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(KR)
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H04B 3/54

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(43)

2001 - 0083852
2001 09 03

(21) 10 - 2001 - 0039835
(22) 2001 07 04

(71) ()

1 651 - 3 9

(72) 2 742 102 504
102 - 40
393 - 6

(74)

:

(54)

(AMR),

(HA)

(FA),

가

가

,

가

가 ,

가

가 ,

, , , , , PLC,

1

2
(HA) (FA)

3

4

5

6

7

8

9

OSI 7

10a

10b

10c

< >

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

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

(Home Automation Server) HA
 가 HA (PC), , PDA
 ePNA), (RF: Radio Frequency) 가 가 (Hom
 (PLC)

(Building Automation)

(FA; Factory Automation)

NC

(FA)

") 1999 - 069965 (0060984 (: ")가 .

0060984

0060984

1

1

PL

C , 2 ,

1

1

1999 - 069965

가

1999 - 069965

,가

가

1

1

2

1

2

가가

가

2

1

가가

가

가

0060984

1999 - 069965

(noise)

(carrier frequency)가 1

가

(noise)

가

, HA, FA

가 .

가 , 가

가 , 가 , 가

가 .

가

1

가

가

가

(AMR)

(HA),

(FA),

1
1
2

2
(carrier)

2
1

가

가 가

가 .

(correlation) , (carrier) 가
-
.

가

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

OSI 7

2

가

1 2

2 1

2
(carrier)

가
-

가 가

(Home Automation)

(Factory Automation)

가

가

(Home Automation)

(Factory Automation)

(carrier)

가

가

가

1 (100)

(110)

1 (100), (104 - 1, ..., 104 - N, 104)

(102 - 1, ..., 102 - N, 102), (100)

130) (110) (120), (140), (140)

(150), (140) (PC), PCS (162), PDA(164)

(140) (110) 가 (104), (100) (104), (110) (140)

(140) (104)

2 (HA) (FA) , 1

2 , 1 HA (105 - 1, ..., 105 - N, 105), HA (106 - 1, ..., 106 - N, 106), FA (107 - 1, ..., 107 - N, 107), FA (108 - 1, ..., 108 - N, 108)가 (100) 가

05) FA (107) (100) HA (106) FA (108) HA (1 (110)

(120) (110)

(120) 2 (100) (130) (140)

(140) (HA)

(FA)

3 (100, 110)

3 (320), (300), (320) (100, 110) (320), (330), (330)
(350), (300), (330) (350) (330)
(340)

(100, 110)

(330) 0 1 (330) (330)
(100, 110) 가 (330)

(320)

(300) 가 (carrier) 가

(320) (300)

(300)

(310)

(300) (320) , CRC (330) (308), 0,1

(300)
(320)

(330) (104) OSI 7 (300)
(9)

(330) (300)

330) 가 가 (330) (

(330) CRC (330)

(350) (

(110) (100) (350) 가 (100) (330)

(340) (340)
(Home Automation

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

4 (300)

4 (300) (302), (304), (304), (310)
(304) CRC (306), (304), (310) CRC (306) (310)
(312), (304), (310) (312)

(302) ADC (320) 0, 1

(304) (correlation)

(304) () 100us

(314) ROM (314) EEPROM
가 ()가

() ()가

(1ms) (304)
(308) (330)

(302) (304)

(310) (314)

400Khz 가 100Khz 200Khz 100us 25 가 200Khz

100us (300)
(310)

(carrier) 가

,1
가

CRC (306) (308) 16 CRC 가
CRC (306) CRC
CRC 가 CRC (306)

(312) (304), (310), CRC (306)
(314) 가

5 6

5

(110) (100)
, 6 (100)가 가 (110)
(100) (100)

5

(501). (110)
(100) (503).

(100) (505).

(110) (507).

(100)

(110)가

(509). (110) (511). (

(110)

(100) (100) (513). (515).
(110) (110)

(110)

(100)

(517). (100) (110)
(110) (519), (110)
(521).

, FA 가 (100) , HA
 , (HA) (FA) .
 6 (100)
 (601). (100)
 (110) (603). 605
 623 5 5 6
 (100)가 가 (110)
 가 (100) , 가

7
 7 (701), (110)
 703). (100)
 (705). (310) (100)
 (110) (100) (1

00) (100) (707, 709).
 8
 8 (110) (100) 801 803
 (100) (805, 813).
 (100) (110) (110)
 (110) (807 811).

9 OSI 7
 9 (901), (903), OSI
 (909) (911) (905), (907),
 OSI 7 CEbus ,
 10a (100) (110)

10a , (1001), ID(1003), ID(1005), (1007), (1009),
(1011) (1013) .
(1001) , ID(1003) (110) (ID)
, ID(1005) (100) (ID) .
(1007) (1009), (1011) (1013) .
(1009) 가 () (1013) (140) (10
11) .

10b (100)

10b , (1015), (ID
1009), (1017), ID(1
005), (1019) (1021) .

10c
(100)

10c , (1015), (1 ID
009), (1017), ID(10
05), (1013), (1019) (1021) .
(1023), 가
, 가
, 가
, 가
, 가

가 .
 , (AMR) , (HA), (FA),
 , 가 .

(57)

1.

1
 2 1 ; 2
 1 ;
 2 ;
 (carrier) 가 - ,
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 , 가가

2.

1 ,
 (carrier) 가 - (correlation) ,

3.

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가

8.

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

9.

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OSI 7

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(carrier)

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10 11 ,

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12 ,

(Home Automation) , (Factory Automation)

14.

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가

15.

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(carrier)

가

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가 가

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가

16.

14 15 ,

17.

14 15 ,

18.

17 ,

(Home Automation) ,

(Factory Automation)

19.

(carrier)

가

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가

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가

20.

가

가

21.

2 1 ;

2 1

2

(carrier)

가

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가 가

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가

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22.

가

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23.

2 1 2 2
; ;
2 ;
(carrier) 가 - ,
;

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가

가

가

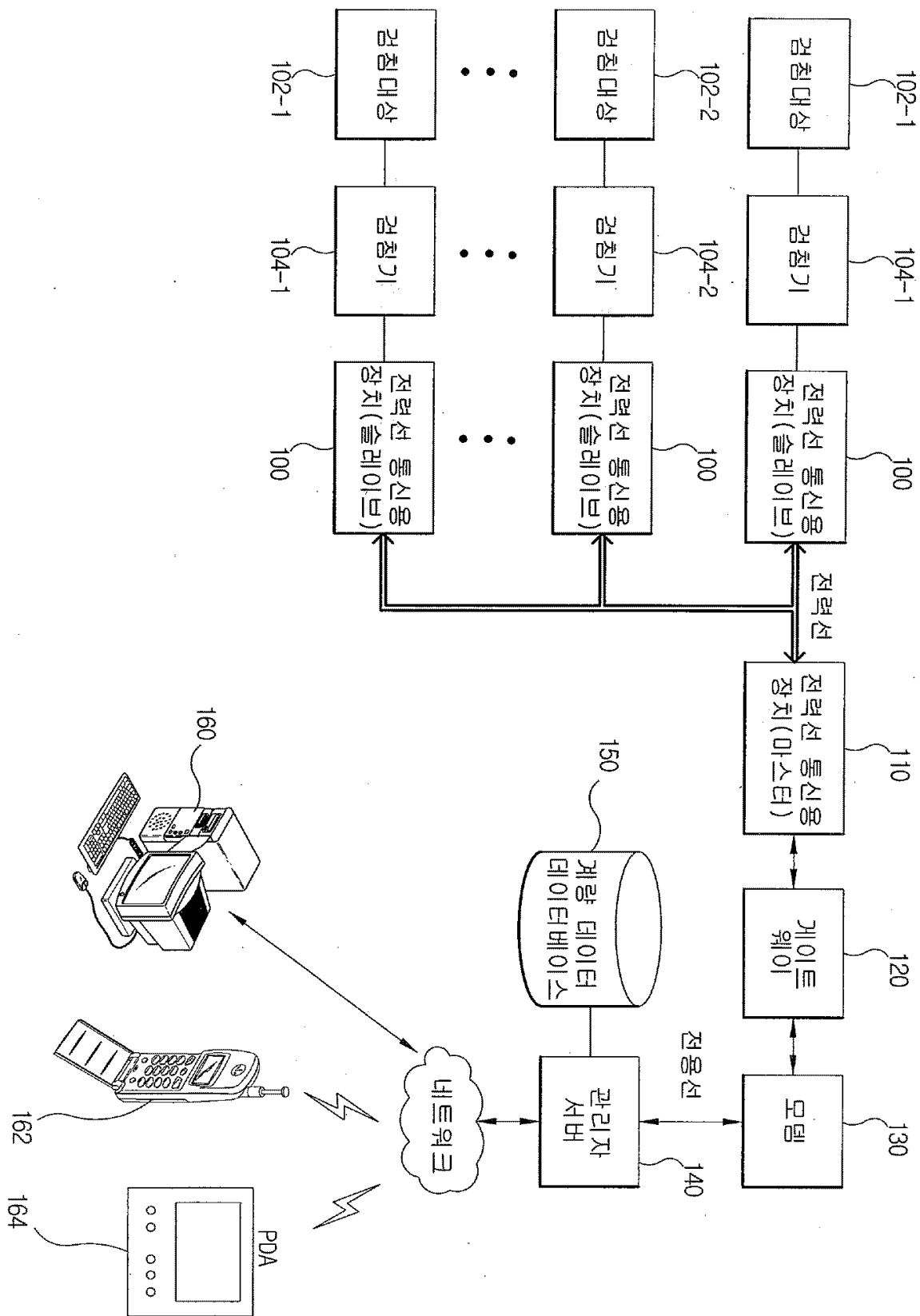
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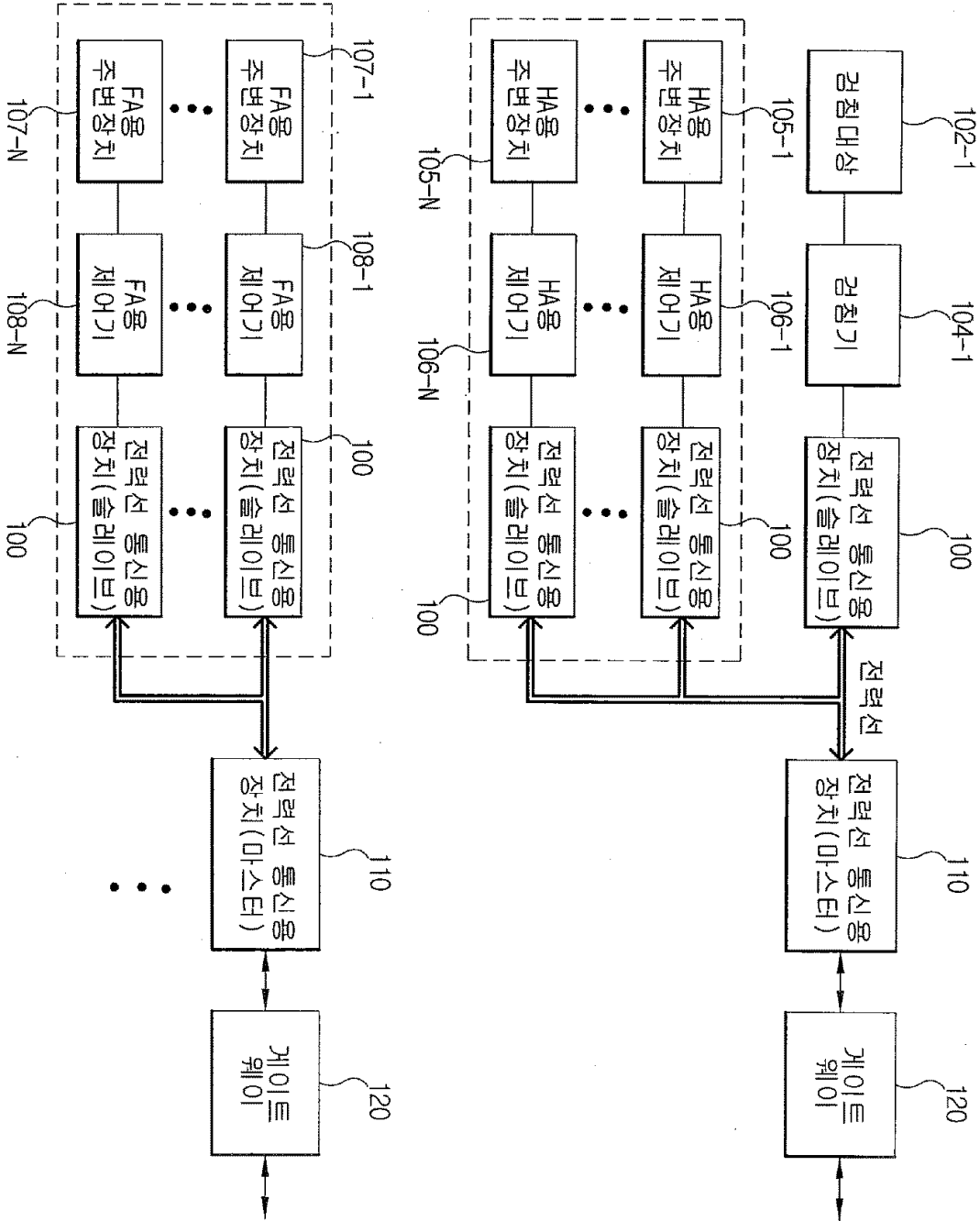
,
가

;

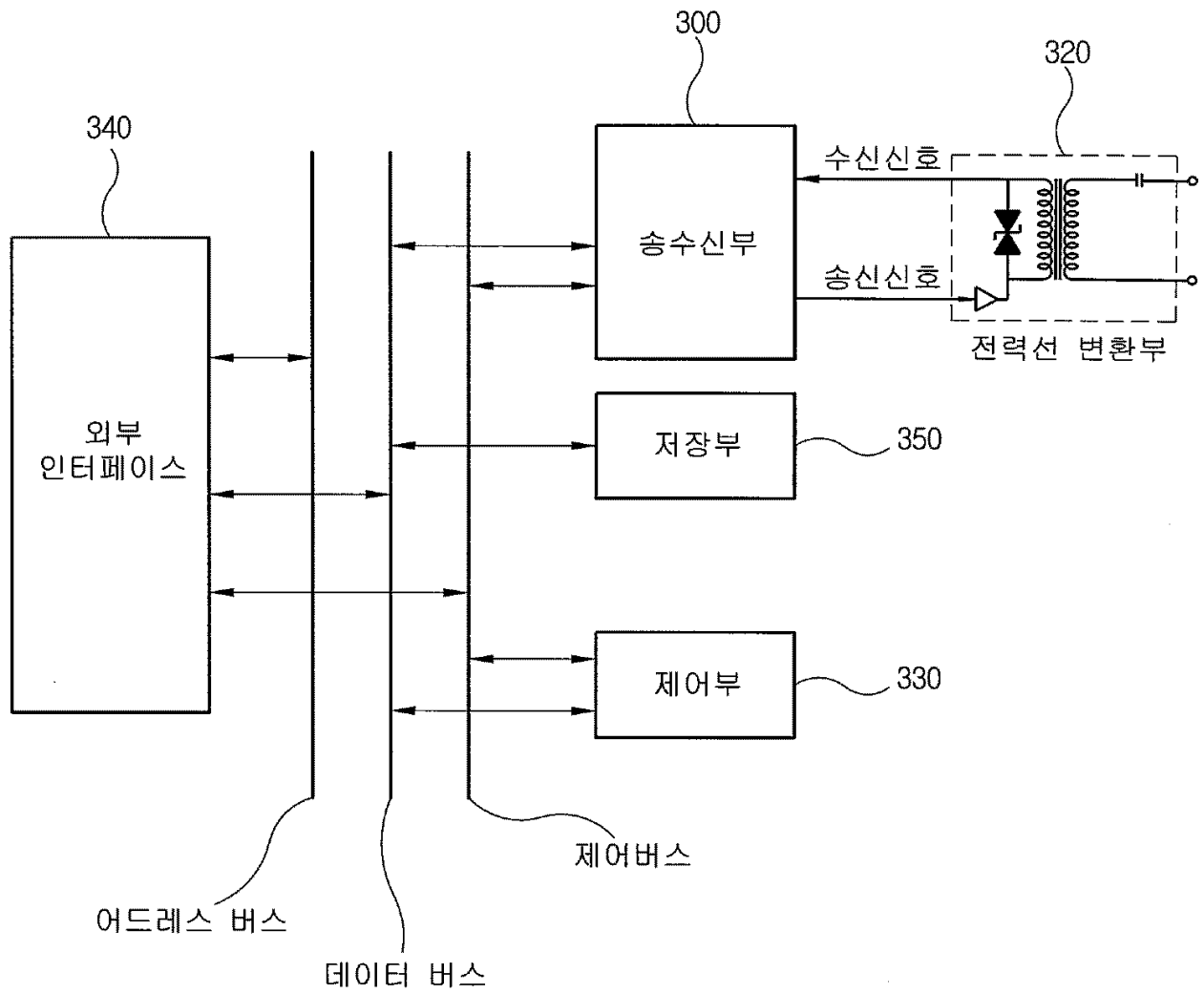
.

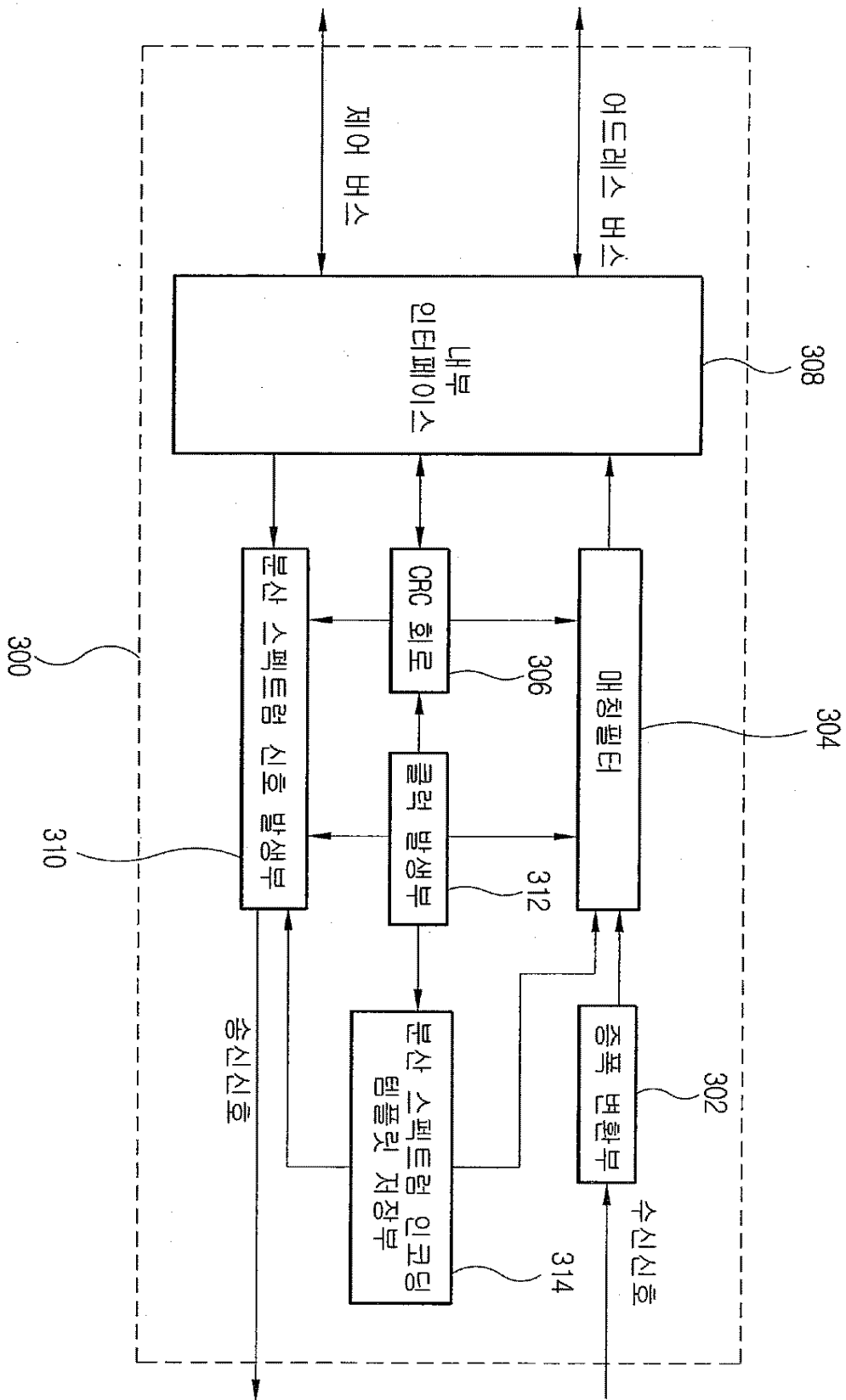
1

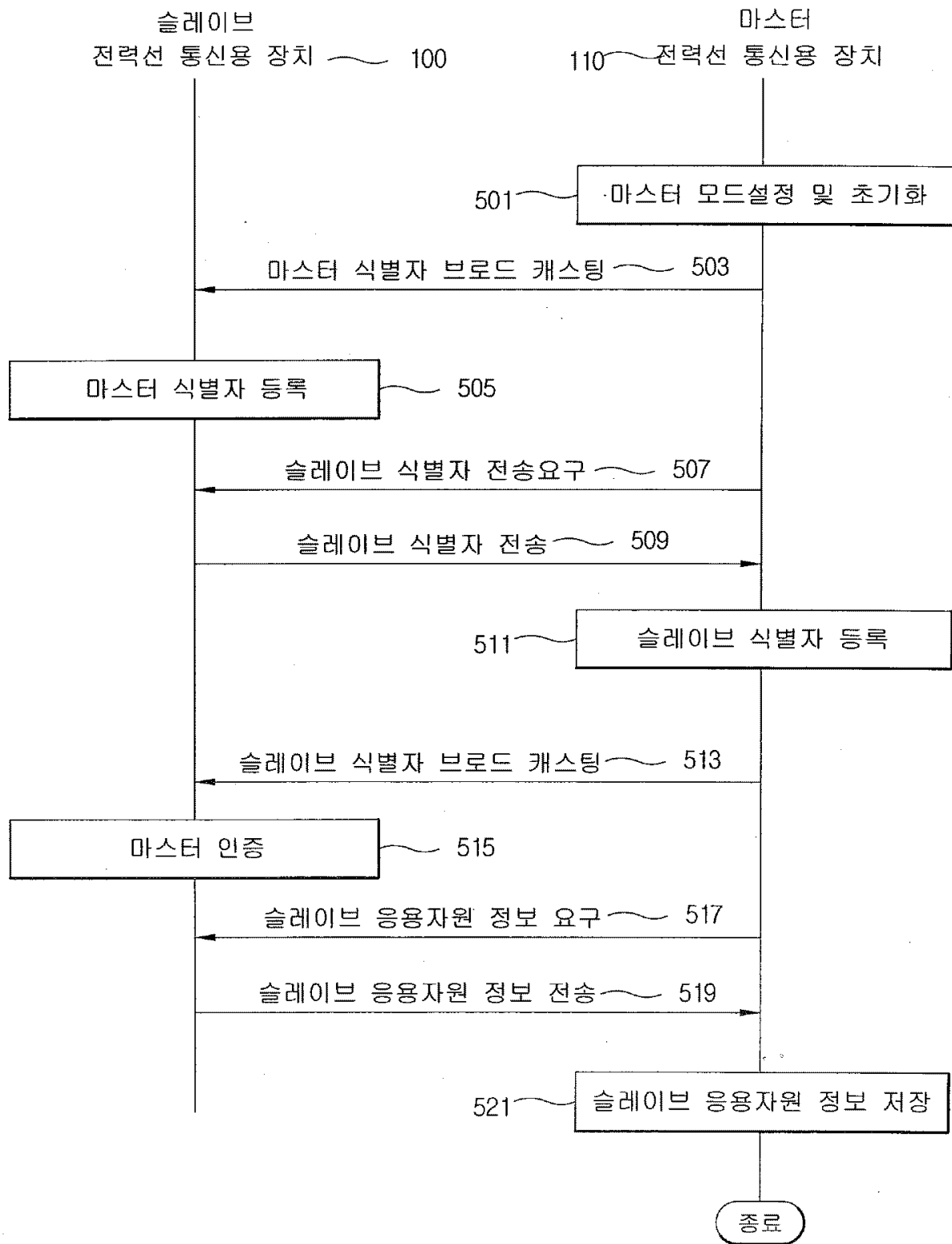


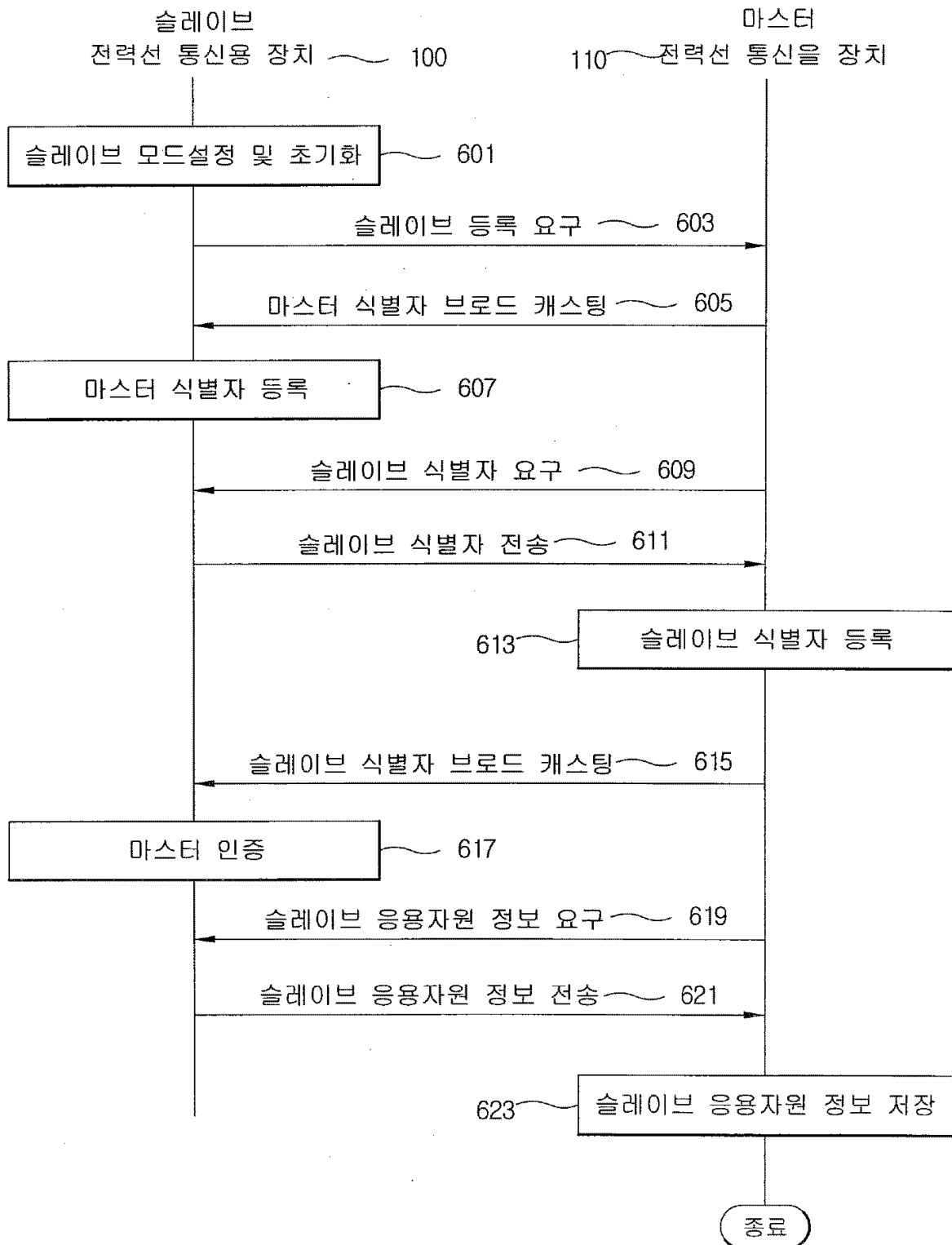


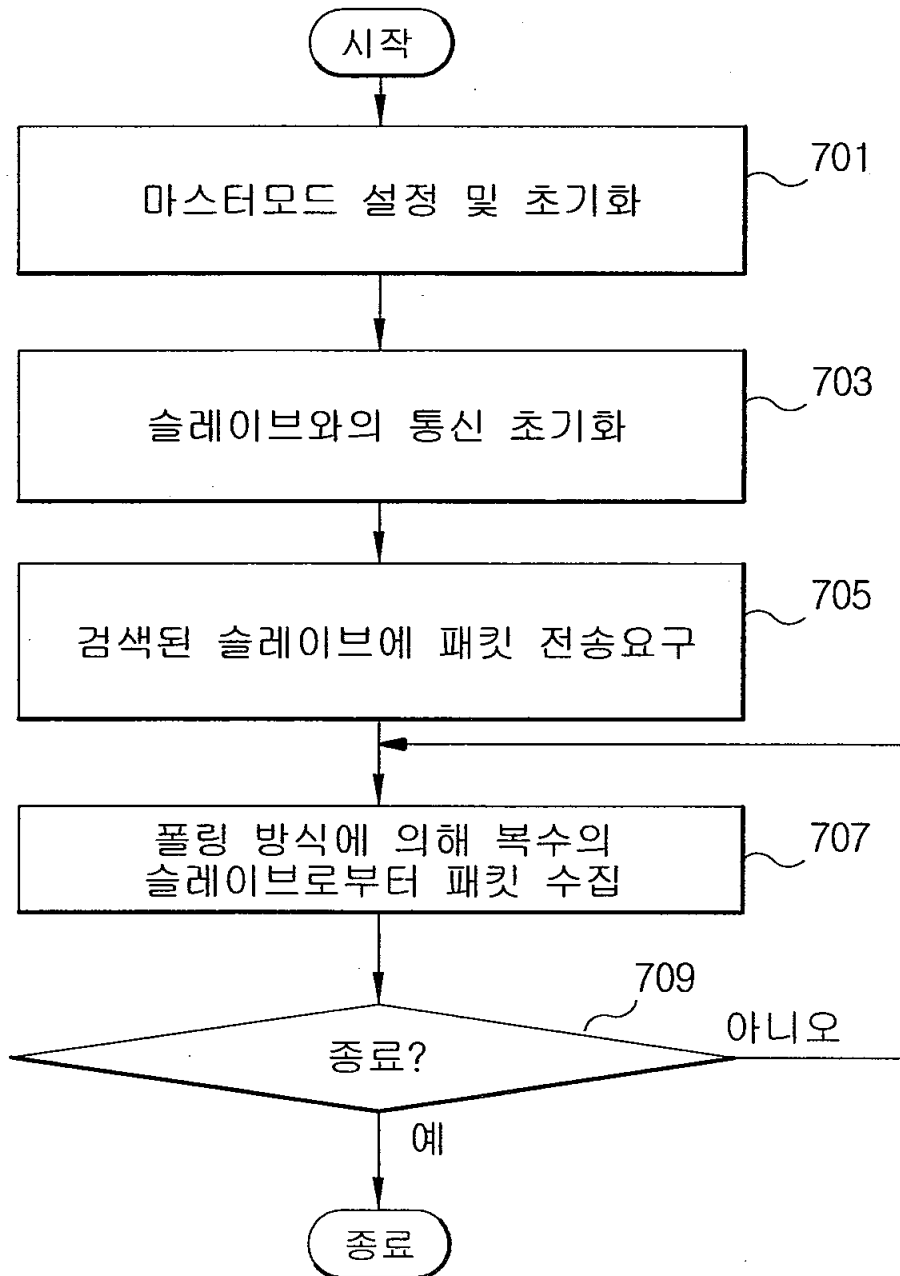
3



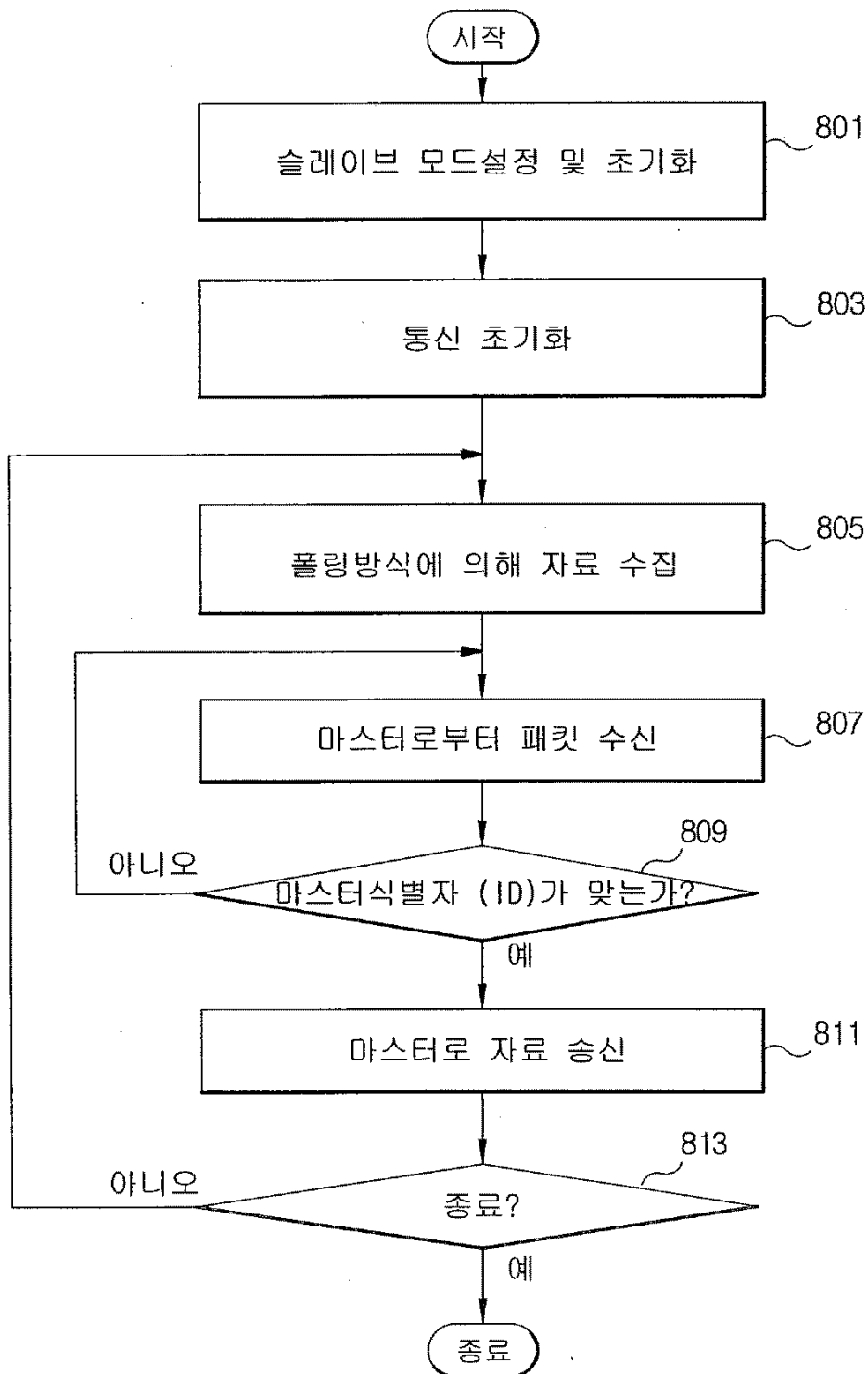




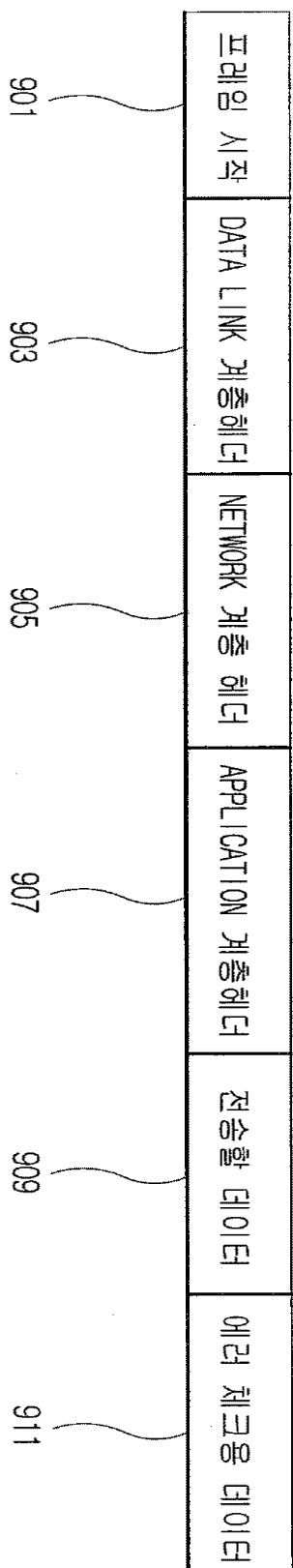
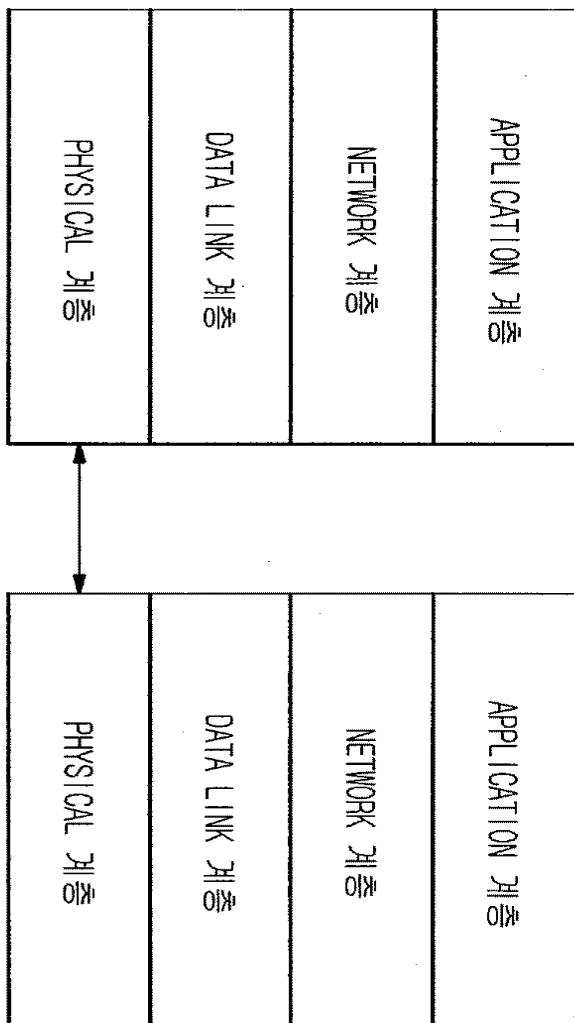




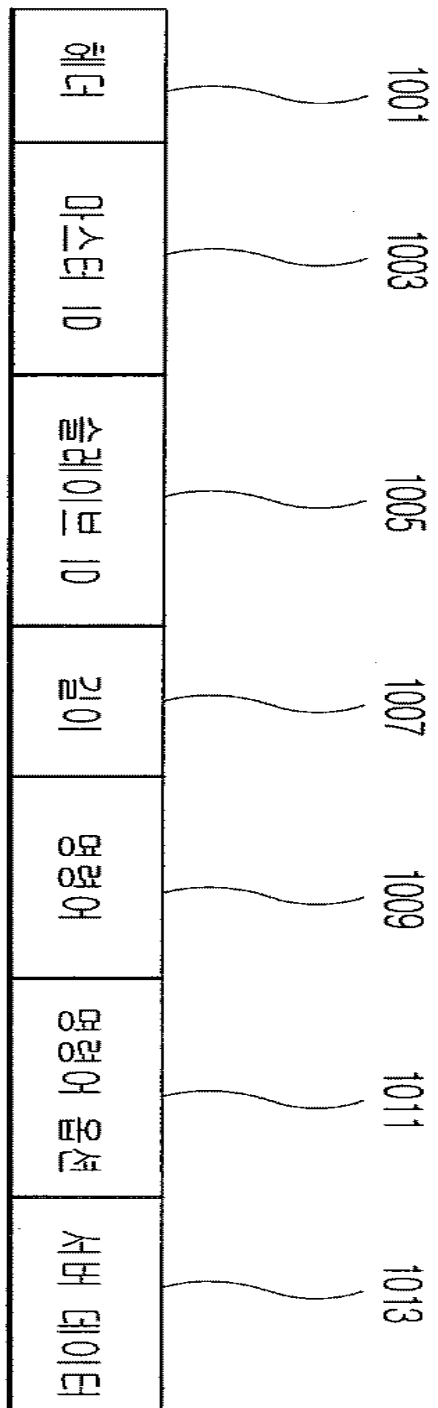
8



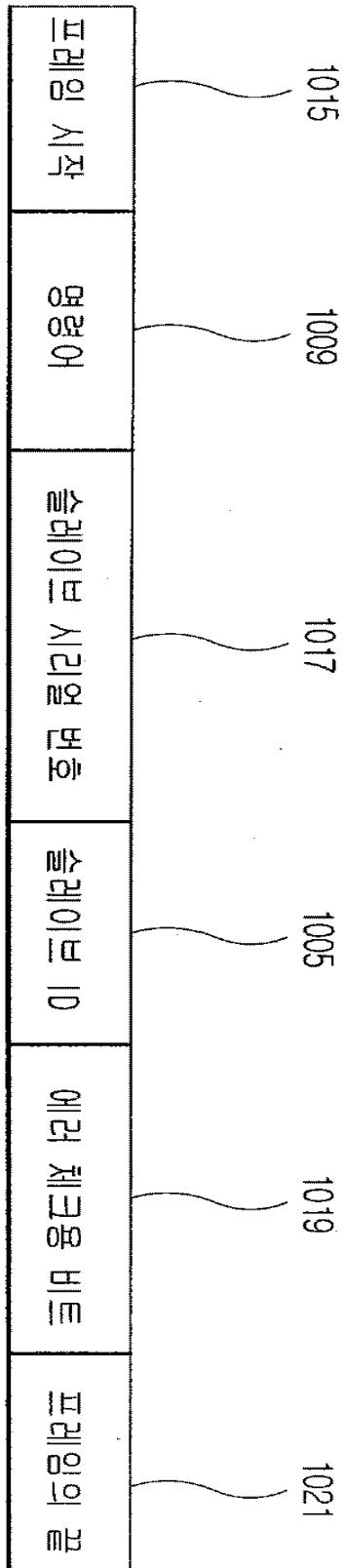
9



10a



10b



10c

