED VIDEO SEQUENCE
ENTROPY ENCODER 625
GENERAL CONTROL DATA
RESIDUE ENCODER 624
INTRA PREDICTION INFORMATION
RESIDUE DECODER 628
INTER PREDICTION RESULT
INTER PREDICTION INFORMATION
623
626
INTRA PREDICTION RESULT
GENERAL CONTROLLER 621
INTRA ENCODER 622
INTER ENCODER 630
BLOCK DATA
REFERENCE PICTURES

FIG. 6

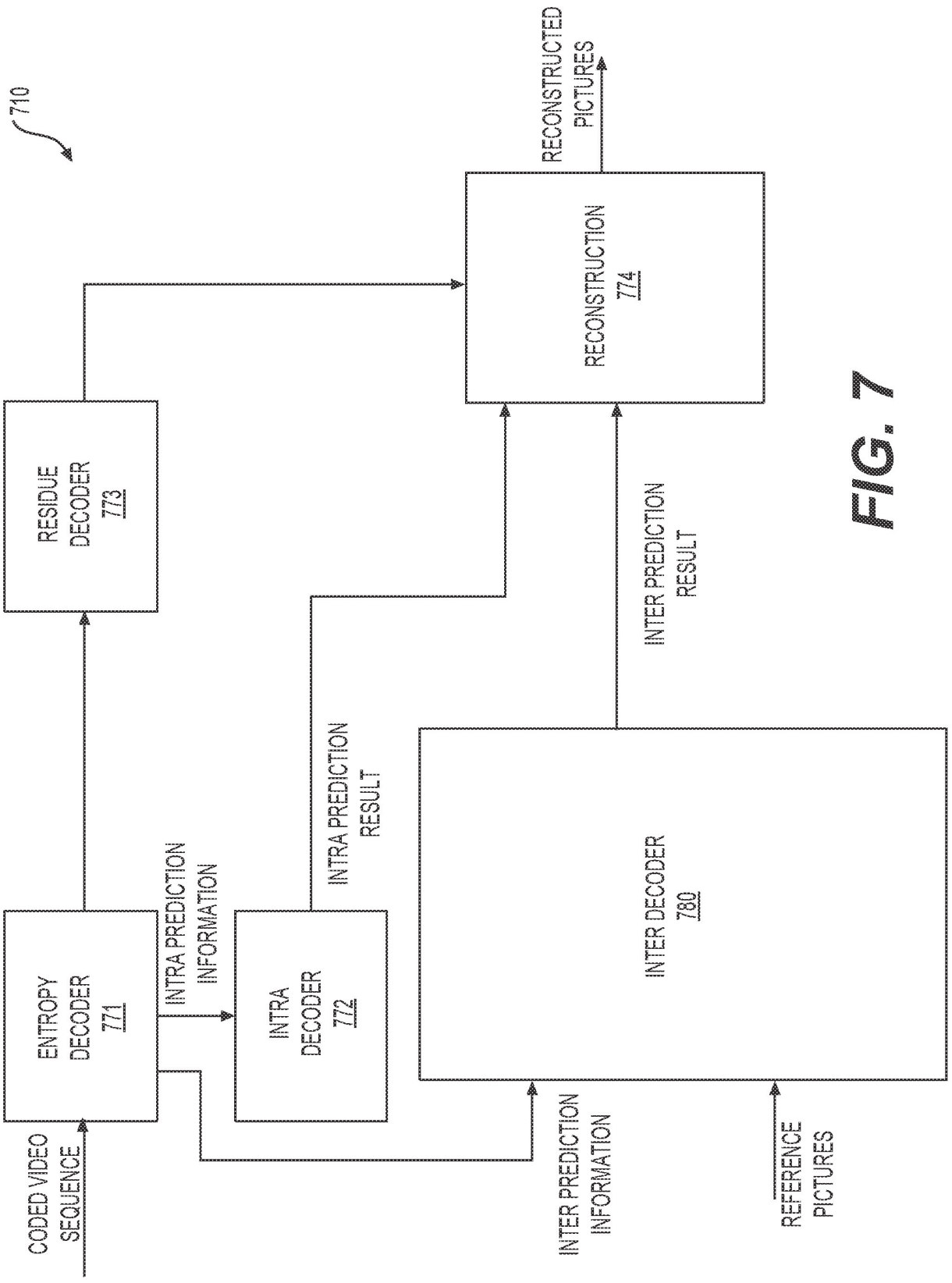

710
CODED VIDEO SEQUENCE
ENTROPY DECODER 771
INTRA PREDICTION INFORMATION
INTRA DECODER 772
INTRA PREDICTION RESULT
RESIDUE DECODER 773
INTER PREDICTION INFORMATION
INTER DECODER 780
REFERENCE PICTURES
INTER PREDICTION RESULT
RECONSTRUCTION 774
RECONSTRUCTED PICTURES

FIG. 7

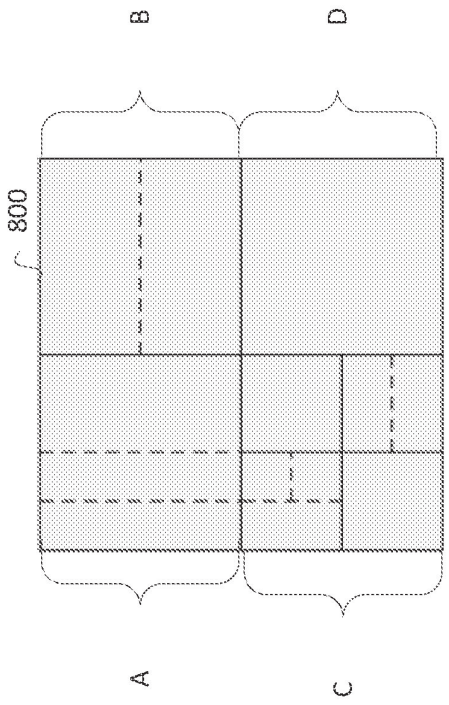



FIG. 8A

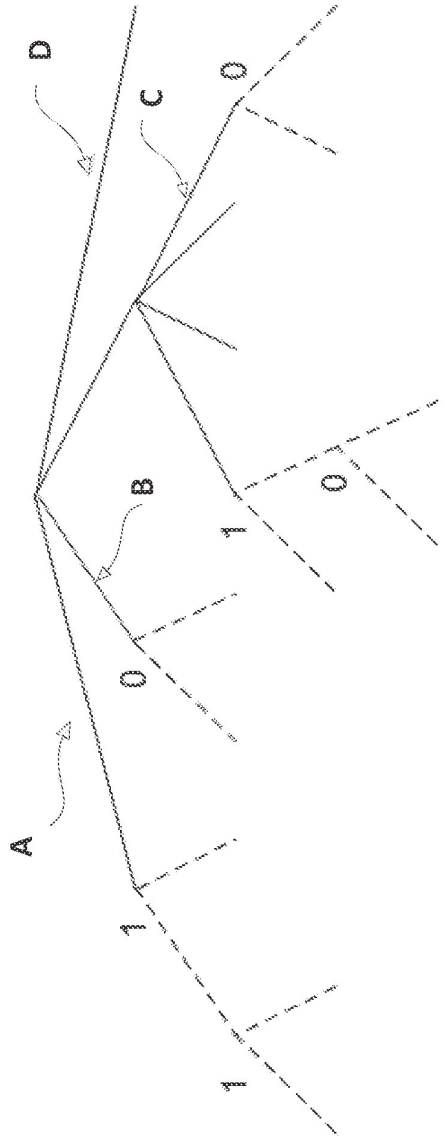



FIG. 8B

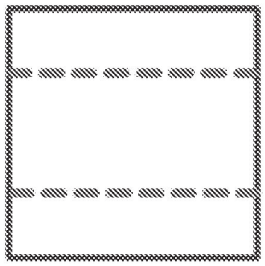


FIG. 9A

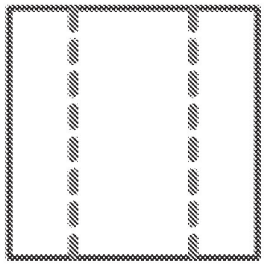


FIG. 9B




FIG. 10A

FIG. 10B

FIG. 10C

FIG. 10D

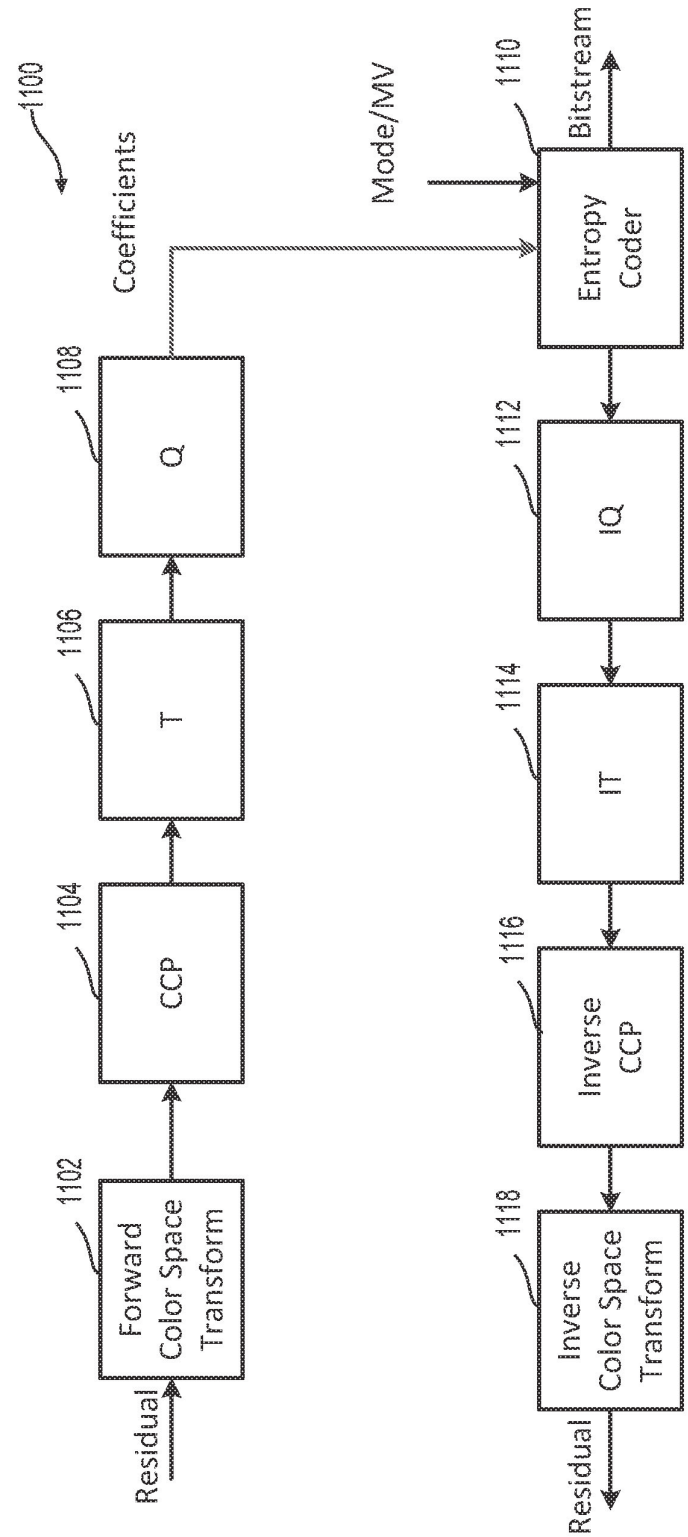

1100
Residual
1102
Forward Color Space Transform
1104
CCP
1106
T
1108
Q
Coefficients
Mode/MV
1110
Entropy Coder
Bitstream
1112
IQ
1114
IT
1116
Inverse CCP
1118
Inverse Color Space Transform
Residual

FIG. 11

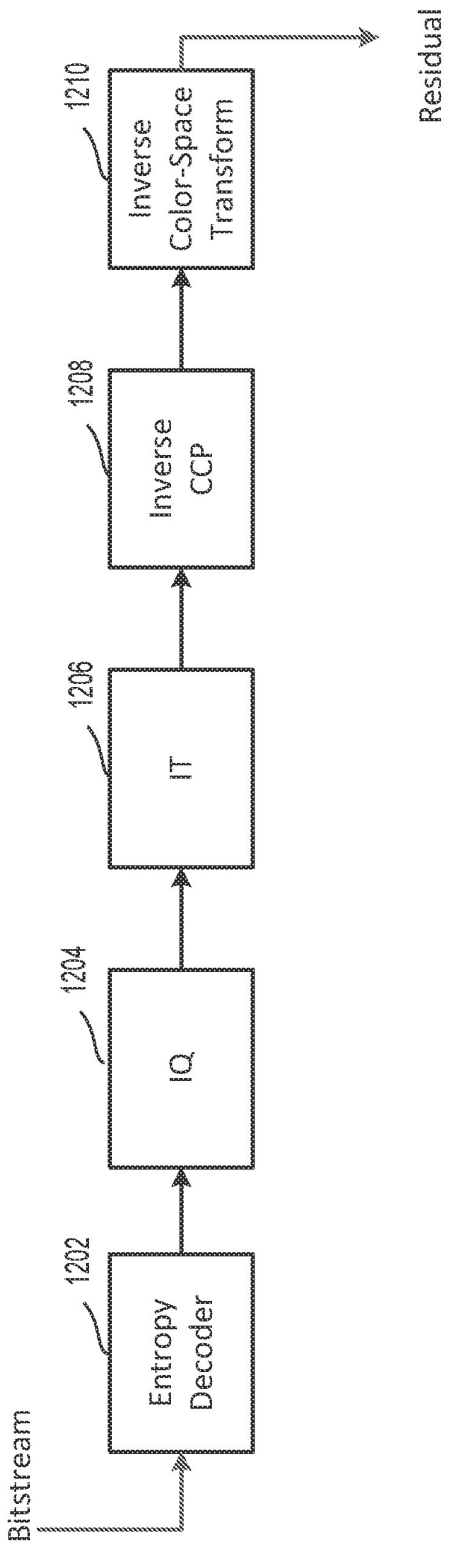

1200
Bitstream
1202
Entropy Decoder
1204
IQ
1206
IT
1208
Inverse CCP
1210
Inverse Color-Space Transform
Residual

FIG. 12

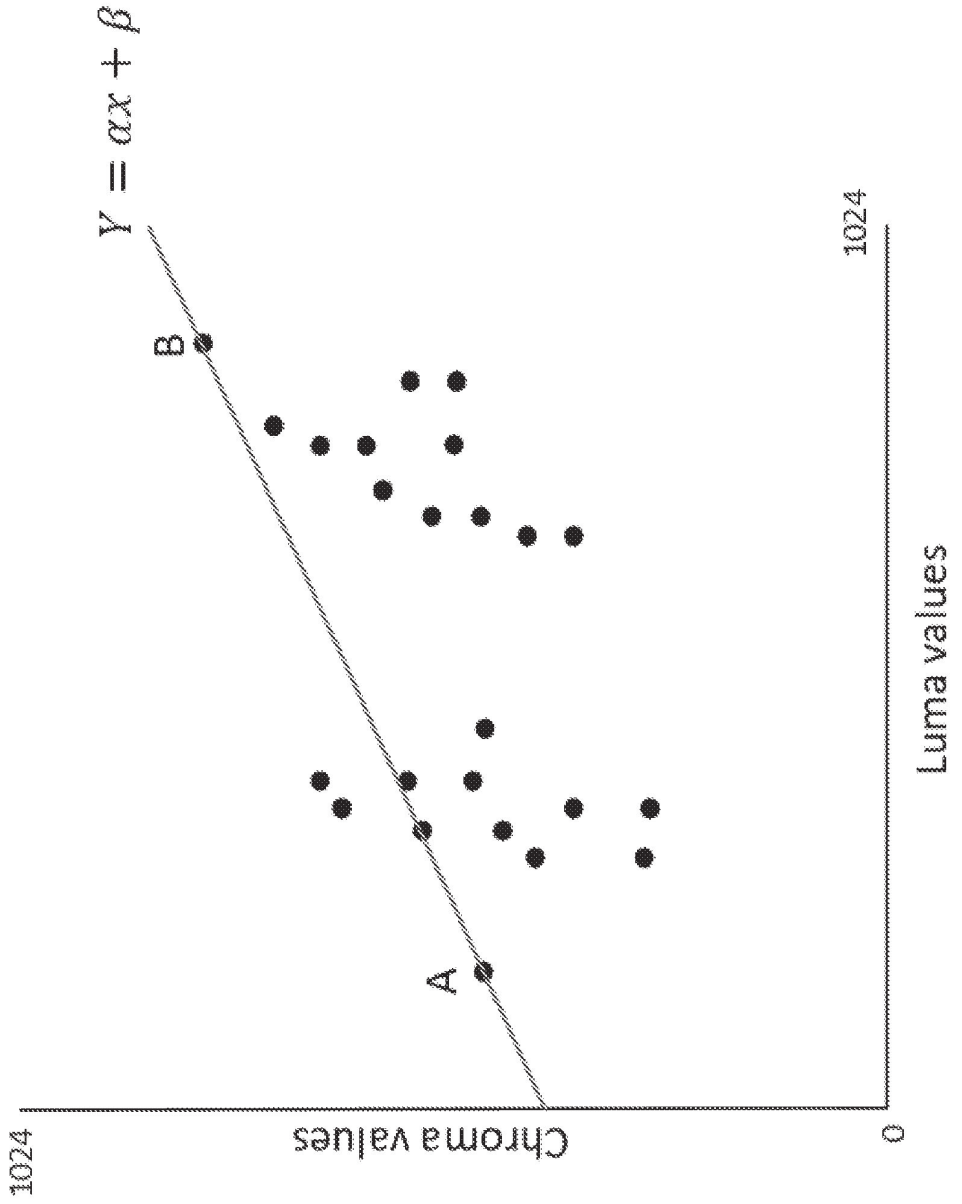



FIG. 13

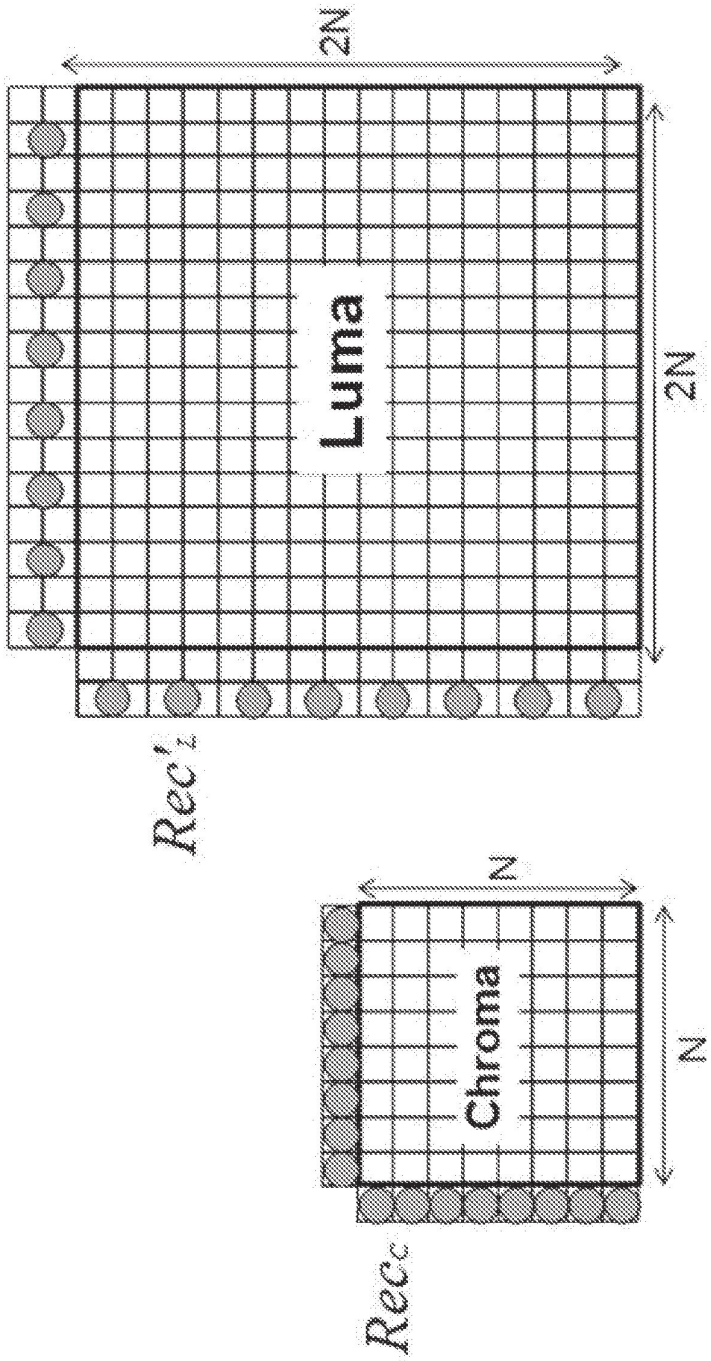



FIG. 14B

FIG. 14A

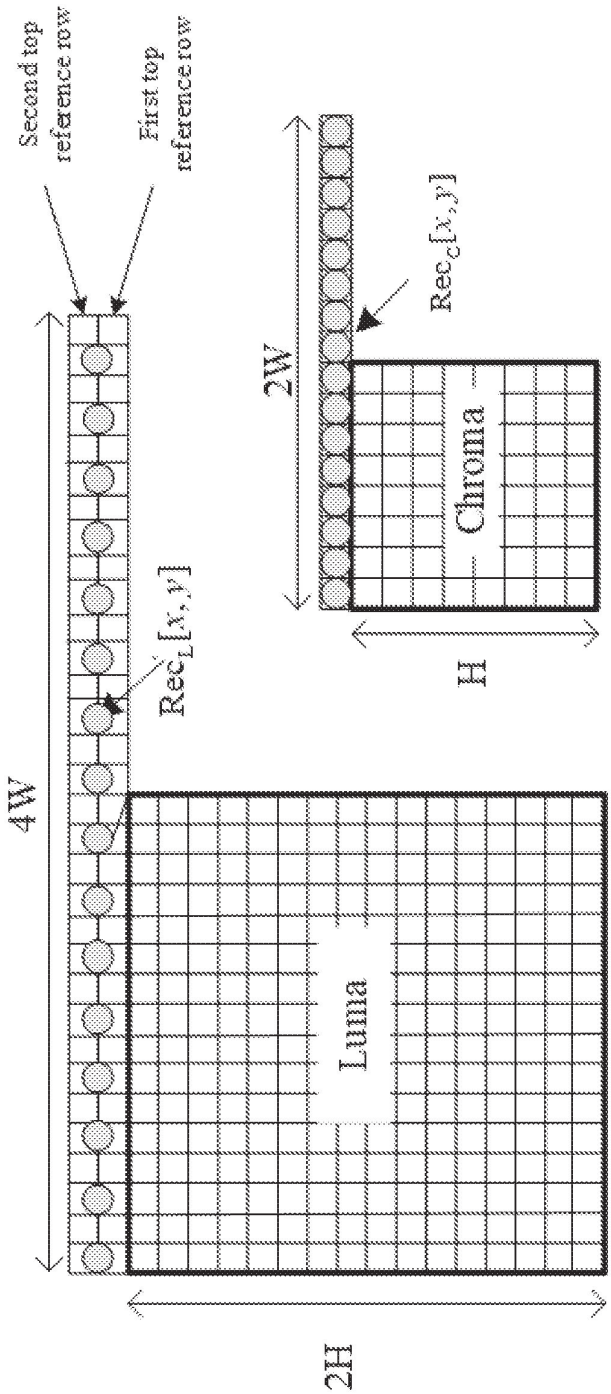



FIG. 15A

FIG. 15B

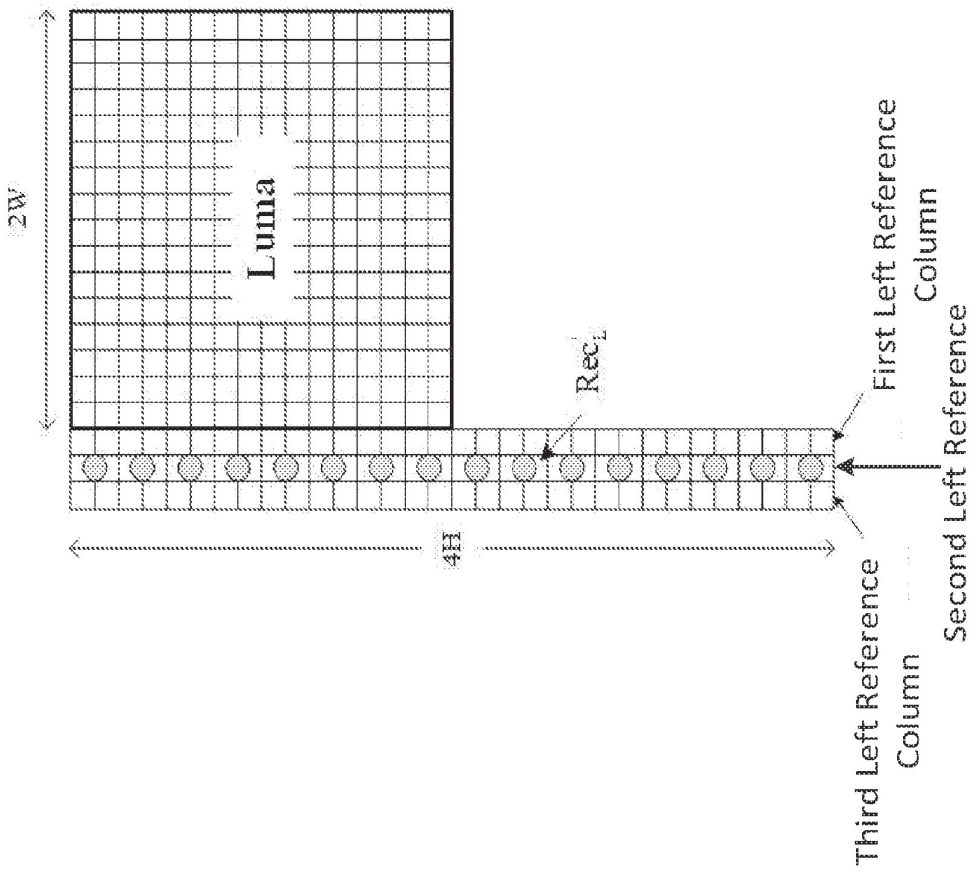



FIG. 16A

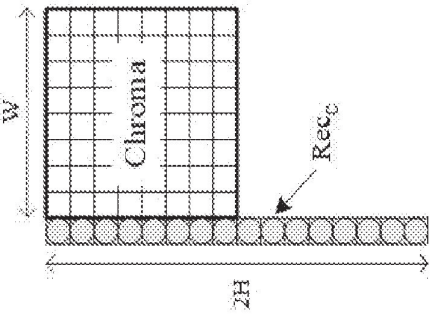



FIG. 16B

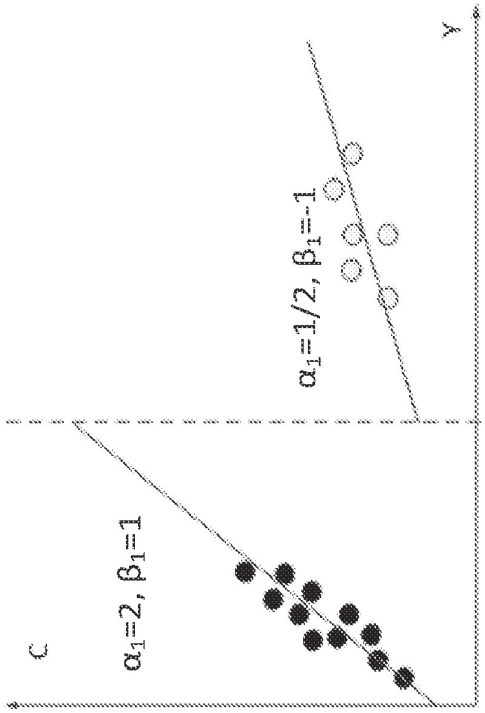



FIG. 17

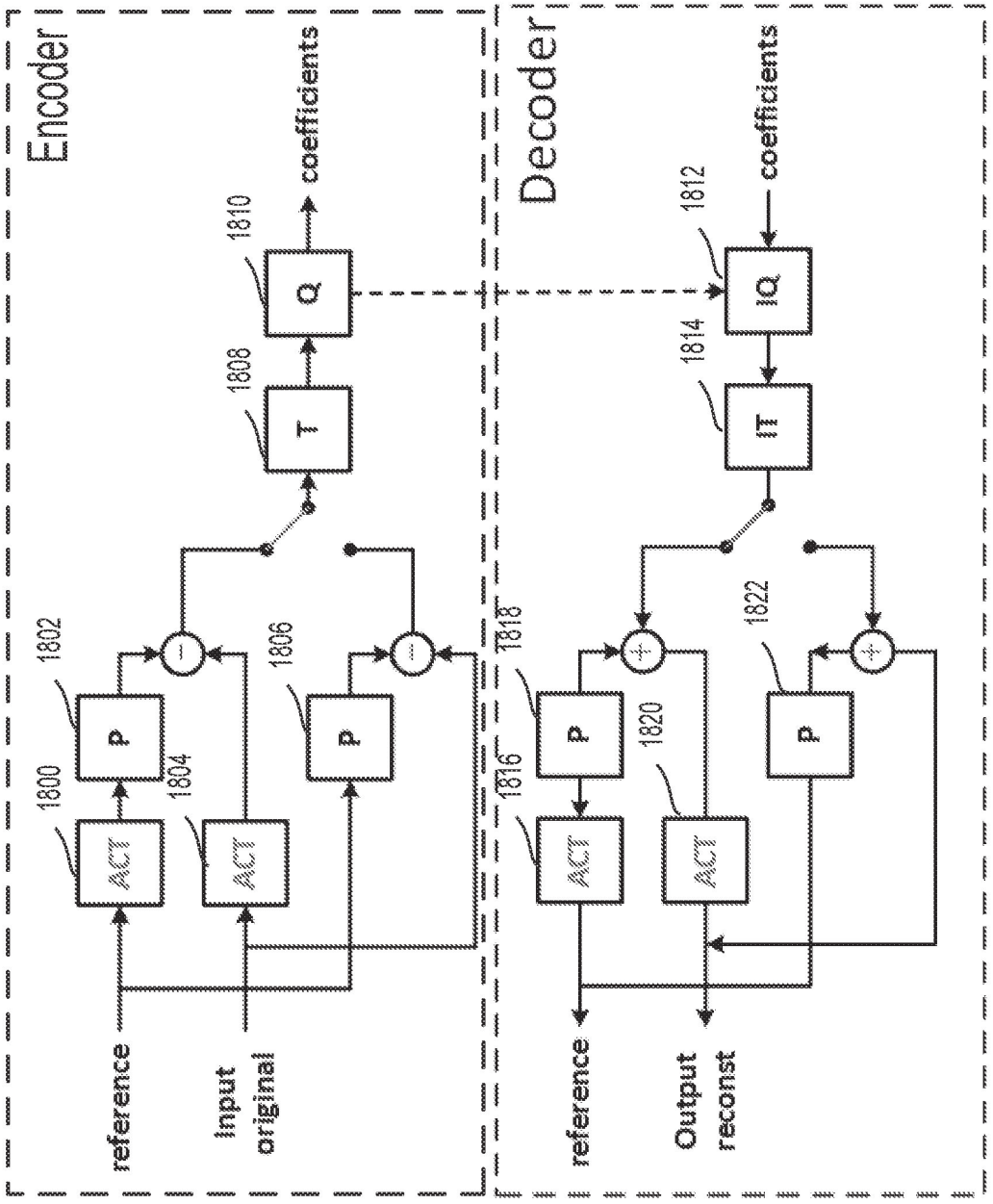

Encoder
reference
Input original
ACT
P
T
Q
1800
1802
1804
1806
1808
1810
coefficients
Decoder
reference
Output reconst
ACT
P
IT
IQ
1812
1814
1816
1818
1820
1822
coefficients

FIG. 18

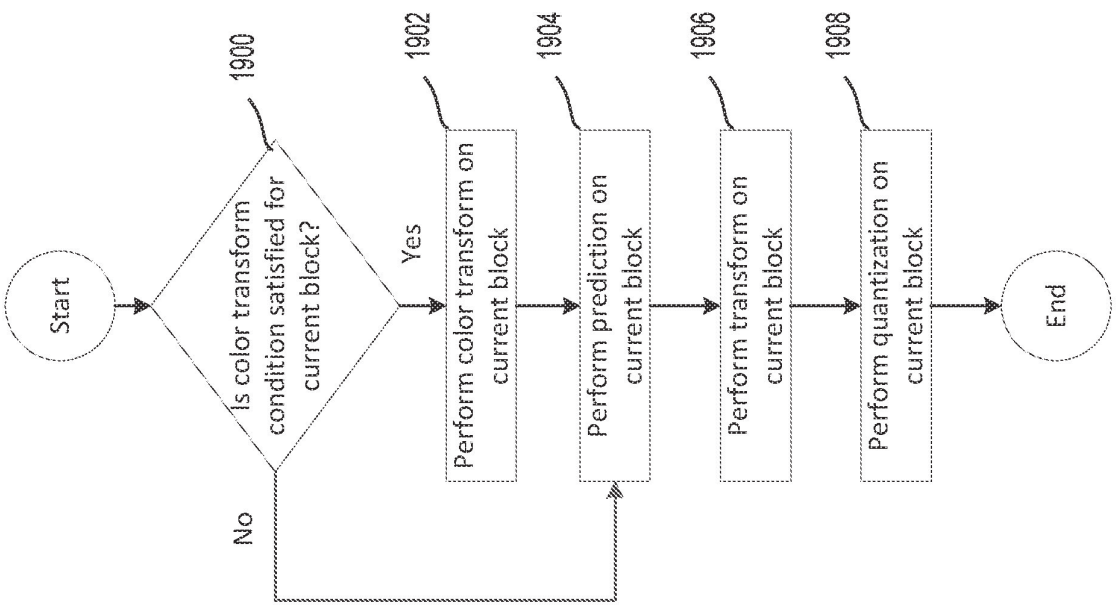

Start
Is color transform condition satisfied for current block?
1900
Yes
No
Perform color transform on current block
1902
Perform prediction on current block
1904
Perform transform on current block
1906
Perform quantization on current block
1908
End

FIG. 19

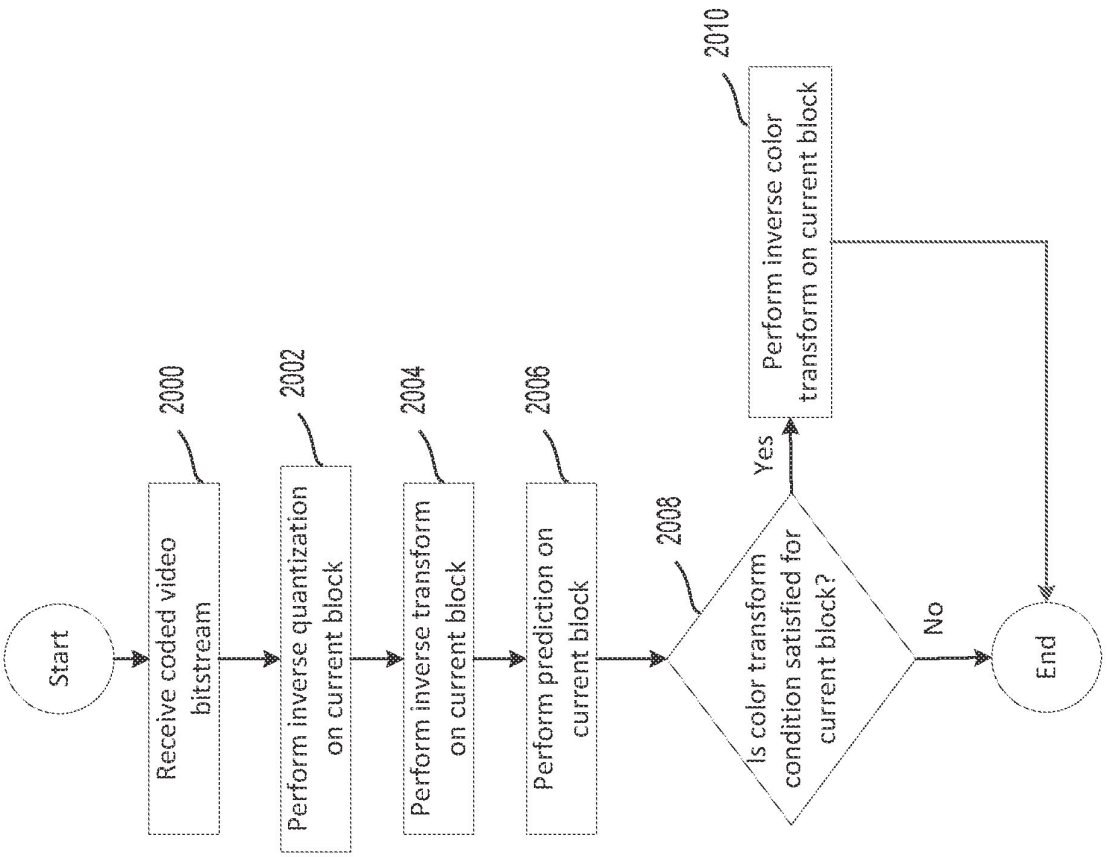

Start
Receive coded video bitstream
2000
Perform inverse quantization on current block
2002
Perform inverse transform on current block
2004
Perform prediction on current block
2006
Is color transform condition satisfied for current block?
2008
Yes
Perform inverse color transform on current block
2010
No
End

FIG. 20

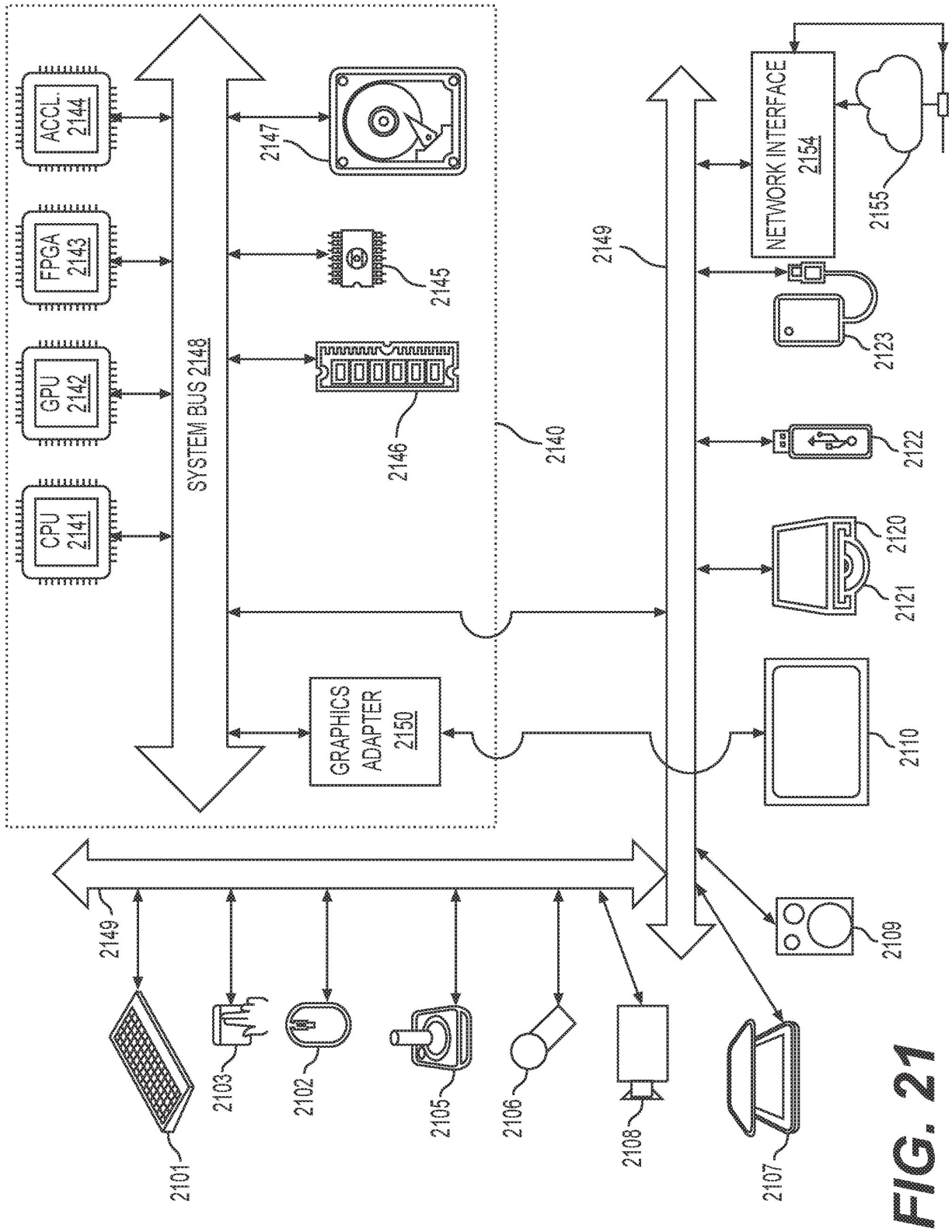

CPU 2141
GPU 2142
FPGA 2143
ACCL. 2144
SYSTEM BUS 2148
2147
2145
2146
2140
GRAPHICS ADAPTER 2150
2149
NETWORK INTERFACE 2154
2155
2123
2122
2120
2121
2110
2109
2101
2103
2102
2105
2106
2108
2107

FIG. 21