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20-0363345  
2004 09 20

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2004 03 12

(73) 2 475-22

(72) 32-8 가 3 E-101

(74)

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(54) 가

가 , 가 ,

가 , 가 ,

1

가 , , , ,

1

가 .

2 1 가 가  
 3 1  
 4 3  
 5 1  
 6 5  
 7a 7e 5  
 8 2  
 9 8  
 10 2  
 11  
 12 11  
 13a 13b

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10 : 20 :

30 : 40 :

50 : 60 :

70 : 80 :

90 : H1 Hm : 가

M1 Mm : D1 Dm :

T1 Tn : MID1 MIDm :

K1 Km :

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 :

750a : 가

가

가

,

가 .

, (Power Line Communication; PLC) , 가

(camcorder) 가 가 TV(TeleVision), (computer),  
(homenetwork)

symmetric Digital Subscriber Line) Mbbs 가 ADSL(As  
(access network) (cable modem)

(Automatic Meter Reading; AMR),  
(internet)

가 가 가 , 가 가

가 가 (contents) , 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 가 , 가

가 가 가 , 가

1 가 가 2 1 (80)

, 가 ,

(90)

1 2 , 가 (40)  
 (50) , (50) ( (80)  
 M1 Mm) (90) (meter gateway; M1 Mm) , (D1 Dm) ,  
 (D1 Dm) (T1 Tn)

[ ]

(10), (20), (30) , TCP/IP(Trans  
 mission Control Protocol/Internet Protocol) (40)( (50)  
 (10), (20) (30) (40)

(10) (40) (50) 가(H1 Hm)  
 가(H1 Hm) (10) (50) 가(H1 Hm)  
 가(H1 Hm) (50) 가(H1 Hm)

(20) (40) (50) 가(H1 Hm)  
 (50) / , / 가(H1 Hm) (service/contents)  
 가(H1 Hm) 가(H1 Hm) (20)

(M1 Mm) (30) / (40) (30) (40) (40)  
 (M1 Mm) / . , ( ) ( )  
 가 / (40) , 가 / (50) 가(H1 Hm) 가 /  
 가(H1 Hm) 가 / (50) 가(H1 Hm) 가 /  
 가(H1 Hm) 가 / (50) 가(H1 Hm) 가 /  
 H1 Hm) , , , , 가(H1 Hm) , 가(  
 H1 Hm) , IP 가(H1 Hm)

(M1 Mm) 가 / (30) , / 가 /  
 [ ]

(50) 가 (access network) 가 (50) 가(H1  
 (M1 Mm) (M1 Mm) (80) (80)  
 Hm) (40) (50) (M1 Mm)  
 (60) 110/220V  
 (50) (80) (M1 Mm) (50)  
 (40) (10) , (50)

(M1 Mm) (10) 가 ( 3 '530' ) 가 (530) 가 (50)

(40) (M1 Mm) (10) (40) 가 / (50) 가 / (40) 가 / (50) 가 / 가 / 가 /

(10) 가 / (40) 가 / 가 / 가 /

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

(30) (30) 가 (30) (30) (M1 Mm) (MID1 MIDm) 가 (M1 Mm) (K1 Km) (K1 Km) (K1 Km)

(50) (M1 Mm) (MID1 MIDm) 가 (M1 Mm) (K1 Km) (K1 Km)

(530), (50) 3 (540), (550), (510), (520), (80) (510) (80) (80) (530) (80) (510) (550) (510) (80) (514), (515) (516) (coupler; 511), (512), (513), (511) (80) (M1 Mm) (80) (512) (511) (516) (511) 1 (80) , 2 (noise) (512) (513) (512) (513) (513) (512) (515) (516) (515) (515) (514) (516) (515) (515) (511) (516) (514) (515) (516) (511) (515) (516) (515) (514) (chip) OFDM(Orthogonal Frequency Division Multiplexing), CDMA(Code Division Multiple Access) (514) (513) (520) (520) (515) (550) (40) (10), (550) (40)

(10) 가 / (550) (510) (80) (520) (520)

56) (550) (551), (552), (553), (554), (5

(555) (551) (40) (552) (40) (555)

(552) (553) (552)

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

(556) (555) (556)

(554) (555) (556)

(556) (551) (554) (553) (520) (520) (556)

(540) 가

PDA(Personal Digital Assistant), (note book computer) (remote control)

4 (M1 Mm) (MID1 MID

m) (K1 Km) (530) (100) 11 12 (MID1 MIDm) (K1 Km) (

Km) (530) (540) (MID1 MIDm) (541), (542), (

543), (544), (545) (546) (541), (542), (

(541) (M1 Mm)

(MID1 MIDm) (K1 Km) (542) (542) Km

( ) , (546) (MID1 MIDm) (K1 Km)

) 가 PDA, (541) (541)

(MID1 MIDm) (K1 Km) (541)

(MID1 MIDm) (K1 Km)

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

(MID1 MIDm) (K1 Km) (542)

(543) (543) (542)

(544)

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

(MID1 MIDm) (K1 Km) (545) (544)

(546) (546) (545)

(541)

(544) (543)

(520) (520)

(545)

m) (520) (540) (M1 M

(MID1 MIDm) (K1 Km) (530)

(MID1 MIDm) (K1 Km) (530) (MID1 MIDm) (K1 Km) (540) (50)

(520) (MID1 MIDm) (K1 Km) 가

(MID1 MIDm) (K1 Km)

가 가 가 가 (520) (MID1 MIDm) (MID1 MIDm)

m) Dm) (K1 Km) 가 가 (520) (MID1 MIDm) (MID1 MIDm)

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

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

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

y), (530) (Random Access Memory; RAM) (Read Only Memory; ROM), (flash memor (520)

가 가 (H1 Hm), (530) 4 (M1 Mm) (MID1 MIDm) (K1 Km)가 (MID1 MIDm) (K1 Km)

(MID1 MIDm) (K1 Km)가 (530) (520) 가

[ (M1 Mm)]

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

(D1 Dm) (T1 Tn) (80) 가 (50) (80) (50) (90) (T1 Tn)

(M1 Mm) (50) (90) (T1 Tn)

(624) (50) (90) (T1 Tn)

(M1 Mm) 가(H1 Hm) (80) (M1 Mm) (D1 Dm)

가 / (M1 Mm) (T1 Tn) 가 / (80) (50)

(M1 Mm) (MID1 MIDm) (K1 Km) (624) 가 (50) 가 (K1 Km)

m) (K1 Km) (50) (M1 Mm) (MID1 MIDm) (MID1 MIDm)

(MID1 MIDm) (MID1 MIDm) (MID1 MIDm)



(M1 Mm) 5 (610) (620)  
(610) (611) (612)  
(620) (621), (622), (623), (624),  
(625), / (628) (626) (620) (627) (610)

(610) 가(H1 Hm) (628)  
(620) (622)

6114) (611) / (6111), (6112), (6113) (  
/ / (6111) (80) 가 ( )  
(6112) / (6111) /  
(6113) (6112) (6113) (628)  
(621) (6114) (6113)

(612) (remote controlle  
r, ) (611) (6113)  
가 , (611) ( ) ,  
가 PDA

(612) (6121), (6122), (6123),  
(6124), (6125) (6126) (6121) (6121)  
) (6123) (6122) (6121)  
(6113) (6113) (6124)  
(6124), (6125), (6126)  
(6121)

(610) 가  
(620) (80) (50) (610)  
622), (624), (6214) (620) (610)  
) (620)

(620) (50) (80)  
(T1 Tm) (620)  
m) 가 (50), (MID1 MIDm) (K1 K  
(620) (K1 Km) (D1 Dm) (T1 Tn)  
(50), (D1 Dm) (T1 Tn)  
(K1 Km)

(621) (80) (90)  
(80) (90)

14), (621) (6211), (6212), (6213), (62  
211) (6215) (6216) (6212) (6  
(80) (90) (6212)  
(6212) (6211) (6213)  
(6212) 가 (6214) (90) (80)  
(6214) (622) (6215)  
(6215) (6214) (6214) (6216) (6215)

(80) (6211) (90) (6211) (6216)

(623) (50) (MID1 MIDm) (540) 가

(K1 Km) (6233), (6234), (623) (6235) (6231), (6232), (6236) PDA,

(622) (K1 Km) (623) (MID1 MIDm) (624) (6231)

(624) (620) 가 / (622) (628) (624)

(622) (620) (625) (624) 가 가 (H1 H (624))

m), 6 (624) (624) (MIDi) (Ki)가 'i' 1 m 가

(624) (624) / (626) (626) /

/ (626) /

가 (stream)

가

(event) 가 ( )

(M1 Mm) (IP )가 가 가

(D1 Dm) (624) 가 (50) 가

(50) 가 가 (M1 Mm) 가

가 가 가 가 (D1 Dm)

가 가 (Mbyte )가 가

가

가

가

(D1 Dm) , 가 가 (M

1 Mm) (D1 Dm) , 가 가 (50)

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

가 (D1 Dm) (624) (M1 Mm) / (626)

(30) (626) (624) (624) (M1 Mm) / (626)

(625) 가 가 (625) ELD(ElectroLuminisc

ent Display), LCD(Liquid Crystal Display)

7a 7e 5 (M1 Mm) , 7a ,

7b , 7c 7d , 7e .

7a 7e (M1 Mm) (610) (620) (610)

(620) 7e 가 (620) (610)

5 (620) (610) (casing; 620a, 610a)

(board) (620a) (610a)

(630)가 (620a) (610a)

( ) (620a) (621a) (622a)가

(622a) (610a) (622a) (651)

(612a) (622a, 612a) (651)

1) (610a) (661)가 (66)

7a (620a) 5 (625), (6

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

(625) 가 가 (6231a) (MID1 MIDm) (K1 Km) (K1

가 (6231b) LED (625a) / (ON/OFF) , LE

Km) , LED (625a) 가 가 / LED가 가 (6

D가 가 (625a) 가 가 (627) (AC)

20) (80) , (620) (610a) (613)

(80) (615) , (80)

(Direct Current, DC) (615) (615)

(Alternating Current, AC) (80) (90) (Curre

(610) (613) (80) (90) (616)

nt Transformer, CT)(616) (614) (90) (616)

(620) (629)

(M1 Mm)

(610) (620) (610) (620) (610)

51) 가 7d (620) (621a) (627) (620)

(ON/OFF) (651) (621a) (620) (621a) (651) (620)

[ ]

(D1 Dm) 가(H1 Hm) (90)

(M1 Mm) MMI(Man - Machine - Interface) , 8 (750) (T1 Tn) (90)

(D1) (M1) (T1 Tn) (K1)

(730), (D1 Dm) 8 (710), (720), (740), (750), (760), (770)

(780)

(710) (90)

(90) (621) 5 (M1 Mm)

(714), (715) 가 (716) (711), (712), (713),

(760) (K1)

Km) 가 PDA, (100) (760) 5

(762), (M1 Mm) (763), (764), (623) 가 (761),

(760) (T1 Tn) (765) (766)

(770) (T1 Tn) , VoIP , I

(770) (771)( , RJ45, USB), (772), (773),

(774), (775) 가 (776) (770) (90) (

T1 Tn) 가 (770)

(720) (760) (K1 Km)

(730)

(M1 Mm) (710) 가 / (T1 Tn)

(720) (720) (730) (710) (730)

(730) (710) (T1 Tn)

(740)

(730) (720) 가 / (730) (Ki)가

(730) (720)

가

(750) 가 가 (D1 Dm) (D1 Dm) (interface) .가 9 가 가 (750)

a)

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

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

1 Km)

(740) 가 가 ( )

, 9 / LED (790) , LED가 (740) 가 가

/ (ON/OFF) , LED가 가

[ ]

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

, (actuator), 가 , ( ), , VoIP , IP ,

, 가 , , TV, . (T1 Tn)

(D1 Dm) (D1 Dm) (M1 Mm)

(M1 Mm) (T1 Tn) Tn (D1 Dm) 가

(T1 Tn) 10 (810), (820), (T1 Tn)

n) (830), LED (840) (850) (810), 10 (820), (T1 Tn)

(810) (90)

(810) (811), (812), (813), (

814), (815) (816)

(850) (K1

Km) 가 PDA, (100) (850)

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

, 가 (850) 가 가

(T1 Tn)

(820) (840) (K1 Km)

(830) (830) (T1 Tn)

, (820) (810) (830) (820) 가 /

, 가 / , VoIP , IP ,

(830)

(830) (820) 가 / (830) (Ki)가

, (830) (820) ,

가

LED (840) 가 가 / , LED가 / 가 , LED가 가

, 11 12 , 12 11 (100) (100) . 11

11 (150), (100) (160) (170) (110), (110)가 (120), (100) (130), (150)

(540) (110) 3 (50) 10  
(T1 Tn) (M1 Mm) (810) (623)  
(110) (111), (112), (113), (114),  
(115) (116)

(120) (160) (130)  
(MID1 MIDm) (K1 Km) (MID1 MIDm) (110)  
(130) (110) (120) (MID1 MIDm) (K1 Km)  
Km) (Write; W) (Read; R) (150) (MID1 MIDm) (K1 Km)  
(140)

(130) (100) (MID1 MI  
(K1 Km)가 , , 가 (M1) (MID1) (K  
(K1)가 , , 가 (100) (100) (130) (MID1) (MID  
Km) (100) (50) (MID1) (MIDm) (K  
m) (MID1 MIDm) (K1 Km)가 (M1 M

(150) 12 LED , (MID1 MIDm)

(160) (161) (162) (16  
(120) (MID1 MIDm) / (K1 Km) (D1 D  
(110) (M1 Mm), (50), (120)  
(T1 Tn) (M1 Mm) (162) (50)  
(MID1 MIDm) / (K1 Km)

(100) 12 (161a) (162a)  
, 가 (100) (111) (M1 Mm)  
(6231) (162a) (download) (M1 Mm) (K1 Km) (  
624) (K1 Km) (130) LED(150) (K1 Km)

(M1 Mm)가 (50)  
(50) (MID1 MIDm) (K1 Km)  
(100) (M1 Mm) (MID1

MIDm) (K1 Km)

(50) (M1 Mm) (624) 가 ,  
(M1 Mm) (M1 Mm) (50) (MID1 MIDm)가  
(50) (MID1 MIDm)

(100) (M1 Mm) (624) (6231) ,  
 (100) ( 12 '111' ) (624) (6231a) (624) (100) (50) ( 3  
 (6231a) (100) (130) (130) (100) (50) (50) ( 3  
 '531' ) (130) (130) 4 (MID1 MIDm) ( (50)  
 K1 Km)가 ( 3 '530' ) (M1 Mm) (MID1 MIDm) (MID1 MIDm)  
 , (50) (M1 Mm) (MID1 MIDm) (MID1 MIDm)  
 (50) (K1 Km)가 ( 3 '530' ) (MID1 MIDm) (MID1 MIDm)  
 가 (M1 Mm) (MID1 MIDm) (50) (50) (541)  
 가 (100) (111) (50) (50) (541)  
 (100) (130) (530) (100) (6231b)  
 (130) (624) (D1 Dm) (T1 Tn) (M1 Mm) (730, 830)  
 (50) (100) (D1 Dm) (T1 Tn) (M1 Mm) (730, 830)  
 13a 13b (50) (M1)  
 13a (50) (K1) (Hello) (K1) (Hello)  
 (50) (K1) (Hello) (K1) (Hello)  
 (E<sub>k1</sub> (Hello)) (50) (E<sub>k1</sub> (Hello)) (M2 Mm) (M1) (80)  
 (M2 Mm) 가 (E<sub>k1</sub> (Hello))가 (M1) (M3) (80)  
 (M1) (E<sub>k1</sub> (Hello)) (M1) (E<sub>k1</sub> (Hello)) (E<sub>k1</sub> (Hello)) (M3)  
 ) (K1) (Hello) (Hello) (E<sub>k1</sub> (Hello)) (E<sub>k1</sub> (Hello)) (E<sub>k1</sub> (Hello)) (M3)  
 (K1)가 (E<sub>k1</sub> (Hello)) (E<sub>k1</sub> (Hello)) (E<sub>k1</sub> (Hello))  
 13b (M1) (M1) (M1) (MID1) (Hello) (M1) (80) (MID1)  
 (50) (K1) (Hello) (MID1) (Hello) (M1) (80) (MID1)  
 (50) (M1) (MID1, E<sub>k1</sub> (MID1+Hello)) (80) (80)  
 Hello) (50) 가 (MID1, E<sub>k1</sub> (MID1+Hello)) (MID1, E<sub>k1</sub> (MID1+Hello))  
 (50) (MID1, E<sub>k1</sub> (MID1+Hello)) (MID1, E<sub>k1</sub> (MID1+Hello)) (51)  
 (MID1) (MID1, E<sub>k1</sub> (MID1+Hello)) (K1 Km) (MID1, E<sub>k1</sub> (MID1+Hello))  
 (K1)가 (K1) (Hello) (E<sub>k1</sub> (MID1+Hello)) (MID1)  
 (MID1) (Hello) 가 (MID1) (51)  
 (M1) 가 (M1) (MID1, E<sub>k1</sub> (MID1+Hello))  
 (50) 가 (K1)가 (E<sub>k1</sub> (Hello))  
 (M1 Mm) (D1 Dm) (T1 Tn) (M1) (D1)  
 (T1 Tn) (K1) 가 (M1)

가

가 가

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(57)

1.

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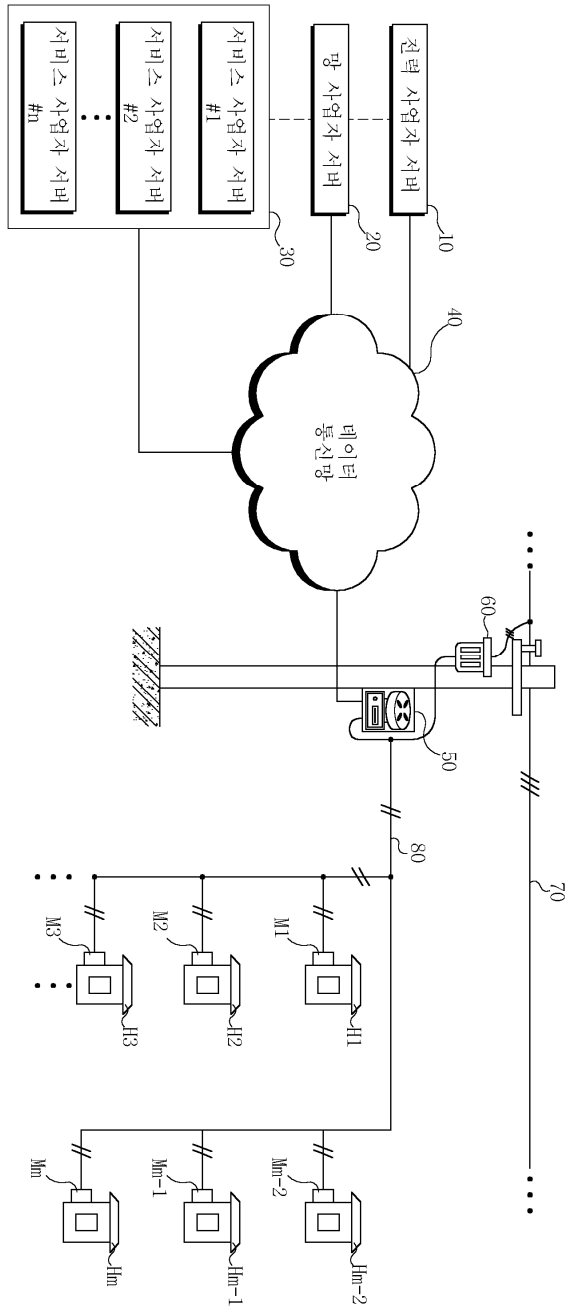
가

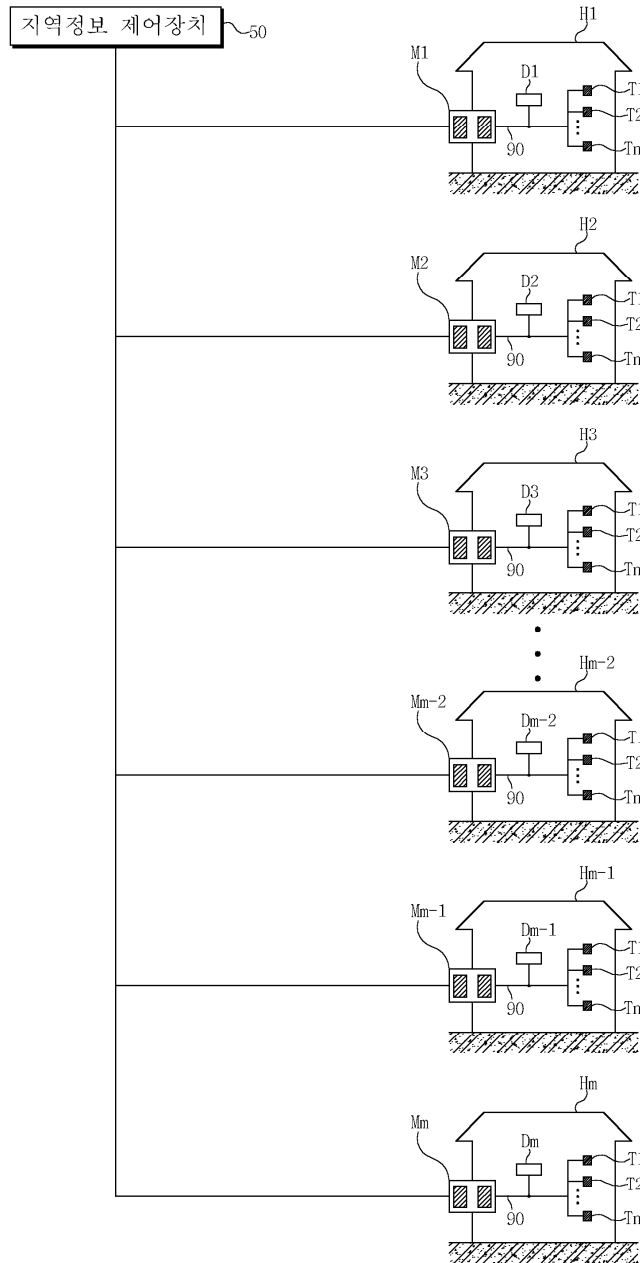
가

가

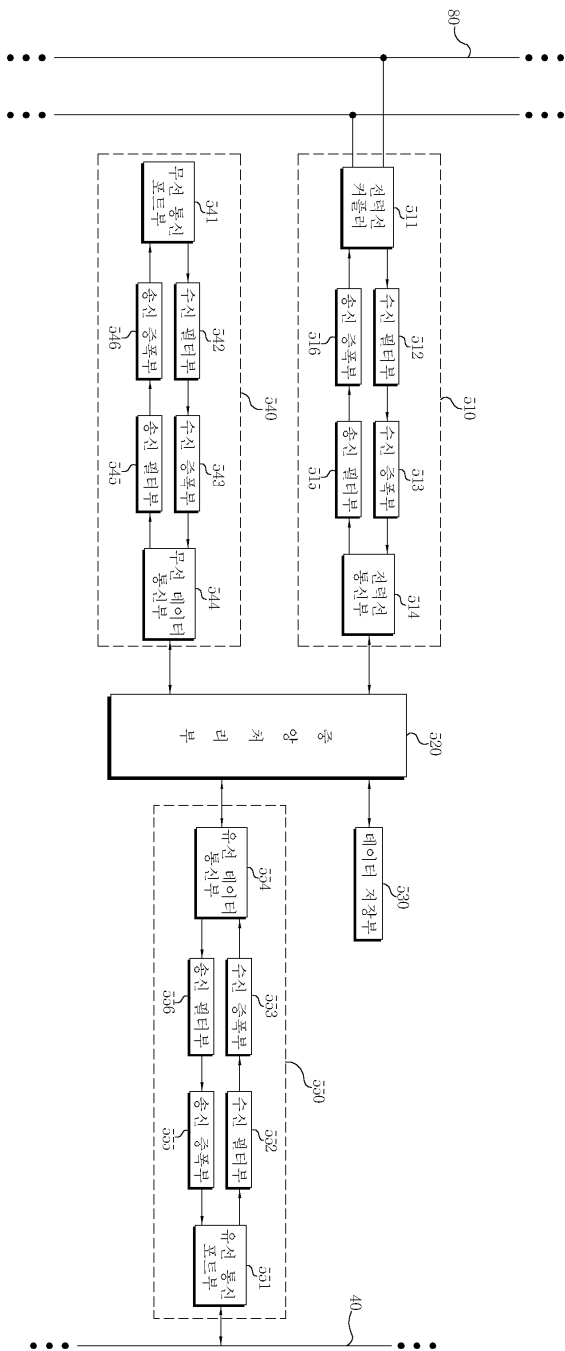
.

1

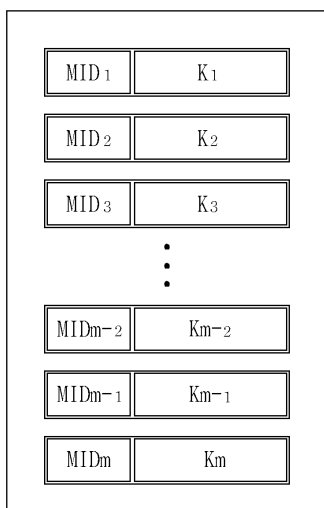




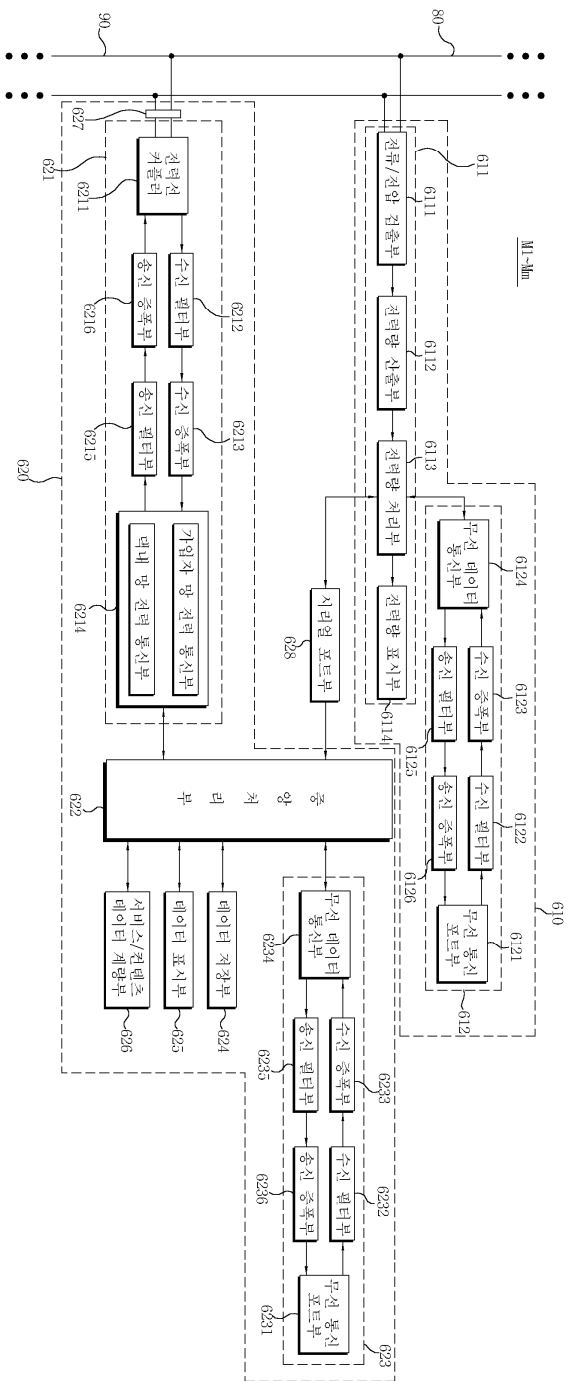
3



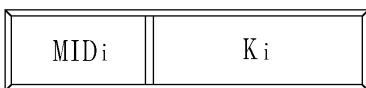
4



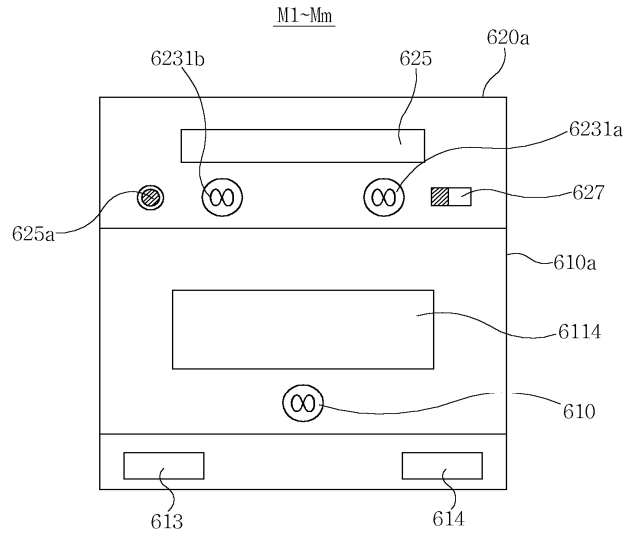
5



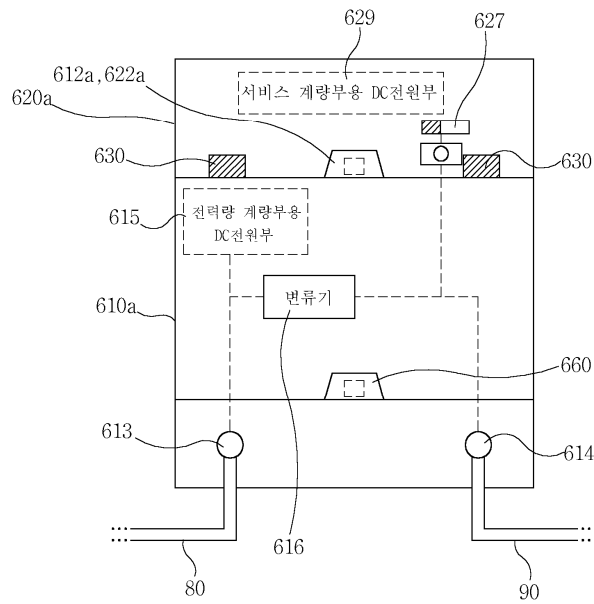
6



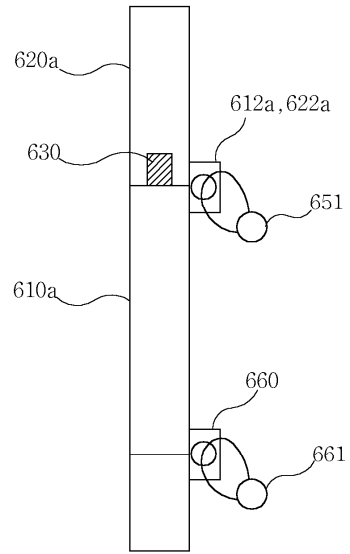
7a



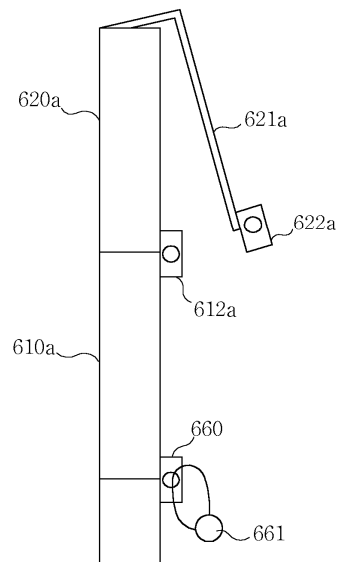
7b



7c

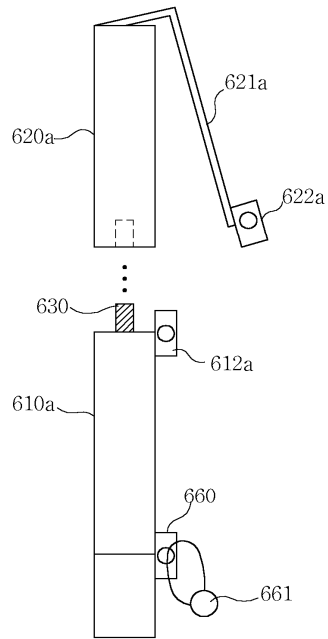


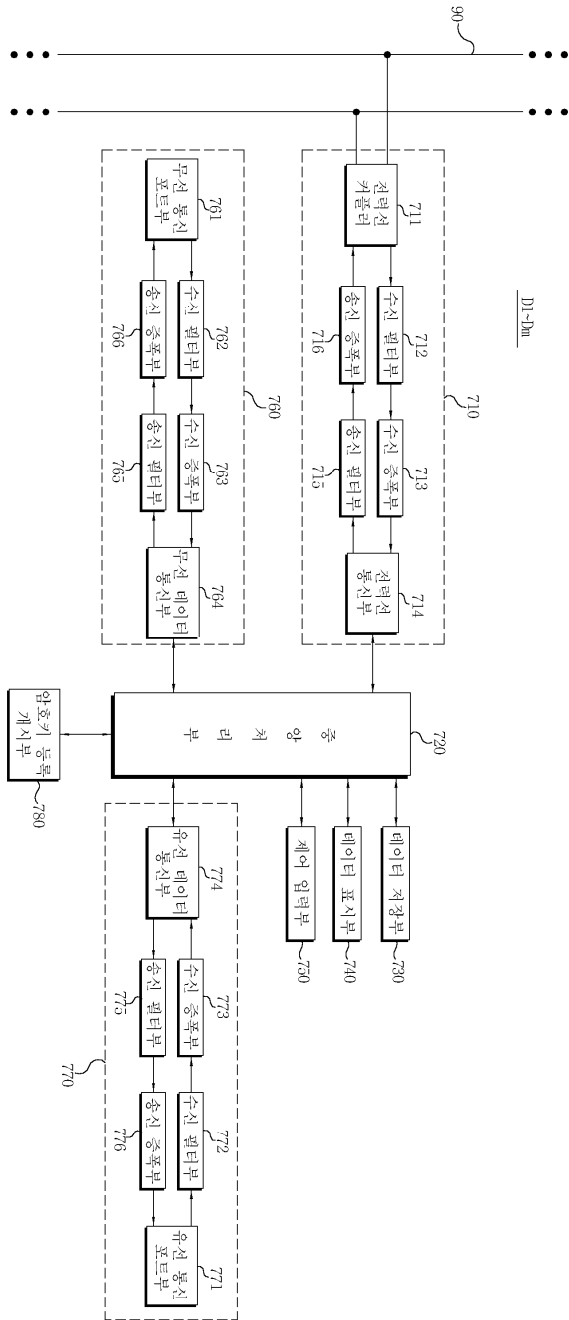
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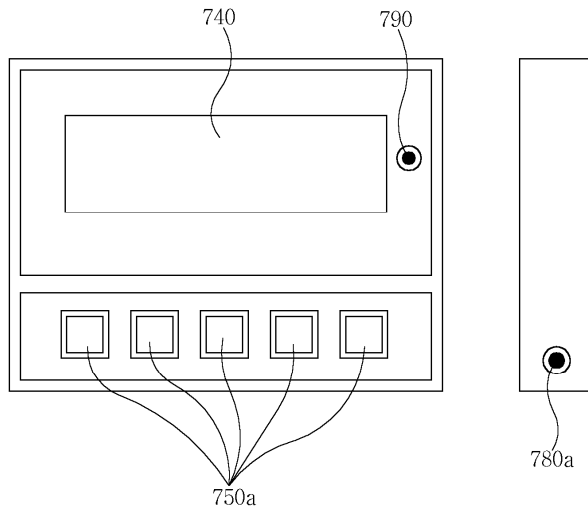
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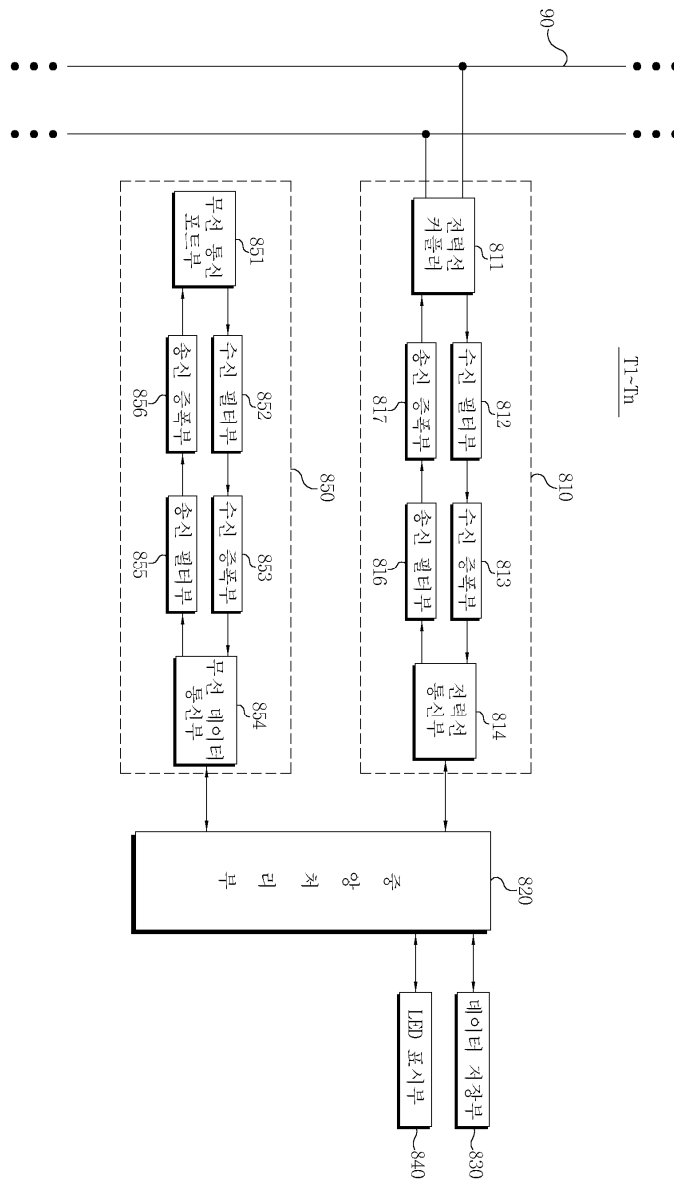


9

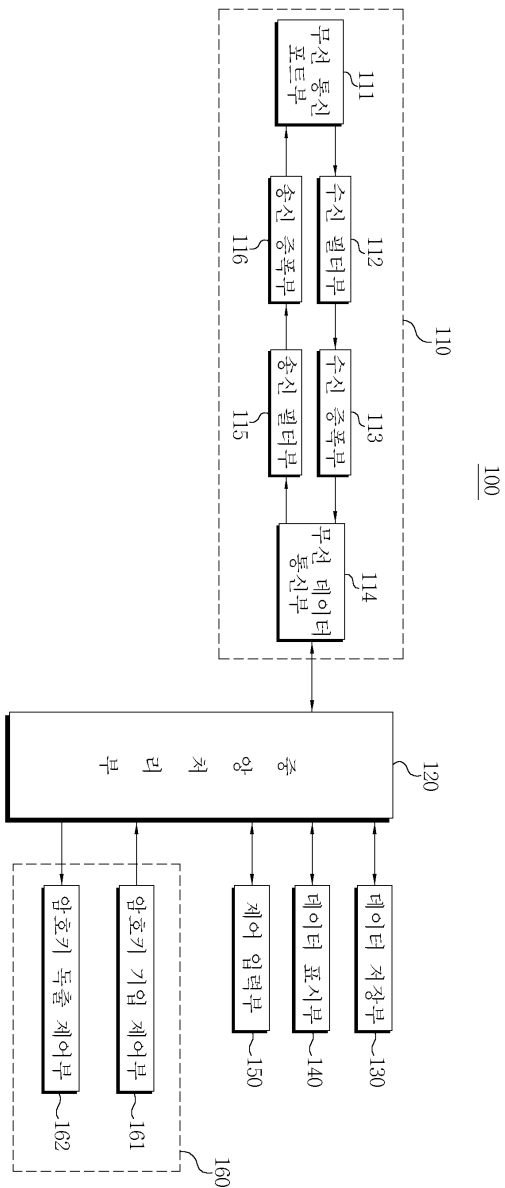
D1~Dm



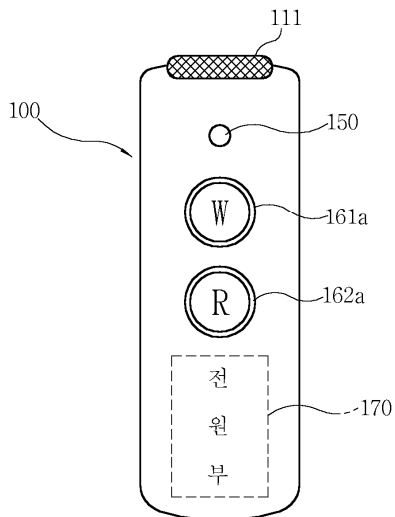
10



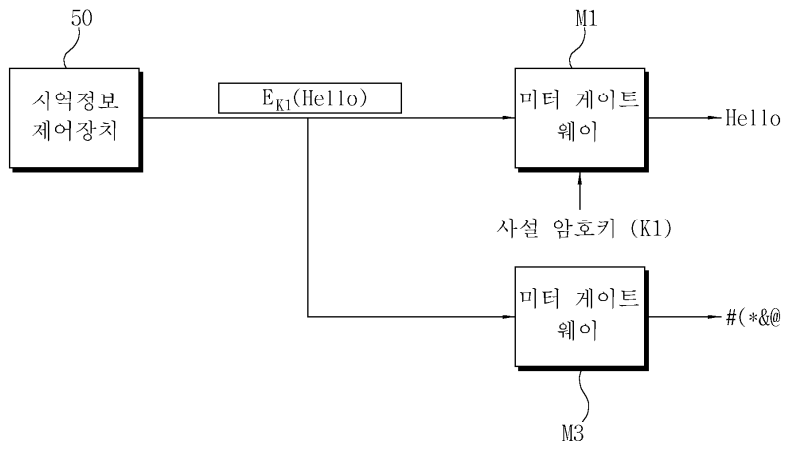
11



12



13a



13b

