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(22) 2004 03 12  
(62) 10-2004-0016793  
: 2004 03 12

2004 03 12

(73) 2 475-22

(72) 32-8 가 3 E-101

(74)  
:

(54) 가 ,

가 , 가 , 가 ,  
(meter gateway) , 가 , 가 ,  
, 가 , 가 , 가 ,  
, 가 , 가 , 가 ,  
, 가 , 가 , 가 ,

1 가 .  
 2 1 가 가 .  
 3 1 .  
 4 1 가 .  
 5a 5e 4 가 .  
 6 2 .  
 7 6 .  
 8 2 .  
 9 .  
 10 9 .  
 11a 11b .  
 12a 12b .

< >

10 : 20 :  
 30 : 40 :  
 50 : 60 :  
 70 : 80 :  
 90 : H1 Hm : 가  
 M1 Mm : D1 Dm :  
 T1 Tn :  
 510, 620, 710, 810 :  
 511, 6211, 711, 811 :  
 512, 542, 552, 6122, 6212, 6232, 712, 762, 772, 112 :  
 513, 543, 553, 6123, 6213, 6233, 713, 763, 773, 113 :  
 514, 544, 554, 6124, 6214, 6234, 714, 764, 774, 114 :  
 515, 545, 556, 6125, 6215, 6235, 715, 765, 775, 115 :

516, 545, 555, 6126, 6216, 6236, 716, 766, 776, 116 :

520, 622, 720, 120 :

530, 624, 730, 130 :

540, 612, 623, 760, 110 :

541, 6121, 6231, 761, 111 :

544, 6124, 6234, 764, 114 :

550, 770 :

551, 771 :                      554, 774 :

610 :                      611 :

6111 :    /                      6112 :

6113 :                      6114 :

620 :                      625, 740, 140 :

626 :    /                      627 :

625a, 790, 840 : LED                      610a :

620a :                      6231a :

6231b :                      613 :

614 :                      615 :                      DC

629 :                      DC                      616 :

630 :                      612a, 622a, 660 :

651, 661 :                      621a :

150 :                      160 :

161 :                      162 :

161a :                      162a :

170 :                      628 :

780 :                      780a :

750a : 가

가 , 가 , 가  
 , , 가  
 , (Power Line Communication; PLC) , 가  
 ), (camcorder) 가 가 TV(TeleVision), (computer  
 가 (homenetwork)  
 Mbbs 가 ADSL(As  
 ymmetric Digital Subscriber Line) 가 (access network) (cable modem)  
 가 (Automatic Meter Reading; AMR), (internet)  
 가 가 가 가 가  
 가 (contents) 가 가 가 가

가 , 가 (meter gateway) 가  
 , 가 가 가  
 , 가 가 가  
 , 가 가 가  
 , 가 가 가  
 , 가 가 가  
 , 가 가 가  
 가 , 가 가 가  
 가 / 가 / 가  
 가 가



가(H1 Hm) (50) , , , , 가(H1 Hm) , , 가(H1 Hm) , (M1 Mm) (30) , , /

[ ]

(50) 가 (access network) (M1 Mm) (80) (50) 가(H1 Hm) (40) (M1 Mm) (60) (80) (M1 Mm) 110/220V (50) (M1 Mm)

(50) (80) (M1 Mm) (50) 가 (40) (10) ( '3 '530' ) (530) (M1 Mm) (10) (50) 가 (40) (10) , 가 / (50) (40) 가 / (40) (10) 가 / (50) 가 / (40)

(50) (40) (M1 Mm) (20) (30) (ON-line) (50) (M1 Mm) (M1 Mm) (M1 Mm) (30) (30) 가 (M1 Mm) (M1 Mm)

Mm) (50) (M1 Mm) (K0) ( '3 '530' ) ( , ) 가 (M1 Mm) (K (80) (M1 Mm) (frame) (M1 Mm) (50) (530), (50) 3 (510), (520), (540), (550), ( ) (80) (510) (50) (80) (510) (510) (80) (550) (550) (80) (513), (514), (515) (516) (coupler; 511), (512), (511) (80) (M1 Mm) (512) (80) (511) (516) (80) (511) 1 (80) , 2 (512) (516) ( ) , , (noise) , ,

(512) (513) , (512)  
 (511) (filtering)  
 (513) , (513) (512)  
 (514)

(515) (516) , (515) (5  
 16) (514) (516) (515)  
 (511)

(514) (chip)  
 OFDM(Orthogonal Frequency Division Multiplexing), CDMA(Code Division Multiple Access)  
 (514) (513)  
 (520) (520)  
 (515)

가 / (550) (40) , (10),  
 (550) (40)  
 (10) 가 / (550) (520) (520)  
 (550) (551), (510) (552), (80) (553), (554), (5  
 56) (555)

(551) (40) , (40) (556)  
 (552) (40)

(552) (553) , (552)  
 (551)  
 (553) (553) (552)  
 (554)

(556) (555) , (556)  
 (554)  
 (555) (555) (556)  
 (551)

(554) (553) ,  
 (520) (520)  
 (556)

(540) 가  
 PDA(Personal Digital Assistant), (note book computer) (remote control)  
 (K0) (530) , PDA,  
 가 (100) 9 10 (K0) (530)  
 (K0) (540) (540) (54)  
 1), (542), (543), (544), (545) (546)

(541) (K0)  
 (542) ( ) , (546) (K0)  
 ( ) 가  
 PDA, (541) (K0)  
 (541) (K0)

(542) (K0) (543) (542) (541)  
 (543) (542) (543)

(545) (K0) (546) (545) (544)  
 (546) (545) (546)

(544) (543) (520) (520)  
 (520) (545) (540) (K0) (K0) (K0) (50)

(520) (K0) (K0) (K0) (K0) (520)

(K0) 가 가 가 가 (520)

(520) (510) (530) (530)  
 (550) (550) (550) (40) (530)

(520) (550) (510) (530) (530)

(530) (Random Access Memory; RAM), (Read Only Memory; ROM), (flash memor  
 가 가 (H1 Hm), (530) (K0)가 (530) (K0) (520)  
 (K0)가 (530) (K0)가 (550) (530)

(520) 가 (530)

[ ]

가 (M1 Mm) 가 가(H1 Hm)  
 (M1 Mm) (80) (50)  
 (M1 Mm) (90) 가(H1 Hm)

(D1 Dm) (T1 Tn)

(M1 Mm) (50) (80)  
 ( 4 '624' ) 가  
 (624) (M1 Mm) (T1 Tn) (90) (T1 Tn)

(M1 Mm) 가(H1 Hm) (80)



가 / (50) (M1 Mm) (80) (50) (D1 Dm)

(M1 Mm) (T1 Tn) 가 / (50) (K0) (K1 Km)

가 (50) (K0) (K1 Km)

(D1 Dm) (T1 Tn) (K1 K

m) , 'K0' 'Km'

(M1 Mm) 4 (610) (620)

(610) (611) (612)

(620) (621), (622), (623), (624),

(625), / (626) (627) (610) (610)

(628) (620)

(610) 가(H1 Hm) (628)

(620) (622)

(611) / (6111), (6112), (6113) (

6115) / (6111) (80) 가 ( )

/ (6112) / (6111) / ( )

(6113) (6112) (6113) (628)

(621) (6114) (6113)

(612) (remote controller, )

(611) (6113) 가 ,

( ) ,

가 PDA

(612) (6121), (6122), (6123),

(6124), (6125) (6126) (6121)

(6122) (61

21) (6123) (6113) (6113) (612) (612

4) (6113) (6124), (6125), (6126)

(6121)

(620) (610) 가 (50)

(80) (620) (610)

(622), (624), (6214) (620) (610)

) (620)

(620) (50) (80)

(T1 Tn) (620) (K0) (K1 Km) 가

(50), (D1 Dm) (T1 Tn)

(K0) (K1 Km) (D1 Dm) (T1 Tn)

(620) (K0) (50), (K1 Km)

(K0) (K1 Km)

(621) (80) (90)

(80) (90)

14), (6215) (621) (6211), (6212), (6213), (62  
 211) (80) (90) (6212) (6213) (6  
 (6212) (6212) (6211) (6214) (80)  
 가 (90)  
 (6214) (622) (6215)  
 (6215) (6214) (6211) (6216) (6215)  
 (80) (90) (6211) (6216)  
 (623) (50) (540) 가  
 (K0) (K1 Km)  
 (623) (6231), (6232), (6233), (6234),  
 (6235) (6236)  
 (622) (623) (K0) (K1  
 Km) (624) (624) (K0) (K0)  
 (K1 Km) (6231) (624) (620) 가 /  
 (622) (628) (620) (620)  
 (624) (624) (624) (625)  
 m), (624) (622) 가 가 (H1 H  
 (K0) (K1 Km) 가 (624) (624)  
 (624) (520) / (626) 가  
 / (626) /  
 가 (stream)  
 (event) 가 ( )  
 가 가 가  
 (M1 Mm) (IP )가 가  
 (D1 Dm) (624) 가  
 가 (50) 가  
 (50) (K0) 가  
 가 가

가 가 가 가 (D1 Dm)

(Mbyte)가 가

가 / 가

(D1 Dm) 가 가 (M)

1 Mm) (D1 Dm) (가 ) ,가 가

(624) (30) (M1 Mm) 가 (30) (50) (M1 Mm) (50)

(624) (M1 Mm) 가 (M1 Mm)

가 (D1 Dm) (624) (M1 Mm) /

(30) (626) (624) (626)

(625) 가 가 (625) (ELD(ElectroLuminisc

ent Display), LCD(Liquid Crystal Display)

5a 5e 4 (M1 Mm) 5a

5b 5c 5d 5e

5a 5e 가 (M1 Mm)

(610) (620) 5e (610) (620)

4 (620) (610) (casing; 620a, 610a)

(board) (620a) (610a)

(630)가 (620a) (610a)

(620a) (621a) (620a) (150) (150)

(620a) (622a) (612a) (610a) (612a, 622a)

(651) (661) (650) (610a) (660)가

5a (620a) 4 (625), (625), (627)가 (6

231) (6231a, 6231b), LED(Light Emitting Diode) (625a), (627)가

(625) 가 가 (6231a) (K0) (K1 Km) (

가 (6231b) (K0) (K1 Km)

가 LED (625a) , LED (625a) 가

가 / (ON/OFF) , LED가 가

, LED가 가

(627) (620) (80)

(620) (Alternating Current, AC)

5b (80) (610a) (613)  
(Direct Current, DC) (615) (80)  
(615) (610)  
(613) (80) (Current Transformer, CT)(61  
6) (614) (90) (616)  
(629) (629)  
(629) (620) (627)가  
(620)  
(M1 Mm)  
(620) (610) (610) (620) (610)  
651, 661) 가 가 가 (620) (620) (620) (65  
1) 5d (621a) (627)  
(629) ( ) (629)  
/ (ON/OFF) , 가 가 (620)  
(651) (620) (621a) (620) (620)  
(621a) (620) (620) (651)  
(M1 Mm) (620)  
(620) (620) (61  
0) (620) (620) ) (620)  
) 가  
[ ]  
(D1 Dm) 가(H1 Hm) (90)  
(M1 Mm) . 가 가  
MMI(Man - Machine - Interface) , 6 (750)  
(D1 Dm) (M1 Mm) (T1 Tn) (90)  
(D1) (M1) (T1 Tn) (K1)  
(730), (D1 Dm) 6 (710), (720),  
(740), (750), (760), (770)  
(780)  
(710) (90)  
(90) (621) 4 (M1 Mm)  
(714), (715) 가 (711), (712), (713),  
(716)  
(760) (K1)  
Km) 가 PDA, (100) (760) 4  
(762), (M1 Mm) (623) 가 (761),  
(763), (764), (765) (766)  
(760) (T1 Tn)  
(770) (T1 Tn) , VoIP , I  
P ( )  
(770) (771)( , RJ45, USB), (772), (773),  
(774), (775) (776) (90) (T

1 Tn) 가 (770)

(720) (760) (K1 Km)

(730) (730) (T1 Tn)

(M1 Mm) (710) 가 / (730) (710) (730)

(720) (720) (730) (710) (T1 Tn)

(740)

(730) (720) 가 / (730) 가

가 (730) (720)

(750) 가 가 (D1 Dm) 가 7a 가 가 (750a)

(D1 Dm) / (interface) . 가

(780) (D1 Dm) (K1 Km) (100)

(D1 Dm) . 가 (D1 Dm) (D1 Dm) Dm) (

(D1 Dm) (761) (D1 Dm) Dm) (

K1 Km) (7b '782a') , 7b (D1 Dm)

(740) 가 가 ( )

7a / LED (790) (740) 가 가

/ / (ON/OFF) , LED가 가

[ ]

(T1 Tn) (90) (D1 Dm) (M1 Mm)

가 / , , (actuator), 가 , ( ), , VoIP , IP ,

가 , , TV, (T1 Tn)

(D1 Dm) (M1 Mm) (T1 Tn) (D1 Dm) 가 Mm)

(M1 Mm) (T1 Tn) Tn)

(830), LED (T1 Tn) 8 (810), (820), (T1 Tn

) (840) (850) , 8 (810), (811), (812), (813), (

(810) (90)

(810) (815) (816) (811), (812), (813), (

814), (850) (K1

Km) 가 PDA, (100) (850)

(851), (852), (853), (854), (855) (856)

(850) 가 가

가 (T1 Tn)

(820) (840) (K1 Km)

(830) (830) (T1 Tn)

(M1 Mm) (810) (830) (820) 가 /

가 / , VoIP , IP (830)

(830) (820) 가 / (830) 가

(830) (820)

가

LED (840) 가 가 / , LED가 가

9 10 (100) 10 9 (100) 9

(150), (100) (160) (170) (110), (120), (130), (150)

(110) 3 (50) (623) 8

(540) 4 (M1 Mm) (810) (111), (112), (113), (114), (115) (116)

(120) (160) (130) (110) (130)

(K0) / (K1 Km) (K0) / (K1 Km) (K1 Km) (130)

(Read; R) (150) (120) (100) (K0) / (K1 Km) (Write; W)

(140)

(130) (100) (K0) / (K1 Km) (K0) / (K1 Km) (K0) / (K1 Km)

(K1 Km)가 (100) (M1) (130) (K0) (K0) (100)

(K1)가 (130) (K0)가 (50) (K0)

(150) 10 LED (K0) /

(K1 Km)

1) (160) (161) (162) (16 (

110) (120) (K0) / (K1 Km) (D1 Dm)

(T1 Tn) (M1 Mm), (50), (162) (120) (K1 Km)

(110) (M1 Mm) (162) (K0) / (K1 Km)

(100) 10 (161a) (162a)

(6231) (100) (162a) (111) (M1 Mm) (M1 Mm) (6

24) (K0) / (K1 Km) (download) (130) LED(1  
(K0) / (K1 Km) (100) (50) (K0)  
(50) (100) (50) (K0)  
(M1 Mm) (624) (K0)가 (M1 Mm) (624)  
(K0) (100) (111) (M1 Mm) (624)  
(6231) (6231a) (624) (K0)  
(K0) (100) (130) (100)  
(50) (531) (130) (K0) (530)  
(50) (50) (K0)  
(M1 Mm) (K0)  
(50) (K0) (530)  
50) (K0) (K0) 가 가 (100)  
(111) (50) (50) (541) 가 가 (100) (53  
0) (K0) (K0) (100) (6231b) (130)  
30) (K0) (M1 Mm) (M1 Mm) (M1 M  
m) (K0) (M1 Mm) (624)  
(M1 Mm) (K1 Km) (K1 Km) (M1  
Mm) (D1 Dm) (T1 Tn) (T1 Tn) (730, 830)  
(100) (D1 Dm) (K1 Km)  
11a 11b, 12a 12b (50) (M1)  
(M1) (D1)  
11a (50) (K1) (Hello) (50)  
(E<sub>k0</sub> Hello) (K0) (M1) (E<sub>k0</sub> Hello)  
(80) (K0) (M1) (Hello) (E<sub>k0</sub> Hello)  
11b (M1) (M1) (M1) (K0) (Hell  
o) (50) (Hello) (80) (50) (50)  
(E<sub>k0</sub> Hello) (K0) (E<sub>k0</sub> Hello)  
(Hello)  
12a 12b (M1) (D1)  
(K1) 가 (M1) (D1)

(meter gateway) 가 .

가 가

가 가

가 가

가,

가

(57)

1. 가 , 가 가
2. 1 , 가 가  
1 2 / , 가
3. 1 , 가 가 가
4. 1 , 가 가 가
5. 1 , 가 가



가  
DC(Direct Current)

가 .

1 6. ,

가 (board)

가

가 .

6 7. ,

가 가 .

6 8. ,

가 가 /

가 가 .

6 9. ,

LED(Light Emitting Diode)

) 가 가 .

9 10. ,

LED (OFF) 가 (ON) , 가 가

1 11. ,

가 .

1 12. ,

가 가 .

1 13. ,

가 가 ;

가 가 , ;

가

, 가

,  
;

,

가

가

;

;

/

/

가

**14.**

1 가

가  
가

;

1 , 가

가

1

2 , 가

가

2

가

**15.**

14 ,

가

**16.**

14 ,

2

1

가

1

2

2

**17.**

1 가

**18.**

17 ,

가

가

,가

;

가

18 19. ,  
가

19 20. ,  
가 가 ,

17 21. ,  
가 가 .

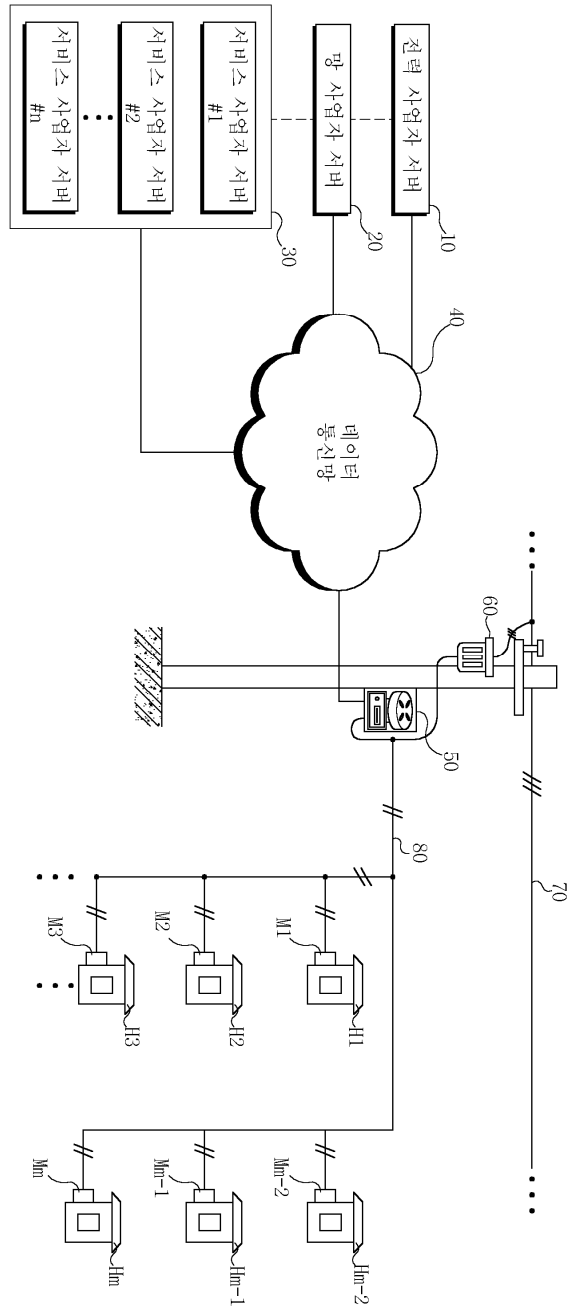
21 22. ,  
가 가 .

20 23. 22 ,  
가 PDA(Personal Digital Assistant),

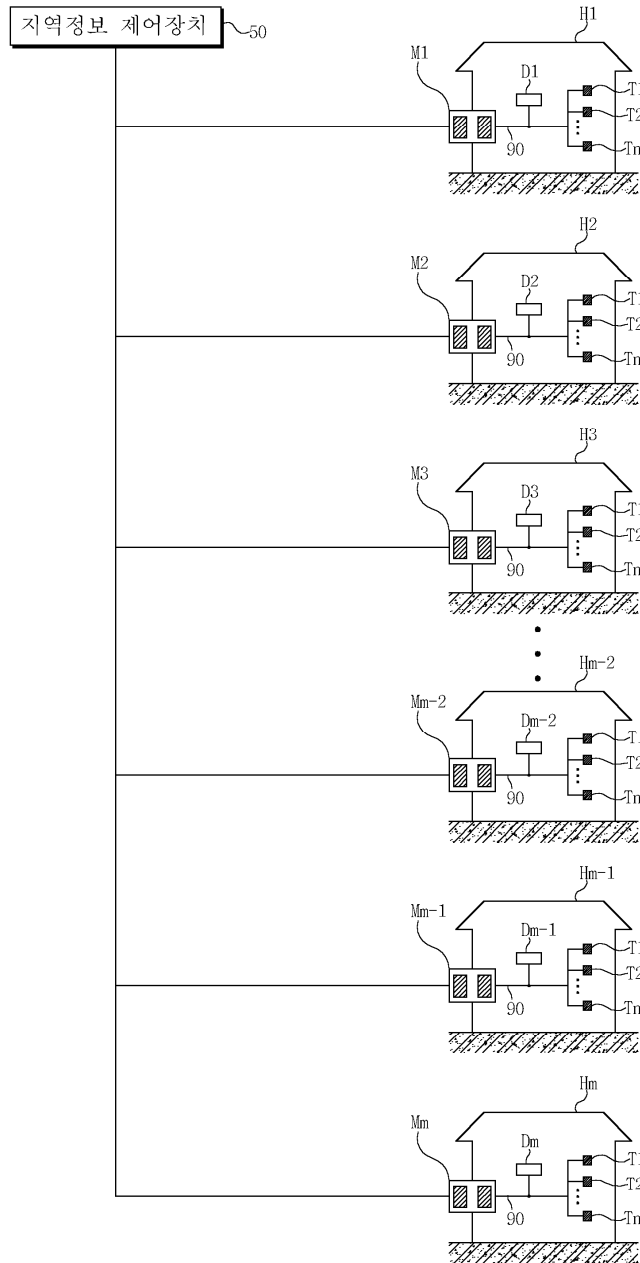
23 24. , ,  
가 / ;  
/ 가 , / 가 ;  
/ ;  
/ ;  
/ /

24 25. ,  
LED ,

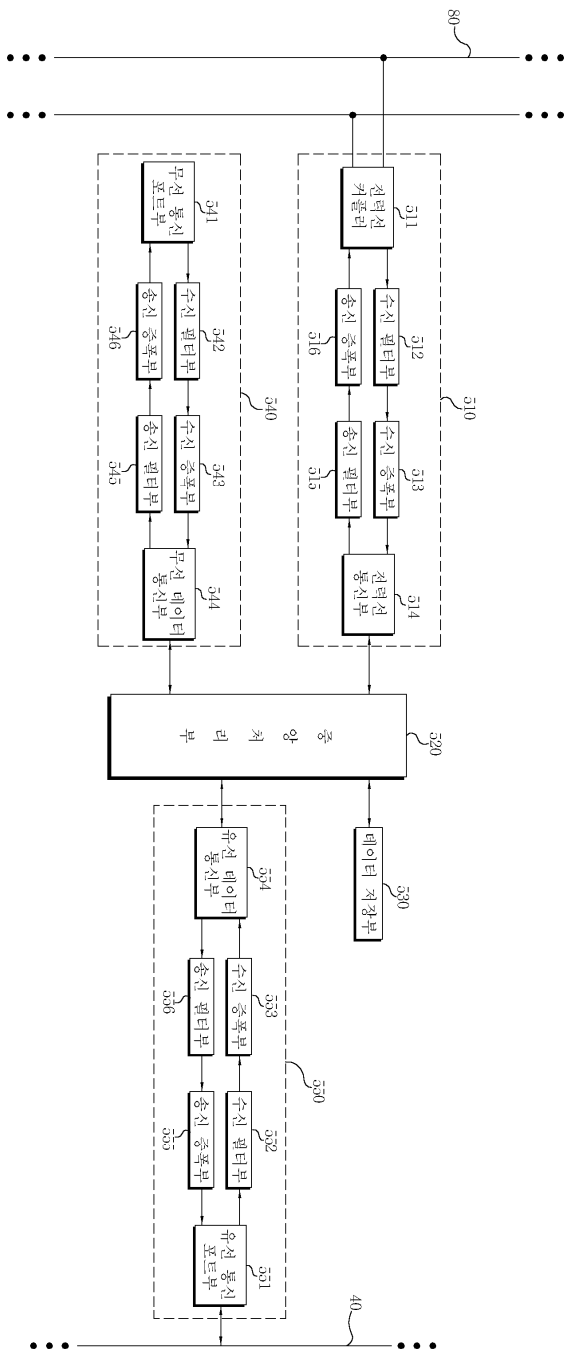
1

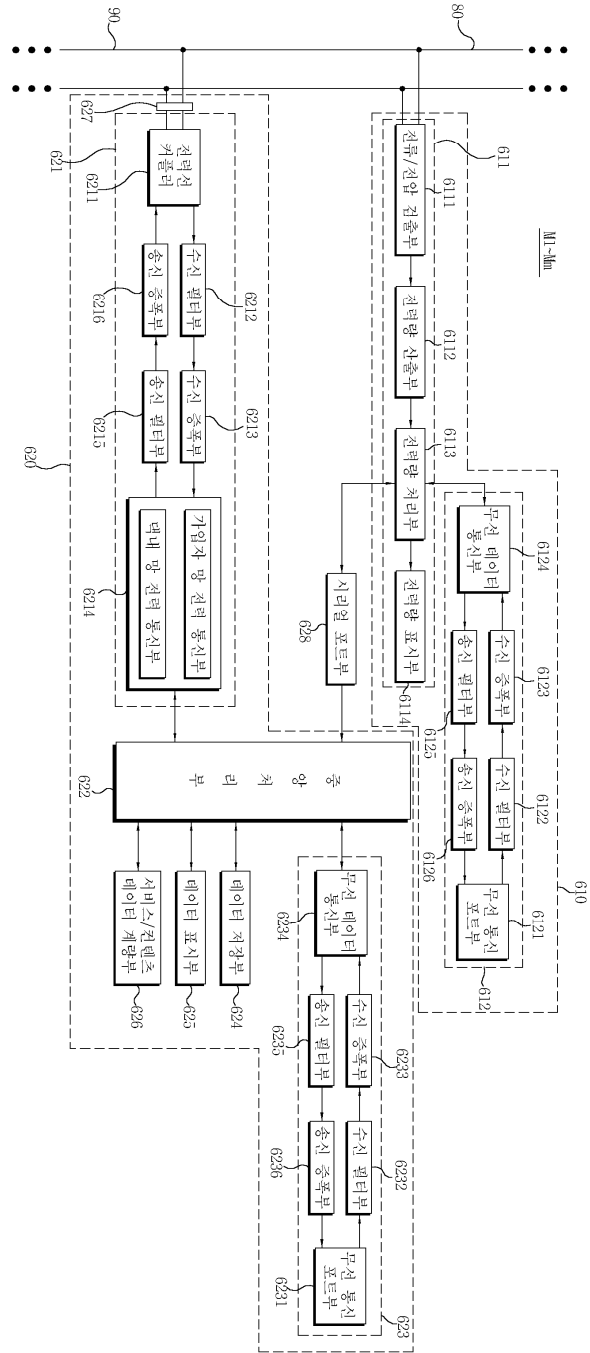


2

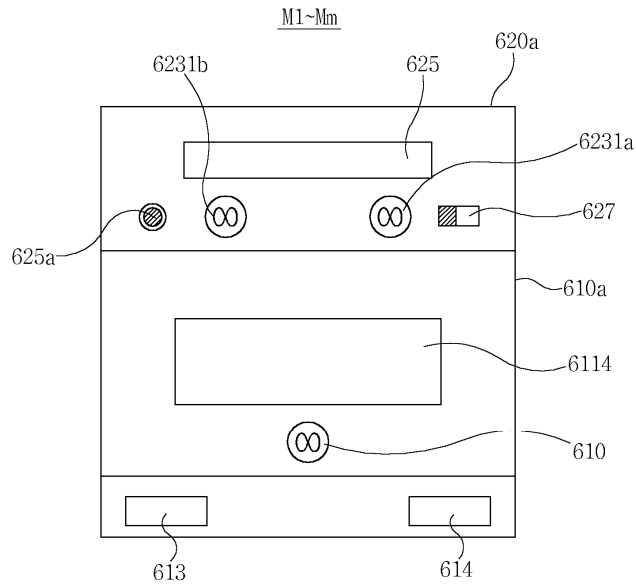


3

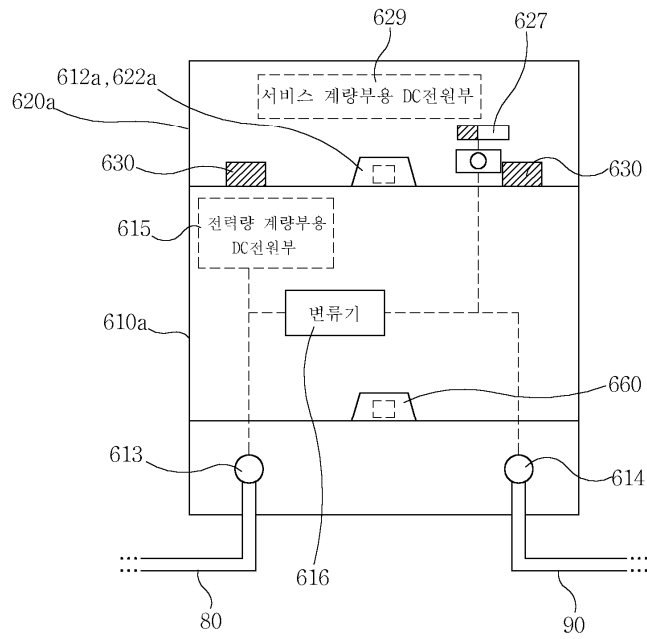




5a

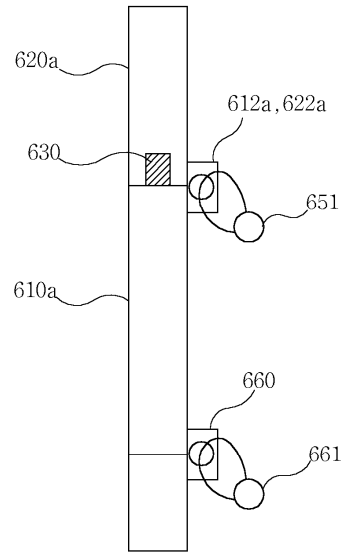


5b

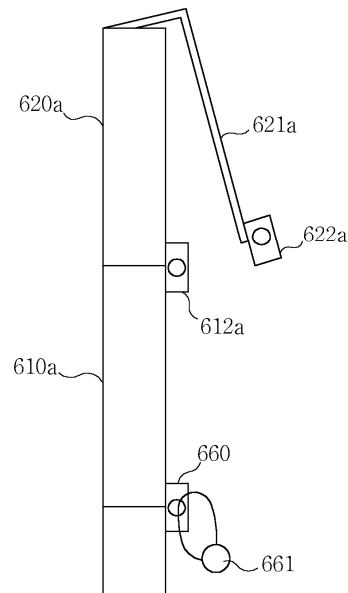




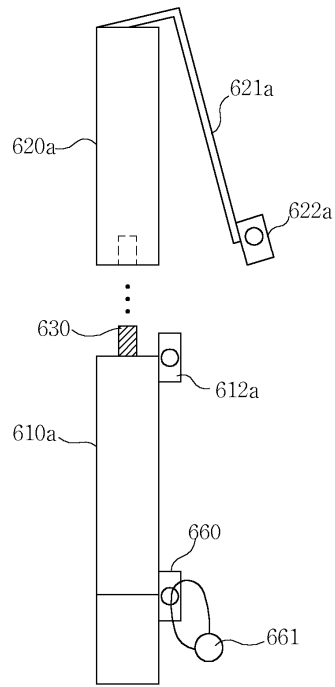
5c



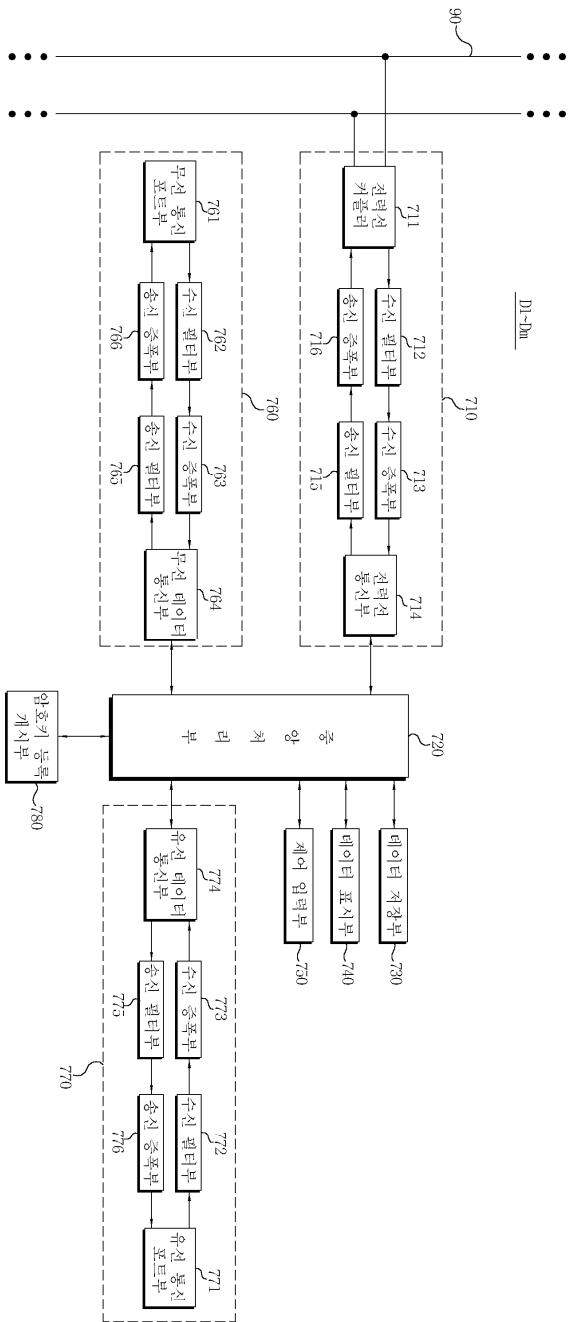
5d



5e

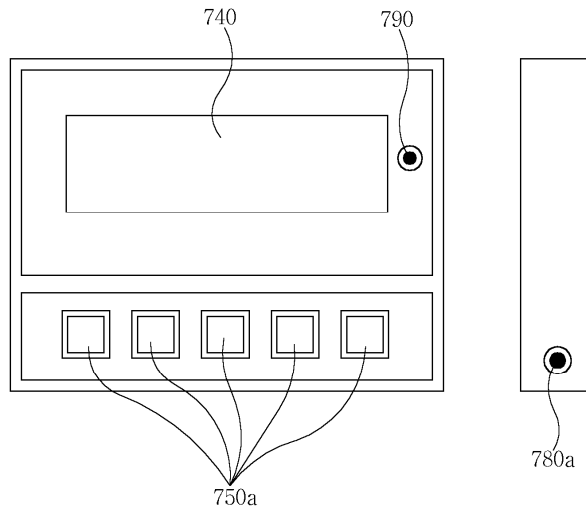


6

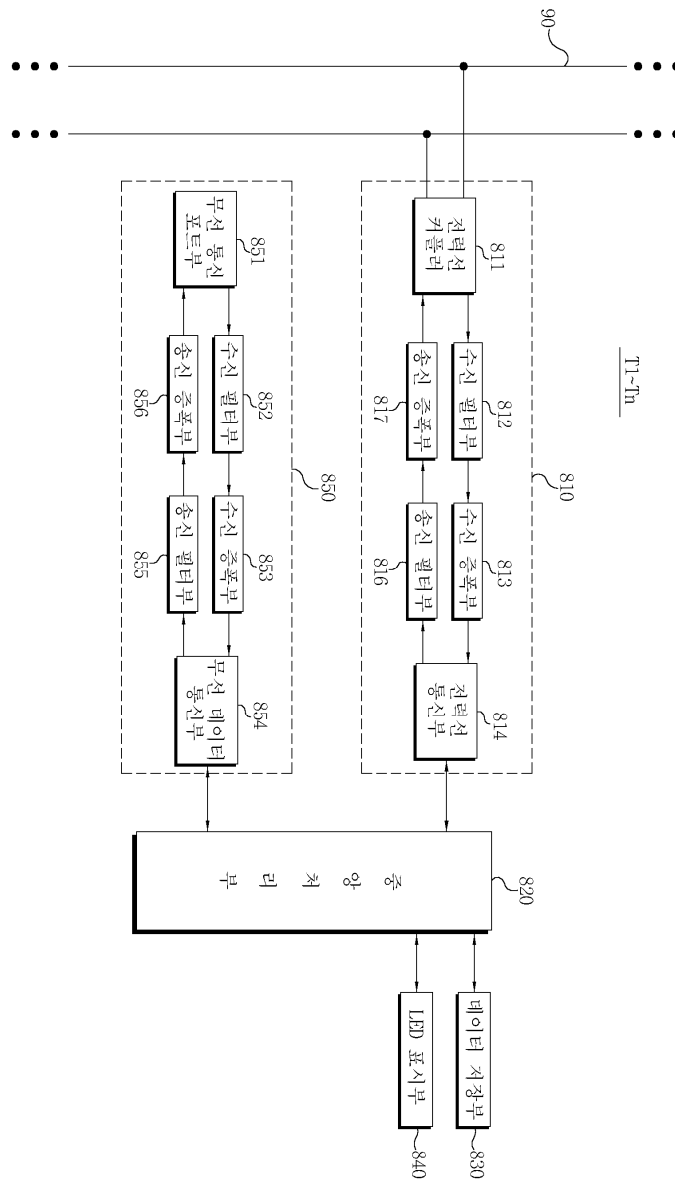


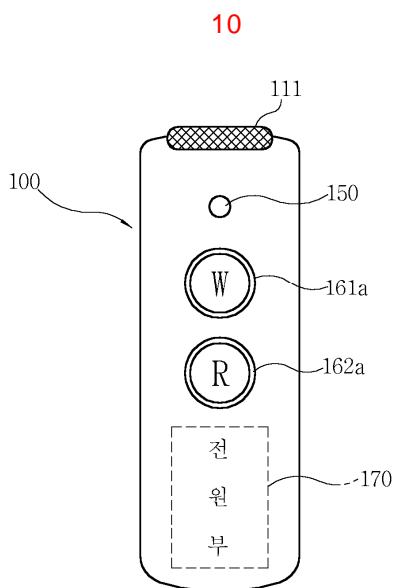
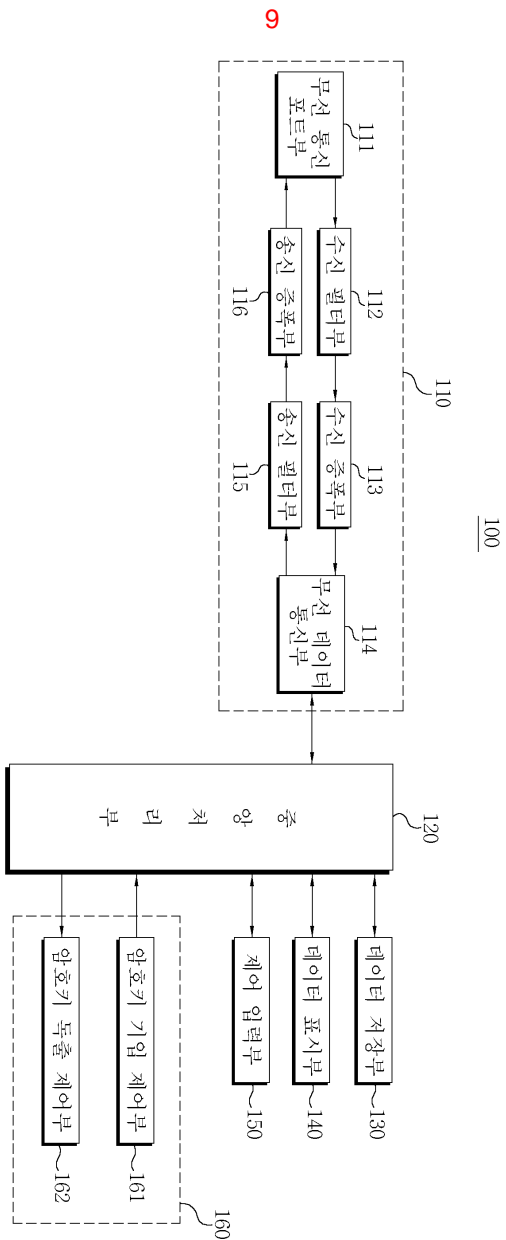
7

D1~Dm

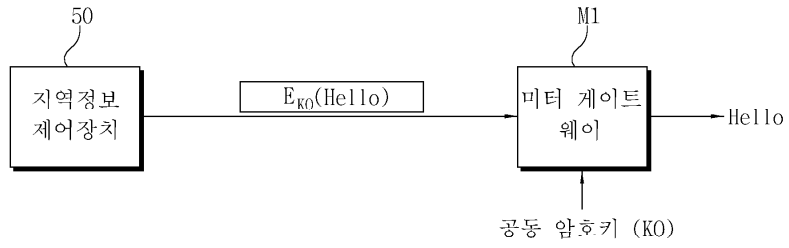


8

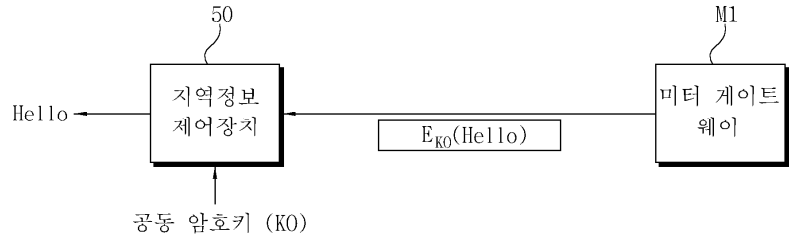




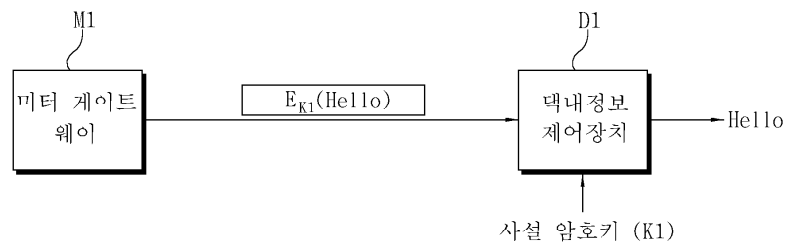
11a



11b



12a



12b

