


# SECTION 4 CHARTS AND DIAGRAMS

## NOTES OF SCHEMATIC DIAGRAM

### Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

### 1. Units of components on the schematic diagram

Unless otherwise specified.

1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).

Chip resistors are 1/16 W.

K or k: k $\Omega$  (1000 $\Omega$ ), M: M $\Omega$  (1000k $\Omega$ )

2) All capacitance values are in  $\mu$ F, (P: PF).

3) All inductance values are in  $\mu$ H, (m: mH).

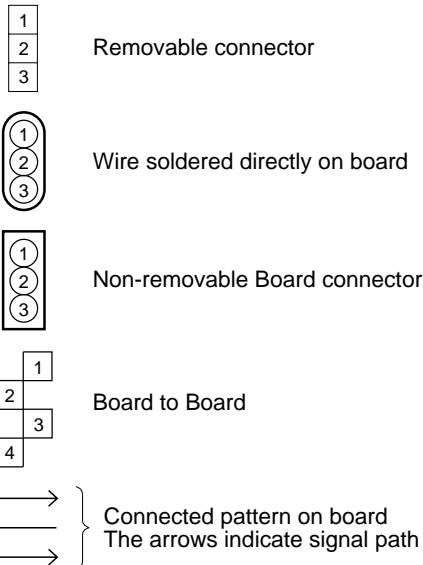
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

### 2. Indications of control voltage

AUX : Active at high

AUX or AUX(L) : Active at low

### 3. Interpreting Connector indications



### 4. Voltage measurement

1) Video circuits

REC : Colour bar signal in SP mode, normal VHS mode

PB : Alignment tape, colour bar SP mode, normal VHS mode

— : Unmeasurable or unnecessary to measure

2) Audio circuits

REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode

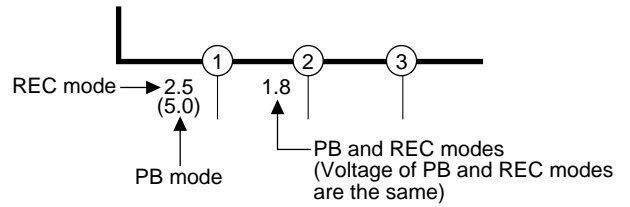
PB : REC then playback it

3) Movie Camera circuits

Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

4) Indication on schematic diagram

Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



**Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.**

### 5. Waveform measurement

1) Video circuits

REC : Colour bar signal in SP mode, normal VHS mode

PB : Alignment tape, colour bar SP mode, normal VHS mode

2) Audio circuits

REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode

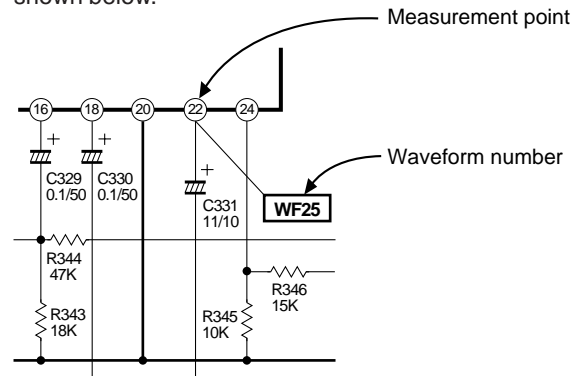
PB : REC then playback it

3) Movie Camera circuits

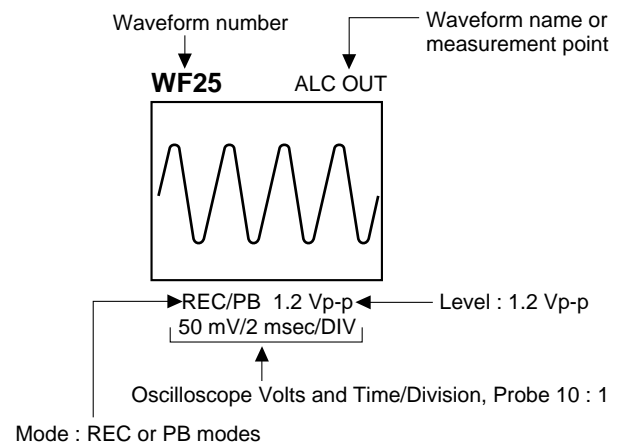
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

4) Indication on schematic diagram

Waveform indications on the schematic diagram are as shown below.

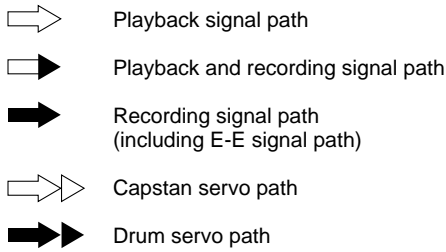


5) Waveform indications

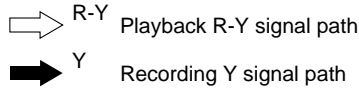


## 6. Signal path Symbols

The arrows indicate the signal path as follows.



(Example)



## 7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



## 8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



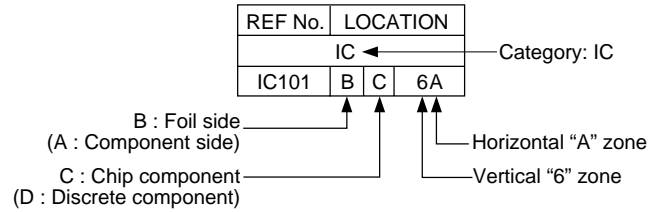
## CIRCUIT BOARD NOTES

### 1. Foil and Component sides

- 1) Foil side (B side) :  
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :  
Parts on the component side seen from component face (parts face) indicated.

### 2. Parts location guides

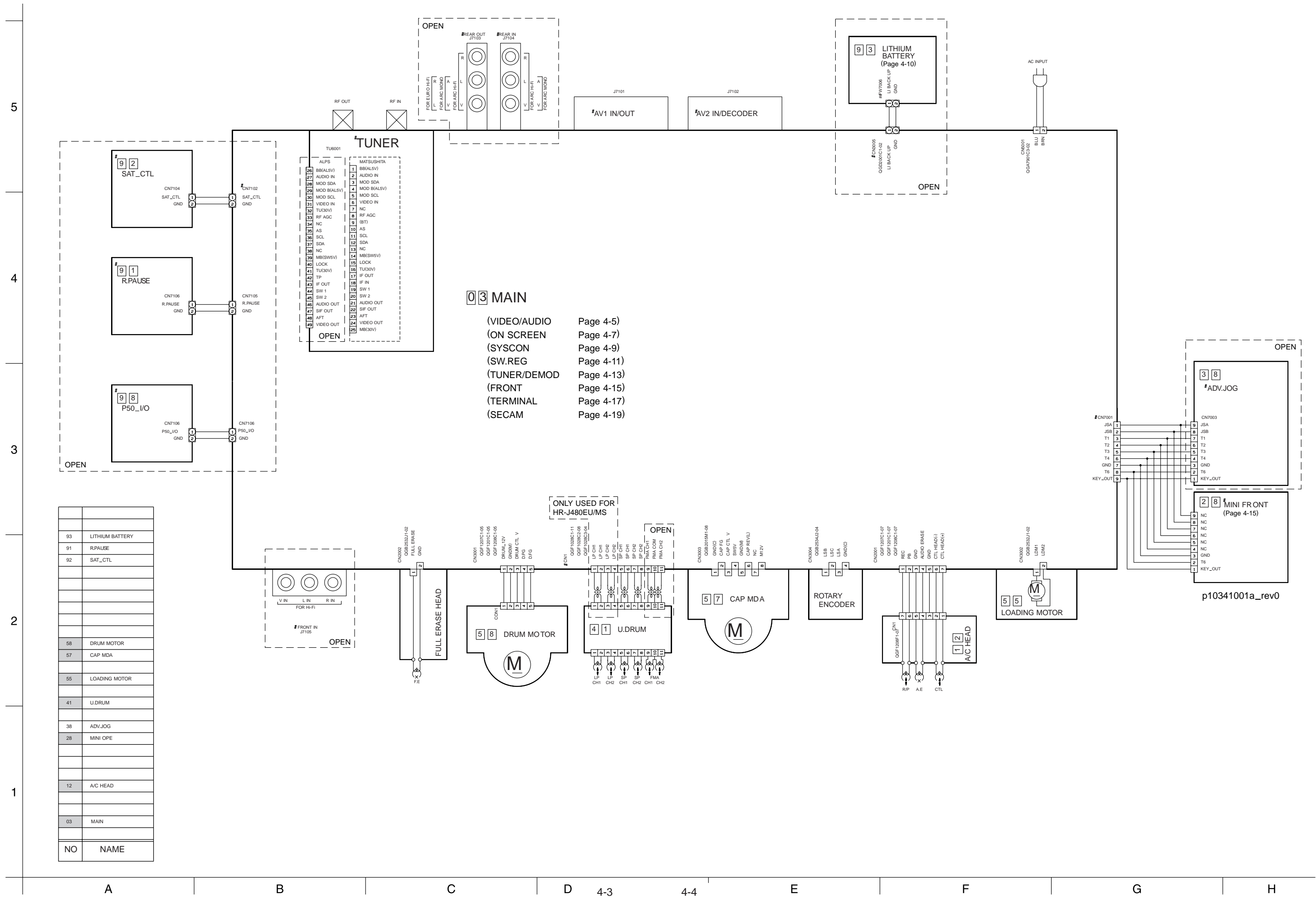
Parts location are indicated by guide scale on the circuit board.



### Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

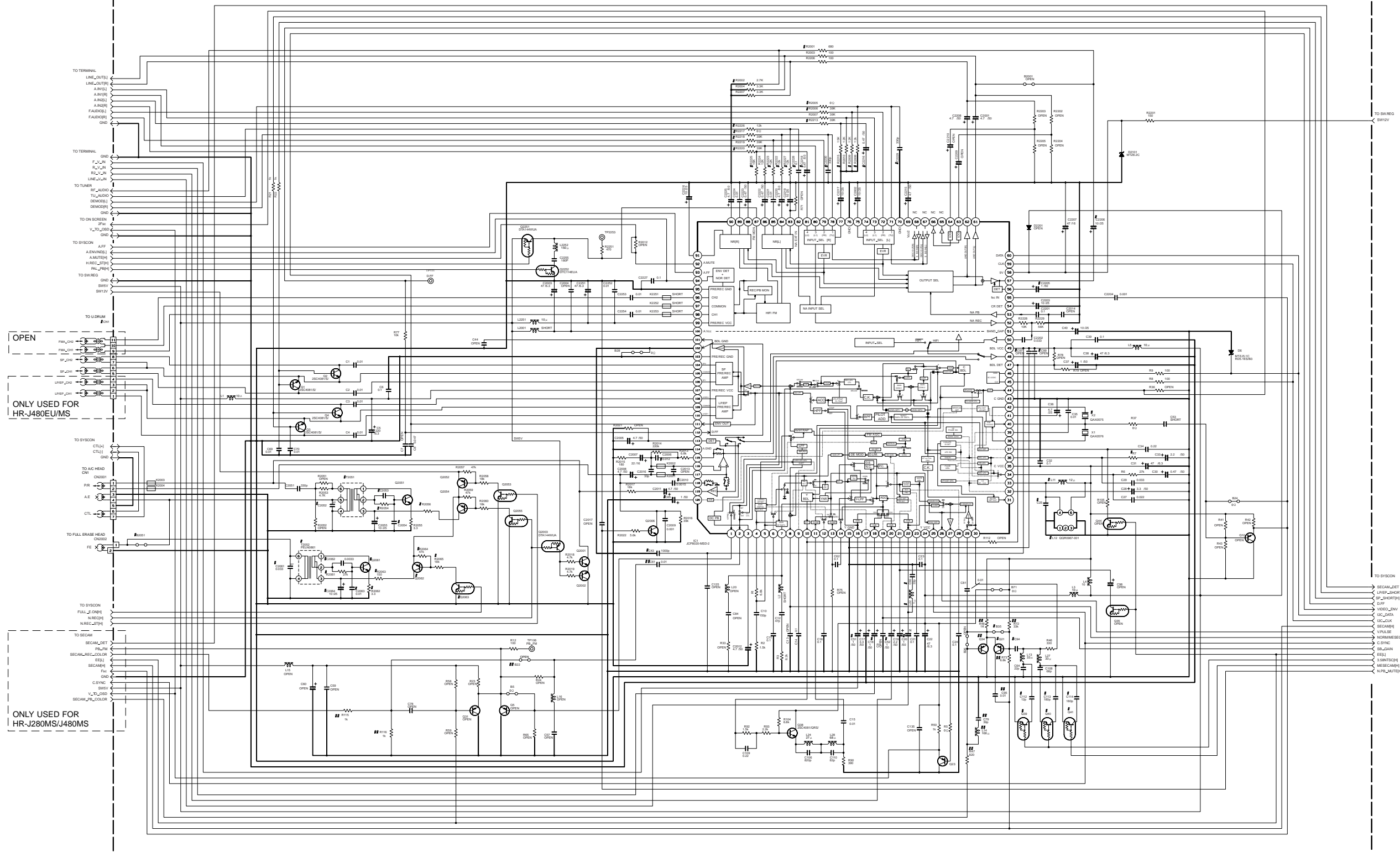
# 4.1 BOARD INTERCONNECTIONS



4.2 MAIN (VIDEO/AUDIO) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

03 MAIN (VIDEO/AUDIO)



OPEN  
ONLY USED FOR HR-J480EU/MS

ONLY USED FOR HR-J280MS/J480MS

#DIFFERENCE TABLE AUDIO

	R2006 R2008	R2213 R2215 C2216
WITH CH+	X	X
WITH CH-	O	O
	R2006 R2009	B2201 R2201 C2216
WITH CH+	X	X
WITH CH-	O	O

#DIFFERENCE TABLE VIDEO

	C20 C51 C52 C18	Q1 Q21 Q34	J2 C112 C113 R7	R71 C3 C41
WITH CH+	O X X	O X O	X O 800	O X 5-6
WITH CH-	O X X	O X O	X O 680	X O 1-4
	Q41 C114	L11 L12 C22 L22 C25		
WITH CH+	O	X O O O		
WITH CH-	X	O X X X		

NOTES UNLESS OTHERWISE SPECIFIED:  
 ALL NPN TRANSISTOR ARE 2SC4081Q/R5 or 2SD1819A/Q/R5 or 2PC4081/R.  
 ALL PNP TRANSISTOR ARE 2SA1578A/Q/R5 or 2SB1218A/Q/R5 or 2P A1578/R.  
 ALL NPN DIGITAL TRANSISTOR ARE DTC144WU A or UN621E or PDC144WU or RN1309.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN P.F.  
 ELECTROLYTIC  
 CERAMIC  
 MYLER  
 NON POLAR  
 K2001-K2004 - NOR0403-003X

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5

4

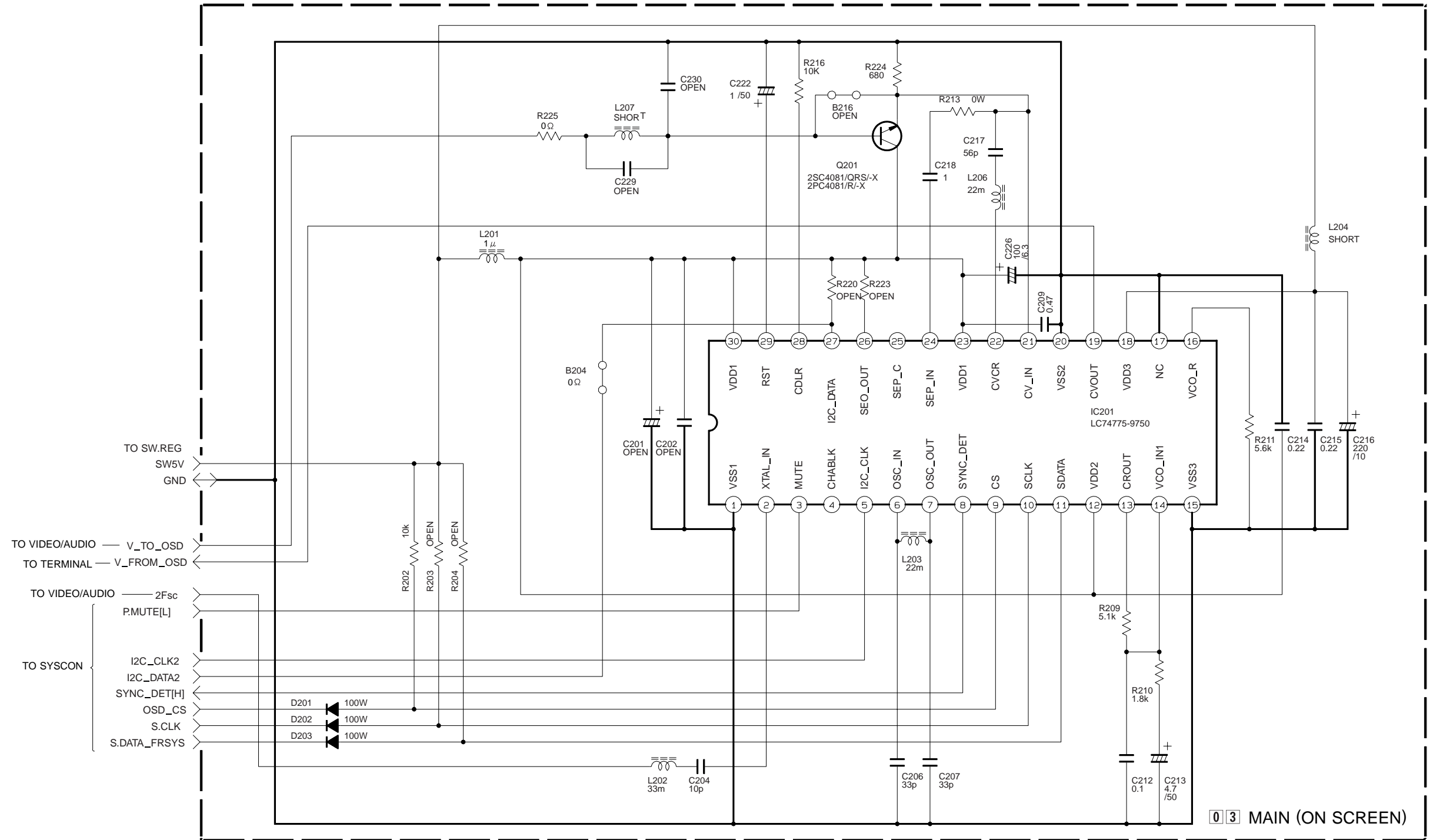
3

2

1

4.3 MAIN (ON SCREEN) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



03 MAIN (ON SCREEN)

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NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC  
 CERAMIC

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

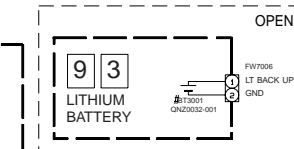
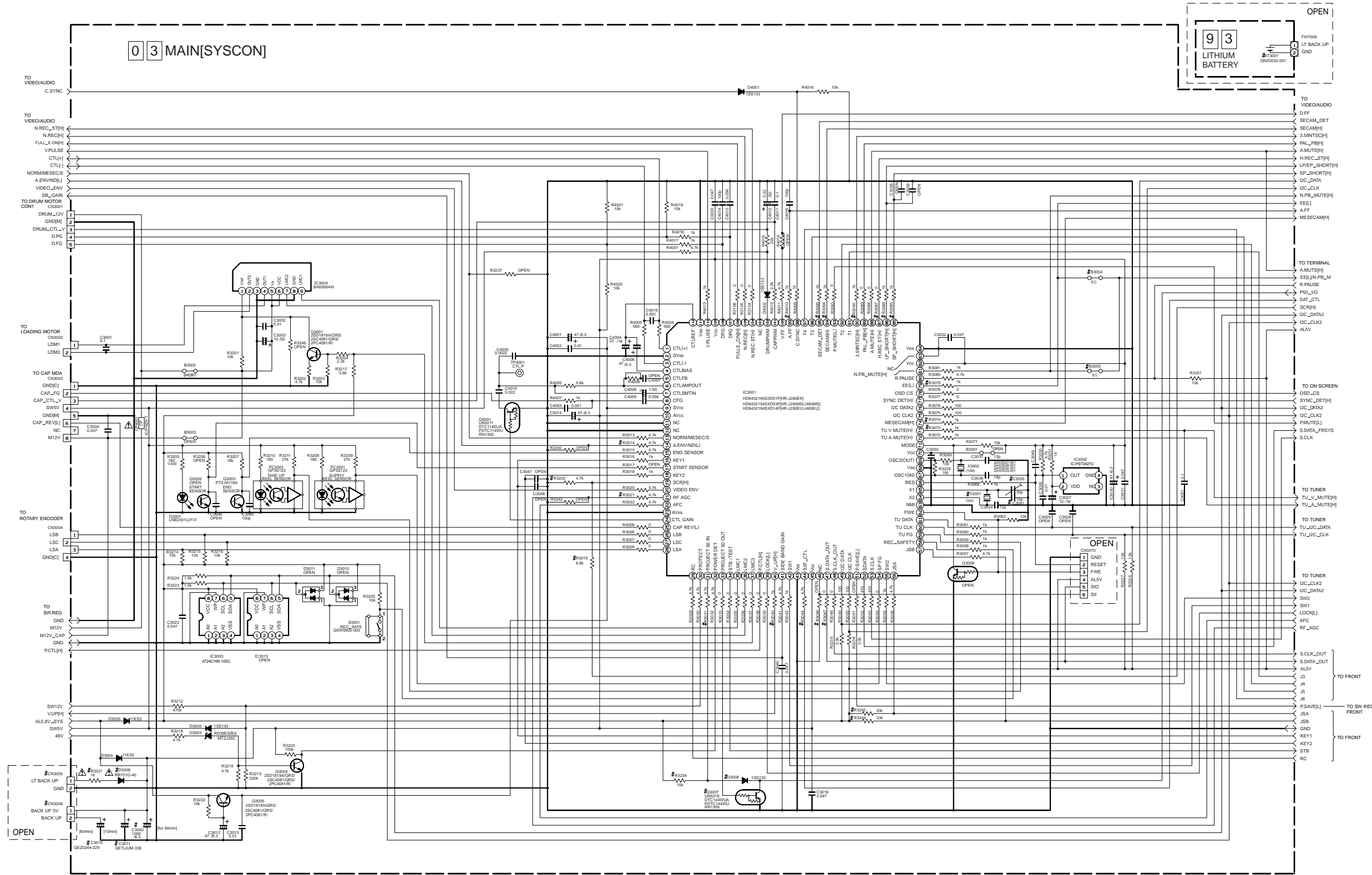
5

4

3

2

1



# DIFFERENCE TABLE

	B3004	B3005
HR-J280EK/EU-J480EJ	○	○
HR-J480MS	×	○
HR-J280MS	×	×

As for other # difference parts, refer to sec.5

NOTES-UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN µF.

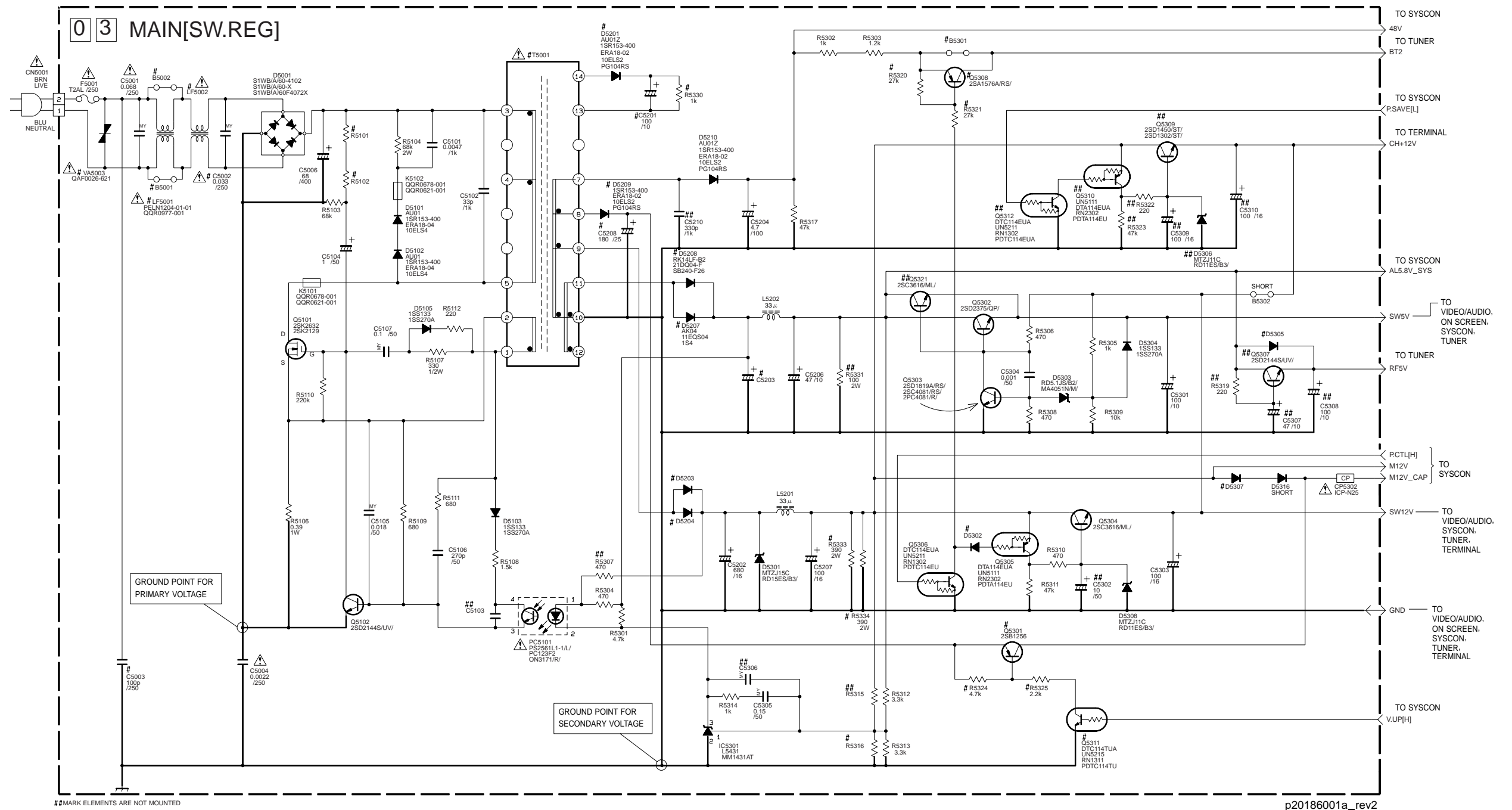
- ELECTROLYTIC
- CERAMIC
- MYLAR
- NON POLAR

LAST NO	VACANT NO

p10342001a\_rev0

4.5 MAIN(SW.REG) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

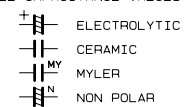


# MARK ELEMENTS ARE NOT MOUNTED

p20186001a\_rev2

#DIFFERENCE TABLE 1							#DIFFERENCE TABLE 2						#DIFFERENCE TABLE 3				#DIFFERENCE TABLE 4			#DIFFERENCE TABLE 5		#DIFFERENCE TABLE 6		#DIFFERENCE TABLE 7	
<b>HIGH SPEED FF/REW</b>							<b>POWER SAVE</b>						<b>CE</b>				<b>HIFI</b>			<b>AUTO</b>		<b>JVC</b>		<b>PH/75</b>	
-YES-							-YES-						-YES-				NO			YES		NO		YES	
-NO-							-NO-						-NO-				YES			NO		YES		NO	
AUTO							SHORT						SHORT				NO			NO		NO		NO	
OTHER							OTHER						OTHER				OTHER			OTHER		OTHER		OTHER	

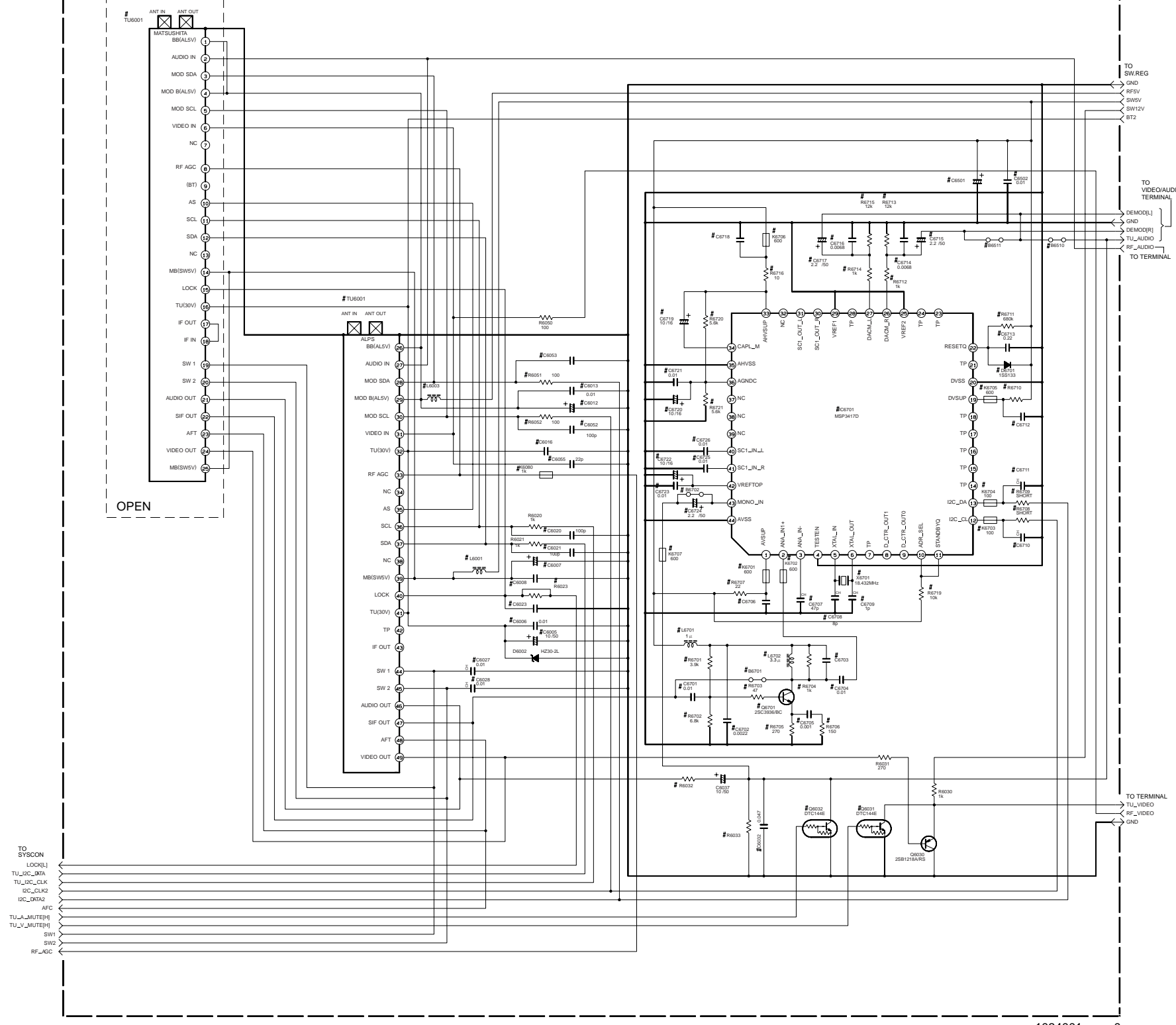
NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.



4.6 MAIN (TUNER/DEMOD) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

03 MAIN (TUNER)



# DIFFERENCE TABLE

TUNER	TU6001	HR-J280E/EU/J480EU					HR-J280MS/J480MS					ASIA 3SYSTEM		ASIA 4SYSTEM										
		HFI		MONO		HFI		MONO		HFI	MONO	HFI	MONO											
		With CH+	Without CH+	J580 (D3)	ALPS	ALPS	ALPS	ALPS	ALPS	ALPS	ALPS	ALPS	ALPS											
RF CONVERTER	R6050-R6052	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○								
	L6003	47 μ	47 μ	47 μ	47 μ	47 μ	SHORT	SHORT	47 μ	47 μ	47 μ	SHORT	SHORT	47 μ	SHORT	47 μ	SHORT							
	C6012	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×							
	C6013	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○							
	C6052,C6053	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×							
SW 5V	L6001	1 μ	1 μ	1 μ	1 μ	1 μ	SHORT	SHORT	1 μ	1 μ	1 μ	1 μ	SHORT	SHORT	1 μ	SHORT	1 μ	SHORT						
	C6007,C6008	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
	C6005	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
TU(30V)	C6006	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
	C6016	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
RF AGC	R6080	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ	1kΩ						
TUNER PLL	C6020,C6021	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
	C6023	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
CENELEC S2C	C6027	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
	C6028	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×						
AUDIO OUT	R6032	1.8k	4.7k	1.8k	4.7k	4.7k	1.8k	4.7k	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω	1.8k	4.7k	1.8k	4.7k	0Ω	0Ω				
	R6033	2.7k	1.8k	2.7k	1.8k	1.8k	2.7k	1.8k	×	×	×	×	×	×	2.7k	1.8k	2.7k	1.8k	×	×				
	C6032	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
AUDIO MUTE	C6032	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
VIDEO MUTE	C6031	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
SET HFI TUNER MONO	B6510,B6511	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			
	C6501	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			
	C6502	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			
DEMODO																								
PRE AMP	R6701, R6703-R6706, C6702-C6705, C6701, L6701-L6702	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○		
	B6701	○	○	○	○	○	×	×	○	○	○	×	×	○	○	×	×	○	○	×	×	×		
	R6702	1.8k	1.8k	1.8k	1.8k	1.8k	×	×	1.8k	1.8k	1.8k	1.8k	×	×	1.8k	1.8k	×	×	6.8k	6.8k	6.8k	6.8k		
	C6701	0Ω	0Ω	0Ω	0Ω	0Ω	×	×	0Ω	0Ω	0Ω	0Ω	×	×	0Ω	0Ω	×	×	0.01	0.01	0.01	0.01		
	C6703	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	33p	33p		
	C6704	○	○	○	○	○	×	×	○	○	○	×	×	○	○	×	×	○	○	×	×	×		
MONO IN	B6702	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		
	C6724,K6707	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		
	R6707-R6712, R6714-R6716, R6719-R6721, C6707-C6709, C6713-C6717, C6719-C6721, C6723,K6701, K6701,K6702, K6705,K6706, IC6701	○	○	○	○	○	×	×	○	○	○	○	×	×	○	○	×	×	○	○	×	×	○	×
	C6706,C6710, C6711,C6712, C6718,C6723, C6725,C6726	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
AUDIO LOAD	R6713,R6715	○	○	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	

NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.  
 [Symbol] ELECTROLYTIC  
 [Symbol] CERAMIC  
 [Symbol] MYLER  
 [Symbol] NON POLAR

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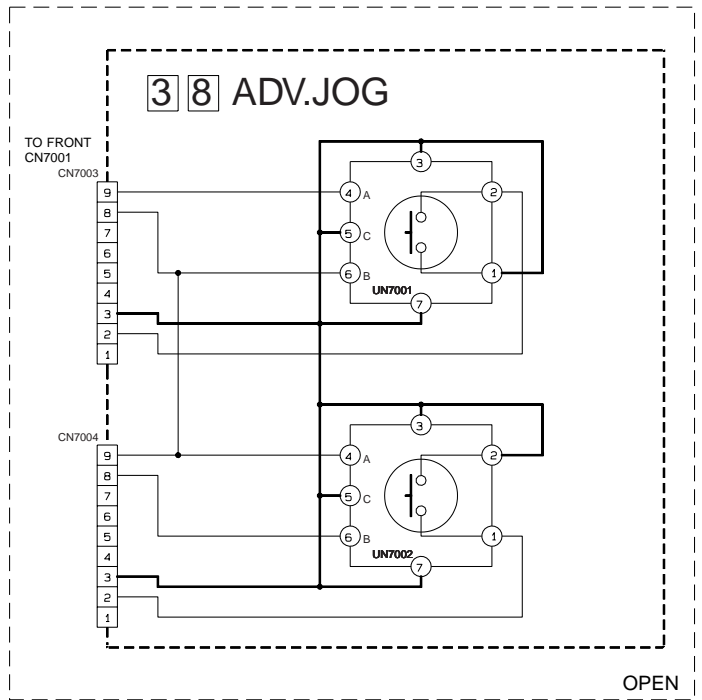
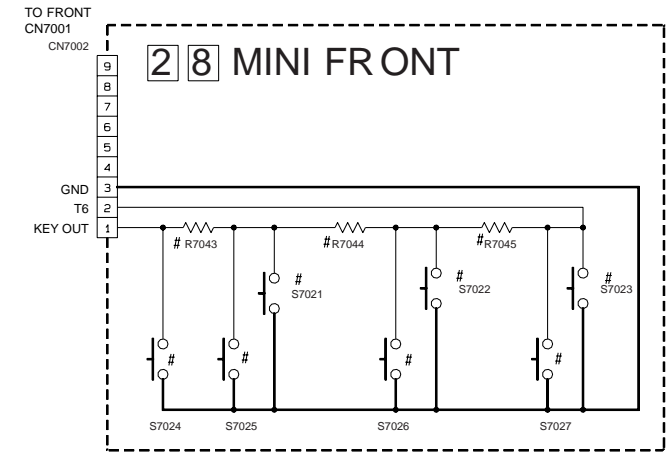
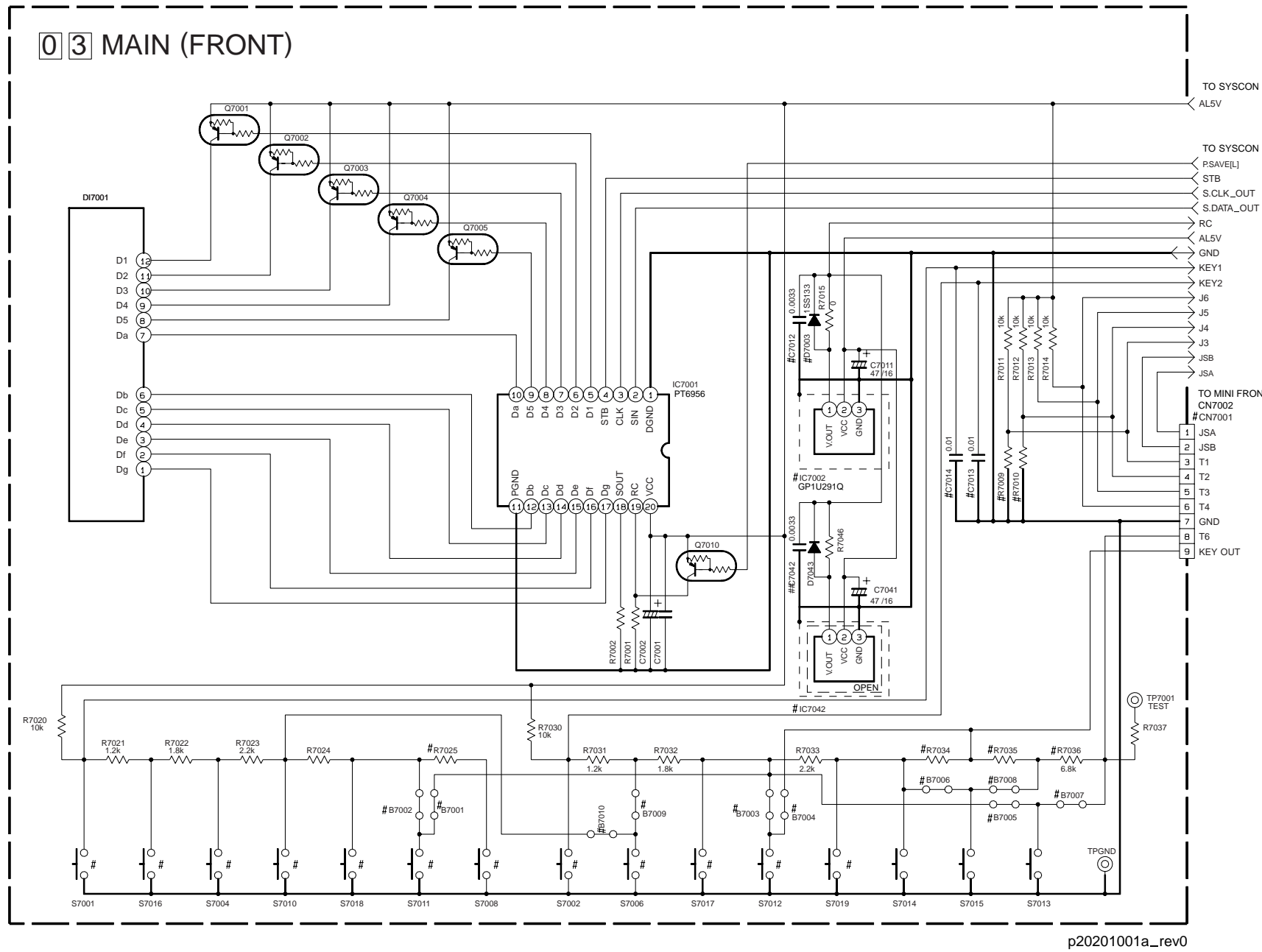
5  
4  
3  
2  
1

A B C D 4-13 4-14 E F G H



4.7 MAIN (FRONT) AND MINI FRONT SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



# DIFFERENCE TABLE

O : Used  
x : Not used

BRAND	TOOL	WORKING NUMBER	S7001	S7002	S7004	S7006	S7008	S7010	S7011	S7012	S7013	S7014	S7015	S7016	S7017	S7018	S7019	S7021 S7023	S7024 S7027	J/S	R7025	R7034	R7035 R7036	R7043 R7045	B7001	B7002	B7003	B7004	B7005 B7006	B7007	B7008	B7009	B7010
JVC	400HA	D1+.D15	STAND-BY	A.DUB	REC	PAUSE	STOP/EJECT	PLAY	—	E.PROG.	—	—	—	SAT.CTL	—	—	—	—	adv	O	O	O	X	X	X	X	X	X	X	X	X	X	
	400H	D1.D11.D12	POWER	CH -	REC	PAUSE	STOP/EJECT	REC LINK	—	PLAY	—	REW	FF	CH +	—	—	—	—	—	X	O	O	O	X	X	X	X	X	X	X	X	X	
			STAND-BY	CH -	REC	PAUSE	STOP/EJECT	SAT.CTL	—	PLAY	—	REW	FF	CH +	—	—	—	—	—	X	O	O	O	X	X	X	X	X	X	X	X	X	X
360E	A1.A11.C1.D0+.D1-	STAND-BY	TIMER	CH -	CH +	—	DISPLAY	REC	—	PAUSE	—	STOP/EJECT	SAT.CTL	—	—	—	O	—	X	X	X	X	O	X	O	X	X	X	X	X	X	X	

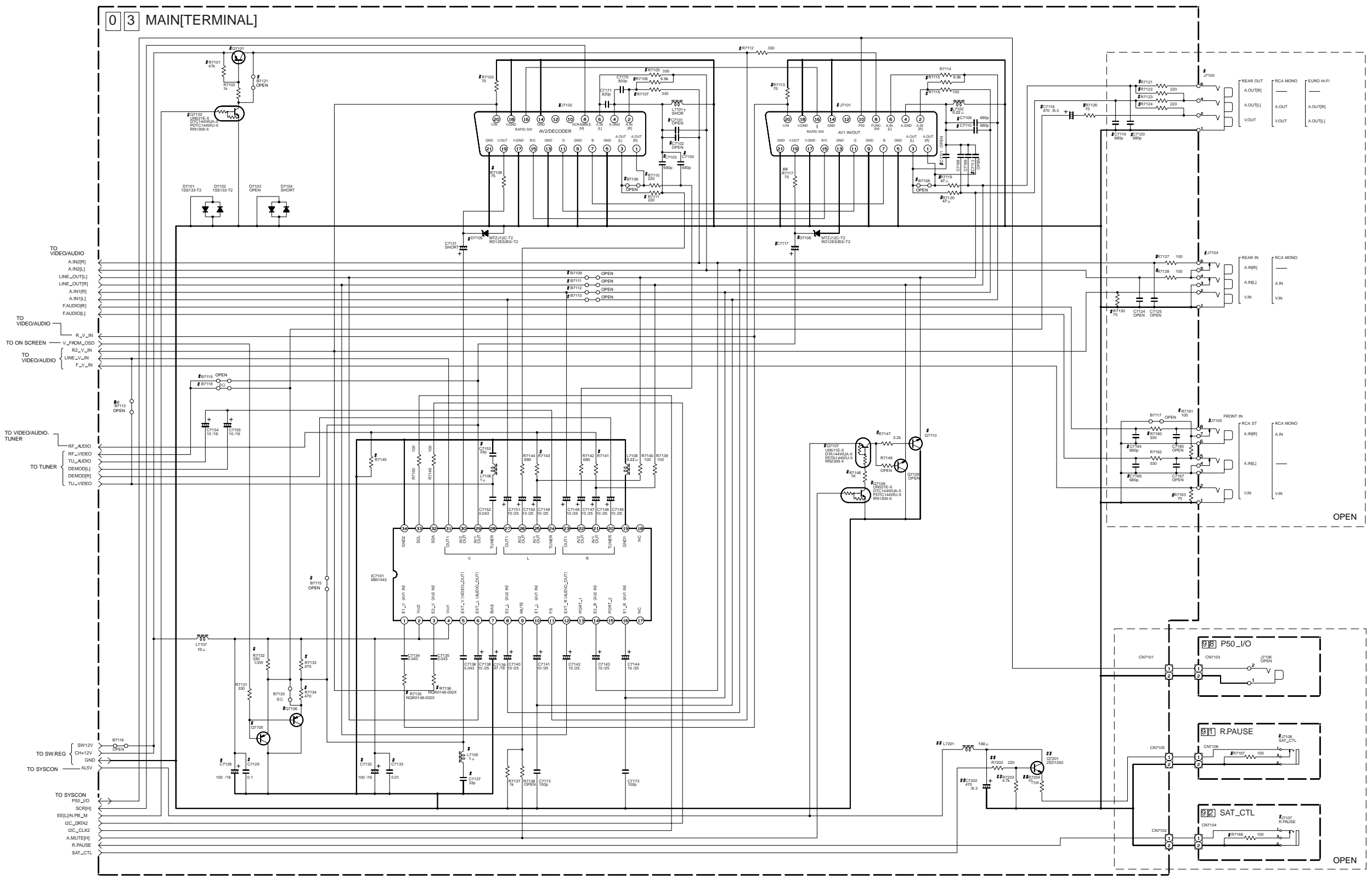
NOTES: UNLESS OTHERWISE SPECIFIED.  
ALL RESISTANCE VALUES ARE IN OHMS.  
ALL INDUCTANCE VALUES ARE IN H.  
ALL CAPACITANCE VALUES ARE IN μF.

- ELECTROLYTIC
- CERAMIC
- MYLER
- NON POLAR

LAST NO	VACANT NO
R	
C	
D	
Q	
L	

4.8 MAIN (TERMINAL) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



# DIFFERENCE TABLE

	B7106	B7108	B7109	B7110	B7111	B7112	B7113	B7115	B7118	B7119	B7121
HR-J280EK/EU/MS	○	○	×	×	×	×	×	×	○	×	×
HR-J480EU/MS	○	○	○	○	○	○	○	○	○	○	○

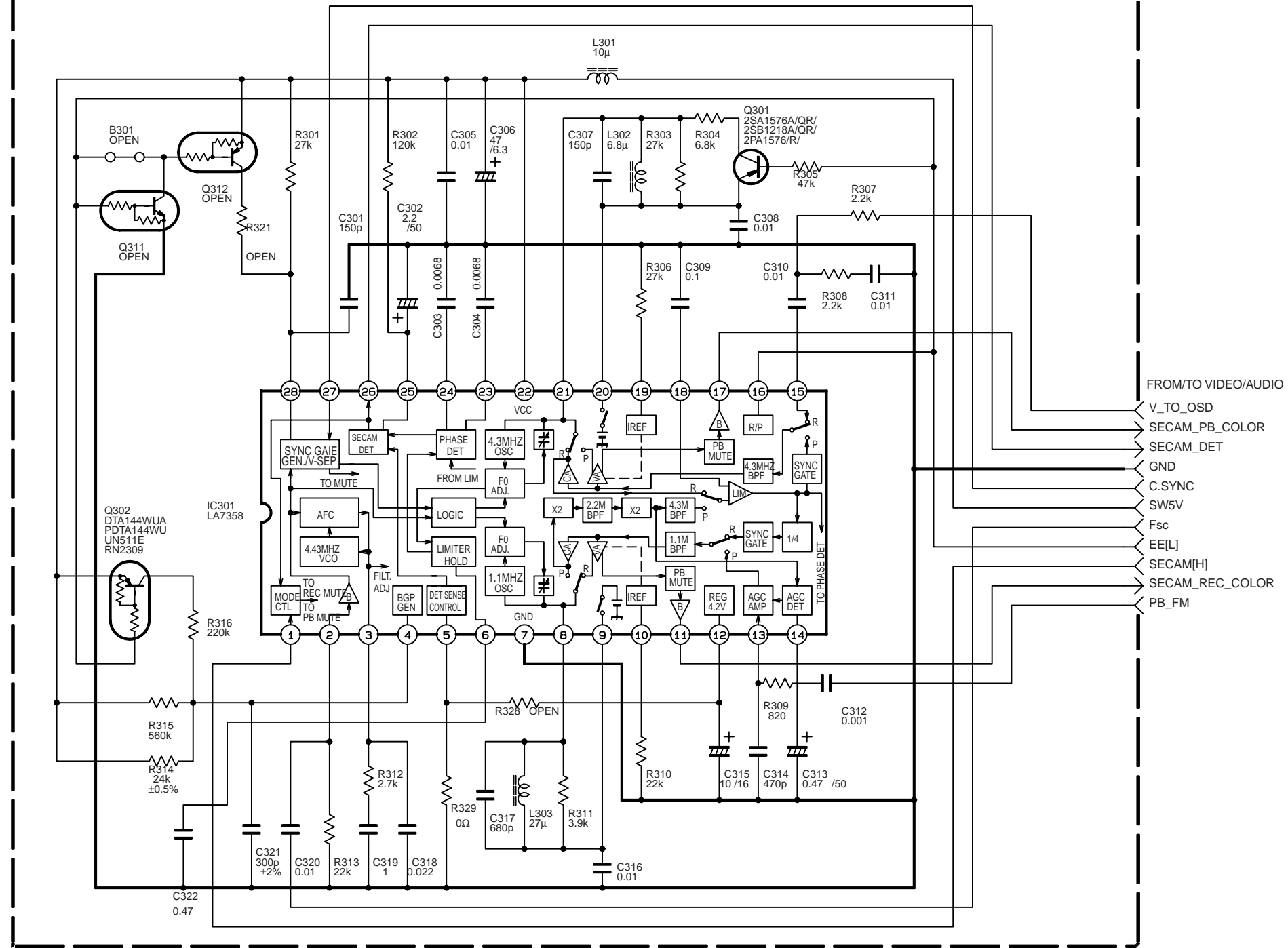
As for other # difference parts, refer to sec.5

NOTES: UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS. ALL INDUCTANCE VALUES ARE IN H. ALL CAPACITANCE VALUES ARE IN μF.

- ELECTROLYTIC
- CERAMIC
- MYLAR
- NON POLAR

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0 3 MAIN(SECAM)

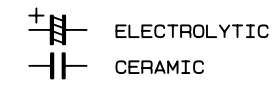


- FROM/TO VIDEO/AUDIO
- V\_TO\_OSD
- SECAM\_PB\_COLOR
- SECAM\_DET
- GND
- C.SYNC
- SW5V
- Fsc
- EE[L]
- SECAM[H]
- SECAM\_REC\_COLOR
- PB\_FM

ONLY USED FOR  
HR-J280MS/J480MS

P3007001a\_rev0

NOTES: UNLESS OTHERWISE SPECIFIED.  
ALL RESISTANCE VALUES ARE IN OHMS.  
ALL INDUCTANCE VALUES ARE IN H.  
ALL CAPACITANCE VALUES ARE IN μF.

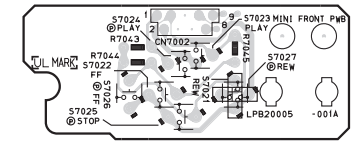
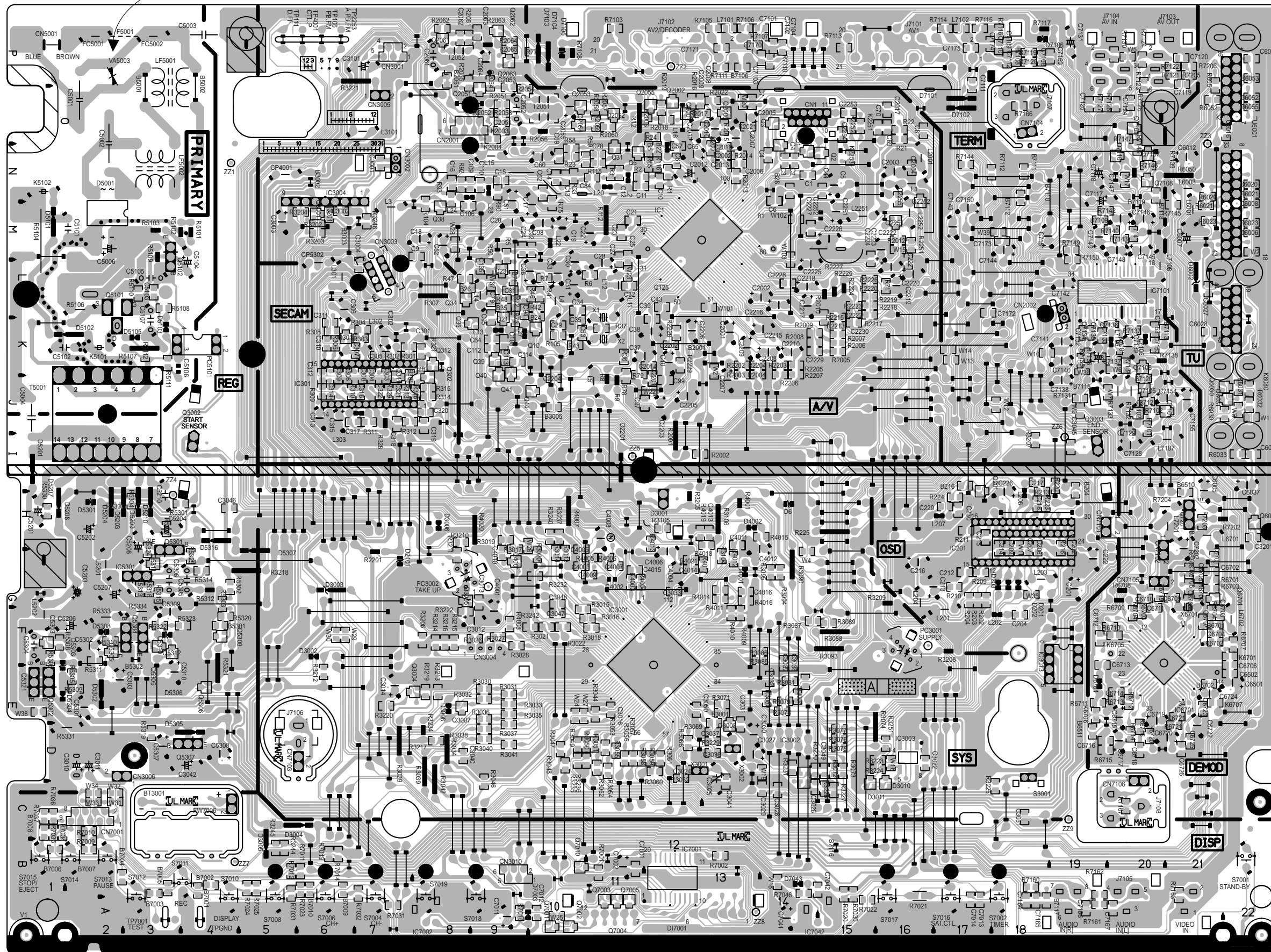


4.10 MAIN AND MINI FRONT CIRCUIT BOARDS

<03> MAIN  
LPB10131-002C

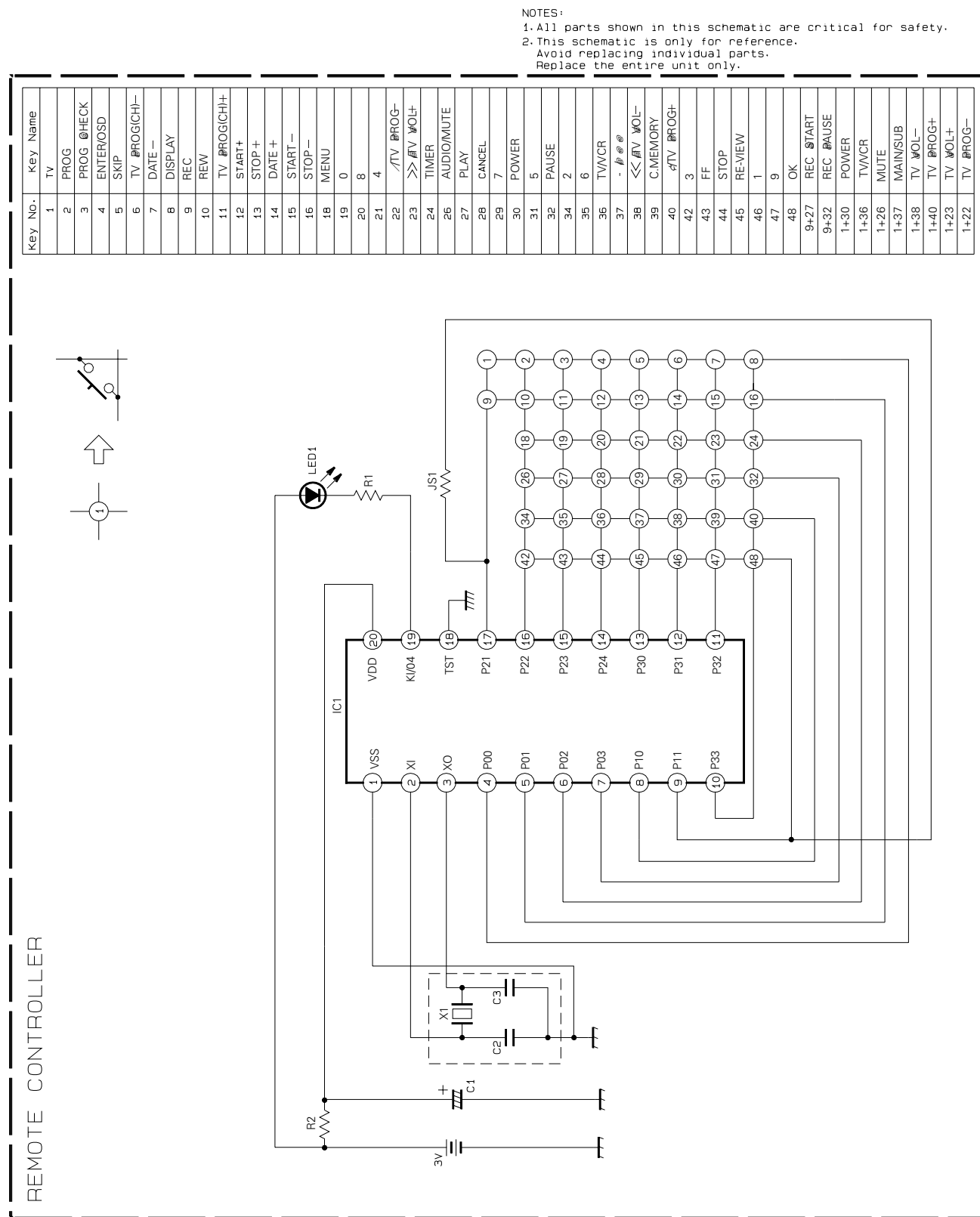
**DANGEROUS VOLTAGE**

<28> MINI FRONT  
LPB20005-001A



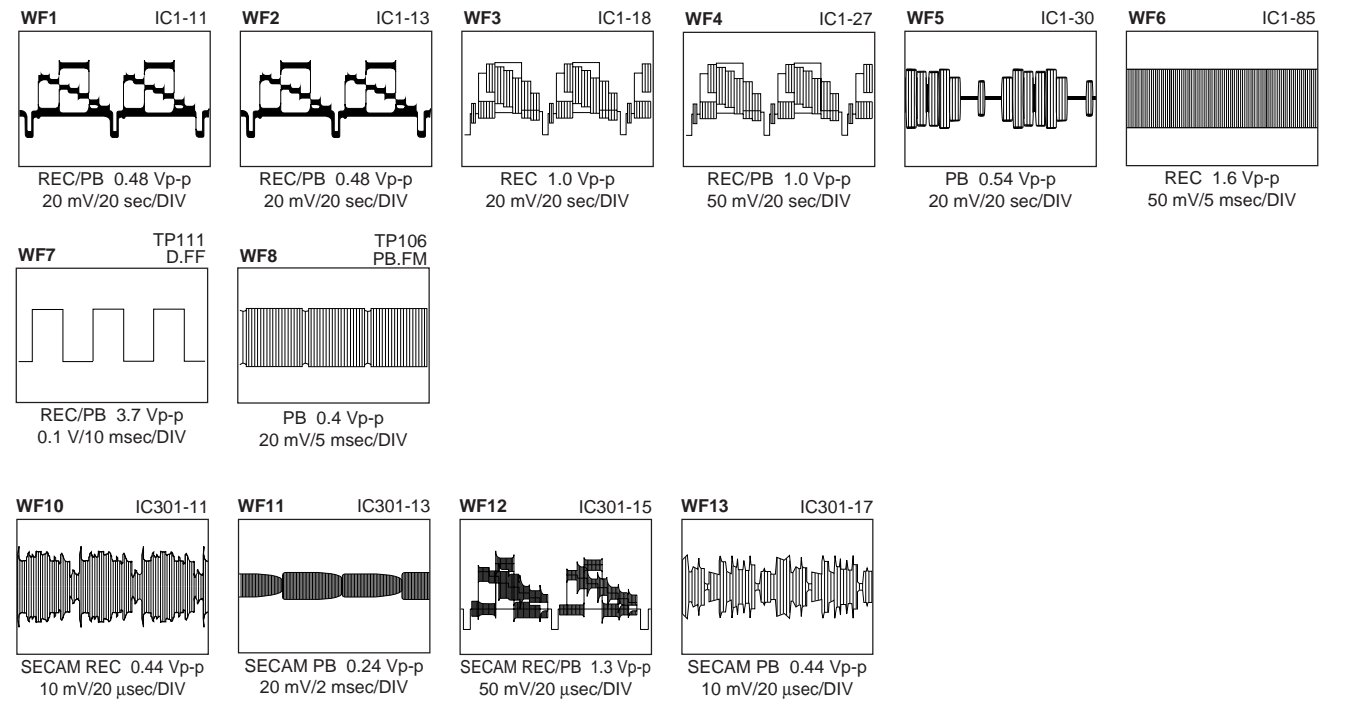


#### 4.12 REMOTE CONTROLLER SCHEMATIC DIAGRAM



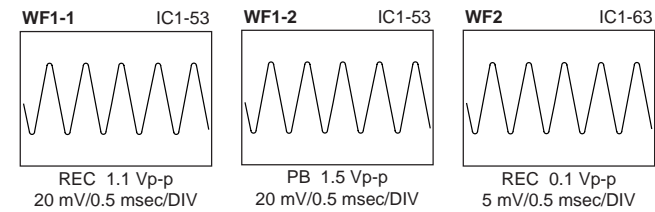
#### 4.13 WAVEFORMS

##### < VIDEO >

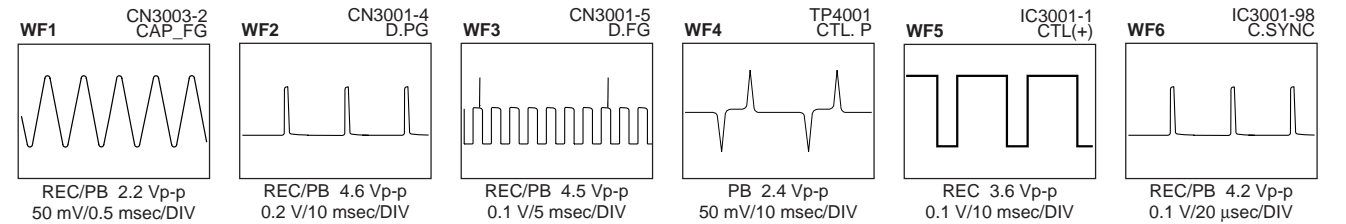


\*WF10 - WF13 is used only for HR-J280MS/J480MS.

##### < AUDIO >

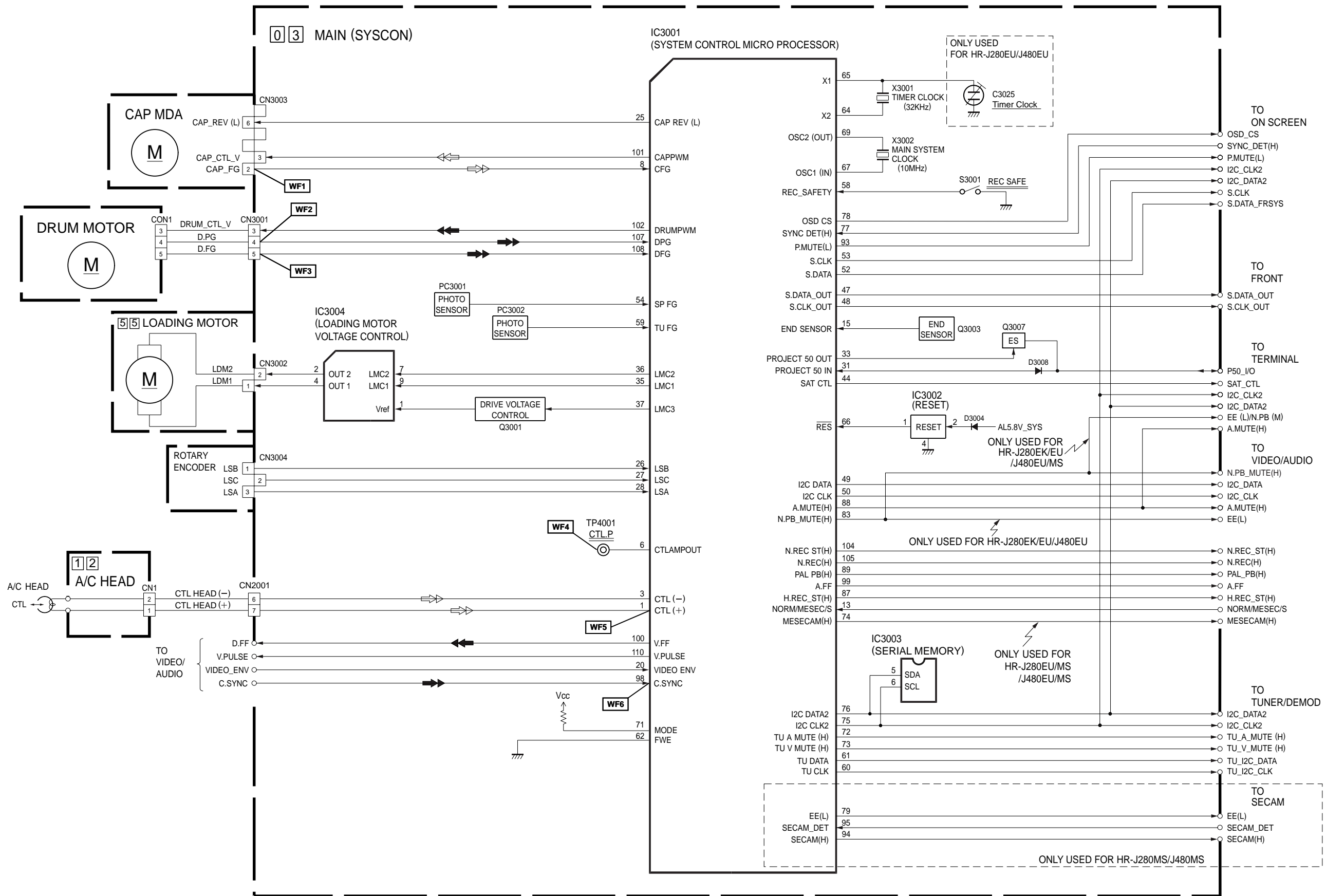


##### < SYSCON >





4.16 SYSTEM CONTROL BLOCK DIAGRAM

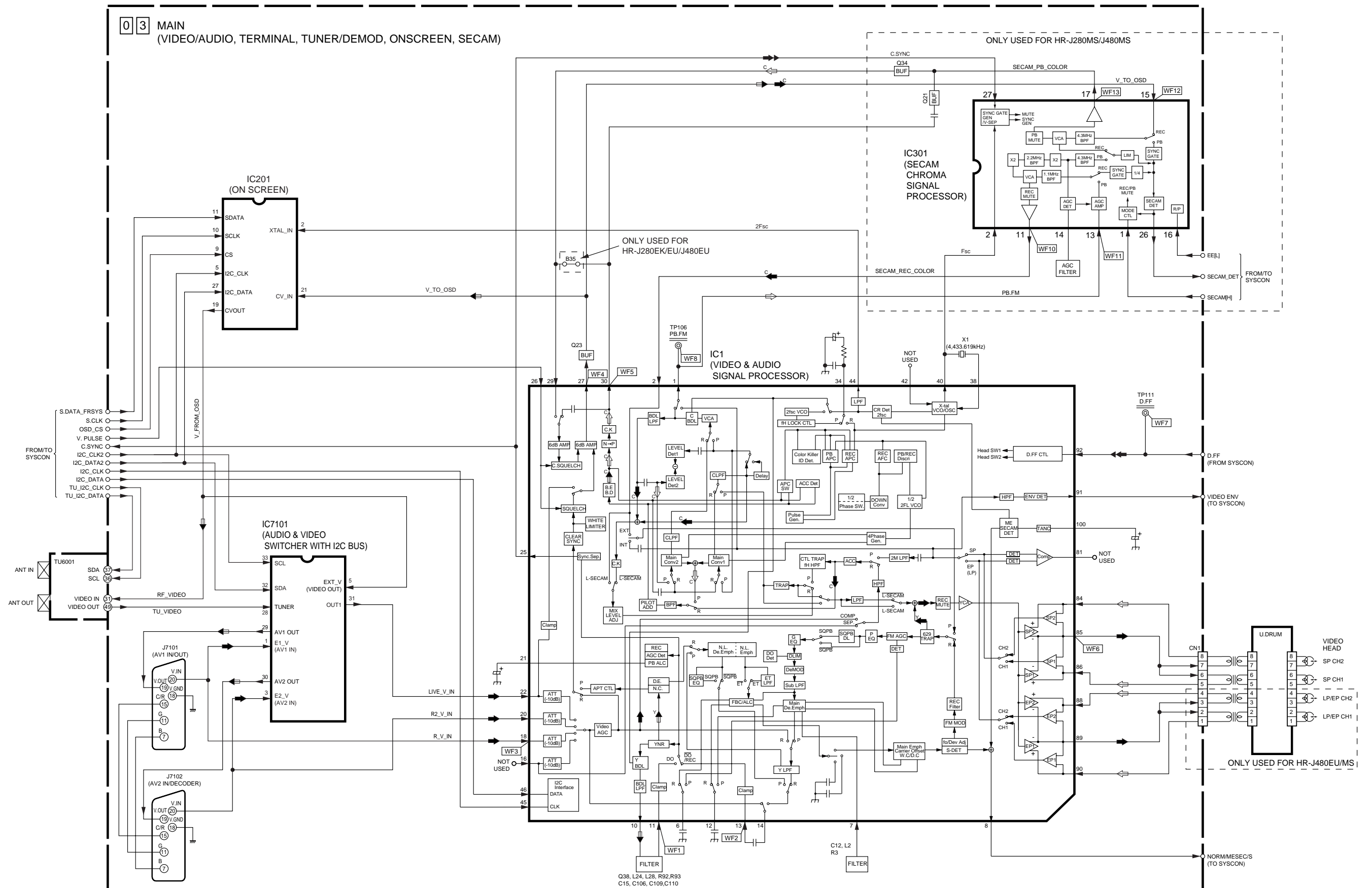


Note : For the waveforms in this block diagram, refer to page 4-26.



4.17 VIDEO BLOCK DIAGRAM

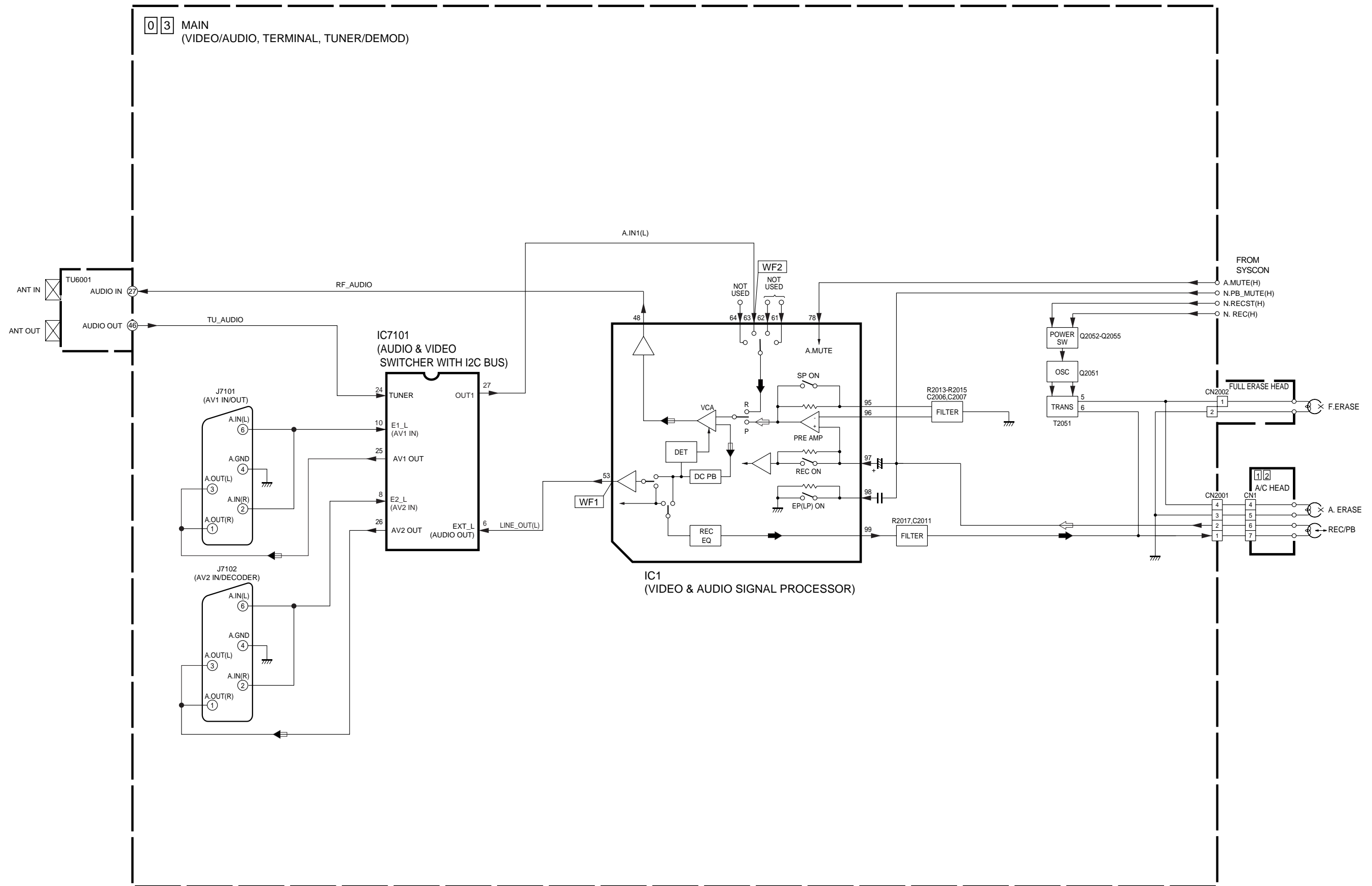
5  
4  
3  
2  
1



Note : For the waveforms in this block diagram, refer to page 4-26.

A B C D 4-31 4-32 E F G H

4.18 AUDIO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-26.