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10 - 2000 - 0037964
2000 07 04

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n*n

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가

가

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1 .

2 1 (24) / 가

3 (12) (14) 2

4 1 (12) .

5 4 / (70/72) .

6 5 (78) .

7 2 .

8 2 .

(Image) (zoom) , (Natural Image)

2 .

(PC)가

가 (Zoom) (Interpolat

ion) 가 , 가

2 (2 - D Linear Interpolation) ,

(smoothing) (degradation) .

가 2 ,

가 2 .

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 / 2
 ; n*n
 ; 2 ;

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 / 2
 ; n*n
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 2 ; 1 2
 , 2

, 2
 (a) ; (a)
 가 2
 가 (c) ; (c) (b) ;
 n*n 가
 (d) ; (c) 가
 (e) , 2
 .

, 2
 .
 1
 (20), (12), (14) (16)
 .

1 (20) IN
 (edge) ,
 (20) 2
 (20) (W_NW,W_NE,W_SW,W_SE) .
 (20) , 2 (W_NW,W_NE,W_SW,W_SE) / (EDG)
 . , 2 , , ,
 4 , W_NW
 W_NE , W_SW , W

_SE (22), (24), (26), (28) (30) (20) .
 (20) IN 가 (edge) .
 99 - 7910).
 (24) (20) (MOD_EDG) (pivot) (24) 8 .
 (26) (24) (CX, CY) , (CX,CY) (EPX,EPY) (EDG) .
 (CX, CY) (EPX, EPY) (28) 가 (26) (W_N
 (28) 1 (TX,TY) 2 (W_N
 W,W_NE,W_SW,W_SE) .
 (28) (30) 1 1 (C
 X, CY) , (EPX, EPY) (28) 1 (TX, TY) .
 (30) 1 (30) (R
 ead Only Memory: , ROM) .
 , (12) n*n n (tap) 2
 . , (12) (Cv1~Cvn)
 . , (Ch1~Chn)
 (14) (20) 2 (W_NW,W_NE,
 W_SW,W_SE) 가 x,y , , , , A,B,C,D , (x,y)
 (I) $A*(W_NW) + B*(W_NE) + C*(W_SW) + D*(W_WE)$ (12)
 (14) 3 .
 (MUX,16) (20) (EDG) ,
 (12) OUT , (16) 가 OUT .
 가

, $\frac{(12)^2}{8}$ (12) $\frac{(24)^2}{2 \cdot 3 \cdot 3}$ (EDG) 가
 , 가
 가
 ,
 2 1 (24) / 가
 , $\frac{2 \cdot 3 \cdot 3}{2}$ 2 A
 , B
 2 , 가 $3 \cdot 3$, / 가 가
 ,
 3 (12) (14) 2
 , 2 8 2
 ,
 3 , 2 (lpx) $8 \cdot 8$ (P11~P88) ,
 8 (I1~I8) (I1~I8) (lpx)
 (W_NW, W_NE, W_SW, W_SE) (lpx) (P44, P54, P45, P55) 2
 (lpx)
 4 1 (12) 4 , (12)
 (70) (72)
 3 4 , (70) 8 (P11~P81, P12~P82, ..., P18
 ~P88) (Cv1~Cv8) (I1~I8) (I1~I8)
 (Ch1~Ch8) (72) 8 (I1~I8) (lpx)
 OUT
 5 4 / (70/72) 5 , /
 (70/72) / (74), (76) (78)
 5 / (74) / (V_BND/H_BND)) ,
 / 가 , / 8
 ,
 (76) / (V_EDG/H_EDG) , 가
 , 3 가 I4 , P44 P34 가
 (76) 8 (P14~P84)
 P44 P34 P14~P34 ,

P44 P14~P34

(78) / (Cv1~Cv8/Ch1~Ch8) (76) 8

OUT

6 5 (78) 6 (78) 8

(80~84) 가 (86)

6 (80~84) 8 (P1~P8) / (Cv

1~Cv8/Ch1~Ch8)가 (80~84) 가 (86) OU

. 가 (86) 가 /

T

7 2 (116) 2 (118) (120), (112), 1 (114),

(120) 1

(20)

(112) 3 (112) 8*8 (P18~P88) (Cv1~Cv8)

(I1~I8)

1 (114) (EDG) (112) (PNE,PNW,PSE,PSW)

(PNE,PNW,PSE,PSW) 가 , 1 (114) 4

(112) 가 1 (114)

2 (118) (EDG) (Ch1~Ch8) 2

(W_NW,W_NE,W_SW,W_SE) 가 , 2

(118) (120) 2 (W_NW,W_NE,

W_SW,W_SE) 가 , 2 (118)

(Ch1~Ch8)

(116) 1 (112) 2 (118)

OUT

가 (116) , 1 2 (114,118) , 4

(PNE,PNW,PSE,PSW) 2 (W_NW,W_NE,W_SW,W_SE)가

(116) , 1

2 (114,118) , (I1~I8) (Ch1~Ch8)

가 , 6 , 가 가 , ,
가 가 , .

8 2 .

1 8 , (20) IN (100
) . , 100 IN 가 ,
, , , (pivot)
.

100 , (20)
2 (102) . ,
(26) 100 (CX,CY) (EPX,EPY)
(CX,XY) (EPX,EPY) 1 (28) (TX,TY) (28)
(26) . (26) 1 (TX,TY) 2
(W_NW,W_NE,W_SW,W_SE) .

102 , 가 가 (104) .

104 , 가 , , n*n n
(106) . , , (Cv1~Cvn)
, (Ch1~Chn)

, 104 가 , (20) 2
(W_NW,W_NE,W_SW,W_SE)
(108) .

, 8 104 108 .
7 , 102 (112) n*n
(EDG) , n (126)
, 가 가
(116) , 1 2 (114,
2 (W_NW,W
_NE,W_SW,W_SE)

, 가 (116) , 1 2
(114,118) , (I1~I8) (Ch1~Ch8)
.

, 2 가 가
8 . , 가
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가 가 가
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가 , 2 가
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(57)

1.

, , 2
/ ;

$n \times n$

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2

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2

2.

1 ,

가 ;

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, 1 2 ,
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, 1^2 1^2 .

3.

, 2^2 / 2^2 ;

$n \times n$

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1^2 ;

2^2 ; 2^2

1^2 2^2 , 2^2 .

4.

2^2 ,

(a) ;

(b) (a) 2^2 ;

(c) 가 가 ;

(d) (c) 가 , $n \times n$;

(e) (c) 가 , 2^2 2^2 .

5.

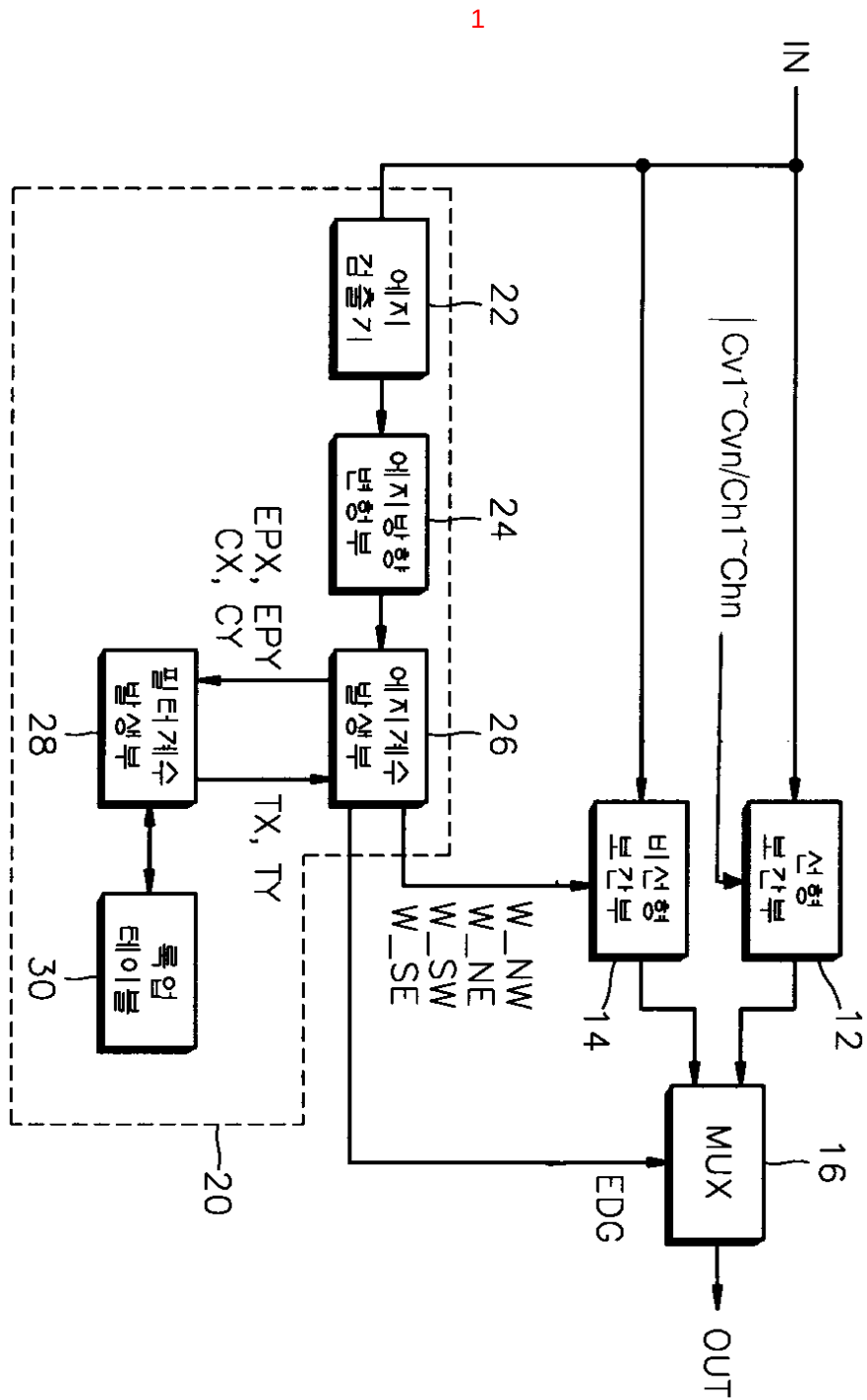
4^2 , (c) (e)

(f) $n \times n$;

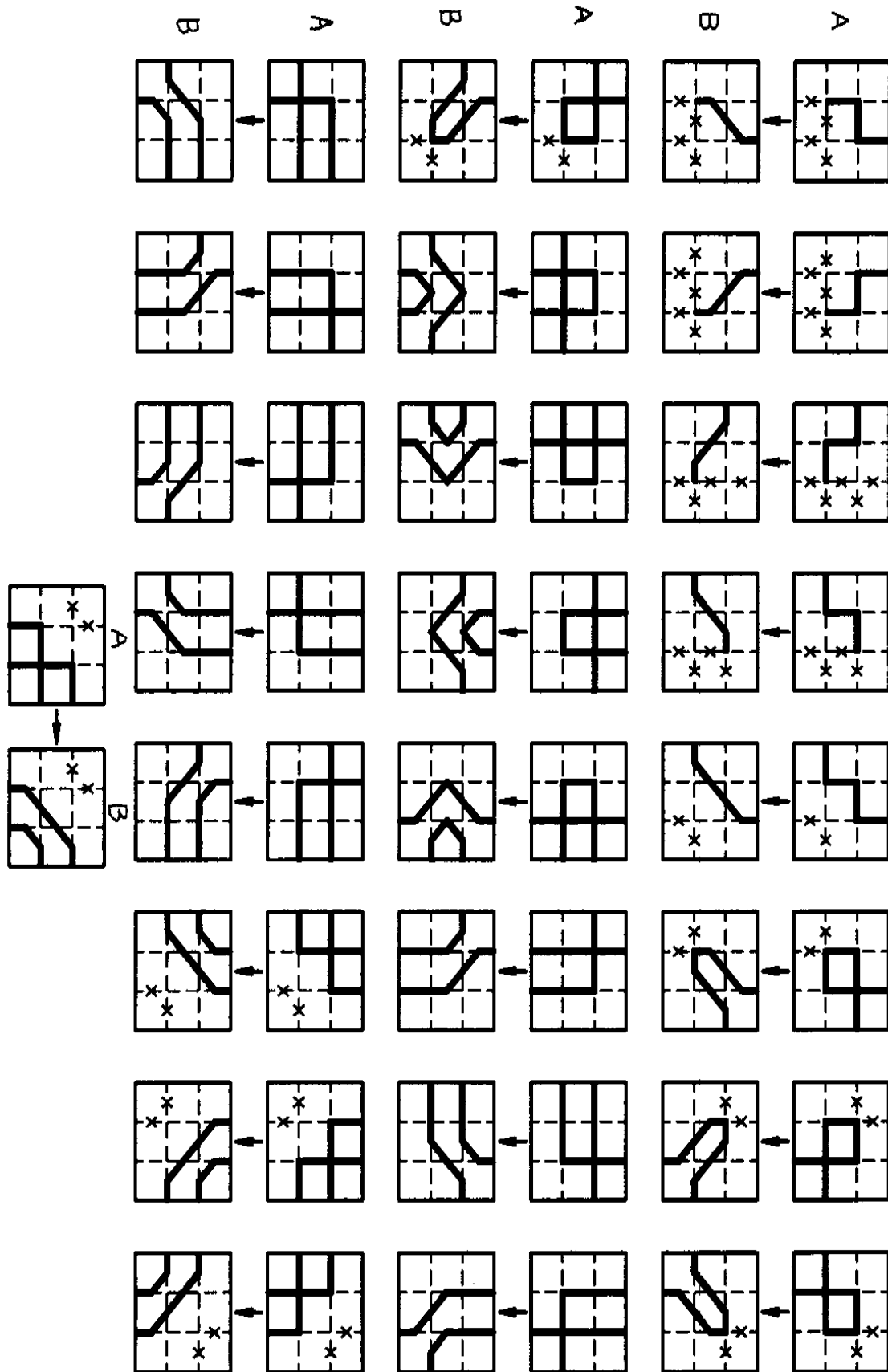
(g) 가 가 ;

(h) (g) 가 , (f) ;

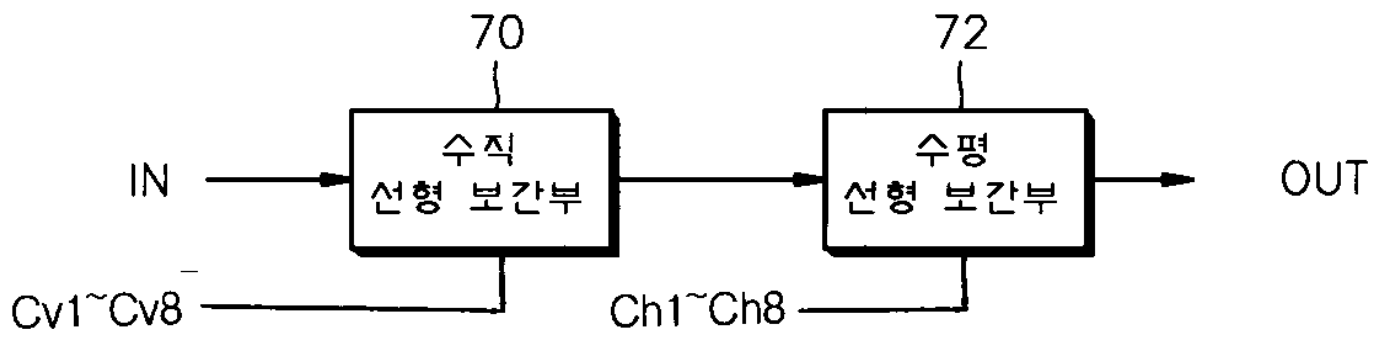
(i) (g) 가 , 2 2



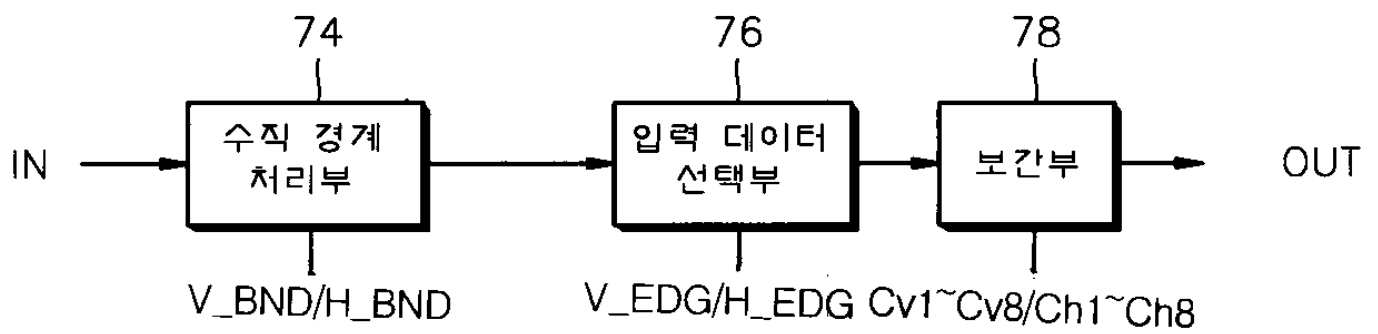
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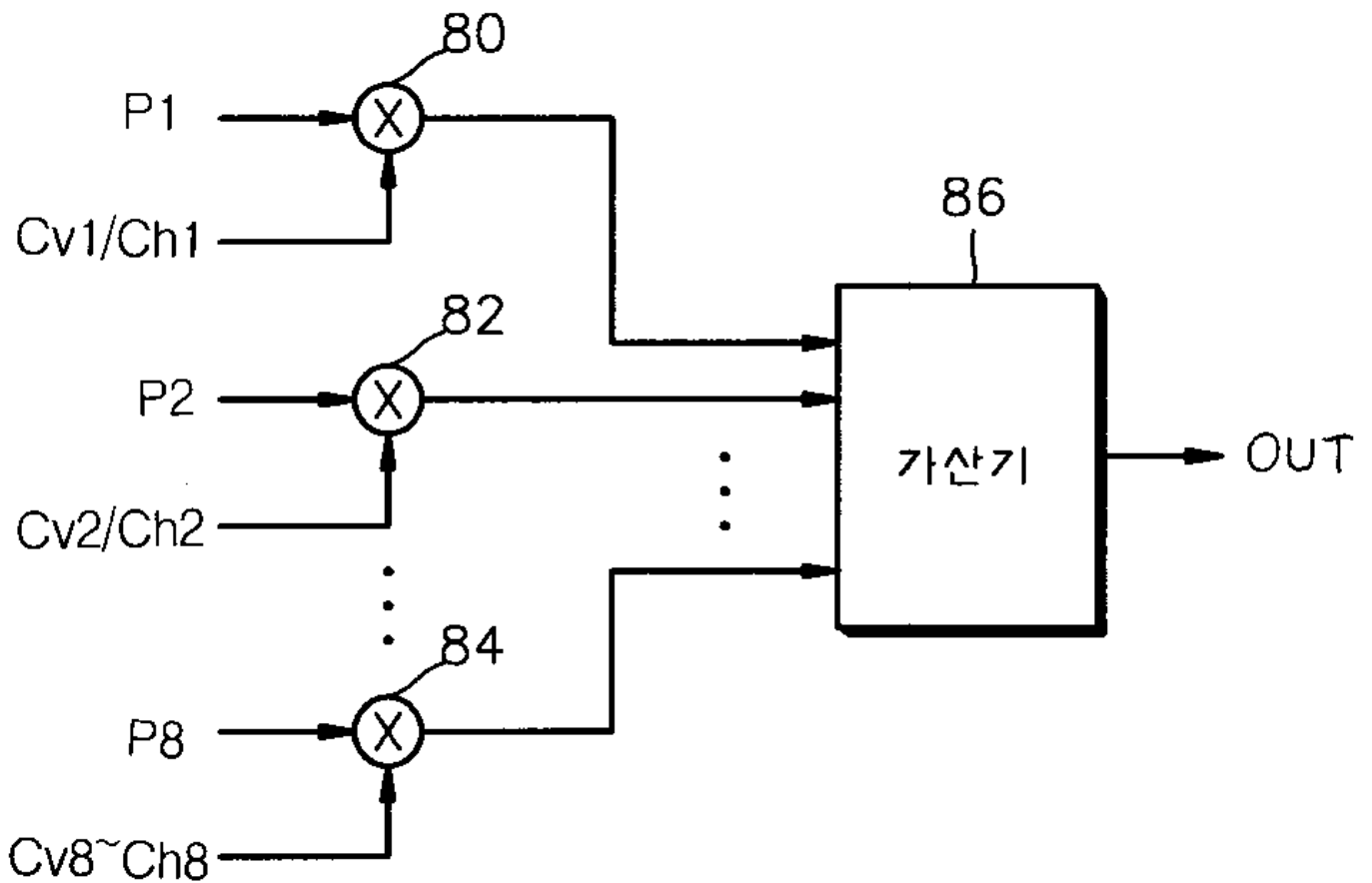
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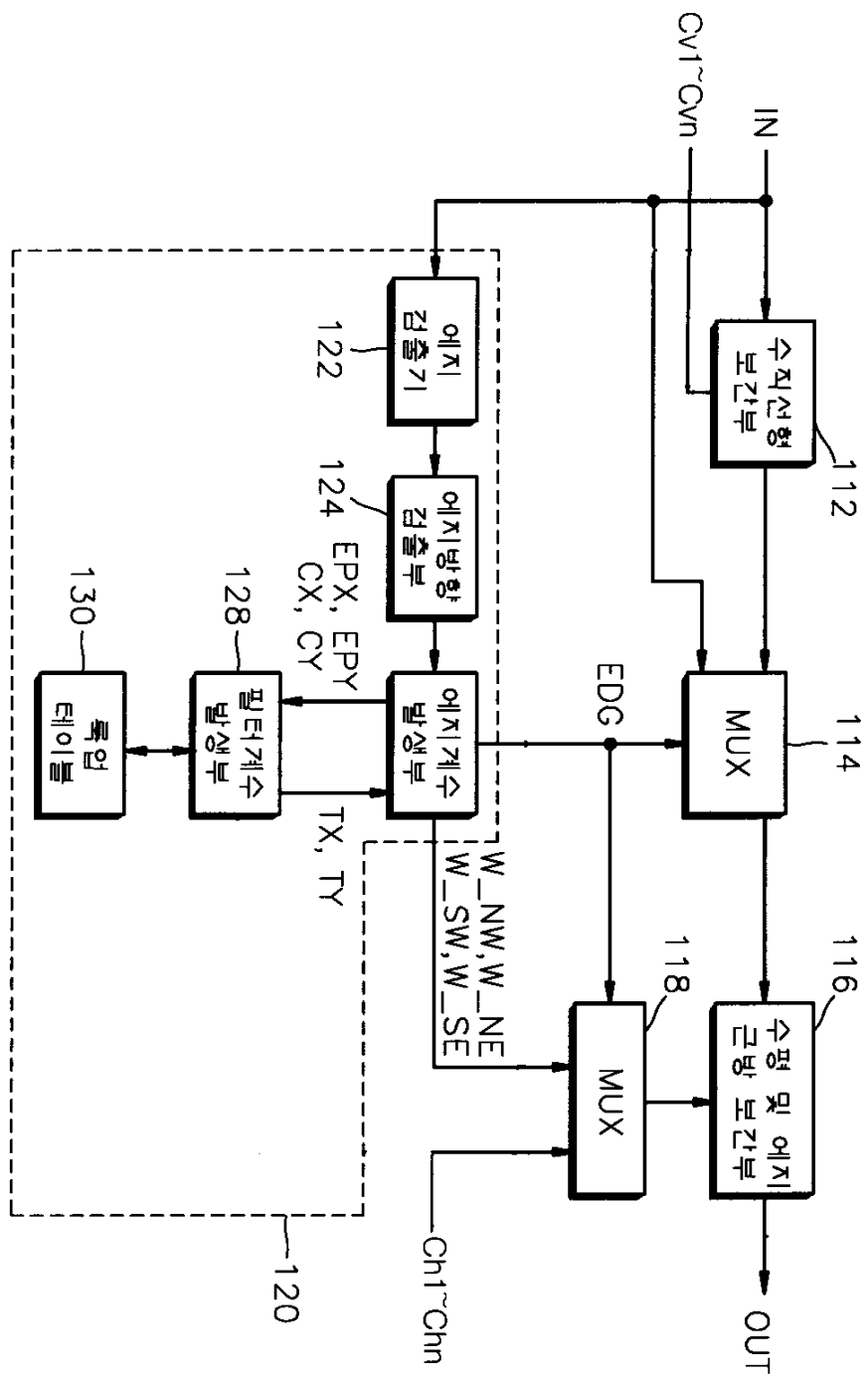
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6



7



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