

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

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

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

(Building Automation)

(FA; Factory Automation) NC ,
 (FA)

1999 - 069965 (")가 .

1999 - 069965 가

1999 - 069965 , 가

가 1 1

2

1

2

가 가

가

2

1

가 가

가

가

1999 - 069965

(noise)

(carrier frequency)가 1
(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 1
2 2 2
1 , 2
가 - , (carrier)

가
-

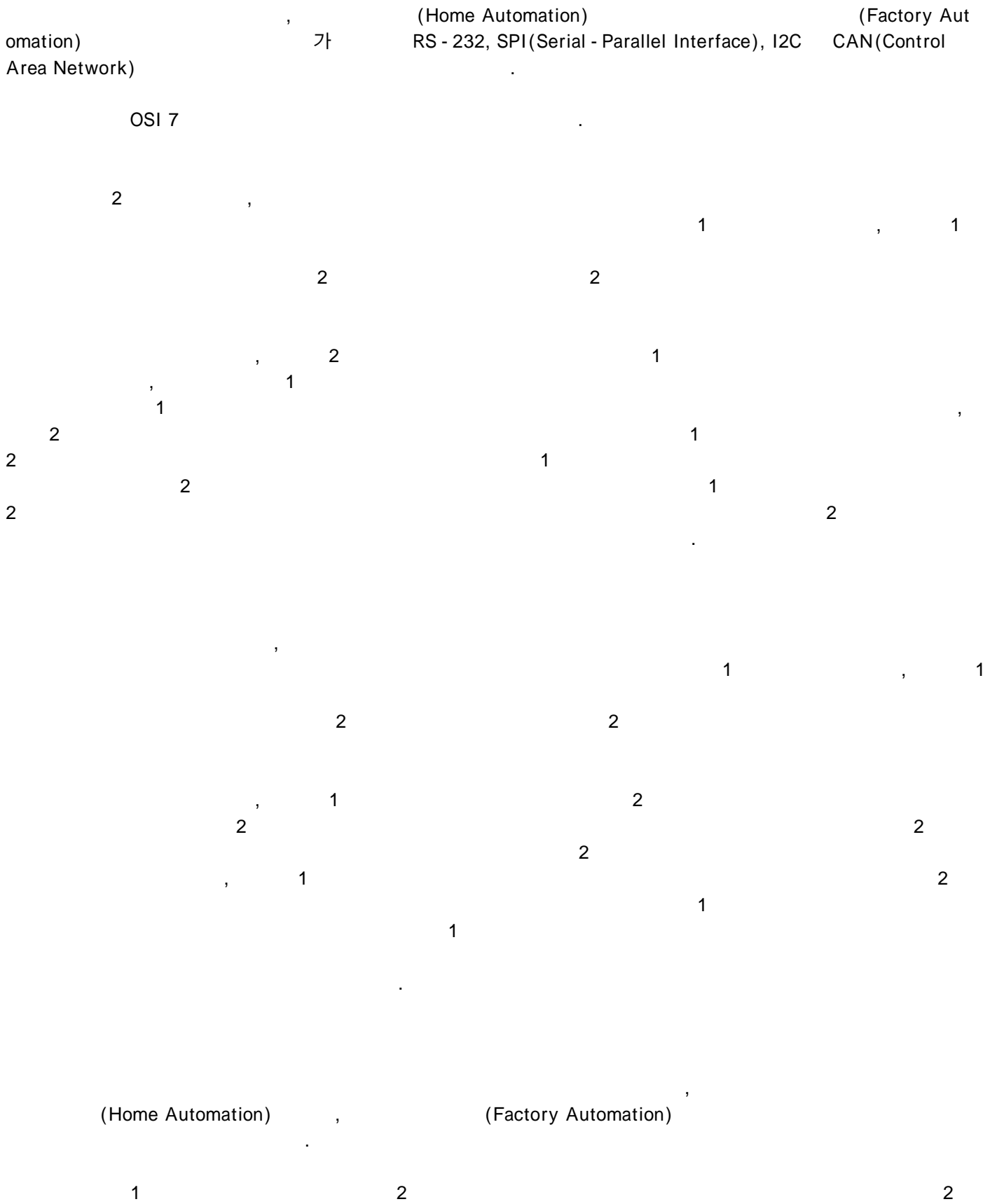
가
가

(correlation) - , (carrier) 가
-

1 2

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) (PC) (160), PCS

(162), PDA(164)

(100, 110)

110) (100,

(100)

0) (110) (11

(120) (100) 0, 1 (110)

(120) (130) (140) (140)

2 3

2 , , 가

, (140) (140)

3 (102)

(100) (100) (120),

(130) PPP, ADSL (140) (150)

3 (HA)

HA , 가 , /

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

HA
 (100, 110)
 HA 가 가 가 가
 가 FA .

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

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

8
 8 , (820), (820) (820)
 (800), (820) (830), (830)
 (850), (800), (830) (850)
 (840) .

가 (830)
 (820)
 (800)
 가 (carrier) 가
 (820) (800)
 (810) (800)

(800) (820) , CRC (830) (808), 0,1

(800)
(820)

(830) (104) OSI 7 (800)
(9)

(830) (800)

OSI

CEbus

OSI 7

(830) 가 가
(830)

(830) CRC (830)

(850) ()
(110) (100) 가 (850)
(100) (830)

(840) (840)

(Home Automation)

(Factory Automation)

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

ork)

9 (800) (800)

9 (804) (800) (802), (804), (810)
(804) CRC (806), (804), (810) CRC (806) (810)
(812), (804), (810) (810) (812)

(814)

(802) ADC (820) 0, 1

(804)

(correlation)

(804)

() 100us

(814)

(814)

ROM

EEPROM

가

)가

(1ms)

(804)

(808)

(830)

(802)

(804)

(810)

(814)

400Khz

가 100Khz

200Khz

100us

100us

25

가 200Khz

(300)

(810)

(carrier)

가

, 1
가

CRC (806)

(808)

16

CRC

CRC
가

(806)

CRC

가

CRC (806)

CRC

(812)
(814)

(804),
가

(810), CRC (806)

10 11

10

(110) , 6 (100)가 가 (100) (110)

10 , , (1001). (110) (100) (1003). (100) (1005).

(110) (1007). (110) (100) (110)가 , (1009). (110) (1011).

(110) (100) (1013). (100) (1015).

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

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

12 . 12 , (140) (110) (1201), (100) (100) (1203), (100) (104) (1

205). (104), (100), (110)
(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

(AMR)

가

가

(HA),

(FA),

(57)

1.

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(carrier)

가

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가 가

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3 ,

(carrier)

가

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(correlation)

5.

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1 2

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1 2

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1 2

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3 ,

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

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OSI 7

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(carrier)

가

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가가

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(Home Automation)

,

(Factory Automation)

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14.

11 ,

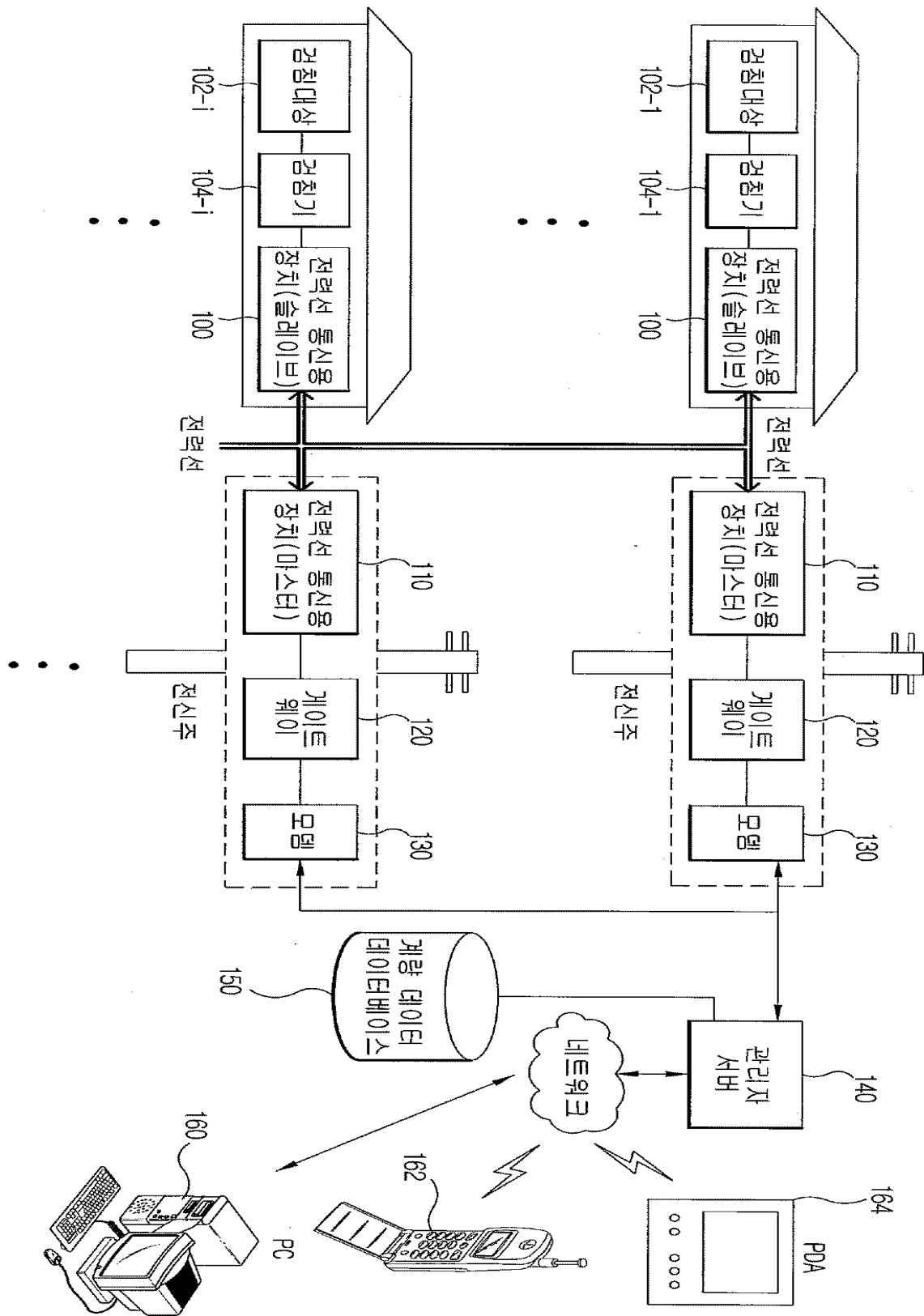
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2

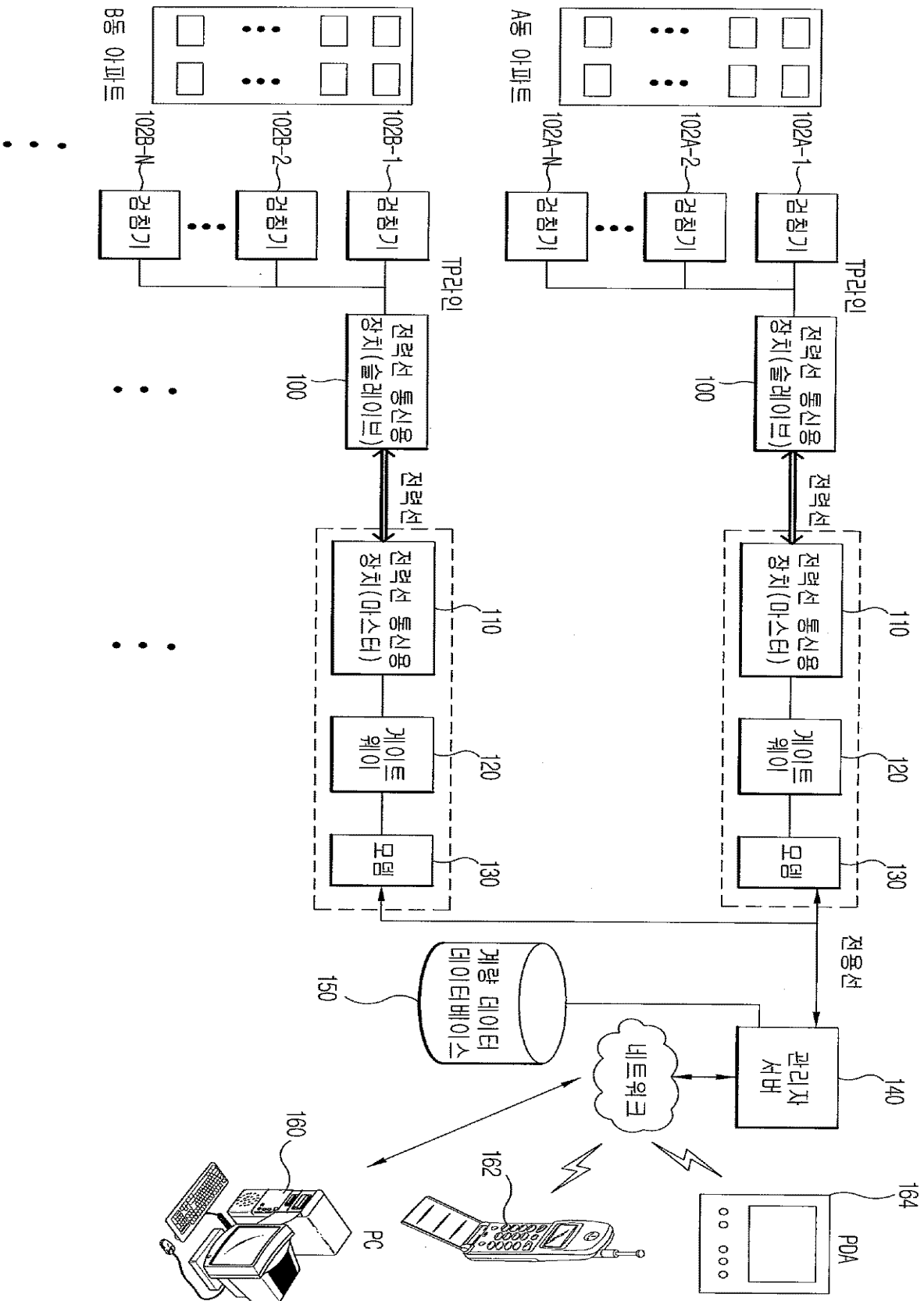
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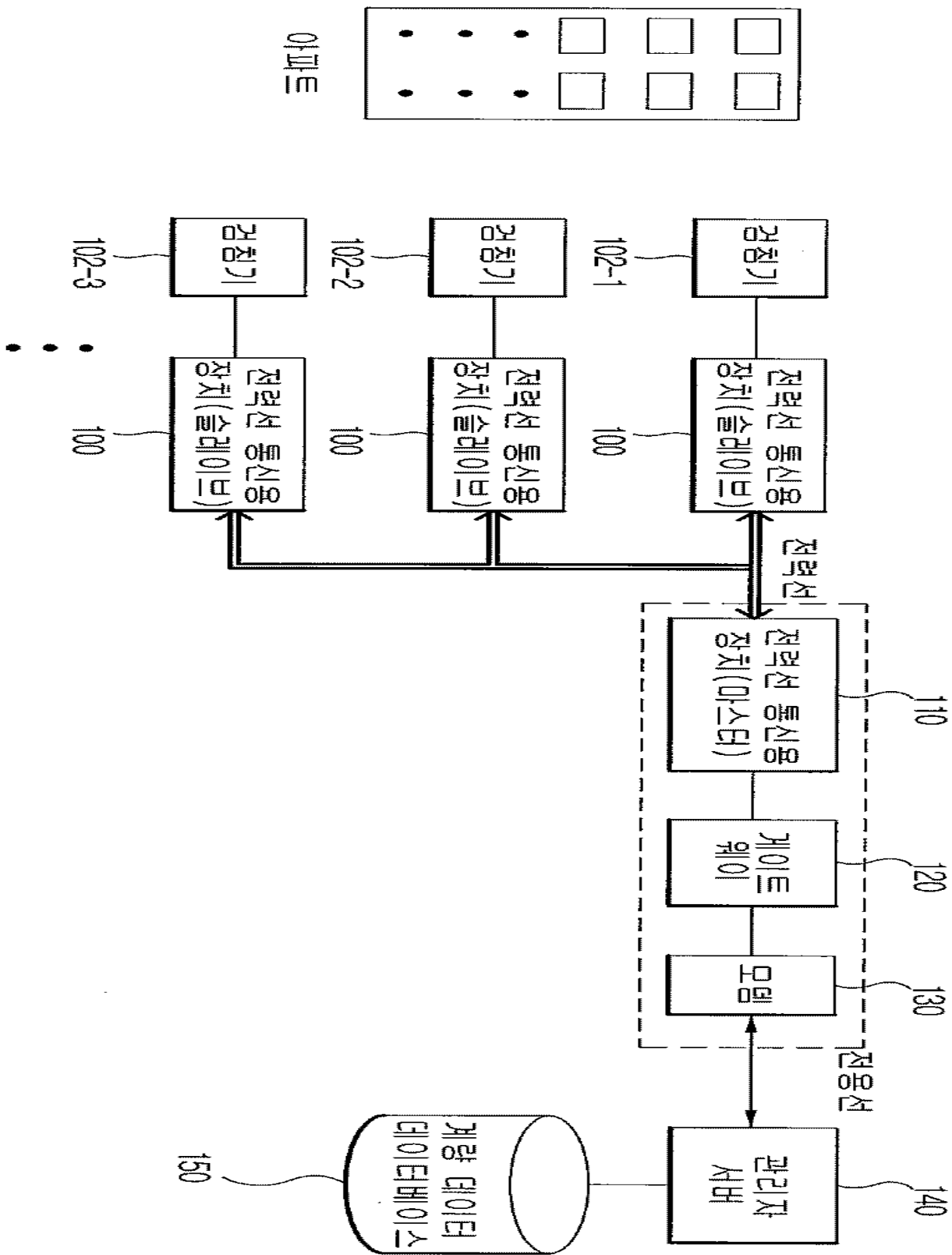
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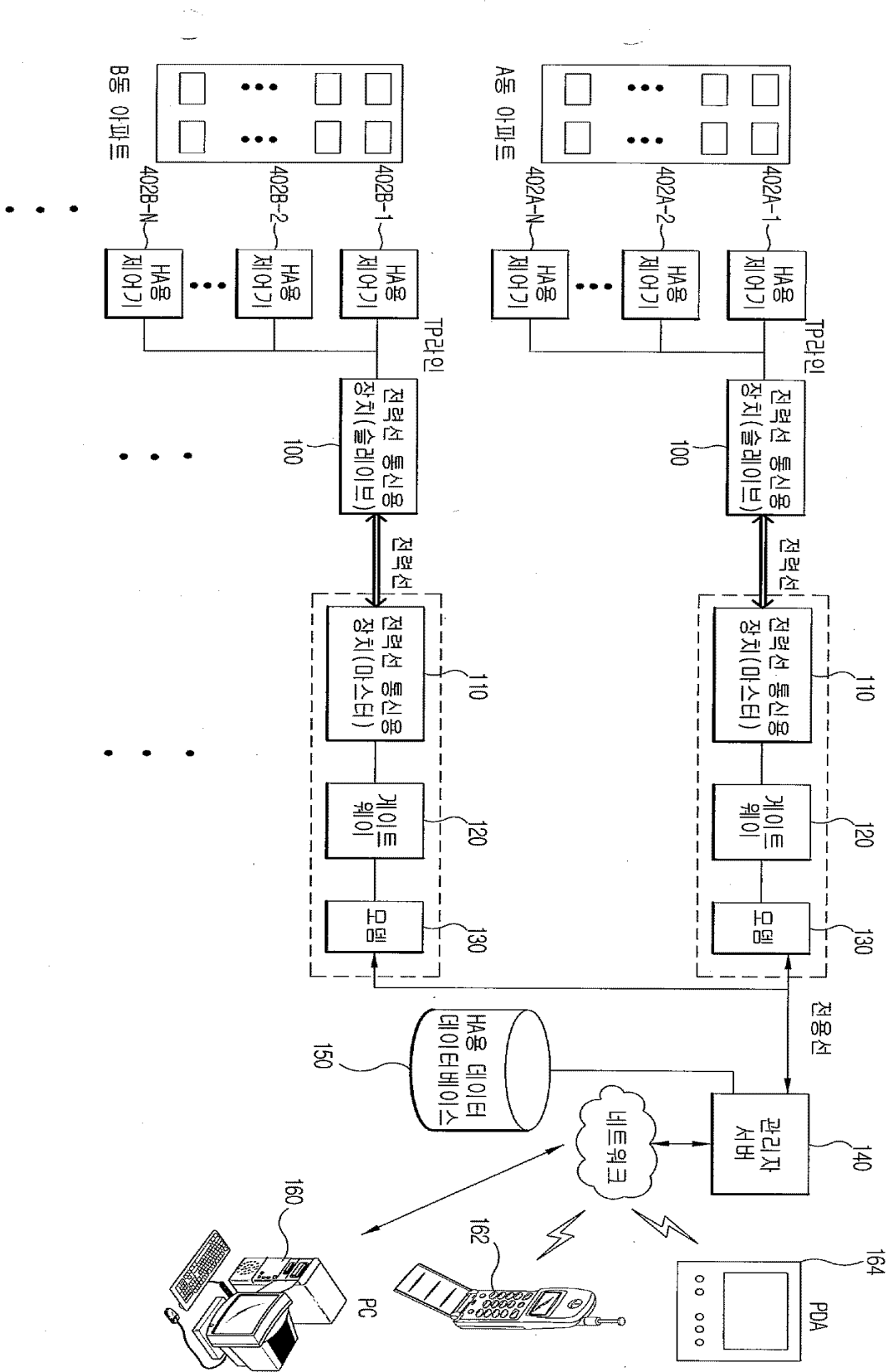


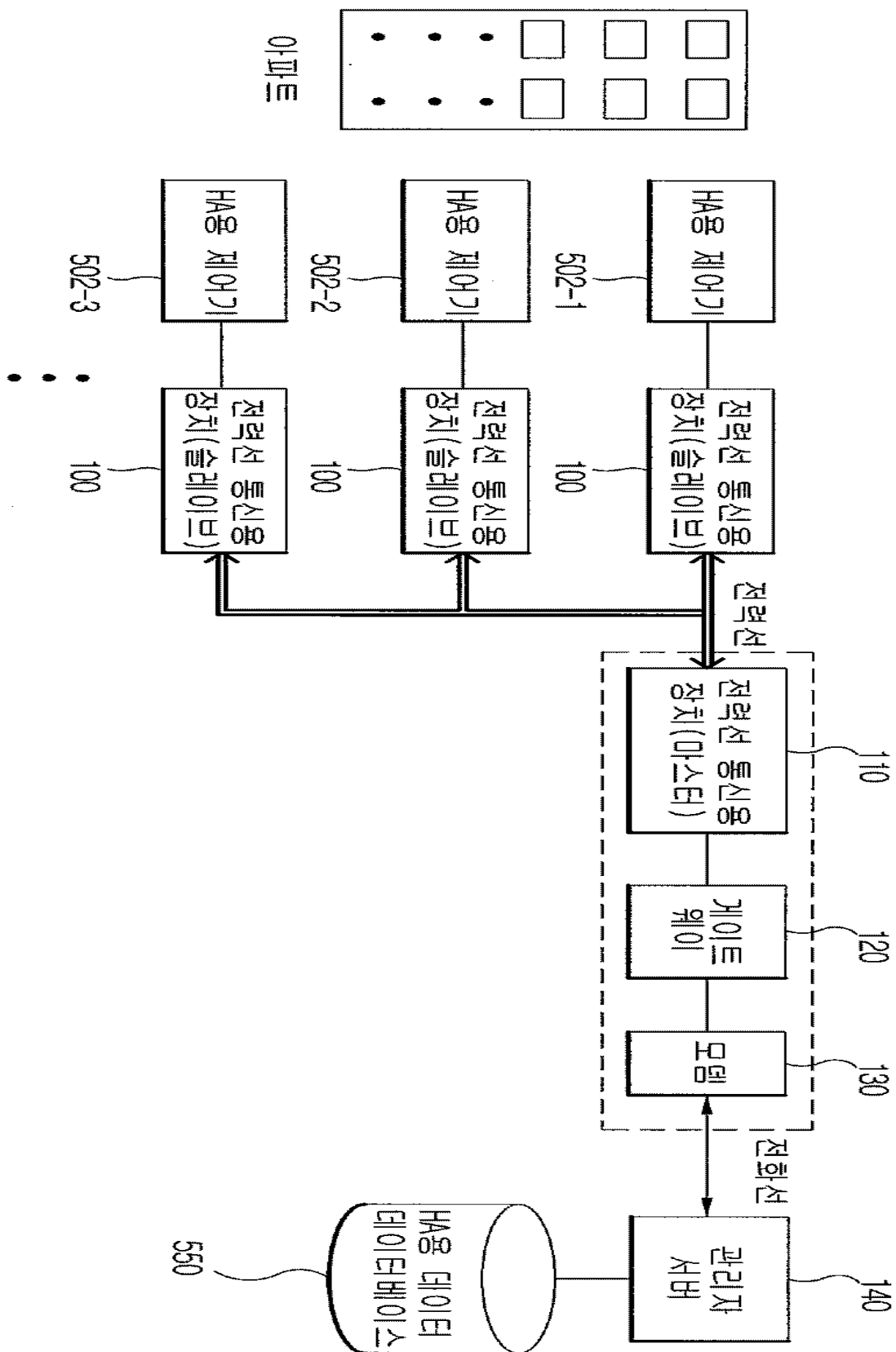
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4





9

