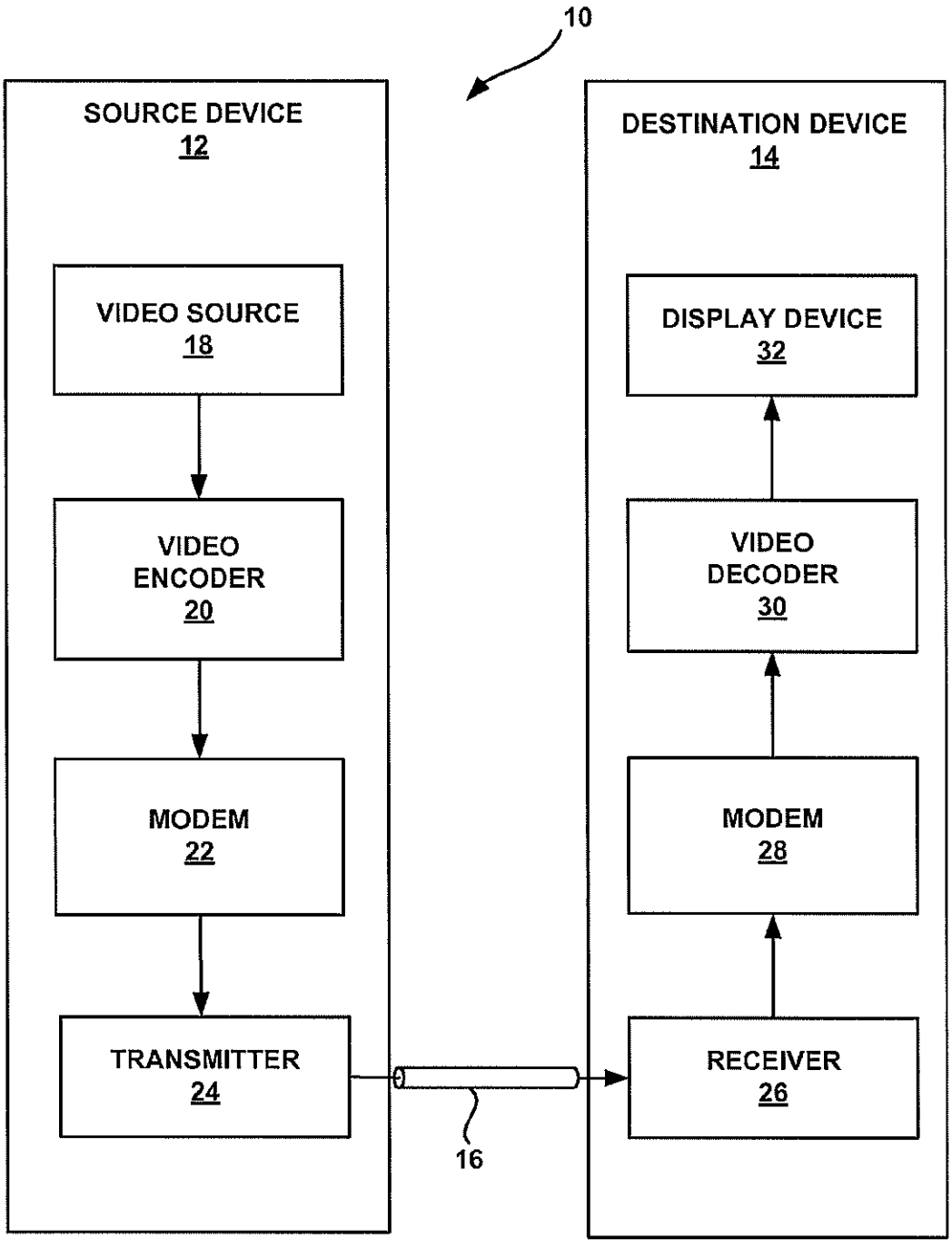

10
SOURCE DEVICE
12
VIDEO SOURCE
18
VIDEO
ENCODER
20
MODEM
22
TRANSMITTER
24
16
DESTINATION DEVICE
14
DISPLAY DEVICE
32
VIDEO
DECODER
30
MODEM
28
RECEIVER
26

FIG. 1

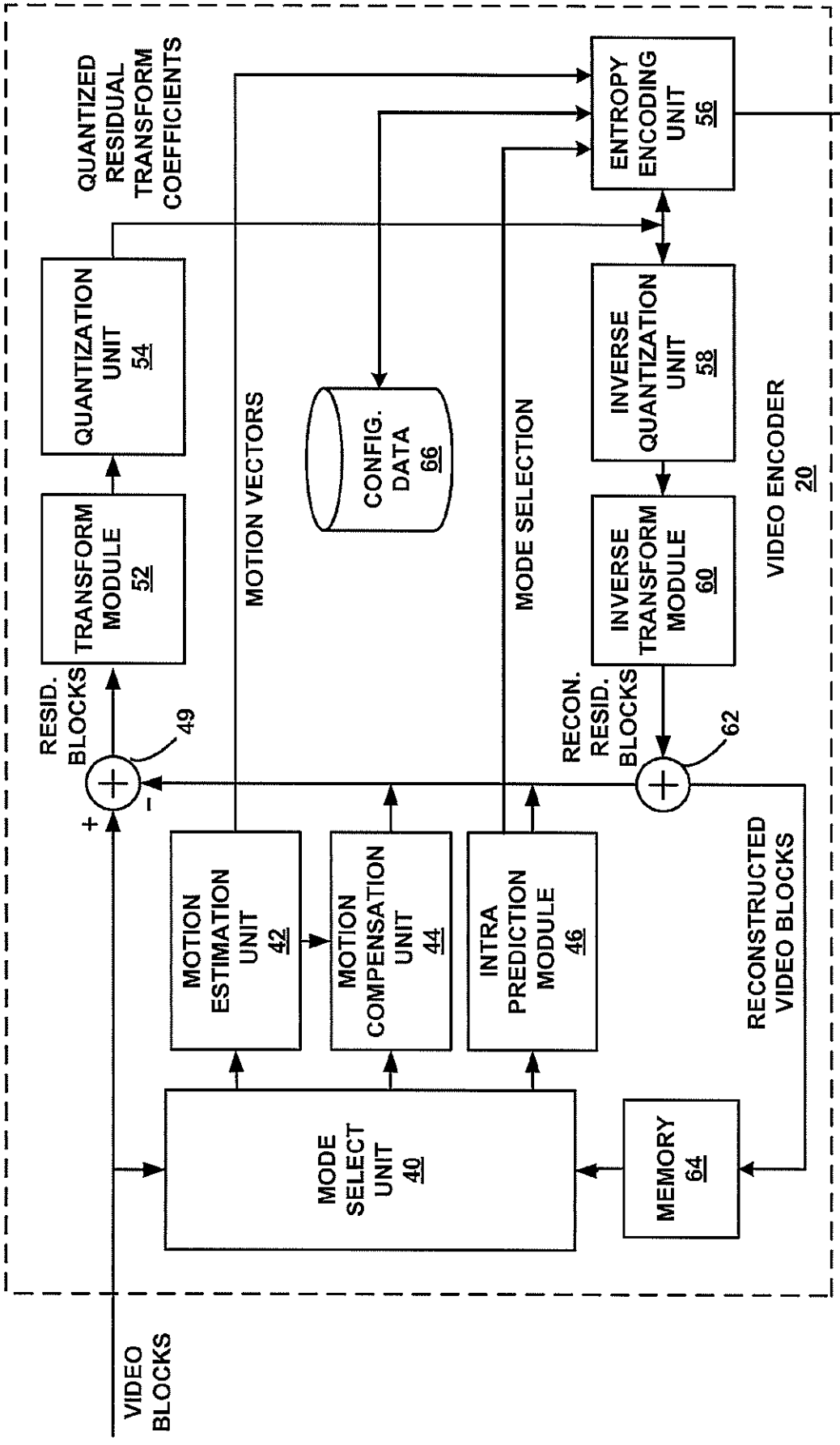

VIDEO BLOCKS
VIDEO ENCODER 20
MODE SELECT UNIT 40
MOTION ESTIMATION UNIT 42
MOTION COMPENSATION UNIT 44
INTRA PREDICTION MODULE 46
MEMORY 64
RECONSTRUCTED VIDEO BLOCKS
RESID. BLOCKS
49
TRANSFORM MODULE 52
QUANTIZATION UNIT 54
QUANTIZED RESIDUAL TRANSFORM COEFFICIENTS
MOTION VECTORS
CONFIG. DATA 66
MODE SELECTION
ENTROPY ENCODING UNIT 56
INVERSE QUANTIZATION UNIT 58
INVERSE TRANSFORM MODULE 60
RECON. RESID. BLOCKS
62

FIG. 2

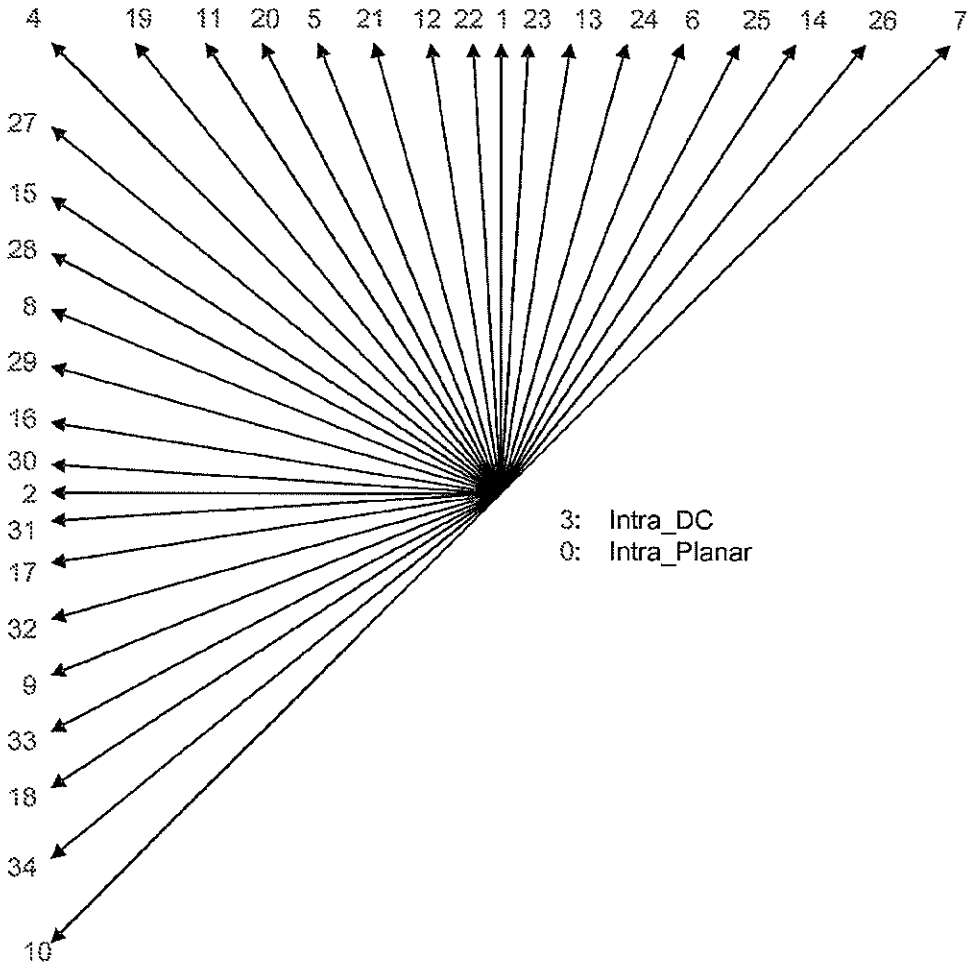

4
19
11
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5
21
12
22
1
23
13
24
6
25
14
26
7
27
15
28
8
29
16
30
2
31
17
32
9
33
18
34
10
3: Intra_DC
0: Intra_Planar

FIG. 3

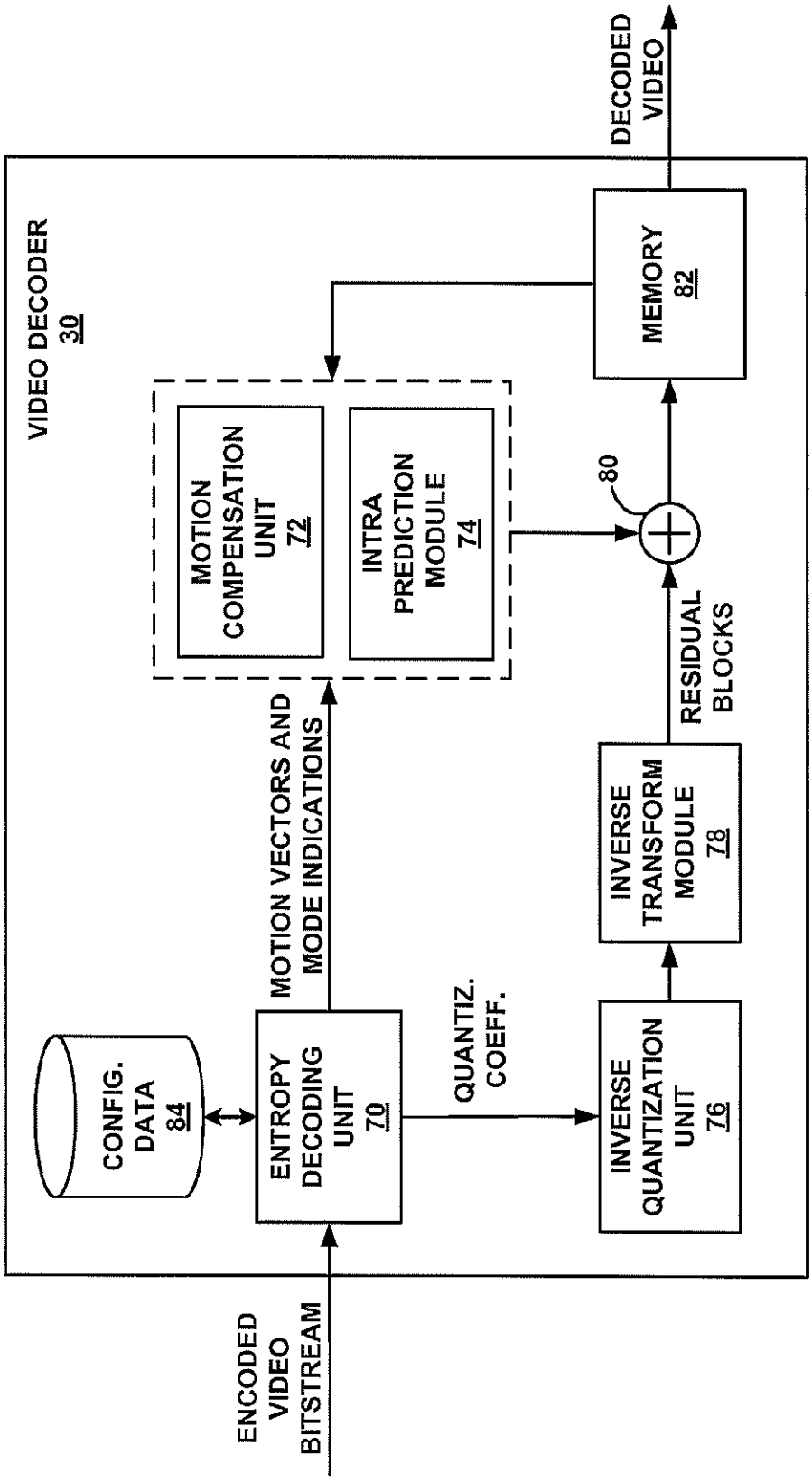

VIDEO DECODER
30
ENCODED VIDEO BITSTREAM
CONFIG. DATA
84
ENTROPY DECODING UNIT
70
MOTION VECTORS AND MODE INDICATIONS
QUANTIZ. COEFF.
INVERSE QUANTIZATION UNIT
76
INVERSE TRANSFORM MODULE
78
RESIDUAL BLOCKS
80
MOTION COMPENSATION UNIT
72
INTRA PREDICTION MODULE
74
MEMORY
82
DECODED VIDEO

FIG. 4

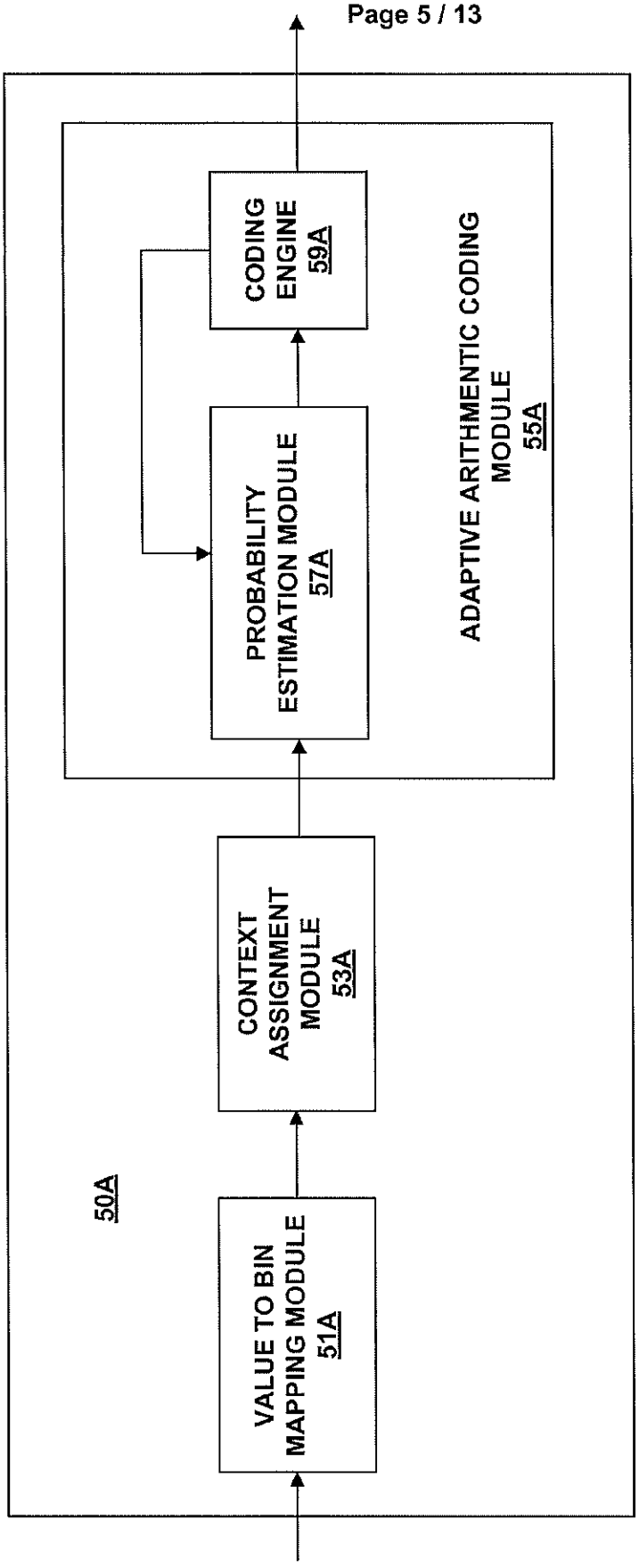

50A
VALUE TO BIN MAPPING MODULE 51A
CONTEXT ASSIGNMENT MODULE 53A
PROBABILITY ESTIMATION MODULE 57A
CODING ENGINE 59A
ADAPTIVE ARITHMENTIC CODING MODULE 55A

FIG. 5A

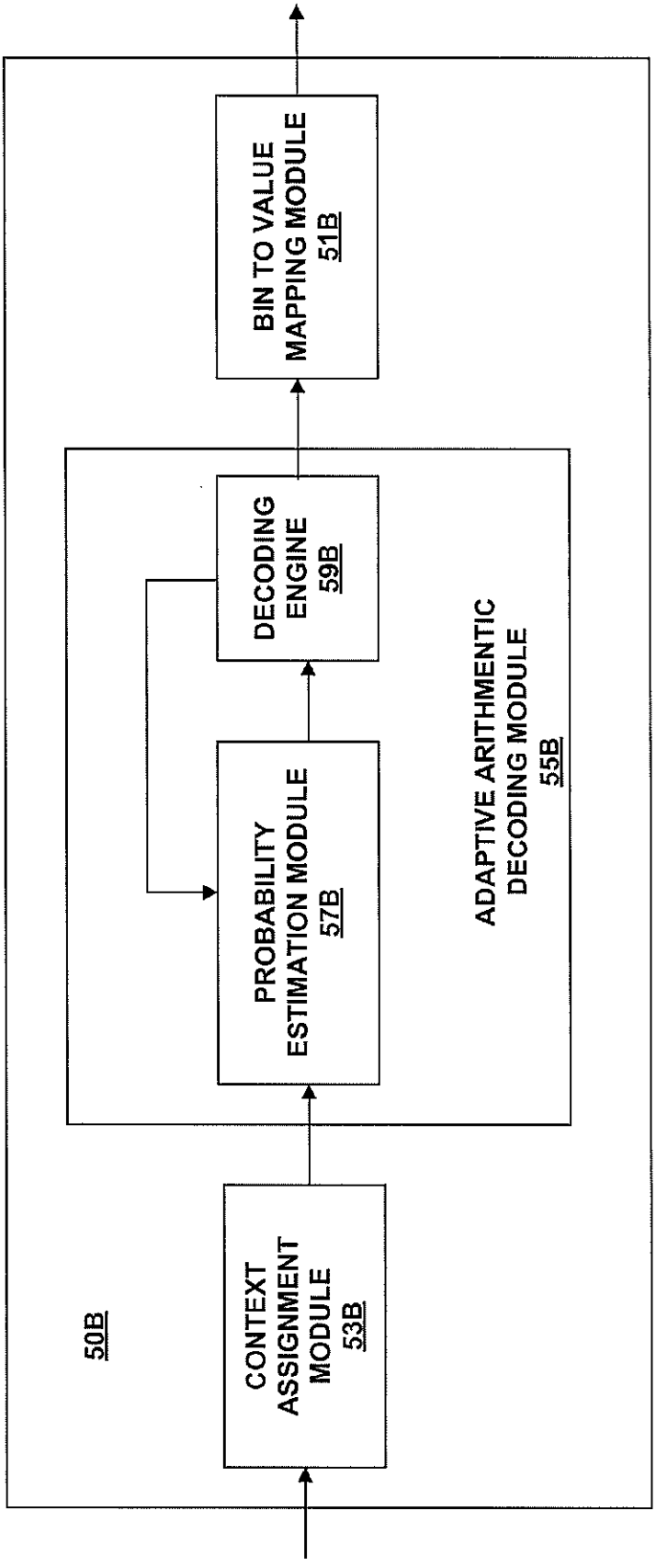

50B
CONTEXT ASSIGNMENT MODULE 53B
PROBABILITY ESTIMATION MODULE 57B
DECODING ENGINE 59B
ADAPTIVE ARITHMENTIC DECODING MODULE 55B
BIN TO VALUE MAPPING MODULE 51B

FIG. 5B

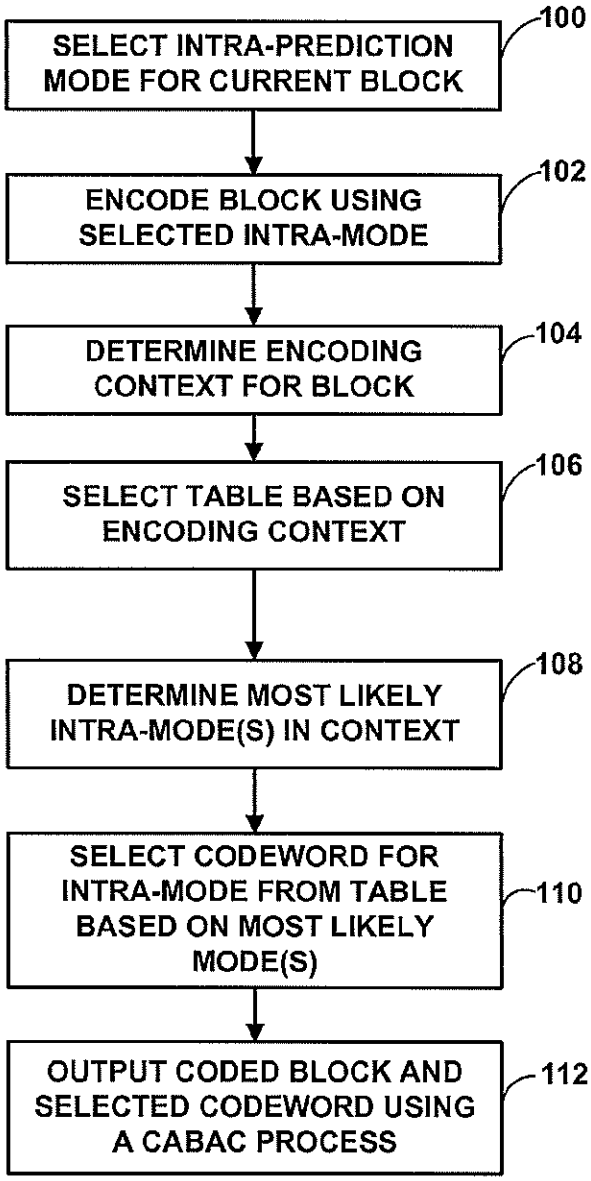

SELECT INTRA-PREDICTION MODE FOR CURRENT BLOCK
100
ENCODE BLOCK USING SELECTED INTRA-MODE
102
DETERMINE ENCODING CONTEXT FOR BLOCK
104
SELECT TABLE BASED ON ENCODING CONTEXT
106
DETERMINE MOST LIKELY INTRA-MODE(S) IN CONTEXT
108
SELECT CODEWORD FOR INTRA-MODE FROM TABLE BASED ON MOST LIKELY MODE(S)
110
OUTPUT CODED BLOCK AND SELECTED CODEWORD USING A CABAC PROCESS
112

FIG. 6

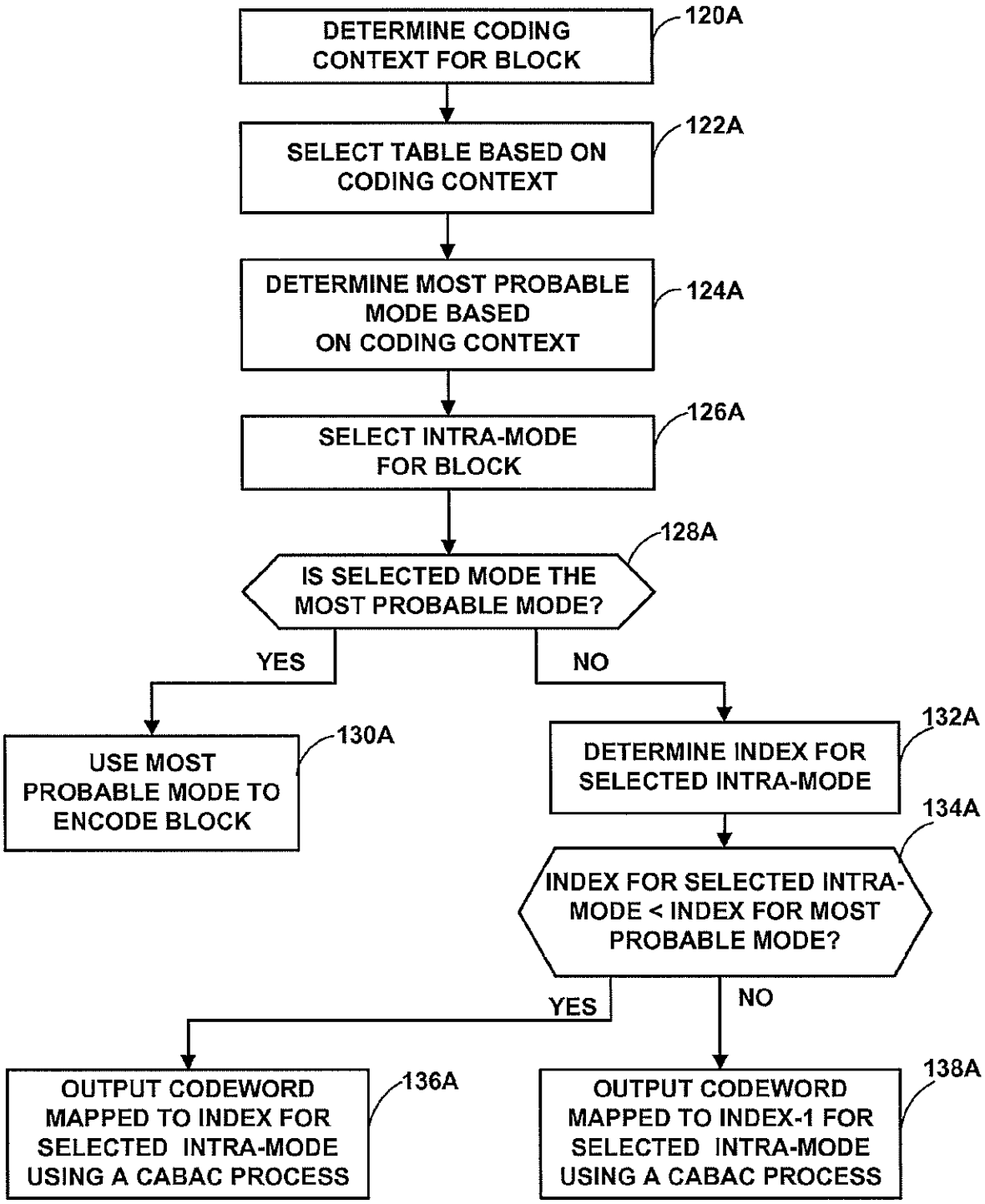

DETERMINE CODING CONTEXT FOR BLOCK
120A
SELECT TABLE BASED ON CODING CONTEXT
122A
DETERMINE MOST PROBABLE MODE BASED ON CODING CONTEXT
124A
SELECT INTRA-MODE FOR BLOCK
126A
IS SELECTED MODE THE MOST PROBABLE MODE?
128A
YES
NO
USE MOST PROBABLE MODE TO ENCODE BLOCK
130A
DETERMINE INDEX FOR SELECTED INTRA-MODE
132A
INDEX FOR SELECTED INTRA-MODE < INDEX FOR MOST PROBABLE MODE?
134A
YES
NO
OUTPUT CODEWORD MAPPED TO INDEX FOR SELECTED INTRA-MODE USING A CABAC PROCESS
136A
OUTPUT CODEWORD MAPPED TO INDEX-1 FOR SELECTED INTRA-MODE USING A CABAC PROCESS
138A

FIG. 7A

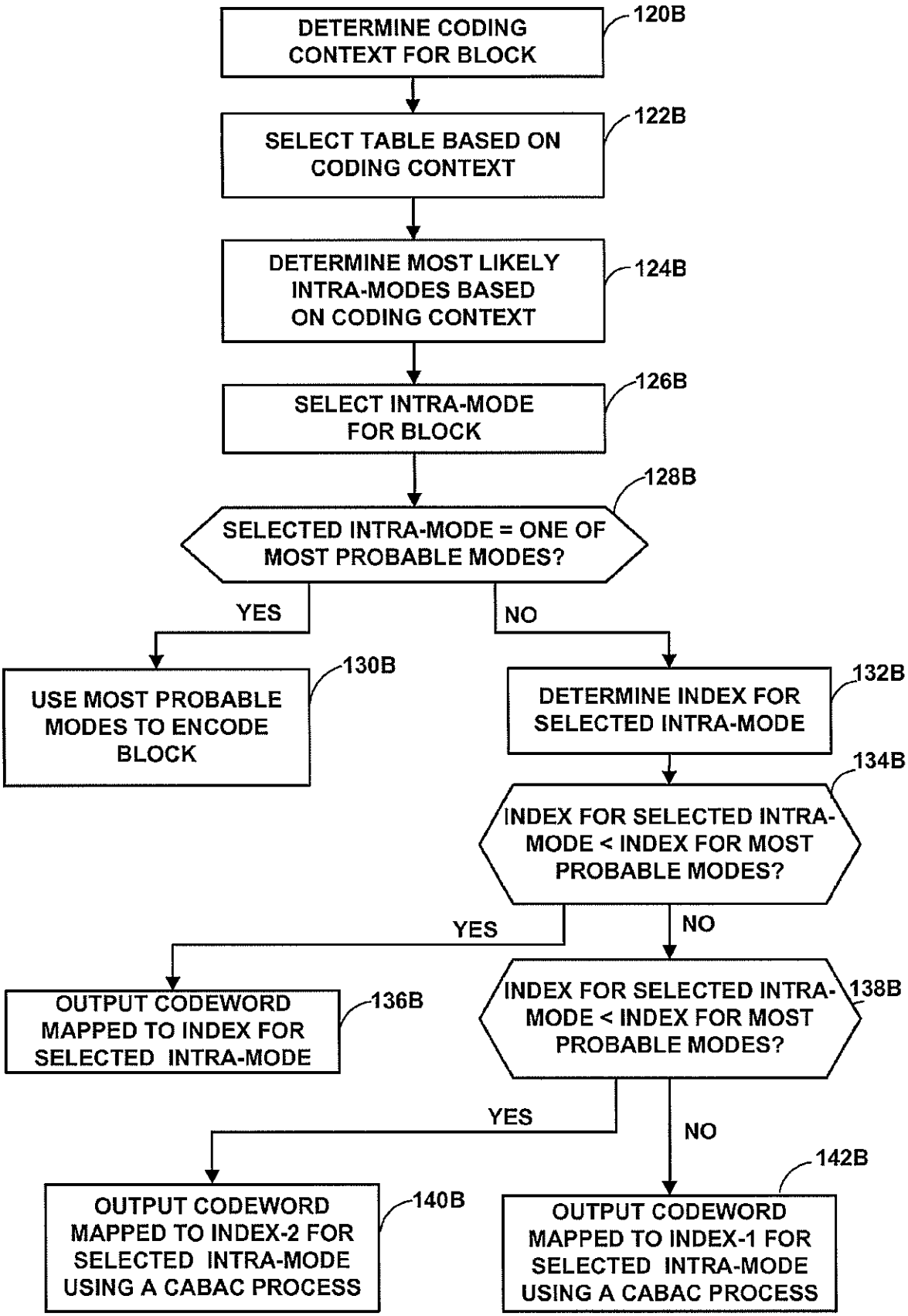

DETERMINE CODING CONTEXT FOR BLOCK
120B
SELECT TABLE BASED ON CODING CONTEXT
122B
DETERMINE MOST LIKELY INTRA-MODES BASED ON CODING CONTEXT
124B
SELECT INTRA-MODE FOR BLOCK
126B
SELECTED INTRA-MODE = ONE OF MOST PROBABLE MODES?
128B
YES
NO
USE MOST PROBABLE MODES TO ENCODE BLOCK
130B
DETERMINE INDEX FOR SELECTED INTRA-MODE
132B
INDEX FOR SELECTED INTRA-MODE < INDEX FOR MOST PROBABLE MODES?
134B
YES
NO
OUTPUT CODEWORD MAPPED TO INDEX FOR SELECTED INTRA-MODE
136B
INDEX FOR SELECTED INTRA-MODE < INDEX FOR MOST PROBABLE MODES?
138B
YES
NO
OUTPUT CODEWORD MAPPED TO INDEX-2 FOR SELECTED INTRA-MODE USING A CABAC PROCESS
140B
OUTPUT CODEWORD MAPPED TO INDEX-1 FOR SELECTED INTRA-MODE USING A CABAC PROCESS
142B

FIG. 7B

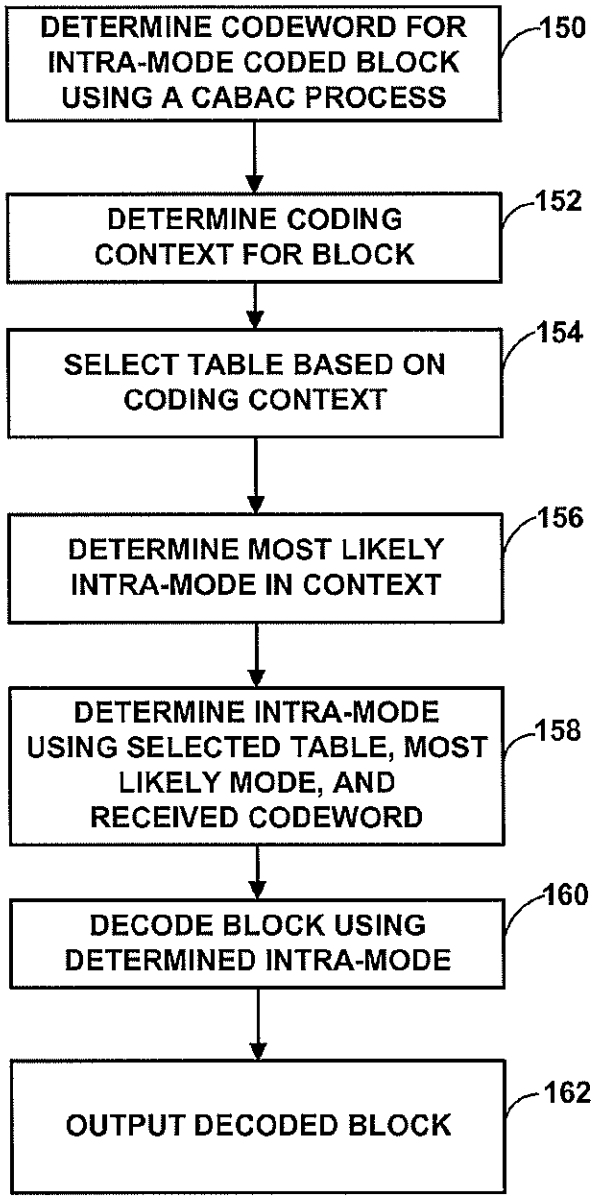

DETERMINE CODEWORD FOR INTRA-MODE CODED BLOCK USING A CABAC PROCESS
150
DETERMINE CODING CONTEXT FOR BLOCK
152
SELECT TABLE BASED ON CODING CONTEXT
154
DETERMINE MOST LIKELY INTRA-MODE IN CONTEXT
156
DETERMINE INTRA-MODE USING SELECTED TABLE, MOST LIKELY MODE, AND RECEIVED CODEWORD
158
DECODE BLOCK USING DETERMINED INTRA-MODE
160
OUTPUT DECODED BLOCK
162

FIG. 8

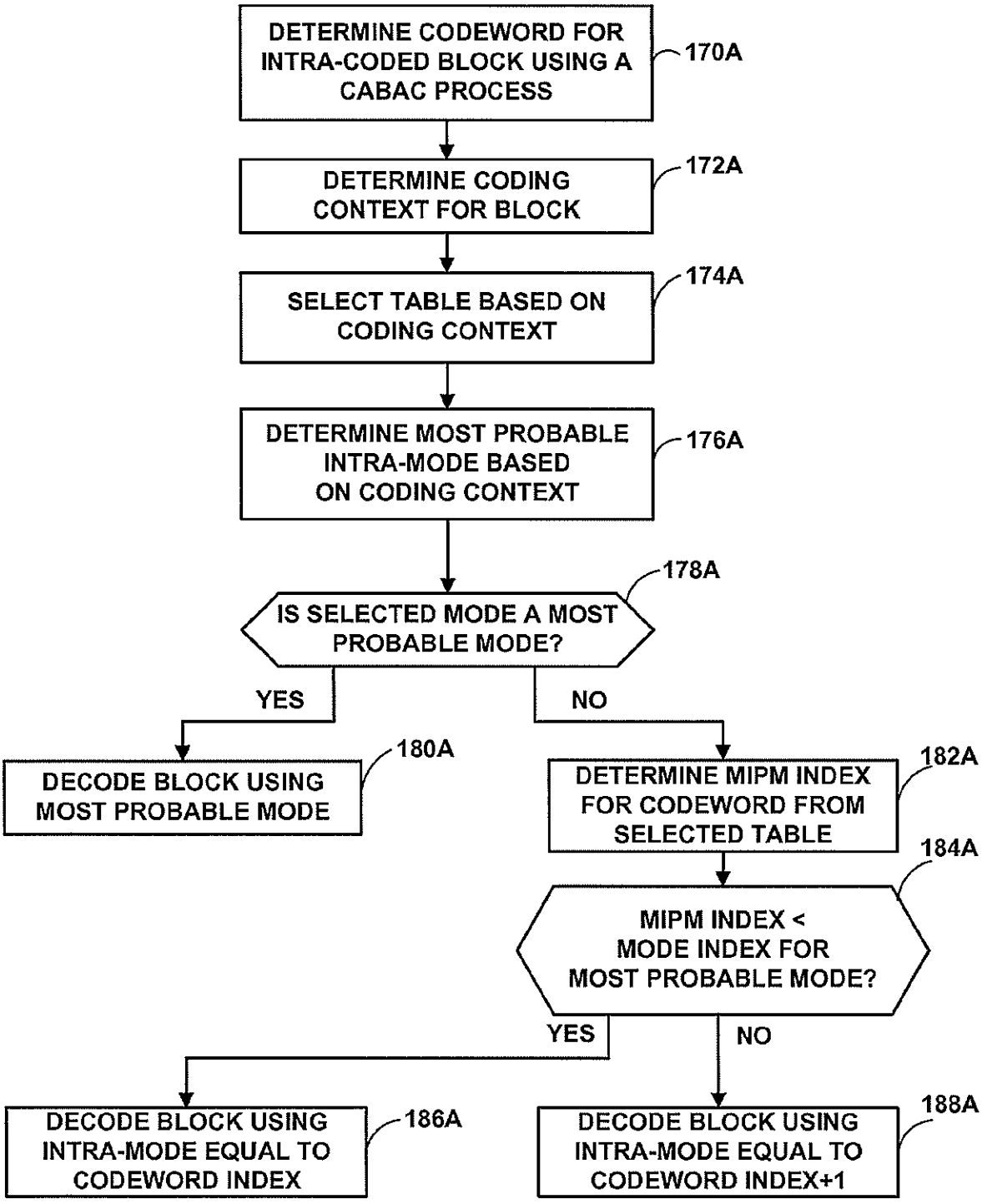

DETERMINE CODEWORD FOR INTRA-CODED BLOCK USING A CABAC PROCESS
170A
DETERMINE CODING CONTEXT FOR BLOCK
172A
SELECT TABLE BASED ON CODING CONTEXT
174A
DETERMINE MOST PROBABLE INTRA-MODE BASED ON CODING CONTEXT
176A
IS SELECTED MODE A MOST PROBABLE MODE?
178A
YES
NO
DECODE BLOCK USING MOST PROBABLE MODE
180A
DETERMINE MIPM INDEX FOR CODEWORD FROM SELECTED TABLE
182A
MIPM INDEX < MODE INDEX FOR MOST PROBABLE MODE?
184A
YES
NO
DECODE BLOCK USING INTRA-MODE EQUAL TO CODEWORD INDEX
186A
DECODE BLOCK USING INTRA-MODE EQUAL TO CODEWORD INDEX+1
188A

FIG. 9A

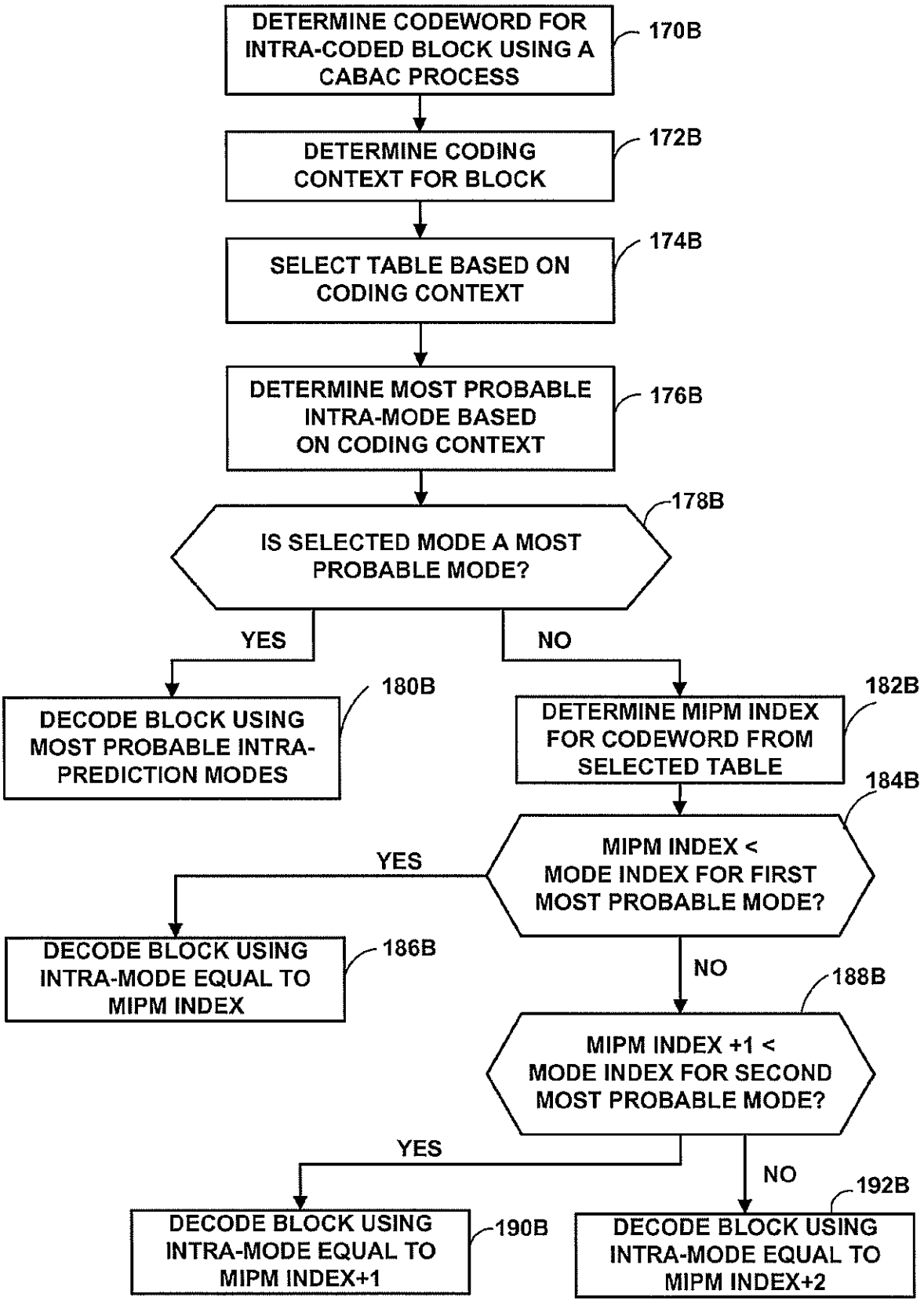

DETERMINE CODEWORD FOR INTRA-CODED BLOCK USING A CABAC PROCESS
170B
DETERMINE CODING CONTEXT FOR BLOCK
172B
SELECT TABLE BASED ON CODING CONTEXT
174B
DETERMINE MOST PROBABLE INTRA-MODE BASED ON CODING CONTEXT
176B
IS SELECTED MODE A MOST PROBABLE MODE?
178B
YES
NO
DECODE BLOCK USING MOST PROBABLE INTRA-PREDICTION MODES
180B
DETERMINE MIPM INDEX FOR CODEWORD FROM SELECTED TABLE
182B
MIPM INDEX < MODE INDEX FOR FIRST MOST PROBABLE MODE?
184B
YES
NO
DECODE BLOCK USING INTRA-MODE EQUAL TO MIPM INDEX
186B
MIPM INDEX +1 < MODE INDEX FOR SECOND MOST PROBABLE MODE?
188B
YES
NO
DECODE BLOCK USING INTRA-MODE EQUAL TO MIPM INDEX+1
190B
DECODE BLOCK USING INTRA-MODE EQUAL TO MIPM INDEX+2
192B

FIG. 9B

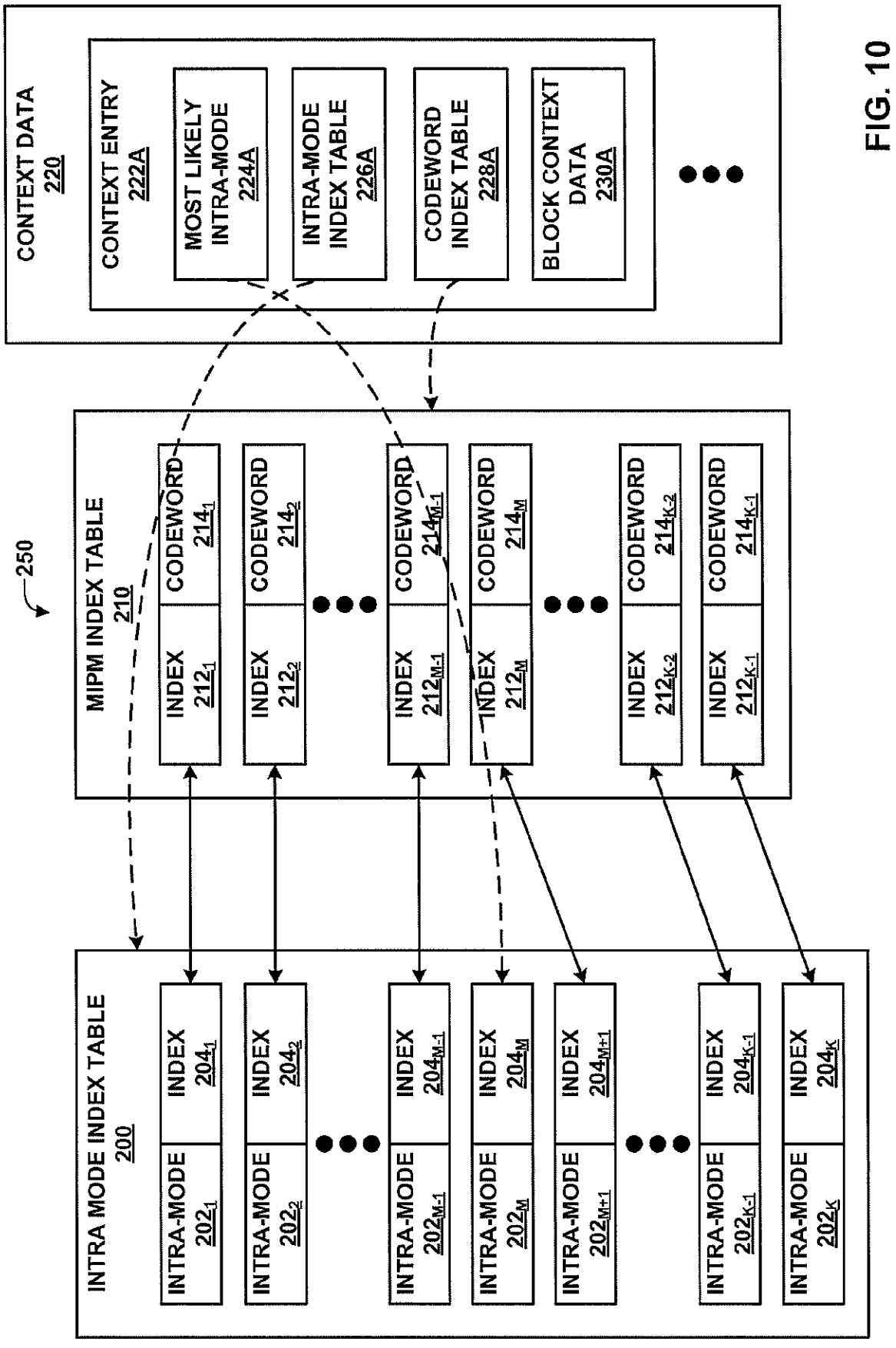

CONTEXT DATA
220
CONTEXT ENTRY
222A
MOST LIKELY
INTRA-MODE
224A
INTRA-MODE
INDEX TABLE
226A
CODEWORD
INDEX TABLE
228A
BLOCK CONTEXT
DATA
230A
250
MIPM INDEX TABLE
210
INDEX
212$_1$
CODEWORD
214$_1$
INDEX
212$_2$
CODEWORD
214$_2$
INDEX
212$_{M-1}$
CODEWORD
214$_{M-1}$
INDEX
212$_M$
CODEWORD
214$_M$
INDEX
212$_{K-2}$
CODEWORD
214$_{K-2}$
INDEX
212$_{K-1}$
CODEWORD
214$_{K-1}$
INTRA MODE INDEX TABLE
200
INTRA-MODE
202$_1$
INDEX
204$_1$
INTRA-MODE
202$_2$
INDEX
204$_2$
INTRA-MODE
202$_{M-1}$
INDEX
204$_{M-1}$
INTRA-MODE
202$_M$
INDEX
204$_M$
INTRA-MODE
202$_{M+1}$
INDEX
204$_{M+1}$
INTRA-MODE
202$_{K-1}$
INDEX
204$_{K-1}$
INTRA-MODE
202$_K$
INDEX
204$_K$

FIG. 10