

(19)  
(12)

(KR)  
(A)

(51) 。 Int. Cl.<sup>7</sup>  
G09G 3/36  
G09G 3/20

(11)  
(43)

10-2004-0075010  
2004 08 26

(21)  
(22)  
(86)  
(86)

10-2004-7009536  
2004 06 18  
2004 06 18  
PCT/IB2002/005532  
2002 12 20

(87)  
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WO 2003/054847  
2003 07 03

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(74)

10/028,380  
-5621  
-5656  
-5656

2001 12 21

(US)  
1  
6  
6

(54)

,

(10)

(12)가

(10)

(12)

(10)



가 RLCD  
(mirror-reflected) 319, 318, 239, 238, 159, 158, 79, 78, ..., 81, 80, 1, 0  
8 8  
(a matrix transposition) 40\*4  
4 40  
(, : Ping Pong method)  
320\*96 SRAM  
320 0, 1, 80,  
81, 160, 161, 240, 241, 2, 3, 82, 83, ... , 238, 239, 318, 319 32  
320 3\*32 = 96 가  
60K SRAM

\_\_\_\_\_

(a read-modify-write mode)  
verwrite) 320\*96 SRAM (o

- 1 27
- 2 1
- 3
- 4 3
- 5 6

SRAM  
80\*4 가 9 가  
320 ,가 318 319 80\*4 1  
, 8 26 가 , ( 0 25) ( 40\*4 = 160  
26 0 가 , 2  
1

$$A_{ni} = \text{Int}[A_{(n-1)i} / 4] + 40 * \text{Remainder}[A_{(n-1)i} / 4],$$

, n i 0 159 .

( 2)

$$A_{ni} = \text{Int}[B_{(n-1)i} / 4] + 40 * \text{Remainder}[B_{(n-1)i} / 4],$$

, B<sub>(n-1)i</sub> = 159 - A<sub>(n-1)i</sub> .

(10) 가 3 (10) 320\*96 S  
RAM (12), (14), 9 (16), D  
(10) ( ViR, ViG, ViB ) 3  
(advanced) , 1 ( (active low) )가 AdvH AdvV 가 .  
3 Ho(18) Vo(20) 1 VoR, VoG,  
VoB Ho, Vo  
(12)  
가 (12)  
(12) (14) Addr  
, (12) ViR, ViG, ViB  
(16) (12)

(14) 가 4 (14) 160\*8 SRAM  
(22), (24), (26), (combinatorial converter)(28), (30)  
(159-X), (32,34), (36,38), 1  
( = 0) , (24) (0, 1, 2, 3, ..., 319)  
1 가 Addr , 1 8  
(28) (22) 1 , SRA  
M(22) 0, 1, 2, 3, 4, ..., 159 (12)  
0, 40, 80, 120, 1, ... , 159 1  
, Addr SRAM(22) SRAM(22) ( (28) (A,B)  
28) SRAM(22) 4 (0, 1, 2, 3) (0, 40, 80,  
'Y' ( 1 + , B = 0 Y = A , B = 1 , Y = A + 40 , B = 2 , Y  
120)) , B = 3 Y = A + 120 . 2 , SRAM(22) 0, 10, 20, 30, ... ,  
= A + 80 , B = 3 Y = A + 120 . 2 , SRAM(22) 0, 10, 20, 30, ... ,  
159가 (24) 'B' (toggling)  
(24) 'Remainder[A<sub>(n-1)i</sub> / 4]

가 , 'A' 8 5  
'Y' 5 'Int[A<sub>(n-1)i</sub> / 4] , (28)  
'Y' A<sub>ni</sub> Y = A + 40B .  
' ' R1 가 (28) (30)  
) SRAM(22) '159 - X' (30) 'X' (30)  
(28) 'A<sub>(n-1)i</sub>' (28) 'B<sub>(n-1)i</sub>' 'B<sub>(n-1)i</sub>'  
(28) 가  
가 가 (318)가 (319)  
(319)가 (318)  
(26) (42)  
OR (40)

4 5 6 (14) 5 6  
(14)

(57)

1. (reorder) (a pixel shuffle)  
r)(10) (12)  
(14)  
(14)  
a) (Radr), (D) (12)  
(Q) (a sequence)  
(22)  
b) (Q) (a combinatorial converter)(  
28) (28) (D) (28) (12)  
(22)

2. 1 (28) (Q) (a constant integer multiplicand)  
(product) 가

3. 1

4. 1

(22)

(Radr)

(24)

5.

4

(24)

(36,38)

6.

1

(14)

(16)

(12)

7.

1

(28)

8.

7

(28)

(a mirror image)

(a computing block)(30)

9.

7

(RLCD)

10.

9

(14)

RLCD

(24)

(22

11.

10

(14) RLCD

(26)

12.

1

(12)

가 (12) 가 , 가

(12)

1

비디오 라인 번호 어드레스

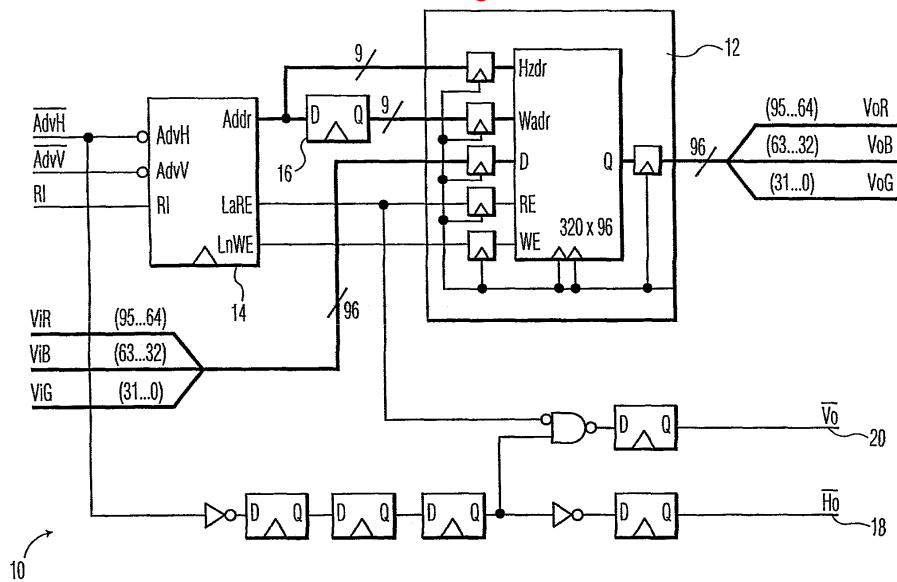
|    |    |      |      |      |      |      |     |      |      |      |      |      |
|----|----|------|------|------|------|------|-----|------|------|------|------|------|
| 0  | 0, | 1,   | 2,   | 3,   | 4,   | 5,   | ... | 155, | 156, | 157, | 158, | 159; |
| 1  | 0, | 40,  | 80,  | 120, | 1,   | 41,  | ... | 158, | 39,  | 79,  | 119, | 159; |
| 2  | 0, | 10,  | 20,  | 30,  | 40,  | 50,  | ... | 119, | 129, | 139, | 149, | 159; |
| 3  | 0, | 82,  | 5,   | 87,  | 10,  | 92,  | ... | 149, | 72,  | 154, | 77,  | 159; |
| 4  | 0, | 100, | 41,  | 141, | 82,  | 23,  | ... | 77,  | 18,  | 118, | 59,  | 159; |
| 5  | 0, | 25,  | 50,  | 75,  | 100, | 125, | ... | 59,  | 84,  | 109, | 134, | 159; |
| 6  | 0, | 46,  | 92,  | 138, | 25,  | 71,  | ... | 134, | 21,  | 67,  | 113, | 159; |
| 7  | 0, | 91,  | 23,  | 114, | 46,  | 137, | ... | 113, | 45,  | 136, | 68,  | 159; |
| 8  | 0, | 142, | 125, | 108, | 91,  | 74,  | ... | 68,  | 51,  | 34,  | 17,  | 159; |
| 9  | 0, | 115, | 71,  | 27,  | 142, | 98,  | ... | 17,  | 132, | 88,  | 44,  | 159; |
| 10 | 0, | 148, | 137, | 126, | 115, | 104, | ... | 44,  | 33,  | 22,  | 11,  | 159; |
| 11 | 0, | 37,  | 74,  | 111, | 148, | 26,  | ... | 11,  | 48,  | 85,  | 122, | 159; |
| 12 | 0, | 49,  | 98,  | 147, | 37,  | 86,  | ... | 122, | 12,  | 61,  | 110, | 159; |
| 13 | 0, | 52,  | 104, | 156, | 49,  | 101, | ... | 110, | 3,   | 55,  | 107, | 159; |
| 14 | 0, | 13,  | 26,  | 39,  | 52,  | 65,  | ... | 107, | 120, | 133, | 146, | 159; |
| 15 | 0, | 43,  | 86,  | 129, | 13,  | 56,  | ... | 146, | 30,  | 73,  | 116, | 159; |
| 16 | 0, | 130, | 101, | 72,  | 43,  | 14,  | ... | 116, | 87,  | 58,  | 29,  | 159; |
| 17 | 0, | 112, | 65,  | 18,  | 130, | 83,  | ... | 29,  | 141, | 94,  | 47,  | 159; |
| 18 | 0, | 28,  | 56,  | 84,  | 112, | 140, | ... | 47,  | 75,  | 103, | 131, | 159; |
| 19 | 0, | 7,   | 14,  | 21,  | 28,  | 35,  | ... | 131, | 138, | 145, | 152, | 159; |
| 20 | 0, | 121, | 83,  | 45,  | 7,   | 128, | ... | 152, | 114, | 76,  | 38,  | 159; |
| 21 | 0, | 70,  | 140, | 51,  | 121, | 32,  | ... | 38,  | 108, | 19,  | 89,  | 159; |
| 22 | 0, | 97,  | 35,  | 132, | 70,  | 8,   | ... | 89,  | 27,  | 124, | 62,  | 159; |
| 23 | 0, | 64,  | 128, | 33,  | 97,  | 2,   | ... | 62,  | 126, | 31,  | 95,  | 159; |
| 24 | 0, | 16,  | 32,  | 48,  | 64,  | 80,  | ... | 95,  | 111, | 127, | 143, | 159; |
| 25 | 0, | 4,   | 8,   | 12,  | 16,  | 20,  | ... | 143, | 147, | 151, | 155, | 159; |
| 26 | 0, | 1,   | 2,   | 3,   | 4,   | 5,   | ... | 155, | 156, | 157, | 158, | 159; |

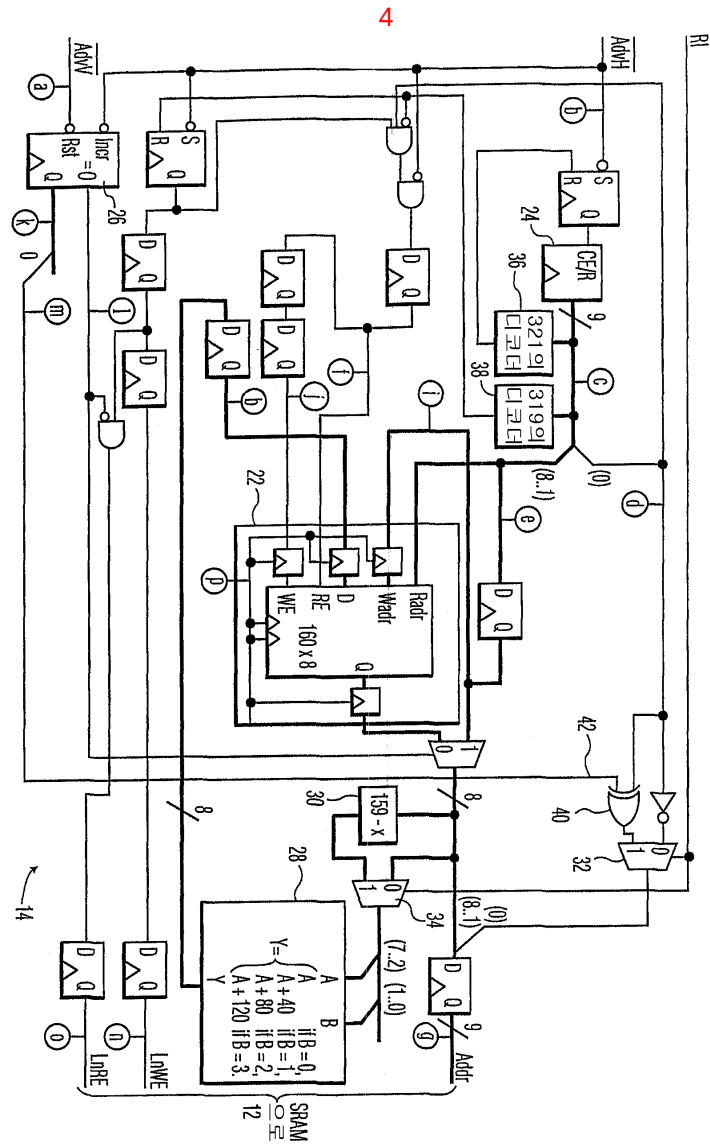
2

비디오 라인 번호      어드레스

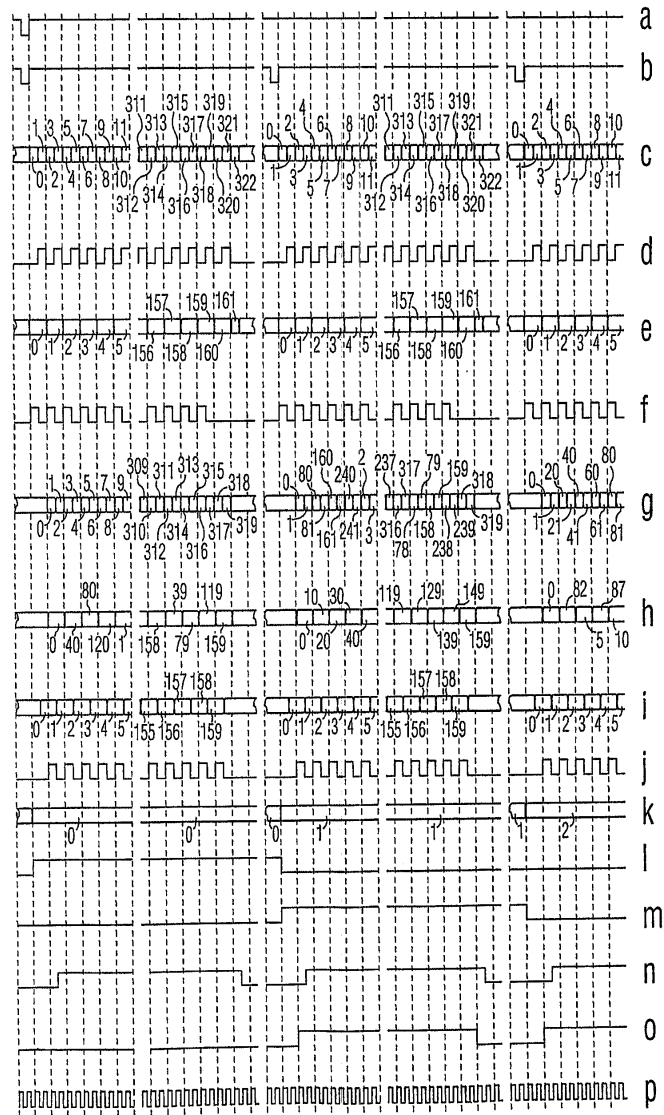
|    |      |      |      |      |      |      |     |      |      |      |      |      |
|----|------|------|------|------|------|------|-----|------|------|------|------|------|
| 0  | 0,   | 1,   | 2,   | 3,   | 4,   | 5,   | ... | 155, | 156, | 157, | 158, | 159; |
| 1  | 159, | 119, | 79,  | 39,  | 158, | 118, | ... | 1,   | 120, | 80,  | 40,  | 0;   |
| 2  | 0,   | 10,  | 20,  | 30,  | 40,  | 50,  | ... | 119, | 129, | 139, | 149, | 159; |
| 3  | 159, | 77,  | 154, | 72,  | 149, | 67,  | ... | 10,  | 87,  | 5,   | 82,  | 0;   |
| 4  | 0,   | 100, | 41,  | 141, | 82,  | 23,  | ... | 77,  | 18,  | 118, | 59,  | 159; |
| 5  | 159, | 134, | 109, | 84,  | 59,  | 34,  | ... | 100, | 75,  | 50,  | 25,  | 0;   |
| 6  | 0,   | 46,  | 92,  | 138, | 25,  | 71,  | ... | 134, | 21,  | 67,  | 113, | 159; |
| 7  | 159, | 68,  | 136, | 45,  | 113, | 22,  | ... | 46,  | 114, | 23,  | 91,  | 0;   |
| 8  | 0,   | 142, | 125, | 108, | 91,  | 74,  | ... | 68,  | 51,  | 34,  | 17,  | 159; |
| 9  | 159, | 44,  | 88,  | 132, | 17,  | 61,  | ... | 142, | 27,  | 71,  | 115, | 0;   |
| 10 | 0,   | 148, | 137, | 126, | 115, | 104, | ... | 44,  | 33,  | 22,  | 11,  | 159; |
| 11 | 159, | 122, | 85,  | 48,  | 11,  | 133, | ... | 148, | 111, | 74,  | 37,  | 0;   |
| 12 | 0,   | 49,  | 98,  | 147, | 37,  | 86,  | ... | 122, | 12,  | 61,  | 110, | 159; |
| 13 | 159, | 107, | 55,  | 3,   | 110, | 58,  | ... | 49,  | 156, | 104, | 52,  | 0;   |
| 14 | 0,   | 13,  | 26,  | 39,  | 52,  | 65,  | ... | 107, | 120, | 133, | 146, | 159; |
| 15 | 159, | 116, | 73,  | 30,  | 146, | 103, | ... | 13,  | 129, | 86,  | 43,  | 0;   |
| 16 | 0,   | 130, | 101, | 72,  | 43,  | 14,  | ... | 116, | 87,  | 58,  | 29,  | 159; |
| 17 | 159, | 47,  | 94,  | 141, | 29,  | 76,  | ... | 130, | 18,  | 65,  | 112, | 0;   |
| 18 | 0,   | 28,  | 56,  | 84,  | 112, | 140, | ... | 47,  | 75,  | 103, | 131, | 159; |
| 19 | 159, | 152, | 145, | 138, | 131, | 124, | ... | 28,  | 21,  | 14,  | 7,   | 0;   |
| 20 | 0,   | 121, | 83,  | 45,  | 7,   | 128, | ... | 152, | 114, | 76,  | 38,  | 159; |
| 21 | 159, | 89,  | 19,  | 108, | 38,  | 127, | ... | 121, | 51,  | 140, | 70,  | 0;   |
| 22 | 0,   | 97,  | 35,  | 132, | 70,  | 8,   | ... | 89,  | 27,  | 124, | 62,  | 159; |
| 23 | 159, | 95,  | 31,  | 126, | 62,  | 157, | ... | 97,  | 33,  | 128, | 64,  | 0;   |
| 24 | 0,   | 16,  | 32,  | 48,  | 64,  | 80,  | ... | 95,  | 111, | 127, | 143, | 159; |
| 25 | 159, | 155, | 151, | 147, | 143, | 139, | ... | 16,  | 12,  | 8,   | 4,   | 0;   |
| 26 | 0,   | 1,   | 2,   | 3,   | 4,   | 5,   | ... | 155, | 156, | 157, | 158, | 159; |

3

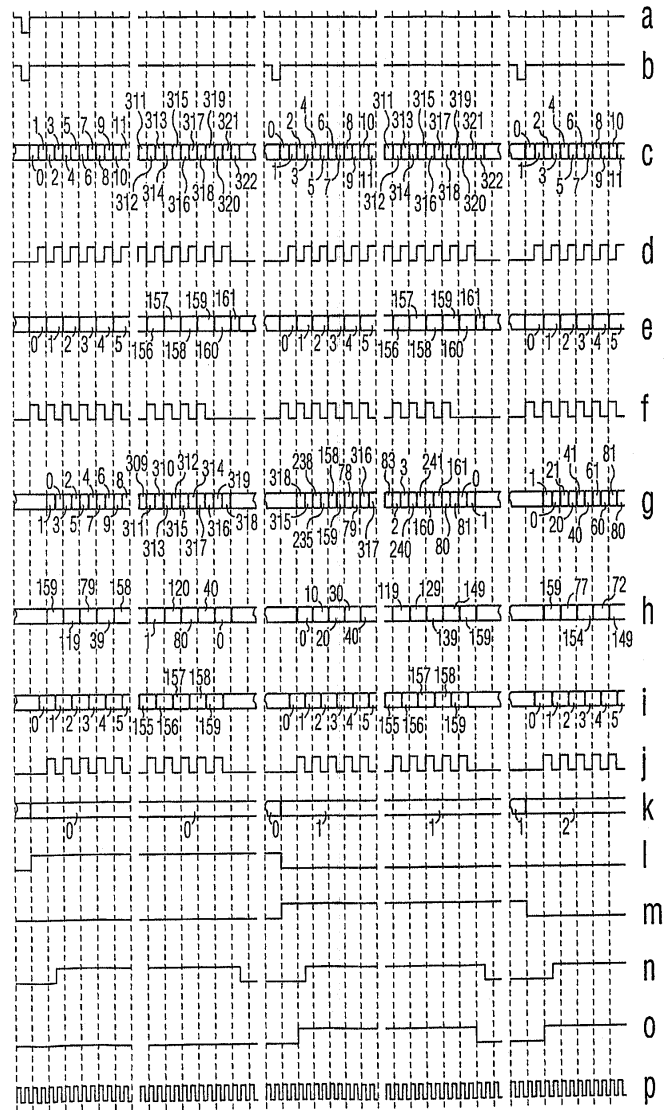




5



6



The diagram illustrates the control system for a 1000-ton hydraulic press. It includes a power supply section with a transformer (T) and a motor (M) section with a motor (M). The central control unit (ZK) is labeled with a 1000-ton capacity. The system is controlled by a series of relays (K1-K10) and switches (SA1-SA4). The diagram shows the electrical connections between these components, including the main power lines and the control lines. A legend at the bottom right identifies the symbols used in the diagram.