

(19)  
(12)

(KR)  
(A)

(51) 。 Int. Cl.<sup>7</sup>  
H04M 11/00

(11)  
(43)

2003-0050406  
2003 06 25

(21) 10-2001-0080834  
(22) 2001 12 18

(30) 1020010079791 2001 12 15 (KR)

(71) 4 873-29 4

(72) 329-1 105 1501

3 505

3 가 608

4 834-11

(74)

:

(54)

가 가

IC ; PLC IC IC ; DTMF 가 , ; DTMF ; DTMF ; DTMF ; DTMF ;

4

PLC, ,

1a 1b

,

2a X-10

,

2b 2a

,

3 (H

A : Home Automation)

,

4 ,

5 ,

6 ,

7a 7b ,

7a ,

7b ,

7c ,

8a 8l ,

8a (410) ,

8b (450) ,

8c (435) ,

8d IC(430) ,

8e (425) (Ring Detector) ,

8f (425) ,

8g ,

8h DTMF (420) ,

8i IC(430) ARS ,

8j DTMF (415) ,

8k PLC (405) ,

8l ,

8m PLC (405) AC ,  
 8n ( , 455) .

300 : 301 :  
 302 : 303 : 가  
 304 : 가 305 :  
 306 : 401 : IC  
 405 : PLC 410 :  
 415 : DTMF 420 : DTMF  
 425 : 430 : IC  
 435 : 440 :  
 445 : 450 :  
 455 : ( )

가 가 , ,  
 .  
 가 .  
 , 가 , ,  
 .  
 , , ( )  
 . 가 가 가 ( , , )  
 , ,  
 , (PLC : Power Line Communication) 가

(Zero Cross Point)

1, 1/2, 120KHz, X-10, 1ms

1a 1b

1a 1b 가 '0' '1' 1a 1b 가 1

X-10 '( : 10-2000-002198) '( : 10-1999-053820)

X-10

2a X-10, 2b 2a

2a, X-10, 'Start Code'가 2, 'House Code'가 4, 'Number Code', 'Function Code'가 5, 'Start Code' 1110, 1/2, 가 L1, 1 0, 가, L0, 0 1, 2b, L1 L0

가 '1', '0', 1(L1), 0(L0), 가, 0 1

2b, 'Start Code' '1110', 'House Code' 'L0,L0,L0,L1', 'Number/Function Code' 'L0,L0,L0,L1,L1'

가 가 PSTN

가 가

S232) IC, IC, PLC, DTMF, DTMF (UART, R, PLC, IC, DTMF)

F, IC, DTMF, DTMF, IC, DTMF

DTMF, IC

가 .

, , ; 가 , , 가

, , ;

, ARS ;

, 2 가 , ; , ARS ;

, , ;

3 (H  
A : Home Automation)

가 (303), (300) 가 (304) (301), (302), (300) (305) 가 (306) 가

(301, 302, 303, 304, 305, 306) PSTN 가

3 , (300) 가 , 가 (306)가 가

가 (300) , 가 , 가

가 ARS .

, (306)가 , FM

, 3 가 (304)가 가 (303)

4 , IC(401), PLC (Coupling)(405), (410), DTMF (Generator, 415), DTMF (Decoder)(420), (Loop) (425), IC(430), (435), (440), (Buzzer, 445), (455) (450) .

IC(401) (450) (UART RS232)

PLC (405) IC(401) IC(401)

(420) DTMF (425) , DTMF (415), DTMF , DTMF , (450)

DTMF (450) IC(430)

(455) (450) (455) (445)

(440) PSTN , 가 PS

TN (450) PSTN DTMF (435)

(450) 가 가 가

ARS 가 가 DTMF

, 가 (On) , 'All Light On' ARS

, 가 , 가 가 가 ARS

terface) ARS , (In

5 , S501 , S502 , S503 , S504 , S505 , 가 , S506 , 가

S507  
S508

S508

S509

S510

S511

S508

ARS

S508

S514 가

S515

S515

S508

S506

가

S512

가 3

S513

S504

3

6

S601

S602  
S602

가

S603

S604

가

S605

S606

가

S606

가

S607

S608

S608

S609  
가

가

ARS

S610

S611

S611

가

S613

1

가

S605

S606

가

S611

S608

S610

S614

S608

7a

7b

7a

7b

7c

7a

7b

(601),

LED(602),

(603),

(604),

(605),

AC

(606),

(607),

AC

(610), TEL

(611)

(612)

7c

(612)

TEL

(611)

가

AC

(610)

8a

8l

8a

(410)

CN1 AC220V / 60Hz (Fuse) (Trans Power)  
 AC220V AC15V D1 DC 가 , SW1  
 C1 DC15V

U2 5V DC15V DC5V  
 가 , 12V U20

8b (450)  
 (AT89C52) DC5V , X1 11.0592MHz (Clock)  
 (Reset) , D4

RS232 IC(401)  
 DTMF (420) (Hook) DTMF , IC  
 (430)

8c (435)  
 (450) OUT10 ~ OUT13 , LED\_MODE  
 LED On, Off

8d IC(430)  
 1 (High), 2 (Low) C15  
 2 R31 Q5 ,  
 , C15가 R29 Q4 , R29 +15V  
 가 가

8e (425) (Ring Detector)  
 가 C14 20 Hz 40Hz 40 150V 가 가 (Tip) (Ring)  
 , R25 DC 가 , CR2 3V  
 가 , SW4

8f (425) 8g  
 (High) , R40 Q8  
 가 , Q6 Q7

8h DTMF (420)  
 R27 R22 DTMF DC DTMF , U7 , DTMF  
 , dTMF , DTMF U7 IC , DTMF 4 Bit  
 DTMF , DTMF , DTS DTS

8i IC(430) ARS  
 ARS



(Section)  
R9 R66

8j DTMF (415)

DTMF U11 DTMF U9, DTMF DTMF  
C25 R41 , U9 U9 DTMF DTMF (4  
25)

8k PLC (405)

T2 Q1 T2 (U1) Z-TX T2  
R49 가

8m PLC (405) AC

Ac R7 U3 AC AC U3 Q2 Q  
ZCP , ZCP AC가 , U3

8n ( , 455)

J1 (455) C74, R5 R8 (455)  
, J1 , CR3

PLC

가

가

가

가

( : 2001-10-0076335)  
ARS DTMF

가

가

가

가

1.

IC, , PLC , DTMF , DTMF , IC ,  
 IC (UART RS232)  
 ;  
 IC PLC IC IC ;  
 IC DTMF DTMF ;  
 DTMF 가 , ;  
 DTMF ;  
 , DTMF ;  
 IC

2.

1 ,  
 ,  
 , , ,

3.

1 , ,

4.

1 , , ;

PSTN

5.

4 ,

6.

1 ,

1 7. , 가 , , , .

1 8. , ; 가 , 가 , ; ARS ; .

8 9. , 가 ; ; .

8 10. , 가 , 가 ; .

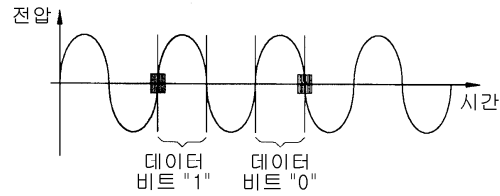
2 11. , 가 ; ; 가 ARS ; .

11 12. ,

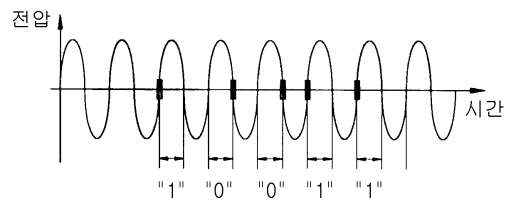
가 ,

ARS

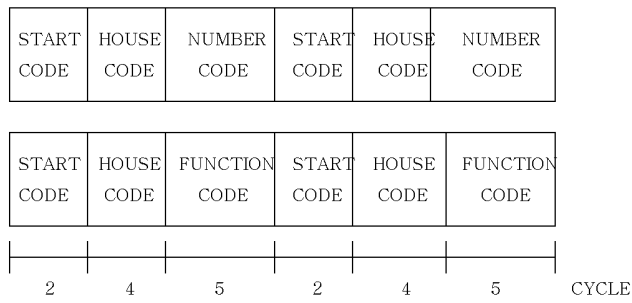
1a



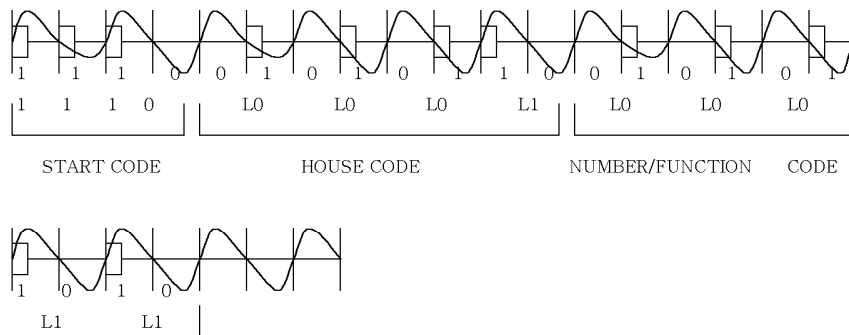
1b



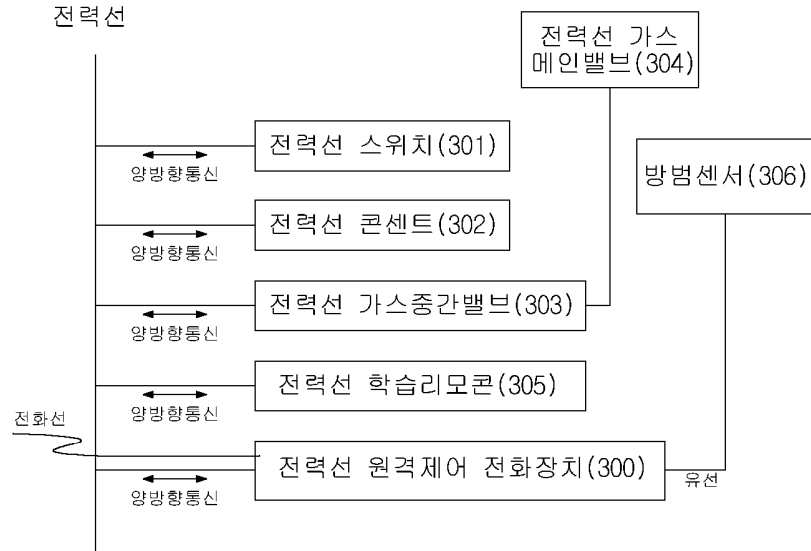
2a



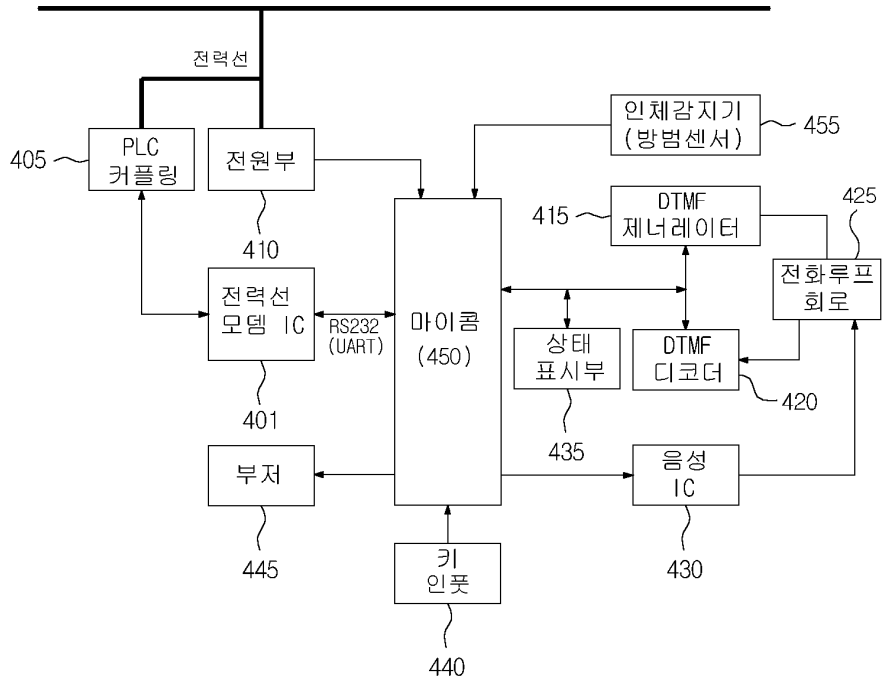
2b



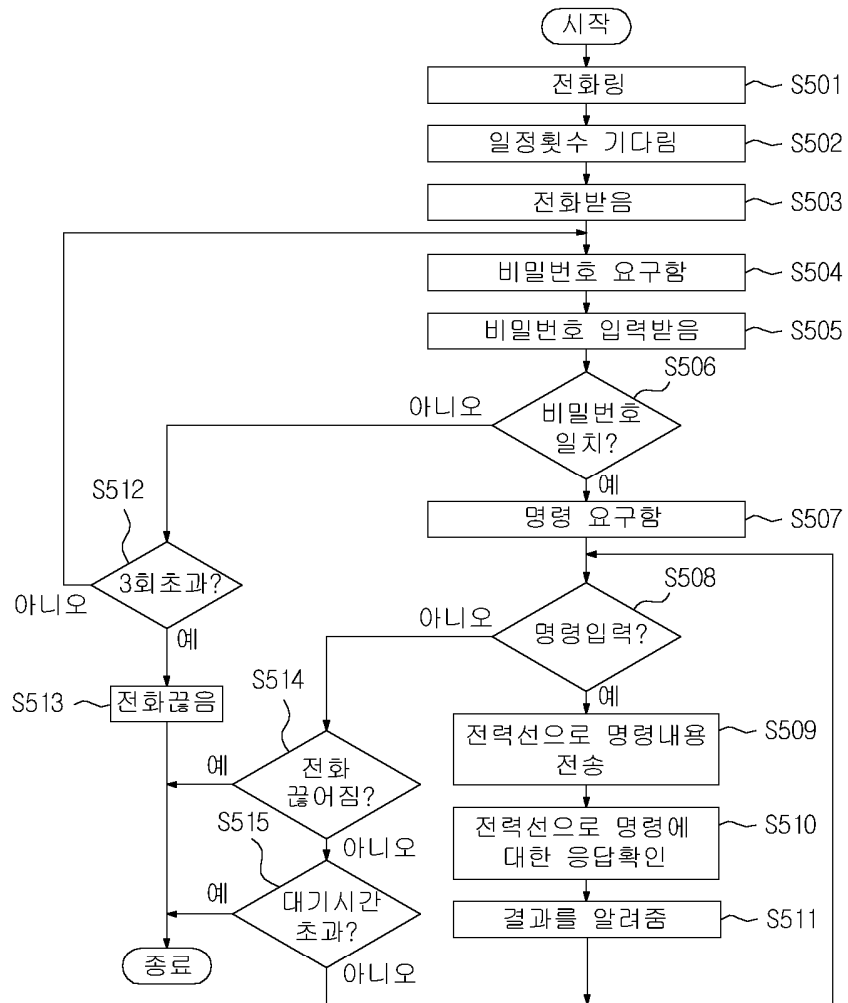
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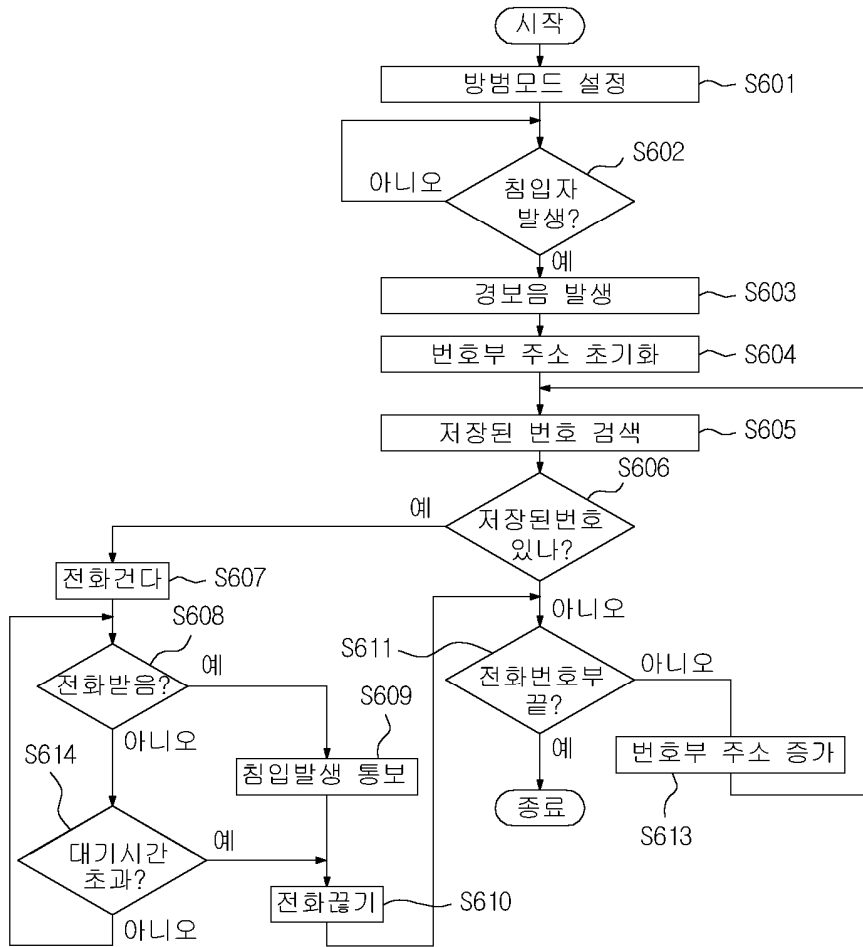
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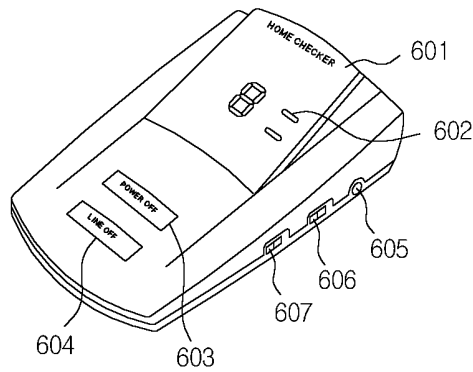
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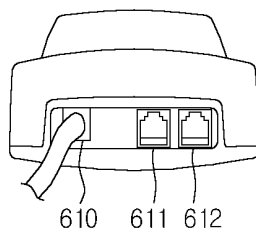
6



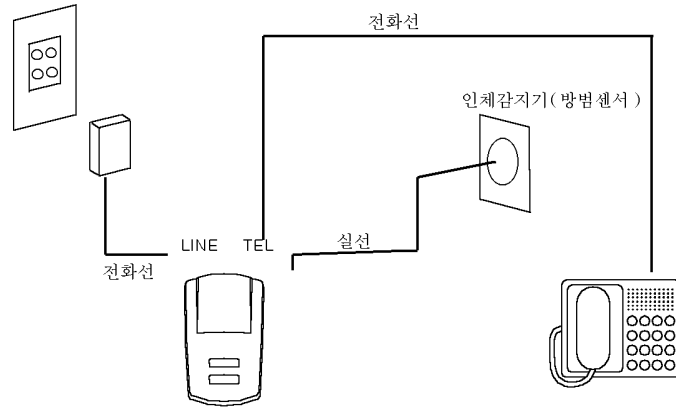
7a



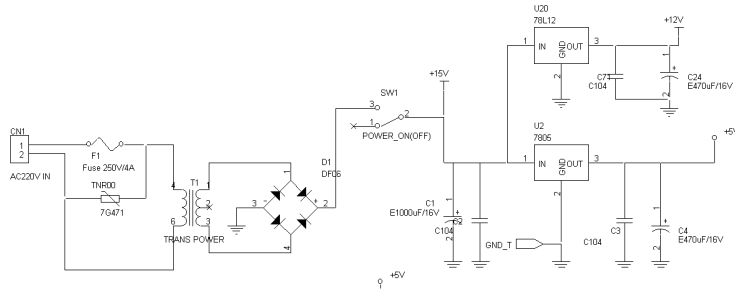
7b



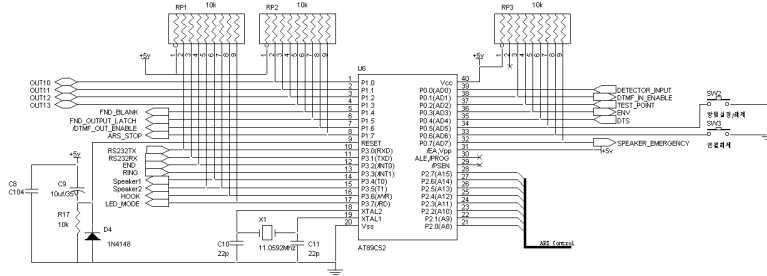
7c



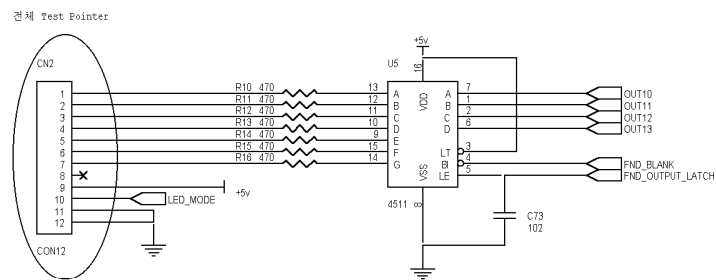
8a



8b

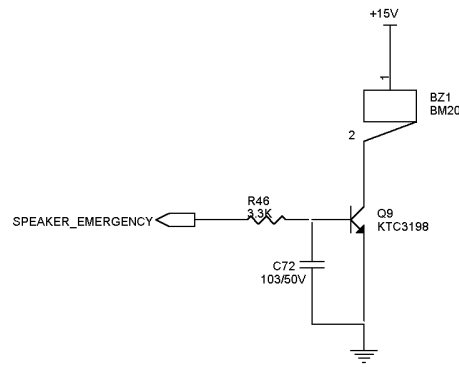
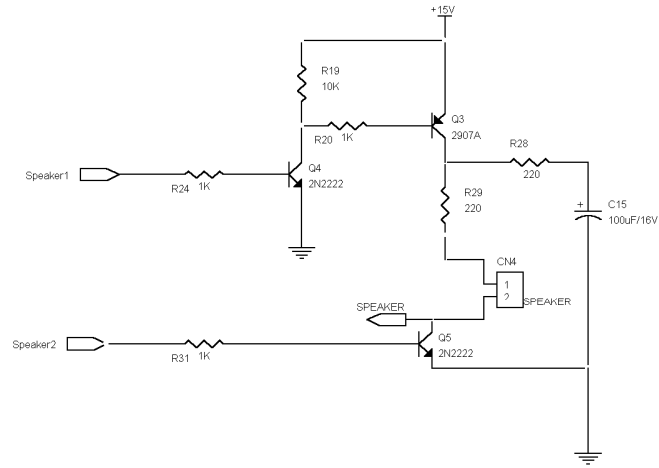


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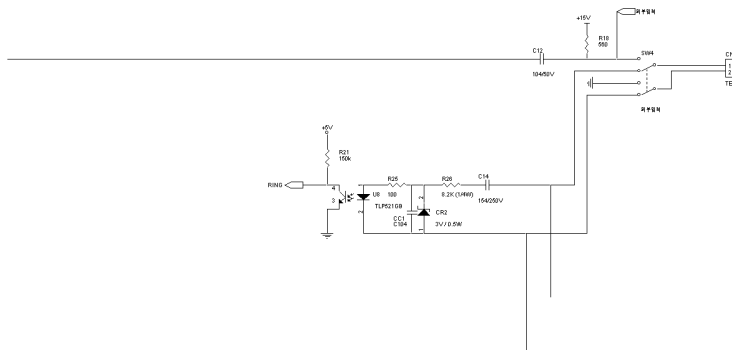




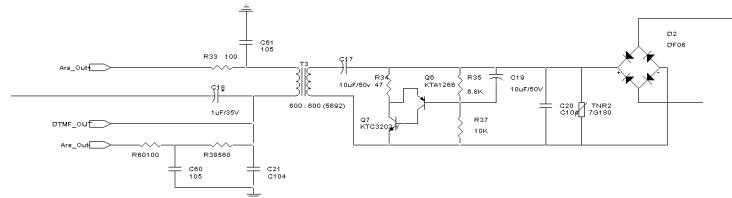
8d



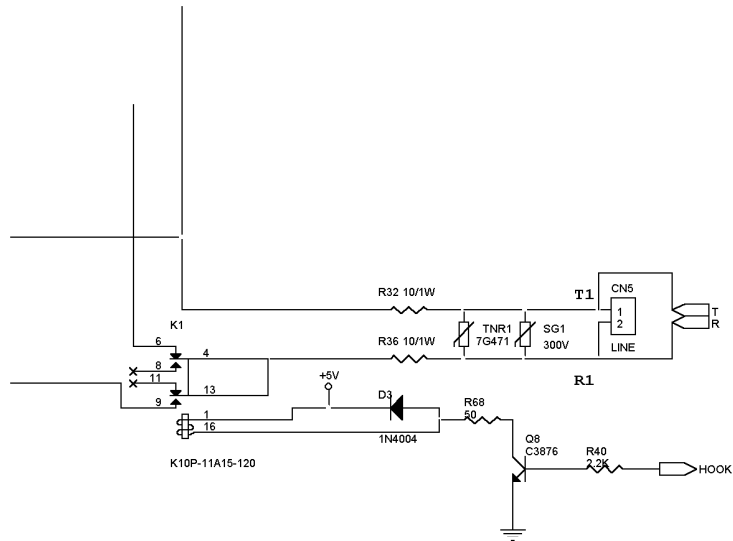
8e



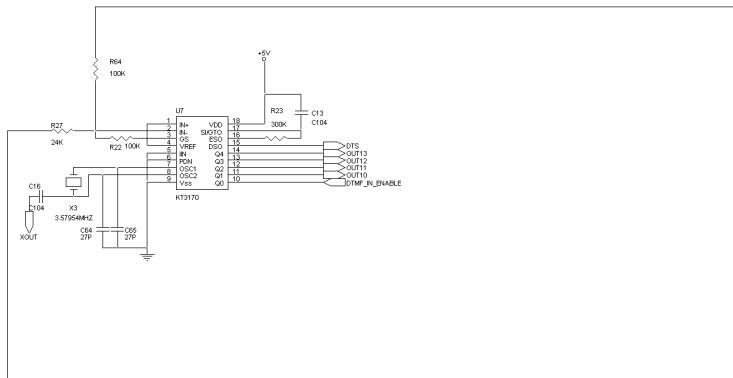
8f



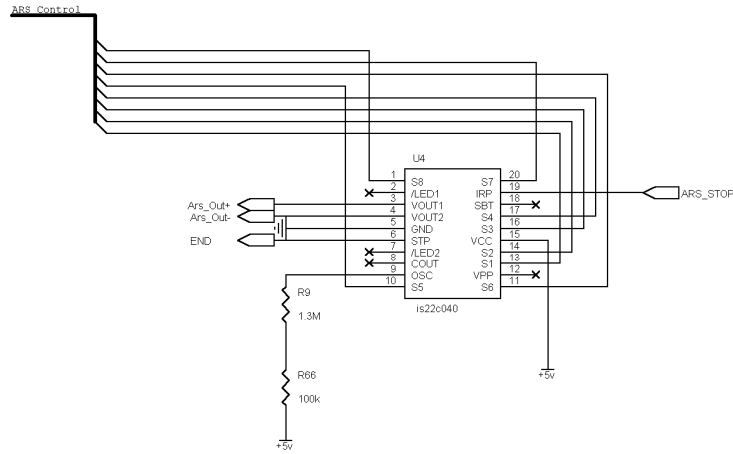
8g



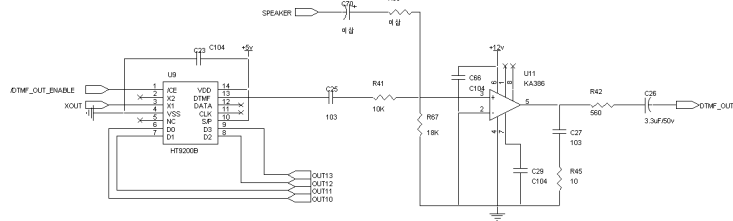
8h



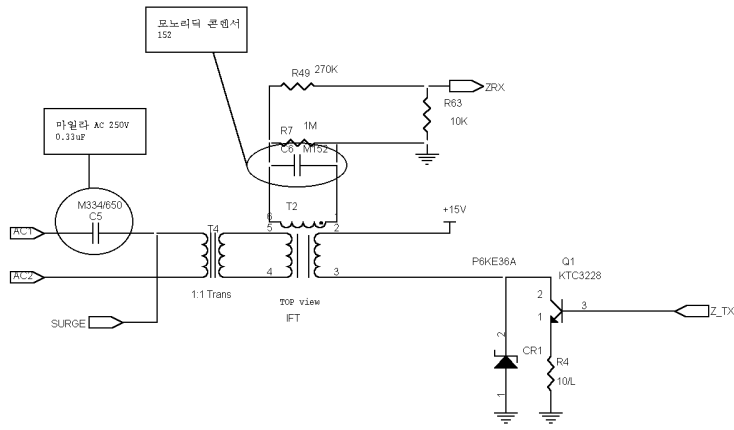
8i



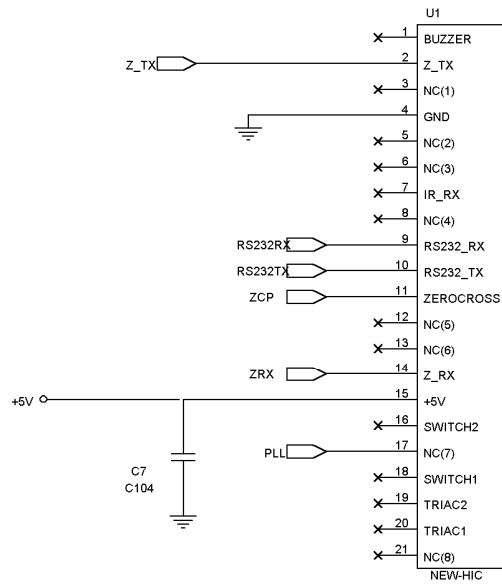
8j



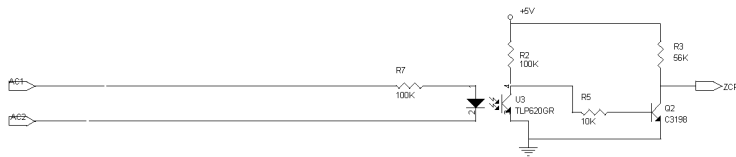
8k



8l



8m



8n

