

(19)  
(12)

(KR)  
(Y1)

(51) 。 Int. Cl. 7  
H04B 3/54

(45)  
(11)  
(24)

2002 07 27  
20 - 0283809  
2002 07 18

(21) 20 - 2002 - 0011640  
(22) 2002 04 17  
(62) 2001 - 0039836  
: 2001 07 04

2001 07 04

(73) ( )  
1 651 - 3 9

(72)  
2 742 102 504  
102 - 40

(74)

:

가 :

(54)

(HA) (FA), (AMR)  
가 가 , 가 ,  
가 가 , 가 ,  
가 가 , 가 ,

1

, , , , , , PLC

1 3

4 5  
(HA)

6 7  
A)

(F

8

9

10

11

12

13

<

100 :

102 - 1, ..., 102 - N :      104 - 1, ..., 104 - N :

110 :

120 :      130 :

140 :      150 :

300 :      302 :

304 :      306 : CRC

308 : 310 :

(PLC; Power Line Communication) (media)  
60 Hz (carrier)  
, 가 가 .

가  
(PLC) (AMR; Automatic Meter Reading), (PLC) (H  
A; Home Automation), (Building Automation), (FA; Factory Automation)

(AMR) 가 , , , , 가  
( )

, 가 ,  
(HA) 가 가 가  
(Lighting), 가 , 가 , , CCD 가  
ce), ( HVAC: Heating, Ventilation Air Conditioning), / (Security Devi  
( HA ) (Audio/Video)

(Home Automation Server) HA  
가 HA (PC), , PDA

(Building Automation)

(FA; Factory Automation) NC ,  
( FA )

)가 1999 - 069965 ( "

1999 - 069965 가

1999 - 069965

, 가

가

1

1

2

.

1

2

가 가

가

2

1

가 가

가

가

1999 - 069965

(carrier frequency)가 1  
(noise)

(noise)

가

가

, HA, FA

가

가

가

가

가

가

가

1

가 가

가

(AMR)

(HA),

(FA),

1

1

1

2

2

1

2

2

2

1

1

2

(carrier)

가

가 가

(carrier)

가

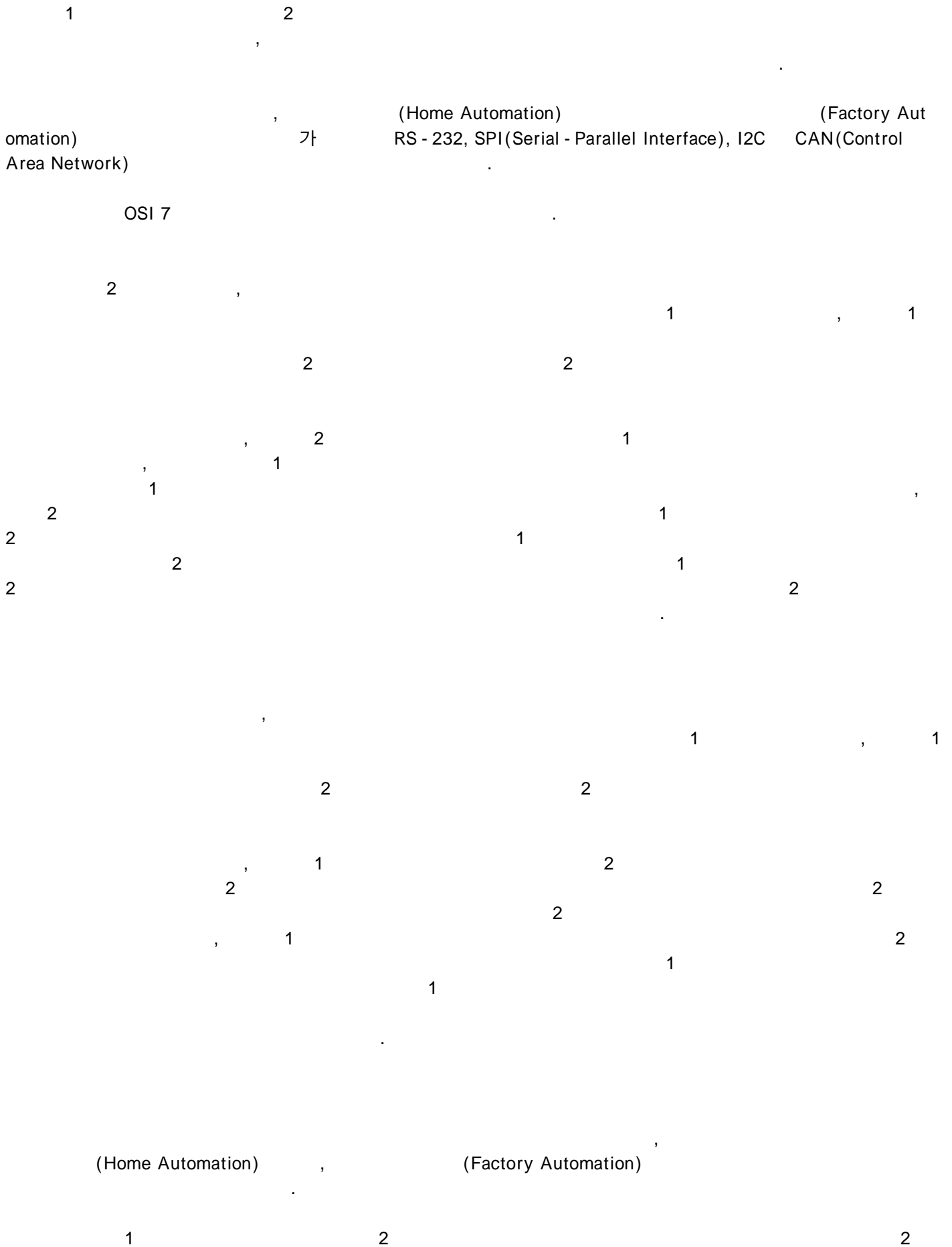
(correlation)

1

2

1

2



1 3 (100, 110)  
(FA) (100, 110) 4 5 (HA) 6 7

, 1 , 2 7 1 . 1 ,  
, 가 .

1 , (100),  
(102 - 1, ..., 102 - i, ... 102 ), (104 - 1, ..., 104 - i, ... 104 )  
(130) (110), (110) (100) (120),  
(150), (140) (140), (140) (PC)(160), PCS  
(162), PDA(164)

(100, 110)

110) (100,

(100)

(110)

(11

0)

0, 1

(120)

(100)

(110)

(120)

(130)

(140)

(140)

2 3

2 , , 가

(140)

(140)

3 , (102)

(100)

(100)

(120),

(130)

PPP, ADSL

(140)

(150)

3 (HA)  
 , 가 , /  
 HA

4 HA HA (402) TP  
 (100) (100) 1  
 (100)

HA  
 (100, 110)  
 HA 가 가 가 가  
 가 FA

5 HA HA (402) TP  
 (100) (100) (100)  
 (120), (140)  
 (100) (140)  
 / (100) HA

6 7 FA  
 5 7  
 NC 가 FA HA  
 가 가 가 (100, 110)  
 (140)

8  
 8 (800), (820) (820), (820)  
 (850), (800), (830) (830), (830)  
 (840) (850)  
 가 (830)  
 (820)  
 (800) 가 (carrier) 가  
 (820) (800)  
 (800)



(810)

(800)

(820)

, CRC

(830)

(808),

0,1

(800)

(820)

(830)

(104)

( 9 )

OSI 7

(800)

(830)

(800)

OSI

CEbus

OSI 7

(830)

가

(830)

가

(830)

CRC

(830)

(850)

)

(100)

(850)

(110)

가

(100)

(830)

(840)

(Home Automation)

가

RS - 232C, SPI(Serial - Parallel Interface), I2C

(Factory Automation)

CAN(Control Area Netw

ork)

9

(800)

9

(800)

(802),

(804),

(804) CRC (806), (812), (814) (810), (804), (810) (804) (810) CRC (806) (812) (810)

(802) ADC (820) 0, 1

(804) (correlation) (804)

( ) 100us

(814) ROM (814) EEPROM ( )가

( 1ms ) (804) (808) (830)

(802) (804)

(810) (814) 400Khz 가 100Khz 200Khz 100us 25 가 200Khz ( 300 ) (810)

(carrier) 가

, 1 가

CRC (806) (808) 16 CRC 가 CRC (806) CRC (806) CRC

(812) (814) (804), 가 (810), CRC (806)

10 11 . 10  
 (110) (100)  
 , 6 (100)가 가  
 (100) (100) (110)

10 , ,  
 ( 1001). (110)  
 (100) ( 1003).  
 (100) ( 1005).  
 (110) ( 1007).  
 (100)  
 (110)가 ,  
 ( 1009). (110) (

1011).  
 (110)  
 (100) ( 1013).  
 (100) (110) ( 1015).  
 (110) (100)  
 ( 1017). (100)  
 (110) ( 1019), (110)  
 ( 1021). (100) , HA  
 , FA 가 (HA) (FA) .

11 , (100)  
 ( 1101). (100)  
 (110) ( 1103). 110  
 5 1123 10 . 10 11  
 (110) 가 (100)가 가  
 (100) . , 가

12

12 , (140) (110) ( (100) (100) (100)  
 1201), (100) (100) (104) ( 1  
 ( 1203), (100) (110)  
 205). (104), (100), (140) (104)  
 (140) ( 1207, 1209, 1211). (140) (104)  
 ( 1213). (140)  
 ( 1215)

13 (140)

13 , (1305) (1301) (1303)  
 가 (1301) (1307),  
 (1309), (1311)

(1319) (1321)

, 1325 (1313), (1315), (1317) (1  
 323) ,

가

가  
가

가

가

1

가

가

가

가

가

(AMR)

가

(HA),

(FA),

(57)

1.

1

;

1

2

;

2

2.

1

,

3.

1

,

1

2

1

2

;

2

1

2

;

(carrier)

가

- ,

;

;

,

가 가

4.

3

,

(carrier)

가

- ,

(correlation)

5.

3 ,

1 2

6.

3 ,

1 2

7.

3 ,

1 2

8.

3 ,

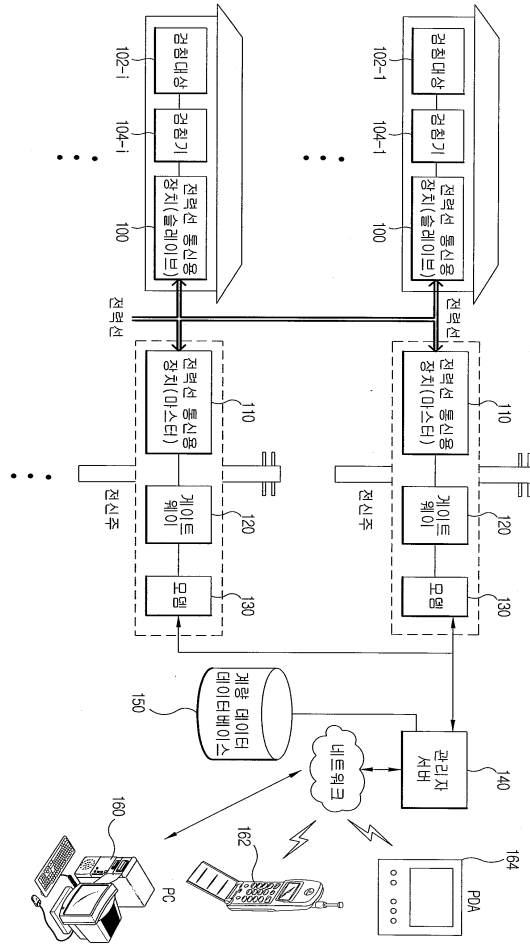
, 가 (Home Automation) RS - 232, SPI(Serial - Parallel Interface), I2C (Factory Automation) CAN(Control Area Network)

9.

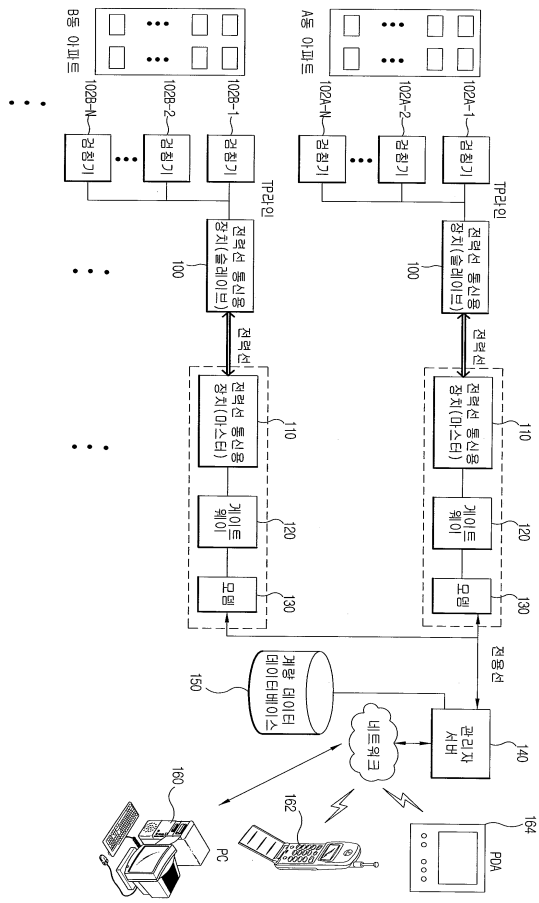
3 ,

OSI 7

1

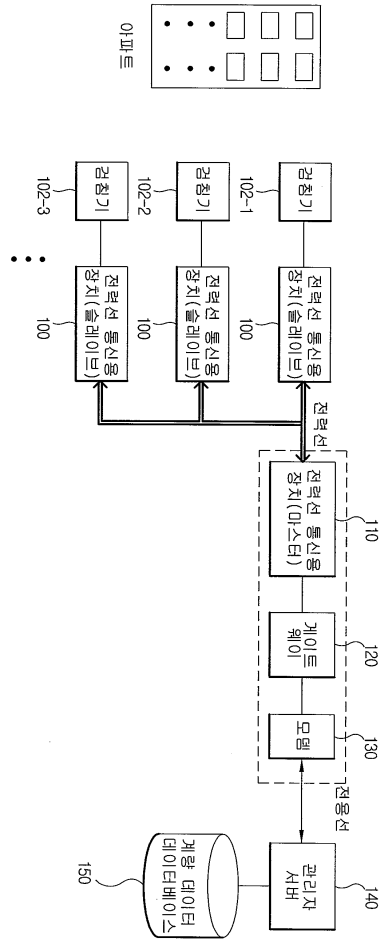


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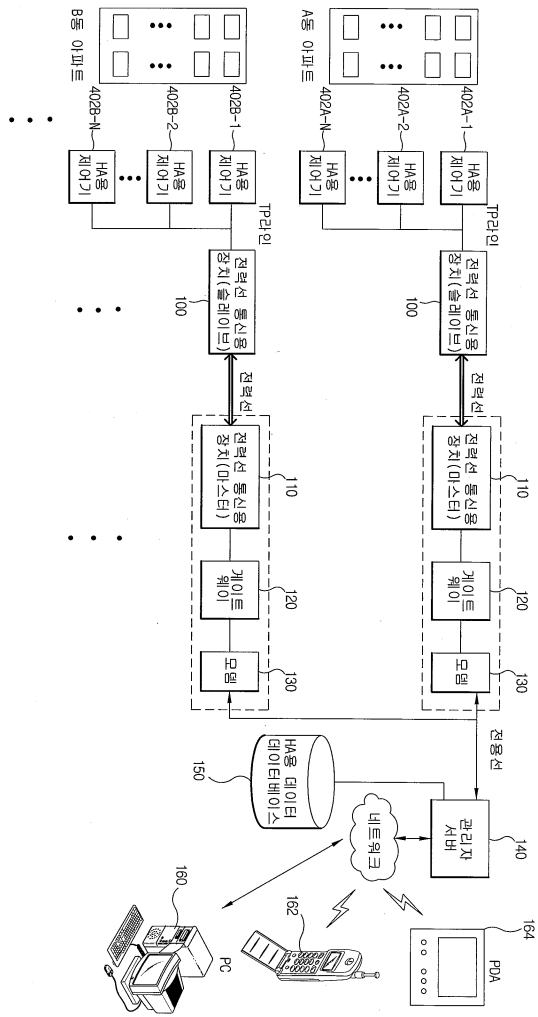




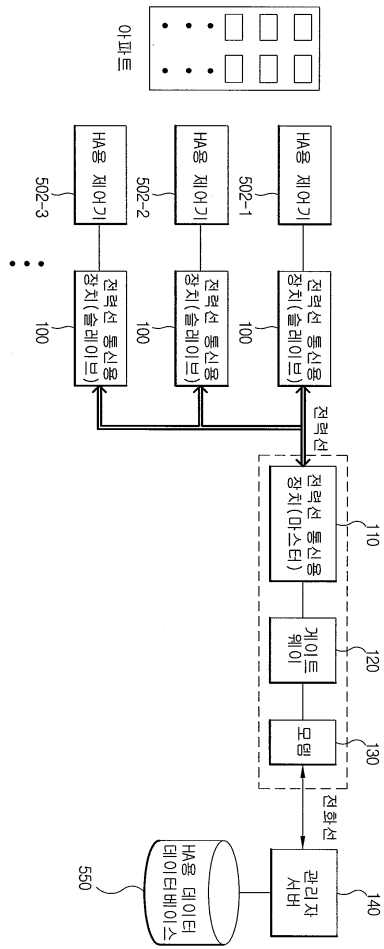
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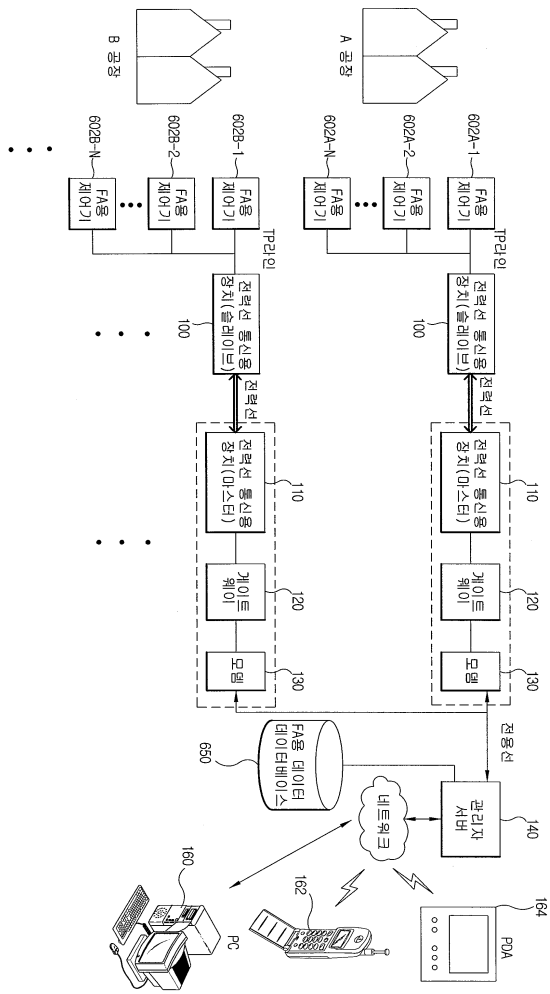
4



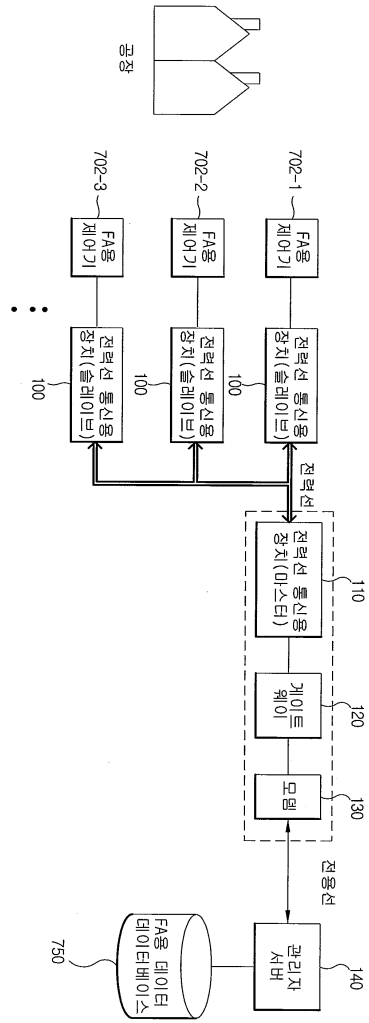
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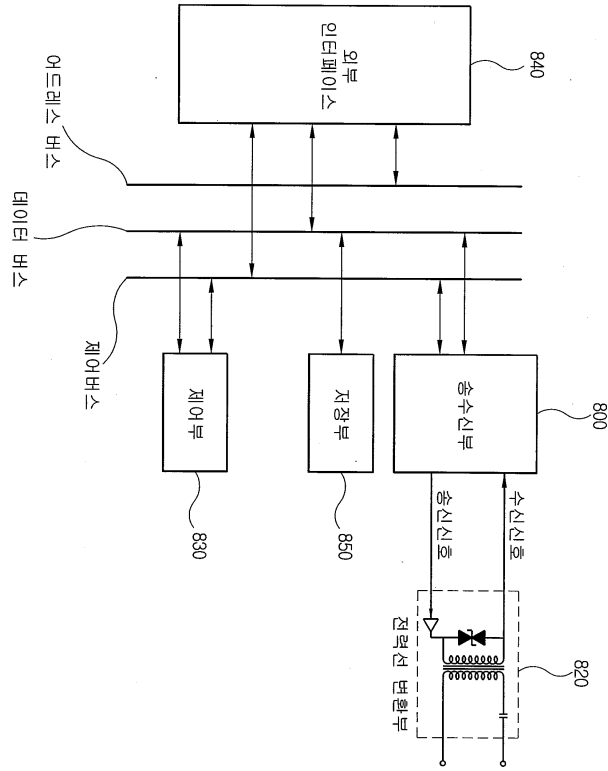


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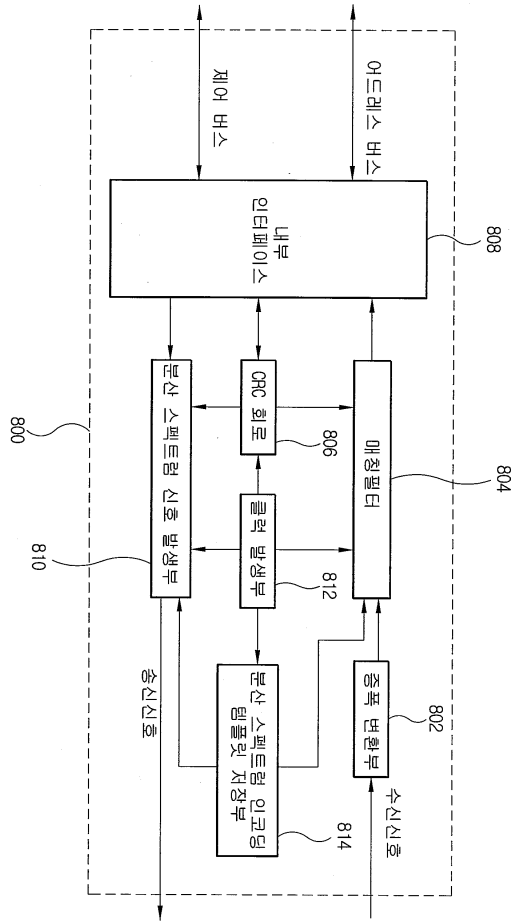


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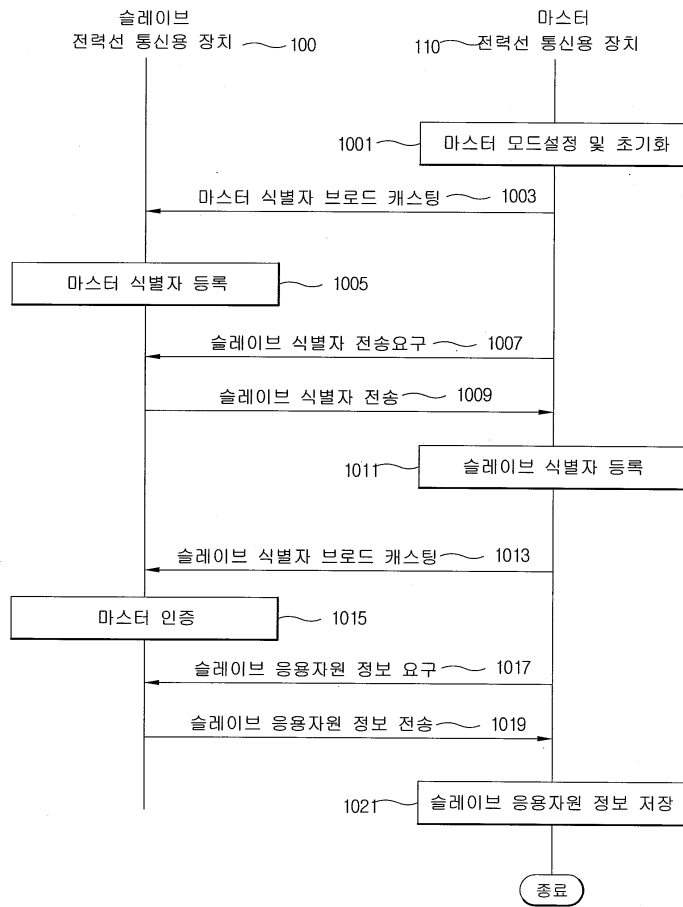




6



10





11

