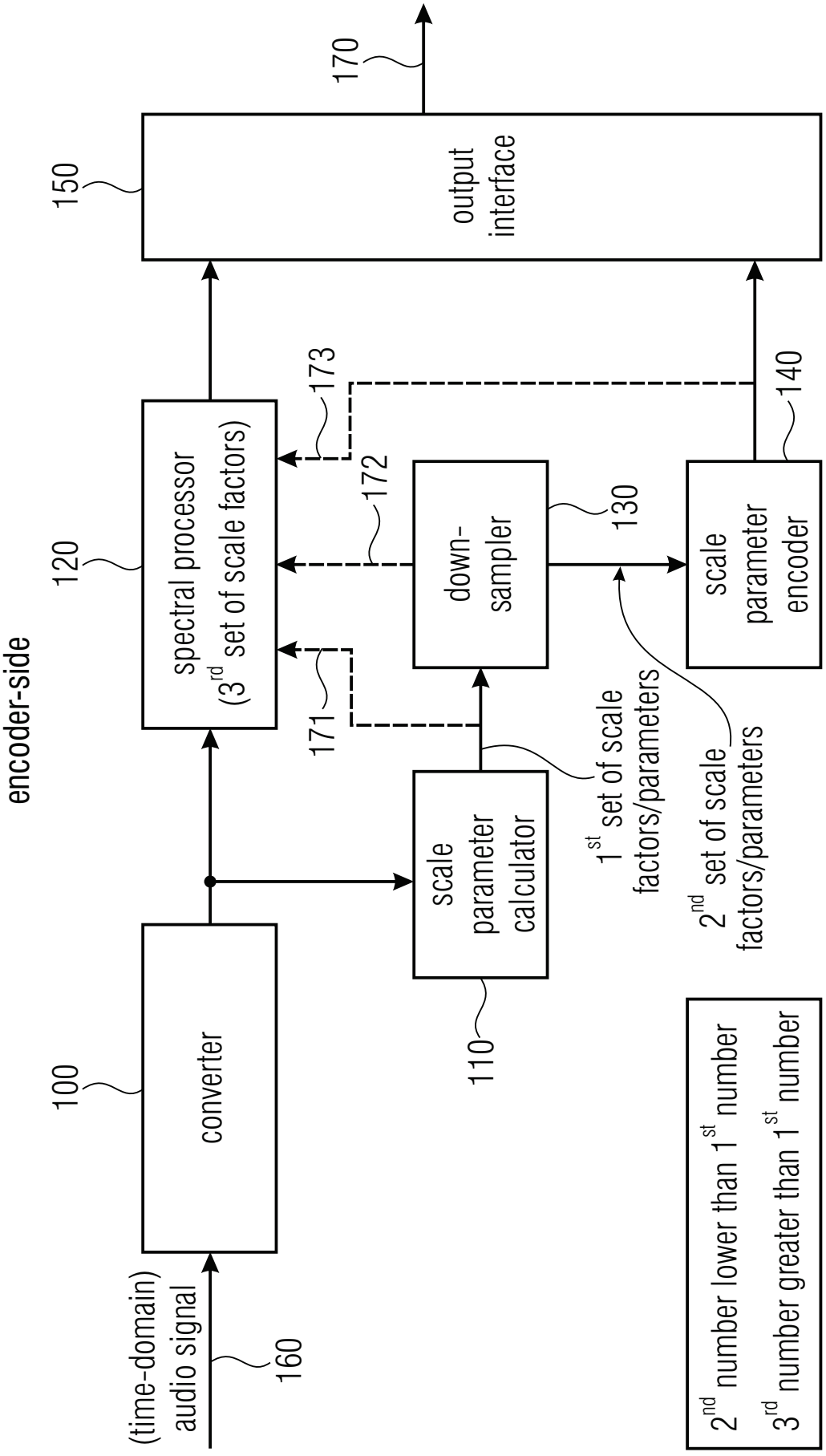

encoder-side
(time-domain) audio signal
160
100
converter
120
spectral processor (3rd set of scale factors)
150
output interface
170
110
scale parameter calculator
130
down-sampler
140
scale parameter encoder
171
172
173
1st set of scale factors/parameters
2nd set of scale factors/parameters
2nd number lower than 1st number
3rd number greater than 1st number

Fig. 1

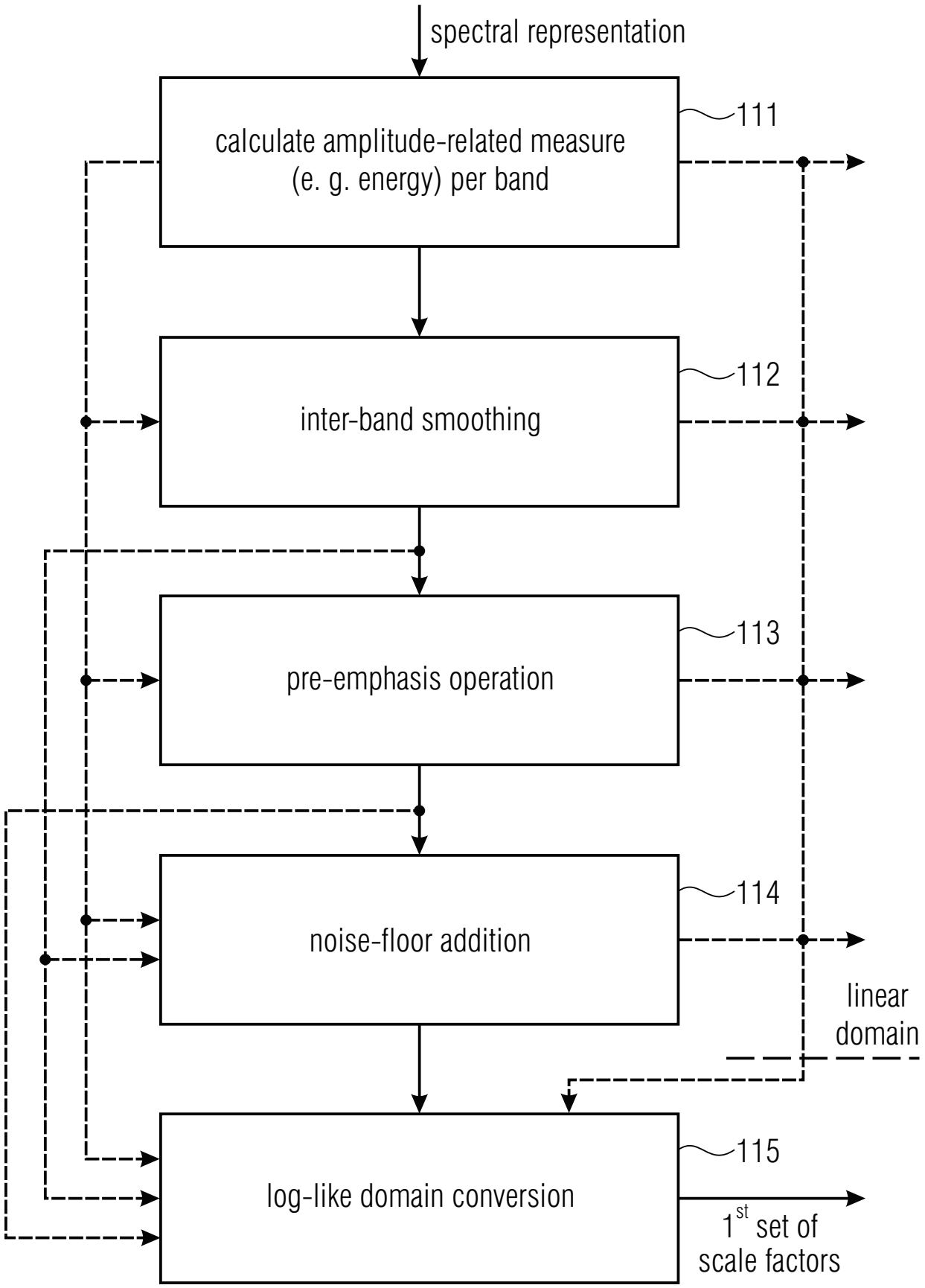


Fig. 2
(SCALE FACTOR CALCULATOR)

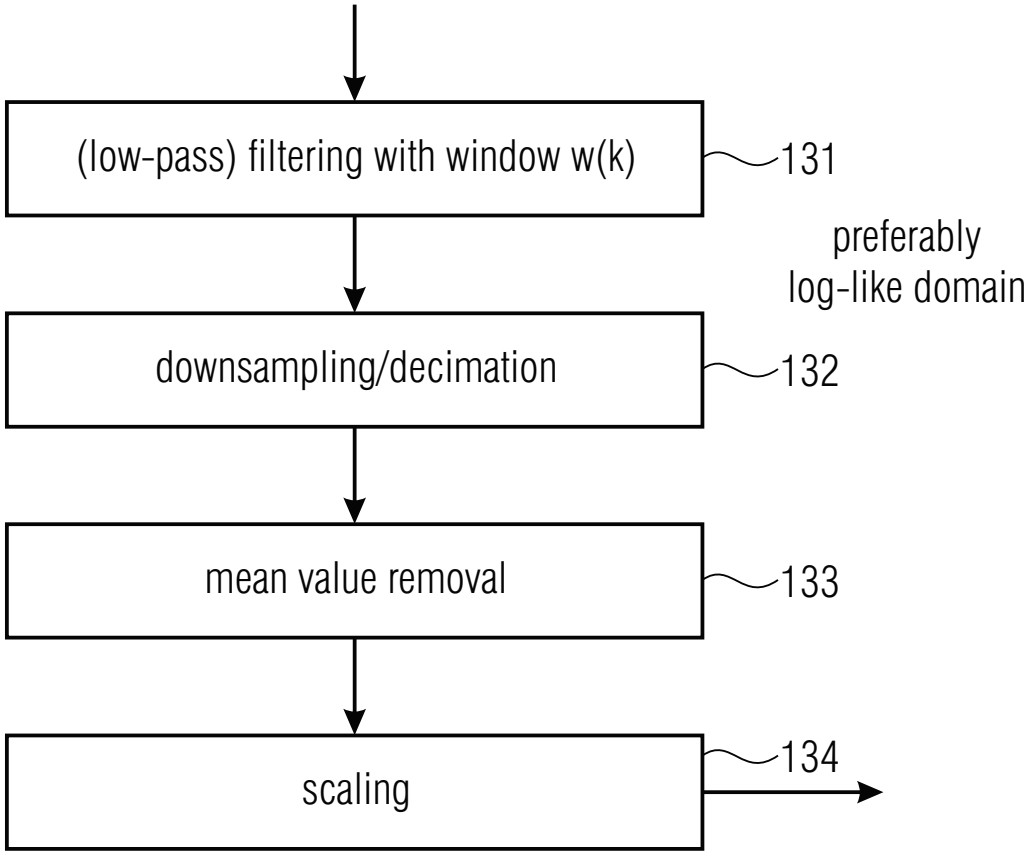


Fig. 3
(DOWNSAMPLER)

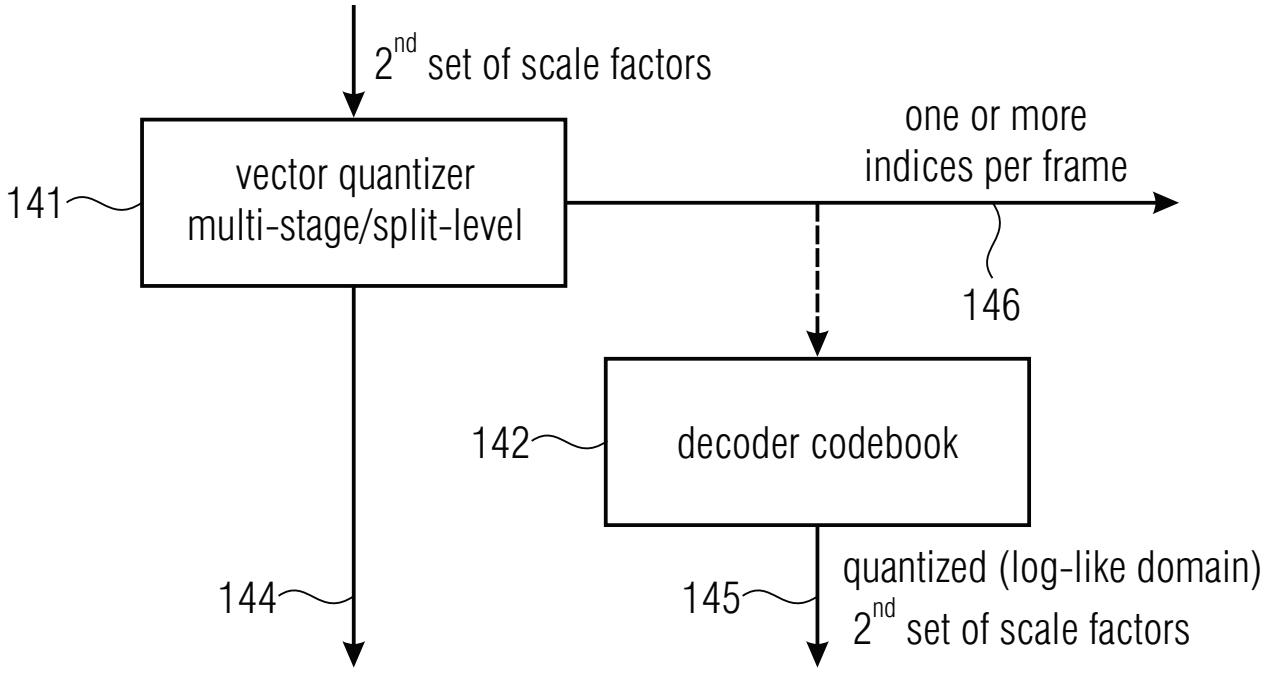


Fig. 4
(SCALE FACTOR ENCODER)

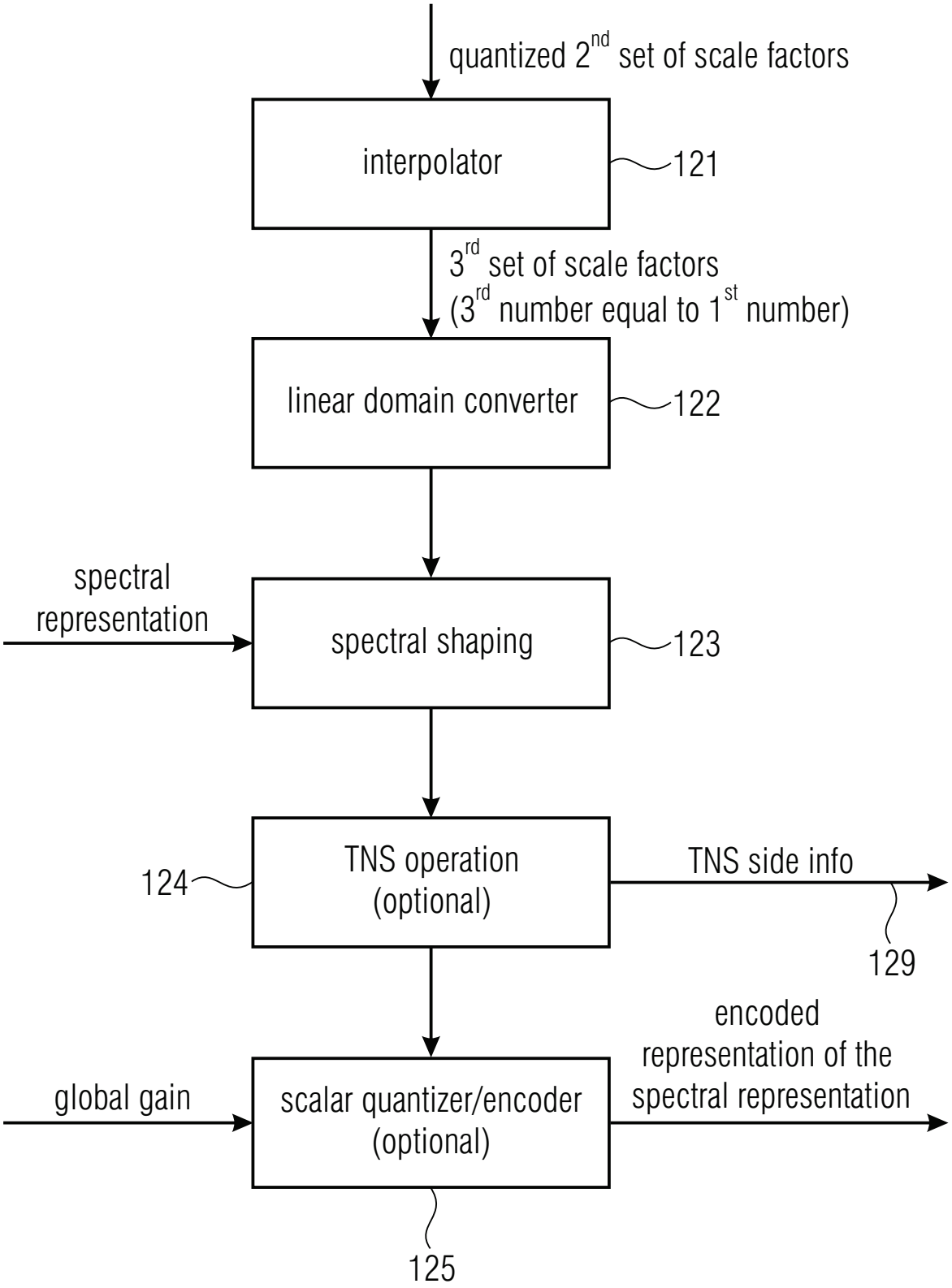


Fig. 5
(SPECTRAL PROCESSOR)

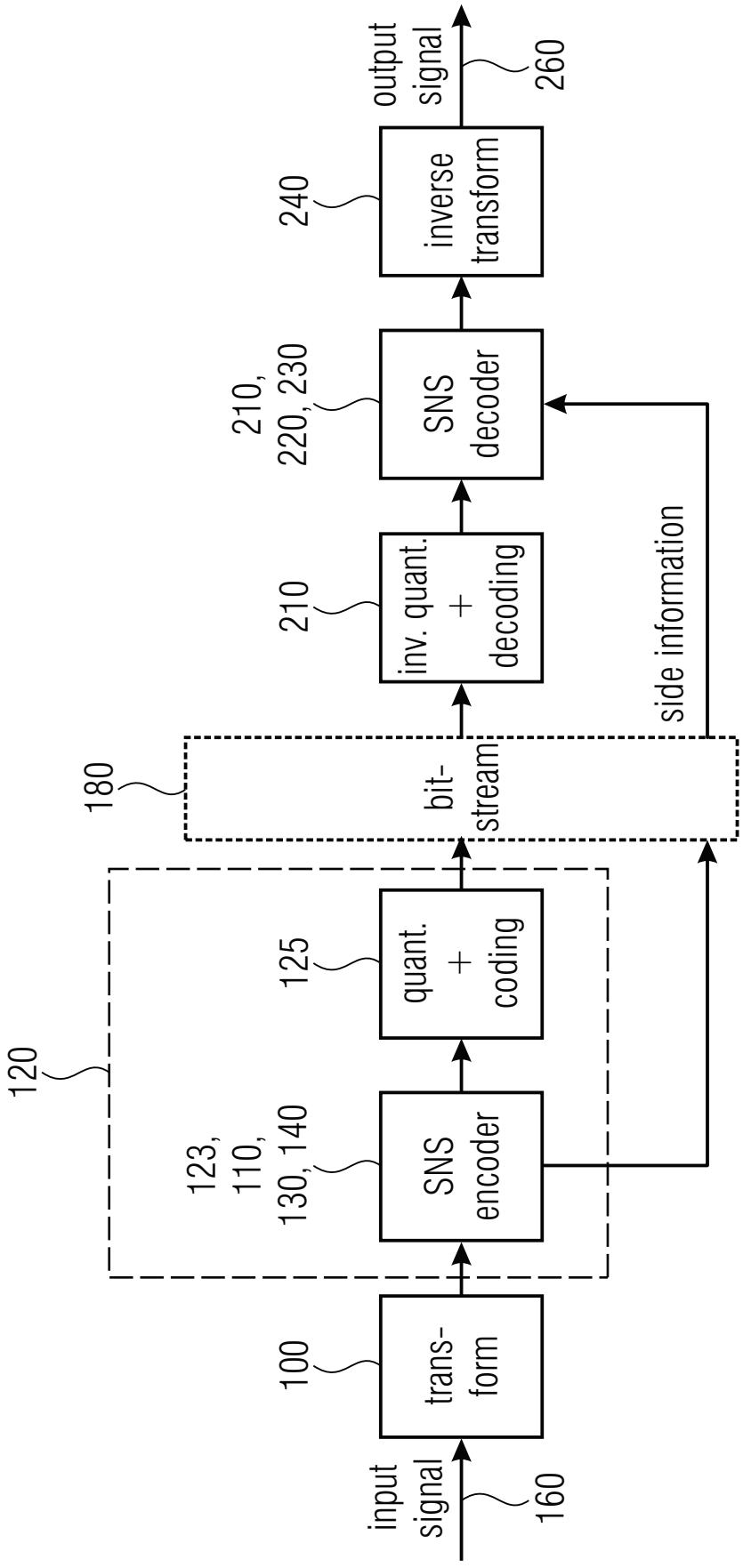

input signal
160
100
trans-form
120
123, 110, 130, 140
SNS encoder
125
quant. + coding
180
bit-stream
side information
210
inv. quant. + decoding
210, 220, 230
SNS decoder
240
inverse transform
output signal
260

Fig. 6

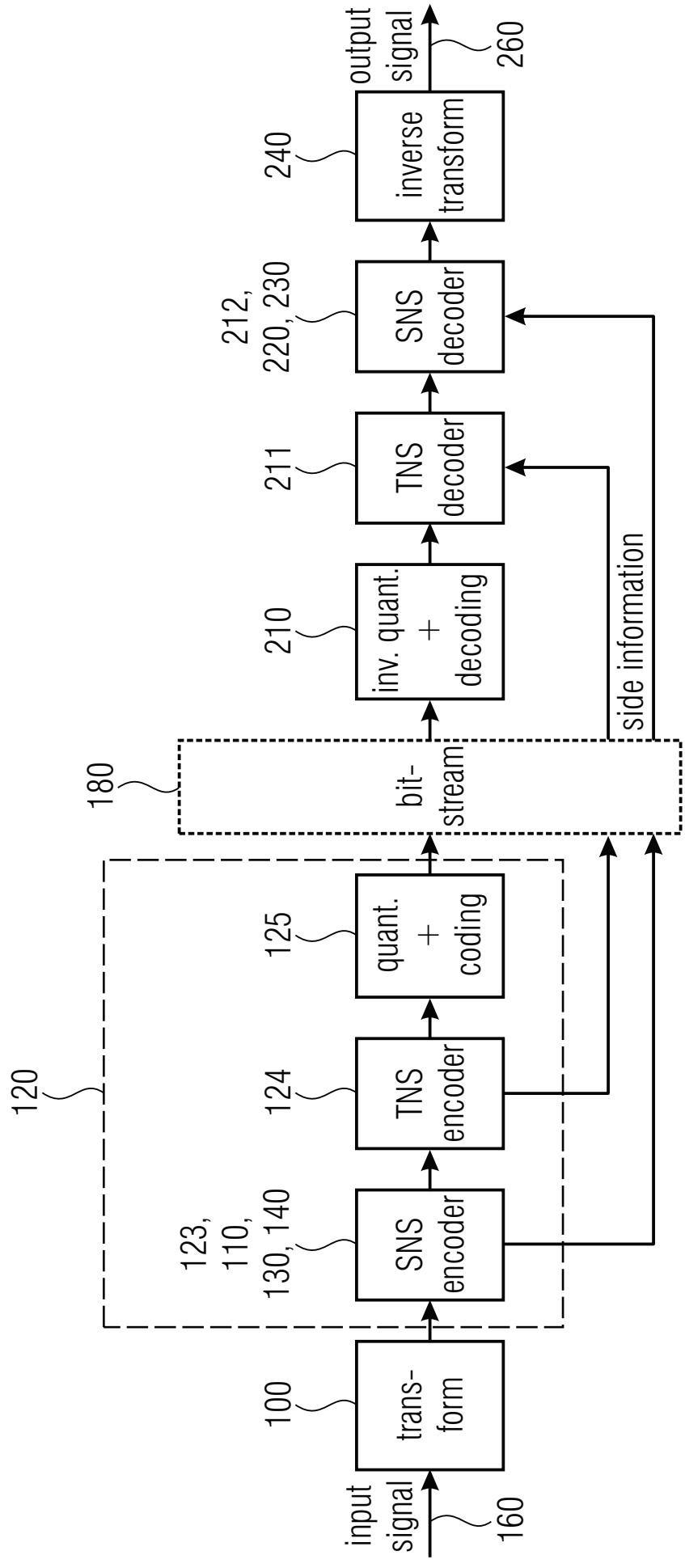

input signal
160
100
trans-form
120
123, 110, 130, 140
SNS encoder
124
TNS encoder
125
quant. + coding
180
bit-stream
side information
210
inv. quant. + decoding
211
TNS decoder
212, 220, 230
SNS decoder
240
inverse transform
output signal
260

Fig. 7

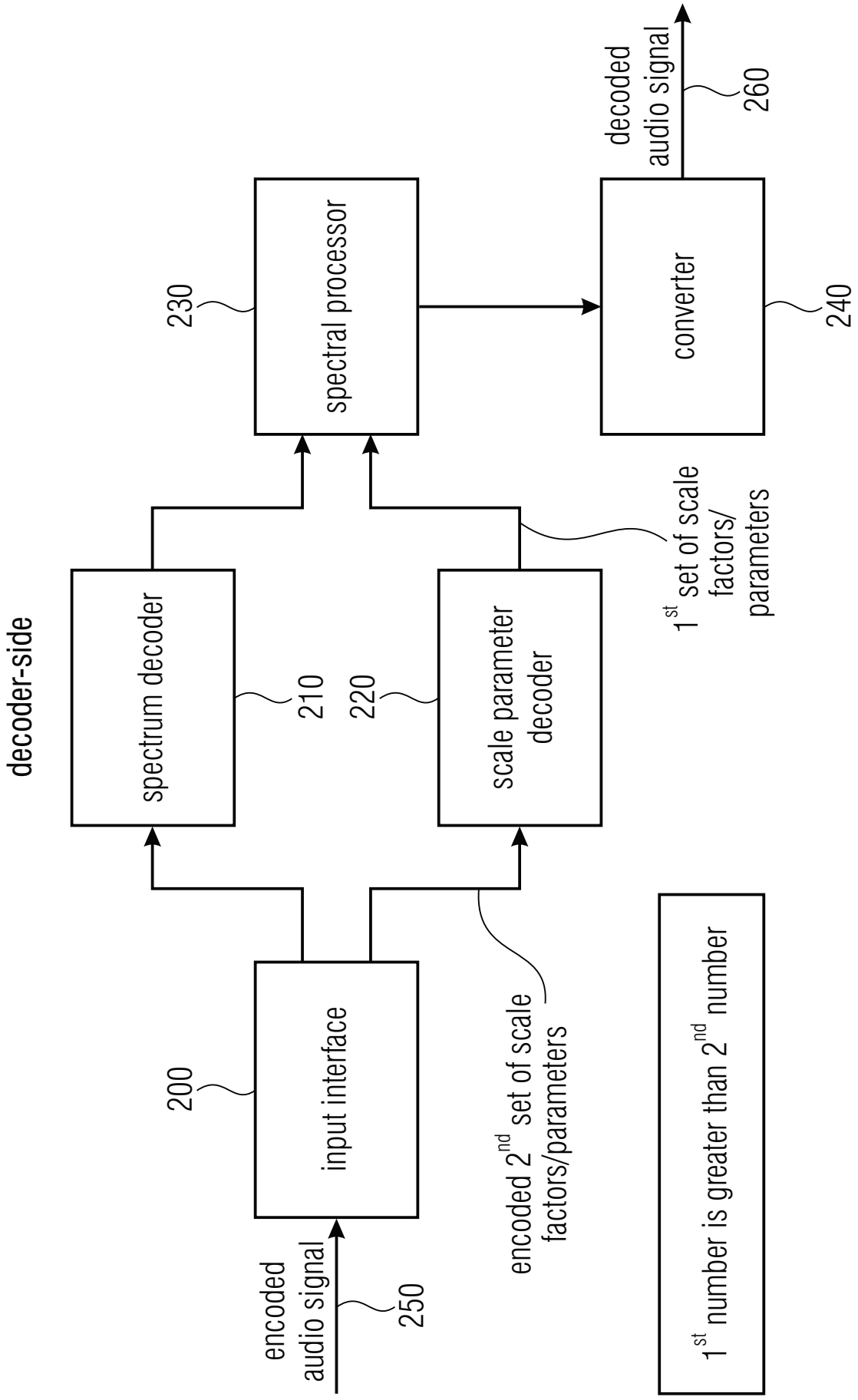

decoder-side
spectrum decoder
210
scale parameter decoder
220
1st set of scale factors/ parameters
spectral processor
230
converter
240
decoded audio signal
260
input interface
200
encoded audio signal
250
encoded 2nd set of scale factors/parameters
1st number is greater than 2nd number

Fig. 8

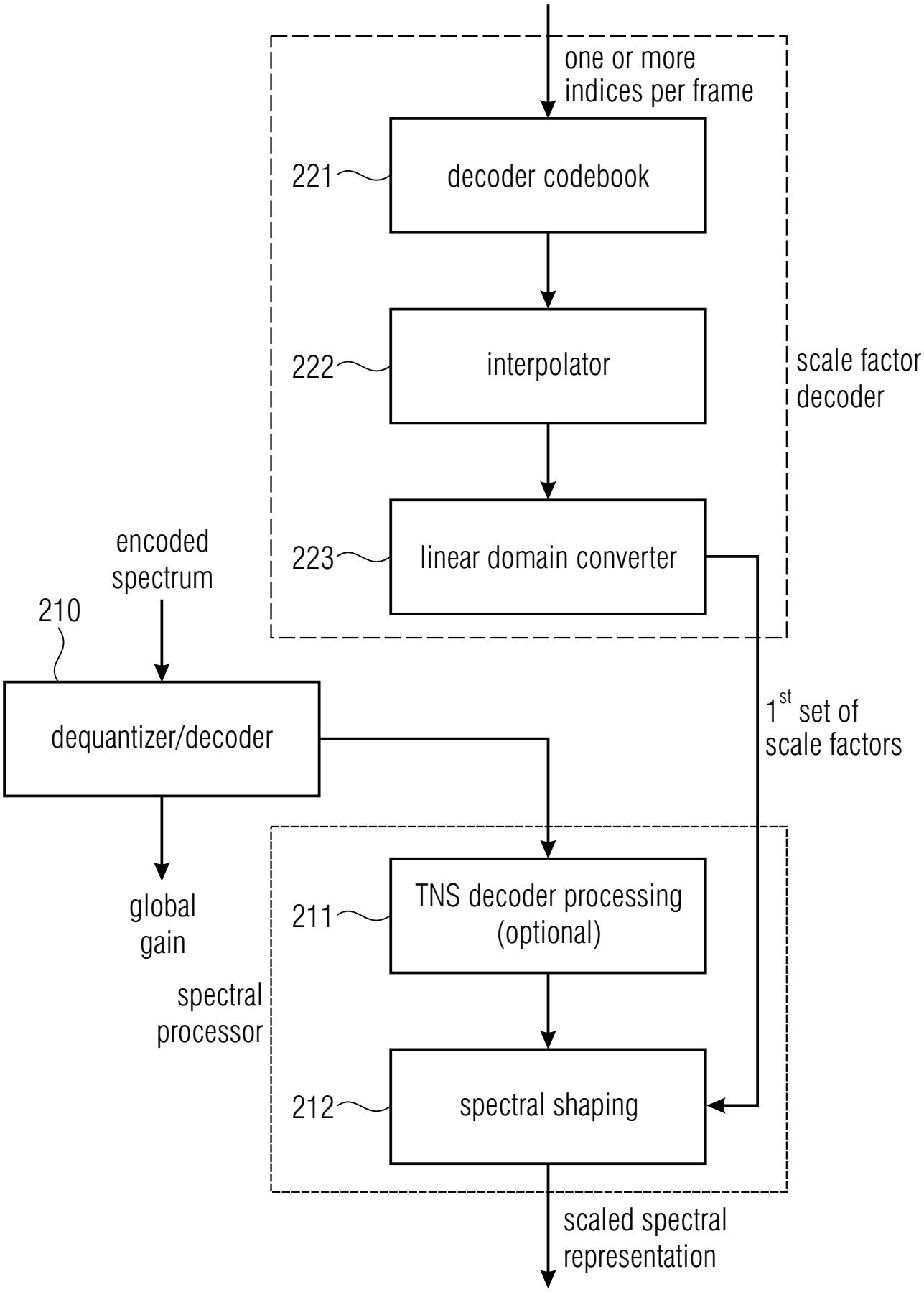

one or more
indices per frame
221
decoder codebook
222
interpolator
scale factor
decoder
223
linear domain converter
encoded
spectrum
210
dequantizer/decoder
1st set of
scale factors
global
gain
211
TNS decoder processing
(optional)
spectral
processor
212
spectral shaping
scaled spectral
representation

Fig. 9

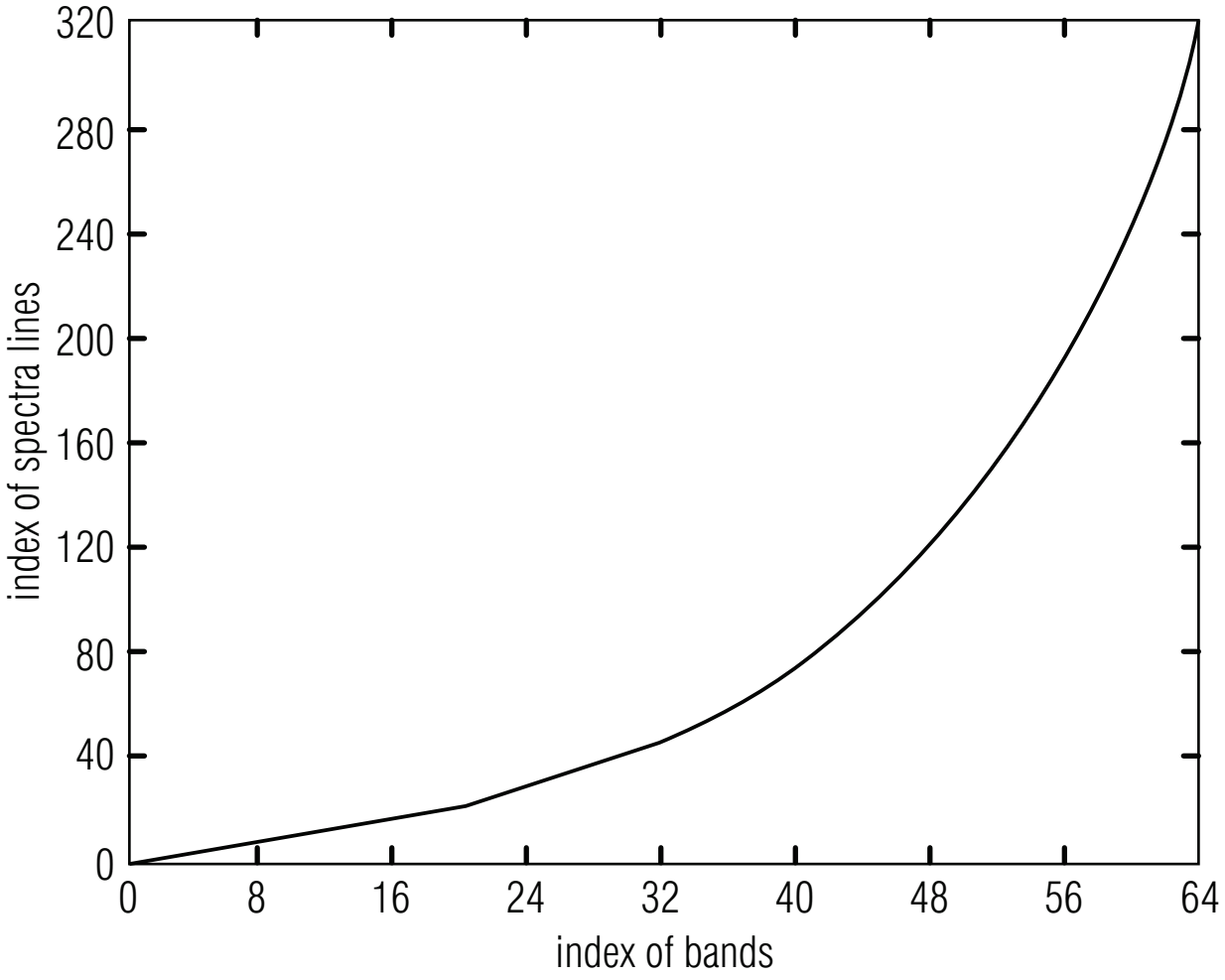

320
280
240
200
160
120
80
40
0
index of spectra lines
0
8
16
24
32
40
48
56
64
index of bands

Fig. 10

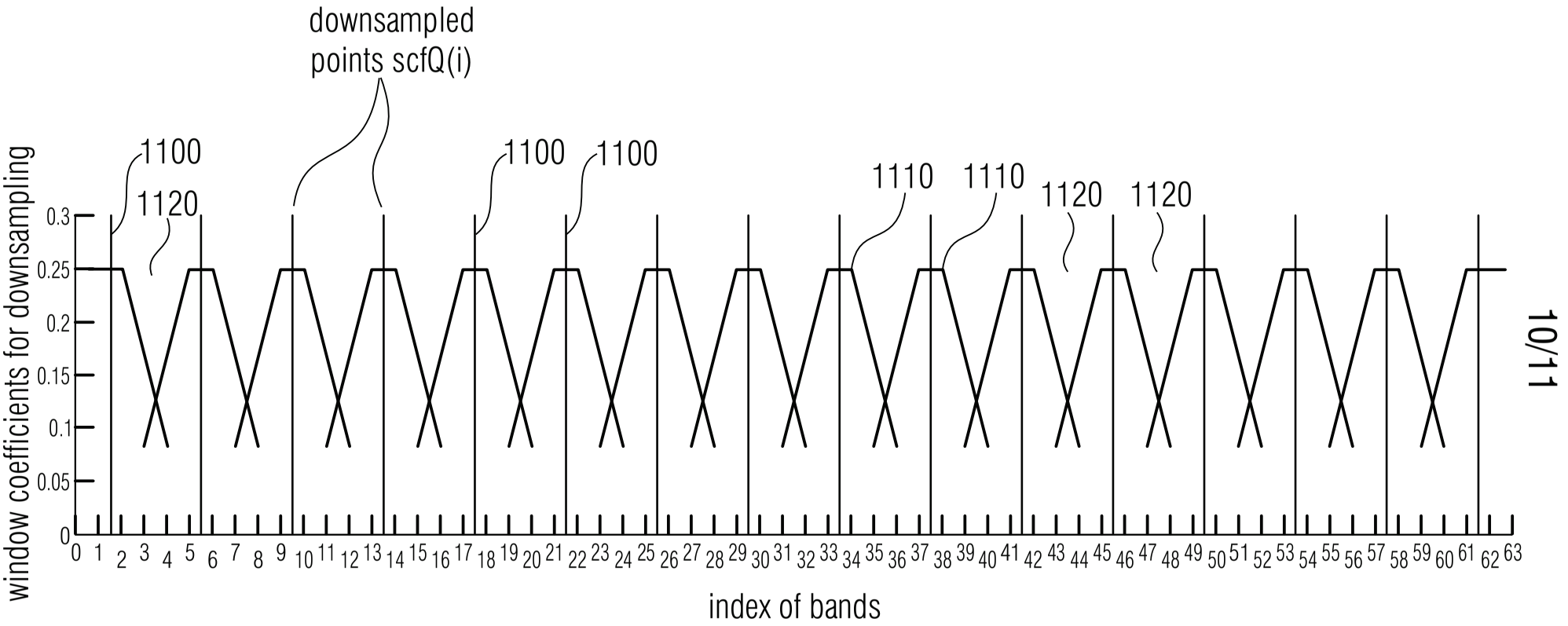

downsampled
points scfQ(i)
1100
1120
1100
1100
1110
1110
1120
1120
window coefficients for downsampling
0.3
0.25
0.2
0.15
0.1
0.05
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
index of bands

Fig. 11

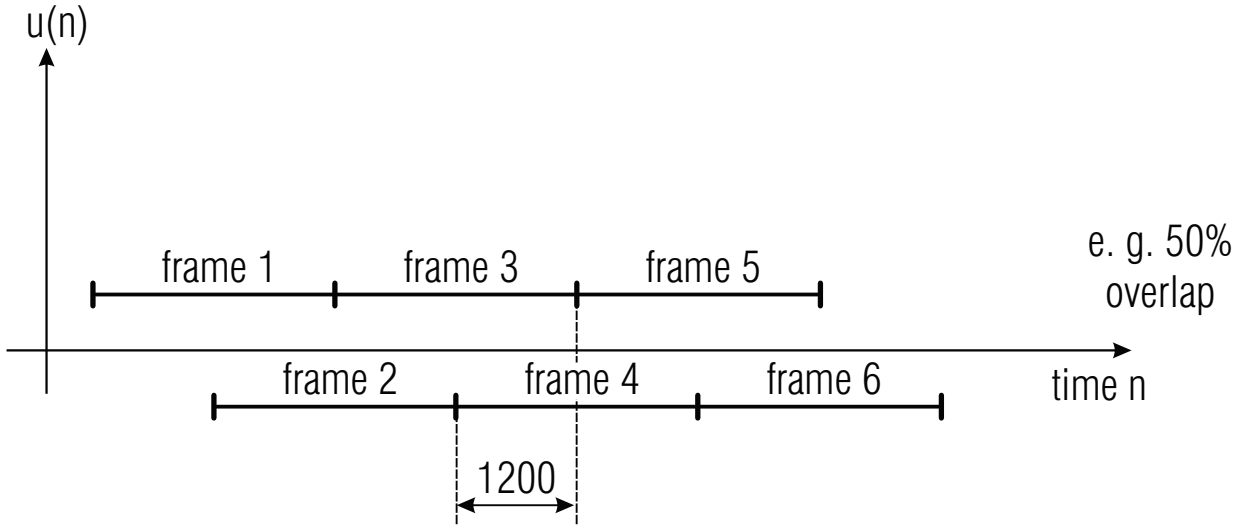


Fig. 12a

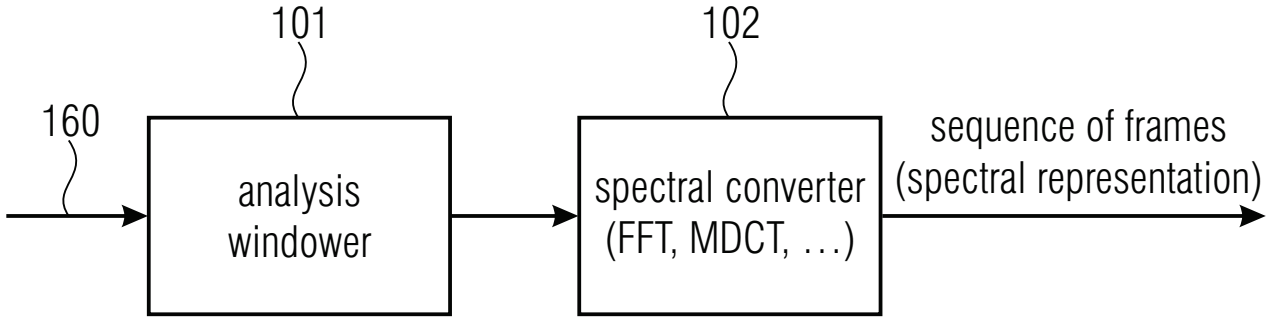


Fig. 12b

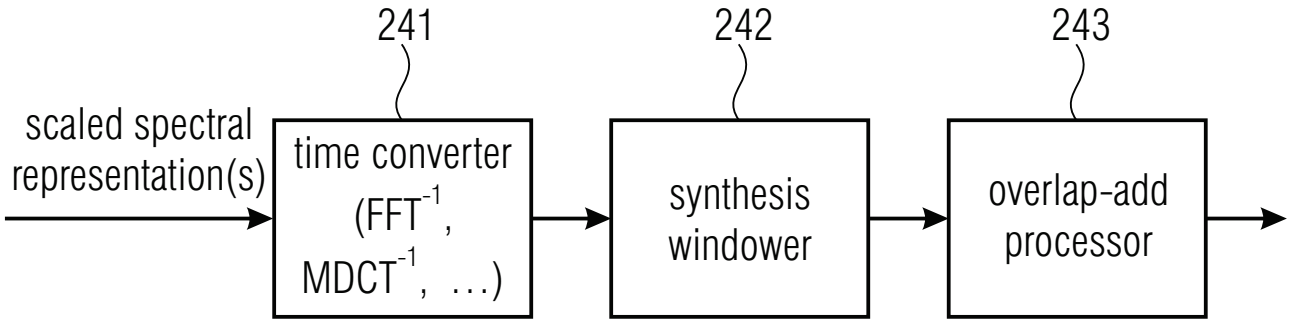


Fig. 12c