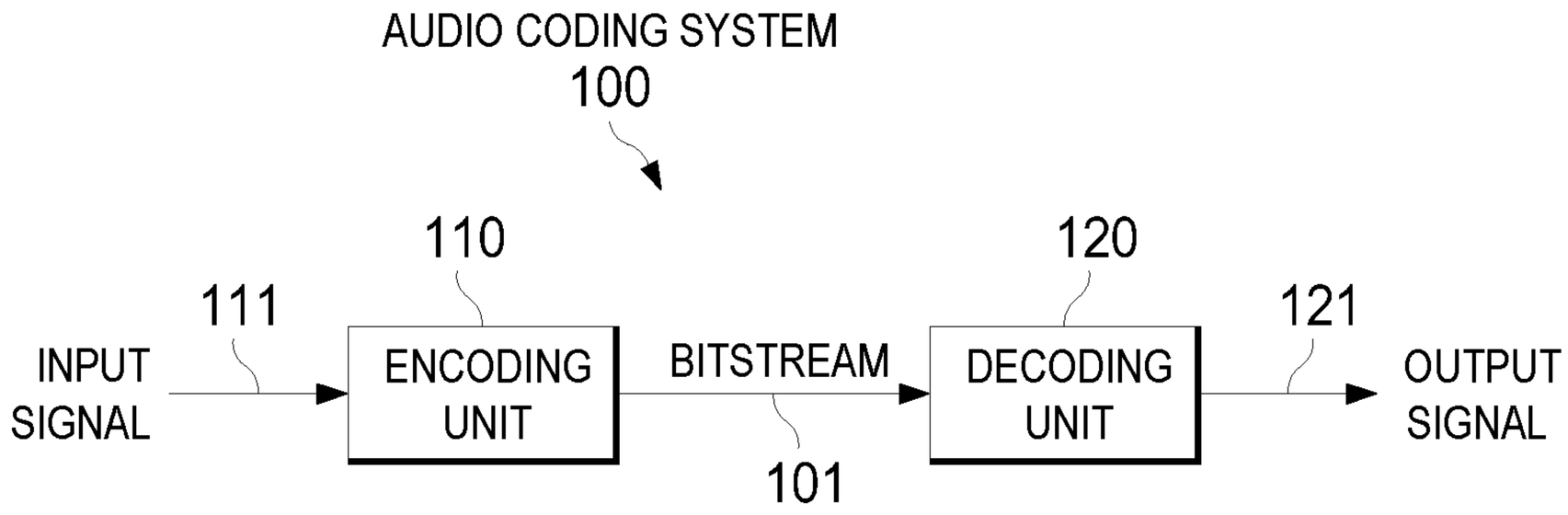

AUDIO CODING SYSTEM
100
110
120
111
121
INPUT
SIGNAL
ENCODING
UNIT
BITSTREAM
DECODING
UNIT
OUTPUT
SIGNAL
101

FIG. 1

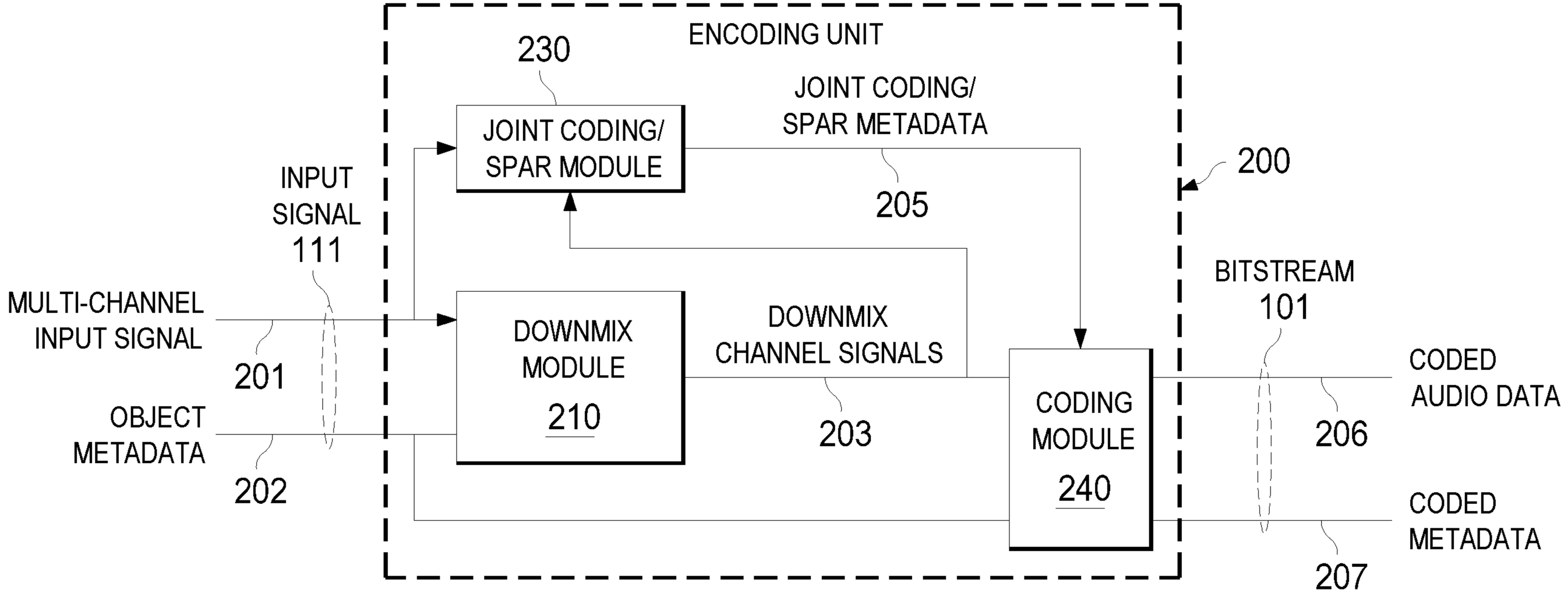

ENCODING UNIT
230
JOINT CODING/
SPAR MODULE
JOINT CODING/
SPAR METADATA
205
200
INPUT
SIGNAL
111
BITSTREAM
101
MULTI-CHANNEL
INPUT SIGNAL
201
DOWNMIX
MODULE
210
DOWNMIX
CHANNEL SIGNALS
203
CODING
MODULE
240
CODED
AUDIO DATA
206
OBJECT
METADATA
202
CODED
METADATA
207

FIG. 2

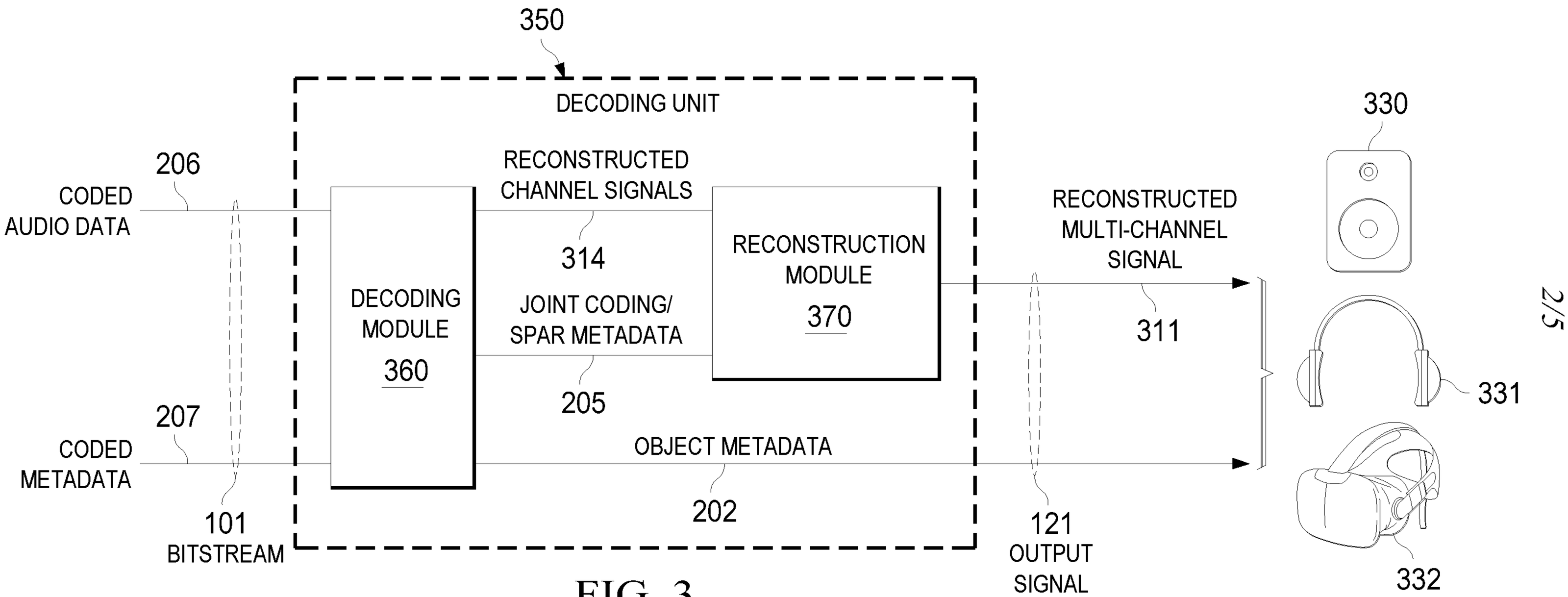

350
DECODING UNIT
206
CODED
AUDIO DATA
RECONSTRUCTED
CHANNEL SIGNALS
314
DECODING
MODULE
360
JOINT CODING/
SPAR METADATA
205
RECONSTRUCTION
MODULE
370
RECONSTRUCTED
MULTI-CHANNEL
SIGNAL
311
330
331
332
207
CODED
METADATA
OBJECT METADATA
202
101
BITSTREAM
121
OUTPUT
SIGNAL

FIG. 3

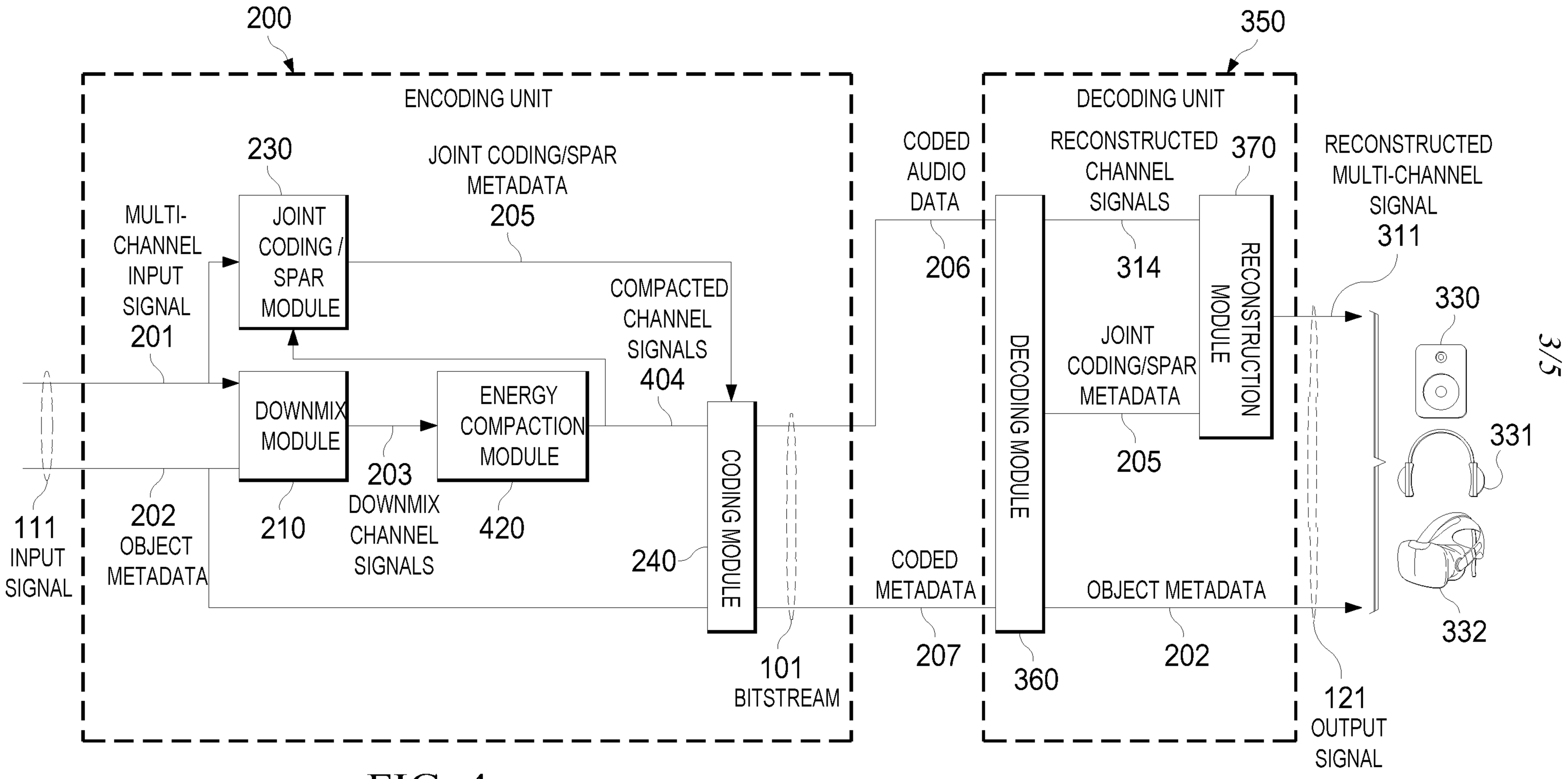

200
ENCODING UNIT
230
JOINT CODING/SPAR METADATA
205
MULTI-CHANNEL INPUT SIGNAL
201
JOINT CODING / SPAR MODULE
COMPACTED CHANNEL SIGNALS
404
DOWNMIX MODULE
ENERGY COMPACTION MODULE
203
DOWNMIX CHANNEL SIGNALS
420
210
111
INPUT SIGNAL
202
OBJECT METADATA
240
CODING MODULE
101
BITSTREAM
350
DECODING UNIT
CODED AUDIO DATA
206
RECONSTRUCTED CHANNEL SIGNALS
314
370
RECONSTRUCTED MULTI-CHANNEL SIGNAL
311
330
DECODING MODULE
JOINT CODING/SPAR METADATA
205
RECONSTRUCTION MODULE
331
332
CODED METADATA
207
OBJECT METADATA
202
360
121
OUTPUT SIGNAL

FIG. 4

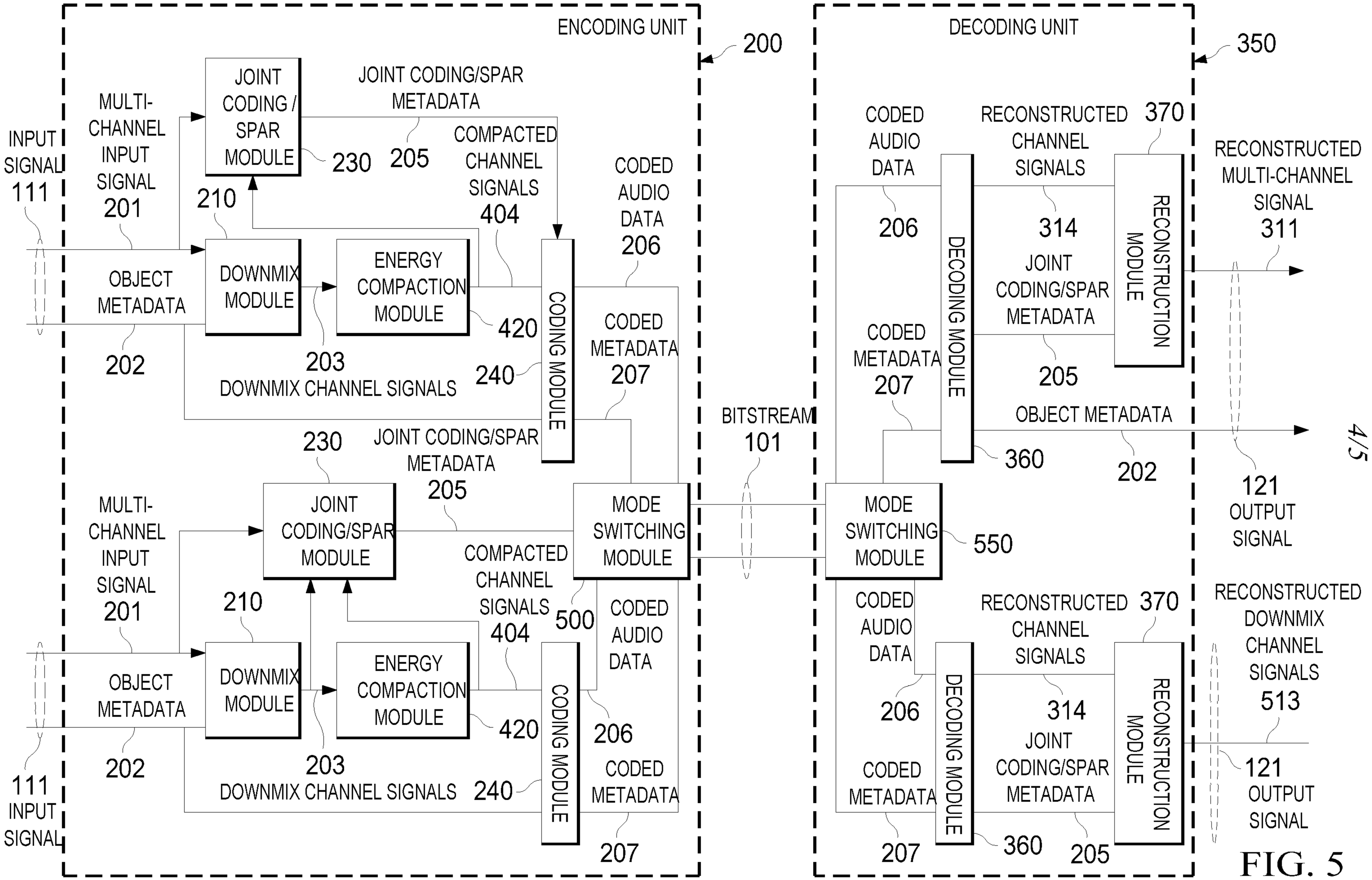

ENCODING UNIT
200
INPUT SIGNAL
111
MULTI-CHANNEL INPUT SIGNAL
201
OBJECT METADATA
202
JOINT CODING / SPAR MODULE
230
JOINT CODING/SPAR METADATA
205
210
DOWNMIX MODULE
203
DOWNMIX CHANNEL SIGNALS
ENERGY COMPACTION MODULE
420
COMPACTED CHANNEL SIGNALS
404
CODING MODULE
240
CODED AUDIO DATA
206
CODED METADATA
207
BITSTREAM
101
DECODING UNIT
350
CODED AUDIO DATA
206
CODED METADATA
207
DECODING MODULE
360
RECONSTRUCTED CHANNEL SIGNALS
314
JOINT CODING/SPAR METADATA
205
OBJECT METADATA
202
RECONSTRUCTION MODULE
370
RECONSTRUCTED MULTI-CHANNEL SIGNAL
311
121
OUTPUT SIGNAL
MODE SWITCHING MODULE
550
500
RECONSTRUCTED DOWNMIX CHANNEL SIGNALS
513

FIG. 5

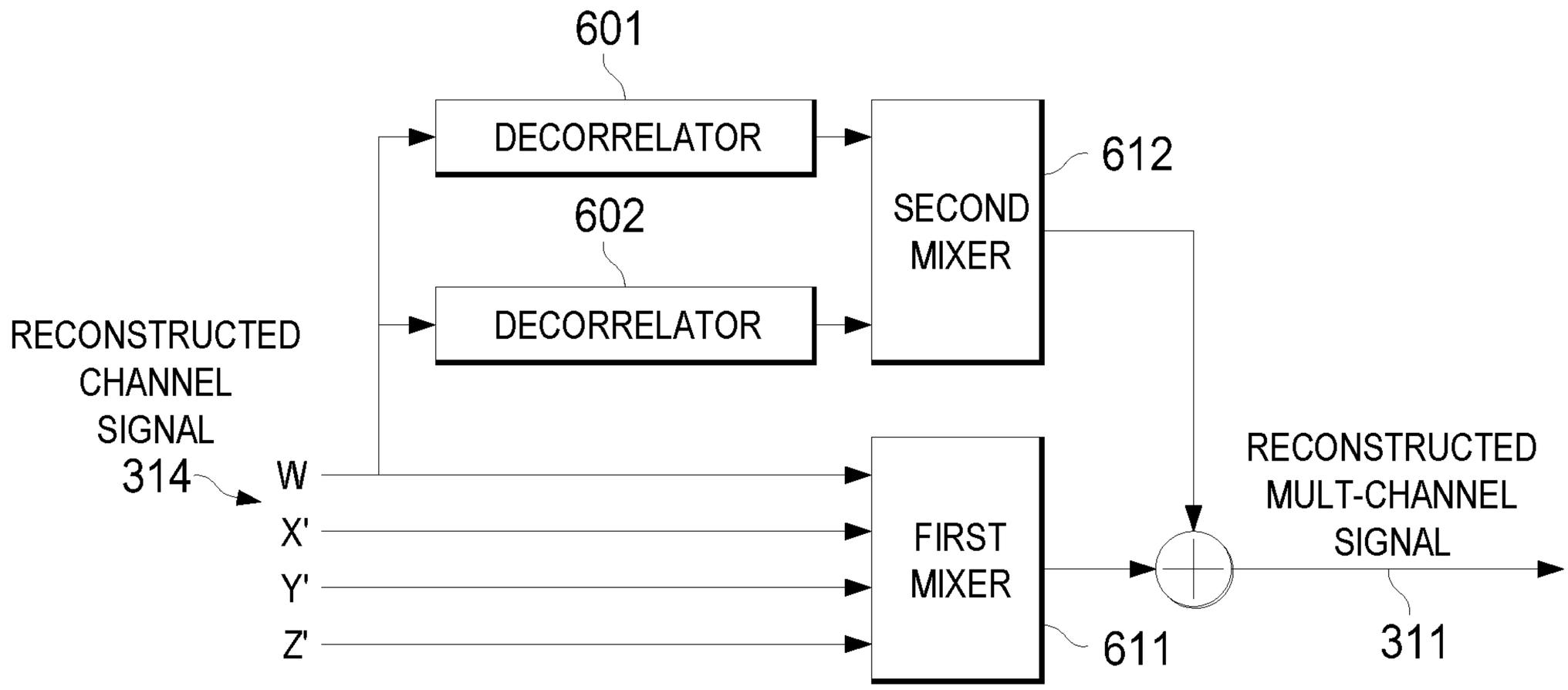


FIG. 6

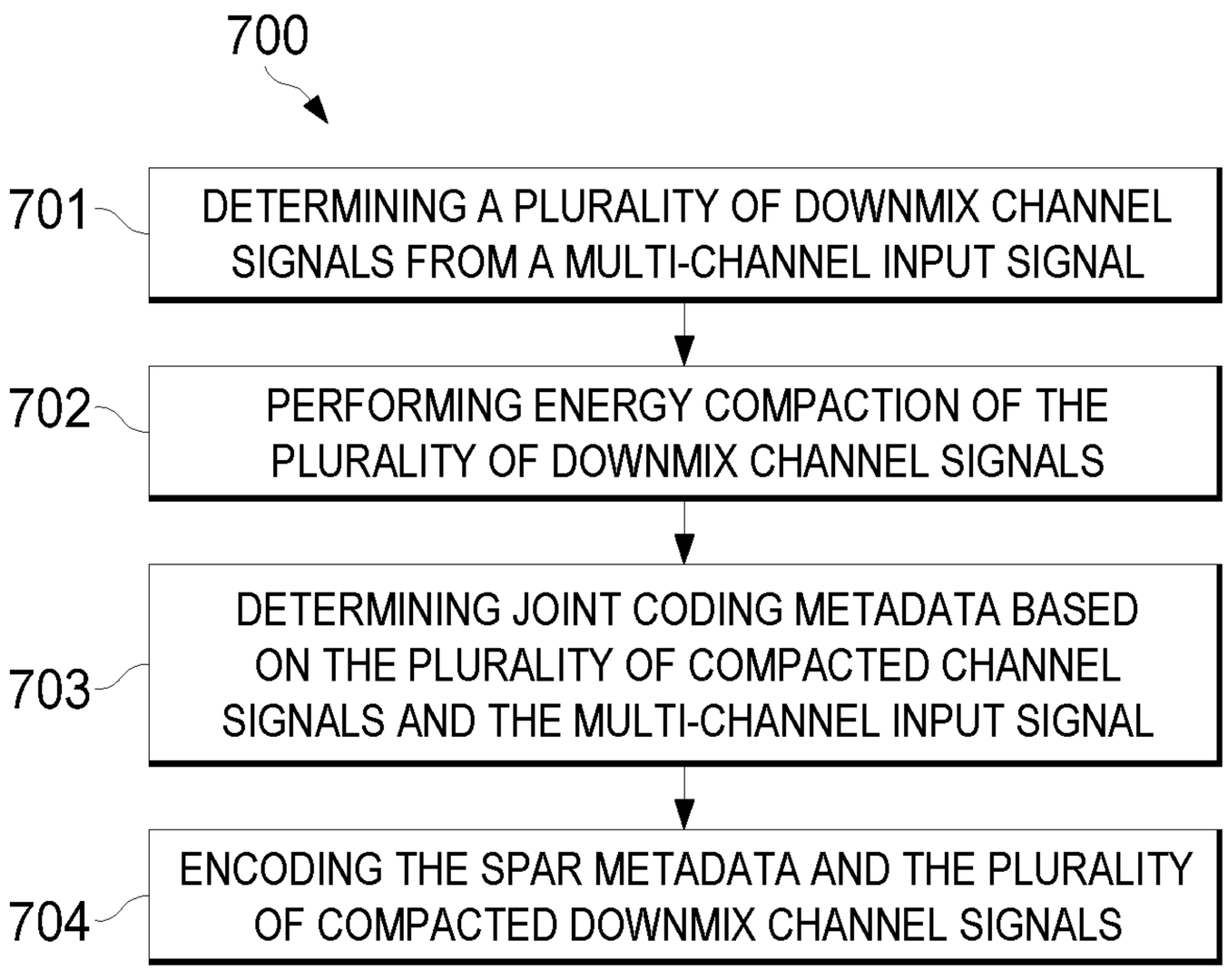


FIG. 7

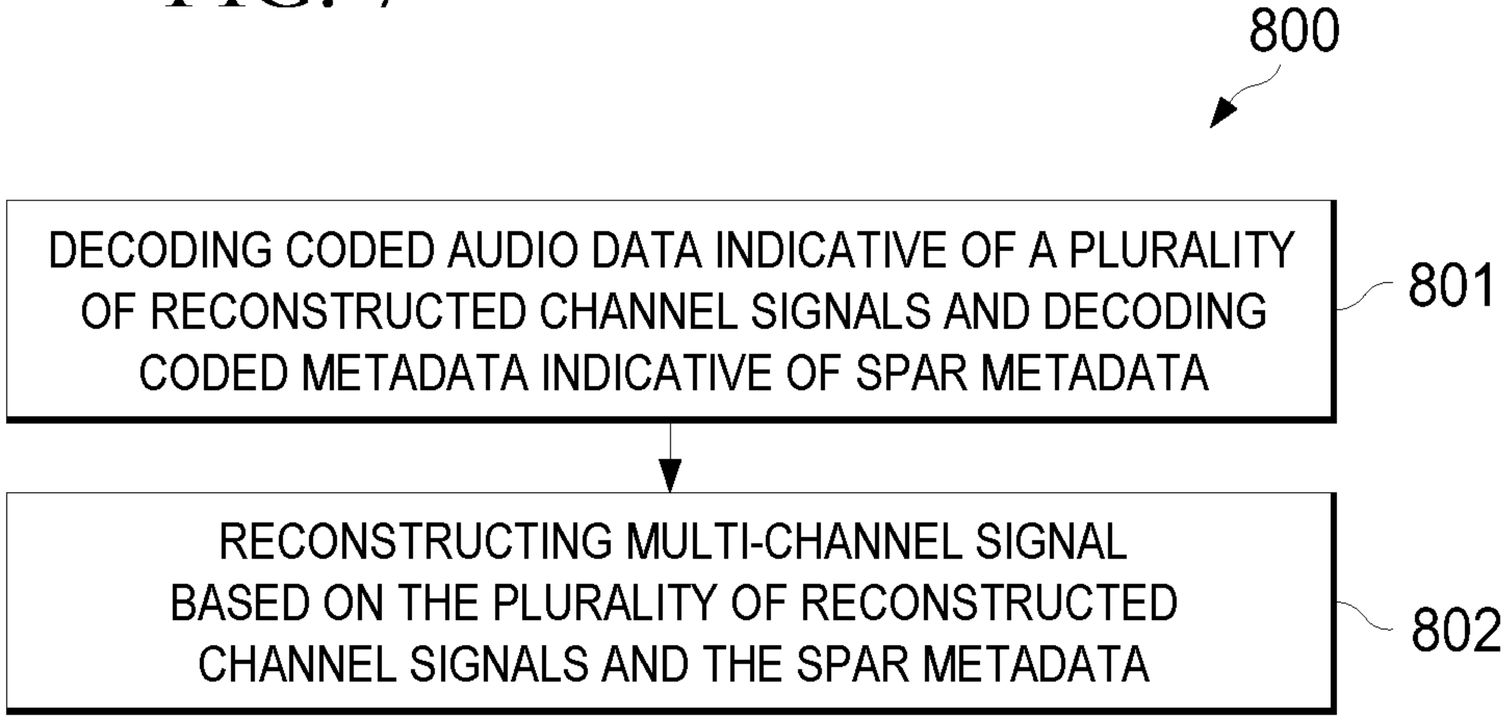


FIG. 8