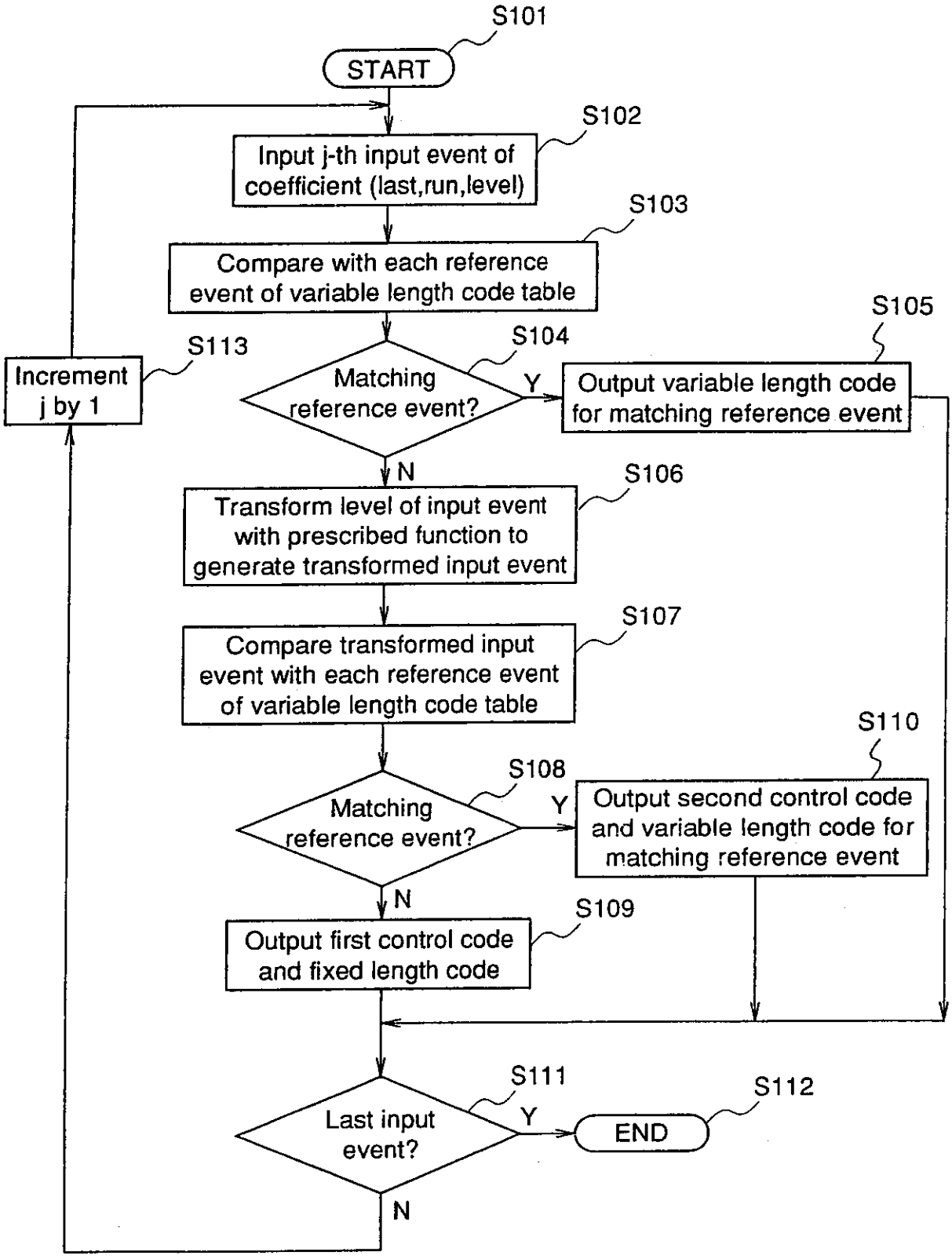
Fig.1


S101
START
S102
Input j-th input event of coefficient (last,run,level)
S103
Compare with each reference event of variable length code table
S104
Matching reference event?
Y
S105
Output variable length code for matching reference event
N
S106
Transform level of input event with prescribed function to generate transformed input event
S107
Compare transformed input event with each reference event of variable length code table
S108
Matching reference event?
Y
S110
Output second control code and variable length code for matching reference event
N
S109
Output first control code and fixed length code
S111
Last input event?
Y
S112
END
N
S113
Increment j by 1

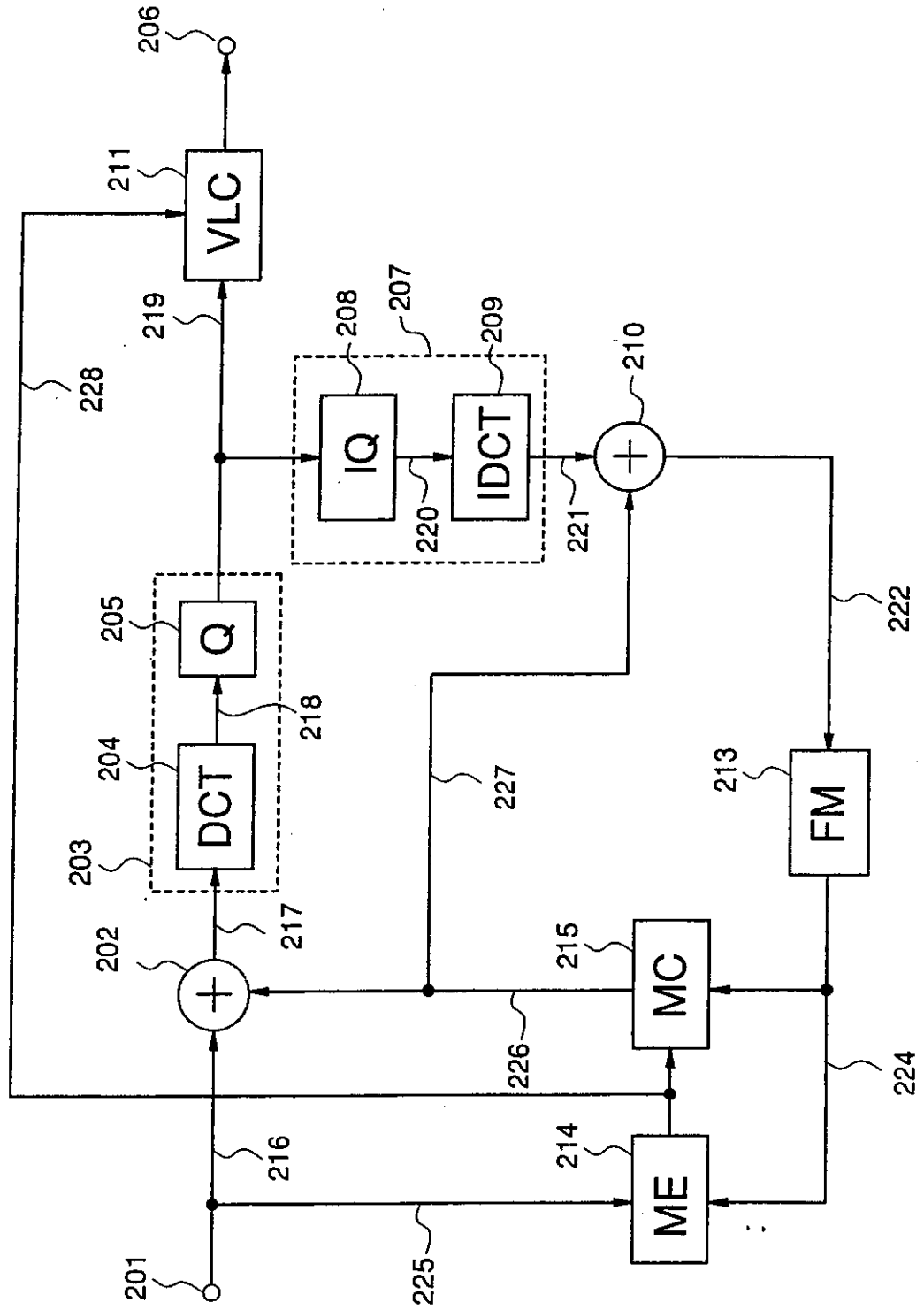

206
211
VLC
219
228
208
207
209
210
IQ
IDCT
220
221
205
Q
218
222
204
DCT
227
213
FM
203
217
202
215
MC
226
224
216
214
ME
201
225

Fig.2

Fig.3 (a)

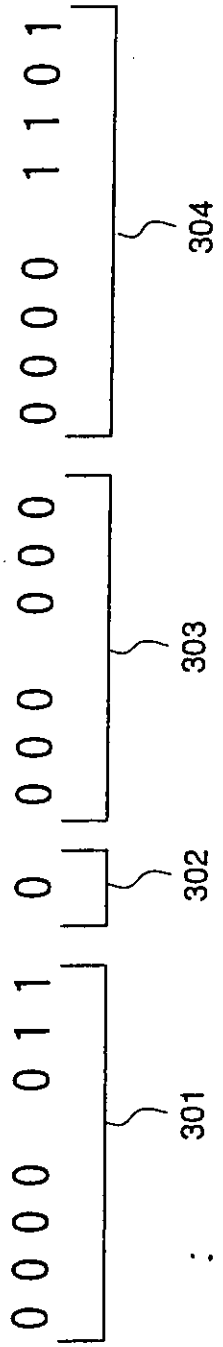
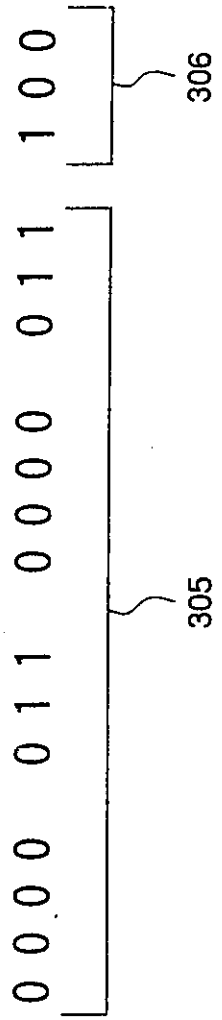

0 0 0 0 0 1 1 1
301
:
0
302
0 0 0 0 0 0 0 0
303
0 0 0 0 0 1 1 0 1
304

Fig.3 (b)


0 0 0 0 0 1 1 1 0 0 0 0 0 1 1 1
305
1 0 0
306

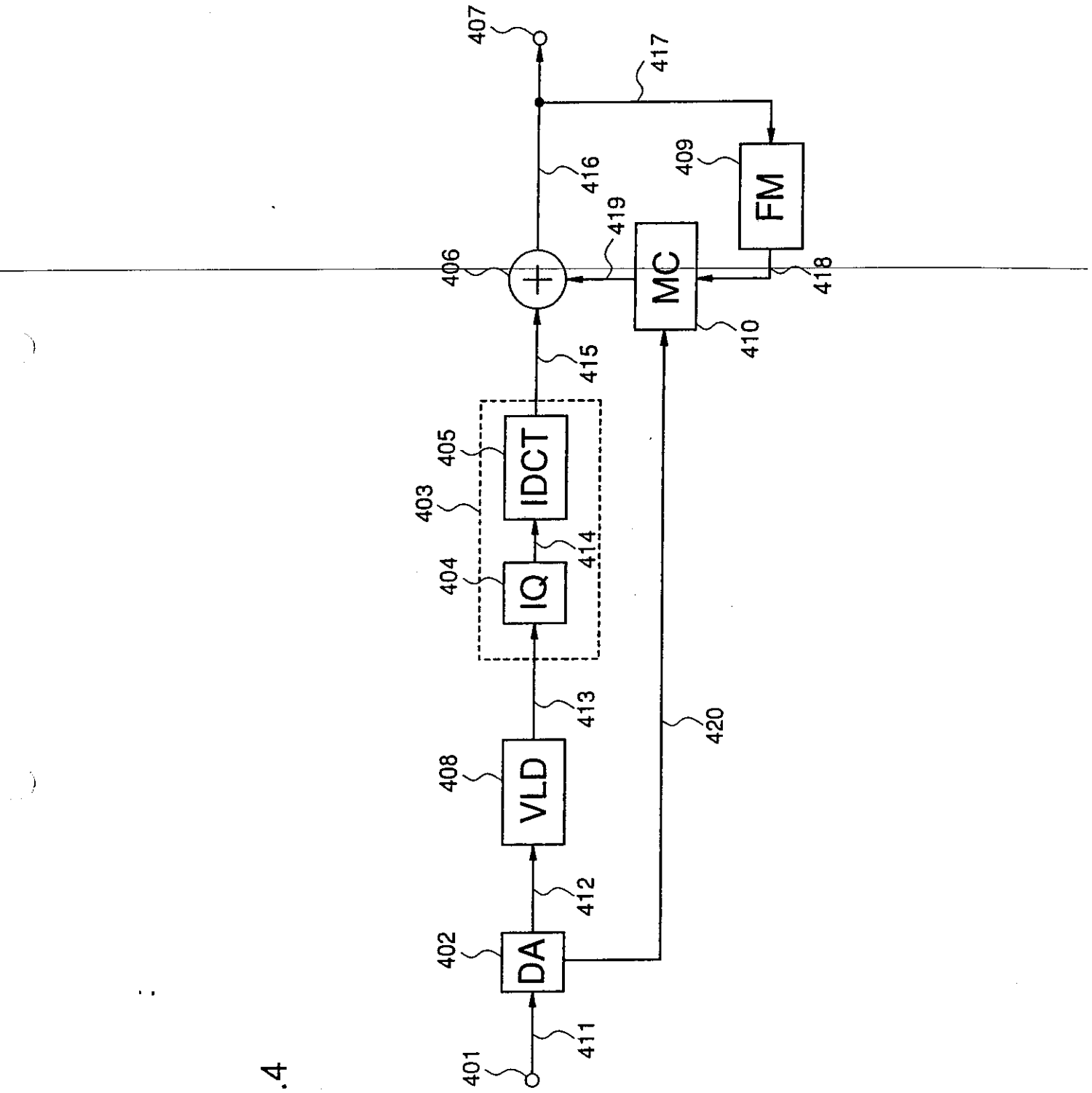

401
DA
402
VLD
408
IQ
404
IDCT
405
403
MC
410
FM
409
406
407
411
412
413
414
415
416
417
418
419
420

Fig.4

Fig.5

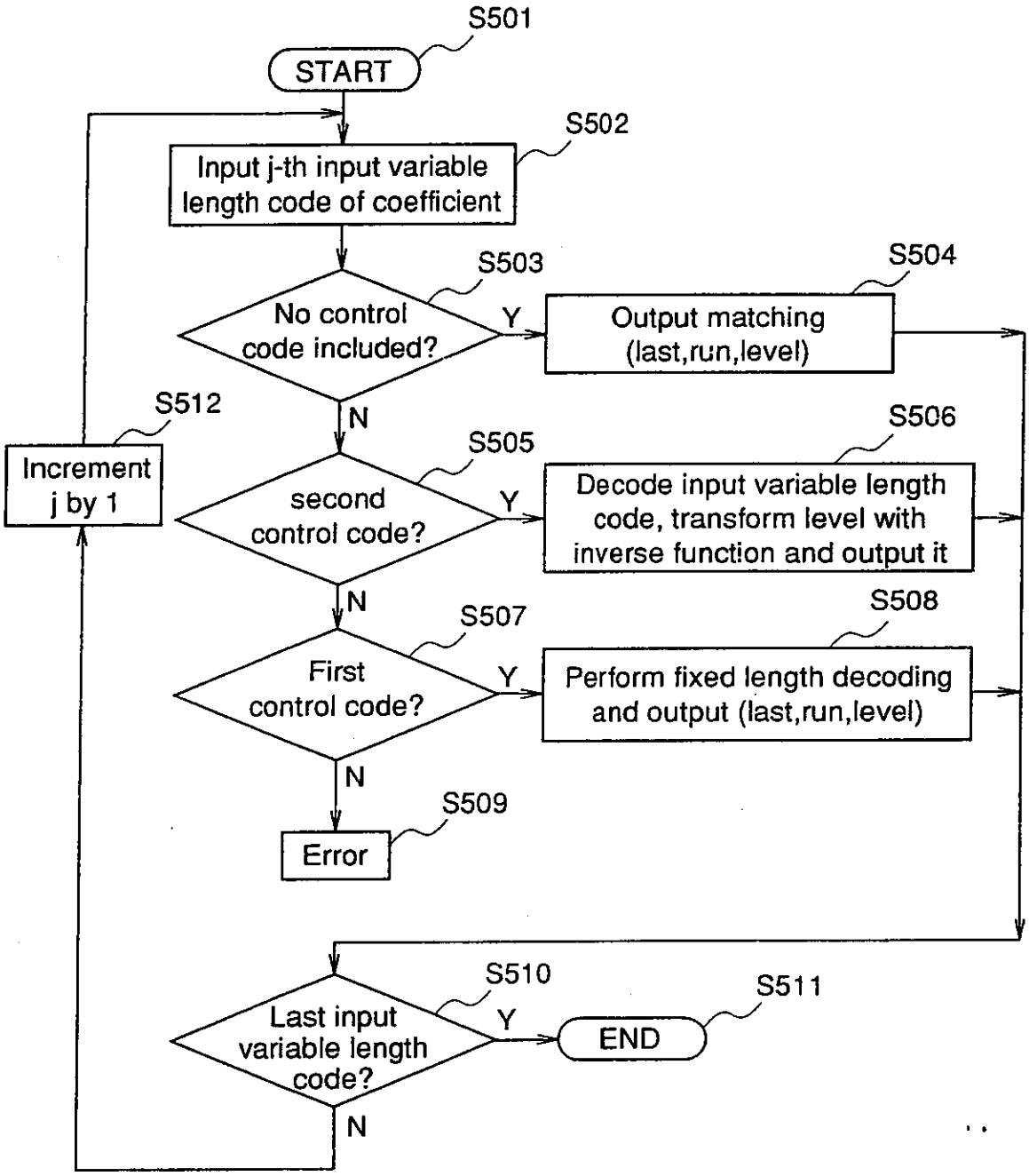

S501
START
S502
Input j-th input variable length code of coefficient
S503
No control code included?
Y
S504
Output matching (last,run,level)
N
S505
second control code?
Y
S506
Decode input variable length code, transform level with inverse function and output it
N
S507
First control code?
Y
S508
Perform fixed length decoding and output (last,run,level)
N
S509
Error
S512
Increment j by 1
S510
Last input variable length code?
Y
S511
END
N

Fig.6

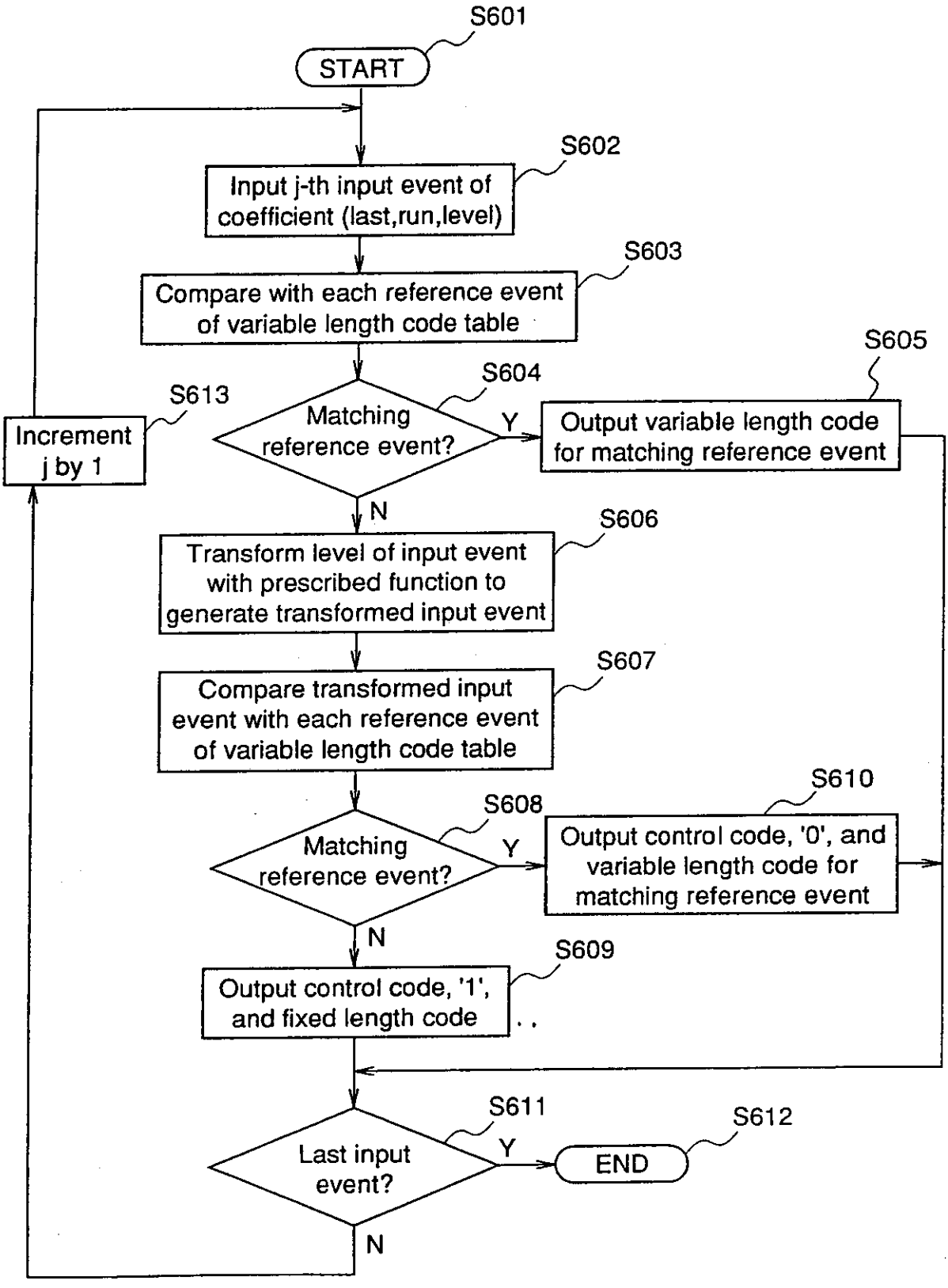

S601
START
S602
Input j-th input event of coefficient (last,run,level)
S603
Compare with each reference event of variable length code table
S604
Matching reference event?
Y
S605
Output variable length code for matching reference event
N
S606
Transform level of input event with prescribed function to generate transformed input event
S607
Compare transformed input event with each reference event of variable length code table
S608
Matching reference event?
Y
S610
Output control code, '0', and variable length code for matching reference event
N
S609
Output control code, '1', and fixed length code
S611
Last input event?
Y
S612
END
N
S613
Increment j by 1

Fig.7

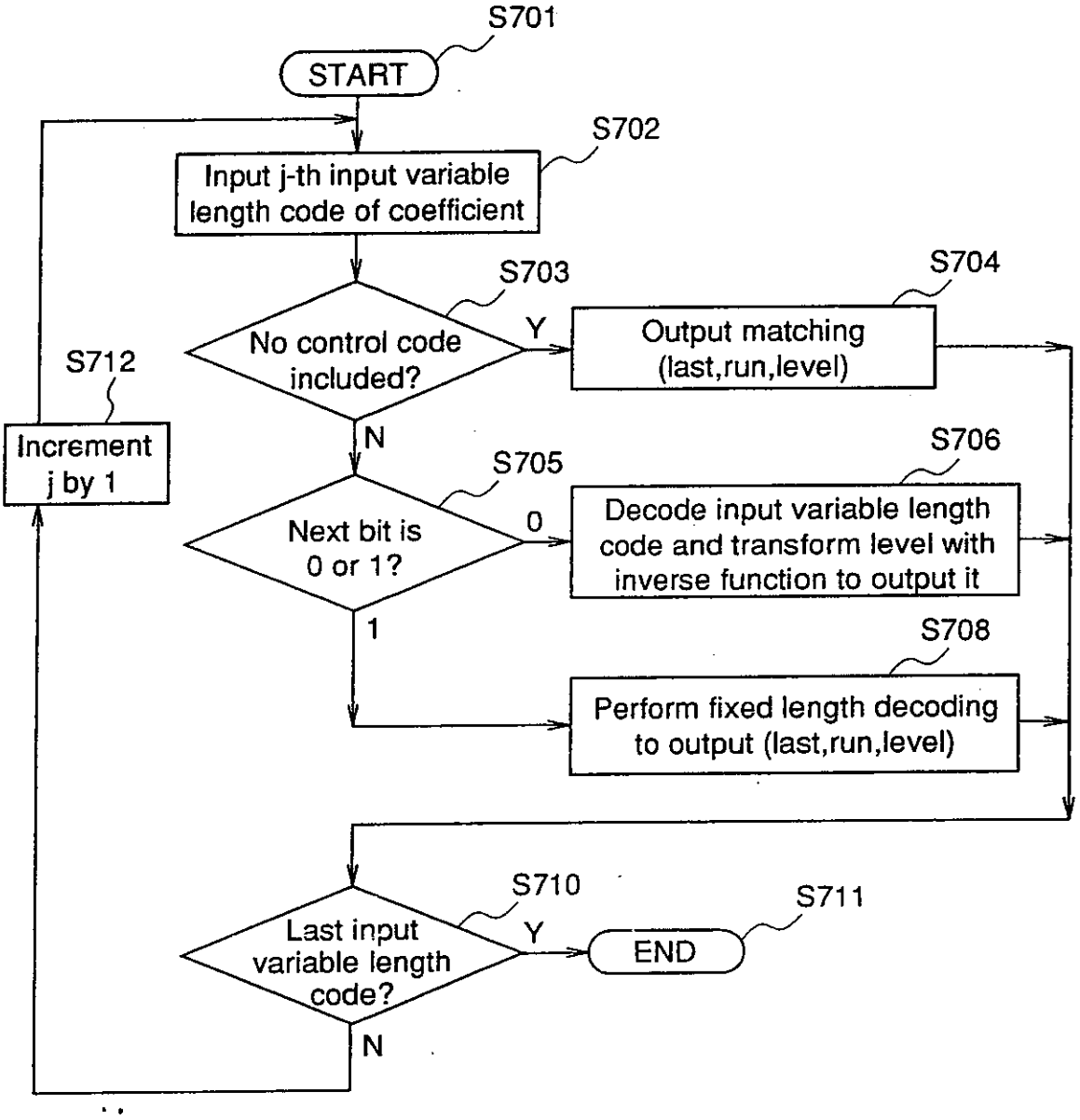

S701
START
S702
Input j-th input variable length code of coefficient
S703
No control code included?
Y
S704
Output matching (last,run,level)
N
S705
Next bit is 0 or 1?
0
S706
Decode input variable length code and transform level with inverse function to output it
1
S708
Perform fixed length decoding to output (last,run,level)
S710
Last input variable length code?
Y
S711
END
N
S712
Increment j by 1

Fig.8 (a)

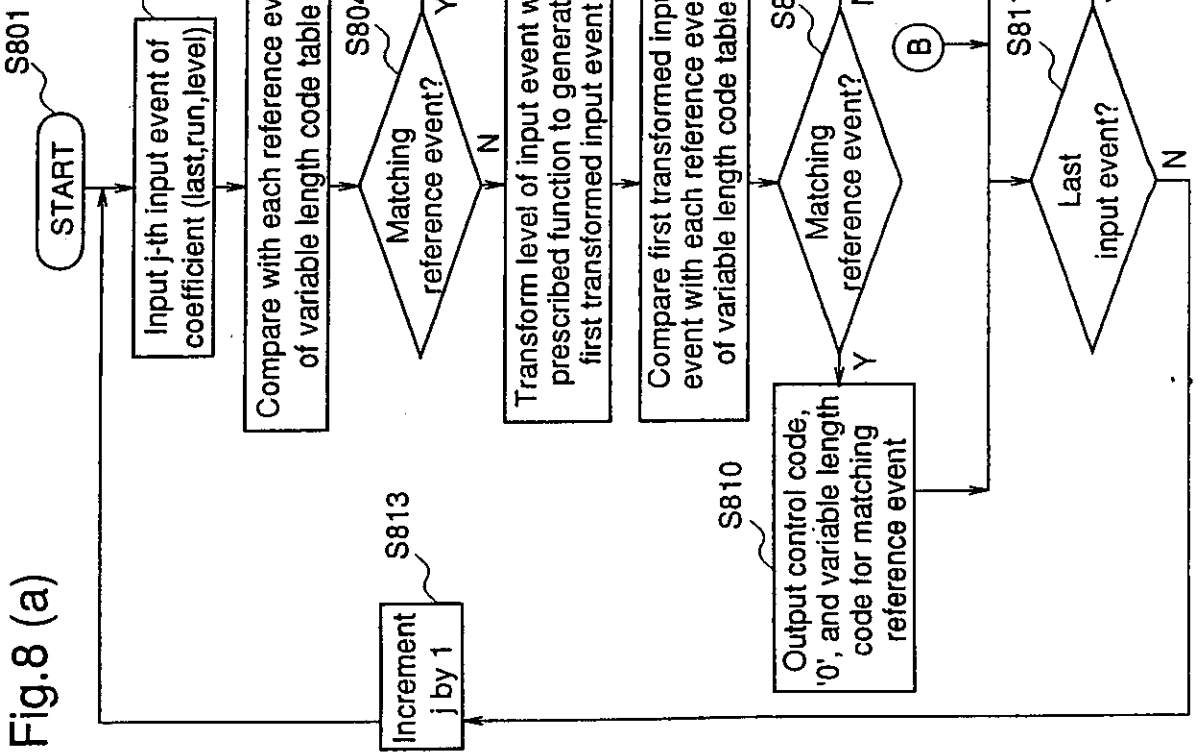

START
S801
Input j-th input event of coefficient (last,run,level)
S802
Compare with each reference event of variable length code table
S803
Matching reference event?
S804
Y
N
Output variable length code for matching reference event
S805
Transform level of input event with prescribed function to generate first transformed input event
S806
Compare first transformed input event with each reference event of variable length code table
S807
Matching reference event?
S808
N
Y
Output control code, '0', and variable length code for matching reference event
S810
Increment j by 1
S813
Last input event?
S811
Y
N
END
S812
A
B

Fig.8 (b)

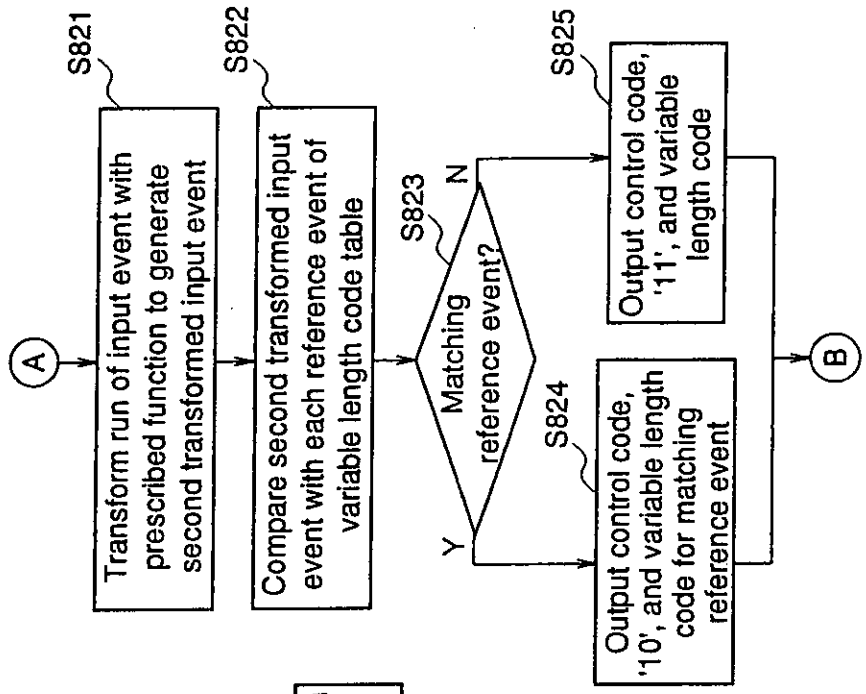

A
Transform run of input event with prescribed function to generate second transformed input event
S821
Compare second transformed input event with each reference event of variable length code table
S822
Matching reference event?
S823
N
Y
Output control code, '10', and variable length code for matching reference event
S824
Output control code, '11', and variable length code
S825
B

Fig.9

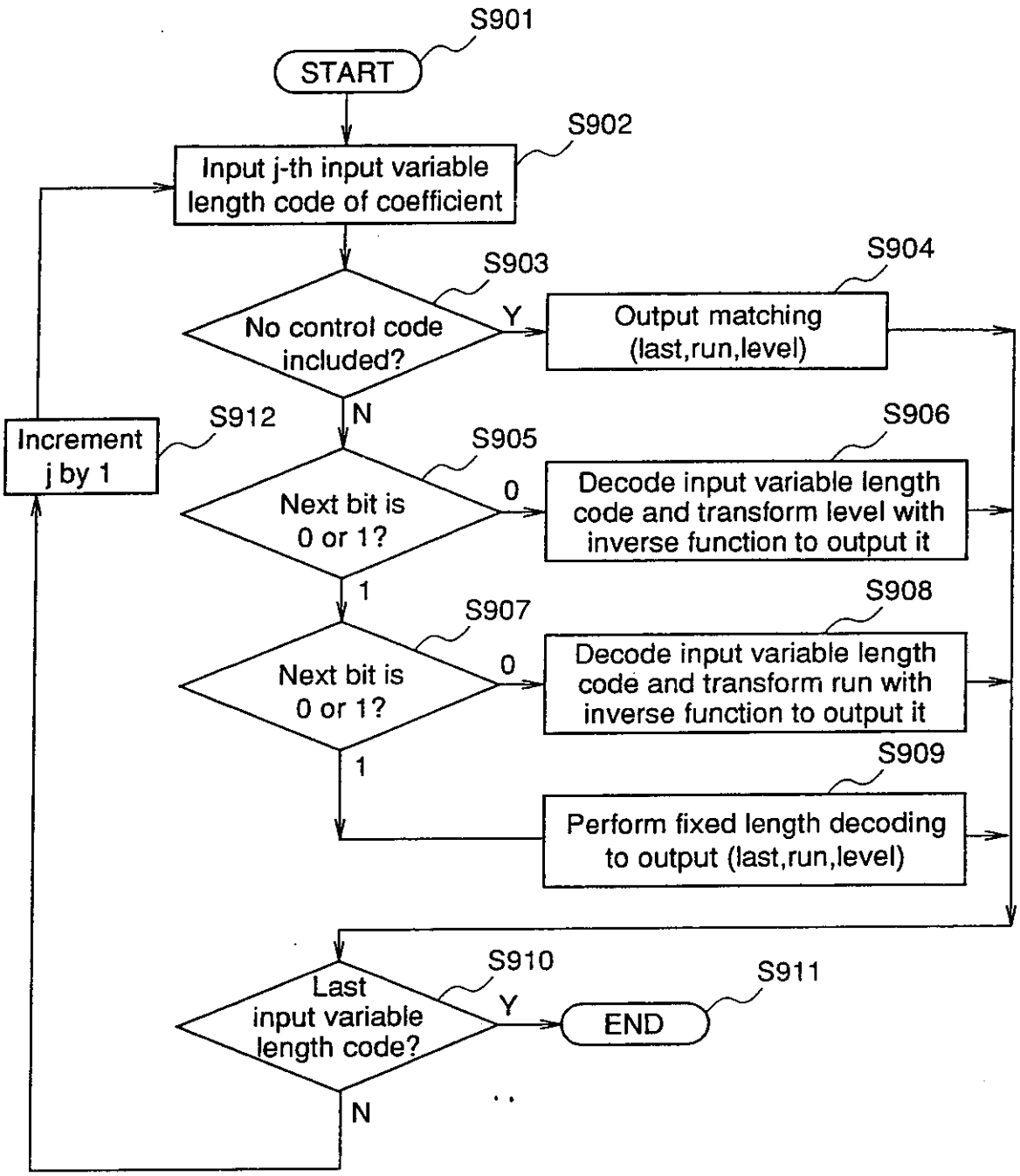

S901
START
S902
Input j-th input variable length code of coefficient
S903
No control code included?
Y
S904
Output matching (last,run,level)
N
S912
Increment j by 1
S905
Next bit is 0 or 1?
0
S906
Decode input variable length code and transform level with inverse function to output it
1
S907
Next bit is 0 or 1?
0
S908
Decode input variable length code and transform run with inverse function to output it
1
S909
Perform fixed length decoding to output (last,run,level)
S910
Last input variable length code?
Y
S911
END
N

Fig.10

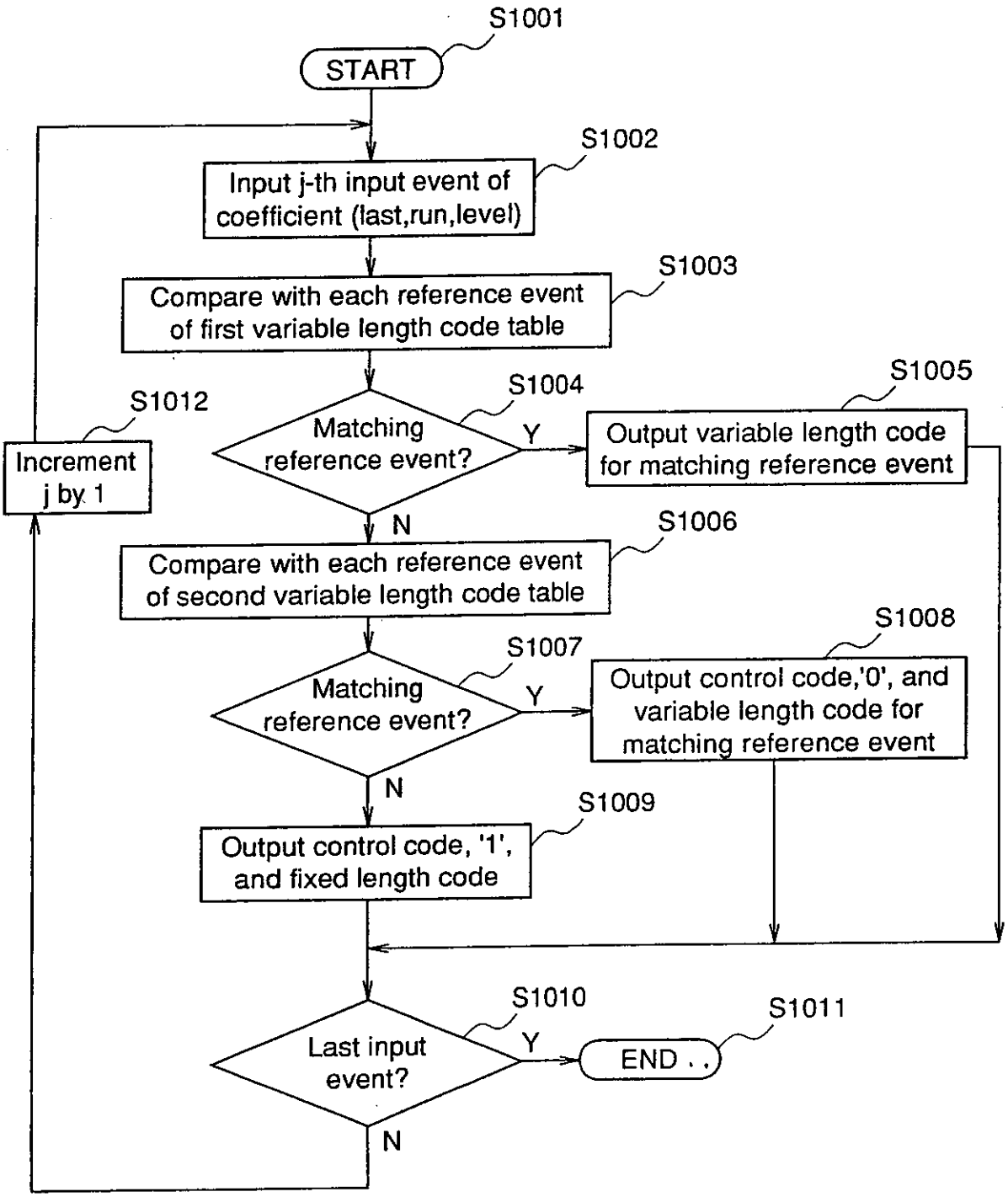

S1001
START
S1002
Input j-th input event of coefficient (last,run,level)
S1003
Compare with each reference event of first variable length code table
S1004
Matching reference event?
Y
S1005
Output variable length code for matching reference event
N
S1006
Compare with each reference event of second variable length code table
S1007
Matching reference event?
Y
S1008
Output control code,'0', and variable length code for matching reference event
N
S1009
Output control code, '1', and fixed length code
S1010
Last input event?
Y
S1011
END
N
S1012
Increment j by 1

Fig.11

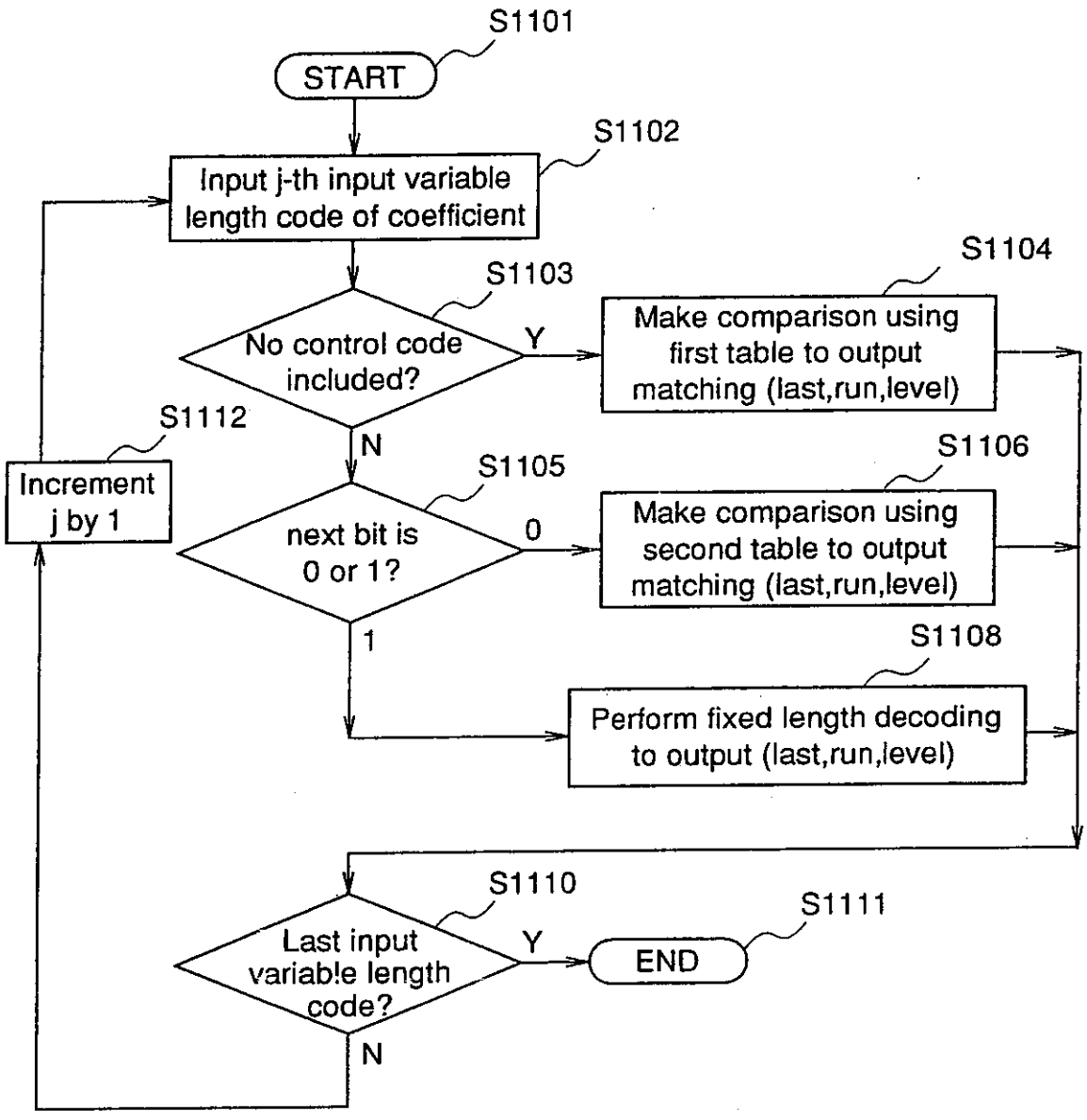

S1101
START
S1102
Input j-th input variable length code of coefficient
S1103
No control code included?
Y
S1104
Make comparison using first table to output matching (last,run,level)
N
S1112
Increment j by 1
S1105
next bit is 0 or 1?
0
S1106
Make comparison using second table to output matching (last,run,level)
1
S1108
Perform fixed length decoding to output (last,run,level)
S1110
Last input variable length code?
Y
S1111
END
N

Fig.12

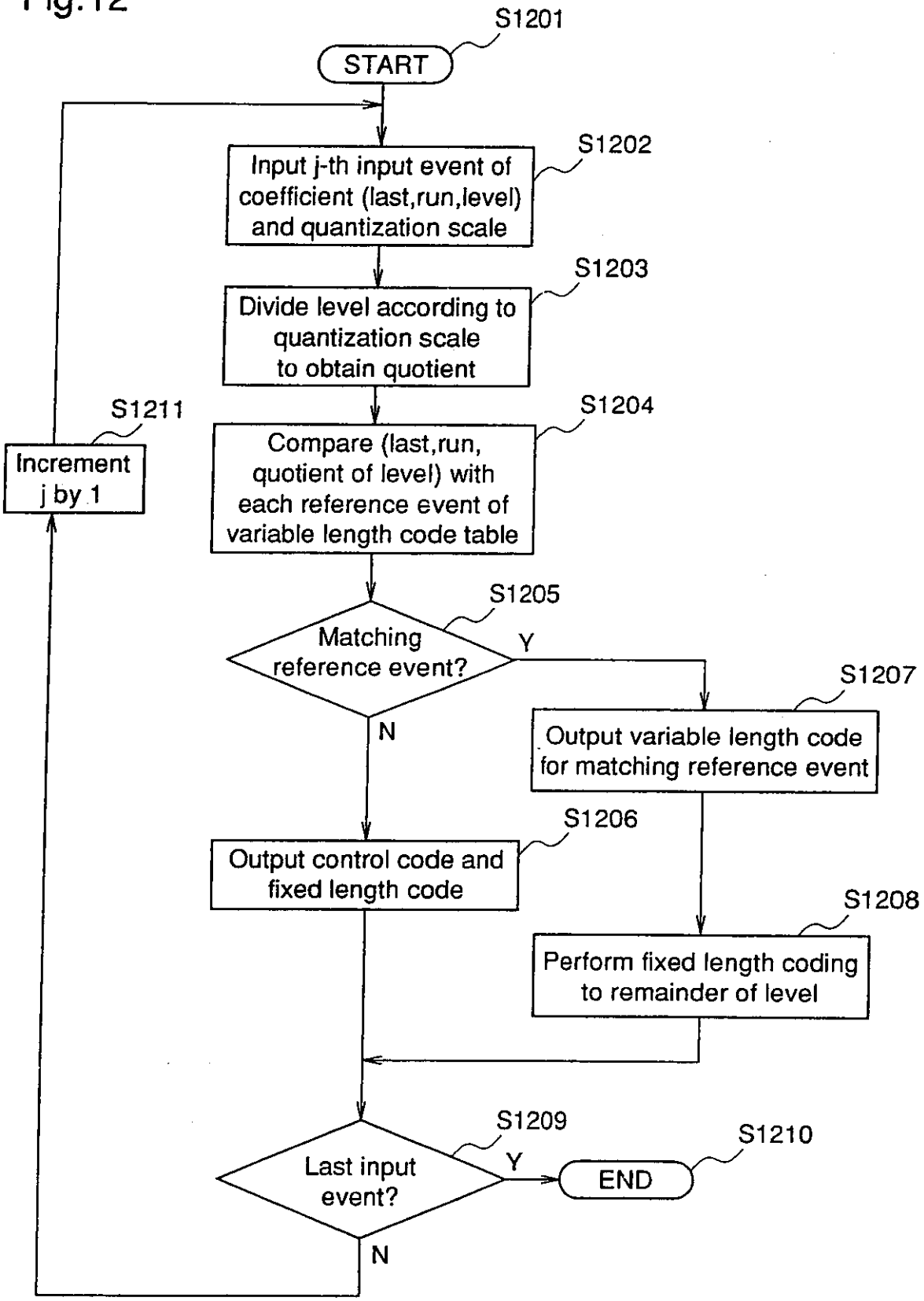

S1201
START
S1202
Input j-th input event of coefficient (last,run,level) and quantization scale
S1203
Divide level according to quantization scale to obtain quotient
S1204
Compare (last,run, quotient of level) with each reference event of variable length code table
S1205
Matching reference event?
Y
N
S1207
Output variable length code for matching reference event
S1206
Output control code and fixed length code
S1208
Perform fixed length coding to remainder of level
S1209
Last input event?
Y
N
S1210
END
S1211
Increment j by 1

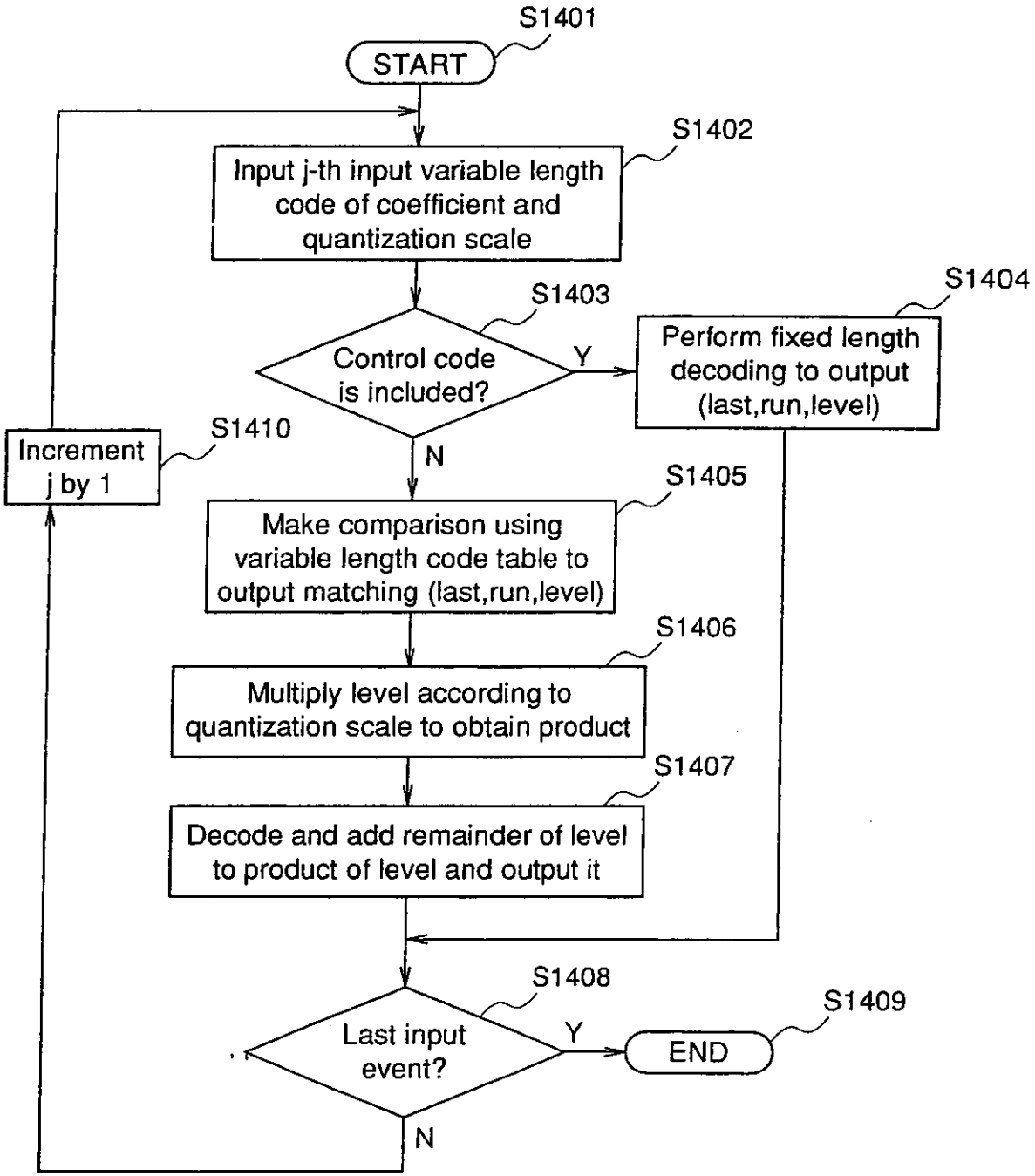
Fig.13 (a)

QUANTIZATION SCALE	DIVISOR	NUMBER OF BITS OF REMAINDER
1～7	2	1
≧8	1	0

Fig.13 (b)

QUANTIZATION SCALE	DIVISOR	NUMBER OF BITS OF REMAINDER
1～3	4	2
4～11	2	1
≧12	1	0

Fig.14


S1401
START
S1402
Input j-th input variable length code of coefficient and quantization scale
S1403
Control code is included?
Y
S1404
Perform fixed length decoding to output (last,run,level)
N
S1405
Make comparison using variable length code table to output matching (last,run,level)
S1406
Multiply level according to quantization scale to obtain product
S1407
Decode and add remainder of level to product of level and output it
S1408
Last input event?
Y
S1409
END
N
S1410
Increment j by 1

1 3 APR 2004

Fig.15

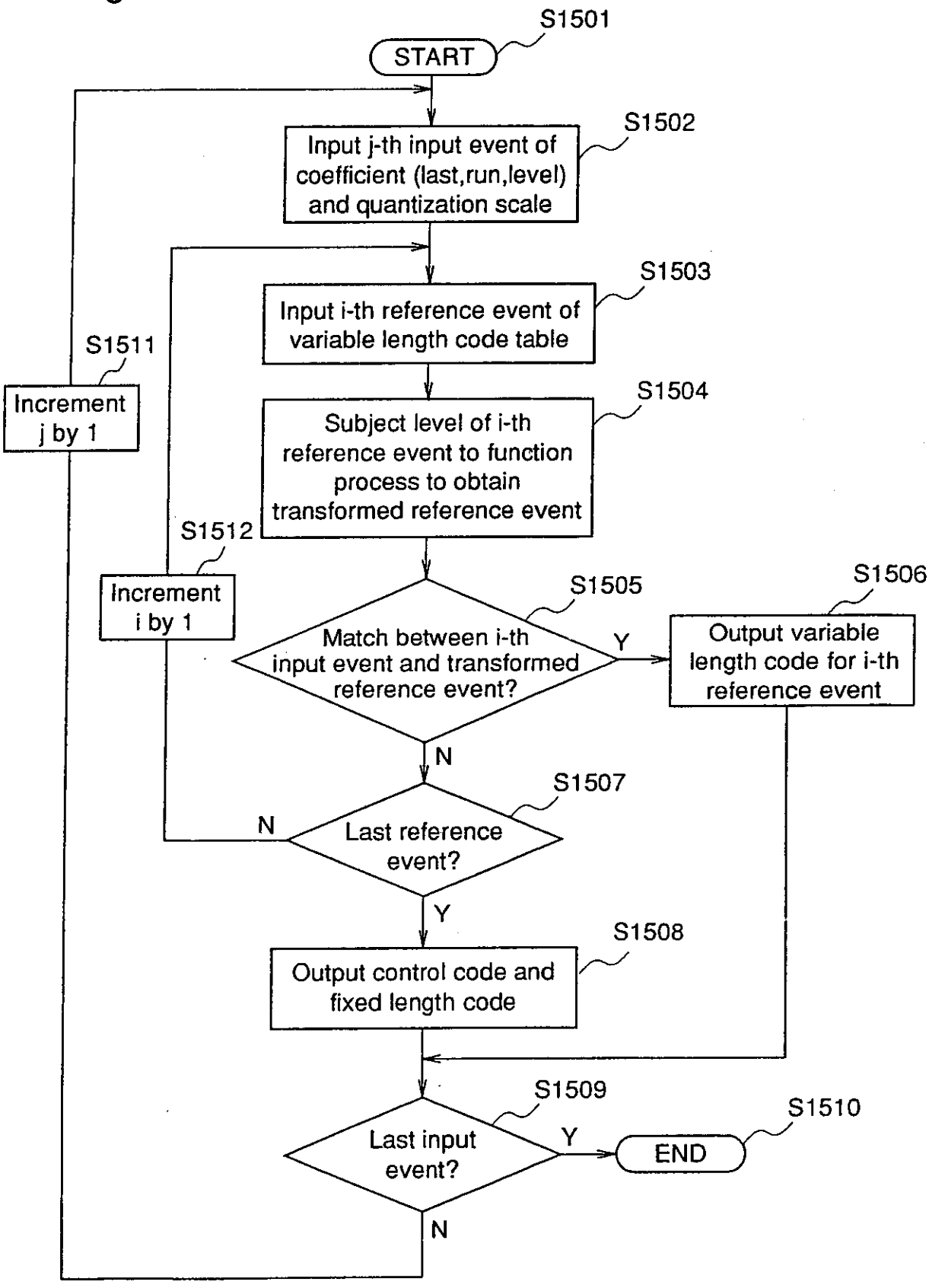


Fig.16

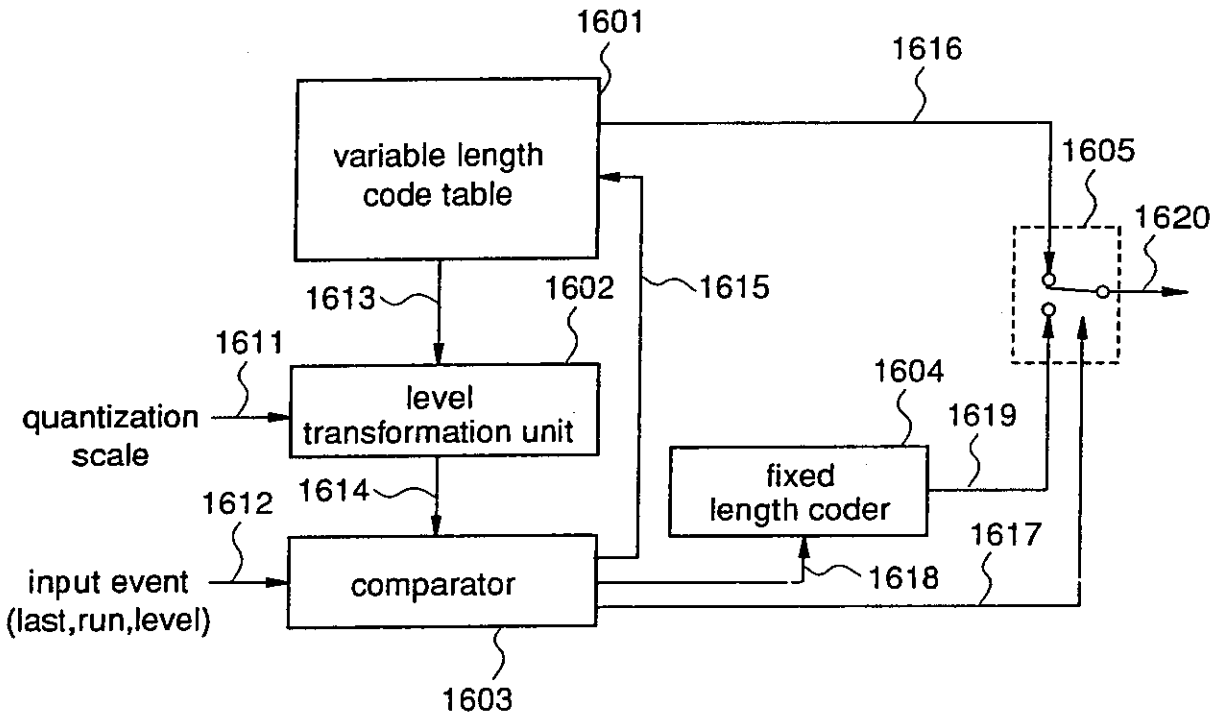

1601
1616
variable length code table
1605
1620
1613
1602
1615
1611
level transformation unit
1604
1619
quantization scale
fixed length coder
1612
1614
1617
input event (last,run,level)
comparator
1618
1603

Fig.17

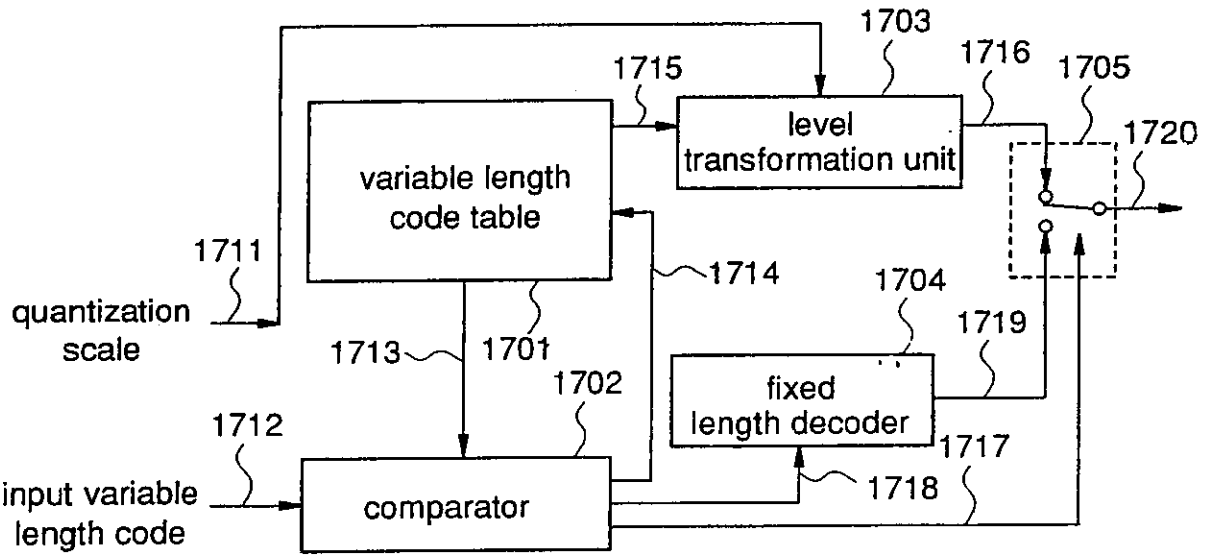

1703
1715
1716
1705
level transformation unit
1720
variable length code table
1711
1714
1704
1719
quantization scale
1713
1701
1702
fixed length decoder
1712
1717
input variable length code
comparator
1718

Fig.18

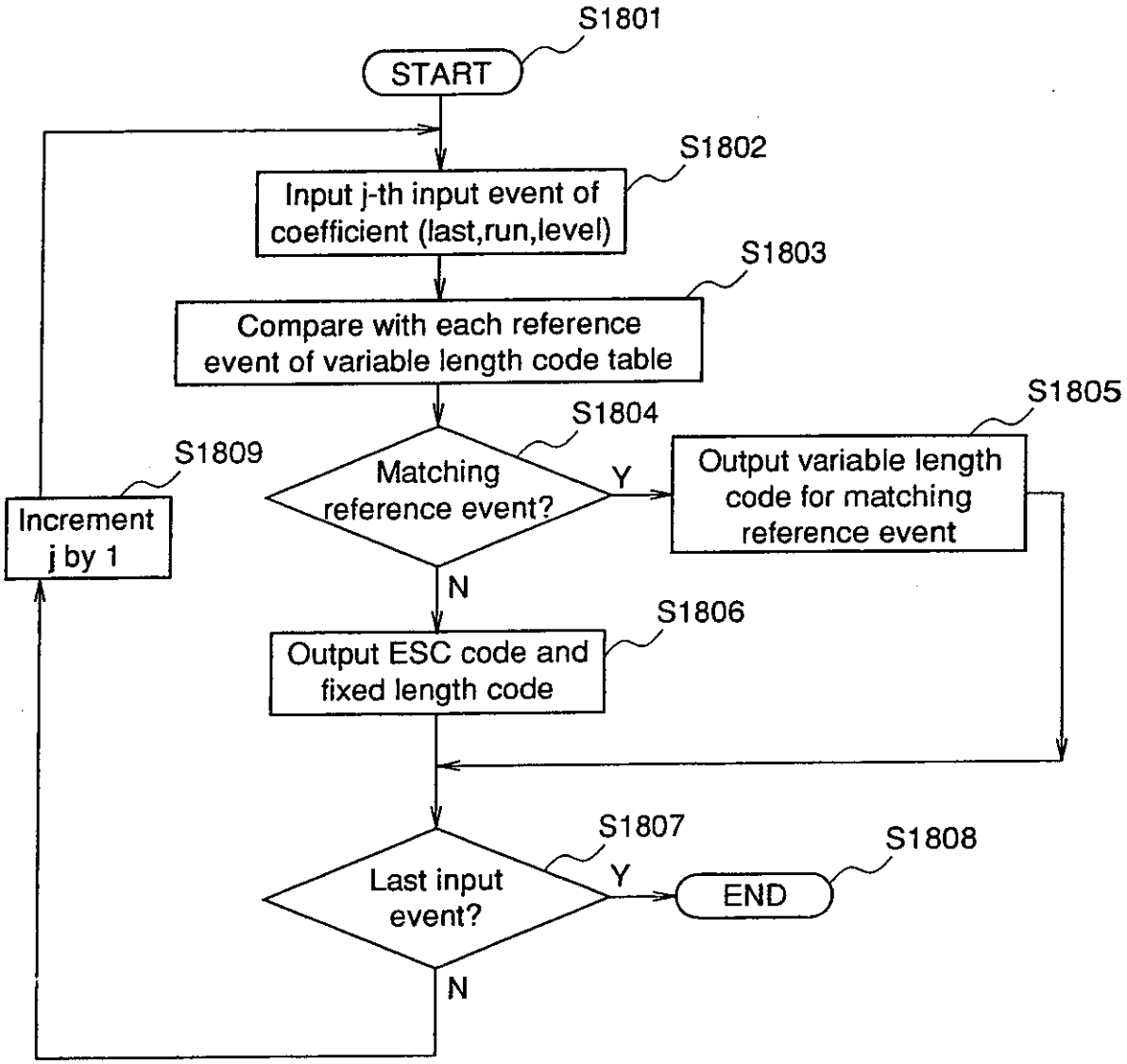

S1801
START
S1802
Input j-th input event of coefficient (last,run,level)
S1803
Compare with each reference event of variable length code table
S1804
Matching reference event?
Y
S1805
Output variable length code for matching reference event
N
S1806
Output ESC code and fixed length code
S1807
Last input event?
Y
S1808
END
N
S1809
Increment j by 1

Fig.19

INDEX	LAST	RUN	LEVEL	BITS	VLC CODE
0	0	0	1	3	10s
1	0	0	2	5	1111s
2	0	0	3	7	0101 01s
3	0	0	4	8	0010 111s
4	0	0	5	9	0001 1111s
5	0	0	6	10	0001 0010 1s
6	0	0	7	10	0001 0010 0s
7	0	0	8	11	0000 1000 01s
8	0	0	9	11	0000 1000 00s
9	0	0	10	12	0000 0000 111s
10	0	0	11	12	0000 0000 110s
11	0	0	12	12	0000 0100 000s
12	0	1	1	4	110s
13	0	1	2	7	0101 00s
14	0	1	3	8	0001 1110s
15	0	1	4	11	0000 0011 11s
16	0	1	5	12	0000 0100 001s
17	0	1	6	13	0000 0101 0000s
18	0	2	1	5	1110s
19	0	2	2	9	0001 1101s
20	0	2	3	11	0000 0011 10s
21	0	2	4	13	0000 0101 0001s
22	0	3	1	6	0110 1s
23	0	3	2	10	0001 0001 1s
24	0	3	3	11	0000 0011 01s
25	0	4	1	6	0110 0s
26	0	4	2	10	0001 0001 0s
27	0	4	3	13	0000 0101 0010s
28	0	5	1	6	0101 1s
29	0	5	2	11	0000 0011 00s
30	0	5	3	13	0000 0101 0011s

Fig.20

31	0	6	1	7	0100 11s
32	0	6	2	11	0000 0010 11s
33	0	6	3	13	0000 0101 0100s
34	0	7	1	7	0100 10s
35	0	7	2	11	0000 0010 10s
36	0	8	1	7	0100 01s
37	0	8	2	11	0000 0010 01s
38	0	9	1	7	0100 00s
39	0	9	2	11	0000 0010 00s
40	0	10	1	8	0010 110s
41	0	10	2	13	0000 0101 0101s
42	0	11	1	8	0010 101s
43	0	12	1	8	0010 100s
44	0	13	1	9	0001 1100s
45	0	14	1	9	0001 1011s
46	0	15	1	10	0001 0000 1s
47	0	16	1	10	0001 0000 0s
48	0	17	1	10	0000 1111 1s
49	0	18	1	10	000 1111 0s
50	0	19	1	10	0000 1110 1s
51	0	20	1	10	0000 1110 0s
52	0	21	1	10	0000 1101 1s
53	0	22	1	10	0000 1101 0s
54	0	23	1	12	0000 0100 010s
55	0	24	1	12	0000 0100 011s
56	0	25	1	13	0000 0101 0110s
57	0	26	1	13	0000 0101 0111s

Fig.21

INDEX	LAST	RUN	LEVEL	BITS	VLC CODE
58	1	0	1	5	011s
59	1	0	2	10	0000 1100 1s
60	1	0	3	12	0000 0000 101s
61	1	1	1	7	0011 11s
62	1	1	2	12	0000 0000 100s
63	1	2	1	7	0011 10s
64	1	3	1	7	0011 01s
65	1	4	1	7	0011 00s
66	1	5	1	8	0010 011s
67	1	6	1	8	0010 010s
68	1	7	1	8	0010 001s
69	1	8	1	8	0010 000s
70	1	9	1	9	0001 1010s
71	1	10	1	9	0001 1001s
72	1	11	1	9	0001 1000s
73	1	12	1	9	0001 0111s
74	1	13	1	9	0001 0110s
75	1	14	1	9	0001 0101s
76	1	15	1	9	0001 0100s
77	1	16	1	9	0001 0011s
78	1	17	1	10	0000 1100 0s
79	1	18	1	10	0000 1011 1s
80	1	19	1	10	0000 1011 0s
81	1	20	1	10	0000 1010 1s
82	1	21	1	10	0000 1010 0s
83	1	22	1	10	0000 1001 1s
84	1	23	1	10	0000 1001 0s
85	1	24	1	10	0000 1000 1s
86	1	25	1	11	0000 0001 11s
87	1	26	1	11	0000 0001 10s
88	1	27	1	11	0000 0001 01s

Fig.22

89	1	28	1	11	0000 0001 00s
90	1	29	1	12	0000 0100 100s
91	1	30	1	12	0000 0100 101s
92	1	31	1	12	0000 0100 110s
93	1	32	1	12	0000 0100 111s
94	1	33	1	13	0000 0101 1000s
95	1	34	1	13	0000 0101 1001s
96	1	35	1	13	0000 0101 1010s
97	1	36	1	13	0000 0101 1011s
98	1	37	1	13	0000 0101 1100s
99	1	38	1	13	0000 0101 1101s
100	1	39	1	13	0000 0101 1110s
101	1	40	1	13	0000 0101 1111s
102	ESC			7	0000 011

Fig.23 (a)

INDEX	RUN	CODE
0	0	000 000
1	1	000 001
2	2	000 010
.	.	.
.	.	.
63	63	111 111

Fig.23 (b)

INDEX	LAST	CODE
-	-128	FORBIDDEN
0	-127	1000 0001
.	.	.
.	.	.
125	-2	1111 1110
126	-1	1111 1111
-	0	FORBIDDEN
127	1	0000 0001
128	2	0000 0010
.	.	.
.	.	.
253	127	0111 1111