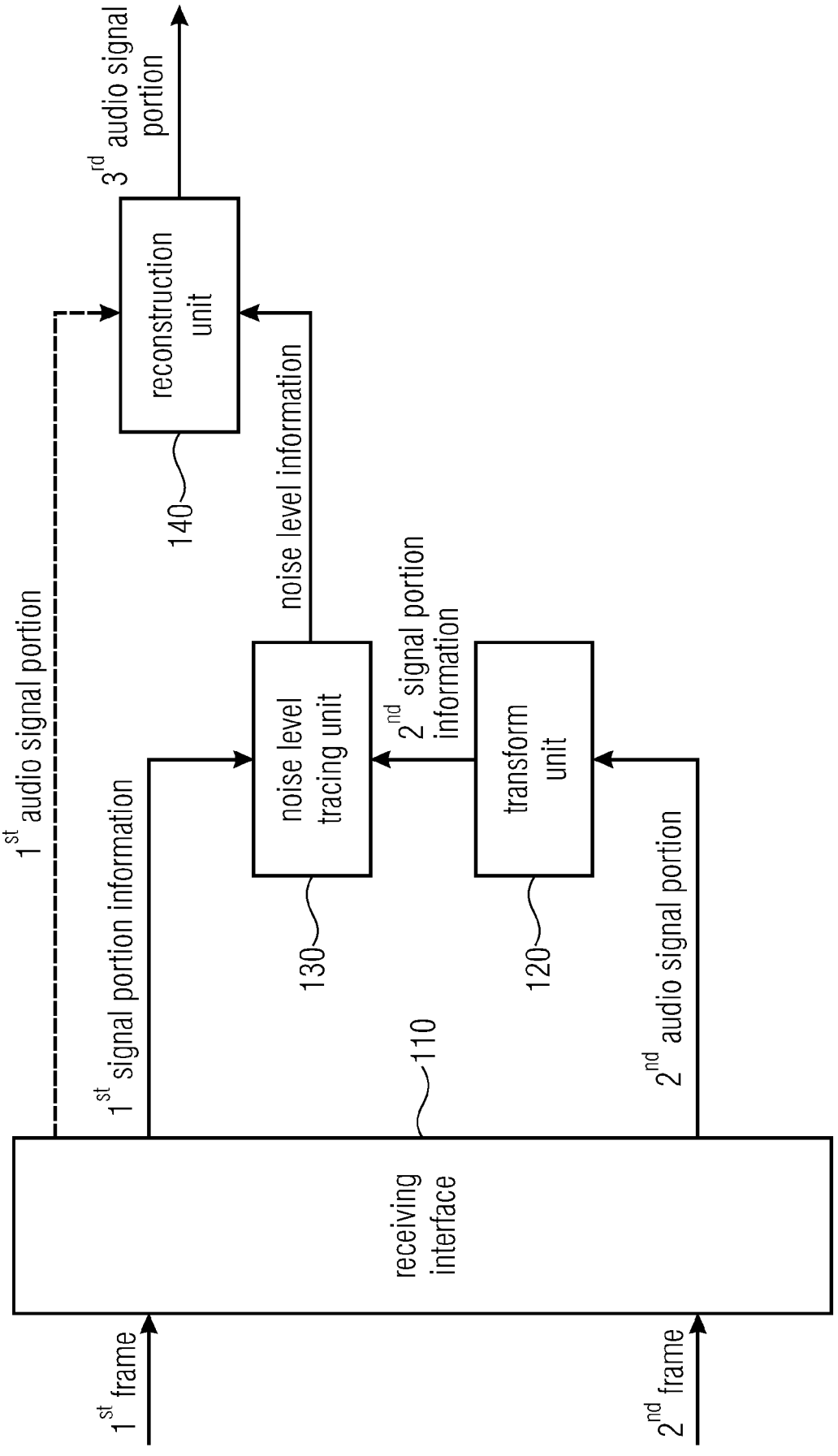

receiving interface
1st frame
2nd frame
1st signal portion information
1st audio signal portion
2nd audio signal portion
110
noise level tracing unit
130
transform unit
120
2nd signal portion information
noise level information
reconstruction unit
140
3rd audio signal portion

FIG 1A

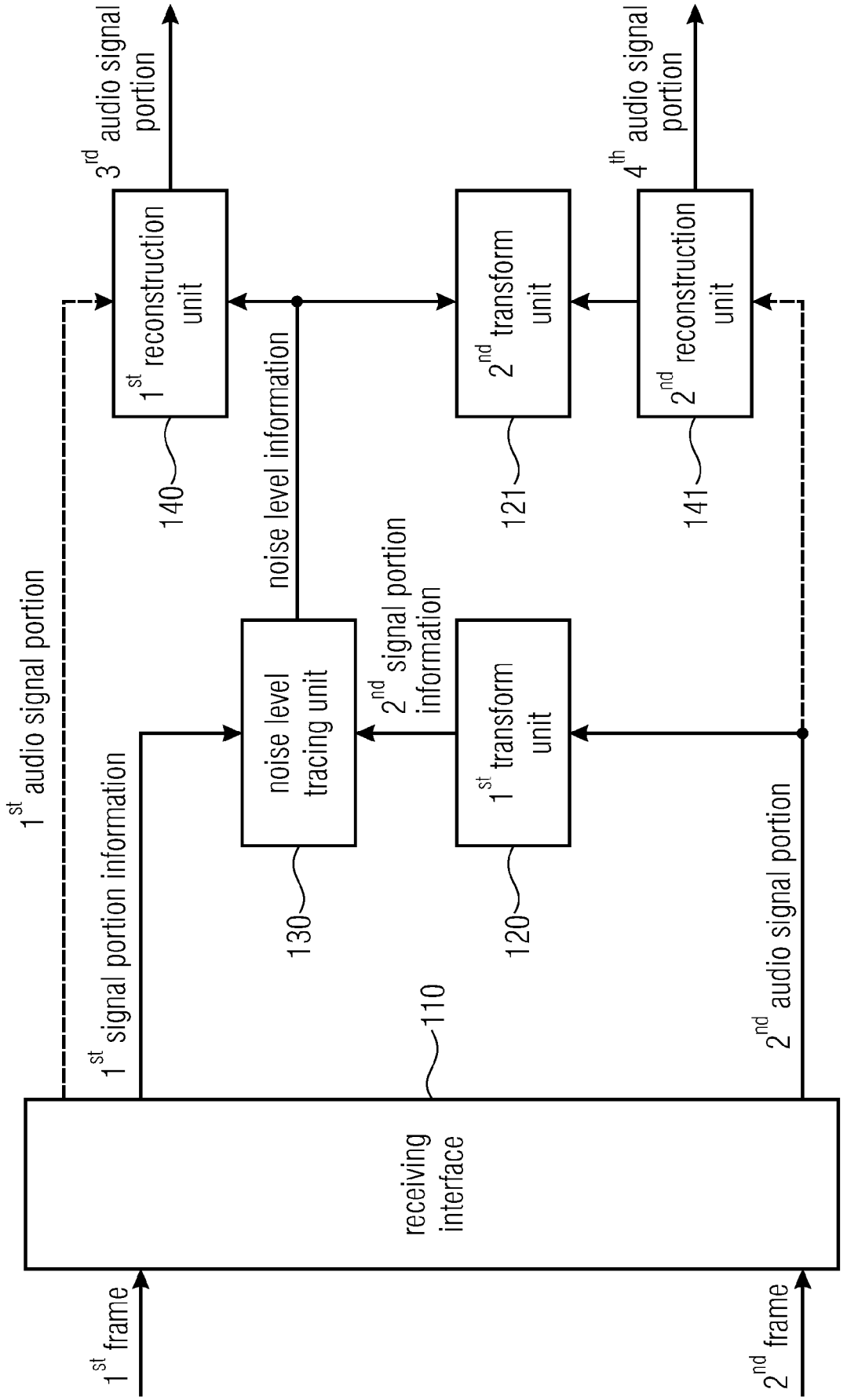

1st frame
2nd frame
receiving interface
110
1st signal portion information
2nd audio signal portion
1st audio signal portion
noise level tracing unit
130
2nd signal portion information
1st transform unit
120
noise level information
1st reconstruction unit
140
2nd transform unit
121
2nd reconstruction unit
141
3rd audio signal portion
4th audio signal portion

FIG 1B

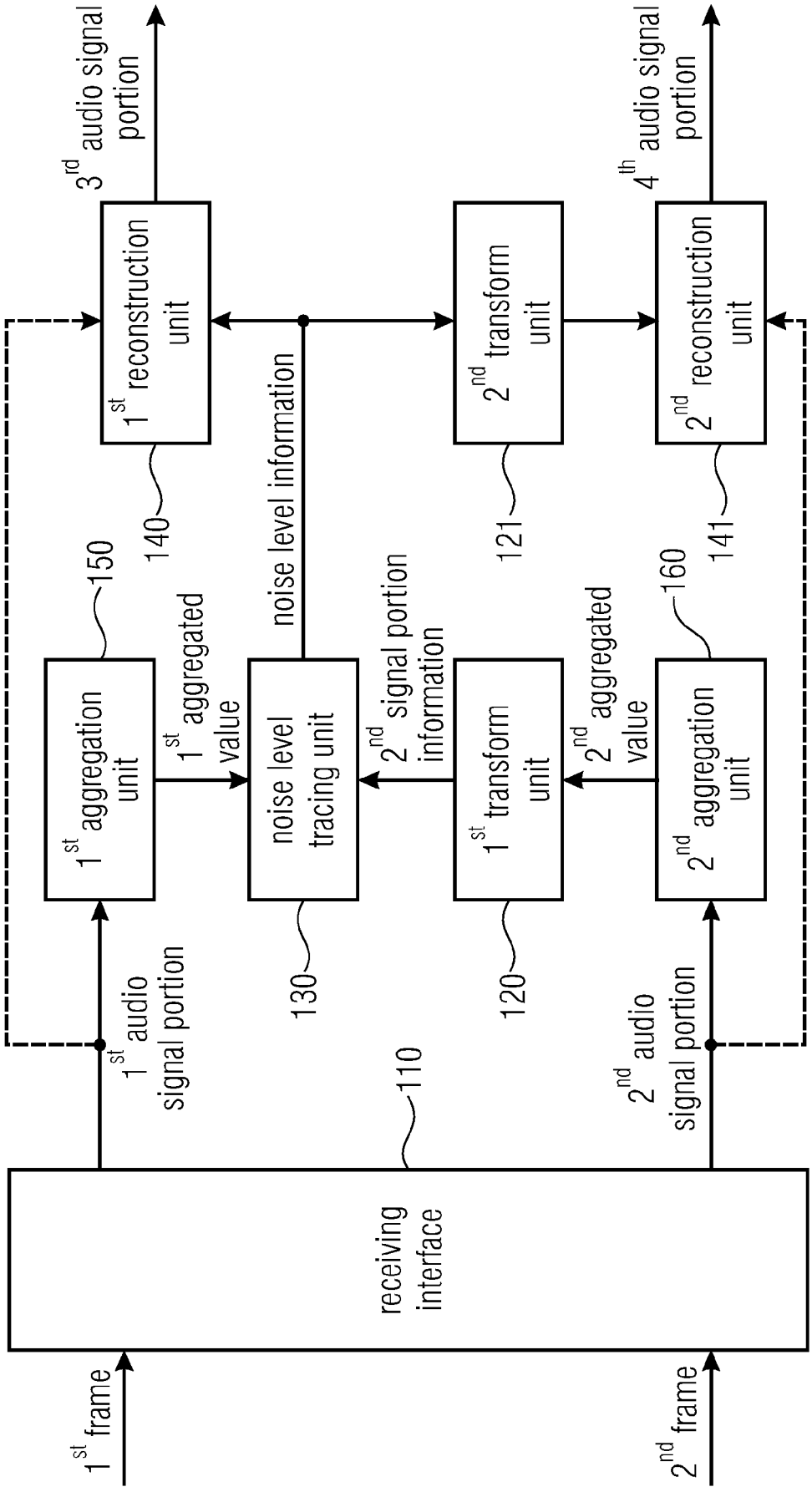

1st frame
2nd frame
receiving interface
110
1st audio signal portion
2nd audio signal portion
1st aggregation unit
150
1st aggregated value
noise level tracing unit
130
noise level information
2nd signal portion information
1st transform unit
120
2nd aggregated value
2nd aggregation unit
160
1st reconstruction unit
140
2nd transform unit
121
2nd reconstruction unit
141
3rd audio signal portion
4th audio signal portion

FIG 1C

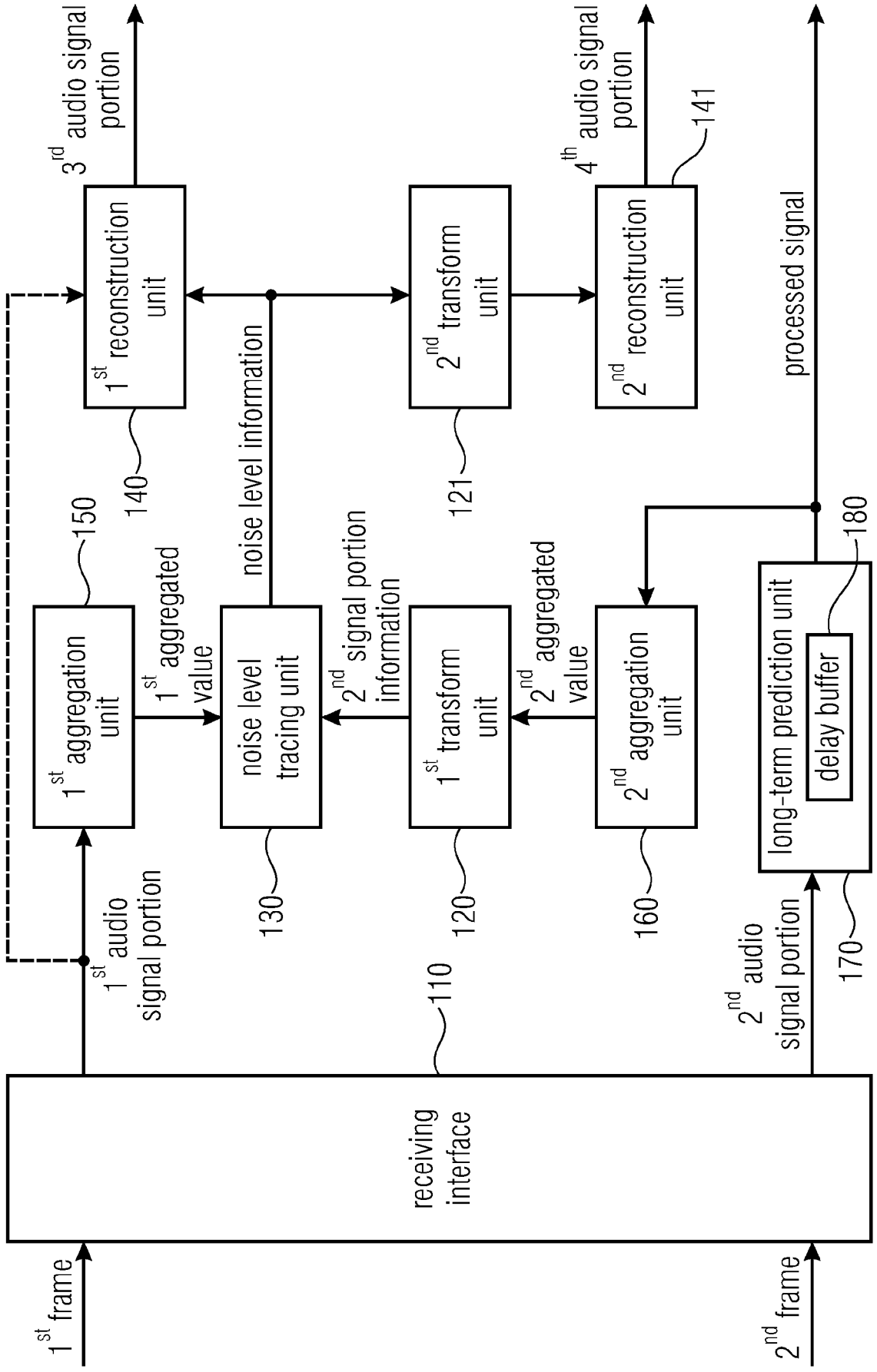

receiving interface
110
1st frame
2nd frame
1st audio signal portion
2nd audio signal portion
1st aggregation unit
150
1st aggregated value
noise level tracing unit
130
noise level information
2nd signal portion information
1st transform unit
120
2nd aggregated value
2nd aggregation unit
160
long-term prediction unit
delay buffer
180
170
processed signal
1st reconstruction unit
140
3rd audio signal portion
2nd transform unit
121
2nd reconstruction unit
141
4th audio signal portion

FIG 1D

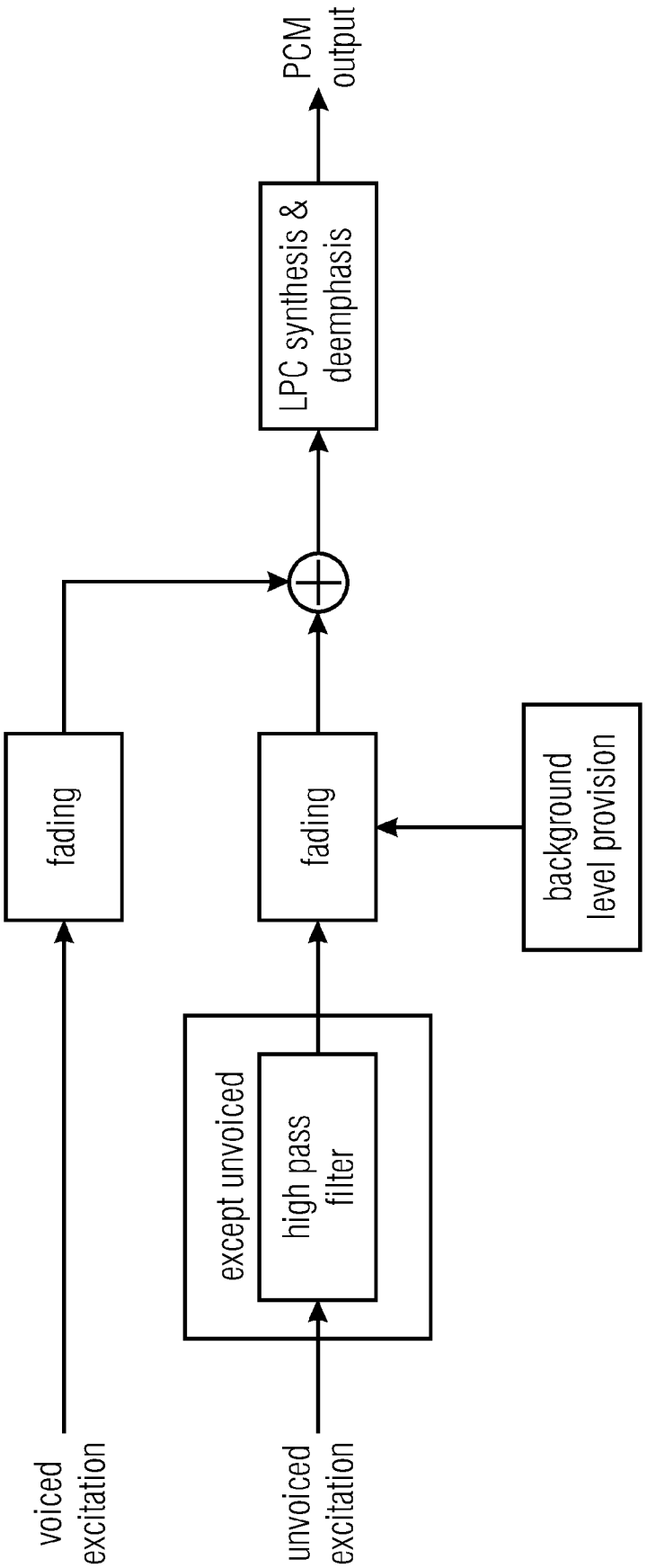

PCM output
LPC synthesis & deemphasis
fading
fading
background level provision
except unvoiced
high pass filter
voiced excitation
unvoiced excitation

FIG 2

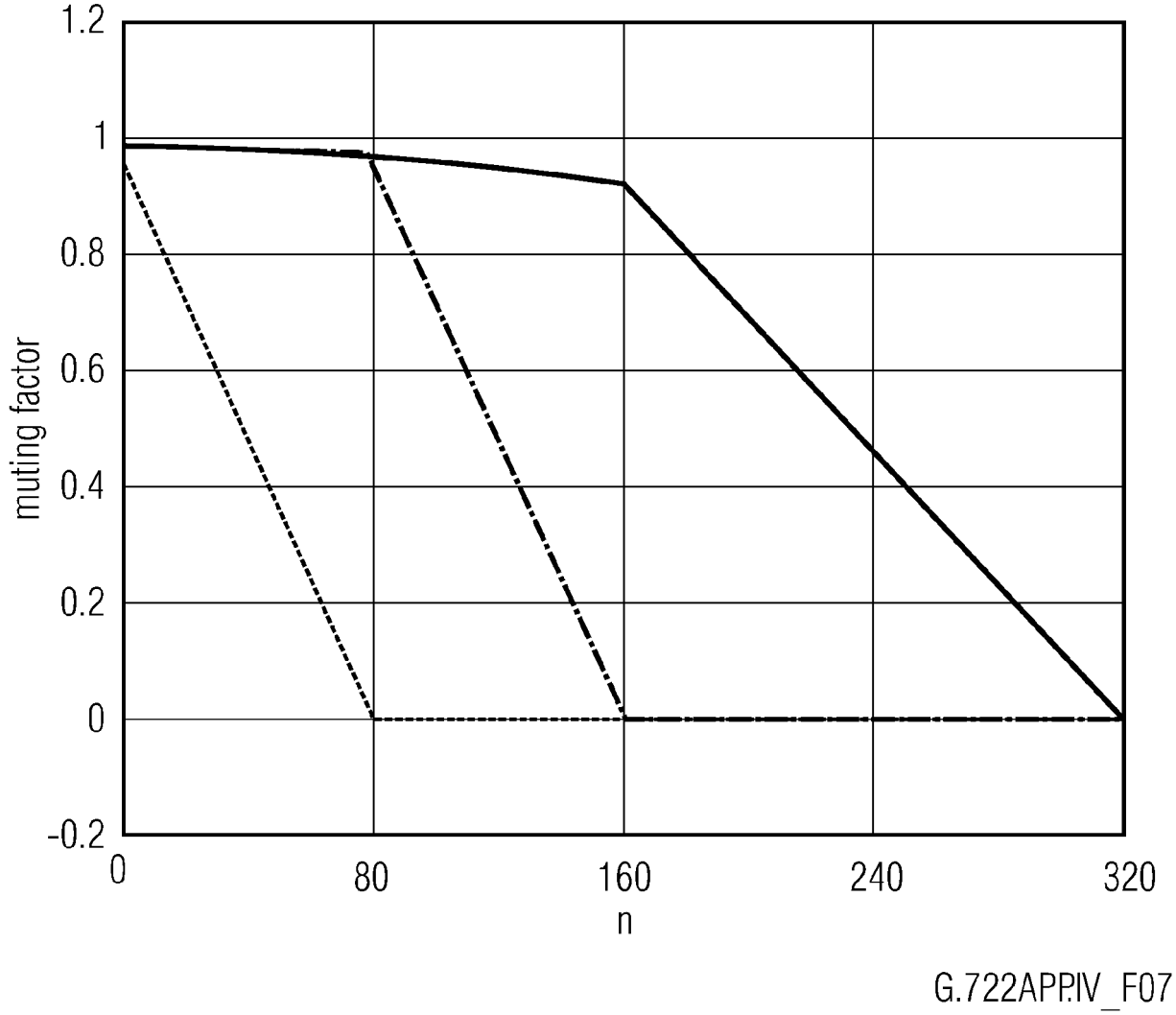

1.2
1
0.8
0.6
0.4
0.2
0
-0.2
muting factor
0
80
160
240
320
n
G.722APP.IV_F07
TRANSIENT
VUV_TRANSITION
other classes

FIG 3

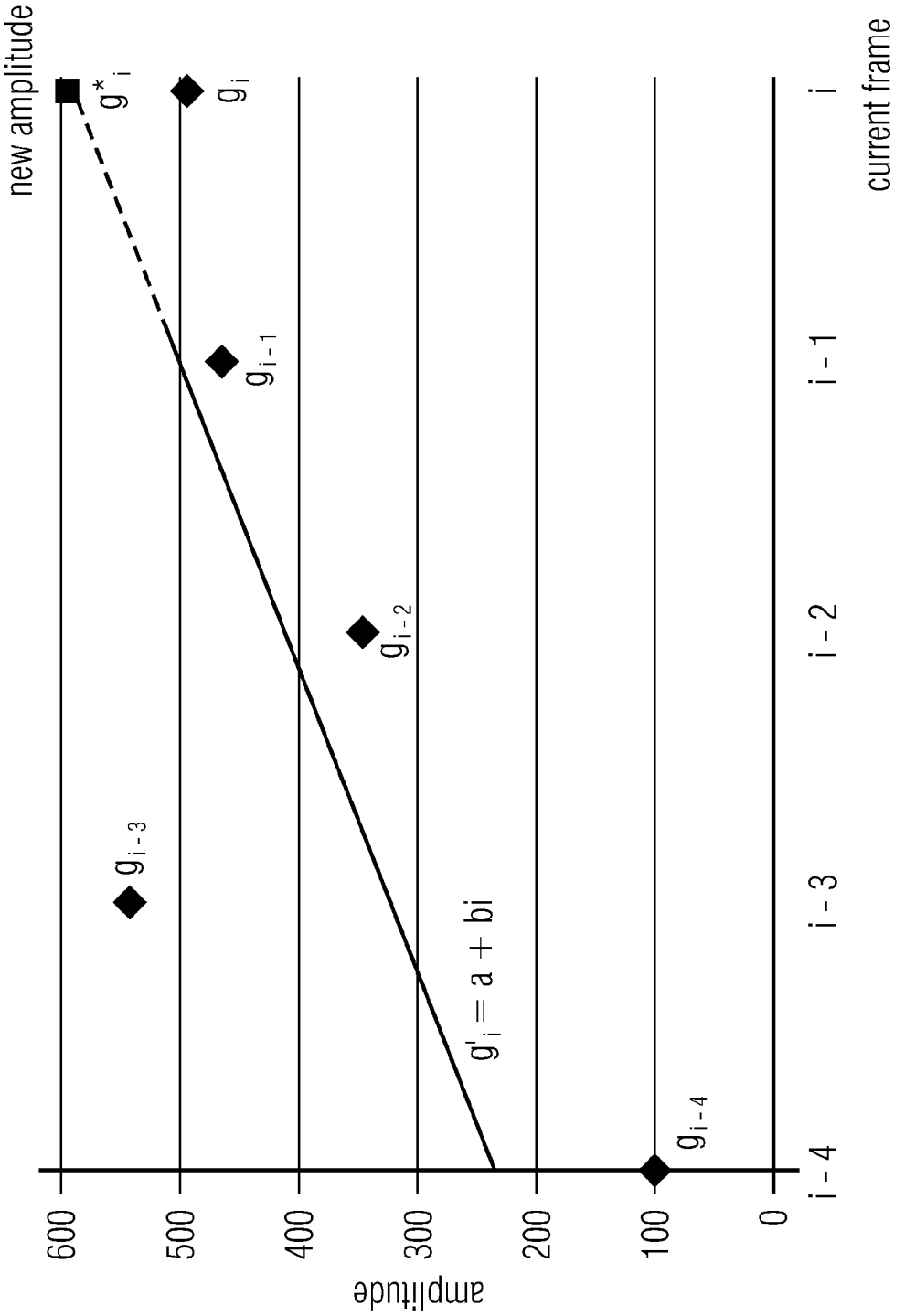

new amplitude
g*i
gi
gi-1
gi-2
gi-3
gi-4
g'i = a + bi
amplitude
600
500
400
300
200
100
0
i - 4
i - 3
i - 2
i - 1
i
current frame

FIG 4

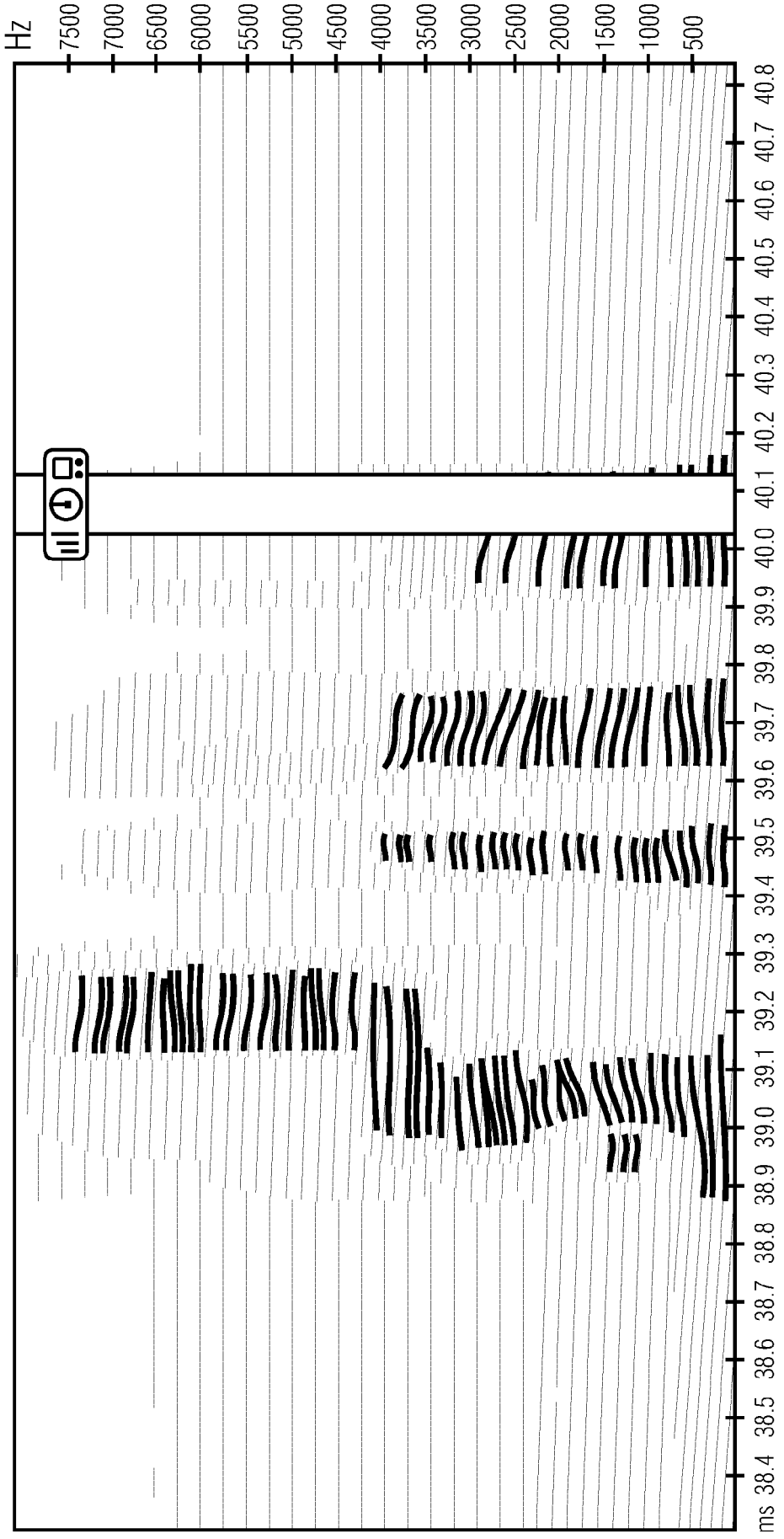

Hz
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
40.8
40.7
40.6
40.5
40.4
40.3
40.2
40.1
40.0
39.9
39.8
39.7
39.6
39.5
39.4
39.3
39.2
39.1
39.0
38.9
38.8
38.7
38.6
38.5
38.4
ms

FIG 5

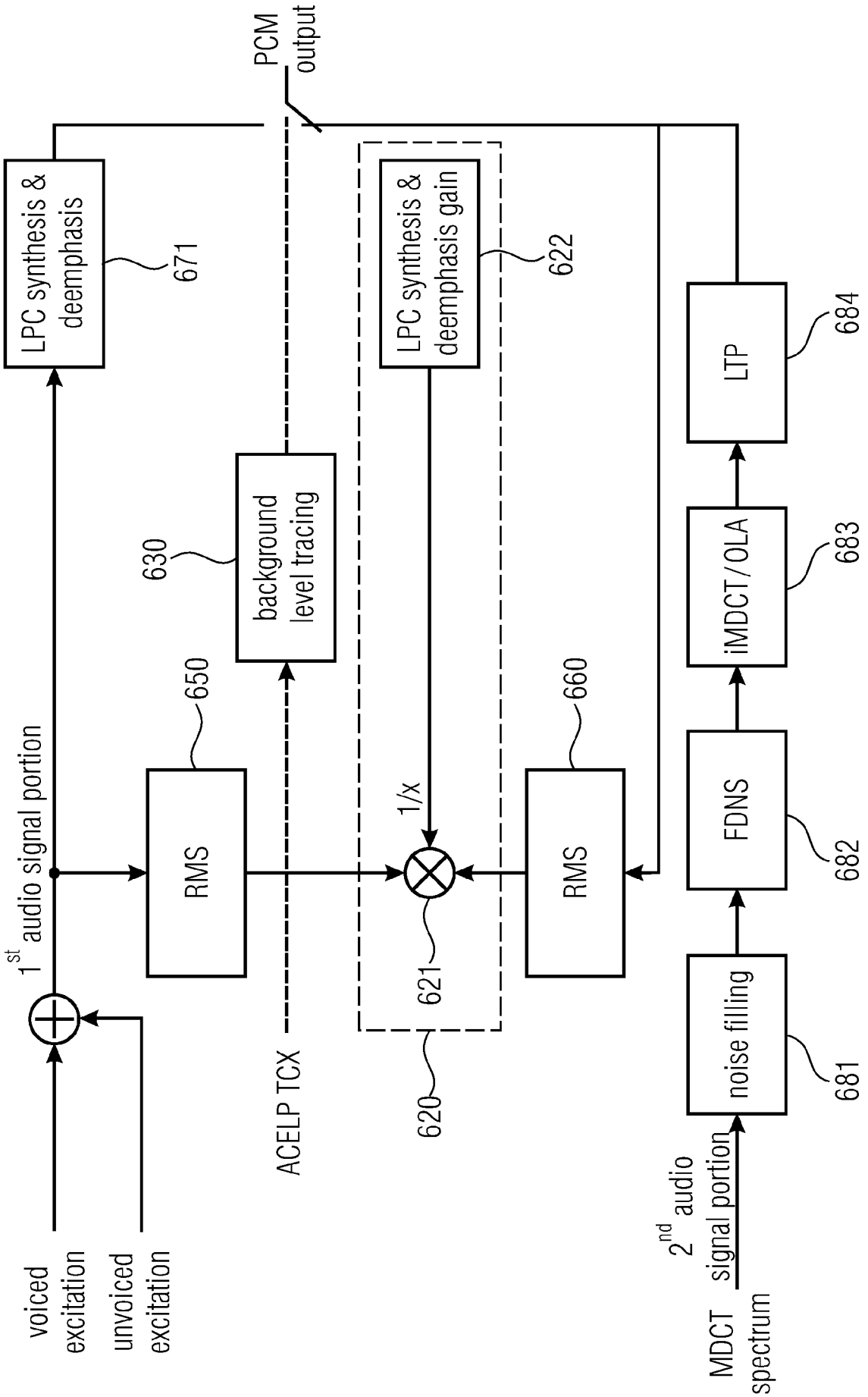

PCM output
LPC synthesis & deemphasis
671
LPC synthesis & deemphasis gain
622
LTP
684
630
background level tracing
iMDCT/OLA
683
650
660
1st audio signal portion
RMS
1/x
RMS
FDNS
682
621
noise filling
681
620
ACELP TCX
2nd audio signal portion
voiced excitation
unvoiced excitation
MDCT spectrum

FIG 6

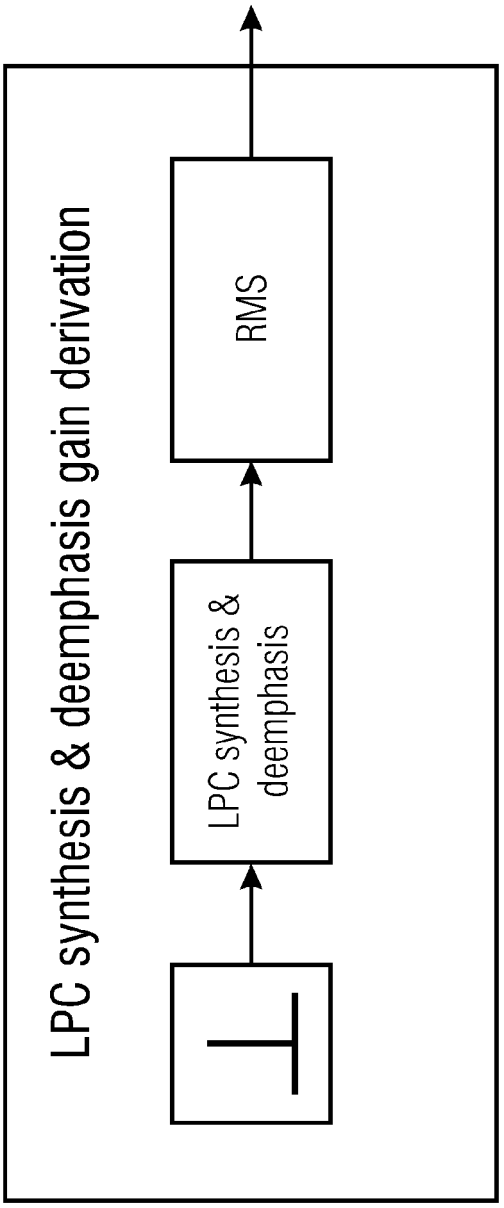

LPC synthesis & deemphasis gain derivation
RMS
LPC synthesis & deemphasis

FIG 7

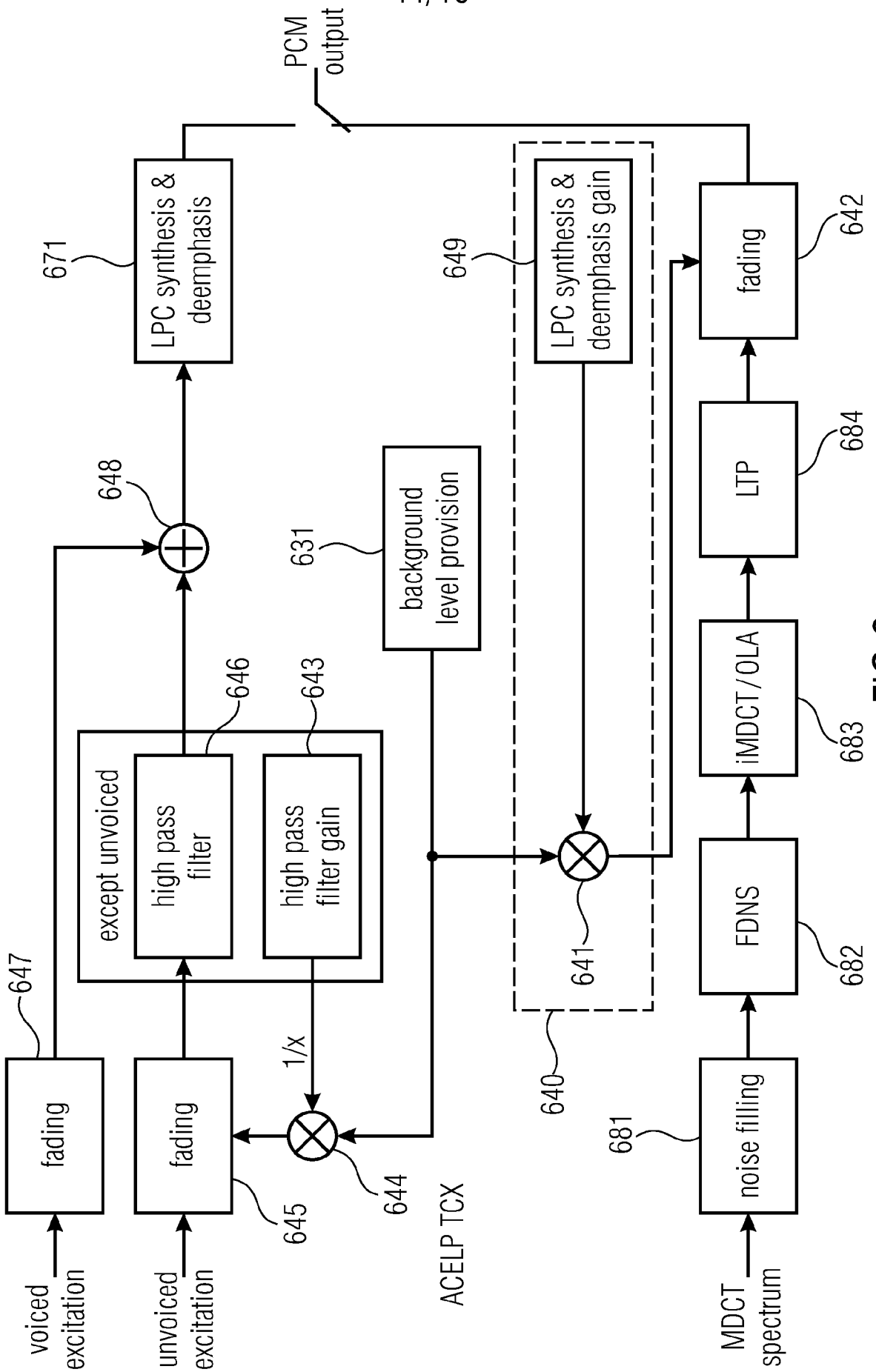

PCM output
671
LPC synthesis & deemphasis
649
LPC synthesis & deemphasis gain
642
fading
684
LTP
683
iMDCT/OLA
682
FDNS
681
noise filling
MDCT spectrum
640
641
631
background level provision
648
646
except unvoiced
high pass filter
643
high pass filter gain
1/x
647
fading
645
fading
644
ACELP TCX
voiced excitation
unvoiced excitation

FIG 8

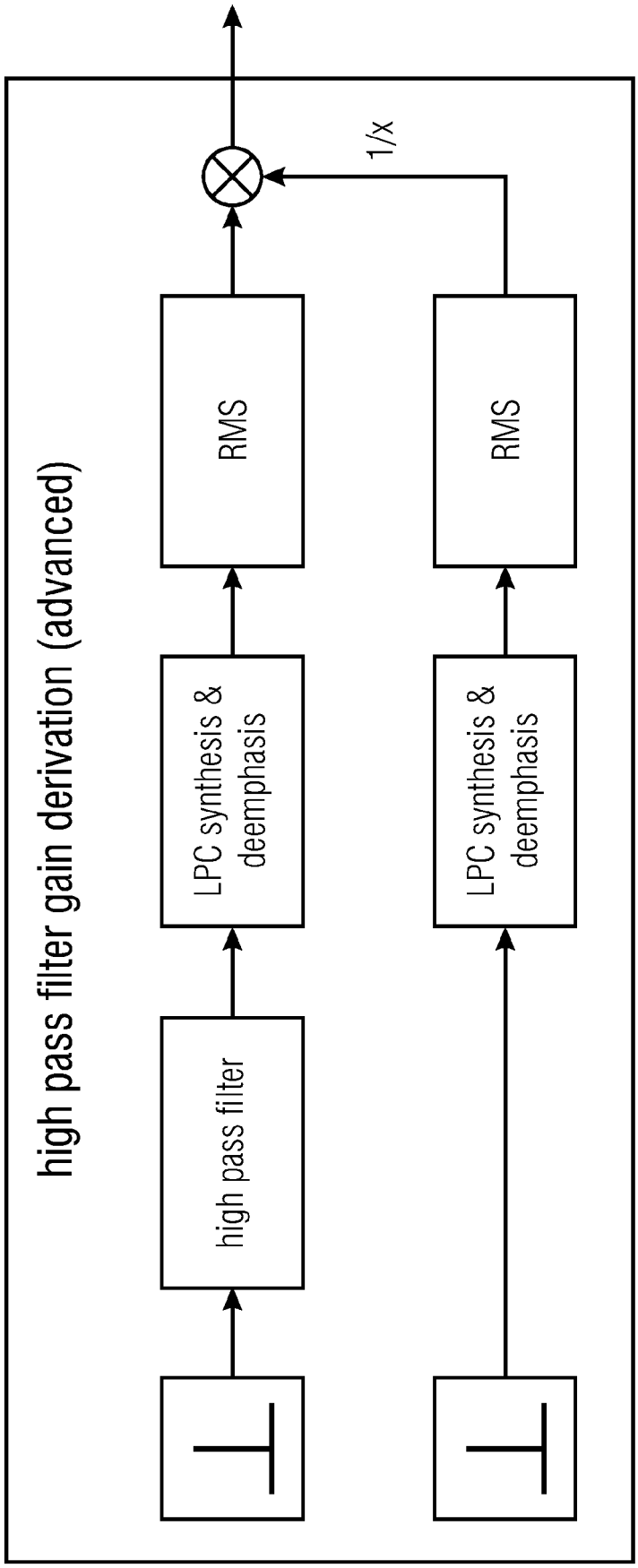

high pass filter gain derivation (advanced)
high pass filter
LPC synthesis & deemphasis
RMS
LPC synthesis & deemphasis
RMS
1/x

FIG 9

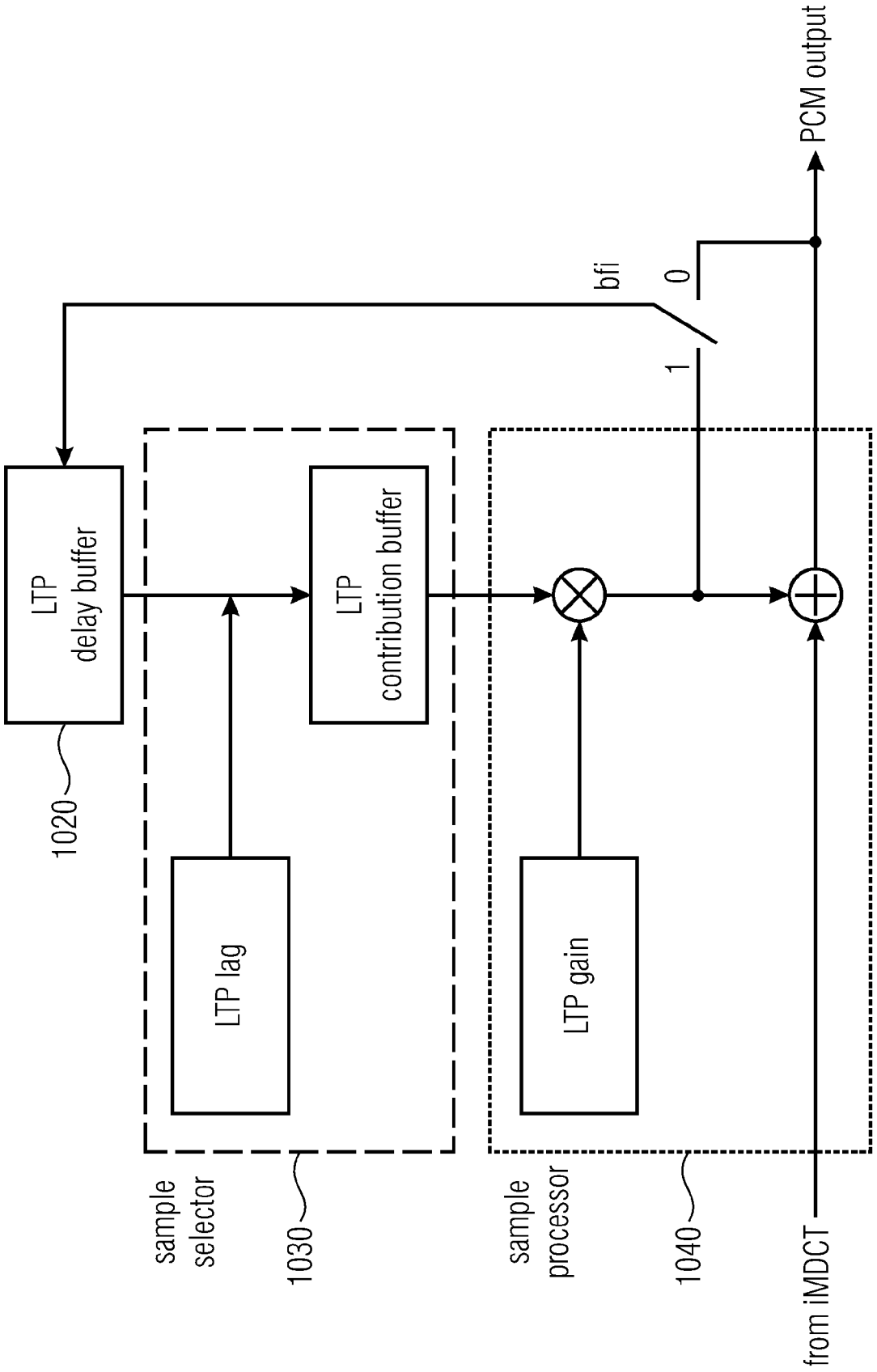

PCM output
bfi
0
1
LTP
delay buffer
LTP
contribution buffer
1020
LTP lag
LTP gain
sample
selector
1030
sample
processor
1040
from iMDCT

FIG 10

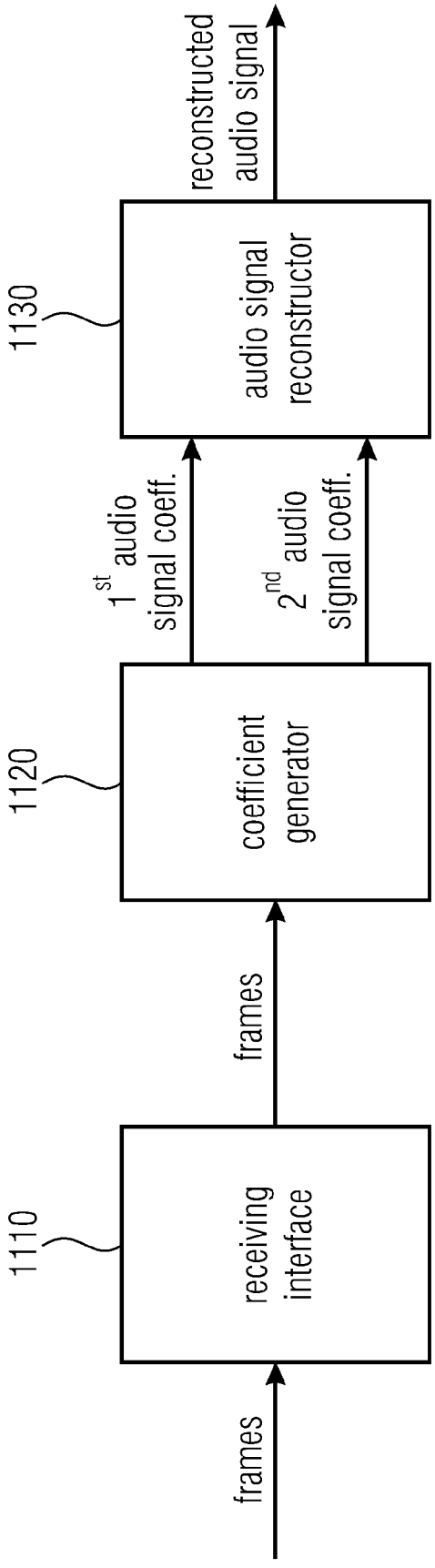

frames
1110
receiving interface
frames
1120
coefficient generator
1st audio signal coeff.
2nd audio signal coeff.
1130
audio signal reconstructor
reconstructed audio signal

FIG 11

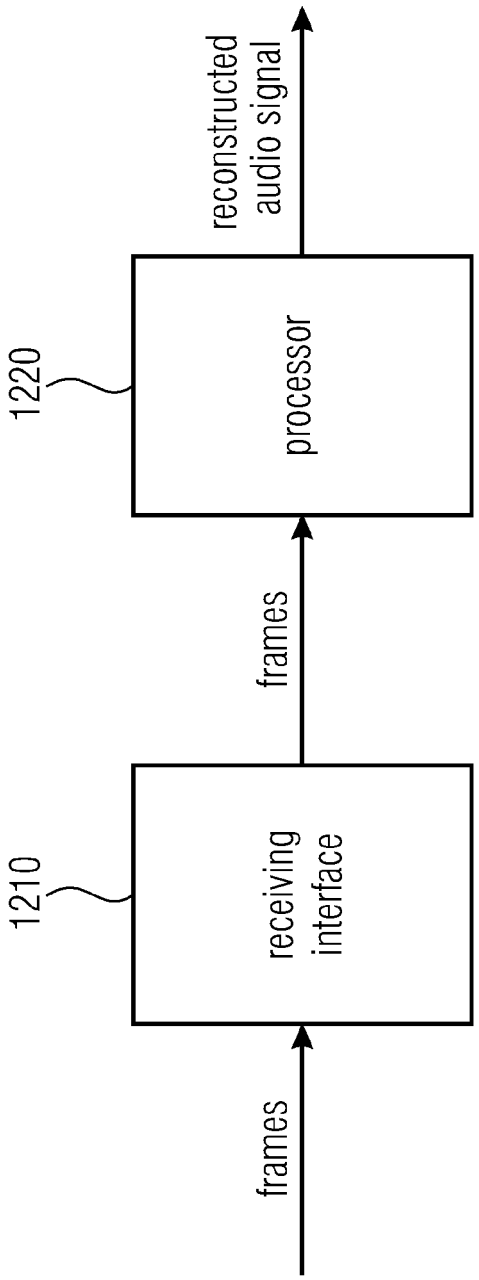

frames
1210
receiving interface
frames
1220
processor
reconstructed audio signal

FIG 12

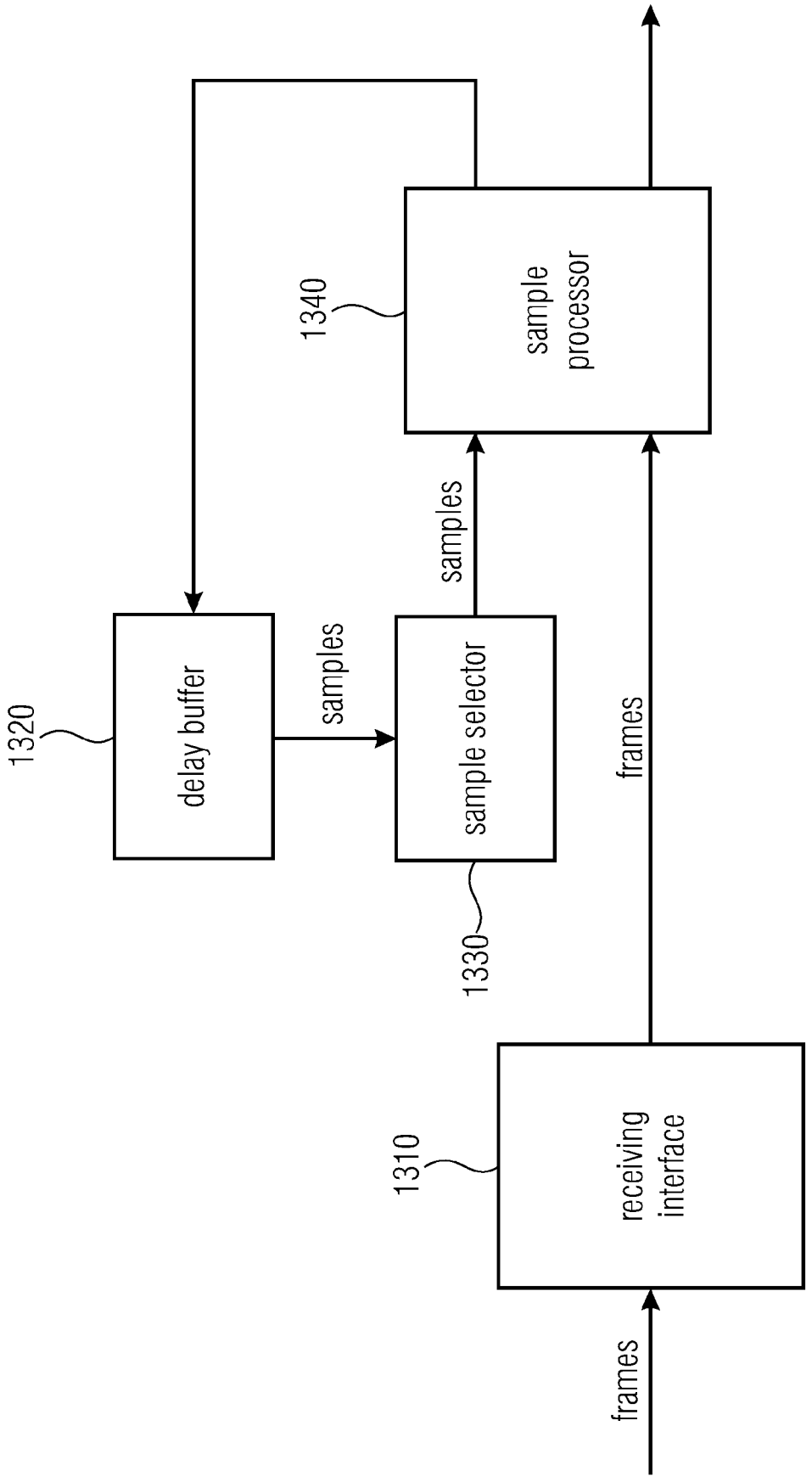

1340
sample processor
samples
1320
delay buffer
samples
sample selector
frames
1330
1310
receiving interface
frames

FIG 13

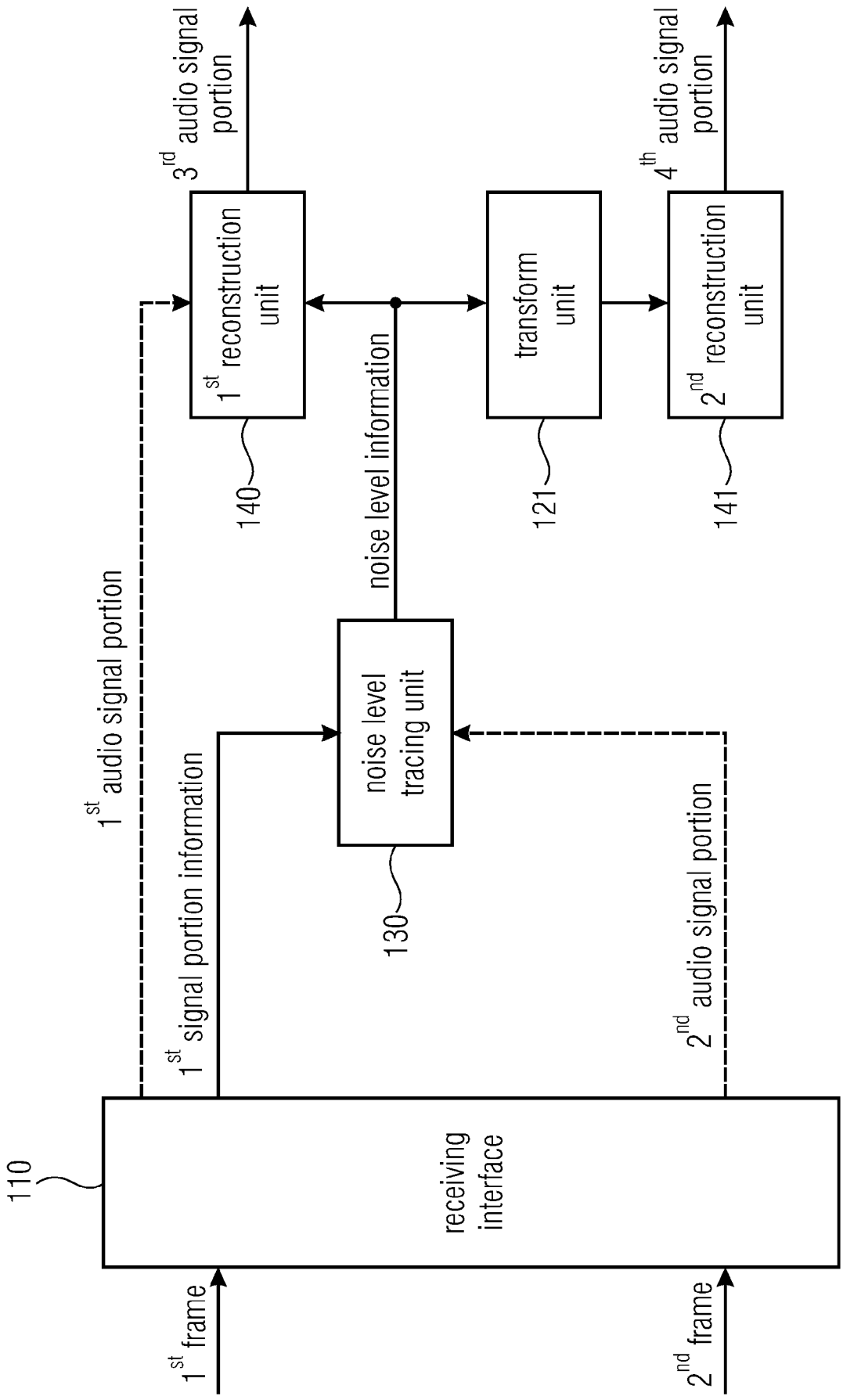

receiving interface
110
1st frame
2nd frame
1st audio signal portion
1st signal portion information
2nd audio signal portion
noise level tracing unit
130
noise level information
1st reconstruction unit
140
transform unit
121
2nd reconstruction unit
141
3rd audio signal portion
4th audio signal portion

FIG 14