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JP-P-2007-00074224 2007 03 22 (JP)

(56)

JP2002125188 A

JP080032847 A

KR1020050022401 A

KR1020050015742 A

: 12

:

(54)

(57)

EMPTY

LIFE[EMPTY]

STP\_NUM

STAMP[STP\_NUM]

(S108). 4

19 7 11 7

STP\_NUM 1 N\_STAMP(=4)

, S108

STP\_NUM [1]

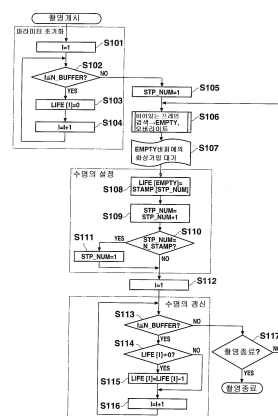
STAMP[1]=19, [2]

STAMP[2]= 7, [3]

STAMP[3]= 11, [4]

STAMP[4]= 7

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**7**

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**10**

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**11**

**12**

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**13**

10 ,

**14**

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**15**

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16

[0001]

[0002]

[0003]

[0004]

[0005]

[0006]

[0007]

[0008]

[0009]

[0010]

[0011]

[0012]

[0013]

[0014]

[0015]

[0016]

, 1 .

< 1 >

1 (1) (1) CCD(2) DSP/CPU(3) .  
(1) , CCD(2) (Bayer) . DSP/CPU(3) (1)

DSP/CPU(3) CCD(2) TG(Timing Generator) (4) . TG(4)  
CCD(2) (5)  
(5) CCD(2) CCD(2)  
(CCS) , (AGC) ,  
A/D , CCD(2)  
DSP/CPU(3) .

DSP/CPU(3) (6), (7) , (10)  
(DRAM(11), ROM(12), (13), (14) . (11)  
, DSP/CPU(3) .

DSP/CPU(3) (5) (pedestal clamp)  
, RGB , RGB (Y) (UV) . DSP/CPU(3)  
YUV 1 (11) . (11) 1  
YUV (6) , .

- [0017] , CCD(2) (5)
- (11) 1 YUV DSP/CPU(3) JPEG  
(11) , (10)  
(13) ( )
- [0018] ( ) 1 , YUV  
, 2 (11) (past) ( )  
(11) YUV
- [0019] (11) YUV DSP/CPU(3) , JPEG ( )  
MPEG (codec) (11)  
(10) , (13) . DSP/CPU(3)  
( ) (13) ( )  
, ( ) (11)  
.
- [0020] (6) LCD , CCD(2)  
, (13)  
(7) , ,  
DSP/CPU(3) /  
, .
- [0021] ROM(12) , , (EV)  
(F) AE , EV  
. DSP/CPU(3)  
TG(4) CCD(2) . CCD(2)  
. CCD(2) , ROM(12)  
.
- [0022] (1) (14) , (14)  
TV .
- [0023] (11) 2 , 1 12 12  
4f/s  
.
- [0024] , , 3 .
- [0025] , .
- [0026] N\_BUFFER
- [0027] , 12 .
- [0028] LIFE[1] I
- [0029] , 19 0 , 0  
.
- [0030] EMPTY
- [0031] , 1 12 .
- [0032] N\_STAMP
- [0033] , 4 .

[0034] STAMP[STP\_NLM]

[0035] 4 19, 7, 11, 7 , STAMP[1]=19, STAMP[2]=7,  
STAMP[3]=11, STAMP[4]=7 . 4 , N\_STAMP  
4 .

[0036] STP\_NLM

[0037] 4 STAMP[ ] , 1 4 .

[0038] (7) , DSP/CPU(3) TG(4)  
CCD(2) 4f/s ,  
S101 S104 , S108 S111  
S113 S116 .

[0039] , S101 S104 , I 1 ( S101).  
I N\_BUFFER(=12) ( S102). I N\_BUFFER , I  
I LIFE[1] 0 ( S103). ,  
I (increment) ( S104), S102  
S102 S104 12 , 2 1 12 0  
.

[0040] I=13 , S102 I N\_BUFFER NO , S102 S105 ,  
STP\_NLM 1 ( S105). ,  
( S106).

[0041] S106 4 , 12  
LIFE[1] 0 ( S11). (1 12  
) EMPTY ( S12). , S11  
S12  
EMPTY  
CCD(2) , EMPTY  
S13).

[0042] , 2 A , 1 0  
EMPTY 1 . EMPTY ,

[0043] 3 S107 4 1  
 , DSP/CPU(3) TG(4) CCD(2) 4f/s , , 1/4  
EMPTY  
 , S107 S108 .

[0044] , EMPTY LIFE[EMPTY] ,  
STP\_NLM STAMP[STP\_NLM] ( S108). STP\_NLM  
S105 1(STP\_NLM+1) , STAMP[STP\_NLM] STAMP[1] . 4  
19, 7, 11, 7 1 19 , STAMP[1]=19 , S108  
 , 2 B , 1 LIFE[1]  
19 .

[0045] , STP\_NLM ( S109), STP\_NLM  
N\_STAMP(=4) ( S110). STP\_NLM+1  
S111 S112 . STP\_NLM+1  
( S111), S112 .

[0046] , STP\_NLM 1 N\_STAMP , 1 4 , S108  
( ) STP\_NLM 1

STAMP[ 1] =19 , STP\_NUM 2 STAMP[ 2] =7 ,  
 STP\_NUM 3 STAMP[ 3] =11 , STP\_NUM 4  
 STAMP[ 4] =7 .

[0047] , 2 A , 1 0  
 EMPTY=1 , STP\_NUM [ 1] , S108 LIFE[ 1] =STAMP[ STP\_NUM] =STAMP[ 1] =19  
 . , 2 B , 1 STAMP[ 1]  
 19 .

[0048] 2 B , 6 0  
 EMPTY=6 , STP\_NUM 2 , S108 LIFE[ 6] =STAMP[ STP\_NUM] =STAMP[ 2] =7 .  
 , 2 C , 6 STAMP[ 2] 7  
 .

[0049] 2 C , 4 0  
 EMPTY=4 , STP\_NUM 3 , S108 LIFE[ 4] =STAMP[ STP\_NUM] =STAMP[ 3] =11 .  
 , 2 D , 4 STAMP[ 3] 11  
 .

[0050] 2 D , 8 0  
 EMPTY=8 , STP\_NUM 4 , S108 LIFE[ 8] =STAMP[ STP\_NUM] =STAMP[ 4] =7 .  
 , 2 E , 8 STAMP[ 4] 7  
 .

[0051] S110 S111 S112 I 1 ,  
 S113 S116 . I N\_BUFFER( =12)  
 ( S113). I N\_BUFFER , I I  
 LIFE[ I] 0 ( S114). I LIFE[ I] 0  
 ( S114 NO), S115 S116 .

[0052] I LIFE[ I] 0 ( S114 YES), LIFE[ I]  
 (decrement) ( S115). , I ( S116), S113  
 . , S113 S116 12  
 , 0 .

[0053] I=13 , S113 “ I N\_BUFFER” NO , S113 S117 ,  
 . S106  
 , S108 S111 S113 S116  
 .

[0054] S108 S111 ,  
 . S113 S116 , 2  
 2 4 3 2 1, 0 .

[0055] , . ,  
 2 E , 12  
 . , 4 S13 , 0  
 2 , 2 12  
 .

[0056] , 4fps , 12 ,  
 , 3  
 . , 19 0 1/4  
 , 4 75 .

[0057] , , ,  
 .



[0058] , , ,

[0059] 3 , 0 , ,

[0060] , ( ) (13) , 0

[0061] , , (13) , (13)

[0062] (7) S101 , ( SS117 YES) S101 ,

[0063] < 2 >

[0064] 5 2 3 1 S201 S204 1 S101 S104 , , 6 1 12 0

[0065] I=13 , S202 " I N\_BUFFER" NO , S202 S205 , (7)

[0066] , STP\_NM 1 ( S206), ( S207).

[0067] S207 8 , ( S21). S21 NO S22 S23 S24 .

[0068] ( S21 YES), 0 3 ( S22). , 6 A S22 ( ) , 2 4 1 6 3 8 , 0 ( S23). S23 , 6 B , 4 6 8 0

[0069] S21 S23 S24 LIFE[I] 0 ( 1, 4 6 8 ) EMPTY ( S25). , EMPTY CCD(2) ( S26).

[0070] , 6 B , 1, 4 6 8 0 EMPTY 1 , EMPTY

( S27).

[0071] 5 S208 8 1  
 , DSP/CPU(3) TG(4) CCD(2) 4f/s , , 1/4  
 EMPTY , S208 S209 .

[0072] 3 S108 S111 , EMPTY  
 LIFE[EMPTY] , STP\_NUM  
 STAMP[STP\_NUM] ( S209) , STP\_NUM S206  
 1(STP\_NUM#1) , STAMP[STP\_NUM] STAMP[1] . 4 19, 7, 11, 7  
 1 19 , STAMP[1]=19 , S209 , 6  
 C , 1 LIFE[1] 19 .

[0073] , STP\_NUM ( S210) , STP\_NUM  
 N\_STAMP(=4) ( S211) . STP\_NUM#N\_STAMP  
 S212 S213 , STP\_NUM#N\_STAMP STP\_NUM  
 1 ( S212) , S213 .

[0074] , STP\_NUM 1 N\_STAMP , 1 4 , S209  
 , STP\_NUM 1  
 STAMP[1]=19 , STP\_NUM 2 STAMP[2]=7 ,  
 STP\_NUM 3 STAMP[3]=11 , STP\_NUM 4  
 STAMP[4]=7 .

[0075] , 6 B , 1 0  
 EMPTY=1 , STP\_NUM 1 , S209  
 LIFE[1]=STAMP[STP\_NUM]=STAMP[1]=19 , 6 C , 1  
 STAMP[1] 19 .

[0076] 6 C , 6 0 EMPTY=6  
 , STP\_NUM [2] , S209 LIFE[6]=STAMP[STP\_NUM]=STAMP[2]=7 .  
 , 6 D , 6 STAMP[2] 7  
 .

[0077] 6 D , 4 0 EMPTY=4  
 , STP\_NUM 3 , S209 LIFE[4]=STAMP[STP\_NUM]=STAMP[3]=11 .  
 , 6 E , 4 STAMP[3]  
 11 .

[0078] 6 E , 8 0 EMPTY=8  
 , STP\_NUM 4 , S209 LIFE[8]=STAMP[STP\_NUM]=STAMP[4]=7 .  
 , 7 F , 8 STAMP[4] 7  
 .

[0079] S211 S212 S213 I 1 ,  
 S214 S217 . I N\_BUFFER(=12)  
 ( S214) . I N\_BUFFER , I I  
 LIFE[I] 0 ( S215) . I LIFE[I] 0  
 ( S215 NO, S216 S217 .

[0080] I LIFE[I] 0 ( S215 YES), LIFE[I]  
 ( S216) . , I ( S217), S214  
 . , S214 S217 12 , 0

[0081] I=13 , S214 " I N\_BUFFER" NO , S214 S218  
S207  
S209 S212 S214 S217  
.

[0082] S209 S212 ,  
S214 S217 ,  
6 2 4 3 2 1, 0 .

[0083] , S21 YES . ,  
0 , 3 ( S22) .  
7 F S22 ( )  
2 7, 1 10, 3 12  
0 ( S23) . S23 , 7  
G , 7, 10, 12 0 , S24  
S27 , S208 S218 .

[0084] , ,  
7 G , 12  
8 S26 , 0  
2, 7, 10, 12 , 2, 7, 10, 12  
12 .

[0085] 4fps , 12 ,  
3  
19 0 1/4  
4 75 .

[0086] , , ,

[0087] , , ,

[0088] < 3 >

[0089] 9 3 , 1 ,  
3  
1 .

[0090] LI FE[1]

[0091] I , 0 19 , 19  
11, 7  
.

[0092] N\_STAMP

[0093] , 4 .

[0094] STP\_NUM

[0095] 4 STAMP[ ] , 1 4 .

[0096] STAMP[ STP\_NUM]

[0097] 4 19, 7, 11, 7 , STAMP[ 1]=19, STAMP[ 2]=7,  
STAMP[ 3]=11, STAMP[ 4]=7 . , 4 , N\_STAMP  
4 .

[0098] , ON , OFF

[0099] , S301 S305 , I 1  
 ( S301). , I N\_BUFFER(=12) ( S302). I  
 N\_BUFFER , I I LIFE[1] 0  
 ( S303), I ON ( S304). , I  
 ( S305), S302  
 S302 S305 12 , 10 1 12 0  
 , ON .

[0100] I=13 , S302 “ I N\_BUFFER” NO , S302 S306  
 , STP\_NUM 1 ( S306). , ,  
 ( S307).

[0101] S307 11 , 12 ,  
 ON ( S31). (1  
 12 ) EMPTY ( S32). , S31  
 S32  
 EMPTY . , EMPTY  
 CCD(2) ,  
 ( S33).

[0102] , 10 A , 1 7  
 ON EMPTY 7 , EMPTY  
 , .

[0103] 9 S308 11 1  
 , DSP/CPU(3) TG(4) CCD(2) 4f/s . , 1/4  
 EMPTY  
 , S308 S309 .

[0104] EMPTY LIFE[EMPTY] 0  
 ( S309), EMPTY OFF  
 ( S310).

[0105] , STP\_NUM ( S311), STP\_NUM  
 N\_STAMP(=4) ( S312). STP\_NUM N\_STAMP  
 S313 S314 . STP\_NUM N\_STAMP STP\_NUM 1  
 ( S313), S314 . , STP\_NUM 1 N\_STAMP , 1 4

[0106] S312 S313 S314 I 1 ,  
 S315 S321 , I N\_BUFFER(=12)  
 ( S315). I N\_BUFFER , I I  
 LIFE[1] 19 ( S316). I LIFE[1] 19  
 ( S316 NO, I ON ( S318).

[0107] I LIFE[1] 19 ( S316 YES), I  
 LIFE[1] STP\_NUM STAMP[STP\_NUM]  
 ( S317).

[0108] S311 1 4 STP\_NUM , STP\_NUM [1]  
 STAMP[1]=19 , STP\_NUM [2] STAMP[2]=7 ,

STP\_NM [3] STAMP[3]=11 , STP\_NM [4]  
STAMP[4]=7 .

[0109] , S317 S311 1 4 STP\_NM , I  
LIFE[I] 19, 7, 11, 7 . , I  
LIFE[I] STP\_NM 19, 7, 11, 7 ( S317 NO),  
ON ( S318).

[0110] , I LIFE[I] STP\_NM 19, 7, 11, 7  
( S317 YES), I ON ( S319).  
S321 . I ON S320  
LIFE[I] ( S320). , I ( S321),  
S315 . , S313 S321 12  
.

[0111] S315 S321 , 10 A  
STP\_NM [1] , STAMP[1]=19 . 10 A 1  
19 S316 NO , S318 1  
ON . 7  
ON . , 1 ON  
7 .

[0112] 10 B STP\_NM 2 , STAMP[2]=7 .  
, 10 B 7 , 19 6  
S316 NO , S318 6  
ON . 6 ON  
1 .

[0113] 10 C STP\_NM 3 , STAMP[3]=11 .  
10 C 11 11 , 19 4  
S316 NO , S318 4  
ON , S317 NO , S318  
11 ON . 4, 11  
ON 6 .

[0114] 10 D STP\_NM 4 , STAMP[4]=7 .  
, 10 D 7 , 19 8  
S316 NO , S318 8  
ON . 8 ON  
4, 11 .

[0115] 10 E STP\_NM 1 , STAMP[1]=19 .  
, 10 E 2 19 S316  
NO , S318 2 ON .  
2 ON 8, 11  
.

[0116] , I=13 , S315 " I N\_BUFFER" NO , S315 S322  
, S307  
S309 S313 S315 S321  
.

[0117] 10 E , ,  
11 S33 , 12  
.

ON 2 8 11 , 12

[0118] , 4fps , 12 ,  
 , 3 ,  
 , 19 1/4  
 , 4 75

[0119] , , ,

[0120] , ,

[0121] , , (13)  
 , (13)  
 (13)

[0122] , S309 S312 , 0  
 , 0 , 1  
 , S315 S321 , 0 ,  
 ON

[0123] , 2 ,  
 , ON , 16  
 , ON

[0124] , =12 , =4fps, N\_BUFFER=12, LIFE[I]=19 0,  
 N\_STAMP=4, STAMP[STP\_NUM]=19, 7, 11, 7 ,

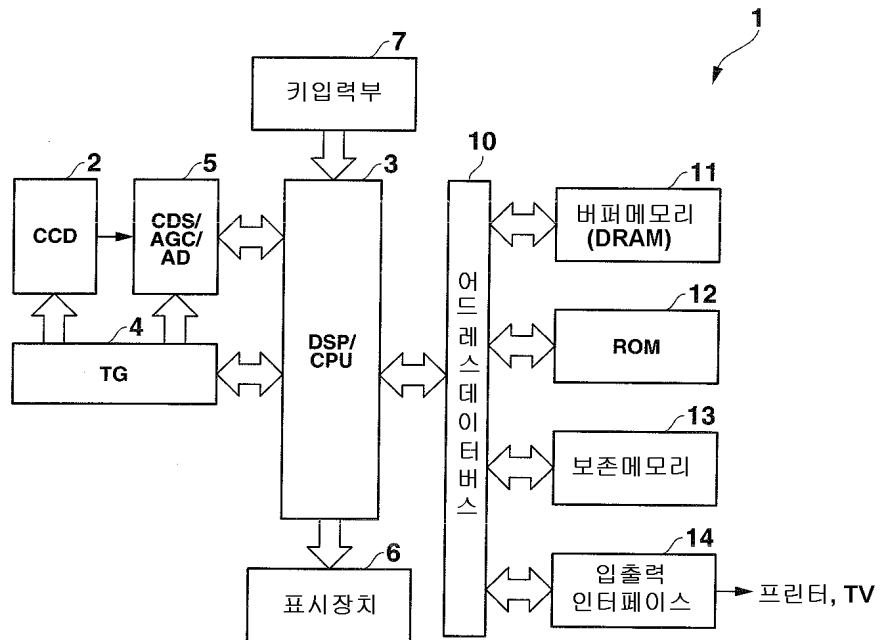
[0125] , , (future) +

[0126]	1	1
[0127]	2	1
[0128]	3	1
[0129]	4	1
[0130]	5	2
[0131]	6	2
[0132]	7	6
[0133]	8	2
[0134]	9	3
[0135]	10	3

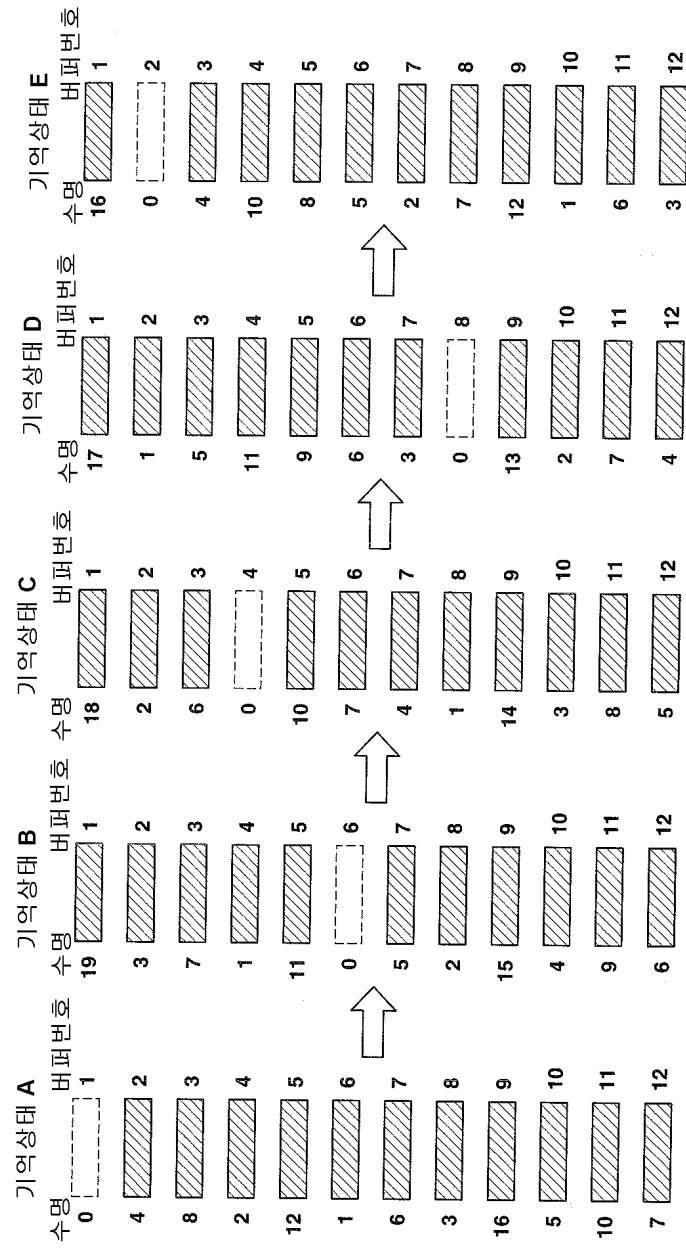
[0136]

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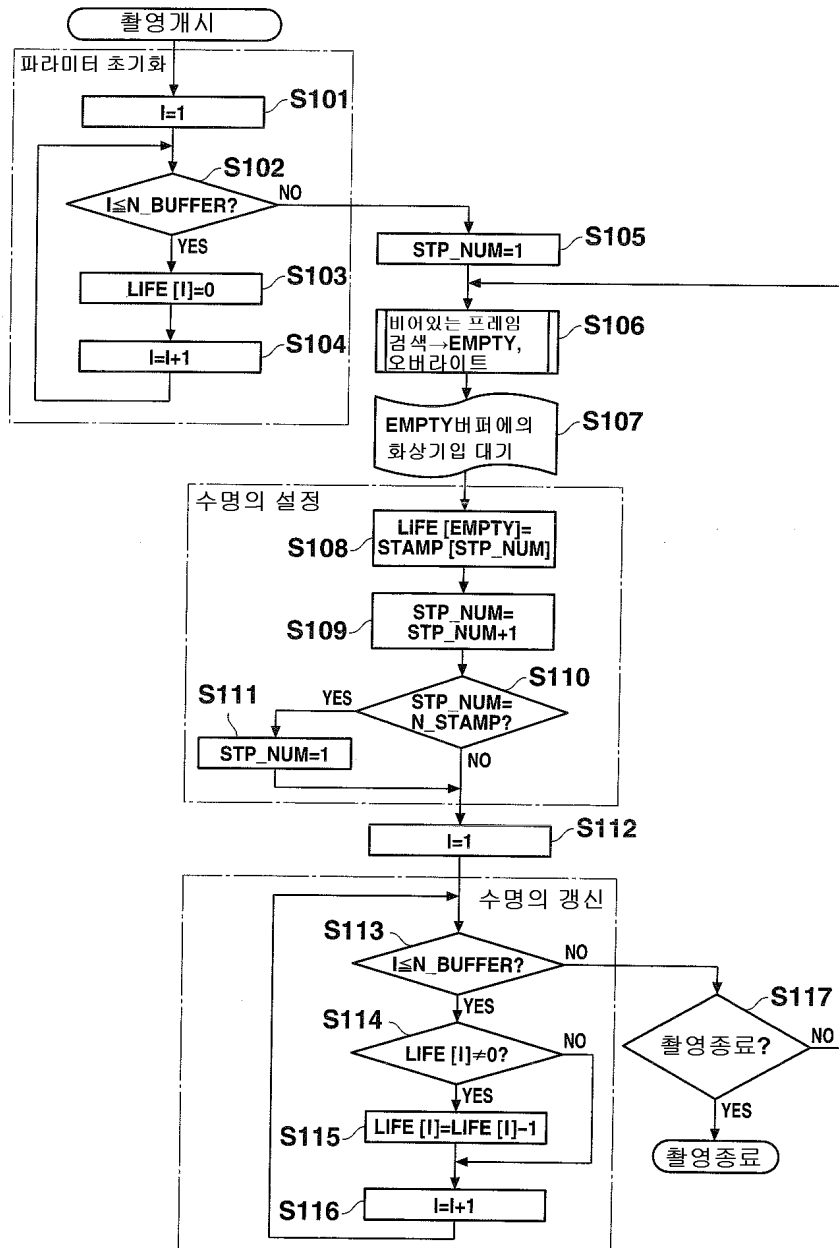
*1*

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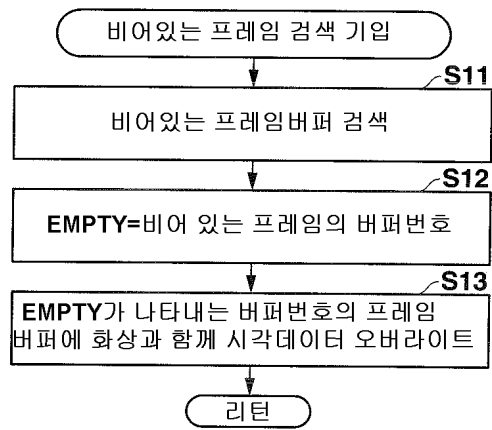




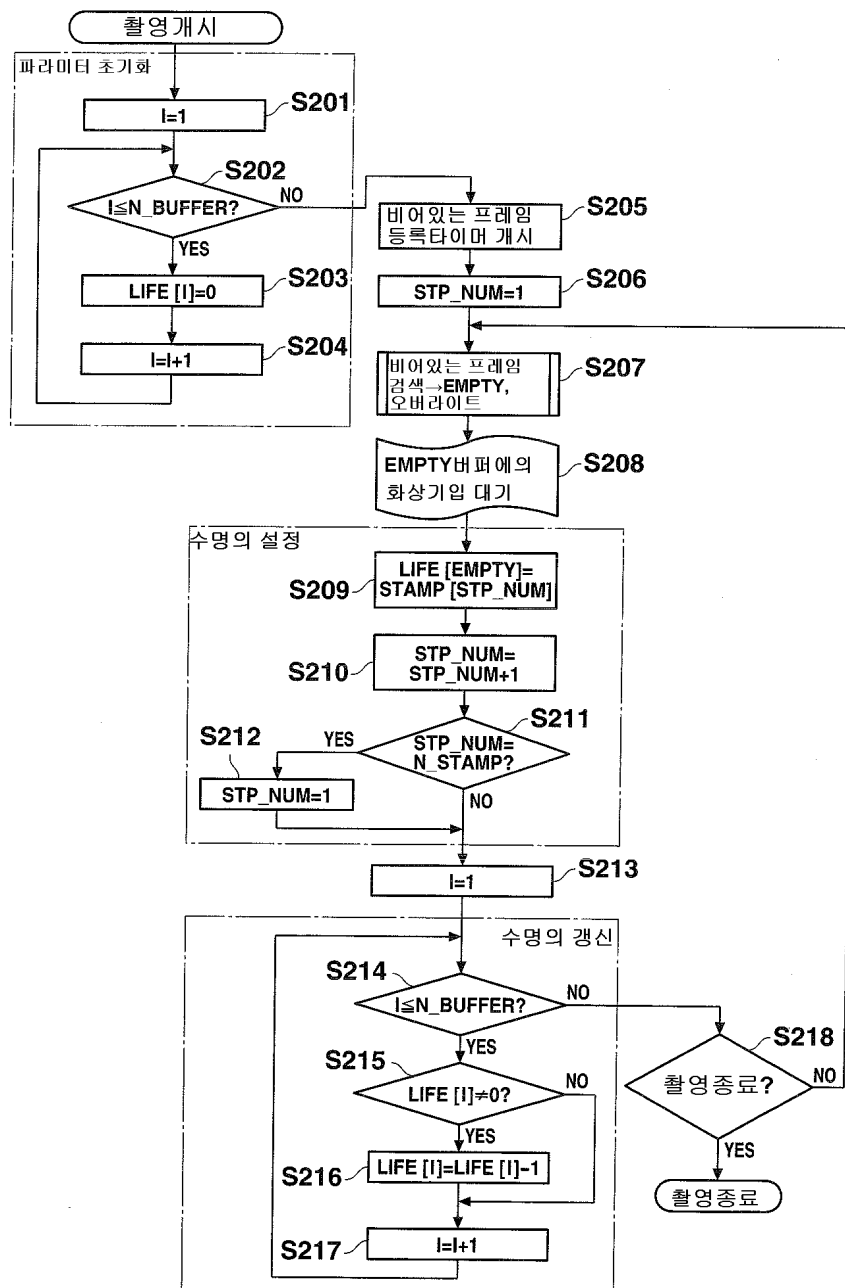
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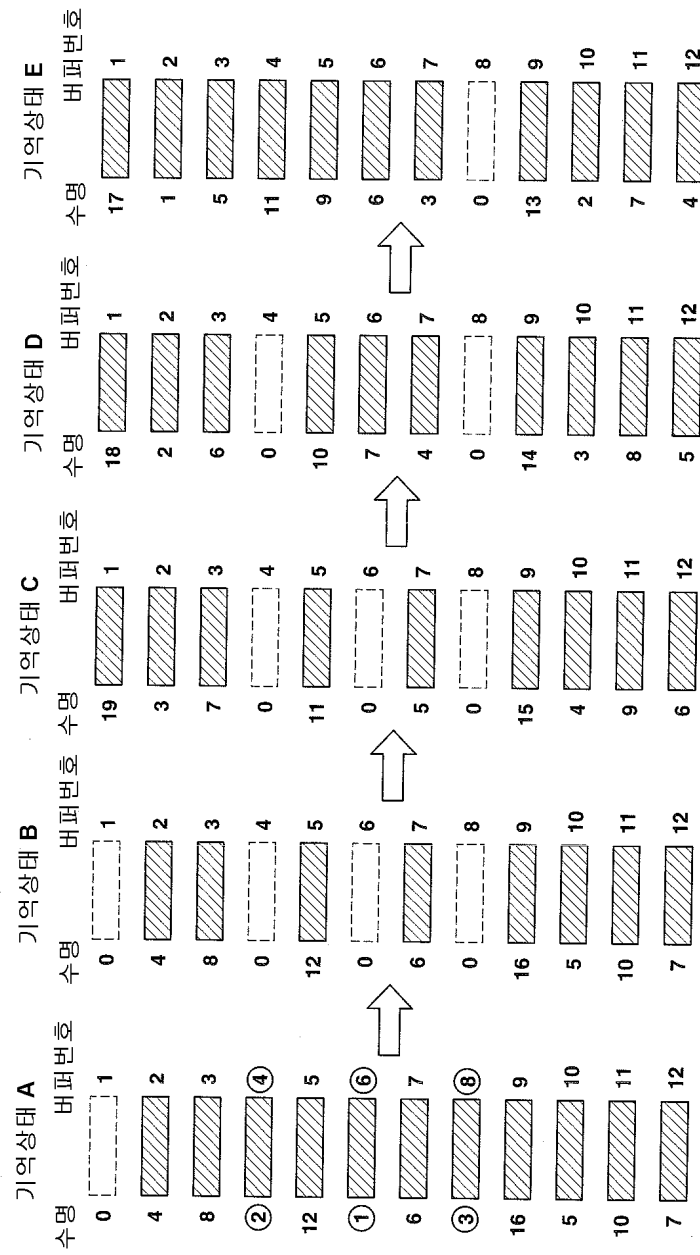


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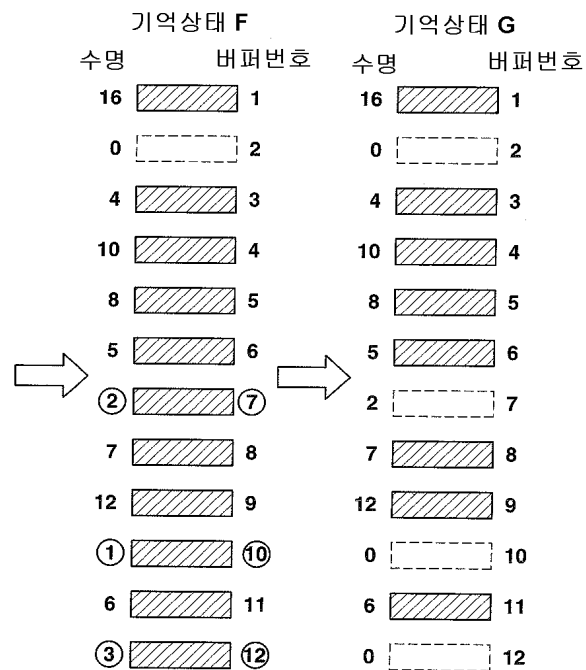


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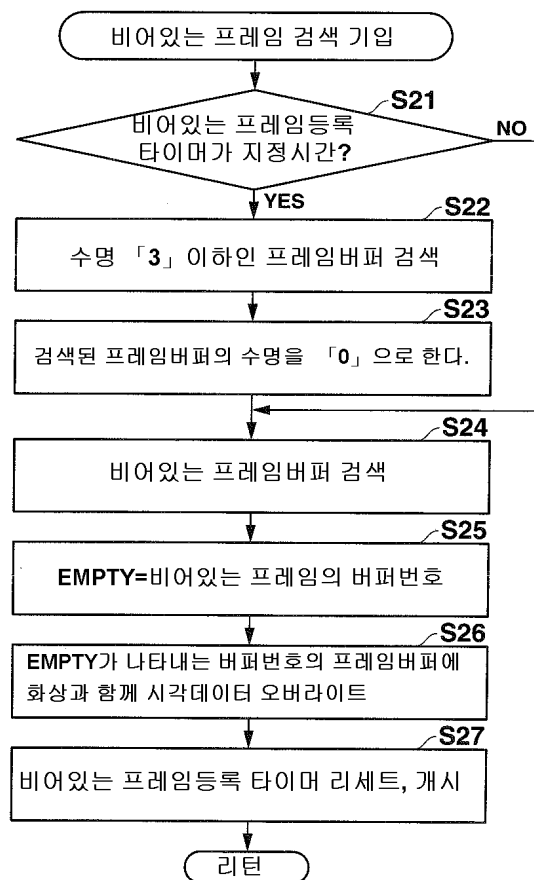




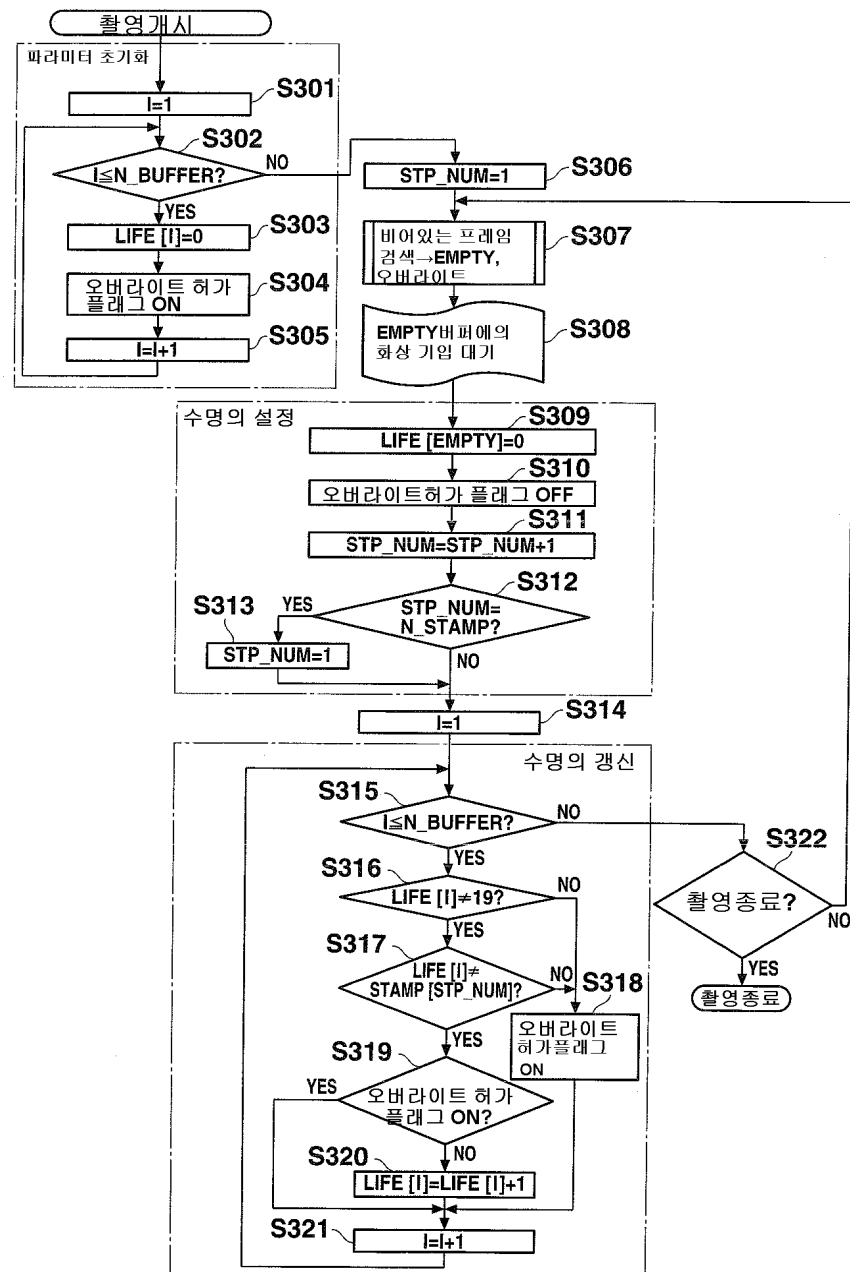
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기억상태 A		기억상태 B		기억상태 C		기억상태 D		기억상태 E	
수명	버퍼번호	수명	버퍼번호	수명	버퍼번호	수명	버퍼번호	수명	버퍼번호
19	1(ON)	19	1(ON)	0	1	1	1	2	1
15	2	16	2	17	2	18	2	19	2(ON)
11	3	12	3	13	3	14	3	15	3
17	4	18	4	19	4(ON)	19	4(ON)	0	4
7	5	8	5	9	5	10	5	11	5
18	6	19	6(ON)	19	6(ON)	0	6	1	6
11	7(ON)	0	7	1	7	2	7	3	7
16	8	17	8	18	8	19	8(ON)	19	8(ON)
3	9	4	9	5	9	6	9	7	9
14	10	15	10	16	10	17	10	18	10
9	11	10	11	11	11(ON)	11	11(ON)	11	11(ON)
12	12	13	12	14	12	15	12	16	12
(19)		(7)		(11)		(7)		(19)	

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