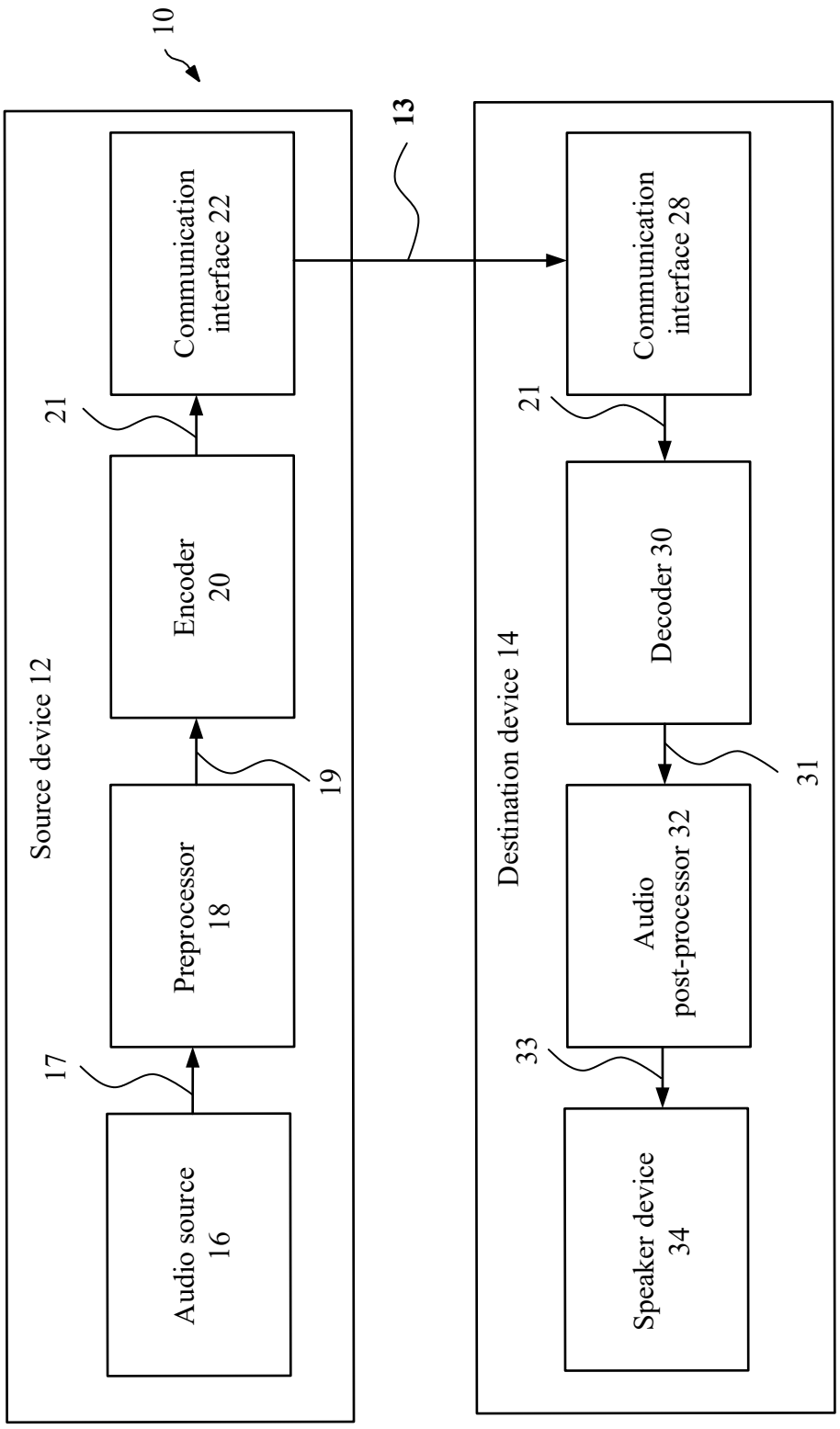
10
13
Source device 12
Audio source 16
17
Preprocessor 18
19
Encoder 20
21
Communication interface 22
Destination device 14
Communication interface 28
21
Decoder 30
31
Audio post-processor 32
33
Speaker device 34

FIG. 1

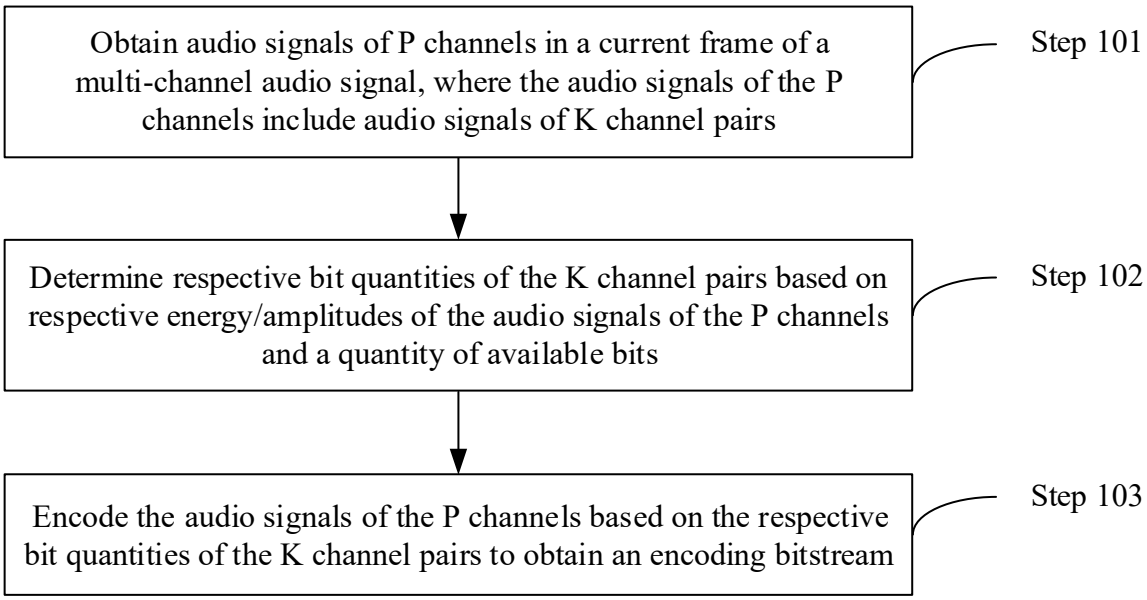
Obtain audio signals of P channels in a current frame of a multi-channel audio signal, where the audio signals of the P channels include audio signals of K channel pairs
Step 101
Determine respective bit quantities of the K channel pairs based on respective energy/amplitudes of the audio signals of the P channels and a quantity of available bits
Step 102
Encode the audio signals of the P channels based on the respective bit quantities of the K channel pairs to obtain an encoding bitstream
Step 103

FIG. 2

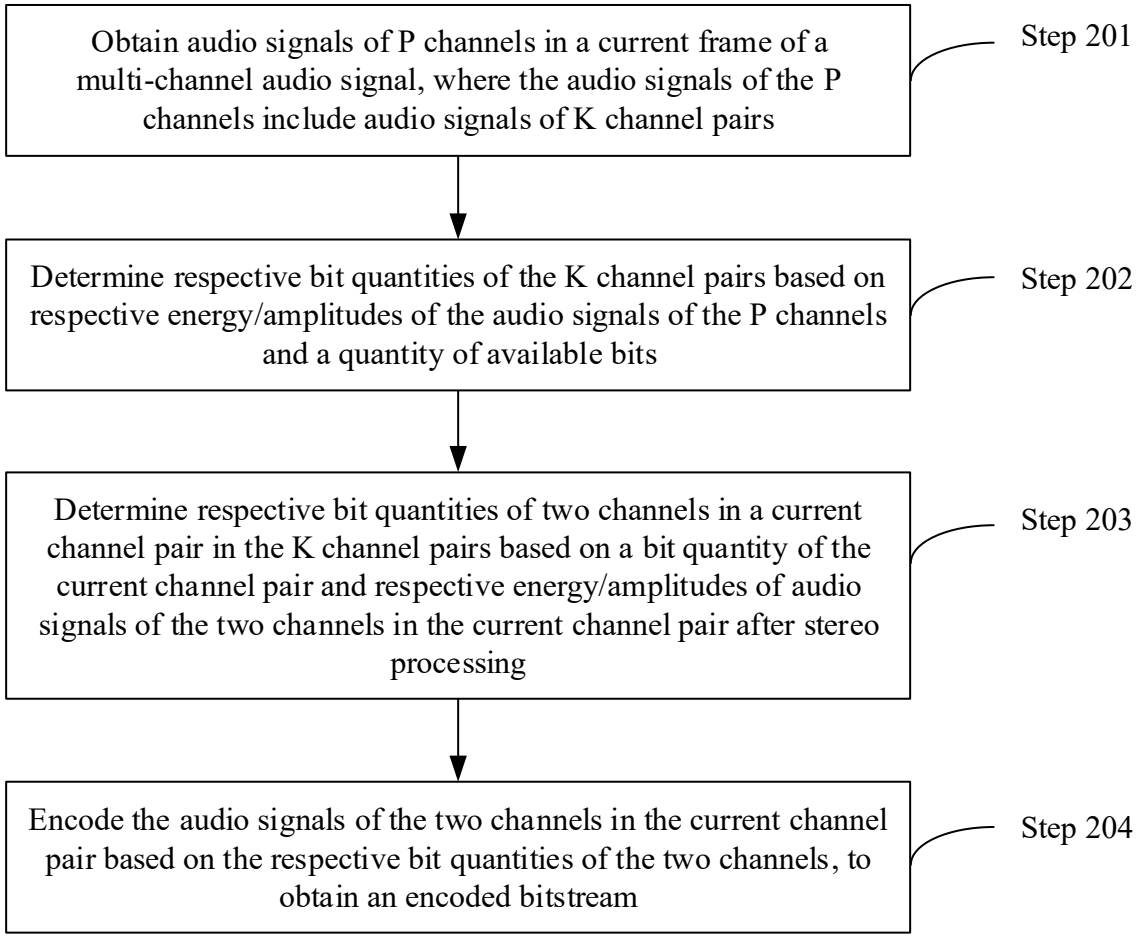
Obtain audio signals of P channels in a current frame of a multi-channel audio signal, where the audio signals of the P channels include audio signals of K channel pairs
Step 201
Determine respective bit quantities of the K channel pairs based on respective energy/amplitudes of the audio signals of the P channels and a quantity of available bits
Step 202
Determine respective bit quantities of two channels in a current channel pair in the K channel pairs based on a bit quantity of the current channel pair and respective energy/amplitudes of audio signals of the two channels in the current channel pair after stereo processing
Step 203
Encode the audio signals of the two channels in the current channel pair based on the respective bit quantities of the two channels, to obtain an encoded bitstream
Step 204

FIG. 3

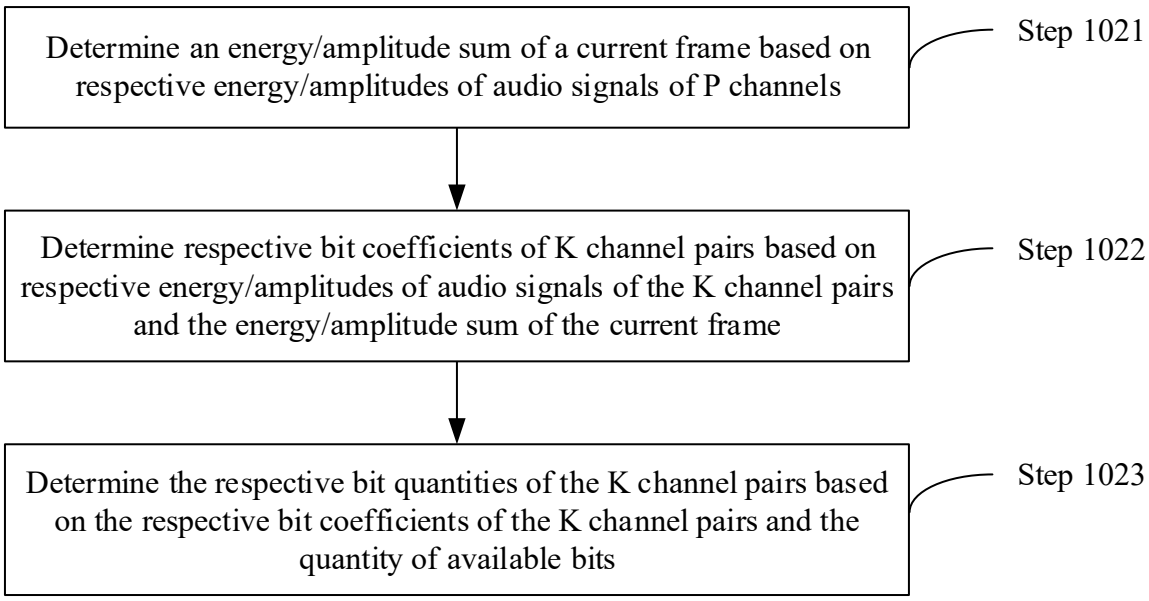
Determine an energy/amplitude sum of a current frame based on respective energy/amplitudes of audio signals of P channels
Step 1021
Determine respective bit coefficients of K channel pairs based on respective energy/amplitudes of audio signals of the K channel pairs and the energy/amplitude sum of the current frame
Step 1022
Determine the respective bit quantities of the K channel pairs based on the respective bit coefficients of the K channel pairs and the quantity of available bits
Step 1023

FIG. 4

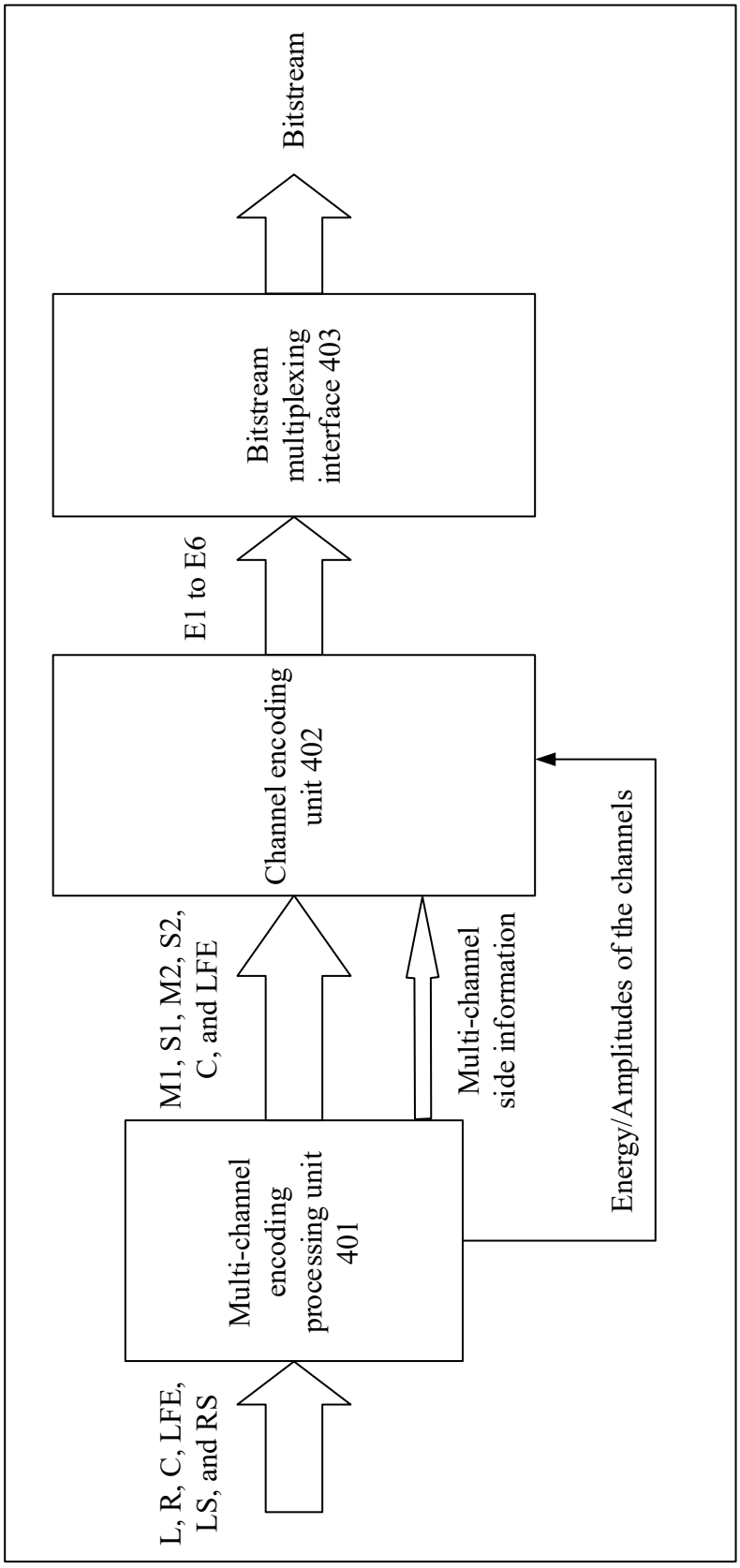
L, R, C, LFE, LS, and RS
Multi-channel encoding processing unit 401
M1, S1, M2, S2, C, and LFE
Multi-channel side information
Energy/Amplitudes of the channels
Channel encoding unit 402
E1 to E6
Bitstream multiplexing interface 403
Bitstream

FIG. 5

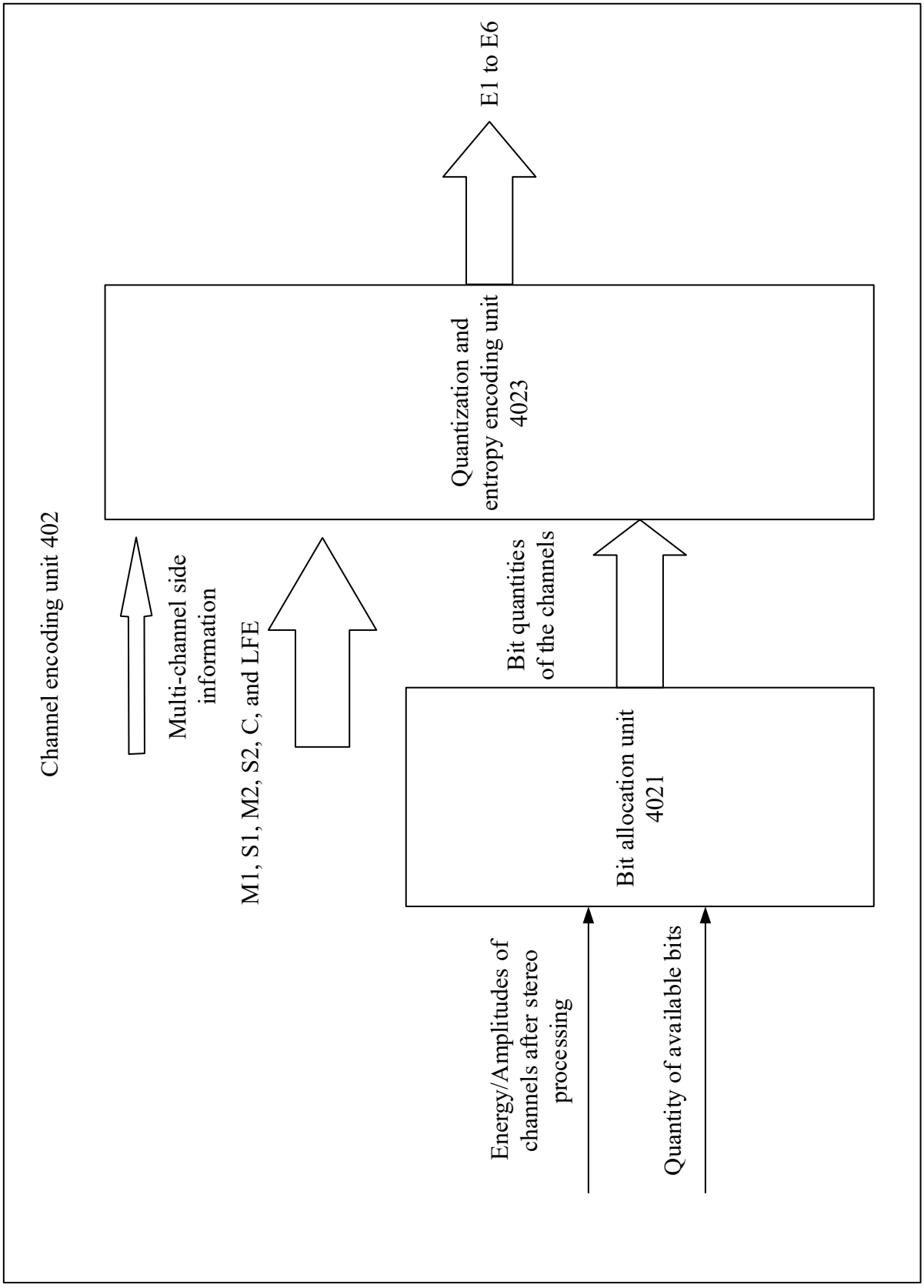
Channel encoding unit 402
Multi-channel side information
M1, S1, M2, S2, C, and LFE
Bit quantities of the channels
Quantization and entropy encoding unit 4023
E1 to E6
Bit allocation unit 4021
Energy/Amplitudes of channels after stereo processing
Quantity of available bits

FIG. 6

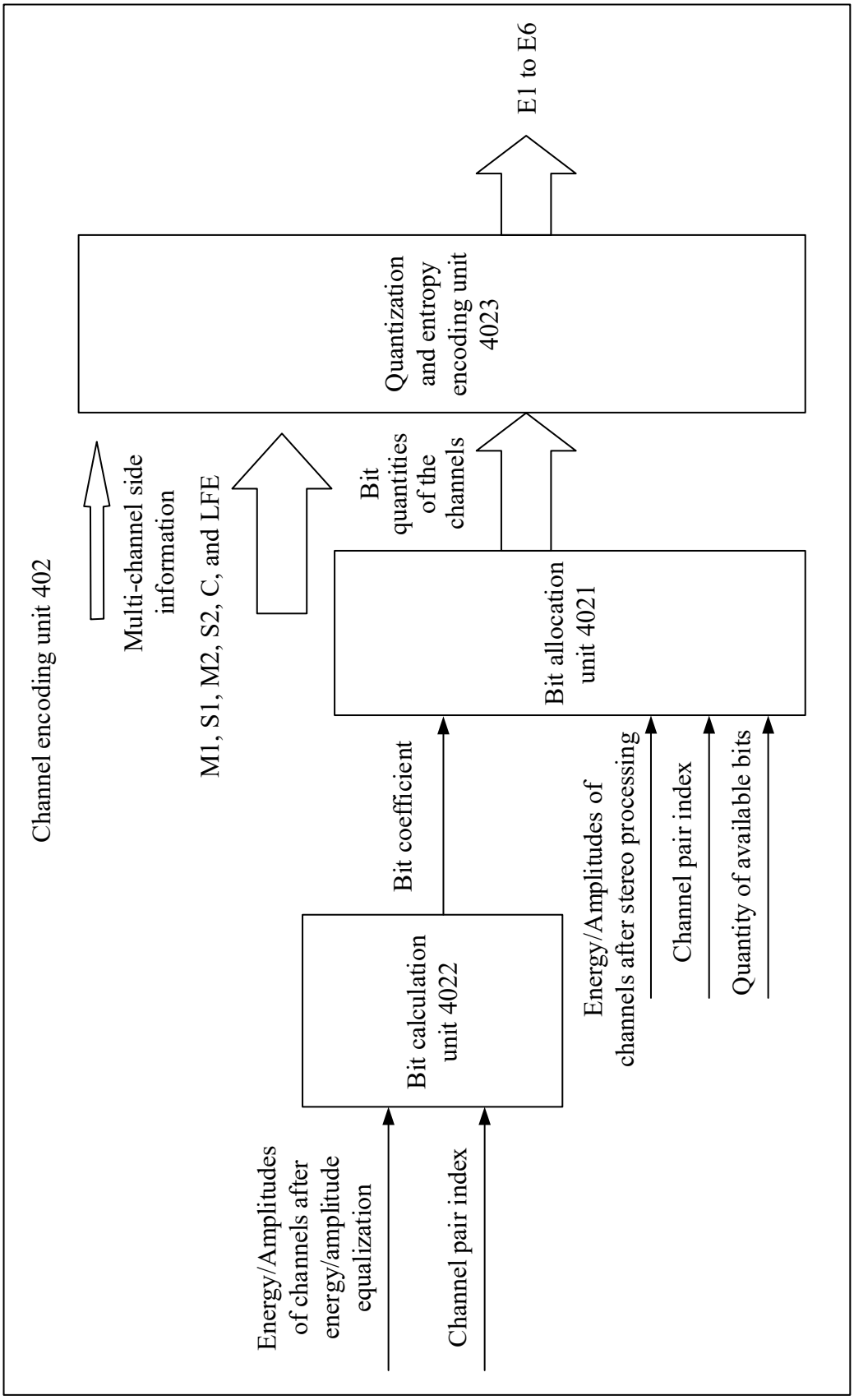
Channel encoding unit 402
Energy/Amplitudes of channels after energy/amplitude equalization
Channel pair index
Bit calculation unit 4022
Bit coefficient
Energy/Amplitudes of channels after stereo processing
Channel pair index
Quantity of available bits
Bit allocation unit 4021
Bit quantities of the channels
M1, S1, M2, S2, C, and LFE
Multi-channel side information
Quantization and entropy encoding unit 4023
E1 to E6

FIG. 7

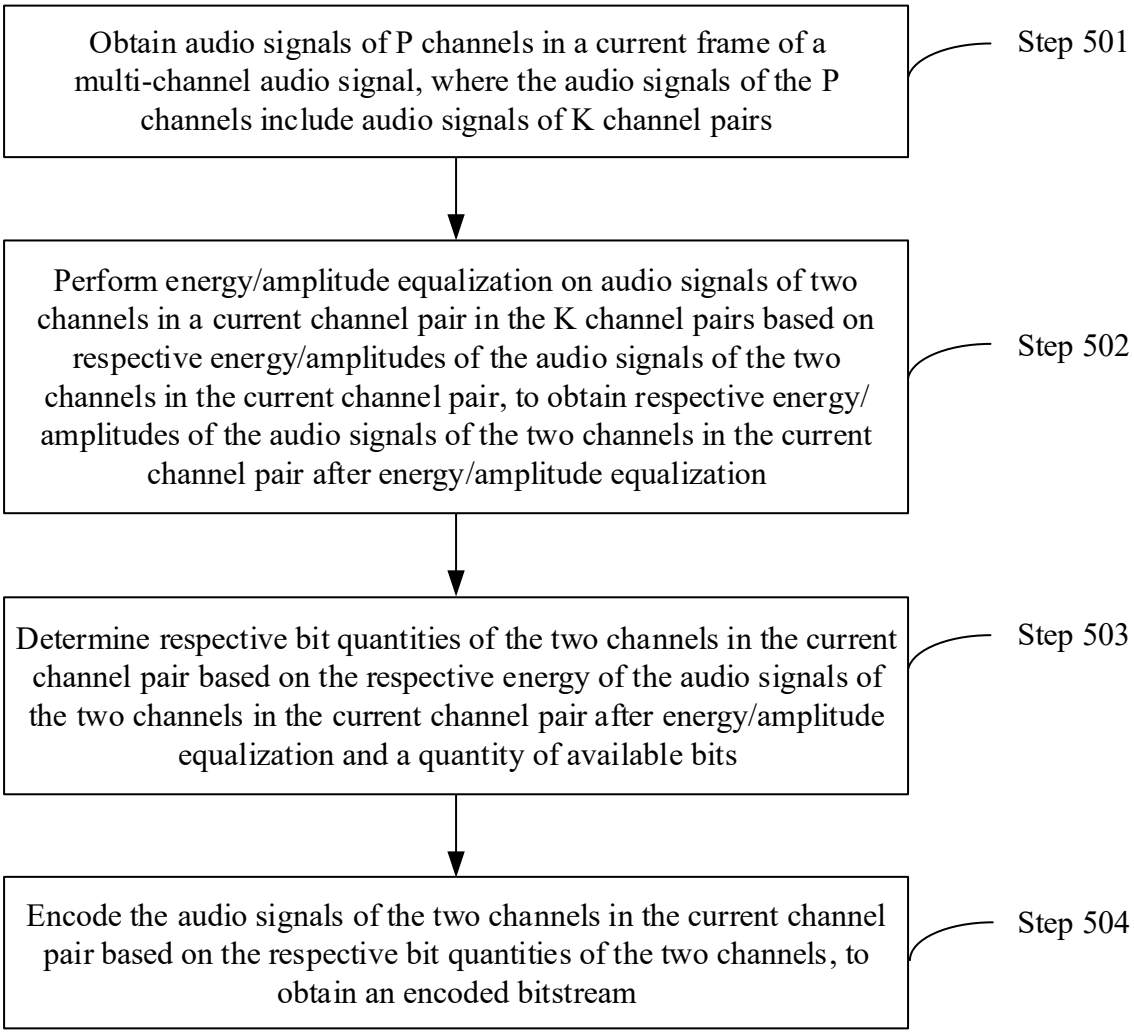
Obtain audio signals of P channels in a current frame of a multi-channel audio signal, where the audio signals of the P channels include audio signals of K channel pairs
Step 501
Perform energy/amplitude equalization on audio signals of two channels in a current channel pair in the K channel pairs based on respective energy/amplitudes of the audio signals of the two channels in the current channel pair, to obtain respective energy/amplitudes of the audio signals of the two channels in the current channel pair after energy/amplitude equalization
Step 502
Determine respective bit quantities of the two channels in the current channel pair based on the respective energy of the audio signals of the two channels in the current channel pair after energy/amplitude equalization and a quantity of available bits
Step 503
Encode the audio signals of the two channels in the current channel pair based on the respective bit quantities of the two channels, to obtain an encoded bitstream
Step 504

FIG. 8

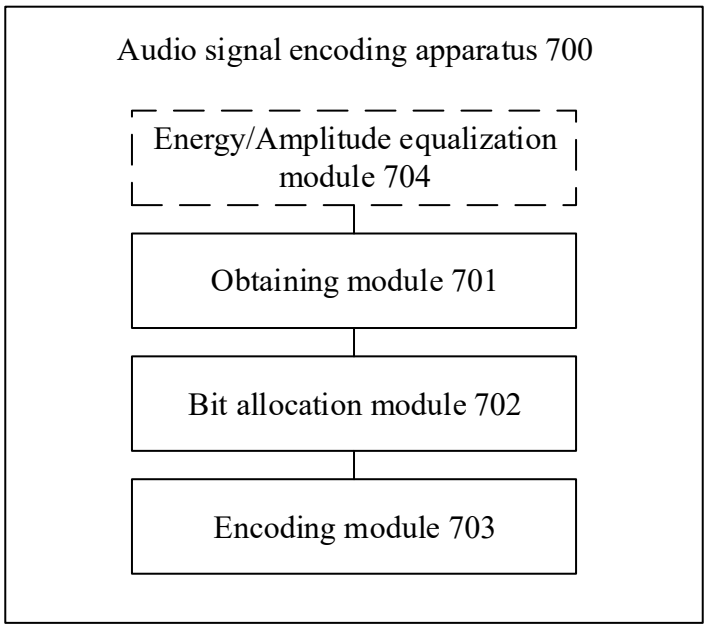
Audio signal encoding apparatus 700
Energy/Amplitude equalization module 704
Obtaining module 701
Bit allocation module 702
Encoding module 703

FIG. 9

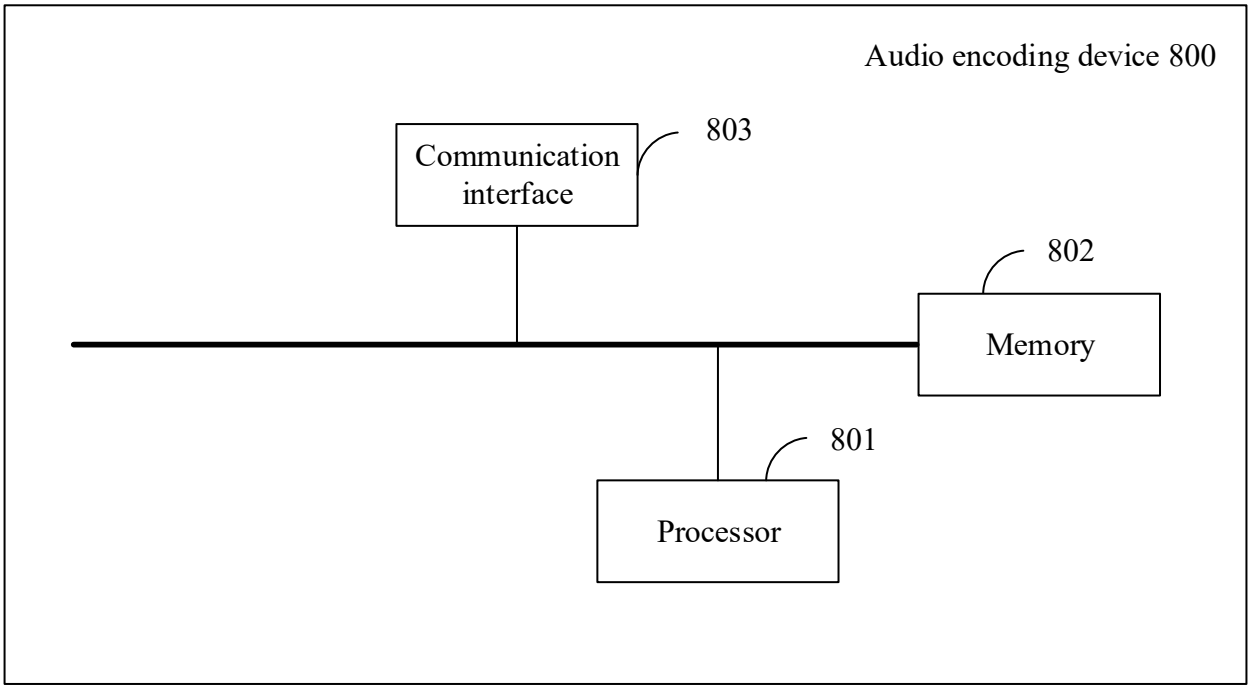
Audio encoding device 800
Communication interface
803
802
Memory
801
Processor

FIG. 10