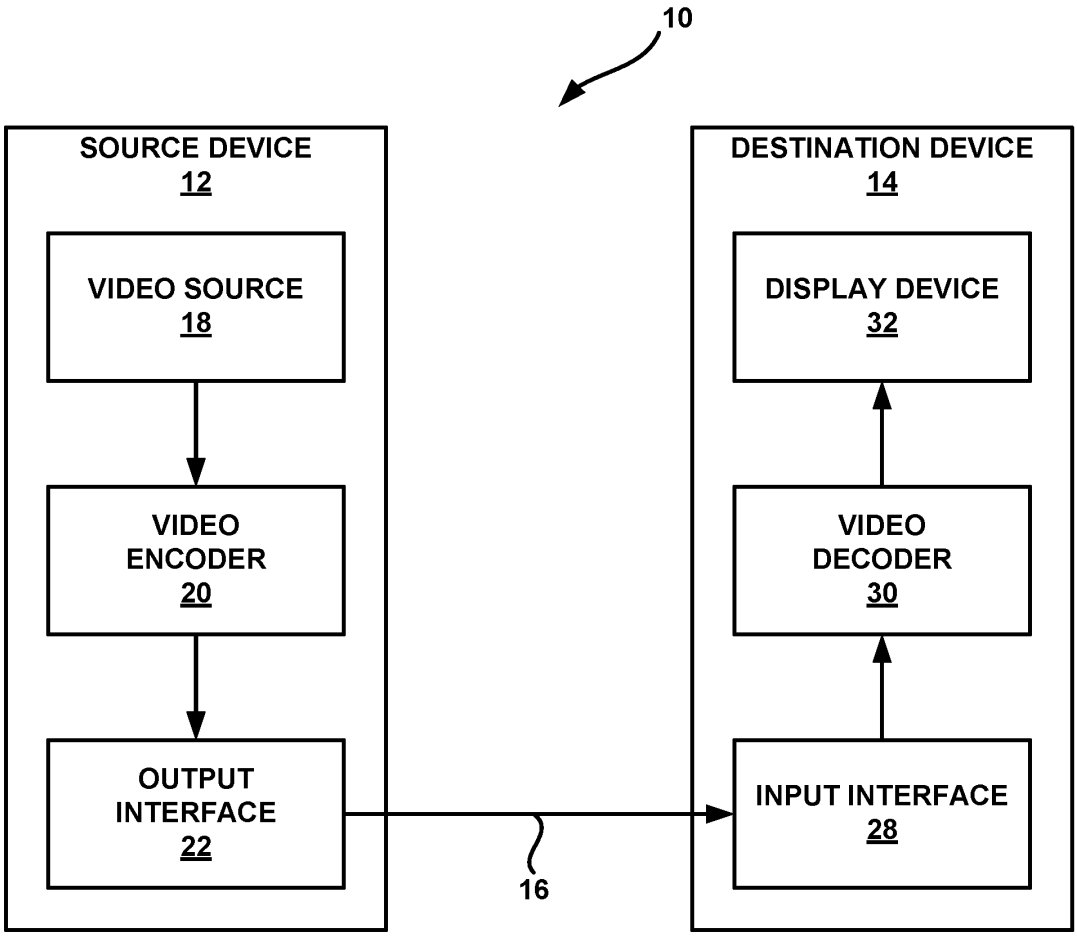

10
SOURCE DEVICE
12
VIDEO SOURCE
18
VIDEO
ENCODER
20
OUTPUT
INTERFACE
22
16
DESTINATION DEVICE
14
DISPLAY DEVICE
32
VIDEO
DECODER
30
INPUT INTERFACE
28

FIG. 1

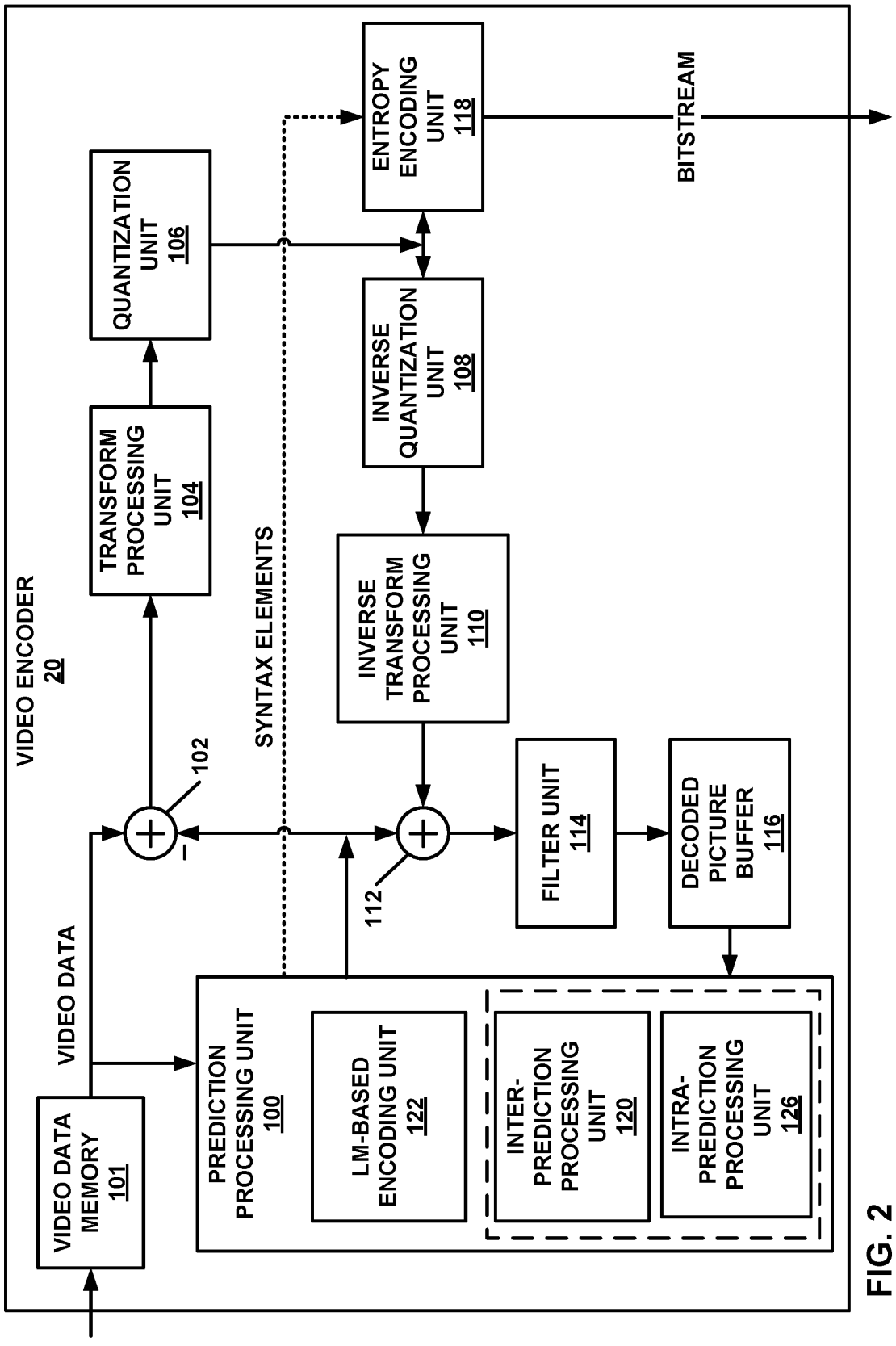

VIDEO ENCODER
20
VIDEO DATA MEMORY
101
VIDEO DATA
PREDICTION PROCESSING UNIT
100
LM-BASED ENCODING UNIT
122
INTER-PREDICTION PROCESSING UNIT
120
INTRA-PREDICTION PROCESSING UNIT
126
102
TRANSFORM PROCESSING UNIT
104
QUANTIZATION UNIT
106
INVERSE QUANTIZATION UNIT
108
INVERSE TRANSFORM PROCESSING UNIT
110
112
FILTER UNIT
114
DECODED PICTURE BUFFER
116
SYNTAX ELEMENTS
ENTROPY ENCODING UNIT
118
BITSTREAM

FIG. 2

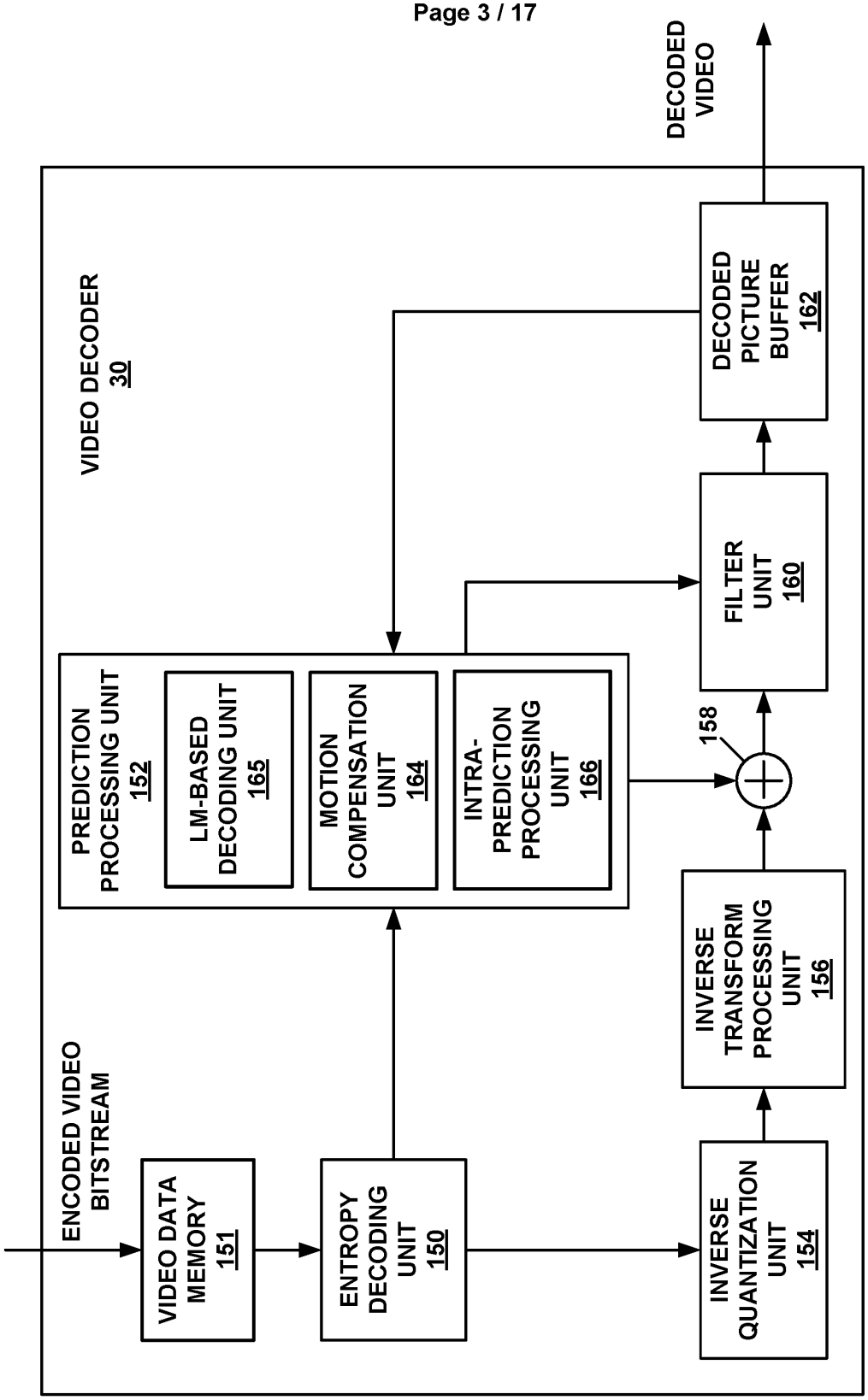
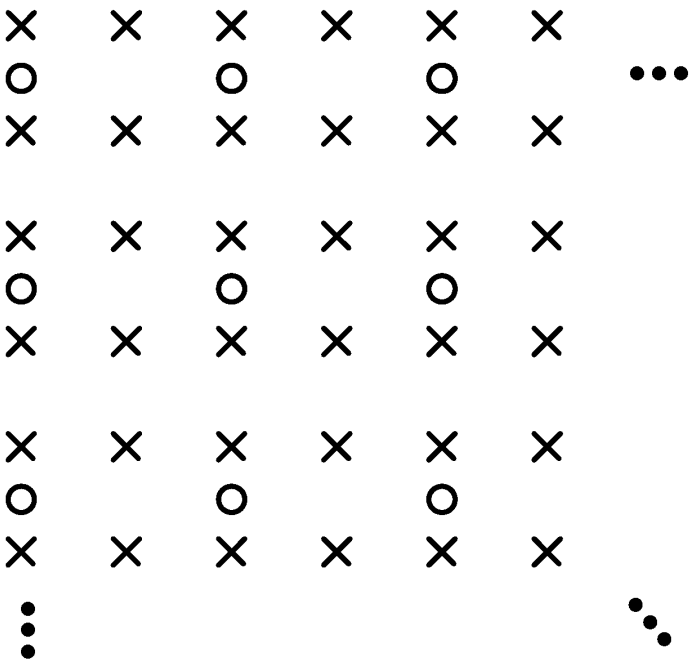

DECODED VIDEO
VIDEO DECODER 30
DECODED PICTURE BUFFER 162
FILTER UNIT 160
PREDICTION PROCESSING UNIT 152
LM-BASED DECODING UNIT 165
MOTION COMPENSATION UNIT 164
INTRA-PREDICTION PROCESSING UNIT 166
158
INVERSE TRANSFORM PROCESSING UNIT 156
ENCODED VIDEO BITSTREAM
VIDEO DATA MEMORY 151
ENTROPY DECODING UNIT 150
INVERSE QUANTIZATION UNIT 154

FIG. 3



Guide:

× = Location of luma sample

O = Location of chroma sample

FIG. 4

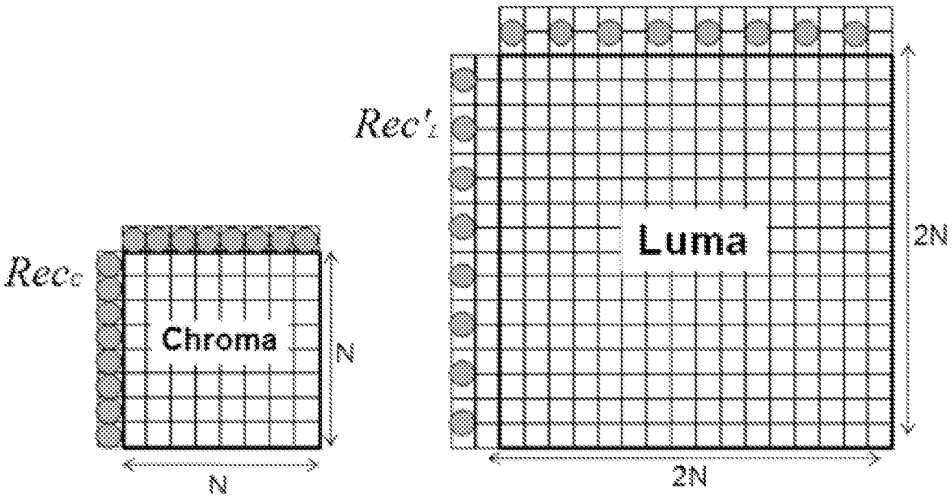


FIG. 5

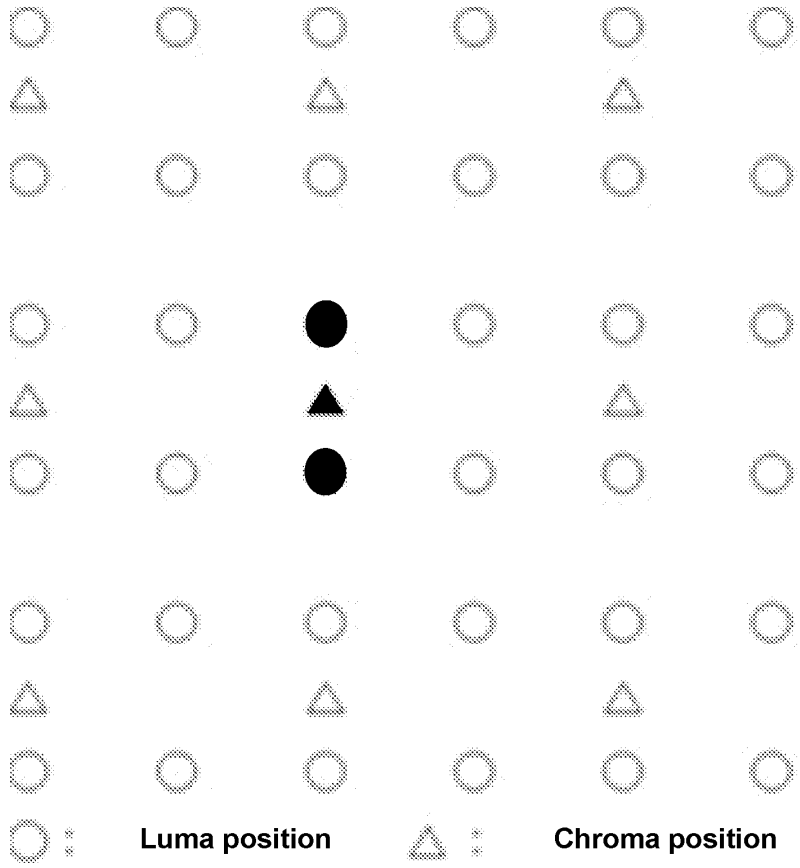


FIG. 6

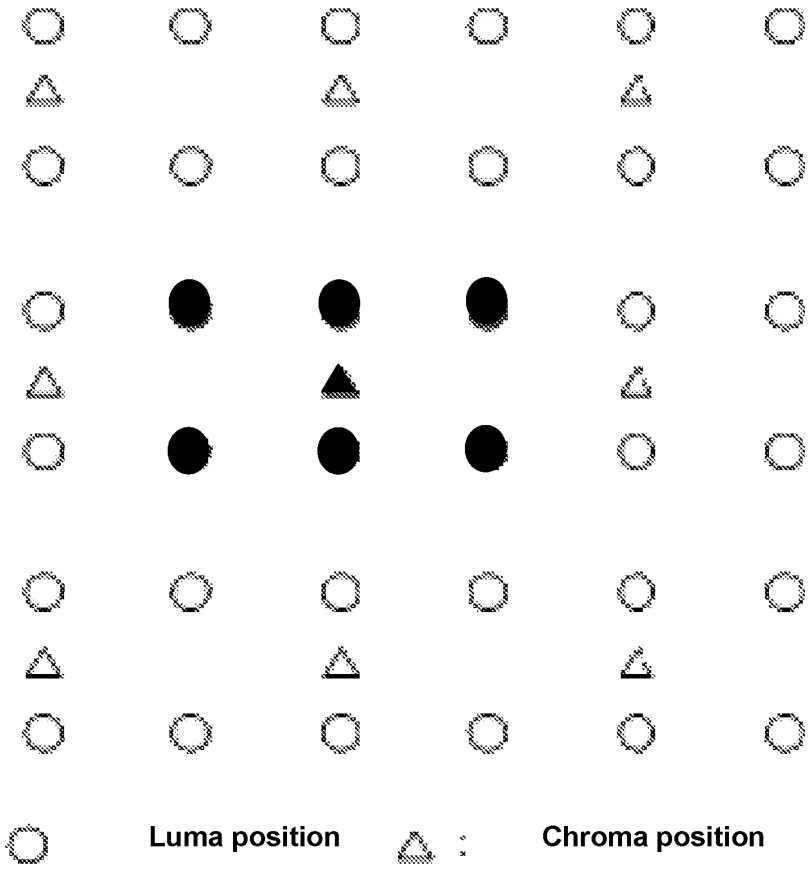


FIG. 7

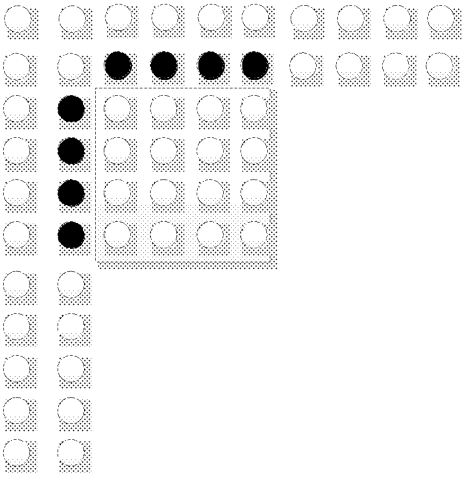


FIG. 8A

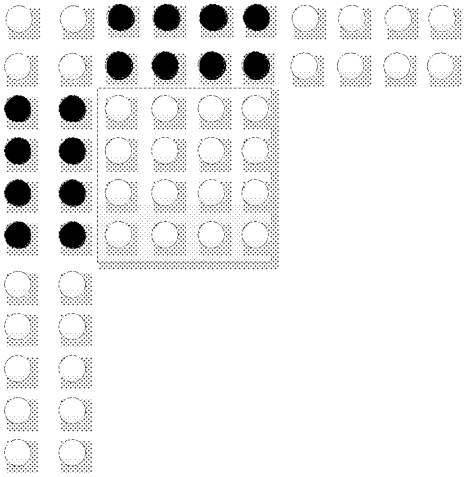


FIG. 8B

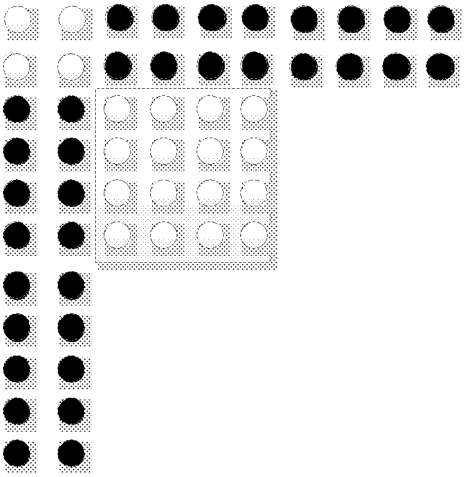


FIG. 8C

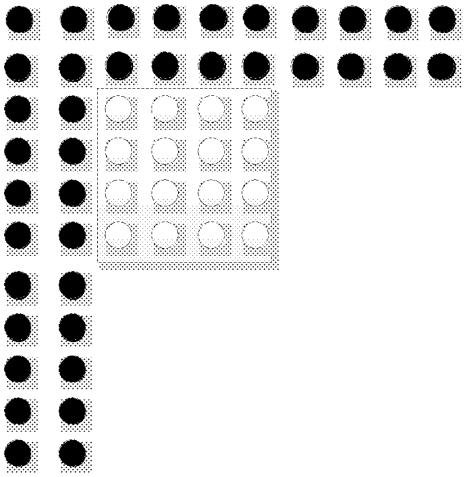


FIG. 8D

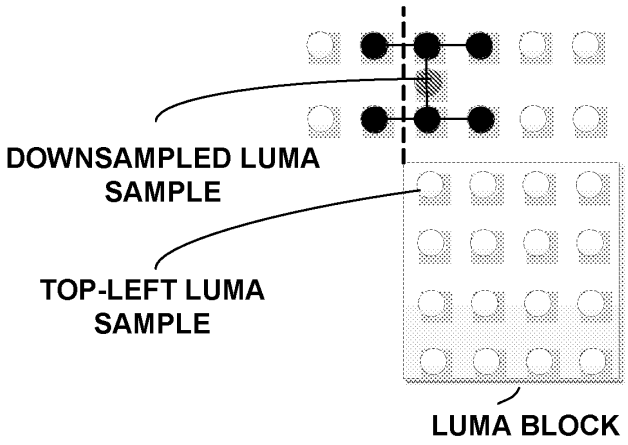

DOWNSAMPLED LUMA SAMPLE
TOP-LEFT LUMA SAMPLE
LUMA BLOCK

FIG. 9

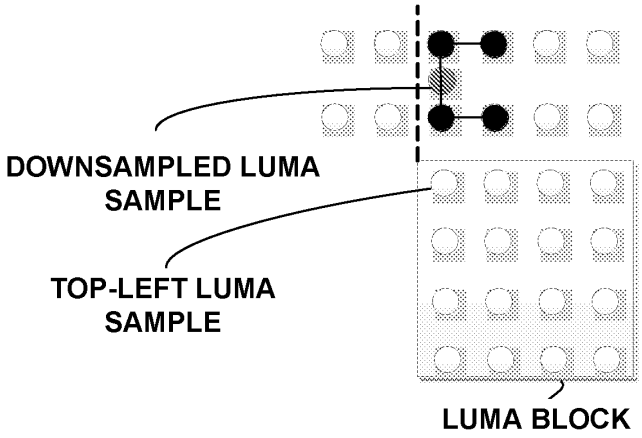

DOWNSAMPLED LUMA SAMPLE
TOP-LEFT LUMA SAMPLE
LUMA BLOCK

FIG. 10

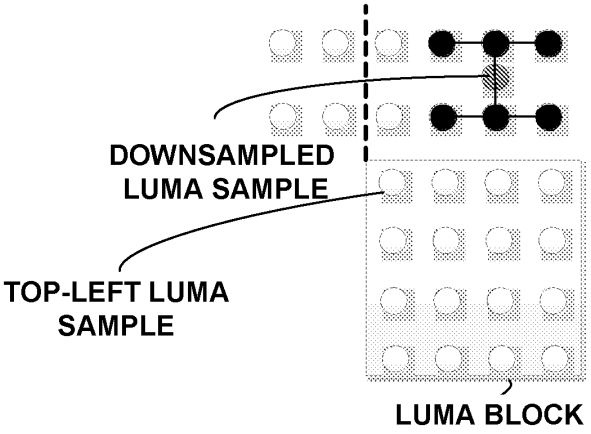


FIG. 11A

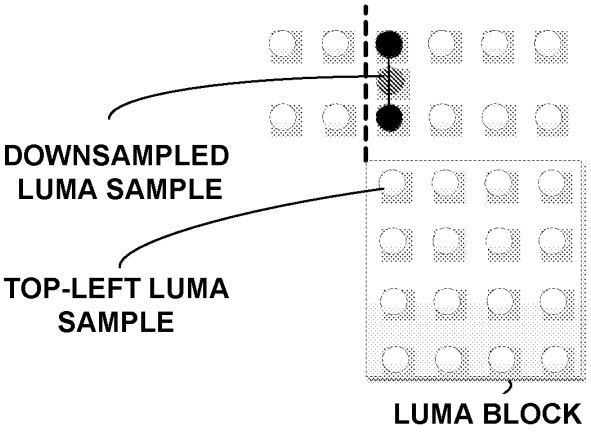


FIG. 11B

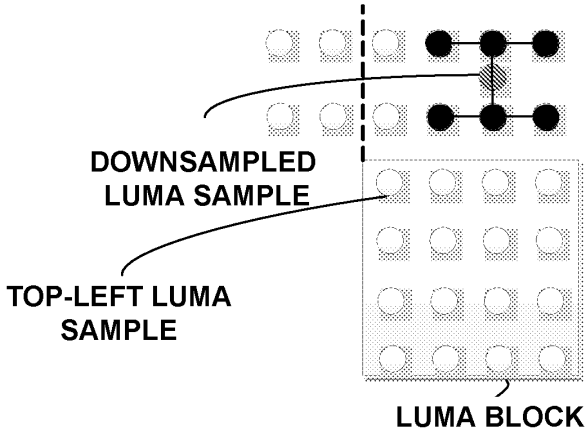


FIG. 12A

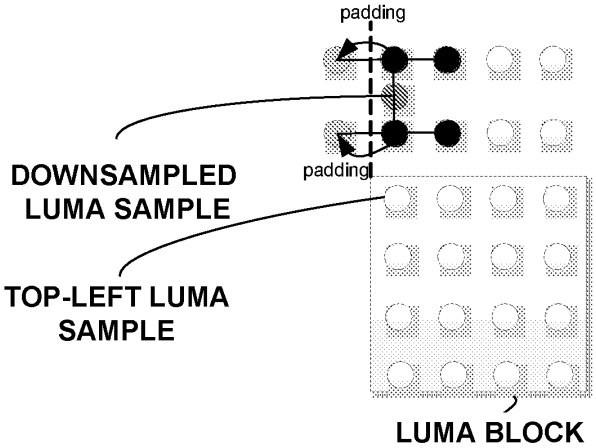


FIG. 12B

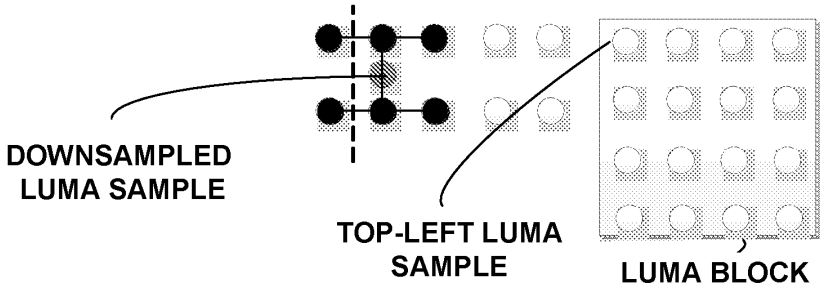

DOWNSAMPLED
LUMA SAMPLE
TOP-LEFT LUMA
SAMPLE
LUMA BLOCK

FIG. 13

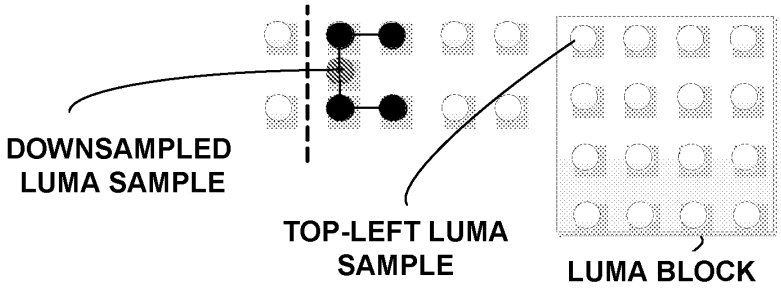

DOWNSAMPLED
LUMA SAMPLE
TOP-LEFT LUMA
SAMPLE
LUMA BLOCK

FIG. 14

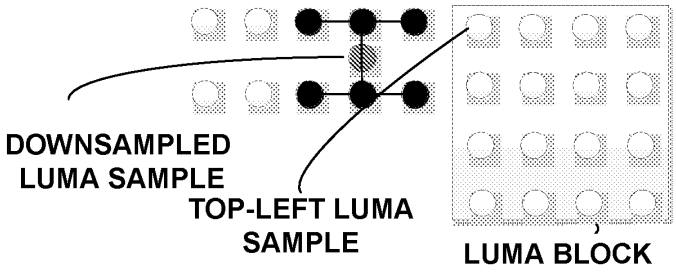


FIG. 15A

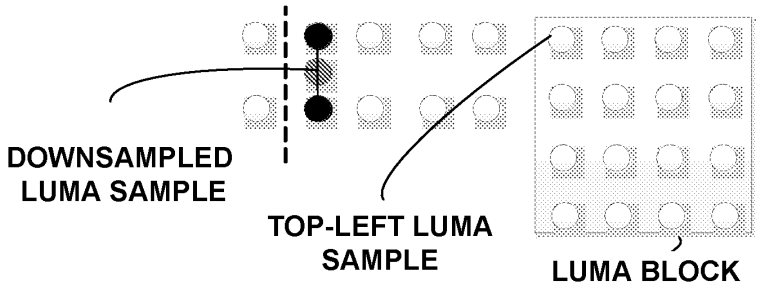


FIG. 15B

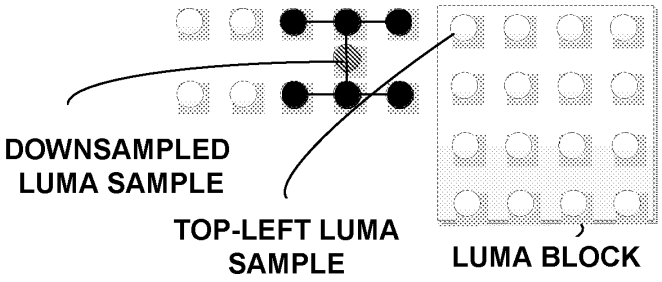


FIG. 16A

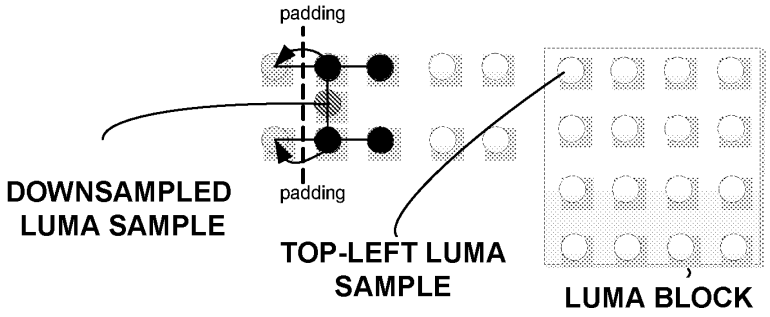


FIG. 16B

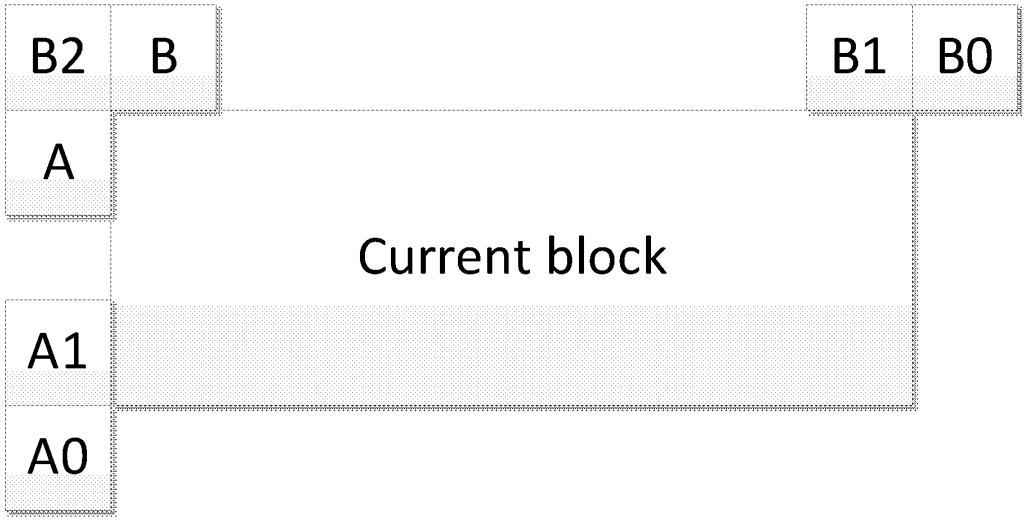


FIG. 17

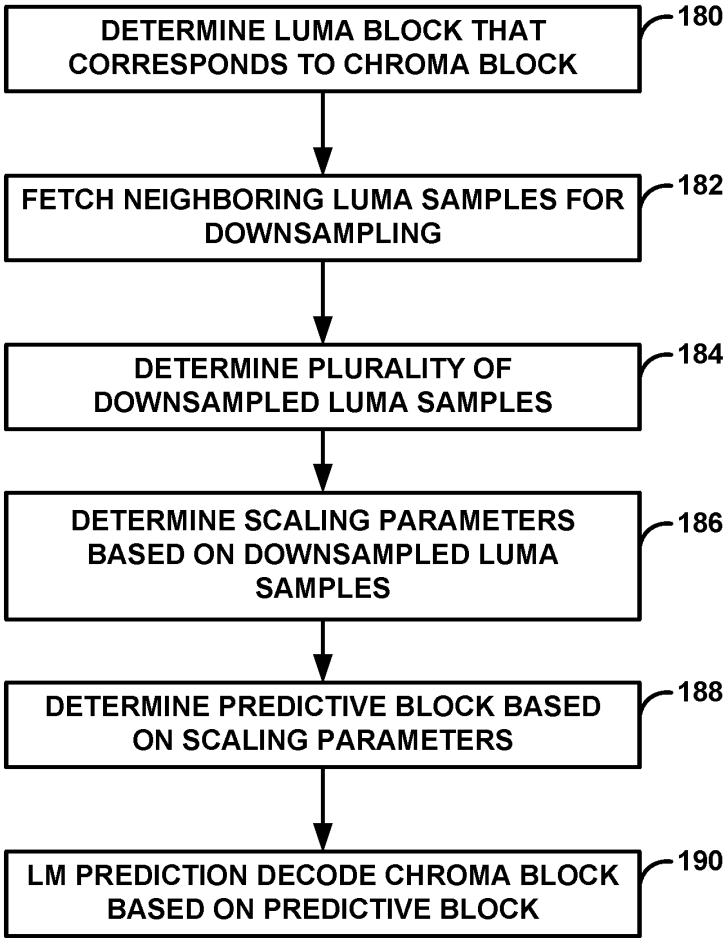

DETERMINE LUMA BLOCK THAT CORRESPONDS TO CHROMA BLOCK
180
FETCH NEIGHBORING LUMA SAMPLES FOR DOWNSAMPLING
182
DETERMINE PLURALITY OF DOWNSAMPLED LUMA SAMPLES
184
DETERMINE SCALING PARAMETERS BASED ON DOWNSAMPLED LUMA SAMPLES
186
DETERMINE PREDICTIVE BLOCK BASED ON SCALING PARAMETERS
188
LM PREDICTION DECODE CHROMA BLOCK BASED ON PREDICTIVE BLOCK
190

FIG. 18

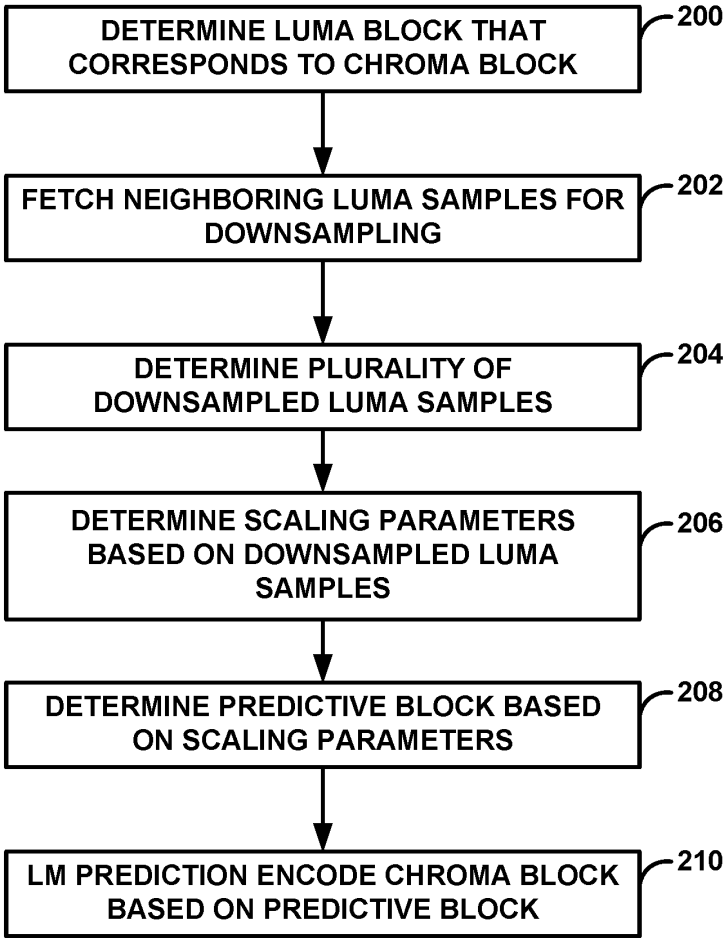

DETERMINE LUMA BLOCK THAT CORRESPONDS TO CHROMA BLOCK
200
FETCH NEIGHBORING LUMA SAMPLES FOR DOWNSAMPLING
202
DETERMINE PLURALITY OF DOWNSAMPLED LUMA SAMPLES
204
DETERMINE SCALING PARAMETERS BASED ON DOWNSAMPLED LUMA SAMPLES
206
DETERMINE PREDICTIVE BLOCK BASED ON SCALING PARAMETERS
208
LM PREDICTION ENCODE CHROMA BLOCK BASED ON PREDICTIVE BLOCK
210

FIG. 19