


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.

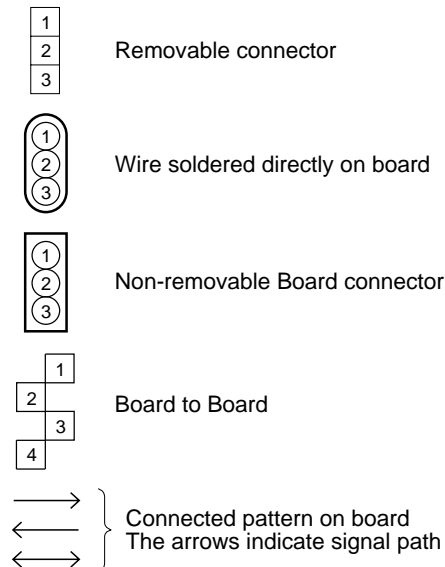
- All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K: KΩ (1000Ω), M: MΩ (1000KΩ)
- All capacitance values are in μF, (P: PF).
- All inductance values are in μH, (m: mH).
- All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

$\overline{\text{AUX}}$ or AUX(L) : Active at low

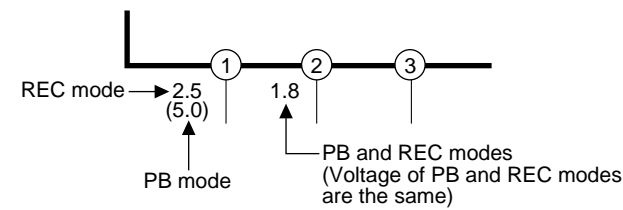
3. Interpreting Connector indications



4. Voltage measurement

- 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
- Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode
PB : REC then playback it
- Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode

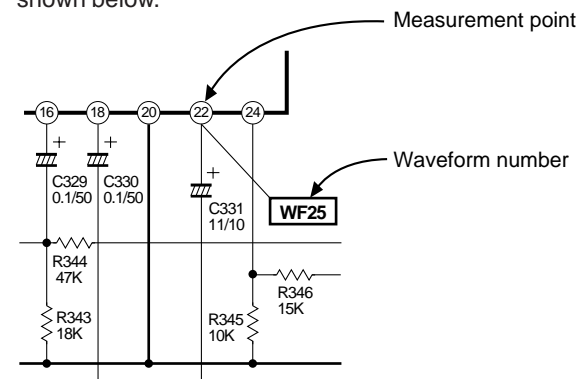
- Indication on schematic diagram
Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



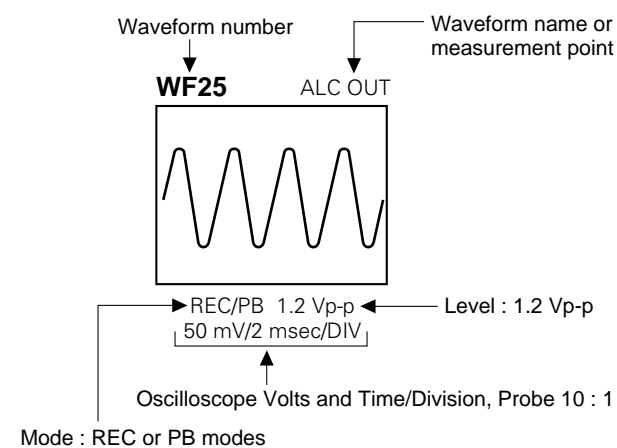
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

- Video circuits
REC : Colour bar signal in SP mode, normal VHS mode
PB : Alignment tape, colour bar SP mode, normal VHS mode
- Audio circuits
REC : 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode
PB : REC then playback it
- Movie Camera circuits
Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
- Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.

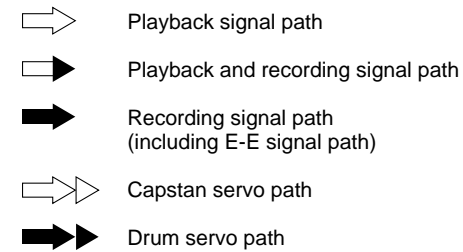


- Waveform indications

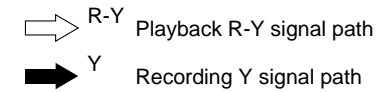


6. Signal path Symbols

The arrows indicate the signal path as follows.

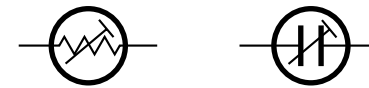


(Example)



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.



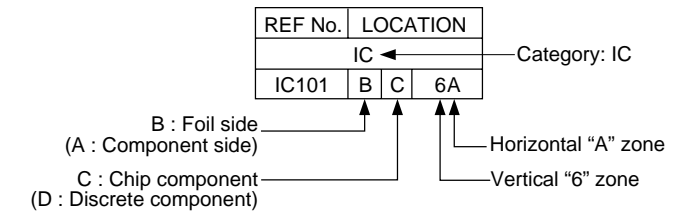
CIRCUIT BOARD NOTES

1. Foil and Component sides

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

2. Parts location guides

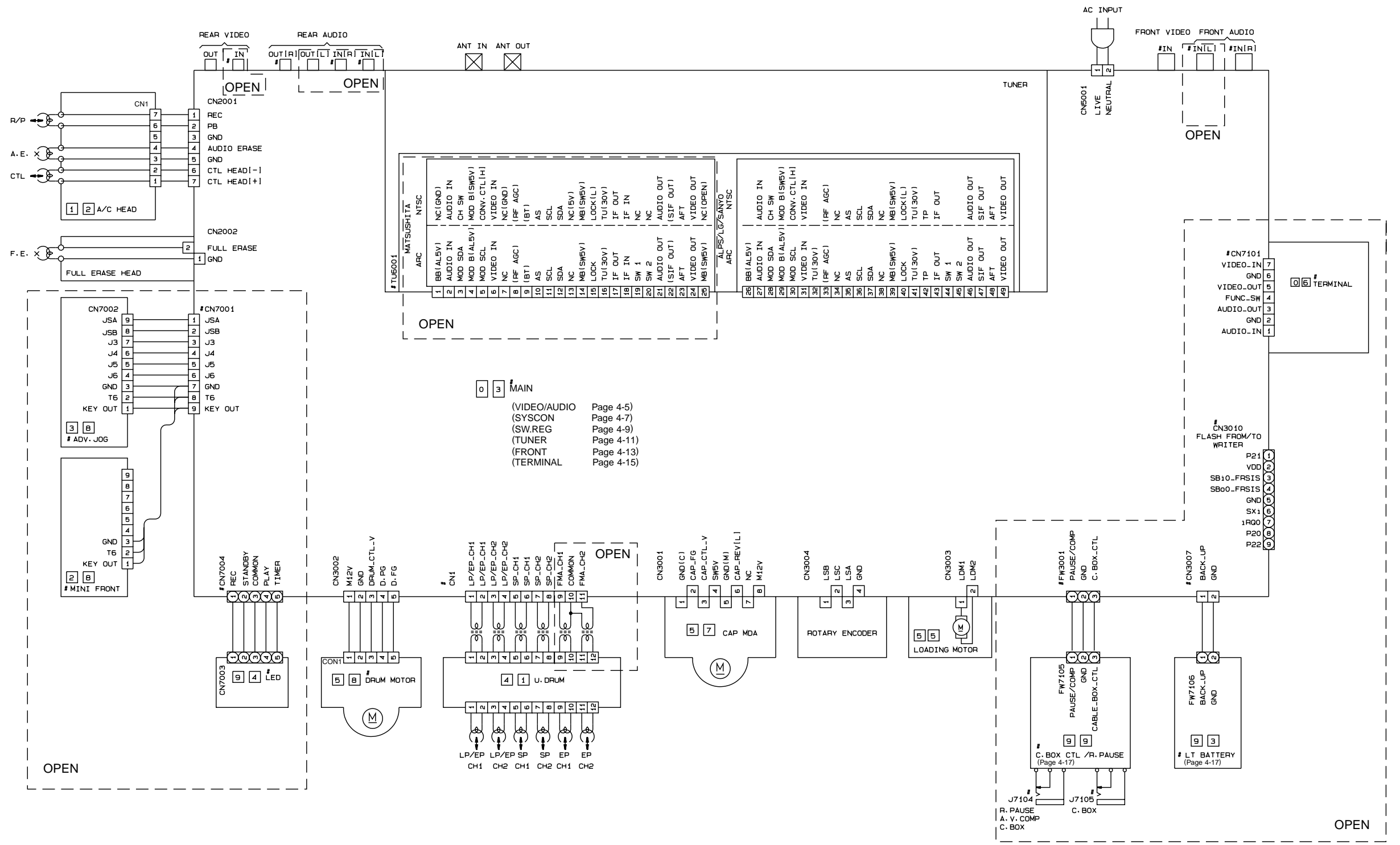
Parts location are indicated by guide scale on the circuit board.



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



9 9	C. BOX CTL/R. PAUSE
9 4	LED
9 3	LT BATTERY
5 8	DRUM MOTOR
5 7	CAP. MDA
5 5	LOADING MOTOR
4 1	U. DRUM
3 8	ADV. JOG
2 8	MINI FRONT
1 2	A/C HEAD
0 6	TERMINAL
0 3	MAIN
NO	NAME

0 3 MAIN
 (VIDEO/AUDIO Page 4-5)
 (SYSCON Page 4-7)
 (SW.REG Page 4-9)
 (TUNER Page 4-11)
 (FRONT Page 4-13)
 (TERMINAL Page 4-15)

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Different between models

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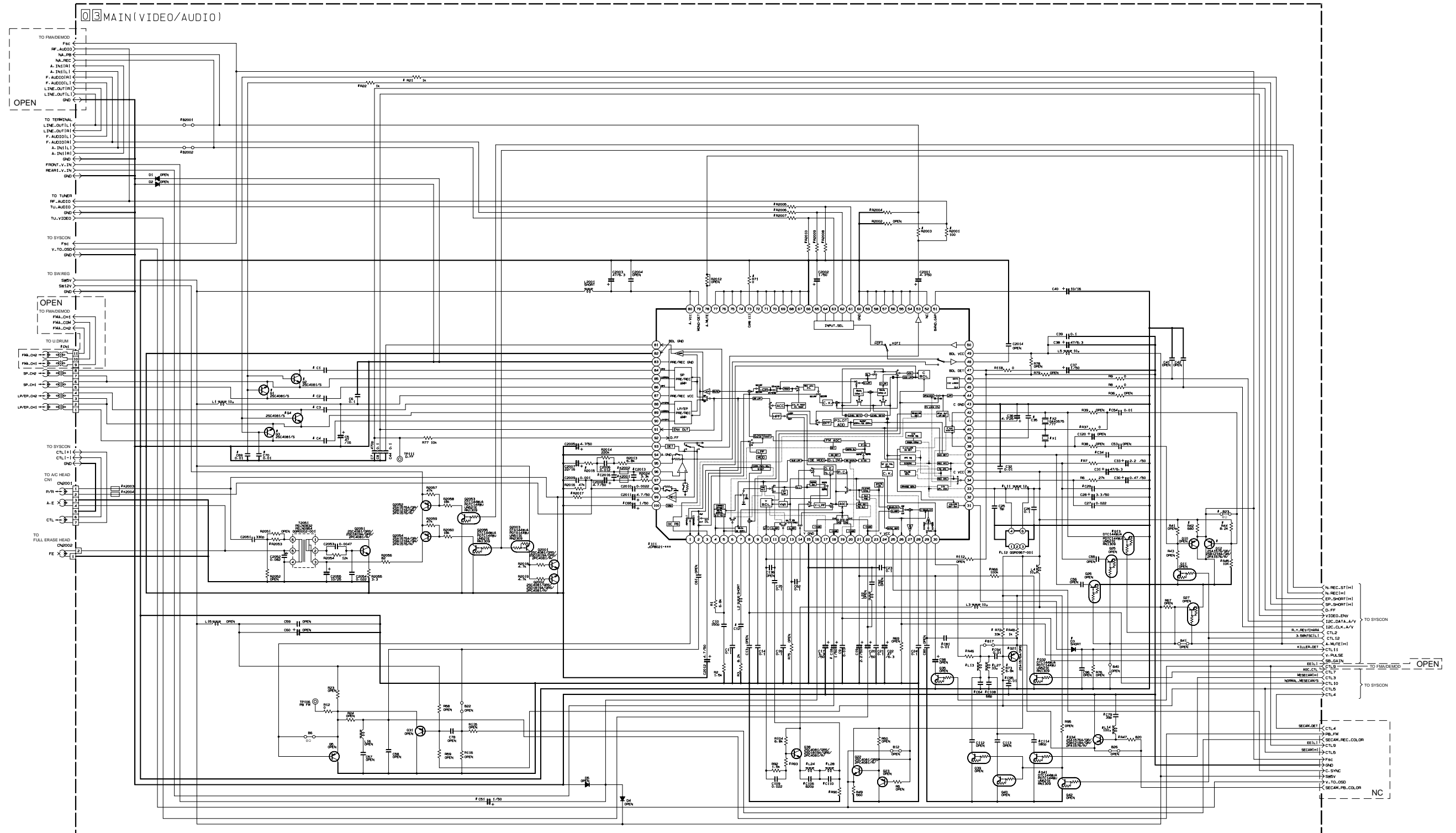
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4.2 MAIN (VIDEO/AUDIO) SCHEMATIC DIAGRAM

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.



#DIFFERENCE TABLE 1

	IC1	X1	D3	Q1-Q4	Q13	Q32	Q41	R7	R21, R22	R37, R42, R44, R45	R46	R66	R90	R93	C29	C34	C35	C54	C64	C65	C69-C70	C81	C106	C108	C110	C114	L13	L24	L27	L28	B17	B23	Q21, Q34, R47, R48, R72, R73, C79, C84, C95, L14	
NTSC	PCE1/B01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
OTHERS	NVD-2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PAL M	MVD-2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
H1F1	MVD-2	QAX0578	O	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
PAL N	MONO	MVD-2	QAX0580	X	O	X	O	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
H1F1	MONO	MVD-2	QAX0576/79	X	O	X	O	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
PAL/ARC	MONO	MVD-2	QAX0576/79	X	X	O	X	X	O	X	O	330	X	390	X	390	2.2K	470	0.033	0.22	0.01	O	220	O	O	O	O	O	O	O	O	O	O	O
H1F1	MONO	MVD-2	QAX0576/79	X	O	X	O	X	O	O	O	330	X	390	2.2K	470	0.033	0.22	0.01	O	220	O	O	O	O	O	O	O	O	O	O	O	O	O
H1F1	SECAM	MONO	MVD-2	QAX0576/79	X	X	O	X	X	O	330	X	390	2.2K	470	0.033	0.22	0.01	O	220	O	O	O	O	O	O	O	O	O	O	O	O	O	O

#DIFFERENCE TABLE 2

3-SBNTSC	X2
YES	O
NO	X

#DIFFERENCE TABLE 3

INPUT	C18	C51
FRONT	X	O
REAR	O	X
FRONT/REAR	O	O

#DIFFERENCE TABLE 4

HEAD TYPE	C1, C2	C3, C4	R71	CN1
4-HEAD H1F1	1	1	X	11 PIN1-1-111
4-HEAD MONO	1	1	X	8 PIN1-1-81
2-HEAD	0.1	X	O	4 PIN15-81

#DIFFERENCE TABLE 5

DESTINATION	INPUT	FRONT IN	FM -> A11(H1F1)	REAR IN/REAR IN(MONO)
H1F1	NTSC/PAL M/PAL N	R2005	R2009	B2002
ARC	FRONT/REAR	47K	5.6K	X
MONO	FRONT/REAR	47K	5.6K	X
PAL/ARC	FRONT/REAR	47K	5.6K	X

#DIFFERENCE TABLE 6

RF-OUT	A11-PIN(H1F1)	LINE OUT(MONO)	TU-IN	BN	REC	LEVEL	B145
H1F1	NTSC/PAL M	X	X	100	X	X	X
PAL N	X	X	100	X	X	X	180
PAL/ARC	X	X	100	X	X	X	180
NTSC/PAL M	O	O	680	2.7K	33K	47K	180
PAL N	O	O	680	2.7K	33K	47K	180
PAL/ARC	O	O	100	4.7K	15K	10K	180

#DIFFERENCE TABLE 7

H1F1	NTSC/ARC	C2013	C2016	K2001, K2002	K2003, K2004
PAL M/PAL N	X	X	SHORT	SHORT	SHORT
MONO	NTSC/ARC	X	X	SHORT	SHORT
PAL	PAL				

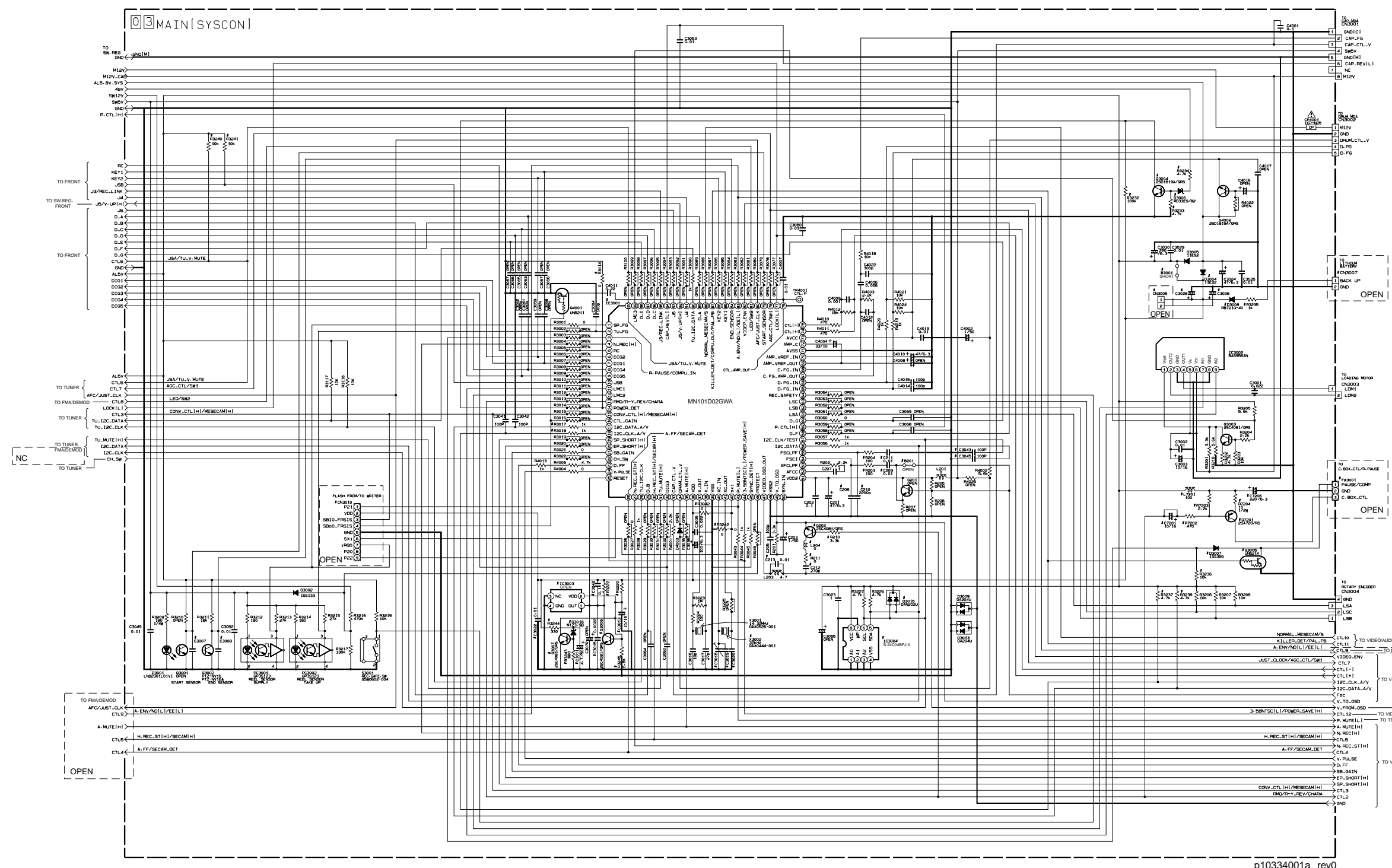
NOTES: UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS. ALL CAPACITANCE VALUES ARE IN P.F. ALL INDUCTANCE VALUES ARE IN μH.

Legend:
 [Symbol] ELECTROLYTIC
 [Symbol] CERAMIC
 [Symbol] MYLAR
 [Symbol] NON POLAR

4.3 MAIN (SYSCON) 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.

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		HR-VP49U 30015 HR-A37U
SYSCON IC	IC3001	A
EEPROM	IC3004	4K
LITHIUM BACK UP	D3008	X
	R3235	X
	CN3007	X
R.PAUSE	FW3001	X
C.BOX CTL	Q3005	X
	R3236 D3007	X
	R7202 R7203 R7204	X
	L7201 C7206 Q7201	X
	C7201	X
ADV. JOG/SHUTTLE	R3240 R3241	X
3.58NTSC(L)/POWER SAVE(H)	R3044	X
BACK UP	C3026	X
	C3028	X
	CN3005	X
	B3001	O
	D3004	X
	R3042	X
	R3242	O
	X3002	X
	C3018	X
	C3019	OΩ
	C3020	X
POWER DET	R3232 R3233 R3234	X
	D3006 D3004	X
	R3114	O
RESET CIRCUIT	R3220	5.6k
	R3222	470
	R3243 R3244 R3245	O
	D3016 Q3006 Q3007	O
	C3011	O
RESET IC	IC3003	X
	C3013 C3022	X
OSD	R203 R204	X
	C208 C210	OΩ
	C209 C211	X
	B201	X
	Q202 L204	X
	R210 R211 C212 C213	X
ESD	C3007	X
	C3008	0.01
	C3015	X
	C3048	O
	D3015	X
	R3237 R3238	4.7k
	R3017 R3018	1k

IC3001 MN101D02GW* /MN101DP02JAFW*

IC3004

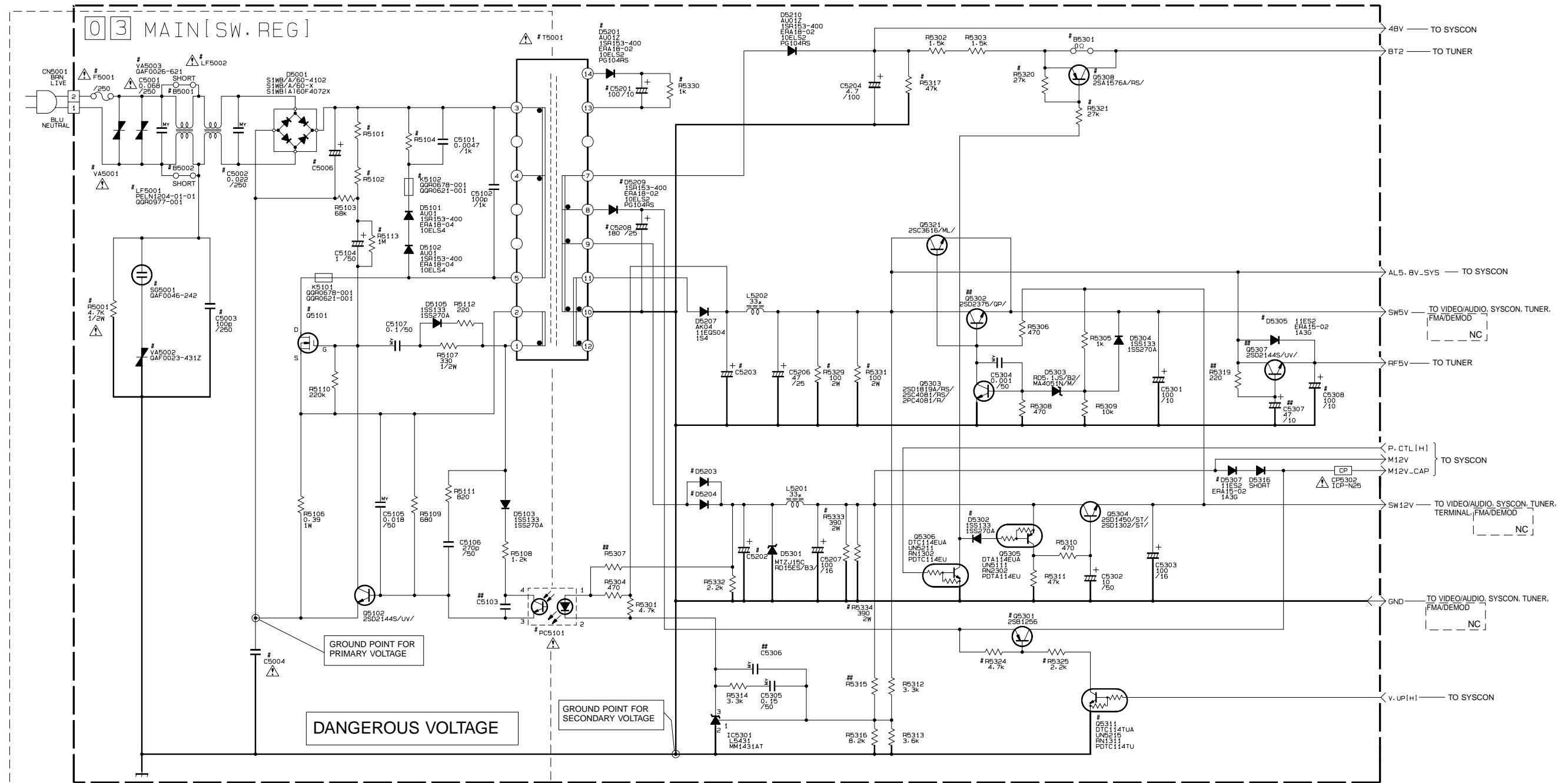
32K	AT24C32N-10SC-X
	24LC32B/SN-X
	BR24C32F-X
8K	AT24C08N-10SC-X
	24LC08B/SN-X
	BR24C08F-X
	X24C08S-X
4K	S-24C04BFJ-X
	AT24C04N-10SC-X
	24LC04B/SN-X
	BR24C04F-W-X
	X24C04S-X
2K	S-24C02BFJ-X
	AT24C02N-10SC-X
	24LC02B/SN-X
	BR24C02F-W-X

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] MILER
 [Symbol] NON POLAR

A B C D 4-7 4-8 E F G H

4.4 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

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#DIFFERENCE TABLE 1

	05101	R5001	C5004	C5006	PC5101	F5001
US	2SK3043 2SK2324	YES	0.0047 /250	47 /200	PS2501-1 PC817 ON311/RS/ PC817X	1.25A
PH /7B	2SK3255	NO	0.0022 /250	68 /400	PS2561L1-1/WL/ PC123F2 ON3171/R/	2A
OTHER	2SK3632 2SK2125	NO	0.0022 /250	68 /400	PS2561L1-1/WL/ PC123F2 ON3171/R/	2A

#DIFFERENCE TABLE 2

	CE	Q5308 R5317	R5320 R5321	R5301	D5302	R5101 R5102	R5104	C5002	LF5001	LF5002	B5002 B5001
-YES-		YES	NO	YES	330k	150k 2W	YES	YES	QGR0508-001 QGR0509-001 QGR0510-001 QGR0578-001	NO	
-NO-		NO	YES	SHORT	220k	68k 2W	NO	NO	QGR0533-001 QGR0532-001 QGR0516-001 QGR0532-001 QGR0516-001	YES	

#DIFFERENCE TABLE 8

	C5202	C5203
US	1000 /16	1000 /10
OTHER	680 /16	680 /10

#DIFFERENCE TABLE 3

	SURGE	SG5001	VA5001	VA5002	R5113	VA5003
US	SHORT	GAF0023-431Z GAF0024-431Z GAF0039-431Z	NO	NO	NO	NO
OTHER	NO	NO	NO	NO	NO	NO
US (PHILIPS)	YES	GAF0023-431Z	YES	YES	NO	NO
PH AUTO VOLTAGE	NO	NO	NO	NO	YES	

#DIFFERENCE TABLE 4

	RF5V	D5305
-YES-	YES	
-NO-	NO	

#DIFFERENCE TABLE 5

	ROOM ANT	C5003	K5102
PHILIPS/7B	YES	YES	YES
PHILIPS/75	YES	SHORT	
OTHER	NO	SHORT	

#DIFFERENCE TABLE 6

	AUTO VOLTAGE	R5329	R5331	R5333	R5334
-YES-	RF5V -YES-	NO	NO	YES	YES
	RF5V -NO-	NO	YES	YES	YES
OTHER		NO	NO	NO	NO

#DIFFERENCE TABLE 7

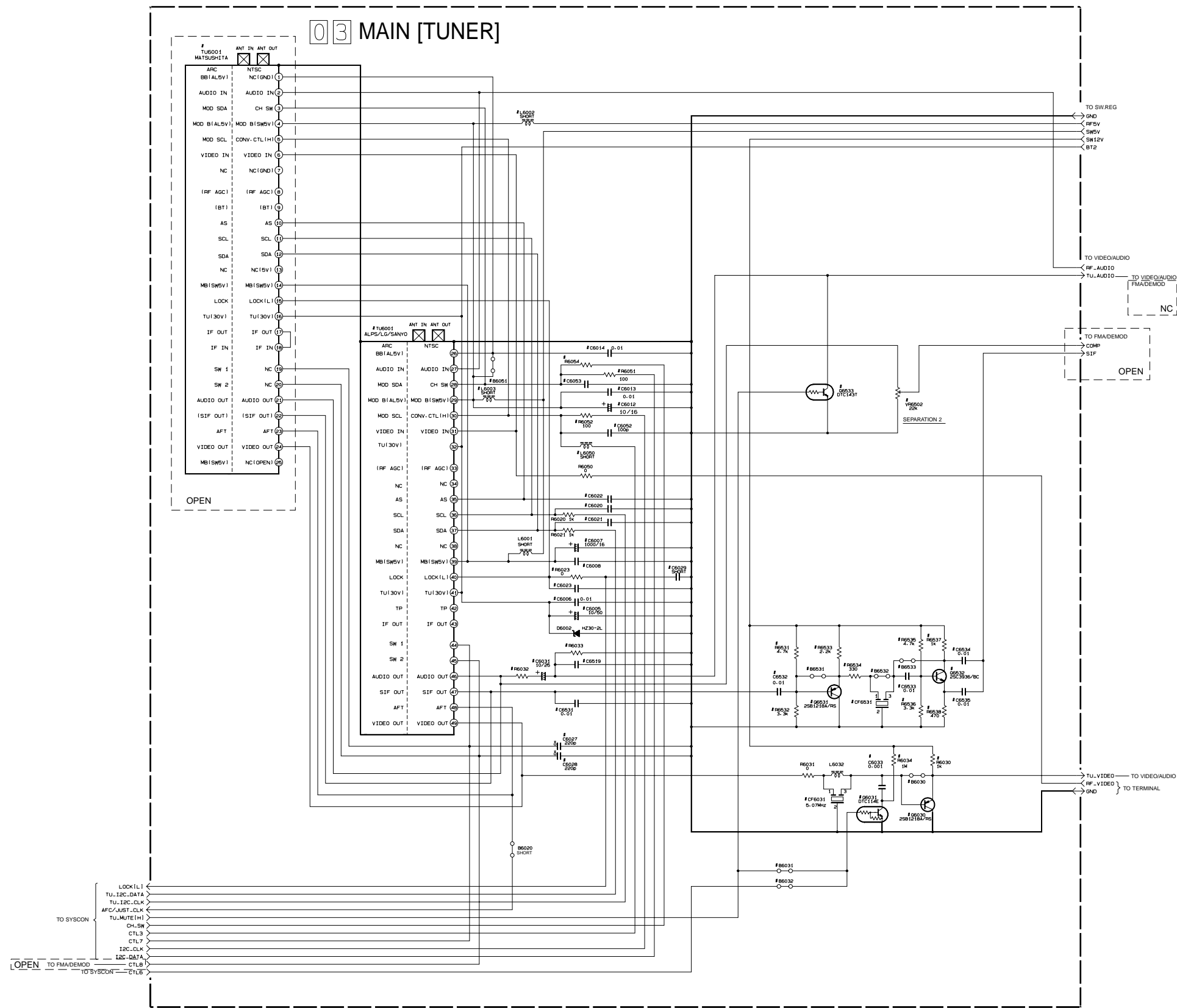
	HIGH SPEED FF/REW	T5001	Q5301 Q5311	R5324 R5325	C5208 C5209	D5201 R5330 C5201	D5307	D5203 D5204
-YES-	Q050030-002 Q050031-002 Q050036-001	YES	YES	YES	YES	YES	YES	AU01Z 10EL52
-NO-	Q050083-001 Q050084-001 Q050093-001	NO	NO	NO	NO	SHORT	1SR153-400 ERA18-02 10EL52 PG104RS	

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

4.5 MAIN(TUNER) 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.



O : Used
x : Not used

DIFFERENCE TABLE (US-PAL-M/N)

		H1F1	MONO
TU6001	ALPS	GAU0207	GAU0207
	SANYO	GAU0206	GAU0206
VIDEO BUFFER	R6030-R6030	O	O
	R6030	X	X
VIDEO MUTE	R6031-R6034	X	X
	R6033-R6031	X	X
LOCK	R6023-C6023	X	X
	C6029	O	O
	R6032	X	15k
	R6033	X	10k
MONO	C6019	X	0.012
	C6031	X	O
H1F1	VR602	O	X
MOD B1SWV1	L6003	O	O
CONV CTL	L6050	O	O
CONV SW	R6054	O	O
	C6005-C6008		
	C6012-C6014		
	C6020-C6022		
	C6052-C6053		
	Q6001-Q6002		
	Q6031-Q6033	X	X
	CF6031-CF6031		
	R6031-R6036		
	C6031-C6035		
PAL	R6030-R6051	X	X
	L6003		
	R6051-R6052		
	C6027-C6028		

DIFFERENCE TABLE (EUROPE-ASIA - PAL/MS)

TUNER UNIT	TU6001	EU/EK		FRANCE MS		ASIA 3SYSTEM		ASIA 4SYSTEM	
		MATSHITA	ALPS	ALPS	LG	MATSHITA	ALPS	MATSHITA	MATSHITA
		GAU0208	GAU0209	GAU0210	GAU0211	GAU0208	GAU0209	GAU0212	
VIDEO BUFFER	R6030-R6030	O	O	O	O	O	O	O	O
	R6030	X	X	X	X	X	X	X	X
VIDEO MUTE	R6031-R6034	O	O	O	O	X	X	X	X
	R6033	0a	0a	0a	0a	X	X	X	X
	R6031	X	X	X	X	X	X	X	X
	R6032	O	O	O	O	X	X	X	X
AUDIO MUTE	R6033	O	O	O	O	X	X	X	X
	C6020	X	X	X	X	X	X	X	X
TU I2C	C6021	X	X	X	X	X	X	X	X
	C6022	X	X	X	X	X	X	X	X
LOCK	R6023-C6023	X	X	X	X	X	X	X	X
	C6029	O	O	O	O	O	O	O	O
	R6032	3.3k	3.3k	3.9k	3.9k	3.3k	3.3k	0a	
MONO	R6033	1.8k	1.8k	1.8k	1.8k	1.8k	1.8k	1.8k	
	C6031	O	O	O	O	O	O	O	O
	C6019	0.047	0.047	0.047	0.047	0.047	0.047	0.047	
US MPX	VR602	X	X	X	X	X	X	X	X
	L6003-R6051	O	O	O	O	O	O	O	O
ALDV	C6012	X	X	X	X	X	X	X	X
	C6013	X	X	X	X	X	X	X	X
	C6014	O	O	O	O	O	O	O	O
	R6051-R6052	O	O	X	X	O	O	O	O
	R6054-L6050	X	X	X	X	X	X	X	X
	C6052-C6053	X	X	X	X	X	X	X	X
SWV	L6003	X	X	X	X	X	X	X	X
	C6007	X	X	X	X	X	X	X	X
	C6008	X	X	X	X	X	X	X	X
TU130V	C6005	X	X	X	X	X	X	X	X
	C6006	X	X	X	X	X	X	X	X
SIF OUT	R6031-C6035	X	X	X	X	X	X	X	X
	R6031-R6036	X	X	X	X	X	X	X	X
	R6031-R6033	X	X	X	X	X	X	X	X
	CF6031	X	X	X	X	X	X	X	X
GENLEC S2	C6027	X	X	O	X	X	X	X	X
	C6028	X	X	X	X	X	X	X	X

CTL3	CONV.CTL(H)/MESCAM(H)
CTL6	J11.6A1/TU.V-MUTE(H)
CTL7	AGC.CTL/SW1
CTL8	LED/SW2

NOTES-UNLESS OTHERWISE SPECIFIED:
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN P.F.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

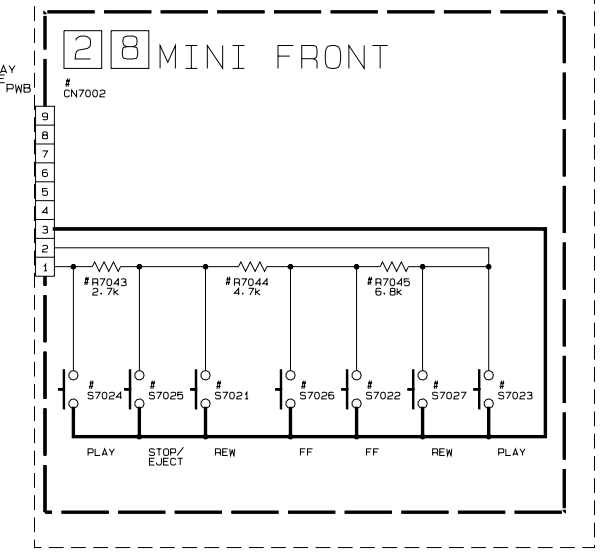
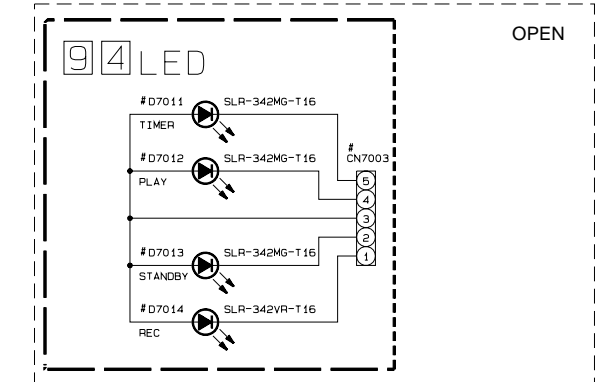
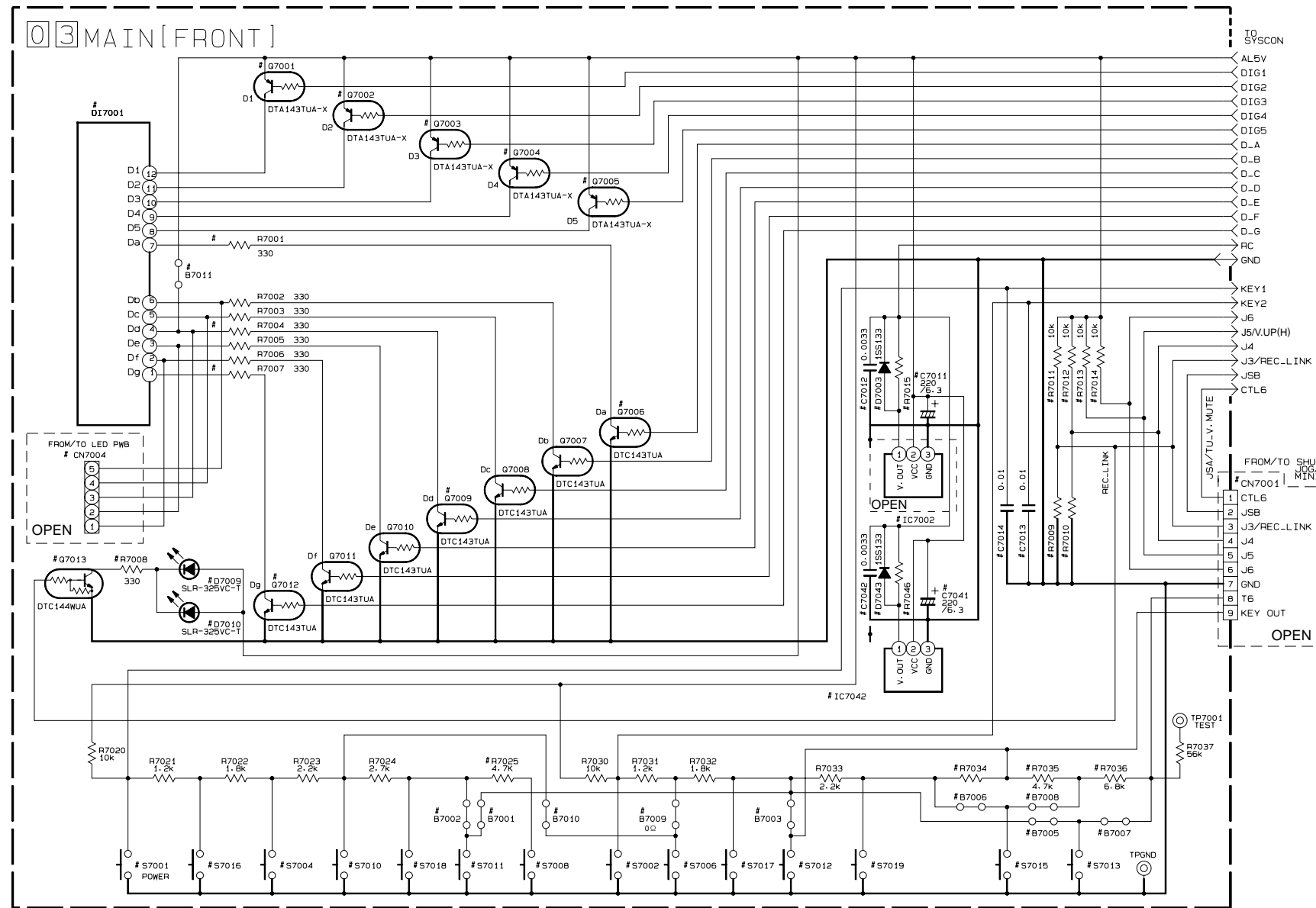
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A B C D 4-11 4-12 E F G H

4.6 MAIN (FRONT) 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 1

BRAND	TOOL	WORKING NUMBER	S7001	S7002	S7004	S7006	S7008	S7010	S7011	S7012	S7013	S7014	S7015	S7016	S7017	S7018	S7019	S7020	S7021	S7022	S7023	S7024	S7025	S7030	S7031	S7032	S7033	S7034	S7035	S7036	B7001	B7002	B7003	B7004	B7006	B7007	B7008	B7009	B7010		
JVC	400EA	D15 U/UC. D15P U/UC. D1EN	POWER	REC LINK	CH - CH +	PLAY	E.PROG.	REC	PAUSE	STOP/EJECT	DISP	ADV	7seg	O	2.7k	O	O	O	O	O	O	O	X	O	O	O	O	X	O	O	X	O	X	O	X	O	X	O	X		
JVC	400E		POWER	C.RESET	CH - CH +	REVIEW	SP/EP	REC	PAUSE	STOP/EJECT	DISP	ADV	7seg	O	0	X	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	X		
JVC	360H	C0 U/UC. C0P UM. C1 U/UM/M/EN D0 U/UC. D1 M/UM. D1M U/UC A1 A/EM/EA/EE/(A/EA) A11 A. A2 EM C1 A/S/EA/EE/(A/S)			REW/CH-	FF/CH+		PLAY						POWER	STOP/EJECT	REC	PAUSE/CH												X	X	X	X	X	X	X	X	X	X	X	O	X
JVC	AD EU				REW/CH-	FF/CH+		PLAY						STAND-BY	STOP/EJECT	REC	PAUSE/CH											X	X	X	X	X	X	X	X	X	X	O	X		
PHILIPS	01A	D1 /78/50. C1 /50 A1 /VR120/551. D1 /VR602/551			FF/CH+	CH	STOP/EJECT							POWER	REC	REW/CH-	PLAY											X	X	X	X	X	X	X	X	X	X	X	O	X	
PHILIPS	01B	A1 /55-C1 /50/55/61. D1 /55	POWER	PAUSE	MENU OK	REC	CH - CH +							POWER	REC	REW/CH-	PLAY											X	X	X	X	X	X	X	X	X	X	X	O	X	
PHILIPS	00A		POWER	PAUSE	MENU OK	REC	CH - CH +							POWER	REC	REW/CH-	PLAY											X	X	X	X	X	X	X	X	X	X	O	X		
SEARS	360H				REW/CH-	FF/CH+		PLAY						POWER	STOP/EJECT	REC	PAUSE/CH											X	X	X	X	X	X	X	X	X	X	O	X		
AUDINAC	360H				REW/CH-	FF/CH+		PLAY						POWER	STOP/EJECT	REC	PAUSE/CH											X	X	X	X	X	X	X	X	X	O	X			

##DIFFERENCE TABLE 2

BRAND	TOOL	IC7002	D7003	R7015	D7043	IC7042	R7046
JVC	400H. 400EA. 400E	GP1U2910 PNA4652M00YC PIC-28143LJ	X	0	X	X	X
JVC	360H		X	X	X	O	0
PHILIPS	01A	X	X	X	O	X	100k
PHILIPS	01B. 00A	GP1U2900 PNA4652M00YC PIC-28142LJ	O	100k	X	X	X

##DIFFERENCE TABLE 3

DISPLAY TYPE	D17001	D7001-D7005	D7009. D7012	D7011-D7014	D7011
12H. 7 SEG AMBER	LTG-Y2K12M-01J	O	X	X	X
12/24H. 7 SEG GREEN	LTG-Y2K16M-J	O	X	X	X
4-DIG	X	X	O	O	O

##DIFFERENCE TABLE 4

JOG/SHUTTLE	R7009-R7014
WITH J/S	O
WITH ADV J/S	X
OTHERS	X

##DIFFERENCE TABLE 5

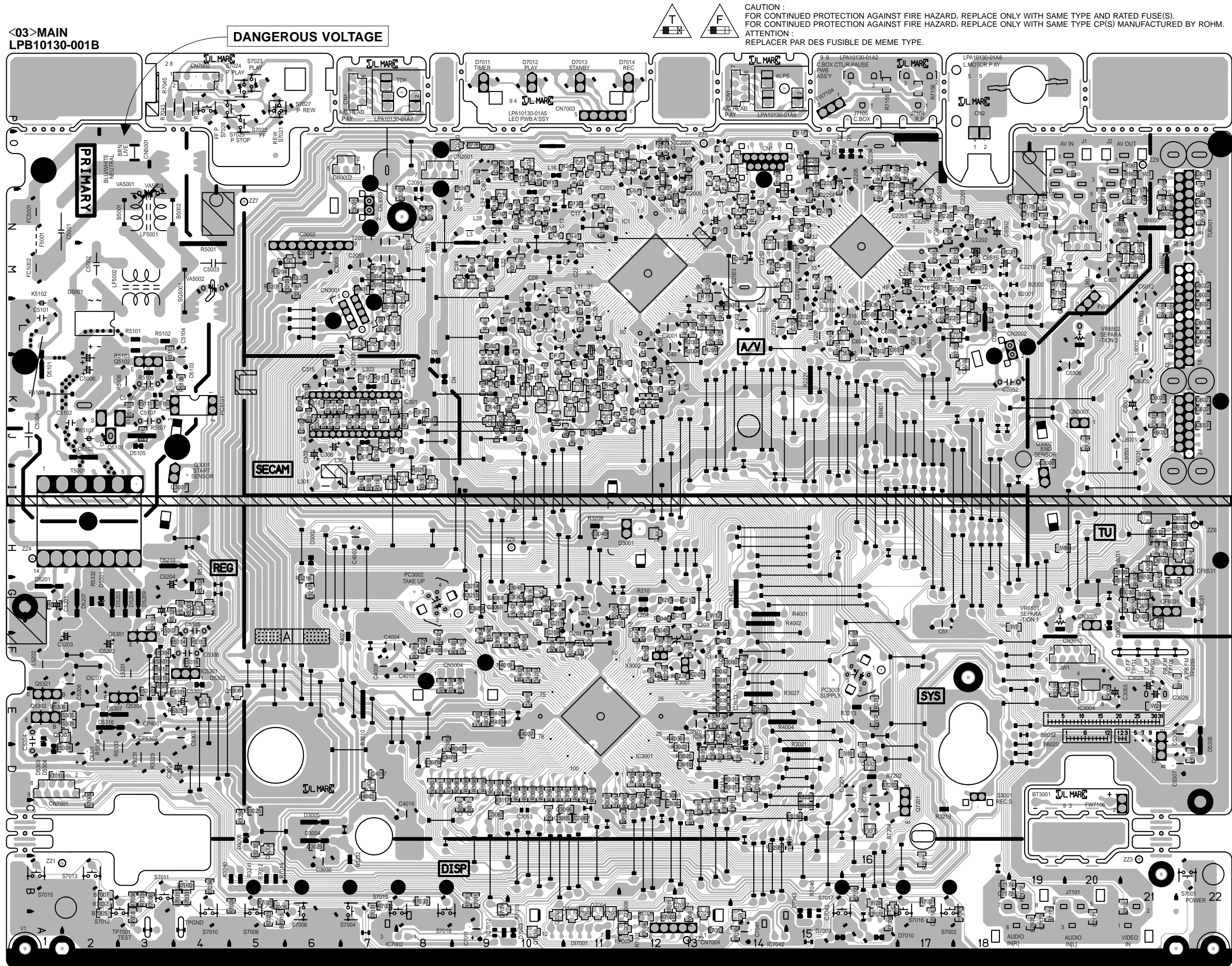
REC LINK	Q7013	D7009	D7010
YES	O	RED	X
NO	X	X	X

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

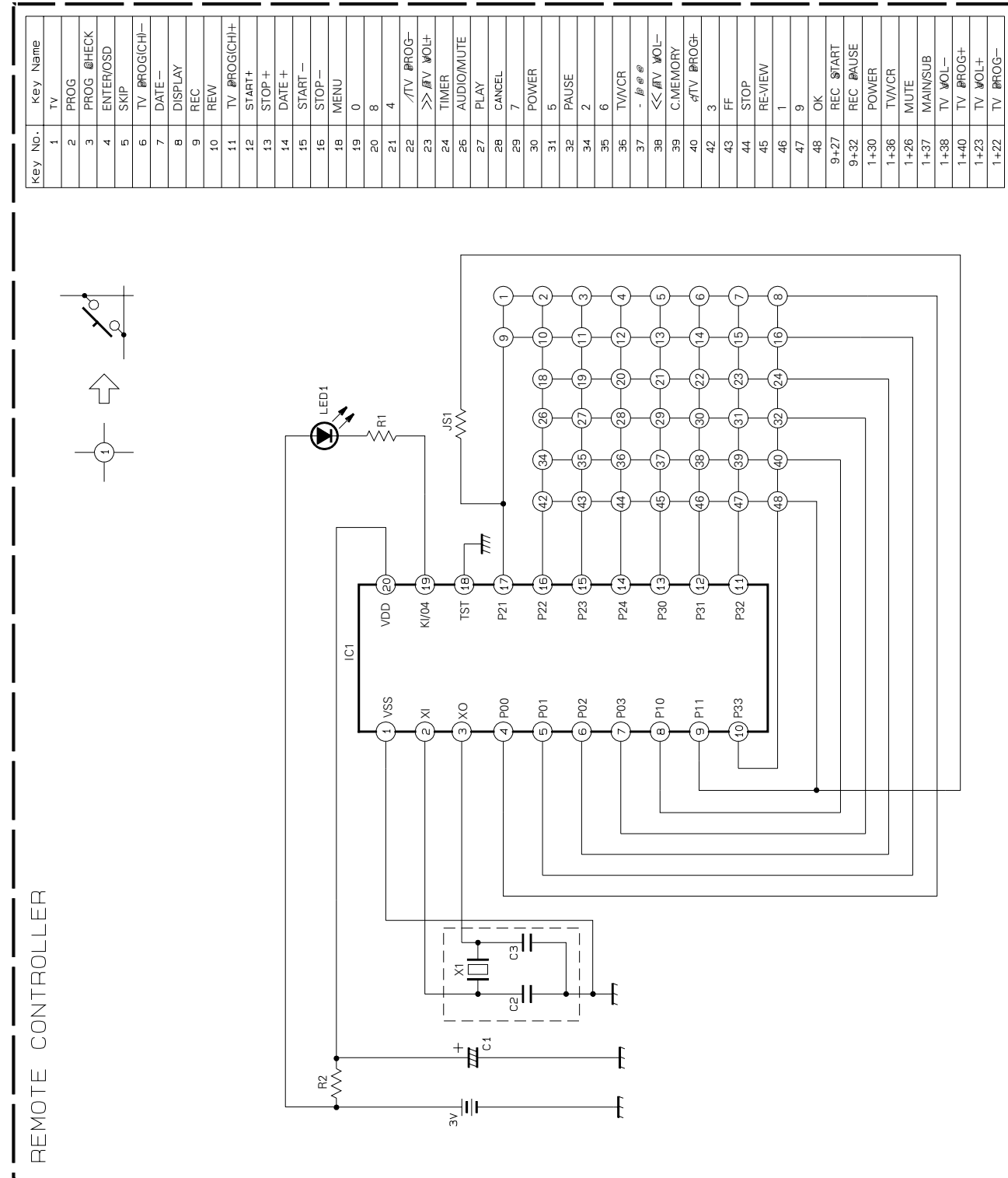
5
4
3
2
1

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



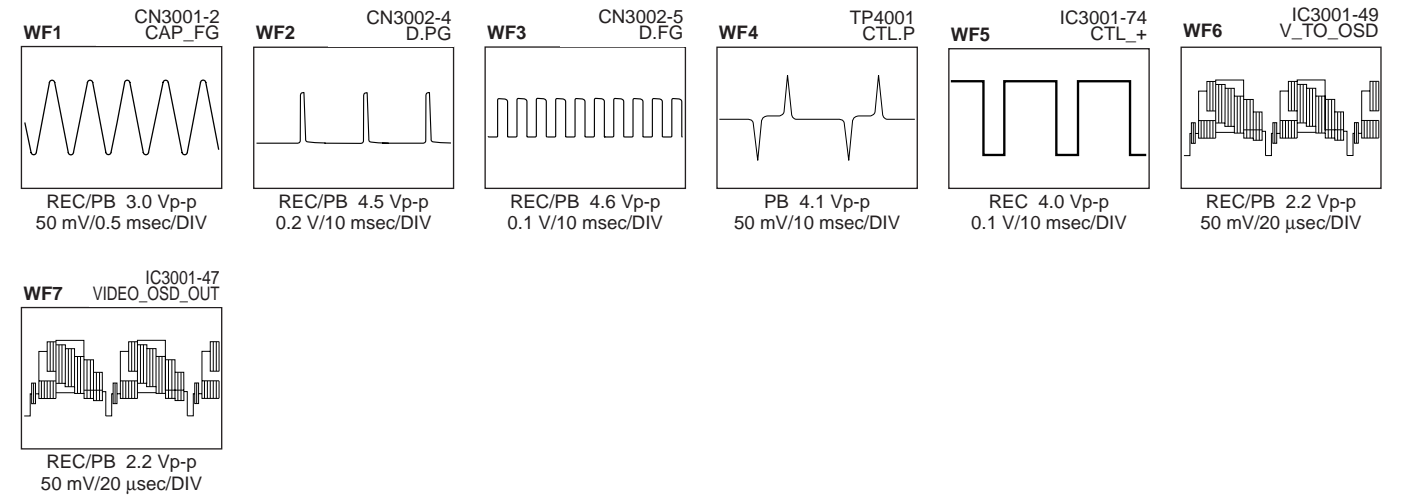
4.9 REMOTE CONTROLLER SCHEMATIC DIAGRAM

NOTES:
 1. All parts shown in this schematic are critical for safety.
 2. This schematic is only for reference.
 Avoid replacing individual parts.
 Replace the entire unit only.

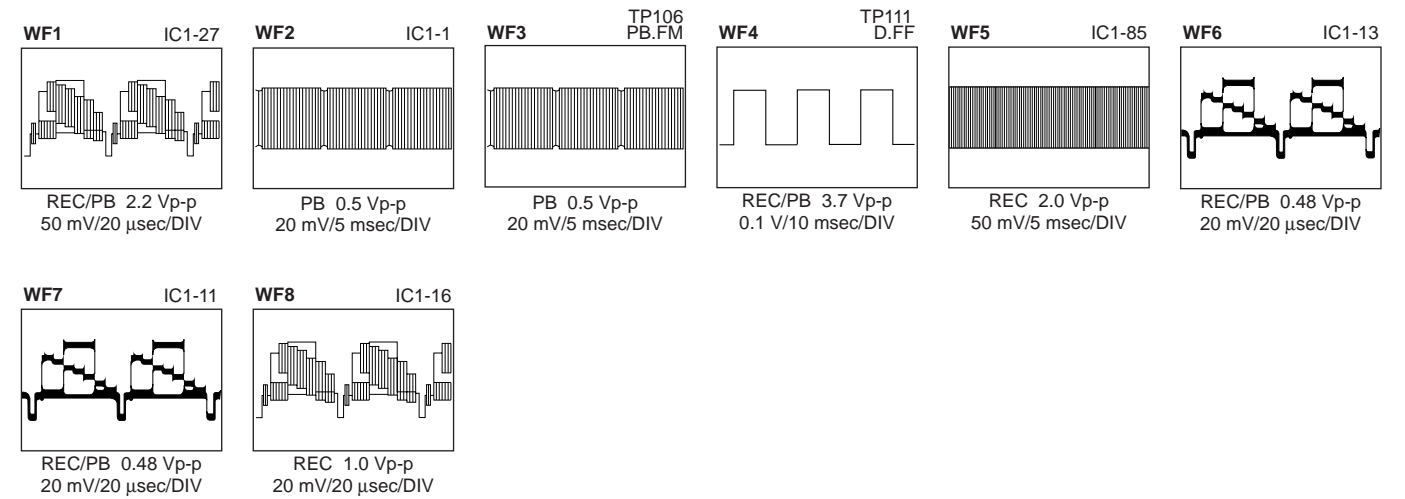


4.10 WAVEFORMS

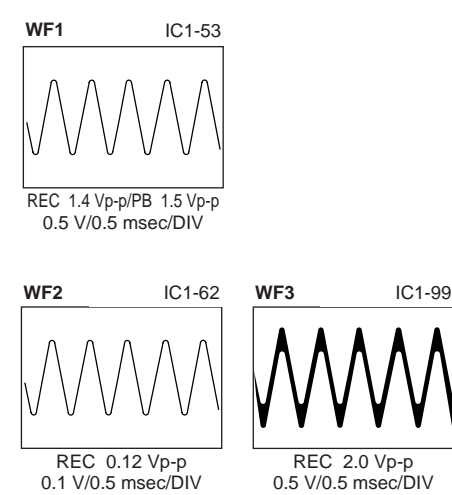
< SYSCON >



< VIDEO >



< AUDIO >



4.11 VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1		
1	1.5	2.3
2	2.8	2.8
3	2.6	2.6
4	1.9	1.5
5	1.9	1.5
6	2.4	2.1
7	1.4	0.8
8	0	0
9	2.6	3.1
10	2.3	2.3
11	3.1	3.1
12	2.8	2.8
13	3.1	3.1
14	2.3	2.3
15	0	0
16	2.8	2.8
17	1.4	1.4
18	2.8	2.8
19	2.8	2.8
20	2.8	2.8
21	2.0	2.0
22	2.8	2.8
23	2.8	2.8
24	5.0	5.0
25	0.4	0.4
26	0	0
27	2.3	2.3
28	2.3	2.3
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.5	2.5
33	5.0	5.0
34	2.7	2.3
35	5.0	5.0
36	2.5	0
37	2.3	2.3
38	-	-
39	1.2	1.2
40	-	-
41	2.5	2.5
42	-	-
43	0	0
44	2.2	2.2
45	4.6	4.6
46	4.9	4.6
47	2.9	2.9
48	2.6	2.6
49	5.0	5.0
50	2.5	2.5
51	2.8	2.8
52	0	0
53	2.6	2.6
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	2.0	2.0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	3.1	3.1
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	5.0	5.0
80	5.0	5.0
81	0	0
82	0	0
83	0	0
84	2.2	2.2
85	2.4	2.4
86	2.2	2.2
87	5.0	5.0
88	0	0
89	0	0
90	0	0
91	0	4.0
92	2.6	2.6
93	0.8	0.5
94	0	0
95	2.5	2.5
96	2.5	2.5
97	2.5	2.5
98	0	0
99	2.5	2.5
100	0	0

MODE PIN NO.	REC	PLAY
IC3001		
1	-	-
2	-	-
3	0	0
4	5.0	0
5	5.1	5.0
6	4.0	4.0
7	4.0	4.0
8	4.1	4.1
9	4.0	4.0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	5.0	5.0
16	4.9	4.9
17	4.9	4.9
18	4.5	4.5
19	0	0
20	0	0
21	2.8	2.8
22	4.3	4.3
23	2.5	2.5
24	0	0
25	-	-
26	0	2.5
27	5.0	0
28	5.1	5.0
29	1.0	1.0
30	4.9	0
31	5.0	5.0
32	4.1	4.1
33	2.5	2.5
34	1.5	1.5
35	0	0
36	5.0	5.0
37	-	-
38	-	-
39	0	0
40	-	-
41	-	-
42	0	0
43	5.0	5.0
44	0	0
45	5.0	5.0
46	4.6	4.6
47	1.6	1.6
48	0	0
49	1.6	1.6
50	2.4	2.4
51	5.0	5.0
52	2.5	2.5
53	2.5	2.5
54	0	0
55	0	0
56	4.5	4.9
57	4.8	4.8
58	2.0	0
59	5.0	0
60	1.9	3.9
61	0	0
62	5.1	5.1
63	5.1	5.1
64	5.1	5.1
65	2.8	2.8
66	0	0.4
67	2.5	2.5
68	2.5	2.5
69	2.5	2.5
70	2.5	2.5
71	0	0
72	2.4	2.4
73	5.0	5.0
74	3.0	2.5
75	0	2.5
76	2.5	2.5
77	0	0
78	0	0
79	0	0
80	1.1	1.1
81	0	0
82	0	3.6
83	0	1.9
84	4.9	4.9
85	5.1	5.1
86	0	5.1
87	0	0
88	0	0
89	1.0	0
90	5.1	5.1
91	0	0
92	0	0
93	0	0
94	5.0	5.0
95	0	0
96	1.0	0
97	0	0
98	1.9	0
99	0	0
100	0	0

MODE PIN NO.	REC	PLAY
IC3002		
1	7.5	7.5
2	0.5	0.5
3	0	0
4	0.5	0.5
5	11.9	11.9
6	11.9	11.9
7	0	0
8	0	0
9	0	0
IC3004		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.8	4.8
6	4.9	4.9
7	0	0
8	5.1	5.1
IC5301		
1	2.5	2.5
2	0	0
3	4.5	4.5
IC7042		
1	5.1	
2	5.0	
3	0	
CN1		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.3	2.3
6	2.4	2.2
7	2.4	2.4
8	2.4	2.4
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	5.0	5.0
7	0	0
8	11.9	11.9
CN3002		
1	11.9	11.9
2	0	0
3	1.3	1.3
4	0.4	0.4
5	2.8	2.8
CN3003		
1	1.0	1.0
2	1.0	1.0
CN3004		
1	5.1	5.1
2	5.1	5.1
3	0	0
4	0	0

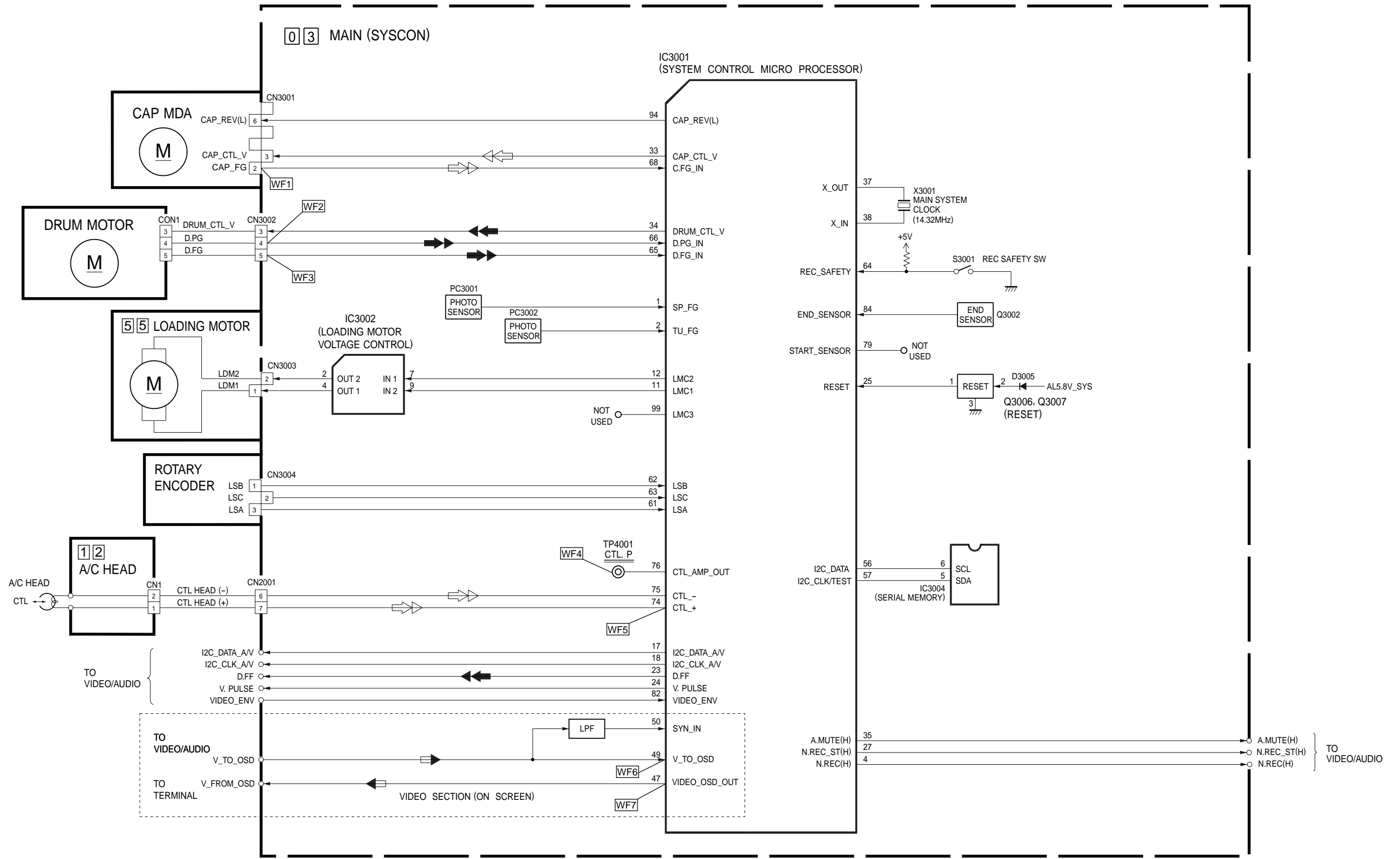
4.12 CPU PIN FUNCTION

<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
2	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
3	R.PAUSE/COMPU_IN	-	NC
4	N.REC(H)	OUT	NORMAL AUDIO REC MODE CONTROL (REC:H)
5	RC	IN	REMOTE CONTROL DATA INPUT
6	DIG2	OUT	LED DRIVE
7	DIG1	OUT	LED DRIVE
8	DIG4	OUT	LED DRIVE
9	DIG5	OUT	LED DRIVE
10	JSB	-	NC
11	LMC1	OUT	LOADING MOTOR DRIVE(1)
12	LMC2	OUT	LOADING MOTOR DRIVE(2)
13	RMO/R-Y_REV/CHARA	-	NC/NC/NC
14	POWER_DET	-	NC
15	CONV_CTL(H)/MESECAM(H)	OUT	R/F CONVERTER ON/OFF (ON:H, OFF:L)/NC
16	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
17	I2C_DATA_AV	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
18	I2C_CLK_AV	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
19	SP_SHORT(H)	-	NC
20	EP_SHORT(H)	-	NC
21	SB_GAIN	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
22	CH_SW	IN	RF CHANNEL SWITCHING
23	D.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
24	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
25	RESET	-	RESET TERMINAL
26	A.FF/SECAM_DET	OUT	AUDIO FF OUTPUT/NC
27	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
28	TU_I2C_CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR THE TUNER UNIT
29	D_B	OUT	LED DRIVE
30	H.REC_ST(H)/SECAM(H)	OUT	HI-FI AUDIO SOUND RECORDING START
31	TU_MUTE(H)	-	NC
32	DIG3	OUT	LED DRIVE
33	CAP_CTL_V	OUT	CAPSTAN MOTOR CONTROL
34	DRUM_CTL_V	OUT	DRUM MOTOR CONTROL
35	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE ON:H)
36	VDD	-	SYSTEM POWER
37	X_OUT	-	MAIN SYSTEM CLOCK (14.32MHz)
38	X_IN	-	MAIN SYSTEM CLOCK (14.32MHz)
39	VSS	-	GND
40	XC_IN	-	NC
41	XC_OUT	-	NC
42	Sxi	-	NC
43	P.MUTE(L)	-	NC
44	3.58NTSC(L)/POWER_SAVE(H)	-	NC
45	SYNC_DET	-	NC
46	PROTECT	IN	DETECTION SIGNAL FOR SWITCHING POWER SUPPLY
47	VIDEO_OSD_OUT	OUT	COMPOSITE VIDEO SIGNAL OUTPUT
48	VSS2	-	GND
49	V_TO_OSD	IN	COMPOSITE VIDEO SIGNAL INPUT
50	SYN_IN	IN	COMPOSITE SYNCHRONIZING SIGNAL FOR SERVO, VERTICAL SYNCHRONIZING SIGNAL FOR OSD

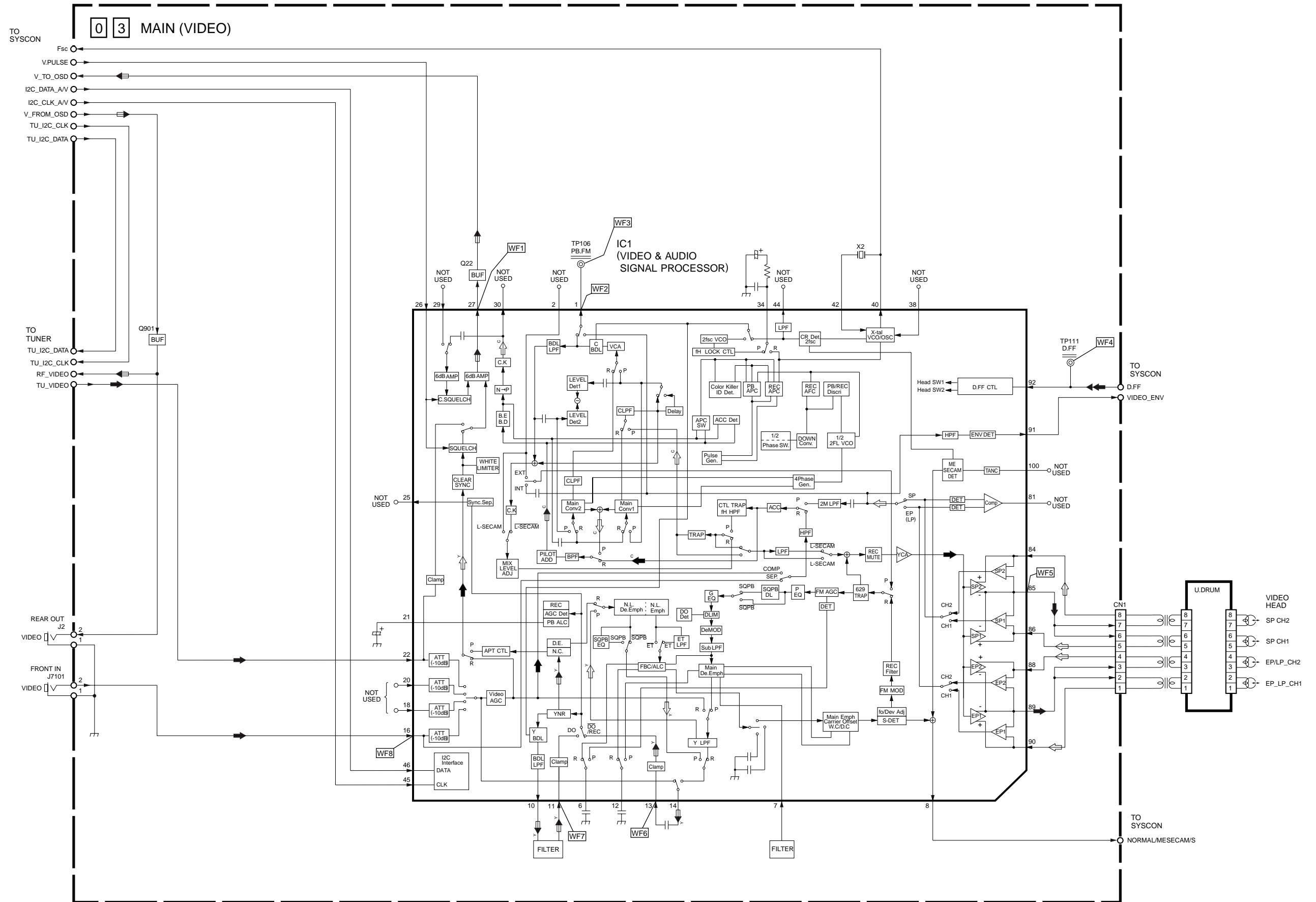
PIN NO.	LABEL	IN/OUT	FUNCTION
51	VDD2	-	SYSTEM POWER
52	AFCC	IN	FILTER INPUT FOR HORIZONTAL SYNCHRONIZING OF OSD CHARACTER
53	AFCLPF	OUT	FILTER OUTPUT FOR HORIZONTAL SYNCHRONIZING OF OSD CHARACTER
54	FSCI	IN	FSC INPUT FOR OSD
55	FSCLPF	OUT	FSC OUTPUT FOR OSD
56	I2C_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
57	I2C_CLK/TEST	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC/MECHANISM TEST SIGNAL
58	D_F	OUT	LED DRIVE
59	P.CTL(H)	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
60	D_G	OUT	LED DRIVE
61	LSA	IN	MECHANISM MODE DETECT(A)
62	LSB	IN	MECHANISM MODE DETECT(B)
63	LSC	IN	MECHANISM MODE DETECT(C)
64	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
65	D.FG_IN	IN	DRUM FG PULSE INPUT
66	D.PG_IN	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
67	C.FG_AMP_OUT	OUT	SET-UP OUTPUT FOR CAPSTAN FG AMPLIFICATION FACTOR
68	C.FG_IN	IN	CAPSTAN FG PULSE INPUT
69	AMP_VREF_OUT	OUT	AMP CIRCUIT REFERENCE VOLTAGE OUTPUT
70	AMP_VREF_IN	IN	AMP CIRCUIT REFERENCE VOLTAGE INPUT
71	AVSS	-	GND FOR ANALOG CIRCUIT
72	AMP_C	IN	CAPACITOR CONNECT TERMINAL FOR CTL AMP CIRCUIT
73	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
74	CTL(+)	IN/OUT	CTL(+) SIGNAL
75	CTL(-)	IN/OUT	CTL(-) SIGNAL
76	CTL_AMP_OUT	OUT	CTL PULSE OUTPUT
77	LOCK(L)	-	NC
78	AGC_CTL/SW1	OUT	DETECTION SIGNAL FOR AGC/NC
79	START_SENSOR	IN	START SENSOR
80	AFC/JUST_CLK	IN	TUNING CHECK/NC
81	LED/SW2	IN	SAP DETECT/NC
82	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
83	A.ENV/ND(L)/EE(L)	IN	AUDIO PB FM ENV. INPUT/NON HI-FI MODEL-L/NC
84	END_SENSOR	IN	END SENSOR
85	KEY1	-	NC
86	KEY2	-	NC
87	KILLER_DET/COMPU_OUT/PAL_PB	-	NC/NC/NC
88	NORMAL_MESECAM/S	IN	NC/SQP/B DETECT
89	D_A	OUT	LED DRIVE
90	TU_I2C_DATA	IN/OUT	I/O DATA FOR THE TUNER UNIT
91	J4	-	NC
92	J5/V.UP(H)	-	NC/NC
93	J6	-	NC
94	CAP_REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
95	J3/REC_LINK	-	NC/NC
96	D_C	OUT	LED DRIVE
97	D_D	OUT	LED DRIVE
98	D_E	OUT	LED DRIVE
99	LMC3	OUT	LOADING MOTOR DRIVE(3)
100	JSA/TU_V.MUTE	-	NC/NC

4.13 SYSTEM CONTROL BLOCK DIAGRAM



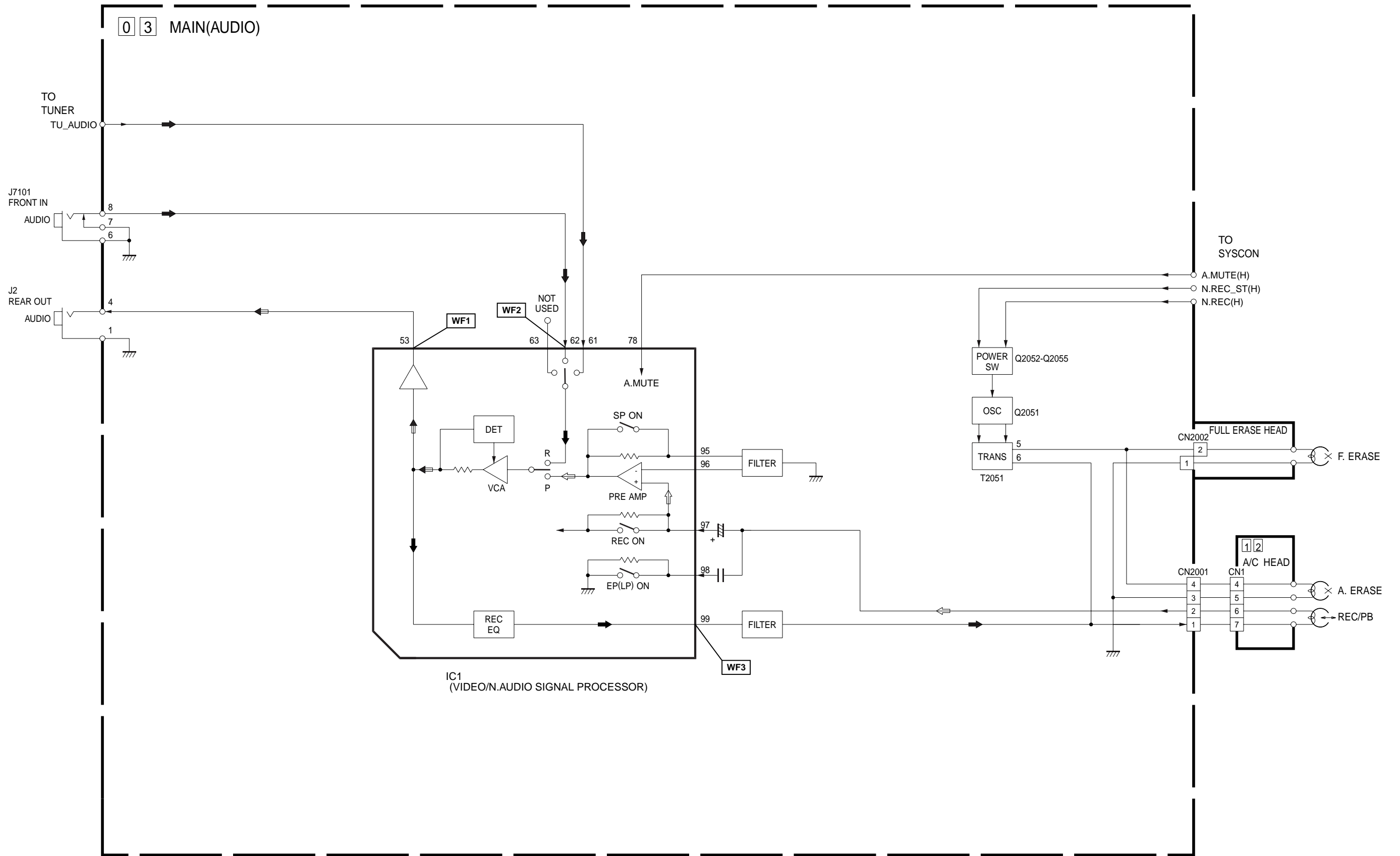
Note : For the waveforms in this block diagram, refer to page 4-20.

4.14 VIDEO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-20.

4.15 AUDIO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-20.