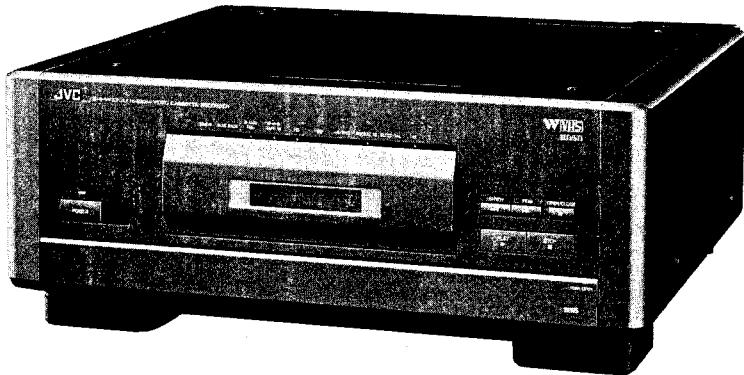


JVC

SERVICE MANUAL

W-VHS VIDEO CASSETTE RECORDER

SR-W320U



W VHS HD/SD

S VHS **Hi-Fi**

SPECIFICATIONS

• Power supply	AC 120 V, 60 Hz
• Power consumption	78 W (10 W with power off)
• External dimensions	445 (W) x 182 (H) x 463 (D)
• Weight	16.2 kg
• Allowable operating temperatures	+5°C – +40°C
• Allowable relative humidity	35% – 80%
• Allowable storage temperature	-20°C – +60°C

Video

• Recording/playback format	[W-VHS format] HD mode: Rotary 4-head helical scanning system SD mode: Rotary 2-head helical scanning system Temporal compression TCI signal FM recording
	[S-VHS/VHS format] Rotary 2-head helical scanning system Luminance signal: FM recording Color signal: Phase shift, converted sub-carrier direct recording
• Video signal	NTSC-type color signal Hi-vision baseband signal

Hifi Audio

• Recording system	VHS stereo HiFi system
• Frequency response	20 Hz – 20 kHz
• Dynamic range	90 dB or more
• Wow & flutter	0.005% or less
• Channel separation	60 dB or more

Normal Audio

• Recording system	Linear track
• Audio track	1-channel monaural

Timer (Timer programming/clock)

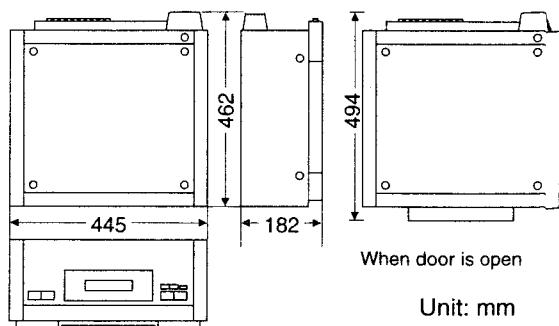
• Timer programming	2 weeks 8 programs
• Clock	24-hour system
• Breakdown backup time	Apporx. 30 min.

Connectors

• HD Video	Input Y: 0.7 Vp-p, 75 ohms, ternary in sync PB, PR: ±0.35 V, 75 ohms, ternary in sync Output Y: 0.7 Vp-p, 75 ohms, ternary in sync PB, PR: ±0.35 V, 75 ohms, ternary in sync
• S Video	Input Y: 0.8 – 1.2 Vp-p, 75 ohms C: 0.2 – 0.4 Vp-p, 75 ohms Output Y: 1.0 Vp-p, 75 ohms C: 0.29 Vp-p, 75 ohms
• Video	Input 0.5 – 2.0 Vp-p, 75 ohms (BNC) Output 1.0 Vp-p, 75 ohms (BNC)
• Audio	Input –8 dBs, 50 kohms (RCA) Monaural on front panel connectors only (left) Output –8 dBs, 1 kohm (RCA)
• REMOTE PAUSE	For editing with JVC Video movie deck RS-232C
• Remote control unit	

Accessories

• Provide video accessories	Cleaning Tape Power Cord
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* Designs and specifications subject change without notice

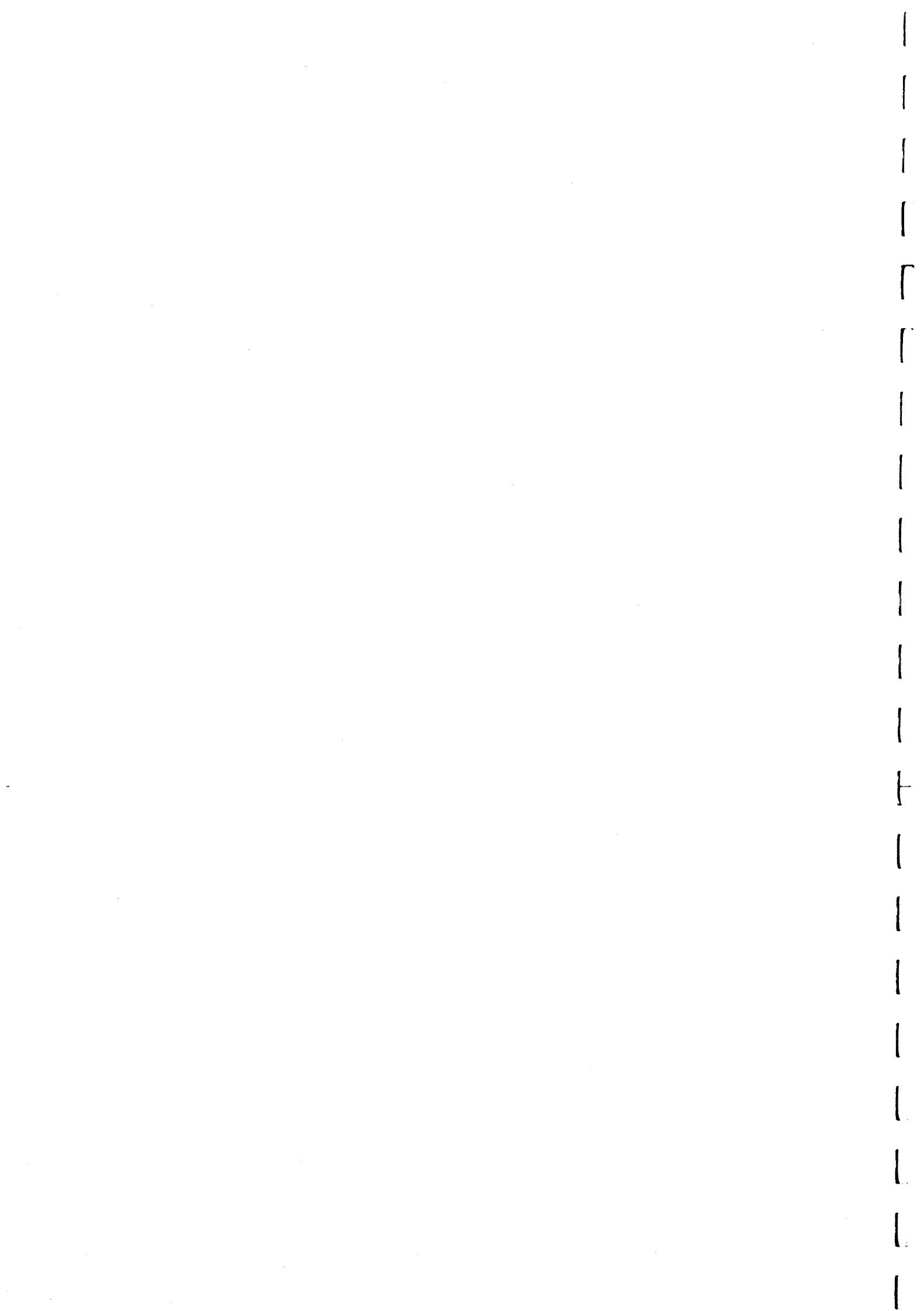


TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
Important Safety Precautions					
INSTRUCTIONS					
1. GENERAL DESCRIPTION AND DISASSEMBLY					
1.1 REMOVAL OF MAIN PARTS	1-1	3.5.1 TBC color level	3-9		
1.1.1 Upper cover	1-1	3.5.2 PB color level	3-9		
1.1.2 Front panel assembly	1-1	3.5.3 Phase of clamping pulse	3-9		
1.1.3 Base plate	1-2	3.5.4 YCS Y level	3-9		
1.1.4 VIDEO MAIN board assembly	1-2	3.5.5 TBC V-S ratio	3-10		
1.1.5 VIDEO I/O board assembly	1-3	3.5.6 TBC Y level	3-10		
1.1.6 SWITCHING REGULATOR board assembly	1-3	3.6 AUDIO CIRCUIT	3-10		
1.1.7 PRE/REC board assembly	1-3	3.6.1 Bias level	3-10		
1.1.8 Cassette housing assembly	1-3	3.6.2 Hi-Fi level	3-10		
1.1.9 Main deck assembly	1-4	3.6.3 Audio EE level	3-10		
1.2 NOTE ON SERVICING	1-4	3.6.4 Carrier frequency	3-11		
2. MECHANISM ADJUSTMENT					
2.1 PREPARATION	2-1	3.6.5 SD audio REC FM level	3-11		
2.1.1 Precautions	2-1	3.6.6 Auto calibration reference level	3-11		
2.1.2 Special implements necessary for adjustment	2-1	3.7 TIMER CIRCUIT	3-12		
2.1.3 Manual takeoff of cassette tape	2-1	3.7.1 Timer clock	3-12		
2.2 MAIN PARTS REPLACEMENT STANDARD	2-2	3.8 ON-SCREEN CIRCUIT	3-12		
2.2.1 Main parts arrangement	2-3	3.8.1 Dot clock	3-12		
2.2.2 Cleaning	2-3	3.9 HEAD RESONANCE	3-13		
2.2.3 Oiling and greasing	2-3	3.9.1 MP tracking preset	3-13		
2.3 REPLACEMENT OF MAIN PARTS	2-4	3.9.2 MP PB switching point	3-13		
2.4 ASSEMBLING OF MECHANISM	2-12	3.9.3 W-VHS head resonance	3-14		
2.5 ADJUSTMENT OF INTERCHANGEABILITY	2-13	3.10 W-I/O CIRCUIT	3-15		
2.6 ADJUSTMENT OF TAPE TRANSPORT SYSTEM	2-17	3.10.1 Subcarrier	3-15		
3. ELECTRICAL ADJUSTMENT					
3.1 PRELIMINARIES TO ELECTRICAL ADJUSTMENT	3-1	3.10.2 PB level	3-15		
3.1.1 Precautions	3-1	3.10.3 Phase	3-16		
3.1.2 Implements required for electrical adjustment	3-1	3.10.4 PR level	3-16		
3.1.3 Special implements for adjustment	3-1	3.11 HDTV CIRCUIT	3-16		
3.1.4 Color bar signal, color bar pattern, video sweep signal	3-1	3.11.1 REC PLL (14 MHz)	3-16		
3.1.5 HD color bar signal (Y, PB, PR), HD color bar pattern	3-2	3.11.2 REC PLL (17 MHz)	3-16		
3.2 ELECTRIC CIRCUITS	3-2	3.11.3 PB Main/Sub (17 MHz)	3-17		
3.2.1 SWD 5 V output voltage	3-2	3.11.4 Input TCI (main) level	3-17		
3.3 SERVO CIRCUIT	3-3	3.11.5 Input TCI level in SD mode	3-17		
3.3.1 Tension	3-3	3.11.6 Input TCI (sub) level	3-17		
3.3.2 PB switching point	3-3	3.11.7 HD REC FM level	3-18		
3.3.3 Slow tracking preset	3-4	3.11.8 HD PB frequency response	3-18		
3.4 VIDEO CIRCUIT	3-4	3.11.9 PB offset level	3-19		
3.4.1 AGC level	3-4	3.11.10 W-VHS SD Y level	3-19		
3.4.2 Non-correlative pulse	3-4	3.12 MOD/DEMOD CIRCUIT	3-20		
3.4.3 Sub-emphasis input level	3-5	3.12.1 Sub-emphasis input level	3-20		
3.4.4 S-VHS white/dark clip	3-5	3.12.2 White/Dark clip	3-20		
3.4.5 S-VHS carrier/deviation	3-5	3.12.3 Carrier/Deviation	3-20		
3.4.6 VHS EP REC FM level	3-6	3.12.4 Carrier balance	3-21		
3.4.7 S-VHS EP REC FM level	3-6	3.12.5 Sub-emphasis PB input level	3-21		
3.4.8 S-VHS SP REC color level	3-6	3.12.6 PB TCI output level	3-21		
3.4.9 S-VHS EP REC color level	3-6	3.13 LOCATION OF CHECK POINTS AND ADJUSTMENT PARTS ON RESPECTIVE BOARDS	3-22		
3.4.10 VHS PB Y level	3-7	4. DIAGRAMS AND CIRCUIT BOARDS			
3.4.11 S-VHS PB Y level (1)	3-7	SCHEMATIC DIAGRAM NOTES	1		
3.4.12 S-VHS PB Y level (2)	3-7	CIRCUIT BOARD NOTES	2		
3.4.13 Frequency response	3-8	4.1 OVERALL WIRING DIAGRAM	3		
3.4.14 PB ACC loop gain	3-8	4.2 AUDIO BLOCK DIAGRAM	5		
3.4.15 S-VHS PB color level	3-8	4.3 VIDEO DIGITAL BLOCK DIAGRAM	7		
3.5 DIGITAL CIRCUIT	3-9	4.4 NTSC BLOCK DIAGRAM	9		
		4.5 W-MAIN VIDEO BLOCK DIAGRAM	13		
		4.6 SWITCHING REGULATOR SCHEMATIC DIAGRAM	17		
		4.7 SWITCHING REGULATOR CIRCUIT BOARD	19		
		4.8 DECK TERMINAL 1, DECK TERMINAL 2, MODE SENSOR, CASS. HOUSING, CASS. HOUSING MOTOR, SCHEMATIC DIAGRAMS	21		
		4.9 DECK TERMINAL 1, DECK TERMINAL 2, A/C HEAD, CASS. HOUSING, CASS. HOUSING MOTOR, LOADING MOTOR CIRCUIT BOARDS	22		

Section	Title	Page
4.11	NTSC VIDEO 2 SCHEMATIC DIAGRAM	26
4.12	VIDEO 1 SCHEMATIC DIAGRAM	29
4.13	AUDIO IN/OUT SCHEMATIC DIAGRAM	32
4.14	AUDIO IN/OUT CIRCUIT BOARD	35
4.15	TIMER, SW JACK, LED, DISPLAY, SENSOR CIRCUIT BOARDS	37
4.16	TIMER, SW JACK, LED, DISPLAY, SENSOR CIRCUIT BOARDS	39
4.17	W-MAIN VIDEO(1) SCHEMATIC DIAGRAM	42
4.18	W-MAIN VIDEO(2) SCHEMATIC DIAGRAM	45
4.19	W-MAIN VIDEO(3) SCHEMATIC DIAGRAM	48
4.20	W-MAIN VIDEO(4) SCHEMATIC DIAGRAM	51
4.21	W-MAIN VIDEO (TCI) SCHEMATIC DIAGRAM	54
4.22	W-MAIN VIDEO (HDC) SCHEMATIC DIAGRAM	57
4.23	W-MAIN VIDEO IN/OUT CIRCUIT BOARD	60
4.24	W-MAIN VIDEO IN/OUT SCHEMATIC DIAGRAM	66
4.25	SUB SCHEMATIC DIAGRAM	69
4.26	SUB CIRCUIT BOARD	71
4.27	W-IN/OUT, DET CIRCUIT BOARDS	73
4.28	PRE/REC AMP CIRCUIT BOARDS	76
4.29	PRE AMP/REC AMP (AUDIO), (FLYING ERASE) SCHEMATIC DIAGRAM	79
4.30	PRE AMP/REC AMP CIRCUIT BOARD	80
4.31	NTSC DIGITAL (ANALOG) SCHEMATIC DIAGRAM	82
4.32	NTSC DIGITAL (MEMORY-CTL) SCHEMATIC DIAGRAM	85
4.33	NTSC DIGITAL (TBC) SCHEMATIC DIAGRAM	88
4.34	NTSC DIGITAL, DIGITAL SUB CIRCUIT BOARDS	91
4.35	NTSC VIDEO IN/OUT SCHEMATIC DIAGRAM	94
4.36	NTSC VIDEO IN/OUT CIRCUIT BOARD	97
4.37	MOD/DEM (MAIN), (SUB) SCHEMATIC DIAGRAM	99
4.38	MOD/DEM (MAIN), (SUB) CIRCUIT BOARD	101
4.39	MOTHER SCHEMATIC DIAGRAM	103
4.40	MOTHER CIRCUIT BOARD	105
4.41	RS-232C SCHEMATIC DIAGRAM	107
4.42	RS-232C CIRCUIT BOARD	109
4.43	REEL MDA SCHEMATIC DIAGRAM	111
4.44	SERVO/MECHAON SCHEMATIC DIAGRAM	113
4.45	SERVO/M-CTL, TERMINAL CIRCUIT BOARD	116
4.46	BNC CIRCUIT BOARD	118
4.47	RM-G30 REMOTE CONTROL SCHEMATIC DIAGRAM (OPTION)	119
4.48	VOLTAGE	120
4.49	WAVEFORMS	123
5. EXPLODED VIEWS AND PARTS LIST		
5.1	PACKING ASSEMBLY <M1>	5-1
5.2	CABINET ASSEMBLY <M2>	5-2
5.3	CHASSIS ASSEMBLY <M3>	5-4
6. ELECTRICAL PARTS LIST		
	SWITCHING REGULATOR BOARD ASSEMBLY <01>	6-1
	VIDEO MAIN BOARD ASSEMBLY <05>	6-3
	TERMINAL BOARD ASSEMBLY <06>	6-13
	AUDIO BOARD ASSEMBLY <09>	6-13
	A/C HEAD BOARD <12>	6-17
	TIMER BOARD ASSEMBLY <20>	6-17
	DISPLAY BOARD ASSEMBLY <21>	6-19
	W-MAIN BOARD ASSEMBLY <30>	6-19
	W-IN/OUT BOARD ASSEMBLY <31>	6-36
	SWITCH/JACK BOARD ASSEMBLY <36>	6-41
	UPPER DRUM BOARD <41>	6-42
	PRE/REC BOARD ASSEMBLY	6-42
	DIGITAL SUB BOARD ASSEMBLY <49>	6-50
	DIGITAL BOARD ASSEMBLY <50>	6-51
	DECK TERMINAL 1 BOARD ASSEMBLY <51>	6-60
Section	Title	Page
	DECK TERMINAL 2 BOARD ASSEMBLY <52>	6-60
	LOADING MOTOR BOARD ASSEMBLY <55>	6-60
	CASSETTE HOUSING BOARD <56>	6-60
	MOD/DEM(SUB) BOARD ASSEMBLY <63>	6-61
	MOD/DEM(MAIN) BOARD ASSEMBLY <64>	6-63
	MOTHER BOARD ASSEMBLY <65>	6-66
	SENSOR BOARD ASSEMBLY <66>	6-67
	SERVO/MECHAON BOARD ASSEMBLY <79>	6-67
	VIDEO IN/OUT BOARD ASSEMBLY <83>	6-72
	RS-232C BOARD ASSEMBLY <86>	6-76
	BNC BOARD ASSEMBLY <87>	6-77
	LED BOARD ASSEMBLY <90>	6-77
	DET BOARD ASSEMBLY <98>	6-78
	CASSETTE HOUSING MOTOR BOARD <99>	6-78
7. TECHNICAL INFORMATION		
7.1	OUTLINE OF W-VHS SYSTEM	7-1
7.1.1	Development of HR-W1	7-1
7.2	WHAT IS "W" in W-VHS	7-1
7.2.1	Features of W-VHS	7-1
7.2.2	Fundamental system of W-VHS	7-2
7.2.3	Correlation between W-VHS and S-VHS/VHS	7-3
7.2.4	Requirement for W-VHS VTR specifications	7-3
7.2.5	Comparison of W-VHS with MUSE	7-3
7.3	W-VHS SPECIFICATIONS	7-4
7.3.1	Details of W-VHS mode	7-4
7.3.2	basic W-VHS Specifications	7-4
7.3.3	Basic principles of W-VHS signal processing	7-5
7.3.4	High performance video head (HD/SD/S-VHS/VHS)	7-8
7.3.5	Relation Between Modes and Tracks	7-9
7.4	HD MODE RECORDING SYSTEM	7-11
7.4.1	Overview of HD mode video system	7-11
7.4.2	HD signal input circuit operation	7-11
7.4.3	Temporal emphasis	7-14
7.4.4	Vertical emphasis	7-14
7.4.5	Time compression integration (TCI)	7-15
7.4.6	2-reack parallel recording	7-19
7.4.7	Relationship between HD circuit sync signal and clocks	7.21
7.4.8	SD mode recording system	7-23
7.4.9	SDII mode recording system	7-24
7.4.10	W-Main wiring Diagram Abbreviations Table	7-25
7.5	DIGITAL TBC CIRCUIT	7-26
7.5.1	HD digital time base corrector (TBC)	7-26
7.5.2	SD digital TBC	7-26
7.5.3	Digital TBC	7-26
7.5.4	3-dimensioNal digital adamal Processing	7-30
7.5.5	Digital circuit block diagram by mode	7-31
7.6	VIDEO CIRCUITS	7-41
7.6.1	Input/output processing (video I/O circuit)	7-41
7.6.2	Recording signal processing	7-45
7.6.3	C signal recording processing	7-45
7.6.4	Playback signal proeessing	7-47
7.6.5	Discrete detail enhancer	7-49
7.6.6	New AI automatic calibration	7-49
7.6.7	Hyper-parallel FET pre-amp	7-50
7.7	MECHAON/SERVO CIRCUIT	7-51
7.7.1	Pin functions of MECHAON/SERVO CPU (IC1)	7-51
7.7.2	Mechacon/Servo block diagram	7-54
7.7.3	16:9 auto wide system	7-56
7.8	TIME CIRCUIT	7-58
7.8.1	Time CPU pin functions	7-58
7.8.2	Time block diagram	7-60

Important Safety Precautions

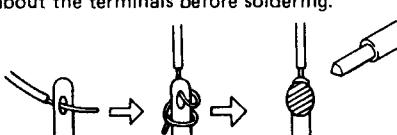
Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

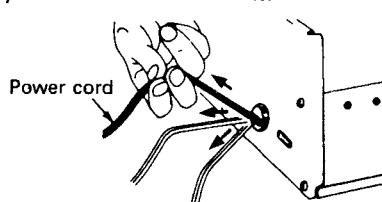
● Precautions during Servicing

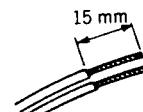
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|--|---|
| 1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals. | 12. Crimp type wire connector
In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

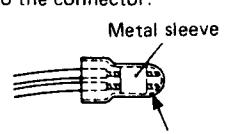
1) Connector part number : E03830-001
2) Required tool : Connector crimping tool of the proper type which will not damage insulated parts.
3) Replacement procedure
(1) Remove the old connector by cutting the wires at a point close to the connector.
Important : Do not reuse a connector (discard it).

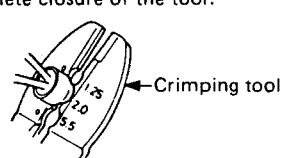

Fig. 3 |
| 2. Parts identified by the  symbol and shaded (■) parts are critical for safety.
Replace only with specified part numbers.
Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission. | |
| 3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified. | |
| 4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads | |
| 5. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation Tape 3) Spacers 5) Barrier
2) PVC tubing 4) Insulation sheets for transistors | |
| 6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

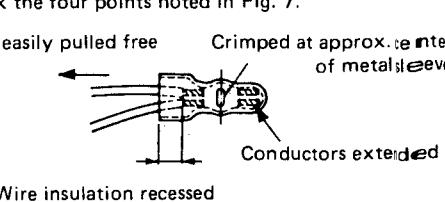

Fig. 1 | |
| 7. Observe that wires do not contact heat producing parts (heat-sinks, oxide metal film resistors, fusible resistors, etc.) | |
| 8. Check that replaced wires do not contact sharp edged or pointed parts. | |
| 9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.


Fig. 2 | |
| 10. Also check areas surrounding repaired locations. | |
| 11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube. | |
| | (2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.


Fig. 4 |
| | (3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.


Fig. 5 |
| | (4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.


Fig. 6 |
| | (5) Check the four points noted in Fig. 7.


Fig. 7 |

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

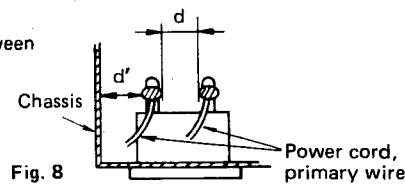


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z . See figure 9 and following table 2.

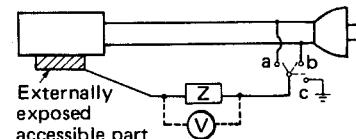


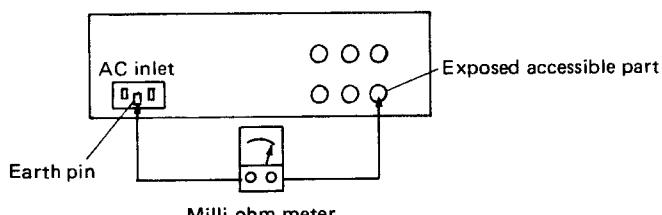
Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

Fig. 10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega /500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V 200 to 240 V	Europe & Australia	$R \geq 10 \text{ M}\Omega /500 \text{ V DC}$	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	$d \geq 4 \text{ mm}$ $d' \geq 8 \text{ mm}$ (Power cord) $d' \geq 6 \text{ mm}$ (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	$0 - \text{---} 1 \text{ k}\Omega$	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	$0.15 \mu\text{F} - \text{---} 1.5 \text{ k}\Omega$	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	$0 - \text{---} 2 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
		$0 - \text{---} 50 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

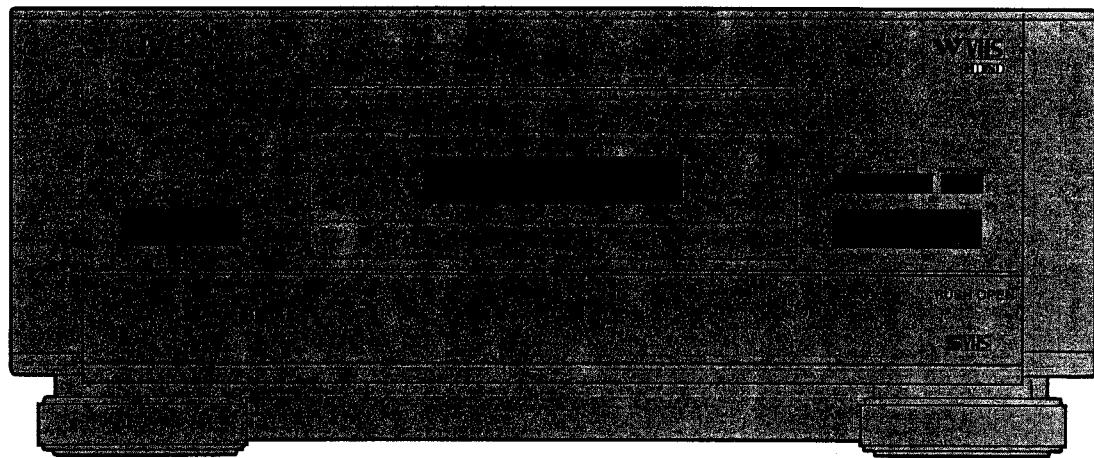
INSTRUCTIONS

JVC

SR-W320U

Hi-Vision VIDEO CASSETTE RECORDER

WVHS HD/SD **SVHS** **Hi-Fi**

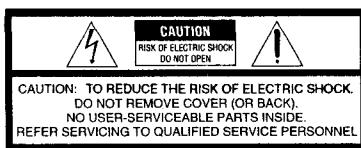


For Customer Use:
Enter below the Serial No. which is
located on the rear of the cabinet.
Retain this information for future
reference.

Model No. SR-W320U

Serial No. _____

SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

This video cassette recorder should be used with AC 120V~, 60 Hz only.

CAUTION:
To prevent electric shocks and fire hazards, do NOT use
any other power source.

When you are not using the video recorder for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.

ATTENTION

This product complies with D.O.C Limits (C.R.C., C. 1374) pertaining to Class A digital apparatus.

ATTENTION

Ce produit est conforme aux normes du M.D.C (C.R.C., ch. 1374) s'appliquant aux appareils numériques de Classe A.

NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION

CHANGES OR MODIFICATIONS NOT APPROVED BY JVC COULD VOID USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTE: The rating plate and the safety caution are on the rear of the unit.

TABLE OF CONTENTS

1	Precautions	4
	Features	4
	VCR	5
	Video Cassettes	5
	Head Cleaning	6
	Recording Modes and Types of the Cassettes	6
	Loading and Unloading the Cassette	7
2	Controls and Connectors	8
	Front Panel	8
	Rear Panel	12
3	Indicators and Displays	14
	What Is Shown on the Front Display Window ...	14
4	Preparations	16
	Connections	16
	Time Setting	17
5	Recording	18
	Basic Operations	18
	Retake Facility	19
	Blank Search Facility	19
	AI Auto Calibration	20
6	Timer-Programmed Recording	21
	Timer-Programmed Recording	21
	Check, Correct and Cancel of the Preset Programs	22
7	Playback	24
	Basic Procedure	24
	Special Playback Procedures	25
	Index Search	27
	Next Function	29
	Adjustment of the Playback Picture	30
8	Tape Dubbing	32
	When Playing Back on SR-W320U and Recording on Another Unit	32
	When Playing Back on Another Unit and Recording on SR-W320U	33
	When Playing Back on a Video Movie and Recording on SR-W320U	34
9	RS-232C Interface	35
	RS-232C Protocol	35
	Commands	36
10	Troubleshooting	40
11	Appendix	42
	Technical Guide	42
	Index	46
12	Specifications	47

1 PRECAUTIONS

FEATURES

- W-VHS format HD mode offers high-definition recording and playback of high-vision signals on a base band.
- W-VHS format SD mode also available to ensure high-quality picture for the existing TV format sources.
- W-VHS metal compatible high-power Sendust heads
- HD super solid DD mechanism enables metal tapes to run with a greater stability.
- The existing VHS/S-VHS video can be recorded and played back with a superb quality.
- Built-in RS-232C enables you to externally control this unit from your personal computer.

With this video cassette recorder, you can enjoy the HD and SD modes of W-VHS video. Be sure to use cassette tapes marked with **WVHS**.

Since the VHS mode and S-VHS mode are also available, use video cassettes marked with **SVHS** or **SVHS** when you want to enjoy these modes.

When executing HD recording with this unit, connect to a high vision TV with a built-in MUSE decoder having HD output connectors (Y, PB, PR). When any other high-vision TV is in use, you have to connect a commercially available MUSE decoder.

What is HD mode? (HD denotes High Definition)

In HD mode, HDTV signals are recorded using multiple tracks, HDTV signal was originally developed by NHK of Japan, and it stands for High-Definition Television. HDTV is a next generation broadcasting system which enables high-definition picture quality in comparison to conventional NTSC system.

What is SD mode? (SD denotes Standard Definition)

In SD mode standard TV signals are recorded on a single track with high picture quality and long recording times.

1 PRECAUTIONS

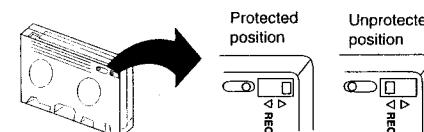
VCR

- Avoid using the recorder in places subject to the following conditions:
 - extreme heat, cold, or humidity,
 - dust,
 - vibrations, and
 - poor ventilation.
- Be careful of moisture condensation.
Do not use the recorder immediately after moving it from a cold place to a warm place. The water vapor in warm air will condense on the still-cold video head drum and tape guides and may cause damage to the tape and the recorder.
- Handle the recorder carefully.
 - Do not block the ventilation openings.
 - Do not place anything heavy on the recorder.
 - Do not place anything which might spill on the top cover of the recorder.
 - Use in horizontal (flat) position only.
- During transportation,
 - Avoid violent shocks to the recorder during packing and transportation.
 - Before packing, be sure to remove the cassette from the recorder.

Video cassettes

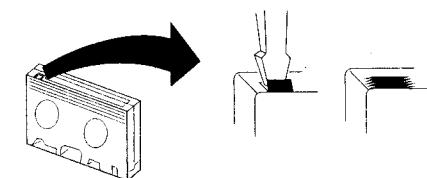
- Use video cassettes marked with **WVHS / SVHS** with this unit. C-cassettes can be used with a C-cassette adapter (SA-CP11U) connected.
- Video cassettes marked with **WVHS** are exclusively for use with a video cassette recorder marked with **WVHS**. Loading such cassettes into existing S-VHS or VHS cassette recorders may cause a damage to the machine.
- Any cassette is provided with a safety tab for protecting it from accidental erasure. The cassette with its safety tab set at a protective position automatically starts playback when loaded into a machine.

W-VHS cassettes Slidable safety tab.



S-VHS, VHS cassettes

- To prevent accidental erasure, remove the cassette's safety tab.
- To record on a cassette whose safety tab has been removed, cover the hole with adhesive tape.



- Reverse side of a cassette is not usable.
- Before putting the cassette into storage, make sure that the tape is uniformly wound up to its beginning.

1 PRECAUTIONS

Head cleaning

Perform head cleaning even 20 hours to enjoy clear pictures.

Video heads get soiled with repeated recording and playback, resulting in rough, uneven picture. Perform cleaning of the tape transport mechanism every 20 hours with the provided head cleaning tape dedicated to W-VHS.

How to use the cleaning tape

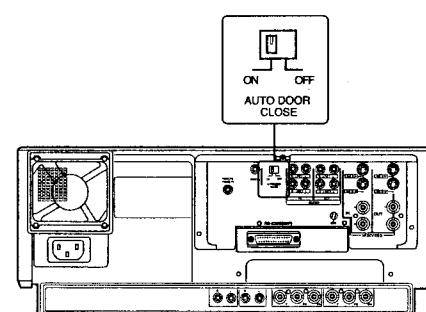
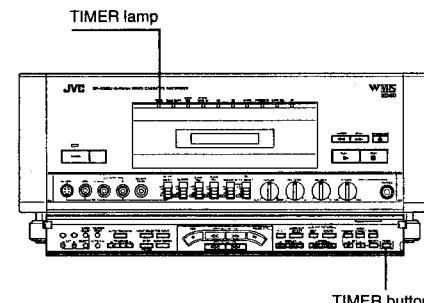
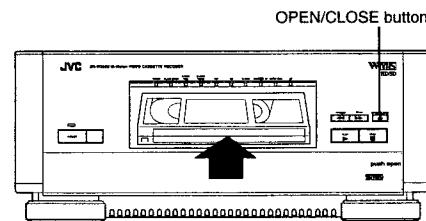
1. Load the W-VHS dedicated head cleaning tape.
2. Press the PLAY button and then STOP button after about 30 seconds.
3. Unload the head cleaning tape and execute a usual recording and playback procedure on a W-VHS cassette to see if audio/visual quality has been recovered.
4. If tape quality does not pick up, repeat the procedures 1. and 2. once or twice.

Cautions

- Do not rewind the cleaning tape after every use (for about 30 seconds). You have only to start at the position where the tape stopped in previous cleaning. Rewind to the beginning when the tape has been used to an end.
- 30 seconds are enough for one run of the cleaning tape. To keep running the tape for longer than 45 seconds may damage the heads.
- If sound and picture quality does not recover with the cleaning procedures repeated three times, there may be some other causes of trouble. Consult your JVC dealer.
- The W-VHS dedicated cleaning tape can be used 100 times.
- Recording or playback is not possible on the cleaning tape.
- Do not use any cleaning tape other than the W-VHS dedicated cleaning tape for this machine.
- The W-VHS dedicated cleaning tape can be used only with the video cassette recorder marked with **W-VHS**.

1 PRECAUTIONS

LOADING AND UNLOADING THE CASSETTE



Loading

1. Press [OPEN/CLOSE] button to open the door.
2. Insert the cassette.
 - Slowly push the center with its visible tape side up.
 - The door automatically closes.
 - Counter display turns 0:00:00.
 - The cassette with its safety tab removed automatically starts playback.

Cautions

- Keep your hand or other foreign substances away from the loading slot. Take special care of young children to protect their hands from the door. If a hand or finger should be caught, the door opens after several seconds.
- When the cassette automatically comes out, insert it again after several seconds.

Unloading

1. Press [OPEN/CLOSE] button. The door opens and the tape comes out. The cassette cannot be removed while the [TIMER] lamp is lit. Press the [TIMER] button and make sure the [TIMER] lamp is out, then remove the cassette.
2. Press [OPEN/CLOSE] button. The door closes.

With the [AUTO DOOR CLOSE] switch on the rear panel is at ON, the door automatically closes when the door is kept open for about one minute with no cassette loaded. If you need not this facility, set the [AUTO DOOR CLOSE] switch to OFF.

RECORDING MODES AND TYPES OF THE CASSETTES

Recording modes available depend on the types of the cassette in use.

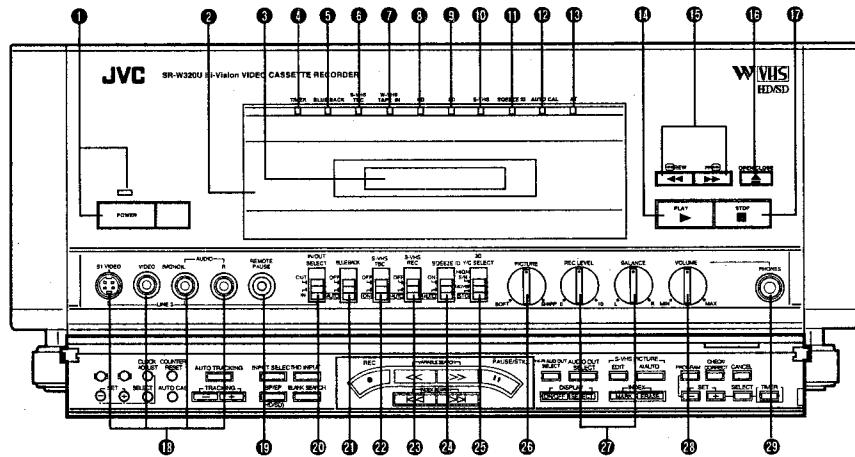
Tapes in use	Recording modes	Recording speed	Remarks
W-VHS	HD	SP	S-VHS/VHS recording not possible.
	SD	EP	
S-VHS	S-VHS	SP/EP Selectable	HD/SD recording not possible.
	VHS	SP/EP Selectable	
VHS	VHS	SP/EP Selectable	HD/SD/SVHS recording not possible.

Cautions

- HD recording at EP mode is not possible.
- SD recording at SP mode is not possible.

2 CONTROLS AND CONNECTORS

Front panel



① [POWER] button/lamp

Press to turn the power on and off. The lamp lights when the power is on.

② Tape loading slot door

③ Video unit display window

Displays the operational state of the recorder, counter and clock digits.

④ [TIMER] lamp

Lights red when the timer preset recording stands by.

⑤ [BLUE BACK] lamp

Lights green when the BLUE BACK switch is at AUTO.

⑥ [S-VHS TBC] lamp

Lights green when the S-VHS TBC switch is at ON.

⑦ [W-VHS TAPE IN] lamp

Lights red when the W-VHS tape is in the recorder.

⑧ [HD] lamp

Lights red when HD mode is selected with a W-VHS tape in use or when a HD-recorded tape is played back.

⑨ [SD] lamp

Lights green when SD mode is selected with a W-VHS tape in use or when a SD-recorded tape is played back.

⑩ [S-VHS] lamp

Lights green when the S-VHS recording switch is at AUTO with an S-VHS tape in use or when an S-VHS recorded tape is played back.

⑪ [SQUEEZE ID] lamp

- Lights when
 - the SQUEEZE ID switch is at AUTO and S1 signal is fed to the external input signal connector.
 - the tape recorded in full mode is played back, provided that the S1 video signal is recorded together.
 - the SQUEEZE ID switch is set at ON.

Full Mode

Entered to fit the picture with aspect ratio of 16 : 9, such as high-vision picture, within aspect ratio of 4 : 3, resulting in a vertically expanded picture.

S1 Picture Signal

Signal for discriminating whether or not the picture is in full mode, superimposed on the S video signal. Without this signal recorded, the full mode picture does not appear as a horizontally wide picture when played back.

2 CONTROLS AND CONNECTORS

Front panel

⑫ [AUTO CAL] auto calibration lamp

Flickers green during auto calibration going on and lights when it is finished. (See page 20)

⑬ [ATT] auto tracking lamp

Lights or flickers green during auto tracking going on.

⑭ [PLAY] button

Press to play back the cassette.

⑮ [REW]/[FF] button

Press to rewind or fast forward.

⑯ [OPEN/CLOSE] door button

Press when opening or closing the door and removing the cassette.

⑰ [STOP] button

Press to stop any operation of VCR.

⑲ [LINE3 IN/OUT] connectors

Receives and sends external video and audio signals.

Switchable between input and output with the IN/OUT SELECT switch ⑩.

S1 VIDEO: For input and output of S1 video signal

VIDEO: For input and output of video signal (RCA)

(MONO) L: For input and output of audio signal (left). If the sound is monaural with a single cable, plug it into this connector, and equal audio signals are recorded for left and right.

R: For input and output of audio signal (right).

S1 video signal is given priority to a standard video signal.

⑳ [REMOTE PAUSE] input connector

Connect the remote pause cable to this connector when editing with the JVC video movie. This connector is given priority to the remote pause connector at rear panel. (See page 34)

㉑ [IN/OUT SELECT] switch

Selects between input and output of the three external input/output connectors ⑩.

㉒ [BLUE BACK] switch

AUTO: Blue screen comes up when there is no input signal.

OFF: No blue screen comes up.

㉓ [S-VHS TBC] switch

Turns on and off the TBC (Time Base Corrector). This switch is disabled in HD/SD mode.

ON: Normally set to ON. Picture distortion is corrected to provide a stable picture quality during playback.

OFF: Set to OFF when playing back the tape with much noise.

㉔ [S-VHS REC] switch

Turns on and off the S-VHS recording facility.

AUTO: S-VHS recording takes place automatically with the S-VHS cassette loaded and VHS recording with the VHS cassette loaded.

OFF: VHS recording takes place regardless of the type of cassette loaded.

㉕ [SQUEEZE ID] switch

Selects the way S1 video signal is recorded.

AUTO: Input signal is recorded as it is.

ON: S1 video signal is forcedly recorded.

㉖ [3DY/C SELECT]

Select the right recording setup depending on in what condition the picture to be recorded is.

STD: Usually select this setup.

MOVE: Select this for a picture with a lot of motion.

High SN: Select this for a picture with a lot of noise.

㉗ [PICTURE] adjust knob

During playback, turn this knob clockwise to obtain a SHARP picture and counterclockwise for a SOFT picture.

㉘ [REC LEVEL]/[BALANCE] adjust knob

Adjusts HiFi recording level and the balance between right and left channels. Carefully adjust this knob, as too low a recording level may lead to a greater noise and too high a level may cause a distortion.

㉙ [VOLUME] adjust knob

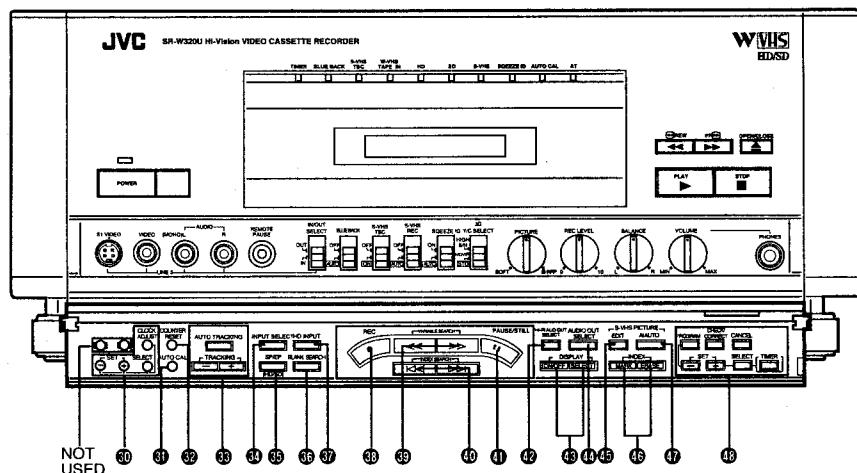
Adjust the sound level of headphone connected to the HEADPHONE connector.

㉚ [PHONES] connector

Accepts the mini plug type headphone.

2 CONTROLS AND CONNECTORS

Front panel



⑩ [CLOCK] setup buttons

Used to set up clock. (See page 17).

CLOCK

ADJUST : Starts or ends the time setting mode.

SET +/- : Sets day and time.

SELECT : Fix the selected data.

⑪ [AUTO CAL] button

Automatically adjust the recording level depending on the tape characteristics. This facility is disable when a W-VHS is in use. (See page 20).

⑫ [COUNTER RESET] button

Resets the tape counter display to 0:00:00.

⑬ [TRACKING] button

-/+: Suppresses the disturbances appearing on the picture when the tape recorded on another machine is played back (or put on slow playback).

AUTO TRACKING: Turns on and off the auto tracking facility.

⑭ [INPUT SELECT] button

Selects among video signals L1, L2, L3 and HD. Every time the button is pressed, the signals shift LINE 1 (L1) → LINE 2 (L2) → LINE 3 (L3) → HD, one after another.

⑮ [SP/EP (HD/SD)] select button

Selects between recording speeds.

⑯ [BLANK SEARCH] button

Searches a non-recorded (blank) section of the tape. (See page 19)

⑰ [HD INPUT] button

Converts the input signal to an HD input. With the INPUT SELECT switch ⑭ pressed, other input signals can be entered.

⑱ [RECORD] button

Press to start recording.

⑲ [VARIABLE SEARCH] button

Changes the search speed upon every pressing the button. (See page 26)

⑳ [INDEX SEARCH] button

Press to start index search. Searches the start of recorded or timer-recorded section or the section indicated with INDEX signal, where normal playback starts. (See page 27)

㉑ [PAUSE/STILL] button

Press to pause the recording or change the playback picture to a still picture. Canceled by pressing the PLAY button.

2 CONTROLS AND CONNECTORS

Front panel

㉒ [HIFI AUD OUT SELECT] button

Selects HiFi audio sources to be played back. Every pressing the button changes right and left audio → left audio → right audio one after another.

㉓ [DISPLAY] button

SELECT: Every pressing the button changes the display window between several sets: Tape counter/mode display → hour/ mode display → audio level indication ...

ON/OFF: Turns the display on and off.

㉔ [AUDIO OUT SELECT] button

Selects audio to be played back. Every pressing the button changes HiFi → Normal → Mix (HiFi and Normal) one after another.

㉕ [EDIT] button

Press to play back or record with a picture quality suitable for dubbing or editing.

㉖ [INDEX] button

Record and erases the index signal.
MARK: Record VISS (INDEX)
ERASE: Erases VISS (INDEX)
(See page 27)

㉗ [AI AUTO] button

Adjust the picture to a desired video quality. Every pressing the button changes AI AUTO.

㉘ Timer program preset button

PROGRAM : Start programming
CHECK/CORRECT:

Check and correct the programmed data.
CANCEL: Press to cancel the programmed data. This can be used as a tape counter reset button, unless timer programming is in operation.

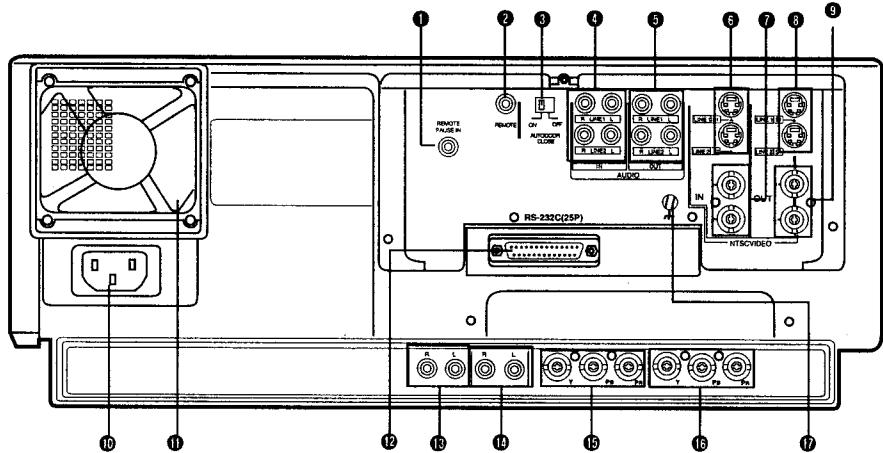
SET +/-: Sets the date, hour and recording speed.

SELECT: Selects the set data.

TIMER: Press to keep the timer-programmed recording at standby or cancel it. (See page 21)

2 CONTROLS AND CONNECTORS

Rear Panel



① Remote pause input connector

Connect the remote pause cable to this connector when editing with the JVC video movie. The remote pause connector on the front panel is given priority.

② Remote control connector

Connect the remote control cable when externally controlling the machine with optional remote control unit (RM-G30U).

③ Auto door close switch

ON: When the door is left open for one minute, the door automatically closes.

OFF: The door does not automatically close. Use the OPEN/CLOSE button for operation of the door.

④ Audio input connectors 1,2

Receive the audio signal from an external audio unit. When dubbing a tape, connect the playback machine to this connector.

⑤ Audio output connectors 1,2

Output the audio signal to an external audio unit. Connect such a machine as TV with audio input connectors. When dubbing a tape, connect the recording machine to this connector.

⑥ S1 video input connectors 1, 2

Receive S or S1 video signals. Connect a playback machine to this connector for dubbing.

⑦ Video input connectors 1,2

Receive composite video signals. Connect a playback machine to this connector for dubbing.

⑧ S1 video output connectors 1,2

Output S video or S1 video output signal. Connect such a machine as TV with video input connectors. When dubbing a tape, connect the recording machine to this connector.

⑨ Video output connectors 1,2

Output composite video output signals. Connect such a machine as a TV with video input connectors. When dubbing a tape, connect the recording machine to this connector.

⑩ AC IN socket

Connect to 120VAC,60 Hz power outlet using the provided power cord.

⑪ Fans

Prevents abnormal temperature rise in the unit, so neither remove nor block it. They go on running until the temperature drops enough even if the power is turned off.

2 CONTROLS AND CONNECTORS

Rear Panel

⑫ RS-232C connector

Connect a RS-232C cable to control this unit from a personal computer. Use a cross cable.

⑬ [HD AUDIO IN] connector

Connect to the audio output connector of a MUSE decoder or the MUSE decoder audio output connector of a high vision TV.

⑭ [AUDIO OUT 4] connectors

Connect to the audio input connectors of a high vision TV.

⑮ [HD VIDEO IN] connector

Connect to the output connector of a MUSE decoder or the MUSE decoder output connector of a high vision TV.

⑯ [HD VIDEO OUT] connector

Connect to the W-VHS input connector or HD input connector of a high vision TV.

⑰ Ground connector

Notes

Take care of the following points when connecting to the audio input connector 2 and the HD audio input connector.

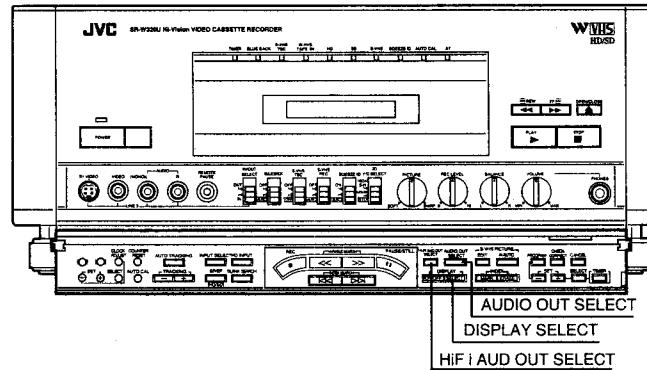
When connected to the right and left channels of the HD audio input connector and to the audio input connector 2, the audio input signal at the HD audio input connector is given priority even if the channel L2 has been selected.

To receive audio signal through the audio input connector 2, unplug the cable connected to the HD audio input connector.

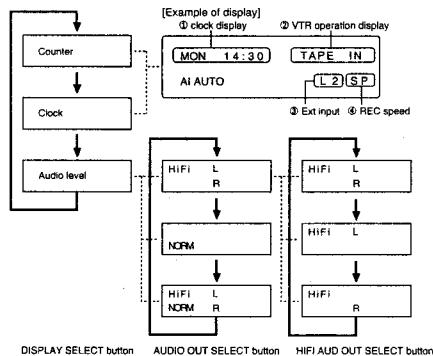
When connected only to the audio input connector 2, the audio signal is received also when HD input is received.

3 INDICATORS AND DISPLAYS

What is shown on the front display window



Pressing the AUDIO OUT SELECT, HIFI AUDIO OUT SELECT and the DISPLAY buttons changes the front window display among the following sets of display data.



Example of display

1 Clock display

Shows date and time

Sun: Sunday Thu: Thursday

Mon: Monday Fri: Friday

Tue: Tuesday Sat: Saturday

Wed: Wednesday

Counter display

Counter display flickers when an unrecorded section is reached during fast forward or rewind.

3 INDICATORS AND DISPLAYS

4 Recording mode

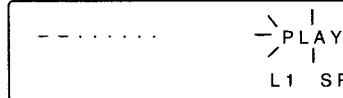
SP Standard (in HD mode)

EP Extended (in SD mode)

Other display data

Next function super rewind

[Example of display]



VISS operation display

[Example of display]



VISS in operation

VISS MARK flickering Index signal being recorded

VISS ERASE flickering Index signal being erased

2 VCR operation display

TAPE IN	Cassette is loaded
EJECT	Cassette being removed
REC	Recording
PAUSE	Recording at pause
FF	Fast Forward
REW	Rewind
FWD	Fast forward playback
REV	Rewind playback
STILL	Still picture (forward)
-STILL	Still picture (reverse)
SLOW	Slow playback (forward)
-SLOW	Slow playback (reverse)
VISS2	VHS index search
BLANK	Blank search
DEW	Machine is dewed
PLAY flickering	PLAY next function memory*
EJECT flickering	EJECT next function memory*

* Next function memories include timer standby and power "off" as well, but they are not indicated on the front display window.

3 External input

Displays the external input connectors selected

L1 LINE (S1 video) input connector 1

L2 LINE (S1 video) input connector 2

L3 LINE (S1 video) input connector 3

HD HD input connector

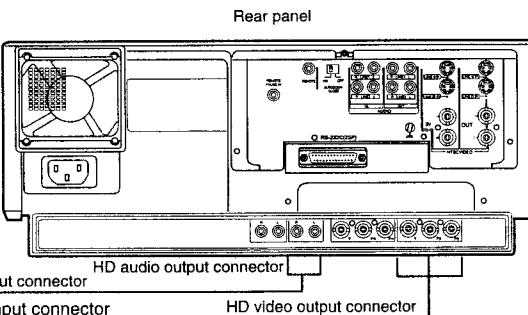
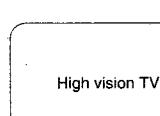
4 PREPARATIONS

Connections

The SR-W320U can be connected to the following units.

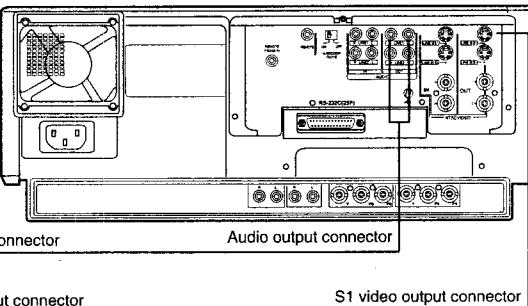
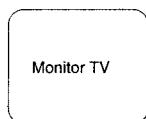
Connection to a high vision TV

Video signal connection
Audio signal connection

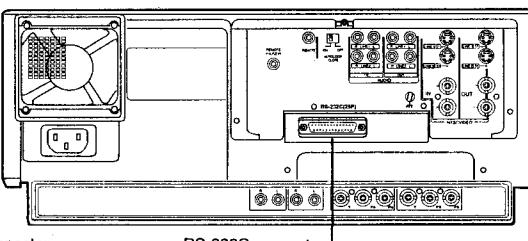
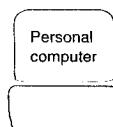


Connection to a monitor TV

Video signal connection
Audio signal connection

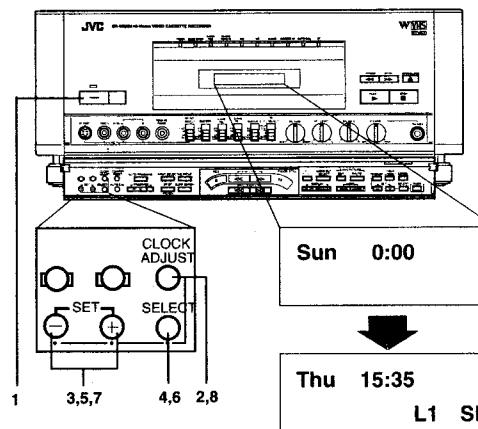


Connection to a personal computer through RS-232C



4 PREPARATIONS

Time Setting



(Example)

When setting to Thursday 35 minutes past 3 o'clock pm.

1 Turn the power on.

2 Press CLOCK ADJUST button.
Date display flickers.

3 Set the date with + or - button.

4 Press SELECT button.
Hour display flickers.

5 Set the hour with + or - button.

6 Press SELECT button.
Minute display flickers

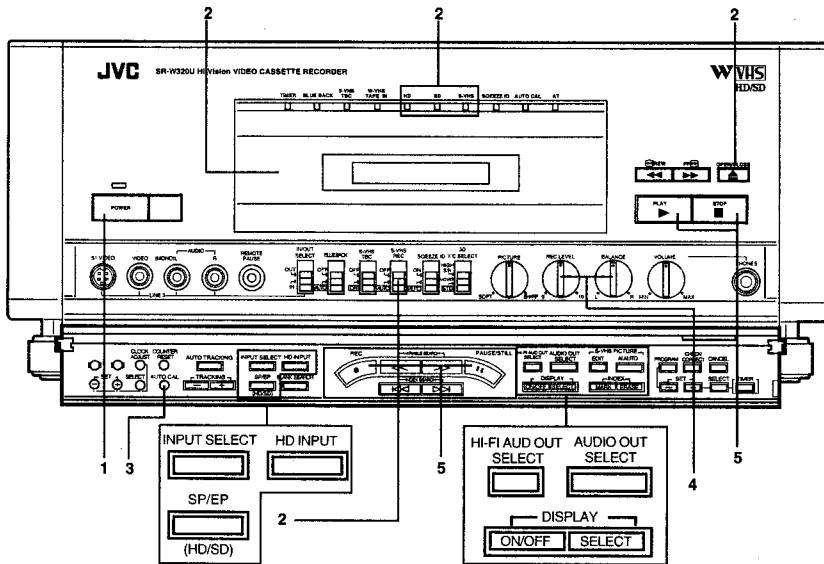
7 Set the minute with + or - button.

8 Press CLOCK ADJUST button.
The clock starts with Thursday 3:35 pm,
simultaneously as the button is pressed.

If there is no time set, 0:00 flickers on the front panel window display. This occurs also when power breakdown stays longer than 30 minutes.

5 RECORDING

Basic Operations



Preparations

1 Turn the power on.

2 Select the recording mode.

Which mode is available depends on the type of the cassette in use.

Cassette in use	Recording mode
W-VHS	HD mode SD mode
S-VHS	S-VHS mode VHS mode
VHS	VHS mode

HD mode

- Press the HD INPUT button.
- Load the W-VHS tape. Then, HD lamp lights and SP is shown on the front window display.

SD mode

- Select L1, L2 or L3 with INPUT SELECT button.
- Load the W-VHS tape. Then, SD lamp lights and EP is shown on the front window display.

S-VHS mode

- Select L1, L2 or L3 with INPUT SELECT button.
- Load the S-VHS tape.
- Select recording speed with the SP/EP (HD/SD) button. Every pressing this button changes the SP → EP → SP.
- Set the [S-VHS REC] switch to AUTO. The [S-VHS] lamp lights.

VHS mode

- When using a S-VHS tape, set the S-VHS REC switch to OFF. The [S-VHS] lamp goes off.
- With a VHS tape loaded, the VHS mode is automatically entered.
- Select recording speed with SP/EP button.

- Set an optimum recording level with the AUTO CAL button as required. (See page 20.) This facility does not work for the W-VHS tape.

5 RECORDING

Basic Operations

4 Adjust the HiFi recording level.

- Call up the audio level meter display with the DISPLAY SELECT button.
- Select HiFi audio with the AUDIO OUT SELECT button. This shows the HiFi audio level meter display. (See page 14.)
- Adjust the recording level and L/R balance. While checking with the audio level meter, adjust with the REC LEVEL and BALANCE knobs, until the thick bars on the display occasionally swing. Perform adjustment carefully, as too low a recording level may lead to a greater noise and too high a level may cause a distortion.

5 Start recording.

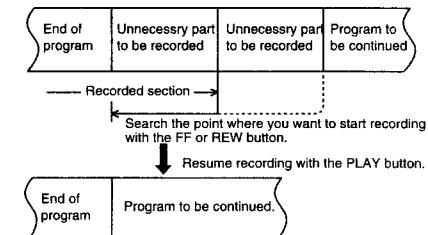
- Press the REC button, whereupon recording starts.
- Press the PAUSE/STILL button for a brief pause of recording.
- Pressing the PLAY button resumes recording.
- Press the STOP button to bring recording to an end.

When pause remains for longer than five minutes, the machine automatically stops recording to protect tape and video head from damage.

Retake Function

You can cut the unnecessary part of the program during recording. This facility does not work when using a W-VHS tape.

- With the pause mode entered, keep pressing the REW or FF button. The tape is played back at a normal PLAY speed.
- Leave your hand off the button at the start of the unnecessary part (where you want to adjoin the program). Pause mode resumes where your hand has left the button.
- Press the PLAY button at the part of the program you want to continue recording. Recording resumes.



Blank Search Function

Used to search the unrecorded section of the tape.

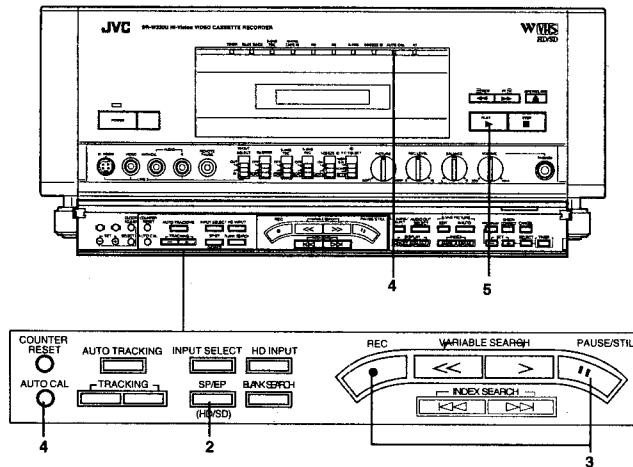
- With the stop mode entered, press the BLANK SEARCH button. Search stops where the unrecorded section is found.
- Press the STOP button if you want to cancel blank search.

Note

When blank search is done, play back the tape before recording to make sure you can start recording here.

5 RECORDING

AI Auto Calibration



Checks the characteristics of the tape in use and sets the recording level to an optimum in dependence on such characteristics.

This facility does not work for the W-VHS tape.

Preparations

AI auto calibration is recorded on a section of the tape to check up the tape characteristics. It is recommended to perform this recording on a section you do not mind erasing.

Make sure that the tape is unprotected (with the safety tab).

Procedures

1 Load the tape.

2 Select recording speed with the SP/EP button.

3 Engage the Record Pause mode.

While pressing the PAUSE/STILL button, press REC button.

4 Keep pressing the AUTO CAL button until the AUTO CAL lamp flickers.

The machine automatically checks the tape characteristics. The record pause mode resumes after completion of adjustment. (Approx. 10 seconds)

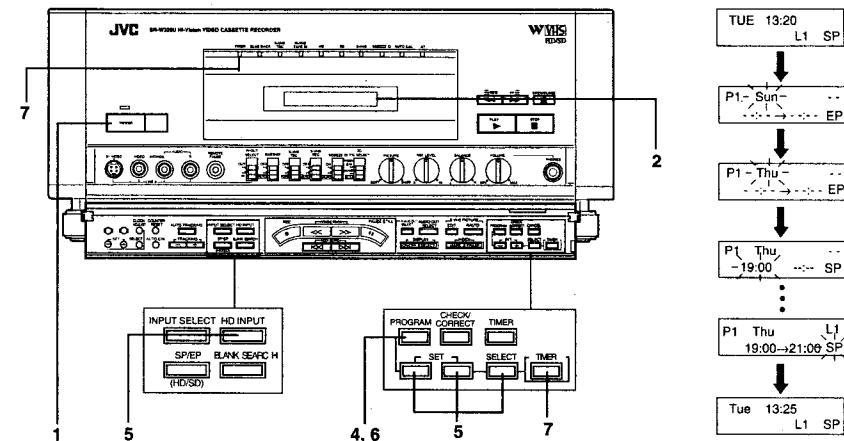
There comes no audio during this operation. Input select is also disabled.

5 Press the PLAY button if you want to immediately start recording.

When the tape is ejected, the AUTO CAL lamp goes off and the AI auto calibration mode is canceled.

6 TIMER-PROGRAMMED RECORDING

Timer-Programmed Recording



Eight programs can be preset for two weeks ahead.

Example: Preset the program 7:00 to 9:00 pm on Thursday on L1 input at SP mode.

1 Turn the power on.

2 Make sure of the present time on the front panel display window.

3 Load a tape with safety tab (on the REC side for W-VHS tape).

4 Press the PROGRAM button.

5 Set the date, start time, end time, input select and recording speed.

Date

- Make sure that the date display flickers.
- Set the date with the SET ± button.
- Pressing the + button changes Sunday → Saturday in the first week, Sunday → Saturday in the second week, Sunday → Saturday every week, Sunday → Saturday daily, Monday → Saturday daily, Monday → Friday daily and Monday → Thursday daily.
- Pressing the - button reverses the sequence in c.
- Press the SELECT button.

Start Time

- Make sure that the start time flickers.
 - Set the start time with the SET ± button.
- Keeping this button pressed changes the time

30 minutes by 30 minutes. Pressing one by one changes the time minute by minute.

- Press the SELECT button.

End Time

- Make sure that the end time flickers.
- Set the end time with the SET ± button.
- Keeping this button pressed changes the time 30 minutes by 30 minutes.
- Press the SELECT button.

Input Select

- Make sure that the input select display flickers.
- Press the INPUT SELECT button to select input. Every pressing the button changes L1 → L2 → L3 → HD
- Press the SELECT button.

Record Speed

- Make sure that the record speed display flickers.
- Set the record speed with SET ± button. With a W-VHS tape in use, the record speed is automatically set with input select.

6 Press the PROGRAM button.

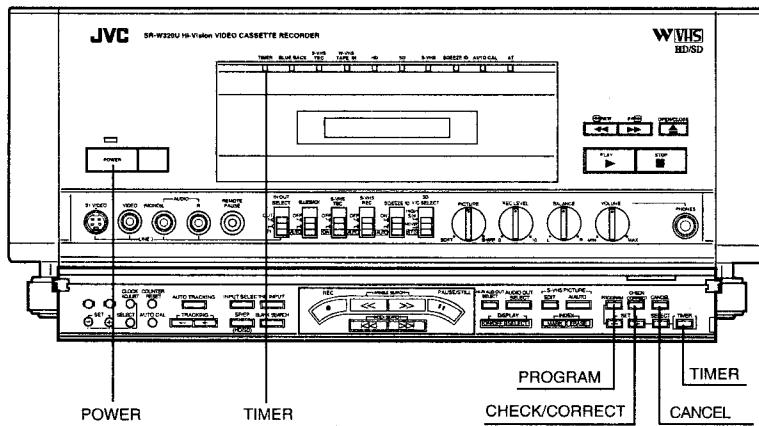
The ordinary display appears. For further programming, repeat procedures 4 - 5.

7 Press TIMER button.

The TIMER lamp lights and the power goes off (Timer standby). When the TIMER lamp flickers, there is some problem with the programming procedure. Check the procedure.

6 TIMER-PROGRAMMED RECORDING

Check, Correct and Cancel of the Preset Programs



Check of the Preset Programs

- If the TIMER lamp is lit, turn this off by pressing the TIMER button.
- Turn the power on.
- Press the CHECK/CORRECT button. The front panel display window shows one preset program. The second and further programs can be checked by pressing the CHECK/CORRECT button.
- Press the TIMER button. The TIMER lamp on the front panel lights and the power is turned off.

Correction of the Preset Programs

- Correction can be made even with the TIMER lamp lit (TIMER standby). Correction is not possible during recording the timer preset programs.
- Press the CHECK/CORRECT button. The front panel display window shows one preset program.
- Call up the preset program which you want to cancel with the CHECK/CORRECT button.
- Make the data you want to correct flick with the SELECT button.
- Correct with the SET ± button.
- Fix the corrected data with the CHECK/CORRECT button.

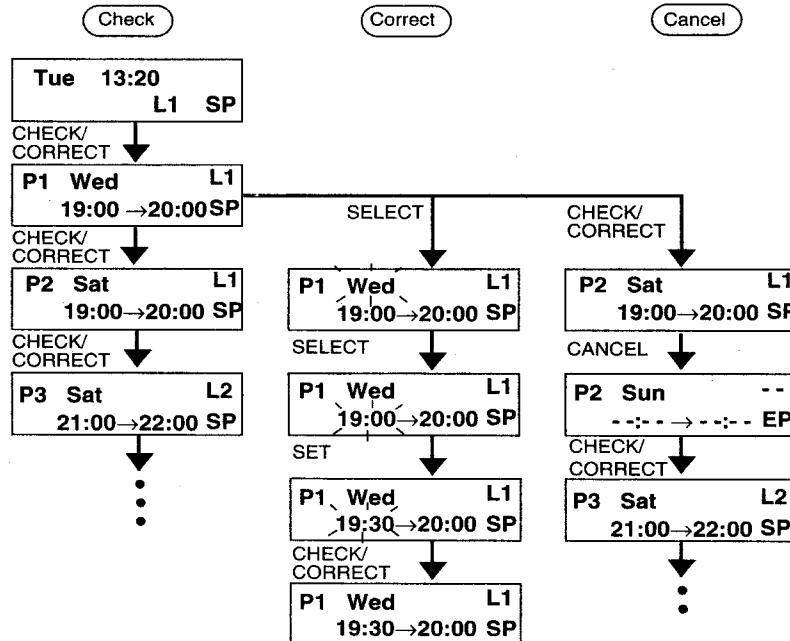
Cancel of the Preset Programs

- If the TIMER lamp is lit, turn this off by pressing the TIMER button.

6 TIMER-PROGRAMMED RECORDING

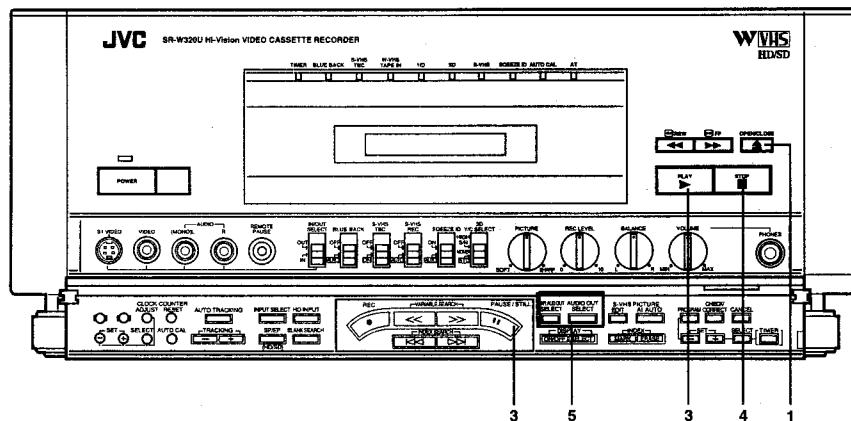
Check, Correct and Cancel of the Preset Programs

The data display on the front panel display window changes as follows for check, correct and cancel of the preset programs.



7 PLAYBACK

Basic Procedure



1 Press OPEN/CLOSE button.

The door opens.

2 Load the tape.

The power is turned on. Playback automatically starts with the tape protected (without safety tab).

3 Press the PLAY button.

Playback starts.

Press the PAUSE/STILL button to obtain a still picture. Playback resumes by pressing the PLAY button.

To monitor the HD-recorded tape, set the input select switch on the high vision TV to HD input. No picture comes out of the S1 video and video output connectors.

4 Press the STOP button to bring the playback to an end.

Notes

- With the still picture or slow play remaining for longer than five minutes, the STOP mode is automatically entered to protect the tape from damage.
- In HD mode, the still picture may fail to come up when quickly switching from PLAY to STILL.

Audio Select

5 How to HiFi audio channel?

- Select with the HiFi AUD SELECT button. Every pressing the button changes HiFiL → HiFiL → HiFiR → HiFi R : Left channel
- When checking the audio output display with the front panel display window, call up the audio level meter with the DISPLAY SELECT button.

When selecting a reproduced audio (HiFi audio/normal audio/mix audio)

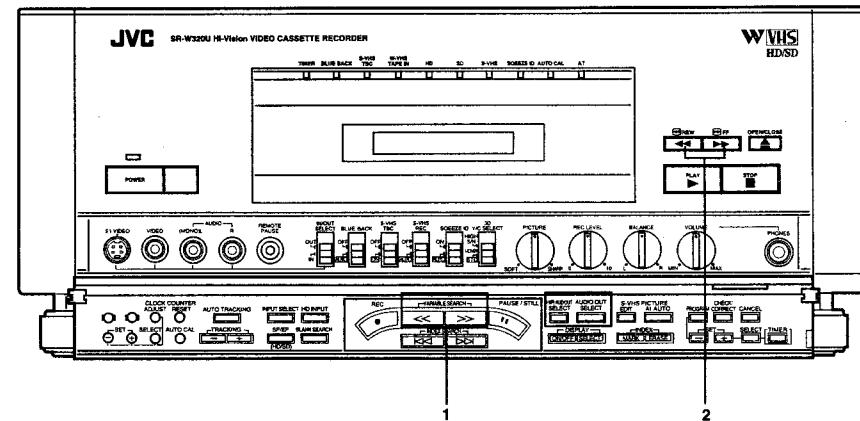
- Select with the AUDIO OUT SELECT button. Every pressing the button changes HiFi audio → normal audio → Mix audio (HiFi and normal). The tape for which HiFi audio has not been recorded reproduces normal audio.
- To check the audio output display on the front panel display window, call up the audio level meter with the DISPLAY SELECT button.

Note

Since normal audio is not recorded on a W-VHS tape, selection between normal and mix audio is not possible on such tape.

7 PLAYBACK

Special Playback Procedures



Variable Speed Playback

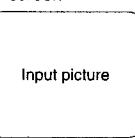
1 Press FF or REW button to fast forward or rewind during playback.

How to press the FF and REW buttons	REC mode				How to cancel the variable speed playback
	S-VHS /VHS tape	W-VHS tape	SP	EP	
Press and immediately let your hand off (latch)	about11 X speed	about30 X speed	about6 X speed	about7 X speed	Pressing the PLAY button resumes normal playback.
Keep pressing	about7 X speed	about7 X speed	about6 X speed	about7 X speed	Letting your finger off resumes normal playback.

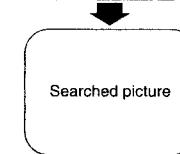
Monitoring the Video during FF or REW

2 Video can be monitored by pressing the FF button during fast forward or the REW button during rewinding and immediately letting your hand off the buttons. (High speed open search)
This facility does not work for the W-VHS tape.

TV screen



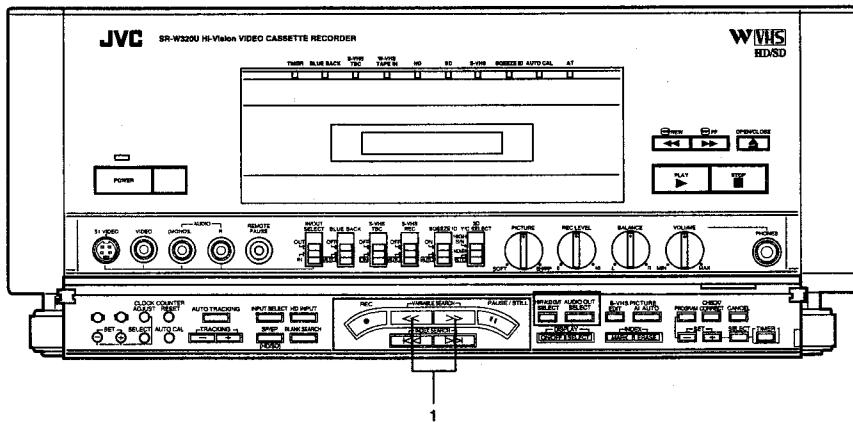
Press the FF/REW button and let it off immediately.



High speed open search going on

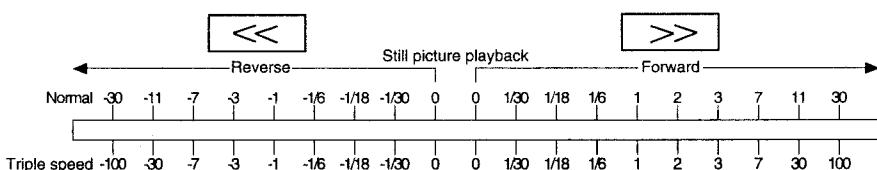
7 PLAYBACK

Special Playback Procedures



Variable Speed Playback with the VARIABLE SEARCH button

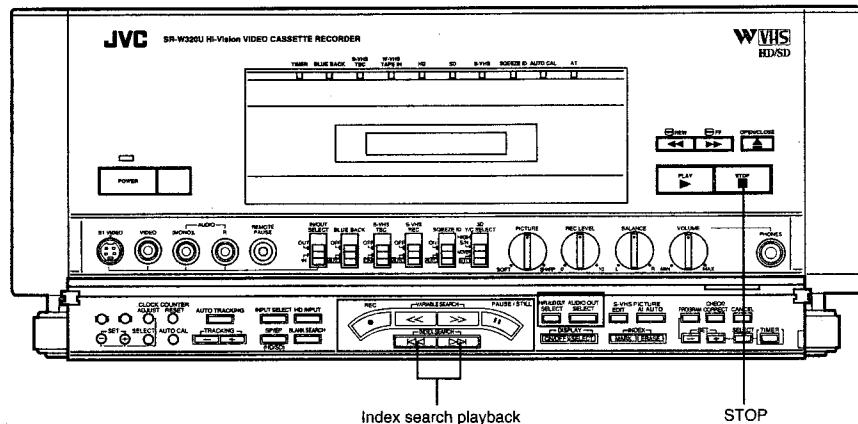
- During playback or still picture playback, search speed can be varied upon every pressing the VARIABLE SEARCH button.
- Still picture playback comes up when the reverse button is pressed during variable search playback.
- This facility does not work for a W-VHS tape in use.



- There is no audio sound during skewless fine search¹, hyper strobe search², high speed open search and variable speed playback with the VARIABLE SEARCH button.
- When the still picture playback or slow playback stays for longer than five minutes, the tape is automatically brought to a stop to protect itself from damage.
- When the tape recorded at EP mode is played back at 100 times speed (hyper strobe search), color may appear somewhat faded.
- Fast forward/rewind playback of S-VHS/VHS is particularly referred to as skewless fine search.
- 230% speed (SP mode) and 100X speed (EP mode) search is particularly referred to as hyper strobe search.

7 PLAYBACK

Index Search

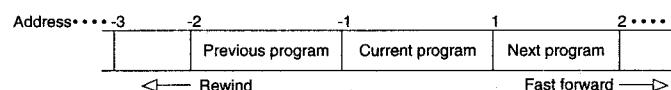
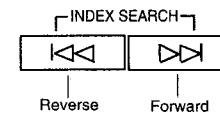
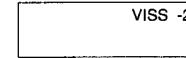


Index search playback

This facility searches the index signal recorded on the tape where playback starts.

- Press the INDEX SEARCH button during stop or playback to specify a desired address.
- Every pressing the forward button increments the number and pressing the reverse button decrements the number. Address up to ±No. 9 can be specified.
- The specified address is automatically searched, whereupon the tape is automatically played back.
- Press the STOP button to cancel this search en route.

Front panel display window.

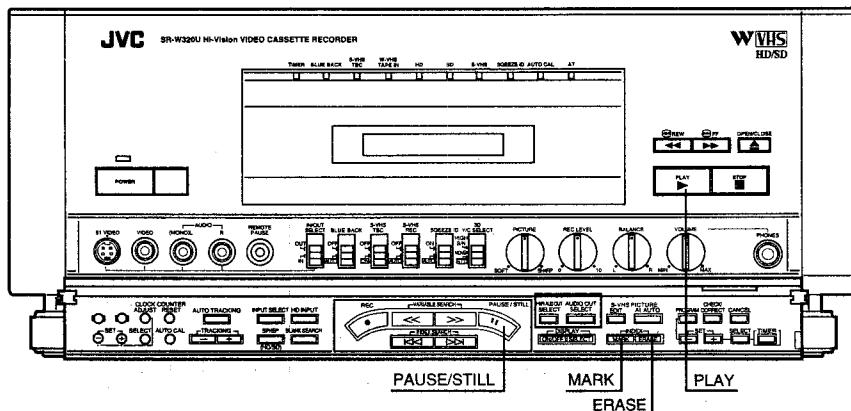


How to count the address:

- When searching the previous program:
Press twice the INDEX SEARCH button in rewind direction.
- When searching the next program:
Press once the INDEX SEARCH button in forward direction.

7 PLAYBACK

Index Search



Recording the Index Signal

Index signal can be recorded on an arbitrary section of the tape.

Index signal is automatically recorded at in the beginning of recording and timer-programmed recording.

During recording or playback

Press the INDEX MARK button.

VISS MARK flickers on the front panel display window, whereupon the index signal is recorded.

The VISS MARK goes off, finishing the recording procedure.

During Recording Pause or Still Picture

Playback

a. Press the INDEX MARK button.

VISS MARK is shown on the front panel display window.

b. Press the PLAY button.

VISS MARK flickers, whereupon the index signal is recorded.

c. VISS MARK disappears, finishing the recording procedure.

Front panel display window.

VISS MARK

Erasing the Index Signal

The index signal recorded on the tape can be erased.

- Enter playback or still picture playback several seconds before the index signal to be erased.
- Press the INDEX ERASE button.
VISS ERASE is shown on the front panel display window.
- The tape automatically runs to erase the index signal.
- The VISS ERASE display disappears, finishing the erasure of the index signal.

Tape goes on playing back.

Front panel display window.

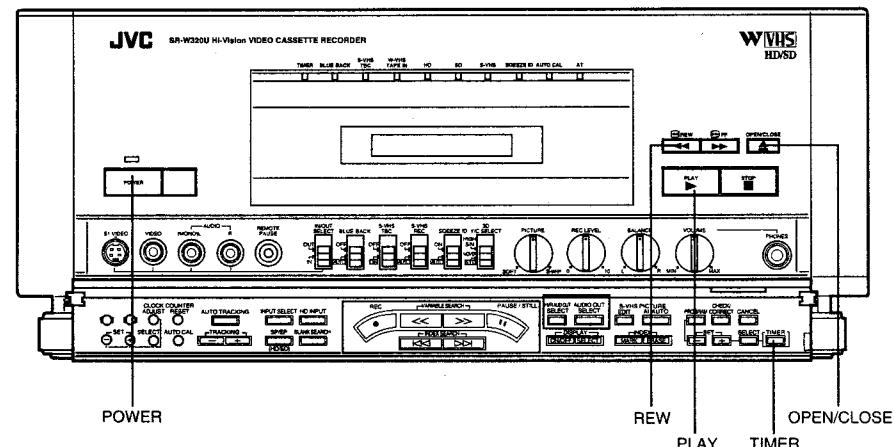
VISS ERASE

Notes

- When recording an index signal on a recorded tape, perform it in the playback mode. In record mode, previous video or audio will be erased.
- Record an index signal at a due distance from a neighboring index signal to avoid operational error.
- With VISS MARK or VISS ERASE shown on display, do not operate other buttons.
- If the record speed is changed from SP to EP near the index signal, the picture may be disturbed after recording or erasing the index signal is finished.
- Recording or erasing cannot take place on a protected tape (without safety tab) or an unrecorded tape.

7 PLAYBACK

Next Function



Next Function Facilities

When the tape is rewound to the beginning, such functions can be automatically executed as automatically unloading the cassette, setting the timer standby and turning the power off.

- To play back
Press the PLAY button immediately after pressing the REW button.
PLAY flickers on the front panel display window.
Playback automatically starts at the beginning of the tape.
- To unload the cassette
Press the OPEN/CLOSE button immediately after pressing the REW button.
EJECT flickers on the front panel display window.
- To set the timer standby.
Press the TIMER button immediately after pressing the REW button.
The POWER lamp flickers and the TIMER lamp lights.
The timer standby is automatically entered at the beginning of the tape.
- To turn the power off
Press the POWER button immediately after pressing the REW button.
The POWER lamp flickers.
The power is turned off at the beginning of the tape.

Next Function Super Rewind

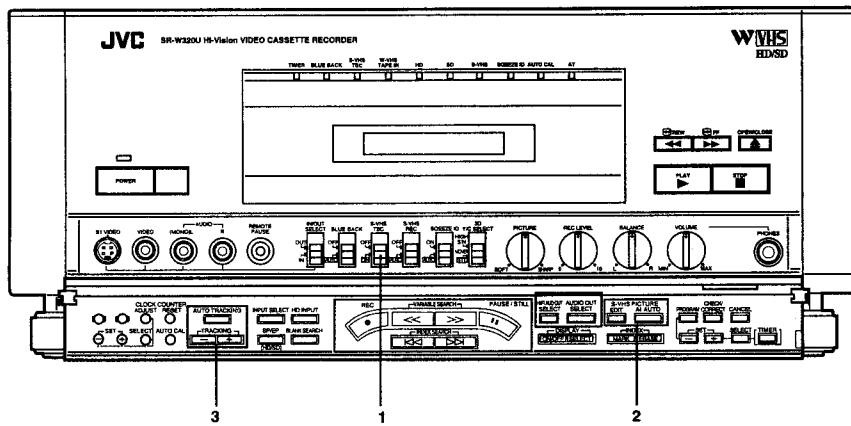
- Using the next function memory facility around the end of a long time tape such as T-120 tape, the tape can be rewound in a shorter time than with the usual rewind.
- A bar graph is shown on the front panel display window (in counter display mode) to indicate how far rewind goes on.
- Normal rewind speed may resume for a T-60 or shorter tape or a VHS-C tape, or depending on the winding position of the tape.
- When the NF (next function) super rewind is finished, the counter display returns to 0:00:00.
The same occurs when this facility is canceled en route.

Front panel display window.



7 PLAYBACK

Adjustment of the Playback Picture



To correct distortion of the picture

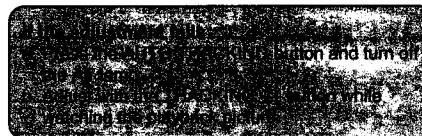
1 Set the S-VHS TBC switch to ON.

- With this switch set to ON, the picture may not be clearly visible, depending on the signal recorded on the tape. In that case, the picture may be better by setting the switch to OFF.
- When playing back a W-VHS tape, TBC for W-VHS works regardless of the switch position.



When there is too much noise in the picture

- 3 Press the AUTO TRACKING button to light the AT lamp. The noise associated with the tape recorded on another machine is automatically minimized.**
- This facility does not work with the W-VHS tape in use.



How to select the video quality matching the tape in use

2 Select the type of video quality with the AI AUTO or EDIT button.

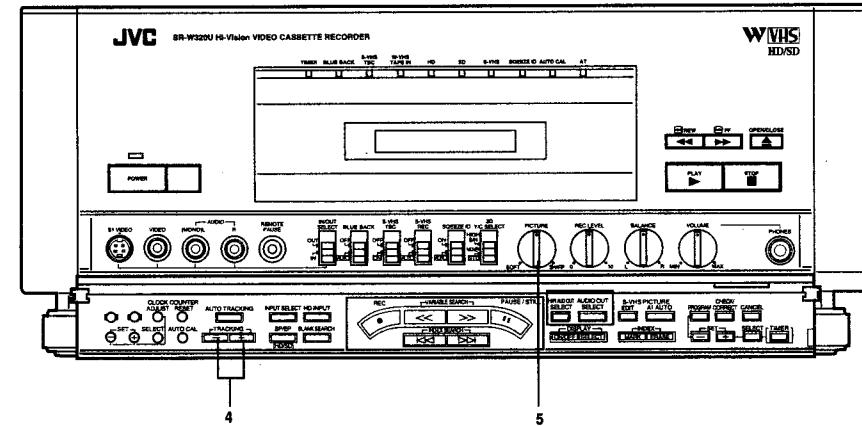
AI AUTO	Standard
EDIT	For dubbing

Front panel display window.

1 : 23 : 45	
AI AUTO	L1 SP

7 PLAYBACK

Adjustment of the Playback Picture



When noise comes up during still picture/slow picture playback

- 4 a. Set to slow playback.
b. Adjust with the TRACKING +/- button.**
- This facility does not work with the W-VHS tape in use.
 - Tracking adjustment may not be quite successful when playing back the tape with a poor recording quality.

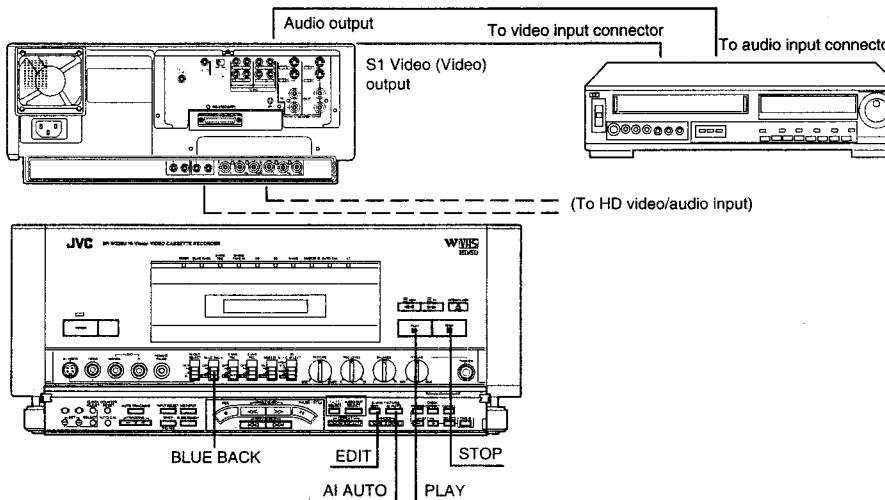
To select your desired picture tone

5 Adjust the picture with PICTURE adjust knob.

- Soft: Soft-tone picture with noise less outstanding
- Sharp: Sharp, clear-cut picture
- Usually set to the center.
- This facility does not work with the W-VHS tape in use.
- This facility does not work when the EDIT button is set.

8 TAPE DUBBING

When Playing Back on SR-W320U and Recording on Another Unit



SR-W320U (as a playback machine)

- 1 Call up "EDIT" on front panel display window with the EDIT button.
 - This facility does not work when the W-VHS is in use.

Another unit (as a recording machine)

- 2 Set the recording machine to external input.
- 3 Put the recording to a pause.

SR-W320U (as a playback machine)

- 4 Start playback shortly before the section where you want to PLAY.

Another unit (as a recording machine)

- 5 Start recording at a section of the program you want to dub.
- 6 To finish, press the STOP button. Extra recording can be avoided by stopping the recording machine then the SR-W320U.

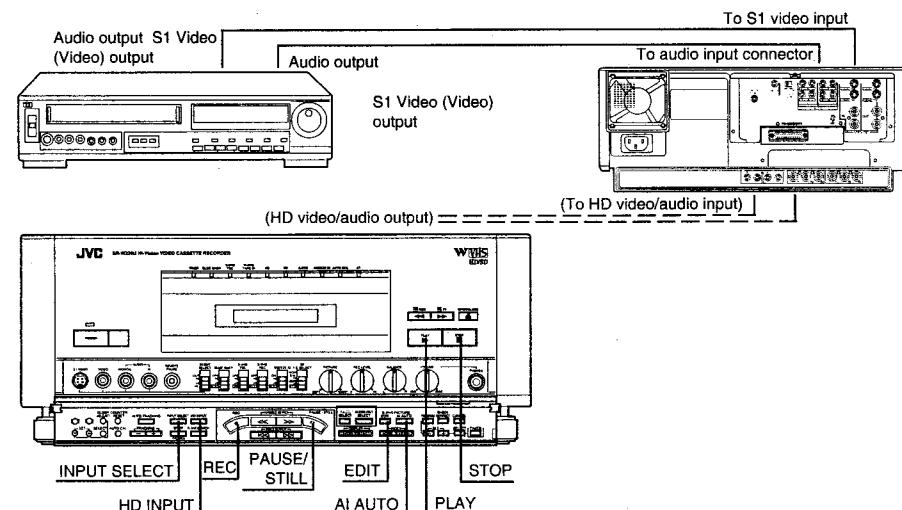
SR-W320U (as a playback machine)

- 7 Press the STOP button.
- 8 Press the AI AUTO button and call back the video status display.

• When dubbing a high vision video, use the HD video cable, provided that the recording VCR is equipped with the HD video input and HD audio input connectors.

8 TAPE DUBBING

When Playing Back on Another Unit and Recording on SR-W320U



SR-W320U (as a recording machine)

- 1 Call up "EDIT" on front panel display window with the EDIT button.
 - This facility does not work when the W-VHS is in use.
- 2 Select the input in connection by pressing the INPUT SELECT button.
- 3 Press the REC button while pressing the PAUSE button to bring recording to a pause.

Another unit (as a playback machine)

- 4 Start playback shortly before the section where you want to dub.

SR-W320U (as a recording machine)

- 5 Press the PLAY button at a section where you want to dub.
- 6 To bring recording to a pause, press the PAUSE button.
- 7 To finish, press the STOP button.
 - Extra recording can be avoided by stopping the SR-W320U then the playback machine.

Another unit (as a playback machine)

- 8 Press the STOP button.

SR-W320U (as a recording machine)

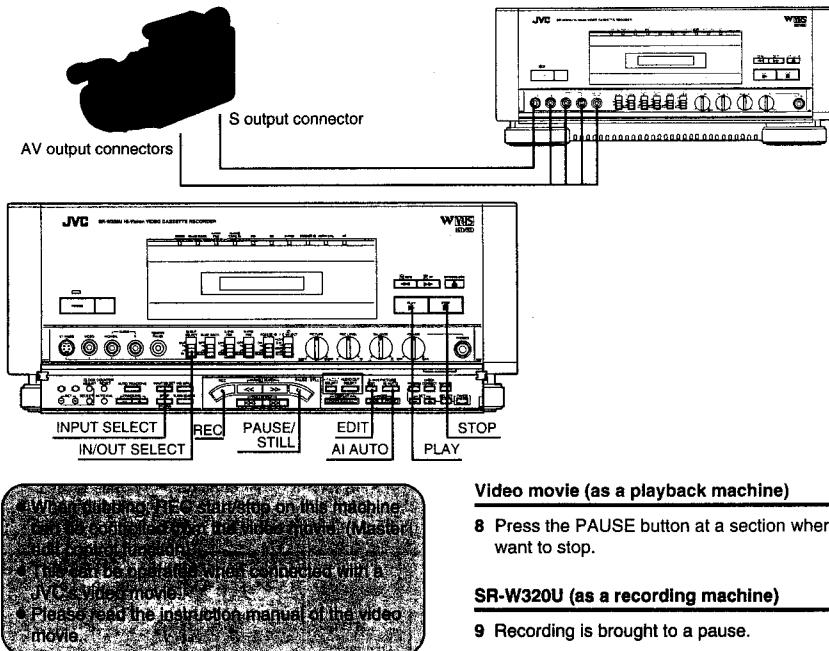
- 9 After finishing dubbing, press the AI AUTO button and call back the video status display.

• When dubbing a high vision video, use the HD video cable, provided that the recording VCR is equipped with the HD video output and HD audio output connectors.
• When dubbing from an audio unit, record the video together with the audio.
• When record pause stays for longer than five minutes, the machine automatically stops to protect the tape and video heads from damage.

• What you have recorded on the video cassette recorder cannot be used without approval of the copyright holder, except that it is solely for personal amusement.

8 TAPE DUBBING

When Playing Back on a Video Movie and Recording on SR-W320U



9 RS-232C INTERFACE

RS-232C PROTOCOL

This chapter is dedicated to the user who intends to program for controlling the SR-W320U through the RS-232C.

JVC BASIC TABLE List of commands

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				Data "0"	ENTER											
1	COMPLETION			Data "1"	CLEAR ERROR											
2	ERROR			Data "2"								CUE UP WITH Data			COUNTER RESET	
3	CASSETTE OUT			Data "3"							EJECT					
4				Data "4"												
5	NOT TARGET			Data "5"								F. SHUTTLE				
6				Data "6"		CLEAR						R. SHUTTLE		W-VHS STATUS SENSE		JVC TABLE1 ON
7				Data "7"										STATUS SENSE	TIMER MODE SELECT	JVC TABLE1 OFF
8				Data "8"											CURRENT CTL SENSE	
9				Data "9"												REC REQUEST
A	ACK			PLAY	REVX1								REC			VTR INQ
B	NAK											FF	REC PAUSE			
C				FWD X1/8	REV X1/8							REW				
D				F-STILL	R-STILL							F. FIELD STEP				
E				FWD X7	REV X7							R. FIELD STEP				
F				STOP	STILL											

JVC TABLE 1 List of commands

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				Data "0"	ENTER											
1	COMPLETION			Data "1"	CLEAR ERROR									DEVICE TYPE		
2	ERROR			Data "2"			ROM VER.					CUE UP WITH Data			COUNTER RESET	
3	CASSETTE OUT			Data "3"						EJECT						
4				Data "4"												
5	NOT TARGET			Data "5"								F. SHUTTLE				
6				Data "6"		CLEAR						R. SHUTTLE		W-VHS STATUS SENSE		JVC TABLE1 ON
7				Data "7"										STATUS SENSE	TIMER MODE SEL	JVC TABLE1 OFF
8				Data "8"										CURRENT CTL SENSE		
9				Data "9"												REC REQUEST
A	ACK			PLAY									REC			VTR INQ
B	NAK						OPERATE ON				FF	REC PAUSE				
C							OPERATE OFF				REW					
D												F. FIELD STEP				
E												R. FIELD STEP				
F				STOP	STILL											

Note: Do not use any command other than listed above.

9 RS-232C INTERFACE

Commands

The commands to control the SR-W320U through the RS-232C Interface are given below. See the pages mentioned for details.

VCR control commands	See page ...
OPERATE ON/OFF PLAY/REVx1 STILL FWDx1/6/x7/STILL REVx1/6/x7/STILL STOP FF/REW F-FIELD STEP R-FIELD STEP EJECT	Page 36
CUE UP WITH DATA F-SHUTTLE R-SHUTTLE REC/REC PAUSE	Page 37
COUNTER RESET TIMER MODE SEL	Page 36

VCR information gathering commands	See page ...
ROM VER. DEVICE TYPE VTR INQ	Page 37
W-VHS STATUS SENS STATUS SENS CURRENT CTL SENS	Page 38 Page 37 Page 37

Return codes from VCR	See page ...
ACK	Page 36
NAK	Page 39
ERROR	Page 39
CASSETTE OUT	Page 39
COMPLETION	Page 39
NOT TARGET	Page 39

Others	See page ...
JVC PAGE 1 ON	Page 39
ENTER	Page 39
CLEAR ERROR	Page 39

Commands Description

VCR control commands

A command complete with one byte. The VCR returns ACK (0Ah) when it normally receives the command.

Note:

- The commands marked with * cannot be used in HD/SD mode.
- When issuing commands sequentially, be sure to check for ACK before sending the next command.

OPERATE ON 7Bh Turns the VCR's power on.
OPERATE OFF 7Ch Turns the VCR's power off.

PLAY 3Ah Play

STILL 4Fh Pause

REVx1 * 4Ah -1x speed playback

FWDx1/6 * 3Ch Forward 1/6x speed playback

FWDx7 * 3Eh Forward 7x speed playback

REV STILL * 3Dh Forward Pause

REVx1/6 * 4Ch Reverse 1/6x speed playback

REVx7 * 4Eh Reverse 7x playback

REV STILL * 4Dh Reverse pause

3Fh Stop

ABh Fast forward

REW ACh Rewind

F-FIELD STEP * ADh During pause, field advances one by one in forward direction and comes to a pause.

R-FIELD STEP * AEh During pause, field advances one by one in reverse direction and comes to a pause.

EJECT A3h Removes the cassette

The following are the 2 bytes or more commands and those consisting of numerical data.

COUNTER RESET E2h

Counter resets with this command followed by ENTER (40h)

TIMER MODE SEL E7h

Selects timer modes such as CTL, LTC, VITC. Fixed at CTL MODE in this unit.

ACK (0Ah) is returned in respond to this command followed by 32h. NAK (0Bh) is returned in response to the following data.

31h: LTC MODE

35h: LTC UB MODE

38h: VITC MODE

39h: TC AUTO MODE

3Ch: VITC UB MODE

3Dh: UB AUTO MODE

9 RS-232C INTERFACE

REC (CAh)

- REC MODE entered in response to REC REQ CMD (FAh) followed by this command.

REC PAUSE (CBh)

- REC PAUSE MODE entered in response to REC REQ CMD followed by this command.
- NAC (0Bh) is returned when the cassette loaded has its safety tab broken.

CUE UP (B2h)

WITH DATA

- CUE UP can be set at a desired position of the tape by sending this command followed by arbitrary numerical data (30h - 39h).

Example) Set 1 hour 32 minutes.

TXD [B2h]	30h	31h	33h	32h	40h
RXD	0Ah	0Ah	0Ah	0Ah	0Ah

- CUE UP operation is entered by sending ENTER CMD (40h) at the end of the numerical data.
- STOP MODE is entered when CUP UP is finished and COMPLETION (01h) is returned.
- If CUE UP position is not found, NOT TARGET (05h) is returned.
- NAK (0Bh) is returned when sending the data outside the frame of 9 hrs. 59 min. 59 sec. 29 in forward direction and the frame of 9 hrs. 59 min. 59 sec. 29 in reverse direction.
- PLAY is entered after CUE UP with JVC TABLE 1 ON.

F-SHUTTLE* (B5h)

- With this command followed by numerical data, search in forward direction is executed at a tape speed responsive to the data.

R-SHUTTLE*(B6h)

- With this command followed by numerical data, search in reverse direction is executed at a tape speed responsive to the data.

Numerical data vs. SHUTTLE SPEED

Numerical data	SPEED
30h	STILL
31h	1/30
32h	1/18
33h	1/6
35h	1
36h	3
37h	7
38h	11
39h	30

Commands for gathering various items of VCR information

ROM VER. (72h)

Returns the current ROM version.

1st byte 21h	Indicates RS-232C
2nd byte 03h	In case of SR-W320U
3rd byte **h	Current ROM version

VTR INQ (FBh)

Returns ACK (0Ah) when VCR is connected.

DEVICE (D1h)

Returns the lower four characters of the SR-W320U model name by means of ASCII code.
W:57h 3:33h 2:32h 0:30h

CURRENT (D9h)

Returns the address on CTL counter.

CTL SENS

Returns the status of VCR in 5 bytes. Each byte signifies as follows.

1st byte

BIT No.	STATUS	When BIT is 1
0	ERROR	Receives an unacceptable command. This makes other, succeeding commands unacceptable. To cancel this mode, send CLEAR ERROR (41H) to VCR.
1	Always 0	
2	SERVO LOCK	Not compatible.
3	CASSETTE OUT	No cassette loaded.
4	REC INHIBIT	Cassette with safety tab broken.
5	SHORT FF/REW	Not compatible.
6	Always 0	
7	Always 1	

2nd byte

BIT No.	STATUS	When BIT is 1
0	TAPE END	SHORT REW is entered by detecting white noise at the end of the tape.
1	TAPE BEGIN	SHORT FF is entered by detecting white noise at the beginning of the tape.
2	DEW	Dewed.
3	WARNING	Not compatible.*
4	AUDIO MUTE	Not compatible.
5	VIDEO MUTE	Not compatible.
6	AUDIO EE	EE signal is fed to the AUDIO output.
7	VIDEO EE	EE signal is fed to the VIDEO output.

9 RS-232C INTERFACE

3rd byte

BIT No.	STATUS	When BIT is 1
0	NOT defined	
1	SEARCH MODE	CUE UP or INDEX search going on.
2	REPEAT MODE	Not compatible.
3	NOT defined	
4	REPEAT	Not compatible.
5	COUNTER SEARCH	Not compatible.
6	TIMER REC	TIMER REC standby or REC going on.
7	TIMER PLAY	Not compatible.

4th byte

BIT No.	STATUS	When BIT is 1
0	A.DUB MODE	Not compatible.
1	REC MODE	Recording going on.
2	EJECT	Unloading the tape.
3	STAND BY MODE	Stand by mode on.
4	STOP MODE	Stop mode on.
5	REW MODE	Rewind going on.
6	FF MODE	Fast forward going on.
7	PALY MODE	Play mode on.

5th byte

BIT No.	STATUS	When BIT is 1
0	SPEED CODE0	Indicates the current running mode of VCR. See separate table.
1	SPEED CODE1	
2	SPEED CODE2	
3	SPEED CODE3	
4	SHUTTLE REV	Shuttle rewind going on.
5	SHUTTLE FWD	Shuttle forward going on.
6	LONG PAUSE	
7	PAUSE MODE	Pause mode on

SPEED CODE		SHUTTLE
BIT No.	Hex	SPEED
32	1	0
00	0	0h STILL
00	0	1h 1/30
00	1	0 2h 1/18
00	1	1 3h 1/6
01	0	1 5h 1
01	1	0 6h 3
01	1	1 7h 7
10	0	0 8h 11
10	0	1 9h 30
10	1	0 Ah 100

W-VHS STATUS SENS

VCR returns the W-VHS related data in consecutive 4 bytes. Each byte signifies as follows.

1st byte

BIT No.	STATUS	When BIT is 1
0	HI FI Lch AUDIO	L1 or L3 is selected as input.
1	HI FI Rch AUDIO	L2 is selected as input.
2	NORMAL AUDIO	HD input is selected as input.
3	Not defined.	
4	JVC TABLE 1	JVC TABLE 1 OPEN
5	JVC TABLE 2	JVC TABLE 2 OPEN
6	Always 0.	
7	Always 1.	

2nd byte

BIT No.	STATUS	When BIT is 1
0	HI FI Lch AUDIO	HIFI Lch is selected as output.
1	HI FI Rch AUDIO	HIFI Rch is selected as output.
2	NORMAL AUDIO	Normal audio is selected as output.
3	EP	EP mode.
4	S-VHS	S-VHS lamp is lit.
5	HD MODE	HD lamp is lit.
6	SD MODE	SD lamp is lit.
7	FULL MODE	SQUEEZE ID lamp is lit.

3rd byte

BIT No.	STATUS	When BIT is 1
0	W-VHS TAPE IN	W-VHS lamp is lit.

1 BIT to 7 BIT of the 3rd byte and the 4th byte in all are not defined yet.

9 RS-232C INTERFACE

Others

ERROR (02h)

When VCR receives an unacceptable command in 2nd and succeeding bytes of a multiple byte command, it returns ERROR message. Any command is then no longer accepted, except for status sens.

To cancel this state, send CLEAR ERROR (41h) or CLEAR (56h) to VCR.

CLEAR (41h)

ERROR

Cancels one byte immediately before numerical data input. Clears the error state. When setting one hour 32 min. with CUE UP WITH Data CMD, 3Fh which is not numerical data (30h - 39h) has been input in mistake. Clear 3Fh with 41h and input 32h.

TXD	E2h	30h	31h	33h	3Fh	41h	32h
RXD	0Ah						

CLEAR (56h)

Clears all the commands. Current modes are canceled and VCR is brought to a stop. Clears error.

NAK (0Bh)

Returned when receiving the command undefined in 1st byte or the command unable to function as VCR. There is no need of clear.

COMPLETION (01h)

Returned when CUE UP is finished with CUE UP WITH Data CMD.

NOT TARGET (05h)

Returned when CUE UP position is not found with CUE UP WITH Data CMD.

CASSETTE (03h)

OUT Returned when unloading the tape is finished.

JVC TABLE1 (F6h)

ON Makes JVC BASIC TABLE, JVC TABLE 1 commands available.

JVC TABLE1 (F7h)

OFF Makes only JVC BASIC TABLE commands available.

ENTER (40h)

Send after the numerical data of COUNTER RESET CMD or CUE UP WITH Data CMD to inform VCR of data finished.

Specifications

24 pin specifications

Pin No.	Signal	Subject	Direction of signals
1	FG	Frame	Ground
2	TXD	Transmit data	VTR→EXT.CPU
3	RXD	Receive data	VTR←EXT.CPU
6	DSR	Data set Ready	VTR→EXT.CPU
20	DTR	Data Terminal Ready	VTR→EXT.CPU
7	GND	Signal Ground	

Data format

Mode: No Synchronization

Character length: 8bit

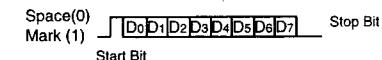
Data rate: 9600bps

Parity: No

Start bit: 1 bit

Stop bit: 1bit

Data configuration



10 TROUBLESHOOTING

No power comes up.

Is power cable plugged into the AC outlet?
Is the TIMER lamp on?

The power goes off.

If the temperature inside the machine rises to an abnormal level, the protective circuit automatically turns the power off. Place the machine so that the fans are clear of any obstacle.

Cassette does not go into the loading slot.

Re-load it in correct direction.

Cassette does not come out.

Is recording still on or is the TIMER lamp lit?

Noise appears on part of the picture.

Is the AT (auto tracking) lamp lit?
If noise still comes up with the AT lamp lit, adjust tracking manually.

No HiFi audio is heard.

Call up L and R on TV screen with the HiFi AUDIO button or the AUD OUT SELECT button.
HiFi is not obtained with the video source which is not HiFi recorded or the tape recorded with a video movie.

Noise appears during variable search.

Not an error. Noise may appear when varying playback speed.

Recording impossible.

Is the cassette safety tab not broken?

Timer-programmed recording impossible.

Is the current time setting correct?
Is the cassette safety tab not broken?
Is the TIMER lamp lit?
Check the programmed details.
Timer-programmed recording does not take place correctly when there has been a power breakdown.

TIMER lamp flickers.

Since there is any problem with programmed data, check them and reset the data correctly.
Is the cassette in the loading slot?
Load the cassette with safety tab.

The cassette comes out when pressing the TIMER button.

Load the cassette with safety tab.

0:00 flickers on the front panel display window.

There occurred a power breakdown. Redo the current time setting.

If you want to do something on the machine during timer recording or timer standby,

Press the TIMER button and turn the TIMER lamp off, then do whatever you want.

Timer-programmed recording of a program across 0:00 midnight.

(Example) When recording a program from 11:00 pm Monday to 1:00 am Tuesday, set the date of start time. In the example, set the end time to 1:00 Monday.

The programmed recording display disappears during timer programming.

When leaving the machine as it is during timer programming for approx. one minute, the programmed data is erased. So, it is required to program again.

The cassette pops out during timer recording, with the TIMER lamp flickering.

The tape is recorded up to the end of the tape.
Press the TIMER button and turn the TIMER lamp off.
Before timer programming, check the time to be set and how much of the tape still remains blank.

When one program is laid on another in timer programming.

Later program does not start recording until the recording the former program is finished.

10 TROUBLESHOOTING

No playback picture on TV.

When watching a HD-recorded tape, set the TV's input select switch to HD input.
When playing back SD/S-VHS/VHS, set the TV's input select switch to VIDEO INPUT.

SP (HD)/EP (SD) is not selectable.

With a W-VHS tape in use, SD mode is automatically entered by setting the input to L1 - L3, and HD mode is entered by selecting the HD input.
There is no need of select operation.

Dubbing Impossible.

When the external unit is connected to the front panel input connector, set the IN OUT SELECT switch to IN and select L3 with the INPUT SELECT switch.

When the external unit is connected to the rear panel input connector, select L1 (L2 or HD) with the INPUT SELECT button.

* As this unit uses a microcomputer, it may not function correctly due to noise from outside or interference noise. In this case, unplug the power cord and plug it again. Then, check the operation.

Technical Guide

W-VHS-related technologies

W-VHS is the next-generation format compatible with HDTV while taking advantage of the technical assets of VHS. W-VHS provides three modes: HD (High-Definition) mode capable of recording and playback high vision signals; SD (Standard Definition) mode for recording the existing TV signals with a high picture quality; and SD2 mode capable of recording the existing TV signal in two separate, parallel lines, which will find interesting applications in future. This machine is compatible with two of these three modes, HD and SD modes.

■ High-quality video heads (HD/SD/S-VHS/VHS)

Picture quality of a video cassette recorder depends on video heads. The SR-W320U is equipped with specially developed high-quality heads separately for HD/SD and S-VHS/VHS modes.

Sendust HD Pro-head (HD/SD)

Since W-VHS uses a metal tape, a greater quantity of information must be transmitted between the tape and the head than with S-VHS/VHS, resulting in severe demand imposed on the head.

Sendust Pro Head is made of Sendust alloy, not only at the gap section but also over the entire magnetic path. This has achieved superb recording characteristics throughout the whole range from low to higher frequencies, while suppressing noise during playback.

In HD mode, two heads must be always in contact with the tape because 2 channel parallel recording is executed. Since the tape is wound around only half the circumference of the rotary drum supporting the head, four Sendust HD Pro heads are placed in two pairs, opposite to each other at an angle of 180° over the rotary drum.

Super Crystal Pro head (S-VHS/VHS standard mode)
A pair of heads are used for recording and playback of video signals. The track width has been made different between the two heads to ensure a high picture quality even during special playback such as search. Super Crystal Pro heads have track widths optimally selected for excellent picture quality, which are in good balance with each other with minimum interference from the neighboring track. The narrower track is now 17% wider than before. All this has led to well-balanced head characteristics and therefore to further enhanced picture quality.

■ HD baseband recording

In W-VHS, high-vision signals are recorded and played back with component baseband signals,

without using the method of improving resolution by means of bandwidth compression such as MUSE. Since the signals input are thus recorded and played back as they are, the resultant picture is free from the signal format restrictions and appears quite natural with no "bias" associated with compression.

■ W-VHS high-performance metal tape

In order to ensure high picture quality of high vision signals on baseband, it is necessary to record signals with a wider frequency range on the tape. To this end, W-VHS uses a newly developed metal tape whose high-range characteristics are 8 dB or more better than in conventional tapes. This metal tape enables you to enjoy high vision pictures with enhanced quality for a prolonged period, using the cassette as small as the conventional-format tapes.

■ Two-track parallel recording

Since high vision signals are packed with the quantity of information four or five times greater than existing TV signals, it is difficult to ensure necessary technical resources merely by development of a single technical element such as introducing a high-performance tape.

W-VHS HD mode has resolved this problem by developing and establishing a challenging method: to handle this immense quantity of information, a high-vision signal is divided into two parts by digital signal processing, the two parts then being recorded and played back using two video signal tracks together. In playback, the two signals from separate tracks are combined together to rebuild the original high vision signal. That is, there is no loss of information during high vision recording on the tape.

■ Vertical emphasis

There are a number of technical approaches to reduce noise. The simpler and easier one of those approaches is cut out small signals by regarding them simply as noise. This could not be a good idea because the picture is deprived of detailed components of video signal.

The idea of "emphasis" is able to reduce noise without such by-product based on the principle that video signals are "emphasized" during recording to compensate for the small signal components to be lost during playback.

This principle is advantageous in that recording and playback work complementary to each other so that only noise can be reduced without cutting off detailed signal components. VHS and S-VHS have conventionally used this emphasis technology as applied to horizontal signal processing, for instance

Technical Guide

as main emphasis and sub emphasis. This method is now applied to vertical processing to provide the "vertical emphasis" noise reduction system. With this, we are one step closer to the ideal of noise reduction, without loss of detailed signal components.

■ Temporal emphasis

Another noise reduction technology developed for W-VHS is this temporal emphasis which also suppresses noise without cutting off detailed signal components. Temporal emphasis has been invented by expanding the concept of emphasis in temporal direction. Emphasis based on the video signal variation from one frame to another is applied to all the picture elements of the whole frame by means of digital signal processing.

Temporal noise reduction which has conventionally been executed during playback tends to produce an unnatural effect in terms of motion. A variety of technical considerations have been made to minimize this by product. This problem is basically resolved by the temporal emphasis by virtue of the complementary operation of recording and playback. In view of this, temporal emphasis obviously plays an important role in the technical requirement for making noise reduction in W-VHS compatible with reproduction of details.

■ TCI (Time Compress Integration) recording system

Existing TV signal consists of a luminance signal indicative of brightness and a composite signal carrying color signals in superposition. Luminance signal and color signals must be once separated for different signal processing. They are finally combined together on the tape as frequency-modulated luminance signal and color signals frequency-converted to low range. While of course the frequencies in use are different between these signals, recording a luminance signal and color signal together has caused a number of technical problems such as interference between signals.

In the high vision system, on the other hand, the broadcasting station itself transmits luminance signal and color difference signal separately as different components. The TCI system has been developed to take advantage of this principle of high vision.

In the TCI system, the luminance signal and the color carrying color difference signal are temporally compressed and rearranged and are then recorded on the tape. That is, the luminance signal and color signal are not recorded together, and instead, they are recorded on different sections of the tape, minimizing the signal interference in its own principle.

This system is used not only for HD mode for high

vision recording but also for SD mode for recording the existing TV signal.

■ HD digital TBC (Time Base Corrector)

W-VHS HD mode achieves a high-density recording using the two-track parallel recording system in which a high vision signal is recorded in two parallel tracks. Such two-track system has been associated with one problem, that is, temporal difference between track widths during playback, or so-called inter-track jitter. The time base corrector corrects this jitter and reinstates the original signal to provide a stable picture quality.

■ SD digital TBC (Time Base Corrector)

In SD mode, video signal is recorded in one track. However, as in conventional VHS and S-VHS, jitter is experienced because of subtle difference in relative head speed between recording and playback. In order to offer excellent recording and playback properties, the SD digital TBC is provided also for SD mode so that digital signal processing prevent temporal variation as a cause of jitter of the picture.

Technical Guide

High Definition Video Design (Basic Signal System)

■ Low-noise discrete REC amp

The video signal REC amp, which is usually made of IC (Integrated Circuit), has been made of carefully selected separate components. This ensures a largely reduced noise, especially improving the S/N ratio in the color signal bandwidth.

■ Hyper parallel FET preamp

Preamplifies the signal picked up from the playback head. While usually one preamp is assigned to one head, SR-W320U uses multiple preamps arranged in parallel for one head. The output signals from the playback head are thus combined together for noise suppression. The number of the preamps is 16 for S-VHS SP/EP modes and 16 for W-VHS HD/SD modes. Besides, each preamp is constituted by FED (Field Effect Transistor) which is easy to shut out noise current. This had led to outstanding noise reduction over a low-frequency range including color signals where noise reduction has so far been difficult.

High Definition Video Design (Signal Processing System)

■ 629 digital TBC

Time base corrector is a circuit adjusting the timing and length of individual scanning lines. Video signals picked out of the tape undergo subtle variation in timing, going fast on one occasion and slow on another, because of irregular tape transport and vibration and irregular rotation of the head drum. This is called jitter which is one of primary causes of picture distortion. The digital TBC stores the video signals of the whole scanning line in memory and reads out at a quartz-accurate timing. This leads to a picture with vertical lines in good order which is not affected by tape running accuracy. Also, the newly developed 629 digital TBC applied correction to the color signals converted to low-range frequency (629 kHz). This suppresses hue variation which has been associated with high frequency jitter, thus ensuring stable color reproduction.

■ 3 dimensional dynamic color processing

Color signal processing is executed in consideration of the preceding picture stored in frame memory. This can handle still pictures, thus improving the reproduced color S/N.

■ 3 dimensional digital Hadamard

It has been difficult to eliminate noise in dark and pale areas delicately alternating. JVC has succeeded in extracting noise component only by means of sophisticated mathematical analysis theory, Hadamard matrix. The 3 dimensional Hadamard has further promoted this principle. In addition to signal processing matching noise frequency and level, the frame memory storing the entire preceding frame in memory is provided to compare it with the current frame. This achieves noise reduction in accurate response to picture variation.

■ 3 dimensional Y/C separation

Home-use VCR separates a luminance signal (Y) and color signal (C) from each other to record on separate frequency ranges. TV signals, on the other hand, consist of luminance signal and color signal combined together, so it is necessary to separate them before recording. This job is performed with the Y/C separation circuit. If this separation fails, there occurs such troubles as cross color and dot disturbances during playback. In SR-W320U, JVC has observed that, although the picture moves continuously, there is slight variation frame by frame. Based this observation, one frame right before the current frame is altogether stored in memory and compared with the current frame. Y/C separation takes place in accordance with the comparison result so that in overall, picture suffers minimum of dot disturbance and cross color, while maintaining high resolution not only horizontally and vertically, but also transversely. If the scenes drastically change frame by frame, or there is sharp motion in a picture, the current frame is obviously unlike the frame previously in memory. In that case, separation is executed with the 3 line digital logical COM Y/C separator which compare one scanning line with another. Besides these, the newly designed motion detecting software which is most important for 3 dimensional Y/C separation, and input/output filters enable you to enjoy picture with reproduction of sharp details, outstanding 3 dimensional impression and superb density and definition. You have a choice between "STD" for normal picture, "MOVE" oriented to reproduction of sharp motion and "High S/N setting" with improved SN effect depending on the nature of your video sources.

■ New AI natural color system

Color smear can be avoided by digital processing of color signals. Also, the newly developed procedure of processing has achieved reproduction of fine tones of darkness and lightness which has so far been difficult to achieve.

Technical Guide

■ Basic S/N improvement in signal system

Discreet detail enhancer

Used to correct the video signal deteriorated due to repeated recording and playback so as to provide a clear cut contour of picture. This enhancement is made of carefully selected separate components, with no use of IC (Integrated Circuit). This has achieved not only detail improvement but also much lower noise.

Double color processing

Color signal processing circuit picks up the color signal converted to low frequency to combine with the luminance signal. The capability required of this circuit is entirely different between normal playback and search. In normal playback, it is essential to steadily try to cope with noise problem. On the other hand, search must handle the variations coming one after another very quickly. In view of this, JVC has provided two separate circuits, double color processing circuits, for these separate purposes. The result are both dense and clear normal playback picture and clean search picture with minimized color disturbance.

High quality HiFi design

■ Logical HiFi NR (reproduction)

Low frequency noise which tended to occur on the HiFi tape recorded on another recorder has been cut off by highly responsive, micro-computer controlled filters. This makes it possible to reproduce commercially available software or rental video.

■ Hyper grounding bus

In order to eliminate potential difference at each ground connector of audio circuits as well as eddy current distortion, three steel plates have been placed at the ground connector to ensure a lower impedance of ground.

■ Audio dedicated power supply + audio's separate circuit board

Since the power supply and circuit board of audio system are separated from those of mechanical parts subject to considerable variation, power supply voltage is stabilized to high quality recording and playback independently of other circuit noises.

■ Hyper tangent method

In VHS HiFi, audio is recorded also with a rotary head, signals are picked up by alternately switching the two heads during playback, resulting in undesired switching noise.

The hyper tangent system forecasts the waveforms from the information obtained from the two heads and fills the gap between them. Besides, the result is examined to correct error if any, so that clearer HiFi audio can be obtained by this facility.

Mechanism

■ HD super solid DD mechanism

The super solid mechanism developed for high performance and high responsiveness has further been improved to provide a tape transport mechanism suitable for the top end video cassette recorder. It ensures low jitter, low noise and stable tape tension mechanism.

■ Dynamic digital search

Generally refers to the high speed, high picture quality search functions enabled by improvement in mechanism and digital video processing.

Hyper strobe search

If you want to quickly check content of the tape, you can use this facility. The one hour program of an SP recorded tape can be checked at 30X speed in less than two minutes and the same program of a SP recorded tape can be checked at 100X speed in 40 seconds.

Skewless fine search

Shuttle search is convenient for briefly fast forwarding or rewinding during playback. Skewless fine search is the picture improved version of the shuttle search.

High speed open search

You can use this search to find your desired section during fast forward or rewind. Tape advances at 30X speed for SP mode and 100X speed for EP mode.

NF super rewind

When entering the next function such as rewind, turn the power off and unloading the tape, the length to be rewound is checked. For a longer section to be rewound, the tape is reloaded to be rewound at a super high speed. 120 min. tape can be rewound in one minute.

High functions

■ Video status

Video status can be easily called up depending on video sources. In addition to AI auto, dubbing and rental, there are 2 user memories provided to allow users to select their desired setting.

■ AI auto calibration

Recording level is selected in dependence on the characteristics of each tape for use in recording to make best use of those characteristics.

Index

- A**
 - AI auto calibration 20
 - AI AUTO 11,30
 - Auto tracking 10
 - AUDIO OUT SELECT 14
- B**
 - Blank search 10,19
 - BLUE BACK 9
- C**
 - Cleaning tape 6
 - COUNTER RESET 10
- D**
 - DISPLAY button 11
 - Dubbing (copy) 32,33,34
- E**
 - EDIT button 11
- H**
 - HD mode 4
 - HiFi AUD OUT SELECT 11,14,24
 - HiFi recording level adjustment 19
 - High speed open search 25
 - Hyper strobe search 26
- I**
 - INDEX BUTTON 11
 - IN/OUT SELECT button 9
 - INPUT SELECT button 10
- M**
 - Master edit control 34
- N**
 - Next function memory 14
 - NF super rewind 29
- P**
 - PICTURE adjust knob 9,31

- R**
 - REMOTE PAUSE connector 9,12
 - Retake function 19
 - RS-232C 35
- S**
 - Safety tab 5
 - SD mode 4
 - Skewless fine search 26
 - Slow tracking control 31
 - S1 Picture Signal 8
 - S-VHS REC switch 9
- T**
 - Timer programed Recording 21
- V**
 - VARIABLE SEARCH button 10

12 SPECIFICATIONS

- Power supply AC 120 V, 60 Hz
- Power consumption 78 W (10 W with power off)
- External dimensions 445 (W) x182 (H) x463 (D)
- Weight 16.2 kg
- Allowable operating temperatures +5°C — +40°C
- Allowable relative humidity 35% — 80%
- Allowable storage temperature -20°C — +60°C

Video

- Recording/playback format [W-VHS format]
HD mode: Rotary 4-head helical scanning system
SD mode: Rotary 2-head helical scanning system
Temporal compression TCI signal FM recording
[S-VHS/VHS format]
Rotary 2-head helical scanning system
Luminance signal FM recording
Color signal Phase shift, converted sub-carrier direct recording
NTSC-type color signal Hi-vision baseband signal
- Video signal

HiFi Audio

- Recording system VHS stereo HiFi system
- Frequency response 20 Hz — 20 kHz
- Dynamic range 90 dB or more
- Wow & flutter 0.005 % or less
- Channel separation 60 dB or more

Normal Audio

- Recording system Linear track
- Audio track 1-channel monaural

Timer (Timer programming/clock)

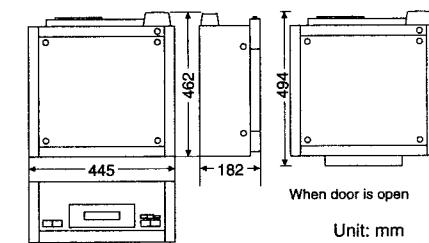
- Timer programming 2 weeks 8 programs
- Clock 24-hour system
- Breakdown backup time Approx. 30 min.

Connectors

- HD Video Input Y: 0.7 Vp-p, 75 ohms, ternary in sync
PB, PR: ±0.35 V, 75 ohms, ternary in sync
Output Y: 0.7 Vp-p, 75 ohms, ternary in sync
PB, PR: ±0.35 V, 75 ohms, ternary in sync
- S Video Input Y: 0.8 - 1.2 Vp-p, 75 ohms
C: 0.2 - 0.4 Vp-p, 75 ohms
Output Y: 1.0 Vp-p, 75 ohms
C: 0.29 Vp-p, 75 ohms
- Video Input 0.5 - 2.0 Vp-p, 75 ohms (BNC)
Output 1.0 Vp-p, 75 ohms (BNC)
- Audio Input -8 dBs, 50 kohms (RCA)
Monaural on front panel connectors only (left)
Output -8 dBs, 1 kohm (RCA)
- REMOTE PAUSE For editing with JVC Video movie deck
- Remote control unit RS-232C

Accessories

- Provided accessories Cleaning Tape
Power Cord



* Designs and specifications subject to change without notice.

SECTION 1

GENERAL DESCRIPTION AND DISASSEMBLY

Note

"AC OUTLET" appearing in the circuit diagram of the switching regulator (Section 4) is not fitted to the actual products.

1.1 REMOVAL OF MAIN PARTS

1.1.1 Upper cover

1. Remove six screws (B).
2. Remove four screws (A).
3. Remove the top plate 1 and 2.
4. Raise the side covers by the bottom in the direction of the arrow while removing them respectively. (Fig. 1-1A)

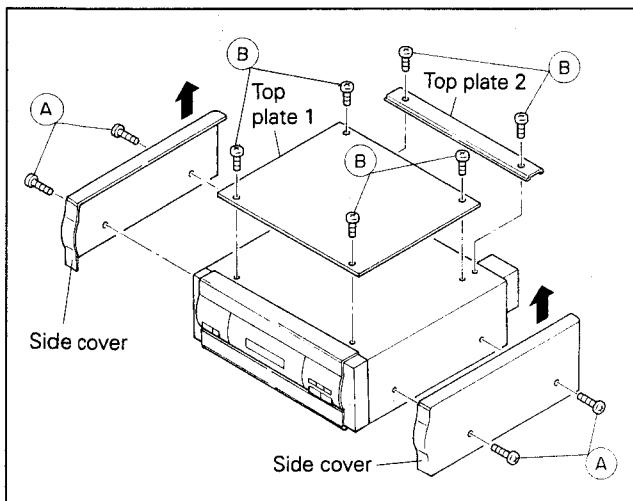


Fig. 1-1A Upper cover 1

5. Remove one screw (C) and slide the upper cover in the direction of the arrow while removing it. (Fig. 1-1B)

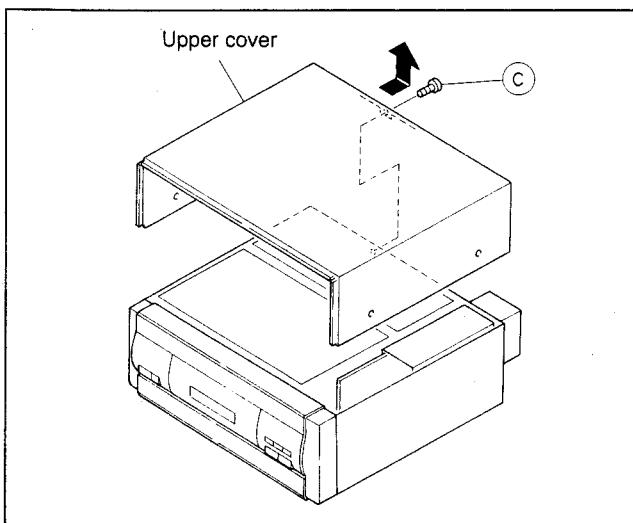


Fig. 1-1B Upper cover 2

1.1.2 Front panel assembly

1. Remove the upper cover.
2. Remove two screws (A).
3. Disengage four hooks (a) in the upper part of the front panel assembly and four pawls (b) in the both sides of it.
4. Disengage three pawls (c) in the lower part of the front panel assembly.
5. Raise the front panel assembly in the direction of the arrow (Fig. 1-2A) and turn it over as shown in Fig. 1-2B.

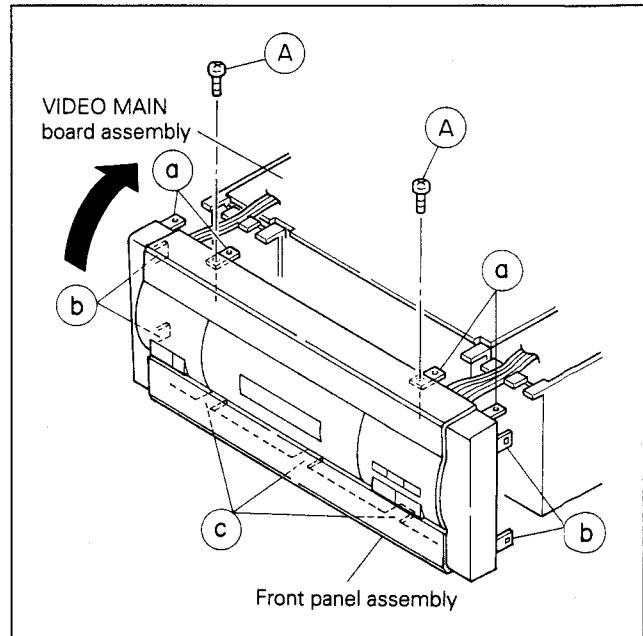


Fig. 1-2A Front panel assembly 1

6. Hold the front panel assembly with care to apply load to the VIDEO MAIN board as little as possible.
7. Remove fifteen screws (D), and then remove the SWITCH/JACK board assembly, TIMER board assembly and LED board assembly.

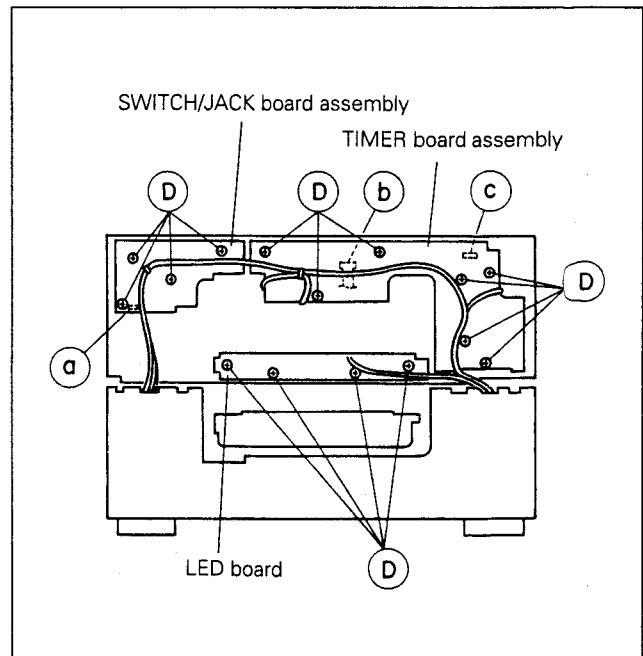


Fig. 1-2B Front panel assembly 2

8. Remove the wire (a), flat wire (b) and (c).

Note: When reassembling the respective boards onto the front panel assembly, pay careful attention to the wires not to be caught nor broken by screws.

1.1.3 Base plate

1. Remove three screws (E) from the rear panel.

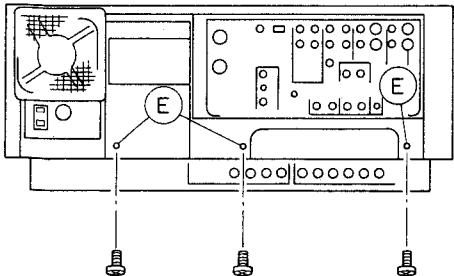


Fig. 1-3A Rear panel

2. Remove the upper cover.
3. Remove four screws (F) and two screws (G) and then detach the foot assembly.
4. Disengage two pawls (a) of the base plate from the front panel while detaching the base plate.

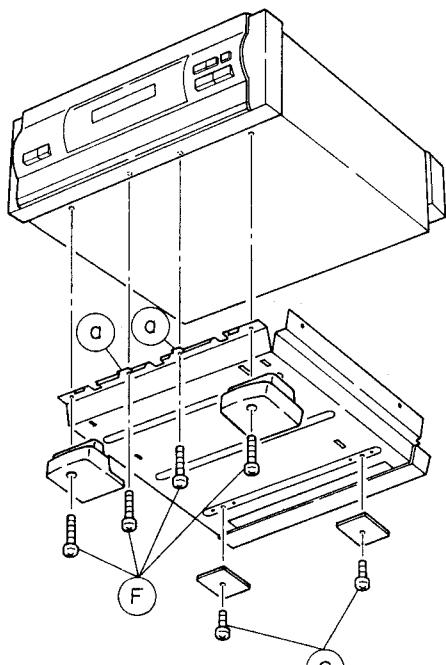


Fig. 1-3B Base plate 1

5. On detaching the base plate, place it as shown in Fig. 1-3C since it is internally fitted with the W-MAIN board and the W I/O board.

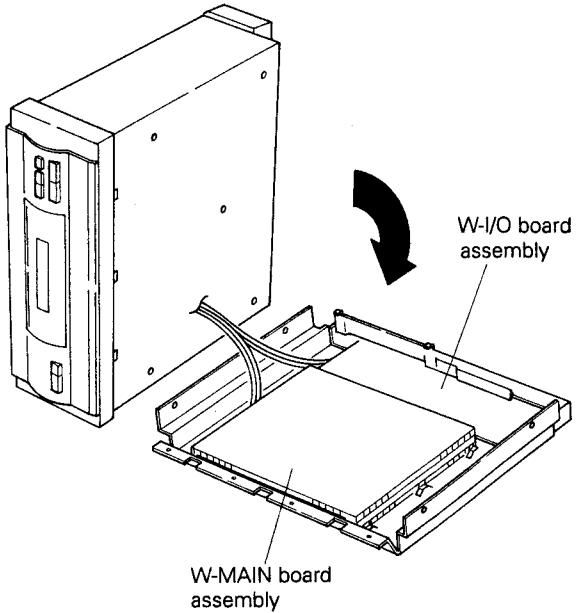


Fig. 1-3C Base plate 2

1.1.4 VIDEO MAIN board assembly

1. Remove the upper cover.
2. Remove three screws (D) and raise the VIDEO MAIN board assembly in the direction of the arrow. (Fig. 1-4)

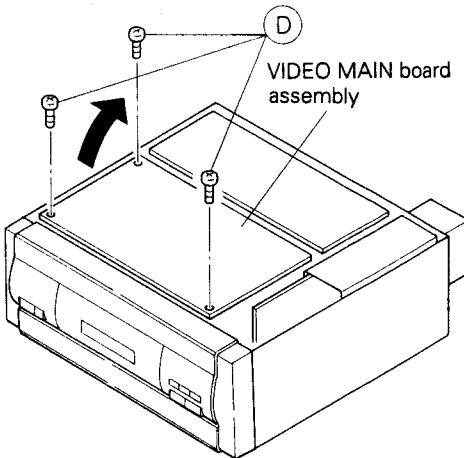


Fig. 1-4 MAIN board assembly

1.1.5 VIDEO I/O board assembly

1. Remove the upper cover.
2. Remove five screws (D).
3. Remove four screws (C) and raise the VIDEO I/O board assembly in the direction of the arrow.

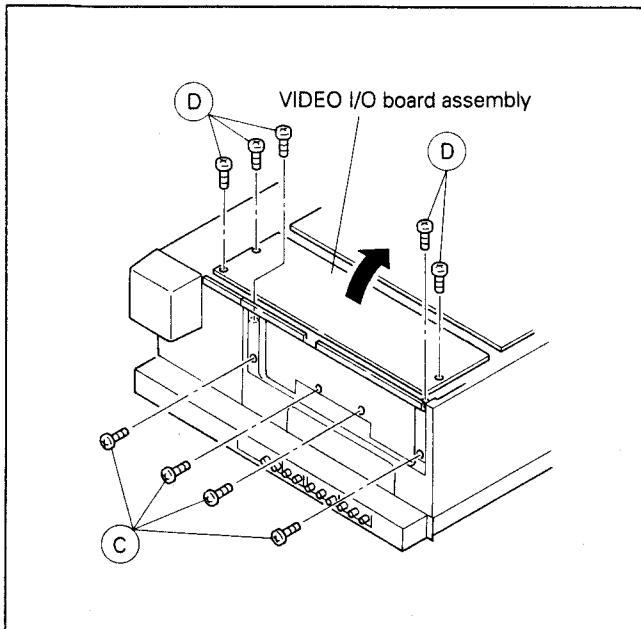


Fig. 1-5 VIDEO I/O board assembly

1.1.6 SWITCHING REGULATOR board assembly

1. Remove the upper cover.
2. Disconnect twelve connectors (a).
3. Remove four screws (D).
4. Raise the SWITCHING REGULATOR board assembly in the direction of the arrow.

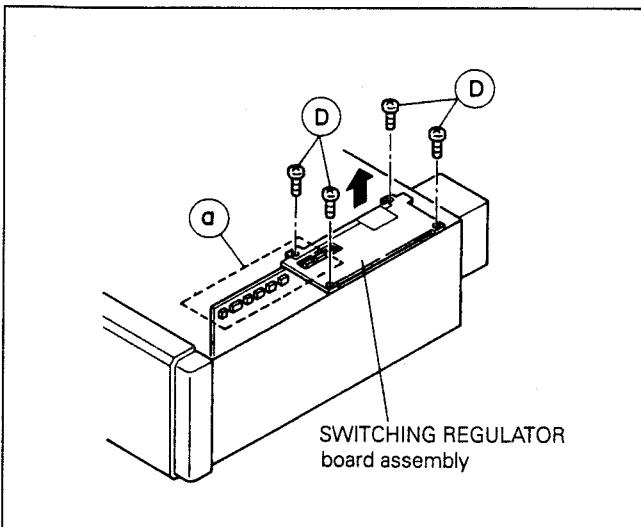


Fig. 1-6 SWITCHING REGULATOR board assembly

1.1.7 PRE/REC board assembly

1. Remove the upper cover, VIDEO MAIN board assembly and VIDEO I/O board assembly.
2. Disconnect three connectors (a), two flat cables (b) and remove the shield case.

3. Remove two screws (H) and two shield case flat cables (d) for flat cables.
4. Disconnect the connectors CN4 and CN5 of the MOTHER board assembly, and the connectors CN11 and CN12 of the VIDEO MAIN board.

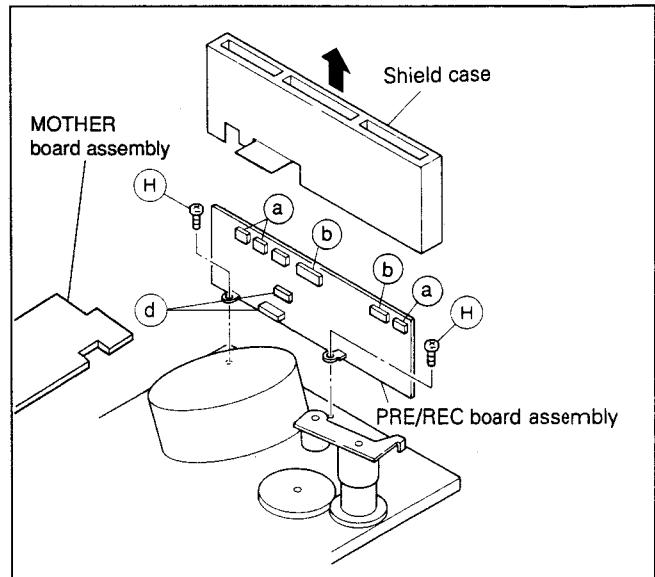


Fig. 1-7 PRE/REC board assy

1.1.8 Cassette housing assembly

Note: Before removing and reinstalling the cassette housing assembly, make sure to set the mechanism to the EJECT mode beforehand.

1. Detach the front panel assembly, upper cover and VIDEO MAIN board assembly. For the front panel assembly, disengagement of the hooks and pawls is enough for the purpose.
2. Remove two screws (F) and the shield cover.
3. Remove one screw (G) and the top bracket.
4. Remove four screws (H) and disconnect the connector (a).

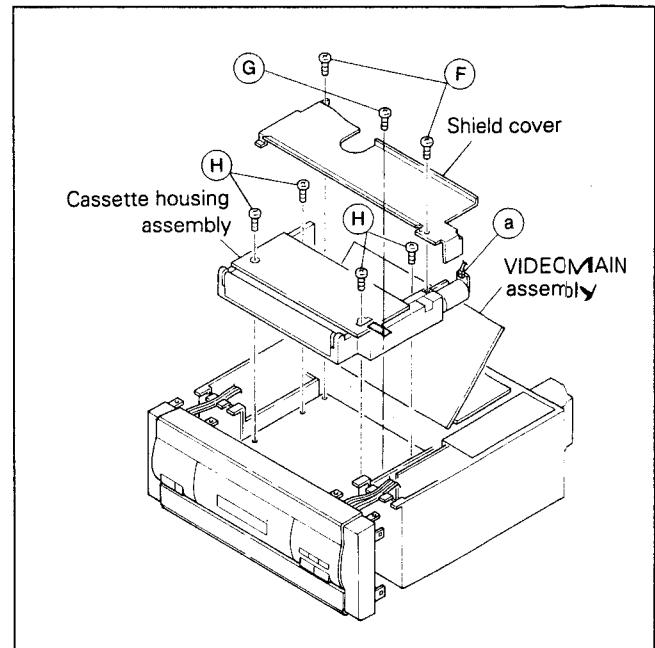


Fig. 1-8 Cassette housing assembly

1.1.9 Main deck assembly

1. Remove the upper cover, front panel assembly, cassette housing assembly and PRE/REC board assembly.
2. Remove three screws (J).
3. Disconnect the connectors (a) (four), (b) (two), (c) (one) and (d) (one).

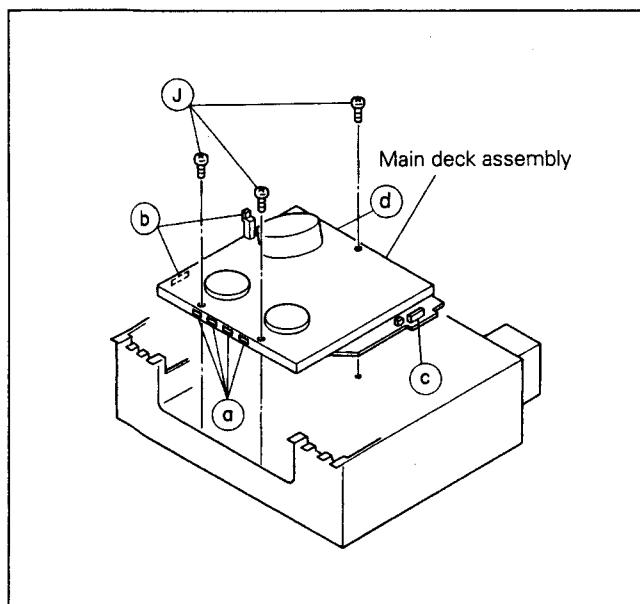


Fig. 1-9 Main deck assembly

1.1.10 W-MAIN board assembly, W-I/O board assembly

1. Remove the base plate.
2. Remove nine screws (H).
3. Release the pawls (a) of the W-MAIN board assembly shield from the hook (b), and then remove the W-MAIN board assembly and the W-I/O board assembly.
4. For removing the terminal cover assembly from the W-I/O board assembly, release it from all of ten pawls.

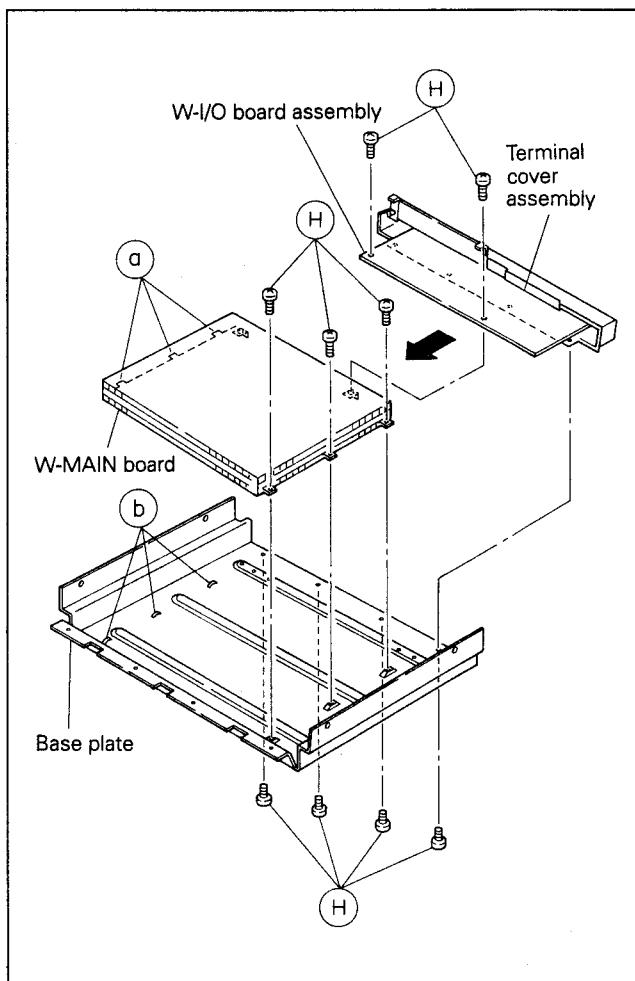


Fig. 1-10 W-MAIN and W-I/O board assemblies

1.2 NOTE ON SERVICING

When tape running is required for inspection of the W-MAIN, W-I/O and SERVO/MECHACON board assemblies that are installed on the base plate, place the main body with the switching regulator side (right side) down.

SECTION 2

MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

- (1) Before using a soldering iron, make sure to unplug the power cord of the set from the AC outlet.
- (2) When disconnecting and reconnecting connectors, pay careful attention to the wires not to damage them.
- (3) When the set has something wrong, don't disturb any adjustment part unreasonably without determination of the cause of trouble.

2.1.2 Special implements necessary for adjustment

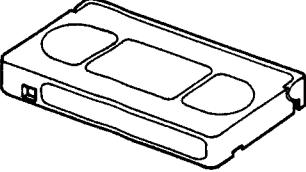
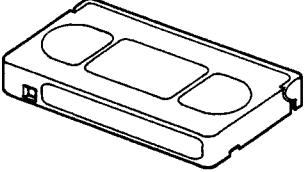
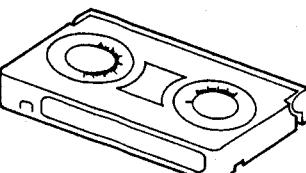
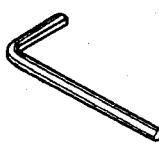
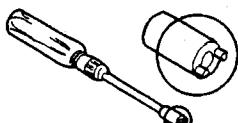
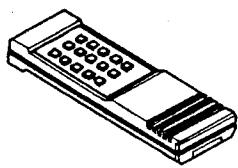
Alignment tape (SP) MHP, MBA, MBP-X	Alignment tape (EP) MH-1L
	
Cassette torque meter PUJ42881	Line head wrench PGJ04033-2
	
Taper nut driver PUJ50637	Presetting unit PTU94008
	

Table 2-1-1 Special implements necessary for adjustment

2.1.3 Manual takeoff of cassette tape

When a cassette tape loaded in the cassette housing cannot be ejected owing to fault in the electrical system, power failure, etc., take off the cassette tape manually according to the procedure mentioned below.

- (1) Unplug the power cord first, then, remove the top cover, MAIN board, shield cover.
- (2) Turn the loading motor on the main deck by hand in the direction of the arrow to set the mechanism to the unloading position. (Fig. 2-1-1) Carefully do this work not to soil the tape with grease.
- (3) Place the set uprightly on its back and remove the base plate (together with the W-MAIN and W-I/O board assemblies) and the MECHACON/

SERVO board assembly.

- (4) Turn the take-up reel motor in the direction of the arrow to pull in the slack of the tape. (Fig. 2-1-2)
- (5) Turn the gear of the cassette housing in the direction of the arrow and take out the cassette tape. (Fig. 2-1-1).

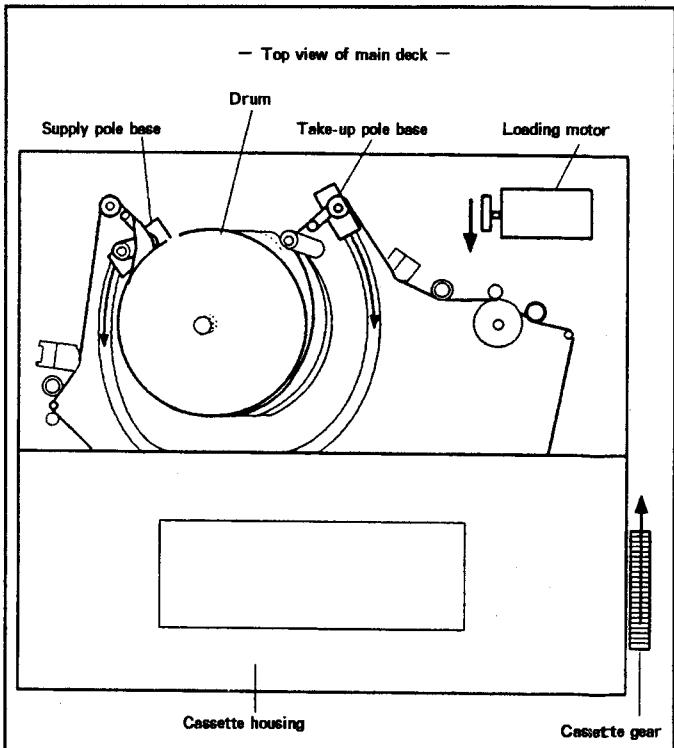


Fig. 2-1-1 Manual takeoff of cassette tape -

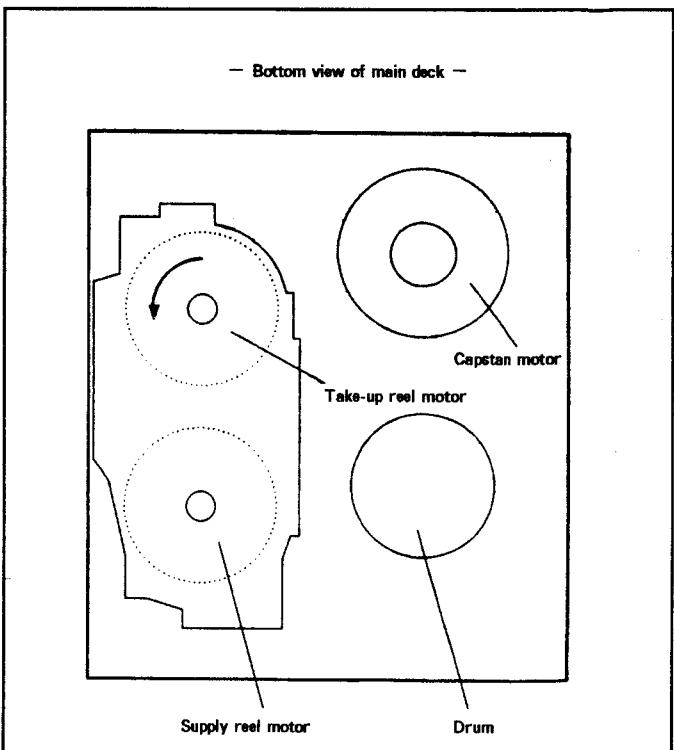


Fig. 2-1-2 Manual takeoff of cassette tape -

2.2 MAIN PARTS REPLACEMENT STANDARD

Periodic inspection and maintenance are important to ensure the original capacity and reliability of the set. The following table shows just a maintenance and replacement standard that is compiled based on general and average use of the set. The respective periods will widely vary depending on environmental and usage conditions of the set.

If the inspection and maintenance work for the following items are improperly performed, it not only shortens the periods but also gives bad influence on the set. Also keep it mind that rubber parts may deform and age even when the set is not used and the service life of the upper drum is particularly affected by environmental and usage conditions.

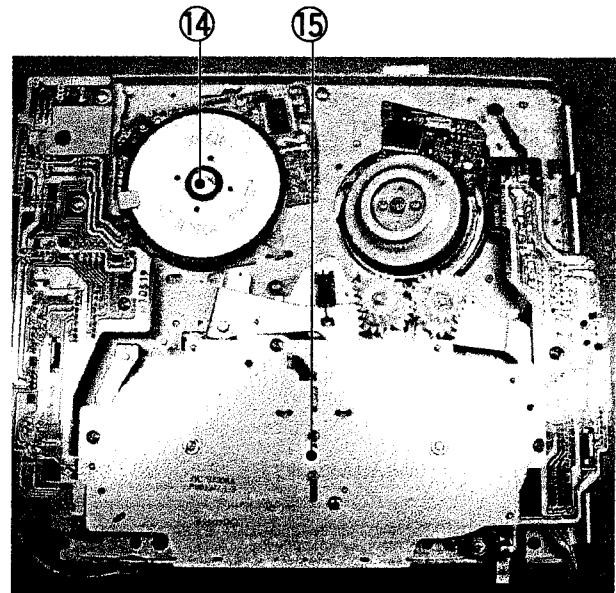
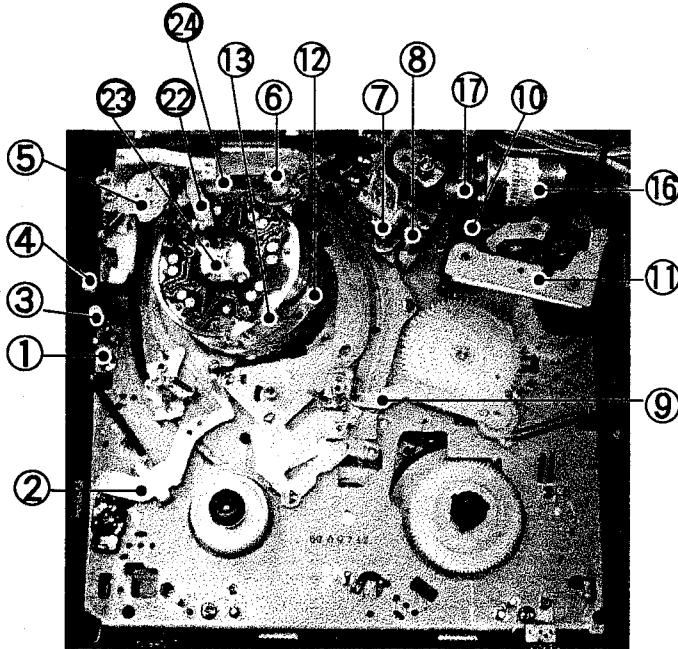
	No.	Part Name	Part No.	Standard service period								Remark
				1000	2000	3000	4000	5000	6000	7000	8000	
Tape transport system	①	S. guide shaft	—	★	★	★	★	★	★	★	★	
	②	Tension arm assy	PQ45314C-8									2.3.6
	③	S. guide roller	PQ43526-1-3									
	④	Full erase head	PEHE0286									
	⑤	S. impedance roller assy	PDM4300A-3									2.3.1
	⑥	T.U. impedance roller assy	PDM4283A-4	★	★	★	●	★	★	★	●	2.3.1
	⑦	A/C head assy	PQ45326B									2.3.5
	⑧	T.U. guide pole Upper flange Lower flange	PQ43526-1-3 PQ43506 PQ43670-1-1									
	⑨	Guide arm roller assy	PQ45320B									
	⑩	Capstan shaft	—	★	★	★	★	★	★	★	★	
	⑪	Pinch roller arm assy	PQ45280A	○	●	○	●	○	●	○	●	2.3.7
	⑫	Drum assy	PDV2324A	★	★	○	●	★	★	○	●	2.3.4
	⑬	Upper drum assy	PDM2251A	●	●	●	—	●	●	●	—	2.3.1
Driving system	⑭	Capstan motor	PU61379		○		●		○		●	2.3.8
	⑮	Reel motor assy	PU61347-1-3				●				●	2.3.9
	⑯	Mode control motor assy	PQ44300B-1				●				●	2.3.10
	⑰	Loading belt	PQM30003-29	●	●	●	●	●	●	●	●	2.3.10
	⑱	Cassette motor	PU60628-2				●				●	
	⑲	Capstan brake assy	PQ45311A-2		●		●		●		●	
	⑳	Main brake	M43108		●		●		●		●	Reel motor assy
Others	㉑	T.U. sub brake	PQ45309A-4		●		●		●		●	Reel motor assy
	㉒	Brush assy	PDM4305A		●		—		●		—	2.3.1
	㉓	Commuter assy	PQ41596C	○	●	○	—	○	●	○	—	2.3.1
	㉔	Head cleaner	PQ44837-2	●	●	●	●	●	●	●	●	2.3.4

★=Cleaning

○=Check and replacement if necessary, or check and clean.

●=Replacement

2.2.1 Main parts arrangement



2.2.2 Cleaning

Periodical cleaning of the tape transport system is desirable, however, it is almost impossible to put it into practice on schedule. Therefore, it is strongly recommended to clean the tape transport system when a set is brought in for repair, etc. For cleaning, use fine woven cotton cloth (like cotton shirting) moistened with ethylalcohol.

(1) Dirty video head causes rough playback picture and non-reproduction of picture in an extreme case.

To clean the video heads, lightly press such cotton cloth as mentioned above to the upper drum while turning it.

Note: Do not move the cleaning cloth on the upper drum since the video heads are weak against vertical force. Otherwise, the video heads may be damaged.

(2) Dirty tape guide not only gets the video heads dirty much more but also damages tapes.

(3) Dirty and dusty brush causes snow noise in playback picture and non-picture reproduction.

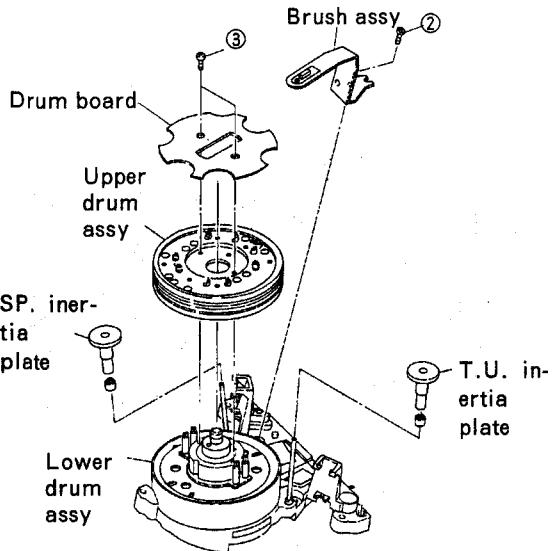
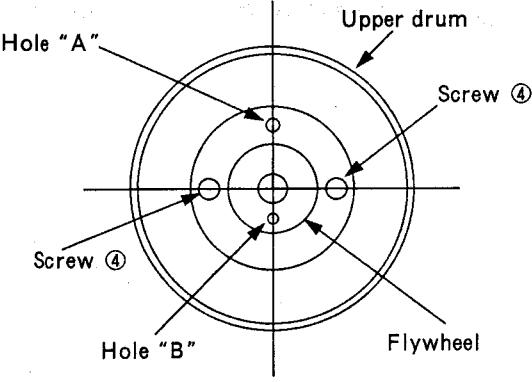
2.2.3 Oiling and greasing

If oil or grease on the other party is dirty and aged in case of parts replacement, wipe it off and apply new oil or grease as well as to do it for new parts.

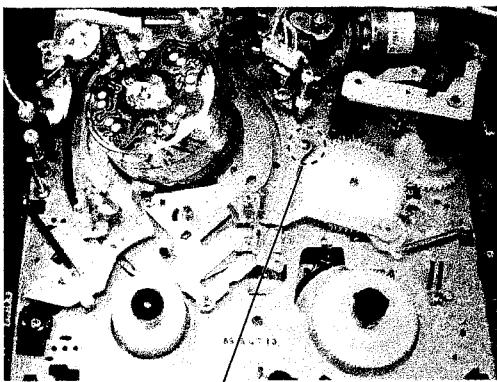
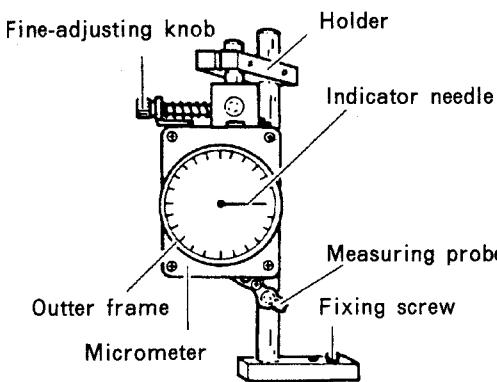
- (1) Oil and grease used in this set are as follows.
- (2) Grease the control cam every 2000 hours of operation.
- (3) For other parts, apply grease to them every 4000 hours of operation or on parts replacement.

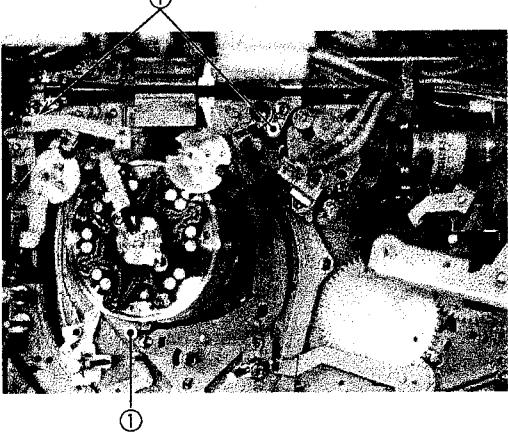
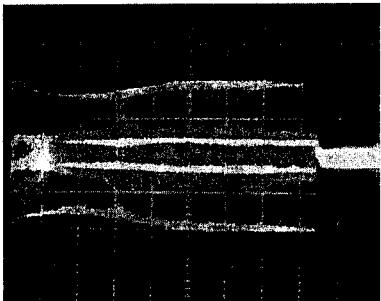
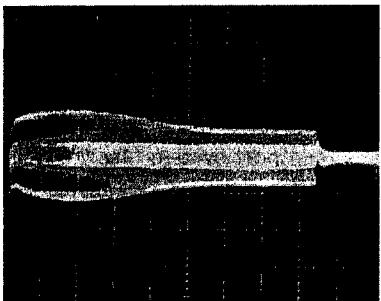
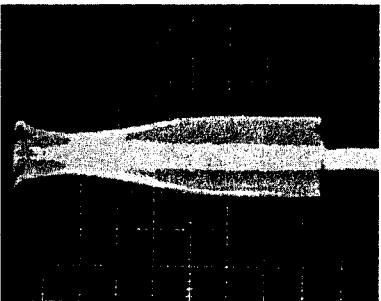
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Grease		
	Moriton Grease (Black)	MOS2-C
	Fuloil G-31KAV (Blue)	KANTO-G-31KAV
	Fuloil GB-TS-1 (Brass)	KANTO-GBT S-1

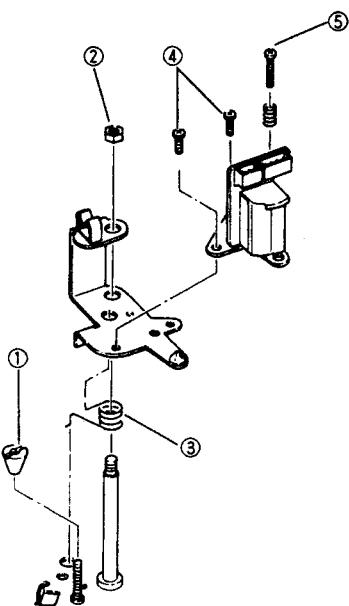
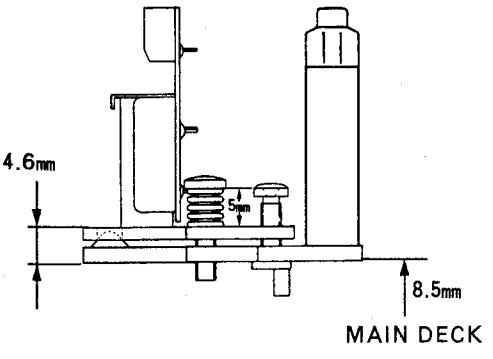
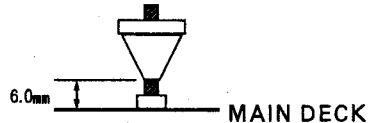
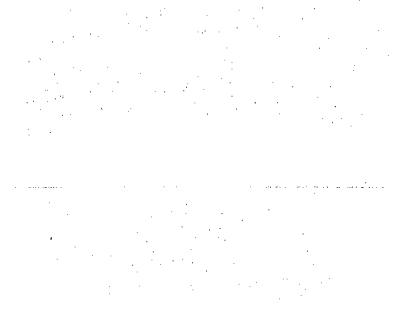
2.3 REPLACEMENT OF MAIN PARTS

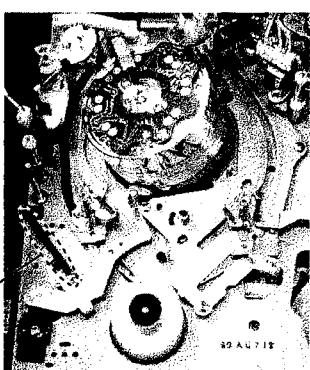
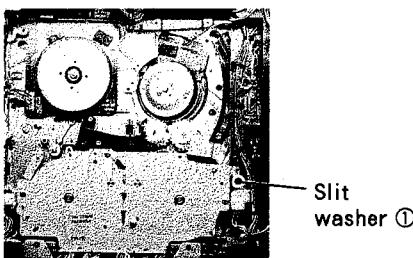
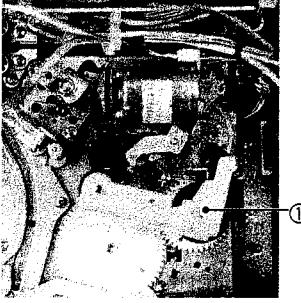
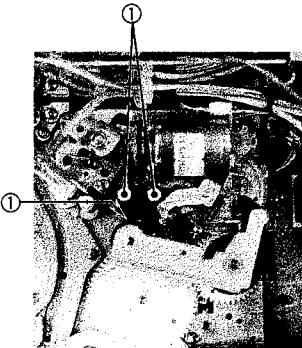
No.	Item and Reference Figure	Check and Adjustment Procedure
1	<p>Upper drum assembly — Removal of upper drum assembly —</p>  <p>Fig. 2-3-3 Removal of upper drum assembly</p>	<ol style="list-style-type: none"> (1) Remove the slit washer retaining the head cleaner assembly and then lift the head cleaner assembly upward to remove it. Note: Replace the slit washer removed once with new one. Part No.: PQM30017-6 (2) Remove the supply and take-up inertia plates. (3) Remove the screw ② and detach the brush assembly. (4) Unsolder soldered parts on the DRUM board. Note: Make sure to unsolder the parts and remove solder chips completely. If the upper drum is removed with incomplete unsoldering, the pin retained to the lower drum is removed together with since the pin is apt to come off. (5) Remove the two screws ③ and detach the upper drum assembly.
2	<p>— Reinstallation of upper drum assembly —</p>  <p>Fig. 2-3-4 Reinstallation of upper drum assembly</p>	<ol style="list-style-type: none"> (1) Clean the respective contact surfaces of the upper drum assembly and the lower drum assembly with alcohol. (2) Set the upper drum assembly so as to position its hole "A" ($\phi 2.7$) directly opposite at an angle of 180° the hole "B" ($\phi 1.6$) of the flywheel. Tighten the screw ④ with a torque of 0.441 to 0.49 N.m. (3) Proceed to check of the "Centering of upper drum" (steps (1) through (9) of the following item No. 3). (4) After confirming that centering of the upper drum is correctly adjusted, solder the DRUM board. (5) Fit the brush assembly and the head cleaner assembly to the upper drum. (6) After adjustment of the upper drum assembly, proceed to the following check and adjustment.

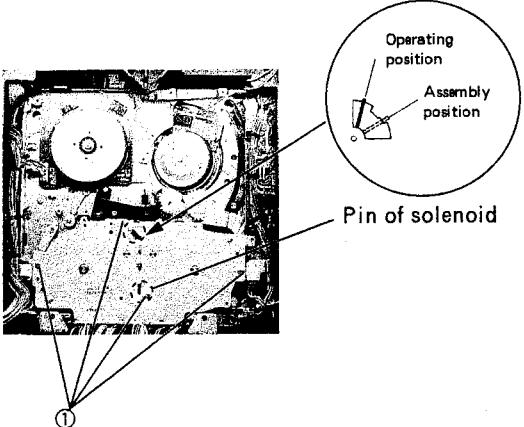
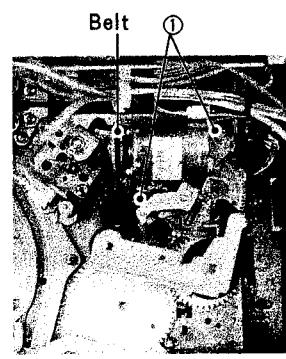
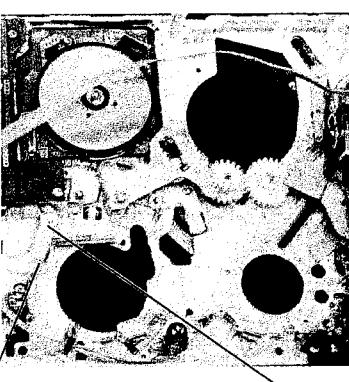
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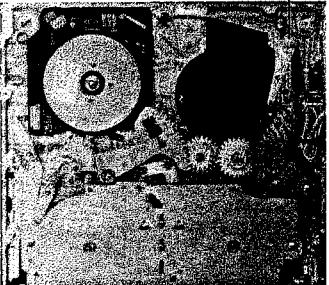
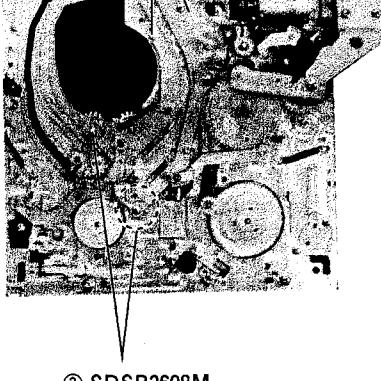
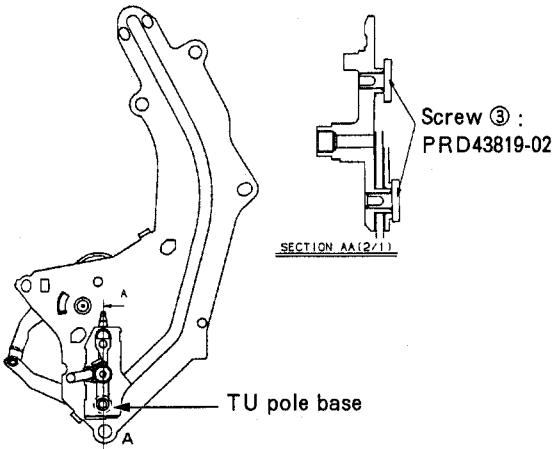
No.	Item and Reference Figure	Check and Adjustment Procedure
3	<p>Centering of upper drum If the upper drum is installed being deviated from the center of the drum shaft, it causes jitters, etc. After replacement of the upper drum assembly, make sure of no wobbling in the upper drum rim. Especially in the HD mode in which the video tracking is 19μ (same as VHS EP mode), considerable wobbling or off-center of the upper drum gives bad influence on the video recording and playback much more than that in the VHS SP mode.</p>  <p>Mounting position of microchecker</p> <p>Fig. 2-3-5 Mounting of microchecker</p> <p>Cautions on handling of microchecker</p> <ul style="list-style-type: none"> ① Carefully handle the microchecker not to get it being vibrated strongly and shocked by dropping since it is a high precision instrument. ② Do not apply unnecessary force to the probe. ③ Although the outer ring of the microchecker can be turned in a range of 0 graduations, do not turn it with a strong force (more than 300 g-cm). ④ Carefully set the microchecker not to make the probe touch any head directly. ⑤ Carefully set the microchecker so that the working direction of the probe points at the center of the upper drum. ⑥ If rubbing or grating sound is heard in measuring, it results from bad setting or abnormal contact of the microchecker and probe. Check that there is neither dust nor foreign substance on the upper drum and the tip of the probe.  <p>Microchecker: PUJ49712-2</p>	<p>Note: For centering adjustment of the upper drum, a setscrew (SDSP2610Z) is necessary besides a microchecker.</p> <ol style="list-style-type: none"> (1) Turn the mode motor counterclockwise (to the rear side) to enter the set into the loading end state. (2) Prepare a microchecker and remove the hexagon headed screw from the base of it. (3) Set the microchecker holder at the place shown in Fig. 2-3-5 and fix it with a prepared setscrew (SDSP2610Z). (4) Mount the microchecker with care not to knock the upper drum with it. (5) Turn the microchecker's fine adjustment knob slowly clockwise so that the pointer indicates "0" graduation. Pointer indication can also be adjusted by turning the outer ring of the microchecker, but the adjustable range is limited to a range of 0 graduations. To place the probe onto the drum assembly, set it between the 4th and 5th grooves of the drum from the top. (6) Turn the upper drum gently with care not to apply lateral pressure to it. (Turn it with a paper string, for example.) If the pointer deflects, it must be within ± 1 micron at maximum. (7) When the pointer deflection exceeds ± 1 micron, turn the microchecker's fine adjustment knob counterclockwise and remove the probe from the upper drum. Then, loosen two screws fixing the upper drum and slightly change the setting position of the upper drum. Tighten the two screws again. (8) Repeat the measurement and adjustment of the centering of the upper drum until the pointer deflects within ± 1 micron. (9) To dismount the microchecker, turn the fine adjustment knob counterclockwise first, and then remove it. <p>- Check of relative height -</p> <ol style="list-style-type: none"> (10) Turn on the POWER switch. (11) Connect the oscilloscope to TP6 on the VIDEO MAIN board and play back the MHP alignment tape. (12) Press the TRACKING switch while checking to see if the CH-1 and CH-2 FM waveforms become maximum at the same time. (AT: OFF) (13) If the two waveforms are remarkably different in time and level from each other, remove the upper drum once and clean its lower surface and the upper surface of the flywheel of the lower drum. Reassemble the upper drum to the drum assembly and repeat the above steps (1) through (12). (14) If the result of the repeated adjustment does not meet the requirement, it is recommended to replace the drum assembly.

No.	Item and Reference Figure	Check and Adjustment Procedure
4	<p>Drum assembly</p>  <p>Tightening torque: 0.49 N·m (5 kg·cm)</p> <p>Fig. 2-3-6 Removal of drum assembly</p>	<p>Note: When holding the drum assembly, don't hold the brush assembly. For replacing the pole base, remove the drum assembly beforehand.</p> <ol style="list-style-type: none"> (1) Remove the PRE/REC board. (2) Remove the head cleaner assembly and the inertia plates. (3) Remove three screws ① and disconnect the connector (DRUM MDA CN1), then replace the drum assembly with new one. (4) Fit the inertia plates to the drum assembly. (5) Follow the flowchart on page 2-4 for check and adjustment.
	<p>Reference Preliminaries to replace drum assembly</p>  <p>Tracking center</p>	<ol style="list-style-type: none"> (1) Connect the oscilloscope to TP6 on the [0] VIDEO MAIN board and trigger it externally with the signal of TP11 on the same board. (2) Play back the MHP alignment tape while observing the FM waveform with operation of the TRACKING control. (AT: OFF) (3) When the waveform in the supply side shows such a tendency as figures, the drum lead is worn out and the drum assembly needs to replace.
	 <p>Tracking (-)</p>	
	 <p>Tracking (+)</p>	

No.	Item and Reference Figure	Check and Adjustment Procedure
5	A/C head — Removal — 	(1) Required tools • Taper nut driver: PUJ50637 • Socket wrench: 7 mm span (2) Disconnect the connector from the A/C HEAD board. (3) Remove the taper nut ① for X-value adjustment. (4) Remove the nut ② first and then the A/C head together with the head base with care not to lose the spring ③ under the head base. (5) Remove two screws ④ and one screw ⑤ to remove the A/C head. At that time pay careful attention to the spring not to lose it. (6) Unsolder the A/C HEAD board and replace the A/C head with new one.
	Fig. 2-3-7 Removal of A/C head	
	— Reinstallation — 	(1) Prior to reassembling the A/C head to the main deck, roughly adjust the head height as shown by Fig. 2-3-8. (2) Reassemble the A/C head and its peripheral parts to the main deck in the reverse order of the disassembly. (3) When fitting the taper nut, adjust the height temporarily as shown in Fig. 2-3-9.
	Fig. 2-3-8 Temporary installation of A/C head	
	— Check and adjustment — 	<p><i>Note: For tape transport check before completion of the adjustment, don't use any alignment tape but use a general recording tape since there is a fear of tape damage.</i></p> <p><i>Proceed to check and adjustment in the following order.</i></p> (1) Adjustment of A/C head (see 2.5.4) (2) Check of tape transport system (see 2.6) (3) Adjustment of X-value (see 2.5.5) (4) Check of FM waveform (see 2.5.2) (5) Adjustment of audio circuit (see 3.6, page 3-10)

No.	Item and Reference Figure	Check and Adjustment Procedure
6	Tension arm assembly — Removal —  <p>Fig. 2-3-10 Removal of tension arm assembly</p>	(1) Remove the cassette housing. (2) Remove the SERVO/M-CTL board and then remove the DECK TERMINAL board from the bottom of the main deck. (Remove two screws.) (3) Remove the slit washer ①. (See Fig. 2-3-11). (4) Disengage the spring ② that is engaged between the tension arm assembly and the spring adjust assembly from the former, and lift the tension arm assembly up to remove it. Note: Replace the slit washer with new one (Part No. PQM30017-7).
	— Reinstallation —  <p>Fig. 2-3-11 Reinstallation of tension arm assembly</p>	(1) Reassemble the tension arm assembly and its peripheral parts to the main deck in the reverse order of the disassembly. (2) Load the cassette torque meter and play it in the SP mode while checking to see if the back tension is 41 to 54 g-f (g-cm). (3) Proceed to the following adjustment. ① Adjustment of tape transport system (see 2.6).
7	Pinch roller arm assembly  <p>Fig. 2-3-12 Removal of pinch roller arm assembly</p>	Note: Proceed to the following work with the mechanism set in the Assembly mode. (See section 2.4.1.) (1) Remove the slit washer ① and lift the pinch roller arm assembly up to remove it. (Slit washer PQM30017-12.)
8	Capstan motor  <p>Fig. 2-3-13 Removal of capstan motor</p>	(1) Remove the MAIN DECK assy. (2) Remove three screws ① and disconnect the connector, and then remove the capstan motor.

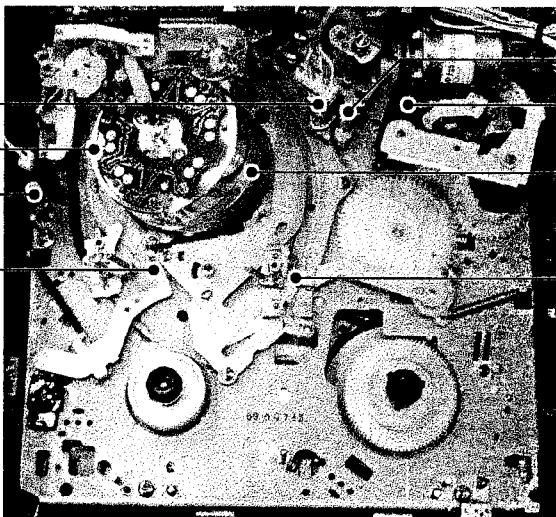
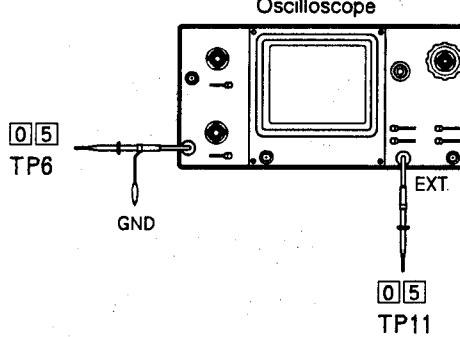
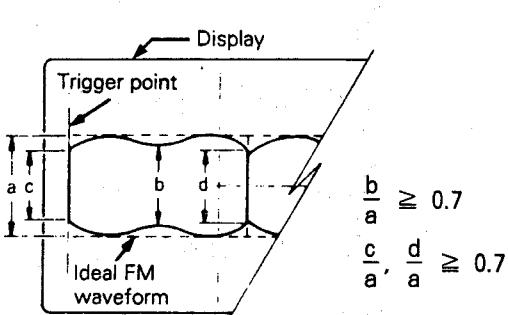
No.	Item and Reference Figure	Check and Adjustment Procedure
9	Reel motor  <p>Operating position Assembly position Pin of solenoid</p> <p>Fig. 2-3-14 Removal of reel motor</p>	(1) Remove the SERVO/M-CTL board. (2) Set the sensor LED at the Assembly position as shown in the figure. (3) Turn the mode motor counterclockwise (toward the rear side) to enter the mechanism into the loading end mode. (4) Remove four screws ① and then remove the reel motor assembly. (5) Set the sensor LED of a new reel motor in assembly position. (6) Set the new reel motor assy. (7) Reset the sensor LED to the Operation position.
10	Mode motor  <p>Belt ①</p> <p>Fig. 2-3-15 Removal of mode motor</p>	(1) Disengage the belt from the motor pulley. (2) Remove two screws ① and then detach the mode motor together with the motor bracket. (3) Disconnect the connector and remove the mode motor.
11	Reel brake assembly  <p>Reel brake Slit washer : PQM30017-6</p> <p>Fig. 2-3-16</p>	(1) Remove the SERVO/M-CTL board. (2) Remove the reel motor. (Refer to 2.3.9.) (3) Remove the slit washer and then remove the reel brake assembly. Note: Replace the slit washer with new one (PQM30017-6).

No.	Item and Reference Figure	Check and Adjustment Procedure
12	<p>Pole base assembly</p> <p>① Slit washer : PQM30017-44</p> 	<p>(1) Remove the drum assembly. (Refer to 2.3.4.)</p> <p>(2) Supply pole base assembly</p> <p>① Turn the loading motor counterclockwise to set the mechanism to the loading end position.</p> <p>② Remove the slit washer ① and lift the supply pole base assembly up to remove it.</p> <p>(3) Take-up pole base assembly</p> <p>① Remove the A/C head.</p> <p>(4) Remove two screws ① and three screws ② and remove the take-up loading assembly. When removing the screws ②, pay attention to the spacers not to lose them.</p> <p>(5) Remove two screws ③ and lift the take-up pole base assembly up to remove it.</p>
	<p>Fig. 2-3-17 Removal of supply pole base</p> <p>① SDSP2608M</p>  <p>② SDSP2608M</p>	
	<p>Fig. 2-3-18 Removal of take-up pole base</p>  <p>Screw ③ : PRD43819-02</p> <p>SECTION AA(2/1)</p> <p>TU pole base</p>	
	<p>Fig.2-3-19 Removal of take-up pole base</p>	

2.4 ASSEMBLING OF MECHANISM

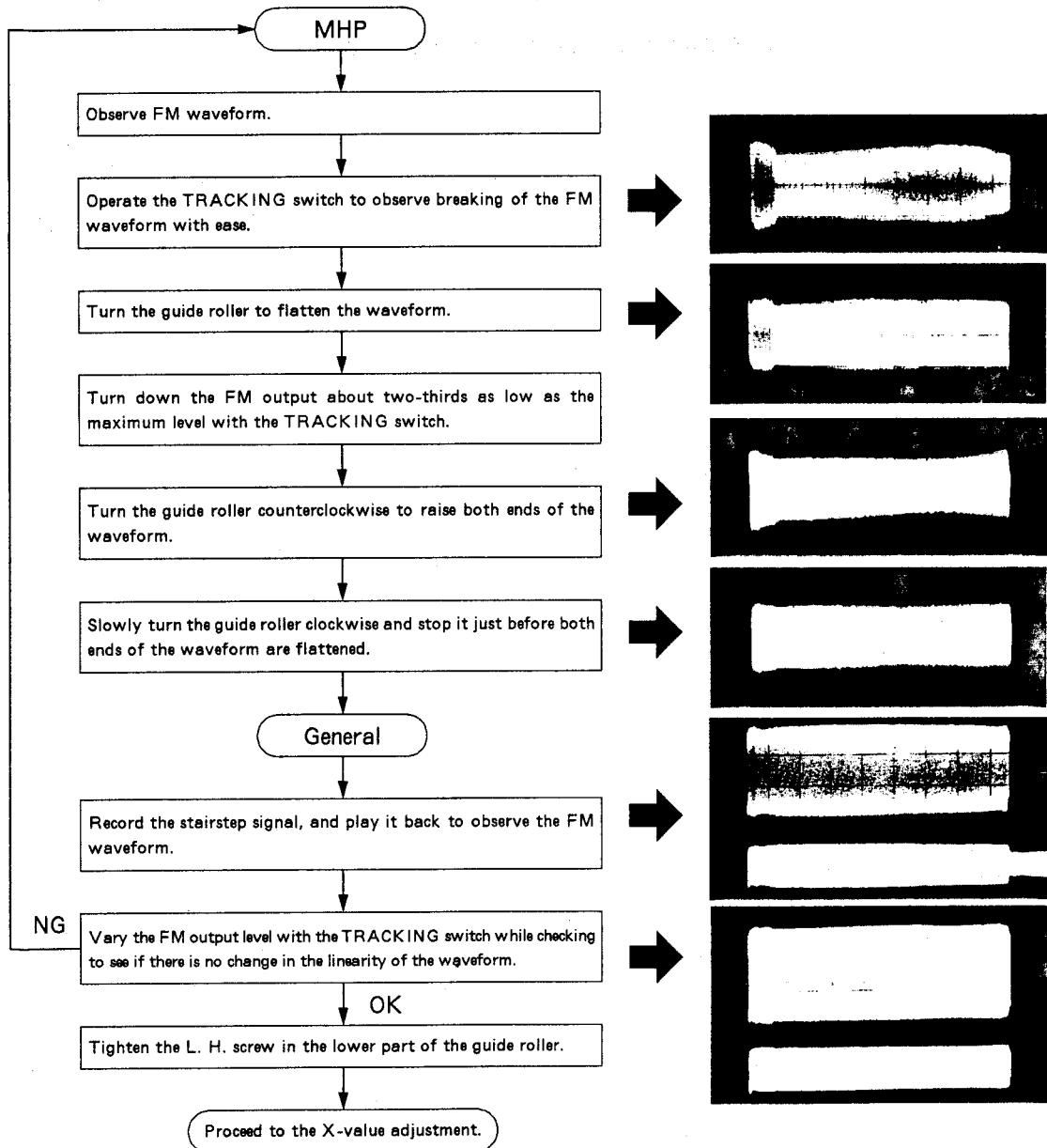
No.	Item and Reference Figure	Check and Adjustment Procedure
There is a close relation between the rotary encoder and the mechacon circuit in the mechanism of the set. In other words, operation of respective mechanism parts is determined according to the rotation angle of the rotary encoder, namely turning angle of the cam gear. If anything of mechanism component parts is abnormally installed, it causes malfunction of the mechanism.		
1	<p>Cam gear Pinch roller cam Pinch roller Control cam Guide arm gear</p> <p>Cam gear Hole Pinch roller cam Control cam Rotary encoder Temporary fix control cam with precision screwdriver. Guide arm gear</p> <p>Fig. 2-4-1 Assembling phase of mechanism</p>	<ol style="list-style-type: none"> Turn the control cam so that its hole overlaps the hole of the main deck, and insert a precision screwdriver, etc. into the holes to fix them. Assemble the pinch roller cam to the control cam as the hole of the pinch roller cam is positioned as shown in Fig. 2-4-1. Assemble the pinch roller to the pinch roller cam. Adjust the phase of the rotary encoder and engage the cam gear with the pinch roller cam with care of its phase. Points of the assembling work <ol style="list-style-type: none"> Fix the control cam with a precision screwdriver, etc. Engage the pawl of the cam gear with the dimple of the rotary encoder.
2	<p>Loading gear (supply) Loading gear (take-up) Cancel lever Arm gear</p> <p>SP. loading gear TU. loading gear Control cam Arm gear Cancel lever</p> <p>Fig. 2-4-2 Assembling phase of mechanism</p>	<ol style="list-style-type: none"> Engage the two loading gears (supply and take-up) and cancel lever together so that four holes of them are positioned in the correct phase. Turn the mode motor 12 to 14 times in the direction of loading (toward the rear side). Set the holes of the arm gear and the take-up loading gear in the correct phase to each other and engage them in the same manner as the step (1). <p><i>Note: In actual, the holes of the loading gears don't face directly the opposite holes respectively because rotation of the loading gears is limited in a certain angle.</i></p>
3	<p>Adjustment of tension sensor position</p> <p>Spacer (0.1mm) Tension arm shaft Tension sensor</p> <p>Positioning of tension sensor Move the tension sensor to the upper right at an angle of 45° (in the direction indicated by the arrow) while setting it so that the gap between the tension sensor and the tension arm shaft is 0.1 mm.</p> <p>Fig. 2-4-3 Positioning of tension sensor</p>	<ol style="list-style-type: none"> Necessary jig: Spacer of 0.1 mm thick or PRD40300 (earth plate on the sub deck of the BR-S811 series) Turn off the POWER switch and remove the cassette housing assembly. Turn the mode motor counterclockwise (toward the rear side) to enter the mechanism into the loading end state. Insert a spacer of 0.1 mm thick between the tension sensor and the tension arm shaft as shown in the figure. Move the tension sensor in the direction of the arrow (upper right) so that the gap between the tension sensor and the tension arm shaft is 0.1 mm. When the gap is as specified, tighten the screw ②. Load the cassette torque meter and play it in the SP mode while checking to see if the back tension is 41 to 54 g-f (g·cm). (See section 3.3) After the above adjustment, reinstall the cassette housing.

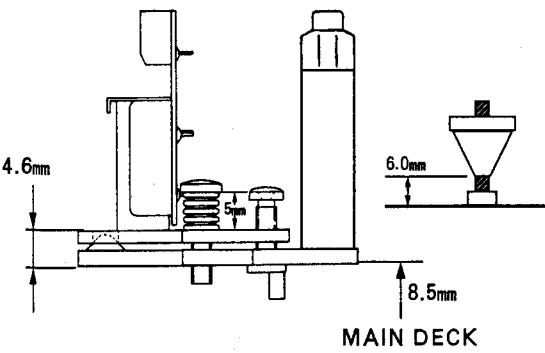
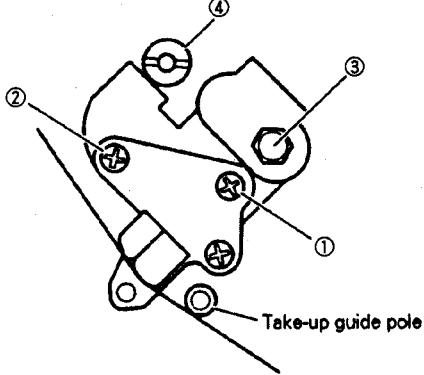
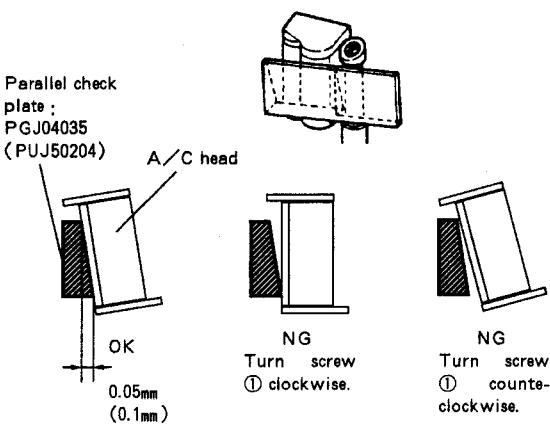
2.5 ADJUSTMENT OF INTERCHANGEABILITY

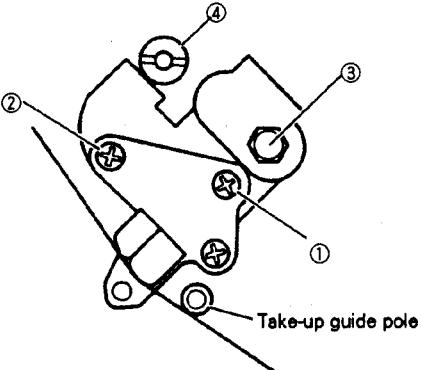
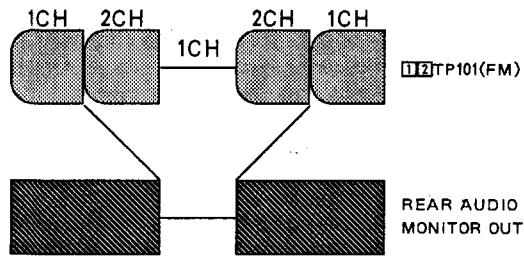
No.	Item and Reference Figure	Check and Adjustment Procedure
	<p>When the upper drum assembly, drum assembly, or A/C head assembly is replaced, interchangeability must be adjusted after replacement.</p> <p>1 Names and locations of main parts</p> 	
2	<p>Check of FM waveform</p>  <p>Fig. 2-5-2 Connection of oscilloscope</p>	<p>Note: Prior to loading an alignment tape, check to see whether tape transport is smooth or not with a general recording tape.</p> <ol style="list-style-type: none"> (1) Connect the oscilloscope to TP6 and TP11 (for external trigger) on the VIDEO MAIN board [05], and observe the FM waveform on the + slope. (2) Play back the MHP alignment tape and maximize the FM waveform with the TRACKING control. As the maximum level is regarded as "a" in the figure, confirm that respective levels (b, c, d) meet the specifications expressed by the equations. (3) When the maximum level "a" is set for 4 scale divisions on the oscilloscope screen, the levels "b", "c" and "d" must be 2.8 scale divisions or more respectively. (4) To set the maximum level "a" for 4 scale divisions, adjust the GAIN control of the oscilloscope as the TRACKING control is set at the maximum position. <p>Fig. 2-5-3 Desirable FM waveform</p> 
		<pre> graph TD START([START]) --> PLAY[Play back the MHP alignment tape.] PLAY --> MEET[FM waveform meets the specifications.] MEET -- YES --> FINISH([FINISH]) MEET -- NO --> LINEARITY[Proceed to the linearity] LINEARITY --> X[FM waveform is maximum with the TRACKING control set at the center position.] X -- YES --> FINISH X -- NO --> X_VALUE[Proceed to the X-value] </pre>

No.	Item and Reference Figure	Check and Adjustment Procedure
3	<p>Interchangeability — Adjustment of linearity —</p> <p>(2mm)</p> <p>Hex. driver or hex. wrench</p> <p>Guide roller</p> <p>Loosen LH. screw, but don't it too much.</p>	<p>(1) Cautions on adjustment</p> <ul style="list-style-type: none"> For the linearity adjustment, play back the MHP alignment tape. If FM dropout still continues after adjustment of the guide roller, the drum assembly needs to replace. (Only when the CH-1 and CH-2 waveforms show the same tendency.) Refer to the FM waveforms with the worn-out lower drum in the section 2.3, No. 4 (replacement of drum assembly). Required tool and jig Hex. head driver: PGJ04034 (2 mm span) L. H. screw: PGJ04033

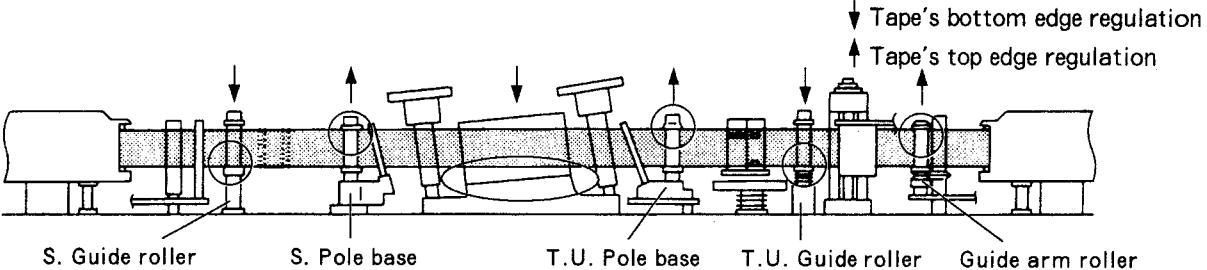
Fig. 2-5-4 Preparation for interchangeability



No.	Item and Reference Figure	Check and Adjustment Procedure
4	<p>Adjustment of A/C head</p> <p>If the A/C head is incorrectly positioned, it causes decline of audio output, deterioration in the S-to-N ratio, or in the worst case, servo is misaligned owing to failure in pickup of control signal when a recorded tape is played back.</p>  <p>Fig. 2-5-5 Adjustment of A/C head height</p>  <p>Fig. 2-5-6 A/C head adjusting screw</p>  <p>Fig. 2-5-7 Check of parallelism</p>	<p>(1) Required tools and jigs Nut driver: 7 mm Alignment tapes: MHP, MBA Parallel check plates: PGJ04035 (0.05 mm), PUJ50204 (0.1 mm)</p> <p>(2) Rough check of A/C head height on installation ① In the preliminary stage of the tape transport check, roughly adjust the A/C head height for conducting the adjustment with ease. (Fig. 2-5-5)</p> <p>(3) Adjustment of tilt (forward bent) ① Adjust the setscrew ① so that the A/C head tilts 0.05 mm as measured with the parallel check plate (PGJ04035). If there is a space between the A/C head and the upper part of the parallel check plate, the A/C head has a little tilt. In this case, tighten the setscrew ① to give the A/C head the tilt much more. If there is a space between the A/C head and the lower part of the parallel check plate, the A/C head has a large tilt. In this case, loosen the setscrew ① to decrease the tilt. (Fig. 2-5-7) ② Check that the tape is neither damaged nor wrinkled at the lower flange of the take-up guide pole. If so, fine adjust the height of the take-up guide pole.</p> <p>(4) Adjustment of head height and azimuth ① Connect the CH-1 of the oscilloscope to the AUDIO OUT terminal and set it to the normal mode. ② Play back the MBA alignment tape while adjusting the A/C head height with the hex. nut ③ to maximize the output level. (Head height adjustment) ③ Play back the MHP alignment tape while adjusting the screw ② to maximize the output level. (Azimuth adjustment) ④ Repeat the above steps ② and ③ alternately to obtain a precise result.</p> <p>(5) Check of A/C head parallelism ① Check to see if the A/C head has a tilt within 0.1 mm as measured with the parallel check plate (PUJ50204). ② If the A/C head is at a tilt over 0.1 mm, repeat the steps (3) through (4) mentioned above until the result is satisfactory.</p>

No.	Item and Reference Figure	Check and Adjustment Procedure
5	<p>Adjustment of X-value If the X-value is adjusted wrong, it results in time lag between picture and normal sound when a tape recorded by a set whose X-value is correctly adjusted is played back.</p>  <p>Fig. 2-5-8 A/C head adjusting screw</p> <p>Adjust two phases (± 1 field)</p>  <p>Fig. 2-5-9 X-value adjustment</p> <div style="border: 1px solid black; padding: 5px;"> <p>• How to synchronize oscilloscope with set</p> <ol style="list-style-type: none"> ① Set the oscilloscope's sweep time to 10 msec/div. ② Synchronize the oscilloscope with the D. FF signal while turning its HOLD OFF knob in the direction of (+) to stabilize non-recorded portion. </div>	<p>(1) Required tools Taper nut driver: PUJ50637 Alignment tapes: MBP-X, MHP</p> <p>(2) X-value adjustment</p> <ol style="list-style-type: none"> ① Press the AUTO TRACKING button to turn off the AT display. ② Press the AUDIO OUTPUT SELECTOR button to select the normal audio output. ③ Connect the oscilloscope's CH-1 to TP6 on the VIDEO MAIN board [0] and CH-2 to the AUDIO OUT terminal on the rear panel. ④ Trigger the oscilloscope externally with the signal of TP11 on the VIDEO MAIN board [0]. Play back a self-recorded tape while checking to see if the FM waveform is maximum with the TRACKING switch set at the center position. ⑤ If not, check and adjust the tracking preset. (Refer to 3.9.1.) ⑥ Set the TRACKING switch to the center position. ⑦ Play back the MBP-X alignment tape. ⑧ Adjust the taper nut so that FM output is maximum and the phases of non-recorded portions of the AUDIO and FM signals correspond to each other (± 1 field). ⑨ Play back the MHP alignment tape while checking to see if the FM waveform is maximum with the TRACKING switch set at the center position. ⑩ If the result of the above step ⑨ is unsatisfactory, change the setting position of the A/C head to a point where the FM waveform is maximum near by the setting position at the step ⑧. <p>(3) Proceed to check and adjustment in the following order.</p> <ol style="list-style-type: none"> ① EP mode auto tracking preset. <i>Note: If the alignment tape ejects automatically, repeat the X-value adjustment.</i> 1. Play back the MH-1L alignment tape staircase signal. 2. After the AT LED on the front panel has changed from blinking to continuous lighting, press the button "D" on the presetting unit while confirming that the AT LED goes out. 3. Press the button "D" once more while confirming that the AT LED goes out again. ② MP tracking preset. (See section 3.9.1.)

2.6 ADJUSTMENT OF TAPE TRANSPORT SYSTEM

No.	Item and Reference Figure	Check and Adjustment Procedure
The tape transport system generally need not to adjust since it has precisely been adjusted before shipment. However, it needs check and adjustment when the set has been used for a long time and parts of the tape transport system is replaced.		
1	Check of tape transport system	<p>(1) Necessities ▪ Thin tape: ST-180</p> <p>(2) Load a thin tape and conduct the following checks with the leading and trailing portions of the tape.</p> <p>(3) Repeat loading and unloading operations alternately while checking to see if the tape is neither damaged nor wrinkled at the take-up guide roller, guide roller, guide arm roller.</p> <p>(4) Conduct the same check in the PLAY, FWD and REV modes respectively.</p>  <p style="text-align: center;">Fig. 2-6-1 Check of tape transport system</p>



SECTION 3

ELECTRICAL ADJUSTMENT

3.1 PRELIMINARIES TO ELECTRICAL ADJUSTMENT

3.1.1 Precautions

Although the procedures appearing in this section are provided for electrical check and adjustment after replacement of mechanism parts and board assemblies, make sure to refer to these procedures on repairing electric circuits.

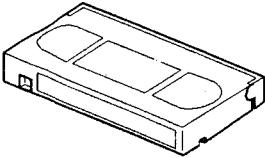
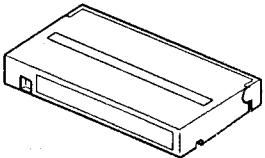
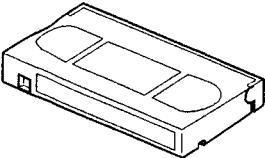
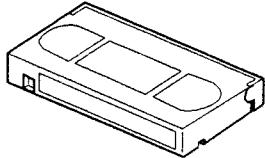
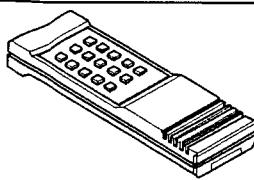
When there is any failure in the electric circuits, investigate the cause and point of the trouble with the test implements specified below first, and then proceed to repair, replacement and adjustment. If the required test implements are unavailable in field service, don't disturb controls and adjustment parts unreasonably.

3.1.2 Implements required for electrical adjustment

1. Color TV monitor
2. Oscilloscope
3. Color bar signal generator
4. Frequency counter
5. Audio signal generator and Audio level meter
6. Digital voltmeter
7. Blank tape for recording and playback
8. Video sweep generator
9. HDTV signal generator

Note: Use the oscilloscope probe at a ratio of 10: 1 unless otherwise specified.

3.1.3 Special implements for adjustment

Alignment tape (SP) MHP	Alignment tape WHP-L
	
Alignment tape (S-VHS) MHV-2H, MH-1H	Alignment tape (FM AUDIO) MH-F1
	
Presetting unit PTU94008	Jig set for chip parts replacement * YTU94038A
	

* This facilitates chip parts replacement.

Table 3-1-1 Required special implements

3.1.4 Color bar signal, color bar pattern, video sweep signal

● Color bar signal

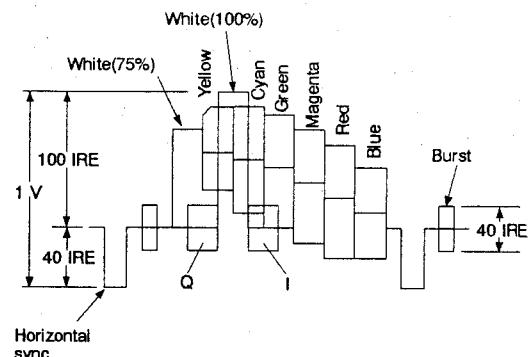


Fig. 3-1-1 Color bar signal waveform

● Color bar pattern

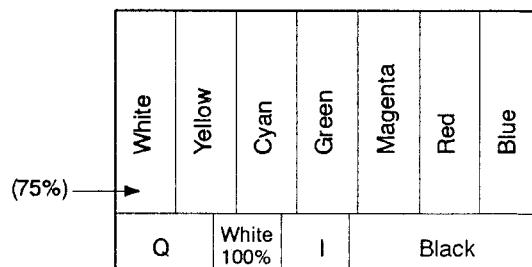


Fig. 3-1-2 Color bar pattern

● Video sweep signal

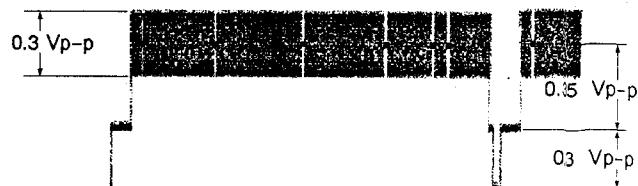


Fig. 3-1-3 Video sweep signal

● HD color tape

WHP-2 (color bar)

This alignment tape is for checking the HD PB circuit.

3.1.5 HD color bar signal (Y, PB, PR), HD color bar pattern

- HD color bar signal (Y)

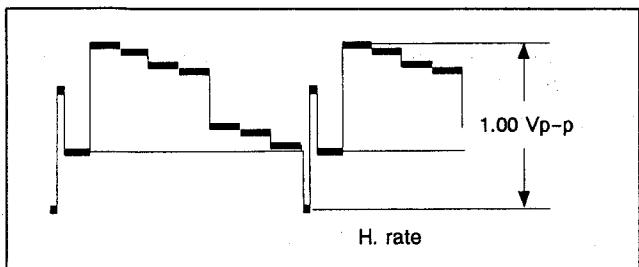


Fig. 3-1-4 HD color bar signal (Y) waveform

- HD color bar signal (PB)

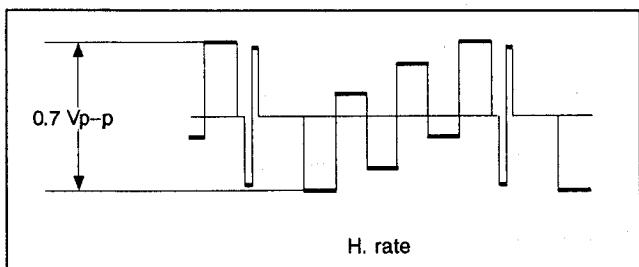


Fig. 3-1-5 HD color bar signal (PB) waveform

- HD color bar signal (PR)

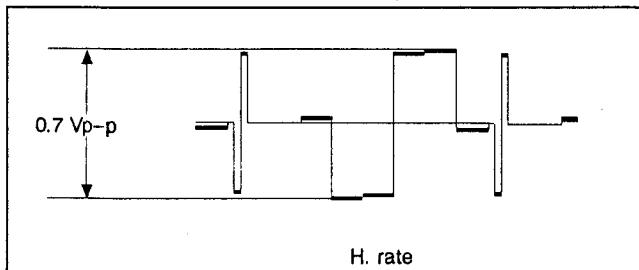


Fig. 3-1-6 HD color bar signal (PR) waveform

- HD color bar pattern

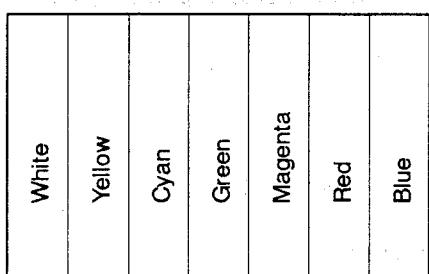


Fig. 3-1-7 HD color bar pattern

3.2 ELECTRIC CIRCUITS

Note: Check points and adjustment parts are located on the SW REGULATOR board unless otherwise specified.

3.2.1 SWD 5 V output voltage

Signal	• HD color bar signal
Mode	• Recording (Normal)
Test instrument	• Digital voltmeter
Check point	• CN3 pin 1
Adjustment part	• R23 (SWD 5V)
Standard value	• 5.34 ± 0.05 V DC

1. Connect a digital voltmeter to pin 1 of CN3.
2. Adjust R23 to obtain 5.34 ± 0.05 V DC as the output voltage.

3.3 SERVO CIRCUIT

Note: Check points and adjustment parts are located on the MOTHER board unless otherwise specified.

3.3.1 Tension

Signal	• No signal
Mode	• EE
Test instrument	• Digital voltmeter
Check point	• TP202 (TENSION VOLTAGE)
Adjustment part	• R202 (TENSION REW) • R201 (TENSION FWD)
Standard value	• 0.00 ± 0.05 V DC (R202) • 5.00 ± 0.05 V DC (R201)

1. Turn off the main power switch without any cassette tape being loaded.
2. Shortcircuit between TP205 and TP206 while turning on the power switch.
3. Set the tension arm to the REW MAX position and adjust R202 to obtain 0.00 ± 0.05 V DC as the voltage at TP202.
4. Set the tension arm to the FWD MAX position and adjust R201 to obtain 5.00 ± 0.05 V DC as the voltage at TP202.
5. Again check the step 3. If the voltage is not 0.00 ± 0.05 V DC, repeat the steps 3 and 4 until both the voltages meet the requirement.
6. Set the tension arm to the PLAY position and fine adjust R202 so that the voltage at TP202 is 3.22 ± 0.05 V DC. After this adjustment, check to see if the voltage at TP202 is 4.7 to 5.5 V DC with the tension arm set to the FWD MAX position.

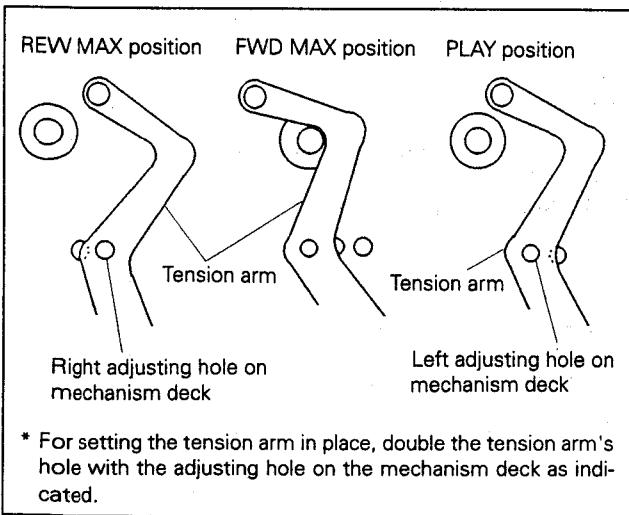


Fig. 3-3-1 Tension pole position

3.3.2 PB switching point

Note: • Set the remote control reception code of the main unit to the mode A.
• Turn off the auto-tracking and TBC without fail.

Signal	• Alignment tape (MHP) • Stairstep signal
Mode	• PB • Auto-tracking: OFF • TBC: OFF
Test instrument	• Oscilloscope
Check point	• TP10 (VIDEO OUT) [VIDEO I/O board]
External trigger	• TP11 (D. FF) (- slope) [VIDEO MAIN board]
Adjusting instrument	• Presetting unit (PTU94008)
Standard value	• 7.5 ± 0.5 H

1. Play back the stairstep signal of the alignment tape.
2. Trigger the oscilloscope externally with signal from TP11 while observing the waveform of TP10's signal.
3. Adjust the trigger point to be 7.5 ± 0.5 H before the rise of V. sync signal with the button E (+) and button F (-) on the presetting unit.

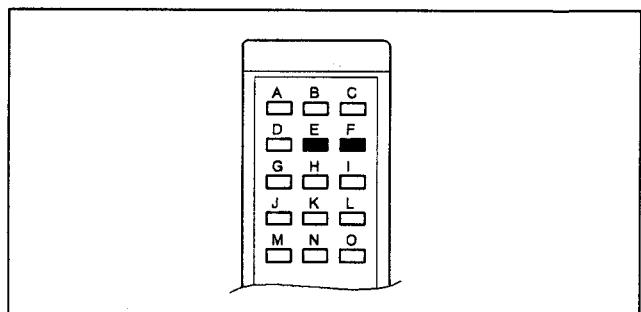


Fig. 3-3-2 Presetting unit

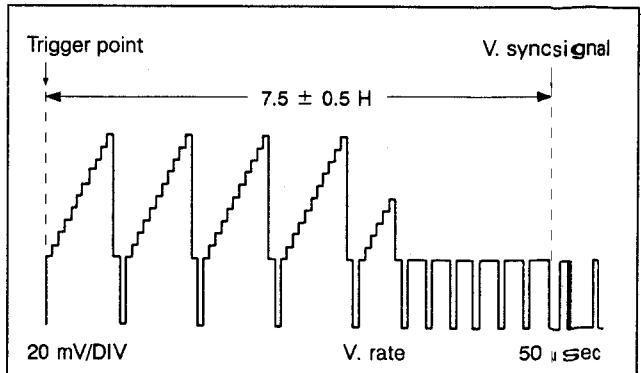


Fig. 3-3-3 PB switching point

3.3.3 Slow tracking preset

Note: Set the remote control reception code of the main unit to the mode A.

Signal	<ul style="list-style-type: none"> Externally input signal Color bar signal
Mode	<ul style="list-style-type: none"> S-VHS Recording → Slow playback: Standard and X3 speed
Check point	<ul style="list-style-type: none"> TV monitor screen
Adjusting instrument	<ul style="list-style-type: none"> Presetting unit (PTU94008)
Standard value	<ul style="list-style-type: none"> Minimum noise bar

1. Record the color bar signal in the standard mode.
2. Play back the recorded signal in the normal slow playback mode.
3. Observing the monitor screen, minimize noise bars with the button B (+) and button C (-) on the presetting unit.
4. Repeat the above step 2 to confirm no (least) noise bar appearing on the monitor screen.
5. Play back the recorded signal in the reverse slow playback mode and perform the same adjustment as in the normal direction.
6. Perform the same adjustment from the step 1 through 5 in the X3 speed mode.

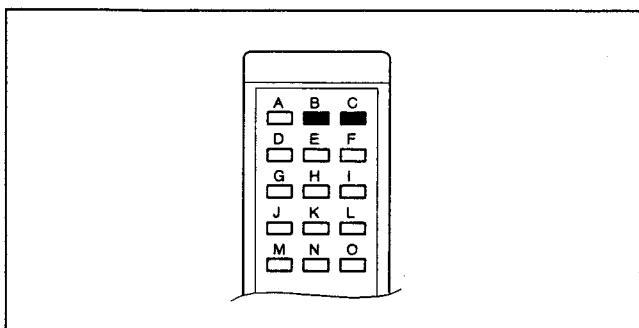


Fig. 3-3-4 Presetting unit

3.4 VIDEO CIRCUIT

Note: • Unless otherwise specified, perform the following adjustments with the TBC set to ON and AI set to AUTO (use the VIDEO STATUS button for setting).

- Check points and adjustment parts are located on the VIDEO MAIN board unless otherwise specified.
- When the adjustment chart indicates "External S input", supply S output of a signal generator or a S-VHS deck to the VIDEO S1 input terminal of the main unit.
- "Terminated by 75Ω " can be interpreted as the state that the S1 output is connected with the TV monitor.

3.4.1 AGC level

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> EE
Test instrument	<ul style="list-style-type: none"> Oscilloscope
Check point	<ul style="list-style-type: none"> TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	<ul style="list-style-type: none"> R299 (AGC LEVEL)
Standard value	<ul style="list-style-type: none"> $1.00 \pm 0.02 \text{ V p-p}$ (Terminated by 75Ω)

1. Adjust R299 to obtain $1.00 \pm 0.02 \text{ Vp-p}$ as Y level at TP20.

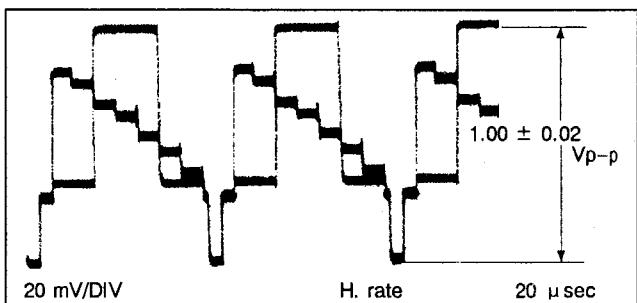


Fig. 3-4-1 AGC level

3.4.2 Non-correlative pulse

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> EE
Test instrument	<ul style="list-style-type: none"> Oscilloscope
Check point	<ul style="list-style-type: none"> TP21 (Y UNCOR)
Adjustment part	<ul style="list-style-type: none"> R377 (YNR NC BAL)
Standard value	<ul style="list-style-type: none"> Minimum waveform amplitude

1. Minimize the waveform amplitude of TP21's signal with R377.

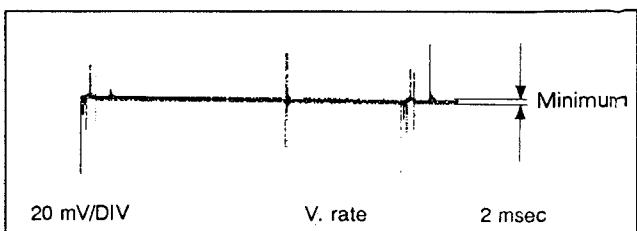


Fig. 3-4-2 Non-correlative pulse

3.4.3 Sub-emphasis input level

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> EE: Normal
Test instrument	Oscilloscope
Check point	TP26 (SUB EMPHA IN)
Adjustment part	R347 (SUB EMPHA INPUT LEVEL)
Standard value	$400 \pm 10 \text{ mVp-p}$

1. Adjust R347 so that Y level is $400 \pm 10 \text{ mVp-p}$ at TP26.

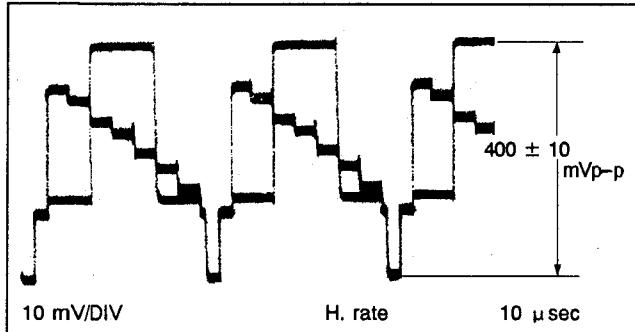


Fig. 3-4-3 Sub-emphasis input level

3.4.4 S-VHS white/dark clip

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> EE: Normal S-VHS
Test instrument	Oscilloscope
Check point	TP51 (WHITE/DARK (S))
Adjustment part	<ul style="list-style-type: none"> R203 (S WHITE CLIP) R202 (S DARK CLIP)
Standard value	<ul style="list-style-type: none"> $210 \pm 5\%$ (WHITE CLIP) $70 \pm 5\%$ (DARK CLIP)

1. Load the deck with an S-VHS tape.
2. Adjust R203 and R202 respectively so that white clip is $210 \pm 5\%$ and dark clip is $70 \pm 5\%$ at TP51.

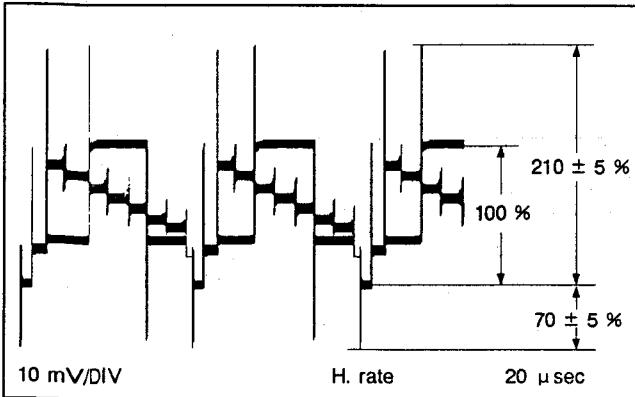


Fig. 3-4-4 S-VHS white/dark clip

3.4.5 S-VHS carrier/deviation

Note: This adjustment should be performed only when the EE and playback systems are normal but sync is distorted (wrong carrier setting), white portion is squeezed (abnormal deviation), output level is low as input level is 1.0 Vp-p, or S-N ratio is extremely poor.

• Carrier

Signal	<ul style="list-style-type: none"> No input
Mode	<ul style="list-style-type: none"> EE: Normal S-VHS
Test instrument	Carrier checker (PGJ05008)
Check point	TP53 (REC FM)
Adjustment part	R200 (S CARRIER)
Standard value	$5.400 \pm 0.050 \text{ MHz}$

1. Load the deck with an S-VHS tape.
2. Adjust R200 so that the frequency of sync tip is $5.400 \pm 0.050 \text{ MHz}$ at TP53.

• Deviation

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> EE: Normal
Test instrument	Carrier checker (PGJ05008)
Check point	TP53 (REC FM)
Adjustment part	R198 (S DEVIATION)
Standard value	$7.000 \pm 0.050 \text{ MHz}$

1. Adjust R198 so that the frequency of white peak is $7.000 \pm 0.050 \text{ MHz}$ at TP53.

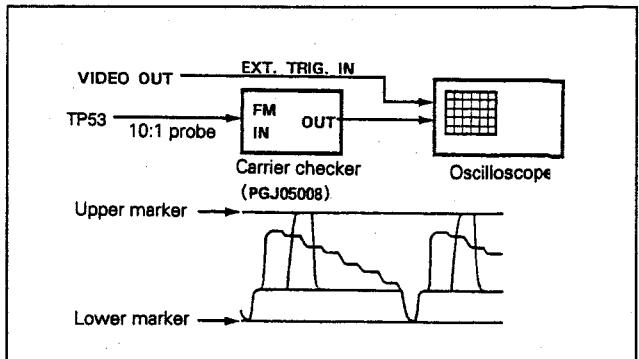


Fig. 3-4-5 S deviation

3.4.6 VHS EP REC FM level

Note: Connect the GND of the oscilloscope with the shield plate of the PRE/REC board.

Signal	<ul style="list-style-type: none"> External input Color bar signal
Mode	<ul style="list-style-type: none"> Recording: X3 mode VHS
Test instrument	Oscilloscope
Check point	TP4 (EP REC FM) [PRE/REC board]
External trigger	TP11 (DRUM FF)
Adjustment part	R9 (N-EP REC FM LEVEL)
Standard value	$105 \pm 5 \text{ mVp-p}$

- Load the deck with a VHS tape and record the signal on it in the X3 speed mode.
- Adjust R9 so that the FM pedestal level is $105 \pm 5 \text{ mVp-p}$ at TP4.

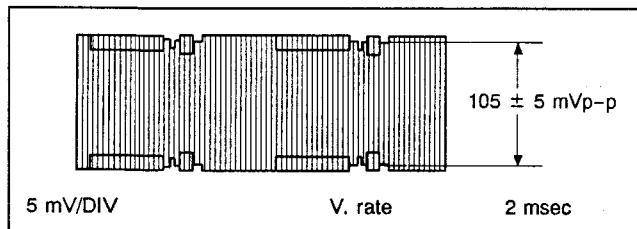


Fig. 3-4-6 VHS EP REC FM level

3.4.7 S-VHS EP REC FM level

Note: Connect the GND of the oscilloscope with the shield plate of the PRE/REC board.

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> Recording: X3 mode S-VHS
Test instrument	Oscilloscope
Check point	TP4 (EP REC FM) [PRE/REC board]
External trigger	TP11 (DRUM FF)
Adjustment part	R10 (S-EP REC FM LEVEL)
Standard value	$105 \pm 5 \text{ mVp-p}$

- Load the deck with an S-VHS tape and record the signal on it in the X3 speed mode.
- Adjust R10 so that the FM pedestal level is $105 \pm 5 \text{ mVp-p}$ at TP4.

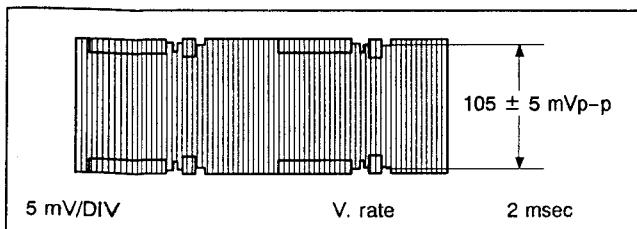


Fig. 3-4-7 S-VHS EP REC FM level

3.4.8 S-VHS SP REC color level

Signal	<ul style="list-style-type: none"> Alignment tape MHV-2H (MH-1H) SP color bar signal
Mode	<ul style="list-style-type: none"> Playback S-VHS Recording → Playback: Standard Auto-tracking: OFF S-VHS
Test instrument	Oscilloscope
Check point	IC3 pin 41 (PB COLOR IN)
External trigger	TP11 (DRUM FF)
Adjustment part	R113 (S-SP REC COLOR LEVEL)
Standard value	$150 \pm 5 \%$

- Play back the SP color bar signal of the alignment tape MHV-2H.
- Trigger the oscilloscope with the signal of TP11 and observe the waveform at pin 41 of IC3.
- Cancel the auto-tracking and maximize the waveform with the TRACKING button.
- Take note of the higher level of two channel waveforms as "A".
- Record the color bar signal in the standard mode and play it back repeatedly while adjusting R113 so that playback level of the channel having the higher level is $A \times 150 \pm 5 \%$. The setting of R113 should be determined before the final recording.

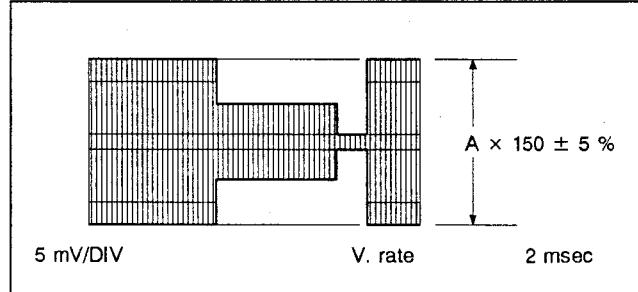


Fig. 3-4-8 S-VHS SP REC color level

3.4.9 S-VHS EP REC color level

Signal	<ul style="list-style-type: none"> Alignment tape MH-1H EP color bar signal
Mode	<ul style="list-style-type: none"> Playback S-VHS Recording → Playback: X3 mode Auto-tracking: OFF S-VHS
Test instrument	Oscilloscope
Check point	IC3 pin 41 (PB COLOR IN)
External trigger	TP11 (DRUM FF)
Adjustment part	R112 (S-EP REC COLOR LEVEL)
Standard value	$130 \pm 5 \%$

- Play back the EP color bar signal of the alignment tape MH-1H.
- Trigger the oscilloscope with the signal of TP11 and observe the waveform at pin 41 of IC3.
- Cancel the auto-tracking and maximize the waveform with the TRACKING button.
- Take note of the higher level of two channel waveforms as "A".
- Record the color bar signal in the X3 mode and play it back repeatedly while adjusting R112 so that playback level of the channel having the higher level is $A \times 130 \pm 5\%$. The setting of R112 should be determined before the final recording.

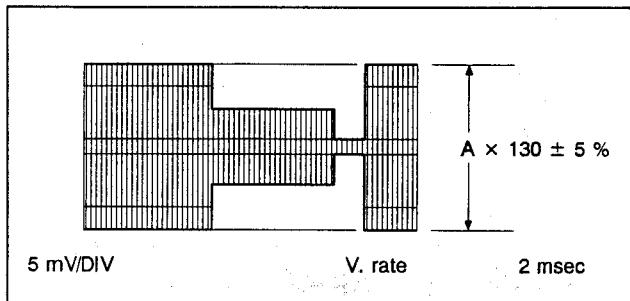


Fig. 3-4-9 S-VHS EP REC color level

Note: Prior to proceeding to the adjustments of 3.4.10 and 3.4.11, shortcircuit between TP54 (CLEAR SYNC OFF) and TP101 (GND) and turn R272 full clockwise as viewed from the soldered side (pattern side).

3.4.10 VHS PB Y level

Signal	• External S input • Color bar signal
Mode	• Recording → Playback: Standard
Test instrument	• Oscilloscope
Check point	• TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	• R322 (N-PB Y LEVEL)
Standard value	• 1.00 ± 0.02 Vp-p (Terminated by 75Ω)

- Connect the TV monitor with the S OUT terminal and adjust R322 so that Y level is 1.00 ± 0.02 Vp-p at TP20.

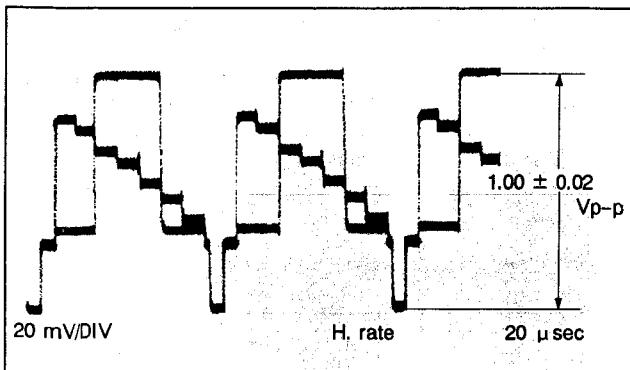


Fig. 3-4-10 VHS PB Y level

3.4.11 S-VHS PB Y level (1)

Signal	• External S input • Color bar signal
Mode	• S-VHS Recording → Playback: Standard
Test instrument	• Oscilloscope
Check point	• TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	• R324 (S-PB Y LEVEL-1)
Standard value	• 1.00 ± 0.02 Vp-p (Terminated by 75Ω)

- Adjust R324 so that Y level is 1.00 ± 0.02 Vp-p at TP20.

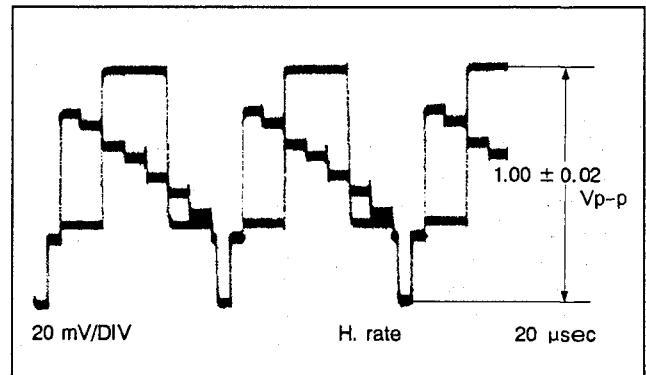


Fig. 3-4-11 S-VHS PB Y level (1)

3.4.12 S-VHS PB Y level (2)

Signal	• External S input • Color bar signal
Mode	• S-VHS Recording → Playback: Standard • TBC: OFF
Test instrument	• Oscilloscope
Check point	• TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	• R272 (S-PB Y LEVEL-2)
Standard value	• V:S = 5:2 (Terminated by 75Ω)

- Remove the shortcircuit between TP54 and TP101.
- Adjust R272 so that V-to-S ratio is 5 to 2. At the same time, confirm that Y level is 1.00 ± 0.02 Vp-p at TP20.

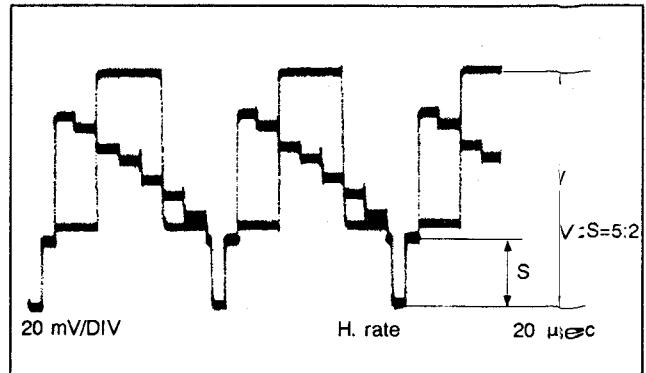


Fig. 3-4-12 S-VHS PB Y level (2)

3.4.13 Frequency response

Signal	<ul style="list-style-type: none"> External S input Video sweep signal
Mode	<ul style="list-style-type: none"> Recording → Playback: Standard/X3 Video status in Recording: AUTO AI Video status in Playback: DUBBING
Test instrument	Oscilloscope
Check point	TP56 (REC/PB Y) [VIDEO I/O board]
Adjustment part	<ul style="list-style-type: none"> R15 (S SP VIDEO EQ) R14 (S EP VIDEO EQ)
Standard value	<ul style="list-style-type: none"> 3.2 graduations (scale divisions) (R15) 2.5 graduations (scale divisions) (R14)

1. Input sweep signal to the S-IN terminal.
2. Record the sweep signal in the standard mode with the AI set to AUTO, and play it back in the DUBBING mode.
3. Observing waveform coming from TP56 on the oscilloscope, set the level of the 100 kHz marker for 4 scale divisions. Then+adjust the level of 3.58 MHz signal to be equivalent to 3.2 scale divisions (-2 ± 0.5 dB) with R15.
4. Record the sweep signal in the X3 mode with the AI set to AUTO and play it back in the DUBBING mode.
5. Observing waveform coming from TP56 on the oscilloscope, set the level of the 100 kHz marker for 4 scale divisions. Then adjust the level of 3.58 MHz signal to be equivalent to 2.5 scale divisions (-4 ± 0.5 dB) with R14.

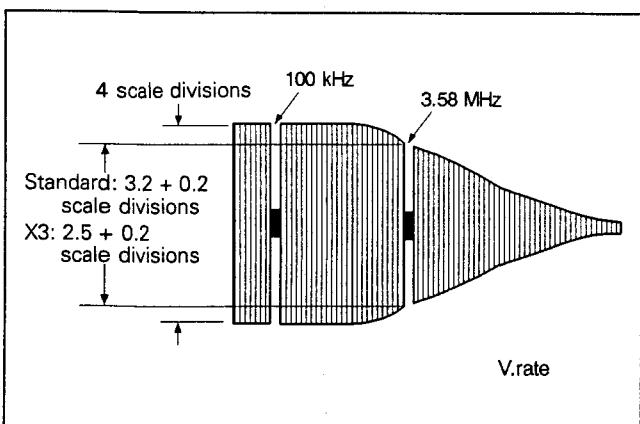


Fig. 3-4-13 Frequency response

3.4.14 PB ACC loop gain

Signal	<ul style="list-style-type: none"> Alignment tape MH-1H SP color bar signal
Mode	Playback
Test instrument	Oscilloscope
Check point	TP60 (COLOR COMB)
Adjustment part	R182 (COLOR COMB GAIN)
Standard value	$100 \pm 5\%$

1. Make a shortcircuit between TP59 and TP102 and playback the color bar signal of the alignment tape MH-1H.
2. Observe the waveform of TP60's signal while taking note of the burst level as "A".
3. Remove the shortcircuit between TP59 and TP102 and observe the same waveform again.
4. Adjust R182 to make the waveform level correspond to "A" ($A \times 1.00 \pm 5\%$).

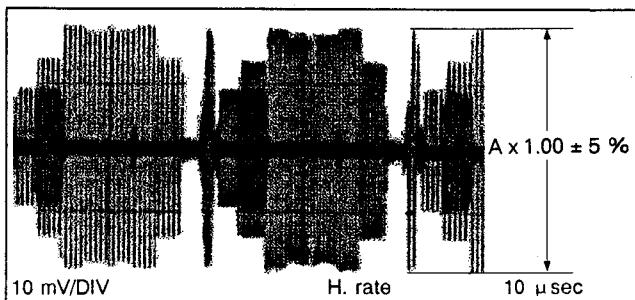


Fig. 3-4-14 PB ACC loop gain

3.4.15 S-VHS PB color level

Signal	<ul style="list-style-type: none"> Alignment tape MH-1H SP color bar signal
Mode	Playback
Test instrument	Oscilloscope
Check point	TP30 (PB COLOR OUT) [VIDEO I/O board]
Adjustment part	R721 (S-PB COLOR LEVEL)
Standard value	$286 \pm 20 \text{ mVp-p}$ (Terminated by 75Ω)

1. Play back the SP color bar signal of the alignment tape MH-1H.
2. Observe the waveform of TP30's signal while adjusting the burst level to be $286 \pm 20 \text{ mVp-p}$ with R721.

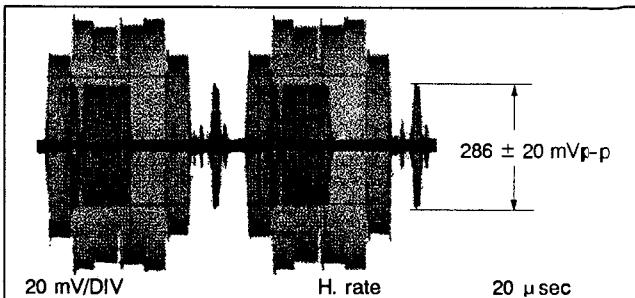


Fig. 3-4-15 S-VHS PB color level

3.5 DIGITAL CIRCUIT

Note: Check points and adjustment parts as well as switches for turning on/off TBC and AUTO AI are located on the DIGITAL board unless otherwise specified.

3.5.1 TBC color level

Signal	• Alignment tape MH-1H • SP color bar signal
Mode	• Playback
Test instrument	• Oscilloscope
Check point	• TP200 (TBC COLOR)
Adjustment part	• R204 (TBC COLOR LEVEL)
Standard value	• $300 \pm 20 \text{ mVp-p}$

1. Play back the SP color bar signal of the alignment tape MH-1H.
2. Observing TP200's signal on the oscilloscope while adjusting R204 to obtain $300 \pm 20 \text{ mVp-p}$ as the burst level.

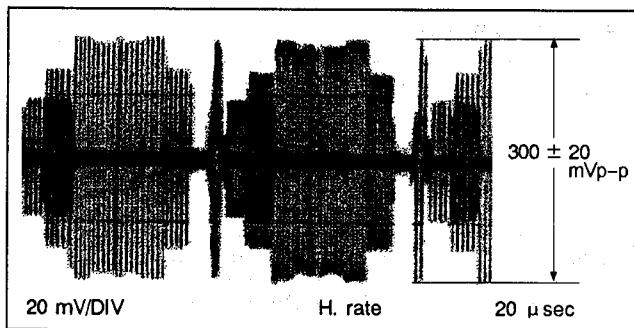


Fig. 3-5-1 TBC color level

3.5.2 PB color level

Signal	• Alignment tape MH-1H • SP color bar signal
Mode	• Playback
Test instrument	• Oscilloscope
Check point	• TP30 (PB COLOR OUT) [VIDEO I/O board]
Adjustment part	• R507 (PB COLOR LEVEL)
Standard value	• $286 \pm 20 \text{ mVp-p}$ (Terminated by 75Ω)

1. Play back the SP color bar signal of the alignment tape MH-1H.
2. Observing TP30's signal on the oscilloscope while adjusting R507 to obtain $286 \pm 20 \text{ mVp-p}$ as the burst level.

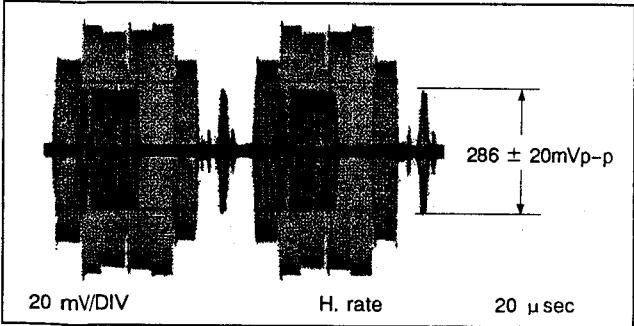


Fig. 3-5-2 PB color level

3.5.3 Phase of clamping pulse

Signal	• External input • Color bar signal to VIDEO-2 INPUT
Mode	• EE
Test instrument	• Oscilloscope
Check point	• TP301 (ABC IN) • TP302 (CLAMP PULSE)
Adjustment part	• TANC401 (CLAMP PULSE)
Standard value	• $1.5 \pm 0.2 \mu\text{sec}$

1. Observe the waveforms of TP301 and TP302 signals on the oscilloscope in the dual trace mode while adjusting TANC401 so that their phases are in the relation shown in Fig. 3-5-3.

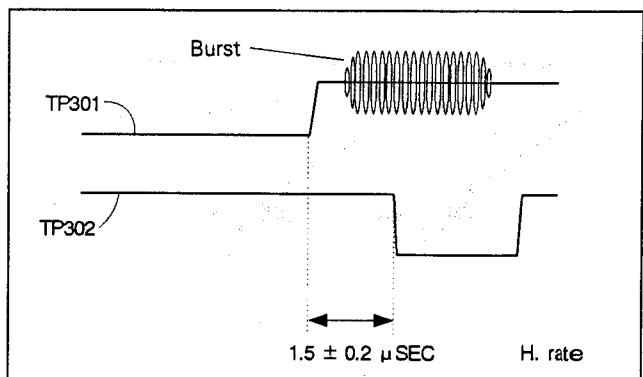


Fig. 3-5-3 Phase of clamping pulse

3.5.4 YCS Y level

Signal	• External input • Color bar signal to VIDEO-2 INPUT
Mode	• EE
Test instrument	• Oscilloscope
Check point	• TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	• R307 (YCS Y LEVEL)
Standard value	• $1.00 \pm 0.02 \text{ Vp-p}$ (Terminated by 75Ω)

1. Connect the monitor with the S-OUT terminal and input the color bar signal to the VIDEO-2 input terminal.
2. Observing TP20's signal on the oscilloscope while adjusting R307 to obtain $1.00 \pm 0.02 \text{ Vp-p}$ as the Y level.

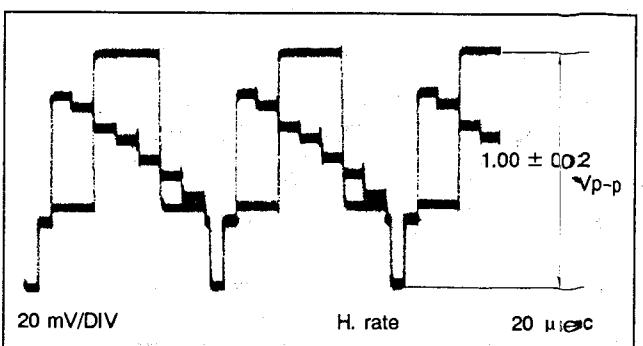


Fig. 3-5-4 YCS Y level

3.5.5 TBCV-S ratio

Signal	<ul style="list-style-type: none"> Alignment tape MH-1H SP color bar signal
Mode	<ul style="list-style-type: none"> Playback
Test instrument	Oscilloscope
Check point	TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	R347 (TBC V/S)
Standard value	V:S = 5:2

- Play back the SP color bar signal of the alignment tape MH-1H.
- Observing TP20's signal on the oscilloscope while adjusting R347 so that V-to-S ratio is 5 : 2.

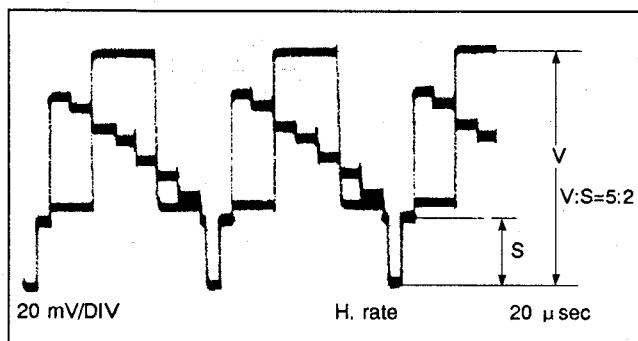


Fig. 3-5-5 TBC V-S ratio

3.5.6 TBCY level

Signal	<ul style="list-style-type: none"> Alignment tape MH-1H SP color bar signal
Mode	<ul style="list-style-type: none"> Playback
Test instrument	Oscilloscope
Check point	TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	R343 (TBC Y LEVEL)
Standard value	1.00 ± 0.02 Vp-p (Terminated by 75Ω)

- Play back the SP color bar signal of the alignment tape MH-1H.
- Observing TP20's signal on the oscilloscope while adjusting R347 so that Y level is 1.00 ± 0.02 Vp-p.

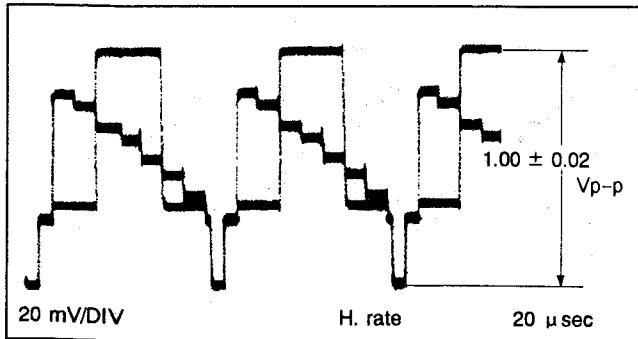


Fig. 3-5-6 TBC Y level

3.6 AUDIO CIRCUIT

Note: Check points and adjustment parts are located on the AUDIO I/O board unless otherwise specified.

3.6.1 Bias level

Signal	<ul style="list-style-type: none"> External input No input signal
Mode	<ul style="list-style-type: none"> Recording: X3 mode
Test instrument	Audio level meter
Check point	<ul style="list-style-type: none"> TP702 (BIAS +) TP703 (BIAS -)
Adjustment part	R706 (BIAS LEVEL)
Standard value	2.6 ± 0.1 mV rms

- Connect the audio level meter to TP702 and TP703.
- Adjust R706 so that bias level is 2.6 ± 0.1 mV rms in the X3 Recording mode.

3.6.2 Hi-Fi PB level

Signal	<ul style="list-style-type: none"> Alignment tape MH-F1 Audio 1 kHz signal
Mode	<ul style="list-style-type: none"> Playback
Test instrument	Audio level meter
Check point	AUDIO OUT terminal
Adjustment part	<ul style="list-style-type: none"> R605 (L DEVIATION) R637 (R DEVIATION)
Standard value	-8 dBs (0.9 Vp-p, 0.32 Vrms) ± 0.5 dBs

- Play back the 1 kHz signal of the alignment tape MH-F1.
- Adjust R605 (L) and 637 (R) so that L-ch and R-ch output levels at the AUDIO OUT terminals are -8 dBs (0.9 Vp-p, 0.32 Vrms) ± 0.5 dBs respectively.

3.6.3 Audio EE level

Signal	<ul style="list-style-type: none"> External input: -8 dBs, 1 kHz signal
Mode	<ul style="list-style-type: none"> EE
Test instrument	Audio level meter
Check point	AUDIO OUT terminals (L-ch and R-ch)
Adjustment part	<ul style="list-style-type: none"> R539 (AUDIO LEVEL L-ch) R540 (AUDIO LEVEL R-ch)
Standard value	-8 dBs (0.9 Vp-p, 0.32 Vrms) ± 1 dBs

- Input the -8 dBs, 1 kHz signal to the AUDIO IN terminals (L-ch and R-ch).
- Set the REC LEVEL and BALANCE controls to the center detent position respectively.
- Adjust R539 (L) and R540 (R) so that output levels at the AUDIO OUT terminals (L-ch and R-ch) are -8 dBs (0.9 Vp-p, 0.32 Vrms) ± 1 dBs respectively.

3.6.4 Carrier frequency

Signal	• No external input signal
Mode	• EE
Test instrument	• Frequency counter
Check point	• TP404 (REC FM L-ch) • TP403 (REC FM R-ch)
Adjustment part	• R610 (L CARRIER) • R630 (R CARRIER)
Standard value	• 1.300 ± 0.005 MHz (R610) • 1.700 ± 0.005 MHz (R630)

1. Adjust R610 so that carrier frequency is 1.300 ± 0.005 MHz at TP610.
2. Adjust R630 so that carrier frequency is 1.700 ± 0.005 MHz at TP630.

3.6.5 SD audio REC FM level

Signal	• External input • Color bar signal • No audio input signal
Mode	• SD • Recording → Playback • X3 mode • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP402 (AUDIO PB FM) [PRE/REC board]
External trigger	• TP11 (D. FF) [VIDEO MAIN board]
Adjustment part	• R463 (SD A FM REC LEVEL)
Standard value	• 75 ± 10 mVp-p

Note: Connect the oscilloscope's GND to the shield plate of the PRE/REC board.

1. Connect the oscilloscope to TP402 on the PRE/REC board.
2. Record the color bar signal on a W-VHS tape and play it back.
3. Adjust R463 before recording the signal so that the playback FM level that is the lower than the other channel's is 75 ± 10 mVp-p.
4. Confirm that the playback FM level does not exceed 150 mVp-p at maximum.

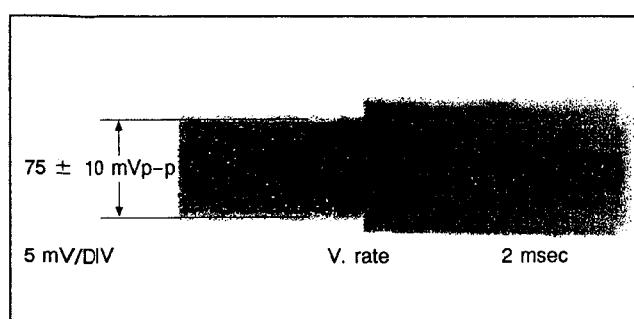


Fig. 3-6-1 SD audio REC FM level

3.6.6 Auto calibration reference level

Signal	• External input • Color bar signal • No audio input signal
Mode	• S-VHS Recording → Playback: Standard/X3 • Auto-calibration: OFF • Auto-tracking: OFF • Balance control: Center position • REC level control: Center position
Test instrument	• Digital voltmeter
Check point	• TP203 (ANG FM) [MOTHER board]
Adjustment part	• R556 (S-SP AUTO CAL REF) [PRE/REC board] • R560 (S-EP AUTO CAL REF) [PRE/REC board]
Standard value	• 2.5 ± 0.1 V DC (R556) • 2.5 ± 0.3 V DC (R560)

1. Without input signal, perform recording and playback in the standard S-VHS mode with the auto-calibration set to off.
2. Turn off the auto-tracking and make a shortcircuit between TP205 and TP206 on the MOTHER board.
3. Adjust R556 to obtain 2.5 ± 0.1 V DC as the signal level at TP203.
4. Perform recording and playback in the same manner as the above step 1 with an exception of the X3 mode.
5. Turn off the auto-tracking and make a shortcircuit between TP205 and TP206 on the MOTHER board.
6. Adjust R560 to obtain 2.5 ± 0.3 V DC as the signal level at TP203.

3.7 TIMER CIRCUIT

Note: Check points and adjustment parts are located on the TIMER board unless otherwise specified.

3.7.1 Timer clock

Signal	• No input signal
Mode	• EE
Test instrument	• Frequency counter
Check point	• TP2 (CLOCK)
Adjustment part	• C11 (TIMER CLOCK)
Standard value	• $488.2813 \pm 0.0005 \mu\text{s}$

1. Disconnect the power cord from the AC outlet to cut off the power supply.
2. Shortcircuit TP3 (TEST) and TP5 to GND.
3. Shortcircuit between TP4 (RST) and GND momentarily to reset IC1.
4. Again connect the power cord to the AC outlet to supply the power and check to see if all segments of the FDP have been turned out.
5. Adjust the frequency at TP2 to be $488.2813 \pm 0.0005 \mu\text{s}$ ($2048.000 \pm 0.002 \text{ Hz}$) with C11.

3.8 ON-SCREEN CIRCUIT

Note: • Check points and adjustment parts are located on the VIDEO I/O board unless otherwise specified.
• The capacity of the probe to be used should be 100 pF or less and used at a ratio of 1:1.

3.8.1 Dot clock

Signal	• No input signal
Mode	• EE
Test instrument	• Frequency counter
Check point	• TP901 (OSC-1)
Adjustment part	• C923 (DOT CLOCK)
Standard value	• $7.70 \pm 0.05 \text{ MHz}$

1. Shortcircuit pin 3 of IC902 to GND.
2. Make a shortcircuit between pin 30 of IC902 and TP202 (SW 5V) on the VIDEO MAIN board.
3. Adjust the frequency at TP901 to be $7.70 \pm 0.05 \text{ MHz}$ with C923.

3.9 HEAD RESONANCE

3.9.1 MP tracking preset

Note: Set the remote control reception code of the main unit to the mode A.

Signal	<ul style="list-style-type: none"> WHP-L alignment tape Stairstep signal (single channel recorded)
Mode	<ul style="list-style-type: none"> Playback: SD
Check point	<ul style="list-style-type: none"> On TV monitor screen
Adjusting instrument	<ul style="list-style-type: none"> Presetting unit PTU94008
Standard value	<ul style="list-style-type: none"> Confirm AT LED turned off

- Play back the SD alignment tape.
- After the AT LED on the front panel has changed from blinking to continuous lighting, press the button "D" on the presetting unit while confirming that the AT LED goes out.
- Press the button "D" once more while confirming that the AT LED goes out again.
- If the tape is ejected in the step 3 above, re-adjust the phase of the head (X value) with the MP tape.

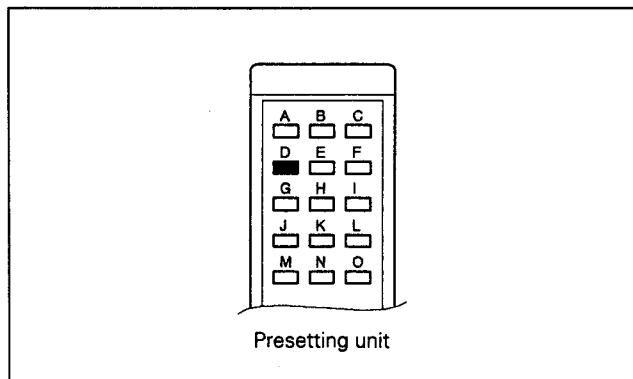


Fig. 3-9-1 MP tracking preset

3.9.2 MP PB switching point

Note: • Set the remote control reception code of the main unit to the mode A.
• Turn off the auto-tracking.

Signal	<ul style="list-style-type: none"> WHP-L alignment tape Stairstep signal
Mode	<ul style="list-style-type: none"> Playback: SD or HD Auto tracking: OFF
Check point	<ul style="list-style-type: none"> TP10 (MAIN TCI) [MOTHER board]
External trigger	<ul style="list-style-type: none"> TP11 (D. FF) (+) [MOTHER board]
Adjusting instrument	<ul style="list-style-type: none"> Presetting unit PTU94008
Standard value	<ul style="list-style-type: none"> 2.25 ± 0.5 H

- Play back the SD alignment tape or HD soft tape.
- Trigger the oscilloscope with the signal of TP11 while observing TP10's signal on the positive slope.
- Adjust the trigger point to be 2.25 ± 0.5 ahead of the fall of the V. sync signal with the buttons "E" (+) and "F" (-) on the presetting unit. (See Fig. 3-9-2.)
- After the step 3 is complete, press the stop button. (The setting data is saved in the ROM.)

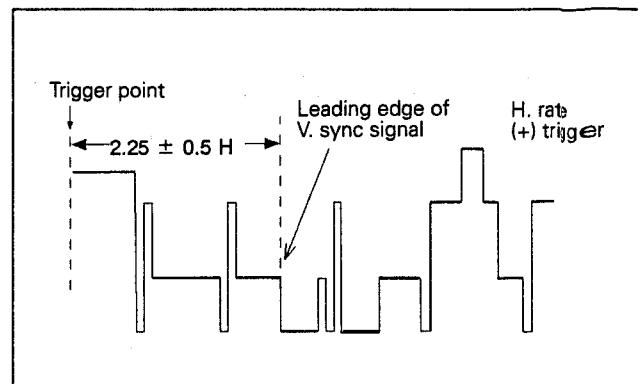
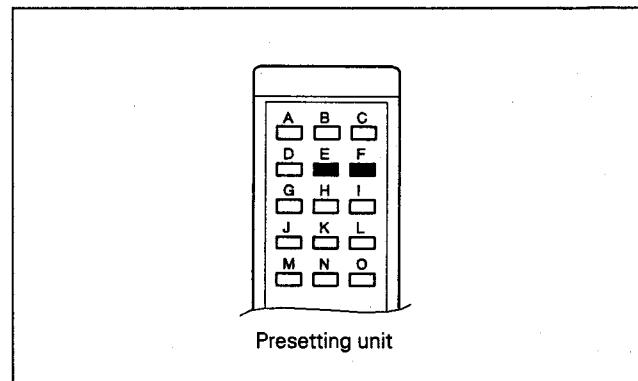


Fig. 3-9-2 MP PB switching point

3.9.3 W-VHS head resonance

Note:

- Check points and adjustment parts are located on the MOTHER board unless otherwise specified.
- Carefully proceed to the following steps not to touch the coil and a head each other.

Signal	• HD video sweep signal
Mode	<ul style="list-style-type: none"> EE Input selector switch: HD input AUTO HD REC switch: ON
Test instrument	• Oscilloscope
Check point	<ul style="list-style-type: none"> TP6 (MAIN PB FM) TP106 (SUB PB FM)
Adjustment part	<ul style="list-style-type: none"> R57 (MAIN Q), C26 (MAIN fo) (WP1) R56 (MAIN Q), C25 (MAIN fo) (WP2) R59 (SUB Q), C30 (SUB fo) (WQ1) R58 (SUB Q), C29 (SUB fo) (WQ2)
Standard value	• See Fig. 3-9-3.

Note:

- WP1, WP2: Main head, WQ1, WQ2: Sub head
- Use the TRACKING (-) button to select WP1 and WQ2.
- Use the TRACKING (+) button to select WP2 and WQ1.

- Make the video sweep signal approximate (5 mm approx.) to the WP2 head with a coil of 15 to 25 μ H as shown in Fig. 3-9-3 while observing the waveform. The WP2 head can be selected by pressing the TRACKING (+) button.
- Connect the oscilloscope to TP6 and adjust R56 and C25 so that the sweep waveform shows the characteristic as shown in Fig. 3-9-5. (WP2 head)
- Turn the WP2 head at an angle of 180° and press the TRACKING (-) button to select the WP1 head.
- Adjust the sweep waveform with the R57 and C26 in the same manner as the step 2. (WP1 head)
- Connect the oscilloscope to TP106 and adjust the sweep waveform of the WQ2 head with R58 and C29 in the same manner as the above step 2. (WQ2 head)
- Turn the WQ2 head at an angle of 180° and press the TRACKING button (+) to select the WQ1 head.
- Adjust the sweep waveform with R59 and C30 in the same manner as the above step 2. (WQ1 head)

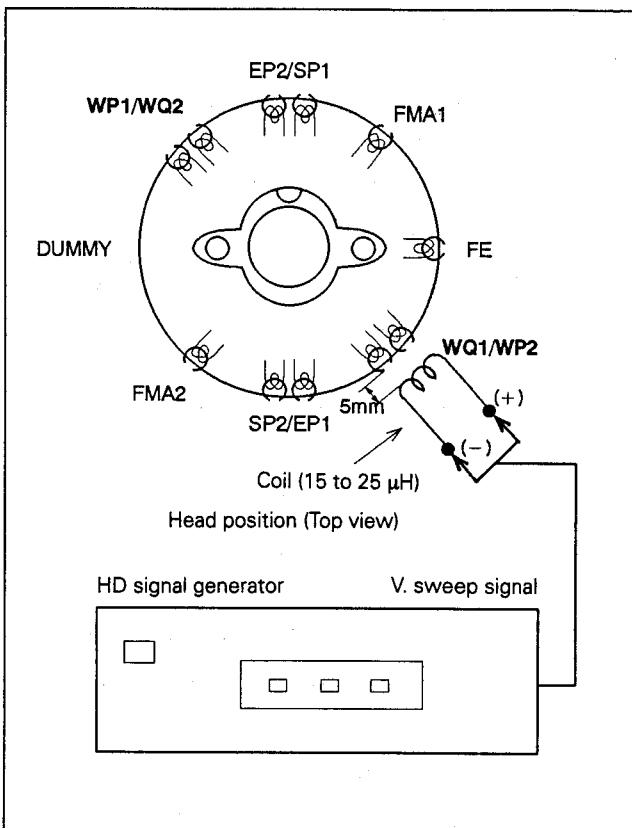


Fig. 3-9-3 Head resonance

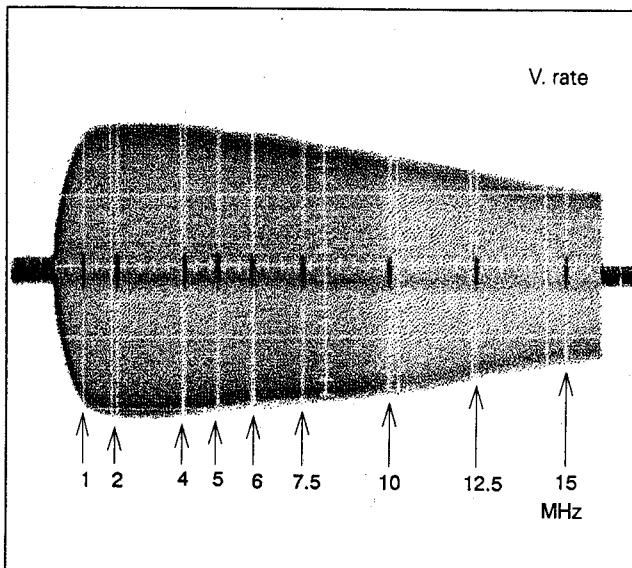


Fig. 3-9-4 Head resonance frequency response 1 (Normal)

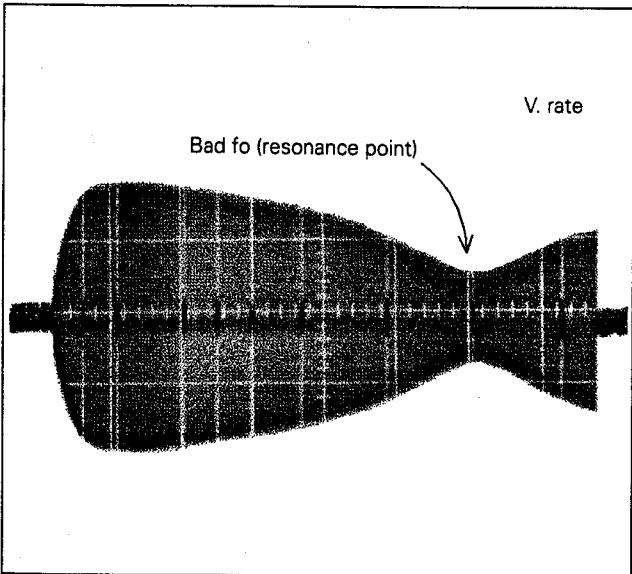


Fig. 3-9-5 Head resonance frequency response 2 (No good)

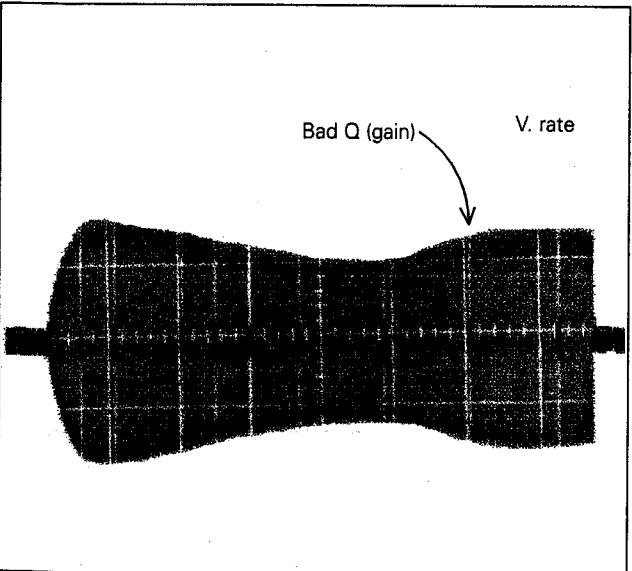


Fig. 3-9-6 Head resonance frequency response 3 (No good)

3.10 W-I/O CIRCUIT

Note: Check points and adjustment parts are located on the W-I/O board unless otherwise specified.

3.10.1 Subcarrier

Signal	• No input signal
Mode	• EE
Test instrument	• Frequency counter
Check point	• TP2 (FSC OUT) • TP15 (GND)
Adjustment part	• R171 (FSC)
Standard value	• 3.579545 ± 0.000050 MHz

Note: The capacity of the probe to be used for measurement should be 100 pF or less and used at a ratio of 1:1.

1. Connect the frequency counter to TP2 and TP15.
2. Adjust R171 to obtain the above-mentioned frequency.

3.10.2 PB level

Signal	• Color bar signal
Mode	• EE
Test instrument	• Oscilloscope
Check point	• TP4 (B-Y)
Adjustment part	• R190 (PB LEVEL)
Standard value	• 486 ± 10 mVp-p

1. Connect the oscilloscope to TP4.
2. Adjust R190 so that the signal level is 486 ± 10 mVp-p.

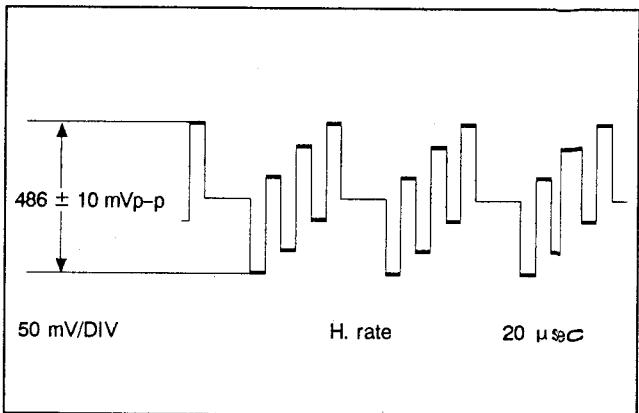


Fig. 3-10-1 PB level

3.10.3 Phase

Signal	• Color bar signal
Mode	• EE
Test instrument	• Oscilloscope
Check point	• TP4 (B-Y)
Adjustment part	• R174 (HUE)
Standard value	<ul style="list-style-type: none"> • a: -243 ± 8 mV • b: 82 ± 8 mV • c: -161 ± 8 mV • d: 161 ± 8 mV • e: -82 ± 8 mV • f: 243 ± 8 mV

1. Connect the oscilloscope to TP4.
2. Adjust R174 so that the signal level at the point from a to f becomes as specified above respectively.

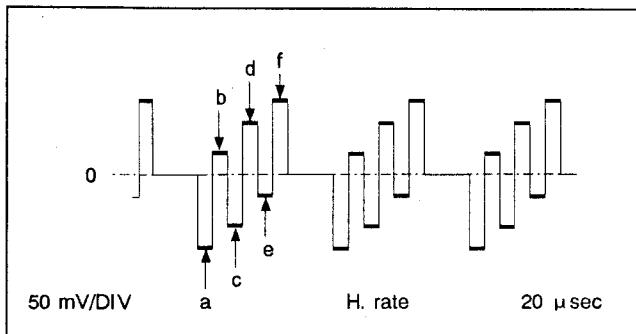


Fig. 3-10-2 Phase

3.10.4 PR level

Signal	• Color bar signal
Mode	• EE
Test instrument	• Oscilloscope
Check point	• TP5 (R-Y)
Adjustment part	• R200 (PR LEVEL)
Standard value	• 486 ± 10 mVp-p

1. Connect the oscilloscope to TP5.
2. Adjust R200 so that the signal level is 486 ± 10 mVp-p.

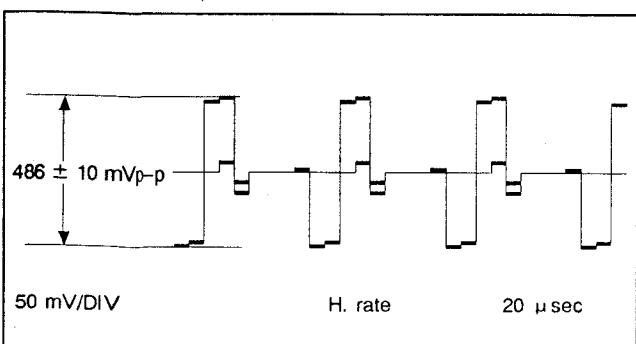


Fig. 3-10-3 PR level

3.11 HDTV CIRCUIT

Note: Check points and adjustment parts are located on the W-MAIN board unless otherwise specified.

3.11.1 REC PLL (14 MHz)

Signal	• HD color bar signal
Mode	<ul style="list-style-type: none"> • EE • HD: SP
Test instrument	• Oscilloscope
Check point	• TP208
Adjustment part	• L203 (REC PLL)
Standard value	• 20 mVp-p or less

1. Connect the oscilloscope to TP208.
2. Adjust L203 so that the waveform level is 20 mVp-p or less as shown in Fig. 3-11-1.
3. The waveform should slant to the right.

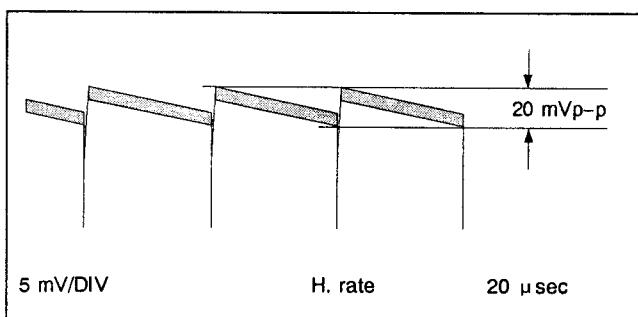


Fig. 3-11-1 REC PLL (14 MHz)

3.11.2 REC PLL (17 MHz)

Signal	• HD color bar signal
Mode	<ul style="list-style-type: none"> • EE • HD: SP
Test instrument	• Oscilloscope
Check point	• TP210
Adjustment part	• L206 (REC PLL)
Standard value	• 200 mVp-p or less

1. Connect the oscilloscope to TP210.
2. Adjust L206 so that the waveform level is 200 mVp-p or less as shown in Fig. 3-11-2.

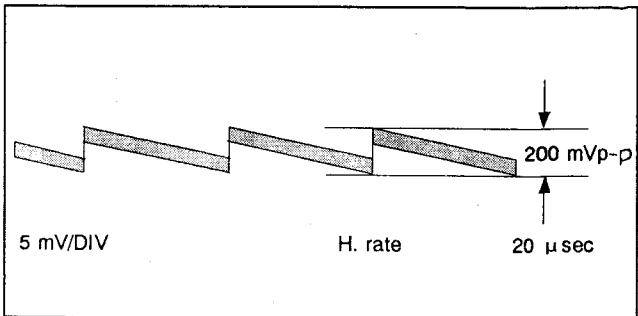


Fig. 3-11-2 REC PLL (17 MHz)

3.11.3 PB Main/Sub (17 MHz)

Signal	• W-VHS tape without recording
Mode	• Playback
Test instrument	• Frequency counter
Check point	• TP472 • TP476
Adjustment part	• L463 (PB MAIN): TP472 • L464 (PB SUB): TP476
Standard value	• 17.199 ± 0.060 MHz

1. Connect the frequency counter to TP472 (TP476).
2. Play back a W-VHS tape without recording.
3. Adjust L463 (L464) so that the frequency at TP472 (TP476) is 17.199 ± 0.060 MHz.

3.11.4 Input TCI (main) level

Signal	• HD color bar signal
Mode	• Recording • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP26 [MOD/DEMOD board, MAIN side]
Adjustment part	• R62 (TCI INPUT LEVEL-MAIN) [MOTHER board]
Standard value	• 400 ± 10 mVp-p

1. Connect the oscilloscope to TP26 on the MOD/DEMOD board (in the MAIN side).
2. Load the deck with a W-VHS tape and record the HD color bar signal on it.
3. Adjust R62 on the MOTHER board so that the signal level is 400 ± 10 mVp-p.

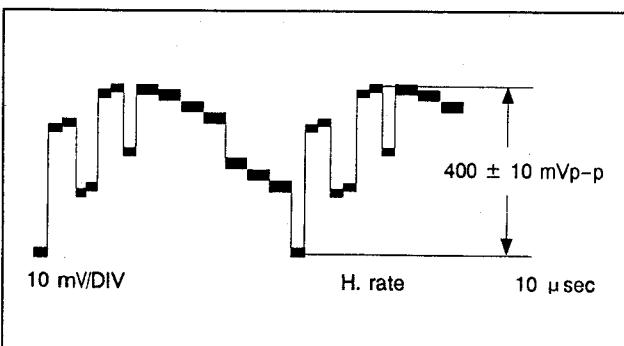


Fig. 3-11-3 Input TCI level

3.11.5 Input TCI level in SD mode

Signal	• NTSC color bar signal
Mode	• Recording • SD • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP26 [MOD/DEMOD board, MAIN side]
Adjustment part	• R313 (SD INPUT TCI LEVEL) [VIDEO MAIN board]
Standard value	• 400 ± 10 mVp-p

1. Connect the oscilloscope to TP26 on the MOD/DEMOD board (in the MAIN side).
2. Load the deck with a W-VHS tape and record the NTSC color bar signal on it. (The deck automatically enters the SD mode.)
3. Adjust R313 on the VIDEO MAIN board so that the signal level is 400 ± 10 mVp-p.

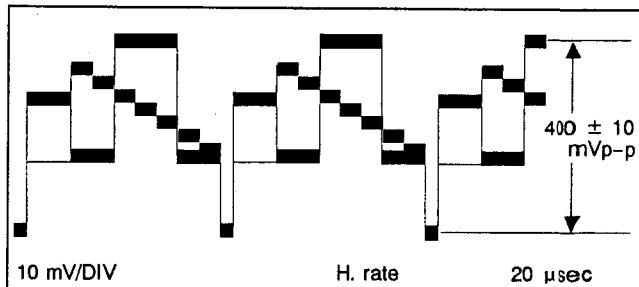


Fig. 3-11-4 Input TCI level in SD mode

3.11.6 Input TCI (sub) level

Signal	• HD color bar signal
Mode	• Recording • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP26 [MOD/DEMOD board, SUB side]
Adjustment part	• R64 (TCI INPUT LEVEL-SUB) [MOTHER board]
Standard value	• 400 ± 10 mVp-p

1. Connect the oscilloscope to TP26 on the MOD/DEMOD board (in the SUB side).
2. Load the deck with a W-VHS tape and record the HD color bar signal on it.
3. Adjust R64 on the MOTHER board so that the signal level is 400 ± 10 mVp-p.

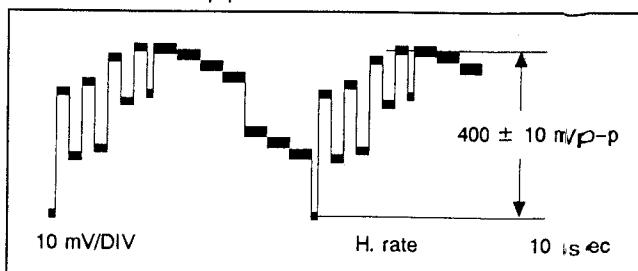


Fig. 3-11-5 Input TCI (sub) level

3.11.7 HD REC FM level

Signal	• HD color bar signal
Mode	• Recording • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP8 [PRE/REC board] • TP7 [PRE/REC board] • TP9 [PRE/REC board] • TP10 [PRE/REC board]
Adjustment part	• R30 (REC FM LEVEL-WP1): TP8 [PRE/REC board] • R32 (REC FM LEVEL-WP2): TP7 [PRE/REC board] • R133 (REC FM LEVEL-WQ1): TP9 [PRE/REC board] • R131 (REC FM LEVEL-WQ1): TP10 [PRE/REC board]
Standard value	• $165 \pm 5 \text{ mVp-p}$

Note: Connect the oscilloscope's GND to the shield plate of the PRE/REC board.

1. Connect the oscilloscope to TP8 on the PRE/REC board.
2. Load the deck with a W-VHS tape and record the HD color bar signal on it.
3. Adjust R30 so that the HD REC FM level is $165 \pm 5 \text{ mVp-p}$.
4. Adjust the FM level at the other test points to be $165 \pm 5 \text{ mVp-p}$ respectively with R32 (TP7), R133 (TP9) and R131 (TP10).

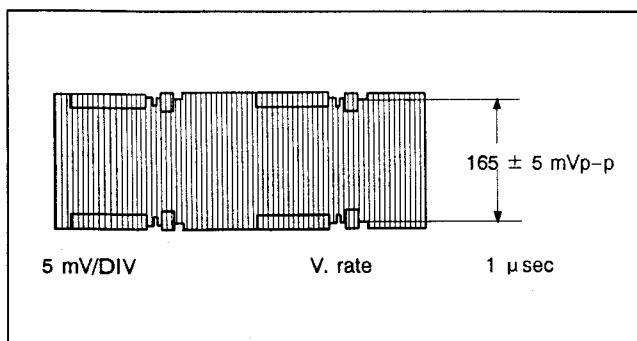


Fig. 3-11-6 HD REC FM level

3.11.8 HD PB frequency response

Signal	• HD video sweep signal
Mode	• Recording → Playback • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• TP10 (MAIN TCI) [MOTHER board] • TP110 (SUB TCI) [MOTHER board]
External trigger	• TP11 (D. FF) [VIDEO MAIN board]
Adjustment part	• R128 (PB FREQ RESP-WP1): TP10 (-) [MOD/DEMOD board, MAIN side] • R110 (PB FREQ RESP-WP2): TP10 (+) [MOD/DEMOD board, MAIN side] • R110 (PB FREQ RESP-WQ1): TP110 (+) [MOD/DEMOD board, SUB side] • R128 (PB FREQ RESP-WQ2): TP110 (-) [MOD/DEMOD board, SUB side]
Standard value	• $2.8 \pm 0.2 \text{ scale divisions}$

1. Connect the oscilloscope to TP10 on the MOTHER board.
2. Trigger the oscilloscope externally with the signal of TP11 on the VIDEO MAIN board.
3. Load the deck with a W-VHS tape, and record the HD color bar signal on it and play it back.
4. Set the oscilloscope for the negative (-) trigger.
5. As the 100 kHz marker of the sweep signal is set for 4 scale divisions, adjust R128 on the MOD/DEMOD board (MAIN side) so that 10 MHz marker is for 2.8 ± 0.2 scale divisions ($-3.0 \pm 0.5 \text{ dB}$).
6. Set the oscilloscope for the external positive (+) trigger and adjust R110 to obtain the same result as the step 5.
7. Connect the oscilloscope to TP110 on the MOTHER board.
8. Set the oscilloscope for the external negative (-) trigger.
9. Adjust R128 on the MOD/DEMOD board (SUB side) so that 10 MHz marker is for 2.8 ± 0.2 scale divisions.
10. Set the oscilloscope for the external positive (+) trigger and adjust R110 to obtain the same result as the step 9.

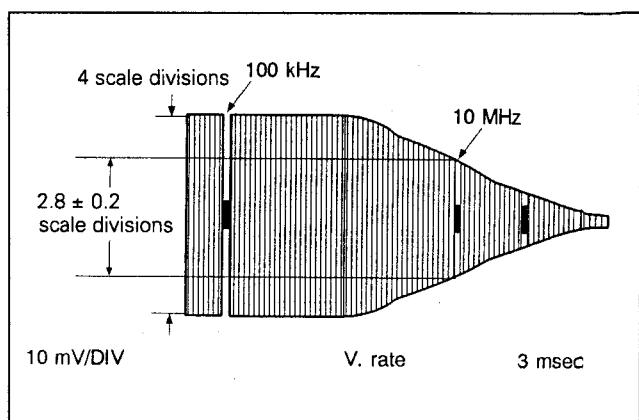


Fig. 3-11-7 Frequency response

3.11.9 PB offset level

Signal	<ul style="list-style-type: none"> HD 100 % white signal Gray scale signal
Mode	<ul style="list-style-type: none"> Recording → Playback HD: SP W-VHS tape
Test instrument	Oscilloscope
Check point	<ul style="list-style-type: none"> HD-PB OUT C-OUT (TP30)
Adjustment part	C131
Standard value	<ul style="list-style-type: none"> Offset: 0 Minimum

- Press the AUTO-TRACKING button to turn out the AT indicator.
- Record the 100 % white signal and play it back.
- Connect the oscilloscope to the HD-PB OUT terminal and adjust C131 on the MOD/DEMOD board (SUB side) so that the waveform has no offset to the blanking portion (waveform is vertically symmetric).
- Record the gray scale signal and play it back.
- Connect the oscilloscope to the C-OUT (TP30 on the VIDEO I/O board) and adjust C131 on the MOD/DEMOD board (MAIN side) to minimize the color level.
- Moreover, check to see if the color level is 4 IRE as the burst level is 40 IRE.

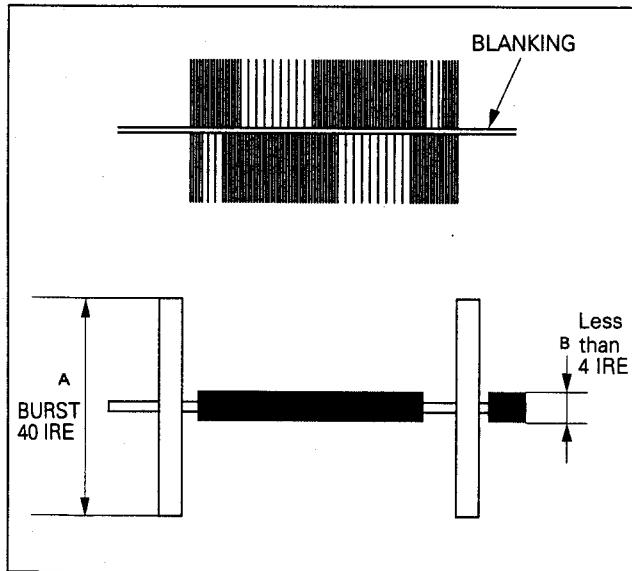


Fig. 3-11-8

3.11.10 W-VHS SD PB Y level

Signal	<ul style="list-style-type: none"> External S input Color bar signal
Mode	<ul style="list-style-type: none"> SD mode Recording → Playback W-VHS tape
Test instrument	Oscilloscope
Check point	TP20 (Y OUT) [VIDEO I/O board]
Adjustment part	R423 (W-SD PB Y LEVEL)
Standard value	$1.00 \pm 0.02 \text{ Vp-p}$ (Terminated by 75Ω)

- Load the deck with a W-VHS tape, record the color bar signal in the SD mode and then play it back.
- Adjust R423 so that Y level is $1.00 \pm 0.02 \text{ Vp-p}$ at TP20.

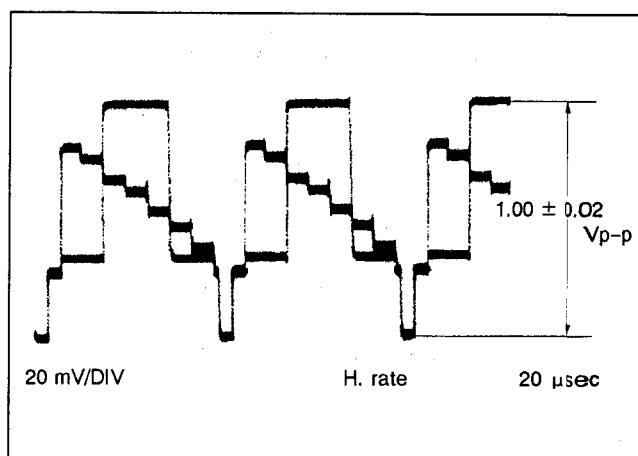


Fig. 3-11-9 W-VHS SD PB Y level

3.12 MOD/DEMOD CIRCUIT

- Note:**
- Check points and adjustment parts are located on the MOD/DEMOD board unless otherwise specified.
 - Volumes appearing as adjustment parts for the items of this section (3.12.1 to 3.12.6) are trimming resistors.
 - If IC4 or IC6 is replaced, it needs to replace the trimming resistors with chip variable resistors for adjustment.

3.12.1 Sub-emphasis input level

Signal	• HD color bar signal
Mode	• EE • HD: SP
Test instrument	• Oscilloscope
Check point	• IC2 pin 1
Adjustment part	• R12 (SUB EMPHA INPUT LEVEL)
Standard value	• $400 \pm 10 \text{ mVp-p}$

- Connect the oscilloscope to pin 1 of IC2.
- Check to see if the signal level is $400 \pm 10 \text{ mVp-p}$.
- If not, temporarily replace R12 with a variable resistor (NVP1301-102NU) and adjust it to obtain $400 \pm 10 \text{ mVp-p}$ as the signal level.

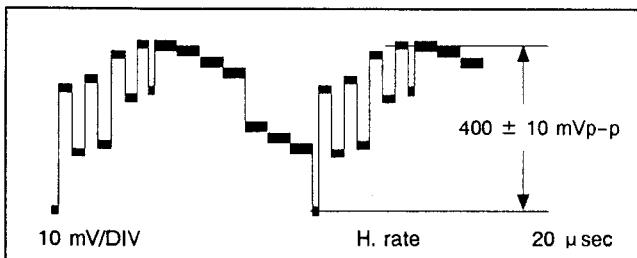


Fig. 3-12-1 Sub-emphasis input level

3.12.2 White/Dark clip

Signal	• HD color bar signal
Mode	• EE • HD: SP
Test instrument	• Oscilloscope
Check point	• IC4 pin 32
Adjustment part	• R23 (WHITE/DARK CLIP-1) • R38 (WHITE/DARK CLIP-2) • R39 (WHITE/DARK CLIP-3)
Standard value	• White clip: $240 \pm 5 \%$ • Dark clip: $110 \pm 5 \%$

- Connect the oscilloscope to pin 32 of IC4.
- Observe the waveform on the oscilloscope while checking to see if the white clip is $240 \pm 5 \%$ and the dark clip is $110 \pm 5 \%$.
- If the check result needs adjustment, temporarily replace R23, R38 and R39 with variable resistors (NVP1301-332NU, -103NU and -103NU) respectively and adjust them to obtain the specified white and dark clip levels.

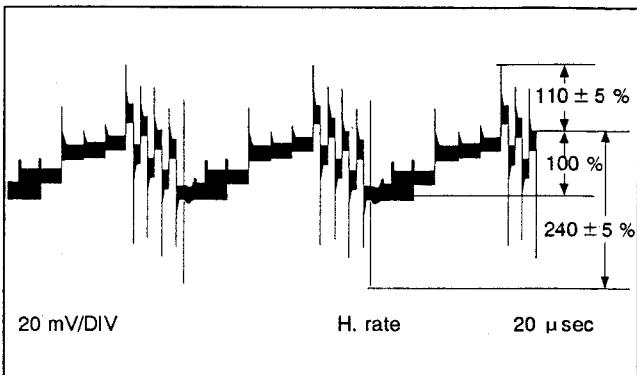


Fig. 3-12-2 White/Dark clip

3.12.3 Carrier/Deviation

- Carrier

Signal	• No signal input
Mode	• EE • HD: SP
Test instrument	• Frequency counter
Check point	• CN2 pin 6 (REC FM)
Adjustment part	• R35 (CARRIER)
Standard value	• $8.00 \pm 0.05 \text{ MHz}$

- Connect the frequency counter to pin 6 of CN2.
- Check to see if the frequency counter reads $8.00 \pm 0.05 \text{ MHz}$ without input signal.
- If not, temporarily replace R35 with a variable resistor (NVP1301-472NZ) and adjust it to obtain the specified frequency ($8.00 \pm 0.05 \text{ MHz}$).

- Deviation

Signal	• HD color bar signal
Mode	• Recording → Playback • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• CN3 pin 1
Adjustment part	• R36 (DEVIATION)
Standard value	• $1.00 \pm 0.06 \text{ Vp-p}$

1. Connect the oscilloscope to pin 1 of CN3.
2. Load the deck with a W-VHS tape. Record the HD color bar signal and play it back while checking to see if the Y level is $1.00 \pm 0.06 \text{ Vp-p}$.
3. If not, temporarily replace R36 with a variable resistor (NVP1301-153NZ) and adjust it to obtain the specified Y level ($1.00 \pm 0.06 \text{ Vp-p}$).

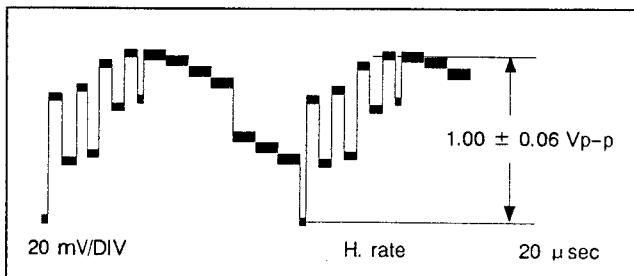


Fig. 3-12-3 Deviation

3.12.4 Carrier balance

Signal	• HD color bar signal
Mode	• Recording → Playback • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• Emitter of Q10
Adjustment part	• R65 (CARRIER BALANCE)
Standard value	• Minimum noise level

1. Connect the oscilloscope to the emitter of Q10.
2. Load the deck with a W-VHS tape. Record the HD color bar signal and play it back while checking to see if the waveform shows fluctuation at minimum.
3. If not, temporarily replace R65 with a variable resistor (NVP1301-103NZ) and adjust it to minimize the fluctuation of the waveform.

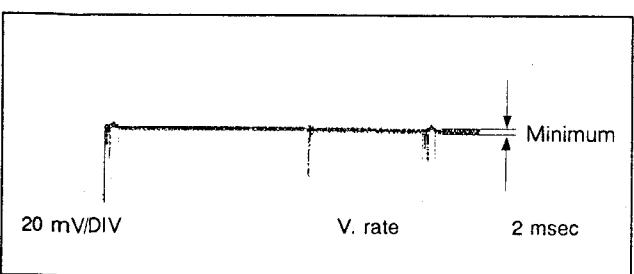


Fig. 3-12-4 Carrier balance

3.12.5 Sub-emphasis PB input level

Sign	• HD color bar signal
Mode	• Recording → Playback • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• IC2 pin 1
Adjustment part	• R6 (SUB EMPHA PB INPUT LEVEL)
Standard value	• $400 \pm 10 \text{ mVp-p}$

1. Connect the oscilloscope to pin 1 of IC2.
2. Load the deck with a W-VHS tape. Record the HD color bar signal and play it back while checking to see if the signal level is $400 \pm 10 \text{ mVp-p}$.
3. If not, temporarily replace R6 with a variable resistor (NVP1301-152NZ) and adjust it to obtain the specified level ($400 \pm 10 \text{ mVp-p}$).

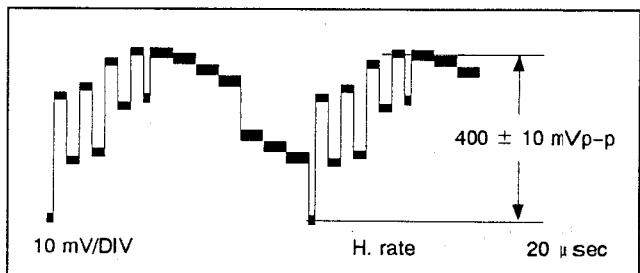


Fig. 3-12-5 Sub-emphasis PB input level

3.12.6 PB TCI output level

Signal	• HD color bar signal
Mode	• Recording → Playback • HD: SP • W-VHS tape
Test instrument	• Oscilloscope
Check point	• CN3 pin 1
Adjustment part	• R26 (PB OUTPUT LEVEL)
Standard value	• $1.00 \pm 0.06 \text{ Vp-p}$

1. Connect the oscilloscope to pin 1 of CN3.
2. Load the deck with a W-VHS tape. Record the HD color bar signal and play it back while checking to see if the signal level is $1.00 \pm 0.06 \text{ Vp-p}$.
3. If not, temporarily replace R26 with a variable resistor (NVP1301-103NZ) and adjust it to obtain the specified signal level ($1.00 \pm 0.06 \text{ Vp-p}$).

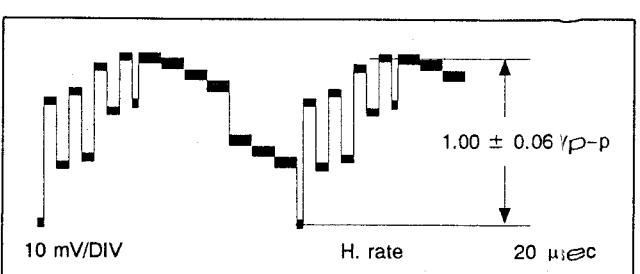
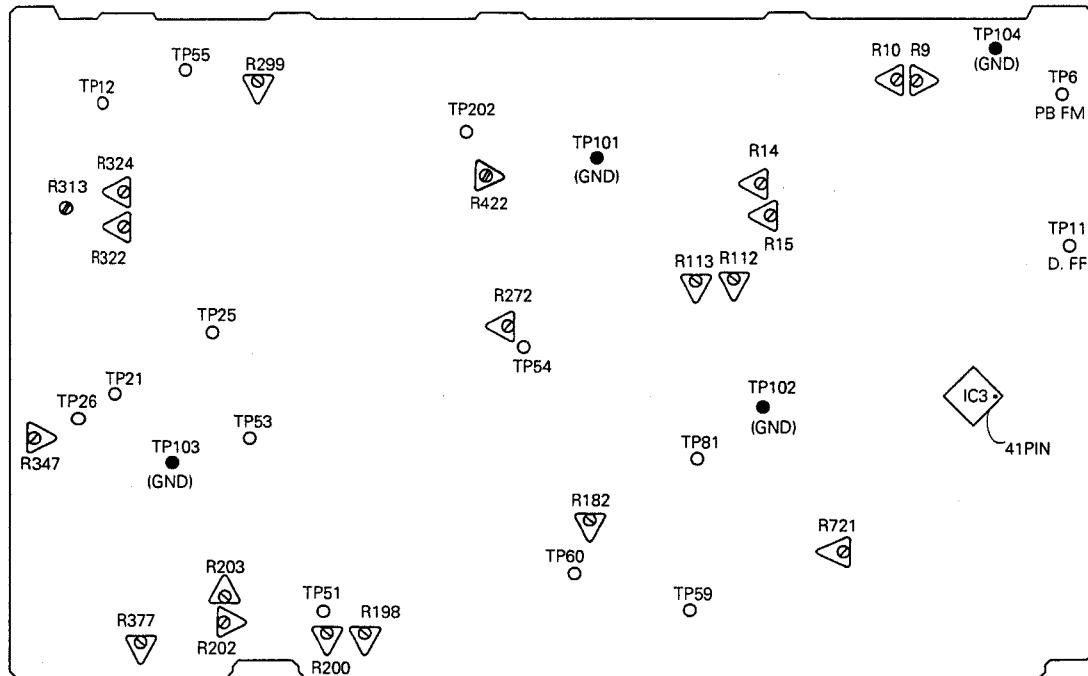


Fig. 3-12-6 PB TCI output level

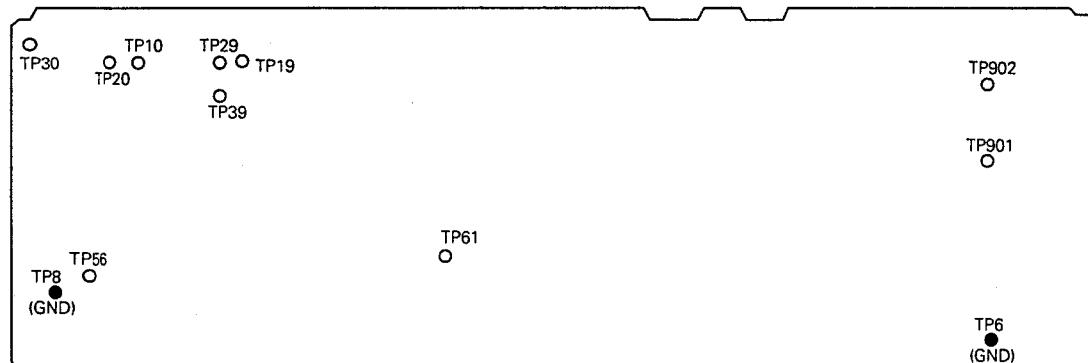
3.13 LOCATION OF CHECK POINTS AND ADJUSTMENT PARTS ON RESPECTIVE BOARDS

—VIDEO MAIN board assembly —

*Unless otherwise indicated, the drawings show the pattern side.



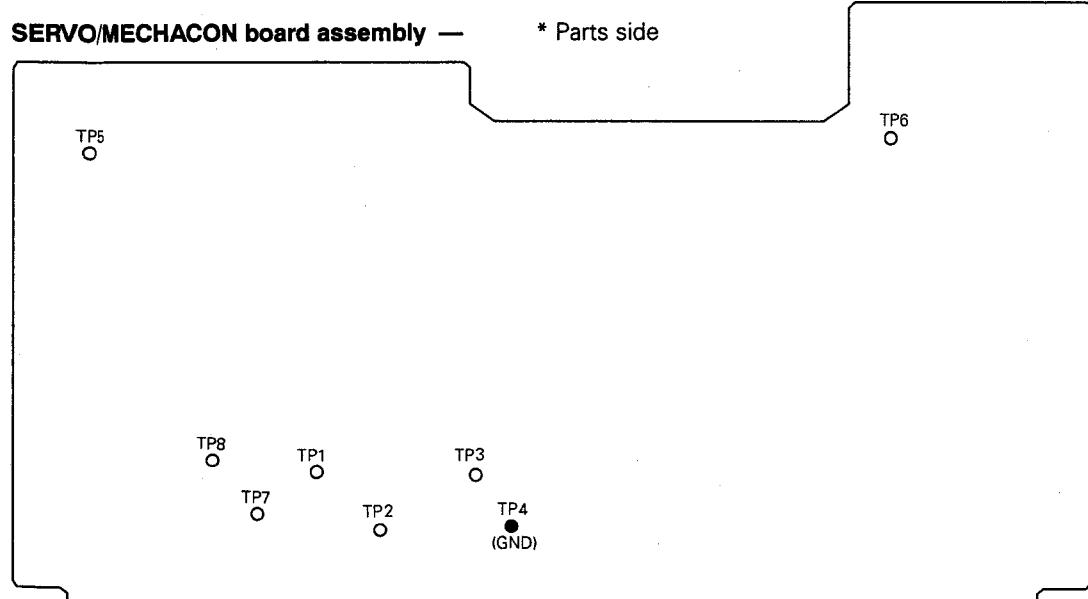
— VIDEO IN/OUT board assembly —



TP6	: GND
TP8	: GND
TP10	: V. OUT
TP19	: V. IN
TP20	: Y. OUT
TP29	: Y. IN
TP30	: C. OUT
TP39	: C. IN
TP56	: REC/PB Y
TP61	: BS SYNC
TP901	: OSC 1
TP902	: OSC 2

— SERVO/MECHACON board assembly —

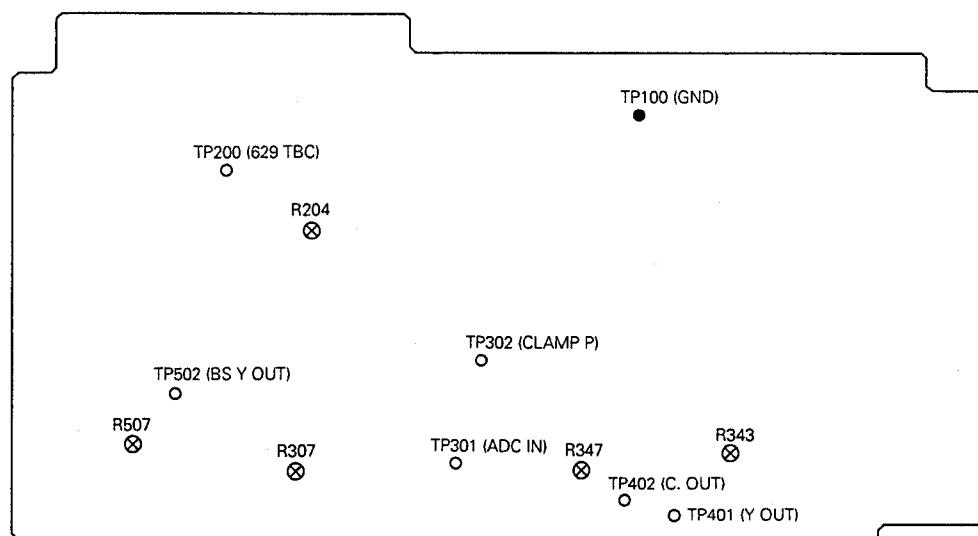
* Parts side



TP1	: CTL. P
TP2	: AVG FM (\$)
TP3	: AVG FM (#)
TP4	: GND
TP5	: D. PG
TP6	: TENSION
TP7	: D. FG
TP8	: C. FG

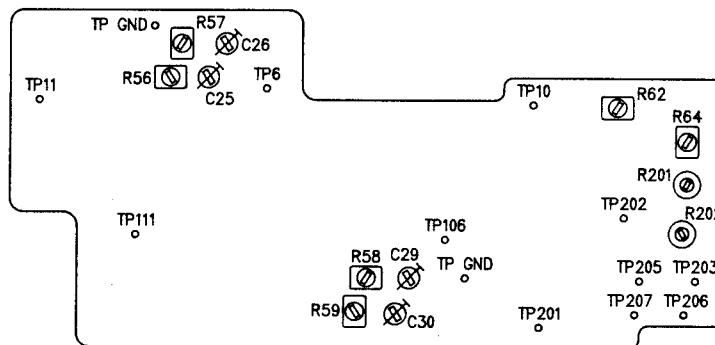
— DIGITAL board assembly —

* Parts side



— MOTHER board assembly —

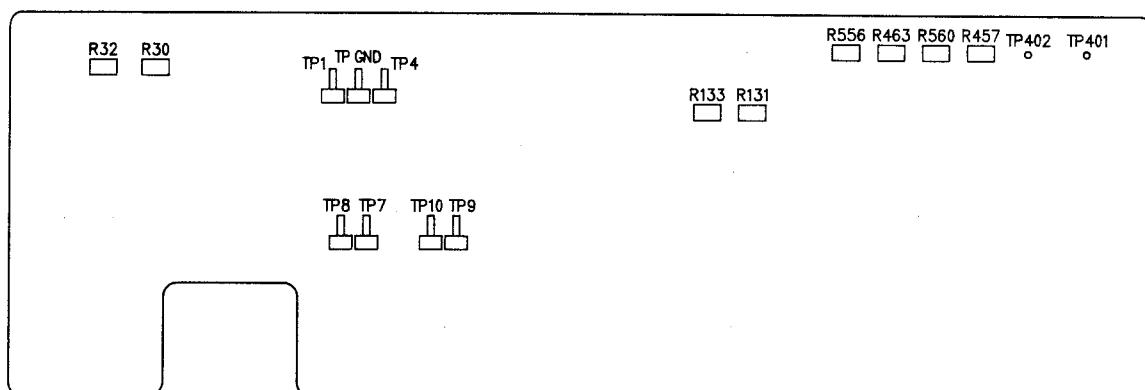
* Parts side



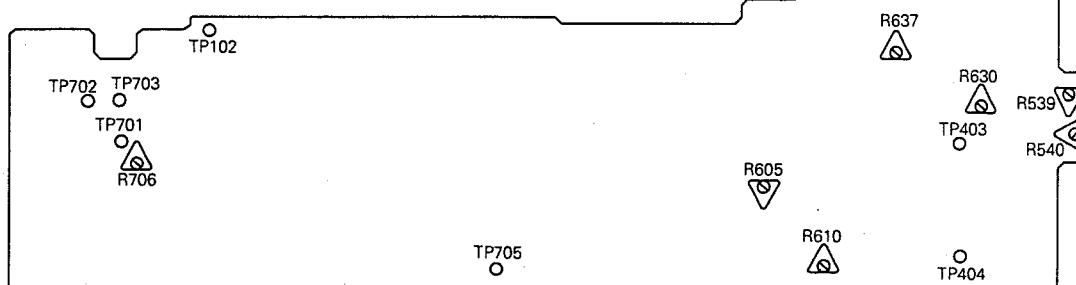
- TP6 : PB FM (M)
- TP10 : MAIN TCI
- TP11 : D. FF (M)
- TP106 : PB FM (S)
- TP110 : SUB TCI
- TP111 : D. FF (S)
- TP201 : CTL P
- TP202 : TEN V
- TP203 : AVG FM (M)
- TP205 : ADJ MODE
- TP206 : GND
- TP207 : AL 5V
- TP GND

— PRE/REC board assembly —

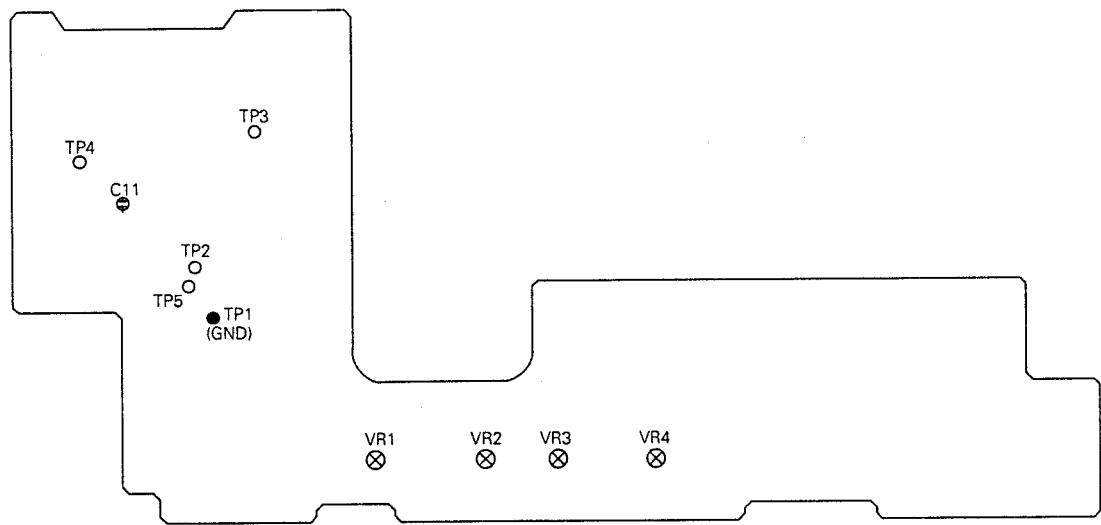
* Parts side



— AUDIO IN/OUT board assembly —

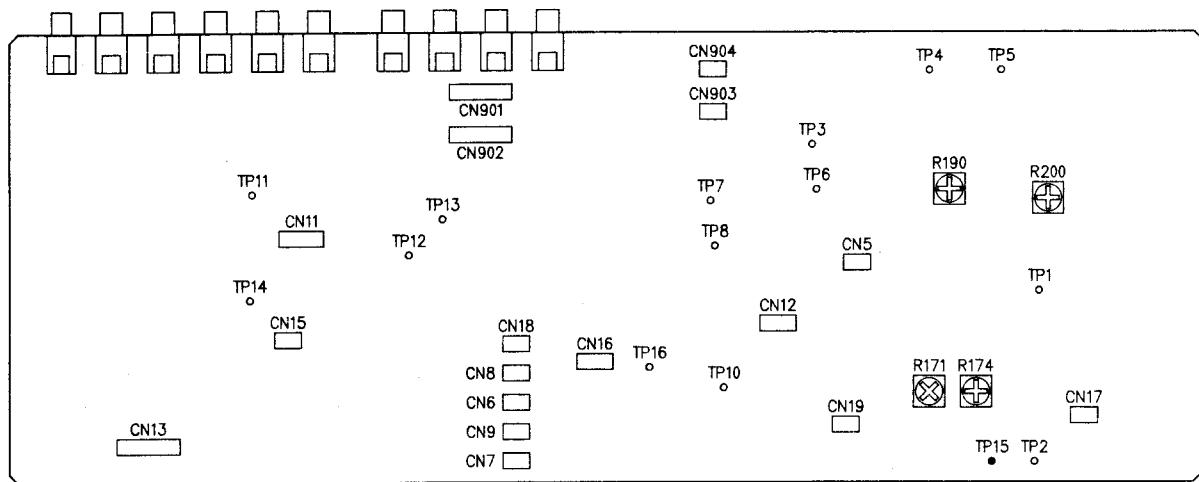


—TIMER board assembly —

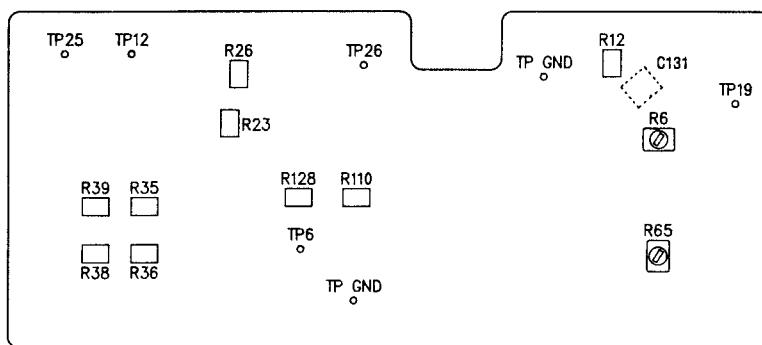


— W-I/O board assembly —

* Parts side

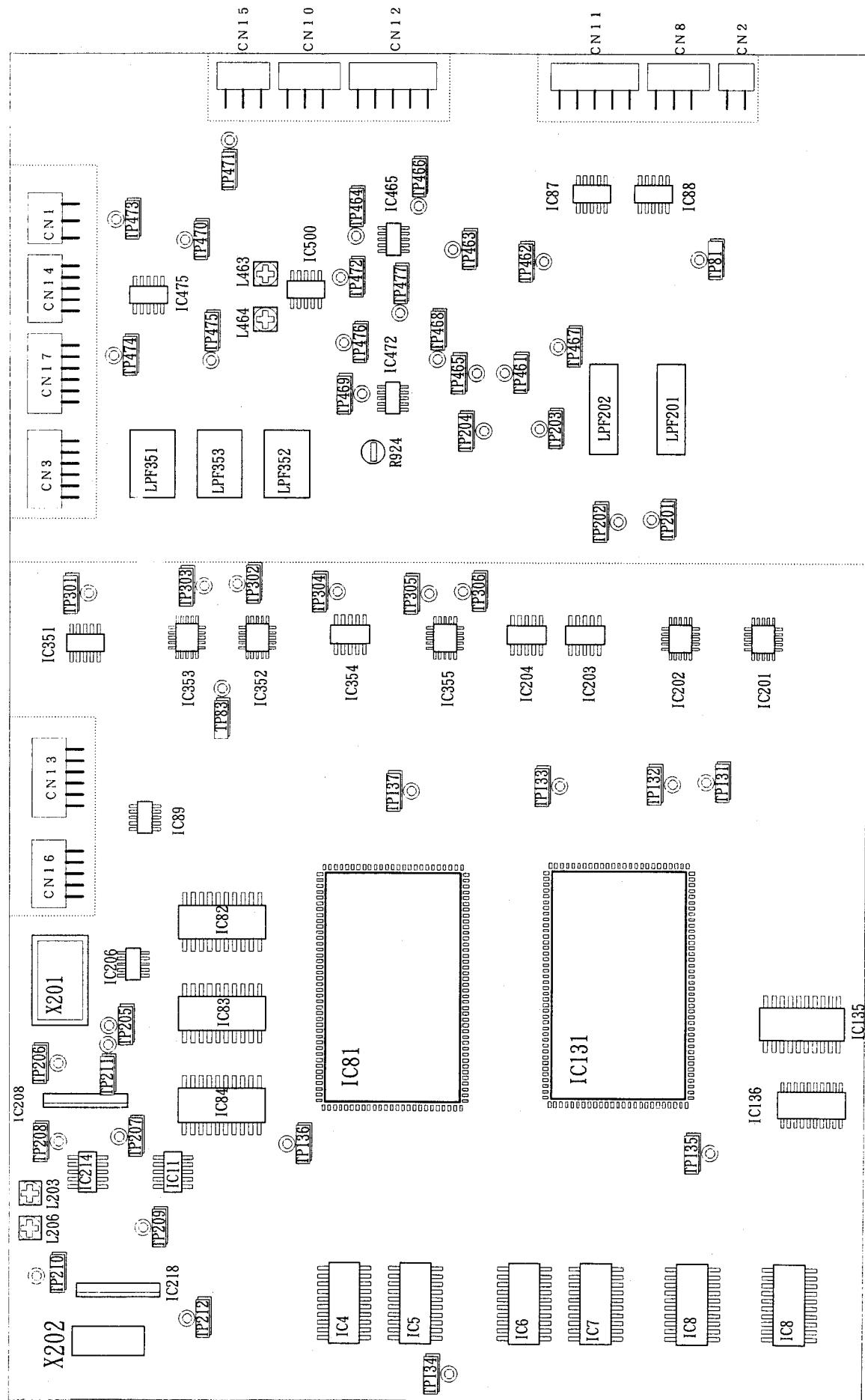


— MOD/DEMOD board assembly —



— W-MAIN board assembly —

* Parts side





SECTION 4 CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

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. Schematic diagram values

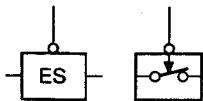
Unless otherwise specified.

- 1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
Chip resistors are 1/16 W.
K: K Ω (1000 Ω), M: M Ω (1000K Ω)
- 2) All capacitance values are in μ F, (P: PF).
- 3) All inductance values in μ H, (m: mH).
- 4) All diodes are 1SS133 or MA165, (refer to parts list).

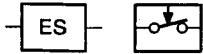
2. Indications

AUX : Active only at high.

AUX : Active only at low.



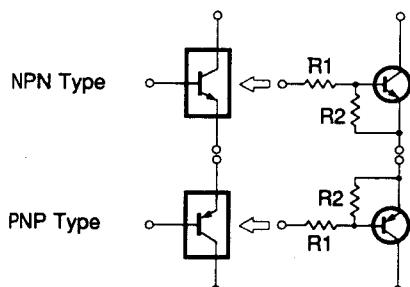
Active only at low for electronic switch.



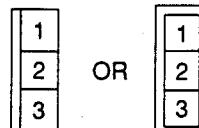
Active only at high for electronic switch.

Digital transistor :

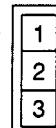
The digital transistor includes built in resistors. It features small size and high reliability.



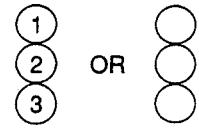
3. Interpreting Connector indications



OR

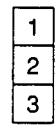


Removable connector



OR

Direct connection on board



Non-removable Board connector



Connected pattern on board

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

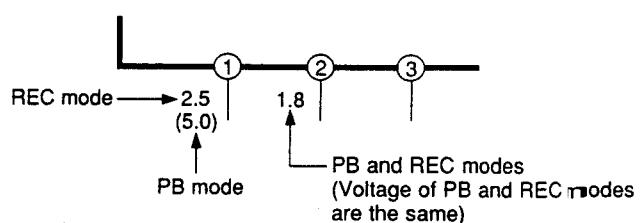
REC: 1KHz, -8 dBs sine wave signal in SP mode, Normal VHS mode.
PB : REC then playback it.

3) Movie Camera circuits

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

4) Indication on schematic diagram

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



Note: If do not indicate for voltage measurement 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

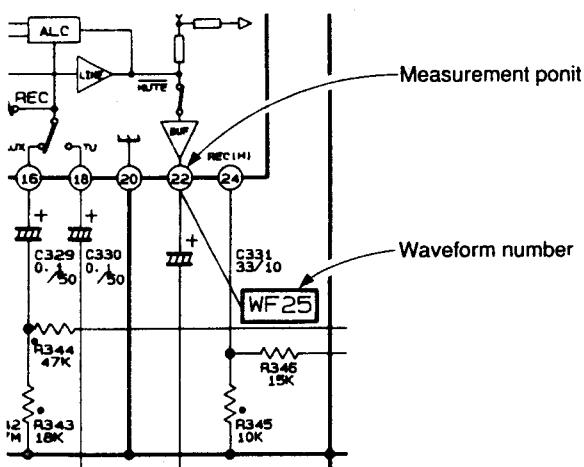
REC: 1KHz, -8 dBs sine wave signal in SP mode, normal VHS mode.
PB : REC then playback it.

3) Movie Camera circuits

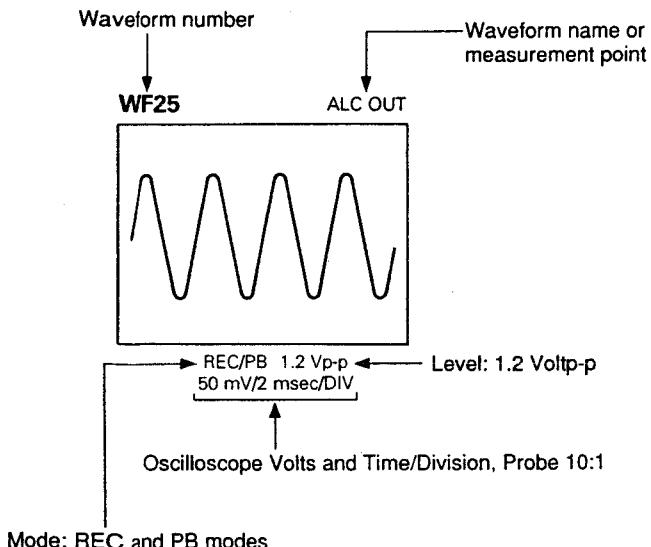
Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.

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.

- | | |
|--|--|
| | Playback signal path |
| | Playback and recording signal path |
| | Recording signal path
(including E-E signal path) |
| | Y signal path |
| | Colour (Chroma) signal path |
| | R or R-Y signal path |
| | B or B-Y signal path |
| | Capstan servo path |
| | Drum servo path |
| | Reel servo path |

CIRCUIT BOARD NOTES

1. Colour indications

- 1) Foil side :
Foil side patterns are indicated at GREY shading.
- 2) Component side :
Component side patterns are indicated at RED shading.

2. 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) are indicated.

3. Parts location guides

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

1) Signal pattern :

REF No.	LOCATION
TRANSISTOR	
Q101	2A
Reference number	Horizontal "A" zone Vertical "2" zone

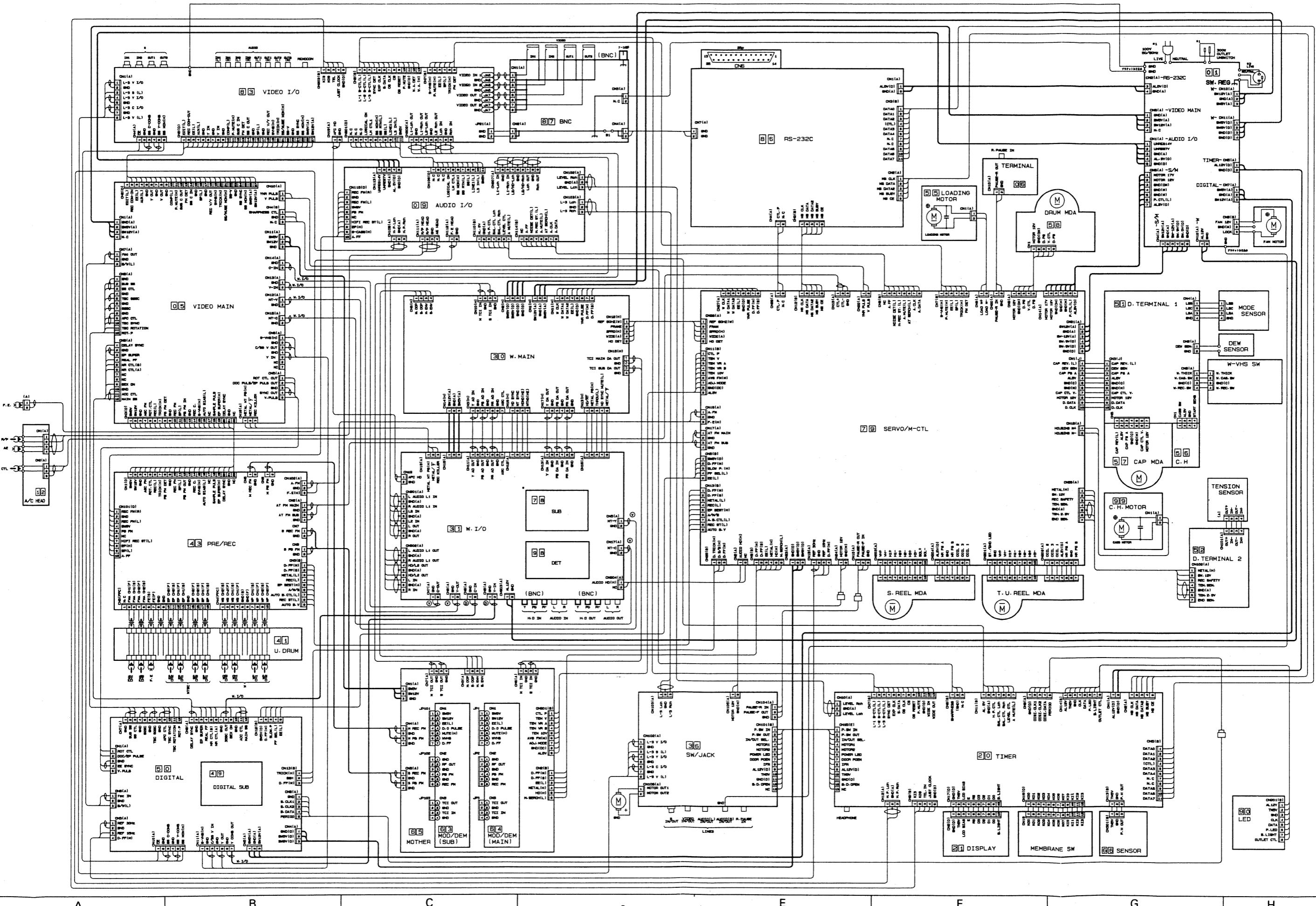
2) Double pattern :

REF No.	LOCATION
IC	
IC101	B-5C
B: Foil side (A: Component side)	Horizontal "C" zone Vertical "5" zone

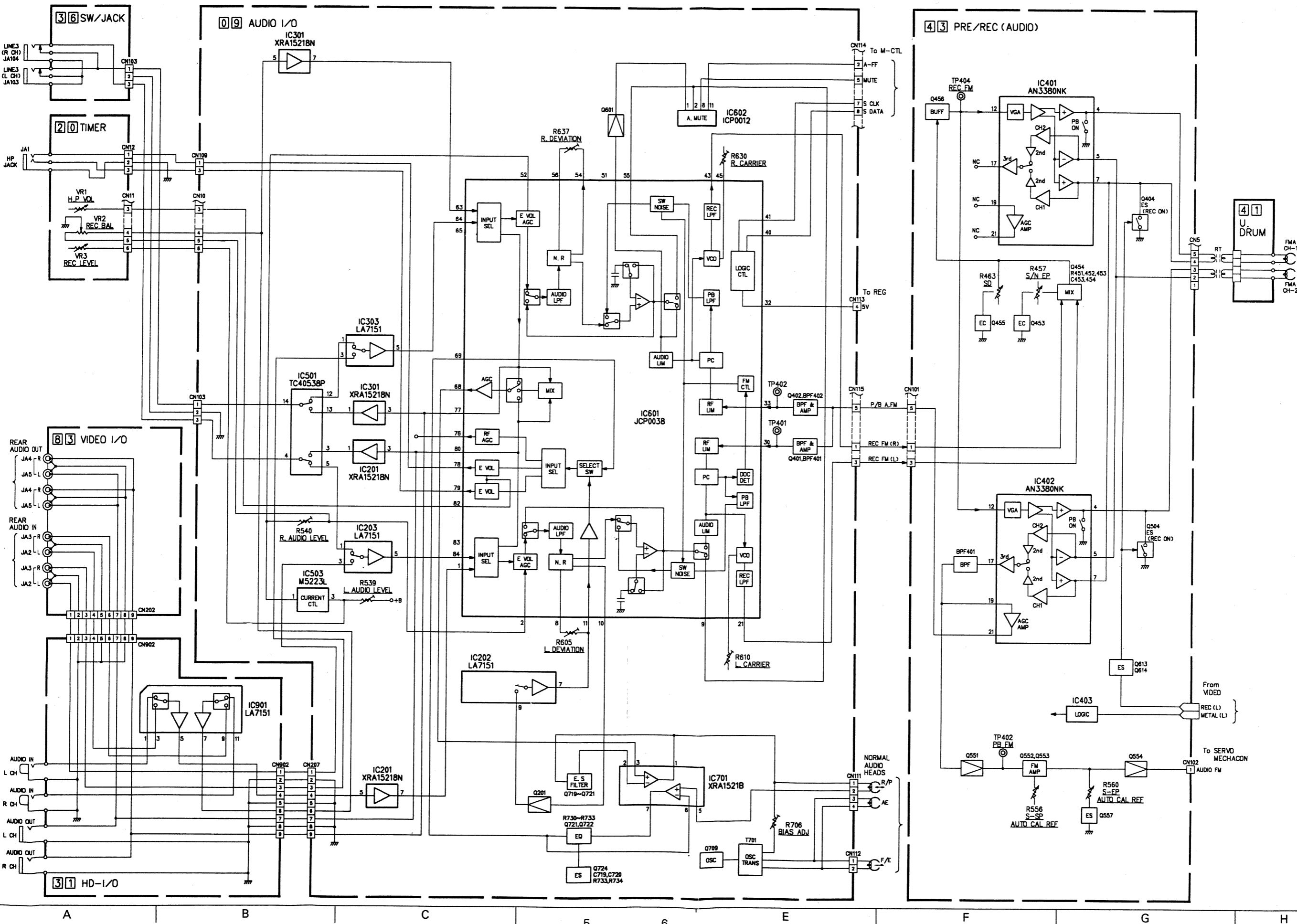
Notes:

- 1) For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).
- 2) For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.

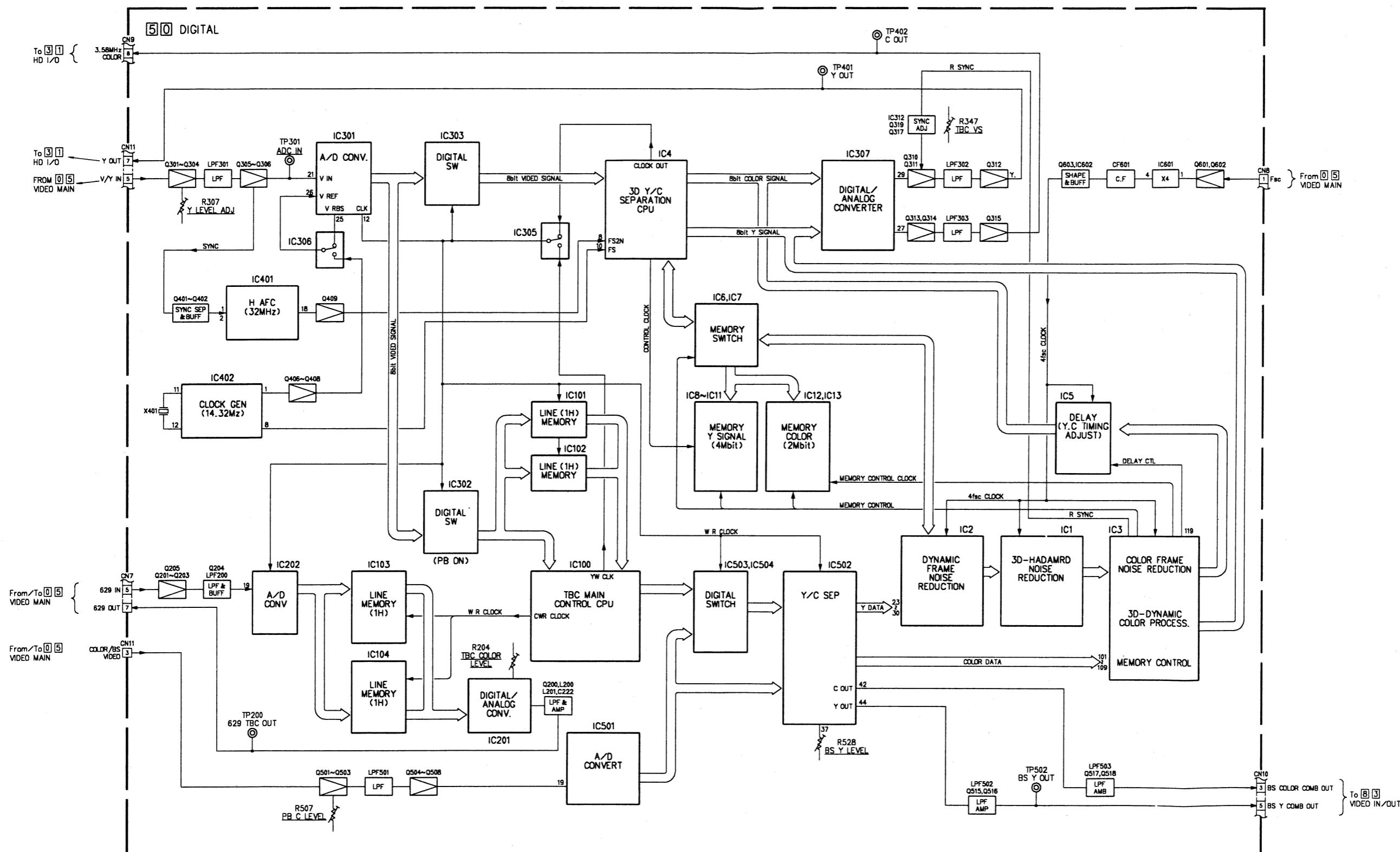
4.1 OVERALL WIRING DIAGRAM



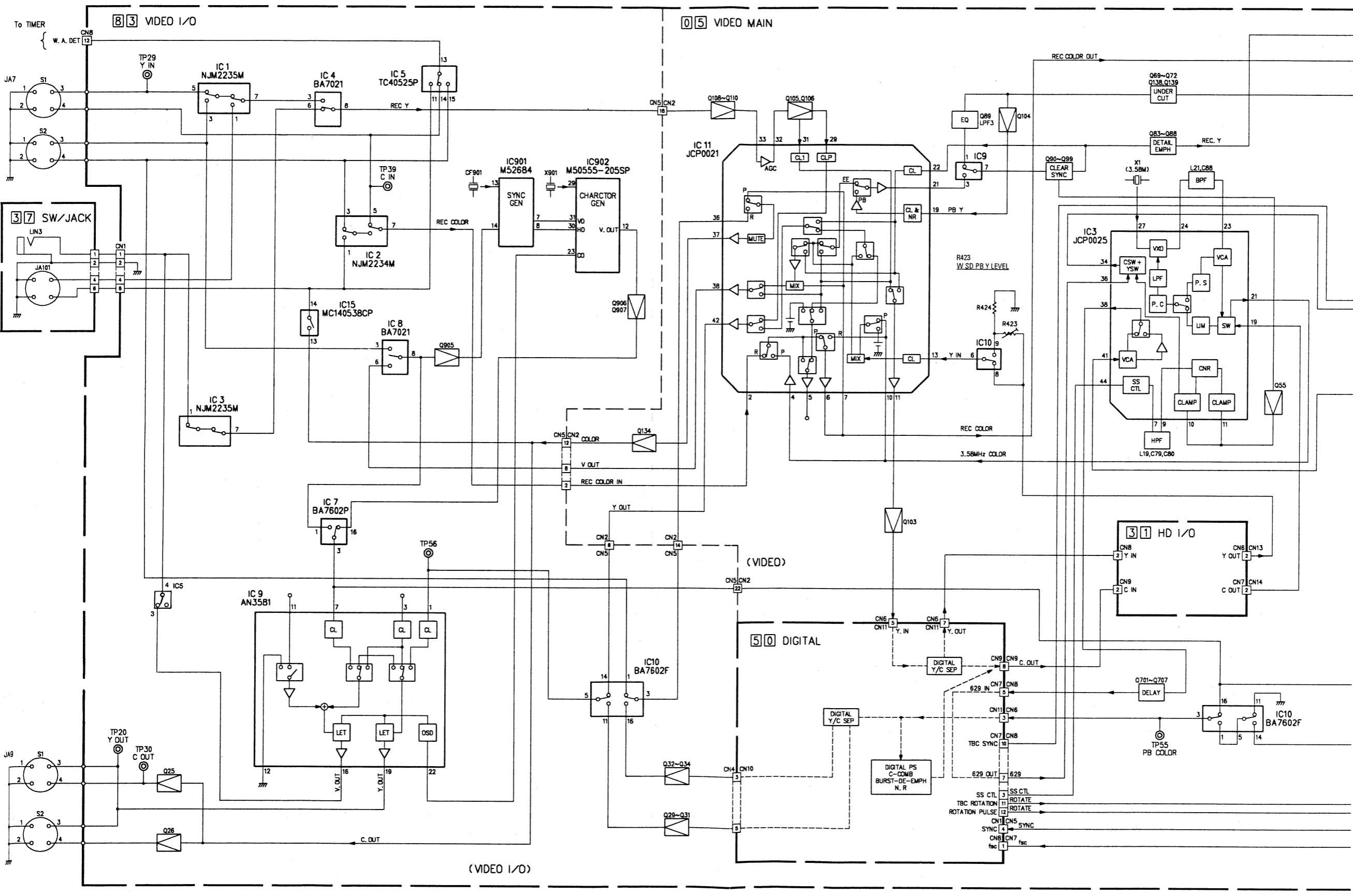
4.2 AUDIO BLOCK DIAGRAM

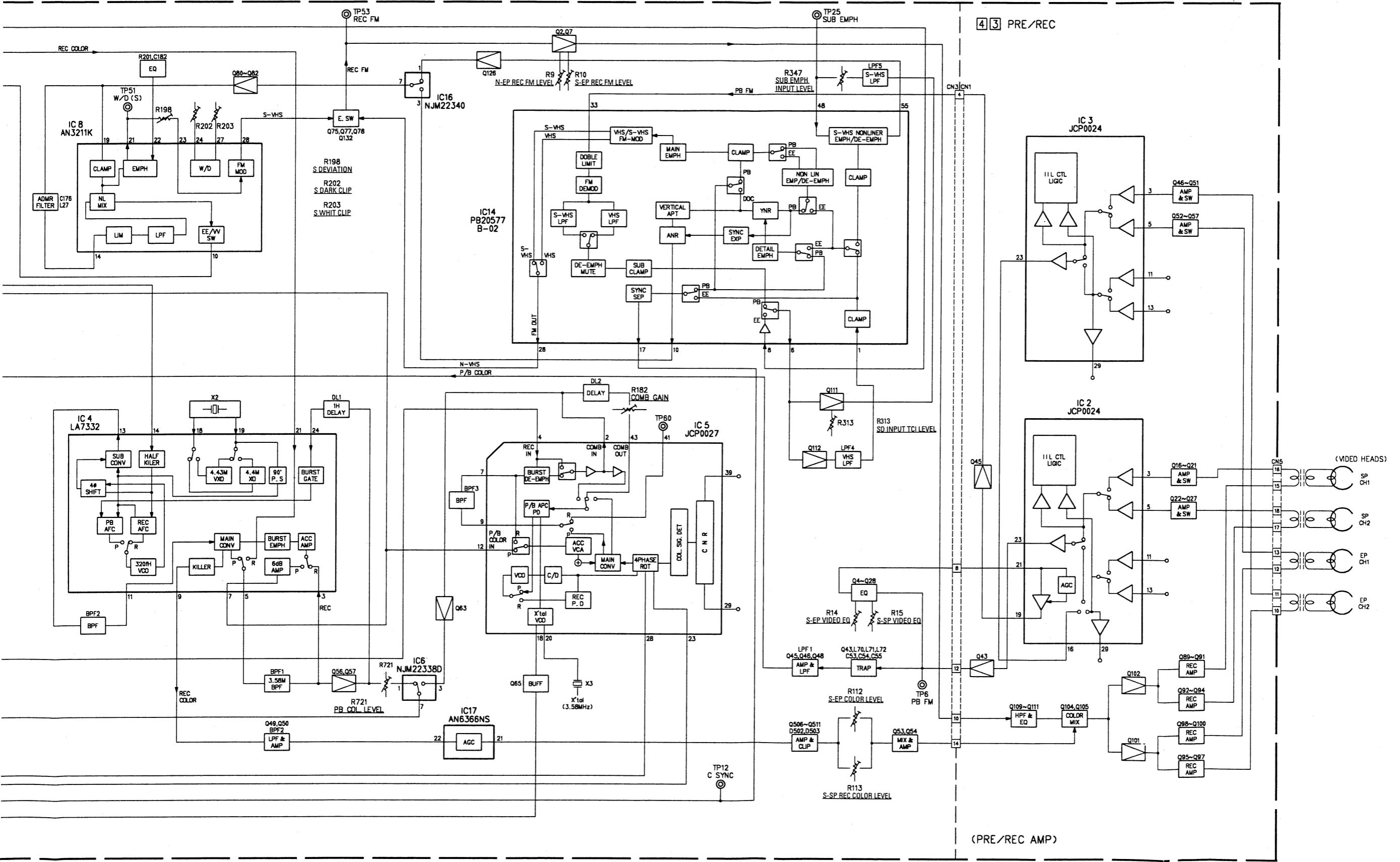


4.3 VIDEO DIGITAL BLOCK DIAGRAM



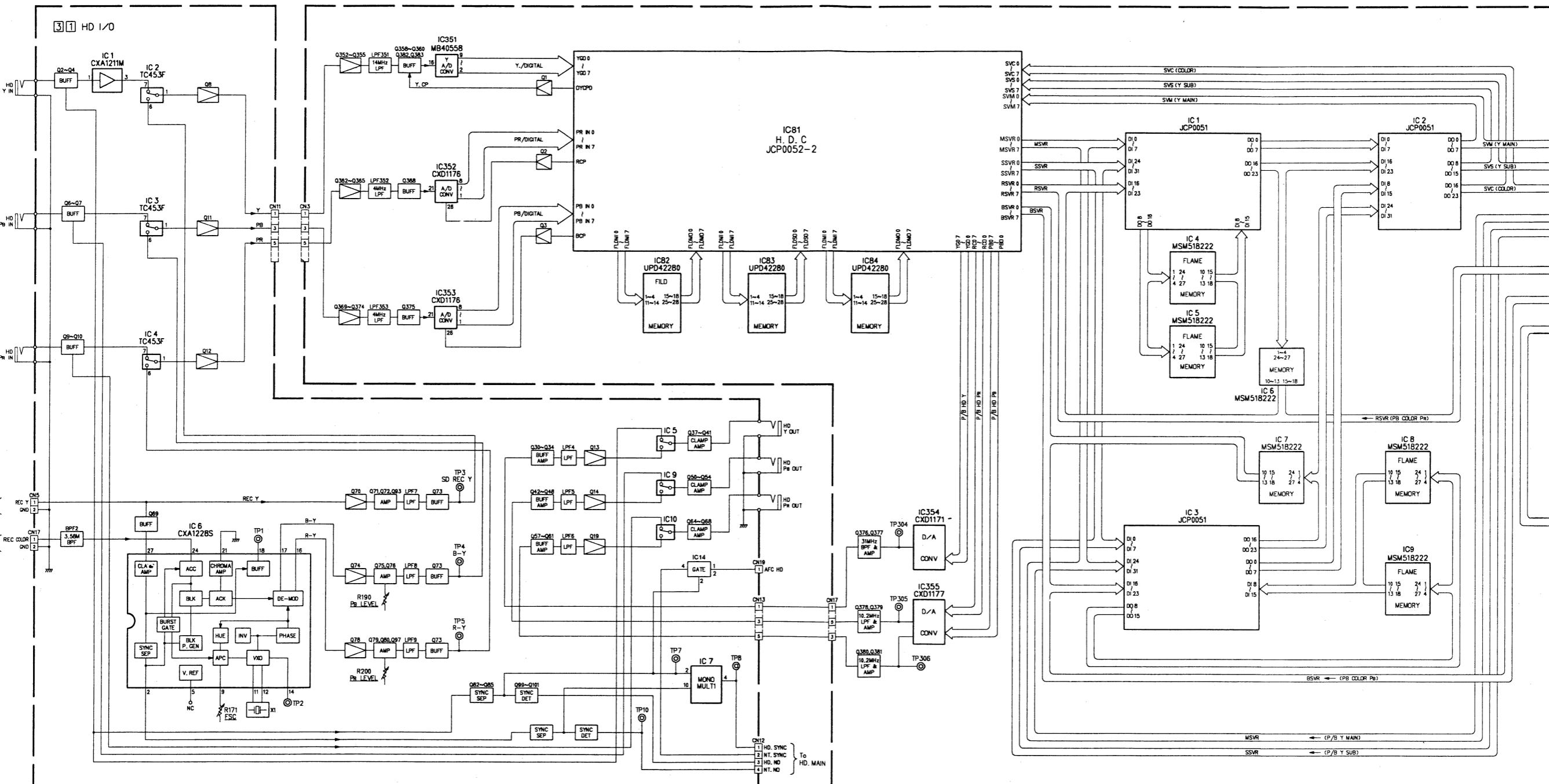
4.4 NTSC VIDEO BLOCK DIAGRAM

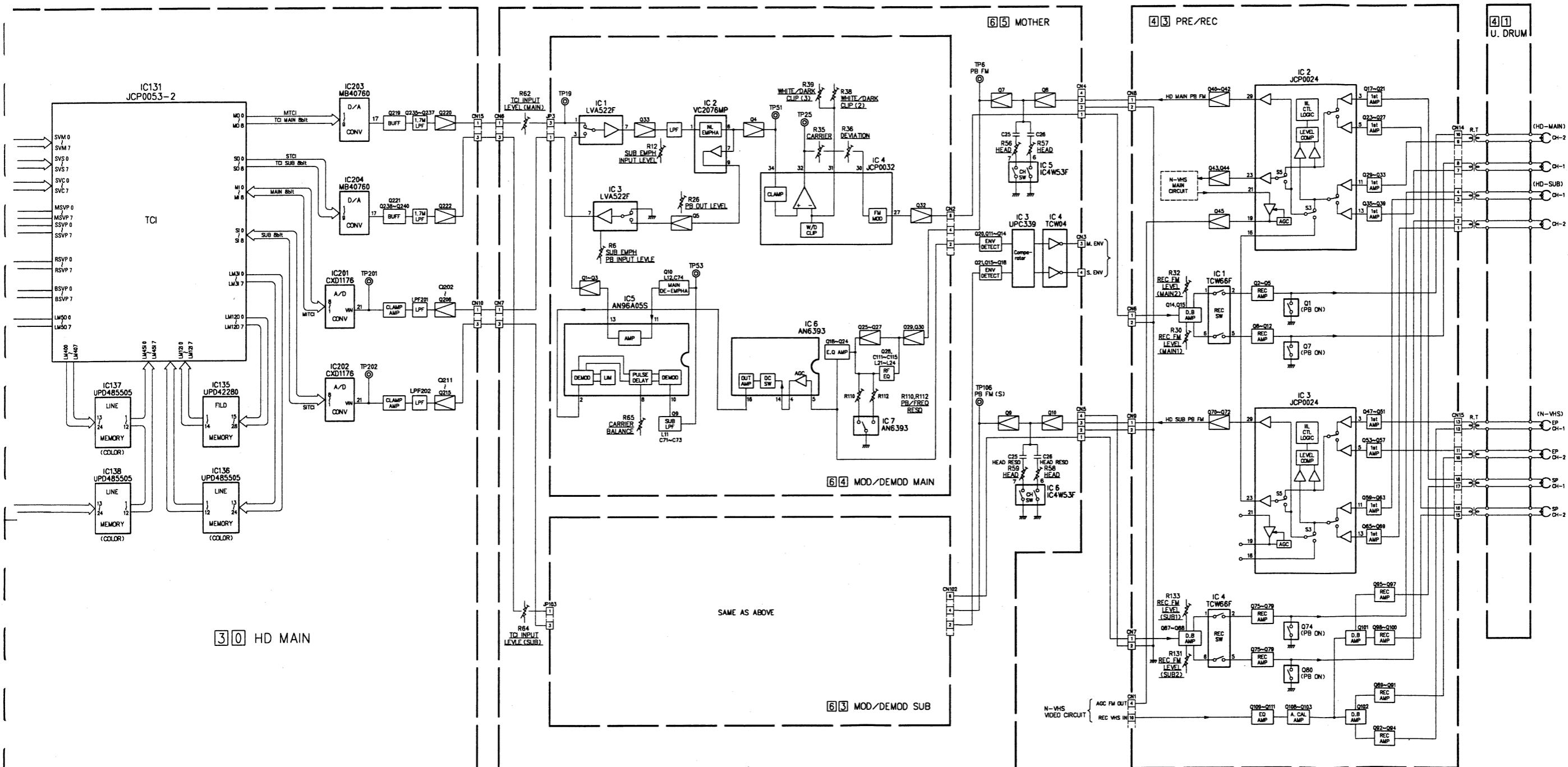




(PRE/REC AMP)

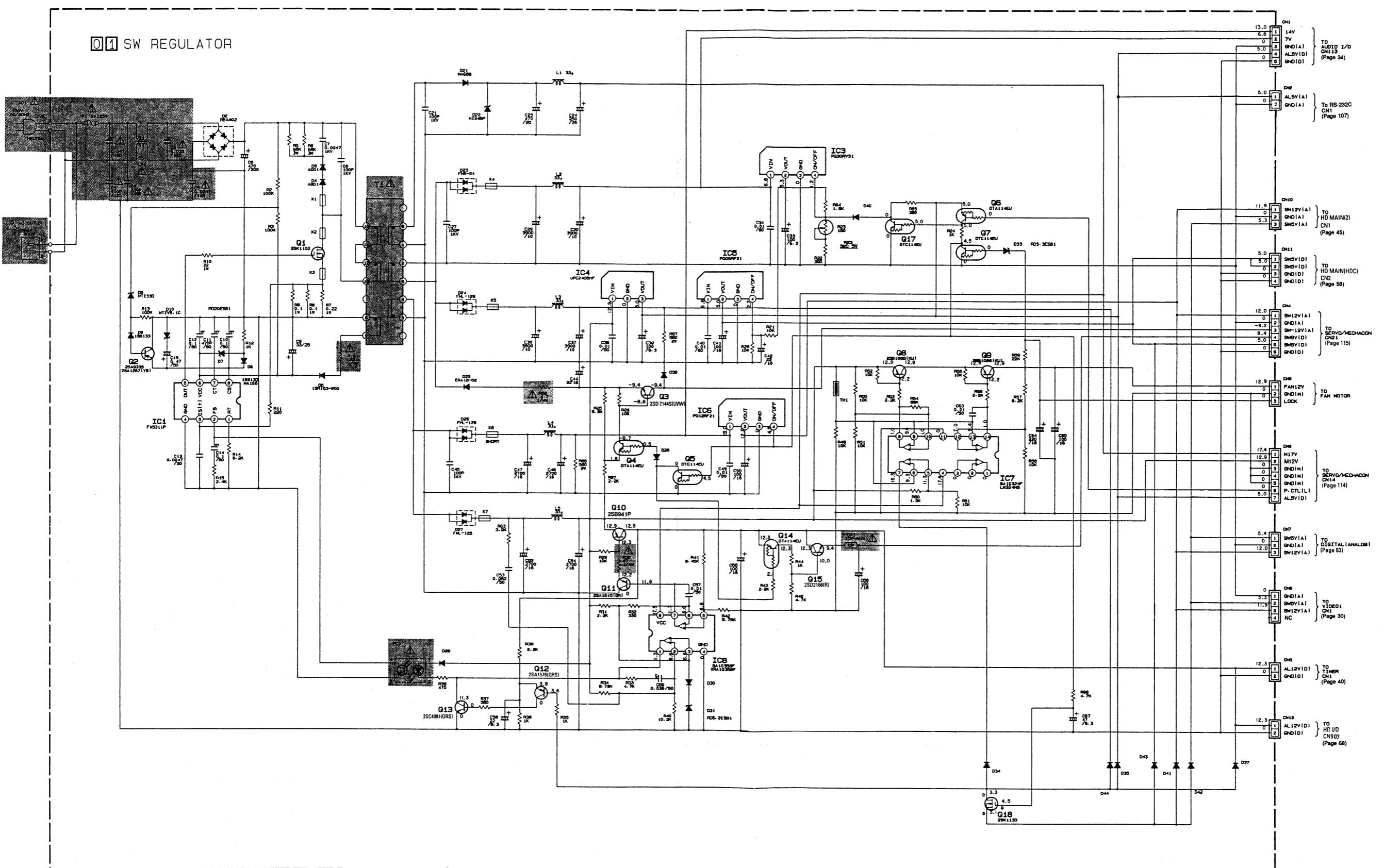
4.5 W-MAIN VIDEO BLOCK DIAGRAM



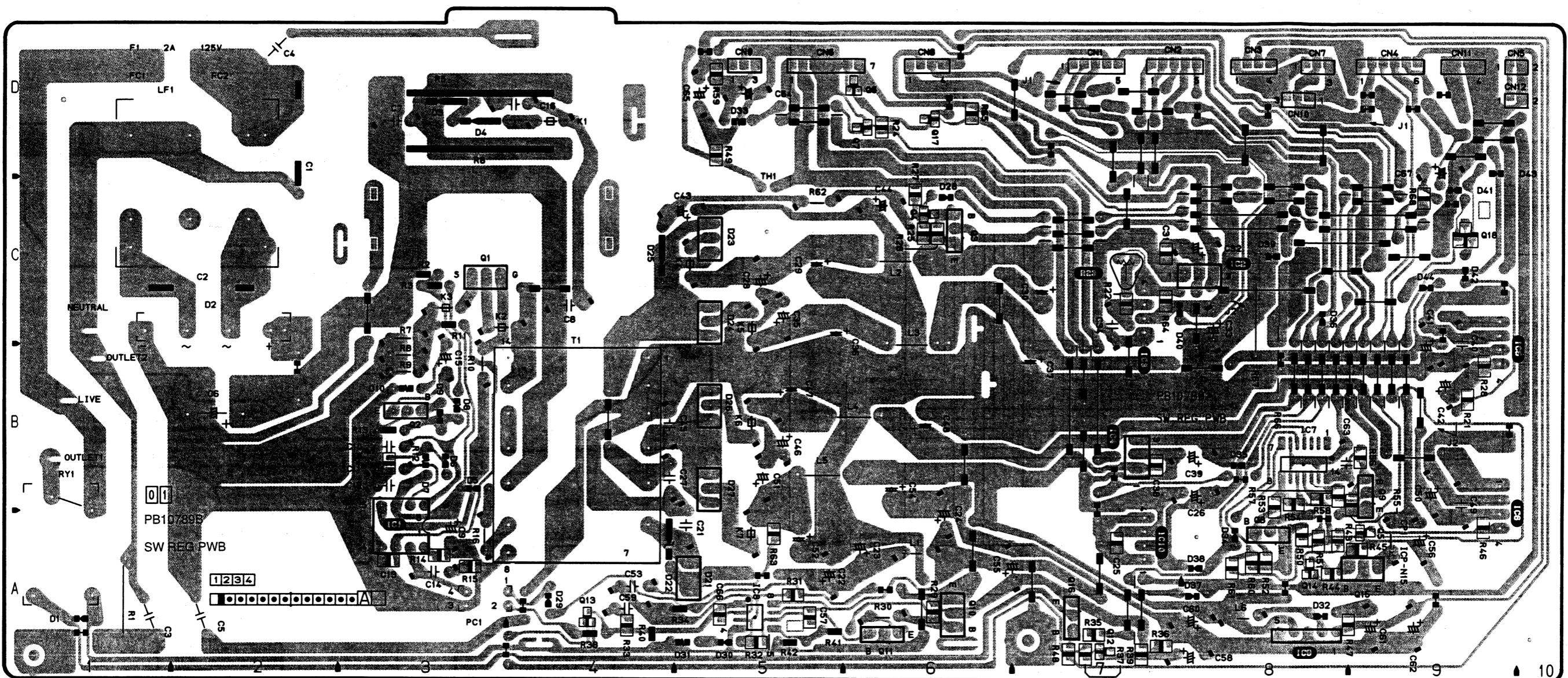


I J K L 15 16 M N O P

4.6 SWITCHING REGULATOR SCHEMATIC DIAGRAM



4.7 SWITCHING REGULATOR CIRCUIT BOARD



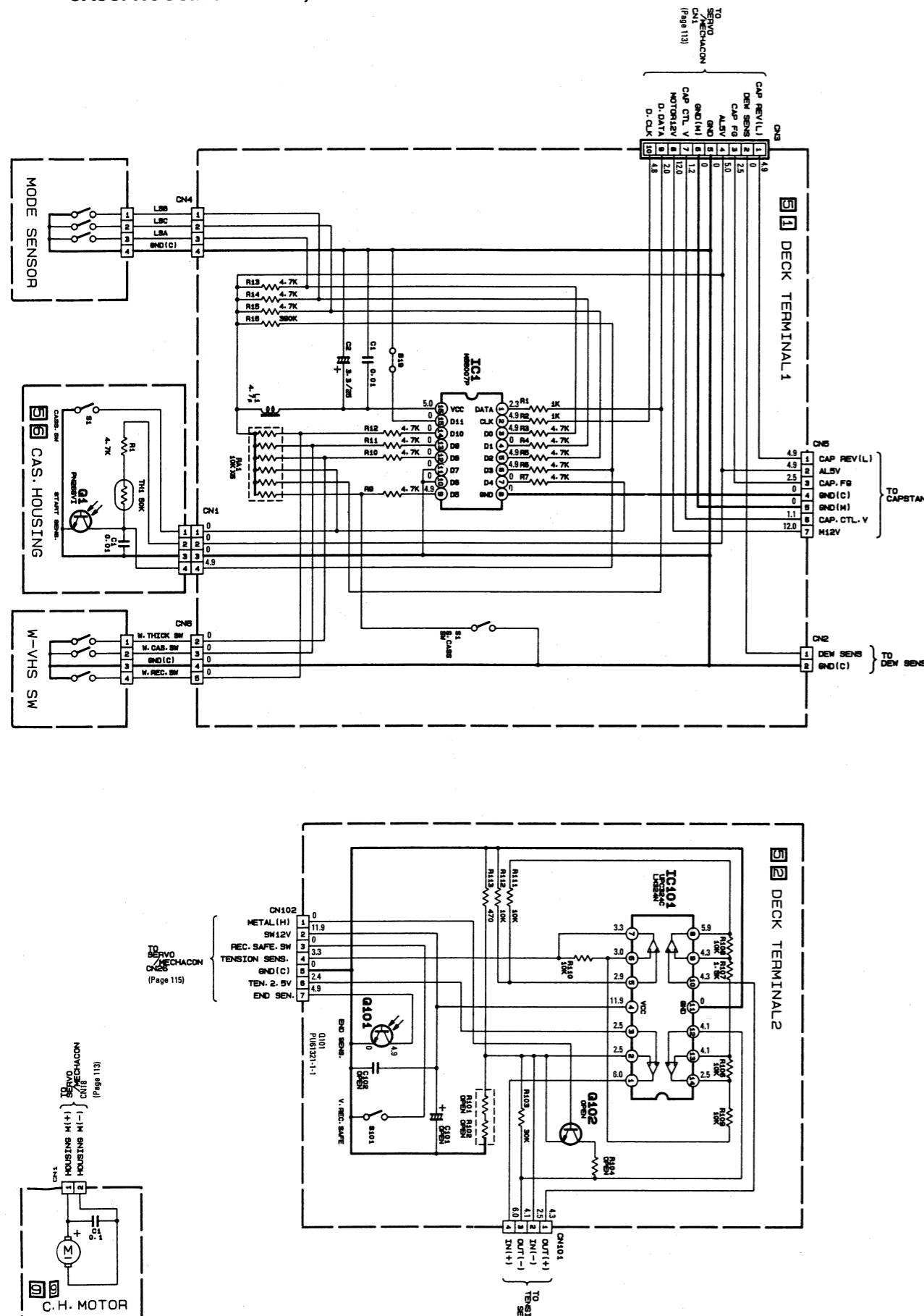
MAIN COMPONENT PARTS LOCATION GUIDE
-01> SW REG BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION			
IC								
IC1	3A	Q17	6D	D35	8B			
IC3	7C	Q18	9C	D37	8A			
IC4	7B	DIODE						
IC5	9B	D2	2C	D39	8C			
IC6	9B	D3	3D	D40	7C			
IC7	8B	D4	3D	D41	9C			
IC8	5A	D5	3B	D42	9C			
TRANSISTOR								
Q1	3C	D6	3B	D43	9D			
Q2	3B	D7	3B	D44	9C			
Q3	6C	D8	3B	CONNECTOR				
Q4	6C	D9	3B	CN1	7D			
Q5	9A	D10	3B	CN2	7D			
Q6	6D	D21	5A	CN4	9D			
Q7	9B	D22	4A	CN5	9D			
Q8	6D	D23	4C	CN6	5D			
Q9	9B	D24	5C	CN7	8D			
Q10	6A	D25	4C	CN8	6D			
Q11	6A	D26	5B	CN9	5D			
Q12	7A	D27	5B	CN10	8D			
Q13	4A	D28	6C	CN11	9D			
Q14	8A	D29	4A	CN12	9D			
Q15	9A	D30	5A	ADJUSTMENT				
		D31	5A	R23	7B			
		D32	5A	CIRCUIT PROTECTOR				
		D33	5D	CP1	9A			

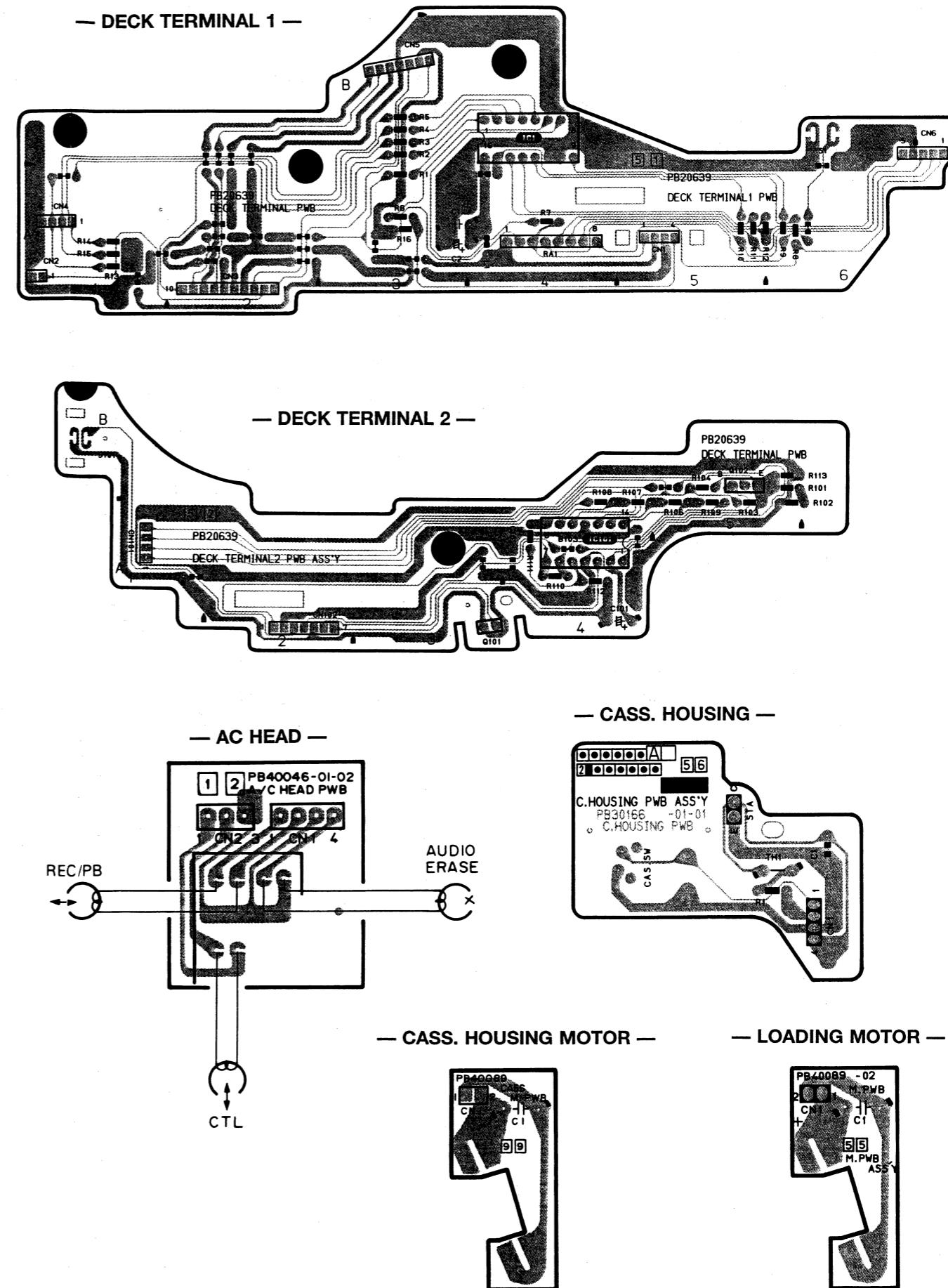
ELADLESS COMPONENT PARTS LOCATION GUIDE
-01> SW REG BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION			
IC								
IC7	8B	R33	4A	RESISTOR				
IC8	5A	R35	7A	CAPACITOR				
TRANSISTOR								
Q4	6C	R36	7A	C13	3A			
Q5	9A	R37	7A	C38	7B			
Q6	6D	R39	7A	C57	5A			
Q7	6D	R43	8A	C66	5A			
Q12	7A	R44	8A	RESISTOR				
Q13	4A	R45	9A	R12	3B			
Q14	8A	R46	9A	R14	3A			
Q17	6D	R49	5D	R15	3A			
Q18	9C	R50	8A	R21	9B			
RESISTOR								
R51	8A	R52	8A	R53	8B			
R52	8A	R54	8B	R56	9B			
R53	8B	R55	8B	R57	8B			
R54	8B	R22	7C	R58	8B			
R55	8B	R24	6D	R59	5D			
R56	9B	R25	6C	R60	8A			
R57	8B	R26	6C	R61	8A			
R58	8B	R27	6C	R63	5A			
R59	5D	R28	9B	R64	7C			
R60	8A	R29	6A	R65	6D			
R61	8A	R31	5A	R66	9C			
R62	8A	R32	5A					

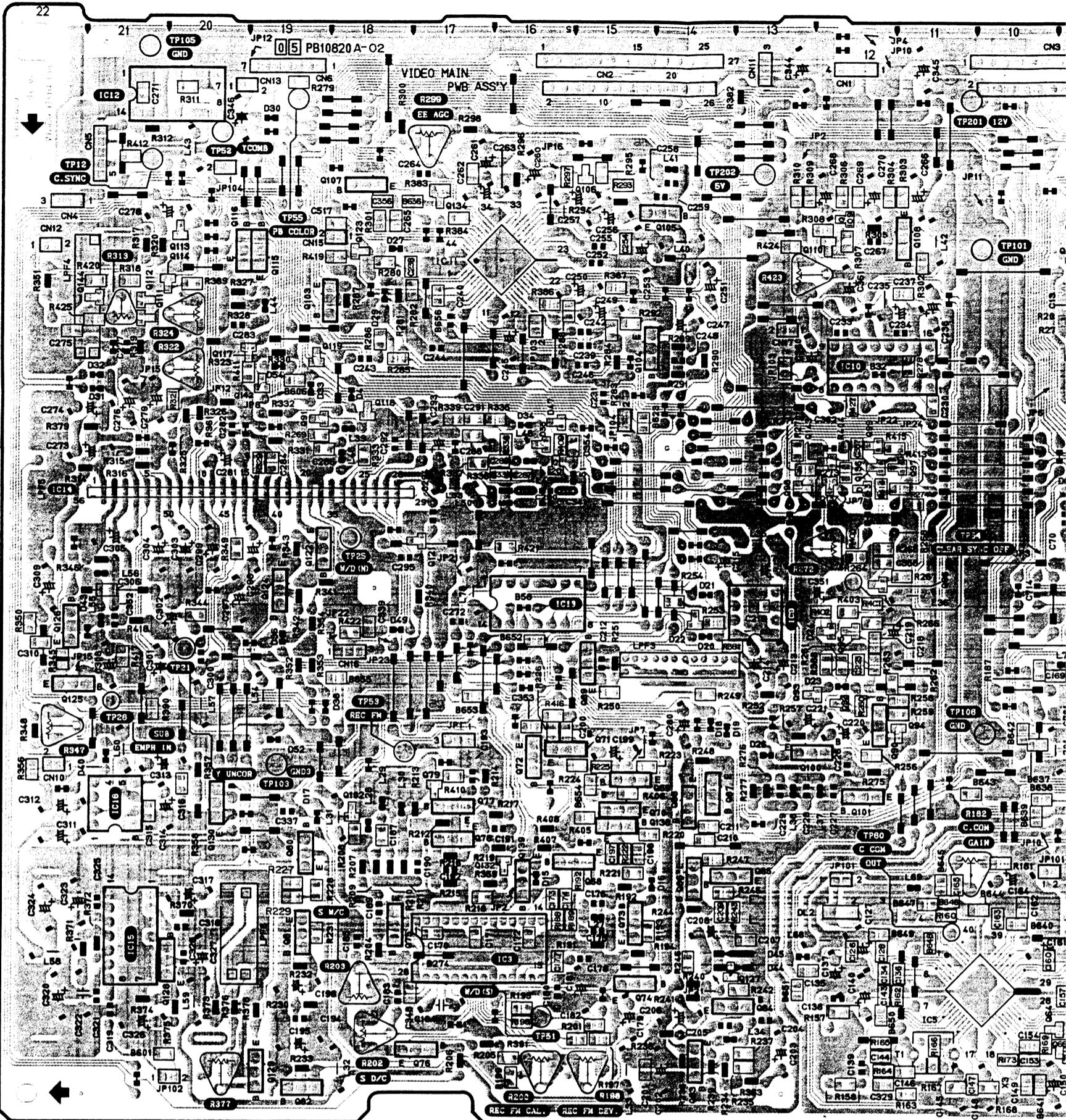
**4.8 DECK TERMINAL 1, DECK TERMINAL 2, MODE SENSOR, CASS. HOUSING,
CASS. HOUSING MOTOR, SCHEMATIC DIAGRAMS**



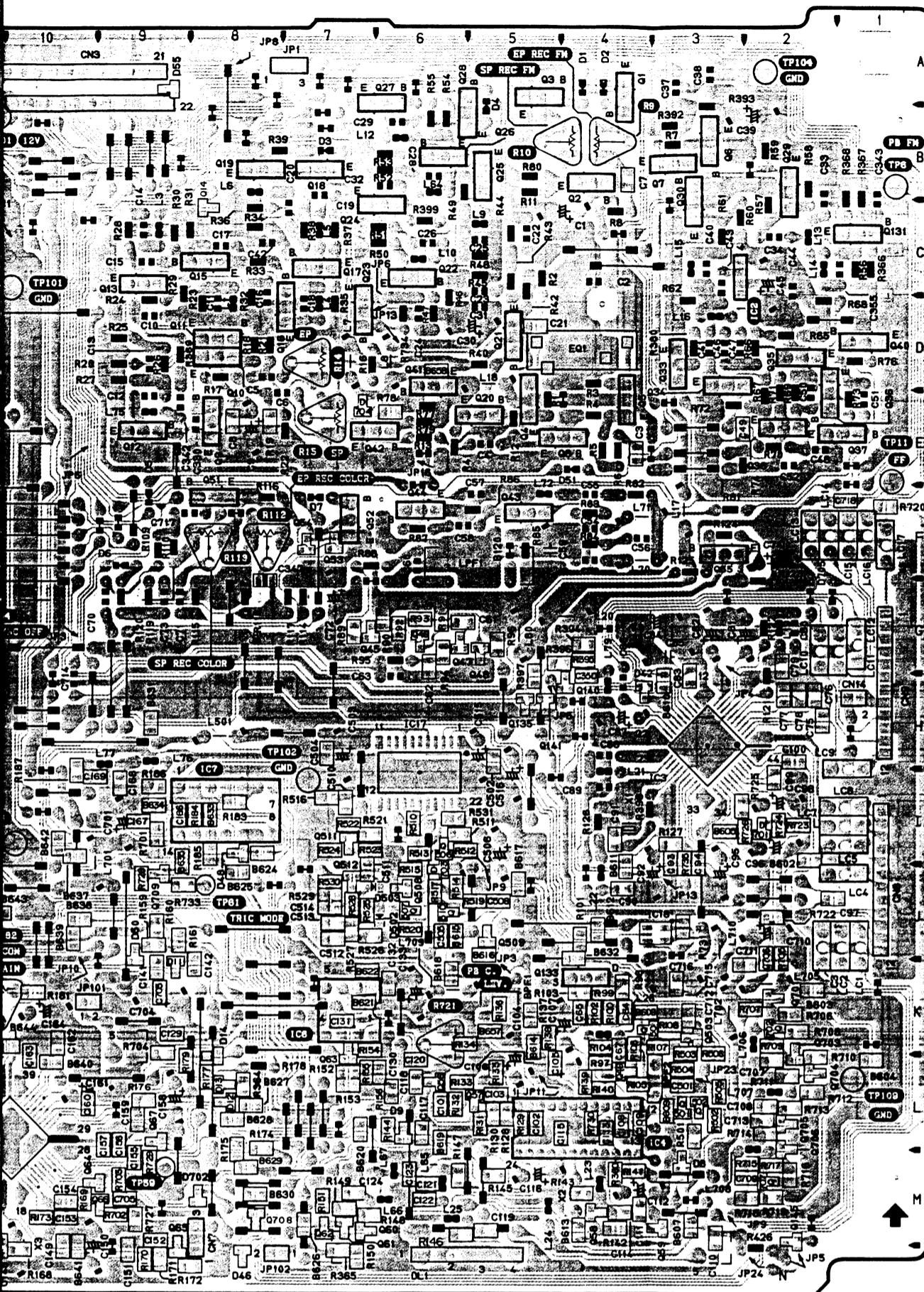
**4.9 DECK TERMINAL 1, DECK TERMINAL 2, A/C HEAD, CASS. HOUSING, CASS. HOUSING MOTOR,
LOADING MOTOR CIRCUIT BOARDS**



4.10 NTSC VIDEO CIRCUIT BOARD



ELADLESS COMPONENT PARTS LOCATION GUIDE <05> VIDEO MAIN BOARD

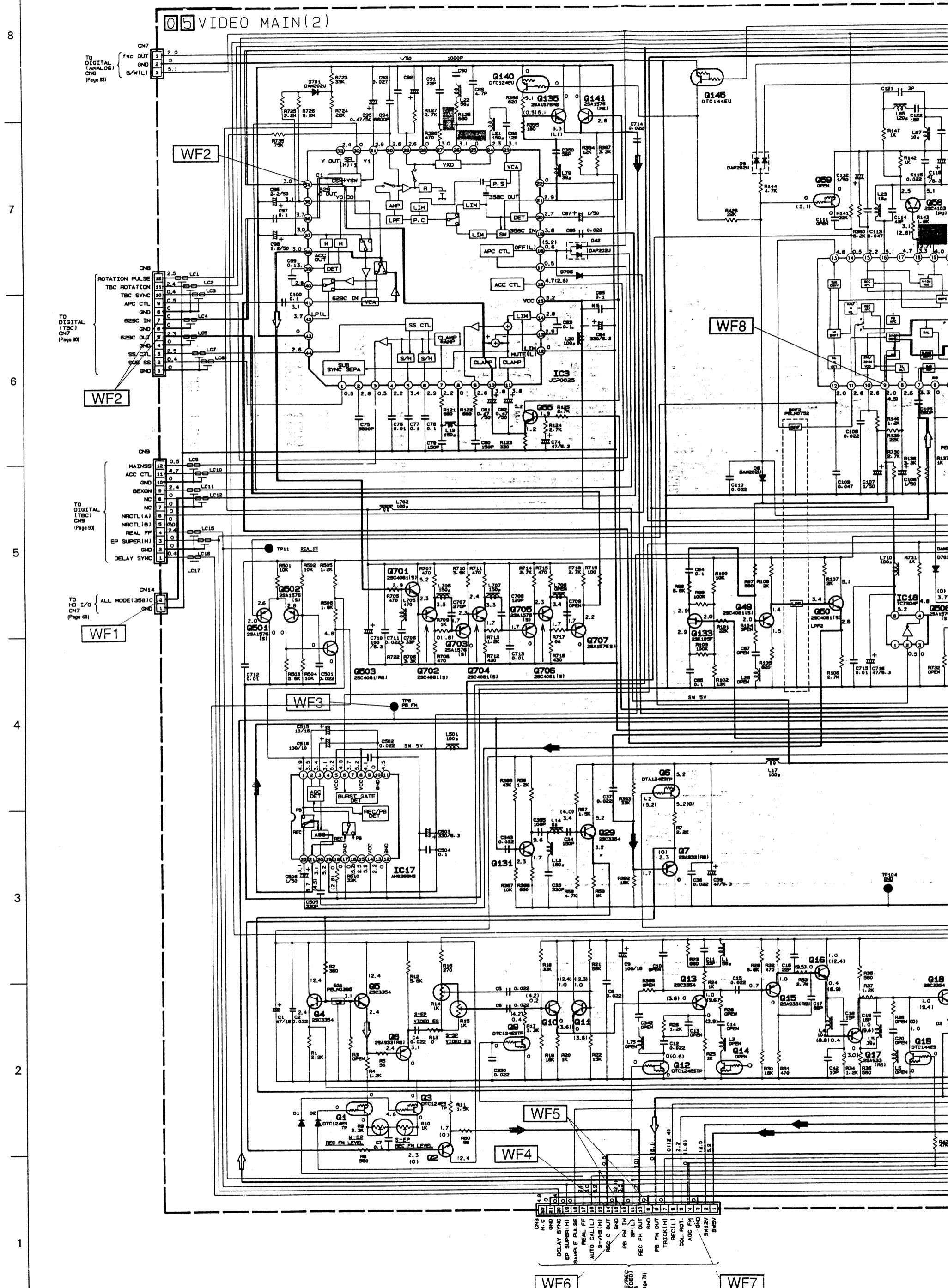


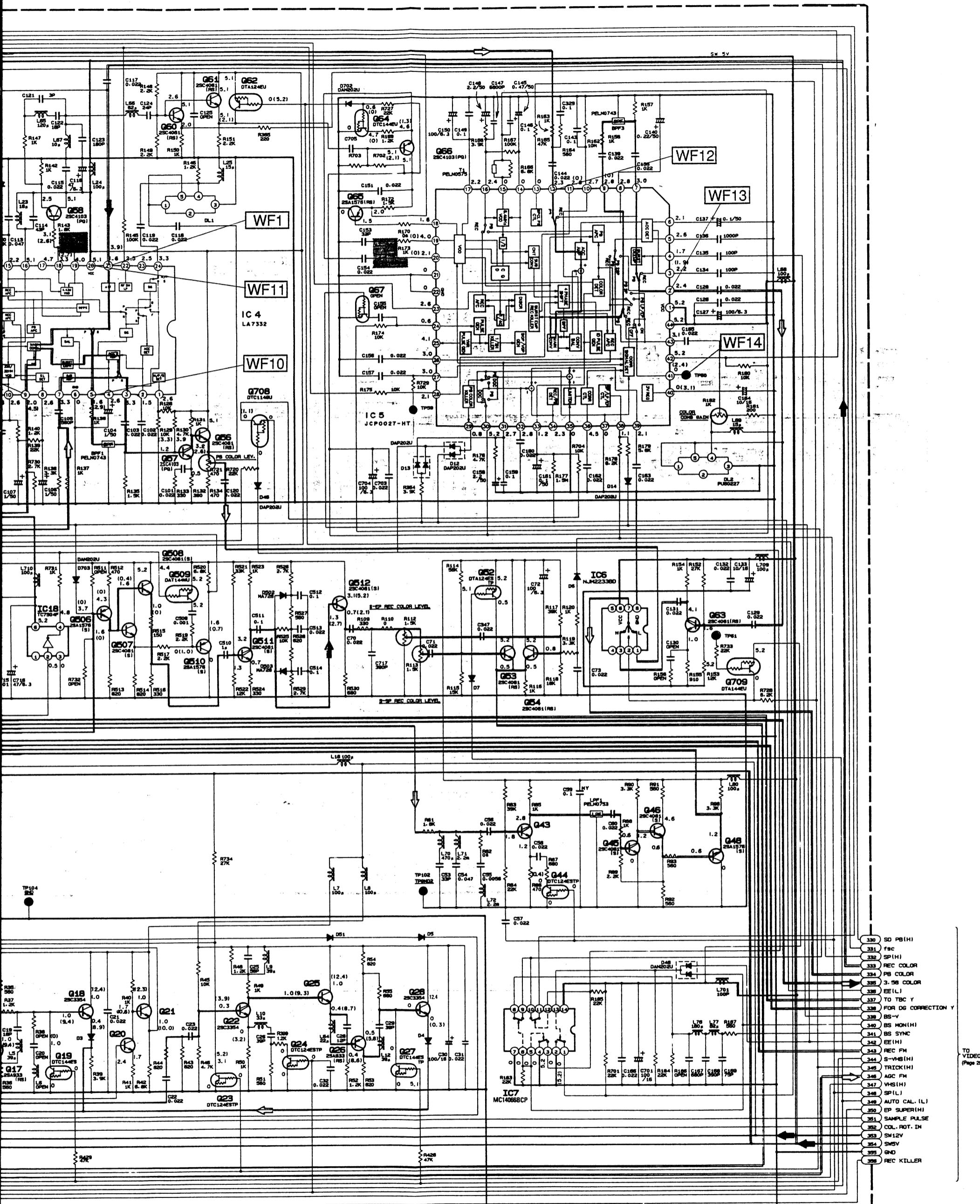
MAIN COMPONENT PARTS LOCATION GUIDE
<05> VIDEO MAIN BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		TRANSISTOR		DIODE		TEST POINT	
IC3	3H	Q85	13K	D12	8L	TP21	20H
IC4	4L	Q86	14K	D13	8L	TP25	18G
IC5	11M	Q87	14J	D14	8K	TP26	21I
IC6	7K	Q88	14J	D15	16K	TP51	16M
IC7	8I	Q89	15I	D16	14K	TP53	18I
IC8	16L	Q90	12I	D17	12H	TP54	12H
IC9	13H	Q92	12I	D18	14I	TP55	19B
IC10	12E	Q93	13I	D19	14I	TP59	9M
IC11	16C	Q94	11I	D20	14H	TP60	11L
IC12	21B	Q95	12H	D21	14H	TP61	8J
IC13	16H	Q96	12G	D23	12I	TP101	10C
IC14	22F	Q97	11F	D24	12H	TP102	21
IC15	21L	Q98	13F	D27	18C	TP103	19J
IC16	21J	Q99	12F	D30	19B	TP104	2A
IC17	6H	Q100	13J	D31	21E	TP201	11B
IC18	3J	Q101	12J	D33	19E	TP202	13C
TRANSISTOR							
Q1	4A	Q102	18J	D34	16F		
Q2	4B	Q103	19D	D35	16F		
Q3	5A	Q104	15E	D36	19H		
Q4	5E	Q105	14C	D38	19I		
Q5	4E	Q106	15C	D40	21J		
Q6	3B	Q107	18C	D41	18E		
Q7	3B	Q108	11C	D42	4H		
Q8	5E	Q109	12C	D43	21H		
Q9	8E	Q110	12C	D44	13L		
Q10	8D	Q111	21D	D45	13L		
Q11	8D	Q112	21D	D46	8N		
Q12	9E	Q113	20C	D47	16F		
Q13	9C	Q114	20D	D48	8I		
Q15	8C	Q115	19D	D49	18H		
Q16	7D	Q116	20C	D51	4E		
Q17	7C	Q117	20E	D52	19I		
Q18	7B	Q118	18E	D53	12F		
Q19	8B	Q119	16F	D54	19E		
Q21	5D	Q120	17G	D502	6J		
Q22	6C	Q121	19G	D503	6J		
Q24	7C	Q122	18C	D701	21		
Q25	5B	Q123	19H	D702	8M		
Q26	6B	Q124	22H	D703	6J		
Q27	6A	Q125	13L	D704	7E		
Q28	6A	Q126	20L	D705	2G		
Q29	2B	CONNECTOR					
Q42	6E	CN1	12A				
Q43	5F	CN2	15A				
Q44	6F	CN3	10A				
Q45	7G	CN4	22C				
Q46	6G	CN5	21B				
Q48	5G	CN6	19A				
Q49	4L	CN7	8M				
Q50	3K	CN8	1J				
Q52	7F	CN9	1H				
Q53	7F	CN10	22J				
Q54	7F	CN11	13A				
Q55	3F	CN12	22C				
Q56	6L	CN13	19A				
Q57	5L	CN14	1H				
Q58	4M	CN15	18C				
Q60	6M	CN16	18H				
Q61	7M	CN17	13E				
Q62	7M	ADJUSTMENT					
Q63	7K	R9	4B				
Q64	10M	R10	5B				
Q65	9M	R14	7D				
Q66	9M	R15	7E				
Q68	15K	R112	8F				
Q69	15J	R113	8F				
Q70	15J	R182	10K				
Q71	15I	R198	15M				
Q72	16J	R200	16M				
Q73	15L	R202	18M				
Q74	15L	R203	18L				
Q75	18L	R272	12G				
Q76	17M	R299	17B				
Q77	17J	R313	21D				
Q78	17K	R322	20E				
Q79	17J	R324	20D				
Q80	19K	R347	22I				
Q81	19L	R377	20M				
Q82	19N	R423	13D				
Q83	14M	R721	6K				
Q84	13M	TEST POINT					
TP6	1B						
TP11	1E						
TP12	2B						

F. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
RESISTOR		RESISTOR		RESISTOR		CAPACITOR		CAPACITOR		CAPACITOR	
R282	17D	P364	8L	R424	13C	R705	2K	C64	4K	C124	7M
R284	15D	P365	7N	R425	21D	R706	2K	C65	4K	C126	12L
R285	18E	P381	13H	R427	12E	R708	2K	C67	4K	C128	12L
R286	18E	P383	17C	R501	3L	R709	2K	C75	2H	C129	12H
R288	16D	P384	17C	R502	3L	R710	2L	C76	2H	C130	9K
R292	15D	P386	16D	R503	3K	R711	2L	C77	2H	C131	7K
R293	15C	P387	15D	R504	3L	R712	2L	C79	2G	C132	6K
R295	15B	P388	12H	R505	3L	R713	2L	C83	3H	C134	12L
R297	16C	P389	20D	R506	3K	R714	2L	C90	4J	C135	13L
R301	18C	P390	21I	R510	6I	R715	2M	C91	4I	C136	11L
R302	11D	P391	16M	R511	5I	R716	2M	C93	3I	C141	9K
R303	11C	P394	4G	R512	5I	R717	2M	C94	3I	C142	8K
R304	12C	P395	4G	R513	6I	R718	9J	C97	1J	C143	12L
R306	12C	P396	4G	R514	6J	R719	2M	C100	2H	C144	12M
R307	12C	P397	5G	R515	6J	R720	1F	C101	6L	C146	11M
R308	12C	P400	12G	R516	7I	R722	2J	C102	5L	C147	10N
R309	13C	P401	12H	R517	6J	R723	2I	C103	5L	C149	10N
R310	13C										

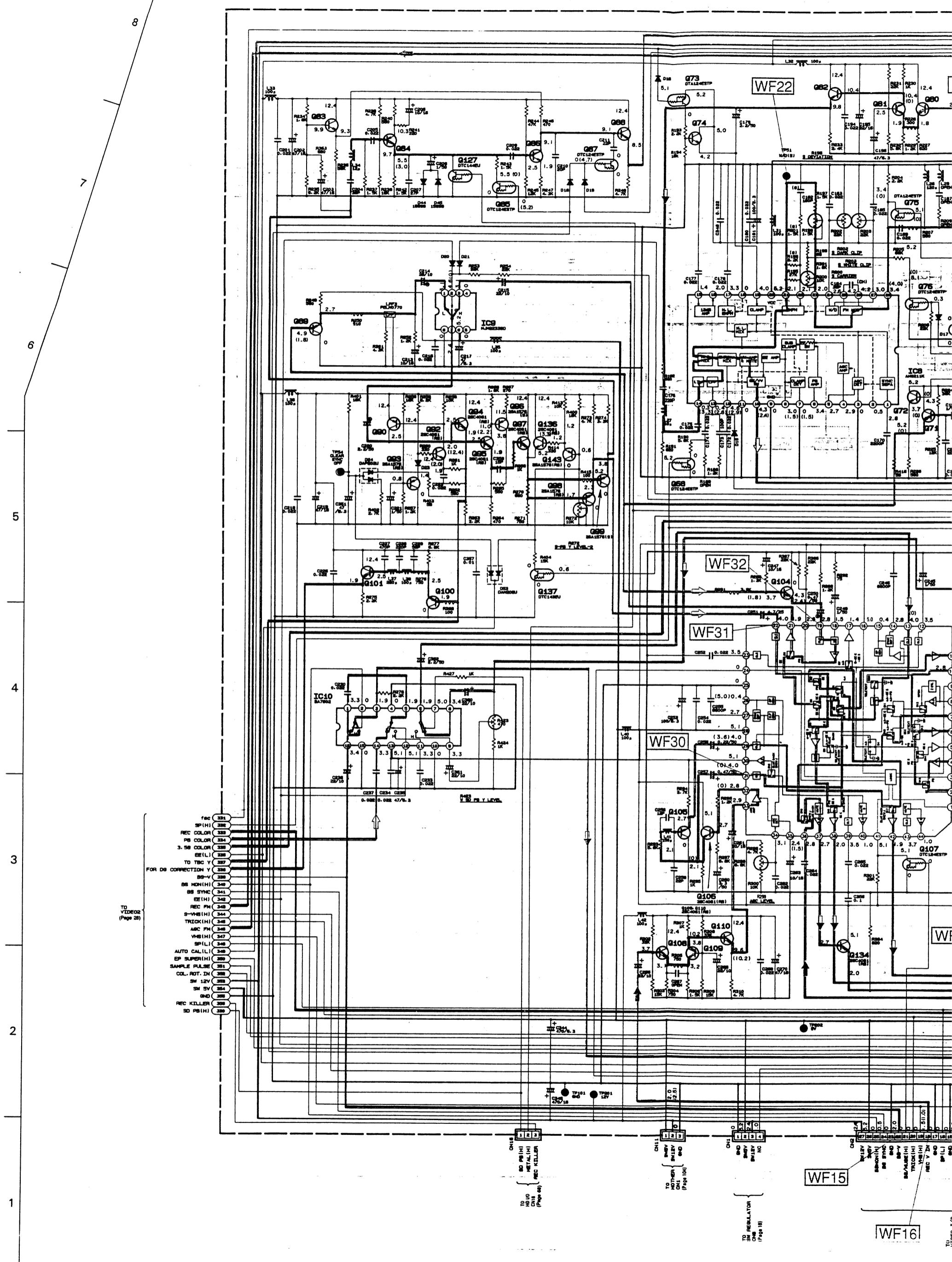
4.11 NTSC VIDEO 2 SCHEMATIC DIAGRAM

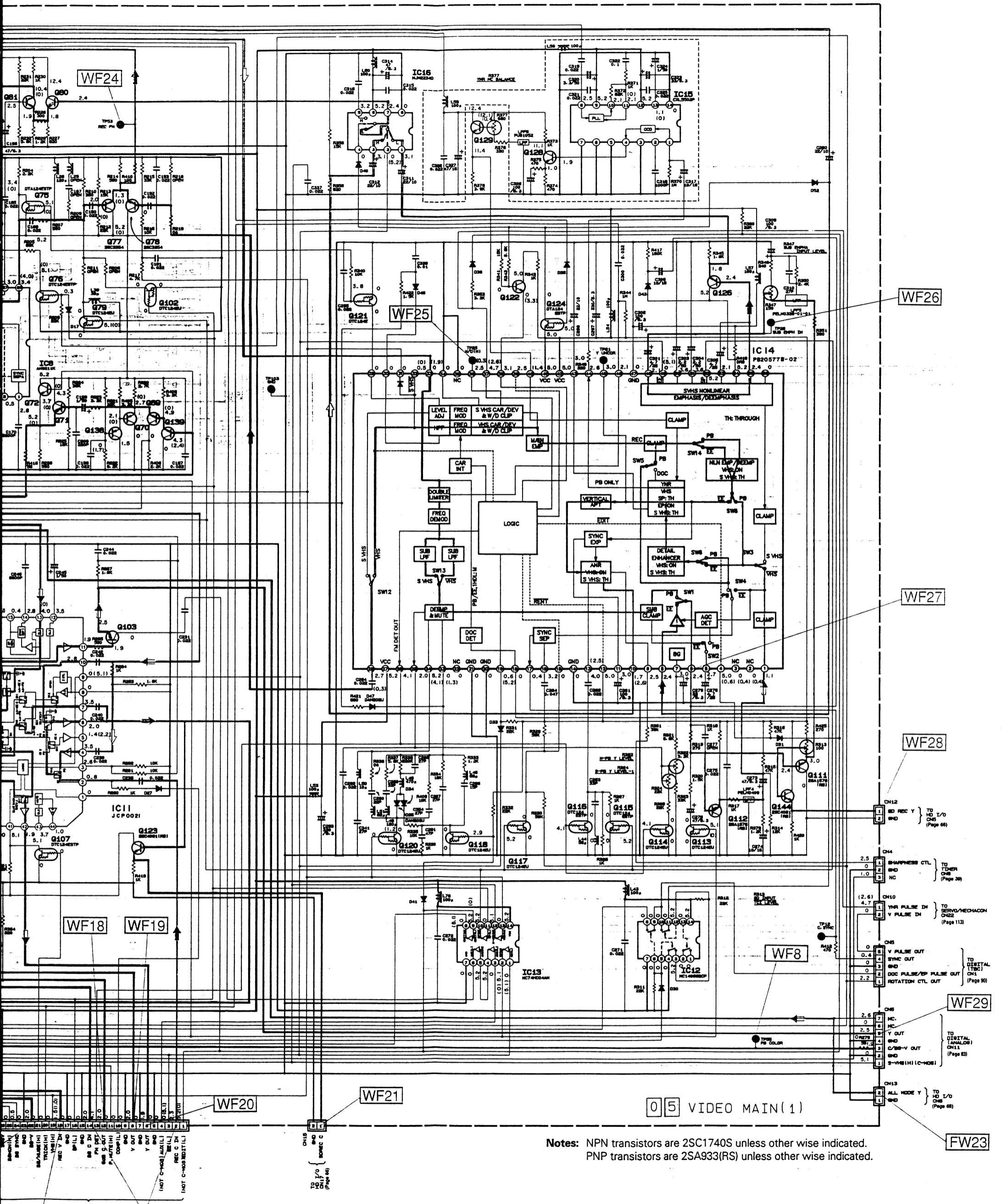




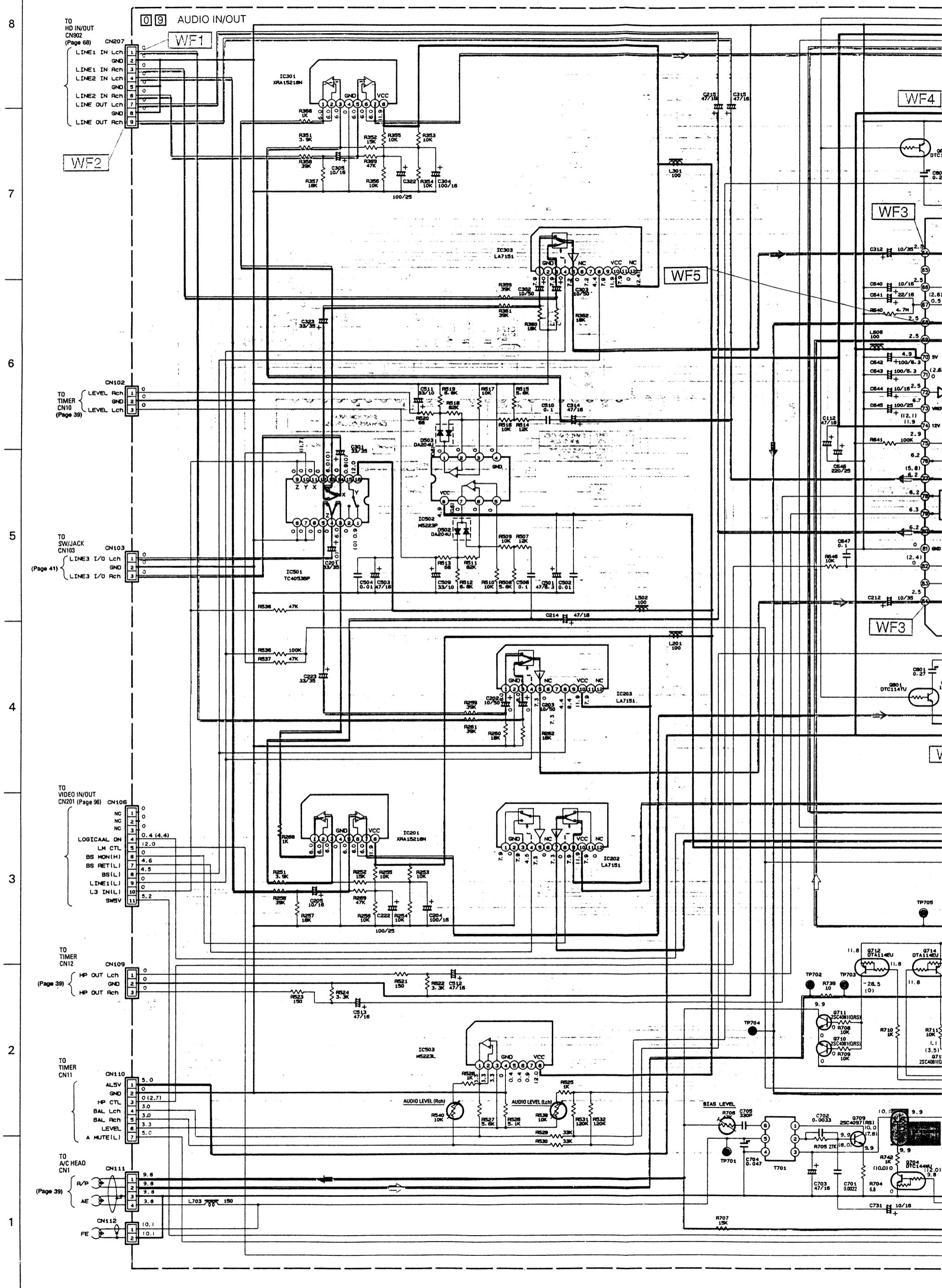
Note: NPN transistors are 2SC1740S unless otherwise indicated

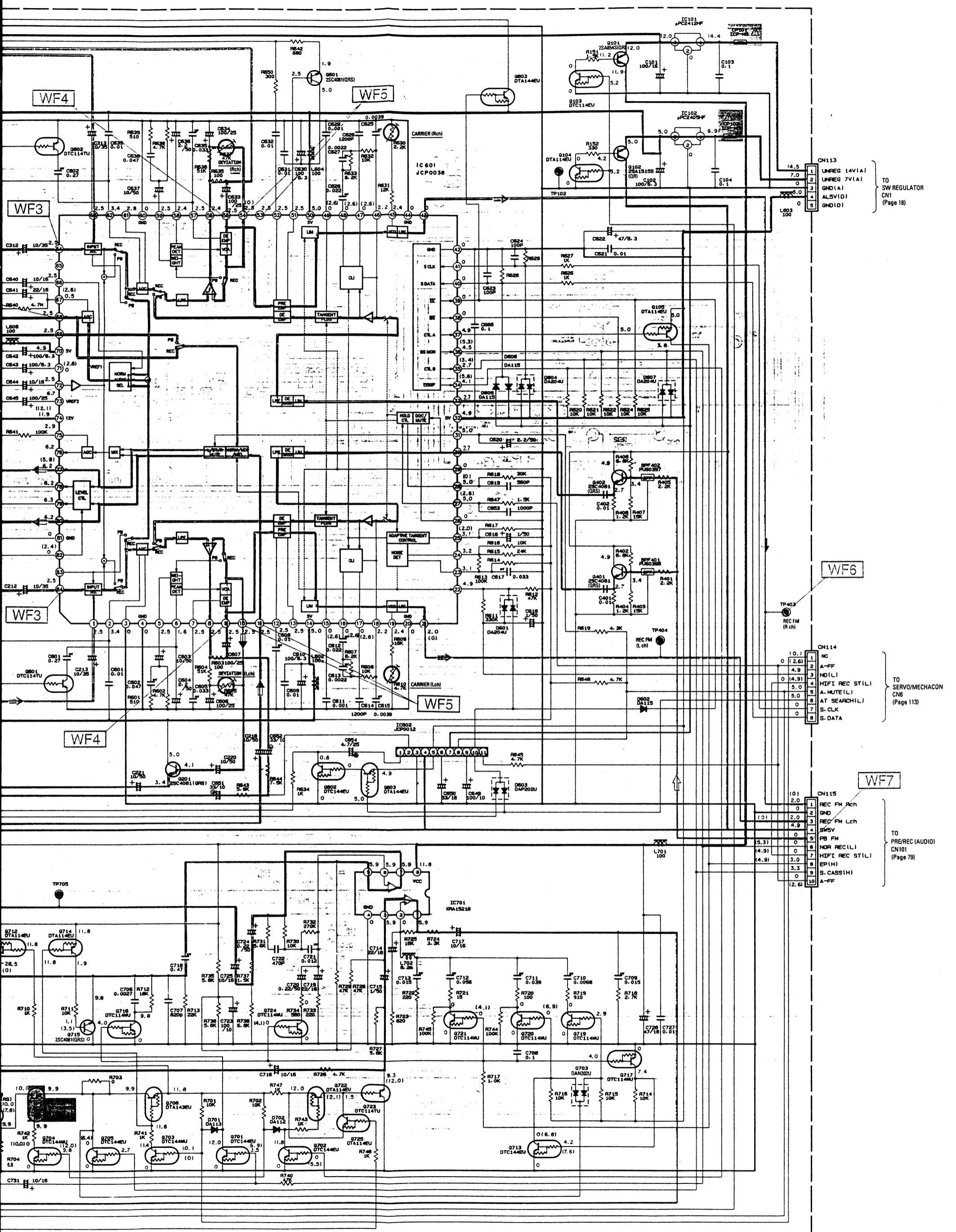
4.12 VIDEO 1 SCHEMATIC DIAGRAM



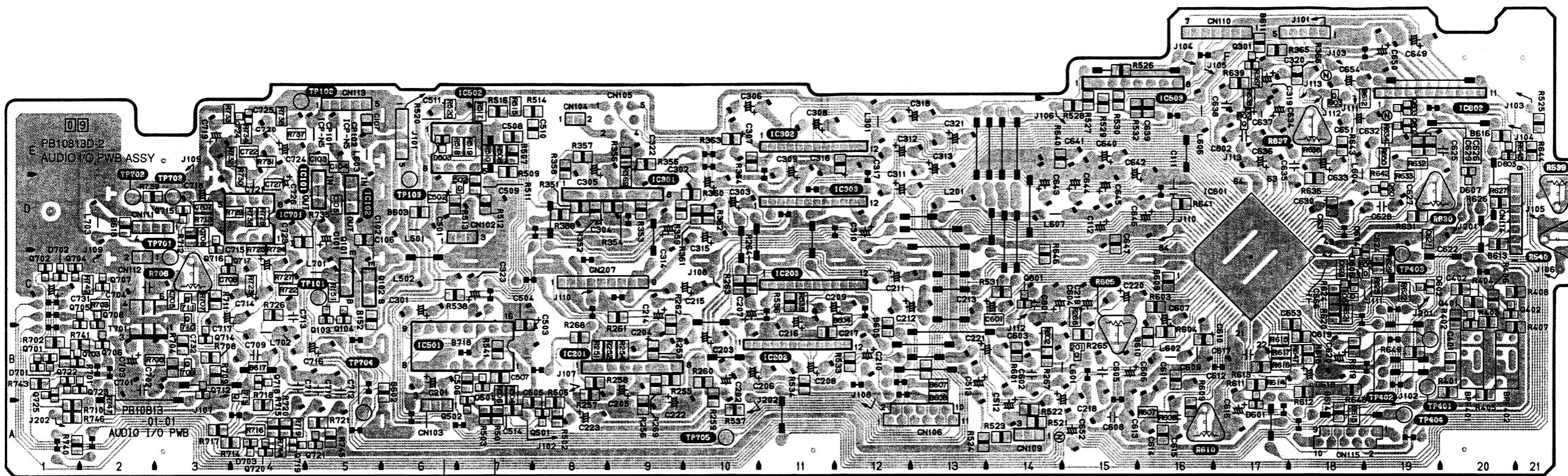


4.13 AUDIO IN/OUT SCHEMATIC DIAGRAM





4.14 AUDIO IN/OUT CIRCUIT BOARD



ELADLESS COMPONENT PARTS LOCATION GUIDE
<09> AUDIO IN/OUT BOARD

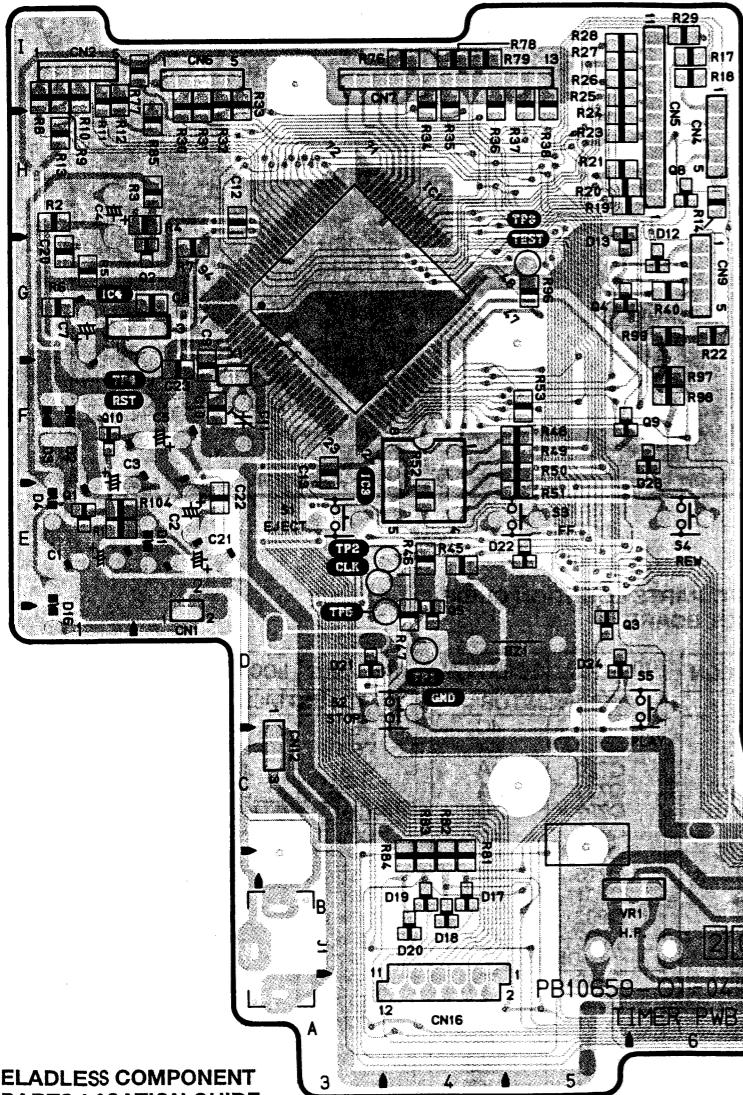
REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC															
IC601 17D															
TRANSISTOR															
Q103 5C		D501 7B		R368 8D		R536 11C		R646 14C		R739 2D		C708 3C		Q717 4C	
Q104 5C		D502 7D		D502 7D		R369 9D		R647 18B		R740 1A		C722 4E		Q719 4A	
Q105 18C		D601 17A		R401 20B		R538 6C		R648 18B		R741 1B		C723 3B		Q720 4A	
Q201 15B		D602 19C		R402 20C		R541 7B		R649 19B		R742 2C		C727 4D		Q721 5A	
Q301 17F		D603 20E		R403 20C		R601 14B		R650 19E		R743 1B				Q722 1B	
Q401 20C		D604 18D		R404 20C		R602 14B		R701 1B		R744 4A				Q723 2B	
Q402 20C		D605 18C		R405 20B		R603 16C		R702 1B		R745 5A				Q724 4E	
Q501 8A		D606 18C		R406 20C		R604 16B		R703 2C		R746 1A				Q725 1B	
Q502 7A		D607 20D		R407 21C		R607 16A		R704 3B		R747 2A				Q801 14C	
Q601 19D		D701 1B		R408 21C		R608 16A		R705 3B						Q802 17E	
Q602 19E		D702 1C		R501 7A		R609 16A		R707 3C						Q803 18E	
Q603 19E		D703 4A		R502 8A		R611 17B		R708 3B							
RESISTOR															
R151 5C															
Q701 1B		R152 5C		R505 8B		R614 17B		R707 3C		C103 5E				D502 7D	
Q702 1C		R153 5C		R506 7B		R615 17B		R708 3B		C104 5E				D503 6E	
Q703 2B		R251 8B		R507 7E		R616 17B		R709 3B		C105 5D				D601 17A	
Q704 1C		R252 9B		R508 7E		R617 17B		R710 1A		C106 5D				D602 19C	
Q705 2C		R253 9B		R509 7E		R618 18B		R711 3C		C107 5E				D603 20E	
Q706 2B		R254 9B		R510 7E		R619 18B		R712 3D		C401 20B				D604 18D	
Q707 2C		R255 9B		R511 7D		R620 18C		R713 3D		C402 20C				D605 18C	
Q708 2C		R256 9A		R512 7D		R621 18C		R714 3A		C502 6D				D606 18C	
Q709 3B		R257 8B		R513 6D		R622 19C		R715 4A		C504 7C				D607 20D	
Q710 3C		R258 8B		R514 8E		R624 18C		R716 4A		C505 8B				D701 1B	
Q711 3C		R259 10A		R515 7E		R625 19C		R717 3A		C506 7B				D702 1C	
Q712 3B		R260 10B		R516 7E		R626 20D		R718 4A		C507 7B				D703 4A	
Q713 4B		R261 9C		R517 7E		R627 20D		R719 4A		C508 7E					
Q714 3B		R262 9C		R518 6E		R629 19C		R720 4A		C510 8E					
Q715 3D		R268 8B		R519 7E		R631 19D		R721 5A		C514 7A					
Q716 3C		R269 9B		R520 6E		R632 19E		R722 4C		C601 14C					
Q717 4C		R351 8D		R521 14A		R633 19D		R723 4C		C609 16B					
Q718 4B		R352 8D		R522 14A		R634 19E		R724 4C		C611 16B					
Q719 4A		R353 9D		R523 14A		R635 18D		R725 4C		C614 16A					
Q720 4A		R354 9D		R524 13A		R636 18E		R726 4C		C619 18B					
Q721 5A		R355 9E		R525 21E		R637 17F		R727 4C		C621 19D					
Q722 1B		R356 9E		R526 15F		R638 17E		R728 4D		C623 18C					
Q723 2B		R357 8E		R527 15E		R639 17F		R729 4D		C624 19C					
Q724 4E		R358 8E		R528 15E		R641 16D		R730 4D		C626 19E					
Q725 1B		R359 9D		R529 15E		R642 19E		R731 4E		C629 19E					
Q801 14C		R360 10D		R530 15E		R643 18E		R732 4E		C631 18D					
Q802 17E		R361 10D		R531 14C		R644 21E		R733 3E		C639 16E					
Q803 18E		R362 10D		R532 15E		R645 21E		R734 4E		C647 15D					

MAIN COMPONENT PARTS LOCATION GUIDE
<09> AUDIO IN/OUT BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC					
IC101 5D		IC102 5D		IC201 8B	
IC202 11B		IC203 11C		IC204 11B	
IC301 9D		IC303 11D		IC304 9D	
IC501 6B		IC502 6E		IC503 16F	
IC601 17D		IC602 19F		IC701 4D	
TRANSISTOR					
Q101 5C		Q102 5C		Q103 5C	
Q104 5C		Q105 5C		Q106 5C	
Q107 18C		Q108 18C		Q109 18A	
Q110 13A		Q111 17F		Q112 2C	
Q113 14A		Q114 20D		Q115 20D	
Q116 17F		Q117 16A		Q118 16A	
Q119 19D		Q120 19D		Q121 18E	
Q122 18E		Q123 18E		Q124 18E	
Q125 3C		Q126 3C		Q127 3C	
CIRCUIT PROTECTOR					
CP101 5E		CP102 5E			
TEST POINT					
TP102 4E		TP403 19C			
TP404 19A		TP701 2D			
TP702 2D		TP703 3D			

4.15 TIMER, SW/JACK, LED, DISPLAY, SENSOR CIRCUIT BOARDS

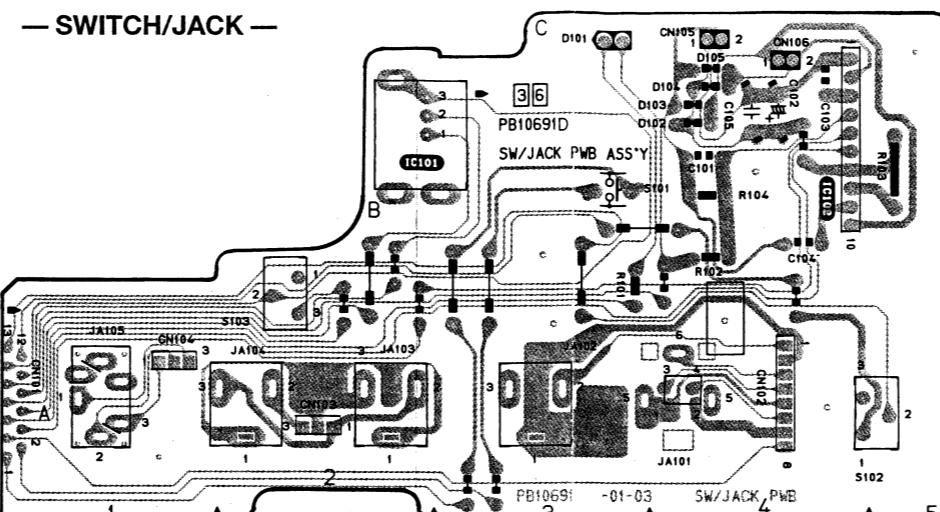
— TIMER —



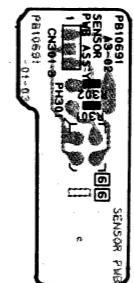
ELADLESS COMPONENT
PARTS LOCATION GUIDE
<20> TIMER BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	
IC					DIODE					
IC1	3G	D18	4B	R19	5H	R44	17C	R68	15D	
TRANSISTOR					D19	4B	R45	11D	R93	11D
Q1	1E	D20	4B	R20	5H	R46	4E	R94	11C	
Q2	2G	D21	3D	R21	5H	R47	4D	R70	17D	
Q3	5D	D22	5F	R22	6G	R48	5F	R71	17D	
Q5	4D	D23	6F	R23	5H	R49	5F	R72	19A	
Q6	16D	D24	5D	R24	5H	R50	5F	R73	12C	
Q7	17C	D25	10A	R25	5I	R51	5E	R74	11C	
Q10	1F	D27	16C	R26	5I	R52	4E	R75	2I	
Q11	9A	R27	5I	R28	5I	R53	5F	R76	4I	
Q12	16C	R29	6I	R54	13C	R54	13C	R77	2I	
RESISTOR					R30	2I	R55	11C	R80	11D
D5	13B	R31	2I	R32	2I	R56	13C	R81	4B	
D6	12A	R33	2I	R34	4I	R57	11D	R82	4B	
D9	17B	R35	4I	R60	13C	R59	13C	R83	4B	
D11	18B	R36	4I	R61	12C	R62	12C	R84	4B	
D12	6G	R37	5H	R63	12C	R64	12C	R85	2H	
D13	5G	R38	5H	R65	12C	R66	12C	R86	11C	
D15	13C	R41	7B	R67	11D	R67	11D	R87	11D	
D17	4B	R42	17D	R68	11C	R68	11C	R88	11C	
R13	1H	R43	17C	R69	11C	R69	11C	R89	11C	
R43	17C	R67	11D	R70	11D	R70	11D	R90	12C	
R67	11D	R71	17D	R71	17D	R71	17D	R91	12C	
R71	17D	R72	19A	R72	19A	R72	19A	R92	2G	
R72	19A	R73	12C	R73	12C	R73	12C	R93	11D	
R73	12C	R74	11C	R74	11C	R74	11C	R94	11C	
R74	11C	R75	2I	R75	2I	R75	2I	R95	6G	
R75	2I	R76	4I	R76	4I	R76	4I	R96	5G	
R76	4I	R77	2I	R77	2I	R77	2I	R97	6F	
R77	2I	R78	4I	R78	4I	R78	4I	R98	6G	
R78	4I	R79	4I	R79	4I	R79	4I	R99	6G	
R79	4I	R80	11D	R80	11D	R80	11D	R100	13D	
R80	11D	R81	4B	R81	4B	R81	4B	R101	16D	
R81	4B	R82	4B	R82	4B	R82	4B	R102	15D	
R82	4B	R83	4B	R83	4B	R83	4B	R104	1E	
R83	4B	R84	4B	R84	4B	R84	4B	R105	12C	
R84	4B	R85	2H	R85	2H	R85	2H	R106	15C	
R85	2H	R86	11C	R86	11C	R86	11C	R107	15C	
R86	11C	R87	11D	R87	11D	R87	11D	R108	15C	
R87	11D	R88	11C	R88	11C	R88	11C	R109	9A	
R88	11C	R89	11C	R89	11C	R89	11C	R110	10D	
R89	11C	R90	12C	R90	12C	R90	12C	R111	12B	
R90	12C	R91	12C	R91	12C	R91	12C	R112	16D	
R91	12C	R92	2G	R92	2G	R92	2G	R113	16D	

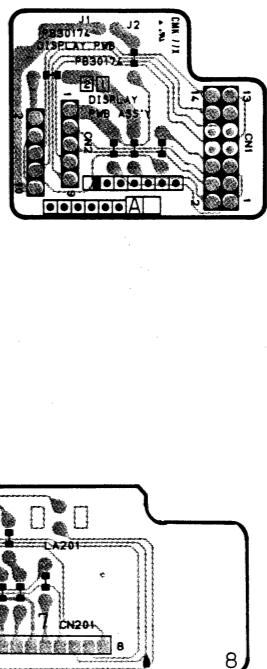
— SWITCH/JACK —



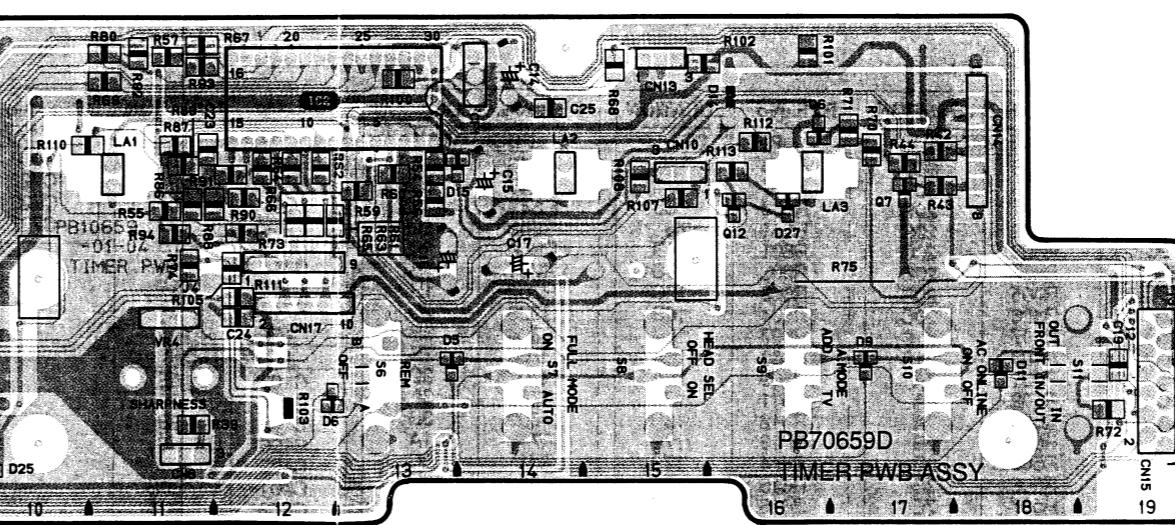
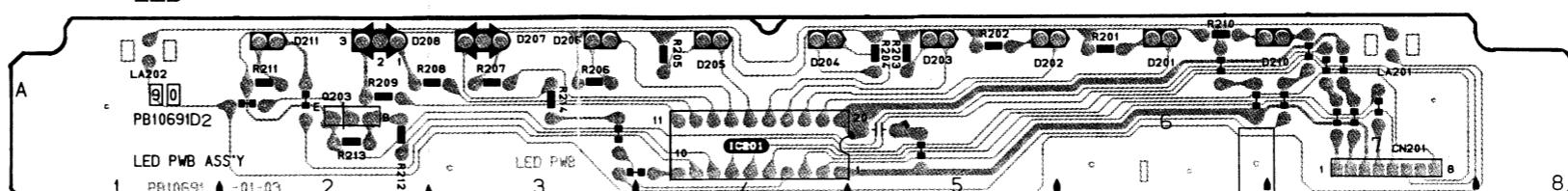
— SENSOR —



— DISPLAY —



— LED —



MAIN COMPONENT PARTS
LOCATION GUIDE
<20> TIMER BOARD

REF. No.	LOCATION
IC	
IC101	2B
IC102	4B
DIODE	
D101	3C
D102	4B
D103	4B
D104	4C
D105	4C
CONNECTOR	
CN101	1A
CN102	4A
CN103	2A
CN104	1A
CN105	4C
CN106	4C

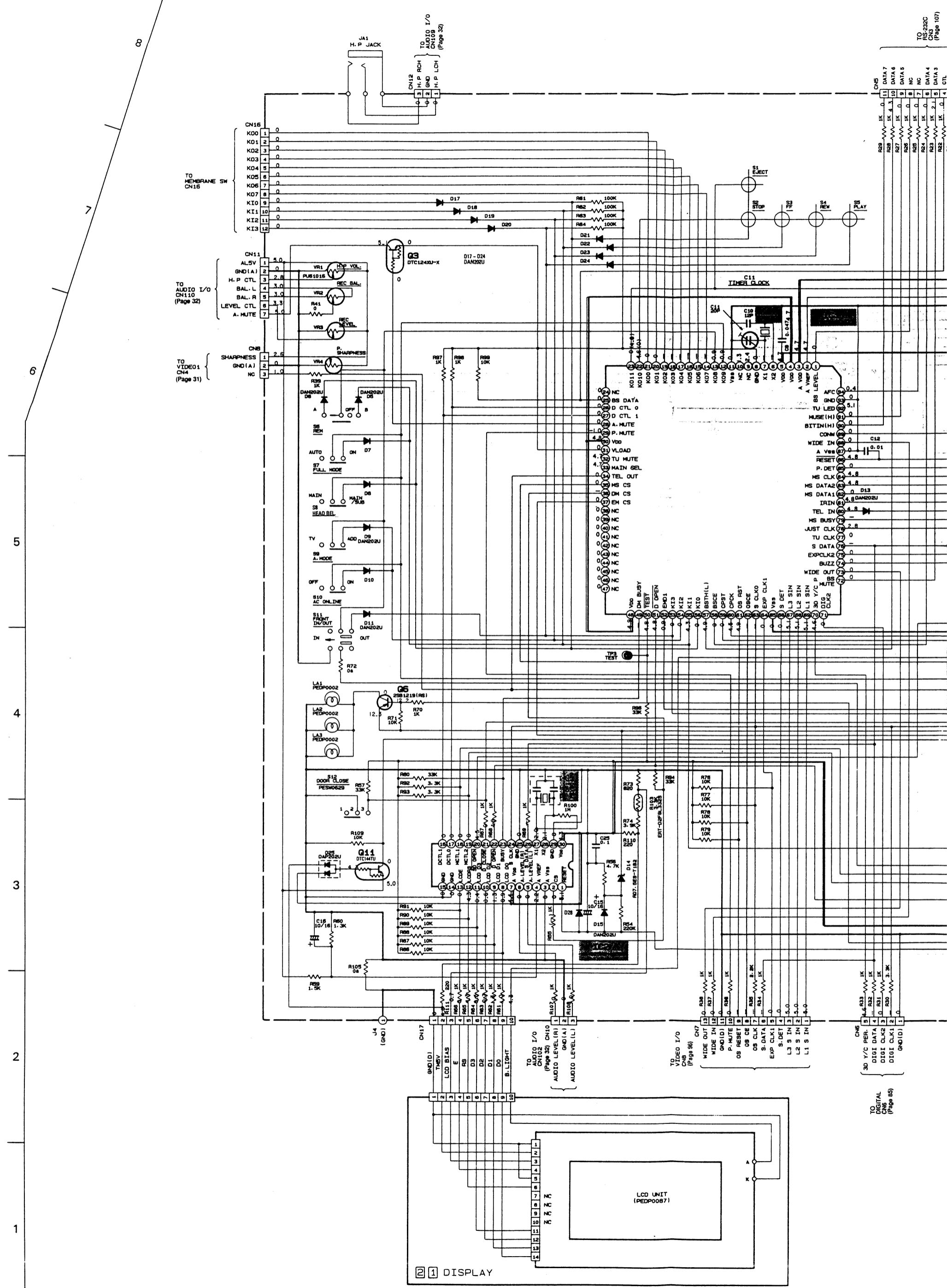
MAIN COMPONENT PARTS
LOCATION GUIDE
<36> SW/JACK BOARD

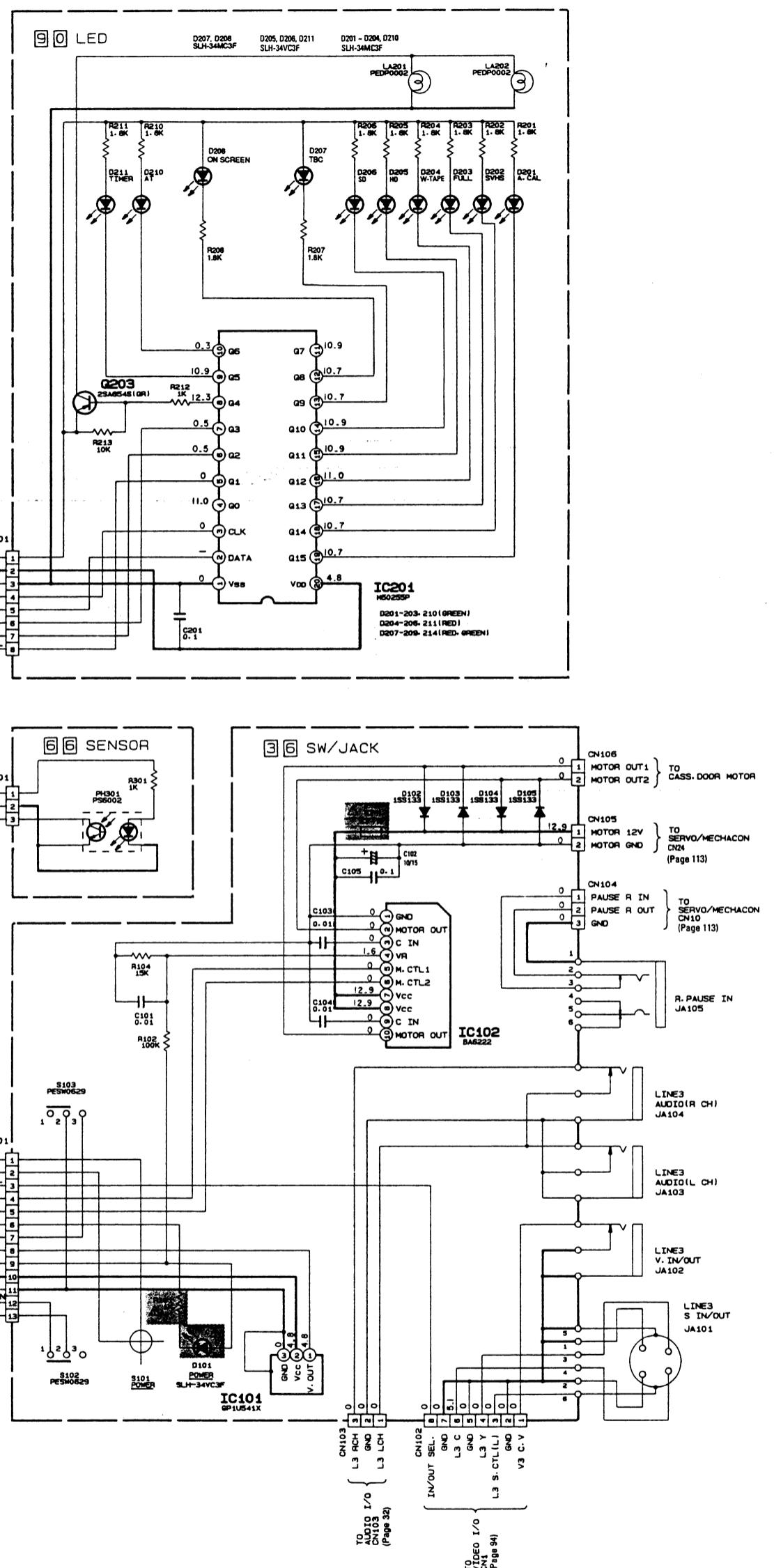
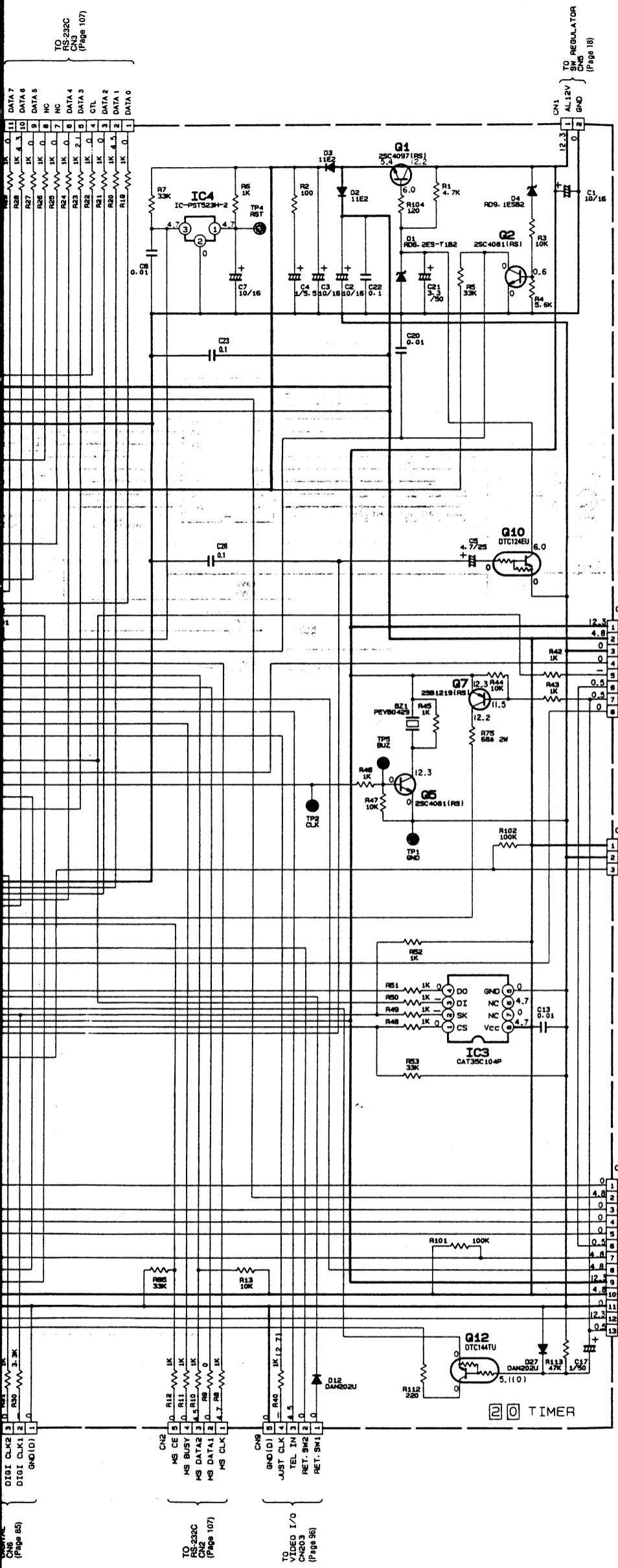
REF. No.	LOCATION
IC	
IC101	2B
IC102	4B
DIODE	
D101	3C
D102	4B
D103	4B
D104	4C
D105	4C
CONNECTOR	
CN101	1A
CN102	4A
CN103	2A
CN104	1A
CN105	4C
CN106	4C

MAIN COMPONENT PARTS
LOCATION GUIDE
<90> LED BOARD

REF. No.	LOCATION
IC	
IC201	4A
TRANSISTOR	
Q203	2A
DIODE	
D201	6A
D202	5A
D203	5A
D204	4A
D205	4A
D206	3A
D207	3A
D208	2A
D210	7A
D211	2A
ADJUSTMENT	
VR1	6B
VR2	7B
VR3	9B
VR4	11B
C11	2F
TEST POINT	
TP1	4D
TP2	4E
TP3	5G
TP4	2F
TP5	4D
CONNECTOR	
CN201	7A

4.16 TIMER, SW/JACK, LED, DISPLAY, SENSOR SCHEMATIC DIAGRAM



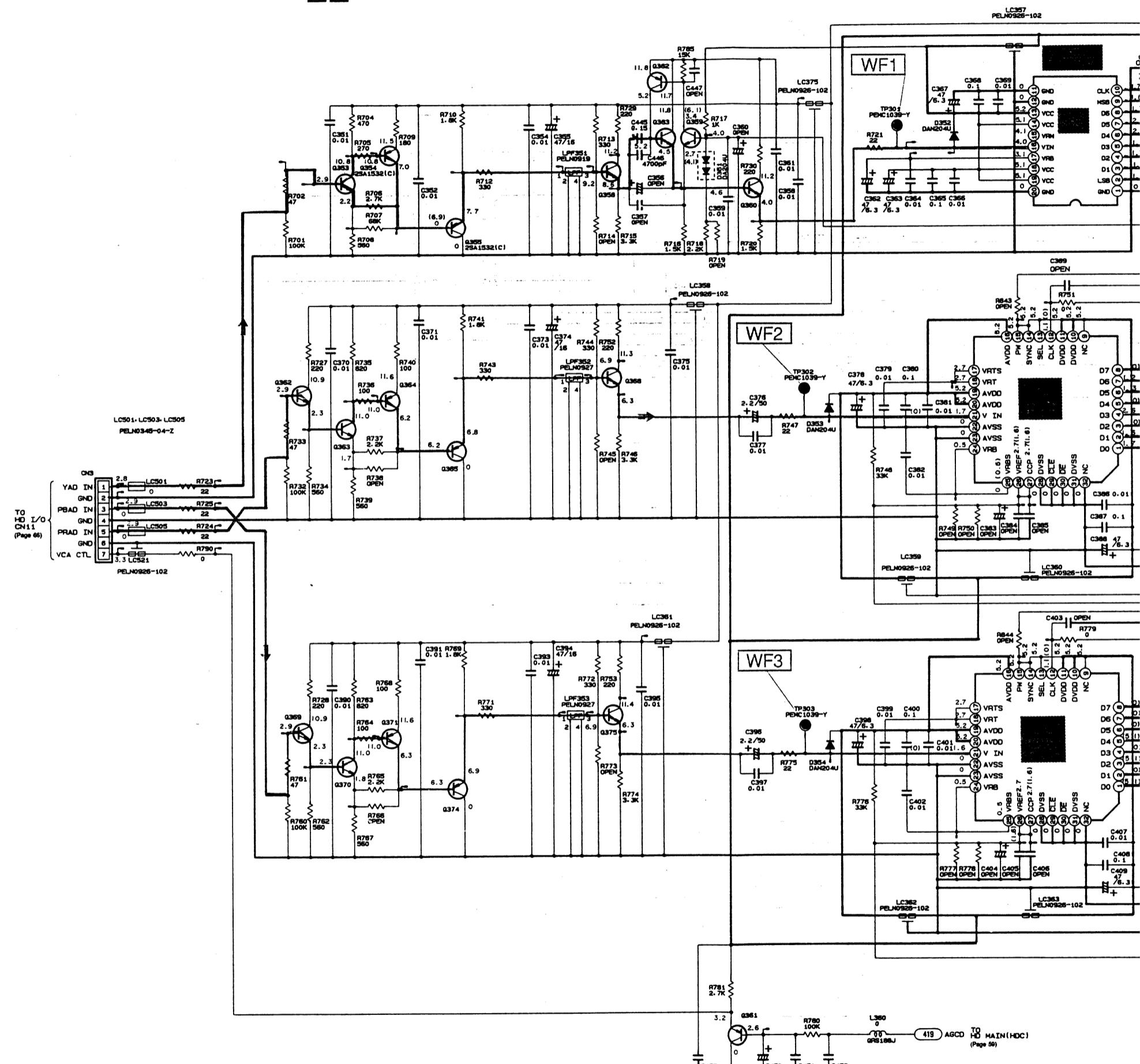


4.17 W-MAIN VIDEO(1) SCHEMATIC DIAGRAM

8

7

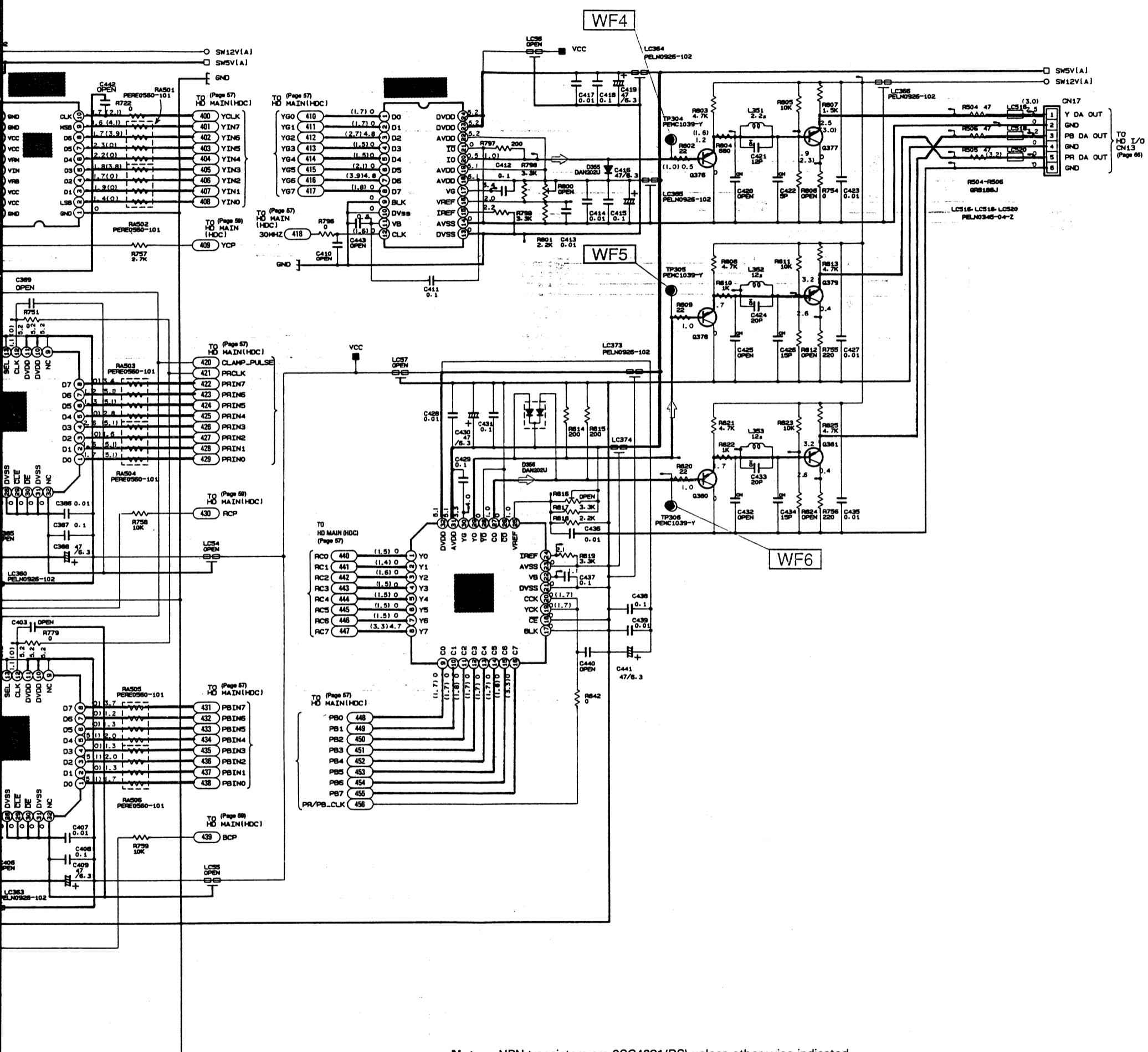
30 HD MAIN(1)



Notes: Voltages appearing in the diagram were measured as mentioned below.

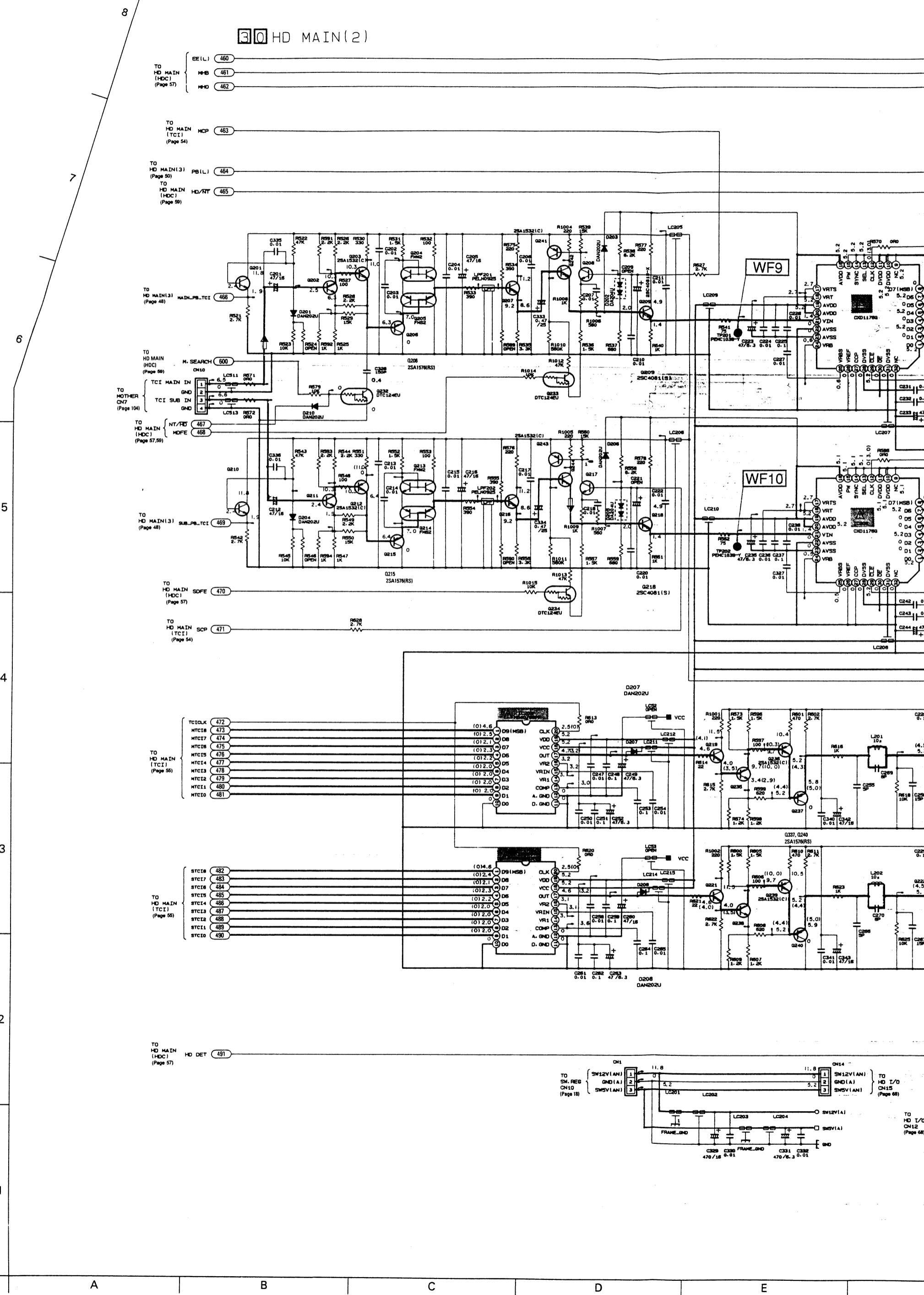
REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.

PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.



Notes: NPN transistors are 2SC4081(RS) unless otherwise indicated.
PNP transistors are 2SA1576(RS) unless otherwise indicated.

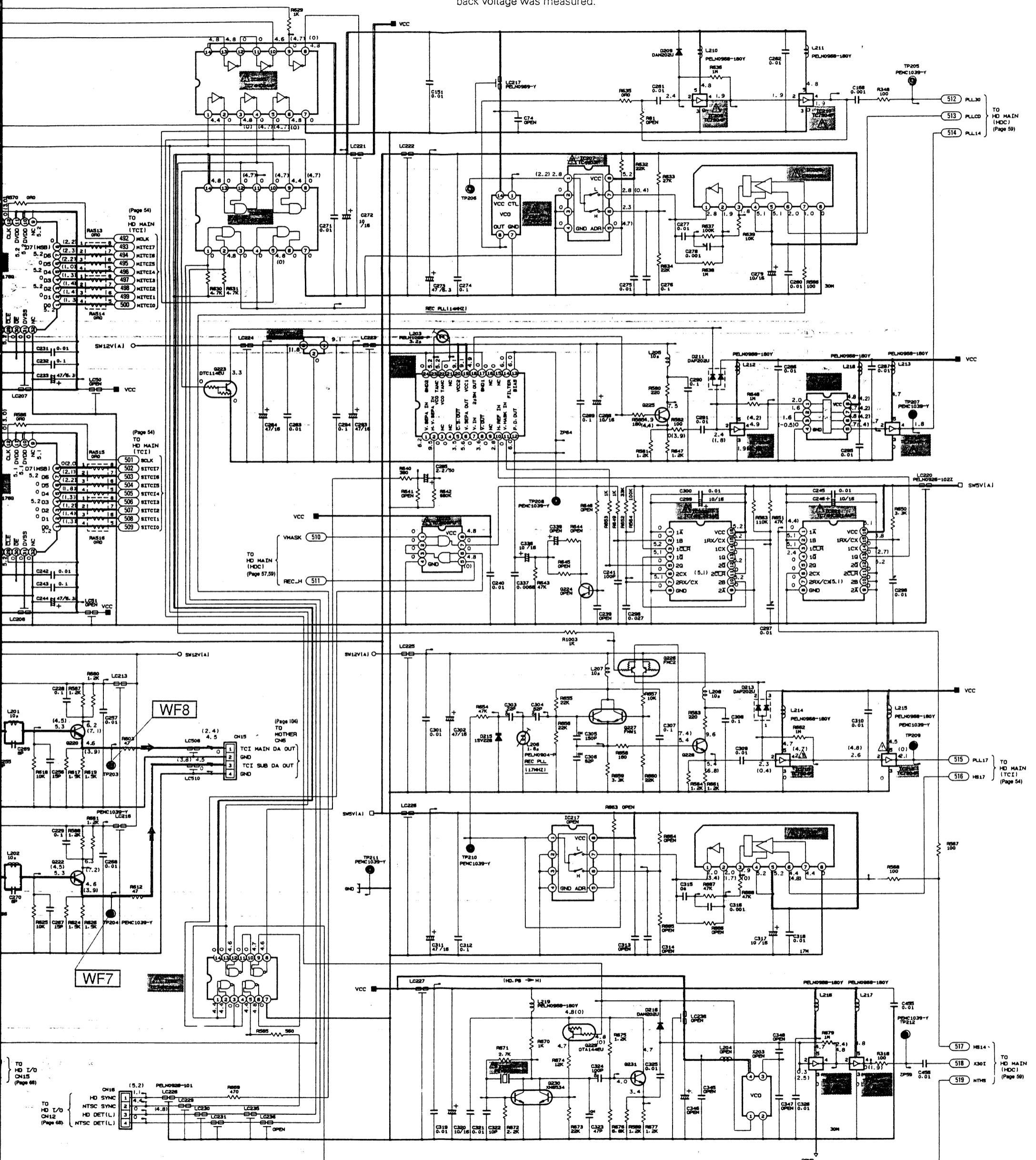
4.18 W-MAIN VIDEO(2) SCHEMATIC DIAGRAM



Notes: Voltages appearing in the diagram were measured as mentioned below.

REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.

PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.



Notes: NPN transistors are 2SC4081(RS) unless otherwise indicated.
PNP transistors are 2SA1532(C) unless otherwise indicated.

4.19 W-MAIN VIDEO(3) SCHEMATIC DIAGRAM

8

HD MAIN(3)

7

6

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4

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2

1

TO HD MAIN(2)
(Page 45)

{ SW5V(A)
MAIN_PB_TCI 466

TO HD MAIN
(TCI)
(Page 54)

{ NGP 520
HSP2 521
HSP1 522

TO HD MAIN(2)
(Page 45)

{ SWD
SUB_PB_TCI 469

TO HD MAIN
(TCI)
(Page 54)

{ SGP 523
SSH2 524
SSH1 525

TO HD MAIN
(HDC)
(Page 55,56)

{ M_SEARCH 600
ENVS 526
ENVM 527

TO HD MAIN
(TCI)
(Page 54)

{ HTP 528
SHOT 529
HMDT 530
STP 531

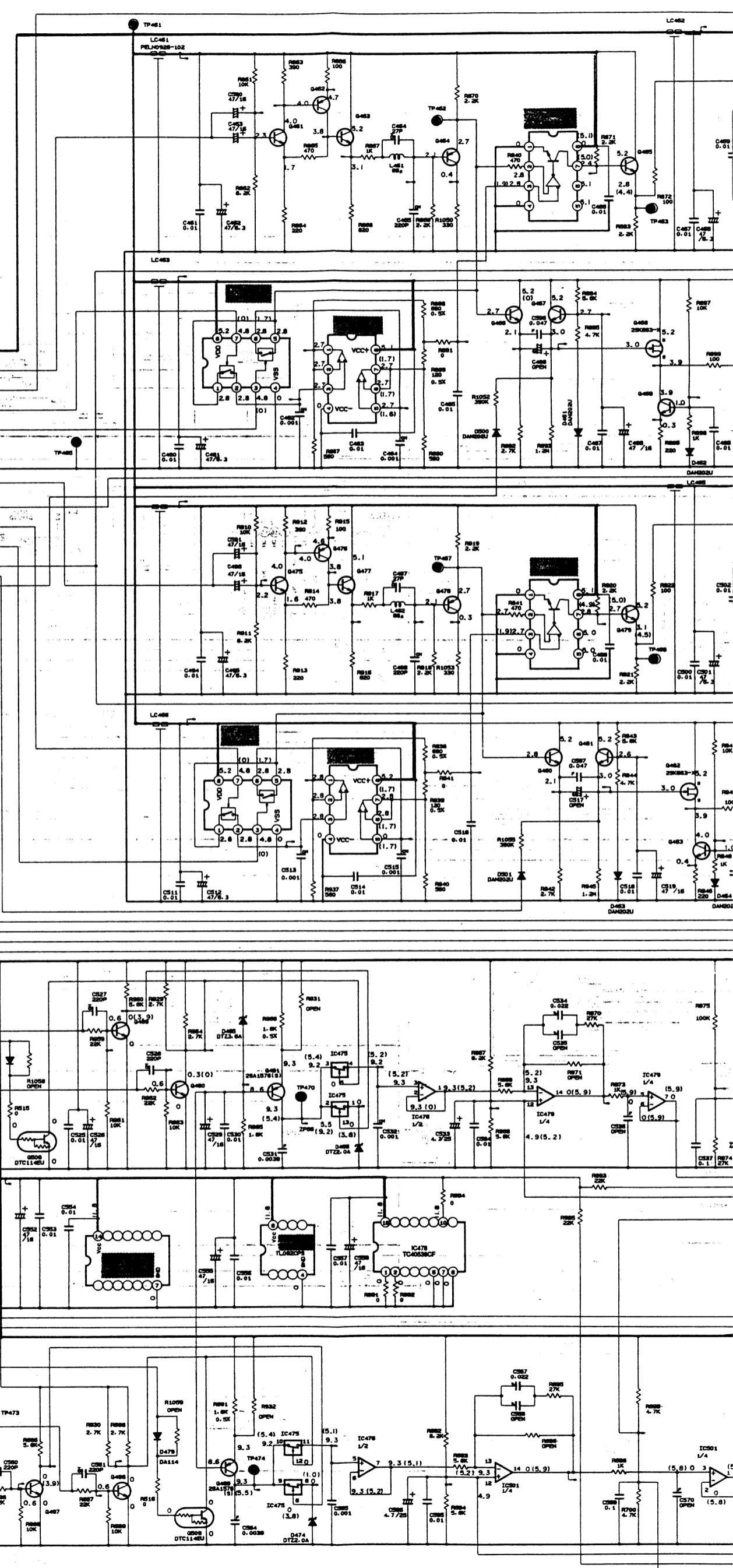
TO HD MAIN
(HDC)
(Page 55)

{ HDOA 532
SOOA 533

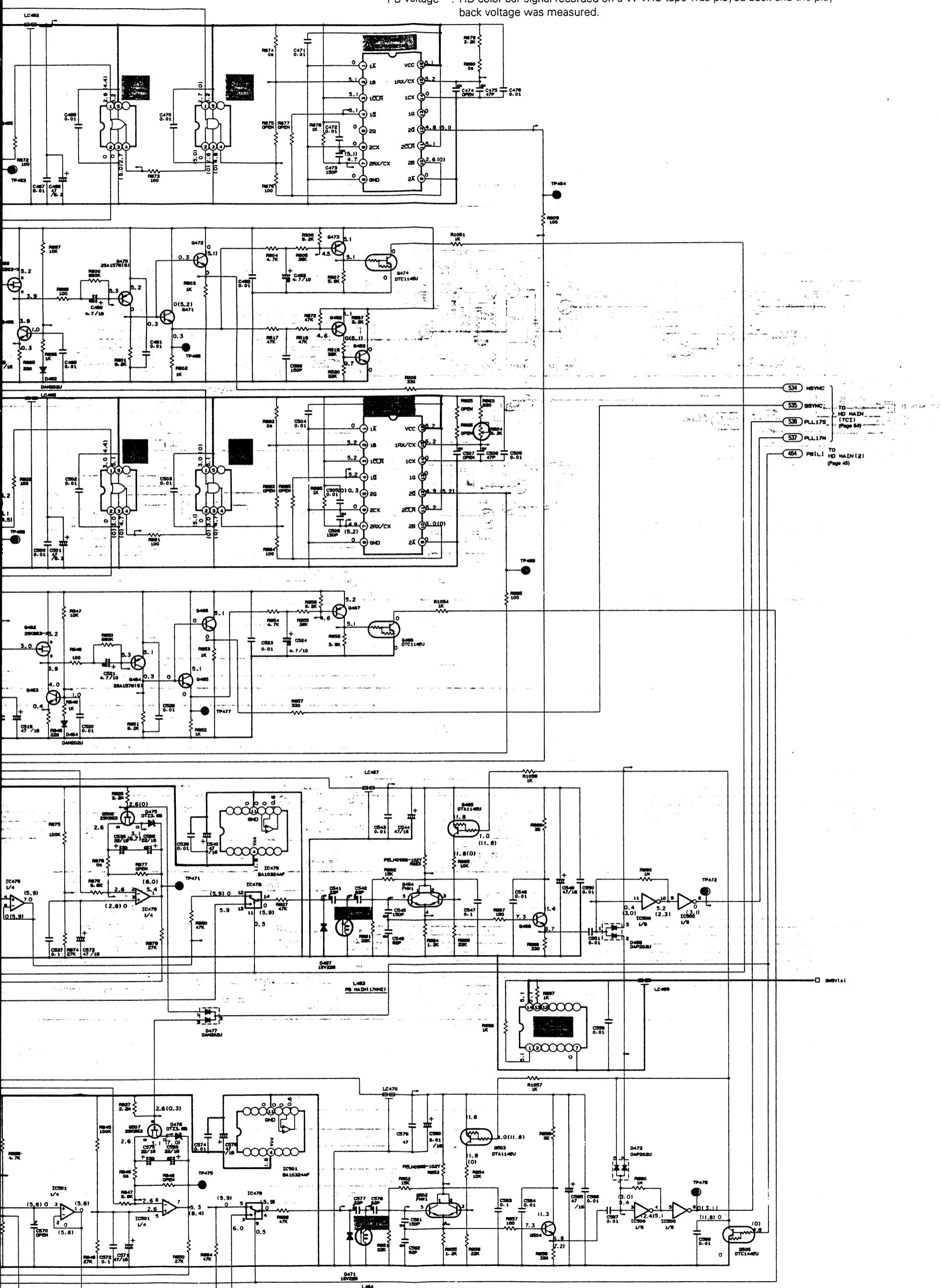
SW12V(A)

SWD

A B C D E

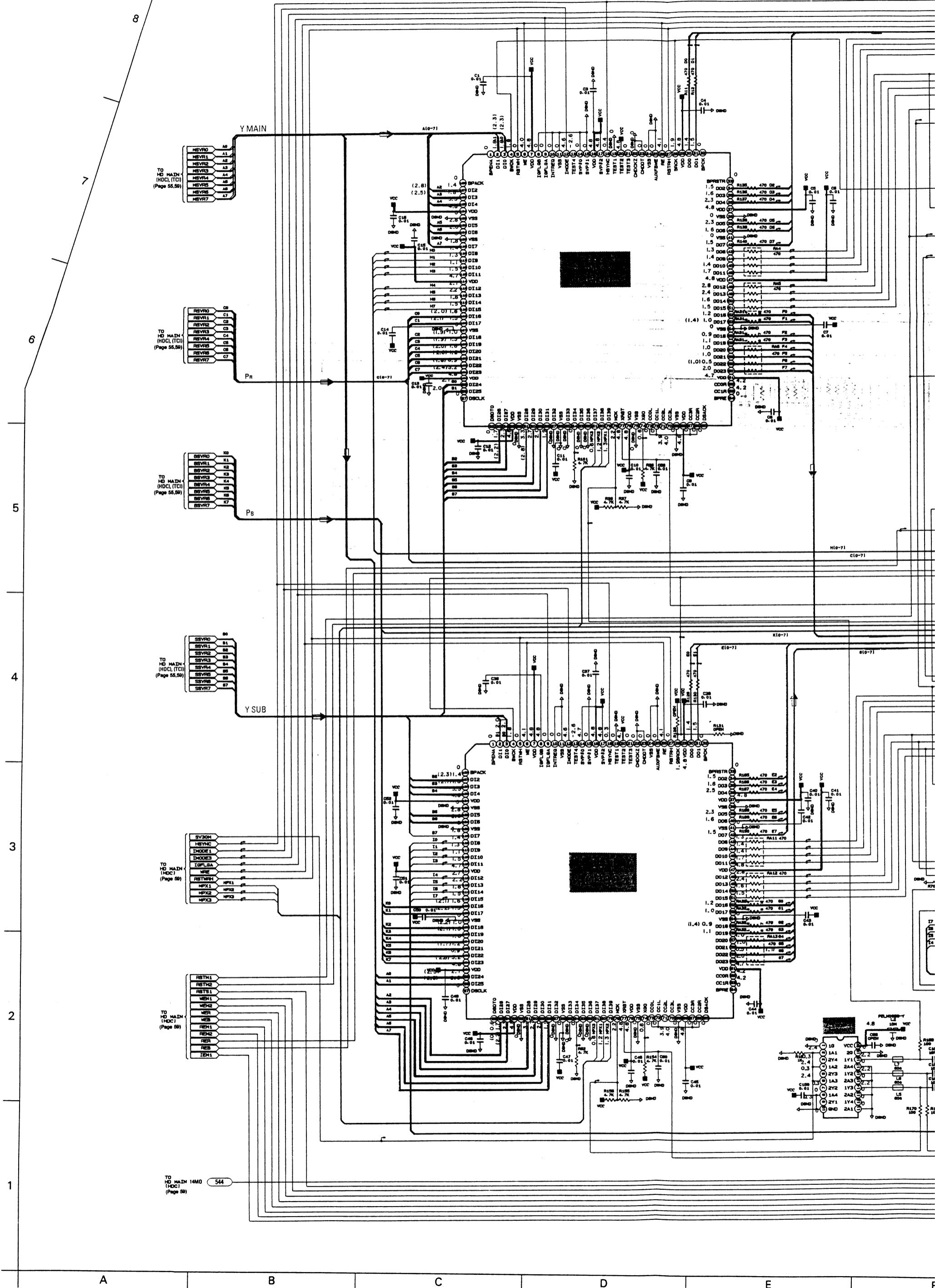


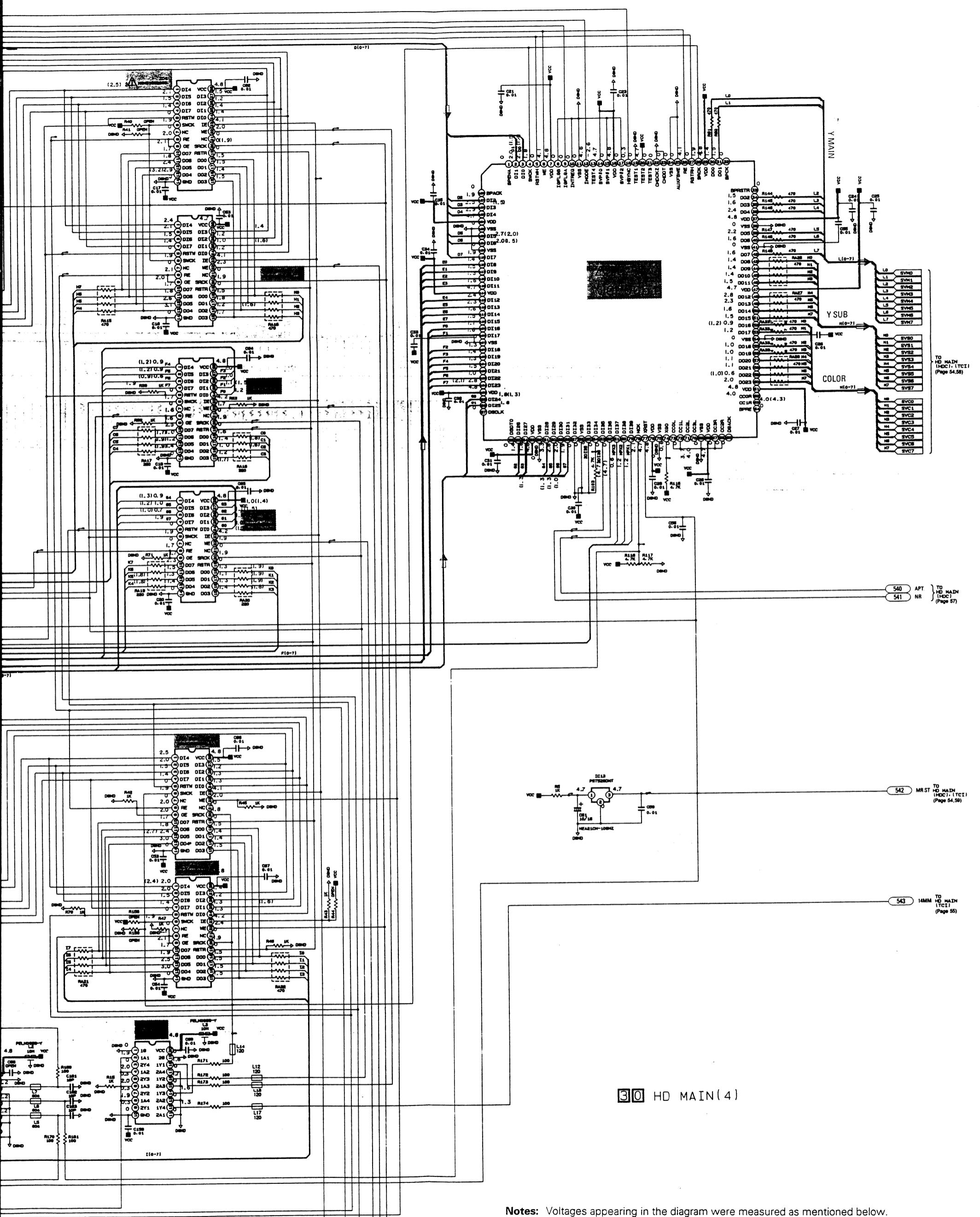
Notes: Voltages appearing in the diagram were measured as mentioned below.
 REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.
 PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.



Notes: NPN transistors are 2SC4081(RS) unless otherwise indicated.
 PNP transistors are 2SA1576(RS) unless otherwise indicated.

4.20 W-MAIN VIDEO(4) SCHEMATIC DIAGRAM





30 HD MAIN(4)

4.21 W-MAIN VIDEO (TCI) SCHEMATIC DIAGRAM

8

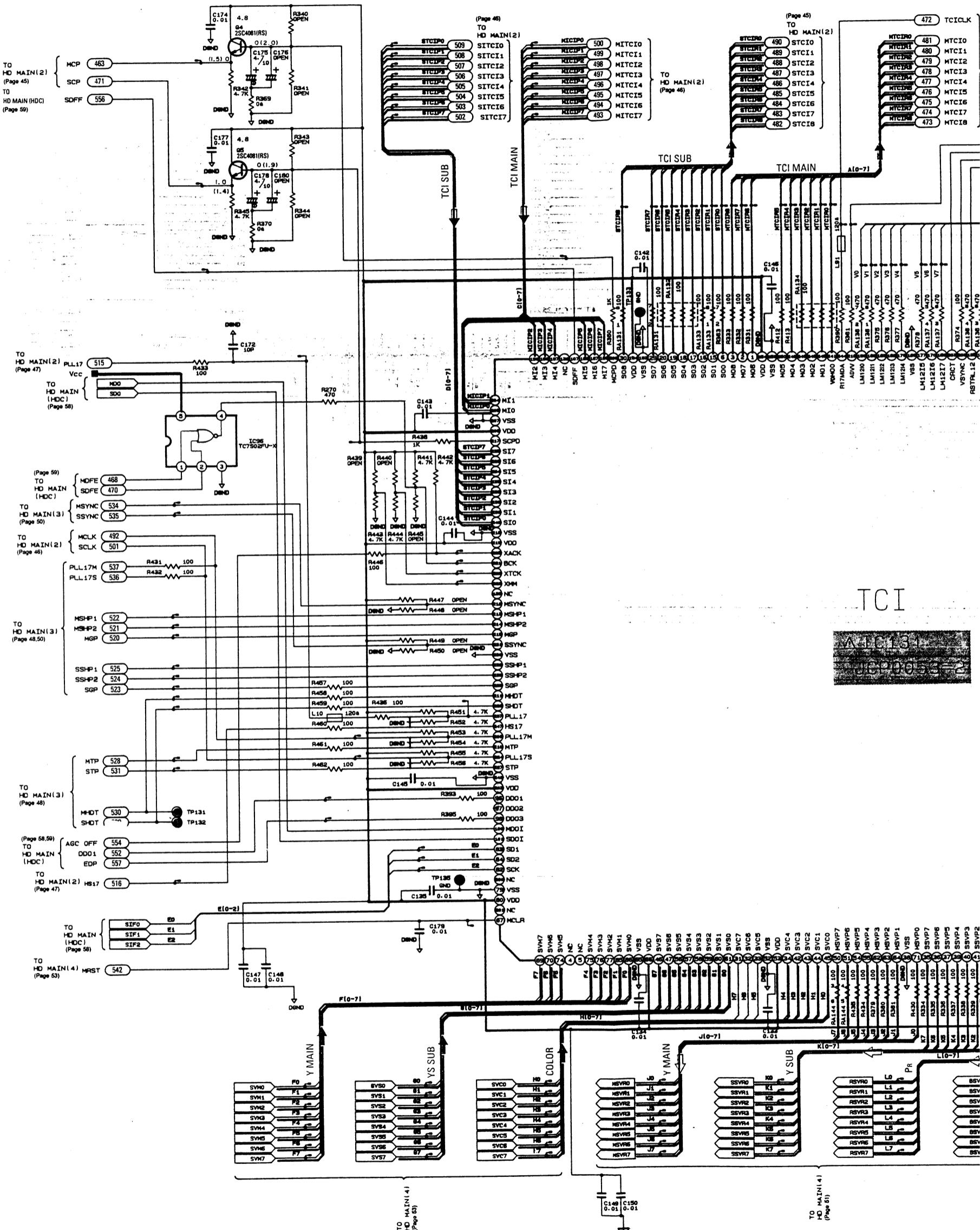
7

6

5

•

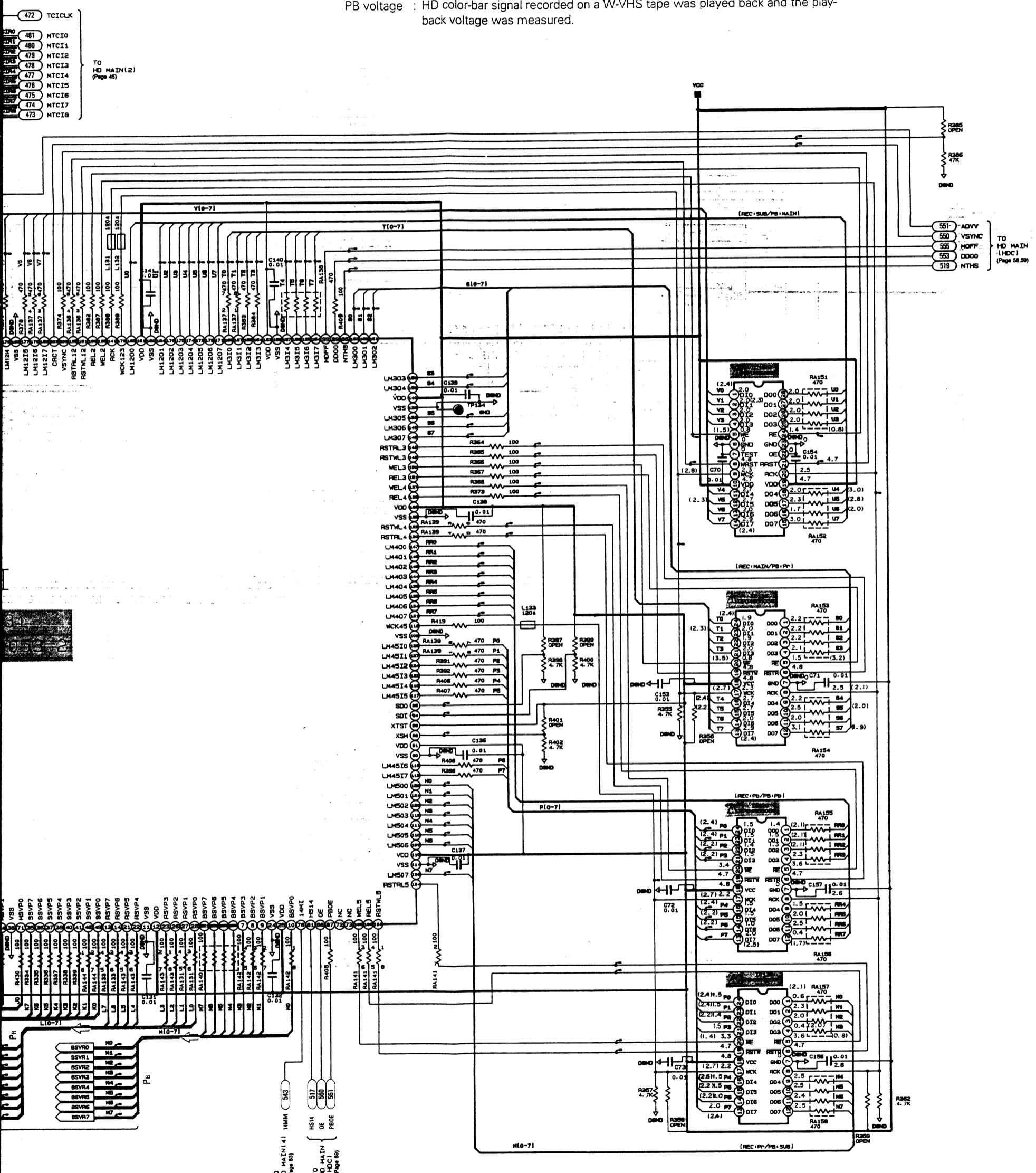
30 HD MAIN(TCI)



Notes: Voltages appearing in the diagram were measured as mentioned below.

REC voltage: HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.

PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.



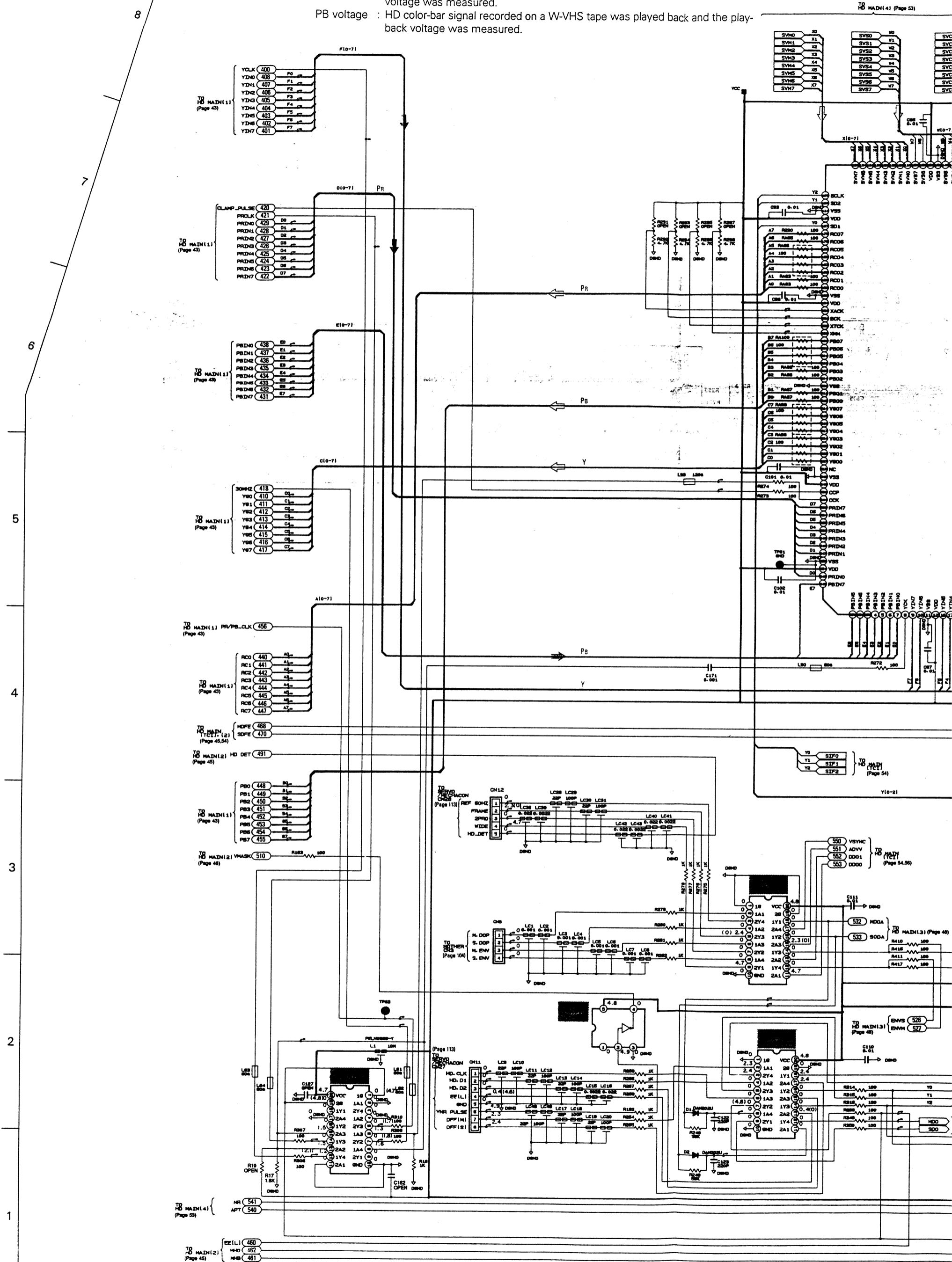
4.22 W-MAIN VIDEO (HDC) SCHEMATIC DIAGRAM

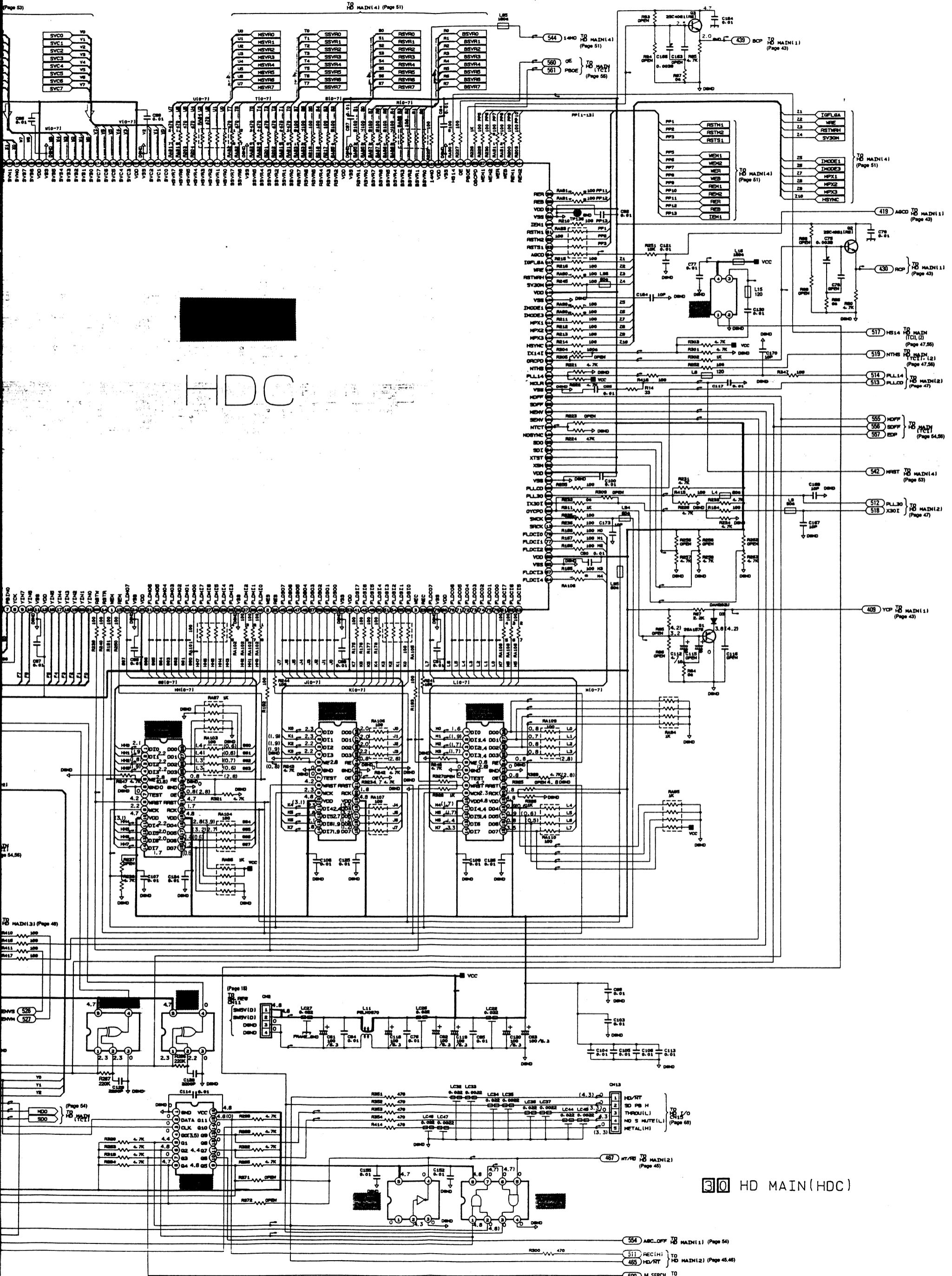
Notes: Voltages appearing in the diagram were measured as mentioned below.

REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.

PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.

To MAIN(4) (Page 53)





30 HD MAIN(HDC)

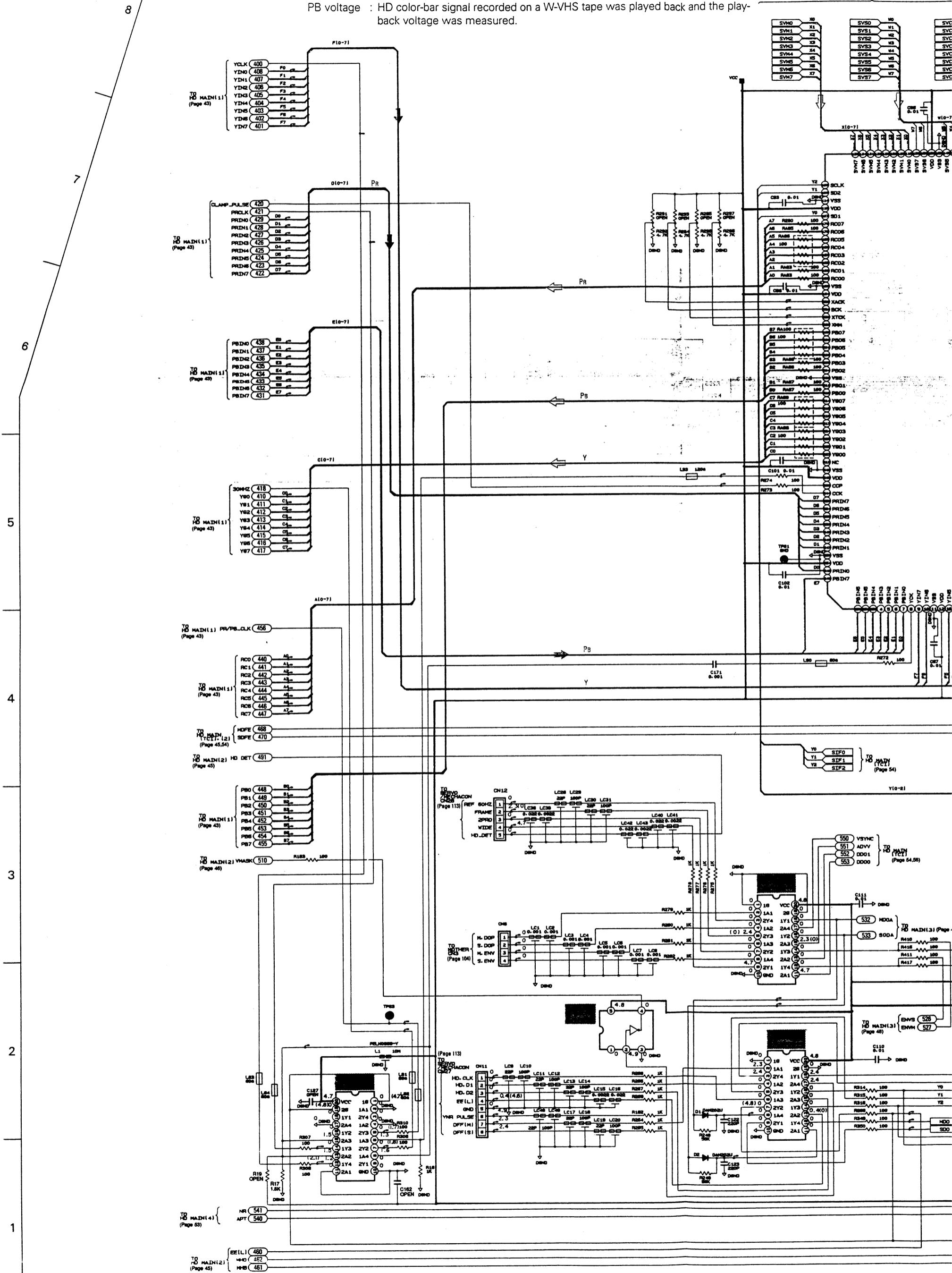
4.22 W-MAIN VIDEO (HDC) SCHEMATIC DIAGRAM

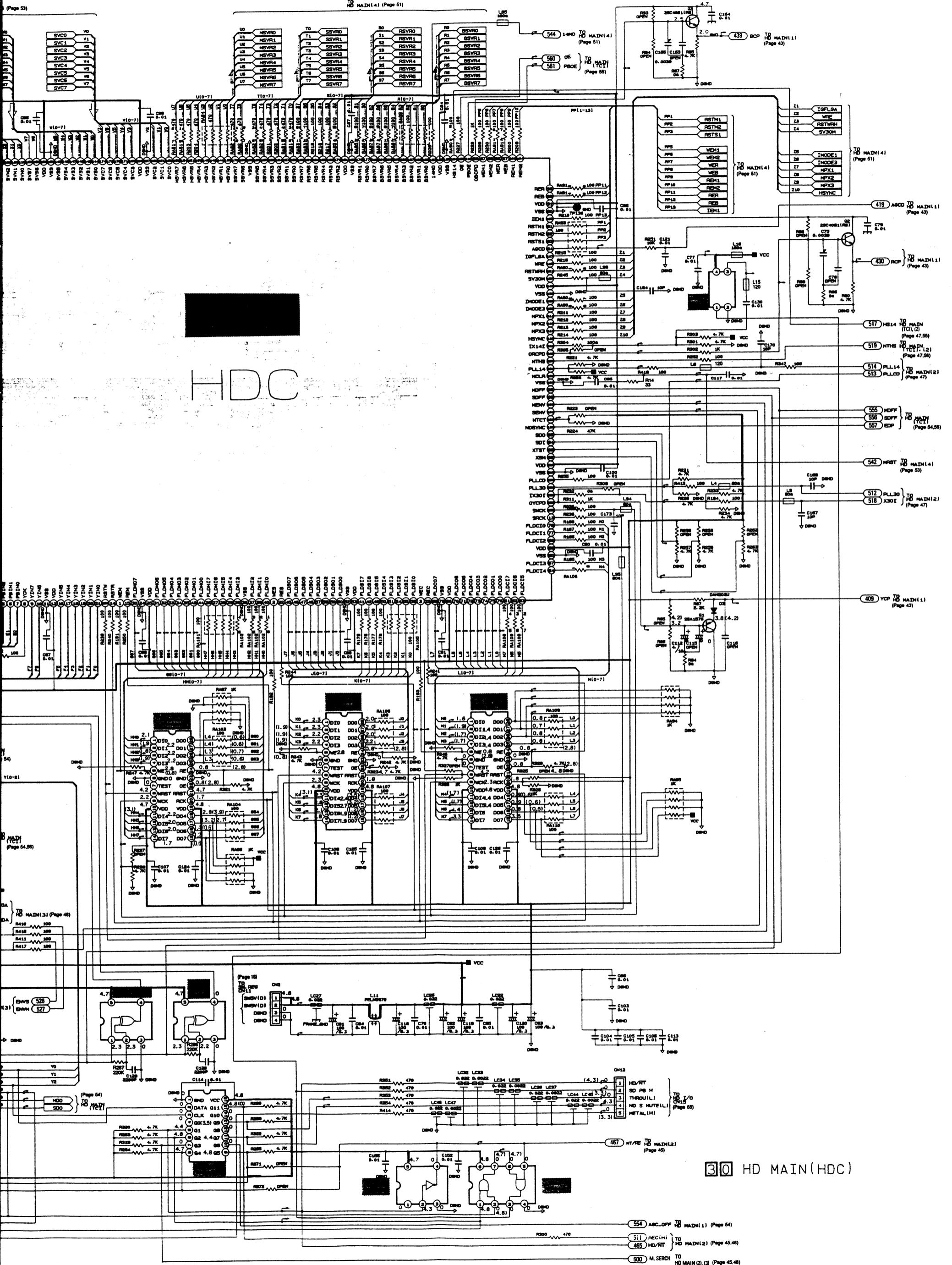
Notes: Voltages appearing in the diagram were measured as mentioned below.

REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" in this case) signal generator was recorded on a W-VHS tape and the recording voltage was measured.

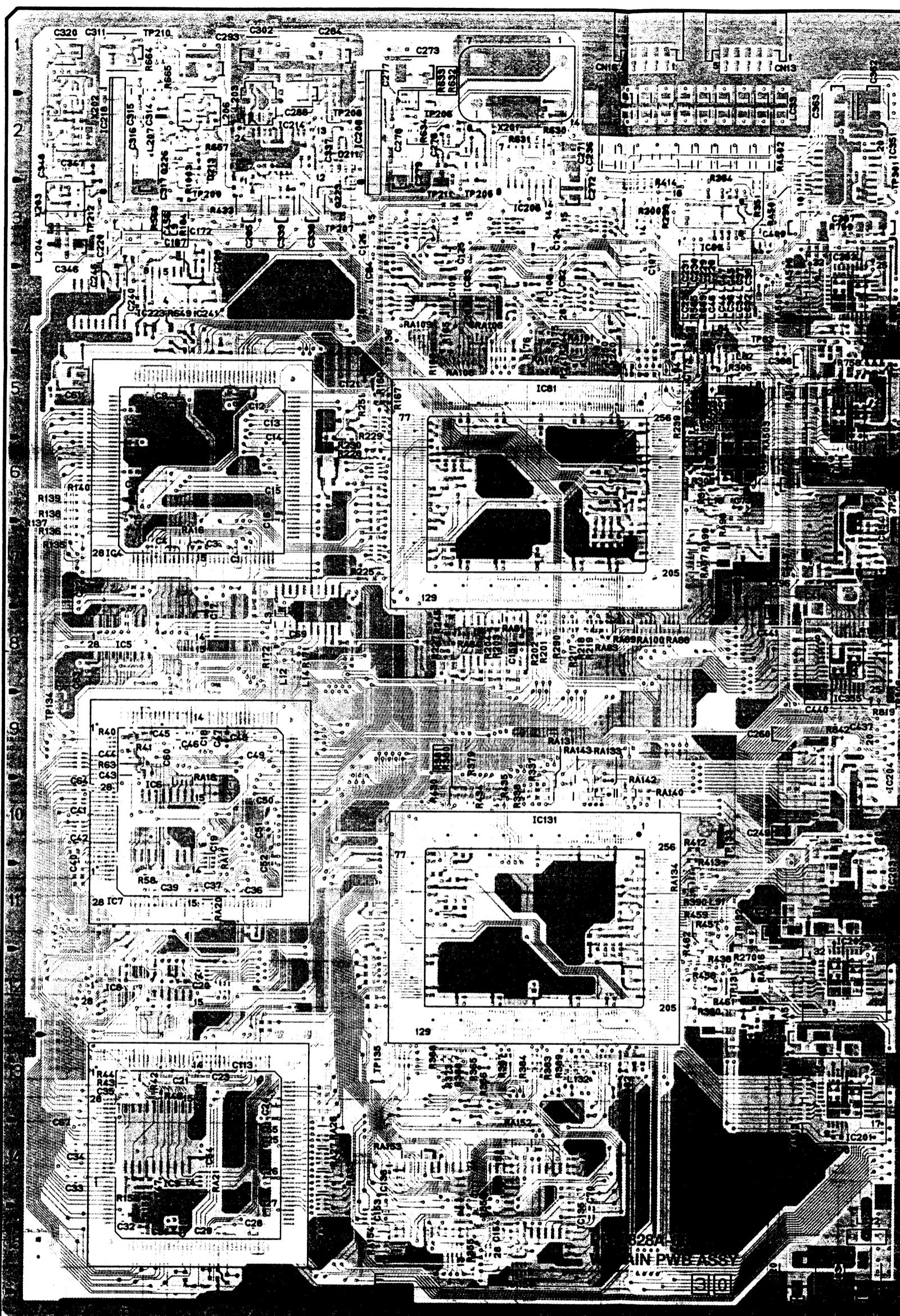
PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the playback voltage was measured.

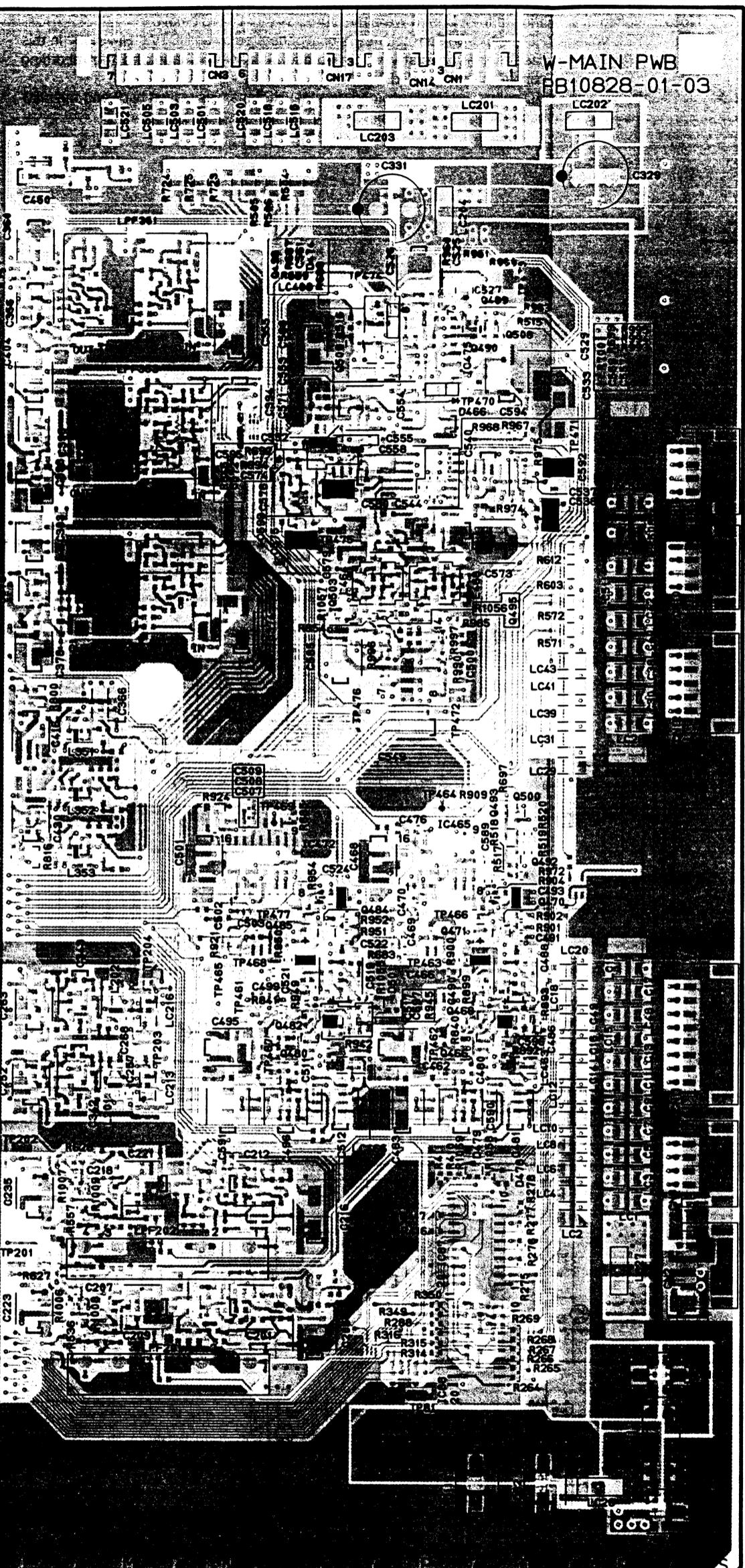
To MAIN(4) (Page 53)





— COMPONENT SIDE (A) —





ELADLESS COMPONENT PARTS LOCATION GUIDE <30> W-MAIN BOARD

REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION		
RESISTOR ARRAY		CAPACITOR		CAPACITOR		CAPACITOR		CAPACITOR		RESISTOR	
RA31	B-21A	C111	B-27Q	C301	B-16C	C487	B-25Q	X202	A-2B		
RA32	B-25A	C112	B-22I	C302	A-1D	C488	A-100	X203	A-3A		
RA33	A-13E	C113	A-13C	C303	B-17B	C489	B-25Q	X403	A-6J		
RA34	A-8G	C114	B-18I	C304	B-17B	C490	A-10P	CRYSTAL RESONATOR			
RA35	B-23G	C115	B-22I	C305	B-17C	C491	A-10Q	LC1	A-12R		
RA36	A-8H	C116	B-22J	C306	B-17C	C492	B-24Q	LC2	A-12O		
RA37	A-8F	C117	B-22F	C307	B-17B	C493	A-9Q	LC3	A-12O		
RA38	B-23G	C118	A-15R	C308	B-17B	C494	B-26N	LC4	A-12O		
RA39	B-23G	C119	A-15P	C309	B-17C	C495	A-10N	LC5	A-12O		
RA40	B-23G	C120	A-15J	C310	B-18B	C497	B-26N	LC6	A-12O		
RA41	A-7I	C121	A-5E	C311	A-18	C498	B-26N	LC7	A-12R		
RA42	A-8I	C122	B-28Q	C312	B-16B	C499	A-10N	LC8	A-12O		
RA43	A-8H	C123	B-28Q	C313	B-16B	C500	B-24N	LC9	A-11R		
RA44	B-22E	C124	A-3G	C314	A-2B	C501	A-9M	LC10	A-11O		
RA45	B-21E	C125	A-3F	C315	A-2B	C502	A-9N	LC11	A-11R		
RA46	B-20E	C126	A-3E	C316	A-2B	C503	A-9N	LC12	A-11O		
RA47	B-19E	C127	B-19J	C317	A-3B	C504	B-24O	LC13	A-11R		
RA48	B-18E	C128	B-29P	C318	B-17B	C505	B-24N	LC14	A-11R		
RA49	B-18G	C129	B-29P	C319	B-16A	C506	B-24O	LC15	A-11R		
RA50	B-19G	C130	A-5I	C320	A-1A	C507	A-8N	LC16	A-11R		
RA51	A-7I	C131	B-25H	C321	B-16A	C508	A-8N	LC17	A-10R		
RA52	A-8H	C132	B-25G	C322	B-16A	C509	A-8N	LC18	A-10Q		
RA53	A-8G	C133	B-25F	C323	B-17A	C511	C-110	LC19	A-10R		
RA54	A-4G	C134	B-25F	C324	B-17A	C512	A-12O	LC20	A-10Q		
RA55	A-5G	C135	B-25F	C325	B-17A	C513	B-26O	LC21	A-8R		
RA56	B-19G	C136	B-26E	C326	B-18A	C514	B-26O	LC22	A-8Q		
RA57	B-18H	C137	B-27F	C327	B-27K	C515	B-26N	LC23	A-7R		
RA58	B-20F	C138	B-27F	C328	B-28O	C516	B-25O	LC24	A-8Q		
RA59	A-4F	C139	B-27F	C330	B-18R	C517	A-10P	LC25	A-4J		
RA60	B-18G	C140	B-27F	C332	B-27P	C518	B-25O	LC26	A-2J		
RA61	A-5F	C141	B-27G	C333	B-28L	C519	A-100	LC27	A-4J		
RA62	A-4E	C142	B-27H	C334	B-27M	C520	B-25O	LC28	A-4J		
RA63	B-18E	C143	B-27H	C335	B-28O	C521	A-100	LC29	A-4J		
RA64	B-25G	C144	B-27H	C336	B-26N	C522	A-100	LC30	A-7R		
RA65	A-9H	C145	B-26H	C337	A-2D	C523	B-24O	LC31	A-8Q		
RA66	A-11I	C146	B-25H	C338	A-3D	C524	A-9O	LC32	A-7R		
RA67	B-28H	C147	B-25G	C339	A-3D	C525	A-3P	LC33	A-7R		
RA68	B-28G	C148	B-26F	C340	B-26M	C526	A-3P	LC34	A-4J		
RA69	B-28F	C149	B-27G	C341	B-26M	C527	A-3O	LC35	A-4J		
RA70	B-28E	C150	B-26H	C342	A-11M	C528	B-19Q	LC36	A-4J		
RA71	A-10H	C151	B-18I	C343	A-10L	C529	A-4R	LC37	A-4J		
RA72	B-25E	C152	B-18I	C345	B-18A	C530	B-19Q	LC45	A-4J		
RA73	C153	C153	A-15E	C346	A-4A	C531	B-19P	LC46	A-4J		
RA74	A-9H	C154	A-15F	C347	A-2A	C532	B-19P	LC47	A-4J		
RA75	A-9G	C155	B-30G	C351	B-18M	C533	A-4R	LC48	A-10R		
RA76	A-15G	C156	B-30F	C352	B-19N	C534	B-19Q	LC49	A-10R		
RA77	A-14E	C157	B-30G	C353	B-19M	C535	B-19Q	LC50	B-28J		
RA78	A-15E	C158	B-22E	C354	B-19M	C536	B-21O	LC51	B-26J		
RA79	A-15F	C159	A-8G	C355	A-4N	C537	A-5R	LC52	B-25J		
RA80	A-15G	C160	B-19H	C356	A-3L	C538	A-5R	LC53	B-25J		
RA81	B-30G	C161	B-21D	C357	B-18L	C539	B-20Q	LC54	B-20J		
RA82	B-30F	C162	B-20H	C358	B-19M	C540	A-5P	LC55	B-18J		
RA83	C163	C163	B-20D	C359	B-18L	C541	B-21P	LC56	B-22J		
RA84	B-30E	C164	B-21D	C360	A-3L	C542	B-21O	LC57	B-23J		
RA85	A-3J	C165	B-27I	C361	B-18L	C543	B-21P	LC205	B-28M		
RA86	A-2J	C166	B-18F	C362	A-1K	C545	B-21P	LC206	B-27M		
RA87	A-5J	C167	B-18F	C363	A-2J	C546	B-21P	LC207	B-28K		
RA88	A-5J	C168	B-29M	C364	B-17K	C547	B-21O	LC208	B-26J		
RA89	A-5J	C169	B-29M	C365	B-20K	C548	B-22P	LC209	B-28L		
RA90	A-5J	C170	B-18E	C366	B-20K	C549	A-9P	LC210	B-27L		
RA91	A-10I	C171	B-20H	C367	B-22M	C550	B-22O	LC211	B-26L		
RA92	B-25E	C172	A-3C	C368	A-6L	C551	B-22P	LC213	A-11M		
RA93	A-14J	C173	A-5I	C369	B-20N	C552	A-5N	LC214	B-25L		
RA94	A-13J	C174	B-27J	C370	B-21M	C553	A-4O	LC215	B-24J		
RA95	A-12J	C175	B-28I	C371	B-22N	C554	A-4P	LC216	B-10M		
RA96	A-12J	C176	B-28I	C372	B-22M	C555	B-19P	LC217	B-17G		
RA97	B-25E	C177	B-27I	C373	B-22M	C556	A-4R	LC218	B-18G		
CAPACITOR		C178	B-26J	C374	A-7N	C557	B-19P	LC222	B-16E		
C1	A-7C	C179	B-25F	C375	B-21L	C558	A-5P	LC223	A-4J		
C3	A-6C	C180	B-26J	C376	B-20K	C559	B-22O	LC224	A-2G		
C4	A-7B	C181	B-23F	C377	B-21K	C560	B-18P	LC225	B-16C		
C5	A-6B	C182	B-24F	C378	A-7L	C561	A-3O	LC226	B-16C		
C6	A-6B	C183	B-23G	C379	B-21K	C562	B-20P	LC230	A-4J		
C7	A-6B	C184	B-22F	C380	A-4N	C563	B-22O	LC231	A-4J		
C8	A-5B	C201	A-13N	C381	B-20K	C564	B-19O	LC235	A-4J		
C9	A-5B	C202	B-28O	C382	B-20K	C565	B-20P	LC236	A-4J		
C10	A-5B	C203	B-28O	C383	A-6L	C566	B-20P	LC237	A-4J		
C11	A-5C	C204	B-29N	C384	B-20K	C567	B-19O	LC238	A-4J		
C12	A-5C	C205	B-29N	C385	B-20K	C568	B-19O	LC239	A-4J		
C13	A-5D	C206	B-29M	C386	B-20K	C569	A-4R	LC240	A-2G		
C14	A-5D	C207	A-13M	C387	B-20J	C570	B-20P	LC241	A-2M		
C15	A-6D	C208	A-13M	C388	A-5J	C571	A-4O	LC242	B-16A		
C16	A-6D	C209	B-28O	C389	B-21J	C572	A-5N	LC243	B-18K		
C17	A-8C	C210	B-28L	C390	B-19M	C573	A-6O	LC244	B-21L		
C18	A-9C	C211	B-28M	C391	B-20N	C574	A-5N	LC245	B-22L		
C19	A-10C	C212	B-28M	C392	B-20M	C575	A-6N	LC246	B-20J		
C20	A-12C	C213	B-26J	C393	B-19K	C576	A-5N	LC247	B-19L		
C21	A-13C	C214	B-27O	C394	B-19K	C577	B-21O	LC248	B-16C		
C22	A-13C	C215	B-27N	C395	B-20L	C578	B-21N	LC249	B-16C		
C23	A-14D	C216	B-27N	C396	A-4L	C579	A-6O	LC250	B-22J		
C24	A-14D	C217	B-28M	C397	B-20L	C580	A-5O	LC251	A-7M		
C25	A-14D	C218	B-28M	C398	B-19K	C581	B-21O	LC252	B-22J		
C26	A-15C	C219	B-27M	C399	B-19J	C582	B-21O	LC253	B-23L		
C27	A-15C	C220	A-12M	C400	B-19J	C583	B-21O	LC254	B-23L		
C28	A-15C	C221	A-12M	C401	B-19K	C584	B-22O	LC255	B-23L		
C29	A-15B	C222	B-27M	C402	B-19K	C585	A-7O	LC256	B-18L		
C30	A-15B	C223	A-13L	C403	B-19J	C586	B-22O	LC257	B-18L		
C31	A-14A	C224	B-29K	C404	A-4L	C587	B-22O	LC258	B-18K		
C32	A-14A	C225	B-28K	C405	B-18K	C588	B-22P	LC259	B-18K		
C33	A-14A	C226	B-28K	C406	B-18K	C589	A-9Q	LC260	B-22J		
C34	A-14A	C227	A-11M	C407	B-19J	C590	A-11O	LC261	B-21O		
C35	A-14A	C228	B-25K	C408	A-3J	C591	A-12N	LC262	B-21O		
C36	A-14A	C229	B-25K	C409	A-3J	C592	A-5R	LC263	B-21O		
C37	A-8D	C230	B-25K	C410	A-7J	C593	A-6N	LC264	B-21O		
C38	A-8D	C231	B-26J	C411	B-22K	C594	A-4Q	LC265	B-21O		
C39	A-14H	C232	B-26J	C412	B-22K	C595	A-5N	LC266	B-21O		
C40	A-10A	C233	B-25K	C413	B-24M	C596	B-22F	LC267	B-21O		
C41	A-10A	C234	B-25K	C414	B-24M	C597	B-22F	LC268	B-21O		
C42	A-14F	C235	B-25K	C415	B-24M	C598	B-22F	LC269	B-21O		
C43	A-14F	C236	B-25K	C416	B-24M	C599	B-22F	LC270	B-21O		
C44	A-15K	C237	B-25K	C417	B-24M	C600	B-22F	LC271	B-21O		
C45	A-15K	C238	B-16C	C418	B-24M	C601	B-22F	LC272	B-21O		
C46	B-29R	C239	B-16E	C419	B-24M	C602	B-16D	LC273	B-21O		
C47	B-30Q	C240	B-16E	C420	B-24P	C603	B-2C	LC274	B-21O		
C48	B-30K	C241	B-16E	C421	B-24P	C604	B-2B	LC275	B-21O		
C49	B-22F	C242	B-16D	C422	B-24P	C605	B-17E	LC276	B-21O		
C50	B-22F	C243	B-16D	C423	B-24P	C606	B-17F	LC277	B-21O		
C51	B-22G	C244	B-16D	C424	B-24P	C607	B-17G	LC278	B-21O		
C52	B-22H	C245	B-16D	C425	B-24P	C608	B-18D	LC279	B-21O		
C53	B-22H	C246	B-16F	C426	B-24P	C609	B-17B	LC280	B-21O		
C54	B-22H	C247	B-16F	C427	B-24P	C610	B-18C	LC281	B-21O		
C55	B-22H	C248	B-16F	C428	B-24P	C611	B-17L	LC282	B-21O		
C56	B-22H	C249	B-16F	C429	B-24P	C612	B-17L	LC283	B-21O		
C57	B-22H	C250	B-16F	C430	B-24P	C613	B-17L	LC284	B-21O		
C58	B-22H	C251	B-16F	C431	B-24P	C614	B-17L	LC285	B-21O		
C59	B-22H	C252	B-16F	C432	B-24P	C615	B-17L	LC286	B-21O		
C60	B-22H	C253	B-16F	C433	B-24P	C616	B-17L	LC287	B-21O		
C61	B-22H	C254	B-16F	C434	B-24P	C617	B-17L	LC288	B-21O		
C62	B-22H	C255	B-16F	C435	B-24P	C618	B-17L	LC289	B-21O		
C63	B-22H	C256	B-16F	C436	B-24P	C619	B-17L	LC290	B-21O		
C64	B-22H	C257	B-16F	C437	B-24P	C620	B-17L	LC291	B-21O		
C65	B-22H	C258	B-16F	C438	B-24P	C621	B-17L	LC292	B-21O		
C66	B-20G	C259	B-16F	C439	B-24P	C622	B-17L	LC293	B-21O		
C67	B-20G	C260	B-16F	C440	B-24P	C623	B-17L	LC294			

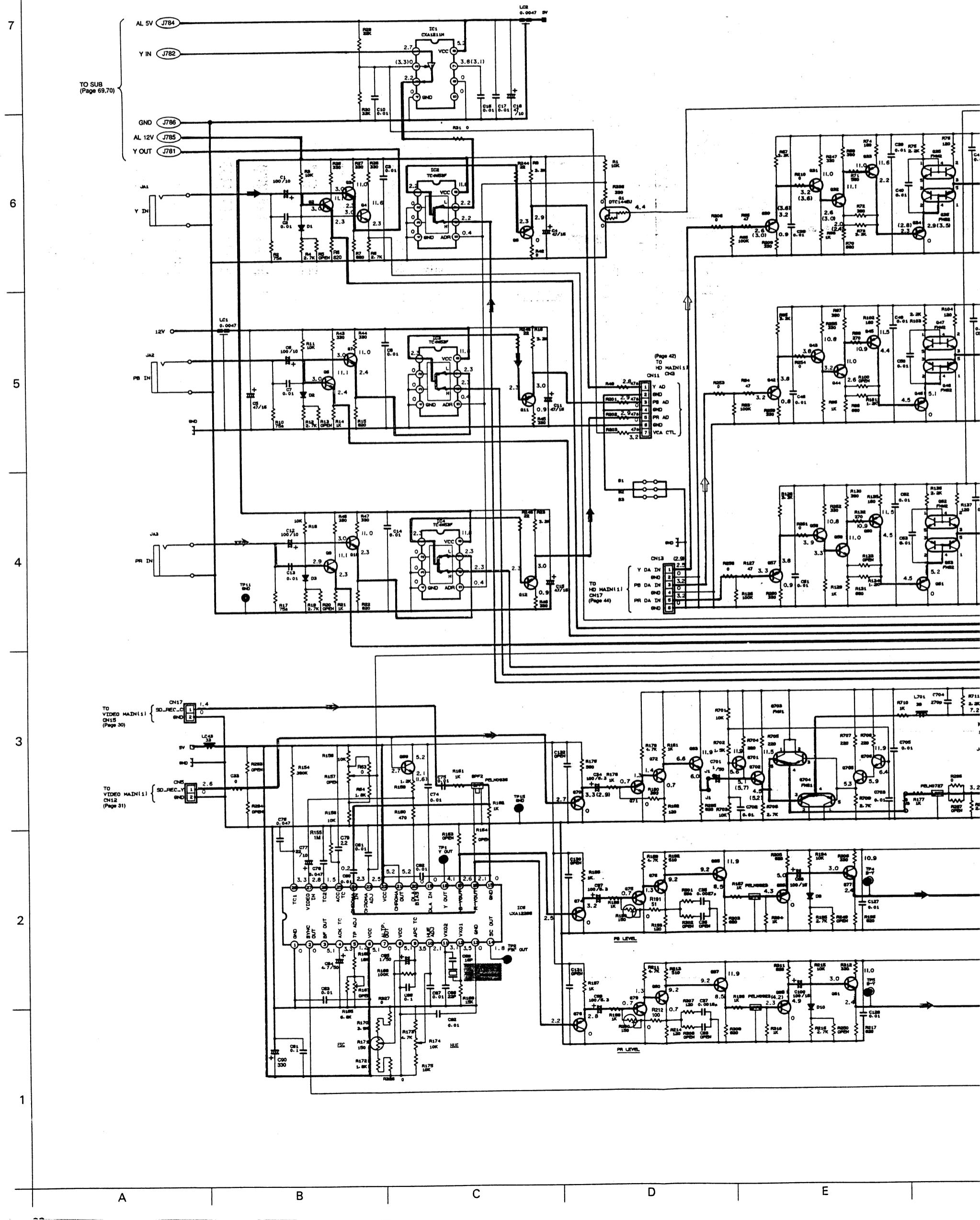
4.24 W-MAIN VIDEO IN/OUT SCHEMATIC DIAGRAM

8

Notes: Voltages appearing in the diagram were measured as mentioned below.
REC voltage : HD (high definition) color-bar signal generated by an HDTV ("Hi-vis" case) signal generator was recorded on a W-VHS tape and the voltage was measured.
PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and

PB voltage : HD color-bar signal recorded on a W-VHS tape was played back and the back voltage was measured.

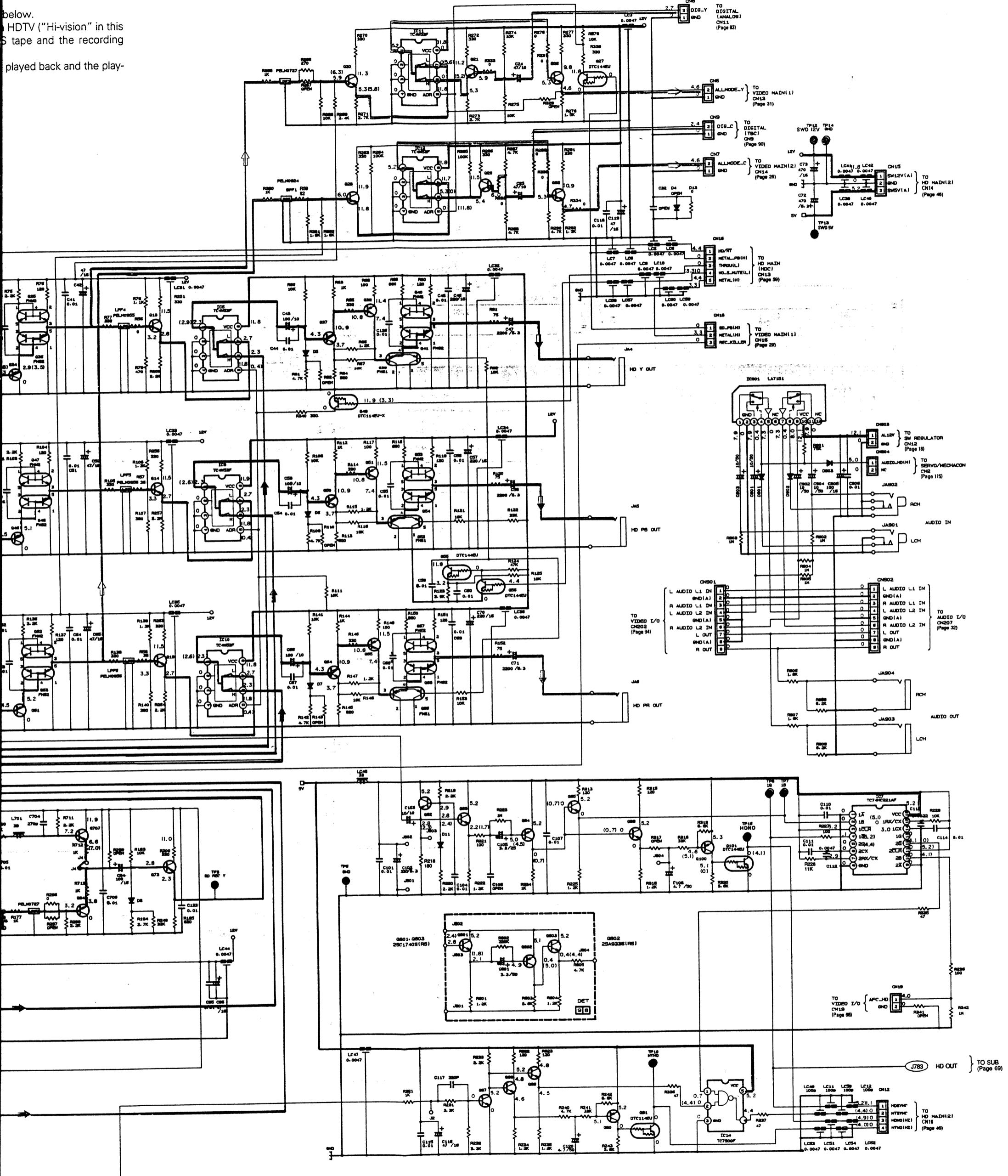
31 HD IN/OUT



below.

HDTV ("Hi-vision" in this tape and the recording

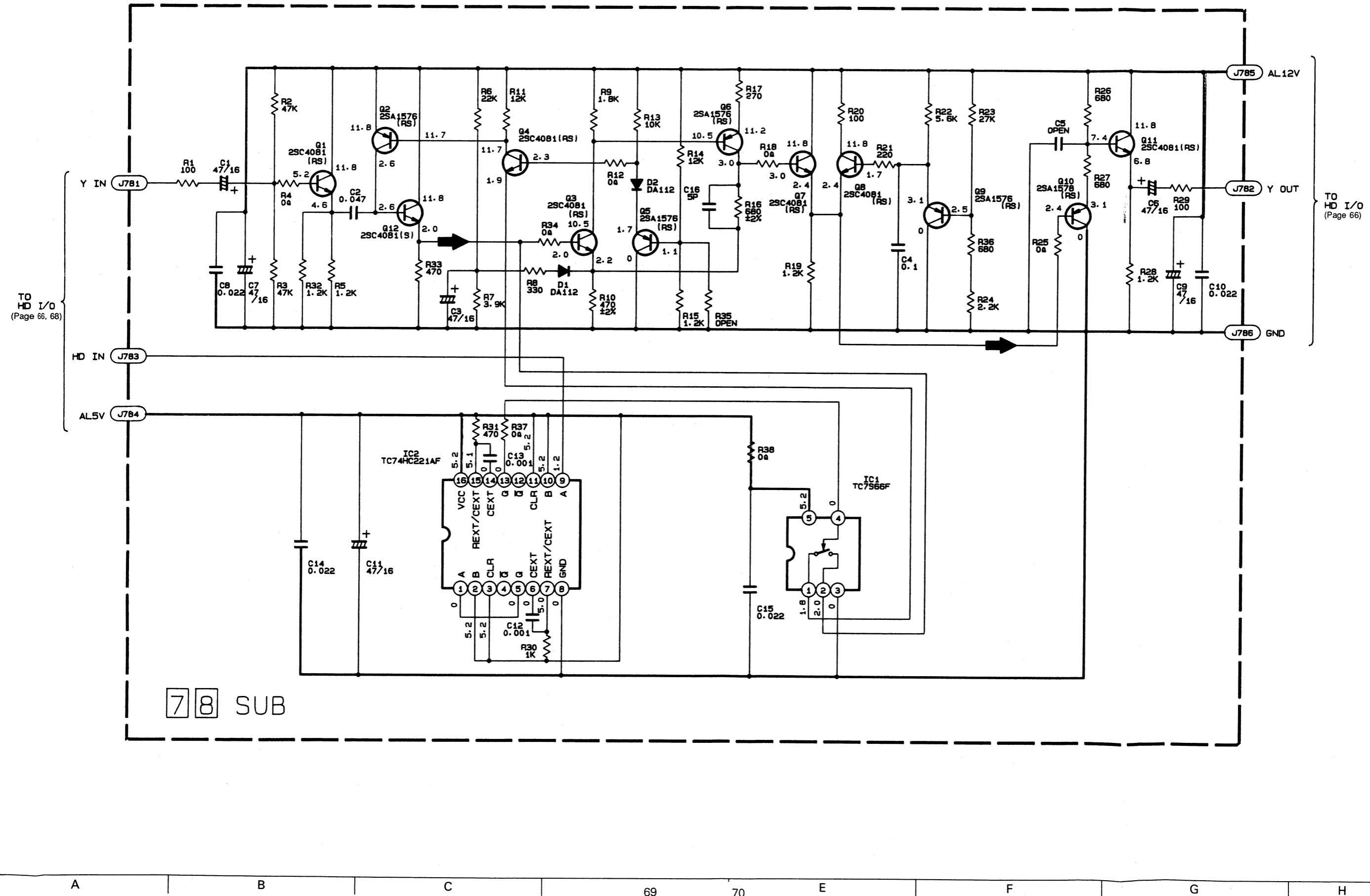
played back and the play-



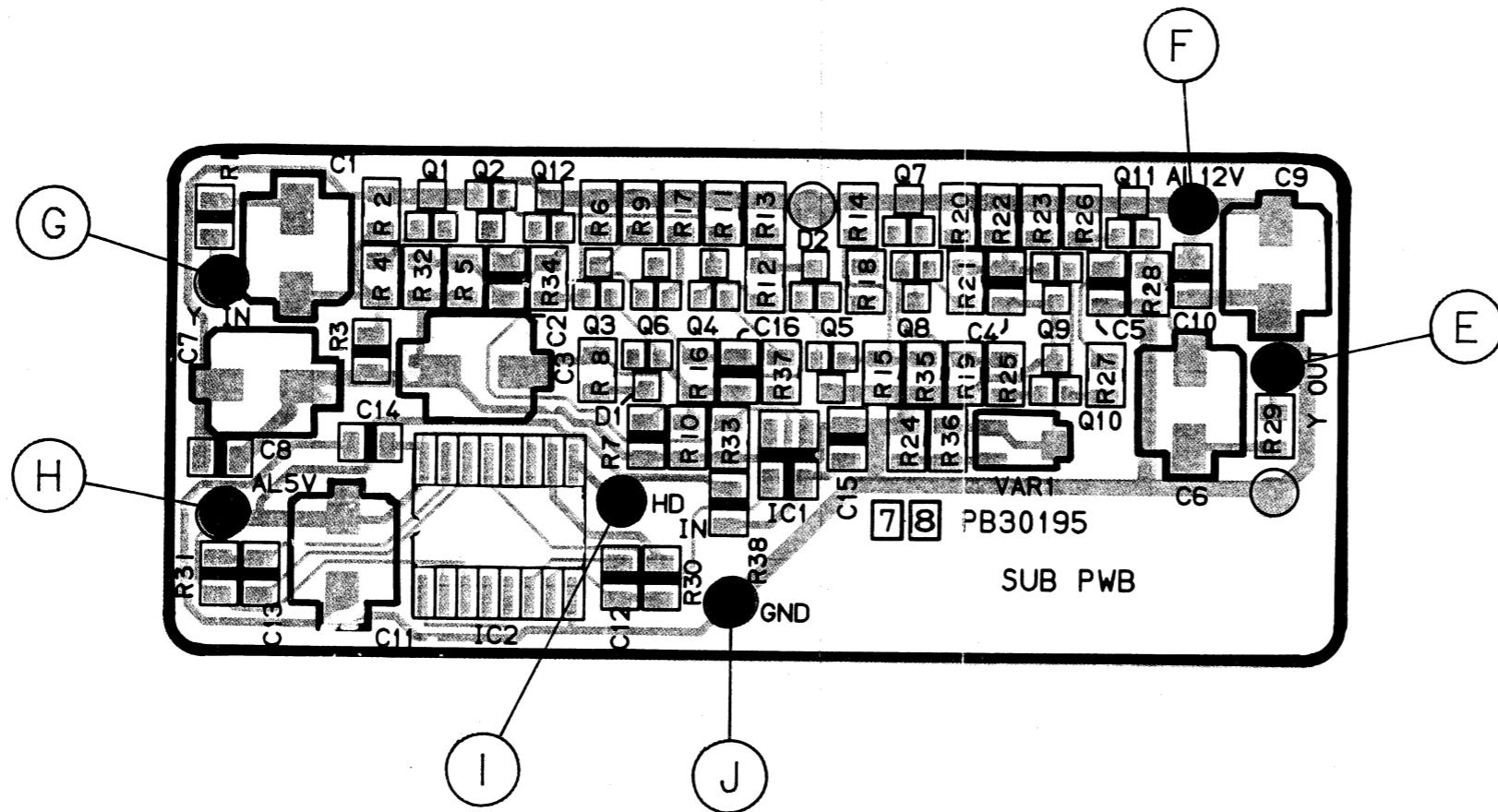
Notes:

- NPN transistors are 2SC4081(RS) unless otherwise indicated.
- PNP transistors are 2SA1576(RS) unless otherwise indicated.
- Diodes are DAN202U unless otherwise indicated.

4.25 SUB SCHEMATIC DIAGRAM

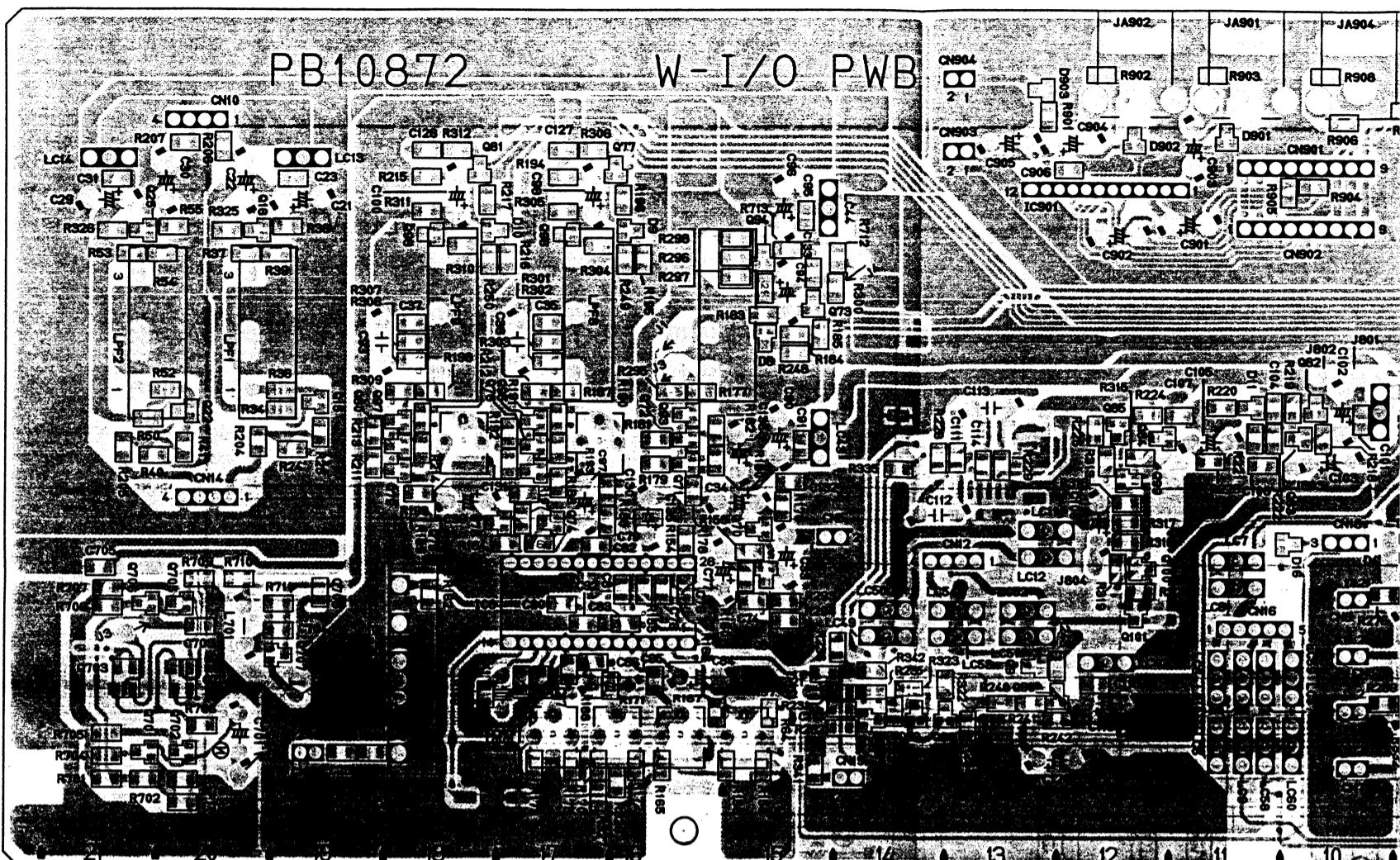


4.26 SUB CIRCUIT BOARD

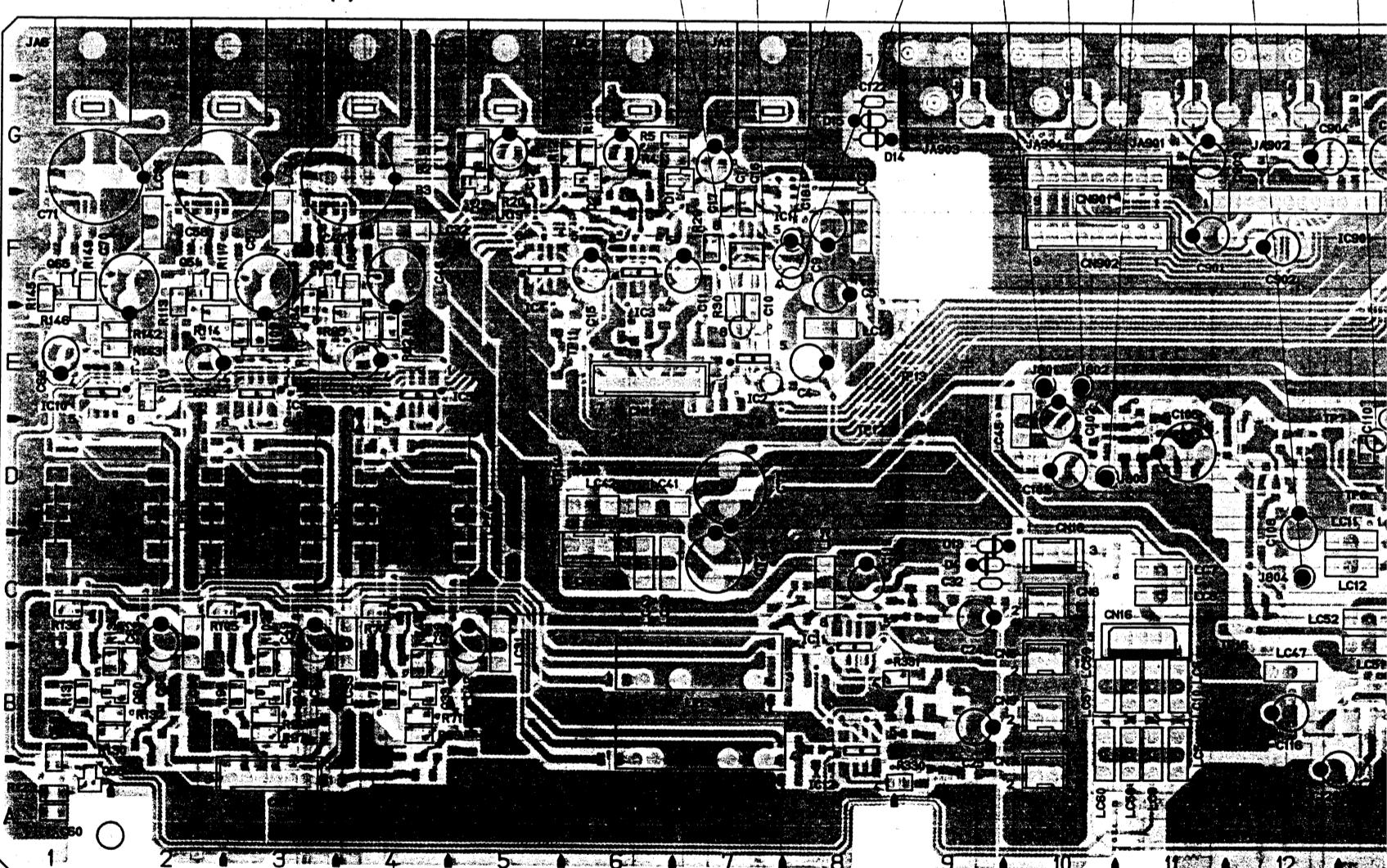


4.27 W-IN/OUT, DET CIRCUIT BOARDS

— FOIL SIDE (B) —



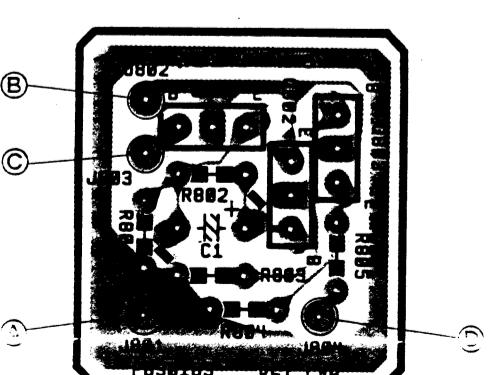
— COMPONENT SIDE (A) —

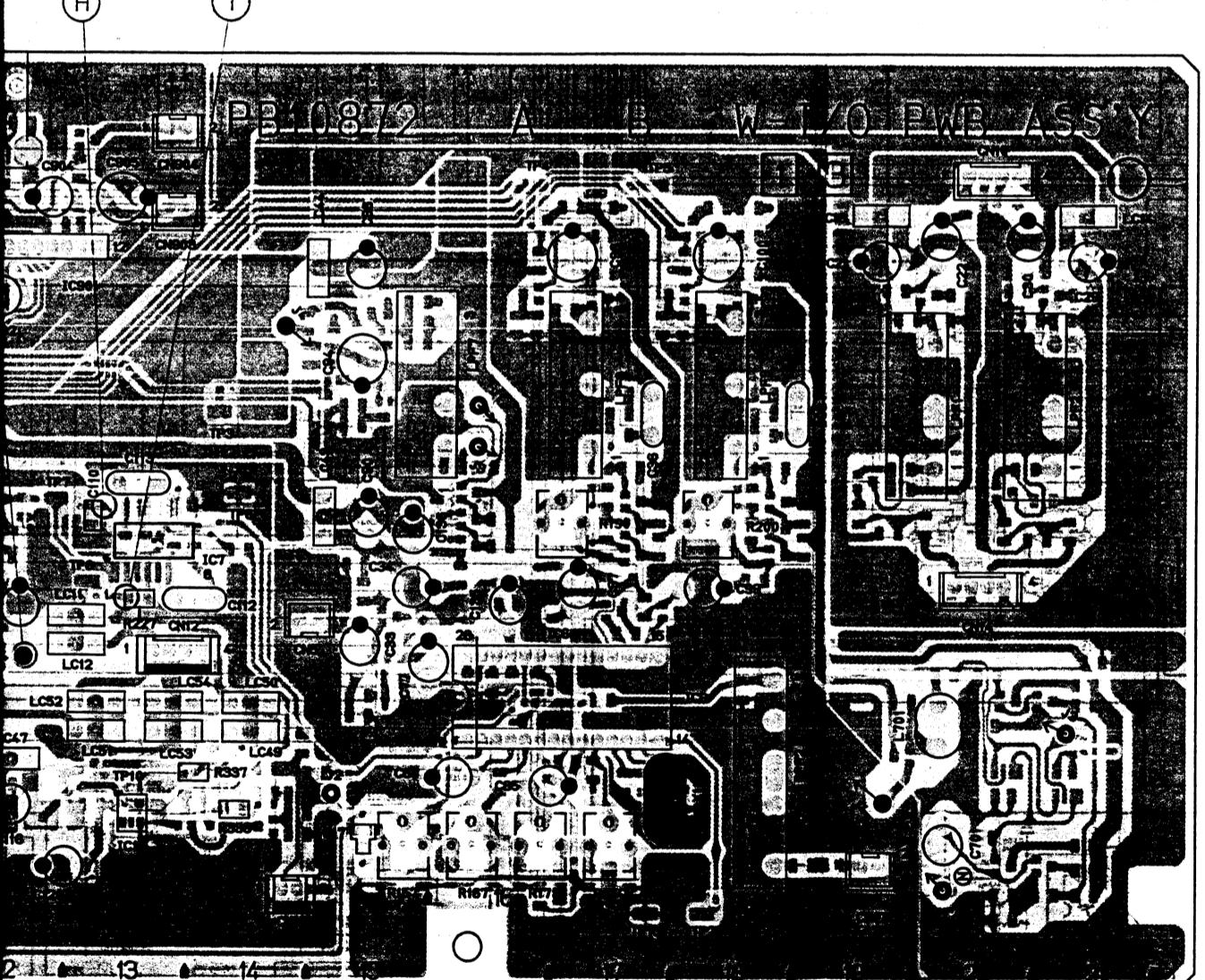
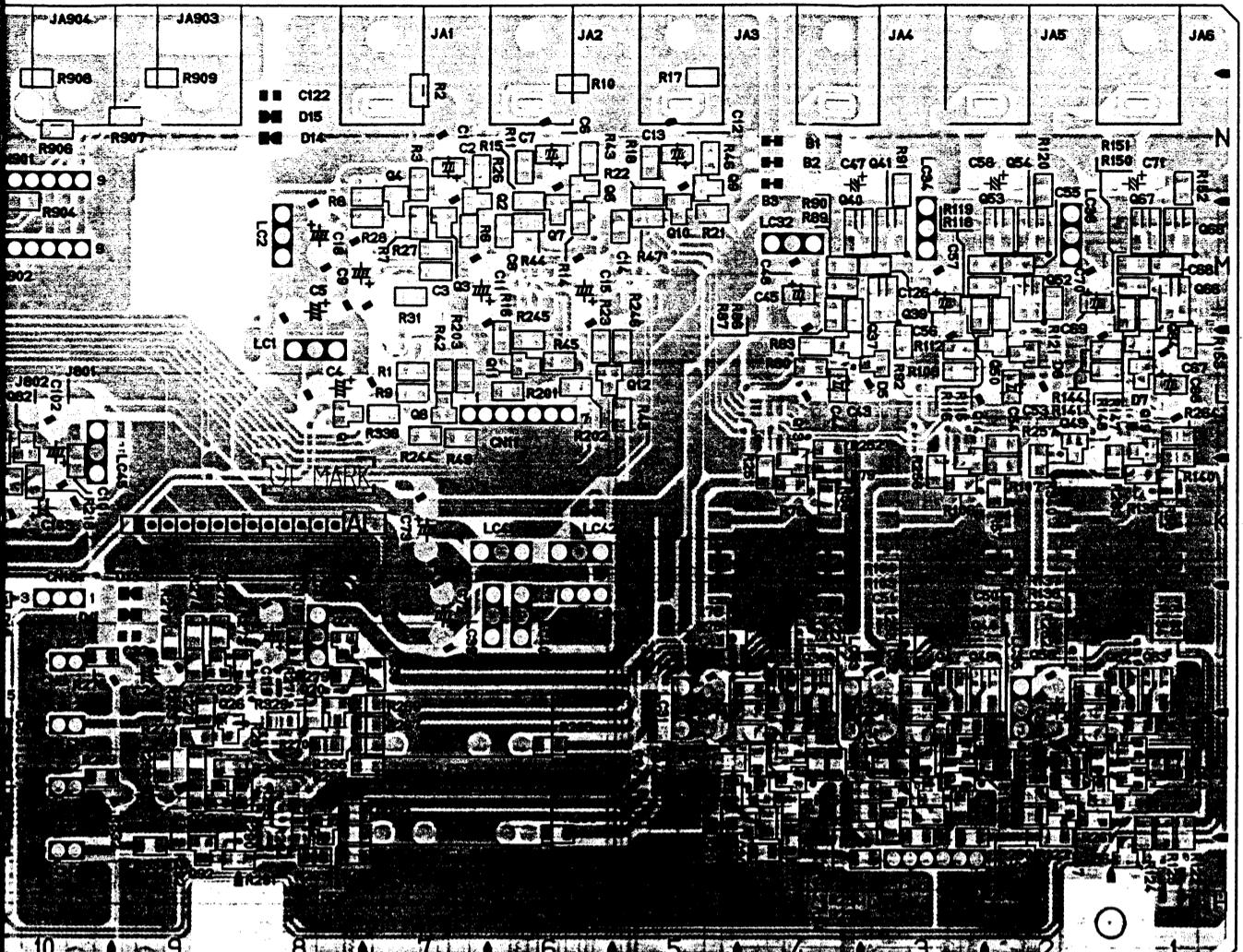


MAIN COMPONENT PARTS LOC
<31> W IN/OUT BOARD

REF. No.	LOCATION	REF. No.
IC		Q14
IC1	A-7F	Q19
IC2	A-7E	Q20
IC3	A-6F	Q21
IC4	A-5F	Q26
IC5	A-4E	Q27
IC6	B-17J	Q28
IC7	A-13D	Q29
IC9	A-3E	Q30
IC10	A-1E	Q31
IC11	A-8C	Q32
IC12	A-8B	Q33
IC14	A-13B	Q34
IC901	B-12M	Q35
TRANSISTOR		Q36
Q1	B-8L	Q37
Q2	B-7N	Q38
Q3	B-7M	Q39
Q4	B-7N	Q40
Q6	B-6N	Q41
Q7	B-6M	Q42
Q8	B-7L	Q43
Q9	B-5N	Q44
Q10	B-5M	Q45
Q11	B-6L	Q46
Q12	B-5L	Q47
Q13	B-4L	

— DET —





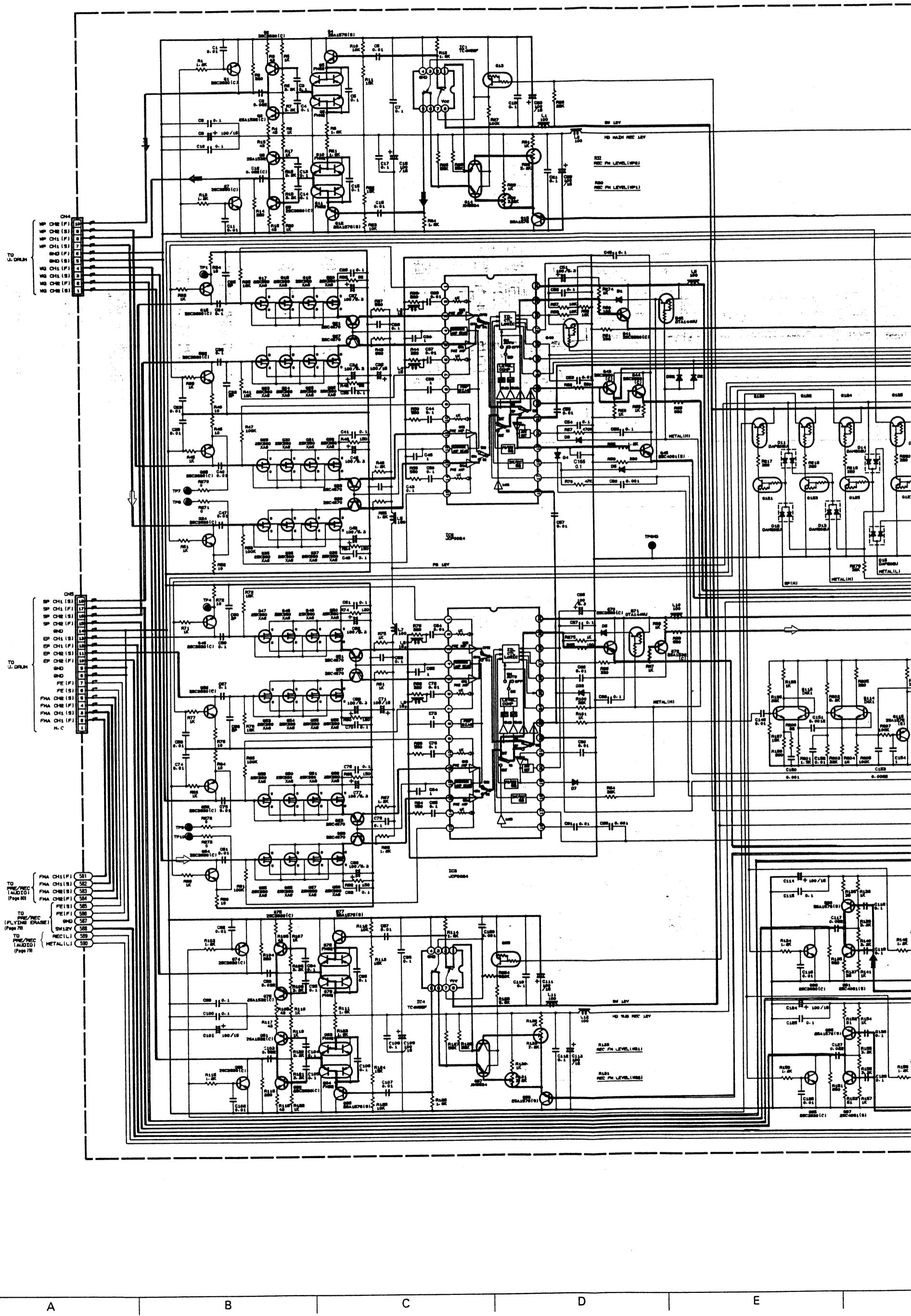
ELADLESS COMPONENT PARTS LOCATION GUIDE <31> W IN/OUT BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		RESISTOR		RESISTOR		RESISTOR	
IC1	A-7F	R17	B-5N	R177	B-16L	R332	B-9I
IC2	A-7E	R18	B-5N	R178	B-16K	R333	B-9J
IC3	A-6F	R19	A-5G	R179	B-16J	R334	B-9H
IC4	A-5F	R20	A-5G	R180	B-16K	R335	B-14K
IC5	A-4E	R21	B-5M	R181	B-16J	R336	A-14B
IC7	A-13D	R22	B-5N	R182	B-16K	R337	A-13B
IC9	A-3E	R24	B-19K	R183	B-15L	R338	B-7L
IC10	A-1E	R25	B-19K	R184	B-15L	R339	B-7J
IC11	A-8C	R26	B-7N	R185	B-15L	R340	B-2K
IC12	A-8B	R27	B-7M	R186	B-17K	R341	B-15H
IC14	A-13B	R28	B-7M	R187	B-17L	R342	B-14I
TRANSISTOR		R29	A-7F	R188	B-17K	R348	B-15H
Q1	B-8L	R30	A-7F	R189	B-17K	R518	B-15H
Q2	B-7N	R31	B-7M	R191	B-17K	R701	B-21H
Q3	B-7M	R34	B-19L	R192	B-17K	R702	B-21H
Q4	B-7N	R36	B-20M	R193	B-17K	R703	B-20H
Q6	B-6N	R37	B-19M	R194	B-17N	R704	B-21H
Q7	B-6M	R38	B-19M	R195	B-16M	R705	B-21I
Q8	B-7L	R39	B-21K	R196	B-16M	R706	B-20I
Q9	B-5N	R40	B-20K	R197	B-17K	R707	B-21J
Q10	B-5M	R41	B-7L	R198	B-18L	R708	B-21J
Q11	B-6L	R42	B-6N	R199	B-18K	R709	B-20J
Q12	B-5L	R43	B-6M	R201	B-6L	R710	B-20J
Q13	B-4L	R44	B-6L	R202	B-6L	R711	B-19J
Q14	B-3L	R45	B-5N	R203	B-7L	R712	B-19I
Q15	B-19L	R46	B-5M	R204	B-20K	R713	B-15M
Q18	B-20M	R47	B-5L	R205	B-21K	R901	B-13N
Q19	B-1L	R48	B-7L	R206	B-20N	R902	B-12N
Q20	B-8J	R49	B-21K	R207	B-20N	R903	B-11N
Q21	B-9J	R50	B-21L	R208	B-3H	R904	B-10M
Q22	B-20L	R52	B-20L	R209	B-5I	R905	B-11M
Q25	B-21M	R53	B-21M	R210	B-4I	R906	B-10N
Q26	B-9I	R54	B-20M	R211	B-19K	R907	B-9N
Q27	B-8J	R55	B-20M	R212	B-18K	R908	B-10N
Q28	B-8I	R56	B-4K	R213	B-19K	R909	B-9N
Q29	B-9I	R57	B-2K	R214	B-18K	CAPACITOR	
Q30	B-4I	R58	B-1K	R215	B-18N	C2	B-7N
Q31	B-4I	R59	B-8I	R216	B-17M	C3	B-7M
Q32	B-4I	R63	B-16I	R217	B-18M	C7	B-6N
Q33	A-4B	R65	B-4H	R218	B-10K	C8	B-6M
Q34	B-4I	R66	B-4H	R219	B-10L	C10	A-7F
Q35	B-4J	R67	B-5I	R220	B-11L	C13	B-5N
Q36	B-4J	R68	B-4I	R221	B-11K	C14	B-5M
Q37	B-4L	R69	A-4B	R222	B-11K	C16	A-7F
Q38	A-3F	R70	A-4B	R223	B-13K	C17	A-7F
Q39	B-3M	R71	A-4B	R223	B-11K	C23	B-19N
Q40	B-4M	R72	B-4I	R224	B-12L	C31	B-21N
Q41	B-3M	R73	B-4I	R225	B-12K	C35	B-17L
Q42	B-3I	R74	A-4B	R227	A-13D	C37	B-18L
Q43	B-3I	R75	B-4J	R228	A-14K	C38	B-5I
Q44	B-3I	R76	B-4J	R231	B-14I	C39	A-4B
Q45	A-3B	R77	A-4C	R232	B-14I	C40	B-4I
Q46	B-3I	R78	B-4K	R233	B-14I	C41	B-4I
Q47	B-3J	R79	B-4K	R234	B-13I	C44	B-4L
Q48	B-3J	R80	B-4L	R235	B-14I	C45	B-4M
Q49	B-2L	R81	A-4E	R235	B-8I	C48	B-3I
Q50	B-2L	R82	A-4E	R235	B-14I	C49	A-3B
Q51	A-2F	R83	B-4L	R240	B-13I	C50	B-3I
Q52	B-2M	R84	A-3E	R241	B-13I	C51	B-3I
Q53	B-2M	R85	A-4E	R242	B-13I	C54	B-2L
Q54	B-2M	R86	B-4M	R243	B-12I	C55	B-2M
Q55	A-1A	R87	B-4M	R244	B-7L	C56	B-3M
Q56	B-1H	R88	A-4F	R245	B-6L	C57	B-3M
Q57	B-2I	R89	B-4M	R246	B-4L	C59	A-1B
Q58	B-2I	R90	B-4M	R247	B-4I	C60	A-1A
Q59	B-1I	R91	B-3N	R248	B-15L	C61	B-2I
Q60	A-2B	R92	B-3L	R249	B-16M	C62	A-2B
Q61	B-1I	R93	B-4I	R250	B-18M	C63	B-1I
Q62	B-1J	R94	B-3I	R251	B-4K	C64	B-2I
Q63	B-1J	R95	B-3I	R252	B-4L	C67	B-1L
Q64	B-1L	R96	B-3I	R253	B-3I	C68	B-1M
Q65	A-1F	R97	A-3B	R254	B-3I	C69	B-2M
Q66	B-1M	R98	A-3B	R255	B-3I	C74	B-15J
Q67	B-1M	R99	A-3B	R256	B-3K	C75	B-19H
Q68	B-1M	R100	B-2I	R257	B-2L	C76	B-16J
Q69	B-15J	R101	B-2I	R258	B-3I	C78	B-16J
Q70	B-15K	R102	A-3B	R259	B-4I	C79	B-16J
Q71	B-16K	R103	B-3J	R260	B-2I	C80	B-17J
Q72	B-16K	R104	B-3J	R261	B-2I	C81	B-16J
Q73	B-15L	R105	A-2C	R262	B-2I	C82	B-17J
Q74	B-17K	R106	B-3K	R263	B-1K	C83	B-16J
Q75	B-17K	R107	B-2K	R264	B-1L	C86	B-17I
Q76	B-17K	R108	B-3L	R265	B-6I	C87	B-17I
Q77	B-16N	R109	A-3E	R266	B-7I	C88	B-17I
Q78	B-18K	R110	A-3E	R267	B-7I	C89	B-17I
Q79	B-18K	R111	A-2E	R268	B-8I	C91	B-15K
Q80	B-18K	R112	B-3L	R268	B-7I	C92	B-17J
Q81	B-18N	R113	A-2F	R269	B-7J	C95	B-15M
Q82	B-10L	R114	A-2E	R271	B-8J	C101	B-10K
Q83	B-10K	R115	B-2M	R272	B-9J	C104	B-11L
Q84	B-12K	R117	A-2F	R273	B-9J	C106	B-11K
Q85	B-12K	R118	B-3M	R274	B-9J	C107	B-11L
Q87	B-14I	R119	B-3M	R275	B-9J	C111	B-13K
Q88	B-13I	R121	B-2M	R276	B-10J	C114	B-13K
Q89	B-14I	R122	B-1I	R277	B-9I	C115	B-12I
Q90	B-13I	R123	A-1A	R278	B-9J	C117	B-14I
Q91	B-13I	R124	B-1I	R279	B-8J	C118	B-8J
Q92	B-9H	R125	B-1I	R280	B-6I	C126	B-3M
Q93	B-16J	R126	B-2I	R281	B-8H	C127	B-17N
Q94	B-15M	R127	B-2I	R282	B-8I	C128	B-18N
Q95	B-17K	R128	B-2I	R283	B-8H	C130	B-17K
Q96	B-17M	R129	B-1I	R284	B-8I	C131	B-17K
Q97	B-18K	R130	A-2B	R285	B-9I	C132	B-15K
Q98	B-18M	R131	A-1B	R287	B-9I	C133	B-15M
Q99	B-12K	R132	A-2B	R288	B-9I	C702	B-20H
Q100	B-12J	R133	B-1I	R289	B-10I	C703	B-20J
Q101	B-12J	R134	B-1I	R290	B-9I	C704	B-19J
Q701	B-21I	R135	A-2B	R291	B-8H	C705	B-21J
Q702	B-20I	R136	B-2J	R292	B-9I	C706	B-19J
Q703	B-21I	R137	B-2J	R293	B-15J	C706	B-13N
Q704	B-20I	R138	A-1C	R294	B-15J	TP1	A-18C
Q705	B-20J	R139	B-1K	R295	B-16L	TP2	A-18A
Q706	B-21J	R140	B-1K	R296	B-15M	TP3	A-14E
Q707	B-19I	R141	B-2L	R297	B-15M	TP4	A-16G
D1	A-7G	R142	A-2E	R298	B-15M	TP5	A-17G
D2	A-6G	R143	A-2E	R299	B-15M	TP6	A-14D
D3	A-5G	R144	B-2L	R300	B-15M	TP7	A-12D
D5	B-3L	R145	A-1F	R301	B-17L	TP8	A-13D
D6	B-2L	R146	A-1E	R302	B-17L	TP10	A-13B
D7	B-1L	R147	B-1M	R303	B-17L	TP11	A-6E
D8	B-15L	R148	B-1M	R304	B-17M	TP12	A-8D
D9	B-16M	R149	A-1F	R305	B-17M	TP13	A-9E
D10	B-17M	R150	B-1M	R306	B-17N	TP14	A-5D
D11	B-11L	R151	B-1M	R307	B-18L	TP15	A-17A
D16	B-10J	R152	B-1N	R308	B-18L	TP16	A-12C
D901	B-11N	R153	B-1L	R309	B-18L		
D902	B-12N	R154	B-16J	R310	B-18M		
D903	B-13N	R155	B-16J	R311	B-18M		
		R156	B-15H	R312	B-18N		
		R159	B-15J	R313	B-12K		
		R160	B-15J	R315	B-12K		
		R161	B-19I	R316	B-12K		
		R162	B-18J	R317	B-12K		
		R163	B-17J	R318	B-12J		
		R164	B-17J	R319	B-12J		
		R165	B-16H	R320	B-12J		
		R166	B-16I	R321	B-15I		
		R168	B-16I	R322	B-13I		
		R169	B-18I	R323	B-14I		
		R170	B-17H	R325	B-20M		
		R172	B-16H	R326	B-21M		
		R173	B-17H	R327	B-17H		
		R175	B-17H	R328	B-16H		
		R176	B-15K	R329	B-8I		
				R330	A-9A		

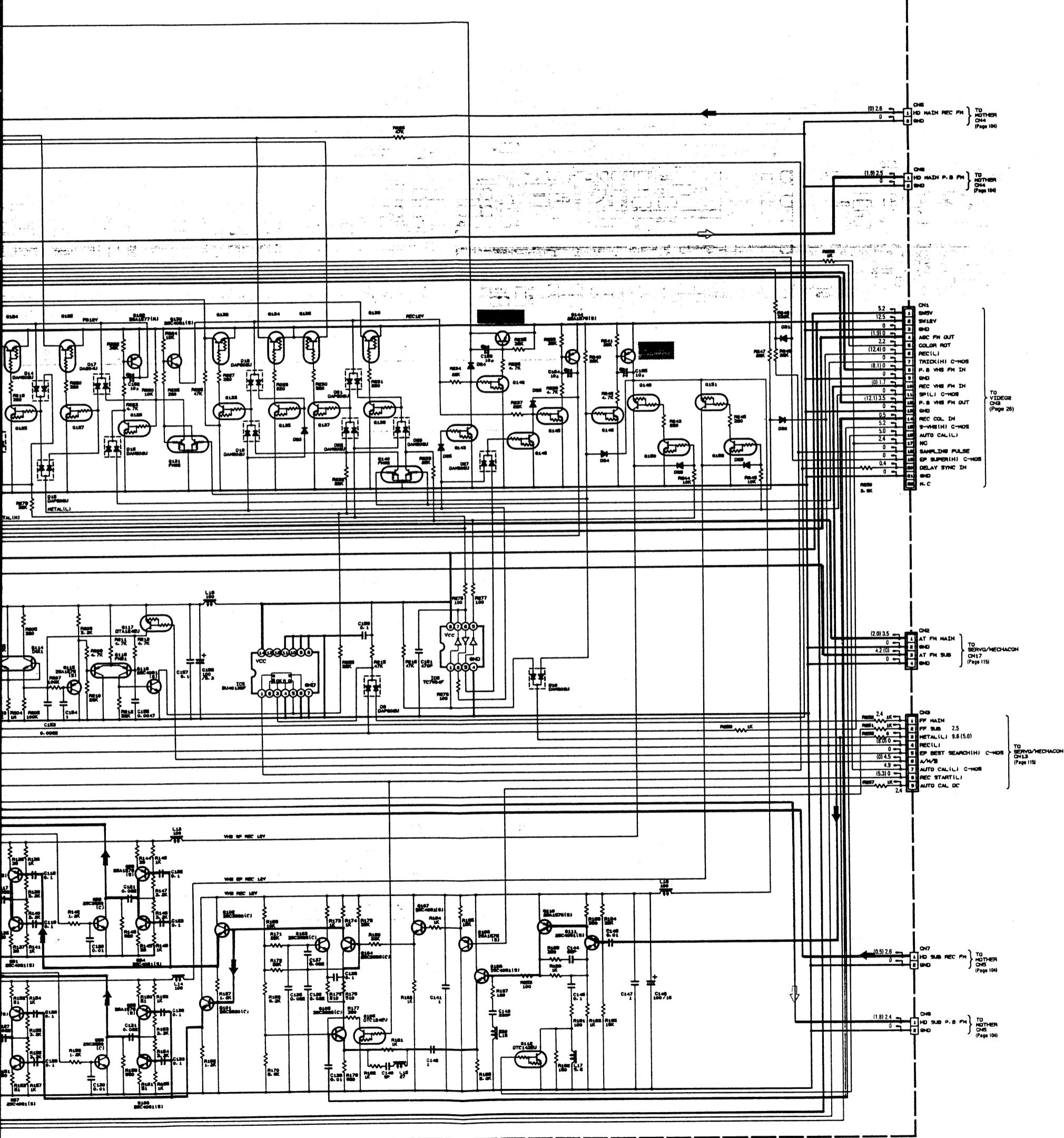
ENT PARTS LOCATION GUIDE BOARD

4.28 PRE/REC AMP (VIDEO) SCHEMATIC DIAGRAM

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7
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4
3
2
1



43 PRE/REC(VIDEO)

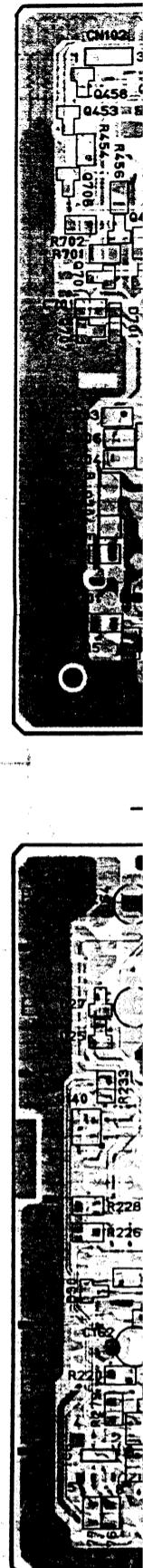
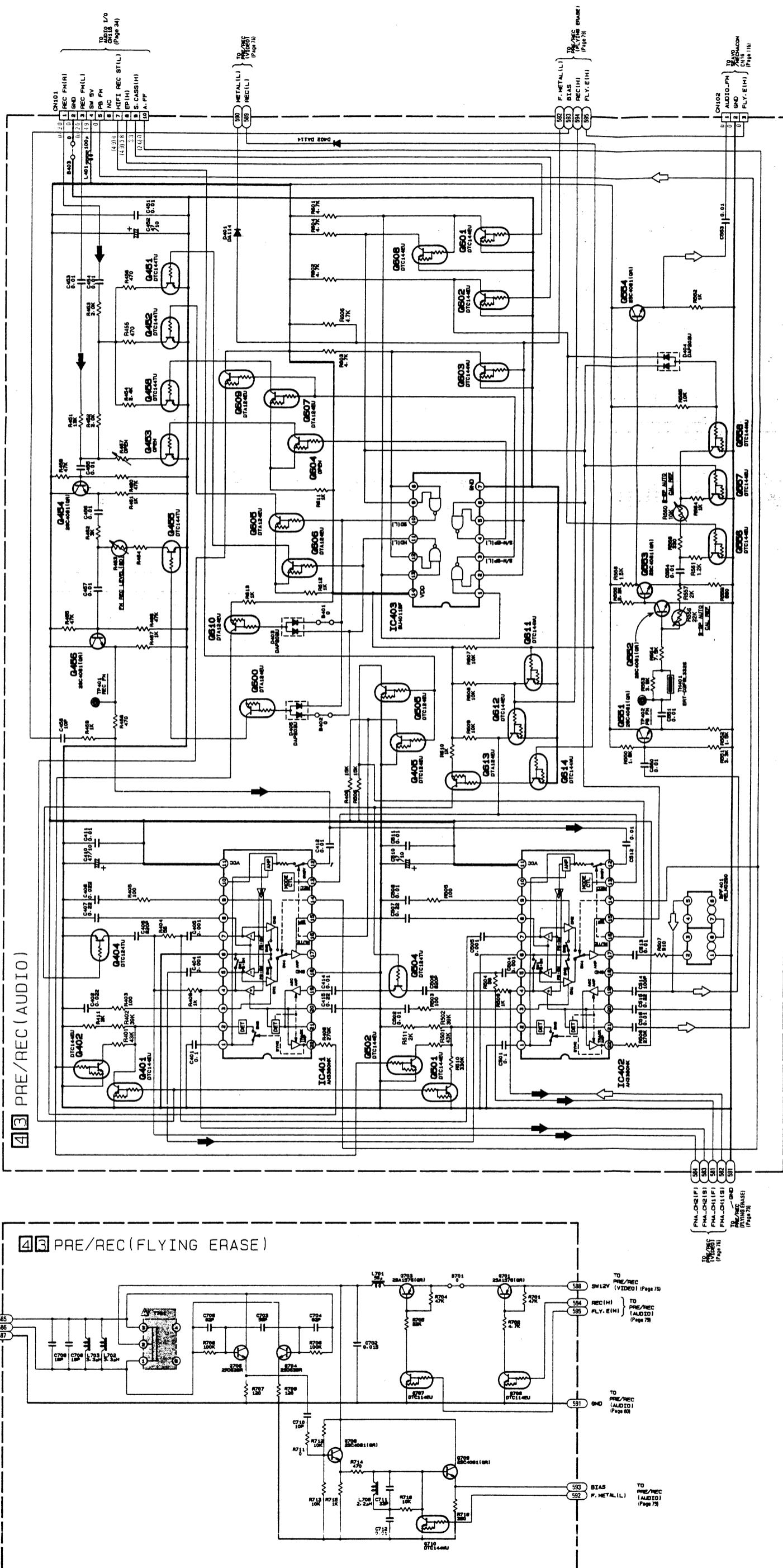


Notes:

- NPN Digital transistors are DTC115EU unless otherwise indicated.
- PNP Digital transistors are DTA143XU unless otherwise indicated.
- Diodes are DAN202U unless otherwise indicated.

4.29 PRE AMP/REC AMP (AUDIO), (FLYING ERASE) SCHEMATIC DIAGRAM

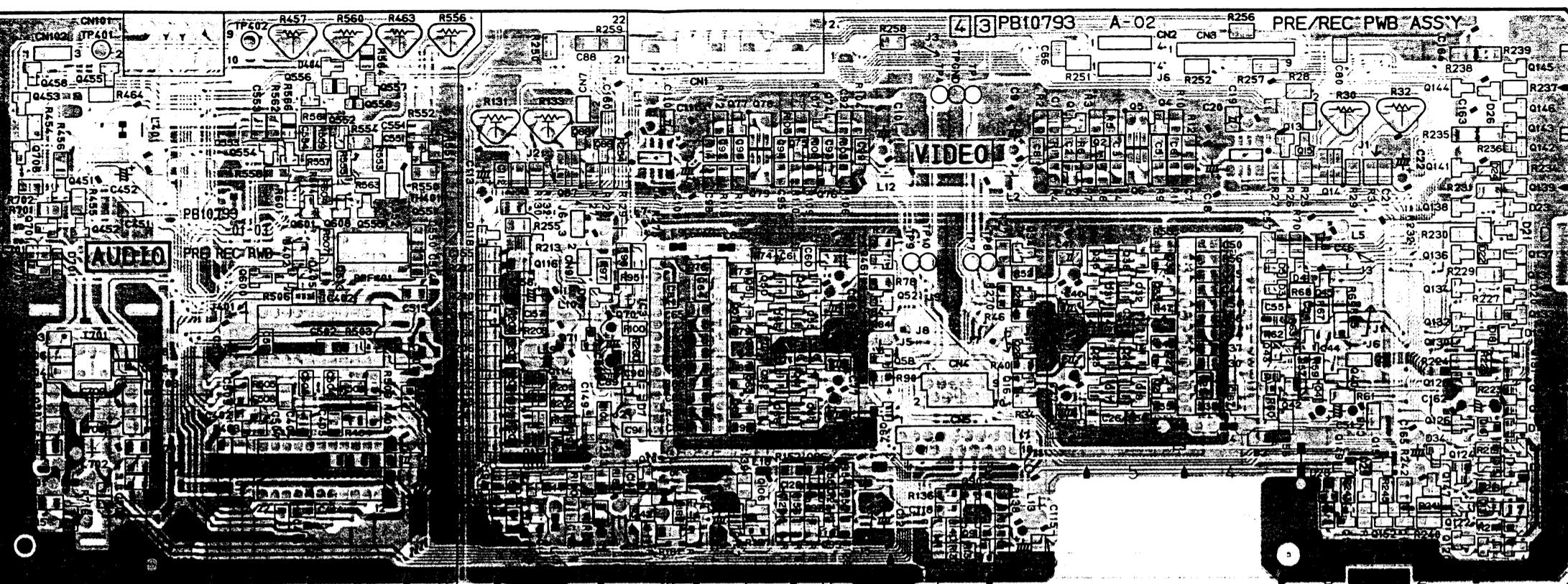
4.30 PR



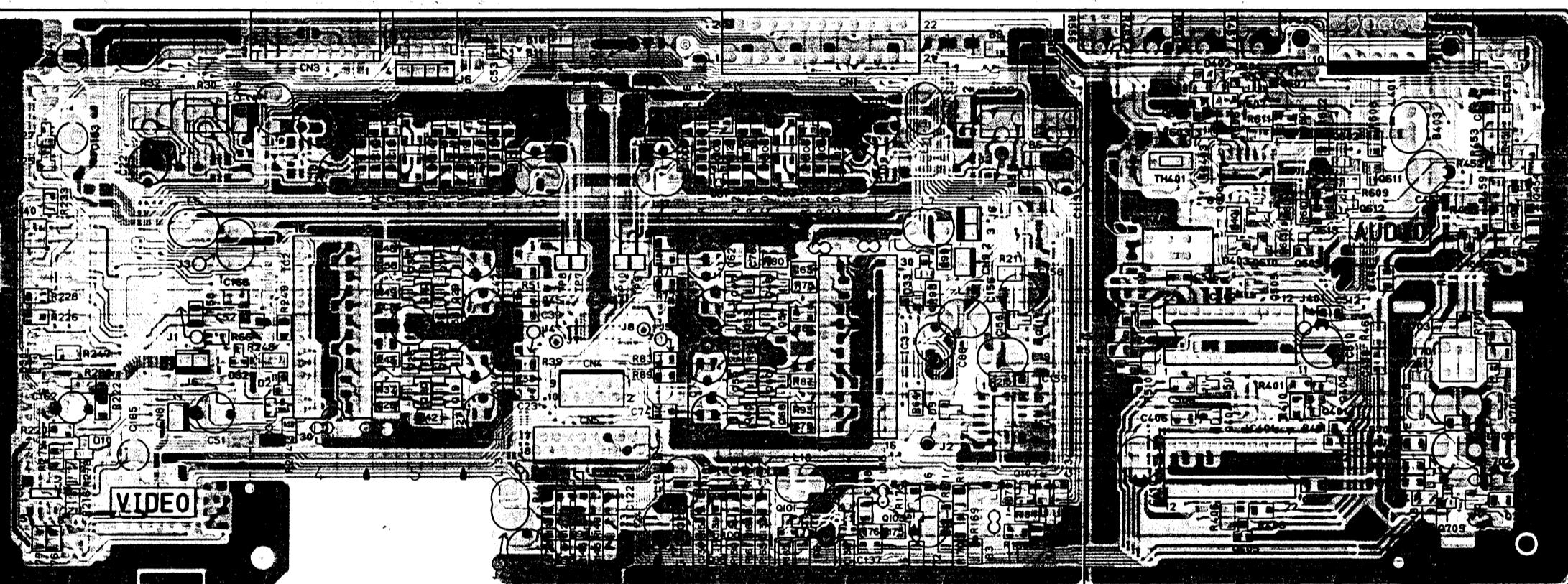
**MAIN COMPONENT PA
<43> PRE/REC BOARD**

REF. NO.	LOCATION	REF. NO.	LOCATION
IC		TRANSISTOR	
IC1	B-4E	Q57	
IC2	B-4C	Q58	
IC3	B-10C	Q59	
IC4	B-10E	Q60	
IC5	A-17B	Q61	
IC401	A-17C	Q62	
IC402	B-13C	Q63	
IC403	A-13E	Q64	
TRANSISTOR		Q65	
Q1	B-6E	Q66	
Q2	B-6E	Q67	
Q3	B-6E	Q68	
Q4	B-6E	Q69	
Q5	B-6E	Q70	
Q6	B-6E	Q71	
Q7	A-6E	Q72	
Q8	A-6E	Q73	
Q10	A-6E	Q74	
Q11	A-6E	Q75	
Q12	A-6E	Q76	
Q13	B-3E	Q77	
Q14	B-3E	Q78	
Q15	B-3E	Q79	
Q16	B-6C	Q80	
Q17	B-5B	Q81	
Q18	B-5B	Q82	
Q19	A-5C	Q83	
Q20	B-6C	Q84	
Q21	B-4C	Q85	
Q22	B-6C	Q86	
Q23	B-6C	Q87	
Q24	B-6C	Q88	
Q25	A-6C	Q89	
Q26	A-5C	Q90	
Q27	B-6C	Q91	
Q28	B-6C	Q92	
Q29	A-6D	Q93	
Q30	B-6D	Q94	
Q31	B-6C	Q95	
Q32	B-6C	Q96	
Q33	B-6C	Q97	
Q34	B-6D	Q98	
Q35	A-6D	Q99	
Q36	B-6D	Q100	
Q37	A-5D	Q101	
Q38	B-6D	Q102	
Q39	B-5D	Q103	
Q40	B-3C	Q104	
Q41	B-3B	Q105	
Q42	B-3B	Q106	
Q43	B-3C	Q107	
Q44	B-3C	Q108	
Q45	B-3C	Q109	
Q46	B-6D	Q110	
Q47	A-6D	Q111	
Q48	A-6D	Q112	
Q49	B-6D	Q113	
Q50	B-6C	Q114	
Q51	B-6C	Q115	
Q52	A-6C	Q116	
Q53	A-6C	Q117	
Q54	A-6C	Q118	
Q55	B-6C	Q119	

— FOIL SIDE (B) —



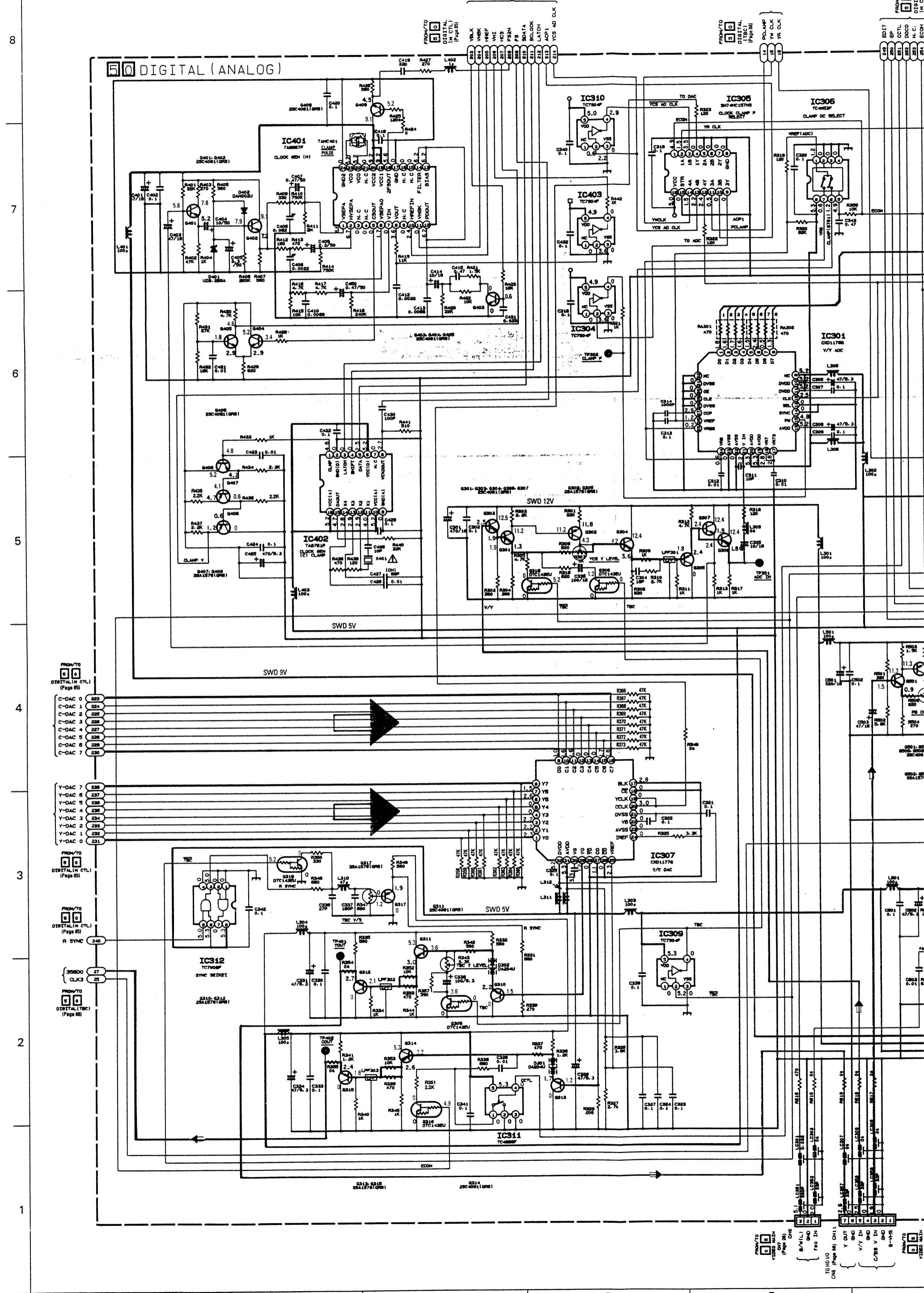
— COMPONENT SIDE (A) —

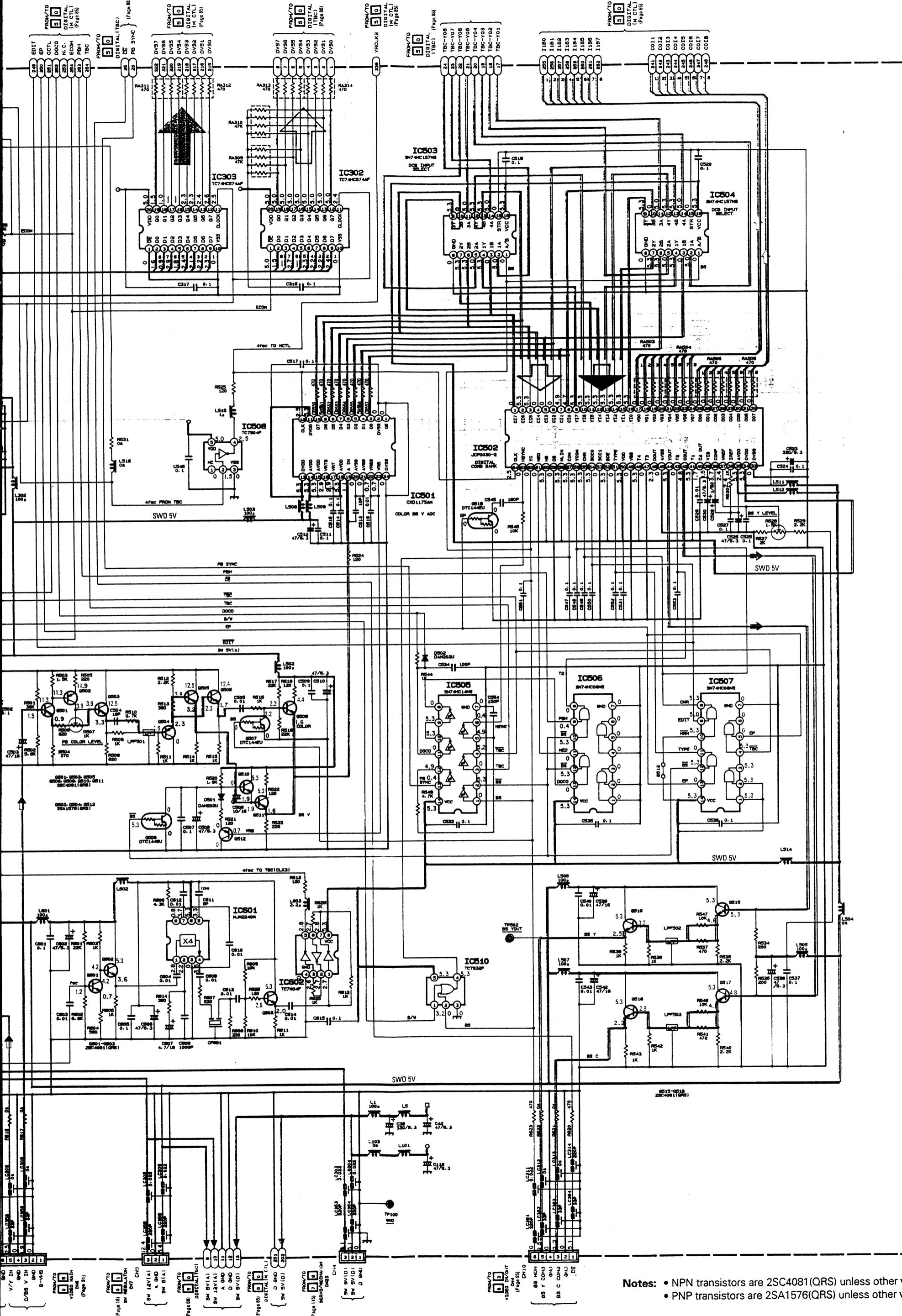


COMPONENT PARTS LOCATION GUIDE /REC BOARD

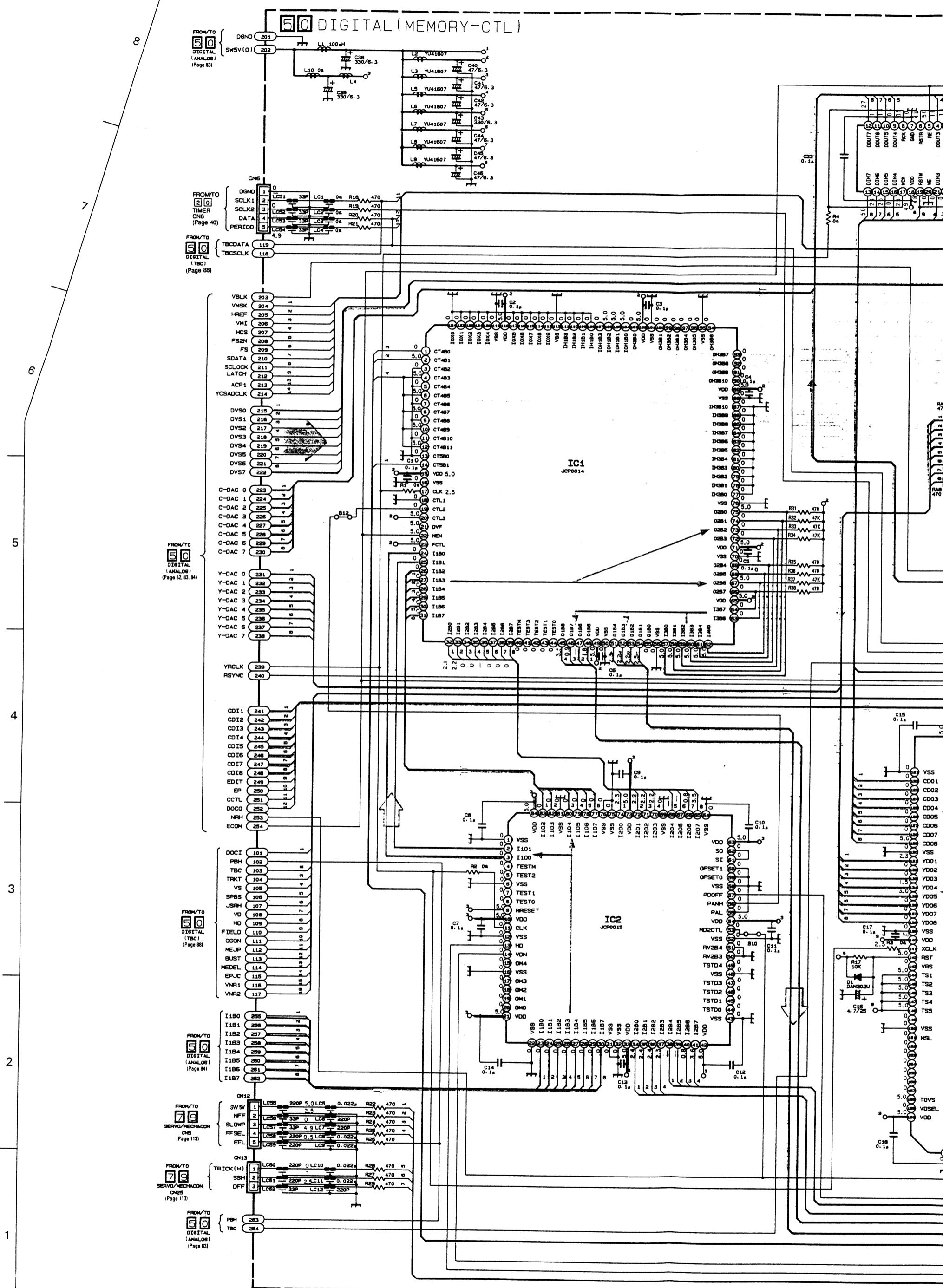
ELADLESS COMPONENT PARTS LOCATION GUIDE <43> PRE/REC BOARD

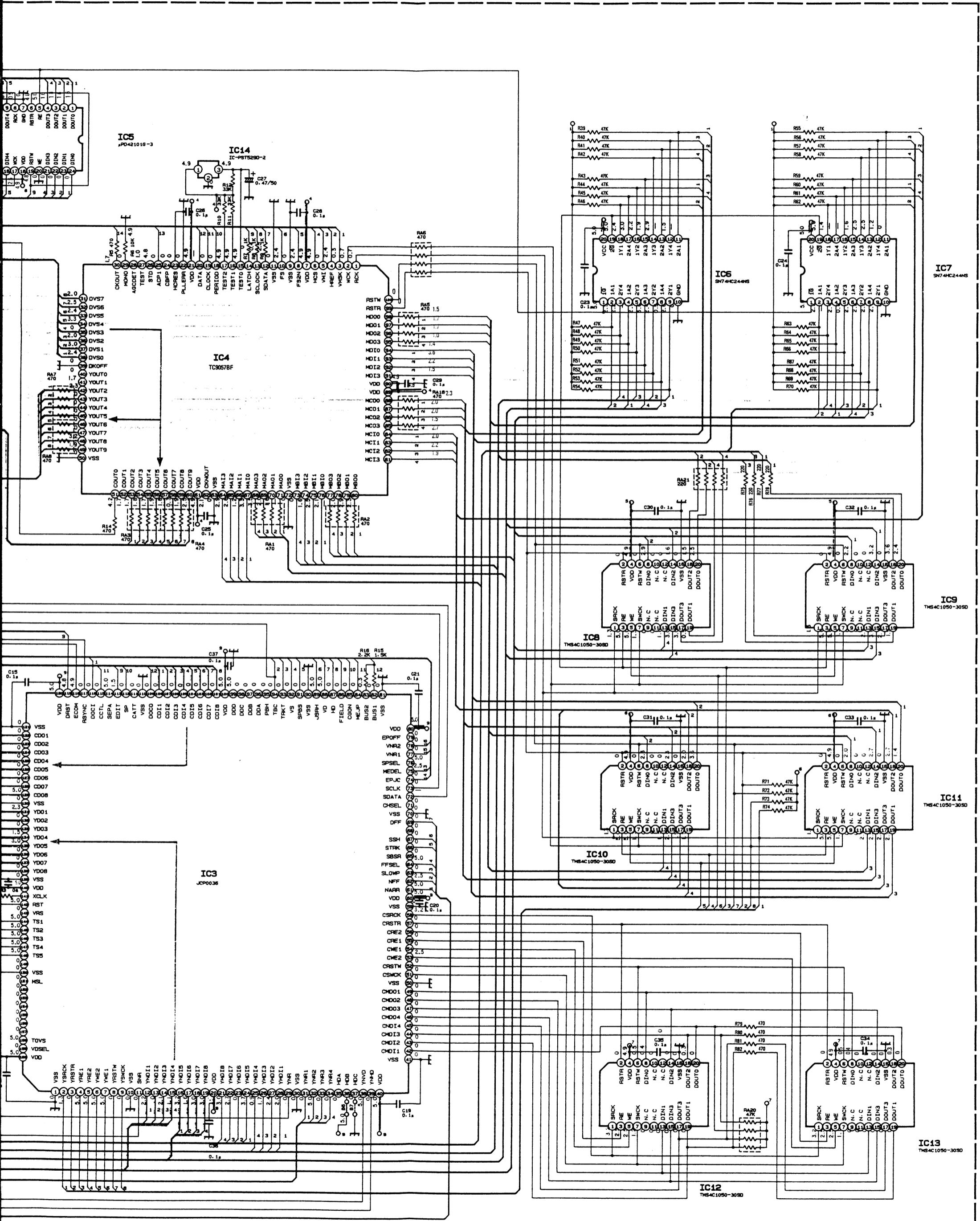
4.31 NTSC DIGITAL (ANALOG) SCHEMATIC DIAGRAM





4.32 NTSC DIGITAL (MEMORY-CTL) SCHEMATIC DIAGRAM

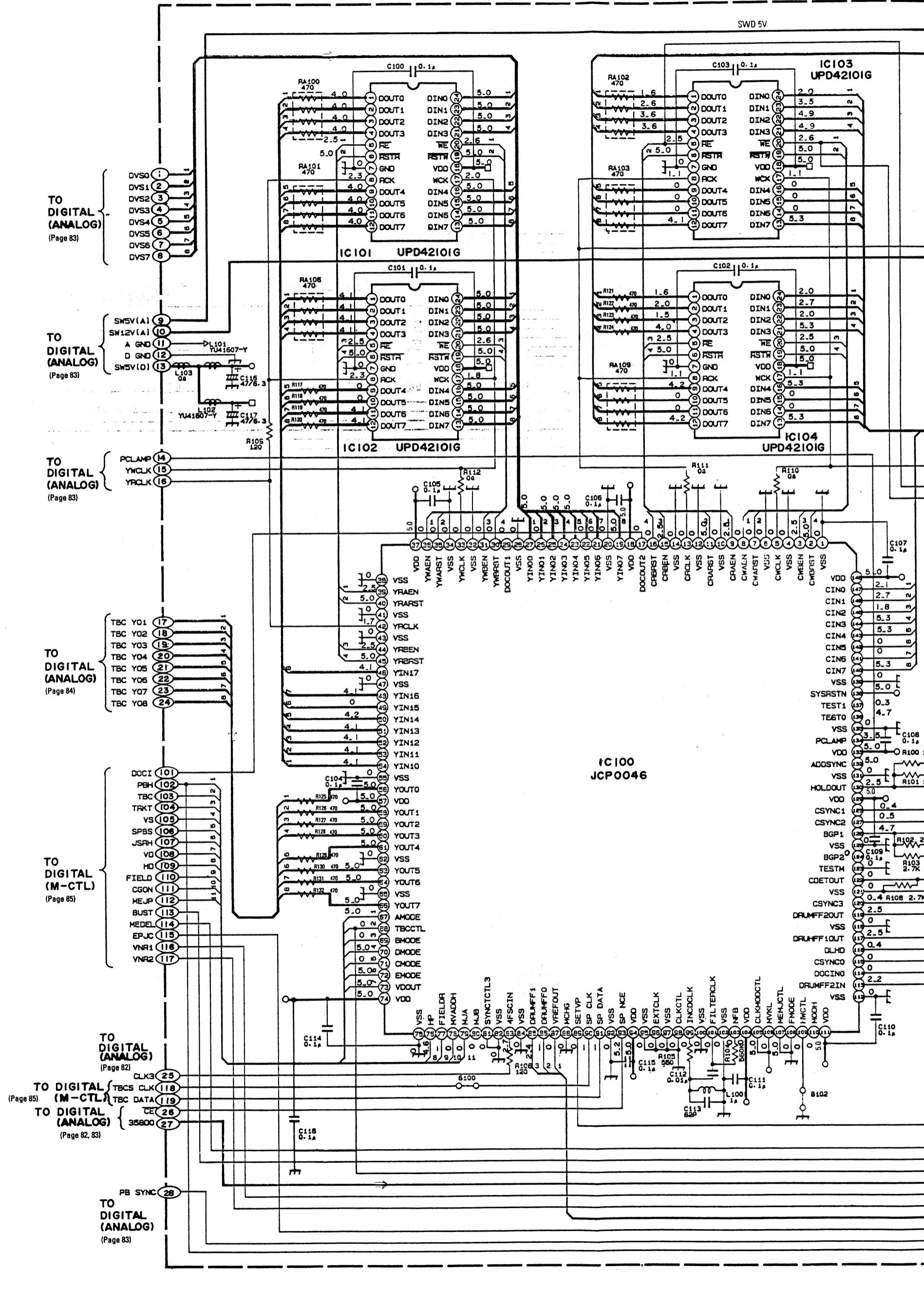


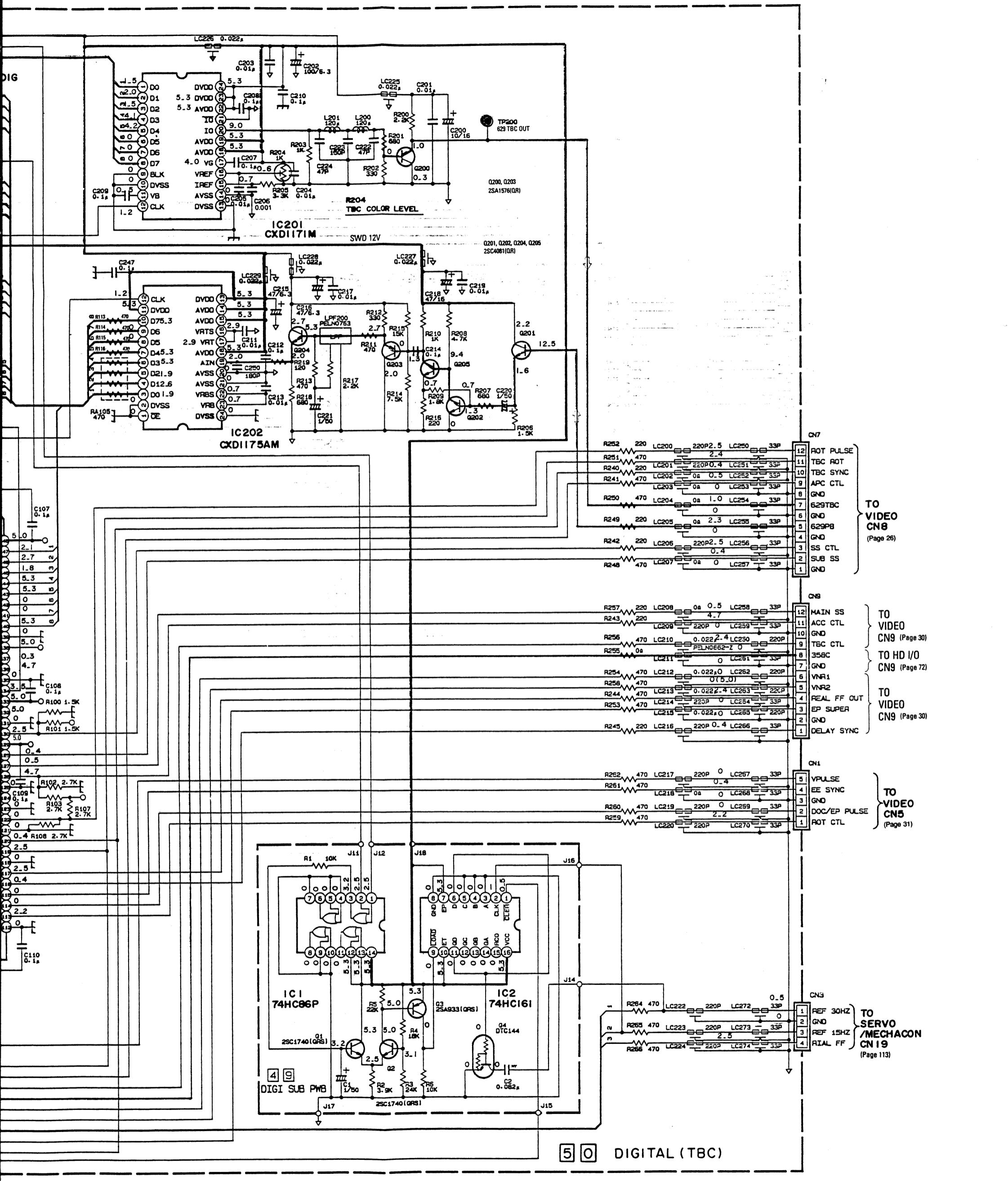


F G H I J K L

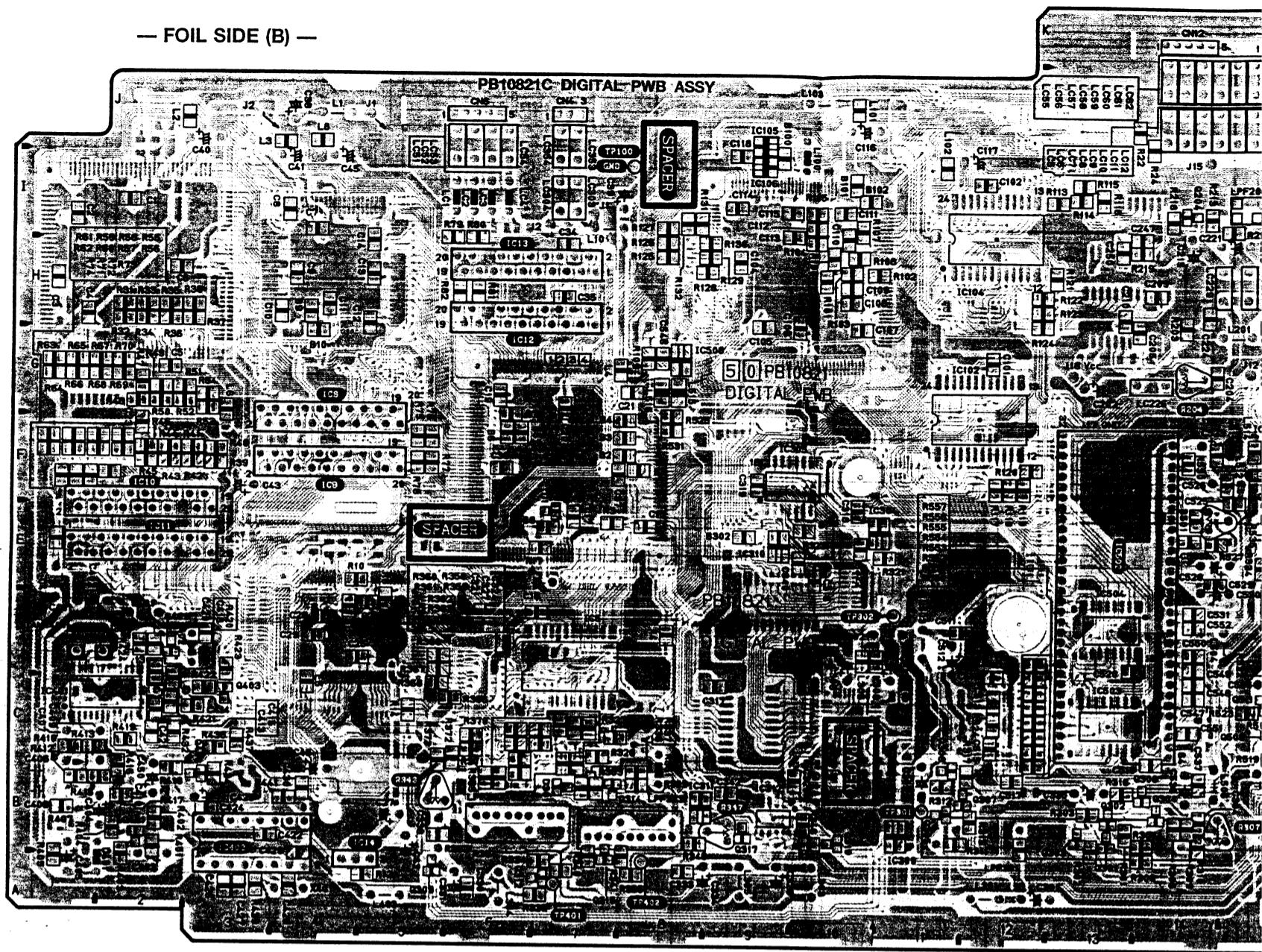
4.33 NTSC DIGITAL (TBC) SCHEMATIC DIAGRAM

8

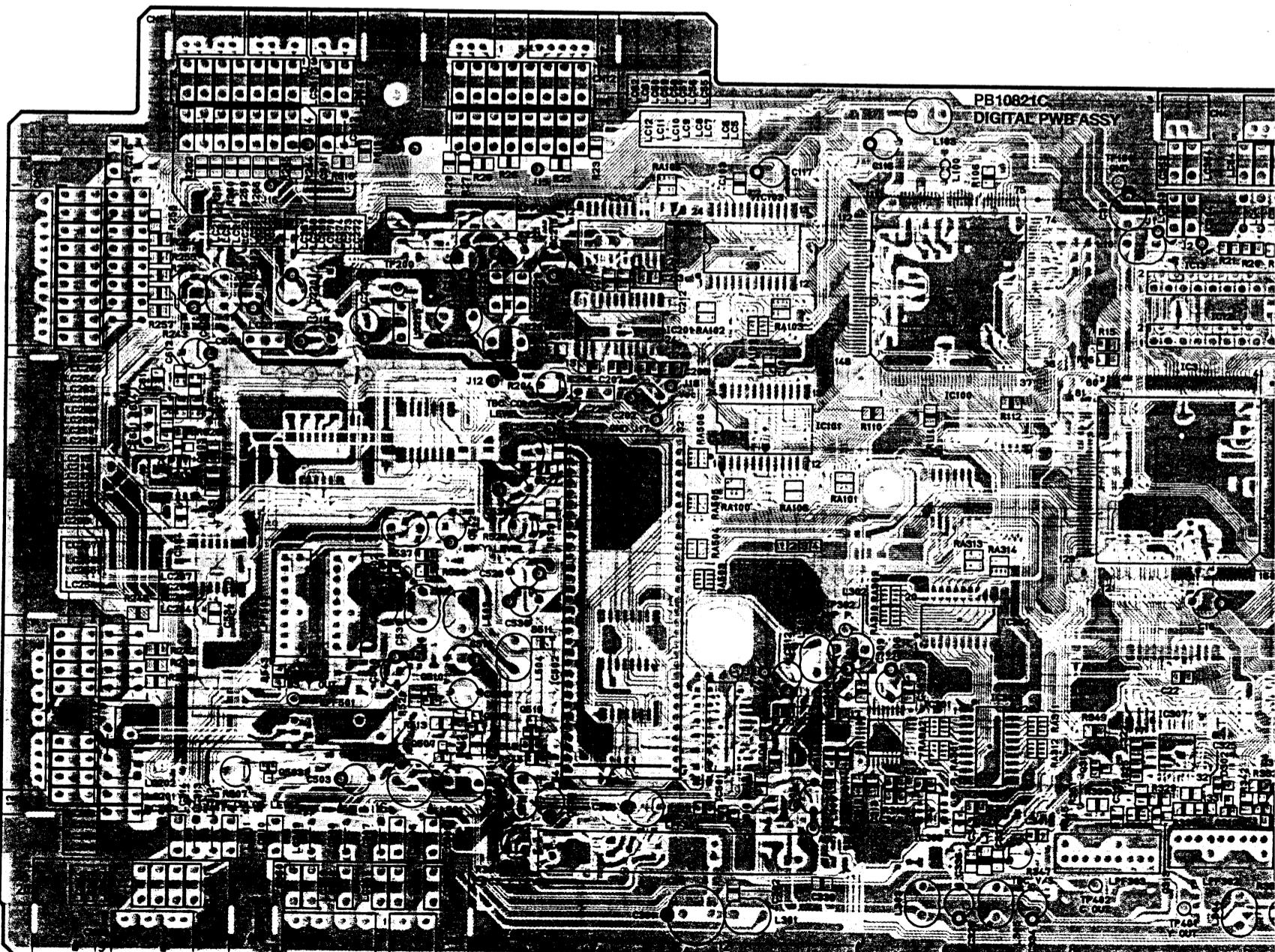


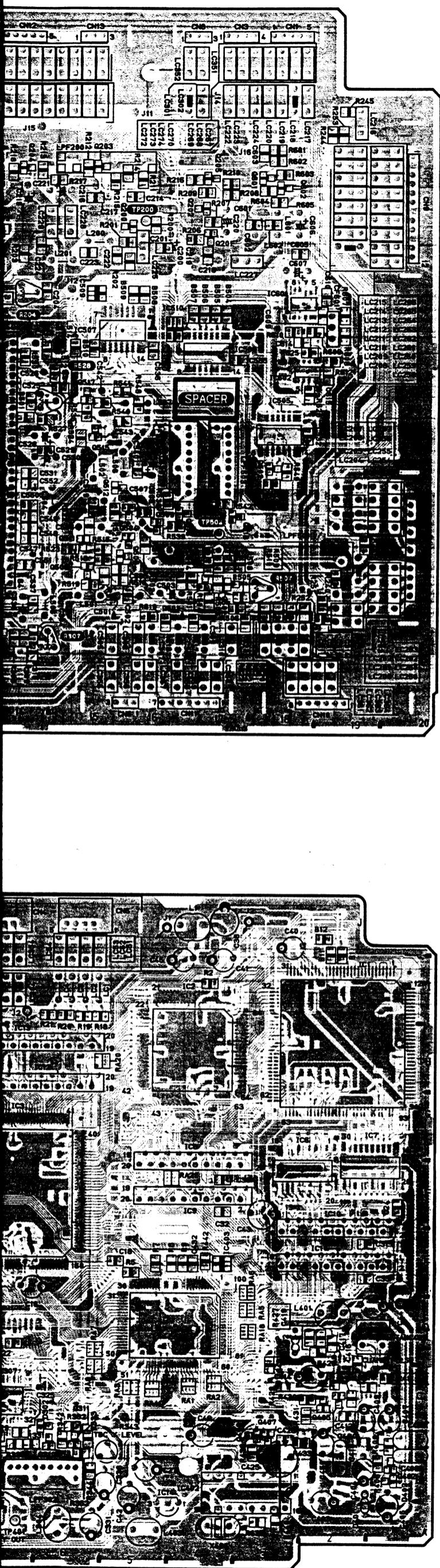


— FOIL SIDE (B) —



— COMPONENT SIDE (A) —





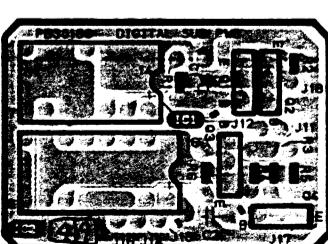
MAIN COMPONENT PARTS LOCATION GUIDE <50> DIGITAL BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		IC		IC		TRANSISTOR		TRANSISTOR		DIODE		ADJUSTMENT	
IC1	A-2I	IC301	A-10C	IC508	B-8G	Q311	A-6B	Q504	B-16C	D401	B-2A	R347	B-9B
IC2	A-4I	IC302	A-9D	IC510	B-16G	C312	B-7A	Q505	A-15C	D402	A-1B	R507	B-18C
IC3	A-7G	IC303	A-9C	IC601	B-18G	C313	A-7B	Q506	B-16C	D501	B-16D	R528	B-14E
IC4	A-4D	IC304	B-10E	IC602	B-18F	Q314	B-7B	Q507	A-15C	DS02	B-18D		TEST POINT
IC5	B-7D	IC305	B-9F			C315	B-7A	Q508	B-15C				TP100
IC6	A-2F	IC306	A-10B	C200	B-16H	C316	A-8C	Q509	B-16D	CN1	B-18K		B-8I
IC7	A-1G	IC307	A-7C	Q201	B-17H	Q317	B-9B	Q510	A-16D	CN3	B-17K		TP200
IC8	B-4G	IC309	B-11B	Q202	B-17H	Q318	A-12B	Q511	B-15C	CN4	B-7J		TP301
IC9	B-4F	IC310	B-9E	Q203	B-15I	Q319	B-10B	Q512	B-15D	CN5	B-16A		TP302
IC10	B-2F	IC311	B-8B	Q204	B-14I	Q401	B-2B	Q515	B-15E	CN6	B-6J		TP401
IC11	B-2E	IC312	B-9B	Q205	B-17I	Q402	A-1B	Q516	B-17D	CN7	B-20C		TP402
IC12	B-6H	IC401	B-1C	Q301	B-13B	Q403	B-3C	Q517	B-15F	CN8	B-17K		TP502
IC13	B-6H	IC402	B-3B	Q302	B-13B	Q404	A-2C	Q518	B-17D	CN9	B-20H		
IC14	B-5A	IC403	A-4E	Q303	B-13B	Q405	A-2C	Q519	A-14C	CN10	B-19A		
IC100	A-9H	IC501	A-12C	Q304	B-14B	Q406	B-3B	Q601	B-18I	CN11	B-17A		
IC101	A-11G	IC502	B-13E	Q305	B-11B	Q407	A-3C	Q602	B-18I	CN12	B-14K		
IC102	B-12G	IC503	B-13C	Q306	B-11C	Q408	A-3B	Q603	A-18F	CN13	B-15K		
IC103	A-12I	IC504	B-13D	Q307	B-12B	Q409	B-2D						ADJUSTMENT
IC104	B-12H	IC505	B-18E	Q308	B-14B	Q501	B-17C	D1	B-7E	R204	B-14G		
IC201	A-13H	IC506	B-17F	Q309	B-5A	Q502	B-17C	D301	B-7B	R307	B-15B		
IC202	A-13I	IC507	B-15F	Q310	A-6B	Q503	A-17C	D302	A-6C	R343	B-5B		

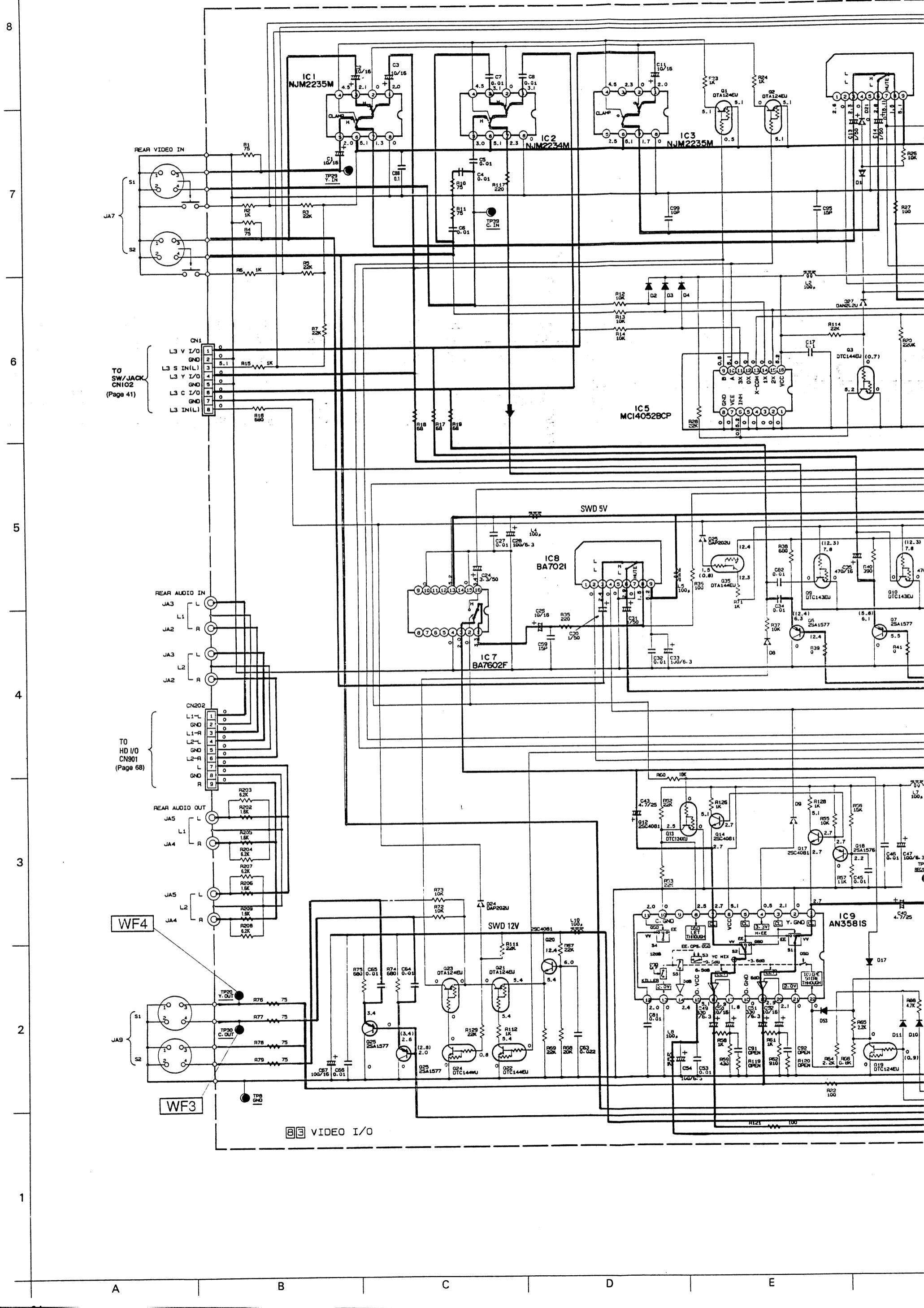
ELADLESS COMPONENT PARTS LOCATION GUIDE <50> DIGITAL BOARD

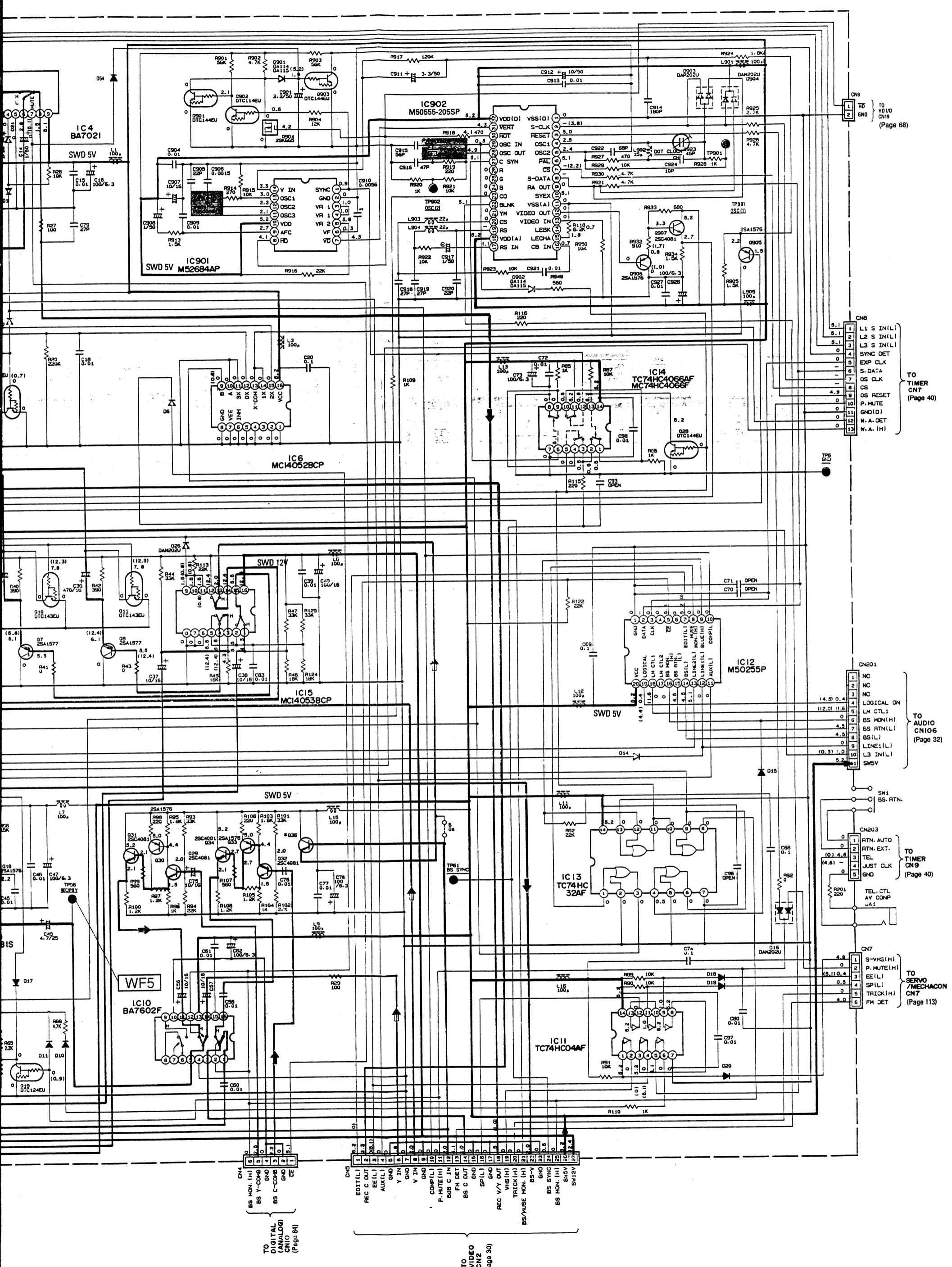
REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR	
		DIODE											
IC1	A-2I	Q515	B-15E	R74	B-1F	R305	A-12B	R519	B-15C	C28	B-4D	C535	B-17F
IC2	A-4I	Q516	B-17D	R75	B-5F	R306	B-14B	R520	A-16C	C29	B-4D	C536	B-16
IC3	A-7G	Q517	B-15F	R76	B-5F	R308	B-14B	R521	B-15D	C30	A-4F	C537	B-14B
IC4	A-4D	Q518	B-17D	R77	B-5F	R309	B-14B	R522	B-15D	C31	A-1E	C540	B-16D
IC5	B-7D	Q519	A-14C	R78	B-5F	R310	B-14B	R523	B-15C	C32	A-4F	C543	B-16E
IC6	A-2F	Q601	B-18I	R79	B-6I	R311	B-11B	R524	B-12C	C33	A-1E	C545	A-14C
IC7	A-1G	Q602	B-18I	R80	B-6I	R312	B-11B	R525	B-8G	C34	B-7H	C546	B-8G
IC100	A-9H	Q603	A-18F	R81	B-6H	R313	B-12B	R527	B-14E	C35	B-7H	C547	B-14C
IC101	A-11G			R82	B-6H	R316	B-13B	R529	A-14F	C36	B-6F	C548	B-14D
IC102	B-12G	D1	B-7E	R100	B-10H	R317	B-12B	R530	B-14F	C37	B-7F	C549	B-14D
IC103	A-12I	D301	B-7B	R101	B-10H	R318	A-11C	R531	B-8F	C100	A-12G	C550	B-14D
IC104	B-12H	D302	A-6C	R102	B-10H	R319	A-10B	R534	B-15E	C101	B-12G	C551	B-14C
IC105	B-9J	D402	A-1B	R103	B-10H	R320	A-10C	R535	B-15E	C102	B-12I	C552	B-14D
IC106	B-9I	D501	B-16D	R104	B-10H	R321	B-11E	R536	A-16E	C103	B-12I	C553	B-14E
IC201	A-13H	D502	B-18D	R105	B-10I	R322	B-10E	R537	A-16E	C104	B-9H	C554	A-18E
IC202	A-13I			R106	A-9I	R323	B-10E	R538	B-16D	C105	B-9H	C601	B-17H
IC301	A-10C	R1	A-2J	R107	B-10I	R325	A-7C	R539	B-16D	C106	B-10H	C603	B-18I
IC302	A-9D	R2	A-4I	R108	B-10H	R326	B-7C	R540	B-15E	C107	B-10H	C604	A-18G
IC303	A-9C	R3	B-7E	R109	B-8G	R327	B-7C	R541	B-16F	C108	B-10H	C605	B-18H
IC304	B-10E	R4	B-8D	R110	A-10G	R329	A-7B	R542	B-17D	C109	B-10H	C606	A-18G
IC305	B-9F	R5	A-5E	R111	A-10G	R330	A-7B	R543	A-17D	C110	B-10I	C609	B-19G
IC306	A-10B	R6	B-5D	R112	A-9G	R331	A-6B	R544	B-18D	C111	B-10I	C610	B-19G
IC307	A-7C	R7	A-5E	R113	B-13I	R332	A-6C	R545	A-14C	C112	B-10I	C611	A-19G
IC309	B-11B	R8	A-4E	R114	B-13I	R333	A-6B	R547	A-16E	C113	B-9I	C612	A-18G
IC310	B-9E	R9	A-4E	R115	B-13I	R334	B-7A	R548	B-16E	C114	B-9I	C613	A-19F
IC311	B-8B	R10	B-4E	R116	B-13I	R335	B-7A	R549	B-18D	C115	B-9I	C614	B-18F
IC312	B-9B	R11	B-4D	R117	B-12F	R336	B-7B	R550	B-12C	C118	B-9J	C615	B-19F
IC401	B-1C	R12	B-5A	R118	B-12F	R337	B-7B	R551	B-12C	C201	B-16H		
IC403	A-4E	R14	B-5C	R119	B-12F	R338	A-8B	R552	B-12C	C203	A-13G	L2	B-2J
IC501	A-12C	R15	A-8H	R120	B-12F	R339	B-8B	R553	B-12C	C204	B-14G	L3	B-4J
IC503	B-13C	R16	A-8G	R122	B012H	R340	B-7A	R554	B-12C	C205	B-14H	L4	B-7G
IC504	B-13D	R17	B-7E	R123	B-12H	R341	B-8A	R555	B-12C	C206	A-14G	L5	B-4C
IC505	B-18E	R18	A-6I	R124	B-12H	R342	A-6B	R556	B-12D	C207	A-13G	L7	B-1E
IC506	B-17F	R19	A-6I	R125	B-8H	R344	A-6B	R556	B-12D	C208	A-13G	L8	B-4J
IC507	B-15F	R20	A-6I	R126	B-8H	R345	A-8B	R601	B-18I	C209	B-14H	L9	B-6D
IC508	B-8G	R21	A-6I	R127	B-8I	R346	B-10B	R602	B-18I	C210	B-13H	L101	B-10J
IC509	B-15G	R22	B-13J	R128	B-8H	R348	B-8B	R603	B-18I	C211	A-14H	L102	B-11J
IC510	B-16G	R23	A-14J	R129	B-9H	R349	A-8C	R604	B-18H	C213	A-13H	L103	B-10D
IC601	B-18G	R24	B-14J	R130	B-9H	R350	B-10B	R605	B-18H	C214	B-16H	L308	B-10D
IC602	B-18F	R25	A-14I	R131	B-8I	R352	A-6B	R606	A-18G	C214	A-13H	L309	A-11C
	TRANSISTOR	R26	A-15I	R132	B-8I	R353	B-8B	R607	B-19G	C217	B-15H	L310	A-9B
Q200	B-16H	R27	A-15I	R200	B-16H	R354	B-7A	R608	B-19F	C219	B-17H	L311	B-7C
Q201	B-17H	R28	A-15I	R201	B-16H	R355	B-8A	R609	B-18F	C222	B-15H	L312	B-7C
Q202	B-17H	R29	A-15I	R202	B-16G	R356	A-9B	R610	B-18F	C223	B-15H	L508	A-12C
Q203	B-15I	R31	B-2H	R203	B-14H	R357	B-5B	R611	A-18F	C224	B-14H	L509	A-11C
Q204	B-14I	R32	B-2H	R205	A-14G	R358	B-7C	R612	B-19F	C247	B-14I	L511	B-14F
Q205	B-17I	R33	B-2H	R206	B-17H	R359	B-7C	R613	A-18F	C250	B-13H	L512	B-15F
Q301	B-13B	R34	B-2H	R207	B-17H	R360	B-6C	R614	A-19G	C302	A-12A	L513	B-15F
Q302	B-13B	R35	B-2H	R208	B-17H	R361	B-6C	R615	A-16J	C304	B-14B	L514	B-15F
Q303	B-13B	R36	B-2H	R209	B-17H	R362	B-6C	R616	A-17I	C307	A-10D	L515	B-8G
Q304	B-14B	R37	B-3H	R210	B-17I	R363	B-6B	R617	B-17B	C309	A-10D	L516	B-8G
Q305	B-11B	R38	B-3H	R211	B-16I	R364	B-6B	R618	B-16B	C310	A-11C	L602	B-18H
Q306	B-11C	R39	B-3F	R212	B-15I	R365	B-6B	R619	B-16B	C311	A-11C	L603	A-18F
Q307	B-12B	R40	B-3F	R213	B-14I	R366	B-6C	R620	B-18B	C312	A-11B		
Q308	B-14B	R41	B-3F	R214	B-16I	R367	B-5D	R621	B-18B	C313	A-10B		
Q309	B-5A	R42	B-3F	R215	B-15I	R368	B-3C	R622	B-18B	C314	A-10C		
Q310	A-6B	R43	B-2F	R216	B-17I	R369	B-5D	R623	B-18B	C316	B-10E		
Q311	A-6B	R44	B-2F	R217	B-15I	R370	B-6C	R624	B-17D	C317	B-9C		
Q312	B-7A	R45	B-2F	R218	B-14I	R371	B-6C	R625	B-18F	C318	B-10F		
Q313	A-7B	R46	B-2F	R219	B-14H	R372	B-6C	R626	B-18F	C319	B-9F		
Q314	B-7B	R47	B-2G	R240	B-19C	R373	B03C	R628	A-18F	C320	B-10B		
Q315	B-7A	R48	B-2G	R241	B-19C	R401	B-2B			C321	B-7C		
Q316	A-8C	R49	B-2G	R242	A-19D	R402	B-2B			C322	A-7C		
Q317	B-9B	R50	B-2G	R243	A-19H	R403	B-2A			C323	A-7B		
Q318	A-12B	R51	B-2G	R244	B-19I	R404	B-2B			C324	B-7C		
Q319	B-10B	R52	B-2G	R245	B-19J	R405	B-1A			C325	A-7B		
Q401	B-2B	R53	B-3G	R248	A-19D	R406	A-1B			C327	B-7C		
Q402	A-1B	R54	B-3G	R249	A-19D	R407	B-1B			C328	A-7B		
Q403	B-3C	R55	B-2F	R250	A-19D	R409	A-1B			C330	B-6A		
Q404	A-2C	R56	B-2F	R251	B-19B	R410	B-1C			C333	B-8A		
Q405	A-2C	R57	B-1F	R253	B-19I	R411	A-1C			C336	A-9B		
Q406	B-3B	R58	B-1F	R254	A-19I	R413	B-1C			C337	A-9B		
Q407	A-3C	R59	B-1F	R255	A-19H	R414	A-1C			C339	A-11A		
Q408	A-3B	R60	B-1F	R256	A-19H	R415	B-1B			C340	B-10E		
Q409	B-2D	R61	B-1F	R257	A-19H	R416	B-2B			C341	A-8B		
Q501	B-17C	R62	B-1F	R258	A-19I	R417	B-2B			C342	B-9B		
Q502	B-17C	R63	B-1G	R259	A-18I	R418	B-2B			C343	A-9B		
Q503	A-17C	R64	B-1G	R260	A-18I	R419	B-2C			C344	B-12H		
Q504	B-16C	R65	B-1G	R261	A-18I	R420	B-2C			C345	B-1D		
Q505	A-15C	R66	B-1G	R262	A-18I	R421	B-3C			C402	B-18		
Q506	B-16C	R67	B-1G	R264	A-17I	R422	B-3C			C406	B-18		
Q507	A-15C	R68	B-1G	R265	A-17I	R423	B-3D			C412	A-2C		
Q508	B-15C	R69	B-2G	R266	A-18I	R424	B-2D			C413	B-2C		
Q509	B-16D	R70	B-2G	R301	B-13B	R425	B-2D			C415	B-2C		
Q510	A-16D	R71	B-1F	R302	B-13B	R426	A-2D			C416	A-2D		
Q511	B-15C	R72	B-1F	R303	B-13B	R427	A-2D			C417	A-2D		
Q512	B-15C	R73	B-2F							C418	B-2D		

DIGITAL SUB

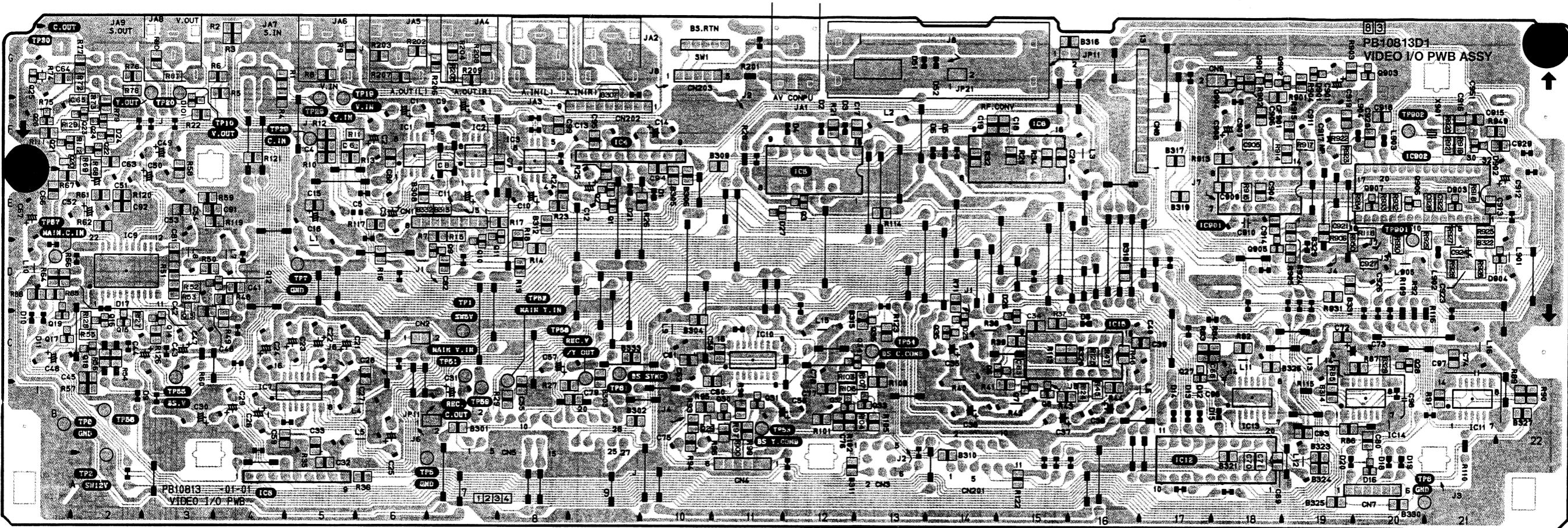


4.35 NTSC VIDEO IN/OUT SCHEMATIC DIAGRAM





4.36 NTSC VIDEO IN/OUT CIRCUIT BOARD



MAIN COMPONENT PARTS LOCATION GUIDE

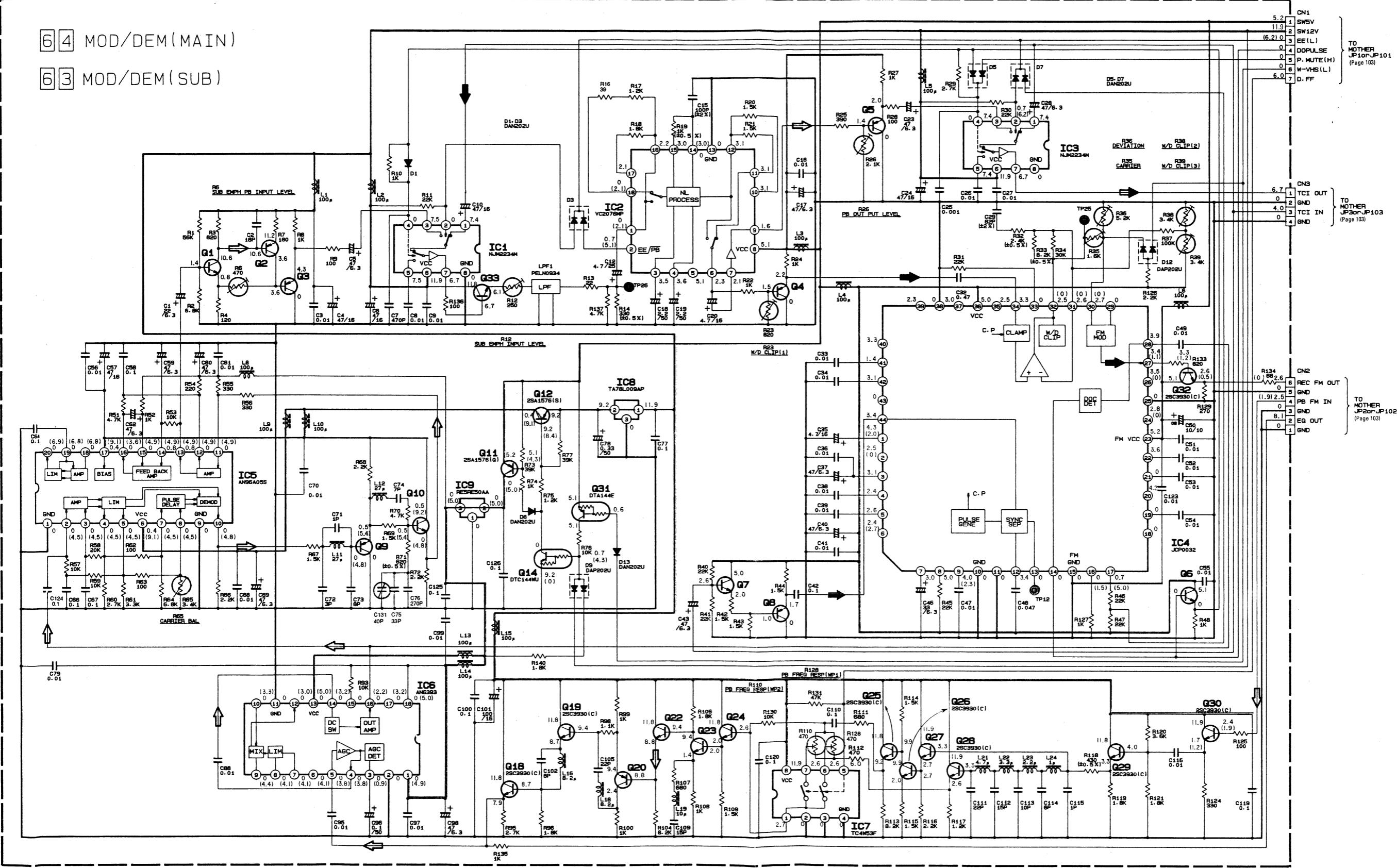
<83> VIDEO I/O BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC		TRANSISTOR		DIODE	
IC1	6F	Q24	2F	D24	2F
IC2	7F	Q25	1G	D25	14C
IC3	8F	Q26	1F	D26	15D
IC4	9F	Q28	20C	D27	11E
IC5	12F	Q29	9B	D51	13G
IC6	15F	Q30	11B	D52	14G
IC7	5B	Q31	11B	D901	19G
IC8	4A	Q32	12B	D902	21F
IC9	2D	Q33	13B	D903	21E
IC10	11C	Q34	13C	D904	22D
IC11	21B	Q35	14C	CONNECTOR	
IC12	17A	Q901	18G	CN1	6E
IC13	18B	Q902	18G	CN4	11A
IC14	20B	Q903	20G	CN5	8B
IC15	16C	Q904	18G	CN7	20A
IC901	18E	Q905	18D	CN8	17F
IC902	20E	Q906	20E	CN9	18G
TRANSISTOR		Q907	20E	CN201	14A
Q1	9E	DIODE		CN202	9F
Q2	9E	D1	10E	CN203	10G
Q3	12E	D2	12F	ADJUSTMENT	
Q6	14C	D3	12F	C923	21D
Q7	15B	D4	12F	TEST POINT	
Q8	15B	D6	14F	TP6	21A
Q9	7D	D8	16C	TP8	1B
Q10	7D	D9	2B	TP10	3G
Q11	7E	D10	1C	TP19	5G
Q13	3C	D11	1C	TP20	3G
Q14	3C	D14	17B	TP29	5F
Q17	1C	D15	18B	TP30	1G
Q18	2C	D16	20A	TP39	5F
Q19	1C	D17	2D	TP56	2B
Q20	1F	D18	20A	TP61	9C
Q21	1F	D19	20A	TP901	20E
Q22	2F	D20	19A	TP902	20F
Q23	2F	D21	9E		

ELADLESS COMPONENT PARTS LOCATION GUIDE <83> VIDEO I/O BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	
IC		TRANSISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR		CAPACITOR
IC1	6F	Q32	12B	R17	8E	R66	1D	R111	1F	R923	19F	C65	2F	
IC2	7F	Q33	13B	R18	8E	R67	1E	R112	2F	R924	19E	C66	1E	
IC3	8F	Q34	13C	R19	8D	R68	2F	R113	15C	R925	21E	C68	17C	
IC7	5B	Q35	14C	R20	15F	R69	2F	R114	13E	R926	21D	C69	18A	
IC9	2D	Q36	13C	R22	3F	R71	14D	R117	6E	R927	21E	C70	18A	
IC10	11C	Q901	18G	R23	8E	R72	2G	R118	20E	R928	21D	C71	18A	
IC11	21B	Q902	18G	R24	8E	R73	2F	R119	4E	R929	20E	C72	19C	
IC13	18B	Q903	20G	R26	10E	R76	2G	R120	2E	R930	20E	C74	21C	
IC14	20B	Q904	18G	R27	8B	R77	2G	R121	4F	R931	19D	C76	12B	
TRANSISTOR		Q906	20E	R29	8B	R78	2G	R122	15A	R932	20E	C77	12B	
Q1	9E	Q907	20E	R32	14F	R79	2F	R123	13C	R933	20E	C79	9B	
Q2	9E	DIODE		R34	15F	R80	3G	R124	16B	R934	20E	C80	20B	
Q3	12E	D16	20A	R35	5B	R81	3G	R125	16C	R949	21F	C81	3D	
Q6	14C	D24	2F	R36	6A	R82	18C	R126	3C	R950	19E	C82	7D	
Q7	15B	D25	14C	R37	15C	R85	19C	R128	2C	CAPACITOR		C83	15C	
Q8	15B	D26	15D	R39	15C	R86	19B	R129	1F	C4	5F	C88	6F	
Q9	7D	D27	11E	R41	15B	R87	20C	R202	6G	C6	5F	C91	3E	
Q10	7D	D101	3F	R43	15B	R88	1D	R203	6G	C7	7F	C92	2E	
Q11	7E	D901	19G	R44	16B	R89	22B	R204	7G	C8	7F	C93	19B	
Q12	4D	D902	21F	R45	16B	R90	22B	R205	7G	C15	5E	C94	10F	
Q13	3C	D903	21E	R46	16C	R91	21B	R206	7G	C17	12F	C95	9F	
Q14	3C	D904	22D	R47	16C	R93	9B	R207	6G	C18	15F	C99	8F	
Q15	2C	RESISTOR		R52	3D	R94	10B	R208	7G	C20	15F	C904	18E	
Q16	2C	R1	4G	R53	3D	R95	9B	R209	7G	C27	6C	C905	18F	
Q17	1C	R2	4G	R54	2C	R96	11B	R901	18G	C32	5A	C906	18F	
Q18	2C	R3	4G	R55	2C	R97	11B	R902	18G	C34	15C	C909	18E	
Q19	1C	R4	4F	R57	2B	R98	11B	R903	19G	C39	17C	C913	21E	
Q20	1F	R5	4G	R58	2C	R99	11B	R904	19G	C45	2C	C914	18E	
Q21	1F	R6	3G	R58	3F	R100	11B	R905	19D	C46	3C	C915	21F	
Q22	2F	R7	7E	R59	3E	R101	12B	R906	19E	C53	3E	C916	21F	
Q23	2F	R8	5G	R61	2E	R102	12B	R913	18F	C55	8B	C918	20F	
Q24	2F	R9	5G	R62	2E	R103	12C	R914	19F	C58	11C	C919	19F	
Q25	1G	R10	5F	R64	1D	R104	13B	R915	19F	C59	4B	C920	20F	
Q26	1F	R11	5F	R65	1D	R105	13B	R916	18E	C60	11C	C921	21F	
Q27	17C	R12	5F			R106	12B	R917	19F	C61	9C	C921	19E	
Q28	20C	R13	5F			R106	12B	R918	21E	C63	2F	C922	21E	
Q29	9B	R14	8D			R107	13C	R919	21F	C64	1G	C924	21D	
Q30	11B	R15	7E			R108	13C	R920	21F			C927	20D	
Q31	11B	R16	6D					R922	19F			C928	21E	

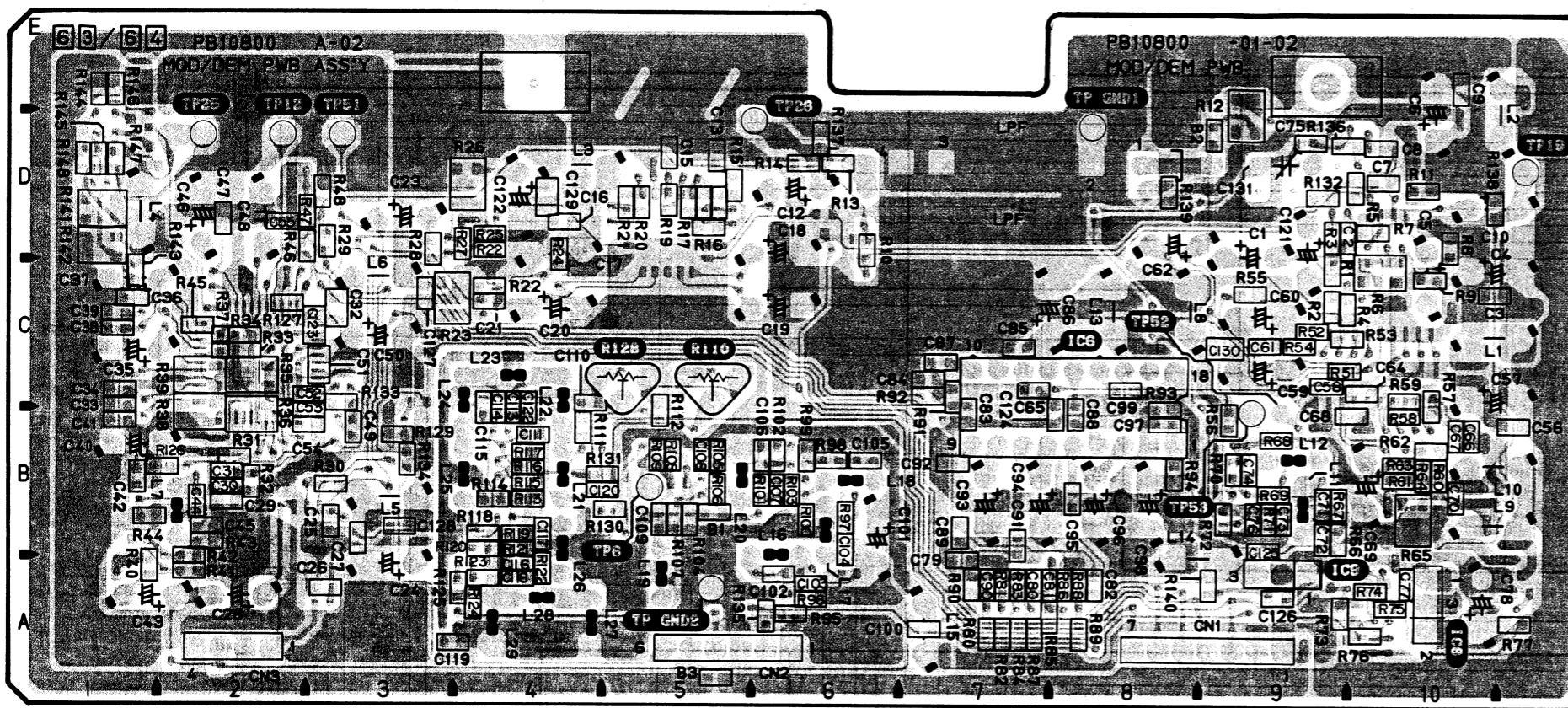
4.37 MOD/DEM (MAIN), (SUB) SCHEMATIC DIAGRAM



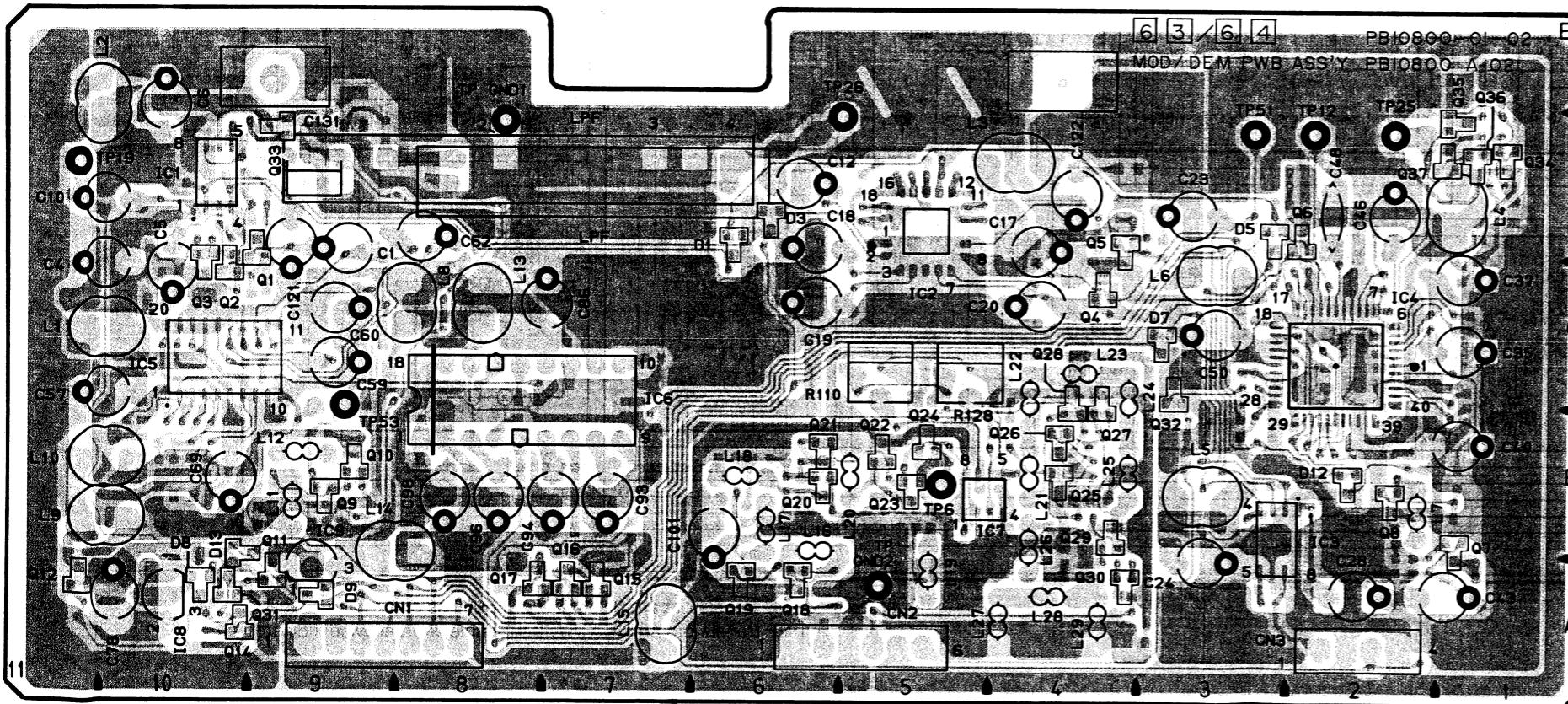
A | B | C | D | E | F | G | H

4.38 MOD/DEM (MAIN), (SUB) CIRCUIT BOARD

— FOIL SIDE (B) —



— COMPONENT SIDE (A) —



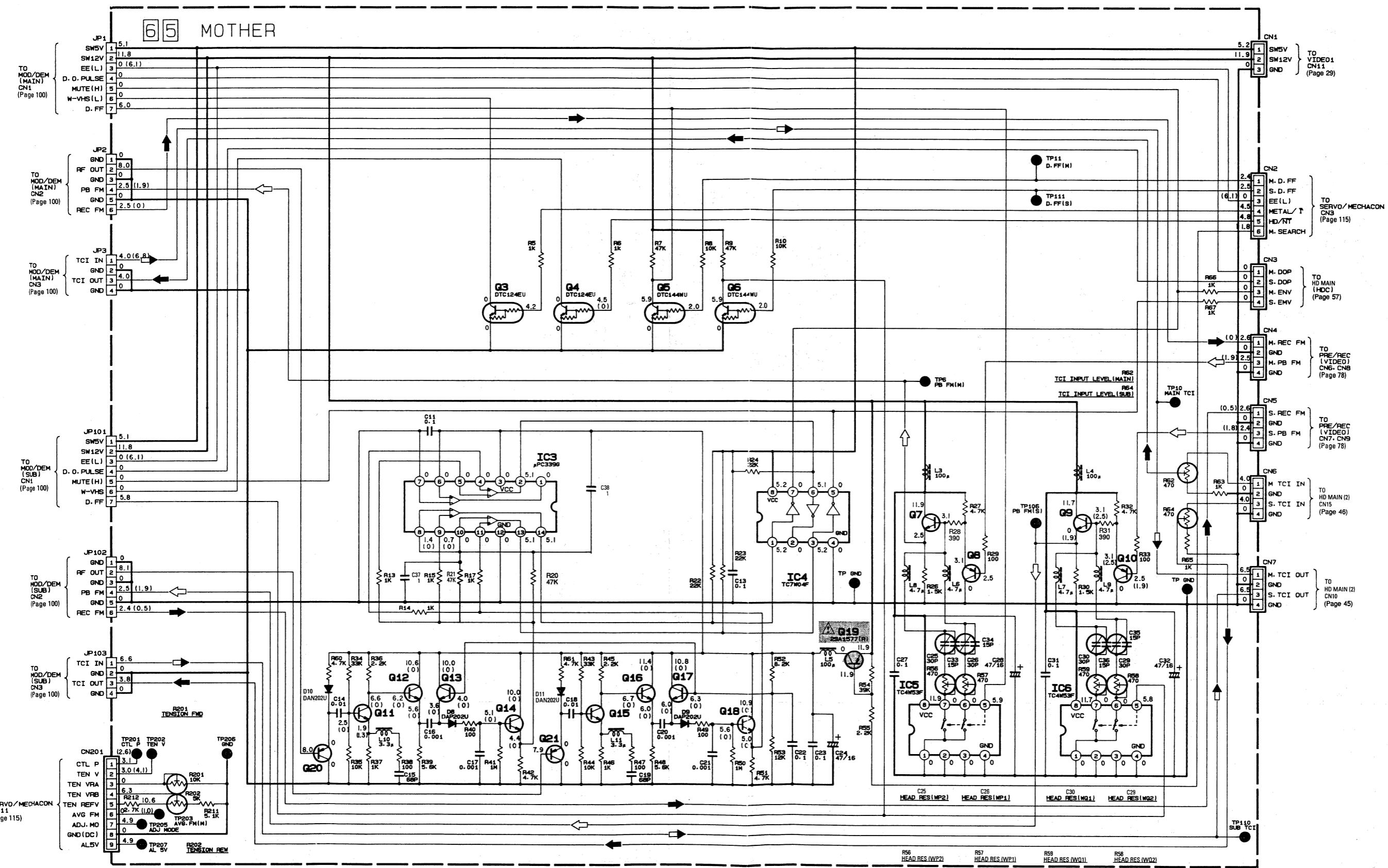
MAIN COMPONENT PARTS LOCATION GUIDE

REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION
IC		CONNECTOR			
IC1	A-10D	Q18	A-6A	CN1	B-9A
IC2	A-5D	Q19	A-6A	CN2	B-5A
IC3	A-2B	Q20	A-6B	CN3	B-2A
IC4	A-2C	Q21	A-6B	ADJUSTMENT	
IC5	A-10C	Q22	A-5B	R16	B-10C
IC6	B-8C	Q23	A-5B	R12	B-9E
IC7	A-5B	Q24	A-5B	R23	B-3C
IC8	B-10A	Q25	A-4B	R26	B-4D
IC9	B-9A	Q26	A-4B	R35	B-2C
TRANSISTOR		Q27	A-4B	R36	B-2B
Q1	A-9C	Q28	A-4C	R38	B-2B
Q2	A-10C	Q29	A-4B	R39	B-2C
Q3	A-10C	Q30	A-4A	R65	B-10B
Q4	A-4C	Q31	A-10A	R110	B-5C
Q5	A-4D	Q32	A-3C	R128	B-5C
Q6	A-2D	Q33	A-9D	TEST POINT	
Q7	A-1B	DIODE			TP12 B-2D
Q8	A-2B	D1	A-6D	TP25	B-2D
Q9	A-9B	D3	A-6D	TP26	B-6E
Q10	A-9B	D5	A-3D	TP GND1	B-8D
Q11	A-9A	D7	A-3C		
Q12	A-11A	D8	A-10A		
Q14	A-10A	D9	A-9A		
		D12	A-2B		
		D13	A-10B		

ELADLESS COMPONENT PARTS LOCATION GUIDE <63><64> MOD/DEM BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
IC	RESISTOR	RESISTOR	RESISTOR	RESISTOR	CAPACITOR		
IC1	A-10D	R19	B-5D	R107	B-5B	C53	B-3B
IC2	A-5D	R20	B-5D	R108	B-5B	C54	B-3B
IC3	A-2B	R21	B-5D	R109	B-5B	C55	B-2D
IC4	A-2C	R22	B-4C	R111	B-4B	C56	B-11B
IC5	A-10C	R23	B-3C	R112	B-5B	C58	B-9C
IC7	A-5B	R24	B-4D	R113	B-4B	C61	B-9C
TRANSISTOR		R25	B-4D	R114	B-4B	C64	B-10C
Q1	A-9C	R26	B-4D	R115	B-4B	C66	B-10B
Q2	A-10C	R27	B-4D	R116	B-4B	C67	B-10B
Q3	A-10C	R28	B-3D	R117	B-4B	C68	B-9B
Q4	A-4C	R29	B-3D	R118	B-4B	C70	B-10B
Q5	A-4D	R30	B-3B	R119	B-4B	C71	B-9B
Q6	A-2D	R31	B-2B	R120	B-4B	C72	B-9B
Q7	A-1B	R32	B-2B	R121	B-4B	C73	B-9B
Q8	A-2B	R33	B-2C	R122	B-4A	C74	B-9B
Q9	A-9B	R34	B-2C	R123	B-4A	C75	B-9D
Q10	A-9B	R35	B-2C	R124	B-4A	C76	B-9B
Q11	A-9A	R36	B-2B	R125	B-4A	C77	B-10A
Q12	A-11A	R37	B-2C	R126	B-2B	C79	B-7B
Q14	A-10A	R38	B-2B	R129	B-3B	C88	B-8B
Q15	A-7A	R39	B-2C	R130	B-5B	C95	B-8B
Q16	A-7A	R40	B-1A	R131	B-5B	C97	B-8B
Q17	A-8A	R41	B-2A	R132	B-9D	C100	B-7A
Q18	A-6A	R42	B-2B	R133	B-3C	C102	B-6A
Q19	A-6A	R43	B-2B	R134	B-3B	C104	B-6B
Q20	A-6B	R44	B-1B	R135	B-6A	C105	B-6B
Q21	A-6B	R45	B-2C	R136	B-9D	C106	B-6B
Q22	A-5B	R46	B-2D	R137	B-6D	C107	B-6B
Q23	A-5B	R47	B-2D	R138	B-9D	C108	B-5B
Q24	A-5B	R48	B-3D	R139	B-8D	C109	B-5B
Q25	A-4B	R51	B-9C	R140	B-9A	C110	B-4C
Q26	A-4B	R52	B-9C	R141	B-1D	C111	B-4B
Q27	A-4B	R53	B-10C	R142	B-1D	C112	B-4C
Q28	A-4C	R54	B-9C	R143	B-1C	C113	B-4C
Q29	A-4B	R55	B-9C	R144	B-1E	C114	B-4C
Q30	A-4A	R56	B-9B	R145	B-1D	C114	B-4C
Q31	A-10A	R57	B-10C	R146	B-1E	C115	B-4C
Q32	A-3C	R58	B-10B	R147	B-1D	C116	B-4A
Q33	A-9D	R59	B-10C	R148	B-1D	C117	B-4B
Q34	A-1D	R60	B-10B	CAPACITOR		C118	B-4A
Q35	A-1D	R61	B-10B	C2	B-9D	C119	B-4A
Q36	A-1D	R62	B-10B	C3	B-10C	C120	B-5B
Q37	A-1D	R63	B-10B	C7	B-10D	C123	B-3C
DIODE		R64	B-10B	C8	B-10D	C124	B-8B
D1	A-6D	R65	B-10B	C9	B-10E	C125	B-9B
D3	A-6D	R66	B-9B	C13	B-5D	C126	B-9A
D5	A-3D	R67	B-9B	C14	B-5D	C130	B-9C
D7	A-3C	R68	B-9B	C15	B-5D	C131	A-9D
D8	A-10A	R69	B-9B	C16	B-4D		
D9	A-9A	R70	B-9B	C21	B-4C		
D12	A-2B	R71	B-9B	C22	B-4D		
D13	A-10B	R72	B-9B	C25	B-3B		
RESISTOR		R73	B-9A	C26	B-3A		
R1	B-9C	R74	B-10A	C27	B-3B		
R2	B-9C	R75	B-10A	C29	B-2B		
R3	B-9D	R76	B-10A	C30	B-2B		
R4	B-10C	R77	B-11A	C31	B-2B		
R5	B-10D	R93	B-8C	C32	B-3C		
R6	B-10C	R94	B-8B	C33	B-1C		
R7	B-10D	R95	B-6A	C34	B-1C		
R8	B-10D	R96	B-6A	C36	B-1C		
R9	B-10C	R97	B-6B	C38	B-1C		
R10	B-6D	R98	B-6B	C39	B-1C		
R11	B-10D	R99	B-6B	C41	B-1B		
R12	B-9E	R100	B-6B	C42	B-1B		
R13	B-6D	R101	B-6B	C44	B-2B		
R14	B-6D	R102	B-6B	C45	B-2B		
R15	B-5D	R103	B-6B	C47	B-2D		
R16	B-5D	R104	B-5B	C49	B-3B		
R17	B-5D	R105	B-5B	C51	B-3C		
R18	B-5D	R106	B-5B	C52	B-3C		

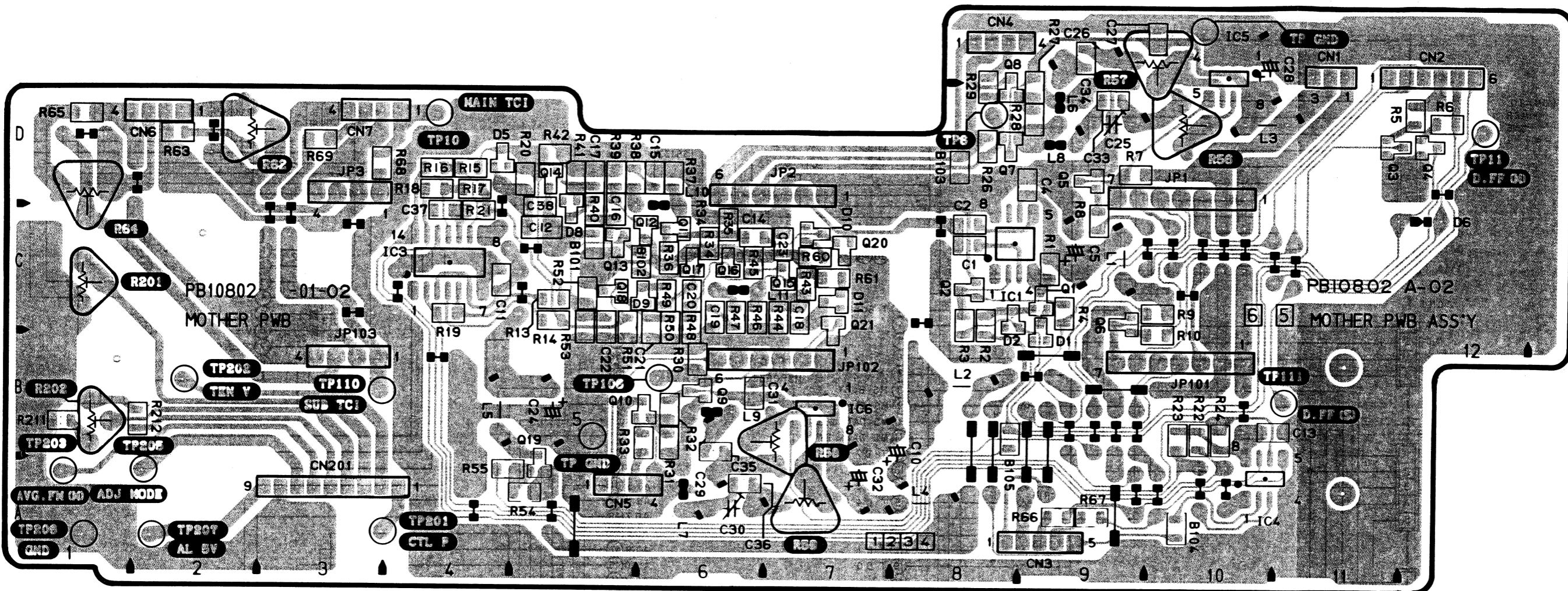
4.39 MOTHER SCHEMATIC DIAGRAM



Notes:

- NPN transistors are 2SC4081(QRS) unless otherwise indicated.
- PNP transistors are 2SA1576(QRS) unless otherwise indicated.

4.40 MOTHER CIRCUIT BOARD



MAIN COMPONENT PARTS LOCATION GUIDE
<65> MOTHER BOARD

REF. No.	LOCATION
IC	
IC3	4C
IC4	10A
IC5	10E
IC6	7B
TRANSISTOR	
Q3	11D
Q4	12D
Q5	9D
Q6	9C
Q7	8D
Q8	8E
Q9	6B
Q10	6B
Q11	6C
Q12	6C
Q13	5C
Q14	5D
Q15	7C
Q16	6C
Q17	6C
Q18	5C
Q19	5B
Q20	7C
Q21	7C
DIODE	
D8	5C
D9	6C
D10	7C
D11	7C

REF. No.	LOCATION
CONNECTOR	
CN1	11E
CN2	12E
CN3	9A
CN4	8E
CN5	5A
CN6	2D
CN7	3D
CN201	3A
ADJUSTMENT	
R56	10D
R57	10E
R58	7B
R59	7A
R62	3D
R64	1D
R201	1C
R202	1B
C25	9D
C26	9E
C29	6A
C30	6A
TEST POINT	
TP202	2B
TP203	1A
TP205	2A
TP206	1A
TP207	2A
TP GND	10E
TP GND	5B

REF. No.	LOCATION
TEST POINT	
TP6	8D
TP10	4D
TP11	12D
TP106	6B
TP110	3B
TP111	11B
TP201	4A

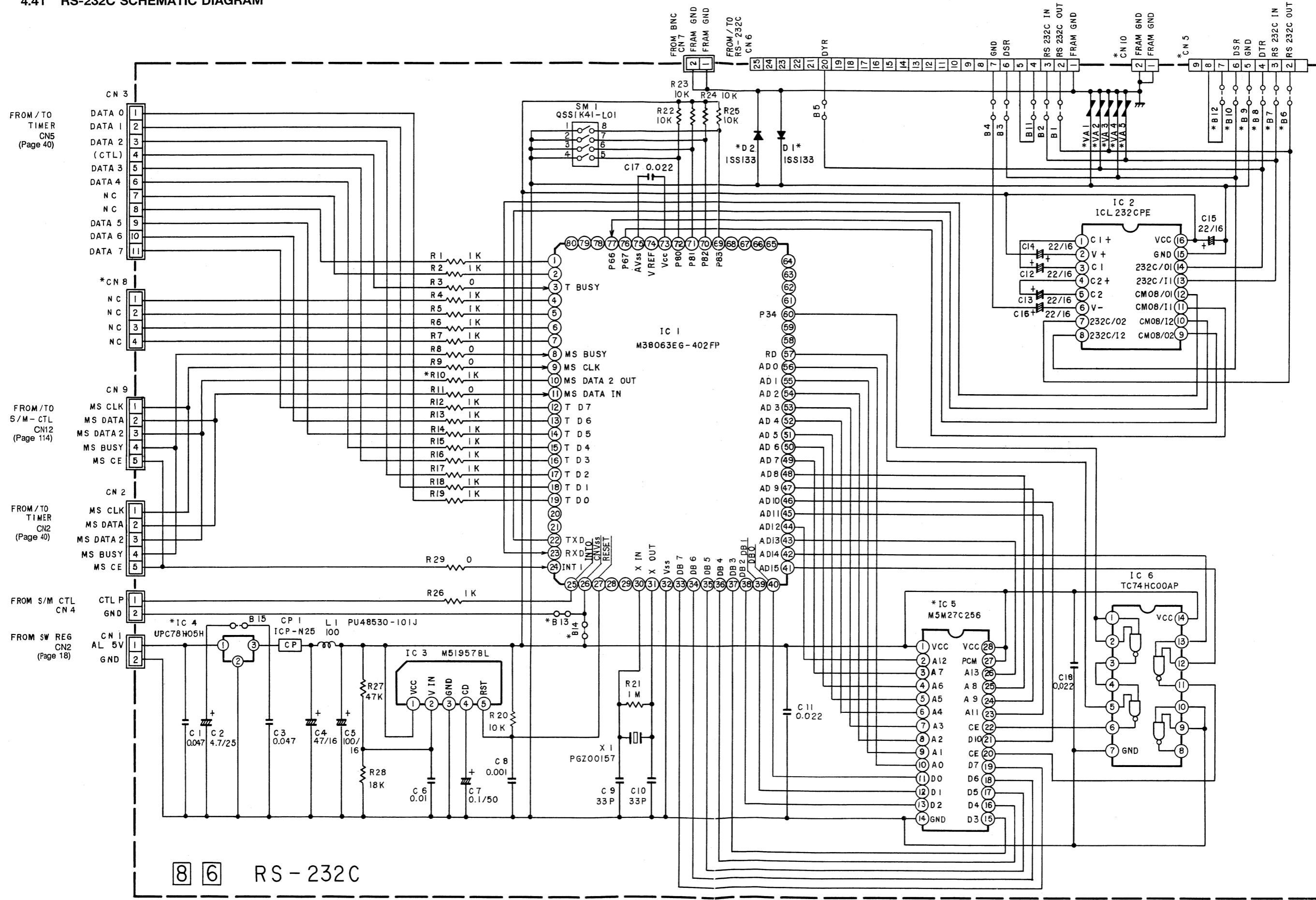
ELADLESS COMPONENT PARTS LOCATION GUIDE
<65> MOTHER BOARD

REF. No.	LOCATION
IC	
IC1	8C
IC3	4C
IC4	10A
IC5	10E
IC6	7B
TRANSISTOR	
Q1	9C
Q2	8C
Q3	11D
Q4	12D
Q5	9D
Q6	9C
Q7	8D
Q8	8E
Q9	6B
Q10	6B
Q11	6C
Q12	6C
Q13	5C
Q14	5D
Q15	7C
Q16	6C
Q17	6C
Q18	5C
Q19	5B
Q20	7C
Q21	7C
DIODE	
D1	9B

REF. No.	LOCATION
DIODE	
D2	8C
D5	4D
D8	5C
D9	6C
D10	7C
D11	7C
RESISTOR	
R27	9D
R28	9D
R29	8D
R30	6B
R31	6B
R32	6B
R33	6B
R34	6C
R35	6C
R36	6C
R37	6D
R38	5D
R39	5D
R40	5D
R41	5D
R42	5D
R43	7C
R44	7C
R45	6C
R46	6C
R47	6C
R48	6C
R49	6C
R50	6C
R51	5C
R52	5C
R53	5C
R54	5A
R55	4A
R56	7C
CAPACITOR	
C35	6B
C36	6A
C37	4C
C38	5D

REF. No.	LOCATION
RESISTOR	
R1	9C
R2	8C
R3	8C
R4	9C
R5	12D
R6	12D
R7	9D
R8	9C
R9	10C
R10	6B
R11	6C
R12	6C
R13	5C
R14	5D
R15	4D
R16	4D
R17	4D
R18	4D
R19	4C
R20	5D
R21	4C
R22	10B
R23	10B
R24	10B
R25	8D
CAPACITOR	
C1	8C
C2	8C
C4	9D
C11	4C
C12	5C
C13	11B
C14	6C
C15	6D
C16	5D
C17	5D
C18	7C
C19	6C
C20	6C
C21	6C
C22	5C
C23	7C
C27	10E
C31	6B
C33	9D
C34	9E

4.41 RS-232C SCHEMATIC DIAGRAM

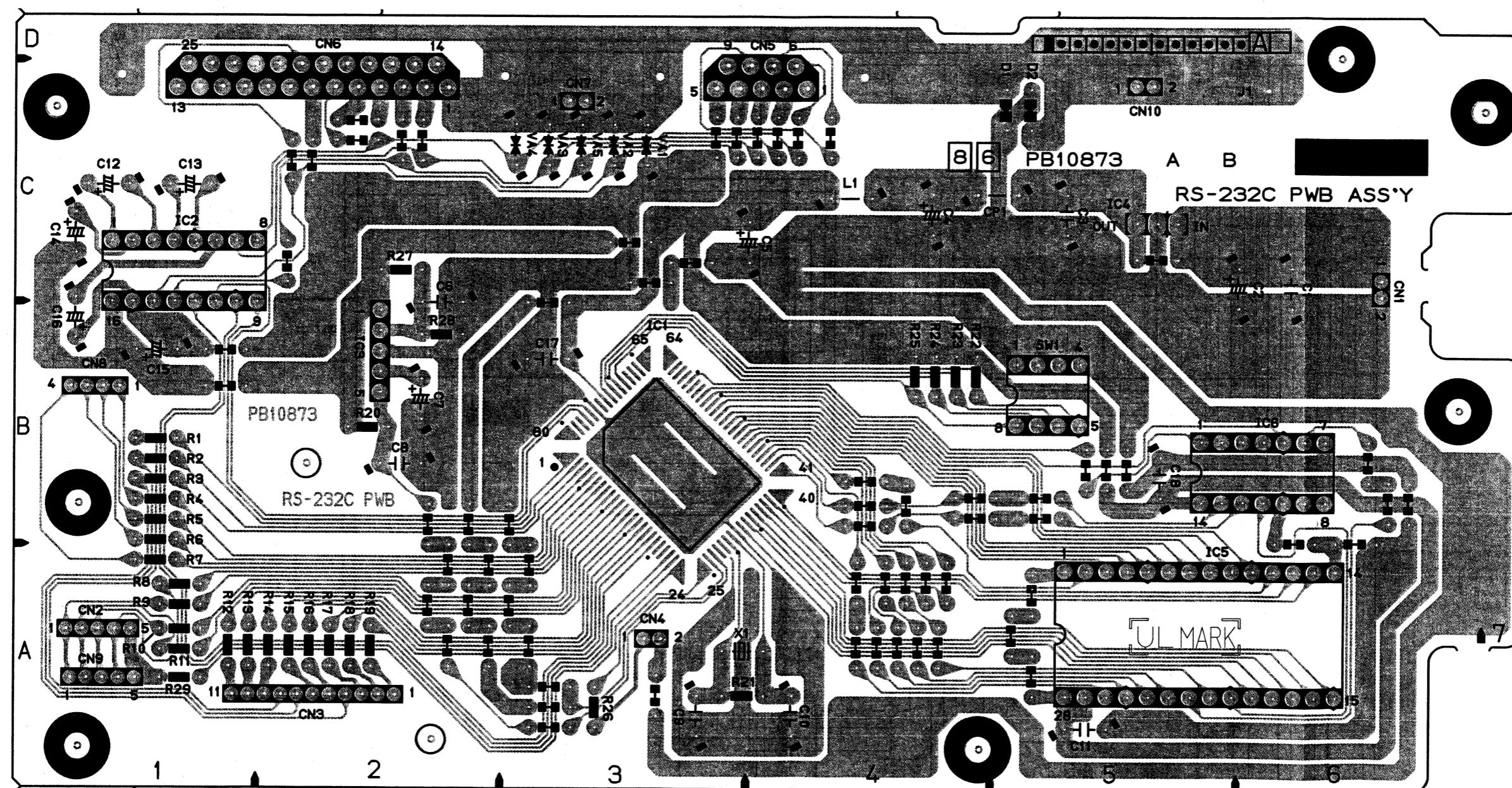


8 6

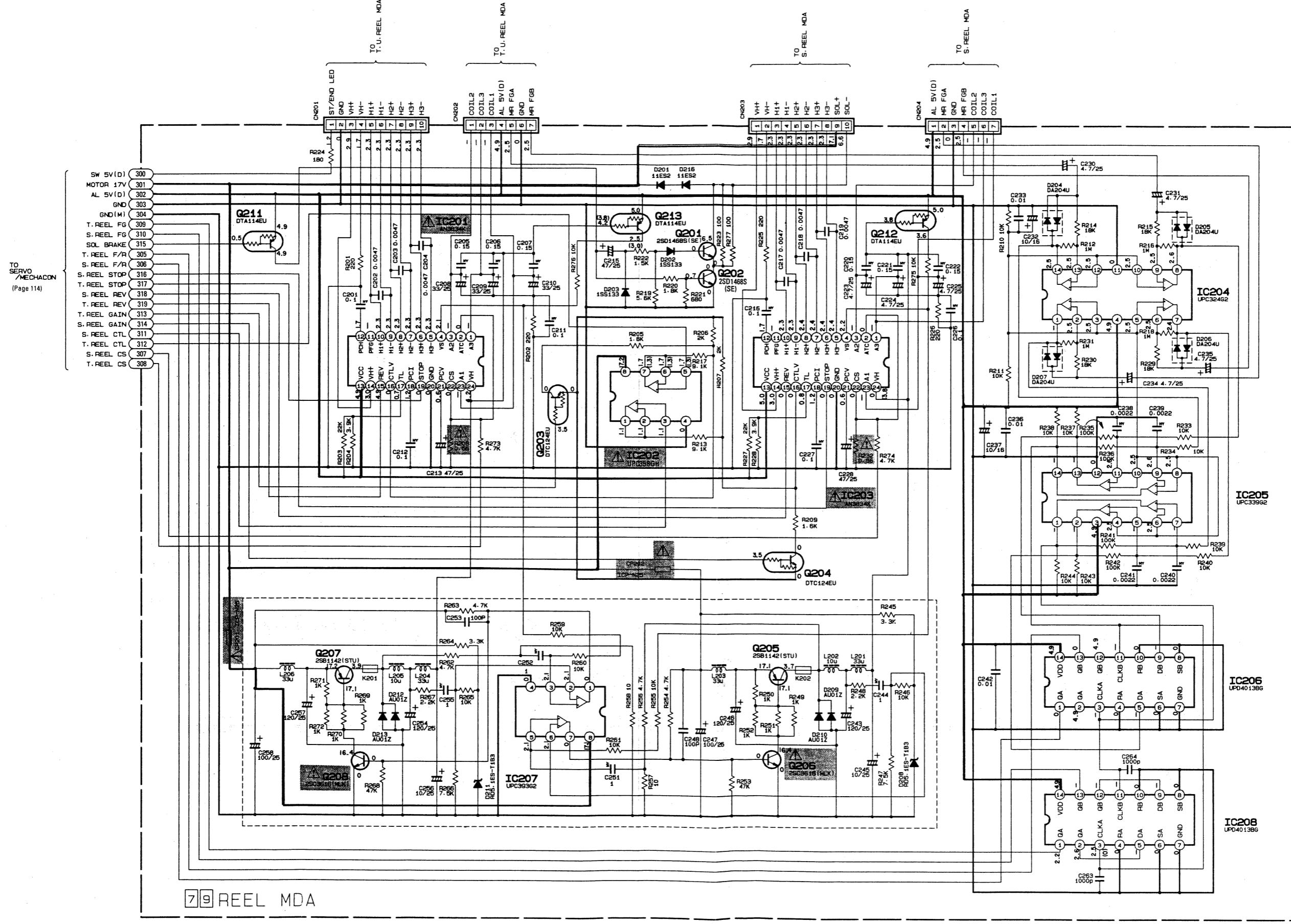
RS - 232C

NOTE: Mark (*) is not used.

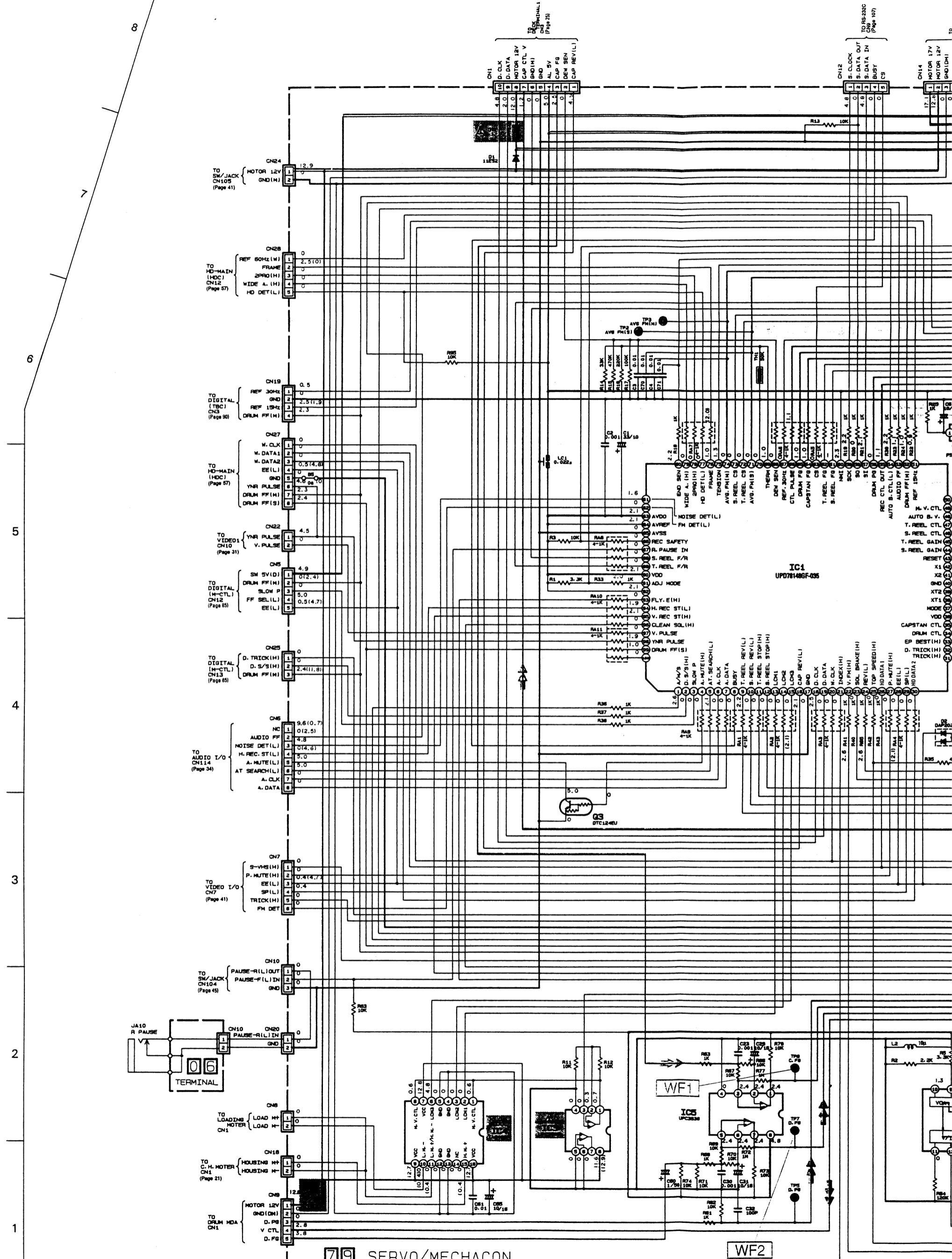
4.42 RS-232C CIRCUIT BOARD



4.43 REEL MDA SCHEMATIC DIAGRAM

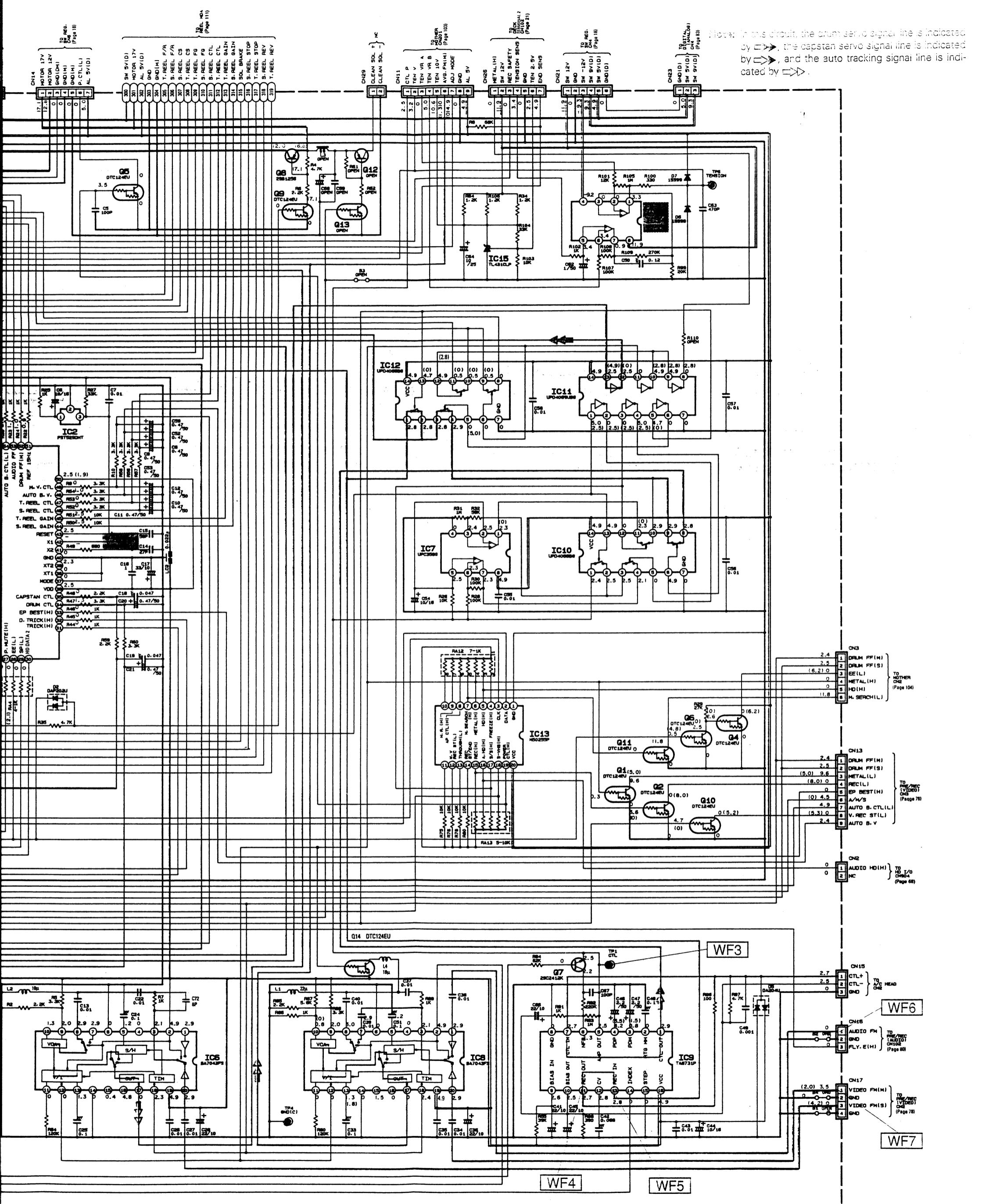


4.44 SERVO/MECHAON SCHEMATIC DIAGRAM



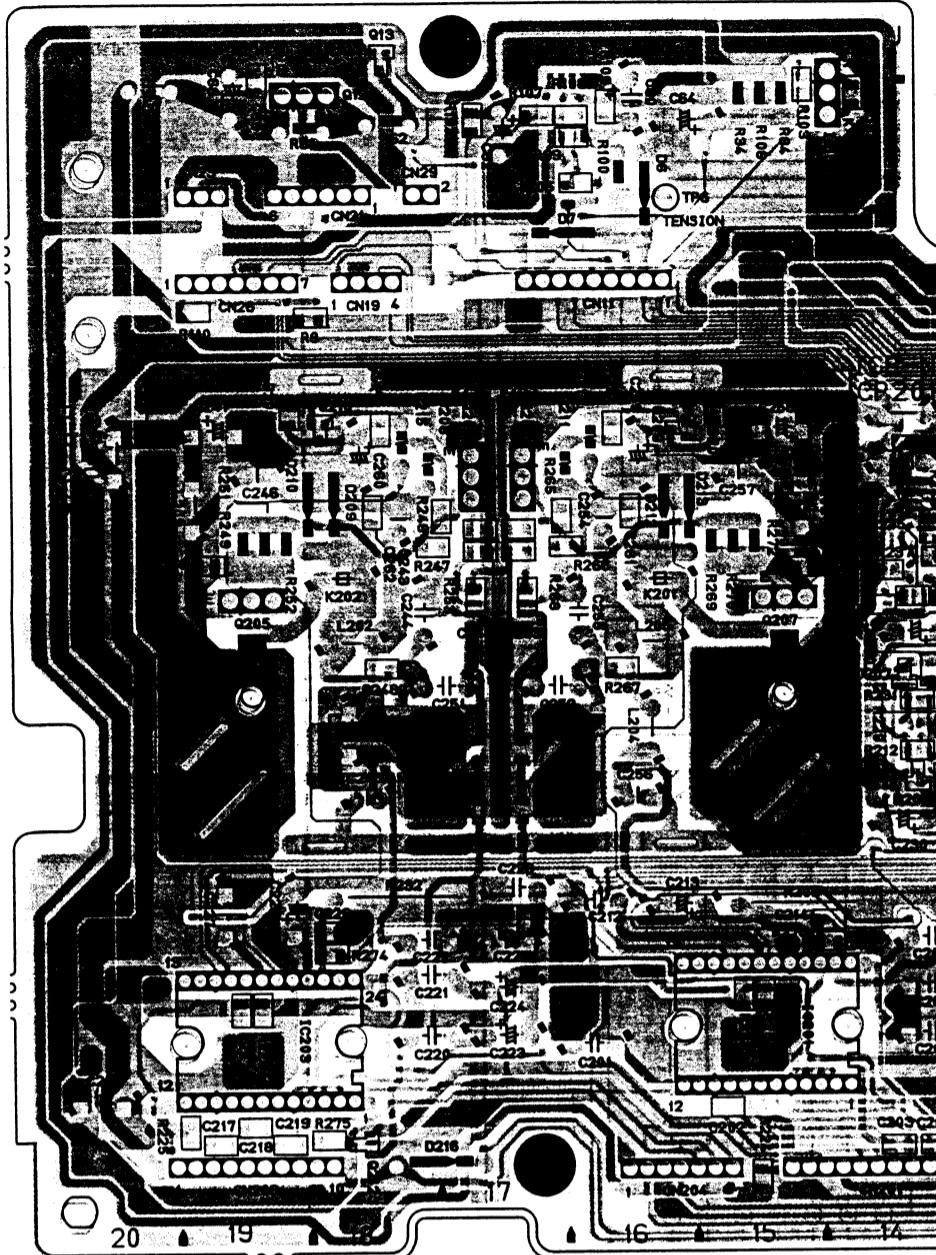
79 SERVO/MECHACON

WF2

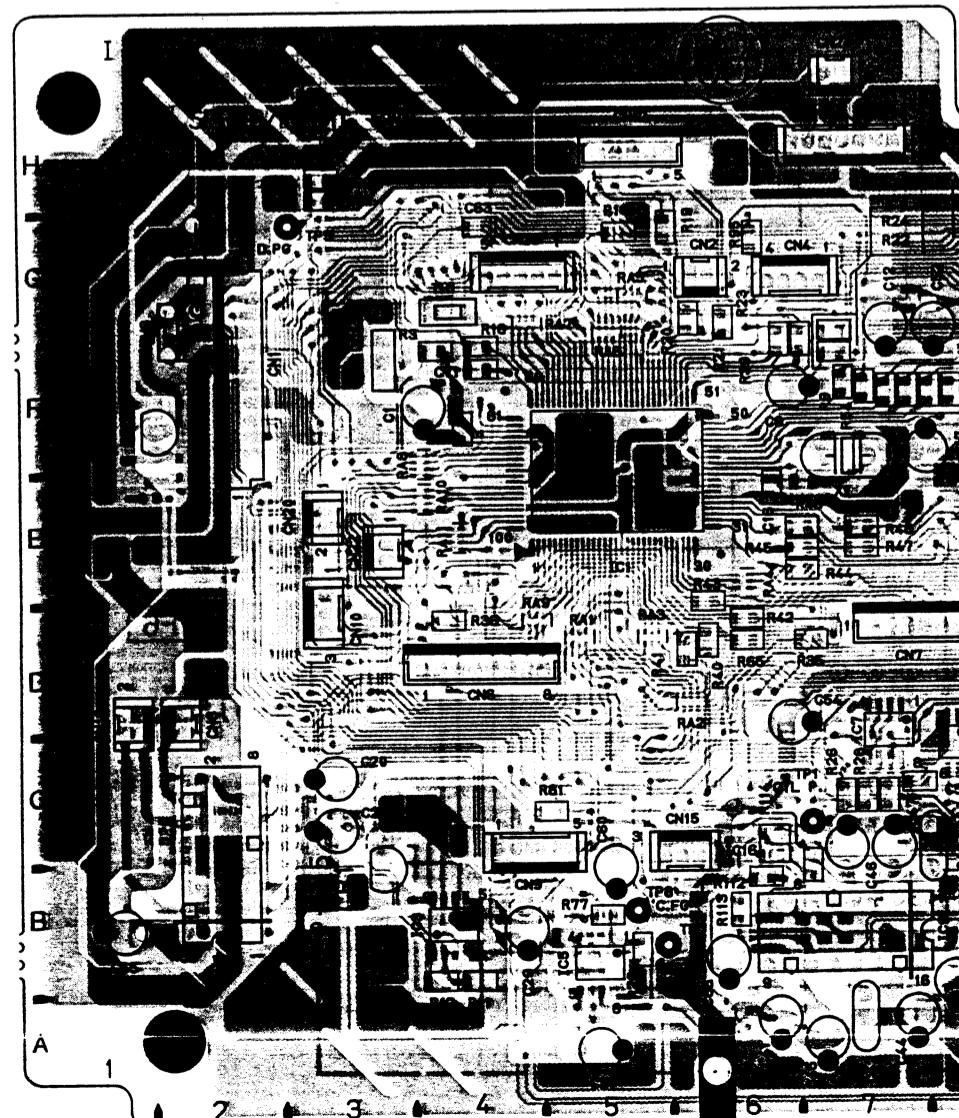


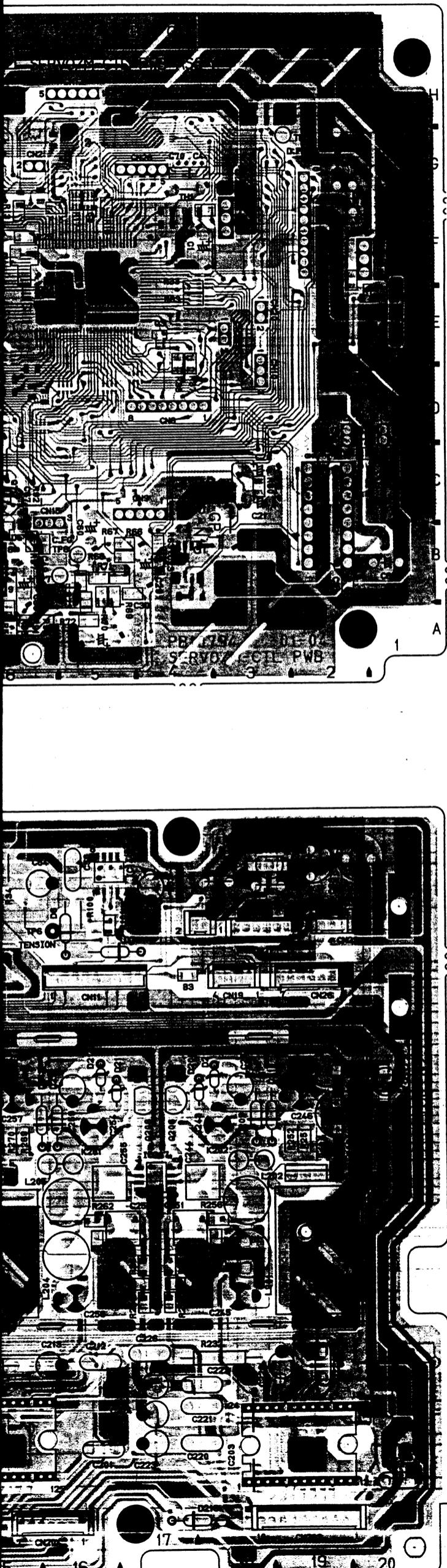
4.45 SERVO/M-CTL, TERMINAL CIRCUIT BOARD

— FOIL SIDE (B) —



— COMPONENT SIDE (A) —





MAIN COMPONENT PARTS LOCATION GUIDE

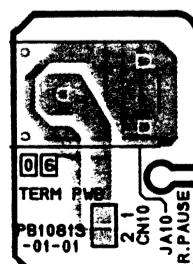
<79> SERVO/MECHACON BOARD

REF. NO.	LOCATION	REF. NO.	LOCATION	REF. NO.	LOCATION
IC		TRANSISTOR		CONNECTOR	
IC1	A-5E	Q211	B-11C	CN23	B-19I
IC2	B-6F	Q212	B-18A	CN24	B-7I
IC3	A-4C	Q213	B-13A	CN25	B-9G
IC4	B-2C	DIODE		CN26	B-19H
IC5	A-5B	D1	B-2G	CN27	B-11E
IC6	A-9B	D2	B-7D	CN28	B-4G
IC7	A-7D	D5	B-6B	CN201	B-14A
IC8	A-10B	D6	B-16I	CN202	B-13A
IC9	B-7B	D7	B-16H	CN203	B-19A
IC10	A-8C	D201	B-13B	CN204	B-16A
IC11	A-9D	D202	B-13B	CIRCUIT PROTECTOR	
IC12	A-10D	D203	B-11B	CP1	B-3B
IC13	B-11F	D204	B-14D	CP201	B-14G
IC14	A-16I	D205	B-13D	CP202	B-20G
IC15	B-14I	D206	B-13E	TEST POINT	
IC201	B-15B	D207	B-14E	TP1	B-7C
IC202	A-12C	D208	B-18G	TP2	B-8B
IC203	B-19B	D209	B-18F	TP3	B-9C
IC204	A-14E	D210	B-19F	TP4	B-11B
IC205	A-14F	D211	B-16G	TP5	B-3G
IC206	A-13G	D212	B-16F	TP6	B-16I
IC207	A-17F	D213	B-16F	TP7	B-6B
IC208	A-13G	D216	B-17A	TP8	B-5B
TRANSISTOR		CONNECTOR			
Q1	B-12F	CN1	B-2F		
Q2	B-12G	CN2	B-6G		
Q3	B-4E	CN3	B-10G		
Q4	B-12E	CN5	B-9F		
Q5	B-12F	CN6	B-4D		
Q6	B-12E	CN7	B-7D		
Q7	B-6C	CN8	B-2D		
Q8	B-2F	CN9	B-4C		
Q9	B-1E	CN10	B-3D		
Q10	B-10C	CN11	B-16H		
Q11	B-11G	CN12	B-5H		
Q14	B-10A	CN13	B-10E		
Q201	B-12B	CN14	B-7H		
Q202	B-12B	CN15	B-6C		
Q203	B-12D	CN16	B-10B		
Q204	B-12C	CN17	B-10A		
Q205	B-19E	CN18	B-1D		
Q206	B-17G	CN19	B-18H		
Q207	B-15E	CN20	B-3E		
Q208	B-17G	CN21	B-18I		
		CN22	B-3E		

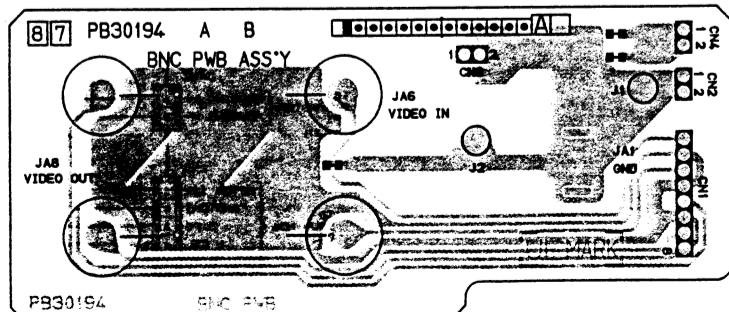
ELADLESS COMPONENT PARTS LOCATION GUIDE <79> SERVO/MECHAON BOARD

REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION	REF. No.	LOCATION
	IC		RESISTOR		RESISTOR		RESISTOR		RESISTOR		RESISTOR
IC1	A-5E	R4	B-1F	R55	B-6A	R201	B-13A	R257	A-18E	C39	B-10B
IC2	B-6F	R5	B-9A	R58	B-7G	R202	B-13C	R258	A-16E	C40	B-1 ^a
IC3	A-4C	R6	B-2F	R59	B-8E	R203	B-15B	R259	A-17D	C43	B-7
IC5	A-5B	R7	B-8A	R60	B-3C	R204	B-15B	R260	A-17D	C49	B-6
IC6	A-9B	R8	B-18H	R63	B-4B	R205	B-12D	R261	A-17D	C55	A-7C
IC7	A-7D	R9	A-7F	R64	B-9B	R206	B-13C	R262	A-16E	C56	A-8C
IC8	A-10B	R11	A-4B	R65	A-6D	R207	B-13C	R263	B-17F	C57	A-9 ^c
IC10	A-8C	R12	A-4B	R66	B-5B	R209	B-12C	R264	B-18F	C58	A-1
IC11	A-9D	R13	B-6F	R67	B-5B	R210	A-14D	R264	B-16G	C61	B-2
IC12	A-10D	R14	A-5G	R68	B-5B	R211	A-14E	R266	B-16F	C63	A-4G
IC14	A-16I	R15	B-5F	R69	B-5B	R212	B-14D	R267	B-16E	C67	B-7C
IC202	A-12C	R16	B-5F	R70	B-5B	R213	B-12C	R268	B-17F	C69	B-1 ^a
IC204	A-14E	R17	B-5G	R71	B-5B	R214	B-14D	R271	B-15F	C70	B-4
IC205	A-14F	R18	A-4G	R72	B-5A	R215	B-13D	R273	B-15C	C71	A-4
IC206	A-13G	R19	A-5G	R73	B-5B	R216	B-13D	R274	B-18C	C72	B-8 ^a
IC207	A-17F	R20	A-6G	R74	B-5B	R217	B-12D	R275	B-18A	C73	B-10B
IC208	A-13G	R21	A-6G	R75	B-10F	R218	B-13E	R276	A-14B	C202	B-15B
	TRANSISTOR			R22	A-7F	R76	B-11F	R219	B-11B	R203	B-1
Q1	B-12F	R23	A-7G	R77	A-5B	R220	B-11C	RA1	A-5D	C204	B-1
Q2	B-12G	R24	A-7G	R78	B-11F	R221	B-12B	RA2	A-6D	C214	B-1 ^a
Q3	B-4E	R25	B-6F	R79	A-5B	R222	B-11B	RA3	A-5D	C217	B-19A
Q4	B-12E	R26	A-7C	R80	B-11F	R224	B-15A	RA4	A-6E	C218	B-19A
Q5	B-12F	R27	B-6E	R81	A-5C	R225	B-19A	RA5	A-5G	C219	B-1
Q6	B-12E	R28	A-7C	R82	A-3H	R226	B-17C	RA6	A-5G	C229	B-1
Q7	B-6C	R29	B-12E	R83	B-4E	R227	B-19B	RA7	A-4G	C233	A-1 ^a
Q9	B-1E	R30	A-7C	R85	B-11A	R228	B-19B	RA8	A-4F	C236	B-14G
Q10	B-10C	R31	B-7C	R86	B-11B	R229	B-13E	RA9	A-4D	C242	A-13F
Q11	B-11G	R32	B-7C	R87	B-11B	R230	B-14E	RA10	A-4E	C248	B-1
Q13	B-18I	R33	B-4F	R88	B-11A	R231	B-14E	RA11	A-4E	C249	A-1 ^a
Q14	B-10A	R35	A-7D	R89	B-10B	R233	B-13F		CAPACITOR	C250	A-1 ^a
Q203	B-12D	R36	A-4D	R90	B-11B	R235	B-14F	C2	A-4F	C253	B-17F
Q204	B-12C	R37	B-4D	R91	B-7B	R236	B-14F	C3	B-5G	C254	B-17F
Q209	B-16G	R38	B-4D	R92	B-6C	R237	B-14F	C4	B-4G	C261	B-1
Q210	B-18G	R39	A-6G	R93	B-7B	R238	B-14E	C5	B-12E	C262	B-1
Q211	B-11C	R40	A-6D	R94	B-6C	R239	A-14E	C7	B-6E	C263	A-3
Q212	B-18A	R41	A-6D	R95	A-6G	R239	A-14E	C13	B-9A	C264	B-13G
Q213	B-13A	R42	A-6D	R96	B-7B	R240	A-13E	C14	B-7F		
	DIODE			R43	A-6E	R97	B-6B	R241	B-13F	C15	B-7F
D2	B-7D	R44	A-7E	R98	B-7A	R242	B-14F	C16	A-6E		
D5	B-6B	R45	A-7E	R99	B-16I	R243	B-14F	C22	B-8A		
D204	B-14D	R46	A-7E	R101	A-16I	R244	B-13F	C23	B-4B		
D205	B-13D	R47	A-7E	R102	B-17I	R245	B-18G	C26	B-8B		
D206	B-13E	R48	A-7E	R103	B-15I	R247	B-18F	C27	A-8B		
D207	B-14E	R49	B-7E	R104	B-14I	R248	B-18E	C30	B-4B		
	RESISTOR			R50	A-8F	R105	B-16I	R250	B-19F	C32	A-3H
R1	B-4F	R51	A-8F	R107	B-17I	R253	B-17F	C34	B-10B		
R2	B-9A	R52	A-7F	R108	B-16I	R254	B-17F	C35	B-10B		
R3	A-4F	R53	A-7F	R109	B-16I	R255	A-17D	C37	B-10B		
		R54	A-7F	R110	B-19H	R256	A-18E	C38	B-10B		

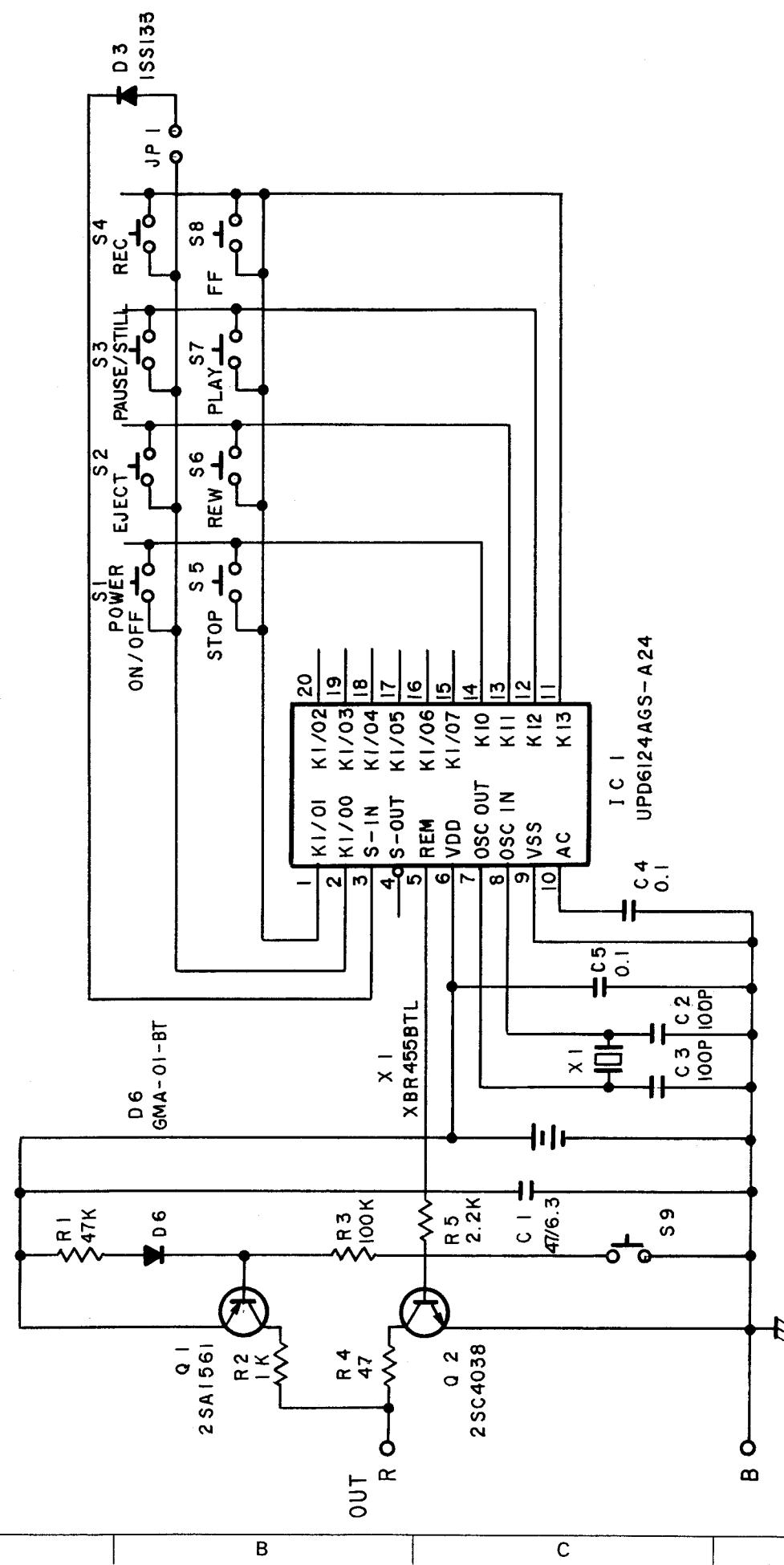
— TERMINAL —



4.46 BNC CIRCUIT BOARD



4.47 RM-G30 REMOTE CONTROL SCHEMATIC DIAGRAM (OPTION)



4.48 VOLTAGE

HD MAIN (TC)

— IC131 —

PIN No.	PIN NAME	MODE	
		REC	PB
1	M06	2.2	0
2	M07	2.4	0
3	M08	4.6	0.7
4	NC	0.7	0.7
5	NC	0.6	0.7
6	SO0	1.7	2.2
7	BSVP3	1.3	2.2
8	BSVP2	1.2	2.2
9	BSVP1	0.9	2.2
10	BSVP0	1.3	2.1
11	VSS	0	0
12	VDD	4.8	4.7
13	RSVP7	2.6	2.4
14	RSVP6	1.3	2.0
15	S01	1.8	0
16	S02	1.8	0
17	S03	1.7	0
18	S04	2.6	0
19	S05	2.3	0
20	S06	2.1	0
21	RSVP5	1.3	2.1
22	RSVP4	1.3	2.1
23	RSVP3	1.5	19
24	VSS	0	0
25	VDD	4.8	4.7
26	RSVP2	1.1	2.1
27	RSVP1	1.2	2.1
28	RSVP0	1.5	2.1
29	S07	2.5	0
30	S08	4.6	0
31	SVC7	1.6	2.0
32	SVC6	0.6	1.0
33	SVC5	0.7	1.1
34	SVC4	0.7	1.2
35	SSVP7	1.9	1.9
36	SSVP6	2.0	1.9
37	SSVP5	2.7	2.7
38	VSS	0	0
39	SSVP4	3.6	2.6
40	SSVP3	1.9	2.3
41	SSVP2	1.3	2.2
42	SVC3	0.7	1.2
43	SVC2	0.8	1.2
44	SVC1	0.7	1.3
45	SVC0	0.7	1.2
46	SVS7	1.3	1.3
47	SVS6	1.5	1.4
48	SSVP1	2.6	2.1
49	SSVP0	1.4	0.8
50	MSVP7	1.9	1.9
51	MSVP6	2.0	2.0
52	VSS	0	0.5
53	VDD	4.8	2.7
54	MSVP5	2.8	2.7
55	MSVP4	3.6	2.8
56	SVS5	1.9	1.9
57	SVS4	2.4	2.4
58	SVS3	1.1	0.8
59	SVS2	1.2	1.2
60	SVS1	1.6	0.8
61	SVS0	0.8	1.3
62	MSVP3	1.5	2.2
63	MSVP2	1.3	2.2
64	MSVP1	2.1	2.2
65	VSS	0	0
66	VDD	4.8	4.8
67	MCLR	4.2	3.7
68	OE	0	0

PIN No.	PIN NAME	MODE	
		REC	PB
69	SVM7	1.3	1.3
70	SVM6	1.4	1.4
71	MSVP0	0.9	2.1
72	NC	0.8	0.8
73	NC	0.8	0.8
74	SVM5	2.0	1.9
75	SVM4	2.4	2.4
76	SVM3	1.1	1.1
77	SVM2	1.2	1.2
78	14MI	1.9	1.9
79	VSS	0	0
80	VDD	4.7	4.7
81	HS14	4.4	4.4
82	SCK	0	0
83	SD1	0	0
84	SD2	0	0
85	SVM1	1.6	1.3
86	SVM0	1.1	1.3
87	PBOE	0	0
88	NTHS	4.5	4.5
89	DDO0	4.7	4.7
90	VSS	0	0
91	VDD	4.7	4.7
92	XSM	0	0
93	XTST	4.7	4.7
94	SDI	0	0
95	SDO	0	0
96	DDO1	0	0
97	DDO2	0	0
98	DDO3	0	0
99	MDFF	2.4	2.3
100	MDOI	0	0
101	SDOI	0	0
102	VSS	0	0
103	RSTWL5	4.7	4.7
104	RSTRL5	4.8	4.7
105	WEL5	3.1	1.4
106	REL5	3.7	0.8
107	SDFF	2.5	2.3
108	LM507	2.6	2.7
109	LM506	2.6	2.1
110	LM505	2.6	2.4
111	LM504	2.6	2.8
112	WCK45	2.5	2.7
113	LM45I7	2.2	0.6
114	VSS	0	0.6
115	VDD	4.9	3.1
116	LM45I6	0.9	2.3
117	LM45I5	1.1	2.1
118	LM45I4	1.1	2.1
119	LM503	2.2	2.1
120	LM502	1.2	2.3
121	LM501	1.6	2.2
122	LM500	1.6	2.3
123	LM45I3	1.2	2.0
124	LM45I2	1.1	2.0
125	VSS	0	0
126	VDD	4.8	4.7
127	LM45I1	1.1	2.3
128	LM45I0	1.2	2.3
129	RSTWL4	4.8	0.7
130	RSTRL4	4.8	0.7
131	LM407	0.8	1.9
132	NC	0	0.6
133	NC	0	0.6
134	LM406	2.8	2.1
135	LM405	0.8	1.9
136	LM404	0.8	2.0

PIN No.	PIN NAME	MODE	
		REC	PB
137	WEL4	3.2	3.6
138	REL4	3.7	3.0
139	VSS	0	0
140	VDD	4.8	4.7
141	RCK	2.4	2.3
142	RSTWL3	4.8	4.7
143	RSTR3	4.8	4.7
144	LM403	2.7	2.2
145	LM402	2.5	2.2
146	LM401	0.8	2.2
147	LM400	2.2	2.2
148	LM307	0	0.6
149	LM306	1.7	1.9
150	WEL3	0.8	3.6
151	REL3	1.4	0.6
152	VSS	0	0
153	VDD	4.8	4.7
154	LM317	2.9	2.5
155	LM316	2.0	2.2
156	LM315	2.8	0.6
157	LM314	2.8	2.1
158	LM305	3.0	0.6
159	LM304	3.2	2.0
160	LM303	2.6	0.6
161	LM302	0	0.5
162	LM301	2.4	0
163	LM300	1.9	2.2
164	LM313	2.0	1.3
165	LM312	1.8	2.0
166	VSS	0	2.2
167	LM311	1.8	1.9
168	LM310	1.7	2.1
169	LM12I7	2.9	2.7
170	LM12I6	2.1	2.3
171	LM12O7	2.5	1.7
172	LM12O6	1.3	1.7
173	LM12O5	0	2.2
174	LM12O4	2.5	1.0
175	LM12O3	2.0	1.0
176	LM12O2	1.1	1.4
177	LM12I5	2.7	2.2
178	LM12I4	2.8	2.2
179	WCK123	2.4	3.0
180	VSS	0	0
181	VDD	0	1.3
182	LM12I3	1.9	1.2
183	LM12I2	1.7	2.2
184	LM12O1	0	1.3
185	LM12O0	1.0	0
186	MI7	0	1.3
187	MI6	5.1	2.2
188	MI5	5.1	2.2
189	LM12I1	1.8	2.0
190	LM12I0	1.7	2.1
191	RSTWL12	4.7	4.7
192	RSTR12	4.7	2.1
193	VSS	0	0
194	VDD	4.7	4.7
195	REL2	0.7	1.4
196	WEL2	0	0.7
197	MI4	5.1	0.8
198	MI3	5.1	2.1
199	MI2	0	2.0
200	NC	0	2.0
201	NC	0	2.0
202	VSYNC	0	2.0
203	CRCT	0	2.0
204	MI1	5.1	1.2

HD MAIN (HDC)

— IC81 —

PIN No.	PIN NAME	MODE	
		REC	PB
205	MIO	0.6	0.6
206	PLL17M	0	2.9
207	VSS	0	0
207	VDD	4.8	4.8
209	MCPD	1.1	2.0
210	MTP	4.8	3.1
211	MHDT	0	2.6
212	MSYNC	0	0
213	MSHP1	4.8	0
214	MSHP2	4.8	0
215	MGP	4.8	0
216	ADV	2.4	0.6
217	SCPD	1.0	1.9
218	VSS	0	0
219	VDD	4.8	4.8
220	XACK	0	0
221	BCK	4.7	0.6
222	XTCK	0.6	0
223	XMM	0	0
224	PLL17S	0	0.6
225	SI6	0	2.2
226	SI7	0	0.6
227	STP	4.8	3.1
228	SHDT	0	2.5
229	SGP	4.8	0
230	VSS	0	0
231	SSYNC	0	0
232	SSHPI	4.8	0
233	SSHPII	4.8	0.6
234	SI5	5.2	2.0
235	SI4	5.2	1.6
236	SI3	0	0.6
237	PLL17	2.3	0
238	SI2	5.2	1.2
239	SI1	0	1.2
240	SIO	0	1.1
241	MO0	1.9	0
242	VSS	0	0
243	VDD	4.8	4.7
244	R17MDA	2.6	0
245	MO1	1.8	0.7
246	MO2	4.5	0
247	HS17	1.9	4.7
248	MO3	0.7	0
249	MO4	2.8	0
250	MO5	2.4	0.7
251	BSVP7	2.9	2.5
252	BSVP6	1.3	2.0
253	VSS	0	0
254	VDD	4.9	4.7
255	BSVP5	1.1	0.9
256	BSVP4	1.2	2.0

PIN No.	PIN NAME	MODE	
		REC	PB
1	WEM	0.7	0.7
2	WES	0.7	0.7
3	WEC	2.8	0.8
4	PBIN3	3.4	0
5	PBIN2	0.8	0
6	PBIN1	2.3	5.2
7	PBINO	2.2	5.1
8	YCK	2.2	2.0
9	YIN7	1.5	3.9
10	YIN6	1.7	3.8
11	VSS	0	0
12	VDD	4.8	4.7
13	SRCK	1.9	2.0
14	RSTR	4.8	4.7
15	REM	0.8	2.8
16	YIN5	2.3	0
17	YIN4	2.1	3.8
18	YIN3	2.0	3.8
19	YIN2	1.7	0
20	YIN1	2.3	0
21	YIN0	1.5	0
22	RES	0.8	2.8
23	REC	0.8	0.7
24	VSS	0	0
25	VDD	4.7	4.7
26	FLDMI7	1.7	1.9
27	FLDMI6	1.9	1.9
28	FLDMI5	2.7	0.8
29	FLDMI4	3.2	2.9
30	FLDMO7	1.2	0.7
31	FLDMO6	1.3	0.7
32	FLDMO5	2.5	3.7
33	FLDMO4	3.0	3.7
34	FLDMO3	1.2	0.6
35	FLDMO2	1.0	0.6
36	FLDMI3	1.5	2.0
37	FLDMI2	1.5	1.6
38	VSS	0	0
39	FLDMI1	0	1.8
40	FLDMI0	1.9	1.8
41	FLDSI7	1.8	1.8
42	FLDSI6	1.9	1.9
43	FLDMO1	1.2	0.5
44	FLDMO0	1.1	0.6
45	FLDSO7	1.4	1.0
46	FLDSO6	1.4	1.0
47	FLDSO5	2.0	2.6
48	FLDSO4	2.5	2.9
49	FLDSI5	2.7	2.7
50	FLDSI4	3.3	2.9
51	FLDSI3	1.6	2.0
52	VSS	0	0
53	VDD	4.8	4.8
54	FLDSI2	1.5	1.5
55	FLDSI1	1.8	0.8
56	FLDSI0	2.0	1.9
57	FLDSO3	1.6	1.7
58	FLDSO2	1.1	1.1
59	FLDSO1	1.7	1.7
60	FLDSO0	1.5	1.6
61	FLDCI7	3.4	2.7
62	FLDCI6	1.2	1.5
63	FLDCI5	1.4	1.6
64	FLDCI4	1.4	1.6
65	VSS	0	0
66	VDD	4.9	4.7
67	FLDCI3	1.4	1.7
68	FLDCI2	1.4	1.7

PIN No.	PIN NAME	MODE	
		REC	PB
69	FLDC07	0.9	3.5
70	FLDC06	0.9	0.5
71	FLDC05	1.0	0.6
72	FLDC04	0.9	0.6
73	FLDC03	0.9	0.6
74	FLDC02	0.8	0.6
75	FLDC01	0.7	0.6
76	FLDC00	0.8	0.6
77	FLDC11	1.3	1.8
78	FLDC10	1.5	1.6
79	VSS	0	0
80	VDD	4.8	4.7
81	RSTM1	0	0
82	RSTM2	0	0
83	RSTS1	0	0
84	AGCD	2.3	2.3
85	MDFF	2.4	2.3
86	SDFF	2.4	2.3
87	WEM1	2.2	2.2
88	WEM2	2.3	2.3
89	OBCPD	2.5	2.3
90	VSS	0	0
91	VDD	4.8	4.8
92	XSM	0	0.7
93	XTST	4.8	4.7
94	SDI	0	0
95	SDO	0	0
96	WER	1.7	1.7
97	WEB	1.8	1.8
98	RER	1.7	1.7
99	REB	1.7	1.6
100	MEMV	0	0
101	SEMV	0	0
102	VSS	0	0
103	REM1	2.2	2.2
104	RM2	2.2	2.2
105	IEM1	4.5	4.5
106	SD2	0	0
107	SD1	0	0
108	SCK	0	0
109	NTCT	0	0
110	PBO4	0	0
111	MPX1	1.2	1.2
112	MPX2	1.2	1.2
113	MPX3	0.6	0.7
114	VSS	0	0
115	VDD	4.7	4.8
116	HSYNC	0	0
117	IGFLGA	0	0
118	WRE	4.0	4.1
119	SYMO	0.6	1.4
120	SVM1	1.5	1.4
121	RSTWRH	0	0
122	IMODE1	4.6	4.6
123	IMODE3	4.6	4.7
124	HS14	4.4	4.4
125	VSS	0	0
126	VDD	4.7	4.8
127	14MO	1.8	2.2
128	SVM2	0.8	1.2
129	SVM3	1.1	1.2
130	SVM4	2.5	2.5
131	SVM5	1.9	2.2
132	NOSYNC	0	0
133	MCLR	3.5	3.8
134	SVM6	1.4	1.6
135	SVM7	1.3	1.5
136	OE	0	0

PIN No.	PIN NAME	MODE	
		REC	PB
137	SV3OM	2.2	2.1
138	MSVR0	1.0	2.4
139	VSS	0	0
140	VDD	4.8	4.7
141	MSVR1	2.2	2.3
142	MSVR2	1.2	2.4
143	MSVR3	1.4	2.1
144	SVS0	0.7	1.4
145	SVS1	1.5	1.5
146	SVS2	0.9	1.4
147	SVS3	1.1	1.0
148	SVS4	2.5	2.2
149	SVS5	1.9	1.8
150	MSVR4	3.7	3.0
151	MSVR5	2.8	2.6
152	VSS	0	0
153	VDD	4.8	4.7
154	MSVR6	2.0	2.0
155	MSVR7	1.9	1.8
156	SSVR0	1.3	2.3
157	SSVR1	2.7	2.3
158	SVS6	1.4	1.4
159	SVS7	1.3	1.3
160	SVC0	0.7	1.1
161	SVC1	0.7	1.4
162	SVC2	0.6	1.2
163	SVC3	0.6	1.1
164	SSVR2	1.3	2.3
165	SSVR3	1.9	2.1
166	VSS	0	0
167	SSVR4	3.7	3.0
168	SSVR5	2.7	2.6
169	SSVR6	2.0	2.0
170	SSVR7	1.9	1.8
171	SVC4	0.7	1.1
172	SVC5	0.6	1.1
173	SVC6	0.6	0.8
174	SVC7	1.7	2.0
175	RCO7	4.7	3.4
176	RCO6	0	1.2
177	RSVR0	1.6	1.9
178	RSVR1	1.3	2.2
179	RSVR2	1.2	1.8
180	VSS	0	0
181	VDD	4.8	4.8
182	RSVR3	1.4	1.8
183	RSVR4	1.4	1.9
184	RSVR5	1.4	1.8
185	RCO5	0	1.4
186	RCO4	0	1.5
187	RCO3	0	1.4
188	RCO2	0	1.6
189	RCO1	0	1.6
190	RCO0	0	1.6
191	RSVR6	1.3	1.6
192	RSVR7	3.1	2.5
193	VSS	0	0
194	VDD	4.8	4.7
195	BSVR0	1.5	1.9
196	BSVR1	1.1	2.1
197	BSVR2	1.2	2.1
198	BSVR3	1.4	1.9
199	PBO7	4.8	3.1
200	PBO6	0	0.7
201	PBO5	0	0.7
202	PBO4	0.6	1.5
203	PBO3	0	1.7
204	PBO2	0	1.6

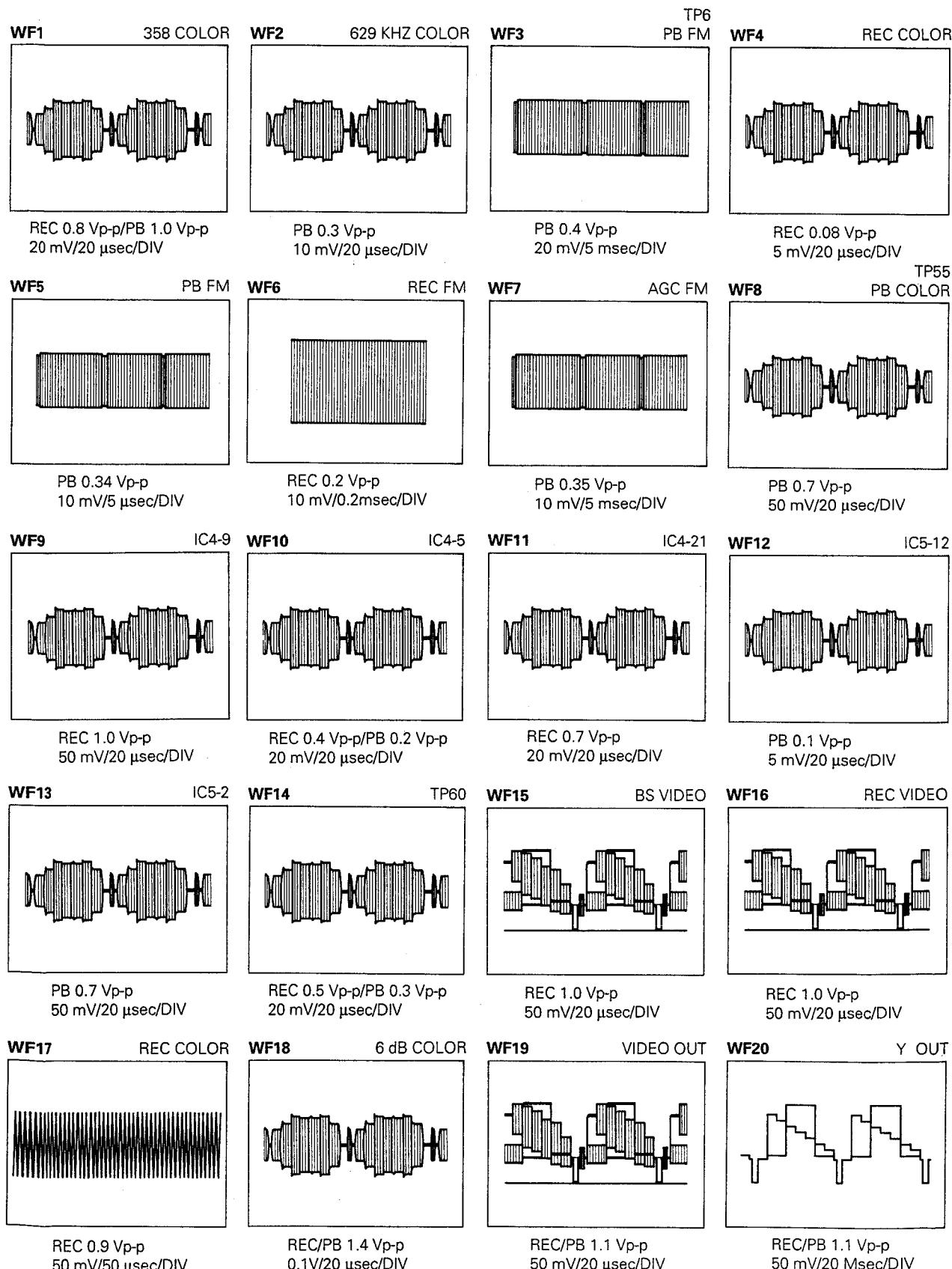
PIN No.	PIN NAME	MODE	
		REC	PB
205	BSVR4	1.1	1.8
206	BSVR5	1.1	1.6
207	VSS	0	0
208	VDD	4.8	4.7
209	BSVR6	1.3	1.8
210	BSVR7	3.2	2.6
211	PBO1	0	1.7
212	PBO0	0	1.7
213	NC	0	0
214	YGO7	0	1.8
215	YGO6	4.8	0.6
216	YGO5	0	2.0
217	YGO4	0	0.6
218	VSS	0	0.6
219	VDD	4.7	0.6
220	XACK	0	0.6
221	BCK	0	0
222	XTCK	0	0
223	XMM	0	0.6
224	YGO3	0	0.6
225	YGO2	4.7	0.6
226	YGO1	0	1.6
227	YGO0	0	0.6
228	OYCPD	3.2	1.2
229	IX3OI	2.3	2.3
230	VSS	0	0
231	PLL14	2.1	2.1
232	PLL30	2.3	0.7
233	PRIN7	1.3	0
234	PRIN6	3.5	5.1
235	PRIN5	3.6	5.1
236	PRIN4	3.6	0
237	NTHS	4.6	4.5
238	PLLCD	2.1	2.0
239	CCP	4.7	4.7
240	ORCPD	2.6	0.7
241	IX14I	2.4	2.3
242	VSS	0	0
243	VDD	4.8	4.8
244	CCK	1.4	1.4
245	PRIN3	3.9	5.1
246	PRIN2	3.6	0
247	PRIN1	2.8	0
248	PRIN0	1.5	5.1
249	PBIN7	2.0	0
250	PBIN6	3.1	5.1
251	PBIN5	1.8	0
252	PBIN4	3.2	5.1
253	VSS	0	0
254	VDD	4.8	4.8
255	SWCK	2.3	2.0
256	RSTW	4.6	4.6

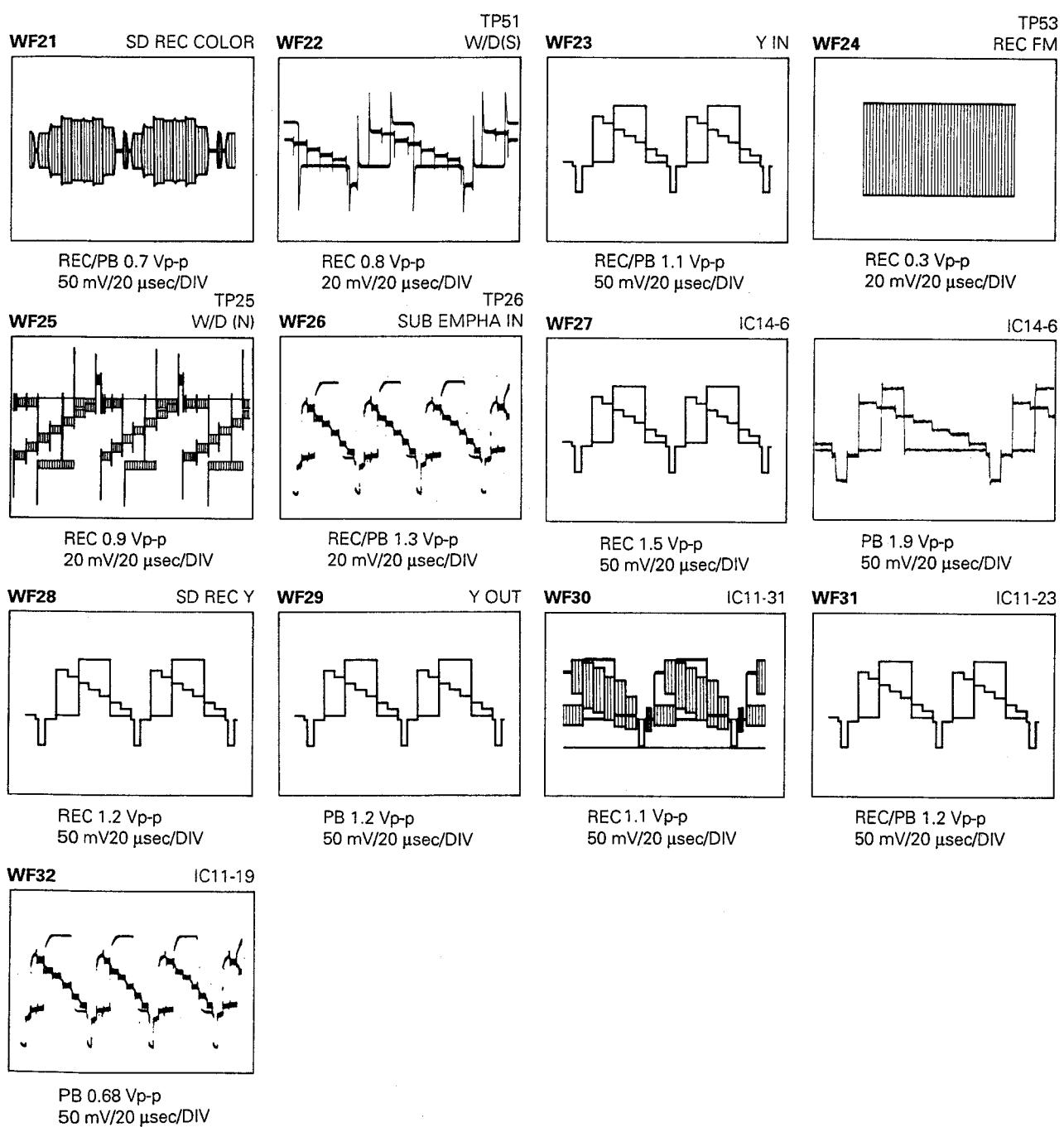
4.49 WAVEFORMS

— NTSC VIDEO —

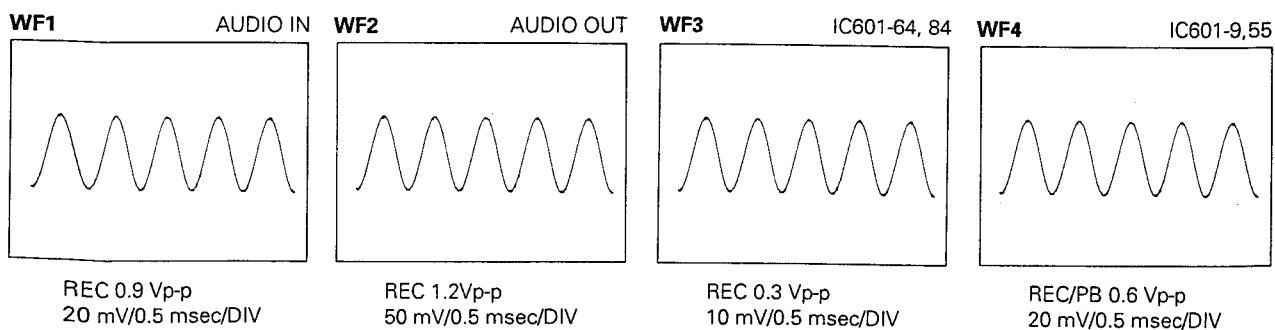
- Notes:**
- For measurement of waveforms shown below, an oscilloscope equipped with a 10:1 probe was used.
 - Waveform whose measurement mode names are headed by "HD" were measured as described below.

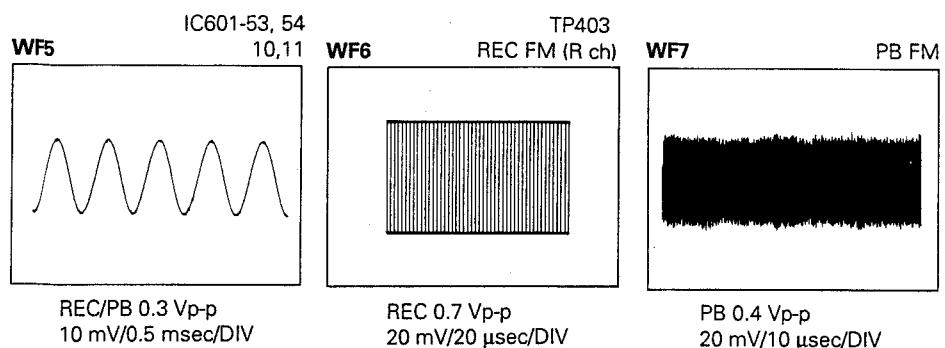
REC : HD (high definition) color-bar signal generated by an HDTV ("Hi-vision" system in this case) signal generator was recorded on a W-VHS tape and the recording waveform (voltage) was measured.
 PB : HD color-bar signal recorded on a W-VHS tape was played back and the playback waveform (voltage) was measured.



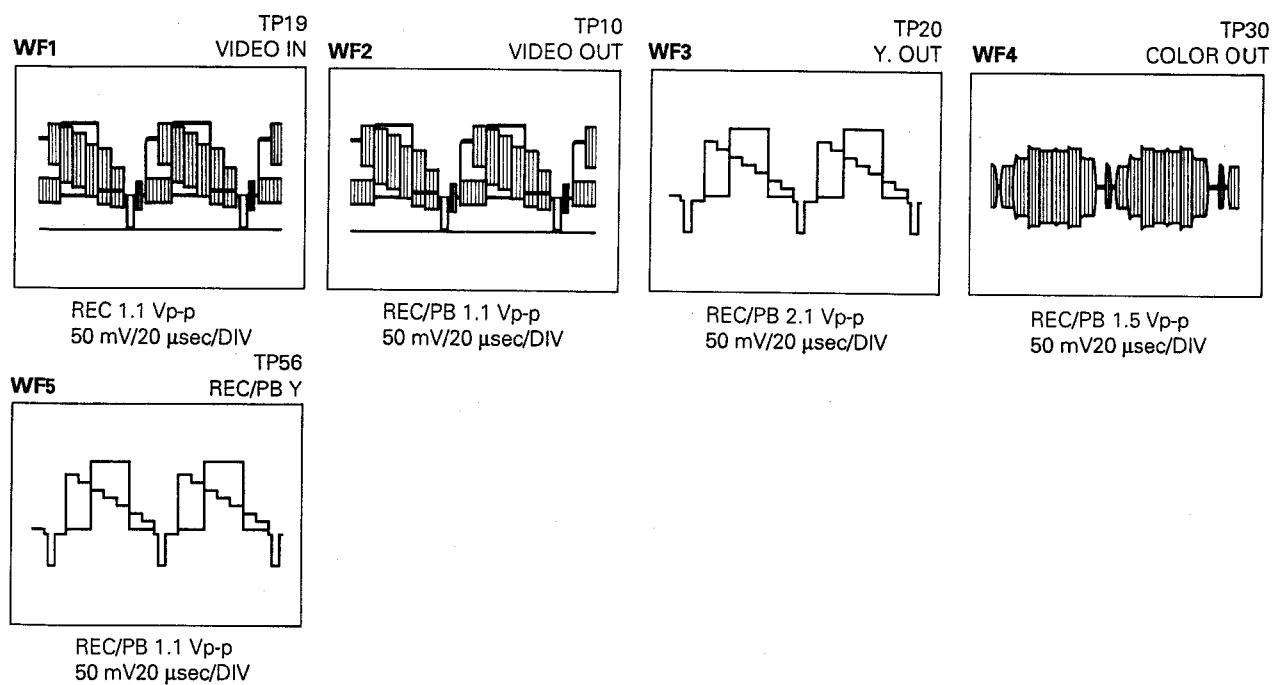


— AUDIO IN/OUT —

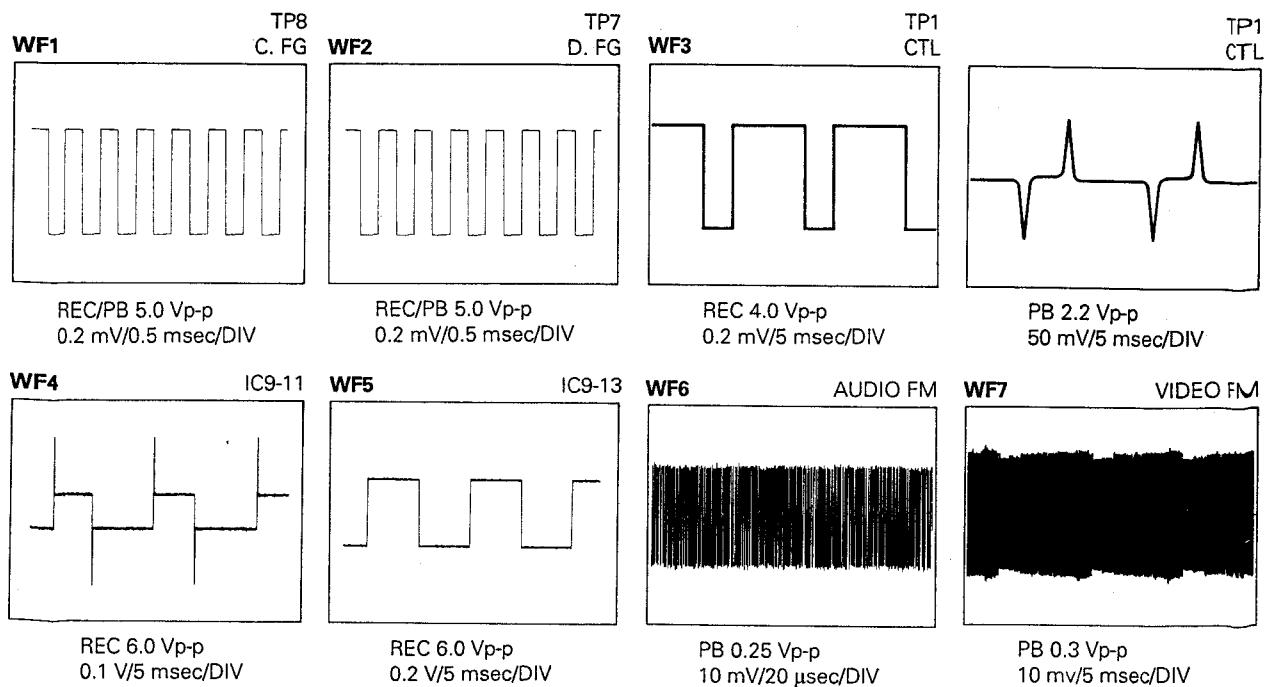




— NTSC VIDEO IN/OUT —

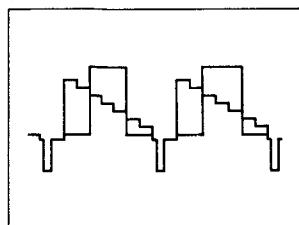


— SERVO/M-CTL —

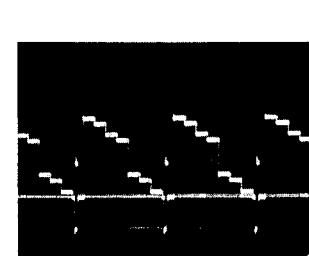


— W-MAIN VIDEO —

WF1 TP301

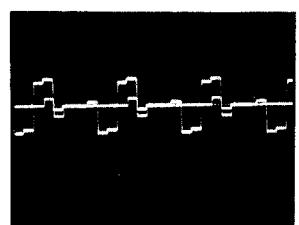


REC 1.9 Vp-p
0.1 V/20 μsec/DIV

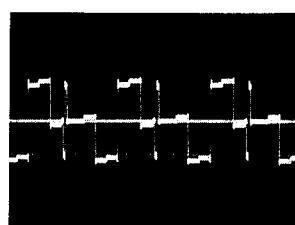


HD REC 1.9 Vp-p
50 mV/10 μsec/DIV

WF2 TP302

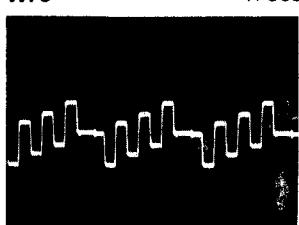


REC 1.0 Vp-p
50 mV/20 μsec/DIV

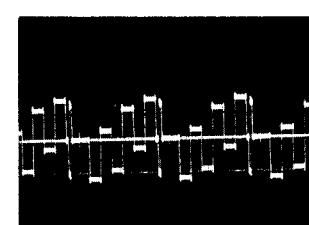


HD REC 1.4 Vp-p
0.1 V/10 μsec/DIV

WF3 TP303

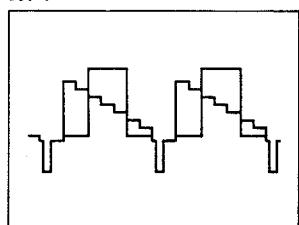


REC 1.0 Vp-p
50 mV/20 μsec/DIV



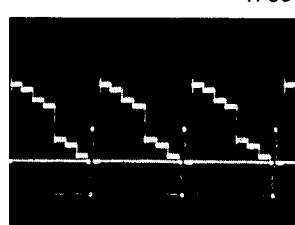
HD REC 1.4 Vp-p
0.1 V/10 μsec/DIV

WF4



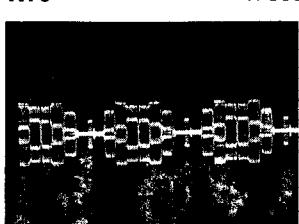
PB 1.9 Vp-p
50 mV/20 μsec/DIV

TP304

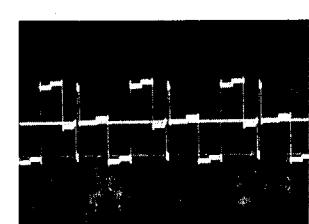


HD PB 1.9 Vp-p
50 mV/20 μsec/DIV

WF5 TP305



PB 1.0 Vp-p
50 mV/20 μsec/DIV



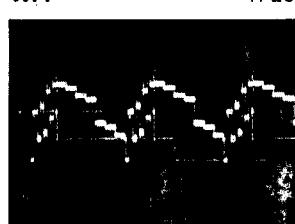
HD PB 1.3 Vp-p
50 mV/10 μsec/DIV

WF6 TP306



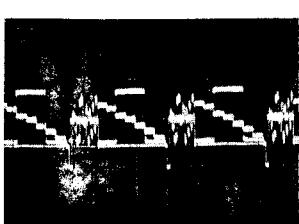
HD PB 1.3 Vp-p
50 mV/10 μsec/DIV

WF7 TP204



HD REC 1.3 Vp-p
50 mV/20 μsec/DIV

WF8 TP203



REC 1.3 Vp-p
50 mV/20 μsec/DIV

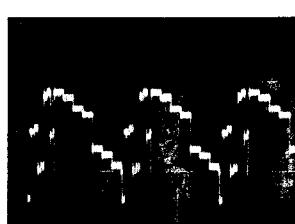


HD REC 1.3 Vp-p
50 mV/20 μsec/DIV

WF9 TP201



REC/PB 1.8 Vp-p
50 mV/20 μsec/DIV



HD REC/PB 1.8 Vp-p
50 mV/20 μsec/DIV

WF10 TP202



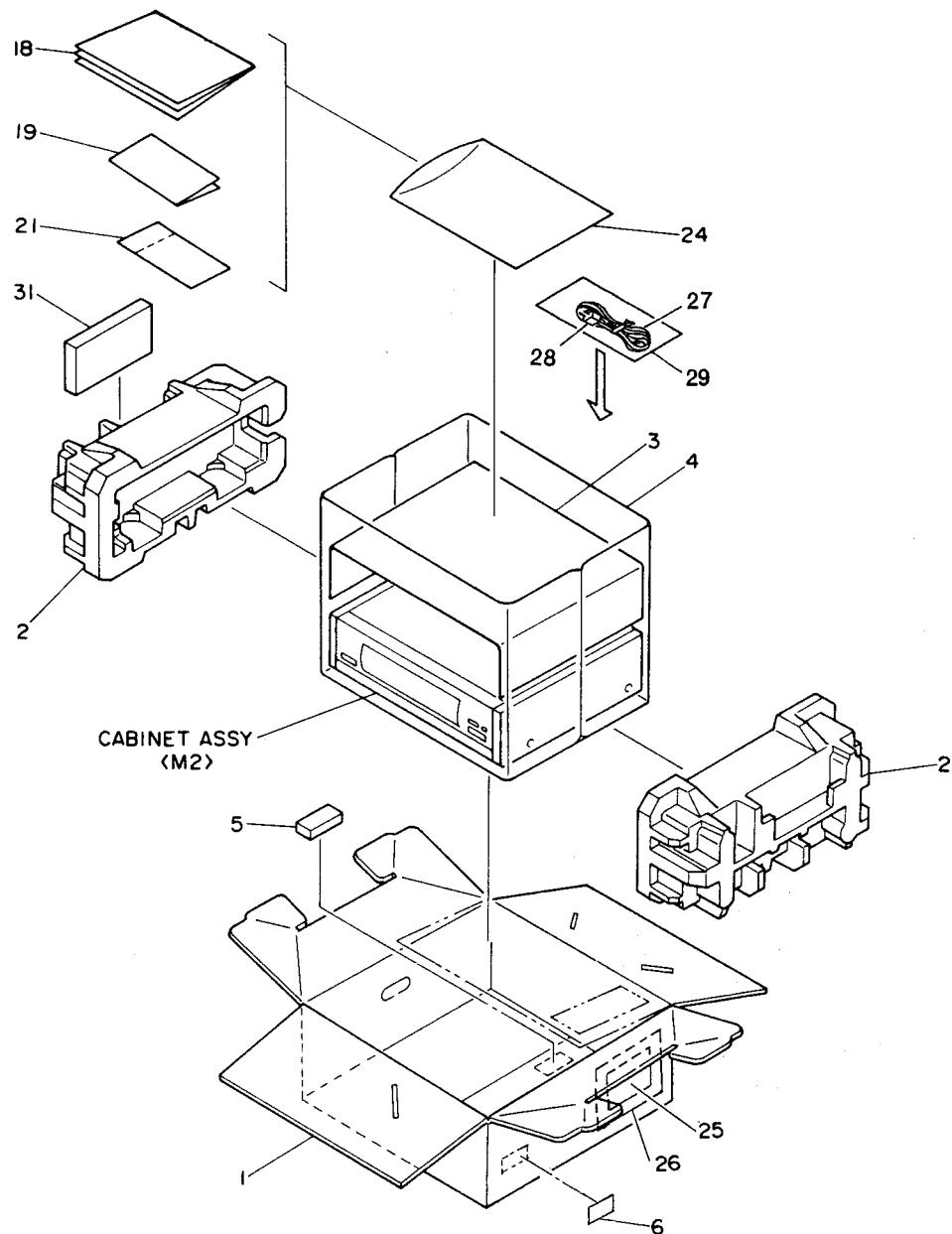
HD REC/PB 1.8 Vp-p
50 mV/20 μsec/DIV

SECTION 5 PARTS LIST

SAFETY PRECAUTION

Parts identified by the  symbol are critical for safety. Replace only with specified part numbers.

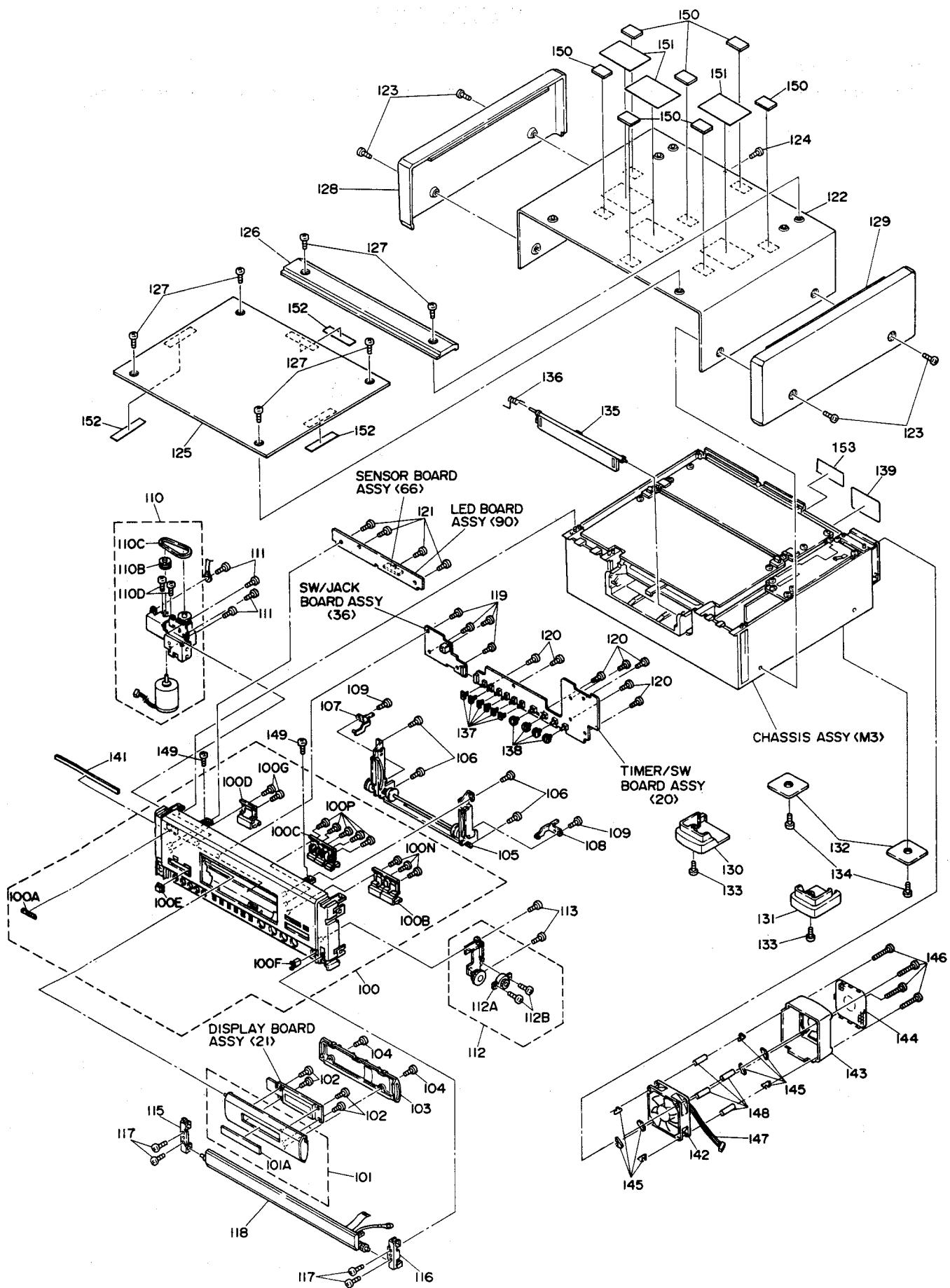
5.1 PACKING ASSEMBLY <M1>



REF No.	PART No.	PART NAME, DESCRIPTION	#  REF No.	PART No.	PART NAME, DESCRIPTION

PACKING ASSEMBLY <M1>					
1	PQ35279	PACKING CASE	19	PU33941-3-3	SAFETY CAUTION
2	PQ34969A-2	CUSHION ASSY	21	BT-20104A	TOLL FREE CARD
3	PQ41026-32	PROTECT SHEET	24	QPGA025-03505	POLY BAG
4	PQM30021-87	POLY BAG	25	BT-20103A	WARRANTY CARD
5	PQ46391	CUSHION(B)	26	PU54821	POLY BAG
6	YQ30938-4	LABEL(SERIAL)	27	QMP9003-022	POWER CORD W.P.
18	SL96020	INSTRUCTIONS	28	PUP40003-7	AIR CAP
			29	QPGB020-02804	POLY BAG
			31	PQ35089-9	CLEANING TAPE

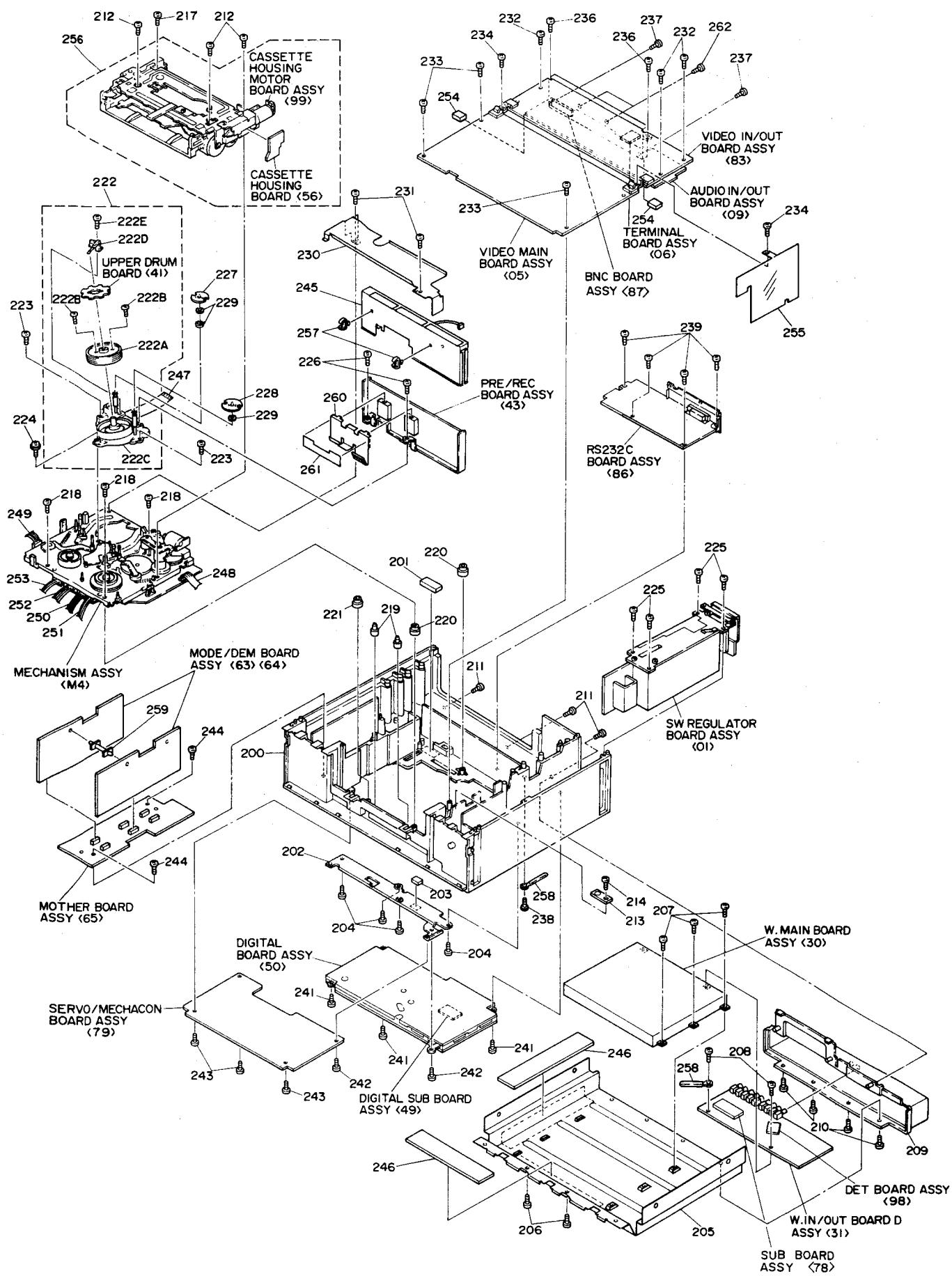
5.2 CABINET ASSEMBLY <M2>



#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION

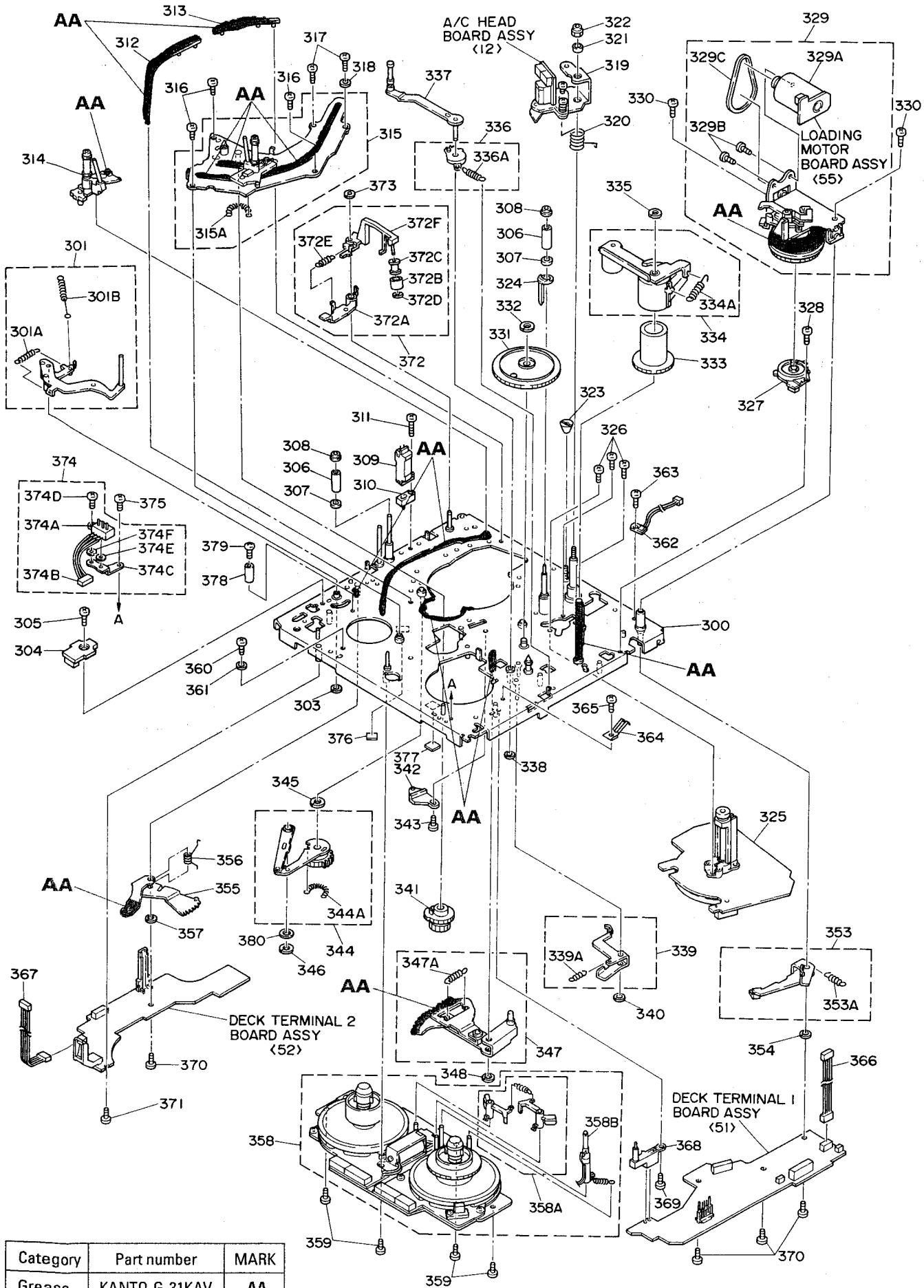
			CABINET ASSEMBLY < M2 >				
100	PQ11382G	FRONT PANEL ASSY		120	SDSF2608Z	SCREW	
100A	PQ42473-4	JVC MARK		121	SDSF2608Z	SCREW	
100B	PQ34365-2	BUTTON(OPE1)		△ 122	PQ11320-4-7	TOP COVER	
100C	PQ34366-2	BUTTON(OPE2)		123	PQ43930-6	SPECIAL SCREW	
100D	PQ34367-2	BUTTON(POWER)		124	SDSF3010M	SCREW	
100E	PQ45716	WINDOW (IR)		125	PQ11465-5	PLATE(T.COVER)1	
100F	PU60005	PUSH OPEN UNIT		126	PQ21441-5	PLATE(T.COVER)2	
100G	SDSF2005Z	SCREW, X2		127	PQ45979-3	SPECIAL SCREW	
100N	SDSF2005Z	SCREW, X3		128	PQ11384-2-3	SIDE PANEL(L)	
100P	SDSF2005Z	SCREW, X5		129	PQ11385-2	SIDE PANEL(R)	
101	PQ34344E	CASSETTE DOOR ASSY		130	PQ46235D	FOOT(FL)ASS' Y	
101A	PQ45715	WINDOW(CASSETTE DOOR)		131	PQ46236D	FOOT(FR)ASSY	
102	SDSF2608Z	SCREW, X4		132	PQ46237B	FOOT(RE)ASSY	
103	PQ21390	COVER(D.REAR)		133	SDSF3010R	SCREW, X2	
104	SDSF2608Z	SCREW, X2		134	SDSG3006R	SCREW, X2	
105	PQ34346A-7	MAIN GEAR ASS' Y		135	PQ34271-6	CASSETTE HOUSING DOOR	
106	SDSF2608Z	SCREW, X4		136	PQ43772	TORSION SPRING	
107	PQ45724A-1	BRACKET(ARM L)ASSY		137	PQ45749-2	KNOB(SLIDE), X6	
108	PQ45721A-1	BRACKET(ARM R)ASSY		138	PQ45750-2	KNOB(VOLUM), X4	
109	SDSF2606Z	SCREW, X2		△ 139	PQ34277-3-2	RATING LABEL	
110	PQ45728A-4	GEAR UNIT(1) AY		141	PQM30029-204	SPACER	
110B	PQ43546-1-2	MOTOR PULLEY		△ 142	PELM0189	FAN MOTOR	
110C	PQM30003-32	BELT		143	PQ21409-5	COVER(FAN)	
110D	SPSP3003Z	SCREW, X2		144	PQ34420-2	PLATE(FAN)	
111	SDSF2610Z	SCREW, X4		145	PQ45753	SPACER(FAN), X8	
112	PQ45746A	GEAR UNIT(2)ASSY		146	SPSP3035M	SCREW, X4	
112A	PEME0916	DAMPER UNIT		147	PW30215-0332413	WIRE	
112B	SDSG2005Z	SCREW, X2		148	PQ46157	SPACER, X4	
113	SDSF2608Z	SCREW, X2		149	SDSF3010Z	SCREW, X2	
115	PQ46101A-1	BRACKET(L)ASSY		150	PQM30029-200	SPACER, X7	
116	PQ34772-1-1	BRACKET(SHAFT)		151	PQM30029-201	SPACER, X3	
117	SDSF2608Z	SCREW, X4		152	PQ46143	SPACER, X3	
118	PEAS2091-06	DOOR ASSY		△ 153	PU47342	STICKER	
119	SDSF2608Z	SCREW					

5.3 CHASSIS ASSEMBLY <M3>



#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
<*****							
			CHASSIS ASSEMBLY < M3 >				
4	200	PQ11314-4	BOTTOM CHASSIS		229	Q03093-831	WASHER, X3
	201	PQM30029-196	SPACER		230	PQ21368-2	DRUM SHIELD
	202	PQ21411	STAY		231	SDST2606Z	SCREW, X2
	203	PQM30029-195	SPACER		232	SDSF3010Z	SCREW, X3
	204	SDSF3008Z	SCREW, X4		233	SDSF3010Z	SCREW, X3
	205	PQ11629-2	BOTTOM COVER		234	SDSF3010Z	SCREW, X2
	206	SDSF3010Z	SCREW, X2		236	SDSF3010Z	SCREW, X2
	207	SDSG3006Z	SCREW, X3		237	SDSF3010M	SCREW, X2
	208	SDSG3006Z	SCREW, X2		238	SDSF3010Z	SCREW
	209	PQ21763B	COVER (TERMINAL) ASSY		239	SDSF3010Z	SCREW, X4
	210	SDST3005M	SCREW, X4		241	SDSF3010Z	SCREW, X3
	211	SDSF3010M	SCREW, X3		242	SDST3006Z	SCREW, X2
	212	SDST2608Z	SCREW, X3		243	SDSF3010Z	SCREW, X3
	213	PQ46286-1-2	TOP BRACKET		244	SDSF3010Z	SCREW, X2
	214	SDSF3010Z	SCREW		245	PQ35099A	SHIELD CASE ASSY, (PRE/REC)
	217	SDSP2605M	SCREW		246	PQ34959-2	FILTER, X2
	218	SPSA4020Z	SCREW, X3		247	ML-PU3939B	WIRE
	219	PQ45977-1-2	BUSHING(1), X2		248	PW30613-10030	WIRE
	220	PQ45978-1-3	BUSHING(2), X2		249	PW30349-0772040	WIRE
	221	PQ45978-2-3	BUSHING(2)		250	PW30218-1012813	WIRE
	222	PDV2324A	DRUM ASSY		251	ML-PU3963A	WIRE
	222A	PDM2251A	UPPER DRUM ASSY		252	PW30218-1003213	WIRE
	222B	PDM4264A	DRUM SCREW ASSY,X2		253	ML-PU3963B	WIRE
	222C	PDM2253A	LOWER DRUM MOTOR ASSY		254	PQM30029-167	SPACER, X2
	222D	PDM4305A	BRUSH ASSY	△	255	PQ34977	SHEET(SW.REG)
	222E	SPSG2606Z	SCREW		256	PUS29609C	CASSETTE HOUSING ASSY
	223	SDSP2610Z	SCREW, X2		257	PU59311-2	WIRE CLAMP, X2
	224	LPSP2612Z	SCREW		258	PU49485-4	WIRE CLAMP, X2
	225	SDSF3010Z	SCREW, X4		259	PEME0946-11	SPACER
	226	SDSG2606Z	SCREW, X2		260	PQ46384	COVER, FOR PRE/REC
	227	PQ45339-2-3	INERTIA PLATE		261	PQ46386	SHEET(COVER)
	228	PQ45339-1-3	INERTIA PLATE		262	SDST3010M	SCREW, X2

5.4 MECHANISM ASSEMBLY <M4>



Category	Part number	MARK
Grease	KANTO-G-31KAV	AA

NOTE: The section marked in AA indicate lubrication and greasing areas.

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION

MECHANISM ASSEMBLY < M4 >							
300		PQ21311B	MAIN DECK ASSY	342		PQ45303	CHANGE RAIL
301		PQ45314C-9	TENSION ARM ASSY	343		SDSP2604Z	SCREW
301A		PQM30001-380-95	TENSION SPRING	344		PQ45298A-4	LOADING GEAR(S) ASSY
301B		PQ46074-1-1	TENSION SPRING	344A		PQM30001-318	TENSION SPRING
303		PQM30017-7	SLIT WASHER	345		Q03091-105	WASHER
304		PU61338	TENSION SENSOR	346		PQM30017-44	SLIT WASHER
305		SDSP2604Z	SCREW	347		PQ45306A-3	ARM GEAR ASSY
306		PQ43526-1-3	TAPE GUIDE, X2	347A		PQM30001-320	TENSION SPRING
307		PQ43670-1-1	GUIDE FLANGE, X2	348		PQM30017-28	SLIT WASHER
308		PQ43506	GUIDE POLE CAP, X2	353		PQ45311A-2	CAPSTAN BRAKE ASSY
309		PEHE0286	FULL ERASE HEAD	353A		PQM30001-322-87	TENSION SPRING
310		PQ45325	F.E.HEAD BASE	354		PQM30017-12	SLIT WASHER
311		SDST2614Z	SCREW	355		PQ34007	CANCEL LEVER
312		PQ33994	GUIDE RAIL 1(S)	356		PQ45313	TORSION SPRING
313		PQ33995	GUIDE RAIL 2(S)	357		PQM30017-12	SLIT WASHER
314		PQ34001E	POLE BASE(S) ASSY	△ 358		PU61347-1-3	REEL MOTOR ASSY
315		PQ45283D-9	LOADING(T) ASSY	358A		M43108	MAIN BRAKE ASSY
315A		PQM30001-348	TENSION SPRING	358B		M43404	LED HOLDER ASSY
316		SDSP2604Z	SCREW,X3	359		SDSP2604Z	SCREW,X4
317		SDSP2608M	SCREW,X2	360		SDST2608Z	SCREW
318		WNS2600N	WASHER	361		WNS2600N	WASHER
319		PQ45326B	A/C HEAD ARM ASSY	362		PU61357	DEW SENSOR
320		PQ44119	TORSION SPRING	363		SDSP2004Z	SCREW
321		PQ44541	SPACER	364		PQ43849	EARTH PLATE
322		PQ44630	NYLON NUT	365		SDST2606Z	SCREW
323		PQ45181	TAPER NUT	366		ML-PU3964A	WIRE
324		PQ44650	TAPE GUARD	367		PW30218-04406	WIRE
△ 325		PU61379	CAPSTAN MOTOR	368		PU61008	CASSETTE SW
326		SPSG2608Z	SCREW,X3	369		SPST2606Z	SCREW
327		PU61339-1-1	ROTARY ENCODER	370		SDSP2604Z	SCREW,X4
328		SDSP2004Z	SCREW	371		SWSP2604Z	SCREW
329		PQ45362B-4	DRIVE ASSY	372		PQ45561A-2	CLEANER ASSY
329A		PQ44300B-1	MODE CONTROL MOTOR ASSY	372A		PQ45436A	CLEANER BASE SUB ASSY
329B		SPSP3003Z	SCREW,X2	372B		PQ44837-2	CLEANER
329C		PQM30003-29	BELT	372C		PQ45689	ROLLER
330		SDSP2604Z	SCREW,X2	372D		PQM30017-38	SLIT WASHER
331		PQ21315-1-2	CONTROL CAM	372E		PQM30001-323	TENSION SPRING
332		PQM30017-28	SLIT WASHER	372F		PQ34047	LIMITTER LEVER
333		PQ21312	PINCH ROLLER CAM	373		PQM30017-6	SLIT WASHER
334		PQ45280A	PINCH ROLLER ARM ASSY	374		PQ46205A-2	METAL TAPE SW ASSY
334A		PQM30001-315	TENSION SPRING	374A		PU61426	CASSETTE SWITCH
335		PQM30017-12	SLIT WASHER	374B		ML-PU3991A	WIRE
336		PQ45319A-3	GUIDE ARM GEAR ASSY	374C		PQ46207-1-1	SW.BRACKET
336A		PQM30001-324	TENSION SPRING	374D		SPSH1740M	SCREW
337		PQ45320B	GUIDE ARM ASSY	374E		PQM30018-61	SPACER
338		PQM30017-6	SLIT WASHER	374F		Q03093-829	WASHER
339		PQ45309A-4	REEL BRAKE ASSY	375		SDST2604Z	SCREW
339A		PQM30001-321-88	TENSION SPRING	376		PQM30029-218	SPACER
340		PQM30017-6	SLIT WASHER	377		PQM30029-219	SPACER
341		PQ34033	LOADING GEAR(T)	378		PQ46376	COLLAR
				379		SPSP2606M	SCREW
				380		Q03093-819	WASHER



SECTION 6

ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the  symbol are critical for safety. Replace only with specified part numbers.

<01>

REF No.	PART No.	PART NAME, DESCRIPTION	#  REF No.	PART No.	PART NAME, DESCRIPTION	

VITCHING REGULATOR BOARD ASSEMBLY <01>						
PWBA	PB10789C	SW REGULATOR BOARD ASSY	D24	or MA7D49 or YG801C04 or 5GWJ2CZ42 YG901C2 or FCF06A20 or FML-12S or MA644	SB DIODE SB DIODE SB DIODE FR DIODE FR DIODE FR DIODE FR DIODE	
C1	FA5311P	IC	D25	ERA18-02-T2 or 1SR153-200-T2 or AU01Z	FR DIODE FR DIODE FR DIODE	
IC3	PQ30RV31	IC	D26	FML-12S or MA644 or YG901C2 or FCF06A20	FR DIODE FR DIODE FR DIODE FR DIODE	
'C4	UPC2405HF	IC	D27	FML-12S or MA644 or YG901C2 or FCF06A20	FR DIODE FR DIODE FR DIODE FR DIODE	
C5	PQ05RF21	IC	D28	1SS133 or MA165	DIODE DIODE	
C6	PQ12RF21	IC	D29	1SS133 or MA165	DIODE DIODE	
IC7	BA10324F	IC	D30	1SS133 or MA165	DIODE DIODE	
	or LM324NS	IC	D31	RD6.2ES-T1B1 or MTZV6.2A or UZ6.2BSA	ZENER DIODE ZENER DIODE ZENER DIODE	
C8	BA10358F	IC	D33	RD3.3ES-T1B1 or UZ3.3BSA	ZENER DIODE ZENER DIODE	
	or XRA10358F	IC	D34	1SS133 or MA165	DIODE DIODE	
J1	2SK1102	FE TRANSISTOR	D35	1SS133 or MA165	DIODE DIODE	
J2	2SA933S	TRANSISTOR	D37	1SS133 or MA165	DIODE DIODE	
	or 2SA1267(YG)-TJK	TRANSISTOR	D39	1SS133 or MA165	DIODE DIODE	
Q3	2SD2144S(UVW)	TRANSISTOR	D40	1SS133 or MA165	DIODE DIODE	
J4	DTA114EU	TRANSISTOR	D41	1SS133 or MA165	DIODE DIODE	
J5	DTC114EU	TRANSISTOR	D42	1SS133 or MA165	DIODE DIODE	
Q6	DTA114EU	TRANSISTOR	D43	1SS133 or MA165	DIODE DIODE	
J7	DTC114EU	TRANSISTOR	D44	1SS133 or MA165	DIODE DIODE	
J8	2SB1068(KU)	TRANSISTOR				
Q9	2SB1068(KU)	TRANSISTOR				
Q10	2SB941P	TRANSISTOR				
J11	2SA1515(QR)	TRANSISTOR				
Q12	2SA1576(QRS)	TRANSISTOR				
Q13	2SC4081(QRS)	TRANSISTOR				
J14	DTA114EU	TRANSISTOR				
J15	2SD2166(R)	TRANSISTOR				
Q17	DTC114EU	TRANSISTOR				
J18	2SK1133	FE TRANSISTOR				
D2	RBA-402	DIODE STACK	R1	QRC122K-225E	RESISTOR	2.2MΩ,1/2W
J3	AG01	FR DIODE	R2	QRD161J-104	RESISTOR	100KΩ,1/6W
J4	AG01	FR DIODE	R3	QRD161J-104	RESISTOR	100KΩ,1/6W
D5	1SR153-200-T2	FR DIODE	R5	QRG032J-683	OMF RESISTOR	68KΩ,3W
	or AU01Z	FR DIODE	R6	QRG032J-683	OMF RESISTOR	68KΩ,3W
	or ERA18-02-T2	FR DIODE	R7	QRX014J-R22Z	MF RESISTOR	0.22Ω,1W
J6	1SS133	DIODE	R8	QRX014G-R10Z	MF RESISTOR	0.1Ω,1W
	or MA165	DIODE	R9	QRX014G-R10Z	MF RESISTOR	0.1Ω,1W
J7	RD20ES-T1B1	ZENER DIODE				
	or UZ20BSA	ZENER DIODE				
J8	MTZ33DT-77	ZENER DIODE				
	or RD33ES-T1B4	ZENER DIODE				
J9	1SS133	DIODE				
	or MA165	DIODE				
D10	MTZV5.1C	ZENER DIODE				
	or RD5.1ES-T1B3	ZENER DIODE				
	or UZ5.1BSC	ZENER DIODE				
D21	MA689	FR DIODE				
D22	HZ24BP	ZENER DIODE				
J23	FMB-24	BARRIER DIODE				
	or F5KQ40B	BARRIER DIODE				

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R10	QRG01DJ-220X	OMF RESISTOR	22Ω,1W	△ C3	QCZ9016-101K	CAPACITOR	100pF
R11	QRD161J-221	RESISTOR	220Ω,1/6W	△ C4	QCZ9016-331K	CAPACITOR	330pF
R12	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	△ C5	QCZ9016-472M	CAPACITOR	0.0047μF
R13	QRD161J-104	RESISTOR	100KΩ,1/6W	△	or QCZ9048-472	CAPACITOR	0.0047μF
R14	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W	C6	PECA0814-477	E CAPACITOR	
R15	QRSA08J-242YN	RESISTOR	2.4KΩ,1/10W	C7	QCZ0212-472	CAPACITOR	0.0047μF,1KV
△ R16	QRZ0077-220X	FUSIBLE RESISTOR	22Ω,1/4W		or QCR13AK-472	CAPACITOR	0.0047μF,1KV
					or QCY53AK-472	CAPACITOR	0.0047μF,1KV
				C8	QCZ0136-101Z	CAPACITOR	100pF
R21	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		or PECA0854-101KZ	CAPACITOR	
R22	QRSA08J-391YN	RESISTOR	390Ω,1/10W		or QCR13AK-101	CAPACITOR	100pF,1KV
R23	QVPC402-151	V RESISTOR,SWD 5V		C9	QEBC1EM-336	E CAPACITOR	33μF,25V
R24	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C10	QFV11HJ-104AZ	F CAPACITOR	0.1μF,50V
R25	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W		or QFV11HJ-104	F CAPACITOR	0.1μF,50V
R26	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C11	QFLA1HJ-471Z	M CAPACITOR	470pF,50V
R27	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W		or QFN31HJ-471	M CAPACITOR	470pF,50V
R28	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C12	QFV11HJ-104AZ	F CAPACITOR	0.1μF,50V
R29	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		or QFV11HJ-104	F CAPACITOR	0.1μF,50V
△ R30	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4W	C13	QCFA1HZ-472	CAPACITOR	0.0047μF,50V
				C14	QFV11HJ-104AZ	F CAPACITOR	0.1μF,50V
R31	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W		or QFV11HJ-104	F CAPACITOR	0.1μF,50V
R32	QRSA08J-331YN	RESISTOR	330Ω,1/10W	C15	QETC1HM-474	E CAPACITOR	0.47μF,50V
R33	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W				
R34	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4W	C21	QCZ0136-101Z	CAPACITOR	100pF
R35	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C23	QEGB1EM-477	E CAPACITOR	470μF,25V
R36	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C24	QETC1EM-227	E CAPACITOR	220μF,25V
R37	QRSA08J-561YN	RESISTOR	560Ω,1/10W	C27	QCZ0136-101Z	CAPACITOR	100pF
R38	QRD161J-471	RESISTOR	470Ω,1/6W	C29	QEMM1AM-398	E CAPACITOR	3900μF,10V
R39	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	C30	QEMM1AM-398	E CAPACITOR	3900μF,10V
R40	QRV144F-1022AY	CMF RESISTOR	10.2KΩ,1/4W				
R41	QRV144F-8451AY	CMF RESISTOR	8.45KΩ,1/4W	C33	QETC0JM-107	E CAPACITOR	100μF,6.3V
R42	QRV144F-9761AY	CMF RESISTOR	9.76KΩ,1/4W	C34	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
R43	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	C36	QEMM1AM-398	E CAPACITOR	3900μF,10V
R44	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C37	QEMM1AM-398	E CAPACITOR	3900μF,10V
R45	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W	C38	QCFA1HZ-103	CAPACITOR	0.01μF,50V
R49	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C39	QETC0JM-107	E CAPACITOR	100μF,6.3V
R50	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C40	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
R51	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C41	QETC1CM-107	E CAPACITOR	100μF,16V
R52	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C42	QETC1AM-226	E CAPACITOR	22μF,10V
R53	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	C44	QETC1CM-226	E CAPACITOR	22μF,16V
R54	QRSA08J-683YN	RESISTOR	68KΩ,1/10W	C45	QCZ0136-101Z	CAPACITOR	100pF
R55	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C47	QEMM1CM-278	E CAPACITOR	2700μF,16V
R56	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	C48	QEMM1CM-278	E CAPACITOR	2700μF,16V
R57	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W	C49	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
R58	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	C50	QETC1CM-107	E CAPACITOR	100μF,16V
R59	QRSA08J-223YN	RESISTOR	22KΩ,1/10W				
R60	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W	C52	QEMM1CM-278	E CAPACITOR	2700μF,16V
				C53	QFV11HJ-823AZ	F CAPACITOR	0.082μF,50V
△ R61	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		or QFV11HJ-823	F CAPACITOR	0.082μF,50V
△ R62	QRZ0077-4R7X	FUSIBLE RESISTOR	4.7Ω,1/4W	C54	QEMM1CM-278	E CAPACITOR	2700μF,16V
R63	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W	C55	QETC1CM-107	E CAPACITOR	100μF,16V
R64	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W	C56	QETC1CM-107	E CAPACITOR	100μF,16V
R65	QRSA08J-391YN	RESISTOR	390Ω,1/10W	C57	QCFA1HZ-103	CAPACITOR	0.01μF,50V
R66	QRG029J-561A	OMF RESISTOR	560Ω,2W	C58	QETC0JM-226	E CAPACITOR	22μF,6.3V
R67	QRG029J-561A	OMF RESISTOR	560Ω,2W	C59	QFV11HJ-393AZ	F CAPACITOR	0.039μF,50V
R68	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W		or QFV11HJ-393	F CAPACITOR	0.039μF,50V
△ C1	QFZ9022-473	F CAPACITOR	0.047μF	C63	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
△ C2	QFZ9022-333	F CAPACITOR	0.033μF	C64	QETC1CM-227	E CAPACITOR	220μF,16V
				C65	QETC1CM-107	E CAPACITOR	100μF,16V

REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
C67	QETC0JM-476	E CAPACITOR 47μF,6.3V	CN11 CN12	PU59555-104R PU59555-2R	CONNECTOR CONNECTOR
L1	PELN0270-330KZ or PELN0640-330KZ or PELN0696-330KZ	COIL 33μH 33μH 33μH	△ CP1	ICP-N15	CP
L2	PELN0966-330L	COIL 33μH	△ F1	QMF51N2-2R0J1	FUSE T2.0A
L3	PU60944-330K	COIL 33μH			
L4	PU60944-330K	COIL 33μH			
L5	PU60944-330K	COIL 33μH			
K1	PELN0662-Z	FERRATE BEADS			*****
K2	PELN0662-Z	FERRATE BEADS			
K3	PELN0662-Z	FERRATE BEADS			
K4	PELN0662-Z	FERRATE BEADS			
K5	PELN0662-Z	FERRATE BEADS			
K7	PELN0662-Z	FERRATE BEADS			
PC1	PC817 or PS2501-1	PH COUPLER PH COUPLER	IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10	JCP0025 LA7332 JCP0027-HT NJM2233BD MC14066BCP AN3211K NJM2233BD BA7602	IC IC IC IC IC IC IC IC
TH1	PESC1133	NEGA THERMISTOR			
△ T1	PGZ02041	SW TRANS	IC11 IC12 IC13 IC14 IC15	JCP0021 MC14066BCP MC74HC04AN PB20577B-02-SS CXL5502P	IC IC IC Y.MOD(JA076-01) IC
ETH1	PQ44695	EARTH PLATE	IC16 IC17 IC18	NJM2234D AN6366NS TC7S04F	IC IC IC
△ FC1	PEMC0965-Z	FUSE CLIP			
△ FC2	PEMC0965-Z	FUSE CLIP			
△ HS1	PEME0889	HEAT SINK	Q1	DTC124ES	TRANSISTOR
△ HS2	PQ34206-1-1	HEAT SINK(1)	Q2	2SC1740S	TRANSISTOR
HS3	PQ34207-1-3	HEAT SINK(2)	Q3	DTC124ES	TRANSISTOR
HS4	PQ44774	HEAT SINK	Q4	2SC3354	TRANSISTOR
LF1	PELN0678	LINE FILTER	Q5 Q6 Q7 Q8	2SC3354 DTA124ES 2SA933S(RS) 2SA933S(RS)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR
SCW1	SDST3006Z	SCREW, X6	Q9	DTC124ES	TRANSISTOR
SCW2	SDSG3008Z	SCREW, X14	Q10	2SC1740S	TRANSISTOR
SPC1	PQM30029-179	SPACER	Q11 Q12 Q13 Q15	2SC1740S DTC124ES 2SC3354 2SA933S(RS)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR
CN1	PU59555-105R	CONNECTOR	Q16	2SC1740S	TRANSISTOR
CN2	PU59555-102	CONNECTOR	Q17	2SA933S(RS)	TRANSISTOR
CN4	PU59555-106	CONNECTOR	Q18	2SC3354	TRANSISTOR
CN5	PU59555-2	CONNECTOR	Q19	DTC144ES	TRANSISTOR
CN6	PU59555-107	CONNECTOR	Q20	2SC1740S	TRANSISTOR
CN7	PU59555-103	CONNECTOR	Q21	2SC1740S	TRANSISTOR
CN8	PU59555-104	CONNECTOR	Q22	2SC3354	TRANSISTOR
CN9	PU60417-103	CONNECTOR	Q23	DTC124ES	TRANSISTOR
CN10	PU59555-3	CONNECTOR			

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	Q24	DTC124ES	TRANSISTOR		Q98	2SA1576(RS)	TRANSISTOR
	Q25	2SC1740S	TRANSISTOR		Q99	2SA1576(S)	TRANSISTOR
	Q26	2SA933S(RS)	TRANSISTOR		Q100	2SA933S(RS)	TRANSISTOR
	Q27	DTC144ES	TRANSISTOR		Q101	2SC1740S	TRANSISTOR
	Q28	2SC3354	TRANSISTOR		Q102	DTC124EU	CHIP D TR
	Q29	2SC3354	TRANSISTOR		Q103	2SA933S(RS)	TRANSISTOR
	Q43	2SC1740S	TRANSISTOR		Q104	2SA933S(RS)	TRANSISTOR
	Q44	DTC124ES	TRANSISTOR		Q105	2SA933S(RS)	TRANSISTOR
	Q45	2SC4081(S)	TRANSISTOR		Q106	2SC4081(RS)	TRANSISTOR
	Q46	2SC4081(S)	TRANSISTOR		Q107	DTC124ES	TRANSISTOR
	Q48	2SA1576(S)	TRANSISTOR		Q108	2SC1740S	TRANSISTOR
	Q49	2SC4081(S)	TRANSISTOR		Q109	2SC4081(RS)	TRANSISTOR
	Q50	2SC4081(S)	TRANSISTOR		Q110	2SC4081(RS)	TRANSISTOR
	Q52	DTA124ES	TRANSISTOR		Q111	2SA1576(RS)	TRANSISTOR
	Q53	2SC4081(RS)	TRANSISTOR		Q112	2SA1576(RS)	TRANSISTOR
	Q54	2SC4081(RS)	TRANSISTOR		Q113	DTC124EU	CHIP D TR
	Q55	2SC1740S	TRANSISTOR		Q114	DTC124EU	CHIP D TR
	Q56	2SC4081(RS)	TRANSISTOR		Q115	DTC124ES	TRANSISTOR
	Q57	2SC4103(PQ)	TRANSISTOR		Q116	DTC124ES	TRANSISTOR
	Q58	2SC4103(PQ)	TRANSISTOR		Q117	DTC124EU	CHIP D TR
	Q60	2SC4081(RS)	TRANSISTOR		Q118	DTC124EU	CHIP D TR
	Q61	2SC4081(RS)	TRANSISTOR		Q119	DTC124EU	CHIP D TR
	Q62	DTA124EU	TRANSISTOR		Q121	DTC124EU	CHIP D TR
	Q63	2SC4081(RS)	TRANSISTOR		Q122	2SC1740S	TRANSISTOR
	Q64	DTC144EU	TRANSISTOR		Q123	2SC4081(RS)	TRANSISTOR
	Q65	2SA1576(RS)	TRANSISTOR		Q124	DTA124ES	TRANSISTOR
	Q66	2SC4103(PQ)	TRANSISTOR		Q126	2SC1740S	TRANSISTOR
	Q68	DTC124ES	TRANSISTOR		Q127	DTC144EU	TRANSISTOR
	Q69	2SA933S(RS)	TRANSISTOR		Q128	2SC1740S	TRANSISTOR
	Q70	2SA933S(RS)	TRANSISTOR		Q129	2SC1740S	TRANSISTOR
	Q71	2SC1740S	TRANSISTOR		Q131	2SC1740S	TRANSISTOR
	Q72	2SC1740S	TRANSISTOR		Q133	2SK105F	FE TRANSISTOR
	Q73	DTA124ES	TRANSISTOR		Q134	2SC4081(RS)	TRANSISTOR
	Q74	2SC1740S	TRANSISTOR		Q135	2SA1576(RS)	TRANSISTOR
	Q75	DTA124ES	TRANSISTOR		Q136	2SC4081(RS)	TRANSISTOR
	Q76	DTC124ES	TRANSISTOR		Q137	DTC143EU	TRANSISTOR
	Q77	2SC3354	TRANSISTOR		Q138	2SA933S(RS)	TRANSISTOR
	Q78	2SC3354	TRANSISTOR		Q139	2SA933S(RS)	TRANSISTOR
	Q79	DTC124EU	CHIP D TR		Q140	DTC124EU	CHIP D TR
	Q80	2SC1740S	TRANSISTOR		Q141	2SA1576(RS)	TRANSISTOR
	Q81	2SC1740S	TRANSISTOR		Q143	2SA1576(RS)	TRANSISTOR
	Q82	2SC1740S	TRANSISTOR		Q144	2SC4081(RS)	TRANSISTOR
	Q83	2SC1740S	TRANSISTOR		Q145	DTC144EU	TRANSISTOR
	Q84	2SA933S(RS)	TRANSISTOR		Q501	2SA1576(S)	TRANSISTOR
	Q85	DTC124ES	TRANSISTOR		Q502	2SA1576(S)	TRANSISTOR
	Q86	2SC1740S	TRANSISTOR		Q503	2SC4081(RS)	TRANSISTOR
	Q87	DTC124ES	TRANSISTOR		Q506	2SA1576(S)	TRANSISTOR
	Q88	2SC1740S	TRANSISTOR		Q507	2SC4081(S)	TRANSISTOR
	Q89	2SA933S(RS)	TRANSISTOR		Q508	2SC4081(S)	TRANSISTOR
	Q90	2SA933S(RS)	TRANSISTOR		Q509	DTA144WU	TRANSISTOR
	Q92	2SC4081(RS)	TRANSISTOR		Q510	2SA1576(S)	TRANSISTOR
	Q93	2SA1576(RS)	TRANSISTOR		Q511	2SC4081(S)	TRANSISTOR
	Q94	2SC4081(RS)	TRANSISTOR		Q512	2SC4081(S)	TRANSISTOR
	Q95	2SC4081(RS)	TRANSISTOR		Q701	2SC4081(S)	TRANSISTOR
	Q96	2SA1576(S)	TRANSISTOR				
	Q97	2SC4081(RS)	TRANSISTOR				

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION
	Q702	2SC4081(S)	TRANSISTOR		D702	DAN202U	DIODE
	Q703	2SA1576(S)	TRANSISTOR		D703	DAN202U	DIODE
	Q704	2SC4081(S)	TRANSISTOR		D705	1SS133	DIODE
	Q705	2SA1576(S)	TRANSISTOR		R1	QRD161J-222	RESISTOR 2.2KΩ,1/6W
	Q706	2SC4081(S)	TRANSISTOR		R2	QRD161J-361	RESISTOR 360Ω,1/6W
	Q707	2SA1576(S)	TRANSISTOR		R4	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	Q708	DTC114GU	TRANSISTOR		R5	QRD161J-560	RESISTOR 56Ω,1/6W
	Q709	DTA144EU	TRANSISTOR		R7	QRD161J-222	RESISTOR 2.2KΩ,1/6W
	D1	1SS133	DIODE		R8	QRD161J-561	RESISTOR 560Ω,1/6W
	D2	1SS133	DIODE		R9	QVPA606-332Z	V RESISTOR,N-EP REC FM LEVEL
	D3	1SS133	DIODE		R10	QVPA606-102Z	V RESISTOR,S-EP REC FM LEVEL
	D4	1SS133	DIODE		R11	QRD161J-152	RESISTOR 1.5KΩ,1/6W
	D5	1SS133	DIODE		R12	QRD161J-562	RESISTOR 5.6KΩ,1/6W
	D6	1SS133	DIODE		R14	QVPA606-102Z	V RESISTOR,S-EP VIDEO EQ
	D7	1SS133	DIODE		R15	QVPA606-102Z	V RESISTOR,S-SP VIDEO EQ
	D8	DAN202U	DIODE		R16	QRD161J-271	RESISTOR 270Ω,1/6W
	D9	DAP202U	DIODE		R17	QRD161J-332	RESISTOR 3.3KΩ,1/6W
	D12	DAP202U	DIODE		R18	QRD161J-333	RESISTOR 33KΩ,1/6W
	D13	DAP202U	DIODE		R19	QRSA08J-183YN	RESISTOR 18KΩ,1/10W
	D14	DAP202U	DIODE		R20	QRD161J-102	RESISTOR 1KΩ,1/6W
	D15	1SS133	DIODE		R21	QRD161J-563	RESISTOR 55KΩ,1/6W
	D16	1SS133	DIODE		R22	QRD161J-153	RESISTOR 15KΩ,1/6W
	D17	1SS133	DIODE		R23	QRD161J-681	RESISTOR 680Ω,1/6W
	D18	1SS133	DIODE		R24	QRD161J-102	RESISTOR 1KΩ,1/6W
	D19	1SS133	DIODE		R25	QRD161J-102	RESISTOR 1KΩ,1/6W
	D20	1SS133	DIODE		R26	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D21	1SS133	DIODE		R29	QRD161J-682	RESISTOR 6.8KΩ,1/6W
	D23	1SS133	DIODE		R30	QRD161J-183	RESISTOR 18KΩ,1/6W
	D24	DAP202U	DIODE		R31	QRD161J-471	RESISTOR 470Ω,1/6W
	D27	1SS133	DIODE		R32	QRD161J-471	RESISTOR 470Ω,1/6W
	D30	1SS133	DIODE		R33	QRD161J-272	RESISTOR 2.7KΩ,1/6W
	D31	1SS133	DIODE		R34	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D33	1SS133	DIODE		R35	QRD161J-561	RESISTOR 560Ω,1/6W
	D34	1SS133	DIODE		R36	QRD161J-561	RESISTOR 560Ω,1/6W
	D35	DAN202U	DIODE		R37	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D36	1SS133	DIODE		R39	QRD161J-392	RESISTOR 3.9KΩ,1/6W
	D38	1SS133	DIODE		R40	QRD161J-102	RESISTOR 1KΩ,1/6W
	D40	1SS133	DIODE		R41	QRD161J-102	RESISTOR 1KΩ,1/6W
	D41	1SS133	DIODE		R42	QRD161J-682	RESISTOR 6.8KΩ,1/6W
	D42	DAP202U	DIODE		R43	QRD161J-821	RESISTOR 82Ω,1/6W
	D43	1SS133	DIODE		R44	QRD161J-821	RESISTOR 82Ω,1/6W
	D44	1SS99	DIODE		R45	QRD161J-103	RESISTOR 10KΩ,1/6W
	D45	1SS99	DIODE		R46	QRD161J-472	RESISTOR 4.7KΩ,1/6W
	D46	DAP202U	DIODE		R48	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D47	DAN202U	DIODE		R49	QRD161J-102	RESISTOR 1KΩ,1/6W
	D48	DAN202U	DIODE		R50	QRD161J-102	RESISTOR 1KΩ,1/6W
	D49	1SS133	DIODE		R51	QRD161J-561	RESISTOR 560Ω,1/6W
	D52	1SS133	DIODE		R52	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D53	DAN202U	DIODE		R53	QRD161J-821	RESISTOR 82Ω,1/6W
	D54	1SS133	DIODE		R54	QRD161J-821	RESISTOR 82Ω,1/6W
	D502	MA728	DIODE		R55	QRD161J-681	RESISTOR 680Ω,1/6W
	D503	MA728	DIODE		R56	QRD161J-122	RESISTOR 1.2KΩ,1/6W
	D701	DAN202U	DIODE		R57	QRD161J-152	RESISTOR 1.5KΩ,1/6W
					R58	QRD161J-472	RESISTOR 4.7KΩ,1/6W
					R59	QRD161J-102	RESISTOR 1KΩ,1/6W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R80	QRD161J-560	RESISTOR	56Ω,1/6W	R141	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R81	QRD161J-182	RESISTOR	1.8KΩ,1/6W	R142	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R83	QRD161J-393	RESISTOR	39KΩ,1/6W	R143	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R84	QRD161J-223	RESISTOR	22KΩ,1/6W	R144	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R85	QRD161J-102	RESISTOR	1KΩ,1/6W	R145	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R86	QRD161J-471	RESISTOR	470Ω,1/6W	R146	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R87	QRD161J-681	RESISTOR	680Ω,1/6W	R147	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R88	QRD161J-102	RESISTOR	1KΩ,1/6W	R148	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R89	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	R149	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R90	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R150	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R91	QRSA08J-561YN	RESISTOR	560Ω,1/10W	R151	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R92	QRSA08J-561YN	RESISTOR	560Ω,1/10W	R152	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R93	QRSA08J-561YN	RESISTOR	560Ω,1/10W	R153	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R96	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R154	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R97	QRSA08J-681YN	RESISTOR	680Ω,1/10W	R155	QRSA08J-911YN	RESISTOR	910Ω,1/10W
R98	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W	R157	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R99	QRSA08J-104YN	RESISTOR	100KΩ,1/10W	R158	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R100	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R162	QRSA08J-106YN	RESISTOR	10MΩ,1/10W
R101	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R163	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R102	QRSA08J-133YN	RESISTOR	13KΩ,1/10W	R164	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R103	QRSA08J-104YN	RESISTOR	100KΩ,1/10W	R165	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R105	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R166	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R106	QRSA08J-202YN	RESISTOR	2KΩ,1/10W	R167	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R107	QRSA08J-202YN	RESISTOR	2KΩ,1/10W	R168	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R108	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W	R169	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R109	QRD161J-331	RESISTOR	330Ω,1/6W	R170	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R112	QVPA606-152Z	V RESISTOR,S-EP REC COLOR LEVE		R172	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R113	QVPA606-152Z	V RESISTOR,S-SP REC COLOR LEVE		R173	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R114	QRD161J-563	RESISTOR	56KΩ,1/6W	R174	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R115	QRD161J-153	RESISTOR	15KΩ,1/6W	R175	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R116	QRD161J-102	RESISTOR	1KΩ,1/6W	R176	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R117	QRD161J-393	RESISTOR	39KΩ,1/6W	R177	QRSA08J-155YN	RESISTOR	1.5MΩ,1/10W
R118	QRD161J-183	RESISTOR	18KΩ,1/6W	R178	QRD161J-822	RESISTOR	8.2KΩ,1/6W
R119	QRD161J-332	RESISTOR	3.3KΩ,1/6W	R179	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R120	QRD161J-102	RESISTOR	1KΩ,1/6W	R180	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R121	QRD161J-681	RESISTOR	680Ω,1/6W	R181	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R122	QRD161J-681	RESISTOR	680Ω,1/6W	R182	QVZ3518-102	V RESISTOR,COLOR COMB GAIN	
R123	QRD161J-331	RESISTOR	330Ω,1/6W	R183	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R124	QRD161J-272	RESISTOR	2.7KΩ,1/6W	R184	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R125	QRD161J-272	RESISTOR	2.7KΩ,1/6W	R185	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R126	QRD161J-681	RESISTOR	680Ω,1/6W	R187	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R127	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W	R188	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R128	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R190	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R129	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R191	QRD161J-821	RESISTOR	820Ω,1/6W
R130	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W	R192	QRD161J-221	RESISTOR	220Ω,1/6W
R131	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R193	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R132	QRSA08J-391YN	RESISTOR	390Ω,1/10W	R194	QRD161J-183	RESISTOR	18KΩ,1/6W
R133	QRSA08J-331YN	RESISTOR	330Ω,1/10W	R195	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R134	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R196	NRVA62D-822N	RESISTOR	8.2KΩ,1/16W
R135	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W	R197	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R136	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R198	QVPA606-152Z	V RESISTOR,S DEVIATION	
R137	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R199	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R138	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R200	QVPA606-103Z	V RESISTOR,S CARRIER	
R139	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R201	NRVA62D-152N	RESISTOR	1.5KΩ,1/16W
R140	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W	R202	QVPA606-223Z	V RESISTOR,S DARK CLIP	
				R203	QVPA606-223Z	V RESISTOR,S WHITE CLIP	

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R204	QRD161J-222	RESISTOR 2.2KΩ,1/6W		R266	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R205	QRD161J-683	RESISTOR 68KΩ,1/6W		R267	QRSA08J-271YN	RESISTOR 270Ω,1/10W
R206	QRD161J-223	RESISTOR 22KΩ,1/6W		R268	QRD161J-102	RESISTOR 1KΩ,1/6W
R207	QRD161J-561	RESISTOR 560Ω,1/6W		R269	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
R210	QRD161J-361	RESISTOR 360Ω,1/6W		R270	QRSA08J-681YN	RESISTOR 680Ω,1/10W
R212	QRD161J-223	RESISTOR 22KΩ,1/6W		R271	QRSA08J-751YN	RESISTOR 750Ω,1/10W
R213	QRD161J-153	RESISTOR 15KΩ,1/6W		R272	QVPA606-103Z	V RESISTOR,S-PB Y LEVEL(2)
R214	QRD161J-561	RESISTOR 560Ω,1/6W		R273	QRD161J-472	RESISTOR 4.7KΩ,1/6W
R215	QRD161J-333	RESISTOR 33KΩ,1/6W		R274	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
R216	QRD161J-103	RESISTOR 10KΩ,1/6W		R275	QRD161J-222	RESISTOR 2.2KΩ,1/6W
R217	QRD161J-472	RESISTOR 4.7KΩ,1/6W		R276	QRD161J-751	RESISTOR 750Ω,1/6W
R220	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		R277	QRD161J-682	RESISTOR 6.8KΩ,1/6W
R221	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		R278	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R222	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W		R279	QRSA08J-560YN	RESISTOR 56Ω,1/10W
R223	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R280	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R224	QRSA08J-363YN	RESISTOR 36KΩ,1/10W		R281	QRD161J-103	RESISTOR 10KΩ,1/6W
R225	QRSA08J-123YN	RESISTOR 12KΩ,1/10W		R282	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R226	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R283	QRD161J-182	RESISTOR 1.8KΩ,1/6W
R227	QRSA08J-621YN	RESISTOR 620Ω,1/10W		R284	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R228	QRSA08J-301YN	RESISTOR 300Ω,1/10W		R285	QRSA08J-561YN	RESISTOR 560Ω,1/10W
R229	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W		R287	QRD161J-182	RESISTOR 1.8KΩ,1/6W
R230	QRD161J-102	RESISTOR 1KΩ,1/6W		R288	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
				R289	QRD161J-132	RESISTOR 1.3KΩ,1/6W
R231	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		R291	QRD161J-392	RESISTOR 3.9KΩ,1/6W
R232	QRD161J-562	RESISTOR 5.6KΩ,1/6W		R292	QRSA08J-750YN	RESISTOR 75Ω,1/10W
R233	QRD161J-242	RESISTOR 2.4KΩ,1/6W		R293	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
R234	QRD161J-162	RESISTOR 1.6KΩ,1/6W		R294	QRD161J-272	RESISTOR 2.7KΩ,1/6W
R235	QRSA08J-622YN	RESISTOR 6.2KΩ,1/10W		R295	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R236	QRD161J-563	RESISTOR 56KΩ,1/6W		R296	QRD161J-122	RESISTOR 1.2KΩ,1/6W
R237	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R297	QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W
R238	QRD161J-472	RESISTOR 4.7KΩ,1/6W		R298	QRD161J-472	RESISTOR 4.7KΩ,1/6W
R239	QRD161J-163	RESISTOR 16KΩ,1/6W		R299	QVPA606-682Z	V RESISTOR,AGC LEVEL
R240	QRD161J-561	RESISTOR 560Ω,1/6W		R300	QRD161J-103	RESISTOR 10KΩ,1/6W
R241	QRD161J-221	RESISTOR 220Ω,1/6W		R301	QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R242	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R302	QRSA08J-333YN	RESISTOR 33KΩ,1/10W
R243	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R303	QRSA08J-153YN	RESISTOR 15KΩ,1/10W
R244	QRD161J-473	RESISTOR 47KΩ,1/6W		R304	QRSA08J-751YN	RESISTOR 750Ω,1/10W
R245	QRSA08J-123YN	RESISTOR 12KΩ,1/10W		R305	QRD161J-751	RESISTOR 750Ω,1/6W
R246	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R306	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R247	QRSA08J-432YN	RESISTOR 4.3KΩ,1/10W		R307	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R248	QRD161J-472	RESISTOR 4.7KΩ,1/6W		R308	QRSA08J-333YN	RESISTOR 33KΩ,1/10W
R249	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R309	QRSA08J-153YN	RESISTOR 15KΩ,1/10W
R250	QRSA08J-911YN	RESISTOR 910Ω,1/10W		R310	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R252	QRD161J-122	RESISTOR 1.2KΩ,1/6W		R311	QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R253	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		R312	QRD161J-223	RESISTOR 22KΩ,1/6W
R254	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		R313	QVPC402-101	V RESISTOR,SD INPUT TCI LEVEL
R255	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R314	QRD161J-123	RESISTOR 12KΩ,1/6W
R256	QRSA08J-183YN	RESISTOR 18KΩ,1/10W		R315	QRD161J-473	RESISTOR 47KΩ,1/6W
R257	QRD161J-122	RESISTOR 1.2KΩ,1/6W		R316	QRD161J-473	RESISTOR 47KΩ,1/6W
R258	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W		R317	QRD161J-102	RESISTOR 1KΩ,1/6W
R259	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R318	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R260	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R319	QRD161J-271	RESISTOR 270Ω,1/6W
R261	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R320	QRD161J-152	RESISTOR 1.5KΩ,1/6W
R262	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R321	QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W
R263	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R322	QVPA606-332Z	V RESISTOR,N-PB Y LEVEL
R264	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R323	QRD161J-333	RESISTOR 33KΩ,1/6W
R265	QRSA08J-561YN	RESISTOR 560Ω,1/10W				

#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R324	QVPA606-223Z	V RESISTOR,S-PB Y LEVEL(1)		R393	QRD161J-333	RESISTOR	33KΩ,1/6W
R327	QRD161J-102	RESISTOR	1KΩ,1/6W	R394	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R328	QRD161J-102	RESISTOR	1KΩ,1/6W	R395	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R329	QRSA08J-563YN	RESISTOR	56KΩ,1/10W	R396	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R330	QRD161J-563	RESISTOR	56KΩ,1/6W	R397	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R331	QRD161J-223	RESISTOR	22KΩ,1/6W	R398	QRD161J-471	RESISTOR	470Ω,1/6W
R332	QRD161J-223	RESISTOR	22KΩ,1/6W	R399	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R333	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W	R400	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R334	QRSA08J-183YN	RESISTOR	18KΩ,1/10W	R401	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R335	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R402	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R336	QRSA08J-224YN	RESISTOR	220KΩ,1/10W	R403	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R337	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W	R404	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R339	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R405	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R340	QRD161J-103	RESISTOR	10KΩ,1/6W	R406	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R341	QRD161J-153	RESISTOR	15KΩ,1/6W	R408	QRD161J-332	RESISTOR	3.3KΩ,1/6W
R342	QRD161J-562	RESISTOR	5.6KΩ,1/6W	R409	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R343	QRD161J-102	RESISTOR	1KΩ,1/6W	R410	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R344	QRSA08J-105YN	RESISTOR	1MΩ,1/10W	R411	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R345	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W	R412	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R347	QVPA606-151Z	V RESISTOR,SUB EMPH INPUT LEVE		R413	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R348	QRD161J-241	RESISTOR	240Ω,1/6W	R414	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R349	QRSA08J-221YN	RESISTOR	220Ω,1/10W	R415	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R350	QRSA08J-242YN	RESISTOR	2.4KΩ,1/10W	R416	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R351	QRD161J-391	RESISTOR	390Ω,1/6W	R417	QRSA08J-184YN	RESISTOR	180KΩ,1/10W
R352	QRD161J-272	RESISTOR	2.7KΩ,1/6W	R419	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R353	QRD161J-332	RESISTOR	3.3KΩ,1/6W	R420	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R356	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R421	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R358	QRD161J-153	RESISTOR	15KΩ,1/6W	R422	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R360	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W	R423	QVPA606-471Z	V RESISTOR,W SD PB Y LEVEL	
R361	QRD161J-393	RESISTOR	39KΩ,1/6W	R424	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R363	QRD161J-681	RESISTOR	680Ω,1/6W	R425	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R364	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W	R426	QRD161J-223	RESISTOR	22KΩ,1/6W
R365	QRSA08J-221YN	RESISTOR	220Ω,1/10W	R427	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R366	QRD161J-433	RESISTOR	43KΩ,1/6W	R428	QRD161J-473	RESISTOR	47KΩ,1/6W
R367	QRD161J-103	RESISTOR	10KΩ,1/6W	R429	QRD161J-473	RESISTOR	47KΩ,1/6W
R368	QRD161J-681	RESISTOR	680Ω,1/6W	R430	QRD161J-0R0	RESISTOR	0Ω,1/6W
R370	QRD161J-105	RESISTOR	1MΩ,1/6W	R431	QRD161J-0R0	RESISTOR	0Ω,1/6W
R371	QRD161J-102	RESISTOR	1KΩ,1/6W	R501	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R372	QRD161J-823	RESISTOR	82KΩ,1/6W	R502	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R373	QRD161J-102	RESISTOR	1KΩ,1/6W	R503	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R374	QRD161J-471	RESISTOR	470Ω,1/6W	R504	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R375	QRD161J-471	RESISTOR	470Ω,1/6W	R505	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R376	QRD161J-331	RESISTOR	330Ω,1/6W	R506	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R377	QVPA606-681Z	V RESISTOR,YNR NC BALANCE		R510	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R378	QRD161J-392	RESISTOR	3.9KΩ,1/6W	R512	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R379	QRD161J-122	RESISTOR	1.2KΩ,1/6W	R513	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R381	QRSA08J-432YN	RESISTOR	4.3KΩ,1/10W	R514	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R384	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R515	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R386	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R516	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R387	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R517	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R388	QRSA08J-101YN	RESISTOR	100Ω,1/10W	R519	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R389	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R520	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R390	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R521	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R391	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W	R522	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R392	QRD161J-153	RESISTOR	15KΩ,1/6W	R523	QRSA08J-102YN	RESISTOR	1KΩ,1/10W

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R524	QRSA08J-331YN	RESISTOR 330Ω,1/10W		C21	QCYA1HK-223	CAPACITOR 0.022μF,50V
R525	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		C22	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R526	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		C23	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R527	QRSA08J-561YN	RESISTOR 560Ω,1/10W		C25	QCSB1HJ-560	CAPACITOR 56pF,50V
R528	QRSA08J-621YN	RESISTOR 620Ω,1/10W		C26	QCSB1HJ-390	CAPACITOR 39pF,50V
R529	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		C28	QCSB1HJ-120	CAPACITOR 12pF,50V
R530	QRSA08J-681YN	RESISTOR 680Ω,1/10W		C29	QCSB1HJ-390	CAPACITOR 39pF,50V
				C30	QEK61CM-107	E CAPACITOR 100μF,16V
R701	QRSA08J-223YN	RESISTOR 22KΩ,1/10W				
R704	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		C31	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R705	NRVA62D-471N	RESISTOR 470Ω,1/16W		C32	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R706	NRVA62D-332N	RESISTOR 3.3KΩ,1/16W		C33	QCBB1HJ-331	CAPACITOR 330pF,50V
R707	NRVA62D-471N	RESISTOR 470Ω,1/16W		C34	QCBB1HJ-151	CAPACITOR 150pF,50V
R708	NRVA62D-471N	RESISTOR 470Ω,1/16W		C37	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R709	NRVA62D-102N	RESISTOR 1KΩ,1/16W		C38	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R710	NRVA62D-392N	RESISTOR 3.9KΩ,1/16W		C39	QEK60JM-476	E CAPACITOR 47μF,6.3V
R711	NRVA62D-471N	RESISTOR 470Ω,1/16W		C42	QCSB1HJ-100	CAPACITOR 10pF,50V
R712	NRVA62D-431N	RESISTOR 430Ω,1/16W				
R713	NRVA62D-122N	RESISTOR 1.2KΩ,1/16W		C53	QCSB1HJ-330	CAPACITOR 33pF,50V
R714	NRVA62D-272N	RESISTOR 2.7KΩ,1/16W		C54	QCFB1HZ-473	CAPACITOR 0.047μF,50V
R715	NRVA62D-471N	RESISTOR 470Ω,1/16W		C55	QCXB1CM-562	CAPACITOR 0.0056μF,16V
R716	NRVA62D-431N	RESISTOR 430Ω,1/16W		C56	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R717	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		C57	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R718	NRVA62D-272N	RESISTOR 2.7KΩ,1/16W		C58	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R719	NRVA62D-101N	RESISTOR 100Ω,1/16W		C59	QFN31HJ-104	M CAPACITOR 0.1μF,50V
R720	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		C60	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R721	QVPAG06-471Z	V RESISTOR,PB COLOR LEVEL		C64	QCFA1EZ-104	CAPACITOR 0.1μF,25V
R722	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		C65	QCFA1EZ-104	CAPACITOR 0.1μF,25V
R723	QRSA08J-333YN	RESISTOR 33KΩ,1/10W		C70	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R724	QRSA08J-223YN	RESISTOR 22KΩ,1/10W				
R725	QRSA08J-225YN	RESISTOR 2.2MΩ,1/10W		C71	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R726	QRSA08J-225YN	RESISTOR 2.2MΩ,1/10W		C72	QETC0JM-107	E CAPACITOR 100μF,6.3V
R727	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		C73	QCFB1EZ-223	CAPACITOR 0.022μF,25V
R728	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W		C74	QEK60JM-476	E CAPACITOR 47μF,6.3V
R729	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		C75	QCYA1HK-682	CAPACITOR 0.0068μF,50V
R730	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		C76	QCYA1HK-103	CAPACITOR 0.01μF,50V
				C77	QCFA1EZ-104	CAPACITOR 0.1μF,25V
R731	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		C78	QCFA1EZ-104	CAPACITOR 0.1μF,25V
R733	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		C79	QCSA1HJ-151	CAPACITOR 150pF,50V
R734	QRD161J-273	RESISTOR 27KΩ,1/6W		C80	QCBB1HJ-151	CAPACITOR 150pF,50V
R735	QRSA08J-753YN	RESISTOR 75KΩ,1/10W				
R736	QRD161J-102	RESISTOR 1KΩ,1/6W		C81	QEK61HM-474	E CAPACITOR 0.47μF,50V
				C82	QEK61HM-474	E CAPACITOR 0.47μF,50V
				C83	QCFA1EZ-104	CAPACITOR 0.1μF,25V
C1	QEK61CM-476	E CAPACITOR 47μF,16V		C84	QETC0JM-337	E CAPACITOR 330μF,6.3V
C2	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C85	QFN31HJ-104	M CAPACITOR 0.1μF,50V
C4	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C86	QCFB1EZ-223	CAPACITOR 0.022μF,25V
C5	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C87	QEK61HM-105	E CAPACITOR 1μF,50V
C6	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C88	QCSB1HJ-120	CAPACITOR 12pF,50V
C7	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C89	QCSB1HK-4R7	CAPACITOR 47pF,50V
C8	QCYA1HK-223	CAPACITOR 0.022μF,50V		C90	QCYA1HK-102	CAPACITOR 0.001μF,50V
C9	QEK61CM-107	E CAPACITOR 100μF,16V				
				C91	QCSA1HJ-220	CAPACITOR 22pF,50V
C11	QCSB1HJ-330	CAPACITOR 33pF,50V		C92	QEK61HM-105	E CAPACITOR 1μF,50V
C12	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C93	QCYA1HK-273	CAPACITOR 0.027μF,50V
C15	QCFB1EZ-223	CAPACITOR 0.022μF,25V		C94	QCYA1HK-682	CAPACITOR 0.0068μF,50V
C16	QCSB1HJ-220	CAPACITOR 22pF,50V		C95	QEK61HM-474	E CAPACITOR 0.47μF,50V
C17	QCSB1HJ-680	CAPACITOR 68pF,50V		C96	QETC1HM-225	E CAPACITOR 22μF,50V
C18	QCSB1HJ-150	CAPACITOR 15pF,50V		C97	QCFA1EZ-104	CAPACITOR 0.1μF,25V
C19	QCSB1HJ-180	CAPACITOR 18pF,50V		C98	QETC1HM-225	E CAPACITOR 22μF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C99	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C161	QEK61HM-104	E CAPACITOR	0.1 μ F,50V
C100	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C162	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C101	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C163	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C102	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C164	QEK61HM-106	E CAPACITOR	10 μ F,50V
C103	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C165	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C104	QETC1HM-105	E CAPACITOR	1 μ F,50V	C166	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C105	QCSA1HJ-561	CAPACITOR	560pF,50V	C167	QCYA1HK-681	CAPACITOR	680pF,50V
C106	QETC1HM-105	E CAPACITOR	1 μ F,50V	C168	QCYA1HK-391	CAPACITOR	390pF,50V
C107	QETC1HM-105	E CAPACITOR	1 μ F,50V	C169	QCSA1HJ-750	CAPACITOR	75pF,50V
C108	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C170	QCYA1HK-222	CAPACITOR	0.0022 μ F,50V
C109	QCYA1HK-473	CAPACITOR	0.047 μ F,50V	C172	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C110	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C173	QCSA1HJ-101	CAPACITOR	100pF,50V
C112	QEK61HM-105	E CAPACITOR	1 μ F,50V	C174	QCFB1EZ-223	CAPACITOR	0.022 μ F,50V
C113	QCYA1HK-473	CAPACITOR	0.047 μ F,50V	C175	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C114	QCSA1HJ-430	CAPACITOR	43pF,50V	C176	QCBB1HJ-221	CAPACITOR	220pF,50V
C115	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C177	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C116	QEK60JM-476	E CAPACITOR	47 μ F,6.3V	C178	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C117	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C179	QEK61HM-225	E CAPACITOR	2.2 μ F,50V
C118	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C180	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C119	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C181	QEK60JM-107	E CAPACITOR	100 μ F,6.3V
C120	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C182	QCSA1HG-161	CAPACITOR	160pF,50V
C121	QCSA1HJ-3R0	CAPACITOR	3pF,50V	C183	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C122	QCSA1HJ-180	CAPACITOR	18pF,50V	C184	QCT25CH-390	CAPACITOR	39pF
C123	QCSA1HJ-181	CAPACITOR	180pF,50V	C185	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C124	QCSA1HJ-240	CAPACITOR	24pF,50V	C189	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C125	QFN41HJ-104	M CAPACITOR	0.1 μ F,50V	C190	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C126	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C191	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C127	QEK60JM-107	E CAPACITOR	100 μ F,6.3V	C192	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C128	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C193	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C129	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C194	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C131	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C195	QEK61CM-226	E CAPACITOR	22 μ F,16V
C132	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C196	QEK60JM-476	E CAPACITOR	47 μ F,6.3V
C133	QEK61CM-106	E CAPACITOR	10 μ F,16V	C197	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C134	QCSA1HJ-101	CAPACITOR	100pF,50V	C198	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C135	QCSA1HJ-101	CAPACITOR	100pF,50V	C199	QEK61HM-105	E CAPACITOR	1 μ F,50V
C136	QCYA1HK-102	CAPACITOR	0.001 μ F,50V	C200	QCSA1HJ-221	CAPACITOR	220pF,50V
C137	QEK61HM-104	E CAPACITOR	0.1 μ F,50V	C201	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C138	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V	C202	QEK61CM-476	E CAPACITOR	47 μ F,16V
C139	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V	C203	QEK61CM-476	E CAPACITOR	47 μ F,16V
C140	QEK61HM-224	E CAPACITOR	0.22 μ F,50V	C204	QCSB1HJ-390	CAPACITOR	39pF,50V
C143	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C205	QCFB1EZ-223	CAPACITOR	0.022 μ F,25V
C144	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C206	QEK61CM-106	E CAPACITOR	10 μ F,16V
C145	QEK61HM-474	E CAPACITOR	0.47 μ F,50V	C207	QCSA1HJ-270	CAPACITOR	27pF,50V
C146	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C208	QEK61HM-105	E CAPACITOR	1 μ F,50V
C147	QCYA1HK-682	CAPACITOR	0.0068 μ F,50V	C209	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C148	QEK61HM-225	E CAPACITOR	2.2 μ F,50V	C210	QCSA1HJ-200	CAPACITOR	20pF,50V
C149	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C211	QCSA1HJ-220	CAPACITOR	22pF,50V
C150	QEK60JM-107	E CAPACITOR	100 μ F,6.3V	C213	QETC1CM-106	E CAPACITOR	10 μ F,16V
C151	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C214	QENC1AM-226	NP E CAPACITOR	22 μ F,10V
C153	QCSA1HJ-330	CAPACITOR	33pF,50V	C215	QEK61AM-226	E CAPACITOR	22 μ F,10V
C154	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C216	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C156	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C217	QEK60JM-476	E CAPACITOR	47 μ F,6.3V
C157	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C218	QCYA1HK-223	CAPACITOR	0.022 μ F,50V
C158	QEK61HM-225	E CAPACITOR	2.2 μ F,50V	C219	QEK61CM-476	E CAPACITOR	47 μ F,16V
C159	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C220	QENC1HM-225	NP E CAPACITOR	2.2 μ F,50V
C160	QCYA1HK-223	CAPACITOR	0.022 μ F,50V	C221	QEK61HM-105	E CAPACITOR	1 μ F,50V

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
C223	QCYA1HK-223	CAPACITOR	0.022μF,50V	C288	QCSA1HJ-270	CAPACITOR	27pF,50V
C226	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C289	QCSA1HJ-330	CAPACITOR	33pF,50V
C227	QCBB1HJ-471	CAPACITOR	470pF,50V	C290	QCSB1HJ-220	CAPACITOR	22pF,50V
C228	QCBB1HJ-221	CAPACITOR	220pF,50V	C291	QCSA1HJ-470	CAPACITOR	47pF,50V
C229	QCSB1HJ-560	CAPACITOR	56pF,50V	C292	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C230	QCYA1HK-223	CAPACITOR	0.022μF,50V	C293	QETC0JM-337	E CAPACITOR	330μF,6.3V
C231	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C294	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C233	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C295	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C234	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C297	QETC0JM-337	E CAPACITOR	330μF,6.3V
C235	QEK60JM-476	E CAPACITOR	47μF,6.3V	C298	QEK61AM-226	E CAPACITOR	22μF,10V
C236	QEK61AM-226	E CAPACITOR	22μF,10V	C300	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C237	QCYA1HK-223	CAPACITOR	0.022μF,50V	C301	QEK61EM-475	E CAPACITOR	4.7μF,25V
C238	QCYA1HK-223	CAPACITOR	0.022μF,50V	C302	QEK60JM-107	E CAPACITOR	100μF,6.3V
C239	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C303	QEK61HM-225	E CAPACITOR	2.2μF,50V
C240	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C304	QEK61HM-225	E CAPACITOR	2.2μF,50V
C242	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C305	QEK61EM-475	E CAPACITOR	4.7μF,25V
C244	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C308	QETC1CM-106	E CAPACITOR	10μF,16V
C245	QEK61HM-105	E CAPACITOR	1μF,50V	C309	QEK60JM-107	E CAPACITOR	100μF,6.3V
C246	QCXB1CM-682	CAPACITOR	0.0068μF,16V	C310	QCSA1HJ-270	CAPACITOR	27pF,50V
C247	QEK61CM-106	E CAPACITOR	10μF,16V	C311	QEK61AM-226	E CAPACITOR	22μF,10V
C249	QEK61HM-105	E CAPACITOR	1μF,50V	C312	QEK61AM-226	E CAPACITOR	22μF,10V
C250	QENC1HM-474	NP E CAPACITOR	0.47μF,50V	C314	QEK60JM-476	E CAPACITOR	47μF,6.3V
C251	QEK61EM-475	E CAPACITOR	4.7μF,25V	C315	QCYA1HK-223	CAPACITOR	0.022μF,50V
C252	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C316	QCYA1HK-223	CAPACITOR	0.022μF,50V
C253	QEK60JM-107	E CAPACITOR	100μF,6.3V	C317	QEK61CM-106	E CAPACITOR	10μF,16V
C254	QCYA1HK-223	CAPACITOR	0.022μF,50V	C318	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C255	QCXB1CM-682	CAPACITOR	0.0068μF,16V	C319	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C256	QEK61HM-224	E CAPACITOR	0.22μF,50V	C320	QETC1HM-335	E CAPACITOR	3.3μF,50V
C257	QEK61HM-474	E CAPACITOR	0.47μF,50V	C321	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C258	QCSB1HJ-120	CAPACITOR	12pF,50V	C322	QCC31EJ-104	CAPACITOR	0.1μF,25V
C259	QCSB1HJ-220	CAPACITOR	22pF,50V	C323	QEK60JM-336	E CAPACITOR	33μF,6.3V
C260	QETC1HM-335	E CAPACITOR	3.3μF,50V	C324	QEK61HM-105	E CAPACITOR	1μF,50V
C261	QEK61CM-106	E CAPACITOR	10μF,16V	C325	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C262	QCYA1HK-223	CAPACITOR	0.022μF,50V	C326	QETC0JM-107	E CAPACITOR	100μF,6.3V
C263	QEK61CM-106	E CAPACITOR	10μF,16V	C327	QETC1CM-476	E CAPACITOR	47μF,16V
C264	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C328	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C265	QCYA1HK-223	CAPACITOR	0.022μF,50V	C329	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C266	QEK61AM-336	E CAPACITOR	33μF,10V	C330	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C268	QEK61AM-226	E CAPACITOR	22μF,10V	C337	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C269	QCYA1HK-223	CAPACITOR	0.022μF,50V	C339	QCYA1HK-103	CAPACITOR	0.01μF,50V
C270	QEK61CM-476	E CAPACITOR	47μF,16V	C341	QCSB1HJ-270	CAPACITOR	27pF,50V
C271	QCYA1HK-223	CAPACITOR	0.022μF,50V	C343	QCFB1EZ-223	CAPACITOR	0.022μF,25V
C272	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C344	QETC0JM-477	E CAPACITOR	470μF,6.3V
C273	QEK60JM-476	E CAPACITOR	47μF,6.3V	C345	QETC1CM-477	E CAPACITOR	470μF,16V
C274	QEK61CM-106	E CAPACITOR	10μF,16V	C347	QCYA1HK-223	CAPACITOR	0.022μF,50V
C275	QCYA1HK-223	CAPACITOR	0.022μF,50V	C348	QCYA1HK-223	CAPACITOR	0.022μF,50V
C276	QEK61EM-475	E CAPACITOR	4.7μF,25V	C350	QCSA1HJ-560	CAPACITOR	56pF,50V
C278	QEK60JM-476	E CAPACITOR	47μF,6.3V	C351	QEK60JM-476	E CAPACITOR	47μF,6.3V
C279	QEK60JM-336	E CAPACITOR	33μF,6.3V	C354	QCSA1HJ-270	CAPACITOR	27pF,50V
C280	QEK61AM-226	E CAPACITOR	22μF,10V	C355	QCBB1HJ-101	CAPACITOR	100pF,50V
C281	QEK60JM-107	E CAPACITOR	100μF,6.3V	C356	QCYA1EK-104	CAPACITOR	0.1μF,25V
C282	QCFB1EZ-223	CAPACITOR	0.022μF,25V	C357	QCYA1HK-103	CAPACITOR	0.01μF,50V
C283	QCSB1HJ-330	CAPACITOR	33pF,50V	C358	QCSA1HJ-150	CAPACITOR	15pF,50V
C284	QCYA1HK-473	CAPACITOR	0.047μF,50V	C360	QEK61AM-226	E CAPACITOR	22μF,10V
C286	QCSA1HJ-150	CAPACITOR	15pF,50V				
C287	QCSA1HJ-270	CAPACITOR	27pF,50V				

#	△ REF No.	PART No.	PART NAME, DESCRIPTION		#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C361	QEK61AM-226	E CAPACITOR	22μF,10V		L33	PU59153-101K	COIL	100μH
C362	QEK61HM-225	E CAPACITOR	2.2μF,50V		L34	PU59152-120J	COIL	12μH
C501	QCYA1HK-223	CAPACITOR	0.022μF,50V		L35	PU59153-101K	COIL	100μH
C502	QCYA1HK-223	CAPACITOR	0.022μF,50V		L36	PU59153-101K	COIL	100μH
C503	QETC0JM-337	E CAPACITOR	330μF,6.3V		L37	PU59152-221J	COIL	220μH
C504	QCFA1EZ-104	CAPACITOR	0.1μF,25V		L38	PU59152-101J	COIL	100μH
C505	QCSA1HJ-331	CAPACITOR	330pF,50V		L40	PU59153-101K	COIL	100μH
C506	QEK61HM-105	E CAPACITOR	1μF,50V		L41	PU59152-151J	COIL	150μH
C508	QCYA1HJ-102	CAPACITOR	0.001μF,50V		L42	PU59153-101K	COIL	100μH
C510	QCFA1CZ-105	CAPACITOR	1μF,16V		L43	PU59153-101K	COIL	100μH
					L44	PU59152-560J	COIL	56μH
C511	QCFA1EZ-104	CAPACITOR	0.1μF,25V		L46	PU59152-680J	COIL	68μH
C512	QCFA1EZ-104	CAPACITOR	0.1μF,25V		L48	PU48530-471J	COIL	470μH
C513	QCYA1HK-223	CAPACITOR	0.022μF,50V		L49	PU59152-121J	COIL	120μH
C514	QCFA1EZ-104	CAPACITOR	0.1μF,25V		L50	PU59152-100J	COIL	10μH
C515	QETC1CM-106	E CAPACITOR	10μF,16V		L51	PU59152-820J	COIL	82μH
C516	QEGC1AM-107	E CAPACITOR	100μF,10V		L53	PU48530-101K	COIL	100μH
C701	QEK61CM-107	E CAPACITOR	100μF,16V		L54	PU48530-101K	COIL	100μH
C703	QCYA1HK-223	CAPACITOR	0.022μF,50V		L57	PU59153-101K	COIL	100μH
C704	QEK60JM-107	E CAPACITOR	100μF,6.3V		L58	PU59153-101K	COIL	100μH
C706	QCTA1CH-330	CAPACITOR	33pF,16V		L59	PU59153-101K	COIL	100μH
C707	QCTA1CH-271	CAPACITOR	270pF,16V		L60	PU59153-101K	COIL	100μH
C708	QCTA1CH-121	CAPACITOR	120pF,16V		L64	PU59152-220J	COIL	22μH
C710	QEK61CM-107	E CAPACITOR	100μF,16V		L65	PU59152-121J	COIL	120μH
C711	QCYA1HK-223	CAPACITOR	0.022μF,50V		L66	PU59152-820J	COIL	82μH
C712	QCYA1HJ-103	CAPACITOR	0.01μF,50V		L67	PU59152-100J	COIL	10μH
C713	QCYA1HJ-103	CAPACITOR	0.01μF,50V		L68	PU59153-101K	COIL	100μH
C714	QCFB1EZ-223	CAPACITOR	0.022μF,25V		L69	PU59152-150J	COIL	15μH
C715	QCYA1HK-103	CAPACITOR	0.01μF,50V		L70	PU48530-471J	COIL	470μH
C716	QETC0JM-476	E CAPACITOR	47μF,6.3V		L71	PU48530-222J	COIL	2.2mH
C717	QCBB1HJ-391	CAPACITOR	390pF,50V		L72	PU48530-222J	COIL	2.2mH
					L76	PU59152-181J	COIL	180μH
L1	PU59152-560J	COIL	56μH		L77	PU59152-820J	COIL	82μH
L4	PU59152-100J	COIL	10μH		L78	PU59153-101K	COIL	100μH
L5	PU59152-390J	COIL	39μH		L79	PU59152-390J	COIL	39μH
L7	PU59153-101K	COIL	100μH		L80	PU59153-101K	COIL	100μH
L8	PU59153-101K	COIL	100μH		L501	PU59153-101K	COIL	100μH
L9	PU59152-390J	COIL	39μH		L701	PU59153-101K	COIL	100μH
L10	PU59152-330J	COIL	33μH		L702	PU59153-101K	COIL	100μH
					L705	PELN0530-471JZ	COIL	470μH
L12	PU59152-390J	COIL	39μH		L706	PU59152-151J	COIL	150μH
L13	PU59152-181J	COIL	180μH		L707	PU59152-151J	COIL	150μH
L17	PU59153-101K	COIL	100μH		L709	PU59153-101K	COIL	100μH
L18	PU59153-101K	COIL	100μH		L710	PU59153-101K	COIL	100μH
L19	PU59152-151J	COIL	150μH					
L20	PU59153-101K	COIL	100μH					
L21	PU59152-151J	COIL	150μH		EQ1	PELN0395	EQUALIZER	
L22	PU59152-560J	COIL	56μH		LPF1	PELN0753	LOW PASS FILTER	
L23	PU59152-180J	COIL	18μH		LPF3	PELN0770	LOW PASS FILTER	
L24	PU59153-101K	COIL	100μH		LPF4	PELN0409	LOW PASS FILTER	
L25	PU59152-150J	COIL	15μH		LPF5	PELN0336-01-01	LOW PASS FILTER	
L27	PU59152-100J	COIL	10μH		LPF6	PU61052	LOW PASS FILTER	
L28	PU59152-121J	COIL	120μH					
L30	PU59152-390J	COIL	39μH					
L31	PU59153-101K	COIL	100μH					
L32	PU59153-101K	COIL	100μH					

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION

TERMINAL BOARD ASSEMBLY <06>							
				PWBA	PB10813A3-01	TERMINAL BOARD ASSY	
DL1	PU60058-2	DELAY LINE		JA10	PU61012 or PU60612	MINI JACK	
DL2	PU60058-2	DELAY LINE		CN10	PU59555-102	CONNECTOR	
X1	PEVB0490	CRYSTAL RESONATOR					
X2	PEVB0470	CRYSTAL RESONATOR					
X3	PEVB0347	CRYSTAL RESONATOR					
T1	PELN0575	TANK FILTER					

AUDIO BOARD ASSEMBLY <09>							
HD1	PEME0858-01-01	HOLDER (PWB), X2		PWBA	PB10813E2	AUDIO IN/OUT BOARD ASSY	
JP1	PW30343-0312415 or PW30344-0312415	WIRE		IC101	UPC2412HF	IC	
		WIRE		IC102	UPC2405HF	IC	
SPC1	PU60010-7	SPACER		IC201	XRA15218N	IC	
SPC2	PU60010-2	SPACER, X2		IC203	LA7151	IC	
WR1	PW30362-0492616	WIRE,CN1		IC301	XRA15218N	IC	
WR2	PW30801-2709	WIRE,CN2		IC303	LA7151	IC	
WR11	PW30362-0302210	WIRE,CN11		IC501	TC4053BP or CD4053BE	IC	
JP101	PW30343-0210902 or PW30344-0210902	WIRE		IC502	M5223P	IC	
IP102	PW30343-0212202 or PW30344-0212202	WIRE		IC503	M5223L	IC	
JP103	PW30343-0210902 or PW30344-0210902	WIRE		IC601	JCP0038 or JCP0038-B	IC	
		WIRE		IC602	JCP0012	IC	
				IC701	XRA15218	IC	
CN1	PU59555-4	CONNECTOR					
CN2	PU58798-127	CONNECTOR		Q101	2SA854S(QR)	TRANSISTOR	
CN3	PU58798-122	CONNECTOR		Q102	2SA1515S(QR)	TRANSISTOR	
CN4	PU60417-3	CONNECTOR		Q103	DTC114EU	TRANSISTOR	
CN5	PU59555-5	CONNECTOR		Q104	DTC114EU	TRANSISTOR	
CN6	PU59555-5	CONNECTOR		Q105	DTA114EU	TRANSISTOR	
CN7	PU59555-3	CONNECTOR					
CN8	PU59555-12	CONNECTOR		Q401	2SC4081(QRS)	TRANSISTOR	
CN9	PU59555-12R	CONNECTOR		Q402	2SC4081(QRS)	TRANSISTOR	
CN10	PU59555-2	CONNECTOR					
CN11	PU59555-3	CONNECTOR		Q601	2SC4081(QRS)	TRANSISTOR	
CN12	PU59555-2	CONNECTOR		Q602	DTC144EU	TRANSISTOR	
CN13	PU59555-2R	CONNECTOR		Q603	DTA144EU	TRANSISTOR	
CN14	PU59555-2	CONNECTOR		Q701	DTC144EU	TRANSISTOR	
CN15	PU59555-2Y	CONNECTOR		Q702	DTC144EU	TRANSISTOR	
CN16	PU59555-3	CONNECTOR		Q703	DTC144WU	TRANSISTOR	
CN17	PU59555-2	CONNECTOR		Q704	DTC144WU	TRANSISTOR	
				Q705	DTC144EU	TRANSISTOR	
				Q706	DTA143EU	TRANSISTOR	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
△	Q707	DTA143EU	TRANSISTOR		R353	QRSA08J-103YN	RESISTOR
	Q709	2SC4097(QR)	TRANSISTOR		R354	QRSA08J-103YN	RESISTOR
	Q710	2SC4081(QRS)	TRANSISTOR		R355	QRSA08J-103YN	RESISTOR
					R356	QRSA08J-103YN	RESISTOR
	Q711	2SC4081(QRS)	TRANSISTOR		R357	QRSA08J-183YN	RESISTOR
	Q712	DTA114EU	TRANSISTOR		R358	QRSA08J-393YN	RESISTOR
	Q713	DTC144EU	TRANSISTOR		R359	QRSA08J-393YN	RESISTOR
	Q714	DTA114EU	TRANSISTOR		R360	QRSA08J-183YN	RESISTOR
	Q715	2SC4081(QRS)	TRANSISTOR				18KΩ,1/10W
	Q716	DTC114WU	TRANSISTOR		R361	QRSA08J-393YN	RESISTOR
	Q717	DTC114WU	TRANSISTOR		R362	QRSA08J-183YN	RESISTOR
	Q719	DTC114WU	TRANSISTOR		R368	QRSA08J-102YN	RESISTOR
	Q720	DTC114WU	TRANSISTOR		R369	QRSA08J-473YN	RESISTOR
					R401	QRSA08J-222YN	RESISTOR
	Q721	DTC114WU	TRANSISTOR		R402	QRSA08J-682YN	RESISTOR
	Q722	DTA114EU	TRANSISTOR		R403	QRSA08J-153YN	RESISTOR
	Q723	DTC114TU	TRANSISTOR		R404	QRSA08J-122YN	RESISTOR
	Q724	DTC114WU	TRANSISTOR		R405	QRSA08J-222YN	RESISTOR
	Q725	DTA114EU	TRANSISTOR		R406	QRSA08J-682YN	RESISTOR
					R407	QRSA08J-153YN	RESISTOR
	Q801	DTC114TU	TRANSISTOR		R408	QRSA08J-122YN	RESISTOR
	Q802	DTC114TU	TRANSISTOR				1.2KΩ,1/10W
	Q803	DTA144EU	TRANSISTOR		R507	QRSA08J-123YN	RESISTOR
					R508	QRSA08J-562YN	RESISTOR
D502	DA204U	DIODE			R509	QRSA08J-103YN	RESISTOR
D503	DA204U	DIODE			R510	QRSA08J-103YN	RESISTOR
					R511	QRSA08J-823YN	RESISTOR
D601	DA204U	DIODE			R512	QRSA08J-682YN	RESISTOR
D602	DA115	DIODE			R513	QRSA08J-680YN	RESISTOR
D603	DAP202U	DIODE			R514	QRSA08J-123YN	RESISTOR
D604	DA204U	DIODE			R515	QRSA08J-562YN	RESISTOR
D605	DA115	DIODE			R516	QRSA08J-103YN	RESISTOR
D606	DA115	DIODE			R517	QRSA08J-103YN	RESISTOR
D607	DA204U	DIODE			R518	QRSA08J-823YN	RESISTOR
D701	DA113	DIODE			R519	QRSA08J-682YN	RESISTOR
D702	DA112	DIODE			R520	QRSA08J-680YN	RESISTOR
D703	DAN202U	DIODE					6.8KΩ,1/10W
					R521	QRSA08J-151YN	RESISTOR
					R522	QRSA08J-332YN	RESISTOR
R151	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W		R523	QRSA08J-151YN	RESISTOR
R152	QRSA08J-331YN	RESISTOR	330Ω,1/10W		R524	QRSA08J-332YN	RESISTOR
					R525	QRSA08J-102YN	RESISTOR
R251	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W		R526	QRSA08J-512YN	RESISTOR
R252	QRSA08J-153YN	RESISTOR	15KΩ,1/10W		R527	QRSA08J-562YN	RESISTOR
R253	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		R528	QRSA08J-102YN	RESISTOR
R254	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		R529	QRSA08J-333YN	RESISTOR
R255	QRSA08J-103YN	RESISTOR	10KΩ,1/10W		R530	QRSA08J-333YN	RESISTOR
R256	QRSA08J-103YN	RESISTOR	10KΩ,1/10W				33KΩ,1/10W
R257	QRSA08J-183YN	RESISTOR	18KΩ,1/10W		R531	QRSA08J-124YN	RESISTOR
R258	QRSA08J-393YN	RESISTOR	39KΩ,1/10W		R532	QRSA08J-124YN	RESISTOR
R259	QRSA08J-393YN	RESISTOR	39KΩ,1/10W		R536	QRSA08J-104YN	RESISTOR
R260	QRSA08J-183YN	RESISTOR	18KΩ,1/10W		R537	QRSA08J-473YN	RESISTOR
					R538	QRSA08J-473YN	RESISTOR
R261	QRSA08J-393YN	RESISTOR	39KΩ,1/10W		R539	QVPA606-103Z	V RESISTOR,AUDIO LEVEL(L CH)
R262	QRSA08J-183YN	RESISTOR	18KΩ,1/10W		R540	QVPA606-103Z	V RESISTOR,AUDIO LEVEL(R CH)
R268	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R269	QRSA08J-473YN	RESISTOR	47KΩ,1/10W		R601	QRSA08J-511YN	RESISTOR
					R602	QRSA08J-472YN	RESISTOR
R351	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W		R603	QRSA08J-101YN	RESISTOR
R352	QRSA08J-153YN	RESISTOR	15KΩ,1/10W		R604	QRSA08J-513YN	RESISTOR

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R605	QVPA606-473Z	V RESISTOR,DEVIATION(L CH)		R718	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
	R607	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W		R719	QRSA08J-911YN	RESISTOR 910Ω,1/10W
	R608	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R720	QRSA08J-101YN	RESISTOR 100Ω,1/10W
	R609	QRSA08J-163YN	RESISTOR 16KΩ,1/10W		R721	QRSA08J-150YN	RESISTOR 15Ω,1/10W
	R610	QVPA606-472Z	V RESISTOR,CARRIER(L CH)		R722	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R611	QRSA08J-334YN	RESISTOR 330KΩ,1/10W		R723	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R612	QRSA08J-473YN	RESISTOR 47KΩ,1/10W		R724	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R613	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R725	QRSA08J-163YN	RESISTOR 16KΩ,1/10W
	R615	QRSA08J-243YN	RESISTOR 24KΩ,1/10W		R726	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
	R616	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R727	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R618	QRSA08J-303YN	RESISTOR 30KΩ,1/10W		R728	QRSA08J-473YN	RESISTOR 47KΩ,1/10W
	R619	QRSA08J-432YN	RESISTOR 4.3KΩ,1/10W		R729	QRSA08J-473YN	RESISTOR 47KΩ,1/10W
	R620	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R730	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
	R621	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R731	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R622	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R732	QRSA08J-274YN	RESISTOR 270KΩ,1/10W
	R624	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R733	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R625	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R734	QRSA08J-561YN	RESISTOR 560Ω,1/10W
	R626	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R735	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R627	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R736	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R630	QVPA606-222Z	V RESISTOR,CARRIER(R CH)		R737	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
					R738	QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W
	R631	QRSA08J-123YN	RESISTOR 12KΩ,1/10W		R739	QRSA08J-100YN	RESISTOR 10Ω,1/10W
	R632	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R740	QRSA08J-473YN	RESISTOR 47KΩ,1/10W
	R633	QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W		R741	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R634	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R742	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R635	QRSA08J-101YN	RESISTOR 100Ω,1/10W		R743	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R636	QRSA08J-513YN	RESISTOR 51KΩ,1/10W		R744	QRSA08J-104YN	RESISTOR 100KΩ,1/10W
	R637	QVPA606-473Z	V RESISTOR,DEVIATION(R CH)		R745	QRSA08J-104YN	RESISTOR 100KΩ,1/10W
	R638	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R746	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R639	QRSA08J-511YN	RESISTOR 510Ω,1/10W		R747	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R640	QRSA08J-475YN	RESISTOR 4.7MΩ,1/10W				
	R641	QRSA08J-104YN	RESISTOR 100KΩ,1/10W				
	R642	QRSA08J-681YN	RESISTOR 680Ω,1/10W	C101	QETC1CM-107	E CAPACITOR 100μF,16V	
	R643	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W	C102	QETC0JM-107	E CAPACITOR 10μF,6.3V	
	R644	QRSA08J-752YN	RESISTOR 7.5KΩ,1/10W	C103	QCFA1HZ-104	CAPACITOR 0.1μF,50V	
	R645	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C104	QCFA1HZ-104	CAPACITOR 0.1μF,50V	
	R646	QRSA08J-103YN	RESISTOR 10KΩ,1/10W				
	R647	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W	C112	PECA0882-476MZ	E CAPACITOR	
	R648	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W				
	R650	QRSA08J-301YN	RESISTOR 300Ω,1/10W	C201	QETC1VM-336ZE	E CAPACITOR 33μF,35V	
				C202	QETC1HM-106ZE	E CAPACITOR 10μF,50V	
	R701	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C203	QETC1HM-106ZE	E CAPACITOR 10μF,50V	
	R702	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C204	QETC1CM-107	E CAPACITOR 100μF,16V	
	R703	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	C205	PECA0772-106MZ	E CAPACITOR	
	R704	QRSA08J-6R8YN	RESISTOR 6.8Ω,1/10W				
	R705	QRSA08J-273YN	RESISTOR 27KΩ,1/10W	C212	PECA0881-106MZ	E CAPACITOR	
	R706	QVPA606-473Z	V RESISTOR,BIAS LEVEL	C213	PECA0881-106MZ	E CAPACITOR	
	R707	QRSA08J-159YN	RESISTOR 15KΩ,1/10W	C214	QETC1CM-476	E CAPACITOR 4.7μF,16V	
	R708	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C215	PECA0882-476MZ	E CAPACITOR	
	R709	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C218	QE231HM-106ZE	E CAPACITOR 10μF,50V	
	R710	QRSA08J-102YN	RESISTOR 1KΩ,1/10W				
	R711	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C222	QE231EM-107ZE	E CAPACITOR 100μF,25V	
	R712	QRSA08J-183YN	RESISTOR 18KΩ,1/10W	C223	QETC1VM-336ZE	E CAPACITOR 33μF,35V	
	R713	QRSA08J-223YN	RESISTOR 22KΩ,1/10W	C301	QETC1VM-336ZE	E CAPACITOR 33μF,35V	
	R714	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C302	QETC1HM-106ZE	E CAPACITOR 10μF,50V	
	R715	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C303	QETC1HM-106ZE	E CAPACITOR 10μF,50V	
	R716	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C304	QETC1CM-107	E CAPACITOR 100μF,16V	
	R717	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	C305	PECA0772-106MZ	E CAPACITOR	

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION
C312	PECA0881-106MZ	E CAPACITOR		C636	QETC1HM-225ZE	E CAPACITOR	2.2 μ F,50V
C313	PECA0881-106MZ	E CAPACITOR		C637	QETC1HM-106ZE	E CAPACITOR	10 μ F,50V
C314	QETC1CM-476	E CAPACITOR	47 μ F,16V	C638	QFLC1HJ-473Z	M CAPACITOR	0.047 μ F,50V
C315	PECA0882-476MZ	E CAPACITOR		C639	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C318	QE231HM-106ZE	E CAPACITOR	10 μ F,50V	C640	QETC1CM-106	E CAPACITOR	10 μ F,16V
C322	QE231EM-107ZE	E CAPACITOR	100 μ F,25V	C641	QETC1CM-226	E CAPACITOR	22 μ F,16V
C323	QETC1VM-336ZE	E CAPACITOR	33 μ F,35V	C642	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
C401	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C643	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
C402	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C644	QETC1CM-106	E CAPACITOR	10 μ F,16V
C501	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C645	QE231EM-107ZE	E CAPACITOR	100 μ F,25V
C502	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C646	QETC1EM-227ZE	E CAPACITOR	220 μ F,25V
C503	QETC1CM-476	E CAPACITOR	47 μ F,16V	C647	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V
C504	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C649	QETC1AM-107	E CAPACITOR	100 μ F,10V
C508	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V	C650	QETC1CM-336	E CAPACITOR	33 μ F,16V
C509	QETC1AM-336	E CAPACITOR	33 μ F,10V	C651	QENC1AM-336	NP E CAPACITOR	33 μ F,10V
C510	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V	C652	QENC1AM-336	NP E CAPACITOR	33 μ F,10V
C511	QETC1AM-336	E CAPACITOR	33 μ F,10V	C653	QCSA1HK-102	CAPACITOR	0.001 μ F,50V
C512	QETC1CM-476	E CAPACITOR	47 μ F,16V	C654	QENC1EM-475	NP E CAPACITOR	4.7 μ F,25V
C513	QETC1CM-476	E CAPACITOR	47 μ F,16V	C666	QCC11CJ-104	CAPACITOR	0.1 μ F,16V
C601	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C701	QFN31HJ-222	M CAPACITOR	0.0022 μ F,50V
C602	QFLC1HJ-473Z	M CAPACITOR	0.047 μ F,50V	C702	QFN31HJ-332	M CAPACITOR	0.0033 μ F,50V
C603	QETC1HM-106ZE	E CAPACITOR	10 μ F,50V	C703	QEK61CM-476	E CAPACITOR	47 μ F,16V
C604	QETC1HM-225ZE	E CAPACITOR	2.2 μ F,50V	C704	QFN31HJ-473	M CAPACITOR	0.047 μ F,50V
C605	QFLC1HJ-333Z	M CAPACITOR	0.033 μ F,50V	C705	QCSA1HK-331	CAPACITOR	330pF,50V
C606	QE231EM-107ZE	E CAPACITOR	100 μ F,25V	C706	QCYA1HK-272	CAPACITOR	0.0027 μ F,50V
C607	QE231EM-107ZE	E CAPACITOR	100 μ F,25V	C707	QCSA1HK-821	CAPACITOR	820pF,50V
C608	QFLC1HJ-103Z	M CAPACITOR	0.01 μ F,50V	C708	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V
C609	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C709	QFN31HJ-153	M CAPACITOR	0.015 μ F,50V
C610	QETC0JM-107	E CAPACITOR	100 μ F,6.3V	C710	QFN31HJ-682	M CAPACITOR	0.0068 μ F,50V
C611	QCSA1HK-102	CAPACITOR	0.001 μ F,50V	C711	QFN31HJ-393	M CAPACITOR	0.039 μ F,50V
C612	QFLC1HJ-223Z	M CAPACITOR	0.022 μ F,50V	C712	QFN31HJ-563	M CAPACITOR	0.056 μ F,50V
C613	QFLC1HJ-222Z	M CAPACITOR	0.0022 μ F,50V	C713	QFN31HJ-153	M CAPACITOR	0.015 μ F,50V
C614	QCSA1HK-122	CAPACITOR	0.0012 μ F,50V	C714	QETC1CM-226	E CAPACITOR	22 μ F,16V
C615	QFLC1HJ-392Z	M CAPACITOR	0.0039 μ F,50V	C715	QETC1HM-105	E CAPACITOR	1 μ F,50V
C616	QETC1HM-105	E CAPACITOR	1 μ F,50V	C716	QETC1CM-106	E CAPACITOR	10 μ F,16V
C617	QFLC1HJ-333Z	M CAPACITOR	0.033 μ F,50V	C717	QETC1CM-106	E CAPACITOR	10 μ F,16V
C618	QETC1HM-105	E CAPACITOR	1 μ F,50V	C718	QFV21HJ-474	F CAPACITOR	0.47 μ F,50V
C619	QCSA1HK-561	CAPACITOR	560pF,50V	C719	QETC1CM-226	E CAPACITOR	22 μ F,16V
C620	QETC1HM-225	E CAPACITOR	2.2 μ F,50V	C720	QETC1HM-224	E CAPACITOR	0.22 μ F,50V
C621	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C721	QFN31HJ-123	M CAPACITOR	0.012 μ F,50V
C622	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C722	QCSA1HK-471	CAPACITOR	470pF,50V
C623	QCSA1HK-101	CAPACITOR	100pF,50V	C723	QETC1AM-107	E CAPACITOR	100 μ pF,10V
C624	QCSA1HK-101	CAPACITOR	100pF,50V	C724	QETC1HM-224	E CAPACITOR	0.22 μ F,50V
C625	QFLC1HJ-392Z	M CAPACITOR	0.0039 μ F,50V	C725	QETC1CM-106	E CAPACITOR	10 μ F,16V
C626	QCSA1HK-122	CAPACITOR	0.0012 μ F,50V	C726	QETC1CM-476	E CAPACITOR	47 μ F,16V
C627	QFLC1HJ-222Z	M CAPACITOR	0.0022 μ F,50V	C727	QCYA1HK-103	CAPACITOR	0.01 μ F,50V
C628	QFLC1HJ-223Z	M CAPACITOR	0.022 μ F,50V	C731	QEK61CM-476	E CAPACITOR	47 μ F,16V
C629	QCSA1HK-102	CAPACITOR	0.001 μ F,50V	C732	QCSA1HK-101	CAPACITOR	100pF,50V
C630	QETC0JM-107	E CAPACITOR	100 μ F,6.3V	C801	QFV11HJ-274AZ	F CAPACITOR	0.27 μ F,50V
C631	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C802	QFV11HJ-274AZ	F CAPACITOR	0.27 μ F,50V
C632	QFLC1HJ-103Z	M CAPACITOR	0.01 μ F,50V	L201	PU48530-101K	COIL	100 μ H
C633	QE231EM-107ZE	E CAPACITOR	100 μ F,25V				
C634	QE231EM-107ZE	E CAPACITOR	100 μ F,25V				
C635	QFLC1HJ-333Z	M CAPACITOR	0.033 μ F,50V				

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION	
	L301	PU48530-101K	COIL	100 μ H			*****	
	L502	PU48530-101K	COIL	100 μ H	TIMER BOARD ASSEMBLY <20>			
	L602	PU48530-101K	COIL	100 μ H	PWBA	PB10659E	TIMER BOARD ASSY	
	L603	PU48530-101K	COIL	100 μ H				
	L604	PU48530-101K	COIL	100 μ H	△ IC1	UPD75238GJ-118	QFP IC (MCU)	
	L606	PU48530-101K	COIL	100 μ H	△	or UPD75P238GJ8118	IC	
	L701	PU48530-101K	COIL	100 μ H	△ IC2	M34225M2-116SP	IC	
	L702	PU58308-822J	COIL	8.2mH	△	or M50927E-528SP	IC	
	L703	PU58697-151KZ	COIL	150 μ H	IC3	CAT35C104P	IC	
					IC4	IC-PST523H-2	IC	
	3PF401	PU60396-S	BAND PASS FILTER					
	BPF402	PU60397-S	BAND PASS FILTER		Q1	2SC4097(RS)	TRANSISTOR	
					Q2	2SC4081(RS)	TRANSISTOR	
	T701	PELN0971	OSC TRANSFORMER		Q3	DTC124XU	TRANSISTOR	
					Q5	2SC4081(RS)	TRANSISTOR	
	SCW1	DPSP2606Z	SCREW		Q6	2SB1219(RS)	TRANSISTOR	
					Q7	2SB1219(RS)	TRANSISTOR	
	CN102	PU59555-3	CONNECTOR		Q10	DTC124EU	CHIP D TR	
	CN103	PU59555-3Y	CONNECTOR					
	CN106	PU58798-11	CONNECTOR		Q11	DTA144TU	TRANSISTOR	
	CN109	PU59555-3R	CONNECTOR		Q12	DTC144TU	TRANSISTOR	
	CN110	PU60417-7	CONNECTOR		D1	RD6.2ES-T1B2	ZENER DIODE	
	CN111	PU59555-4	CONNECTOR		D2	11E2-T5	DIODE	
	CN112	PU59555-2	CONNECTOR		D3	11E2-T5	DIODE	
	CN113	PU59555-5R	CONNECTOR		D4	RD9.1ES-T1B2	ZENER DIODE	
	CN114	PU60417-8	CONNECTOR		D5	DAN202U	DIODE	
	CN115	PU58798-10	CONNECTOR		D6	DAN202U	DIODE	
	CN207	PU59555-9R	CONNECTOR		D9	DAN202U	DIODE	
	CP101	ICP-N5	C PROTECTER		D11	DAN202U	DIODE	
	CP102	ICP-N5	C PROTECTER		D12	DAN202U	DIODE	
					D13	DAN202U	DIODE	
					D14	RD7.5ES-T1B2	ZENER DIODE	
					D15	DAN202U	DIODE	
					D17	DAN202U	DIODE	
					D18	DAN202U	DIODE	
					D19	DAN202U	DIODE	
					D20	DAN202U	DIODE	
					D21	DAN202U	DIODE	
					D22	DAN202U	DIODE	
					D23	DAN202U	DIODE	
					D24	DAN202U	DIODE	
					D25	DAP202U	DIODE	
					D27	DAN202U	DIODE	
					D28	1SS133	DIODE	
						or 1N4148M	DIODE	
	CN1	PU59555-104	CONNECTOR		R1	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	CN2	PU59555-103	CONNECTOR		R2	QRSA08J-101YN	RESISTOR	100Ω,1/10W
					R3	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
					R4	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
					R5	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
					R6	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
					R7	QRSA08J-333YN	RESISTOR	33KΩ,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R8	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R71	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R9	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R72	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R10	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R73	QRSA08J-821YN	RESISTOR	820KΩ,1/10W
				R74	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R11	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R75	QRG029J-680A	RESISTOR	68Ω,2W
R12	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R76	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R13	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R77	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R19	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R78	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R20	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R79	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
				R80	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R21	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R22	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R81	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R23	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R82	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R24	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R83	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R25	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R84	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R26	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R85	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R27	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R86	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R28	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R87	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R29	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R88	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R30	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R89	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
				R90	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R31	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R32	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R91	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R33	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R92	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R34	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R93	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R35	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	R94	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R36	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R96	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
R37	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R97	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R38	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R98	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
				R99	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R41	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R100	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R42	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R43	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R101	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R44	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R102	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R45	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R103	ERT-D2FGL332S	THERMISTOR	
R46	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R104	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R47	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R105	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R48	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R107	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R49	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R108	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R50	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R109	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
				R110	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R51	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R52	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R111	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R53	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R112	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R54	QRSA08J-104YN	RESISTOR	100KΩ,1/10W	R113	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R55	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R56	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W				
R57	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	VR1	PU61016	V RESISTOR,HEAD PHONE VOL	
R59	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W	VR2	PERE0472	V RESISTOR,REC BALANCE	
R60	QRSA08J-132YN	RESISTOR	1.3KΩ,1/10W	VR3	PERE0473	V RESISTOR,REC LEVEL	
				VR4	PERE0464	V RESISTOR,PICTURE SHARP	
R61	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R62	QRSA08J-102YN	RESISTOR	1KΩ,1/10W				
R63	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C1	QER61CM-106	E CAPACITOR	10μF,16V
R64	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C2	QER61CM-106	E CAPACITOR	10μF,16V
R65	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C3	QER61CM-106	E CAPACITOR	10μF,16V
R66	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C4	QEA40HZ-105	EDL CAPACITOR	1F,5.5V
R67	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C5	QEK61EM-475	E CAPACITOR	4.7μF,25V
R68	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C7	QER61CM-106	E CAPACITOR	10μF,16V
R69	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C8	QCYA1EK-104	CAPACITOR	0.1μF,25V
R70	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	C9	QCYA1EK-104	CAPACITOR	0.1μF,25V
				C10	QCSA1HJ-120	CAPACITOR	12pF,50V

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION
	C11	QAT3120-200Z	TRIM CAPACITOR 20pF		TP1	PU56008	TEST-PIN, X5
	C12	QCYA1EK-104	CAPACITOR 0.1 μ F,25V		CN1	PU59555-2	CONNECTOR
	C13	QCYA1HK-103	CAPACITOR 0.01 μ F,50V		CN2	PU59555-5	CONNECTOR
	C15	QEK61CM-106	E CAPACITOR 10 μ F,16V		CN5	PU60417-11	CONNECTOR
	C16	QER61CM-106	E CAPACITOR 10 μ F,16V		CN6	PU59555-5	CONNECTOR
	C17	QER61HM-105	E CAPACITOR 1 μ F,50V		CN7	PU60417-13	CONNECTOR
	C20	QCYA1HK-103	CAPACITOR 0.01 μ F,50V		CN8	PU60417-3	CONNECTOR
	C21	QEK61HM-335	E CAPACITOR 3.3 μ F,50V		CN9	PU60417-5	CONNECTOR
	C22	QCYA1EK-104	CAPACITOR 0.1 μ F,25V		CN10	PU59555-3	CONNECTOR
	C23	QCYA1EK-104	CAPACITOR 0.1 μ F,25V		CN11	PU60417-7	CONNECTOR
	C25	QCYA1EK-104	CAPACITOR 0.1 μ F,25V		CN12	PU59555-3R	CONNECTOR
	C26	QCC11CJ-104	CAPACITOR 0.1 μ F,16V		CN13	PU60417-3	CONNECTOR
	BZ1	PEVB0429	BUZZER		CN14	PU60417-8	CONNECTOR
	LA1	PEDP0002	LAMP		CN15	PEMC0889-013	B TO B CONN
	LA2	PEDP0002	LAMP		CN16	PU58798-12	FFC CONNECTOR
	LA3	PEDP0002	LAMP		CN17	PU58798-110	CONNECTOR
△	CF1	PEVB0352	RESONATOR				*****
△	X1	PU61013	CRYSTAL RESONATOR				DISPLAY BOARD ASSEMBLY <21>
	S1	PU60975-2Z or PESW0525-02Z	TACT SWITCH,EJECT	PWBA	PB30174A	DISPLAY BOARD ASSY	
	S2	PU60975-2Z or PESW0525-02Z	TACT SWITCH,STOP	LCD1	PEDP0087	LCD UNIT	
	S3	PU60975-2Z or PESW0525-02Z	TACT SWITCH,FF	WR1	PEWR0662	FPC	
	S4	PU60975-2Z or PESW0525-02Z	TACT SWITCH,REW.	CN1	PEMC0959-014	PIN HEADER	
	S5	PU60975-2Z or PESW0525-02Z	TACT SWITCH,PLAY	CN2	PU58798-110	CONNECTOR	
	S6	PESW0633-02	SLIDE SWITCH,REM				*****
	S7	PESW0633	SLIDE SWITCH,FULL				
	S8	PESW0633	SLIDE SWITCH,HEAD	PWBA	PB10828A-03	W-MAIN BOARD ASSY	
	S9	PESW0633	SLIDE SWITCH,A MODE				
	S10	PESW0633	SLIDE SWITCH,AC				
	S11	PESW0633-03	SLIDE SWITCH,I/O	△ IC1	JCP0051	IC	
	S12	PESW0629	SLIDE SWITCH,DOOR	△ IC2	JCP0051	IC	
	HD1	PQ34399-2-1	HOLDER(LAMP)	△ IC3	JCP0051	IC	
	HD2	PQ34399-2-1	HOLDER(LAMP)	△ IC4	MSM518222GS	IC	
	HD3	PQ34399-2-1	HOLDER(LAMP)	△ IC5	MSM518222GS	IC	
	JA1	PU60664-2	MINI JACK	△ IC6	MSM518222GS	IC	
				△ IC7	MSM518222GS	IC	
				△ IC8	MSM518222GS	IC	
				△ IC9	MSM518222GS	IC	
				△ IC10	74F241SJ	IC	
				△ IC11	74F241SJ	IC	
				IC13	IC-PST529DMT-X	IC	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
△	IC81	JCP0052-2	IC	△	IC470	TC7S32F	IC
△	IC82	UPD42280	IC	△	IC471	TC7S08F	IC
△	IC83	UPD42280	IC	△	IC472	TC74HC221AF	IC
△	IC84	UPD42280	IC	△	IC473	TC4W66F	IC
△	IC86	74F241SJ	IC	△	IC474	TL092CPS	IC
△	IC87	SN74HC244NS	IC	△	IC475	TC74HC4066AF	IC
△	IC88	SN74HC244NS	IC	△	IC476	TL082CPS	IC
△	IC89	BU2090F	IC	△	IC478	TC4053BF	IC
△	IC90	TC7S04F	IC	△	IC479	BA10324AF	IC
△	IC91	TC7W08F	IC			or XRA10324AF	IC
△	IC92	TC74HC00AF	IC	△	IC500	TC74HC04AF	IC
△	IC93	TC7S04F	IC			IC501	BA10324AF
△	IC94	TC4S30F	IC			or XRA10324AF	IC
△	IC95	TC4S30F	IC				
△	IC96	TC7S02FU	IC				
△	IC131	JCP0053-2	IC	Q1		2SA1576(RS)	TRANSISTOR
	IC135	UPD42280	IC	Q2		2SC4081(RS)	TRANSISTOR
	IC136	UPD485505G	IC	Q3		2SC4081(RS)	TRANSISTOR
	IC137	UPD485505G	IC	Q4		2SC4081(RS)	TRANSISTOR
	IC138	UPD485505G	IC	Q5		2SC4081(RS)	TRANSISTOR
△	IC201	CXD1176Q	IC	Q201		2SC4081(RS)	TRANSISTOR
△	IC202	CXD1176Q	IC	Q202		2SC4081(RS)	TRANSISTOR
△	IC203	MB40760PF	IC	Q203		2SA1532(C)	TRANSISTOR
△	IC204	MB40760PF	IC	Q204		FMW2	PAIR TRANSISTOR
△	IC205	TC74HC04AF	IC	Q205		FMS2	TRANSISTOR
△	IC206	TC74HC08AF	IC	Q206		2SA1576(RS)	TRANSISTOR
△	IC207	TC4W53F	IC	Q207		2SC4081(RS)	TRANSISTOR
△	IC208	CX23065A	IC	Q208		2SC4081(RS)	TRANSISTOR
△	IC209	TC7S04F	IC	Q209		2SC4081(S)	TRANSISTOR
△	IC210	TC7S04F	IC	Q210		2SC4081(RS)	TRANSISTOR
△	IC211	TC7S04F	IC	Q211		2SC4081(RS)	TRANSISTOR
△	IC212	TC7S04F	IC	Q212		2SA1532(C)	TRANSISTOR
△	IC213	TC7W74F	IC	Q213		FMW2	PAIR TRANSISTOR
△	IC214	TA8667F	IC	Q214		FMS2	TRANSISTOR
△	IC215	TC7S04F	IC	Q215		2SA1576(RS)	TRANSISTOR
△	IC216	TC7S04F	IC	Q216		2SC4081(RS)	TRANSISTOR
△	IC218	CX23065A	IC	Q217		2SC4081(RS)	TRANSISTOR
△	IC219	TC7S04F	IC	Q218		2SC4081(S)	TRANSISTOR
△	IC220	TC7S04F	IC	Q219		2SC4081(RS)	TRANSISTOR
△	IC221	TC74HC221AF	IC	Q220		2SC4081(RS)	TRANSISTOR
△	IC222	TC74HC221AF	IC	Q221		2SC4081(RS)	TRANSISTOR
△	IC223	TC7W08FU	IC	Q222		2SC4081(RS)	TRANSISTOR
△	IC224	TA78L09F	IC	Q223		DTC114EU	TRANSISTOR
△	IC351	MB40558PF	IC	Q225		2SC4081(RS)	TRANSISTOR
△	IC352	CXD1176Q	IC	Q226		FMC2	TRANSISTOR
△	IC353	CXD1176Q	IC	Q227		FMW1	TRANSISTOR
△	IC354	CXD1171M	IC	Q228		2SC4081(RS)	TRANSISTOR
△	IC355	CXD1177Q	IC	Q229		DTA144EU	TRANSISTOR
△	IC461	LM311PS	IC	Q230		XN6534	PAIR TRANSISTOR
△	IC463	TC7S32F	IC	Q231		2SC4081(RS)	TRANSISTOR
△	IC464	TC7S08F	IC	Q232		DTC124EU	CHIP D TR
△	IC465	TC74HC221AF	IC	Q233		DTC124EU	CHIP D TR
△	IC466	TC4W66F	IC	Q234		DTC124EU	CHIP D TR
△	IC467	TL092CPS	IC	Q235		2SC4081(RS)	TRANSISTOR
△	IC468	LM311PS	IC	Q236		2SA1532(C)	TRANSISTOR

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
Q237	2SA1576(RS)	TRANSISTOR		Q482	2SK663	FE TRANSISTOR
Q238	2SC4081(RS)	TRANSISTOR		Q483	2SC4081(RS)	TRANSISTOR
Q239	2SA1532(C)	TRANSISTOR		Q484	2SA1576(S)	TRANSISTOR
Q240	2SA1576(RS)	TRANSISTOR		Q485	2SC4081(RS)	TRANSISTOR
				Q486	2SC4081(RS)	TRANSISTOR
Q241	2SA1532(C)	TRANSISTOR		Q487	2SA1576(RS)	TRANSISTOR
Q242	2SC4081(RS)	TRANSISTOR		Q488	DTC114EU	TRANSISTOR
Q243	2SA1532(C)	TRANSISTOR		Q489	2SC4081(RS)	TRANSISTOR
Q244	2SC4081(RS)	TRANSISTOR		Q490	2SC4081(RS)	TRANSISTOR
				Q491	2SA1576(S)	TRANSISTOR
Q353	2SC4081(RS)	TRANSISTOR		Q492	2SA1576(RS)	TRANSISTOR
Q354	2SA1532(C)	TRANSISTOR		Q493	2SC4081(RS)	TRANSISTOR
Q355	2SA1532(C)	TRANSISTOR		Q494	FMW1	TRANSISTOR
Q358	2SC4081(RS)	TRANSISTOR		Q495	DTA114EU	TRANSISTOR
Q359	2SC4081(RS)	TRANSISTOR		Q496	2SC4081(RS)	TRANSISTOR
Q360	2SC4081(RS)	TRANSISTOR		Q497	2SC4081(RS)	TRANSISTOR
Q361	2SA1576(RS)	TRANSISTOR		Q498	2SC4081(RS)	TRANSISTOR
Q362	2SC4081(RS)	TRANSISTOR		Q499	2SA1576(S)	TRANSISTOR
Q363	2SC4081(RS)	TRANSISTOR				
Q364	2SA1576(RS)	TRANSISTOR		Q502	FMW1	TRANSISTOR
Q365	2SA1576(RS)	TRANSISTOR		Q503	DTA114EU	TRANSISTOR
Q368	2SC4081(RS)	TRANSISTOR		Q504	2SC4081(RS)	TRANSISTOR
Q369	2SC4081(RS)	TRANSISTOR		Q505	DTC144EU	TRANSISTOR
Q370	2SC4081(RS)	TRANSISTOR		Q506	2SK663	FE TRANSISTOR
Q371	2SA1576(RS)	TRANSISTOR		Q507	2SK663	FE TRANSISTOR
Q374	2SA1576(RS)	TRANSISTOR		Q508	DTC114EU	TRANSISTOR
Q375	2SC4081(RS)	TRANSISTOR		Q509	DTC114EU	TRANSISTOR
Q376	2SA1576(RS)	TRANSISTOR				
Q377	2SA1576(RS)	TRANSISTOR		D1	DAN202U	DIODE
Q378	2SA1576(RS)	TRANSISTOR		D2	DAN202U	DIODE
Q379	2SA1576(RS)	TRANSISTOR		D3	DAN202U	DIODE
Q380	2SA1576(RS)	TRANSISTOR				
Q381	2SA1576(RS)	TRANSISTOR		D201	DAN202U	DIODE
Q382	2SA1576(RS)	TRANSISTOR		D202	DA204U	DIODE
Q383	2SC4081(RS)	TRANSISTOR		D203	DAN202U	DIODE
				D204	DAN202U	DIODE
				D205	DA204U	DIODE
J461	2SC4081(RS)	TRANSISTOR		D206	DAN202U	DIODE
J462	2SA1576(RS)	TRANSISTOR		D207	DAN202U	DIODE
Q463	2SC4081(RS)	TRANSISTOR		D208	DAN202U	DIODE
Q464	2SA1576(RS)	TRANSISTOR		D209	DAN202U	DIODE
J465	2SC4081(RS)	TRANSISTOR		D210	DAN202U	DIODE
J466	2SC4081(RS)	TRANSISTOR				
Q467	2SC4081(RS)	TRANSISTOR		D211	DAP202U	DIODE
J468	2SK663	FE TRANSISTOR		D213	DAP202U	DIODE
J469	2SC4081(RS)	TRANSISTOR		D215	1SV228	V DIODE
J470	2SA1576(S)	TRANSISTOR		D216	DAN202U	DIODE
J471	2SC4081(RS)	TRANSISTOR		D351	DA204U	DIODE
J472	2SC4081(RS)	TRANSISTOR		D352	DAN202U	DIODE
Q473	2SA1576(RS)	TRANSISTOR		D353	DAN202U	DIODE
Q474	DTC114EU	TRANSISTOR		D354	DAN202U	DIODE
J475	2SC4081(RS)	TRANSISTOR		D355	DAN202U	DIODE
J476	2SA1576(RS)	TRANSISTOR		D356	DAN202U	DIODE
Q477	2SC4081(RS)	TRANSISTOR				
Q478	2SA1576(RS)	TRANSISTOR		D461	DAN202U	DIODE
J479	2SC4081(RS)	TRANSISTOR		D462	DAN202U	DIODE
J480	2SC4081(RS)	TRANSISTOR		D463	DAN202U	DIODE
				D464	DAN202U	DIODE
Q481	2SC4081(RS)	TRANSISTOR		D465	DTZ3.6A	ZENER DIODE

#Δ	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION
D466	DTZ2.0A	ZENER DIODE		R130	NRSA63J-471N	RESISTOR	470Ω,1/16W
D467	1SV228	V DIODE		R135	NRSA63J-471N	RESISTOR	470Ω,1/16W
D468	DAP202U	DIODE		R136	NRSA63J-471N	RESISTOR	470Ω,1/16W
D471	1SV228	V DIODE		R137	NRSA63J-471N	RESISTOR	470Ω,1/16W
D472	DAP202U	DIODE		R138	NRSA63J-471N	RESISTOR	470Ω,1/16W
D474	DTZ2.0A	ZENER DIODE		R139	NRSA63J-471N	RESISTOR	470Ω,1/16W
D475	DTZ3.6B	ZENER DIODE		R140	NRSA63J-471N	RESISTOR	470Ω,1/16W
D476	DTZ3.6B	ZENER DIODE		R144	NRSA63J-471N	RESISTOR	470Ω,1/16W
D477	DAN202U	DIODE		R145	NRSA63J-471N	RESISTOR	470Ω,1/16W
D478	DA114	DIODE		R146	NRSA63J-471N	RESISTOR	470Ω,1/16W
D479	DA114	DIODE		R147	NRSA63J-471N	RESISTOR	470Ω,1/16W
D500	DAN202U	DIODE		R148	NRSA63J-471N	RESISTOR	470Ω,1/16W
D501	DAN202U	DIODE		R149	NRSA63J-471N	RESISTOR	470Ω,1/16W
R5	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R154	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R11	NRSA63J-471N	RESISTOR	470Ω,1/16W	R155	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R12	NRSA63J-471N	RESISTOR	470Ω,1/16W	R156	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R14	NRSA63J-333N	RESISTOR	33KΩ,1/16W	R165	NRSA63J-101N	RESISTOR	100Ω,1/16W
R15	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R166	NRSA63J-101N	RESISTOR	100Ω,1/16W
R17	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W	R167	NRSA63J-101N	RESISTOR	100Ω,1/16W
R18	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R168	NRSA63J-101N	RESISTOR	100Ω,1/16W
R36	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R169	NRSA63J-101N	RESISTOR	100Ω,1/16W
R37	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R170	NRSA63J-101N	RESISTOR	100Ω,1/16W
R38	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R171	NRSA63J-101N	RESISTOR	100Ω,1/16W
R39	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R172	NRSA63J-101N	RESISTOR	100Ω,1/16W
R42	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R173	NRSA63J-101N	RESISTOR	100Ω,1/16W
R43	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R174	NRSA63J-101N	RESISTOR	100Ω,1/16W
R45	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R175	NRSA63J-101N	RESISTOR	100Ω,1/16W
R46	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R176	NRSA63J-101N	RESISTOR	100Ω,1/16W
R47	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R177	NRSA63J-101N	RESISTOR	100Ω,1/16W
R48	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R178	NRSA63J-101N	RESISTOR	100Ω,1/16W
R58	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R181	NRSA63J-101N	RESISTOR	100Ω,1/16W
R62	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R182	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R63	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R183	NRSA63J-101N	RESISTOR	100Ω,1/16W
R70	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R184	NRSA63J-101N	RESISTOR	100Ω,1/16W
R71	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R185	NRSA63J-471N	RESISTOR	470Ω,1/16W
R84	NRSA63J-0R0N	RESISTOR	0Ω,1/16W	R186	NRSA63J-471N	RESISTOR	470Ω,1/16W
R87	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W	R187	NRSA63J-471N	RESISTOR	470Ω,1/16W
R90	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R188	NRSA63J-471N	RESISTOR	470Ω,1/16W
R91	NRSA63J-471N	RESISTOR	470Ω,1/16W	R189	NRSA63J-471N	RESISTOR	470Ω,1/16W
R92	NRSA63J-471N	RESISTOR	470Ω,1/16W	R190	NRSA63J-471N	RESISTOR	470Ω,1/16W
R95	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R191	NRSA63J-101N	RESISTOR	100Ω,1/16W
R96	NRSA63J-0R0N	RESISTOR	0Ω,1/16W	R192	NRSA63J-101N	RESISTOR	100Ω,1/16W
R97	NRSA63J-0R0N	RESISTOR	0Ω,1/16W	R193	NRSA63J-101N	RESISTOR	100Ω,1/16W
R101	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R200	NRSA63J-101N	RESISTOR	100Ω,1/16W
R103	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R201	NRSA63J-471N	RESISTOR	470Ω,1/16W
R116	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R202	NRSA63J-471N	RESISTOR	470Ω,1/16W
R117	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R203	NRSA63J-471N	RESISTOR	470Ω,1/16W
R118	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W	R204	NRSA63J-471N	RESISTOR	470Ω,1/16W
R129	NRSA63J-471N	RESISTOR	470Ω,1/16W	R209	NRSA63J-101N	RESISTOR	100Ω,1/16W
				R210	NRSA63J-101N	RESISTOR	100Ω,1/16W
				R211	NRSA63J-101N	RESISTOR	100Ω,1/16W
				R212	NRSA63J-101N	RESISTOR	100Ω,1/16W
				R213	NRSA63J-101N	RESISTOR	100Ω,1/16W

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R214	NRSA63J-101N	RESISTOR 100Ω,1/16W		R281	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R215	NRSA63J-101N	RESISTOR 100Ω,1/16W		R282	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R216	NRSA63J-101N	RESISTOR 100Ω,1/16W		R283	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R217	NRSA63J-101N	RESISTOR 100Ω,1/16W		R284	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R218	NRSA63J-101N	RESISTOR 100Ω,1/16W		R285	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R219	NRSA63J-101N	RESISTOR 100Ω,1/16W		R286	NRSA63J-224N	RESISTOR 220KΩ,1/16W
					R287	NRSA63J-224N	RESISTOR 220KΩ,1/16W
	R221	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R288	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R222	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R289	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R224	NRSA63J-473N	RESISTOR 47KΩ,1/16W		R290	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R225	NRSA63J-101N	RESISTOR 100Ω,1/16W				
	R226	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R292	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R227	NRSA63J-101N	RESISTOR 100Ω,1/16W		R294	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R228	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R296	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R229	NRSA63J-101N	RESISTOR 100Ω,1/16W		R298	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R230	NRSA63J-101N	RESISTOR 100Ω,1/16W		R299	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
					R300	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R231	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W				
	R232	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R301	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R233	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R302	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R234	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R303	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R235	NRSA63J-101N	RESISTOR 100Ω,1/16W		R304	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R236	NRSA63J-101N	RESISTOR 100Ω,1/16W		R306	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R238	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R307	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R239	NRSA63J-101N	RESISTOR 100Ω,1/16W		R308	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R240	NRSA63J-101N	RESISTOR 100Ω,1/16W		R310	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R241	NRSA63J-101N	RESISTOR 100Ω,1/16W		R311	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R242	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R314	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R243	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R315	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R244	NRSA63J-101N	RESISTOR 100Ω,1/16W		R316	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R245	NRSA63J-101N	RESISTOR 100Ω,1/16W		R318	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R246	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R319	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R247	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R320	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R248	NRSA63J-563N	RESISTOR 56KΩ,1/16W				
	R249	NRSA63J-563N	RESISTOR 56KΩ,1/16W				
	R250	NRSA63J-101N	RESISTOR 100Ω,1/16W				
					R321	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
					R322	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
					R323	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R251	NRSA63J-103N	RESISTOR 10KΩ,1/16W		R326	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R252	NRSA63J-101N	RESISTOR 100Ω,1/16W		R328	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R255	NRSA63J-101N	RESISTOR 100Ω,1/16W		R329	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R257	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W				
	R259	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R331	NRSA63J-101N	RESISTOR 100Ω,1/16W
					R332	NRSA63J-101N	RESISTOR 100Ω,1/16W
					R333	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R263	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R334	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R264	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R335	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R265	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R336	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R266	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R337	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R267	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R338	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R268	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R339	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R269	NRSA63J-102N	RESISTOR 1KΩ,1/16W				
	R270	NRSA63J-471N	RESISTOR 470Ω,1/16W				
					R342	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
					R345	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
					R347	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R274	NRSA63J-101N	RESISTOR 100Ω,1/16W		R348	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R275	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R349	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R276	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R350	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R277	NRSA63J-102N	RESISTOR 1KΩ,1/16W				
	R278	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R351	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R279	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R352	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R280	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R353	NRSA63J-471N	RESISTOR 470Ω,1/16W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R354		NRSA63J-471N	RESISTOR 470Ω,1/16W	R431		NRSA63J-101N	RESISTOR 100Ω,1/16W
R355		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R432		NRSA63J-101N	RESISTOR 100Ω,1/16W
R357		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R433		NRSA63J-101N	RESISTOR 100Ω,1/16W
R360		NRSA63J-102N	RESISTOR 1KΩ,1/16W	R434		NRSA63J-101N	RESISTOR 100Ω,1/16W
R361		NRSA63J-101N	RESISTOR 100Ω,1/16W	R435		NRSA63J-101N	RESISTOR 100Ω,1/16W
R362		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R436		NRSA63J-101N	RESISTOR 100Ω,1/16W
R363		NRSA63J-101N	RESISTOR 100Ω,1/16W	R438		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R364		NRSA63J-101N	RESISTOR 100Ω,1/16W	R441		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R365		NRSA63J-101N	RESISTOR 100Ω,1/16W	R442		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R366		NRSA63J-101N	RESISTOR 100Ω,1/16W	R443		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R367		NRSA63J-101N	RESISTOR 100Ω,1/16W	R444		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R368		NRSA63J-101N	RESISTOR 100Ω,1/16W	R446		NRSA63J-101N	RESISTOR 100Ω,1/16W
R369		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	R451		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R370		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	R452		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R373		NRSA63J-101N	RESISTOR 100Ω,1/16W	R453		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R374		NRSA63J-101N	RESISTOR 100Ω,1/16W	R454		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R375		NRSA63J-471N	RESISTOR 470Ω,1/16W	R455		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R376		NRSA63J-471N	RESISTOR 470Ω,1/16W	R456		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R377		NRSA63J-471N	RESISTOR 470Ω,1/16W	R457		NRSA63J-101N	RESISTOR 100Ω,1/16W
R378		NRSA63J-471N	RESISTOR 470Ω,1/16W	R458		NRSA63J-101N	RESISTOR 100Ω,1/16W
R379		NRSA63J-101N	RESISTOR 100Ω,1/16W	R459		NRSA63J-101N	RESISTOR 100Ω,1/16W
R380		NRSA63J-101N	RESISTOR 100Ω,1/16W	R460		NRSA63J-101N	RESISTOR 100Ω,1/16W
R381		NRSA63J-101N	RESISTOR 100Ω,1/16W	R461		NRSA63J-101N	RESISTOR 100Ω,1/16W
R382		NRSA63J-101N	RESISTOR 100Ω,1/16W	R462		NRSA63J-101N	RESISTOR 100Ω,1/16W
R383		NRSA63J-471N	RESISTOR 470Ω,1/16W	R500		NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R384		NRSA63J-471N	RESISTOR 470Ω,1/16W	R501		NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R386		NRSA63J-473N	RESISTOR 47KΩ,1/16W	R502		NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R387		NRSA63J-101N	RESISTOR 100Ω,1/16W	R504		QRS188J-470YN	RESISTOR 47Ω,1/8W
R388		NRSA63J-101N	RESISTOR 100Ω,1/16W	R505		QRS188J-470YN	RESISTOR 47Ω,1/8W
R389		NRSA63J-101N	RESISTOR 100Ω,1/16W	R506		QRS188J-470YN	RESISTOR 47Ω,1/8W
R390		NRSA63J-101N	RESISTOR 100Ω,1/16W	R515		NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R391		NRSA63J-471N	RESISTOR 470Ω,1/16W	R516		NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R392		NRSA63J-471N	RESISTOR 470Ω,1/16W	R517		NRSA63J-473N	RESISTOR 47KΩ,1/16W
R393		NRSA63J-101N	RESISTOR 100Ω,1/16W	R518		NRSA63J-473N	RESISTOR 47KΩ,1/16W
R395		NRSA63J-101N	RESISTOR 100Ω,1/16W	R519		NRSA63J-223N	RESISTOR 22KΩ,1/16W
R396		NRSA63J-471N	RESISTOR 470Ω,1/16W	R520		NRSA63J-223N	RESISTOR 22KΩ,1/16W
R398		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R521		NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R400		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R522		NRSA63J-473N	RESISTOR 47KΩ,1/16W
R402		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R523		NRSA63J-103N	RESISTOR 10KΩ,1/16W
R405		NRSA63J-101N	RESISTOR 100Ω,1/16W	R525		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R406		NRSA63J-471N	RESISTOR 470Ω,1/16W	R526		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
R407		NRSA63J-471N	RESISTOR 470Ω,1/16W	R527		NRSA63J-101N	RESISTOR 100Ω,1/16W
R408		NRSA63J-471N	RESISTOR 470Ω,1/16W	R528		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
R409		NRSA63J-101N	RESISTOR 100Ω,1/16W	R529		NRSA63J-153N	RESISTOR 15KΩ,1/16W
R410		NRSA63J-101N	RESISTOR 100Ω,1/16W	R530		NRSA63J-331N	RESISTOR 330Ω,1/16W
R411		NRSA63J-101N	RESISTOR 1000Ω,1/16W	R531		NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R412		NRSA63J-101N	RESISTOR 100Ω,1/16W	R532		NRSA63J-101N	RESISTOR 100Ω,1/16W
R413		NRSA63J-101N	RESISTOR 100Ω,1/16W	R533		NRSA63J-391N	RESISTOR 390Ω,1/16W
R414		NRSA63J-471N	RESISTOR 470Ω,1/16W	R534		NRSA63J-391N	RESISTOR 390Ω,1/16W
R415		NRSA63J-101N	RESISTOR 100Ω,1/16W	R535		NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R416		NRSA63J-101N	RESISTOR 100Ω,1/16W	R536		NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R417		NRSA63J-101N	RESISTOR 100Ω,1/16W	R537		NRSA63J-681N	RESISTOR 680Ω,1/16W
R418		NRSA63J-101N	RESISTOR 100Ω,1/16W	R538		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W
R419		NRSA63J-101N	RESISTOR 100Ω,1/16W	R539		NRSA63J-153N	RESISTOR 15KΩ,1/16W
R430		NRSA63J-101N	RESISTOR 100Ω,1/16W				

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R540	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R600	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R541	NRSA63J-750N	RESISTOR 75Ω,1/16W		R601	NRSA63J-471N	RESISTOR 470Ω,1/16W
R542	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W		R602	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R543	NRSA63J-473N	RESISTOR 47KΩ,1/16W		R603	QRS188J-470YN	RESISTOR 47Ω,1/8W
R544	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R605	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R545	NRSA63J-103N	RESISTOR 10KΩ,1/16W		R606	NRSA63J-101N	RESISTOR 100Ω,1/16W
R547	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R607	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W
R548	NRSA63J-101N	RESISTOR 100Ω,1/16W		R608	NRSA63J-621N	RESISTOR 620Ω,1/16W
R549	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R609	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W
R550	NRSA63J-153N	RESISTOR 15KΩ,1/16W		R610	NRSA63J-471N	RESISTOR 470Ω,1/16W
R551	NRSA63J-331N	RESISTOR 330Ω,1/16W		R611	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R552	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W		R612	QRS188J-470YN	RESISTOR 47Ω,1/8W
R553	NRSA63J-101N	RESISTOR 100Ω,1/16W		R613	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R554	NRSA63J-391N	RESISTOR 390Ω,1/16W		R614	NRSA63J-220N	RESISTOR 22Ω,1/16W
R555	NRSA63J-391N	RESISTOR 390Ω,1/16W		R615	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R556	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W		R616	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R557	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W		R617	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R558	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W		R618	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R559	NRSA63J-681N	RESISTOR 680Ω,1/16W		R619	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R560	NRSA63J-153N	RESISTOR 15KΩ,1/16W		R620	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R561	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R621	NRSA63J-220N	RESISTOR 22Ω,1/16W
R562	NRSA63J-750N	RESISTOR 75Ω,1/16W		R622	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R563	NRSA63G-114N	RESISTOR 110KΩ,1/16W		R623	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R564	NRSA63G-104N	RESISTOR 100KΩ,1/16W		R624	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R565	QRS188J-561YN	RESISTOR 560Ω,1/8W		R625	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R566	NRSA63J-101N	RESISTOR 100Ω,1/16W		R626	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R567	NRSA63J-101N	RESISTOR 100Ω,1/16W		R627	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R568	NRSA63J-101N	RESISTOR 100Ω,1/16W		R628	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R569	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R629	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R570	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R630	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R571	QRS188J-0R0YN	RESISTOR 0Ω,1/8W		R631	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R572	QRS188J-0R0YN	RESISTOR 0Ω,1/8W		R632	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R573	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W		R633	NRSA63J-273N	RESISTOR 27KΩ,1/16W
R574	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R634	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R575	NRSA63J-221N	RESISTOR 220Ω,1/16W		R635	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R576	NRSA63J-221N	RESISTOR 220Ω,1/16W		R636	NRSA63J-105N	RESISTOR 1MΩ,1/16W
R577	NRSA63J-221N	RESISTOR 220Ω,1/16W		R637	NRSA63J-104N	RESISTOR 100KΩ,1/16W
R578	NRSA63J-221N	RESISTOR 220Ω,1/16W		R638	NRSA63J-105N	RESISTOR 1MΩ,1/16W
R579	NRSA63J-103N	RESISTOR 10KΩ,1/16W		R639	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R580	NRSA63J-221N	RESISTOR 220Ω,1/16W		R640	NRSA63J-391N	RESISTOR 390Ω,1/16W
R581	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R642	NRSA63J-684N	RESISTOR 680KΩ,1/16W
R582	NRSA63J-101N	RESISTOR 100Ω,1/16W		R643	NRSA63J-473N	RESISTOR 47KΩ,1/16W
R583	NRSA63J-221N	RESISTOR 220Ω,1/16W		R647	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W
R584	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R648	NRSA63J-105N	RESISTOR 1MΩ,1/16W
R585	NRSA63J-181N	RESISTOR 180Ω,1/16W		R649	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R586	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R650	NRSA63G-332N	RESISTOR 3.3KΩ,1/16W
R587	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R651	NRSA63G-473N	RESISTOR 47KΩ,1/16W
R588	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R652	NRSA63G-333N	RESISTOR 33KΩ,1/16W
R591	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R653	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R592	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R654	NRSA63J-473N	RESISTOR 47KΩ,1/16W
R593	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R655	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R594	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R656	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R595	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W		R657	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R597	NRSA63J-101N	RESISTOR 100Ω,1/16W		R658	NRSA63J-181N	RESISTOR 180Ω,1/16W
R598	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R659	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R599	NRSA63J-621N	RESISTOR 620Ω,1/16W		R660	NRSA63J-223N	RESISTOR 22KΩ,1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
R661	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	R730	NRSA63J-221N	RESISTOR 220Ω,1/16W
R662	NRSA63J-105N	RESISTOR 1MΩ,1/16W	R732	NRSA63J-104N	RESISTOR 100KΩ,1/16W
R667	NRSA63J-473N	RESISTOR 47KΩ,1/16W	R733	NRSA63J-470N	RESISTOR 47Ω,1/16W
R668	NRSA63J-473N	RESISTOR 47KΩ,1/16W	R734	NRSA63J-561N	RESISTOR 560Ω,1/16W
R669	QRS188J-471YN	RESISTOR 470Ω,1/8W	R735	NRVA63D-821N	MF RESISTOR 820Ω,1/16W
R670	NRSA63J-102N	RESISTOR 1KΩ,1/16W	R736	NRSA63J-101N	RESISTOR 100Ω,1/16W
R671	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W	R737	NRVA63D-222N	MF RESISTOR 2.2KΩ,1/16W
R672	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	R739	NRVA63D-561N	MF RESISTOR 560Ω,1/16W
R673	NRSA63J-223N	RESISTOR 22KΩ,1/16W	R740	NRSA63J-101N	RESISTOR 100Ω,1/16W
R674	NRSA63J-123N	RESISTOR 12KΩ,1/16W			
R675	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	R741	NRSA63J-182N	RESISTOR 1.8KΩ,1/16W
R676	NRSA63J-682N	RESISTOR 6.8KΩ,1/16W	R743	NRVA63D-331N	MF RESISTOR 330Ω,1/16W
R677	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	R744	NRVA62D-331N	RESISTOR 330Ω,1/16W
R679	NRSA63J-105N	RESISTOR 1MΩ,1/16W	R746	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R680	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	R747	NRSA63J-220N	RESISTOR 22Ω,1/16W
			R748	NRSA63J-333N	RESISTOR 33KΩ,1/16W
R681	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W			
R683	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	R751	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R684	NRSA63J-473N	RESISTOR 47KΩ,1/16W	R752	NRSA63J-221N	RESISTOR 220Ω,1/16W
R685	NRSA63J-101N	RESISTOR 100Ω,1/16W	R753	NRSA63J-221N	RESISTOR 220Ω,1/16W
R686	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	R754	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R687	NRSA63J-223N	RESISTOR 22KΩ,1/16W	R755	NRSA63J-221N	RESISTOR 220Ω,1/16W
R688	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W	R756	NRSA63J-221N	RESISTOR 220Ω,1/16W
R689	NRSA63J-103N	RESISTOR 10KΩ,1/16W	R757	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
			R758	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R691	NRVA63D-182N	MF RESESTOR	R759	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R692	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W	R760	NRSA63J-104N	RESISTOR 100KΩ,1/16W
R693	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W			
R694	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	R761	NRSA63J-470N	RESISTOR 47Ω,1/16W
R695	NRSA63J-273N	RESISTOR 27KΩ,1/16W	R762	NRSA63J-561N	RESISTOR 560Ω,1/16W
R697	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	R763	NRVA63D-821N	MF RESISTOR 820Ω,1/16W
R698	NRSA63J-102N	RESISTOR 1KΩ,1/16W	R764	NRSA63J-101N	RESISTOR 100Ω,1/16W
R699	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R765	NRVA63D-222N	MF RESISTOR 2.2KΩ,1/16W
R700	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R766	NRVA63D-561N	MF RESISTOR 560Ω,1/16W
			R767	NRSA63J-101N	RESISTOR 100Ω,1/16W
R701	NRSA63J-104N	RESISTOR 100KΩ,1/16W	R768	NRSA63J-182N	RESISTOR 1.8KΩ,1/16W
R702	NRSA63J-470N	RESISTOR 47Ω,1/16W			
R704	NRVA63D-471N	RESISTOR 470Ω,1/16W	R771	NRVA63D-331N	MF RESISTOR 330Ω,1/16W
R705	NRSA63J-271N	RESISTOR 270Ω,1/16W	R772	NRVA62D-331N	RESISTOR 330Ω,1/16W
R706	NRVA63D-272N	MF RESISTOR 2.7KΩ,1/16W	R774	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R707	NRVA63D-683N	MF RESISTOR 68KΩ,1/6W	R775	NRSA63J-220N	RESISTOR 22Ω,1/16W
R708	NRVA63D-561N	MF RESISTOR 560Ω,1/16W	R776	NRSA63J-333N	RESISTOR 33KΩ,1/16W
R709	NRSA63J-181N	RESISTOR 180Ω,1/16W	R779	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R710	NRSA63J-182N	RESISTOR 1.8KΩ,1/16W	R780	NRSA63J-104N	RESISTOR 100KΩ,1/16W
R712	NRVA63D-331N	MF RESISTOR 330Ω,1/16W	R781	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R713	NRVA62D-331N	RESISTOR 330Ω,1/16W	R785	NRSA63J-153N	RESISTOR 15KΩ,1/16W
R715	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W	R790	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
R716	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W			
R717	NRSA63J-102N	RESISTOR 1KΩ,1/16W	R796	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R718	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	R797	NRVA63D-201N	RESISTOR 200Ω,1/16W
R720	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W	R798	NRVA63D-332N	MF RESISTOR 3.3KΩ,1/16W
			R799	NRVA63D-332N	MF RESISTOR 3.3KΩ,1/16W
R721	NRSA63J-220N	RESISTOR 22Ω,1/16W			
R722	NRSA63J-0R0N	RESISTOR 0Ω,1/16W	R801	NRVA63D-222N	MF RESISTOR 2.2KΩ,1/16W
R723	QRS188J-220YN	RESISTOR 22Ω,1/8W	R802	NRSA63J-220N	RESISTOR 22Ω,1/16W
R724	QRS188J-220YN	RESISTOR 22Ω,1/8W	R803	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
R725	QRS188J-220YN	RESISTOR 22Ω,1/8W	R804	NRVA63D-681N	MF RESISTOR 680Ω,1/16W
R727	NRSA63J-221N	RESISTOR 220Ω,1/16W	R805	NRVA63D-103N	MF RESISTOR 10KΩ,1/16W
R728	NRSA63J-221N	RESISTOR 220Ω,1/16W	R807	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R729	NRSA63J-221N	RESISTOR 220Ω,1/16W	R808	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R809	NRSA63J-220N	RESISTOR 22Ω,1/16W		R884	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R810	NRVA63D-102N	MF RESISTOR 1KΩ,1/16W		R886	NRVA63D-102N	MF RESISTOR 1KΩ,1/16W
	R811	NRVA63D-103N	MF RESISTOR 10KΩ,1/16W		R887	NRSA63J-561N	RESISTOR 560Ω,1/16W
	R813	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R888	NRVA63D-681N	MF RESISTOR 680Ω,1/16W
	R814	NRVA63D-201N	RESISTOR 200Ω,1/16W		R889	NRVA63D-121N	MF RESISTOR 120Ω,1/16W
	R815	NRVA63D-201N	RESISTOR 200Ω,1/16W		R890	NRSA63J-561N	RESISTOR 560Ω,1/16W
	R817	NRVA63D-332N	MF RESISTOR 3.3KΩ,1/16W		R891	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R818	NRVA63D-222N	MF RESISTOR 2.2KΩ,1/16W		R892	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
	R819	NRVA63D-332N	MF RESISTOR 3.3KΩ,1/16W		R893	NRSA63J-125N	RESISTOR 1.2MΩ,1/16W
	R820	NRSA63J-220N	RESISTOR 22Ω,1/16W		R894	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W
	R821	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R895	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R822	NRVA63D-102N	MF RESISTOR 1KΩ,1/16W		R896	NRSA63J-221N	RESISTOR 220Ω,1/16W
	R823	NRVA63D-103N	MF RESISTOR 10KΩ,1/16W		R897	NRSA63J-103N	RESISTOR 10KΩ,1/16W
	R825	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		R898	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R826	NRSA63J-225N	RESISTOR 2.2MΩ,1/16W		R899	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R827	NRSA63J-225N	RESISTOR 2.2MΩ,1/16W		R900	NRSA63J-684N	RESISTOR 680KΩ,1/16W
	R840	NRSA63J-471N	RESISTOR 47Ω,1/16W		R901	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W
	R841	NRSA63J-471N	RESISTOR 47Ω,1/16W		R902	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R842	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R903	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R845	NRSA63J-104N	RESISTOR 100KΩ,1/16W		R904	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
	R846	NRSA63J-273N	RESISTOR 27KΩ,1/16W		R905	NRSA63J-393N	RESISTOR 39KΩ,1/16W
	R847	NRSA63J-682N	RESISTOR 6.8KΩ,1/16W		R906	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W
	R849	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R907	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W
	R850	NRSA63J-273N	RESISTOR 27KΩ,1/16W		R908	NRSA63J-331N	RESISTOR 330Ω,1/16W
	R851	NRSA63J-223N	RESISTOR 22KΩ,1/16W		R909	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R852	NRSA63J-153N	RESISTOR 15KΩ,1/16W		R910	NRSA63J-103N	RESISTOR 10KΩ,1/16W
	R853	PELN0968-102Y	NOISE FILTER		R911	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W
	R854	NRSA63J-103N	RESISTOR 10KΩ,1/16W		R912	NRSA63J-391N	RESISTOR 390Ω,1/16W
	R855	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W		R913	NRSA63J-221N	RESISTOR 220Ω,1/16W
	R856	NRSA63J-223N	RESISTOR 22KΩ,1/16W		R914	NRSA63J-471N	RESISTOR 47Ω,1/16W
	R857	NRSA63J-181N	RESISTOR 18Ω,1/16W		R915	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R858	NRSA63J-220N	RESISTOR 22Ω,1/16W		R916	NRSA63J-821N	RESISTOR 820Ω,1/16W
	R859	NRSA63J-331N	RESISTOR 330Ω,1/16W		R917	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R860	NRSA63J-105N	RESISTOR 1MΩ,1/16W		R918	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R861	NRSA63J-103N	RESISTOR 10KΩ,1/16W		R919	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R862	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W		R920	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R863	NRSA63J-391N	RESISTOR 390Ω,1/16W		R921	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R864	NRSA63J-221N	RESISTOR 220Ω,1/16W		R922	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R865	NRSA63J-471N	RESISTOR 47Ω,1/16W		R923	NRVA63D-821N	MF RESISTOR 820Ω,1/16W
	R866	NRSA63J-101N	RESISTOR 100Ω,1/16W		R924	NVP1311-332N	V RESISTOR
	R867	NRSA63J-102N	RESISTOR 1KΩ,1/16W		R927	NRSA63J-473N	RESISTOR 47KΩ,1/16W
	R868	NRSA63J-821N	RESISTOR 820Ω,1/16W		R928	NRSA63J-473N	RESISTOR 47KΩ,1/16W
	R869	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R929	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
	R870	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R930	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
	R871	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W		R933	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R872	NRSA63J-101N	RESISTOR 100Ω,1/16W		R934	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R873	NRSA63J-101N	RESISTOR 100Ω,1/16W		R935	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R874	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R936	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R876	NRSA63J-101N	RESISTOR 100Ω,1/16W		R937	NRSA63J-561N	RESISTOR 560Ω,1/16W
	R878	NRVA63D-102N	MF RESISTOR 1KΩ,1/16W		R938	NRVA63D-681N	MF RESISTOR 680Ω,1/16W
	R879	NRVA63D-222N	MF RESISTOR 2.2KΩ,1/16W		R939	NRVA63D-121N	MF RESISTOR 120Ω,1/16W
	R880	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R940	NRSA63J-561N	RESISTOR 560Ω,1/16W
	R881	NRSA63J-101N	RESISTOR 100Ω,1/16W		R941	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
	R882	NRSA63J-0R0N	RESISTOR 0Ω,1/16W		R942	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
					R943	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W
					R944	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R945		NRSA63J-125N	RESISTOR 1.2MΩ,1/16W	R1004		NRSA63J-221N	RESISTOR 220Ω,1/16W
R946		NRSA63J-221N	RESISTOR 220Ω,1/16W	R1005		NRSA63J-221N	RESISTOR 220Ω,1/16W
R947		NRSA63J-103N	RESISTOR 10KΩ,1/16W	R1006		NRSA63J-561N	RESISTOR 560Ω,1/16W
R948		NRSA63J-102N	RESISTOR 1KΩ,1/16W	R1007		NRSA63J-561N	RESISTOR 560Ω,1/16W
R949		NRSA63J-101N	RESISTOR 100Ω,1/16W	R1008		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R950		NRSA63J-684N	RESISTOR 680KΩ,1/16W	R1009		NRSA63J-102N	RESISTOR 1KΩ,1/16W
				R1010		NRSA63J-564N	RESISTOR 560KΩ,1/16W
R951		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W	R1011		NRSA63J-564N	RESISTOR 560KΩ,1/16W
R952		NRSA63J-102N	RESISTOR 1KΩ,1/16W	R1012		NRSA63J-473N	RESISTOR 47KΩ,1/16W
R953		NRSA63J-102N	RESISTOR 1KΩ,1/16W	R1013		NRSA63J-473N	RESISTOR 47KΩ,1/16W
R954		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	R1014		NRSA63J-103N	RESISTOR 10KΩ,1/16W
R955		NRSA63J-393N	RESISTOR 39KΩ,1/16W	R1015		NRSA63J-103N	RESISTOR 10KΩ,1/16W
R956		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W	R1050		NRSA63J-331N	RESISTOR 330Ω,1/16W
R957		NRSA63J-331N	RESISTOR 330Ω,1/16W	R1051		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R958		NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	R1052		NRSA63J-394N	RESISTOR 390KΩ,1/16W
R959		NRSA63J-223N	RESISTOR 22KΩ,1/16W	R1053		NRSA63J-331N	RESISTOR 330Ω,1/16W
R960		NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	R1054		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R961		NRSA63J-103N	RESISTOR 10KΩ,1/16W	R1055		NRSA63J-394N	RESISTOR 390KΩ,1/16W
R962		NRSA63J-223N	RESISTOR 22KΩ,1/16W	R1056		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R963		NRSA63J-103N	RESISTOR 10KΩ,1/16W	R1057		NRSA63J-102N	RESISTOR 1KΩ,1/16W
R964		NRSA63J-272N	RESISTOR 2.7KΩ,1/16W				
R965		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W				
R966		NRVA63D-182N	MF RESESTOR				
R967		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W				
R968		NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	RA4		PERE0560-471JY	RESISTOR ARRAY
R969		NRSA63J-562N	RESISTOR 5.6KΩ,1/16W	RA5		PERE0560-471JY	RESISTOR ARRAY
R970		NRSA63J-273N	RESISTOR 27KΩ,1/16W	RA6		PERE0560-471JY	RESISTOR ARRAY
R972		NRSA63J-473N	RESISTOR 47KΩ,1/16W	RA11		PERE0560-471JY	RESISTOR ARRAY
R973		NRSA63J-102N	RESISTOR 1KΩ,1/16W	RA12		PERE0560-471JY	RESISTOR ARRAY
R974		NRSA63J-273N	RESISTOR 27KΩ,1/16W	RA13		PERE0560-471JY	RESISTOR ARRAY
R975		NRSA63J-104N	RESISTOR 100KΩ,1/16W	RA15		PERE0560-471JY	RESISTOR ARRAY
R976		NRSA63J-682N	RESISTOR 6.8KΩ,1/16W	RA16		PERE0560-471JY	RESISTOR ARRAY
R978		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	RA17		PERE0560-221JY	RESISTOR ARRAY
R979		NRSA63J-273N	RESISTOR 27KΩ,1/16W	RA18		PERE0560-221JY	RESISTOR ARRAY
R980		NRSA63J-473N	RESISTOR 47KΩ,1/16W	RA19		PERE0560-221JY	RESISTOR ARRAY
				RA20		PERE0560-221JY	RESISTOR ARRAY
R981		NRSA63J-223N	RESISTOR 22KΩ,1/16W				
R982		NRSA63J-153N	RESISTOR 15KΩ,1/16W	RA21		PERE0560-471JY	RESISTOR ARRAY
R983		PELN0968-102Y	NOISE FILTER	RA22		PERE0560-471JY	RESISTOR ARRAY
R984		NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	RA26		PERE0560-471JY	RESISTOR ARRAY
R985		NRSA63J-103N	RESISTOR 10KΩ,1/16W	RA27		PERE0560-471JY	RESISTOR ARRAY
R986		NRSA63J-223N	RESISTOR 22KΩ,1/16W	RA28		PERE0560-471JY	RESISTOR ARRAY
R987		NRSA63J-181N	RESISTOR 180Ω,1/16W				
R988		NRSA63J-220N	RESISTOR 22Ω,1/16W	RA31		PERE0560-471JY	RESISTOR ARRAY
R989		NRSA63J-331N	RESISTOR 330Ω,1/16W	RA32		PERE0560-471JY	RESISTOR ARRAY
R990		NRSA63J-105N	RESISTOR 1MΩ,1/16W	RA33		PERE0560-471JY	RESISTOR ARRAY
R991		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	RA81		PERE0560-471JY	RESISTOR ARRAY
R992		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	RA82		PERE0560-471JY	RESISTOR ARRAY
R993		NRSA63J-223N	RESISTOR 22KΩ,1/16W	RA83		PERE0560-101JY	RESISTOR ARRAY
R994		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	RA84		PERE0560-471JY	RESISTOR ARRAY
R995		NRSA63J-223N	RESISTOR 22KΩ,1/16W	RA85		PERE0560-101JY	RESISTOR ARRAY
R996		NRSA63J-102N	RESISTOR 1KΩ,1/16W	RA86		PERE0560-101JY	RESISTOR ARRAY
R997		NRSA63J-102N	RESISTOR 1KΩ,1/16W	RA87		PERE0560-101JY	RESISTOR ARRAY
R998		NRSA63J-223N	RESISTOR 22KΩ,1/16W	RA88		PERE0560-101JY	RESISTOR ARRAY
R999		NRSA63J-103N	RESISTOR 10KΩ,1/16W	RA89		PERE0560-101JY	RESISTOR ARRAY
R1001		NRSA63J-221N	RESISTOR 220Ω,1/16W	RA90		PERE0560-101JY	RESISTOR ARRAY
R1002		NRSA63J-221N	RESISTOR 220Ω,1/16W	RA91		PERE0560-101JY	RESISTOR ARRAY
R1003		NRSA63J-102N	RESISTOR 1KΩ,1/16W	RA93		PERE0560-101JY	RESISTOR ARRAY

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
RA94	PERE0560-102JY	RESISTOR ARRAY		C8	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA95	PERE0560-102JY	RESISTOR ARRAY		C9	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA96	PERE0560-102JY	RESISTOR ARRAY		C10	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA97	PERE0560-102JY	RESISTOR ARRAY				
RA98	PERE0560-101JY	RESISTOR ARRAY		C11	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA99	PERE0560-101JY	RESISTOR ARRAY		C12	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA100	PERE0560-101JY	RESISTOR ARRAY		C13	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C14	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA101	PERE0560-101JY	RESISTOR ARRAY		C15	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA102	PERE0560-101JY	RESISTOR ARRAY		C16	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA103	PERE0560-101JY	RESISTOR ARRAY		C17	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA104	PERE0560-101JY	RESISTOR ARRAY		C18	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA105	PERE0560-101JY	RESISTOR ARRAY		C19	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA106	PERE0560-101JY	RESISTOR ARRAY		C20	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA107	PERE0560-101JY	RESISTOR ARRAY				
RA108	PERE0560-101JY	RESISTOR ARRAY		C21	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA109	PERE0560-101JY	RESISTOR ARRAY		C23	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA110	PERE0560-101JY	RESISTOR ARRAY		C24	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C25	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA131	PERE0560-101JY	RESISTOR ARRAY		C26	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA132	PERE0560-101JY	RESISTOR ARRAY		C27	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA133	PERE0560-101JY	RESISTOR ARRAY		C28	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA134	PERE0560-101JY	RESISTOR ARRAY		C29	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA136	PERE0560-471JY	RESISTOR ARRAY		C30	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA137	PERE0560-471JY	RESISTOR ARRAY				
RA138	PERE0560-471JY	RESISTOR ARRAY		C31	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA139	PERE0560-471JY	RESISTOR ARRAY		C32	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA140	PERE0560-101JY	RESISTOR ARRAY		C33	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C34	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA141	PERE0560-101JY	RESISTOR ARRAY		C35	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA142	PERE0560-101JY	RESISTOR ARRAY		C36	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA143	PERE0560-101JY	RESISTOR ARRAY		C37	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA144	PERE0560-101JY	RESISTOR ARRAY		C39	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C40	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA151	PERE0560-471JY	RESISTOR ARRAY				
RA152	PERE0560-471JY	RESISTOR ARRAY		C41	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA153	PERE0560-471JY	RESISTOR ARRAY		C42	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA154	PERE0560-471JY	RESISTOR ARRAY		C43	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA155	PERE0560-471JY	RESISTOR ARRAY		C44	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA156	PERE0560-471JY	RESISTOR ARRAY		C45	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA157	PERE0560-471JY	RESISTOR ARRAY		C46	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA158	PERE0560-471JY	RESISTOR ARRAY		C47	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C48	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA501	PERE0560-101JY	RESISTOR ARRAY		C49	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA502	PERE0560-101JY	RESISTOR ARRAY		C50	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA503	PERE0560-101JY	RESISTOR ARRAY				
RA504	PERE0560-101JY	RESISTOR ARRAY		C51	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA505	PERE0560-101JY	RESISTOR ARRAY		C52	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA506	PERE0560-101JY	RESISTOR ARRAY		C53	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C54	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA513	PERE0560-0R0JY	RESISTOR ARRAY		C55	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA514	PERE0560-0R0JY	RESISTOR ARRAY		C56	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA515	PERE0560-0R0JY	RESISTOR ARRAY		C58	NCB31HK-103A	CAPACITOR 0.01μF,50V
RA516	PERE0560-0R0JY	RESISTOR ARRAY		C59	NCB31HK-103A	CAPACITOR 0.01μF,50V
				C60	NCB31HK-103A	CAPACITOR 0.01μF,50V
C1	NCB31HK-103A	CAPACITOR 0.01μF,50V		C61	NEA21CM-106N	E CAPACITOR 10μF,16V
C3	NCB31HK-103A	CAPACITOR 0.01μF,50V		C62	NCB31HK-103A	CAPACITOR 0.01μF,50V
C4	NCB31HK-103A	CAPACITOR 0.01μF,50V		C63	NCB31HK-103A	CAPACITOR 0.01μF,50V
C5	NCB31HK-103A	CAPACITOR 0.01μF,50V		C64	NCB31HK-103A	CAPACITOR 0.01μF,50V
C6	NCB31HK-103A	CAPACITOR 0.01μF,50V		C65	NCB31HK-103A	CAPACITOR 0.01μF,50V
C7	NCB31HK-103A	CAPACITOR 0.01μF,50V		C66	NCB31HK-103A	CAPACITOR 0.01μF,50V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
C67	NCB31HK-103A	CAPACITOR 0.01μF,50V	C129	NCB31EK-222A	CAPACITOR 0.0022μF,25V
C69	NCB31HK-103A	CAPACITOR 0.01μF,50V	C130	or NCB31HK-222A NCB31HK-103A	CAPACITOR 0.0022μF,50V 0.01μF,50V
C70	NCB31HK-103A	CAPACITOR 0.01μF,50V			
C71	NCB31HK-103A	CAPACITOR 0.01μF,50V	C131	NCB31HK-103A	CAPACITOR 0.01μF,50V
C72	NCB31HK-103A	CAPACITOR 0.01μF,50V	C132	NCB31HK-103A	CAPACITOR 0.01μF,50V
C73	NCB31HK-103A	CAPACITOR 0.01μF,50V	C133	NCB31HK-103A	CAPACITOR 0.01μF,50V
C75	NFV41HJ-392AY	CHIP F CAP 0.0039μF,50V	C134	NCB31HK-103A	CAPACITOR 0.01μF,50V
C76	NCB31HK-103A	CAPACITOR 0.01μF,50V	C135	NCB31HK-103A	CAPACITOR 0.01μF,50V
C77	NCB31HK-103A	CAPACITOR 0.01μF,50V	C136	NCB31HK-103A	CAPACITOR 0.01μF,50V
C79	NCB31HK-103A	CAPACITOR 0.01μF,50V	C137	NCB31HK-103A	CAPACITOR 0.01μF,50V
			C138	NCB31HK-103A	CAPACITOR 0.01μF,50V
C81	NEH30JM-107NP	E CAPACITOR 100μF,6.3V	C139	NCB31HK-103A	CAPACITOR 0.01μF,50V
C82	NEH30JM-107NP	E CAPACITOR 100μF,6.3V	C140	NCB31HK-103A	CAPACITOR 0.01μF,50V
C83	NEH30JM-107NP	E CAPACITOR 100μF,6.3V			
C84	NCB31HK-103A	CAPACITOR 0.01μF,50V	C141	NCB31HK-103A	CAPACITOR 0.01μF,50V
C85	NCB31HK-103A	CAPACITOR 0.01μF,50V	C142	NCB31HK-103A	CAPACITOR 0.01μF,50V
C86	NCB31HK-103A	CAPACITOR 0.01μF,50V	C143	NCB31HK-103A	CAPACITOR 0.01μF,50V
C87	NCB31HK-103A	CAPACITOR 0.01μF,50V	C144	NCB31HK-103A	CAPACITOR 0.01μF,50V
C88	NCB31HK-103A	CAPACITOR 0.01μF,50V	C145	NCB31HK-103A	CAPACITOR 0.01μF,50V
C89	NCB31HK-103A	CAPACITOR 0.01μF,50V	C146	NCB31HK-103A	CAPACITOR 0.01μF,50V
C90	NCB31HK-103A	CAPACITOR 0.01μF,50V	C147	NCB31HK-103A	CAPACITOR 0.01μF,50V
			C148	NCB31HK-103A	CAPACITOR 0.01μF,50V
C91	NCB31HK-103A	CAPACITOR 0.01μF,50V	C149	NCB31HK-103A	CAPACITOR 0.01μF,50V
C92	NCB31HK-103A	CAPACITOR 0.01μF,50V	C150	NCB31HK-103A	CAPACITOR 0.01μF,50V
C93	NCB31HK-103A	CAPACITOR 0.01μF,50V			
C94	NCB31HK-103A	CAPACITOR 0.01μF,50V	C152	NCB31HK-103A	CAPACITOR 0.01μF,50V
C95	NCB31HK-103A	CAPACITOR 0.01μF,50V	C153	NCB31HK-103A	CAPACITOR 0.01μF,50V
C96	NCB31HK-103A	CAPACITOR 0.01μF,50V	C154	NCB31HK-103A	CAPACITOR 0.01μF,50V
C97	NCB31HK-103A	CAPACITOR 0.01μF,50V	C155	NCB31HK-103A	CAPACITOR 0.01μF,50V
C98	NCB31HK-103A	CAPACITOR 0.01μF,50V	C156	NCB31HK-103A	CAPACITOR 0.01μF,50V
C99	NCB31HK-103A	CAPACITOR 0.01μF,50V	C157	NCB31HK-103A	CAPACITOR 0.01μF,50V
C100	NCB31HK-103A	CAPACITOR 0.01μF,50V	C158	NCB31HK-103A	CAPACITOR 0.01μF,50V
			C159	NCB31HK-103A	CAPACITOR 0.01μF,50V
C101	NCB31HK-103A	CAPACITOR 0.01μF,50V	C164	NCB31HK-103A	CAPACITOR 0.01μF,50V
C102	NCB31HK-103A	CAPACITOR 0.01μF,50V	C166	NFV41HJ-392AY	CHIP F CAP 0.0039μF,50V
C103	NCB31HK-103A	CAPACITOR 0.01μF,50V	C167	NCS31HJ-100A	CAPACITOR 10pF,50V
C104	NCB31HK-103A	CAPACITOR 0.01μF,50V	C168	NCB31HK-102A	CAPACITOR 0.001μF,50V
C105	NCB31HK-103A	CAPACITOR 0.01μF,50V	C169	NCS31HJ-100A	CAPACITOR 10pF,50V
C106	NCB31HK-103A	CAPACITOR 0.01μF,50V	C170	NCS31HJ-100A	CAPACITOR 10pF,50V
C107	NCB31HK-103A	CAPACITOR 0.01μF,50V			
C108	NCB31HK-103A	CAPACITOR 0.01μF,50V	C171	NCB31HK-102A	CAPACITOR 0.001μF,50V
C109	NCB31HK-103A	CAPACITOR 0.01μF,50V	C172	NCS31HJ-100A	CAPACITOR 10pF,50V
C110	NCB31HK-103A	CAPACITOR 0.01μF,50V	C173	NCS31HJ-100A	CAPACITOR 10pF,50V
			C174	NCB31HK-103A	CAPACITOR 0.01μF,50V
C111	NCB31HK-103A	CAPACITOR 0.01μF,50V	C175	NEE21AM-475RY	E CAPACITOR 4.7μF,10V
C112	NEE21AM-475RY	E CAPACITOR 4.7μF,10V	C177	NCB31HK-103A	CAPACITOR 0.01μF,50V
C113	NCB31HK-103A	CAPACITOR 0.01μF,50V	C178	NEE21AM-475RY	E CAPACITOR 4.7μF,10V
C114	NCB31HK-103A	CAPACITOR 0.01μF,50V	C179	NCB31HK-103A	CAPACITOR 0.01μF,50V
C117	NCB31HK-103A	CAPACITOR 0.01μF,50V			
C118	NEH30JM-107NP	E CAPACITOR 100μF,6.3V	C181	NCS31HJ-100A	CAPACITOR 10pF,50V
C119	NEH30JM-107NP	E CAPACITOR 100μF,6.3V	C182	NCS31HJ-100A	CAPACITOR 10pF,50V
C120	NEH30JM-107NP	E CAPACITOR 100μF,6.3V	C183	NCS31HJ-100A	CAPACITOR 10pF,50V
			C184	NCS31HJ-100A	CAPACITOR 10pF,50V
C121	NCB31HK-103A	CAPACITOR 0.01μF,50V	C201	NEA21CM-476NP	E CAPACITOR 47μF,16V
C122	NCT06CH-221A	CAPACITOR 220pF,50V	C202	NCB31HK-103A	CAPACITOR 0.01μF,50V
C123	NCT06CH-221A	CAPACITOR 220pF,50V	C203	NCB31HK-103A	CAPACITOR 0.01μF,50V
C124	NCB31HK-103A	CAPACITOR 0.01μF,50V	C204	NCB31HK-103A	CAPACITOR 0.01μF,50V
C125	NCB31HK-103A	CAPACITOR 0.01μF,50V	C205	NEA21CM-476NP	E CAPACITOR 47μF,16V
C126	NCB31HK-103A	CAPACITOR 0.01μF,50V	C206	NCB31HK-103A	CAPACITOR 0.01μF,50V
C128	NCB31EK-222A	CAPACITOR 0.0022μF,25V			
	or NCB31HK-222A	CAPACITOR 0.0022μF,50V			

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
C207	NCB31HK-103A	CAPACITOR	0.01μF,50V	C270	NCS31HJ-8R0A	CAPACITOR	8pF,50V
C210	NCB31HK-103A	CAPACITOR	0.01μF,50V	C271	NCB31HK-103A	CAPACITOR	0.01μF,50V
C211	NCB31HK-103A	CAPACITOR	0.01μF,50V	C272	NEA21CM-106N	E CAPACITOR	10μF,16V
C212	NEA21CM-476NP	E CAPACITOR	47μF,16V	C273	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V
C213	NCB31HK-103A	CAPACITOR	0.01μF,50V	C274	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C214	NCB31HK-103A	CAPACITOR	0.01μF,50V	C275	NCB31HK-103A	CAPACITOR	0.01μF,50V
C215	NCB31HK-103A	CAPACITOR	0.01μF,50V	C276	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C216	NEA21CM-476NP	E CAPACITOR	47μF,16V	C277	NFV41HJ-103AY	CHIP F CAP	0.01μF,50V
C217	NCB31HK-103A	CAPACITOR	0.01μF,50V	C278	QCTA1CH-102	CAPACITOR	0.001μF,16V
C218	NCB31HK-103A	CAPACITOR	0.01μF,50V	C279	NEA21CM-106N	E CAPACITOR	10μF,16V
C220	NCB31HK-103A	CAPACITOR	0.01μF,50V	C280	NCB31HK-103A	CAPACITOR	0.01μF,50V
C222	NCB31HK-103A	CAPACITOR	0.01μF,50V	C281	NCB31HK-103A	CAPACITOR	0.01μF,50V
C223	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C282	NCB31HK-103A	CAPACITOR	0.01μF,50V
C224	NCB31HK-103A	CAPACITOR	0.01μF,50V	C283	NCB31HK-103A	CAPACITOR	0.01μF,50V
C225	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C284	NEA21CM-476NP	E CAPACITOR	47μF,16V
C226	NCB31HK-103A	CAPACITOR	0.01μF,50V	C285	NEA21HM-225NZ	E CAPACITOR	2.2μF,50V
C227	NCB31HK-103A	CAPACITOR	0.01μF,50V	C286	NCB31HK-103A	CAPACITOR	0.01μF,50V
C228	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C287	NCB31HK-103A	CAPACITOR	0.01μF,50V
C229	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C288	NEA21CM-106N	E CAPACITOR	10μF,16V
C231	NCB31HK-103A	CAPACITOR	0.01μF,50V	C289	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C232	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C290	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C233	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C291	NCB31HK-103A	CAPACITOR	0.01μF,50V
C235	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C293	NEA21CM-476NP	E CAPACITOR	47μF,16V
C236	NCB31HK-103A	CAPACITOR	0.01μF,50V	C294	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C237	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C295	NCB31HK-103A	CAPACITOR	0.01μF,50V
C238	NCB31HK-103A	CAPACITOR	0.01μF,50V	C296	NFV41HG-103AY	CHIP F CAP	0.01μF,50V
C240	NCB31HK-103A	CAPACITOR	0.01μF,50V	C297	NFV41HG-103AY	CHIP F CAP	0.01μF,50V
C241	NCS31HJ-101A	CAPACITOR	100pF,50V	C298	NFV41CG-273AY	CHIP F CAP	0.027μF,16V
C242	NCB31HK-103A	CAPACITOR	0.01μF,50V	C299	NEA21CM-106N	E CAPACITOR	10μF,16V
C243	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C300	NCB31HK-103A	CAPACITOR	0.01μF,50V
C244	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C301	NCB31HK-103A	CAPACITOR	0.01μF,50V
C245	NCB31HK-103A	CAPACITOR	0.01μF,50V	C302	NEA21CM-476NP	E CAPACITOR	47μF,16V
C246	NEA21CM-106N	E CAPACITOR	10μF,16V	C303	NCT06CH-220A	CAPACITOR	22pF,50V
C247	NCB31HK-103A	CAPACITOR	0.01μF,50V	C304	NCT06CH-820A	CAPACITOR	82pF,50V
C248	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C305	NCT06CH-151A	CAPACITOR	150pF,50V
C249	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C306	NCT06CH-820A	CAPACITOR	82pF,50V
C250	NCB31HK-103A	CAPACITOR	0.01μF,50V	C307	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C251	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C308	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C252	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C309	NCB31HK-103A	CAPACITOR	0.01μF,50V
C253	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C310	NCB31HK-103A	CAPACITOR	0.01μF,50V
C254	NCB31HK-103A	CAPACITOR	0.01μF,50V	C311	NEA21CM-476NP	E CAPACITOR	47μF,16V
C255	NCS31HJ-5R0A	CAPACITOR	5pF,50V	C312	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C256	NCS31HJ-150A	CAPACITOR	15pF,50V	C315	QRS188J-0R0YN	RESISTOR	0Ω,1/8W
C257	NCB31HK-103A	CAPACITOR	0.01μF,50V	C316	QCTA1CH-102	CAPACITOR	0.001μF,16V
C258	NCB31HK-103A	CAPACITOR	0.01μF,50V	C317	NEA21CM-106N	E CAPACITOR	10μF,16V
C259	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C318	NCB31HK-103A	CAPACITOR	0.01μF,50V
C260	NEA21CM-476NP	E CAPACITOR	47μF,16V	C319	NCB31HK-103A	CAPACITOR	0.01μF,50V
C261	NCB31HK-103A	CAPACITOR	0.01μF,50V	C320	NEA21CM-106N	E CAPACITOR	10μF,16V
C262	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C321	NCB31HK-103A	CAPACITOR	0.01μF,50V
C263	NEA20JM-476NZ	E CAPACITOR	47μF,6.3V	C322	NCS31HJ-100A	CAPACITOR	10pF,50V
C264	NCF31EZ-104A	CAPACITOR	0.1μF,25V	C323	NCT06CH-470A	CAPACITOR	47pF,50V
C265	NCB31HK-103A	CAPACITOR	0.01μF,50V	C324	NCT06CH-101A	CAPACITOR	100pF,50V
C266	NCS31HJ-5R0A	CAPACITOR	5pF,50V	C325	NCB31HK-103A	CAPACITOR	0.01μF,50V
C267	NCS31HJ-150A	CAPACITOR	15pF,50V	C326	NCB31HK-103A	CAPACITOR	0.01μF,50V
C268	NCB31HK-103A	CAPACITOR	0.01μF,50V	C327	NCB31HK-103A	CAPACITOR	0.01μF,50V
C269	NCS31HJ-8R0A	CAPACITOR	8pF,50V	C328	NCT06CH-151A	CAPACITOR	150pF,50V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C329	QETB1CM-477	E CAPACITOR	470 μ F,16V	C401	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C330	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C402	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C331	QETB0JM-477	E CAPACITOR	470 μ F,6.3V	C407	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C332	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C408	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C333	NEE21EM-474RY	E CAPACITOR	0.47 μ F,25V	C409	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C334	NEE21EM-474RY	E CAPACITOR	0.47 μ F,25V	C411	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C335	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C412	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C336	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C413	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C337	NCB31HK-682A	CAPACITOR	0.0068 μ F,50V	C414	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C338	NEA21CM-106N	E CAPACITOR	10 μ F,16V	C415	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C340	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C416	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C341	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C417	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C342	NEA21CM-476NP	E CAPACITOR	47 μ F,16V	C418	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C343	NEA21CM-476NP	E CAPACITOR	47 μ F,16V	C419	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C351	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C421	NCT06CH-120A	CAPACITOR	12pF,50V
C352	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C422	NCT06CH-5R0A	CAPACITOR	5pF,50V
C354	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C423	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C355	NEA21CM-476NP	E CAPACITOR	47 μ F,16V	C424	NCT06CH-200A	CAPACITOR	20pF,50V
C358	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C426	NCT06CH-150A	CAPACITOR	15pF,50V
C359	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C427	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C361	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C428	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C362	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C429	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C363	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C430	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C364	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C431	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C365	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V	C433	NCT06CH-200A	CAPACITOR	20pF,50V
C366	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C434	NCT06CH-150A	CAPACITOR	15pF,50V
C367	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C435	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C368	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V	C436	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C369	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C437	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C370	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C438	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V
C371	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C439	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C373	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C441	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C374	NEA21CM-476NP	E CAPACITOR	47 μ F,16V	C445	QCY81EK-154	CAPACITOR	0.15 μ F,25V
C375	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C446	NCB31EK-472A	CAPACITOR	0.0047 μ F,25V
C376	NEA21HM-225NZ	E CAPACITOR	2.2 μ F,50V	C450	NEA21HM-224NZ	E CAPACITOR	0.22/ μ F,50V
C377	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C451	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C378	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C453	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C379	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C455	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C380	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V	C456	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C381	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C461	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C382	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C462	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C386	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C463	NEA21CM-476NP	E CAPACITOR	47 μ F,16V
C387	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V	C464	NCT06CH-270A	CAPACITOR	27pF,50V
C388	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C465	NCT06CH-221A	CAPACITOR	220pF,50V
C390	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C466	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C391	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C467	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C393	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C468	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V
C394	NEA21CM-476NP	E CAPACITOR	47 μ F,16V	C469	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C395	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C470	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C396	NEA21HM-225NZ	E CAPACITOR	2.2 μ F,50V	C471	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C397	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C472	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
C398	NEA20JM-476NZ	E CAPACITOR	47 μ F,6.3V	C473	NCT06CH-151A	CAPACITOR	150pF,50V
C399	NCB31HK-103A	CAPACITOR	0.01 μ F,50V	C475	NCT06CH-470A	CAPACITOR	47pF,50V
C400	NCF31EZ-104A	CAPACITOR	0.1 μ F,25V	C476	NCB31HK-103A	CAPACITOR	0.01 μ F,50V
				C480	NCB31HK-103A	CAPACITOR	0.01 μ F,50V

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	C481	NEA20JM-476NZ	E CAPACITOR 47 μ F,6.3V		C543	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C482	NCT15CH-102A	CAPACITOR 0.001 μ F		C544	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C483	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C545	NCT06CH-151A	CAPACITOR 150pF,50V
	C484	NCT15CH-102A	CAPACITOR 0.001 μ F		C546	NCT06CH-820A	CAPACITOR 82pF,50V
	C485	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C547	NCF31EZ-104A	CAPACITOR 0.1 μ F,25V
	C487	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C548	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C488	NEA21CM-476NP	E CAPACITOR 47 μ F,16V		C549	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C489	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C550	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C490	NEE21AM-475RY	E CAPACITOR 4.7 μ F,10V				
	C491	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C551	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C492	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C552	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C493	NEE21AM-475RY	E CAPACITOR 4.7 μ F,10V		C553	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C494	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C554	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C495	NEA20JM-476NZ	E CAPACITOR 47 μ F,6.3V		C555	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C496	NEA21CM-476NP	E CAPACITOR 47 μ F,16V		C556	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C497	NCT06CH-270A	CAPACITOR 27pF,50V		C557	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C498	NCT06CH-221A	CAPACITOR 220pF,50V		C558	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C499	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C559	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C500	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C560	NCT06CH-221A	CAPACITOR 220pF,50V
	C501	NEA20JM-476NZ	E CAPACITOR 47 μ F,6.3V		C561	NCT06CH-221A	CAPACITOR 220pF,50V
	C502	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C564	NFV41HG-392AY	CHIP F CAP 0.0039 μ F,50V
	C503	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C565	NCT15CH-102A	CAPACITOR 0.001 μ F
	C504	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C566	NEA21EM-475NZ	E CAPACITOR 4.7 μ F,25V
	C505	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C567	NFV41HJ-223AY	CHIP F CAP 0.022 μ F,50V
	C506	NCT06CH-151A	CAPACITOR 150pF,50V		C569	NCF31EZ-104A	CAPACITOR 0.1 μ F,25V
	C508	NCT06CH-470A	CAPACITOR 47pF,50V		C571	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C509	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C572	NCF31EZ-104A	CAPACITOR 0.1 μ F,25V
	C511	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C573	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C512	NEA20JM-476NZ	E CAPACITOR 47 μ F,6.3V		C574	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C513	NCT15CH-102A	CAPACITOR 0.001 μ F		C575	NEE21CM-226RZ	E CAPACITOR 22 μ F,16V
	C514	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C576	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C515	NCT15CH-102A	CAPACITOR 0.001 μ F		C577	NCT06CH-220A	CAPACITOR 22pF,50V
	C516	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C578	NCT06CH-820A	CAPACITOR 82pF,50V
	C518	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C579	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C519	NEA21CM-476NP	E CAPACITOR 47 μ F,16V		C580	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C520	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C581	NCT06CH-151A	CAPACITOR 150pF,50V
	C521	NEE21AM-475RY	E CAPACITOR 4.7 μ F,10V		C582	NCT06CH-820A	CAPACITOR 82pF,50V
	C522	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C583	NCF31EZ-104A	CAPACITOR 0.1 μ F,25V
	C523	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C584	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C524	NEE21AM-475RY	E CAPACITOR 4.7 μ F,10V		C585	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C525	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C586	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C526	NEA21CM-476NP	E CAPACITOR 47 μ F,16V		C587	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C527	NCT06CH-221A	CAPACITOR 220pF,50V		C588	NCB31HK-103A	CAPACITOR 0.01 μ F,50V
	C528	NCT06CH-221A	CAPACITOR 220pF,50V		C589	NCT06CH-151A	CAPACITOR 150pF,50V
	C529	NEA21CM-476NP	E CAPACITOR 47 μ F,16V		C590	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C530	NCB31HK-103A	CAPACITOR 0.01 μ F,50V		C591	NEA21CM-476NP	E CAPACITOR 47 μ F,16V
	C531	NFV41HG-392AY	CHIP F CAP 0.0039 μ F,50V		C592	NEE21CM-226RZ	E CAPACITOR 22 μ F,16V
	C532	NCT15CH-102A	CAPACITOR 0.001 μ F		C593	NEE21CM-226RZ	E CAPACITOR 22 μ F,16V
	C533	NEA21EM-475NZ	E CAPACITOR 4.7 μ F,25V		C594	NCB31HK-103A	CAPACITOR 0.1 μ F,50V
	C534	NFV41HJ-223AY	CHIP F CAP 0.022 μ F,50V		C595	NCB31HK-103A	CAPACITOR 0.1 μ F,50V
	C537	NCF31EZ-104A	CAPACITOR 0.1 μ F,25V		C596	NFV41CJ-473AY	CHIP F CAP 0.047 μ F,16V
	C538	NEE21CM-226RZ	E CAPACITOR 22 μ F,16V		C597	NFV41CJ-473AY	CHIP F CAP 0.047 μ F,16V
	C539	NCB31HK-103A	CAPACITOR 0.01 μ F,50V				
	C540	NEA21CM-476NP	E CAPACITOR 47 μ F,16V	L1	PELN0969-Y	NOISE FILTER	
	C541	NCT06CH-220A	CAPACITOR 22pF,50V	L2	PELN0969-Y	NOISE FILTER	
	C542	NCT06CH-820A	CAPACITOR 82pF,50V	L3	PELN0969-Y	NOISE FILTER	
			L4	PELN0968-080Y	NOISE FILTER		

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
L5	PELN0968-080Y	NOISE FILTER		L6	PELN0968-080Y	NOISE FILTER	LOW PASS FILTER
L6	PELN0968-080Y	NOISE FILTER		L7	PELN0968-080Y	NOISE FILTER	LOW PASS FILTER
L7	PELN0968-080Y	NOISE FILTER		L8	PELN0968-120Y	NOISE FILTER	LOW PASS FILTER
L8	PELN0968-120Y	NOISE FILTER		L9	PELN0968-080Y	NOISE FILTER	LOW PASS FILTER
L9	PELN0968-080Y	NOISE FILTER		L10	PELN0968-120Y	NOISE FILTER	LOW PASS FILTER
L11	PELN0970-P	COIL		L12	PELN0968-120Y	NOISE FILTER	LC1 PELN0926-102Z NOISE FILTER
L13	PELN0968-120Y	NOISE FILTER		L14	PELN0968-120Y	NOISE FILTER	LC2 PELN0926-102Z NOISE FILTER
L14	PELN0968-120Y	NOISE FILTER		L15	PELN0968-120Y	NOISE FILTER	LC3 PELN0926-102Z NOISE FILTER
L15	PELN0968-120Y	NOISE FILTER		L16	PELN0968-180Y	NOISE FILTER	LC4 PELN0926-102Z NOISE FILTER
L16	PELN0968-180Y	NOISE FILTER		L17	PELN0968-120Y	NOISE FILTER	LC5 PELN0926-102Z NOISE FILTER
L17	PELN0968-120Y	NOISE FILTER		L81	PELN0968-080Y	NOISE FILTER	LC6 PELN0926-102Z NOISE FILTER
L81	PELN0968-080Y	NOISE FILTER		L82	PELN0968-080Y	NOISE FILTER	LC7 PELN0926-102Z NOISE FILTER
L82	PELN0968-080Y	NOISE FILTER		L83	PELN0968-080Y	NOISE FILTER	LC8 PELN0926-102Z NOISE FILTER
L83	PELN0968-080Y	NOISE FILTER		L84	PELN0968-080Y	NOISE FILTER	LC9 PELN0926-220Z NOISE FILTER
L84	PELN0968-080Y	NOISE FILTER		L85	PELN0968-180Y	NOISE FILTER	LC10 PELN0926-101Z NOISE FILTER
L85	PELN0968-180Y	NOISE FILTER		L90	PELN0968-080Y	NOISE FILTER	LC11 PELN0926-220Z NOISE FILTER
L90	PELN0968-080Y	NOISE FILTER		L91	PELN0968-120Y	NOISE FILTER	LC12 PELN0926-101Z NOISE FILTER
L91	PELN0968-120Y	NOISE FILTER		L93	PELN0968-120Y	NOISE FILTER	LC13 PELN0926-220Z NOISE FILTER
L93	PELN0968-120Y	NOISE FILTER		L94	PELN0968-080Y	NOISE FILTER	LC14 PELN0926-101Z NOISE FILTER
L94	PELN0968-080Y	NOISE FILTER		L95	PELN0968-080Y	NOISE FILTER	LC15 PELN0926-222Z NOISE FILTER
L95	PELN0968-080Y	NOISE FILTER		L96	PELN0968-080Y	NOISE FILTER	LC16 PELN0926-223Z NOISE FILTER
L96	PELN0968-080Y	NOISE FILTER		L131	PELN0968-120Y	NOISE FILTER	LC17 PELN0926-220Z NOISE FILTER
L131	PELN0968-120Y	NOISE FILTER		L132	PELN0968-120Y	NOISE FILTER	LC18 PELN0926-101Z NOISE FILTER
L132	PELN0968-120Y	NOISE FILTER		L133	PELN0968-120Y	NOISE FILTER	LC19 PELN0926-220Z NOISE FILTER
L133	PELN0968-120Y	NOISE FILTER		L201	YU41477-100KY	COIL	LC20 PELN0926-101Z NOISE FILTER
L201	YU41477-100KY	COIL	10 μ H	L202	YU41477-100KY	COIL	LC22 PU59736-223 N FILTER
L202	YU41477-100KY	COIL	10 μ H	L203	PELN1026-P	COIL	LC26 PU59736-223 N FILTER
L203	PELN1026-P	COIL		L205	YU41477-100KY	COIL	LC27 PU59736-223 N FILTER
L205	YU41477-100KY	COIL	10 μ H	L206	PELN0904-P	COIL	LC28 PELN0926-220Z NOISE FILTER
L206	PELN0904-P	COIL		L207	YU41477-100KY	COIL	LC29 PELN0926-101Z NOISE FILTER
L207	YU41477-100KY	COIL	10 μ H	L208	YU41477-100KY	COIL	LC30 PELN0926-220Z NOISE FILTER
L208	YU41477-100KY	COIL	10 μ H	L210	PELN0968-180Y	NOISE FILTER	LC31 PELN0926-101Z NOISE FILTER
L210	PELN0968-180Y	NOISE FILTER		L211	PELN0968-180Y	NOISE FILTER	LC32 PELN0926-223Z NOISE FILTER
L211	PELN0968-180Y	NOISE FILTER		L212	PELN0968-180Y	NOISE FILTER	LC33 PELN0926-222Z NOISE FILTER
L212	PELN0968-180Y	NOISE FILTER		L213	PELN0968-180Y	NOISE FILTER	LC34 PELN0926-223Z NOISE FILTER
L213	PELN0968-180Y	NOISE FILTER		L214	PELN0968-180Y	NOISE FILTER	LC35 PELN0926-222Z NOISE FILTER
L214	PELN0968-180Y	NOISE FILTER		L215	PELN0968-180Y	NOISE FILTER	LC36 PELN0926-223Z NOISE FILTER
L215	PELN0968-180Y	NOISE FILTER		L216	PELN0968-180Y	NOISE FILTER	LC37 PELN0926-222Z NOISE FILTER
L216	PELN0968-180Y	NOISE FILTER		L217	PELN0968-180Y	NOISE FILTER	LC38 PELN0926-223Z NOISE FILTER
L217	PELN0968-180Y	NOISE FILTER		L218	PELN0968-180Y	NOISE FILTER	LC39 PELN0926-222Z NOISE FILTER
L218	PELN0968-180Y	NOISE FILTER		L219	PELN0968-180Y	NOISE FILTER	LC40 PELN0926-223Z NOISE FILTER
L219	PELN0968-180Y	NOISE FILTER		L351	YU41477-2R2KY	COIL	LC41 PELN0926-222Z NOISE FILTER
L351	YU41477-2R2KY	COIL	2.2 μ H	L352	YU41477-120JY	COIL	LC42 PELN0926-223Z NOISE FILTER
L352	YU41477-120JY	COIL	12 μ H	L353	YU41477-120JY	COIL	LC43 PELN0926-222Z NOISE FILTER
L353	YU41477-120JY	COIL	12 μ H	L360	QRS188J-0R0YN	RESISTOR	LC44 PELN0926-223Z NOISE FILTER
L360	QRS188J-0R0YN	RESISTOR	0Ω, 1/8W	L461	YU41477-680JY	COIL	LC45 PELN0926-222Z NOISE FILTER
L461	YU41477-680JY	COIL	68 μ H	L462	YU41477-680JY	COIL	LC46 PELN0926-223Z NOISE FILTER
L462	YU41477-680JY	COIL	68 μ H	L463	PELN0904-P	COIL	LC47 PELN0926-222Z NOISE FILTER
L463	PELN0904-P	COIL		L464	PELN0904-P	COIL	LC48 PELN0926-220Z NOISE FILTER
L464	PELN0904-P	COIL		L461	YU41477-680JY	COIL	LC49 PELN0926-101Z NOISE FILTER
L461	YU41477-680JY	COIL	68 μ H	L463	PELN0904-P	COIL	LC201 PU59736-103 N FILTER
L463	PELN0904-P	COIL		L464	PELN0904-P	COIL	LC202 PU59736-103 N FILTER
L464	PELN0904-P	COIL		L461	YU41477-680JY	COIL	LC203 PU59736-103 N FILTER
L461	YU41477-680JY	COIL	68 μ H	L462	YU41477-680JY	COIL	LC204 PU59736-103 N FILTER

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION
	LC205	PELN0926-102Z	NOISE FILTER		LC511	PELN0926-220Z	NOISE FILTER
	LC206	PELN0926-102Z	NOISE FILTER		LC513	PELN0926-220Z	NOISE FILTER
	LC207	PELN0926-102Z	NOISE FILTER		LC516	PELN0345-04-Z	FERRATE BEADS
	LC208	PELN0926-102Z	NOISE FILTER		LC518	PELN0345-04-Z	FERRATE BEADS
	LC209	PELN0926-102Z	NOISE FILTER		LC520	PELN0345-04-Z	FERRATE BEADS
	LC210	PELN0926-102Z	NOISE FILTER		LC521	PELN0926-102Z	NOISE FILTER
	LC211	PELN0926-102Z	NOISE FILTER		△ X201	PEVB0544	VCO
	LC212	PELN0926-102Z	NOISE FILTER		△ X202	PEVB0539-R	CRYSTAL RESONATOR
	LC213	PELN0926-102Z	NOISE FILTER		△ X403	PEVB0558-P	CRYSTAL RESONATOR
	LC214	PELN0926-102Z	NOISE FILTER		SPC1	PQM30029-229	SPACER
	LC215	PELN0926-102Z	NOISE FILTER		WR1	PW30362-0339412	WIRE, CN1
	LC216	PELN0926-102Z	NOISE FILTER		WR2	ML-PU3994C	WIRE, CN2
	LC217	PELN0969-Y	NOISE FILTER		WR3	PW30349-0711406	WIRE, CN3
	LC220	PELN0926-102Z	NOISE FILTER		WR8	PW30218-0444014	WIRE, CN8
	LC221	PELN0926-102Z	NOISE FILTER		WR10	PW30363-0415412	WIRE, CN10
	LC222	PELN0926-102Z	NOISE FILTER		WR11	PW30218-0834013	WIRE, CN11
	LC223	PELN0926-102Z	NOISE FILTER		WR12	PW30218-05D4614	WIRE, CN12
	LC224	PELN0926-102Z	NOISE FILTER		WR13	PW30218-05010	WIRE, CN13
	LC225	PELN0926-102Z	NOISE FILTER		WR14	PW30364-0331210	WIRE, CN14
	LC226	PELN0926-102Z	NOISE FILTER		WR15	PW30349-0415212	WIRE, CN15
	LC227	PELN0926-102Z	NOISE FILTER		WR16	PW30218-04412	WIRE, CN16
	LC228	PELN0926-101Z	NOISE FILTER		WR17	PW30363-0611232	WIRE, CN17
	LC229	PELN0926-101Z	NOISE FILTER		TP201	PEMC1039-Y	CHIP TEST PIN
	LC230	PELN0926-223Z	NOISE FILTER		TP202	PEMC1039-Y	CHIP TEST PIN
	LC231	PELN0926-223Z	NOISE FILTER		TP203	PEMC1039-Y	CHIP TEST PIN
	LC235	PELN0926-222Z	NOISE FILTER		TP204	PEMC1039-Y	CHIP TEST PIN
	LC357	PELN0926-102Z	NOISE FILTER		TP205	PEMC1039-Y	CHIP TEST PIN
	LC358	PELN0926-102Z	NOISE FILTER		TP206	PEMC1039-Y	CHIP TEST PIN
	C359	PELN0926-102Z	NOISE FILTER		TP207	PEMC1039-Y	CHIP TEST PIN
	C360	PELN0926-102Z	NOISE FILTER		TP208	PEMC1039-Y	CHIP TEST PIN
	C361	PELN0926-102Z	NOISE FILTER		TP209	PEMC1039-Y	CHIP TEST PIN
	C362	PELN0926-102Z	NOISE FILTER		TP210	PEMC1039-Y	CHIP TEST PIN
	C363	PELN0926-102Z	NOISE FILTER		TP211	PEMC1039-Y	CHIP TEST PIN
	LC364	PELN0926-102Z	NOISE FILTER		TP212	PEMC1039-Y	CHIP TEST PIN
	C365	PELN0926-102Z	NOISE FILTER		CN1	PEMC1043-103P	CONNECTOR
	C366	PELN0926-102Z	NOISE FILTER		CN2	PEMC1043-104R	CONNECTOR
	LC373	PELN0926-102Z	NOISE FILTER		CN3	PEMC1043-107X	CONNECTOR
	C374	PELN0926-102Z	NOISE FILTER		CN8	PEMC1043-104R	CONNECTOR
	C375	PELN0926-102Z	NOISE FILTER		CN10	PEMC1043-104R	CONNECTOR
	C461	PELN0926-102Z	NOISE FILTER		CN11	PEMC1043-108X	CONNECTOR
	C462	PELN0926-102Z	NOISE FILTER		CN12	PEMC1043-105R	CONNECTOR
	C463	PELN0926-102Z	NOISE FILTER		CN13	PEMC1043-105R	CONNECTOR
	LC464	PELN0926-102Z	NOISE FILTER		CN14	PEMC1043-103P	CONNECTOR
	C465	PELN0926-102Z	NOISE FILTER		CN15	PEMC1043-104R	CONNECTOR
	C466	PELN0926-102Z	NOISE FILTER		CN16	PEMC1043-104R	CONNECTOR
	LC467	PELN0926-102Z	NOISE FILTER		CN17	PEMC1043-106R	CONNECTOR
	LC468	PELN0926-102Z	NOISE FILTER				
	C469	PELN0926-102Z	NOISE FILTER				
	C470	PELN0926-102Z	NOISE FILTER				
	LC501	PELN0345-04-Z	FERRATE BEADS				
	C503	PELN0345-04-Z	FERRATE BEADS				
	C505	PELN0345-04-Z	FERRATE BEADS				
	LC508	PELN0926-220Z	NOISE FILTER				
	C510	PELN0926-220Z	NOISE FILTER				

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION

			W-IN/OUT BOARD ASSEMBLY <31>				
PWBA	PB10872B		W-IN/OUT BOARD ASSY		Q44	2SC4081(RS)	TRANSISTOR
IC1	CXA1211M	IC			Q45	2SA1576(RS)	TRANSISTOR
IC2	TC4W53F	IC			Q46	2SA1576(RS)	TRANSISTOR
IC3	TC4W53F	IC			Q47	FMW2	PAIR TRANSISTOR
IC4	TC4W53F	IC			Q48	FMS2	TRANSISTOR
IC5	TC4W53F	IC			Q49	DTC114EU	TRANSISTOR
IC6	CXA1228S	IC			Q50	2SC4081(RS)	TRANSISTOR
IC7	TC74HC221AF	IC			Q51	2SA1576(RS)	TRANSISTOR
IC9	TC4W53F	IC			Q52	FMS1	TRANSISTOR
IC10	TC4W53F	IC			Q53	FMW2	PAIR TRANSISTOR
IC11	TC4W53F	IC			Q54	FMS2	TRANSISTOR
IC12	TC4W53F	IC			Q55	DTC144EU	TRANSISTOR
IC14	TC7S00F	IC			Q56	DTC144EU	TRANSISTOR
IC901	LA7151	IC			Q57	2SA1576(RS)	TRANSISTOR
Q1	DTC144EU	TRANSISTOR			Q58	2SC4081(RS)	TRANSISTOR
Q2	2SC4081(RS)	TRANSISTOR			Q59	2SC4081(RS)	TRANSISTOR
Q3	2SC4081(RS)	TRANSISTOR			Q60	2SA1576(RS)	TRANSISTOR
Q4	2SC4081(RS)	TRANSISTOR			Q61	2SA1576(RS)	TRANSISTOR
Q6	2SC4081(RS)	TRANSISTOR			Q62	FMW2	PAIR TRANSISTOR
Q7	2SC4081(RS)	TRANSISTOR			Q63	FMS2	TRANSISTOR
Q8	2SA1576(RS)	TRANSISTOR			Q64	2SC4081(RS)	TRANSISTOR
Q9	2SC4081(RS)	TRANSISTOR			Q65	2SA1576(RS)	TRANSISTOR
Q10	2SC4081(RS)	TRANSISTOR			Q66	FMS1	TRANSISTOR
Q11	2SA1576(RS)	TRANSISTOR			Q67	FMW2	PAIR TRANSISTOR
Q12	2SA1576(RS)	TRANSISTOR			Q68	FMS2	TRANSISTOR
Q13	2SC4081(RS)	TRANSISTOR			Q69	2SC4081(RS)	TRANSISTOR
Q14	2SC4081(RS)	TRANSISTOR			Q70	2SA1576(RS)	TRANSISTOR
Q19	2SC4081(RS)	TRANSISTOR			Q71	2SC4081(RS)	TRANSISTOR
Q20	2SC4081(RS)	TRANSISTOR			Q72	2SC4081(RS)	TRANSISTOR
Q21	2SC4081(RS)	TRANSISTOR			Q73	2SC4081(RS)	TRANSISTOR
Q26	2SC4081(RS)	TRANSISTOR			Q74	2SA1576(RS)	TRANSISTOR
Q27	DTC144EU	TRANSISTOR			Q75	2SC4081(RS)	TRANSISTOR
Q28	2SC4081(RS)	TRANSISTOR			Q76	2SC4081(RS)	TRANSISTOR
Q29	2SC4081(RS)	TRANSISTOR			Q77	2SC4081(RS)	TRANSISTOR
Q30	2SA1576(RS)	TRANSISTOR			Q78	2SA1576(RS)	TRANSISTOR
Q31	2SC4081(RS)	TRANSISTOR			Q79	2SC4081(RS)	TRANSISTOR
Q32	2SC4081(RS)	TRANSISTOR			Q80	2SC4081(RS)	TRANSISTOR
Q33	2SA1576(RS)	TRANSISTOR			Q81	2SC4081(RS)	TRANSISTOR
Q34	2SA1576(RS)	TRANSISTOR			Q82	2SC4081(RS)	TRANSISTOR
Q35	FMW2	PAIR TRANSISTOR			Q83	2SC4081(RS)	TRANSISTOR
Q36	FMS2	TRANSISTOR			Q84	2SA1576(RS)	TRANSISTOR
Q37	2SC4081(RS)	TRANSISTOR			Q85	2SC4081(RS)	TRANSISTOR
Q38	2SA1576(RS)	TRANSISTOR			Q87	2SC4081(RS)	TRANSISTOR
Q39	FMS1	TRANSISTOR			Q88	2SC4081(RS)	TRANSISTOR
Q40	FMW2	PAIR TRANSISTOR			Q89	2SC4081(RS)	TRANSISTOR
Q41	FMS2	TRANSISTOR			Q90	2SA1576(RS)	TRANSISTOR
Q42	2SA1576(RS)	TRANSISTOR			Q91	DTC114EU	TRANSISTOR
Q43	2SC4081(RS)	TRANSISTOR			Q92	2SC4081(RS)	TRANSISTOR
					Q93	2SC4081(RS)	TRANSISTOR
					Q94	2SA1576(RS)	TRANSISTOR
					Q95	2SC4081(RS)	TRANSISTOR
					Q96	2SA1576(RS)	TRANSISTOR
					Q97	2SC4081(RS)	TRANSISTOR
					Q98	2SA1576(RS)	TRANSISTOR
					Q99	2SC4081(RS)	TRANSISTOR
					Q100	2SA1576(RS)	TRANSISTOR

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
Q101	DTC144EU	TRANSISTOR		R31	QRSA08J-0R0Y	RESISTOR
						0Ω,1/10W
Q701	2SC4081(RS)	TRANSISTOR		R42	QRSA08J-0R0Y	RESISTOR
Q702	2SC4081(RS)	TRANSISTOR		R43	QRSA08J-331YN	RESISTOR
Q703	FMW1	TRANSISTOR		R44	QRSA08J-331YN	RESISTOR
Q704	FMS1	TRANSISTOR		R45	QRSA08J-331YN	RESISTOR
Q705	2SC4081(RS)	TRANSISTOR		R46	QRSA08J-331YN	RESISTOR
Q706	2SC4081(RS)	TRANSISTOR		R47	QRSA08J-331YN	RESISTOR
Q707	2SC4081(RS)	TRANSISTOR		R48	QRSA08J-331YN	RESISTOR
				R49	QRSA08J-470YN	RESISTOR
						47Ω,1/10W
D1	DAN202U	DIODE		R56	QRSA08J-0R0Y	RESISTOR
D2	DAN202U	DIODE		R57	NRVA62D-360N	RESISTOR
D3	DAN202U	DIODE		R58	NRVA62D-360N	RESISTOR
D5	DAN202U	DIODE		R59	NRVA62D-820N	RESISTOR
D6	DAN202U	DIODE				
D7	DAN202U	DIODE		R63	QRSA08J-0R0Y	RESISTOR
D8	DAN202U	DIODE		R65	QRSA08J-104YN	RESISTOR
D9	DAN202U	DIODE		R66	QRSA08J-470YN	RESISTOR
D10	DAN202U	DIODE		R67	QRSA08J-332YN	RESISTOR
				R68	QRSA08J-102YN	RESISTOR
D11	DAN202U	DIODE		R69	NRVA62D-391N	RESISTOR
D13	QRD167J-0R0X	RESISTOR	0Ω,1/6W	R70	NRVA62D-681N	RESISTOR
D14	1SS133	DIODE				
	or 1N4148M	DIODE		R71	NRVA62D-561N	RESISTOR
D15	1SS133	DIODE		R72	NRVA62D-391N	RESISTOR
	or 1N4148M	DIODE		R73	NRVA62D-332N	RESISTOR
D17	DAN202U	DIODE		R74	NRVA62D-181N	RESISTOR
				R75	QRSA08J-222YN	RESISTOR
D901	DAN202U	DIODE		R76	QRSA08J-121YN	RESISTOR
D902	DAN202U	DIODE		R77	NRVA62D-331N	RESISTOR
D903	DAN202U	DIODE		R78	NRVA62D-112N	RESISTOR
				R79	NRVA62D-471N	RESISTOR
				R80	QRSA08J-103YN	RESISTOR
R1	QRSA08J-103YN	RESISTOR	10KΩ,1/10W			
R2	NRVA62D-750N	RESISTOR	75Ω,1/16W	R81	QRSA08J-472YN	RESISTOR
R3	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R83	NRVA62D-102N	RESISTOR
R4	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W	R84	NRVA62D-821N	RESISTOR
R6	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R85	NRVA62D-331N	RESISTOR
R7	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R86	NRVA62D-122N	RESISTOR
R8	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R87	NRVA62D-183N	RESISTOR
R9	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R88	NRVA62D-101N	RESISTOR
R10	NRVA62D-750N	RESISTOR	75Ω,1/16W	R89	QRSA08J-681YN	RESISTOR
				R90	QRSA08J-121YN	RESISTOR
I11	QRSA08J-103YN	RESISTOR	10KΩ,1/10W			
R12	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W	R91	NRVA62D-750N	RESISTOR
R14	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R92	QRSA08J-103YN	RESISTOR
I15	QRSA08J-821YN	RESISTOR	820Ω,1/10W	R93	QRSA08J-104YN	RESISTOR
I16	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R94	QRSA08J-470YN	RESISTOR
R17	NRVA62D-750N	RESISTOR	75Ω,1/16W	R95	QRSA08J-332YN	RESISTOR
I18	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R96	QRSA08J-102YN	RESISTOR
I19	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W	R97	NRVA62D-391N	RESISTOR
				R98	NRVA62D-681N	RESISTOR
R21	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R99	NRVA62D-271N	RESISTOR
I22	QRSA08J-821YN	RESISTOR	820Ω,1/10W			
I23	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R101	NRVA62D-122N	RESISTOR
R26	QRSA08J-331YN	RESISTOR	330Ω,1/10W	R102	NRVA62D-181N	RESISTOR
R27	QRSA08J-331YN	RESISTOR	330Ω,1/10W	R103	QRSA08J-222YN	RESISTOR
I28	QRSA08J-331YN	RESISTOR	330Ω,1/10W	R104	QRSA08J-121YN	RESISTOR
I29	QRSA08J-223YN	RESISTOR	22KΩ,1/10W	R105	NRVA62D-331N	RESISTOR
R30	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R106	NRVA62D-132N	RESISTOR
				R107	NRVA62D-391N	RESISTOR
						390Ω,1/16W

#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R108	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R171	QVPA606-151Z	V RESISTOR, FSC	
R109	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W	R172	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R111	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R173	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R112	NRVA62D-102N	RESISTOR	1KΩ,1/16W	R174	QVPA606-103Z	V RESISTOR, HUE	
R113	NRVA62D-821N	RESISTOR	820Ω,1/16W	R175	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R114	NRVA62D-331N	RESISTOR	330Ω,1/16W	R176	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R115	NRVA62D-122N	RESISTOR	1.2KΩ,1/16W	R177	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R116	NRVA62D-183N	RESISTOR	18KΩ,1/16W	R178	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R117	NRVA62D-101N	RESISTOR	100Ω,1/16W	R179	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R118	QRSA08J-681YN	RESISTOR	680Ω,1/10W	R180	QRSA08J-361YN	RESISTOR	360Ω,1/10W
R119	QRSA08J-121YN	RESISTOR	120Ω,1/10W	R181	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R120	NRVA62D-750N	RESISTOR	75Ω,1/16W	R182	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R121	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R183	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R122	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R184	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R123	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W	R185	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R124	QRSA08J-473YN	RESISTOR	47KΩ,1/10W	R186	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R125	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R187	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R126	QRSA08J-104YN	RESISTOR	100KΩ,1/10W	R188	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R127	QRSA08J-470YN	RESISTOR	47Ω,1/10W	R189	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R128	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W	R190	QVPA606-151Z	V RESISTOR, PB LEVEL	
R129	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R191	QRSA08J-510YN	RESISTOR	51Ω,1/10W
R130	NRVA62D-391N	RESISTOR	390Ω,1/16W	R192	QRSA08J-511YN	RESISTOR	510Ω,1/10W
R131	NRVA62D-681N	RESISTOR	680Ω,1/16W	R193	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R132	NRVA62D-271N	RESISTOR	270Ω,1/16W	R194	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R134	NRVA62D-122N	RESISTOR	1.2KΩ,1/16W	R195	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R135	NRVA62D-181N	RESISTOR	180Ω,1/16W	R196	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R136	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	R197	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R137	QRSA08J-121YN	RESISTOR	120Ω,1/10W	R198	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R138	NRVA62D-331N	RESISTOR	330Ω,1/16W	R199	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R139	NRVA62D-132N	RESISTOR	1.3KΩ,1/16W	R200	QVPA606-151Z	V RESISTOR, PR LEVEL	
R140	NRVA62D-391N	RESISTOR	390Ω,1/16W	R201	QRSA08J-470YN	RESISTOR	47Ω,1/10W
R141	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R202	QRSA08J-470YN	RESISTOR	47Ω,1/10W
R142	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W	R203	QRSA08J-470YN	RESISTOR	47Ω,1/10W
R144	NRVA62D-102N	RESISTOR	1KΩ,1/16W	R208	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R145	NRVA62D-821N	RESISTOR	820Ω,1/16W	R209	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R146	NRVA62D-331N	RESISTOR	330Ω,1/16W	R210	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R147	NRVA62D-122N	RESISTOR	1.2KΩ,1/16W	R211	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R148	NRVA62D-183N	RESISTOR	18KΩ,1/16W	R212	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R149	NRVA62D-101N	RESISTOR	100Ω,1/16W	R213	QRSA08J-511YN	RESISTOR	510Ω,1/10W
R150	QRSA08J-681YN	RESISTOR	680Ω,1/10W	R214	QRSA08J-121YN	RESISTOR	120Ω,1/10W
R151	QRSA08J-121YN	RESISTOR	120Ω,1/10W	R215	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R152	NRVA62D-750N	RESISTOR	75Ω,1/16W	R216	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R153	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R217	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R154	QRSA08J-394YN	RESISTOR	390KΩ,1/10W	R218	QRSA08J-184YN	RESISTOR	180KΩ,1/10W
R155	QRSA08J-105YN	RESISTOR	1MΩ,1/10W	R219	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R156	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R220	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R158	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R221	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R159	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W	R222	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R160	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R223	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R161	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R224	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R162	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R225	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R165	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W	R227	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R166	QRSA08J-183YN	RESISTOR	18KΩ,1/10W	R228	QRSA08J-113YN	RESISTOR	11KΩ,1/10W
R168	QRSA08J-104YN	RESISTOR	100KΩ,1/10W	R229	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R169	QRSA08J-153YN	RESISTOR	15KΩ,1/10W	R231	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R170	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W	R232	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R233	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R298	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
	R234	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W		R300	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R235	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W				
	R236	QRSA08J-101YN	RESISTOR 100Ω,1/10W		R301	QRSA08J-560YN	RESISTOR 56Ω,1/10W
	R240	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R303	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R241	QRSA08J-333YN	RESISTOR 33KΩ,1/10W		R304	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R242	QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W		R305	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R243	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W		R306	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R244	QRSA08J-220YN	RESISTOR 22Ω,1/10W		R307	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R245	QRSA08J-220YN	RESISTOR 22Ω,1/10W		R309	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R246	QRSA08J-220YN	RESISTOR 22Ω,1/10W		R310	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R247	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R311	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R248	QRSA08J-333YN	RESISTOR 33KΩ,1/10W		R312	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R251	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R313	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R252	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R315	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R253	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R316	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R254	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R318	QRSA08J-333YN	RESISTOR 33KΩ,1/10W
	R255	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R319	QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W
	R256	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R320	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R257	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R321	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R258	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R322	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R259	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R323	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R260	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R327	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R261	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R328	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R262	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R330	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R263	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R331	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R264	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R332	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R265	NRVA62D-102N	RESISTOR 1KΩ,1/16W		R333	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R266	NRVA62D-271N	RESISTOR 270Ω,1/16W		R334	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R268	NRVA62D-103N	RESISTOR 10KΩ,1/16W		R335	QRSA08J-470YN	RESISTOR 47Ω,1/10W
	R269	NRVA62D-242N	RESISTOR 2.4KΩ,1/16W		R336	QRSA08J-470YN	RESISTOR 47Ω,1/10W
	R270	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R337	QRSA08J-470YN	RESISTOR 47Ω,1/10W
	R271	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		R338	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R272	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R339	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R273	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		R340	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R274	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R342	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
	R275	QRSA08J-103YN	RESISTOR 10KΩ,1/10W				
	R276	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R701	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
	R277	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R702	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
	R278	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R703	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
	R279	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R704	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R280	NRVA62D-102N	RESISTOR 1KΩ,1/16W		R705	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R281	NRVA62D-182N	RESISTOR 1.8KΩ,1/16W		R706	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
	R282	NRVA62D-182N	RESISTOR 1.8KΩ,1/16W		R707	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R283	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R708	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R284	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R709	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
	R285	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R710	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R286	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R711	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
	R287	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R712	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R288	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R713	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R289	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W				
	R290	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R901	QRSA08J-753YN	RESISTOR 75KΩ,1/10W
	R291	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R902	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
	R292	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R903	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
	R295	QRSA08J-821YN	RESISTOR 820Ω,1/10W		R904	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
	R296	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R905	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
					R906	QRSA08J-162YN	RESISTOR 1.6KΩ,1/10W

#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R907	QRSA08J-162Y	RESISTOR	1.6KΩ,1/10W	C63	QCYA1HK-103	CAPACITOR	0.01μF,50V
R908	QRSA08J-622Y	RESISTOR	6.2KΩ,1/10W	C64	QCYA1HK-103	CAPACITOR	0.01μF,50V
R909	QRSA08J-622Y	RESISTOR	6.2KΩ,1/10W	C65	QETC1CM-476	E CAPACITOR	47μF,16V
				C66	QETC1AM-107	E CAPACITOR	100μF,10V
				C67	QCYA1HK-103	CAPACITOR	0.01μF,50V
C1	QETC1AM-107	E CAPACITOR	100μF,10V	C68	QCYA1HK-103	CAPACITOR	0.01μF,50V
C2	QCYA1HK-103	CAPACITOR	0.01μF,50V	C69	QCYA1HK-103	CAPACITOR	0.01μF,50V
C3	QCYA1HK-103	CAPACITOR	0.01μF,50V	C70	QETC1CM-227	E CAPACITOR	220μF,16V
C4	QETC1CM-476	E CAPACITOR	47μF,16V				
C5	QETC1CM-476	E CAPACITOR	47μF,16V	C71	QETN0JM-228ZS	E CAPACITOR	2200μF,6.3V
C6	QETC1AM-107	E CAPACITOR	100μF,10V		or QETN0JM-228ZE	E CAPACITOR	2200μF,6.3V
C7	QCYA1HK-103	CAPACITOR	0.01μF,50V	C72	QETC0JM-477	E CAPACITOR	470μF,6.3V
C8	QCYA1HK-103	CAPACITOR	0.01μF,50V	C73	QETC1CM-477	E CAPACITOR	470μF,16V
C9	QETC1CM-106	E CAPACITOR	10μF,16V	C74	QCYA1HK-103	CAPACITOR	0.01μF,50V
C10	QCYA1HK-103	CAPACITOR	0.01μF,50V	C75	QCYA1HK-103	CAPACITOR	0.01μF,50V
				C76	QCYA1HK-473	CAPACITOR	0.047μF,50V
C11	QETC1CM-476	E CAPACITOR	47μF,16V	C77	QETC1AM-226	E CAPACITOR	22μF,10V
C12	QETC1AM-107	E CAPACITOR	100μF,10V	C78	QCYA1HK-473	CAPACITOR	0.047μF,50V
C13	QCYA1HK-103	CAPACITOR	0.01μF,50V	C79	QCFA1CZ-225	CAPACITOR	2.2μF,16V
C14	QCYA1HK-103	CAPACITOR	0.01μF,50V	C80	QCYA1HK-103	CAPACITOR	0.01μF,50V
C15	QETC1CM-476	E CAPACITOR	47μF,16V				
C16	QCYA1HK-103	CAPACITOR	0.01μF,50V	C81	QCYA1HK-103	CAPACITOR	0.01μF,50V
C17	QCYA1HK-103	CAPACITOR	0.01μF,50V	C82	QCYA1HK-103	CAPACITOR	0.01μF,50V
C18	QETC1AM-476	E CAPACITOR	47μF,10V	C83	QCYA1HK-103	CAPACITOR	0.01μF,50V
				C84	QETC1HM-475	E CAPACITOR	4.7μF,50V
C24	QETC1AM-476	E CAPACITOR	47μF,10V	C85	QETC1HM-105	E CAPACITOR	1μF,50V
C25	QETC1AM-476	E CAPACITOR	47μF,10V	C86	QCFA1EZ-104	CAPACITOR	0.1μF,25V
				C87	QCYA1HK-103	CAPACITOR	0.01μF,50V
C33	QRD167J-0R0X	RESISTOR	0Ω,1/6W	C88	QCTA1CH-220	CAPACITOR	22pF,16V
C34	QETC0JM-107	E CAPACITOR	100μF,6.3V	C89	QCTA1CH-180	CAPACITOR	18pF,16V
C35	QCYA1HK-272	CAPACITOR	0.0027μF,50V	C90	QETC0JM-337	E CAPACITOR	330μF,6.3V
C37	QCYA1HK-182	CAPACITOR	0.0018μF,50V				
C38	QCYA1HK-103	CAPACITOR	0.01μF,50V	C91	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C39	QCYA1HK-103	CAPACITOR	0.01μF,50V	C92	QCYA1HK-103	CAPACITOR	0.01μF,50V
C40	QCYA1HK-103	CAPACITOR	0.01μF,50V	C94	QETC1CM-107	E CAPACITOR	100μF,16V
				C95	QCYA1HK-103	CAPACITOR	0.01μF,50V
C41	QCYA1HK-103	CAPACITOR	0.01μF,50V	C96	QETC1CM-476	E CAPACITOR	47μF,16V
C42	QETC1CM-476	E CAPACITOR	47μF,16V	C97	QETC0JM-107	E CAPACITOR	100μF,6.3V
C43	QETC1AM-107	E CAPACITOR	100μF,10V	C98	QETC1CM-107	E CAPACITOR	100μF,16V
C44	QCYA1HK-103	CAPACITOR	0.01μF,50V	C99	QETC0JM-107	E CAPACITOR	100μF,6.3V
C45	QCYA1HK-103	CAPACITOR	0.01μF,50V	C100	QETC1CM-107	E CAPACITOR	100μF,16V
C46	QETC1CM-227	E CAPACITOR	220μF,16V				
C47	QETN0JM-228ZS	E CAPACITOR	2200μF,6.3V	C101	QCYA1HK-103	CAPACITOR	0.01μF,50V
	or QETN0JM-228ZE	E CAPACITOR	2200μF,6.3V	C102	QETC0JM-337	E CAPACITOR	330μF,6.3V
C48	QCYA1HK-103	CAPACITOR	0.01μF,50V	C103	QETC1CM-106	E CAPACITOR	10μF,16V
C49	QCYA1HK-103	CAPACITOR	0.01μF,50V	C104	QCYA1HK-103	CAPACITOR	0.01μF,50V
C50	QCYA1HK-103	CAPACITOR	0.01μF,50V	C105	QETC1EM-335	E CAPACITOR	3.3μF,25V
				C107	QCYA1HK-103	CAPACITOR	0.01μF,50V
C51	QCYA1HK-103	CAPACITOR	0.01μF,50V	C108	QETC1HM-475	E CAPACITOR	4.7μF,50V
C52	QETC1CM-476	E CAPACITOR	47μF,16V	C110	QCYA1HK-103	CAPACITOR	0.01μF,50V
C53	QETC1AM-107	E CAPACITOR	100μF,10V				
C54	QCYA1HK-103	CAPACITOR	0.01μF,50V	C111	QCYA1HK-103	CAPACITOR	0.01μF,50V
C55	QCYA1HK-103	CAPACITOR	0.01μF,50V	C112	QFN31HJ-472	M CAPACITOR	0.0047μF,50V
C56	QCYA1HK-103	CAPACITOR	0.01μF,50V		or QFLC1HJ-472Z	M CAPACITOR	0.0047μF,50V
C57	QETC1CM-227	E CAPACITOR	220μF,16V	C113	QFN31HJ-222	M CAPACITOR	0.0022μF,50V
C58	QETN0JM-228ZS	E CAPACITOR	2200μF,6.3V		or QFLC1HJ-222Z	M CAPACITOR	0.0022μF,50V
	or QETN0JM-228ZE	E CAPACITOR	2200μF,6.3V	C114	QCYA1HK-103	CAPACITOR	0.01μF,50V
C59	QCYA1HK-103	CAPACITOR	0.01μF,50V	C115	QCYA1HK-103	CAPACITOR	0.01μF,50V
C60	QCYA1HK-103	CAPACITOR	0.01μF,50V	C116	QETC1CM-476	E CAPACITOR	47μF,16V
				C117	QCTA1CH-221	CAPACITOR	220pF,16V
C61	QCYA1HK-103	CAPACITOR	0.01μF,50V	C118	QCYA1HK-103	CAPACITOR	0.01μF,50V
C62	QCYA1HK-103	CAPACITOR	0.01μF,50V	C119	QETC1CM-476	E CAPACITOR	47μF,16V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
IC102	BA6222	IC			*****
UPPER DRUM BOARD <41>					
△ D101	SLH-34VC3F	LE DIODE	PWBA	PDM4349A	UPPER DRUM BOARD ASSY
D102	1SS133	DIODE			
	or 1N4148M	DIODE			
D103	1SS133	DIODE	C1	QCTA1CH-151	CAPACITOR 150pF,16V
	or 1N4148M	DIODE			
D104	1SS133	DIODE			
	or 1N4148M	DIODE			
D105	1SS133	DIODE			
	or 1N4148M	DIODE			

△ R101	QRD161J-102	RESISTOR 1KΩ,1/6W			PRE/REC BOARD ASSEMBLY <43>
R102	QRD161J-104	RESISTOR 100KΩ,1/6W	PWBA	PB10793A-02	PRE/REC BOARD ASSY
R104	QRD161J-153	RESISTOR 15KΩ,1/6W			
C101	QCVB1CM-103	CAPACITOR 0.01μF,16V	WR1	PW30801-2205	WIRE, CN1
C102	QER61CM-106	E CAPACITOR 10μF,16V	WR101	PW30801-1011	WIRE, CN101
C103	QCVB1CM-103	CAPACITOR 0.01μF,16V	CN1	PU58798-122	CONNECTOR
C104	QCVB1CM-103	CAPACITOR 0.01μF,16V	CN2	PU59555-104	CONNECTOR
C105	QCC31CJ-104	CAPACITOR 0.1μF,16V	CN3	PU60417-109	CONNECTOR
S101	PU60975-2Z or PESW0525-02Z or PU60392-2-2	TACT SWITCH,POWER	CN4	PU59973-10	CONNECTOR
		TACT SWITCH	CN5	PU59973-18	CONNECTOR
S102	PESW0629	SLIDE SWITCH	CN101	PU58798-110	CONNECTOR
S103	PESW0629 or PS6002A	SLIDE SWITCH PH INTERRUPTER	CN102	PU59555-103R	CONNECTOR
- VIDEO SECTION -					
HD1	PQM30038-2-2	LED HOLDER	IC1	TC4W66F	IC
			IC2	JCP0024	IC
J2	P240-82A2A2LNCN	WIRE	IC3	JCP0024	IC
J4	QWE371-04A1A1	WIRE	IC4	TC4W66F	IC
J5	QWE371-04A1A1	WIRE	IC5	BU4013BF	IC
			IC6	TC7W04F	IC
JA101	PEMC0937	MINI DIN CONN	Q1	2SC3930(C)	TRANSISTOR
JA102	PEMC0922	PIN JACK(SW)	Q2	2SC3930(C)	TRANSISTOR
JA103	PEMC0922	PIN JACK(SW)	Q3	2SA1532(C)	TRANSISTOR
JA104	PEMC0922	PIN JACK(SW)	Q4	2SA1576(S)	TRANSISTOR
JA105	PU60664-3	MINI JACK	Q5	FMS2	TRANSISTOR
			Q6	FMW2	PAIR TRANSISTOR
			Q7	2SC3930(C)	TRANSISTOR
CN101	PEMC0825-013	B TO B CONN	Q8	2SA1532(C)	TRANSISTOR
CN102	PU59555-8	CONNECTOR	Q9	2SC3930(C)	TRANSISTOR
CN103	PU59555-103Y	CONNECTOR	Q10	FMW2	PAIR TRANSISTOR
CN104	PU59555-3	CONNECTOR			
CN105	PU59555-2	CONNECTOR	Q11	FMS2	TRANSISTOR
CN106	PU59555-102	CONNECTOR	Q12	2SA1576(S)	TRANSISTOR
			Q13	DTC115EU	TRANSISTOR
△ CP1	ICP-F10	CIRCUIT PROTECTOR	Q14	XN6534	PAIR TRANSISTOR
			Q15	2SA1576(S)	TRANSISTOR
			Q16	2SC3930(C)	TRANSISTOR
			Q17	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
					TRANSISTOR

REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION
Q18	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q55	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q19	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q56	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q20	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q57	2SC4670	TRANSISTOR
				Q58	2SC3930(C)	TRANSISTOR
				Q59	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q21	2SC4670	TRANSISTOR		Q60	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q22	2SC3930(C)	TRANSISTOR				
Q23	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR				
Q24	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q61	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q25	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q62	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q26	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q63	2SC4670	TRANSISTOR
Q27	2SC4670	TRANSISTOR		Q64	2SC3930(C)	TRANSISTOR
Q28	2SC3930(C)	TRANSISTOR		Q65	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q29	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q66	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q30	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q67	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
				Q68	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR
Q31	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q69	2SC4670	TRANSISTOR
Q32	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q70	2SC3930(C)	TRANSISTOR
Q33	2SC4670	TRANSISTOR		Q71	DTA144WU	TRANSISTOR
Q34	2SC3930(C)	TRANSISTOR		Q72	2SA1532(C)	TRANSISTOR
Q35	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q74	2SC3930(C)	TRANSISTOR
Q36	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q75	2SC3930(C)	TRANSISTOR
Q37	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q76	2SA1532(C)	TRANSISTOR
Q38	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q77	2SA1576(S)	TRANSISTOR
				Q78	FMS2	TRANSISTOR
Q39	2SC4670	TRANSISTOR		Q79	FMW2	PAIR TRANSISTOR
Q40	DTC115EU	TRANSISTOR		Q80	2SC3930(C)	TRANSISTOR
Q41	2SC3930(C)	TRANSISTOR		Q81	2SA1532(C)	TRANSISTOR
Q42	DTA144WU	TRANSISTOR		Q82	2SC3930(C)	TRANSISTOR
Q43	2SC3930(C)	TRANSISTOR		Q83	FMW2	PAIR TRANSISTOR
Q44	2SC3930(C)	TRANSISTOR		Q84	FMS2	TRANSISTOR
Q45	2SC4081(S)	TRANSISTOR		Q85	2SA1576(S)	TRANSISTOR
Q46	2SC3930(C)	TRANSISTOR		Q86	DTC115EU	TRANSISTOR
Q47	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q87	XN6534	PAIR TRANSISTOR
Q48	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q88	2SA1576(S)	TRANSISTOR
Q49	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q89	2SC3930(C)	TRANSISTOR
Q50	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q90	2SA1576(S)	TRANSISTOR
Q51	2SC4670	TRANSISTOR		Q91	2SC4081(S)	TRANSISTOR
Q52	2SC3930(C)	TRANSISTOR		Q92	2SC3930(C)	TRANSISTOR
Q53	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q93	2SA1576(S)	TRANSISTOR
Q54	2SK980XAG-XE or 2SK980XAF-XE	TRANSISTOR		Q94	2SC4081(S)	TRANSISTOR
				Q95	2SC3930(C)	TRANSISTOR
				Q96	2SA1576(S)	TRANSISTOR
				Q97	2SC4081(S)	TRANSISTOR
				Q98	2SC3930(C)	TRANSISTOR
				Q99	2SA1576(S)	TRANSISTOR
				Q100	2SC4081(S)	TRANSISTOR
				Q101	2SC3930(C)	TRANSISTOR
				Q102	2SC3930(C)	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	Q103	2SC3936(C)	TRANSISTOR		D7	DAN202U	DIODE
	Q104	2SC3936(C)	TRANSISTOR		D9	DAP202U	DIODE
	Q105	2SC3936(C)	TRANSISTOR		D10	DAN202U	DIODE
	Q106	DTC124EU	CHIP D TR		D11	DAP202U	DIODE
	Q107	2SC4081(S)	TRANSISTOR		D12	DAN202U	DIODE
	Q108	2SA1576(S)	TRANSISTOR		D13	DAN202U	DIODE
	Q109	2SC4081(S)	TRANSISTOR		D14	DAN202U	DIODE
	Q110	2SA1576(S)	TRANSISTOR		D15	DAP202U	DIODE
	Q111	2SC4081(S)	TRANSISTOR		D16	DAN202U	DIODE
	Q112	DTC143EU	TRANSISTOR		D17	DA204U	DIODE
	Q113	IMX1	PAIR TRANSISTOR		D18	DAP202U	DIODE
	Q114	IMX1	PAIR TRANSISTOR		D19	DAN202U	DIODE
	Q115	2SA1576(S)	TRANSISTOR		D20	DAN202U	DIODE
	Q116	FMS1	TRANSISTOR		D21	DAP202U	DIODE
	Q117	DTA124EU	TRANSISTOR		D22	DAN202U	DIODE
	Q118	2SC4081(S)	TRANSISTOR		D23	DAN202U	DIODE
	Q120	DTA143XU	TRANSISTOR		D24	DAN202U	DIODE
	Q121	DTC115EU	TRANSISTOR		D25	DAN202U	DIODE
	Q122	DTA143XU	TRANSISTOR		D26	DAN202U	DIODE
	Q123	DTC115EU	TRANSISTOR		D27	DAN202U	DIODE
	Q124	DTA143XU	TRANSISTOR		D28	DAN202U	DIODE
	Q125	DTC115EU	TRANSISTOR		D29	DAN202U	DIODE
	Q126	DTA143XU	TRANSISTOR		D30	DAN202U	DIODE
	Q127	DTC115EU	TRANSISTOR		D31	DAN202U	DIODE
	Q128	2SA1577(R)	TRANSISTOR		D32	DAN202U	DIODE
	Q129	DTC115EU	TRANSISTOR		D33	DAN202U	DIODE
	Q130	2SC4081(S)	TRANSISTOR		D34	DAN202U	DIODE
	Q131	FMG2	TRANSISTOR				
	Q132	DTA143XU	TRANSISTOR				
	Q133	DTC115EU	TRANSISTOR	R1	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	Q134	DTA143XU	TRANSISTOR	R2	QRSA08J-221YN	RESISTOR	220Ω,1/10W
	Q135	DTC115EU	TRANSISTOR	R3	QRSA08J-430YN	RESISTOR	43Ω,1/10W
	Q136	DTA143XU	TRANSISTOR	R4	QRSA08J-430YN	RESISTOR	43Ω,1/10W
	Q137	DTC115EU	TRANSISTOR	R5	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q138	DTA143XU	TRANSISTOR	R6	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	Q139	DTC115EU	TRANSISTOR	R7	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	Q140	FMG2	TRANSISTOR	R8	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
				R9	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
△	Q141	2SA1576(S)	TRANSISTOR	R10	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	Q142	DTC115EU	TRANSISTOR				
	Q143	DTC115EU	TRANSISTOR	R11	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
	Q144	2SA1576(S)	TRANSISTOR	R12	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
	Q145	DTC115EU	TRANSISTOR	R13	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	Q146	DTC115EU	TRANSISTOR	R14	QRSA08J-221YN	RESISTOR	220Ω,1/10W
△	Q147	2SA1576(S)	TRANSISTOR	R15	QRSA08J-430YN	RESISTOR	43Ω,1/10W
	Q148	DTC115EU	TRANSISTOR	R16	QRSA08J-430YN	RESISTOR	43Ω,1/10W
	Q149	DTA143XU	TRANSISTOR	R17	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q150	DTC115EU	TRANSISTOR	R18	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
				R19	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	Q151	DTA143XU	TRANSISTOR	R20	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q152	DTC115EU	TRANSISTOR				
				R21	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
				R22	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
D1	DAN202U	DIODE		R23	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
D2	DAN202U	DIODE		R24	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
D3	DAN202U	DIODE		R25	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
D4	DAN202U	DIODE		R26	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
D5	DAN202U	DIODE		R27	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
D6	DAN202U	DIODE		R28	QRSA08J-223YN	RESISTOR	22KΩ,1/10W

#	REF No.	PART No.	PART NAME, DESCRIPTION	#	REF No.	PART No.	PART NAME, DESCRIPTION
	R29	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R86	QRSA08J-151YN	RESISTOR 150Ω,1/10W
	R30	QVZ3521-222	V RESISTOR, REC FM LEVEL (WP1)		R87	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R31	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R88	QRSA08J-561YN	RESISTOR 560Ω,1/10W
	R32	QVZ3521-222	V RESISTOR, REC FM LEVEL (WP2)		R89	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R33	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R90	QRSA08G-100YN	RESISTOR 10Ω,1/10W
	R34	QRSA08G-100YN	RESISTOR 10Ω,1/10W		R91	QRSA08J-104YN	RESISTOR 100KΩ,1/10W
	R35	QRSA08J-183YN	RESISTOR 18KΩ,1/10W		R92	QRSA08J-151YN	RESISTOR 150Ω,1/10W
	R36	QRSA08J-820YN	RESISTOR 82Ω,1/10W		R93	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R37	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R94	QRSA08J-561YN	RESISTOR 560Ω,1/10W
	R38	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R95	QRSA08J-101YN	RESISTOR 100Ω,1/10W
	R39	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R96	QRSA08J-331YN	RESISTOR 330Ω,1/10W
	R40	QRSA08J-100YN	RESISTOR 10Ω,1/10W		R97	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R41	QRSA08J-183YN	RESISTOR 18KΩ,1/10W		R98	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R42	QRSA08J-820YN	RESISTOR 82Ω,1/10W		R99	QRSA08J-681YN	RESISTOR 680Ω,1/10W
	R43	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R100	QRSA08J-223YN	RESISTOR 22KΩ,1/10W
	R44	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R101	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R45	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R103	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R46	QRSA08G-100YN	RESISTOR 10Ω,1/10W		R104	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R47	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R105	QRSA08J-430YN	RESISTOR 43Ω,1/10W
	R48	QRSA08J-151YN	RESISTOR 150Ω,1/10W		R106	QRSA08J-430YN	RESISTOR 43Ω,1/10W
	R49	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W		R107	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R50	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R108	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R51	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R109	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R52	QRSA08G-100YN	RESISTOR 10Ω,1/10W		R110	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R53	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R111	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
	R54	QRSA08J-151YN	RESISTOR 150Ω,1/10W		R112	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
	R55	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W		R113	QRSA08J-153YN	RESISTOR 15KΩ,1/10W
	R56	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R114	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
	R57	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R115	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R59	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R116	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R60	QRSA08J-101YN	RESISTOR 100Ω,1/10W		R117	QRSA08J-430YN	RESISTOR 43Ω,1/10W
	R61	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R118	QRSA08J-430YN	RESISTOR 43Ω,1/10W
	R62	QRSA08J-561YN	RESISTOR 560Ω,1/10W		R119	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R63	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R120	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R64	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		R121	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R65	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R122	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R66	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R123	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
	R67	QRSA08J-474YN	RESISTOR 470KΩ,1/10W		R124	QRSA08J-153YN	RESISTOR 15KΩ,1/10W
	R68	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W		R125	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
	R69	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R126	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
	R70	QRSA08J-473YN	RESISTOR 47KΩ,1/10W		R127	QRSA08J-563YN	RESISTOR 56KΩ,1/10W
	R71	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R128	QRSA08J-563YN	RESISTOR 56KΩ,1/10W
	R72	QRSA08G-100YN	RESISTOR 10Ω,1/10W		R129	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
	R73	QRSA08J-183YN	RESISTOR 18KΩ,1/10W		R130	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R74	QRSA08J-121YN	RESISTOR 120Ω,1/10W		R131	QVZ3521-222Z	V RESISTOR, REC FM LEVEL (WQ2)
	R75	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R132	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R76	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R133	QVZ3521-222Z	V RESISTOR, REC FM LEVEL (WQ1)
	R77	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R134	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R78	QRSA08J-100YN	RESISTOR 10Ω,1/10W		R135	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R79	QRSA08J-183YN	RESISTOR 18KΩ,1/10W		R136	QRSA08G-390YN	RESISTOR 39Ω,1/10W
	R80	QRSA08J-121YN	RESISTOR 120Ω,1/10W		R137	QRSA08G-390YN	RESISTOR 39Ω,1/10W
	R81	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R138	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R82	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R139	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R83	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R140	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R84	QRSA08G-100YN	RESISTOR 10Ω,1/10W		R141	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R85	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R142	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W

#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R143	QRSA08J-821YN	RESISTOR 820Ω, 1/10W		R200	QRSA08J-560YN	RESISTOR 56Ω, 1/10W
	R144	QRSA08G-390YN	RESISTOR 39Ω, 1/10W		R201	QRSA08J-152YN	RESISTOR 1.5KΩ, 1/10W
	R145	QRSA08G-390YN	RESISTOR 39Ω, 1/10W		R202	QRSA08J-822YN	RESISTOR 8.2KΩ, 1/10W
	R146	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R203	QRSA08J-333YN	RESISTOR 33KΩ, 1/10W
	R147	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R204	QRSA08J-105YN	RESISTOR 1MΩ, 1/10W
	R148	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R205	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R149	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R206	QRSA08J-104YN	RESISTOR 100KΩ, 1/10W
	R150	QRSA08J-122YN	RESISTOR 1.2KΩ, 1/10W		R207	QRSA08J-104YN	RESISTOR 100KΩ, 1/10W
	R151	QRSA08J-681YN	RESISTOR 680Ω, 1/10W		R208	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W
	R152	QRSA08G-510YN	RESISTOR 51Ω, 1/10W		R209	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R153	QRSA08G-510YN	RESISTOR 51Ω, 1/10W		R210	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R154	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R211	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R155	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R212	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R156	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R213	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R157	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R215	QRSA08J-473YN	RESISTOR 47KΩ, 1/10W
	R158	QRSA08J-122YN	RESISTOR 1.2KΩ, 1/10W		R216	QRSA08J-473YN	RESISTOR 47KΩ, 1/10W
	R159	QRSA08J-681YN	RESISTOR 680Ω, 1/10W		R217	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R160	QRSA08G-510YN	RESISTOR 51Ω, 1/10W		R218	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R161	QRSA08G-510YN	RESISTOR 51Ω, 1/10W		R219	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R162	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R220	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R163	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R222	QRSA08J-393YN	RESISTOR 39KΩ, 1/10W
	R164	QRSA08J-332YN	RESISTOR 3.3KΩ, 1/10W		R223	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R165	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R224	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W
	R166	QRSA08J-122YN	RESISTOR 1.2KΩ, 1/10W		R225	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R167	QRSA08J-122YN	RESISTOR 1.2KΩ, 1/10W		R226	QRSA08J-473YN	RESISTOR 47KΩ, 1/10W
	R168	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		R227	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R169	QRSA08J-822YN	RESISTOR 8.2KΩ, 1/10W		R228	QRSA08J-473YN	RESISTOR 47KΩ, 1/10W
	R170	QRSA08J-682YN	RESISTOR 6.8KΩ, 1/10W		R229	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R171	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W		R230	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R172	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W		R231	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R173	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R232	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R174	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R233	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R175	QRSA08J-511YN	RESISTOR 510Ω, 1/10W		R234	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R176	QRSA08J-511YN	RESISTOR 510Ω, 1/10W		R235	QRSA08J-393YN	RESISTOR 39KΩ, 1/10W
	R177	QRSA08J-391YN	RESISTOR 390Ω, 1/10W		R236	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R178	QRSA08J-821YN	RESISTOR 820Ω, 1/10W		R237	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R179	QRSA08J-393YN	RESISTOR 39KΩ, 1/10W		R238	QRSA08J-393YN	RESISTOR 39KΩ, 1/10W
	R180	QRSA08J-333YN	RESISTOR 33KΩ, 1/10W		R239	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R181	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R240	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R182	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R241	QRSA08J-393YN	RESISTOR 39KΩ, 1/10W
	R183	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R242	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W
	R184	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R243	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R185	QRSA08J-153YN	RESISTOR 15KΩ, 1/10W		R244	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W
	R186	QRSA08J-222YN	RESISTOR 2.2KΩ, 1/10W		R245	QRSA08J-221YN	RESISTOR 220Ω, 1/10W
	R187	QRSA08J-121YN	RESISTOR 120Ω, 1/10W		R246	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W
	R188	QRSA08J-391YN	RESISTOR 390Ω, 1/10W		R247	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R189	QRSA08J-391YN	RESISTOR 390Ω, 1/10W		R248	QRSA08J-334YN	RESISTOR 330KΩ, 1/10W
	R190	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R249	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R191	QRSA08J-101YN	RESISTOR 100Ω, 1/10W		R250	QRSA08J-392YN	RESISTOR 3.9KΩ, 1/10W
	R192	QRSA08J-181YN	RESISTOR 180Ω, 1/10W		R251	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W
	R193	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R252	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W
	R194	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W		R253	QRSA08J-101YN	RESISTOR 100Ω, 1/10W
	R195	QRSA08J-183YN	RESISTOR 18KΩ, 1/10W		R254	QRSA08J-824YN	RESISTOR 820KΩ, 1/10W
	R196	QRSA08J-333YN	RESISTOR 33KΩ, 1/10W		R255	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W
	R197	QRSA08J-153YN	RESISTOR 15KΩ, 1/10W		R256	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W
	R198	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		R257	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W
	R199	QRSA08J-561YN	RESISTOR 560Ω, 1/10W				

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	R258	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		C43	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R259	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		C44	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R270	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		C45	QCFA1CZ-105	CAPACITOR 1μF,16V
	R271	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		C46	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R274	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		C47	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	R275	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		C48	QEK60JM-107	E CAPACITOR 100μF,6.3V
	R276	QRSA08J-101YN	RESISTOR 100Ω,1/10W		C49	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R277	QRSA08J-101YN	RESISTOR 100Ω,1/10W		C50	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R278	QRSA08J-101YN	RESISTOR 100Ω,1/10W		C51	QEK60JM-107	E CAPACITOR 100μF,6.3V
	R279	QRSA08J-223YN	RESISTOR 22KΩ,1/10W		C52	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	R280	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		C53	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	R281	QRD161J-103	RESISTOR 10KΩ,1/6W		C54	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C1	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C55	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C2	QCFA1HZ-223	CAPACITOR 0.022μF,50V		C56	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C3	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C57	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C4	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C58	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C5	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C59	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C6	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C60	QCSA1HJ-3R0	CAPACITOR 3pF,50V
	C7	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C61	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C8	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C62	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C9	QEK61CM-107	E CAPACITOR 100μF,16V		C63	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C10	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C64	QCYA1HK-103	CAPACITOR 0.01μF,50V
	C11	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C65	QCFA1CZ-105	CAPACITOR 1μF,16V
	C12	QCFA1HZ-223	CAPACITOR 0.022μF,50V		C66	QCSA1HJ-102	CAPACITOR 0.001μF,50V
	C13	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C67	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C14	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C68	QCSA1HJ-5R0	CAPACITOR 5pF,50V
	C15	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C69	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C16	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C70	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C17	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C71	QEK61CM-107	E CAPACITOR 100μF,16V
	C18	QEK61CM-107	E CAPACITOR 100μF,16V		C72	QCYA1HK-103	CAPACITOR 0.01μF,50V
	C19	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C73	QCFA1CZ-105	CAPACITOR 1μF,16V
	C20	QEK61CM-107	E CAPACITOR 100μF,16V		C74	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C21	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C75	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C22	QEK61CM-107	E CAPACITOR 100μF,16V		C76	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C23	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C77	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C24	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C78	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C25	QCSA1HJ-5R0	CAPACITOR 5pF,50V		C79	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C26	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C80	QCSA1HJ-102	CAPACITOR 0.001μF,50V
	C27	QEK60JM-107	E CAPACITOR 100μF,6.3V		C81	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C28	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C82	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C29	QCYA1HK-103	CAPACITOR 0.01μF,50V		C83	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C30	QCFA1CZ-105	CAPACITOR 1μF,16V		C84	QCFA1CZ-105	CAPACITOR 1μF,16V
	C32	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C85	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C33	QCSA1HJ-5R0	CAPACITOR 5pF,50V		C86	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C34	QEK60JM-107	E CAPACITOR 100μF,6.3V		C87	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C35	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C88	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C36	QEK61CM-107	E CAPACITOR 100μF,16V		C89	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C37	QCYA1HK-103	CAPACITOR 0.01μF,50V		C90	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C38	QCFA1CZ-105	CAPACITOR 1μF,16V		C91	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C39	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C92	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C40	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C93	QCFA1HZ-223	CAPACITOR 0.022μF,50V
	C41	QCFA1EZ-104	CAPACITOR 0.1μF,25V		C94	QCFA1EZ-104	CAPACITOR 0.1μF,25V
	C42	QEK60JM-107	E CAPACITOR 100μF,6.3V		C95	QCFA1EZ-104	CAPACITOR 0.1μF,25V
					C96	QCFA1EZ-104	CAPACITOR 0.1μF,25V
					C97	QCFA1HZ-103	CAPACITOR 0.01μF,50V
					C98	QCFA1EZ-104	CAPACITOR 0.1μF,25V
					C99	QCFA1EZ-104	CAPACITOR 0.1μF,25V

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C100		QCFA1EZ-104	CAPACITOR 0.1μF,25V	C158		QEK60JM-107	E CAPACITOR 100μF,6.3V
C101		QEK61CM-107	E CAPACITOR 100μF,16V	C159		QCFA1EZ-104	CAPACITOR 0.1μF,25V
C102		QCFA1HZ-103	CAPACITOR 0.01μF,50V	C160		QCSA1HJ-102	CAPACITOR 0.001μF,50V
C103		QCFA1HZ-223	CAPACITOR 0.022μF,50V	C161		QCYA1HK-471	CAPACITOR 470pF,50V
C104		QCFA1EZ-104	CAPACITOR 0.1μF,25V	C162		QEPC1CM-106	NP E CAPACITOR 10μF,16V
C105		QCFA1EZ-104	CAPACITOR 0.1μF,25V	C163		QEPC1CM-106	NP E CAPACITOR 10μF,16V
C106		QCFA1EZ-104	CAPACITOR 0.1μF,25V	C164		QEPC1CM-106	NP E CAPACITOR 10μF,16V
C107		QCFA1HZ-103	CAPACITOR 0.01μF,50V	C165		QEPC1CM-106	NP E CAPACITOR 10μF,16V
C108		QCFA1EZ-104	CAPACITOR 0.1μF,25V	C166		QCFA1EZ-104	CAPACITOR 0.1μF,25V
C109		QEK61CM-107	E CAPACITOR 100μF,16V	L1		PU48530-101K	COIL 100μH
C110		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L2		PU59153-101K	COIL 100μH
C111		QEK61CM-107	E CAPACITOR 100μF,16V	L3		PU59152-150J	COIL 15μH
C112		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L4		PU59152-150J	COIL 15μH
C113		QEK61CM-107	E CAPACITOR 100μF,16V	L5		PU59153-101K	COIL 100μH
C114		QEK61CM-107	E CAPACITOR 100μF,16V	L6		PU48530-101K	COIL 100μH
C115		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L7		PU59153-101K	COIL 100μH
C116		QCFA1HZ-103	CAPACITOR 0.01μF,50V	L8		PU59152-180J	COIL 18μH
C117		QCFA1HZ-223	CAPACITOR 0.022μF,50V	L9		PU59152-180J	COIL 18μH
C118		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L10		PU48530-101K	COIL 100μH
C119		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L11		PU48530-101K	COIL 100μH
C120		QCFA1HZ-103	CAPACITOR 0.01μF,50V	L12		PU59153-101K	COIL 100μH
C121		QCFA1HZ-223	CAPACITOR 0.022μF,50V	L13		PU59153-101K	COIL 100μH
C122		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L14		PU59153-101K	COIL 100μH
C123		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L15		PU59152-270J	COIL 27μH
C124		QEK61CM-107	E CAPACITOR 100μF,16V	L16		PU48530-221K	COIL 220μH
C125		QCFA1EZ-104	CAPACITOR 0.1μF,25V	L17		PU59152-5R6J	COIL 5.6μH
C126		QCFA1HZ-103	CAPACITOR 0.01μF,50V	L18		PU59153-101K	COIL 100μH
C127		QCFA1HZ-223	CAPACITOR 0.022μF,50V	L19		PU48530-101K	COIL 100μH
C128		QCFA1EZ-104	CAPACITOR 0.1μF,25V	- AUDIO SECTION -			
C129		QCFA1EZ-104	CAPACITOR 0.1μF,25V				
C130		QCFA1HZ-103	CAPACITOR 0.01μF,50V				
C131		QCFA1HZ-223	CAPACITOR 0.022μF,50V	IC401		AN3380NK	IC
C132		QCFA1EZ-104	CAPACITOR 0.1μF,25V	IC402		AN3380NK	IC
C133		QCFA1EZ-104	CAPACITOR 0.1μF,25V	IC403		BU4011BF	IC
C135		QCFA1HZ-223	CAPACITOR 0.022μF,50V				
C136		QCFA1HZ-223	CAPACITOR 0.022μF,50V	Q401		DTC144EU	TRANSISTOR
C137		QCFA1HZ-223	CAPACITOR 0.022μF,50V	Q402		DTC144EU	TRANSISTOR
C138		QCFA1EZ-104	CAPACITOR 0.1μF,25V	Q404		DTC124TU	TRANSISTOR
C139		QCFA1HZ-103	CAPACITOR 0.01μF,50V	Q405		DTC124EU	CHIP D TR
C140		QCSA1HJ-9R0	CAPACITOR 9pF,50V				
C141		QCFA1CZ-105	CAPACITOR 1μF,16V	Q451		DTC144TU	TRANSISTOR
C142		QCFA1CZ-105	CAPACITOR 1μF,16V	Q452		DTC144TU	TRANSISTOR
C143		QCSA1HJ-331	CAPACITOR 330pF,50V	Q454		2SC4081(QR)	TRANSISTOR
C144		QCSA1HJ-680	CAPACITOR 68pF,50V	Q455		DTC144TU	TRANSISTOR
C145		QCFA1EZ-104	CAPACITOR 0.1μF,25V	Q456		2SC4081(QR)	TRANSISTOR
C146		QCFA1HZ-103	CAPACITOR 0.01μF,50V	Q458		DTC144TU	TRANSISTOR
C147		QCFA1CZ-105	CAPACITOR 1μF,16V	Q501		DTC144EU	TRANSISTOR
C148		QEK61CM-107	E CAPACITOR 100μF,16V	Q502		DTC144EU	TRANSISTOR
C149		QCFA1HZ-103	CAPACITOR 0.01μF,50V	Q504		DTC124TU	TRANSISTOR
C150		QCSA1HJ-102	CAPACITOR 0.001μF,50V	Q505		DTC124EU	CHIP D TR
C151		QCSA1HJ-122	CAPACITOR 0.0012μF,50V	Q551		2SC4081(QR)	TRANSISTOR
C152		QCFA1HZ-103	CAPACITOR 0.01μF,50V	Q552		2SC4081(QR)	TRANSISTOR
C153		QCSA1HJ-222	CAPACITOR 0.0022μF,50V	Q553		2SC4081(QR)	TRANSISTOR
C154		QCFA1CZ-105	CAPACITOR 1μF,16V	Q554		2SC4081(QR)	TRANSISTOR
C155		QCYA1HK-472	CAPACITOR 0.0047μF,50V	Q556		DTC144EU	TRANSISTOR
C157		QCFA1EZ-104	CAPACITOR 0.1μF,25V	Q557		DTC144EU	TRANSISTOR

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
Q558	DTC144WU	TRANSISTOR		R505	QRSA08J-101YN	RESISTOR 100Ω,1/10W
Q600	DTA124EU	TRANSISTOR		R506	QRSA08J-153YN	RESISTOR 15KΩ,1/10W
Q601	DTC144EU	TRANSISTOR		R507	QRSA08J-911YN	RESISTOR 910Ω,1/10W
Q602	DTC144EU	TRANSISTOR		R508	QRSA08J-274YN	RESISTOR 270KΩ,1/10W
Q603	DTC144WU	TRANSISTOR		R509	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
Q605	DTA124EU	TRANSISTOR		R510	QRSA08J-334YN	RESISTOR 330KΩ,1/10W
Q606	DTA124EU	TRANSISTOR		R511	QRSA08J-202YN	RESISTOR 2KΩ,1/10W
Q607	DTA124EU	TRANSISTOR		R550	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
Q608	DTC144EU	TRANSISTOR		R551	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
Q609	DTA124EU	TRANSISTOR		R552	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
Q610	DTA124EU	TRANSISTOR		R553	QRSA08J-392YN	RESISTOR 3.9KΩ,1/10W
Q611	DTC144WU	TRANSISTOR		R554	QRSA08J-752YN	RESISTOR 7.5KΩ,1/10W
Q612	DTC144EU	TRANSISTOR		R555	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
Q613	DTA124EU	TRANSISTOR		R556	QVZ3521-223Z	V RESISTOR,S-SP AUTO CAL REF
Q614	DTC144WU	TRANSISTOR		R557	QRSA08J-202YN	RESISTOR 2KΩ,1/10W
				R558	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
				R559	QRSA08J-681YN	RESISTOR 680Ω,1/10W
D401	DA114	DIODE		R560	QVZ3521-103	V RESISTOR,S-EP AUTO CAL REF
D402	DA114	DIODE				
D403	DAP202U	DIODE		R561	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
D404	DAP202U	DIODE		R562	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
D405	DAP202U	DIODE		R564	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
				R565	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
				R566	QRSA08J-331YN	RESISTOR 330Ω,1/10W
R401	QRSA08J-433YN	RESISTOR 43KΩ,1/10W		R601	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R402	QRSA08J-393YN	RESISTOR 39KΩ,1/10W		R602	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R403	QRSA08J-101YN	RESISTOR 100Ω,1/10W		R603	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R404	QRSA08J-560YN	RESISTOR 56Ω,1/10W		R604	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R405	QRSA08J-101YN	RESISTOR 100Ω,1/10W		R606	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R406	QRSA08J-153YN	RESISTOR 15KΩ,1/10W		R607	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R408	QRSA08J-274YN	RESISTOR 270KΩ,1/10W		R608	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R409	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R609	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R410	QRSA08J-334YN	RESISTOR 330KΩ,1/10W		R610	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R411	QRSA08J-202YN	RESISTOR 2KΩ,1/10W				
R451	QRSA08J-133YN	RESISTOR 13KΩ,1/10W		R611	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R452	QRSA08J-202YN	RESISTOR 2KΩ,1/10W		R612	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R453	QRSA08J-202YN	RESISTOR 2KΩ,1/10W		R613	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R454	QRSA08J-242YN	RESISTOR 2.4KΩ,1/10W				
R455	QRSA08J-471YN	RESISTOR 470Ω,1/10W	C401	QCFA1EZ-104	CAPACITOR 0.1μF,25V	
R456	QRSA08J-471YN	RESISTOR 470Ω,1/10W	C402	QCFA1HZ-223	CAPACITOR 0.022μF,50V	
R459	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C404	QCSA1HJ-102	CAPACITOR 0.001μF,50V	
R460	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C405	QCSA1HJ-102	CAPACITOR 0.001μF,50V	
			C406	QCSA1HJ-821	CAPACITOR 820pF,50V	
R461	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	C407	QCFA1CZ-224	CAPACITOR 0.22μF,16V	
R462	QRSA08J-302YN	RESISTOR 3KΩ,1/10W	C408	QCFA1HZ-223	CAPACITOR 0.022μF,50V	
R463	QVZ3521-222Z	V RESISTOR	C410	QEK61AM-476	E CAPACITOR 47μF,10V	
R464	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W				
R465	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C411	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R466	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C412	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R467	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	C414	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R468	QRSA08J-471YN	RESISTOR 470Ω,1/10W	C415	QCFA1CZ-224	CAPACITOR 0.22μF,16V	
R469	QRSA08J-102YN	RESISTOR 1KΩ,1/10W				
			C451	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R501	QRSA08J-433YN	RESISTOR 43KΩ,1/10W	C452	QEK61AM-476	E CAPACITOR 47μF,10V	
R502	QRSA08J-393YN	RESISTOR 39KΩ,1/10W	C453	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R503	QRSA08J-101YN	RESISTOR 100Ω,1/10W	C454	QCYA1HJ-103	CAPACITOR 0.01μF,50V	
R504	QRSA08J-560YN	RESISTOR 56Ω,1/10W	C455	QCYA1HJ-103	CAPACITOR 0.01μF,50V	

#△ REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
C456	QCYA1HJ-103	CAPACITOR 0.01μF,50V	R712	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
C457	QCYA1HJ-103	CAPACITOR 0.01μF,50V	R713	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
C458	QCSA1HJ-100	CAPACITOR 10pF,50V	R714	QRSA08J-471YN	RESISTOR 470Ω,1/10W
			R715	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
C501	QCFA1EZ-104	CAPACITOR 0.1μF,25V	R716	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
C502	QCYA1HJ-103	CAPACITOR 0.01μF,50V	R718	QRSA08J-391YN	RESISTOR 390Ω,1/10W
C504	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C505	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C506	QCSA1HJ-821	CAPACITOR 820pF,50V	C702	QCYA1HJ-153	CAPACITOR 0.015μF,50V
C507	QCFA1CZ-224	CAPACITOR 0.22μF,16V	C703	QCSA1HJ-560	CAPACITOR 56pF,50V
C508	QCYA1HJ-103	CAPACITOR 0.01μF,50V	C704	QCSA1HJ-820	CAPACITOR 82pF,50V
C510	QEK61AM-476	E CAPACITOR 47μF,10V	C706	QCSA1HJ-820	CAPACITOR 82pF,50V
			C708	QCTA1CH-180	CAPACITOR 18pF,16V
C511	QCYA1HJ-103	CAPACITOR 0.01μF,50V	C709	QCTA1CH-180	CAPACITOR 18pF,16V
C512	QCYA1HJ-103	CAPACITOR 0.01μF,50V	C710	QCSA1HJ-100	CAPACITOR 10pF,50V
C513	QCYA1HJ-103	CAPACITOR 0.01μF,50V			
C514	QCSA1HJ-101	CAPACITOR 100pF,50V	C711	QCSA1HJ-330	CAPACITOR 33pF,50V
C515	QCFA1CZ-224	CAPACITOR 0.22μF,16V	C712	QCYA1HJ-103	CAPACITOR 0.01μF,50V
C516	QCYA1HJ-103	CAPACITOR 0.01μF,50V			
C550	QCYA1HJ-103	CAPACITOR 0.01μF,50V	L701	PU59988-560J	COIL 56μH
			L702	PU48530-3R3K	COIL 3.3μH
C551	QCYA1HJ-103	CAPACITOR 0.01μF,50V	L703	PU48530-3R3K	COIL 3.3μH
C553	QCYA1HJ-103	CAPACITOR 0.01μF,50V	L705	PU59988-2R2JW	COIL 2.2μH
C554	QCYA1HJ-103	CAPACITOR 0.01μF,50V			
L401	PU48530-101K	COIL 100μH	△ T701	PU56175	S.TRANS
BPF401	PELN0290	BAND PASS FILTER			
TH401	ERT-D2FGL332S	THERMISTOR			
TP401	PU56347	TEST POINT			
TP402	PU56347	TEST POINT			
	- FLYING ERASE SECTION -				
△ Q701	2SA1576(QR)	TRANSISTOR			
△ Q703	2SA1576(QR)	TRANSISTOR			
Q704	2SD639R	TRANSISTOR	Q1	2SC1740S(QRS)	TRANSISTOR
Q705	2SD639R	TRANSISTOR		or 2SC3199(RS)-TJK	TRANSISTOR
Q706	DTC114EU	TRANSISTOR	Q2	2SC1740S(QRS)	TRANSISTOR
Q707	DTC114EU	TRANSISTOR		or 2SC3199(RS)-TJK	TRANSISTOR
Q708	2SC4081(QR)	TRANSISTOR	Q3	2SA933(RS)	TRANSISTOR
Q709	2SC4081(QR)	TRANSISTOR	Q4	DTC144ES	TRANSISTOR
Q710	DTC144WU	TRANSISTOR			
			R1	QRD161J-103	RESISTOR 10KΩ,1/6W
			R2	QRD161J-392	RESISTOR 3.9KΩ,1/6W
R701	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R3	QRD161J-243	RESISTOR 24KΩ,1/6W
R702	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	R4	QRD161J-183	RESISTOR 18KΩ,1/6W
R704	QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R5	QRD161J-223	RESISTOR 22KΩ,1/6W
R705	QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R6	QRD161J-103	RESISTOR 10KΩ,1/6W
R706	QRSA08J-104YN	RESISTOR 100KΩ,1/10W			
R707	QRSA08J-121YN	RESISTOR 120Ω,1/10W			
R708	QRSA08J-104YN	RESISTOR 100KΩ,1/10W	C1	QER61HM-105	E CAPACITOR 1μF,50V
R709	QRSA08J-121YN	RESISTOR 120Ω,1/10W	C2	QFN31HJ-823	M CAPACITOR 0.082μF,50V
R711	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W			

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION

			DIGITAL BOARD ASSEMBLY <50>				
PWBA	PB10821C		DIGITAL BOARD ASSY		IC501	CXD1175AM-XE	IC
IC1	JCP0014	IC			IC502	JCP0030-2	IC
IC2	JCP0015	IC				or JCP0030	IC
IC3	JCP0036	IC			IC503	SN74HC157NS	IC
IC4	TC9057BF	IC			IC504	SN74HC157NS	IC
IC5	UPD42101G-3-X	IC			IC505	SN74HC14NS	IC
IC6	SN74HC244NS	IC			IC506	SN74HC08NS	IC
IC7	SN74HC244NS	IC			IC507	SN74HC08NS	IC
IC8	TMS4C1050-30SD	IC			IC508	TC7S04F	IC
	or TMS4C1050-40SD	IC			IC510	TC7S32F	IC
	or TMS4C1050B-30SD	IC					
C9	TMS4C1050-30SD	IC			IC601	NJM2240M	IC
	or TMS4C1050-40SD	IC			IC602	TC7W04F	IC
	or TMS4C1050B-30SD	IC					
IC10	TMS4C1050-30SD	IC			Q200	2SA1576(QR)	TRANSISTOR
	or TMS4C1050-40SD	IC			Q201	2SC4081(QR)	TRANSISTOR
	or TMS4C1050B-30SD	IC			Q202	2SC4081(QR)	TRANSISTOR
					Q203	2SA1576(QR)	TRANSISTOR
					Q204	2SC4081(QR)	TRANSISTOR
					Q205	2SC4081(QR)	TRANSISTOR
					Q301	2SC4081(QRS)	TRANSISTOR
					Q302	2SA1576(QRS)	TRANSISTOR
					Q303	2SC4081(QRS)	TRANSISTOR
					Q304	2SC4081(QRS)	TRANSISTOR
					Q305	2SA1576(QRS)	TRANSISTOR
					Q306	2SC4081(QRS)	TRANSISTOR
					Q307	2SC4081(QRS)	TRANSISTOR
					Q308	DTC143EU	TRANSISTOR
					Q309	DTC143EU	TRANSISTOR
					Q310	2SA1576(QRS)	TRANSISTOR
C14	IC-PST529D-2	IC			Q311	2SC4081(QRS)	TRANSISTOR
IC100	JCP0046	IC			Q312	2SA1576(QRS)	TRANSISTOR
C101	UPD42101G-3-X	IC			Q313	2SA1576(QRS)	TRANSISTOR
IC102	UPD42101G-3-X	IC			Q314	2SC4081(QRS)	TRANSISTOR
'C103	UPD42101G-3-X	IC			Q315	2SA1576(QRS)	TRANSISTOR
C104	UPD42101G-3-X	IC			Q316	DTC143EU	TRANSISTOR
IC201	CXD1171M	IC			Q317	2SA1576(QRS)	TRANSISTOR
C202	CXD1175AM-XE	IC			Q318	DTC143EU	TRANSISTOR
					Q319	DTC143EU	TRANSISTOR
IC301	CXD1176Q	IC			Q401	2SC4081(QRS)	TRANSISTOR
IC302	TC74HC574AF	IC			Q402	2SC4081(QRS)	TRANSISTOR
C303	TC74HC574AF	IC			Q403	2SC4081(QRS)	TRANSISTOR
C304	TC7S04F	IC			Q404	2SC4081(QRS)	TRANSISTOR
IC305	SN74HC157NS	IC			Q405	2SC4081(QRS)	TRANSISTOR
'C306	TC4W53F	IC			Q406	2SC4081(QRS)	TRANSISTOR
C307	CXD1177Q	IC			Q407	2SA1576(QRS)	TRANSISTOR
C309	TC7S04F	IC			Q408	2SA1576(QRS)	TRANSISTOR
IC310	TC7S04F	IC			Q409	2SC4081(QRS)	TRANSISTOR
					Q501	2SC4081(QRS)	TRANSISTOR
C311	TC4S66F	IC			Q502	2SA1576(QRS)	TRANSISTOR
IC312	TC7W08F	IC			Q503	2SC4081(QRS)	TRANSISTOR
					Q504	2SA1576(QRS)	TRANSISTOR
					Q505	2SC4081(QRS)	TRANSISTOR
					Q506	2SC4081(QRS)	TRANSISTOR
					Q507	DTC144EU	TRANSISTOR
					Q508	2SC4081(QRS)	TRANSISTOR

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
	Q509	DTC144EU	TRANSISTOR		R34	QRSA08J-473YN	RESISTOR
	Q510	2SC4081(QRS)	TRANSISTOR		R35	QRSA08J-473YN	RESISTOR
	Q511	2SC4081(QRS)	TRANSISTOR		R36	QRSA08J-473YN	RESISTOR
	Q512	2SA1576(QRS)	TRANSISTOR		R37	QRSA08J-473YN	RESISTOR
	Q515	2SC4081(QRS)	TRANSISTOR		R38	QRSA08J-473YN	RESISTOR
	Q516	2SC4081(QRS)	TRANSISTOR		R39	QRSA08J-473YN	RESISTOR
	Q517	2SC4081(QRS)	TRANSISTOR		R40	QRSA08J-473YN	RESISTOR
	Q518	2SC4081(QRS)	TRANSISTOR		R41	QRSA08J-473YN	RESISTOR
	Q519	DTC144EU	TRANSISTOR		R42	QRSA08J-473YN	RESISTOR
	Q601	2SC4081(QRS)	TRANSISTOR		R43	QRSA08J-473YN	RESISTOR
	Q602	2SC4081(QRS)	TRANSISTOR		R44	QRSA08J-473YN	RESISTOR
	Q603	2SC4081(QRS)	TRANSISTOR		R45	QRSA08J-473YN	RESISTOR
	D1	DAN202U	DIODE		R46	QRSA08J-473YN	RESISTOR
	D301	DA204U	DIODE		R47	QRSA08J-473YN	RESISTOR
	D302	DA204U	DIODE		R48	QRSA08J-473YN	RESISTOR
	D401	UZ8.2BSA	ZENER DIODE		R49	QRSA08J-473YN	RESISTOR
	D402	DAN202U	DIODE		R50	QRSA08J-473YN	RESISTOR
	D501	DAN202U	DIODE		R51	QRSA08J-473YN	RESISTOR
	D502	DAN202U	DIODE		R52	QRSA08J-473YN	RESISTOR
	R1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R53	QRSA08J-473YN	RESISTOR
	R2	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R54	QRSA08J-473YN	RESISTOR
	R3	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R55	QRSA08J-473YN	RESISTOR
	R4	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W	R56	QRSA08J-473YN	RESISTOR
	R5	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R57	QRSA08J-473YN	RESISTOR
	R6	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R58	QRSA08J-473YN	RESISTOR
	R7	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R59	QRSA08J-473YN	RESISTOR
	R8	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R60	QRSA08J-473YN	RESISTOR
	R9	QRSA08J-102YN	RESISTOR	1KΩ,1/10W	R61	QRSA08J-473YN	RESISTOR
	R10	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R62	QRSA08J-473YN	RESISTOR
	R11	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R63	QRSA08J-473YN	RESISTOR
	R12	QRSA08J-333YN	RESISTOR	33KΩ,1/10W	R64	QRSA08J-473YN	RESISTOR
	R14	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R65	QRSA08J-473YN	RESISTOR
	R15	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W	R66	QRSA08J-473YN	RESISTOR
	R16	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W	R67	QRSA08J-473YN	RESISTOR
	R17	QRSA08J-103YN	RESISTOR	10KΩ,1/10W	R68	QRSA08J-473YN	RESISTOR
	R18	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R69	QRSA08J-473YN	RESISTOR
	R19	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R70	QRSA08J-473YN	RESISTOR
	R20	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R71	QRSA08J-473YN	RESISTOR
	R21	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R72	QRSA08J-473YN	RESISTOR
	R22	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R73	QRSA08J-473YN	RESISTOR
	R23	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R74	QRSA08J-473YN	RESISTOR
	R24	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R75	QRSA08J-221YN	RESISTOR
	R25	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R76	QRSA08J-221YN	RESISTOR
	R26	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R77	QRSA08J-221YN	RESISTOR
	R27	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R78	QRSA08J-221YN	RESISTOR
	R28	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R79	QRSA08J-471YN	RESISTOR
	R29	QRSA08J-471YN	RESISTOR	470Ω,1/10W	R80	QRSA08J-471YN	RESISTOR
	R31	QRSA08J-473YN	RESISTOR	47KΩ,1/10W	R81	QRSA08J-471YN	RESISTOR
	R32	QRSA08J-473YN	RESISTOR	47KΩ,1/10W	R82	QRSA08J-471YN	RESISTOR
	R33	QRSA08J-473YN	RESISTOR	47KΩ,1/10W	R100	QRSA08J-152YN	RESISTOR
					R101	QRSA08J-152YN	RESISTOR
					R102	QRSA08J-272YN	RESISTOR
					R103	QRSA08J-272YN	RESISTOR
					R104	QRSA08J-564YN	RESISTOR
					R105	QRSA08J-561YN	RESISTOR

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION
	R106	QRSA08J-121YN	RESISTOR 120Ω,1/10W		R249	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R107	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W		R250	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R108	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W				
	R109	QRSA08J-121YN	RESISTOR 120Ω,1/10W		R251	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R110	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R252	QRSA08J-221YN	RESISTOR 220Ω,1/10W
					R253	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R111	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R254	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R112	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W		R255	QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
	R113	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R256	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R114	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R257	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R115	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R258	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R116	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R259	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R117	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R260	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R118	QRSA08J-471YN	RESISTOR 470Ω,1/10W				
	R119	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R261	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R120	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R262	QRSA08J-471YN	RESISTOR 470Ω,1/10W
					R264	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R121	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R265	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R122	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R266	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R123	QRSA08J-471YN	RESISTOR 470Ω,1/10W				
	R124	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R301	QRSA08J-221YN	RESISTOR 220Ω,1/10W
	R125	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R302	QRSA08J-391YN	RESISTOR 390Ω,1/10W
	R126	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R303	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
	R127	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R304	QRSA08J-391YN	RESISTOR 390Ω,1/10W
	R128	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R305	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
	R129	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R306	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R130	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R307	QVZ3513-102	V RESISTOR, YCS Y LEVEL
					R308	QRSA08J-821YN	RESISTOR 820Ω,1/10W
	R131	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R309	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R132	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R310	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
	R200	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R311	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R201	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R312	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
	R202	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R313	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R203	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R316	QRSA08J-621YN	RESISTOR 620Ω,1/10W
	R204	QVZ3513-102	V RESISTOR, TBC COLOR LEVEL		R317	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R205	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R318	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R206	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		R319	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R207	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R320	QRSA08J-823YN	RESISTOR 82KΩ,1/10W
	R208	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W				
	R209	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W		R321	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R210	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R322	QRSA08J-121YN	RESISTOR 120Ω,1/10W
					R323	QRSA08J-121YN	RESISTOR 120Ω,1/10W
	R211	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R325	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W
	R212	QRSA08J-331YN	RESISTOR 330Ω,1/10W		R326	QRSA08J-362YN	RESISTOR 3.6KΩ,1/10W
	R213	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R327	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
	R214	QRSA08J-752YN	RESISTOR 7.5KΩ,1/10W		R329	QRSA08J-201YN	RESISTOR 200Ω,1/10W
	R215	QRSA08J-153YN	RESISTOR 15KΩ,1/10W		R330	QRSA08J-271YN	RESISTOR 270Ω,1/10W
	R216	QRSA08J-221YN	RESISTOR 220Ω,1/10W				
	R217	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R331	QRSA08J-681YN	RESISTOR 680Ω,1/10W
	R218	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R332	QRSA08J-561YN	RESISTOR 560Ω,1/10W
	R219	QRSA08J-121YN	RESISTOR 120Ω,1/10W		R333	QRSA08J-471YN	RESISTOR 470Ω,1/10W
					R334	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R240	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R335	QRSA08J-561YN	RESISTOR 560Ω,1/10W
					R336	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
	R241	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R337	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R242	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R338	QRSA08J-681YN	RESISTOR 680Ω,1/10W
	R243	QRSA08J-221YN	RESISTOR 220Ω,1/10W		R339	QRSA08J-471YN	RESISTOR 470Ω,1/10W
	R244	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R340	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
	R245	QRSA08J-221YN	RESISTOR 220Ω,1/10W				
	R248	QRSA08J-471YN	RESISTOR 470Ω,1/10W		R341	QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
					R342	QRSA08J-561YN	RESISTOR 560Ω,1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R343		QVZ3513-332	V RESISTOR, TBC Y LEVEL	R427		QRSA08J-271YN	RESISTOR 270Ω,1/10W
R344		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R428		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R345		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R429		QRSA08J-821YN	RESISTOR 820Ω,1/10W
R346		QRSA08J-681YN	RESISTOR 680Ω,1/10W	R430		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R347		QVZ3513-681	V RESISTOR, TBC V/S	R431		QRSA08J-273YN	RESISTOR 27KΩ,1/10W
R348		QRSA08J-561YN	RESISTOR 560Ω,1/10W	R432		QRSA08J-183YN	RESISTOR 18KΩ,1/10W
R349		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R433		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R350		QRSA08J-331YN	RESISTOR 330Ω,1/10W	R434		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R351		QRD161J-222	RESISTOR 2.2KΩ,1/6W	R435		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R352		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R436		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R353		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R437		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R354		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R438		QRSA08J-471YN	RESISTOR 470Ω,1/10W
R355		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R439		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R356		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R440		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R357		QRSA08J-393YN	RESISTOR 39KΩ,1/10W	R441		QRSA08J-511YN	RESISTOR 510Ω,1/10W
R358		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R442		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R359		QRSA08J-473YN	RESISTOR 47KΩ,1/10W				
R360		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R501		QRSA08J-393YN	RESISTOR 39KΩ,1/10W
R361		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R502		QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
R362		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R503		QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R363		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R504		QRSA08J-271YN	RESISTOR 270Ω,1/10W
R364		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R505		QRSA08J-221YN	RESISTOR 220Ω,1/10W
R365		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R506		QRSA08J-821YN	RESISTOR 820Ω,1/10W
R366		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R507		QVZ3513-102	V RESISTOR, PB COLOR LEVEL
R367		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R508		QRSA08J-821YN	RESISTOR 820Ω,1/10W
R368		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R509		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R369		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R510		QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
R370		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R511		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R371		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R512		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R372		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R513		QRSA08J-391YN	RESISTOR 390Ω,1/10W
R373		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R514		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R515		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R515		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R401		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R516		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R402		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	R517		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R403		QRSA08J-271YN	RESISTOR 270Ω,1/10W	R518		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R404		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R519		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R405		QRSA08J-361YN	RESISTOR 360Ω,1/10W	R520		QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R406		QRSA08J-224YN	RESISTOR 220KΩ,1/10W				
R407		QRSA08J-561YN	RESISTOR 560Ω,1/10W	R521		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R409		QRSA08J-331YN	RESISTOR 330Ω,1/10W	R522		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R410		QRSA08J-754YN	RESISTOR 750KΩ,1/10W	R523		QRSA08J-221YN	RESISTOR 220Ω,1/10W
R524		QRSA08J-121YN	RESISTOR 120Ω,1/10W	R524		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R411		QRSA08J-205YN	RESISTOR 2MΩ,1/10W	R525		QRSA08J-121YN	RESISTOR 120Ω,1/10W
R412		QRSA08J-161YN	RESISTOR 160Ω,1/10W	R527		QRSA08J-202YN	RESISTOR 2KΩ,1/10W
R413		QRSA08J-471YN	RESISTOR 470Ω,1/10W	R528		QVZ3513-152	V RESISTOR, BS Y LEVEL
R414		QRSA08J-754YN	RESISTOR 750KΩ,1/10W	R529		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R415		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R530		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R416		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W				
R417		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	R531		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W
R418		QRSA08J-244YN	RESISTOR 240KΩ,1/10W	R534		QRSA08J-201YN	RESISTOR 200Ω,1/10W
R419		QRSA08J-113YN	RESISTOR 11KΩ,1/10W	R535		QRSA08J-201YN	RESISTOR 200Ω,1/10W
R420		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R536		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R537		QRSA08J-471YN	RESISTOR 470Ω,1/10W	R537		QRSA08J-471YN	RESISTOR 470Ω,1/10W
R421		QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W	R538		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R422		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R539		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R423		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R540		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W
R424		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W				
R425		QRSA08J-121YN	RESISTOR 120Ω,1/10W	R541		QRSA08J-471YN	RESISTOR 470Ω,1/10W
R426		QRSA08J-561YN	RESISTOR 560Ω,1/10W	R542		QRSA08J-102YN	RESISTOR 1KΩ,1/10W

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R543	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		RA18	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R544	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		RA20	YU40172-473NY or PERE0560-473JY	NETWORK RESISTOR RESISTOR ARRAY
R545	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		RA21	YU40172-221NY or PERE0560-221JY	NETWORK RESISTOR RESISTOR ARRAY
R547	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		RA100	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R548	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		RA101	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R549	QRSA08J-472YN	RESISTOR 4.7KΩ, 1/10W		RA102	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R550	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA103	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R551	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA105	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R552	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA106	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R553	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA109	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R554	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA301	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R555	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA302	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R556	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA309	YU40172-473NY or PERE0560-473JY	NETWORK RESISTOR RESISTOR ARRAY
R557	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		RA310	YU40172-473NY or PERE0560-473JY	NETWORK RESISTOR RESISTOR ARRAY
R601	QRSA08J-223YN	RESISTOR 22KΩ, 1/10W		RA311	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R602	QRSA08J-682YN	RESISTOR 6.8KΩ, 1/10W		RA312	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R603	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		RA313	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R604	QRSA08J-561YN	RESISTOR 560Ω, 1/10W		RA314	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R605	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		RA503	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R606	QRSA08J-432YN	RESISTOR 4.3KΩ, 1/10W		RA504	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R607	QRSA08J-221YN	RESISTOR 220Ω, 1/10W		RA505	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R608	QRSA08J-331YN	RESISTOR 330Ω, 1/10W		RA506	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY
R609	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		B100	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W
R610	QRSA08J-103YN	RESISTOR 10KΩ, 1/10W		B102	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W
R611	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W		C1	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R612	QRSA08J-105YN	RESISTOR 1MΩ, 1/10W		C2	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R613	QRSA08J-121YN	RESISTOR 120Ω, 1/10W		C3	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R614	QRSA08J-361YN	RESISTOR 360Ω, 1/10W		C4	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R615	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W		C5	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R616	QRSA08J-471YN	RESISTOR 470Ω, 1/10W		C6	QCFA1EZ-104	CAPACITOR 0.1 μF, 25V
R617	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W				
R618	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W				
R619	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W				
R620	QRSA08J-471YN	RESISTOR 470Ω, 1/10W				
R621	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W				
R622	QRSA08J-0R0Y	RESISTOR 0Ω, 1/10W				
R623	QRSA08J-471YN	RESISTOR 470Ω, 1/10W				
R625	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W				
R626	QRSA08J-102YN	RESISTOR 1KΩ, 1/10W				
R628	QRSA08J-121YN	RESISTOR 120Ω, 1/10W				
RA1	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
HA2	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
IA3	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
RA4	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
IA5	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
RA6	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
IA7	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				
RA8	YU40172-471NY or PERE0560-471JY	NETWORK RESISTOR RESISTOR ARRAY				

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
C7	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C115	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C8	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C116	QETC0JM-476	E CAPACITOR	47μF,6.3V
C9	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C117	QETC0JM-476	E CAPACITOR	47μF,6.3V
C10	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C118	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C11	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C200	QETC1CM-106	E CAPACITOR	10μF,16V
C12	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C201	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C13	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C202	QETC0JM-107	E CAPACITOR	100μF,6.3V
C14	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C203	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C15	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C204	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C16	QEK61EM-475	E CAPACITOR	4.7μF,25V	C205	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C17	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C206	QCYA1HK-102	CAPACITOR	0.001μF,50V
C18	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C207	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C19	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C208	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C20	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C209	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C21	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C210	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C22	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C211	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C23	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C212	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C24	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C213	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C25	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C214	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C26	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C215	QETC0JM-476	E CAPACITOR	47μF,6.3V
C27	QEK61HM-474	E CAPACITOR	0.47μF,50V	C216	QETC0JM-476	E CAPACITOR	47μF,6.3V
C28	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C217	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C29	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C218	QETC1CM-476	E CAPACITOR	47μF,16V
C30	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C219	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C31	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C220	QETC1HM-105	E CAPACITOR	1μF,50V
C32	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C221	QETC1HM-105	E CAPACITOR	1μF,50V
C33	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C222	QCSA1HJ-470	CAPACITOR	47pF,50V
C34	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C223	QCSA1HJ-151	CAPACITOR	150pF,50V
C35	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C224	QCSA1HJ-470	CAPACITOR	47pF,50V
C36	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C247	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C37	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C250	QCSA1HJ-181	CAPACITOR	180pF,50V
C38	QETC0JM-337	E CAPACITOR	330μF,6.3V	C301	QETC1CM-477	E CAPACITOR	470μF,16V
C39	QETC0JM-337	E CAPACITOR	330μF,6.3V	C302	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C40	QETC0JM-476	E CAPACITOR	47μF,6.3V	C304	QCTA1CH-180	CAPACITOR	18pF,16V
C41	QETC0JM-476	E CAPACITOR	47μF,6.3V	C305	QEP61CM-106	NP E CAPACITOR	10μF,16V
C42	QETC0JM-476	E CAPACITOR	47μF,6.3V	C306	QETC0JM-476	E CAPACITOR	47μF,6.3V
C43	QETC0JM-337	E CAPACITOR	330μF,6.3V	C307	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C44	QETC0JM-476	E CAPACITOR	47μF,6.3V	C308	QETC0JM-476	E CAPACITOR	47μF,6.3V
C45	QETC0JM-476	E CAPACITOR	47μF,6.3V	C309	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C46	QETC0JM-476	E CAPACITOR	47μF,6.3V	C310	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C100	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C311	QCTA1CH-100	CAPACITOR	10pF,16V
C101	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C312	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C102	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C313	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C103	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C314	QCYA1HK-102	CAPACITOR	0.001μF,50V
C104	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C316	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C105	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C317	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C106	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C318	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C107	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C319	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C108	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C320	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C109	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C321	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C110	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C322	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C111	QCFA1EZ-104	CAPACITOR	0.1μF,25V	C323	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C112	QCFA1HZ-103	CAPACITOR	0.01μF,50V	C324	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C113	QCSA1HJ-820	CAPACITOR	82pF,50V	C325	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C114	QCFA1EZ-104	CAPACITOR	0.1μF,25V				

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION	
	C326	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C509	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C327	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C510	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C328	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V				
	C330	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C511	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C331	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C512	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C333	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C513	QCTA1CH-100	CAPACITOR	10pF,16V
	C334	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C514	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C335	QETC1CM-107	E CAPACITOR	100 μ F,16V	C515	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V
	C336	QCTA1CH-270	CAPACITOR	27pF,16V	C516	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C337	QCTA1CH-181	CAPACITOR	180pF,16V	C517	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C338	QETC0JM-107	E CAPACITOR	100 μ F,6.3V	C519	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C339	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C520	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C340	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C523	QETC0JM-337	E CAPACITOR	330 μ F,6.3V
	C341	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C524	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C342	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C525	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C343	QCFA1CZ-474	CAPACITOR	0.47 μ F,16V	C526	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C401	QETC1CM-476	E CAPACITOR	47 μ F,16V	C527	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C402	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C528	QETC1HM-105	E CAPACITOR	1 μ F,50V
	C403	QETC1CM-476	E CAPACITOR	47 μ F,16V	C529	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C404	QETC1HM-106	E CAPACITOR	10 μ F,50V	C530	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C405	QETC1HM-335	E CAPACITOR	3.3 μ F,50V	C531	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C406	QFN31HJ-823	M CAPACITOR	0.082 μ F,50V	C532	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C407	QETC1HM-474	E CAPACITOR	0.47 μ F,50V	C534	QCSA1HK-101	CAPACITOR	100pF,50V
	C408	QFN31HJ-222	M CAPACITOR	0.0022 μ F,50V	C535	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C409	QETC1HM-225	E CAPACITOR	2.2 μ F,50V	C536	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C410	QFN31HJ-682	M CAPACITOR	0.0068 μ F,50V	C537	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C412	QCYA1HK-222	CAPACITOR	0.0022 μ F,50V	C538	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C413	QCYA1HK-682	CAPACITOR	0.0068 μ F,50V	C539	QETC1CM-476	E CAPACITOR	47 μ F,16V
	C414	QETC1CM-106	E CAPACITOR	10 μ F,16V	C540	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C415	QCFA1CZ-474	CAPACITOR	0.47 μ F,16V	C542	QETC1CM-476	E CAPACITOR	47 μ F,16V
	C416	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C543	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C419	QCTA1CH-220	CAPACITOR	22pF,16V	C545	QCTA1CH-181	CAPACITOR	18OpF,16V
	C420	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C546	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C421	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V	C547	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C422	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C548	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C423	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V	C549	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C424	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C550	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C425	QETC0JM-477	E CAPACITOR	470 μ F,6.3V	C551	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C426	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V	C552	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C427	QCTA1CH-680	CAPACITOR	68pF,16V	C553	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C428	QCTA1CH-100	CAPACITOR	10pF,16V	C554	QCTA1CH-151	CAPACITOR	15OpF,16V
	C429	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C601	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C430	QCSA1HK-101	CAPACITOR	100pF,50V	C602	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C431	QCFA1HZ-333	CAPACITOR	0.033 μ F,50V	C603	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C432	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C604	QCFA1HZ-103	CAPACITOR	0.1 μ F,25V
	C450	QETC1HM-474	E CAPACITOR	0.47 μ F,50V	C605	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C501	QETC1CM-227	E CAPACITOR	220 μ F,16V	C606	QETC0JM-476	E CAPACITOR	47 μ F,6.3V
	C502	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C607	QETC1CM-475	E CAPACITOR	47 μ F,16V
	C503	QETC1CM-476	E CAPACITOR	47 μ F,16V	C608	QCYA1HK-102	CAPACITOR	0.001 μ F,50V
	C504	QCTA1CH-180	CAPACITOR	18pF,16V	C609	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C505	QCYA1HK-103	CAPACITOR	0.01 μ F,50V	C610	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C506	QEP61CM-106	NP E CAPACITOR	10 μ F,16V	C611	QCTA1CH-6R0	CAPACITOR	6pF,16V
	C507	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	C612	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C508	QETC0JM-476	E CAPACITOR	47 μ F,6.3V	C613	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
				C614	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V	
				C615	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION		#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
L1	PU59153-101K	COIL		100 μ H	LPF302	PELN0827	LOW PASS FILTER		
L2	YU41607-Y	CHIP FERRATE BEADS			LPF303	PELN0827	LOW PASS FILTER		
L3	YU41607-Y	CHIP FERRATE BEADS			LPF501	PELN0828	LOW PASS FILTER		
L4	YU41607-Y	CHIP FERRATE BEADS			LPF502	PELN0827	LOW PASS FILTER		
L5	YU41607-Y	CHIP FERRATE BEADS			LPF503	PELN0827	LOW PASS FILTER		
L6	YU41607-Y	CHIP FERRATE BEADS			LC1	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L7	YU41607-Y	CHIP FERRATE BEADS			LC2	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L8	YU41607-Y	CHIP FERRATE BEADS			LC3	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L9	YU41607-Y	CHIP FERRATE BEADS			LC4	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L10	QRD161J-0R0	RESISTOR		0Ω,1/6W	LC5	PU59736-223	N FILTER		
L100	PU59988-1R0JY	COIL		1 μ H	LC6	PU59736-221	N FILTER		
L101	YU41607-Y	CHIP FERRATE BEADS			LC7	PU59736-221	N FILTER		
L102	YU41607-Y	CHIP FERRATE BEADS			LC8	PU59736-223	N FILTER		
L103	QRD161J-0R0	RESISTOR		0Ω,1/6W	LC9	PU59736-223	N FILTER		
L200	PU59988-121JY	COIL		120 μ H	LC10	PU59736-223	N FILTER		
L201	PU59988-121JY	COIL		120 μ H	LC11	PU59736-223	N FILTER		
L202	PU59988-121JY	COIL		120 μ H	LC12	PU59736-221	N FILTER		
L301	PU48530-101K	COIL		100 μ H	LC51	PU59736-330	N FILTER		
L302	PU59153-101K	COIL		100 μ H	LC52	PU59736-330	N FILTER		
L303	PU59153-101K	COIL		100 μ H	LC53	PU59736-330	N FILTER		
L304	PU59153-101K	COIL		100 μ H	LC54	PU59736-330	N FILTER		
L305	PU59153-101K	COIL		100 μ H	LC55	PU59736-221	N FILTER		
L306	YU41607-Y	CHIP FERRATE BEADS			LC56	PU59736-330	N FILTER		
L308	YU41607-Y	CHIP FERRATE BEADS			LC57	PU59736-330	N FILTER		
L309	QRS08J-0R0Y	RESISTOR		0Ω,1/10W	LC58	PU59736-221	N FILTER		
L310	PU58201-470J	COIL		47 μ H	LC59	PU59736-221	N FILTER		
L311	YU41607-Y	CHIP FERRATE BEADS			LC60	PU59736-221	N FILTER		
L312	YU41607-Y	CHIP FERRATE BEADS			LC61	PU59736-221	N FILTER		
L401	PU48530-101K	COIL		100 μ H	LC62	PU59736-330	N FILTER		
L402	PU59988-1R0JY	COIL		1 μ H	CF601	PU56171	CERAMIC FILTER		
L403	PU59153-101K	COIL		100 μ H	LC200	PU59736-221	N FILTER		
L501	PU48530-101K	COIL		100 μ H	LC201	PU59736-221	N FILTER		
L502	PU59153-101K	COIL		100 μ H	LC202	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L503	PU59153-101K	COIL		100 μ H	LC203	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L504	QRD161J-0R0	RESISTOR		0Ω,1/6W	LC204	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L505	PU59153-101K	COIL		100 μ H	LC205	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L506	PU59153-101K	COIL		100 μ H	LC206	PU59736-221	N FILTER		
L507	PU59153-101K	COIL		100 μ H	LC207	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L508	YU41607-Y	CHIP FERRATE BEADS			LC208	QRD161J-0R0	RESISTOR	0Ω,1/6W	
L509	YU41607-Y	CHIP FERRATE BEADS			LC209	PU59736-221	N FILTER		
L511	YU41607-Y	CHIP FERRATE BEADS			LC210	PU59736-223	N FILTER		
L512	YU41607-Y	CHIP FERRATE BEADS			LC211	PELN0662-Z	FERRATE BEADS		
L514	YU41607-Y	CHIP FERRATE BEADS			LC212	PU59736-223	N FILTER		
L515	PU58201-1R0J	COIL		1 μ H	LC213	PU59736-223	N FILTER		
L516	QRS188J-0R0YN	RESISTOR		0Ω,1/8W	LC214	PU59736-221	N FILTER		
L601	PU59153-101K	COIL		100 μ H	LC215	PU59736-223	N FILTER		
L602	YU41607-Y	CHIP FERRATE BEADS			LC216	PU59736-221	N FILTER		
L603	PU58201-2R2J	COIL		2.2 μ H	LC217	PU59736-221	N FILTER		
LPF200	PELN0763	LOW PASS FILTER			LC218	QRD161J-0R0	RESISTOR	0Ω,1/6W	
LPF301	PELN0828	LOW PASS FILTER			LC219	PU59736-221	N FILTER		

REF No.	PART No.	PART NAME, DESCRIPTION	# ^A	REF No.	PART No.	PART NAME, DESCRIPTION
LC220	PU59736-221	N FILTER		LC359	PU59736-330	N FILTER
C222	PU59736-221	N FILTER		LC361	PU59736-221	N FILTER
C223	PU59736-221	N FILTER		LC362	PU59736-330	N FILTER
LC224	PU59736-221	N FILTER		LC363	PU59736-330	N FILTER
C225	PU59736-223	N FILTER		LC364	PU59736-330	N FILTER
C226	PU59736-223	N FILTER		X401	PEVB0425	CRYSTAL RESONATOR
C227	PU59736-223	N FILTER		BKT1	PQ45973	FT BRACKET, X7
LC228	PU59736-223	N FILTER		HS1	PQ34281	HEAT SINK(Y/C)
C229	PU59736-223	N FILTER		SCW1	SDST2606Z	SCREW
LC250	PU59736-330	N FILTER		SPC1	PQM30029-194	SPACER, X4
C251	PU59736-330	N FILTER		TP100	PU54983	TEST PIN
C252	PU59736-330	N FILTER		TP200	PU54983	TEST PIN
LC253	PU59736-330	N FILTER		TP301	PU54983	TEST PIN
LC254	PU59736-330	N FILTER		TP302	PU54983	TEST PIN
C255	PU59736-330	N FILTER		TP401	PU54983	TEST PIN
C256	PU59736-330	N FILTER		TP402	PU54983	TEST PIN
LC257	PU59736-330	N FILTER		TP502	PU54983	TEST PIN
C258	PU59736-330	N FILTER		CN1	PU59555-105	CONNECTOR
C259	PU59736-330	N FILTER		CN3	PU59555-104	CONNECTOR
C260	PU59736-221	N FILTER		CN4	PU59555-103	CONNECTOR
C261	PU59736-330	N FILTER		CN5	PU59555-103	CONNECTOR
C262	PU59736-221	N FILTER		CN6	PU59555-105	CONNECTOR
LC263	PU59736-221	N FILTER		CN7	PU59555-112	CONNECTOR
LC264	PU59736-330	N FILTER		CN8	PU59555-103	CONNECTOR
C265	PU59736-221	N FILTER		CN9	PU59555-112R	CONNECTOR
C266	PU59736-330	N FILTER		CN10	PU59555-106	CONNECTOR
LC267	PU59736-330	N FILTER		CN11	PU59555-107	CONNECTOR
C268	PU59736-330	N FILTER		CN12	PU60417-105	CONNECTOR
C269	PU59736-330	N FILTER		CN13	PU60417-103	CONNECTOR
C270	PU59736-330	N FILTER				
C272	PU59736-330	N FILTER				
C273	PU59736-330	N FILTER				
LC274	PU59736-330	N FILTER				
C301	PU59736-223	N FILTER				
C302	QRD161J-0R0	RESISTOR	0Ω,1/6W			
LC303	PU59736-223	N FILTER				
LC304	PU59736-223	N FILTER				
C305	PU59736-223	N FILTER				
C306	PU59736-223	N FILTER				
LC307	QRD161J-0R0	RESISTOR	0Ω,1/6W			
C308	QRD161J-0R0	RESISTOR	0Ω,1/6W			
C309	QRD161J-0R0	RESISTOR	0Ω,1/6W			
LC311	PU59736-223	N FILTER				
C312	QRD161J-0R0	RESISTOR	0Ω,1/6W			
C313	QRD161J-0R0	RESISTOR	0Ω,1/6W			
LC314	PU59736-221	N FILTER				
C351	PU59736-221	N FILTER				
C352	PU59736-330	N FILTER				
LC353	PU59736-221	N FILTER				
C354	PU59736-221	N FILTER				
C355	PU59736-221	N FILTER				
C356	PU59736-221	N FILTER				
LC357	PU59736-330	N FILTER				
C358	PU59736-330	N FILTER				

<51> <52> <55> <56>

#△	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
*****				*****			
DECK TERMINAL 1 BOARD ASSEMBLY <51>							
PWBA	PB20639A1	DECK TERMINAL1 BOARD ASSY		R103	QRV144F-3002AY	CMF RESISTOR	30.0KΩ,1/4W
IC1	M66007P	IC		R106	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R1	QRD161J-102	RESISTOR	1KΩ,1/6W	R107	QRV144F-1501AY	CMF RESISTOR	1.50KΩ,1/4W
R2	QRD161J-102	RESISTOR	1KΩ,1/6W	R108	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R3	QRD161J-472	RESISTOR	4.7KΩ,1/6W	R109	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R4	QRD161J-472	RESISTOR	4.7KΩ,1/6W	R110	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R5	QRD161J-472	RESISTOR	4.7KΩ,1/6W	R111	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R6	QRD161J-472	RESISTOR	4.7KΩ,1/6W	R112	QRV144F-1002A	CMF RESISTOR	10.0KΩ,1/4W
R7	QRD161J-472	RESISTOR	4.7KΩ,1/6W	R113	QRV144F-4700AY	CMF RESISTOR	470Ω,1/4W
R9	QRD161J-472	RESISTOR	4.7KΩ,1/6W	S101	PU61319	REC SAFETY SWITCH	
R10	QRD161J-472	RESISTOR	4.7KΩ,1/6W	CN101	PU59555-104	CONNECTOR	
R11	QRD161J-472	RESISTOR	4.7KΩ,1/6W	CN102	PU59555-7	CONNECTOR	
R12	QRD161J-472	RESISTOR	4.7KΩ,1/6W	*****			
R13	QRD161J-472	RESISTOR	4.7KΩ,1/6W	LOADING MOTOR BOARD ASSEMBLY <55>			
R14	QRD161J-472	RESISTOR	4.7KΩ,1/6W	PWBA	PB40089B	LODING MOTOR BOARD ASSY	
R15	QRD161J-472	RESISTOR	4.7KΩ,1/6W	C102	QCC31CJ-104	CAPACITOR	0.1μF,16V
R16	QRD161J-394	RESISTOR	390KΩ,1/6W	CN101	PU59555-2	CONNECTOR	
RA1	QRB065J-103XM	RESISTOR ARRAY	10KΩ,6W	*****			
C1	QCC11EK-103	CAPACITOR	0.01μF,25V	CASSETTE HOUSING BOARD <56>			
C2	QEK61EM-335	E CAPACITOR	3.3μF,25V	PWB1	PB30166-01-01	CASSETTE HOUSING BOARD	
L1	PU59152-4R7J	COIL	4.7μH	Q1	PN268VI	PHOTO TRANSISTOR	
*****				R1	QRD162J-473	RESISTOR	47KΩ,1/6W
DECK TERMINAL 2 BOARD ASSEMBLY <52>				C1	QCC11EK-103	CAPACITOR	0.01μF,25V
PWBA	PB20639A2	DECK TERMINAL2 BOARD ASSY		SW1	PU61212	REC SAFETY SWITCH	
IC101	LM324N or UPC324C	IC		TH1	ERT-D2FHJ503S	THERMISTOR	
Q101	PU61321-1-1	TAPE SENSOR		CN1	PU60639	4PIN SOCKET	

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION

			MOD/DEM(SUB) BOARD ASSEMBLY <63>		R1	NRSA63J-563N	RESISTOR 56KΩ,1/16W
PWBA	PB10800A-02		MODU/DEMODU-LATOR BOARD ASSY		R2	NRSA63J-682N	RESISTOR 6.8KΩ,1/16W
C1	NJM2234M	IC			R3	NRSA63J-821N	RESISTOR 820Ω,1/16W
IC2	VC2076MP-XE	IC			R4	NRSA63J-121N	RESISTOR 120Ω,1/16W
IC3	NJM2234M	IC			R5	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
C4	JCP0032-HT	IC			R7	NRSA63J-181N	RESISTOR 180Ω,1/16W
IC5	AN96A05S	IC			R8	NRSA63J-102N	RESISTOR 1KΩ,1/16W
IC6	AN6393	IC			R9	NRSA63J-101N	RESISTOR 100Ω,1/16W
C7	TC4W53F	IC			R10	NRSA63J-102N	RESISTOR 1KΩ,1/16W
C8	TA78L009AP	REG.TRANSISTOR			R11	NRSA63J-223N	RESISTOR 22KΩ,1/16W
IC9	RE5RE50AA	IC			R13	NRSA63J-220N	RESISTOR 22Ω,1/16W
Q1	2SC4081(QRS)	TRANSISTOR			R14	NRVA63D-331N	MF RESISTOR 330Ω,1/16W
Q2	2SA1576(QRS)	TRANSISTOR			R16	NRSA63J-390N	RESISTOR 39Ω,1/16W
Q3	2SA1576(QRS)	TRANSISTOR			R17	NRSA63J-122N	RESISTOR 1.2KΩ,1/16W
Q4	2SA1576(QRS)	TRANSISTOR			R18	NRSA63J-182N	RESISTOR 1.8KΩ,1/16W
Q5	2SA1576(QRS)	TRANSISTOR			R19	NRVA63D-102N	MF RESISTOR 1KΩ,1/16W
Q6	2SC4081(QRS)	TRANSISTOR			R20	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
Q7	2SC4081(QRS)	TRANSISTOR			R21	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
Q8	2SA1576(QRS)	TRANSISTOR			R22	NRSA63J-102N	RESISTOR 1KΩ,1/16W
Q9	2SA1576(QRS)	TRANSISTOR			R24	NRSA63J-102N	RESISTOR 1KΩ,1/16W
Q10	2SC4081(QRS)	TRANSISTOR			R25	NRSA63J-391N	RESISTOR 390Ω,1/16W
Q11	2SA1576(Q)	TRANSISTOR			R27	NRSA63J-102N	RESISTOR 1KΩ,1/16W
Q12	2SA1576(S)	TRANSISTOR			R28	NRSA63J-101N	RESISTOR 100Ω,1/16W
Q14	DTC144WU	TRANSISTOR			R29	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
Q18	2SC3930(C)	TRANSISTOR			R30	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q19	2SC3930(C)	TRANSISTOR			R31	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q20	2SA1576(QRS)	TRANSISTOR			R32	NRVA63D-242N	RESISTOR 2.4KΩ,1/16W
Q21	2SA1576(QRS)	TRANSISTOR			R33	NRVA63D-822N	MF RESISTOR 8.2KΩ,1/16W
Q22	2SC4081(QRS)	TRANSISTOR			R34	NRSA63J-303N	RESISTOR 30KΩ,1/16W
Q23	2SC4081(QRS)	TRANSISTOR			R37	NRSA63J-104N	RESISTOR 100KΩ,1/16W
Q24	2SC4081(QRS)	TRANSISTOR			R40	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q25	2SC3930(C)	TRANSISTOR			R41	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q26	2SC3930(C)	TRANSISTOR			R42	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
Q27	2SC4081(QRS)	TRANSISTOR			R43	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
Q28	2SC3930(C)	TRANSISTOR			R44	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
Q29	2SC3930(C)	TRANSISTOR			R45	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q30	2SC3930(C)	TRANSISTOR			R46	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q31	DTA144EU	TRANSISTOR			R47	NRSA63J-223N	RESISTOR 22KΩ,1/16W
Q32	2SC3930(C)	TRANSISTOR			R48	NRSA63J-102N	RESISTOR 1KΩ,1/16W
Q33	2SC4081(QRS)	TRANSISTOR			R51	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W
D1	DAN202U	DIODE			R52	NRSA63J-102N	RESISTOR 1KΩ,1/16W
D3	DAN202U	DIODE			R53	NRSA63J-103N	RESISTOR 10KΩ,1/16W
D5	DAN202U	DIODE			R54	NRSA63J-221N	RESISTOR 220Ω,1/16W
D7	DAN202U	DIODE			R55	NRSA63J-331N	RESISTOR 330Ω,1/16W
D8	DAN202U	DIODE			R56	NRSA63J-331N	RESISTOR 330Ω,1/16W
D9	DAP202U	DIODE			R57	NRSA63J-103N	RESISTOR 10KΩ,1/16W
D12	DAP202U	DIODE			R58	NRSA63J-203N	RESISTOR 20KΩ,1/16W
D13	DAN202U	DIODE			R59	NRSA63J-103N	RESISTOR 10KΩ,1/16W
					R60	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
					R61	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
					R62	NRSA63J-101N	RESISTOR 100Ω,1/16W
					R63	NRSA63J-101N	RESISTOR 100Ω,1/16W
					R64	NRSA63J-682N	RESISTOR 6.8KΩ,1/16W
					R66	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
					R67	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R68		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	C8		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R69		NRVA63D-152N	MF RESESTOR	C9		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R70		NRVA63D-472N	MF RESISTOR 4.7KΩ,1/16W	C10		QETC1CM-476	E CAPACITOR 47μF,16V
R71		NRVA63D-621N	MF RESISTOR 620Ω,1/16W	C12		QETC1EM-475	E CAPACITOR 4.7μF,25V
R72		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	C15		NCS31HG-101A	CAPACITOR 100pF,50V
R73		NRSA63J-393N	RESISTOR 39KΩ,1/16W	C16		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R74		NRSA63J-102N	RESISTOR 1KΩ,1/16W	C17		QETC0JM-476	E CAPACITOR 47μF,6.3V
R75		NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	C18		QETC1HM-225	E CAPACITOR 2.2μF,50V
R76		NRSA63J-103N	RESISTOR 10KΩ,1/16W	C19		QETC1HM-225	E CAPACITOR 2.2μF,50V
R77		NRSA63J-393N	RESISTOR 39KΩ,1/16W	C20		QETC1CM-475	E CAPACITOR 4.7μF,16V
R93		NRSA63J-103N	RESISTOR 10KΩ,1/16W	C23		QETC0JM-476	E CAPACITOR 47μF,6.3V
R94		NRSA63J-0R0N	RESISTOR 0Ω,1/16W	C24		QETC1CM-476	E CAPACITOR 47μF,16V
R95		NRSA63J-272N	RESISTOR 2.7KΩ,1/16W	C25		NCB31HK-102A	CAPACITOR 0.001μF,50V
R96		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W	C26		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R98		NRSA63J-112N	RESISTOR 1.1KΩ,1/16W	C27		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R99		NRSA63J-102N	RESISTOR 1KΩ,1/16W	C28		QETC0JM-476	E CAPACITOR 47μF,6.3V
R100		NRSA63J-102N	RESISTOR 1KΩ,1/16W	C29		PECA0945-820AY	CAPACITOR
R104		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W	C32		QCFA1CZ-474	CAPACITOR 0.47μF,16V
R106		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W	C33		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R107		NRSA63J-681N	RESISTOR 680Ω,1/16W	C34		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R108		NRSA63J-102N	RESISTOR 1KΩ,1/16W	C35		QETC1CM-475	E CAPACITOR 4.7μF,16V
R109		NRSA63J-152N	RESISTOR 1.5KΩ,1/16W	C36		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R110		QVZ3521-471Z	V RESISTOR, PB FREQ RESP	C37		QETC0JM-476	E CAPACITOR 47μF,6.3V
				C38		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R111		NRSA63J-681N	RESISTOR 680Ω,1/16W	C39		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R112		NRSA63J-471N	RESISTOR 470Ω,1/16W	C40		QETC0JM-476	E CAPACITOR 47μF,6.3V
R113		NRSA63J-822N	RESISTOR 8.2KΩ,1/16W				
R114		NRSA63J-152N	RESISTOR 1.5KΩ,1/16W	C41		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R115		NRSA63J-152N	RESISTOR 1.5KΩ,1/16W	C42		NCF31CZ-104A	CAPACITOR 0.1μF,16V
R116		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	C43		QETC0JM-476	E CAPACITOR 47μF,6.3V
R117		NRSA63J-122N	RESISTOR 1.2KΩ,1/16W	C46		QETC0JM-336	E CAPACITOR 33μF,6.3V
R118		NRVA63D-431N	RESISTOR 430Ω,1/16W	C47		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R119		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W	C48		QCC11CJ-473	CAPACITOR 0.047μF,16V
R120		NRSA63J-362N	RESISTOR 3.6KΩ,1/16W	C49		NCF31HZ-103A	CAPACITOR 0.01μF,50V
				C50		PU57601-106MA	E CAPACITOR 10μF
R121		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W				
R124		NRSA63J-331N	RESISTOR 330Ω,1/16W	C51		QCFA1CZ-105	CAPACITOR 1μF,16V
R125		NRSA63J-101N	RESISTOR 100Ω,1/16W	C52		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R126		NRSA63J-222N	RESISTOR 2.2KΩ,1/16W	C53		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R128		QVZ3521-471Z	V RESISTOR, PB FREQ RESP	C54		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R129		NRSA63J-271N	RESISTOR 270Ω,1/16W	C55		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R130		NRSA63J-103N	RESISTOR 10KΩ,1/16W	C56		NCF31HZ-103A	CAPACITOR 0.01μF,50V
				C57		QETC1CM-476	E CAPACITOR 47μF,16V
R131		NRSA63J-473N	RESISTOR 47KΩ,1/16W	C58		NCF31CZ-104A	CAPACITOR 0.1μF,16V
R133		NRSA63J-821N	RESISTOR 820Ω,1/16W	C59		QETC0JM-476	E CAPACITOR 47μF,6.3V
R134		NRSA63J-680N	RESISTOR 68Ω,1/16W	C60		QETC0JM-476	E CAPACITOR 47μF,6.3V
R135		NRSA63J-102N	RESISTOR 1KΩ,1/16W				
R136		NRSA63J-101N	RESISTOR 100Ω,1/16W	C61		NCF31HZ-103A	CAPACITOR 0.01μF,50V
R137		NRSA63J-472N	RESISTOR 4.7KΩ,1/16W	C62		QETC0JM-476	E CAPACITOR 47μF,6.3V
R140		NRSA63J-182N	RESISTOR 1.8KΩ,1/16W	C64		NCF31CZ-104A	CAPACITOR 0.1μF,16V
				C66		NCF31CZ-104A	CAPACITOR 0.1μF,16V
				C67		NCF31CZ-104A	CAPACITOR 0.1μF,16V
C1		QETC0JM-226	E CAPACITOR 22μF,6.3V	C68		NCF31HZ-103A	CAPACITOR 0.01μF,50V
C2		NCS31HJ-180A	CAPACITOR 18pF,50V	C69		QETC1CM-476	E CAPACITOR 47μF,16V
C3		NCF31HZ-103A	CAPACITOR 0.01μF,50V	C70		NCF31HZ-103A	CAPACITOR 0.01μF,50V
C4		QETC1CM-476	E CAPACITOR 47μF,16V				
C5		QETC0JM-476	E CAPACITOR 47μF,6.3V	C71		NCS31HJ-1R0A	CAPACITOR 1pF,50V
C6		QETC1CM-476	E CAPACITOR 47μF,16V	C72		NCS31HJ-3R0A	CAPACITOR 3pF,50V
C7		NCS31HJ-471A	CAPACITOR 470pF,50V	C73		NCS31HJ-8R0A	CAPACITOR 8pF,50V

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
C74	NCS31HJ-7R0A	CAPACITOR	7pF,50V	LPF1	PELN0934	LOW PASS FILTER
C75	NCS31HJ-330A	CAPACITOR	33pF,50V			
C76	NCS31HG-271A	CAPACITOR	270pF,50V			
C77	NCF31CZ-104A	CAPACITOR	0.1μF,16V	TP1	PU56008	TEST PIN, X4
C78	QETC1HM-334	E CAPACITOR	0.33μF,50V			
C79	NCF31HZ-103A	CAPACITOR	0.01μF,50V			
C88	NCF31HZ-103A	CAPACITOR	0.01μF,50V	CN1	PEMC0713-107	HOUSING
				CN2	PEMC0713-106	HOUSING
				CN3	PEMC0713-104	HOUSING
C95	NCF31HZ-103A	CAPACITOR	0.01μF,50V			
C96	QETC1HM-104	E CAPACITOR	0.1μF,50V			
C97	NCF31HZ-103A	CAPACITOR	0.01μF,50V			
C98	QETC0JM-476	E CAPACITOR	47μF,6.3V			
C99	NCF31HZ-103A	CAPACITOR	0.01μF,50V			
C100	NCF31CZ-104A	CAPACITOR	0.1μF,16V			
C101	QETC1CM-107	E CAPACITOR	100μF,16V	PWBA	PB10800A-02	MODU/DEMODU-LATOR BOARD ASSY
C102	NCS31HJ-8R0A	CAPACITOR	8pF,50V			
C105	NCS31HJ-220A	CAPACITOR	22pF,50V	IC1	NJM2234M	IC
C109	NCS31HJ-150A	CAPACITOR	15pF,50V	IC2	VC2076MP-XE	IC
C110	NCF31CZ-104A	CAPACITOR	0.1μF,16V	IC3	NJM2234M	IC
C111	NCS31HJ-220A	CAPACITOR	22pF,50V	IC4	JCP0032-HT	IC
C112	NCS31HJ-150A	CAPACITOR	15pF,50V	IC5	AN96A05S	IC
C113	NCS31HJ-100A	CAPACITOR	10pF,50V	IC6	AN6393	IC
C114	NCS31HJ-6R0A	CAPACITOR	6pF,50V	IC7	TC4W53F	IC
C115	NCS31HJ-1R0A	CAPACITOR	1pF,50V	IC8	TA78L009AP	REG.TRANSISTOR
C116	NCF31HZ-103A	CAPACITOR	0.01μF,50V	IC9	RE5RE50AA	IC
C119	NCF31CZ-104A	CAPACITOR	0.1μF,16V			
C120	NCF31CZ-104A	CAPACITOR	0.1μF,16V			
				Q1	2SC4081(QRS)	TRANSISTOR
				Q2	2SA1576(QRS)	TRANSISTOR
C123	QCFA1HZ-103	CAPACITOR	0.01μF,50V	Q3	2SA1576(QRS)	TRANSISTOR
C124	NCF31CZ-104A	CAPACITOR	0.1μF,16V	Q4	2SA1576(QRS)	TRANSISTOR
C125	NCF31CZ-104A	CAPACITOR	0.1μF,16V	Q5	2SA1576(QRS)	TRANSISTOR
C126	NCF31CZ-104A	CAPACITOR	0.1μF,16V	Q6	2SC4081(QRS)	TRANSISTOR
C130	QCFA1CZ-105	CAPACITOR	1μF,16V	Q7	2SC4081(QRS)	TRANSISTOR
				Q8	2SA1576(QRS)	TRANSISTOR
C131	QAT3760-400	TRIM CAPACITOR	40pF	Q9	2SA1576(QRS)	TRANSISTOR
				Q10	2SC4081(QRS)	TRANSISTOR
L1	PU48530-101K	COIL	100μH	Q11	2SA1576(Q)	TRANSISTOR
L2	PU48530-101K	COIL	100μH	Q12	2SA1576(S)	TRANSISTOR
L3	PU48530-101K	COIL	100μH	Q14	DTC144WU	TRANSISTOR
L4	PU48530-101K	COIL	100μH	Q18	2SC3930(C)	TRANSISTOR
L5	PU48530-101K	COIL	100μH	Q19	2SC3930(C)	TRANSISTOR
L6	PU48530-101K	COIL	100μH	Q20	2SA1576(QRS)	TRANSISTOR
L8	PU48530-101K	COIL	100μH	Q21	2SA1576(QRS)	TRANSISTOR
L9	PU48530-101K	COIL	100μH	Q22	2SC4081(QRS)	TRANSISTOR
L10	PU48530-101K	COIL	100μH	Q23	2SC4081(QRS)	TRANSISTOR
				Q24	2SC4081(QRS)	TRANSISTOR
L11	PU59152-270J	COIL	27μH	Q25	2SC3930(C)	TRANSISTOR
L12	PU59152-270J	COIL	27μH	Q26	2SC3930(C)	TRANSISTOR
L14	PU48530-101K	COIL	100μH	Q27	2SC4081(QRS)	TRANSISTOR
L15	PU48530-101K	COIL	100μH	Q28	2SC3930(C)	TRANSISTOR
L16	PU59152-8R2J	COIL	8.2μH	Q29	2SC3930(C)	TRANSISTOR
L18	PU59152-8R2J	COIL	8.2μH	Q30	2SC3930(C)	TRANSISTOR
L19	PU59152-100J	COIL	10μH			
L21	PU59152-4R7J	COIL	4.7μH	Q31	DTA144EU	TRANSISTOR
L22	PU59152-3R3J	COIL	3.3μH	Q32	2SC3930(C)	TRANSISTOR
L23	PU59152-2R2J	COIL	2.2μH	Q33	2SC4081(QRS)	TRANSISTOR
L24	PU59152-1R0J	COIL	1μH			

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
D1	DAN202U	DIODE		R51	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
D3	DAN202U	DIODE		R52	NRSA63J-102N	RESISTOR	1KΩ,1/16W
D5	DAN202U	DIODE		R53	NRSA63J-103N	RESISTOR	10KΩ,1/16W
D7	DAN202U	DIODE		R54	NRSA63J-221N	RESISTOR	220Ω,1/16W
D8	DAN202U	DIODE		R55	NRSA63J-331N	RESISTOR	330Ω,1/16W
D9	DAP202U	DIODE		R56	NRSA63J-331N	RESISTOR	330Ω,1/16W
				R57	NRSA63J-103N	RESISTOR	10KΩ,1/16W
D12	DAP202U	DIODE		R58	NRSA63J-203N	RESISTOR	20KΩ,1/16W
D13	DAN202U	DIODE		R59	NRSA63J-103N	RESISTOR	10KΩ,1/16W
				R60	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R1	NRSA63J-563N	RESISTOR	56KΩ,1/16W	R61	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R2	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W	R62	NRSA63J-101N	RESISTOR	100Ω,1/16W
R3	NRSA63J-821N	RESISTOR	820Ω,1/16W	R63	NRSA63J-101N	RESISTOR	100Ω,1/16W
R4	NRSA63J-121N	RESISTOR	120Ω,1/16W	R64	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W
R5	NRSA63J-0R0N	RESISTOR	0Ω,1/16W	R65	NVP1301-103N	V RESISTOR,CARRIER BALANCE	
R6	NVP1301-152N	V RESISTOR,SUB EMPH PB INPUT L		R66	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R7	NRSA63J-181N	RESISTOR	180Ω,1/16W	R67	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
R8	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R68	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R9	NRSA63J-101N	RESISTOR	100Ω,1/16W	R69	NRVA63D-152N	MF RESESTOR	
R10	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R70	NRVA63D-472N	MF RESISTOR	4.7KΩ,1/16W
R11	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R71	NRVA63D-621N	MF RESISTOR	620Ω,1/16W
R12	NVP1301-102N	V RESISTOR,SUB EMPH INPUT LEVE		R72	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R13	NRSA63J-220N	RESISTOR	220Ω,1/16W	R73	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R14	NRVA63D-331N	MF RESISTOR	330Ω,1/16W	R74	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R16	NRSA63J-390N	RESISTOR	39Ω,1/16W	R75	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
R17	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W	R76	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R18	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W	R77	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R19	NRVA63D-102N	MF RESISTOR	1KΩ,1/16W	R93	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R20	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W	R94	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R21	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W	R95	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R22	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R96	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R23	NVP1301-272N	V RESISTOR,WHITE/DARK CLIP-1		R98	NRSA63J-112N	RESISTOR	1.1KΩ,1/16W
R24	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R99	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R25	NRSA63J-391N	RESISTOR	390Ω,1/16W	R100	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R26	NVP1301-682N	V RESISTOR,PB OUTPUT LEVEL		R104	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R27	NRSA63J-102N	RESISTOR	1KΩ,1/16W	R106	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R28	NRSA63J-101N	RESISTOR	100Ω,1/16W	R107	NRSA63J-681N	RESISTOR	680Ω,1/16W
R29	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W	R108	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R30	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R109	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
R31	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R110	QVZ3521-471Z	V RESISTOR, PB FREQ RESP	
R32	NRVA63D-242N	RESISTOR	2.4KΩ,1/16W	R111	NRSA63J-681N	RESISTOR	680Ω,1/16W
R33	NRVA63D-822N	MF RESISTOR	8.2KΩ,1/16W	R112	NRSA63J-471N	RESISTOR	470Ω,1/16W
R34	NRSA63J-303N	RESISTOR	30KΩ,1/16W	R113	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R35	NVP1301-472N	V RESISTOR,CARRIER		R114	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
R36	NVP1301-153N	V RESISTOR,DEVIATION		R115	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
R37	NRSA63J-104N	RESISTOR	100KΩ,1/16W	R116	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R38	NVP1301-103N	V RESISTOR,WHITE/DARK CLIP-2		R117	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
R39	NVP1301-103N	V RESISTOR,WHITE/DARK CLIP-3		R118	NRVA63D-431N	RESISTOR	430Ω,1/16W
R40	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R119	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R41	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R120	NRSA63J-362N	RESISTOR	3.6KΩ,1/16W
R42	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W	R121	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R43	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W	R124	NRSA63J-331N	RESISTOR	330Ω,1/16W
R44	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W	R125	NRSA63J-101N	RESISTOR	100Ω,1/16W
R45	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R126	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R46	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R128	QVZ3521-471Z	V RESISTOR, PB FREQ RESP	
R47	NRSA63J-223N	RESISTOR	22KΩ,1/16W	R129	NRSA63J-271N	RESISTOR	270Ω,1/16W
R48	NRSA63J-102N	RESISTOR	1KΩ,1/16W				

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R130	NRSA63J-103N	RESISTOR 10KΩ,1/16W		C56	NCF31HZ-103A	CAPACITOR 0.01μF,50V
R131	NRSA63J-473N	RESISTOR 47KΩ,1/16W		C57	QETC1CM-476	E CAPACITOR 47μF,16V
R133	NRSA63J-821N	RESISTOR 820Ω,1/16W		C58	NCF31CZ-104A	CAPACITOR 0.1μF,16V
R134	NRSA63J-680N	RESISTOR 68Ω,1/16W		C59	QETC0JM-476	E CAPACITOR 47μF,6.3V
R135	NRSA63J-102N	RESISTOR 1KΩ,1/16W		C60	QETC0JM-476	E CAPACITOR 47μF,6.3V
R136	NRSA63J-101N	RESISTOR 100Ω,1/16W		C61	NCF31HZ-103A	CAPACITOR 0.01μF,50V
R137	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W		C62	QETC0JM-476	E CAPACITOR 47μF,6.3V
R140	NRSA63J-182N	RESISTOR 1.8KΩ,1/16W		C64	NCF31CZ-104A	CAPACITOR 0.1μF,16V
				C66	NCF31CZ-104A	CAPACITOR 0.1μF,16V
				C67	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C1	QETC0JM-226	E CAPACITOR 22μF,6.3V		C68	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C2	NCS31HJ-180A	CAPACITOR 18pF,50V		C69	QETC1CM-476	E CAPACITOR 47μF,16V
C3	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C70	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C4	QETC1CM-476	E CAPACITOR 47μF,16V		C71	NCS31HJ-1R0A	CAPACITOR 1pF,50V
C5	QETC0JM-476	E CAPACITOR 47μF,6.3V		C72	NCS31HJ-3R0A	CAPACITOR 3pF,50V
C6	QETC1CM-476	E CAPACITOR 47μF,16V		C73	NCS31HJ-8R0A	CAPACITOR 8pF,50V
C7	NCS31HJ-471A	CAPACITOR 470pF,50V		C74	NCS31HJ-7R0A	CAPACITOR 7pF,50V
C8	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C75	NCS31HJ-330A	CAPACITOR 33pF,50V
C9	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C76	NCS31HG-271A	CAPACITOR 270pF,50V
C10	QETC1CM-476	E CAPACITOR 47μF,16V		C77	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C12	QETC1EM-475	E CAPACITOR 4.7μF,25V		C78	QETC1HM-334	E CAPACITOR 0.33μF,50V
C15	NCS31HG-101A	CAPACITOR 100pF,50V		C79	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C16	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C88	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C17	QETC0JM-476	E CAPACITOR 47μF,6.3V		C95	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C18	QETC1HM-225	E CAPACITOR 2.2μF,50V		C96	QETC1HM-104	E CAPACITOR 0.1μF,50V
C19	QETC1HM-225	E CAPACITOR 2.2μF,50V		C97	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C20	QETC1CM-475	E CAPACITOR 4.7μF,16V		C98	QETC0JM-476	E CAPACITOR 47μF,6.3V
C23	QETC0JM-476	E CAPACITOR 47μF,6.3V		C99	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C24	QETC1CM-476	E CAPACITOR 47μF,16V		C100	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C25	NCB31HK-102A	CAPACITOR 0.001μF,50V		C101	QETC1CM-107	E CAPACITOR 100μF,16V
C26	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C102	NCS31HJ-8R0A	CAPACITOR 8pF,50V
C27	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C105	NCS31HJ-220A	CAPACITOR 22pF,50V
C28	QETC0JM-476	E CAPACITOR 47μF,6.3V		C109	NCS31HJ-150A	CAPACITOR 15pF,50V
C29	PECA0945-820AY	CAPACITOR		C110	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C32	QCFA1CZ-474	CAPACITOR 0.47μF,16V		C111	NCS31HJ-220A	CAPACITOR 22pF,50V
C33	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C112	NCS31HJ-150A	CAPACITOR 15pF,50V
C34	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C113	NCS31HJ-100A	CAPACITOR 10pF,50V
C35	QETC1CM-475	E CAPACITOR 4.7μF,16V		C114	NCS31HJ-6R0A	CAPACITOR 6pF,50V
C36	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C115	NCS31HJ-1R0A	CAPACITOR 1pF,50V
C37	QETC0JM-476	E CAPACITOR 47μF,6.3V		C116	NCF31HZ-103A	CAPACITOR 0.01μF,50V
C38	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C119	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C39	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C120	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C40	QETC0JM-476	E CAPACITOR 47μF,6.3V				
C41	NCF31HZ-103A	CAPACITOR 0.01μF,50V				
C42	NCF31CZ-104A	CAPACITOR 0.1μF,16V				
C43	QETC0JM-476	E CAPACITOR 47μF,6.3V		C123	QCFA1HZ-103	CAPACITOR 0.01μF,50V
C46	QETC0JM-336	E CAPACITOR 33μF,6.3V		C124	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C47	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C125	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C48	QCC11CJ-473	CAPACITOR 0.047μF,16V		C126	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C49	NCF31HZ-103A	CAPACITOR 0.01μF,50V		C130	QCFA1CZ-105	CAPACITOR 1μF,16V
C50	PU57601-106MA	E CAPACITOR 10μF		C131	QAT3760-400	TRIM CAPACITOR 40pF
C51	QCFA1CZ-105	CAPACITOR 1μF,16V				
C52	NCF31HZ-103A	CAPACITOR 0.01μF,50V		L1	PU48530-101K	COIL 100μH
C53	NCF31HZ-103A	CAPACITOR 0.01μF,50V		L2	PU48530-101K	COIL 100μH
C54	NCF31HZ-103A	CAPACITOR 0.01μF,50V		L3	PU48530-101K	COIL 100μH
C55	NCF31HZ-103A	CAPACITOR 0.01μF,50V		L4	PU48530-101K	COIL 100μH

<64> <65>

# △	REF No.	PART No.	PART NAME, DESCRIPTION	# △	REF No.	PART No.	PART NAME, DESCRIPTION
L5	PU48530-101K	COIL	100 μ H	Q21	2SA1576(QRS)	TRANSISTOR	
L6	PU48530-101K	COIL	100 μ H	D8	DAP202U	DIODE	
L8	PU48530-101K	COIL	100 μ H	D9	DAP202U	DIODE	
L9	PU48530-101K	COIL	100 μ H	D10	DAN202U	DIODE	
L10	PU48530-101K	COIL	100 μ H	D11	DAN202U	DIODE	
L11	PU59152-270J	COIL	27 μ H	R5	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L12	PU59152-270J	COIL	27 μ H	R6	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L14	PU48530-101K	COIL	100 μ H	R7	QRSA08J-473YN	RESISTOR	47K Ω , 1/10W
L15	PU48530-101K	COIL	100 μ H	R8	QRSA08J-103YN	RESISTOR	10K Ω , 1/10W
L16	PU59152-8R2J	COIL	8.2 μ H	R9	QRSA08J-473YN	RESISTOR	47K Ω , 1/10W
L18	PU59152-8R2J	COIL	8.2 μ H	R10	QRSA08J-103YN	RESISTOR	10K Ω , 1/10W
L19	PU59152-100J	COIL	10 μ H	R13	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L21	PU59152-4R7J	COIL	4.7 μ H	R14	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L22	PU59152-3R3J	COIL	3.3 μ H	R15	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L23	PU59152-2R2J	COIL	2.2 μ H	R17	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
L24	PU59152-1R0J	COIL	1 μ H	R20	QRSA08J-473YN	RESISTOR	47K Ω , 1/10W
LPF1	PELN0934	LOW PASS FILTER		R21	QRSA08J-473YN	RESISTOR	47K Ω , 1/10W
TP1	PU56008	TEST PIN, X4		R22	QRSA08J-223YN	RESISTOR	22K Ω , 1/10W
CN1	PEMC0713-107	HOUSING		R23	QRSA08J-223YN	RESISTOR	22K Ω , 1/10W
CN2	PEMC0713-106	HOUSING		R24	QRSA08J-223YN	RESISTOR	22K Ω , 1/10W
CN3	PEMC0713-104	HOUSING		R26	QRSA08J-152YN	RESISTOR	1.5K Ω , 1/10W

MOTHER BOARD ASSEMBLY <65>							
PWBA	PB10802A-02	MOTHER BOARD ASSY		R31	QRSA08J-391YN	RESISTOR	390 Ω , 1/10W
IC3	UPC339G	IC		R32	QRSA08J-472YN	RESISTOR	4.7K Ω , 1/10W
IC4	TC7W04F	IC		R33	QRSA08J-101YN	RESISTOR	100 Ω , 1/10W
IC5	TC4W53F	IC		R34	QRSA08J-333YN	RESISTOR	33K Ω , 1/10W
IC6	TC4W53F	IC		R35	QRSA08J-103YN	RESISTOR	10K Ω , 1/10W
Q3	DTC124EU	CHIP D TR		R36	QRSA08J-222YN	RESISTOR	2.2K Ω , 1/10W
Q4	DTC124EU	CHIP D TR		R37	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
Q5	DTC144WU	TRANSISTOR		R38	QRSA08J-101YN	RESISTOR	100 Ω , 1/10W
Q6	DTC144WU	TRANSISTOR		R39	QRSA08J-562YN	RESISTOR	5.6K Ω , 1/10W
Q7	2SC4081(QRS)	TRANSISTOR		R40	QRSA08J-101YN	RESISTOR	100 Ω , 1/10W
Q8	2SA1576(QRS)	TRANSISTOR		R41	QRSA08J-105YN	RESISTOR	1M Ω , 1/10W
Q9	2SC4081(QRS)	TRANSISTOR		R42	QRSA08J-472YN	RESISTOR	4.7K Ω , 1/10W
Q10	2SA1576(QRS)	TRANSISTOR		R43	QRSA08J-333YN	RESISTOR	33K Ω , 1/10W
Q11	2SC4081(QRS)	TRANSISTOR		R44	QRSA08J-103YN	RESISTOR	10K Ω , 1/10W
Q12	2SC4081(QRS)	TRANSISTOR		R45	QRSA08J-222YN	RESISTOR	2.2K Ω , 1/10W
Q13	2SC4081(QRS)	TRANSISTOR		R46	QRSA08J-102YN	RESISTOR	1K Ω , 1/10W
Q14	2SC4081(QRS)	TRANSISTOR		R47	QRSA08J-101YN	RESISTOR	100 Ω , 1/10W
Q15	2SC4081(QRS)	TRANSISTOR		R48	QRSA08J-562YN	RESISTOR	5.6K Ω , 1/10W
Q16	2SC4081(QRS)	TRANSISTOR		R49	QRSA08J-101YN	RESISTOR	100 Ω , 1/10W
Q17	2SC4081(QRS)	TRANSISTOR		R50	QRSA08J-105YN	RESISTOR	1M Ω , 1/10W
Q18	2SC4081(QRS)	TRANSISTOR		R51	QRSA08J-472YN	RESISTOR	4.7K Ω , 1/10W
Q19	2SA1577(R)	TRANSISTOR		R52	QRSA08J-822YN	RESISTOR	8.2K Ω , 1/10W
Q20	2SA1576(QRS)	TRANSISTOR		R53	QRSA08J-123YN	RESISTOR	12K Ω , 1/10W
△				R54	QRSA08J-393YN	RESISTOR	39K Ω , 1/10W
				R55	QRSA08J-222YN	RESISTOR	2.2K Ω , 1/10W
				R56	QVPA606-471Z	V RESISTOR, HEAD RESPONSE(WP2)	
				R57	QVPA606-471Z	V RESISTOR, HEAD RESPONSE(WP1)	

REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION
R58	QVPA606-471Z	V RESISTOR, HEAD RESPONSE(WQ2)	JP1	PEMC0714-007	CONNECTOR
R59	QVPA606-471Z	V RESISTOR, HEAD RESPONSE(WQ1)	JP2	PEMC0714-006	CONNECTOR
R60	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	JP3	PEMC0714-004	CONNECTOR
R61	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	JP101	PEMC0714-007	CONNECTOR
R62	QVPA606-471Z	V RESISTOR, TC1 IN LEVEL(MAIN)	JP102	PEMC0714-006	CONNECTOR
R63	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	JP103	PEMC0714-004	CONNECTOR
R64	QVPA606-471Z	V RESISTOR, TC IN LEVEL(SUB)			
R65	QRSA08J-102YN	RESISTOR 1KΩ,1/10W			
R66	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	TP1	PU55774	TEST PIN, X14
R67	QRSA08J-102YN	RESISTOR 1KΩ,1/10W	CN1	PU59555-3	CONNECTOR
R70	QRD161J-0R0	RESISTOR 0Ω,1/6W	CN2	PU60417-6	CONNECTOR
R201	QVPB601-103	V RESISTOR, TENSION FWD	CN3	PU59555-4	CONNECTOR
R202	QVPB601-502	V RESISTOR, TENSION REV	CN4	PU59555-4R	CONNECTOR
R211	QRSA08J-512YN	RESISTOR 5.1KΩ,1/10W	CN5	PU59555-4	CONNECTOR
R212	QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W	CN6	PU59555-4	CONNECTOR
			CN7	PU59555-4R	CONNECTOR
			CN201	PU60417-9	CONNECTOR
C11	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C13	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C14	QCFA1HZ-103	CAPACITOR 0.01μF,50V			
C15	QCSA1HJ-680	CAPACITOR 68pF,50V			
C16	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C17	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C18	QCFA1HZ-103	CAPACITOR 0.01μF,50V			
C19	QCSA1HJ-680	CAPACITOR 68pF,50V			
C20	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C21	QCSA1HJ-102	CAPACITOR 0.001μF,50V			
C22	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C23	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C24	QETC1CM-476	E CAPACITOR 47μF,16V			
C25	QAT3120-300Z	T.CAPACITOR, HEAD RESPONSE WP2			
C26	QAT3120-300Z	T.CAPACITOR, HEAD RESPONSE WP1			
C27	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C28	QETC1CM-476	E CAPACITOR 47μF,16V			
C29	QAT3120-300Z	T.CAPACITOR, HEAD RESPONSE WQ2			
C30	QAT3120-300Z	T.CAPACITOR, HEAD RESPONSE WQ1			
C31	QCFA1EZ-104	CAPACITOR 0.1μF,25V			
C32	QETC1CM-476	E CAPACITOR 47μF,16V			
C33	QCSA1HJ-150	CAPACITOR 15pF,50V			
C34	QCSA1HJ-150	CAPACITOR 15pF,50V			
C35	QCSA1HJ-150	CAPACITOR 15pF,50V			
C36	QCSA1HJ-150	CAPACITOR 15pF,50V			
C37	QCFA1CZ-105	CAPACITOR 1μF,16V			
C38	QCFA1CZ-105	CAPACITOR 1μF,16V			
L3	PU48530-101K	COIL 100μH			
L4	PU48530-101K	COIL 100μH			
L5	PU48530-101K	COIL 100μH	IC1	UPD78P148GF-N37 I C (MCU)	
L6	PU59152-4R7J	COIL 4.7μH	IC2	IC-PST529DMT-X IC	
L7	PU59152-4R7J	COIL 4.7μH	IC3	BA10358F IC	
L8	PU59152-4R7J	COIL 4.7μH		or UPC358GR IC	
L9	PU59152-4R7J	COIL 4.7μH		or XRA10358F IC	
L10	PU59152-3R3J	COIL 3.3μH	△ IC4	TA8400P IC	
L11	PU59152-3R3J	COIL 3.3μH	IC5	BA10393F IC	
				or UPC393G2 IC	
				or XRA10393F IC	

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION	
	IC6	BA7043FS	IC		Q212	DTA114EU	TRANSISTOR	
	IC7	BA10358F	IC		Q213	DTA114EU	TRANSISTOR	
		or UPC358GR	IC					
		or XRA10358F	IC					
	IC8	BA7043FS	IC		D1	11ES2	DIODE	
	IC9	TA8731P	IC		D2	DAP202U	DIODE	
	IC10	BU4066BCF	IC		D5	DA204U	DIODE	
		or UPD4066BG	IC		D6	1SS99Y	DIODE	
		or XRU4066BCF	IC		D7	1SS99Y	DIODE	
	IC11	BU4069UBF	IC		D201	11ES2	DIODE	
		or UPD4069UBG	IC		D202	1SS133	DIODE	
	IC12	BU4066BCF	IC			or 1N4148M	DIODE	
		or UPD4066BG	IC		D203	1SS133	DIODE	
		or XRU4066BCF	IC			or 1N4148M	DIODE	
	IC13	M50255P	IC		D204	DA204U	DIODE	
△	IC14	BA10358F	IC		D205	DA204U	DIODE	
△		or UPC358GR	IC		D206	DA204U	DIODE	
△		or XRA10358F	IC		D207	DA204U	DIODE	
	IC15	TL431CLP	IC		D208	RD5.1ES-T1B3	ZENER DIODE	
	△ IC201	AN3834K	IC			or UZ5.1BSC	ZENER DIODE	
△	IC202	BA10358F	IC			or MTZV5.1C	ZENER DIODE	
△		or UPC358GR	IC		D209	AU01Z	FR DIODE	
△		or XRA10358F	IC		D210	AU01Z	FR DIODE	
△	IC203	AN3834K	IC		D211	RD5.1ES-T1B3	ZENER DIODE	
	IC204	UPC324G2	IC			or UZ5.1BSC	ZENER DIODE	
	IC205	BA10339F	IC			or MTZV5.1C	ZENER DIODE	
		or UPC339G2	IC		D212	AU01Z	FR DIODE	
	IC206	BU4013BF	IC		D213	AU01Z	FR DIODE	
		or UPD4013BG	IC		D216	11ES2	DIODE	
	IC207	BA10393F	IC					
		or UPC393G2	IC		R1	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
		or XRA10393F	IC		R2	NRVA62D-222N	RESISTOR	2.2KΩ,1/16W
	IC208	BU4013BF	IC		R3	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
		or UPD4013BG	IC		R4	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
					R5	NRVA62D-332N	RESISTOR	3.3KΩ,1/16W
	Q1	DTC124EU	CHIP D TR		R6	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	Q2	DTC124EU	CHIP D TR		R7	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q3	DTC124EU	CHIP D TR		R8	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
	Q4	DTC124EU	CHIP D TR		R9	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	Q5	DTC124EU	CHIP D TR		R10	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	Q6	DTC124EU	CHIP D TR					
	Q7	2SC2412K(RS)	TRANSISTOR		R11	NRVA62D-103N	RESISTOR	10KΩ,1/16W
	Q8	2SB1256	TRANSISTOR		R12	NRVA62D-103N	RESISTOR	10KΩ,1/16W
	Q9	DTC124EU	CHIP D TR		R13	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	Q10	DTC124EU	CHIP D TR		R14	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
					R15	QRSA08J-474YN	RESISTOR	470KΩ,1/10W
	Q11	DTC124EU	CHIP D TR		R16	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
	Q14	DTC124EU	CHIP D TR		R17	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
					R18	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q201	2SD1468S(SE)	TRANSISTOR		R19	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q202	2SD1468S(SE)	TRANSISTOR		R20	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q203	DTC124EU	CHIP D TR					
	Q204	DTC124EU	CHIP D TR		R21	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q205	2SB1142(STU)	TRANSISTOR		R22	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
△	Q206	2SC3616(MLK)	TRANSISTOR		R23	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q207	2SB1142(STU)	TRANSISTOR		R24	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	Q208	2SC3616(MLK)	TRANSISTOR		R25	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
					R26	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	Q211	DTA114EU	TRANSISTOR		R27	QRSA08J-333YN	RESISTOR	33KΩ,1/10W

REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
R28	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R86	NRVA62D-102N	RESISTOR 1KΩ,1/16W
R29	QRSA08J-273YN	RESISTOR 27KΩ,1/10W		R87	NRVA62D-562N	RESISTOR 5.6KΩ,1/16W
R30	QRSA08J-104YN	RESISTOR 100KΩ,1/10W		R88	NRVA62D-332N	RESISTOR 3.3KΩ,1/16W
				R89	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R31	QRSA08J-105YN	RESISTOR 1MΩ,1/10W		R90	NRVA62D-124N	RESISTOR 120KΩ,1/16W
R32	QRSA08J-563YN	RESISTOR 56KΩ,1/10W				
R33	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R91	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R34	QRD161J-122	RESISTOR 1.2KΩ,1/6W		R92	QRSA08J-224YN	RESISTOR 220KΩ,1/10W
R35	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		R93	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
R36	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R94	QRSA08J-823YN	RESISTOR 82KΩ,1/10W
R37	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R95	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R38	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R96	QRSA08J-101YN	RESISTOR 100Ω,1/10W
R39	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R97	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R40	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R98	QRSA08J-391YN	RESISTOR 390Ω,1/10W
				R99	NRVA62D-203N	RESISTOR 20KΩ,1/16W
R41	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R100	QRD161J-331	RESISTOR 330Ω,1/6W
R42	QRSA08J-102YN	RESISTOR 1KΩ,1/10W				
R43	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R101	NRVA62D-123N	RESISTOR 12KΩ,1/16W
R44	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R102	QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R45	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R103	NRVA62D-103N	RESISTOR 10KΩ,1/16W
R46	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R104	NRVA62D-333N	RESISTOR 33KΩ,1/16W
R47	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R105	NRVA62D-105N	RESISTOR 1MΩ,1/16W
R48	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W		R106	QRD161J-122	RESISTOR 1.2KΩ,1/6W
R49	QRSA08J-681YN	RESISTOR 680Ω,1/10W		R107	NRVA62D-104N	RESISTOR 100KΩ,1/16W
R50	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R108	NRVA62D-104N	RESISTOR 100KΩ,1/16W
				R109	NRVA62D-274N	RESISTOR 270KΩ,1/16W
R51	QRSA08J-103YN	RESISTOR 10KΩ,1/10W				
R52	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R201	QRSA08J-221YN	RESISTOR 220Ω,1/10W
R53	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R202	QRSA08J-221YN	RESISTOR 220Ω,1/10W
R54	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R203	NRVA62D-223N	RESISTOR 22KΩ,1/16W
R55	QRSA08J-393YN	RESISTOR 39KΩ,1/10W		R204	NRVA62D-392N	RESISTOR 3.9KΩ,1/16W
R56	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R205	NRVA62D-162N	RESISTOR 1.6KΩ,1/16W
R57	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R206	NRVA62D-202N	RESISTOR 2KΩ,1/16W
R58	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R207	NRVA62D-202N	RESISTOR 2KΩ,1/16W
R59	QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W	△	R208	QRX029J-R56A	RESISTOR 0.56Ω,2W
R60	QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W		R209	NRVA62D-162N	RESISTOR 1.6KΩ,1/16W
				R210	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R63	QRSA08J-102YN	RESISTOR 1KΩ,1/10W				
R64	NRVA62D-124N	RESISTOR 120KΩ,1/16W		R211	QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R65	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R212	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
R66	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R213	NRVA62D-912N	RESISTOR 9.1KΩ,1/16W
R67	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R214	QRSA08J-183YN	RESISTOR 18KΩ,1/10W
R68	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R215	QRSA08J-183YN	RESISTOR 18KΩ,1/10W
R69	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R216	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
R70	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R217	NRVA62D-912N	RESISTOR 9.1KΩ,1/16W
				R218	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
R71	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R219	QRSA08J-562YN	RESISTOR 5.6KΩ,1/10W
R72	QRSA08J-105YN	RESISTOR 1MΩ,1/10W		R220	QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R73	QRSA08J-103YN	RESISTOR 10KΩ,1/10W				
R74	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R221	QRSA08J-681YN	RESISTOR 680Ω,1/10W
R75	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R222	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R76	QRSA08J-103YN	RESISTOR 10KΩ,1/10W	△	R223	QRG029J-101A	OMF RESISTOR 1000Ω,2W
R77	QRSA08J-105YN	RESISTOR 1MΩ,1/10W		R224	QRSA08J-181YN	RESISTOR 180Ω,1/10W
R78	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R225	QRSA08J-221YN	RESISTOR 220Ω,1/10W
R79	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R226	QRSA08J-221YN	RESISTOR 220Ω,1/10W
R80	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R227	NRVA62D-223N	RESISTOR 22KΩ,1/16W
				R228	NRVA62D-392N	RESISTOR 3.9KΩ,1/16W
R81	QRSA08J-102YN	RESISTOR 1KΩ,1/10W		R229	QRSA08J-183YN	RESISTOR 18KΩ,1/10W
R82	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		R230	QRSA08J-183YN	RESISTOR 18KΩ,1/10W
R83	QRSA08J-103YN	RESISTOR 10KΩ,1/10W				
R84	QRD161J-122	RESISTOR 1.2KΩ,1/6W		R231	QRSA08J-105YN	RESISTOR 1MΩ,1/10W
R85	NRVA62D-222N	RESISTOR 2.2KΩ,1/16W	△	R232	QRX029J-R56A	RESISTOR 0.56Ω,2W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R233		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	RA11		PERE0560-102JY	RESISTOR ARRAY
R234		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	RA12		QRB075J-102XM	RESISTOR ARRAY 1KΩ,7W
R235		QRSA08J-104YN	RESISTOR 100KΩ,1/10W	RA13		QRB055J-103XM	RESISTOR ARRAY 10KΩ,5W
R236		QRSA08J-104YN	RESISTOR 100KΩ,1/10W	C1		QEK61AM-336	E CAPACITOR 33μF,10V
R237		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C2		QCSA1HJ-102	CAPACITOR 0.001μF,50V
R238		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C3		QCYA1HK-103	CAPACITOR 0.01μF,50V
R239		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C4		QCYA1HK-103	CAPACITOR 0.01μF,50V
R240		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C5		QCTA1CH-101	CAPACITOR 100pF,16V
R241		QRSA08J-104YN	RESISTOR 100KΩ,1/10W	C6		QEK61CM-106	E CAPACITOR 10μF,16V
R242		QRSA08J-104YN	RESISTOR 100KΩ,1/10W	C7		QCYA1HK-103	CAPACITOR 0.01μF,50V
R243		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C8		QEK61HM-474	E CAPACITOR 0.47μF,50V
R244		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C9		QEK61HM-474	E CAPACITOR 0.47μF,50V
R245		QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W	C10		QEK61HM-474	E CAPACITOR 0.47μF,50V
R246		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C11		QEK61HM-474	E CAPACITOR 0.47μF,50V
R247		QRSA08J-752YN	RESISTOR 7.5KΩ,1/10W	C12		QEK61HM-474	E CAPACITOR 0.47μF,50V
R248		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W	C13		QCYA1HK-103	CAPACITOR 0.01μF,50V
R249		QRD161J-102	RESISTOR 1KΩ,1/6W	C14		QCTA1CH-270	CAPACITOR 27pF,16V
R250		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	C15		QCTA1CH-560	CAPACITOR 56pF,16V
R251		QRD161J-102	RESISTOR 1KΩ,1/6W	C16		QCFA1CZ-105	CAPACITOR 1μF,16V
R252		QRD161J-102	RESISTOR 1KΩ,1/6W	C17		QEK61AM-336	E CAPACITOR 33μF,10V
R253		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C18		QFLC1HJ-473Z	M CAPACITOR 0.047μF,50V
R254		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C19		QFLC1HJ-473Z	M CAPACITOR 0.047μF,50V
R255		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C20		QEK61HM-474	E CAPACITOR 0.47μF,50V
R256		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C21		QEK61HM-474	E CAPACITOR 0.47μF,50V
R257		QRSA08J-100YN	RESISTOR 10Ω,1/10W	C22		QCYA1HK-103	CAPACITOR 0.01μF,50V
R258		QRSA08J-100YN	RESISTOR 10Ω,1/10W	C23		QCSA1HJ-102	CAPACITOR 0.001μF,50V
R259		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C24		QFV21HJ-104AZ	F CAPACITOR 0.1μF,50V
R260		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C25		or QFV21HJ-104	F CAPACITOR 0.1μF,50V
R261		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C26		QFV21HJ-104AZ	F CAPACITOR 0.1μF,50V
R262		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C27		QCYA1HK-103	CAPACITOR 0.01μF,50V
R263		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C28		QCYA1HK-103	CAPACITOR 0.01μF,50V
R264		QRSA08J-332YN	RESISTOR 3.3KΩ,1/10W	C29		QEK61AM-226	E CAPACITOR 22μF,10V
R265		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C30		QEK61CM-106	E CAPACITOR 10μF,16V
R266		QRSA08J-752YN	RESISTOR 7.5KΩ,1/10W	C31		QCSA1HJ-102	CAPACITOR 0.001μF,50V
R267		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W	C32		QEK61CM-106	E CAPACITOR 10μF,16V
R268		QRSA08J-473YN	RESISTOR 47KΩ,1/10W	C33		QCTA1CH-101	CAPACITOR 100pF,16V
R269		QRD161J-102	RESISTOR 1KΩ,1/6W	C34		QFV21HJ-104AZ	F CAPACITOR 0.1μF,50V
R270		QRD161J-102	RESISTOR 1KΩ,1/6W	C35		or QFV21HJ-104	F CAPACITOR 0.1μF,50V
R271		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	C36		QCYA1HK-103	CAPACITOR 0.01μF,50V
R272		QRD161J-102	RESISTOR 1KΩ,1/6W	C37		QCYA1HK-103	CAPACITOR 0.01μF,50V
R273		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C38		QEK61AM-226	E CAPACITOR 22μF,10V
R274		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	C39		QCYA1HK-103	CAPACITOR 0.01μF,50V
R275		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	C40		QCYA1HK-103	CAPACITOR 0.01μF,50V
△ R277		QRG029J-101A	OMF RESISTOR 100Ω,2W	C41		QCYA1HK-103	CAPACITOR 0.01μF,50V
RA1		PERE0560-102JY	RESISTOR ARRAY	C42		QEK61AM-226	E CAPACITOR 22μF,10V
RA2		PERE0560-102JY	RESISTOR ARRAY	C43		QFLC1HJ-683Z	M CAPACITOR 0.068μF,50V
RA3		PERE0560-102JY	RESISTOR ARRAY	C44		QCYA1HK-103	CAPACITOR 0.01μF,50V
RA4		PERE0560-102JY	RESISTOR ARRAY	C45		QEK61CM-106	E CAPACITOR 10μF,16V
RA5		PERE0560-102JY	RESISTOR ARRAY	C46		QEK61AM-226	E CAPACITOR 22μF,10V
RA6		PERE0560-102JY	RESISTOR ARRAY	C47		QEK61HM-225	E CAPACITOR 2.2μF,50V
RA7		PERE0560-102JY	RESISTOR ARRAY	C48		QEK61HM-225	E CAPACITOR 2.2μF,50V
RA8		PERE0560-102JY	RESISTOR ARRAY	C49		QFV21HJ-104AZ	F CAPACITOR 0.1μF,50V
RA9		PERE0560-102JY	RESISTOR ARRAY			or QFV21HJ-104	F CAPACITOR 0.1μF,50V
RA10		PERE0560-102JY	RESISTOR ARRAY			QCYA1HK-103	CAPACITOR 0.001μF,50V

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION
	C50	QFV21HJ-124AZ or QFV21HJ-124	F CAPACITOR 0.12 μ F,50V F CAPACITOR 0.12 μ F,50V		C224	QEK61EM-475	E CAPACITOR 4.7 μ F,25V
	C225	QEK61EM-475	E CAPACITOR 4.7 μ F,25V				
	C226	QFV21HJ-104AZ or QFV21HJ-104	F CAPACITOR 0.1 μ F,50V F CAPACITOR 0.1 μ F,50V		C227	QFV21HJ-104AZ or QFV21HJ-104	F CAPACITOR 0.1 μ F,50V F CAPACITOR 0.1 μ F,50V
	C228	QEH61EM-476	E CAPACITOR 47 μ F,25V				
	C230	QEK61EM-475	E CAPACITOR 4.7 μ F,25V				
	C231	QEK61EM-475	E CAPACITOR 4.7 μ F,25V				
	C232	QEK61CM-106	E CAPACITOR 10 μ F,16V				
	C233	QCYA1HK-103	CAPACITOR 0.01 μ F,50V				
	C234	QEK61EM-475	E CAPACITOR 4.7 μ F,25V				
	C235	QEK61EM-475	E CAPACITOR 4.7 μ F,25V				
	C236	QCYA1HK-103	CAPACITOR 0.01 μ F,50V				
	C237	QEK61CM-106	E CAPACITOR 10 μ F,16V				
	C238	QFN31HJ-222	M CAPACITOR 0.0022 μ F,50V				
	C239	QFN31HJ-222	M CAPACITOR 0.0022 μ F,50V				
	C240	QFN31HJ-222	M CAPACITOR 0.0022 μ F,50V				
	C241	QFN31HJ-222	M CAPACITOR 0.0022 μ F,50V				
	C242	QCYA1HK-103	CAPACITOR 0.01 μ F,50V				
	C243	QEWA1EM-127	E CAPACITOR 120 μ F,25V				
	C244	QFV11HJ-105AZ or QFV11HJ-105	F CAPACITOR 1 μ F,50V F CAPACITOR 1 μ F,50V				
	C245	PU57601-106ME	E CAPACITOR 10 μ F				
	C246	QEWA1EM-127	E CAPACITOR 120 μ F,25V				
	C247	QETC1EM-107	E CAPACITOR 100 μ F,25V				
	C248	QCTA1CH-101	CAPACITOR 100pF,16V				
	C251	QFV11HJ-105AZ or QFV11HJ-105	F CAPACITOR 1 μ F,50V F CAPACITOR 1 μ F,50V				
	C252	QFV11HJ-105AZ or QFV11HJ-105	F CAPACITOR 1 μ F,50V F CAPACITOR 1 μ F,50V				
	C253	QCTA1CH-101	CAPACITOR 100pF,16V				
	C254	QEWA1EM-127	E CAPACITOR 120 μ F,25V				
	C255	QFV11HJ-105AZ or QFV11HJ-105	F CAPACITOR 1 μ F,50V F CAPACITOR 1 μ F,50V				
	C256	PU57601-106ME	E CAPACITOR 10 μ F				
	C257	QEWA1EM-127	E CAPACITOR 120 μ F,25V				
	C258	QETC1EM-107	E CAPACITOR 100 μ F,25V				
	C263	QCSA1HJ-102	CAPACITOR 0.001 μ F,50V				
	C264	QCSA1HJ-102	CAPACITOR 0.001 μ F,50V				
	C265	QFV21HJ-334	F CAPACITOR 0.33 μ F,50V				
	L1	PU48530-220J	COIL 22 μ H				
	L2	PU48530-100J	COIL 10 μ H				
	L4	PU48530-180J	COIL 18 μ H				
	L201	PELN0270-330KZ	COIL 33 μ H				
	L202	PELN0270-100MZ	COIL 10 μ H				
	L203	PELN0270-330KZ	COIL 33 μ H				
	L204	PELN0270-330KZ	COIL 33 μ H				
	L205	PELN0270-100MZ	COIL 10 μ H				
	L206	PELN0270-330KZ	COIL 33 μ H				
	C221	QFV21HJ-154AZ or QFV21HJ-154	F CAPACITOR 0.15 μ F,50V F CAPACITOR 0.15 μ F,50V				
	C222	QFV21HJ-154AZ or QFV21HJ-154	F CAPACITOR 0.15 μ F,50V F CAPACITOR 0.15 μ F,50V				
	C223	QEKA1EM-475	E CAPACITOR 4.7 μ F,25V				
	LC1	PU59736-223	N FILTER				
	LC2	PU59736-223	N FILTER				

<79> <83>

#△ REF No.	PART No.	PART NAME, DESCRIPTION	#△ REF No.	PART No.	PART NAME, DESCRIPTION	
△ X1	PEVB0335	CRYSTAL RESONATOR	CN18	PU59555-2R	CONNECTOR	
TH1	ERT-D2FHJ503S	THERMISTOR	CN19	PU59555-4	CONNECTOR	
△ TH3	PU52108-1R0	POSITIVE THERMISTOR	CN20	PU59555-2	CONNECTOR	
K201	QRD161J-0R0	RESISTOR	0Ω,1/6W	CN21	PU59555-6	CONNECTOR
△ HS1	PQ45789	HEAT SINK, X4	CN22	PU59555-2	CONNECTOR	
SCW1	SDSG3010M	SCREW, X4	CN23	PU59555-3	CONNECTOR	
SCW2	SDSG3008M	SCREW, X2	CN24	PU59555-2	CONNECTOR	
SPC1	PQM30029-190	SPACER, X2	CN25	PU60417-3	CONNECTOR	
WR3	PW30215-0663813	WIRE, CN3	CN26	PU59555-7	CONNECTOR	
WR6	PW30215-0834414	WIRE, CN6	CN27	PU59555-8	CONNECTOR	
WR7	PW30215-0616414	WIRE, CN7	CN28	PU59555-5	CONNECTOR	
WR8	PW30349-0243608	WIRE, CN8	CN29	PU59555-2	CONNECTOR	
WR10	PW30372-0335811	WIRE, CN10	CN201	PU59555-10	CONNECTOR	
WR11	PW30215-0944013	WIRE, CN11	CN202	PU59555-7	CONNECTOR	
WR12	PW30215-0505013	WIRE, CN12	CN203	PU59555-10	CONNECTOR	
WR13	PW30215-0994614	WIRE, CN13	CN204	PU59555-7	CONNECTOR	
WR14	PW30362-0723019	WIRE, CN14	△ CP1	ICP-N15	CP	
WR15	PW30349-0314414	WIRE, CN15	△ CP201	ICP-N25	CP	
WR16	PW30363-0316618	WIRE, CN16	△ CP202	ICP-N25	CP	
WR17	PW30349-0414812	WIRE, CN17	*****	*****	*****	
WR18	PW30363-0223408	WIRE, CN18	VIDEO IN/OUT BOARD ASSEMBLY <83>			
WR20	PW30218-0226814	WIRE, CN20	PWBA	PB10813E1	VIDEO IN/OUT BOARD ASSY	
WR21	PW30362-0665222	WIRE, CN21	IC1	NJM2235M	IC	
WR22	PW30218-0206415	WIRE, CN22	IC2	NJM2234M	IC	
WR24	PW30372-0225209	WIRE, CN24	IC3	NJM2235M	IC	
WR29	PW30218-0223213	WIRE, CN29	IC4	BA7021	IC	
TP	PU55774	TEST PIN	IC5	MC14052BCP	IC	
				or TC4052BP	IC	
CN1	PU60910-10	CONNECTOR	IC6	MC14052BCP	IC	
CN2	PU59555-2	CONNECTOR		or TC4052BP	IC	
CN3	PU60417-6	CONNECTOR	IC7	BA7602F	IC	
CN5	PU60417-5	CONNECTOR	IC8	BA7021	IC	
CN6	PU60417-8	CONNECTOR	IC9	AN3581S	IC	
CN7	PU60417-6	CONNECTOR	IC10	BA7602F	IC	
CN8	PU59555-2	CONNECTOR	IC11	TC74HC04AF	IC	
CN9	PU59555-5	CONNECTOR	IC12	M50255P	IC	
CN10	PU59555-3	CONNECTOR	IC13	TC74HC32AF	IC	
CN11	PU60417-9	CONNECTOR	IC14	MC74HC4066F	IC	
CN12	PU60417-5	CONNECTOR		or TC74HC4066AF	IC	
CN13	PU60417-9	CONNECTOR	IC15	MC14053BCP	IC	
CN14	PU59555-7	CONNECTOR		or TC4053BP	IC	
CN15	PU59555-3	CONNECTOR		or CD4053BE	IC	
CN16	PU59555-3R	CONNECTOR	IC901	M52684AP	IC	
CN17	PU59555-4	CONNECTOR	IC902	M50555-205SP	IC	
			Q1	DTA124EU	TRANSISTOR	

REF No.	PART No.	PART NAME, DESCRIPTION	# [△]	REF No.	PART No.	PART NAME, DESCRIPTION	
Q2	DTA124EU	TRANSISTOR		D17	1SS133	DIODE	
Q3	DTC144EU	TRANSISTOR			or 1N4148M	DIODE	
Q6	2SA1577(RS)	TRANSISTOR		D18	1SS133	DIODE	
Q7	2SA1577(RS)	TRANSISTOR			or 1N4148M	DIODE	
Q8	2SA1577(RS)	TRANSISTOR		D19	1SS133	DIODE	
Q9	DTC143EU	TRANSISTOR			or 1N4148M	DIODE	
Q10	DTC143EU	TRANSISTOR		D20	1SS133	DIODE	
					or 1N4148M	DIODE	
Q11	DTC143EU	TRANSISTOR		D21	1SS133	DIODE	
Q13	DTC124XU	TRANSISTOR			or 1N4148M	DIODE	
Q14	2SC4081(RS)	TRANSISTOR		D24	DAP202U	DIODE	
Q17	2SC4081(RS)	TRANSISTOR		D25	DAP202U	DIODE	
Q18	2SA1576(RS)	TRANSISTOR		D26	DAN202U	DIODE	
Q19	DTC124EU	CHIP D TR		D27	DAN202U	DIODE	
Q20	2SC4081(RS)	TRANSISTOR					
Q21	DTA124EU	TRANSISTOR		D51	1SS133	DIODE	
Q22	DTC144EU	TRANSISTOR			or 1N4148M	DIODE	
Q23	DTA124EU	TRANSISTOR		D52	1SS133	DIODE	
Q24	DTC144WU	TRANSISTOR			or 1N4148M	DIODE	
Q25	2SA1577(RS)	TRANSISTOR		D53	1SS133	DIODE	
Q26	2SA1577(RS)	TRANSISTOR			or 1N4148M	DIODE	
Q28	DTC144EU	TRANSISTOR		D54	1SS133	DIODE	
Q29	2SC4081(RS)	TRANSISTOR					
Q30	2SA1576(RS)	TRANSISTOR		D901	DA114	DIODE	
					or DA115	DIODE	
Q31	2SC4081(RS)	TRANSISTOR		D902	DA114	DIODE	
Q32	2SC4081(RS)	TRANSISTOR			or DA115	DIODE	
Q33	2SA1576(RS)	TRANSISTOR		D903	DAP202U	DIODE	
Q34	2SC4081(RS)	TRANSISTOR		D904	DAN202U	DIODE	
Q35	DTA144EU	TRANSISTOR					
I901	DTC144EU	TRANSISTOR		R1	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
I902	DTC114EU	TRANSISTOR		R2	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
Q903	DTC144EU	TRANSISTOR		R3	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
I904	2SK665	TRANSISTOR		R4	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
I905	2SA1576(QRS)	TRANSISTOR		R5	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
Q906	2SA1576(QRS)	TRANSISTOR		R6	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
Q907	2SC4081(QRS)	TRANSISTOR		R7	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
				R8	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
D1	1SS133	DIODE		R9	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
	or 1N4148M	DIODE		R10	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
2	1SS133	DIODE		R11	QRSA08J-750YN	RESISTOR	75Ω, 1/10W
	or 1N4148M	DIODE		R12	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
D3	1SS133	DIODE		R13	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	or 1N4148M	DIODE		R14	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
4	1SS133	DIODE		R15	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	or 1N4148M	DIODE		R16	QRSA08J-681YN	RESISTOR	680Ω, 1/10W
D6	1SS133	DIODE		R17	QRSA08J-680YN	RESISTOR	68Ω, 1/10W
	or 1N4148M	DIODE		R18	QRSA08J-680YN	RESISTOR	68Ω, 1/10W
8	1SS133	DIODE		R19	QRSA08J-680YN	RESISTOR	68Ω, 1/10W
	or 1N4148M	DIODE		R20	QRSA08J-224YN	RESISTOR	220KΩ, 1/10W
D10	1SS133	DIODE					
	or 1N4148M	DIODE		R22	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
D11	1SS133	DIODE		R23	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	or 1N4148M	DIODE		R24	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
14	1SS133	DIODE		R26	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	or 1N4148M	DIODE		R27	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
D16	DAN202U	DIODE		R28	QRD161J-223	RESISTOR	22KΩ, 1/6W
				R29	QRSA08J-101YN	RESISTOR	100Ω, 1/10W

#	△ REF No.	PART No.	PART NAME, DESCRIPTION	#	△ REF No.	PART No.	PART NAME, DESCRIPTION
R35		QRSA08J-221YN	RESISTOR 220Ω,1/10W	R101		QRSA08J-333YN	RESISTOR 33KΩ,1/10W
R36		QRSA08J-101YN	RESISTOR 100Ω,1/10W	R102		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R37		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R103		QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R38		QRD123J-681SX	RESISTOR 680Ω,1/2W	R104		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R39		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R105		QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
R40		QRD123J-391SX	RESISTOR 390Ω,1/2W	R106		QRSA08J-221YN	RESISTOR 220Ω,1/10W
				R107		QRSA08J-561YN	RESISTOR 560Ω,1/10W
R41		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R108		QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W
R42		QRD123J-391SX	RESISTOR 390Ω,1/2W	R109		QRD161J-102	RESISTOR 1KΩ,1/6W
R43		QRSA08J-0R0Y	RESISTOR 0Ω,1/10W	R110		QRD161J-102	RESISTOR 1KΩ,1/6W
R44		QRSA08J-333YN	RESISTOR 33KΩ,1/10W	R111		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R45		QRSA08J-183YN	RESISTOR 18KΩ,1/10W	R112		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R46		QRSA08J-183YN	RESISTOR 18KΩ,1/10W	R113		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R47		QRSA08J-333YN	RESISTOR 33KΩ,1/10W	R114		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R52		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R115		QRD161J-221	RESISTOR 220Ω,1/6W
R53		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R116		QRD161J-221	RESISTOR 220Ω,1/6W
R55		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R117		QRSA08J-221YN	RESISTOR 220Ω,1/10W
R56		QRSA08J-153YN	RESISTOR 15KΩ,1/10W	R118		QRSA08J-822YN	RESISTOR 8.2KΩ,1/10W
R57		QRSA08J-113YN	RESISTOR 11KΩ,1/10W				
R58		NRVA62D-102N	RESISTOR 1KΩ,1/16W	R121		QRSA08J-101YN	RESISTOR 100Ω,1/10W
R59		NRVA62D-431N	RESISTOR 430Ω,1/16W	R122		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R60		QRD161J-103	RESISTOR 10KΩ,1/6W	R124		QRSA08J-183YN	RESISTOR 18KΩ,1/10W
				R125		QRSA08J-333YN	RESISTOR 33KΩ,1/10W
R61		QRSA08G-102YN	RESISTOR 1KΩ,1/10W	R126		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R62		QRSA08G-911YN	RESISTOR 910Ω,1/10W	R128		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R64		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W	R129		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R65		QRSA08J-222YN	RESISTOR 2.2KΩ,1/10W				
R66		QRSA08J-682YN	RESISTOR 6.8KΩ,1/10W	R201		QRD161J-221	RESISTOR 220Ω,1/6W
R67		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R202		QRSA08J-162YN	RESISTOR 1.6KΩ,1/10W
R68		QRSA08J-203YN	RESISTOR 20KΩ,1/10W	R203		QRSA08J-622YN	RESISTOR 6.2KΩ,1/10W
R69		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R204		QRSA08J-622YN	RESISTOR 6.2KΩ,1/10W
				R205		QRSA08J-162YN	RESISTOR 1.6KΩ,1/10W
R71		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R206		QRSA08J-162YN	RESISTOR 1.6KΩ,1/10W
R72		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R207		QRSA08J-622YN	RESISTOR 6.2KΩ,1/10W
R73		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R208		QRSA08J-622YN	RESISTOR 6.2KΩ,1/10W
R74		QRD123J-681SX	RESISTOR 680Ω,1/2W	R209		QRSA08J-162YN	RESISTOR 1.6KΩ,1/10W
R75		QRD123J-681SX	RESISTOR 680Ω,1/2W				
R76		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R901		QRSA08J-563YN	RESISTOR 56KΩ,1/10W
R77		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R902		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R78		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R903		QRSA08J-563YN	RESISTOR 56KΩ,1/10W
R79		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R904		QRSA08J-123YN	RESISTOR 12KΩ,1/10W
R80		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R905		QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R81		QRSA08J-750YN	RESISTOR 75Ω,1/10W	R913		QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W
R82		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R914		QRSA08J-271YN	RESISTOR 270Ω,1/10W
R85		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R915		QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R86		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R916		QRSA08J-223YN	RESISTOR 22KΩ,1/10W
R87		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R917		QRSA08J-124YN	RESISTOR 120KΩ,1/10W
R88		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W	R918		QRSA08J-471YN	RESISTOR 470Ω,1/10W
R89		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R919		QRSA08J-221YN	RESISTOR 220Ω,1/10W
R90		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R920		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R91		QRSA08J-103YN	RESISTOR 10KΩ,1/10W	R921		QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R93		QRSA08J-333YN	RESISTOR 33KΩ,1/10W	R922		QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R94		QRSA08J-223YN	RESISTOR 22KΩ,1/10W	R923		QRSA08J-103YN	RESISTOR 10KΩ,1/10W
R95		QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W	R924		QRSA08J-182YN	RESISTOR 1.8KΩ,1/10W
R96		QRSA08J-102YN	RESISTOR 1KΩ,1/10W	R925		QRSA08J-272YN	RESISTOR 2.7KΩ,1/10W
R97		QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W	R926		QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W
R98		QRSA08J-221YN	RESISTOR 220Ω,1/10W	R927		QRSA08J-471YN	RESISTOR 470Ω,1/10W
R99		QRSA08J-561YN	RESISTOR 560Ω,1/10W	R928		QRSA08J-102YN	RESISTOR 1KΩ,1/10W
R100		QRSA08J-122YN	RESISTOR 1.2KΩ,1/10W	R929		QRSA08J-103YN	RESISTOR 10KΩ,1/10W

#	REF No.	PART No.	PART NAME, DESCRIPTION	#Δ	REF No.	PART No.	PART NAME, DESCRIPTION
	R930	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		C59	QCSA1HJ-150	CAPACITOR 15pF,50V
	R931	QRSA08J-472YN	RESISTOR 4.7KΩ,1/10W		C61	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	R932	QRSA08J-911YN	RESISTOR 910Ω,1/10W		C62	QEK60JM-107	E CAPACITOR 100μF,6.3V
	R933	QRSA08J-681YN	RESISTOR 680Ω,1/10W		C63	QCYA1HK-223	CAPACITOR 0.022μF,50V
	R934	QRSA08J-152YN	RESISTOR 1.5KΩ,1/10W		C64	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	R949	QRSA08J-561YN	RESISTOR 560Ω,1/10W		C65	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	R950	QRSA08J-103YN	RESISTOR 10KΩ,1/10W		C66	QCFA1HZ-103	CAPACITOR 0.01μF,50V
					C67	QEK61CM-107	E CAPACITOR 100μF,16V
					C68	QCFA1HZ-104	CAPACITOR 0.1μF,50V
					C69	QCFA1HZ-104	CAPACITOR 0.1μF,50V
	C1	QEK61CM-106	E CAPACITOR 10μF,16V		C72	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C2	QEK61CM-106	E CAPACITOR 10μF,16V		C73	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C3	QEK61CM-106	E CAPACITOR 10μF,16V		C74	QCFA1HZ-104	CAPACITOR 0.1μF,50V
	C4	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C75	QEK61CM-106	E CAPACITOR 10μF,16V
	C5	QCVB1CM-103	CAPACITOR 0.01μF,16V		C76	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C6	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C77	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C7	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C78	QEK60JM-107	E CAPACITOR 0.01μF,50V
	C8	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C79	QCSA1HJ-270	CAPACITOR 100μF,6.3V
	C9	QEK61CM-106	E CAPACITOR 10μF,16V		C80	QCFA1HZ-103	CAPACITOR 27pF,50V
	C10	QEK61CM-106	E CAPACITOR 10μF,16V				0.01μF,50V
	C11	QEK61CM-106	E CAPACITOR 10μF,16V		C81	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C13	QEK61HM-105	E CAPACITOR 1μF,50V		C82	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C14	QEK61HM-105	E CAPACITOR 1μF,50V		C83	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C15	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C84	QCF11HP-103	CAPACITOR 0.01μF,50V
	C16	QEK60JM-107	E CAPACITOR 100μF,6.3V		C88	QCFA1HZ-104	CAPACITOR 0.1μF,50V
	C17	QCFA1HZ-104	CAPACITOR 0.1μF,50V				
	C18	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C95	QCSA1HJ-150	CAPACITOR 15pF,50V
	C20	QCFA1HZ-104	CAPACITOR 0.1μF,50V		C97	QCC11EJ-103	CAPACITOR 0.01μF,25V
					C98	QCC11EJ-103	CAPACITOR 0.01μF,25V
	C24	QEK61HM-335	E CAPACITOR 3.3μF,50V		C99	QCSA1HJ-100	CAPACITOR 10pF,50V
	C26	QEK61CM-106	E CAPACITOR 10μF,16V				
	C27	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C901	QETC1HM-225	E CAPACITOR 2.2μF,50V
	C28	QEK60JM-107	E CAPACITOR 100μF,6.3V		C904	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C31	QEK61HM-105	E CAPACITOR 1μF,50V		C905	QCSA1HJ-220	CAPACITOR 22pF,50V
	C32	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C906	QCYA1HK-152	CAPACITOR 0.0015μF,50V
	C33	QEK60JM-107	E CAPACITOR 100μF,6.3V		C907	QEK61CM-106	E CAPACITOR 10μF,16V
	C34	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C908	QEK61HM-105	E CAPACITOR 1μF,50V
	C35	QETC1CM-477	E CAPACITOR 470μF,16V		C909	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C36	QETC1CM-477	E CAPACITOR 470μF,16V		C910	QFN31HJ-562	M CAPACITOR 0.0056μF,50V
	C37	QEK61CM-106	E CAPACITOR 10μF,16V		C911	QEK61HM-335	E CAPACITOR 3.3μF,50V
	C38	QEK61CM-106	E CAPACITOR 10μF,16V		C912	QEK61HM-106	E CAPACITOR 10μF,50V
	C39	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C913	QCYA1HK-103	CAPACITOR 0.01μF,50V
	C40	QEK61CM-107	E CAPACITOR 100μF,16V		C914	QCSA1HJ-181	CAPACITOR 180pF,50V
	C43	QEK61EM-475	E CAPACITOR 4.7μF,25V		C915	QCTA1CH-560	CAPACITOR 56pF,16V
	C45	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C916	QCTA1CH-470	CAPACITOR 47pF,16V
	C46	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C917	QEPC1HM-105	NP E CAPACITOR 1μF,50V
	C47	QEK60JM-107	E CAPACITOR 100μF,6.3V		C918	QCSA1HJ-270	CAPACITOR 27pF,50V
	C48	QEK61EM-475	E CAPACITOR 4.7μF,25V		C919	QCSA1HJ-270	CAPACITOR 27pF,50V
	C49	QETC0JM-337	E CAPACITOR 330μF,6.3V		C920	QCSA1HJ-220	CAPACITOR 22pF,50V
	C50	QEK61CM-106	E CAPACITOR 10μF,16V		C921	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C51	QETC0JM-337	E CAPACITOR 330μF,6.3V		C922	QCSA1HJ-680	CAPACITOR 68pF,50V
	C52	QEK61CM-106	E CAPACITOR 10μF,16V		C923	QAT3120-450Z	TRIM CAPACITOR,DOT CLOCK 45pF
	C53	QCFA1HZ-103	CAPACITOR 0.01μF,50V		C924	QCTA1CH-100	CAPACITOR 10pF,16V
	C54	QEK61CM-107	E CAPACITOR 100μF,16V		C926	QEK60JM-107	E CAPACITOR 100μF,6.3V
	C56	QEK61CM-106	E CAPACITOR 10μF,16V		C927	QCFA1HZ-103	CAPACITOR 0.01μF,50V
	C57	QEK61CM-106	E CAPACITOR 10μF,16V				
	C58	QCFA1HZ-103	CAPACITOR 0.01μF,50V	L1	PU48530-101K	COIL 100μH	

# △	REF No.	PART No.	PART NAME, DESCRIPTION	# △	REF No.	PART No.	PART NAME, DESCRIPTION
L2	PU59153-101K	COIL	100 μ H	CN201	PU58798-111	FFC CONNECTOR	
L3	PU48530-101K	COIL	100 μ H	CN202	PU59555-9	CONNECTOR	
L4	PU59153-101K	COIL	100 μ H	CN203	PU60417-5	CONNECTOR	
L5	PU59153-101K	COIL	100 μ H				
L6	PU48530-101K	COIL	100 μ H				
L7	PU48530-101K	COIL	100 μ H				
L8	PU48530-101K	COIL	100 μ H				
L9	PU59153-101K	COIL	100 μ H				
L10	PU48530-101K	COIL	100 μ H				
L11	PU59153-101K	COIL	100 μ H				*****
L12	PU59153-101K	COIL	100 μ H				
L13	PU59153-101K	COIL	100 μ H				
L15	PU59153-101K	COIL	100 μ H				
L16	PU59153-101K	COIL	100 μ H				
L901	PU59153-101K	COIL	100 μ H				
L902	PU59988-150J	COIL	15 μ H	IC1	M38063E6-402FP	QFP IC (MCU)	
L903	PU59988-220JY	COIL	22 μ H	IC2	ICL232CPE	IC	
L904	PU59988-220JY	COIL	22 μ H	IC3	M51957BL	IC	
L905	PU59153-101K	COIL	100 μ H	IC6	TC74HC00AP	IC	
					or MC74HC00N	IC	
△ CF901	PU60086	RESONATOR		R1	QRD161J-102	RESISTOR	1K Ω ,1/6W
△ X901	PEVB0435	CRYSTAL RESONATOR		R2	QRD161J-102	RESISTOR	1K Ω ,1/6W
SW1	PU55854	SLIDE SWITCH		R4	QRD161J-102	RESISTOR	1K Ω ,1/6W
HD1	PEME0841-02	HOLDER, X3		R5	QRD161J-102	RESISTOR	1K Ω ,1/6W
HD2	PEME0831-02	HOLDER, X2		R6	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA1	PU61012 or PU60612	MINI JACK		R7	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA2	PEMC0939-06	PIN JACK(SW)		R12	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA3	PEMC0939-05	PIN JACK(SW)		R13	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA4	PEMC0938-06	PIN JACK		R14	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA5	PEMC0938-05	PIN JACK		R15	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA7	PEMC0940	MINI DIN CONN		R16	QRD161J-102	RESISTOR	1K Ω ,1/6W
JA9	PEMC0940	MINI DIN CONN		R17	QRD161J-102	RESISTOR	1K Ω ,1/6W
				R18	QRD161J-102	RESISTOR	1K Ω ,1/6W
				R19	QRD161J-102	RESISTOR	1K Ω ,1/6W
				R20	QRD161J-103	RESISTOR	10K Ω ,1/6W
				R21	QRD161J-105	RESISTOR	1M Ω ,1/6W
				R22	QRD161J-103	RESISTOR	10K Ω ,1/6W
				R23	QRD161J-103	RESISTOR	10K Ω ,1/6W
				R24	QRD161J-103	RESISTOR	10K Ω ,1/6W
				R25	QRD161J-103	RESISTOR	10K Ω ,1/6W
				R26	QRD161J-102	RESISTOR	1K Ω ,1/6W
				R27	QRD161J-473	RESISTOR	47K Ω ,1/6W
				R28	QRD161J-183	RESISTOR	18K Ω ,1/6W
TP	PEMC0727	TEST PIN, X12		C1	QCF31HP-473	CAPACITOR	0.047 μ F,50V
				C2	QETC1EM-475	E CAPACITOR	4.7 μ F,25V
				C3	QCF31HP-473	CAPACITOR	0.047 μ F,50V
				C4	QETC1CM-476	E CAPACITOR	47 μ F,16V
CN1	PU59555-8	CONNECTOR		C5	QETC1CM-107	E CAPACITOR	100 μ F,16V
CN4	PU59555-6	CONNECTOR		C6	QCF31HP-103	CAPACITOR	0.01 μ F,50V
CN5	PU58798-127	CONNECTOR		C7	QETC1HM-104	E CAPACITOR	0.1 μ F,50V
CN7	PU60417-6	CONNECTOR		C8	QCF31HP-103	CAPACITOR	0.01 μ F,50V
CN8	PU60417-13	CONNECTOR		C9	QCS31HJ-330	CAPACITOR	33pF,50V
CN9	PU59555-2R	CONNECTOR		C10	QCS31HJ-330	CAPACITOR	33pF,50V

#	REF No.	PART No.	PART NAME, DESCRIPTION	#△	REF No.	PART No.	PART NAME, DESCRIPTION	
C11	QCF31HP-223	CAPACITOR	0.022 μ F,50V				*****	
C12	QETC1CM-226	E CAPACITOR	22 μ F,16V				LED BOARD ASSEMBLY <90>	
C13	QETC1CM-226	E CAPACITOR	22 μ F,16V					
C14	QEE81CM-226	TANTAL CAPACITOR	22 μ F,16V		PWBA	PB10691D2	LED BOARD ASSY	
C15	QEE81CM-226	TANTAL CAPACITOR	22 μ F,16V					
C16	QEE81CM-226	TANTAL CAPACITOR	22 μ F,16V					
C17	QCF31HP-223	CAPACITOR	0.022 μ F,50V		LA201	PEDP0002	LAMP	
C18	QCF31HP-223	CAPACITOR	0.022 μ F,50V		LA202	PEDP0002	LAMP	
L1	PU48530-101J	COIL	100 μ H		IC201	M50255P	IC	
X1	PGZ00157	CRYSTAL RESONATOR			Q203	2SA854S(QR)	TRANSISTOR	
SW1	QSS1K41-L01	DIP SW			D201	SLH-34MC3F	LE DIODE	
SCW1	PGZ01821	SCREW, X2			D202	SLH-34MC3F	LE DIODE	
WR1	PW30349-0225009	WIRE,CN1			D203	SLH-34MC3F	LE DIODE	
CN1	PU59555-2	CONNECTOR			D204	SLH-34MC3F	LE DIODE	
CN2	PU59555-5	CONNECTOR			D205	SLH-34VC3F	LE DIODE	
CN3	PU60417-11	CONNECTOR			D206	SLH-34VC3F	LE DIODE	
CN4	PU59555-2	CONNECTOR			D207	SLH-34MC3F	LE DIODE	
CN6	PGZ02015B	RS-232C JACK			D208	SLH-34MC3F	LE DIODE	
CN7	PU59555-2	CONNECTOR			D210	SLH-34MC3F	LE DIODE	
CN9	PU60417-5	CONNECTOR			D211	SLH-34VC3F	LE DIODE	
△ CP1	ICP-N25	CP			R201	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R202	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R203	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R204	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R205	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R206	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R207	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R208	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R210	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R211	QRD161J-182	RESISTOR	1.8KΩ,1/6W
					R212	QRD161J-102	RESISTOR	1KΩ,1/6W
					R213	QRD161J-103	RESISTOR	10KΩ,1/6W
					C201	QCC31CJ-104	CAPACITOR	0.1 μ F,16V
J46	PEMC1098	BNC CONNECTOR			HD1	PQ34399-1-1	HOLDER(LAMP), X2	
J48	PEMC1098	BNC CONNECTOR			HD2	PQ40795-6	LED HOLDER, X10	
SCW1	SDSF3010M	SCREW, X2			CN201	PU60417-8	CONNECTOR	
WR3	ML-PU3994G	WIRE,CN3						
WR4	PW30349-0223608	WIRE,CN4						
CN1	PU59555-108	CONNECTOR						
CN2	PU59555-102	CONNECTOR						
CN3	PU59555-2	CONNECTOR						
CN4	PU59555-102	CONNECTOR						

<98> <99>

#△ REF No. PART No. PART NAME, DESCRIPTION

DET BOARD ASSEMBLY <98>

PWBA	PB30189A	DET BOARD ASSY	
Q801	2SC1740S(RS)	TRANSISTOR	
Q802	2SA933S(RS)	TRANSISTOR	
Q803	2SC1740S(RS)	TRANSISTOR	
R801	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R802	QRD161J-224	RESISTOR	220KΩ,1/6W
R803	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R804	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R805	QRD161J-472	RESISTOR	4.7KΩ,1/6W
C801	QEK61HM-335	E CAPACITOR	3.3μF,50V

CASSETTE HOUSING MOTOR BOARD <99>

PWB1	PB40089	CASSETTE HOUSING MOTOR BOARD	
C1	QCFC1HZ-104	CAPACITOR	0.1μF,50V
CN1	PU59555-102R	CONNECTOR	

SECTION 7 TECHNICAL INFORMATION

7.1 OUTLINE OF W-VHS SYSTEM

The W-VHS system that is a future-oriented video system of high performance and quality picture is developed aiming at more development of the VHS video system toward the 21st century. Therefore, the W-VHS VTR is of course designed to conform to both of HDTV systems and the current TV systems as a fruit of JVC's home video technologies for the next generation.

7.1.1 Development of HR-W1

The VHS/S-VHS VTR which the total production in the world reached 470,000,000 in number up to the end of 1993 has not only been the majority of VTRs but also taken the major part of the TV and video industry of the whole world. This success, that is of course owes to change in the user needs and development of relating technologies, has helped and promoted time shift of TV programs, establishment of great software industries, marketing of videomovies for recording of growing-up children, day-by-day development video technologies including improvement of the VHS format with continuity in changeability, etc.

At present, persons concerned with TV broadcasting and video industry of the world are making best efforts to develop and popularize HDTV systems and relating appliances on the conception that the center of future visual media will be the wide, high definition, digitized ones. In the 21st century, the present TV system, EDTV, HDTV, 3D TV will be in prosperous coexistence, and people will also be provided with diversified TV programs, communication systems.

In Japan, test broadcasting of the MUSE system has taken place for 8 hours a day since 1991, and HDTV sets are now put on the market at a price lower than 1,000,000 yen. Such the trend gradually popularizes HDTV broadcasting and its reception but there are many problems to extend to general homes because broadcasting service is limited narrow in area and short in hours, HDTV sets are still expensive, etc. Such being the case, the W-VHS VTR has many merits owing to its main design concept for multi-use with the picture quality and functions enough for home use.

Aiming to be the basic video format in the 21st century of the diversified media times, the W-VHS VTR is manufactured based on the thoroughly examined cost performance as home video and up-to-date user needs together with accumulated data on VHS videos.

7.2 WHAT IS "W" IN W-VHS

The "W" in the W-VHS symbolizes the following.

1. Wide aspect ratio of 16-to-9 such as adopted in Hi-vision, EDTV II, etc.
2. Worldwide usable format conforming to foreign HDTV systems.
3. Wide development of VTR applications.
4. Wide track (two-tracks) recording system.

7.2.1 Features of W-VHS

1. Conforms to Hi-vision TV broadcasting.
Capable of recording and playback of Hi-vision broadcasting programs of high definition 16:9 wide aspect ratio. (HD mode)
2. Conforms to future TV broadcasting systems in the world.
Designed to conform to most of future TV broadcasting systems in the world such as ATV (USA), HD-MAC (Europe), etc. under planning at present.
3. Prospective popularization and development as home appliance
The W-VHS VTR having the performance and functions required for the HD VTR for home use can be put on the market at a comparatively popular price because it can be manufactured on the basis of the present VHS/S-VHS VTR technologies and manufacturing systems.
4. New marketing of VTRs with development of applications
Functions of simultaneous recording and playback of two NTSC programs with the multi-track system, 3-dimensional video with two cameras, ultra-wide video recording, etc. will develop new applications and markets of VTRs.
5. HD reception of current TV broadcasting
Current TV broadcasting (NTSC system) programs can be recorded and played back in high resolution superior to the S-VHS system. (SD mode)
6. Interchangeability with the current VHS system
A great deal of VHS and S-VHS softwares can be played back.

7.2.2 Fundamental system of W-VHS

1. System based on VHS format

The W-VHS VTR is designed basically the same as the VHS VTR such as in the drum rotation, tape speed, etc. but different in the additionally installed components such as the HD signal processing circuit and the heads for exclusive use of the HD signal recording and playback. The track pitch is 19 µm that is equivalent to the VHS-EP mode to secure correct H alignment as well as to record HD signal by the three heads simultaneously at the tape speed equivalent to the VHS-SP speed. Therefore, a W-VHS cassette tape is capable of 3 hours recording or longer.

2. Base band recording system

The base band recording system is adopted in consideration of worldwide popularization of HDTV systems and HD videomovies in future as well as to avoid such a resolution improvement method as band compression, etc. Moreover, this system has the advantage that it is free from signal source system, it allows to make up the circuitry simple, natural and almost noiseless picture can be obtained, etc.

The band width is designed 4 to 5 times as wide as the VHS format in consideration of the frequencies of the HDTV and the current TV broadcasting.

3. Newly developed W-VHS cassette tape

The W-VHS tape is capable of not only high frequency output that is 8 dB higher than that of the S-VHS tape but also recording with 8-10.5 MHz FM carrier that is realized by use of the newly developed layer-built laminated Sendust alloy heads together with. Therefore, the recording wavelength is 0.55 µm at the shortest and the linear recording density is accordingly 2 to 2.5 times compared with the VHS tape. Simply explaining, the frequency response is 4 to 5 times that of the VHS tape thanks to the 2-track parallel recording system and the high performance MP tape. The cassette size of the W-VHS tape is the same as the VHS cassette. Moreover, the W-VHS cassette tape is equipped with the new mechanisms to prevent erroneous insertion into the VHS deck and to prevent erroneous erasure besides the newly developed dust-proof structure.

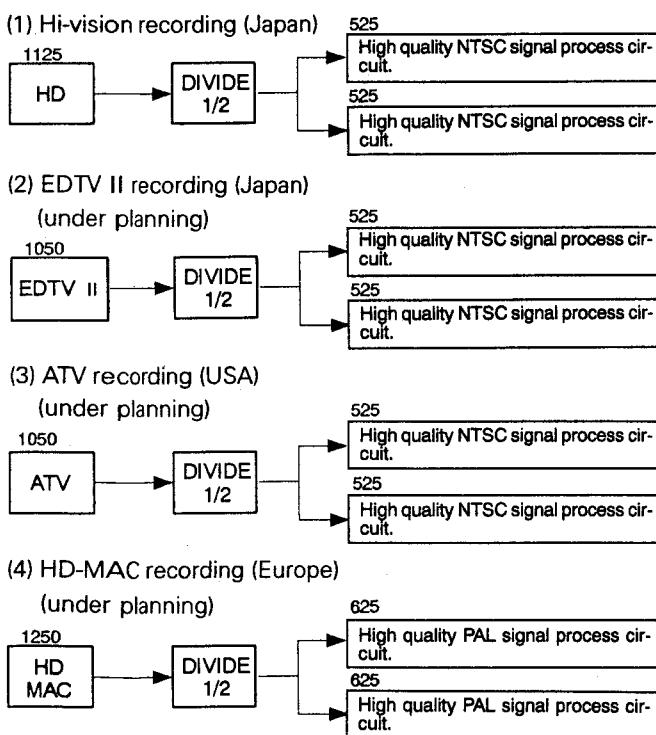


Fig. 7-2-1 Base band recording system that copes with various HDTV systems in the world

7.2.3 Correlation between W-VHS and S-VHS/VHS

The W-VHS VTR is designed to serve as the S-VHS/VHS VTR, too. Therefore, it is capable of recording the ordinary TV broadcasting in the S-VHS/VHS format and playing it back as well as a great deal of S-VHS/VHS softwares.

Table 7-2-1 shows the correlation between the W-VHS and the S-VHS/VHS formats.

7.2.4 Requirement for W-VHS VTR specifications

The W-VHS VTR is required to be capable of video recording/playback in one of the HD mode, SD mode and SD2 mode besides playback of video tape recorded in the VHS and S-VHS (interchangeable with upper-grade VHS models) modes. The W-VHS VTR is identified by the logomark shown below.



		W-VHS			S-VHS	VHS
		HD mode	SD mode	SD2 mode		
Recording broadcasting signal		HDTV	NTSC	NISC (2 channels)	NTSC	
Frame aspect ratio		16 : 9	4 : 3			
Horizontal scanning lines		1125 lines	525 lines			
Recording hours		3 hours	9 hours	3 hours	3 hours(Standard mode) 9 hours (X3 mode)	
Tape width		1/2 inch (Metal tape)			1/2 inch	
Cassette size		VHS cassette size				
Inter-changeability	W-VHS	○			x	
	Playback	S-VHS	○			△ (Simple playback)
	VHS		○			
	Recording	W-VHS	○			x
		S-VHS	○			x
		VHS	○			

Table 7-2-1 Correlation between W-VHS and S-VHS/VHS

7.2.5 Comparison of W-VHS with MUSE

The two-dimensional frequency responses of the W-VHS and MUSE formats are respectively shown in Fig. 7-2-2.

Although the W-VHS is inferior to the MUSE in the horizontal resolution (400 lines approx. in the former and 600 lines approx. in the latter), the W-VHS is superior to the latter in the oblique resolution besides its naturalness and smoothness in switching between still playback and motion playback. Moreover, the W-VHS can easily stand comparison with that of the MUSE in the picture quality which is considered satisfactory for commercial HDTV sets.

The picture quality of the W-VHS is expected to be better and better with improvement of tape performance in future.

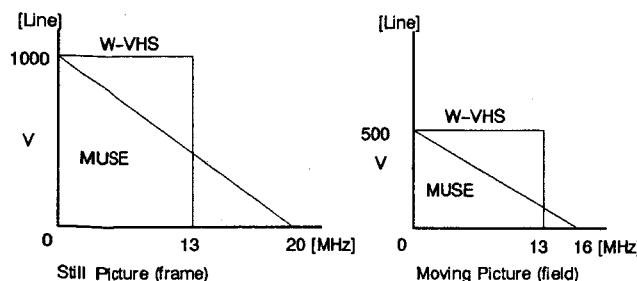


Fig. 7-2-2 Two-dimensional frequency responses of W-VHS and MUSE

7.3 W-VHS SPECIFICATIONS

Video is base band component recorded. Hi-vision signals have bands of 13.3 MHz for Y, 4 MHz for C and NTSC signals have bands of 6.5 MHz for Y and 1 MHz for C. Thanks to the newly developed MP tape, TBC temporal emphasis using digital signal processing, and other technology for improving picture quality, satisfactory picture quality is realized.

The track format is made common with NTSC based on the hi-vision 2-track format and can support 2-channel NTSC recording. Also, the audio uses FM, the same as VHS, and PCM (optional).

7.3.1 Details of W-VHS mode

Here is a summary of the modes comprising W-VHS.

HD mode	Hi-vision signal recording and playback
SD mode	NTSC signal high-quality long-time recording and playback
SD2 mode	NTSC signal 2-channel recording and playback (not yet included)

Table 7-3-1 Details of W-VHS mode

7.3.2 Basic W-VHS Specifications

Table 7-3-2 shows the basic W-VHS specifications.

	HD mode (hi-vision signal recording mode)	SD mode (NTSC signal long-time recording mode)	SD2 mode (NTSC signal 2-program recording mode)
Video	Input/output signals Hi-vision base band signals (V, PB, PR)	NTSC signals or YC separate signals conforming to NTSC signal format	
	Brightness signal band 13.3 MHz	6.5 MHz	
	Color signal band 4 MHz	1 MHz	
	Recording format 2-track parallel recording	1-track azimuth recording	2-track parallel recording
	Recording signal processing Time axis compressed TCI signals divided in 2 and FM	Time axis compressed TCI signals FM recorded	
	Effective scanning lines 1032 lines/frame (PB, PR line sequence)	506 lines/frame	
	Emphasis Temporal emphasis Vertical emphasis Main emphasis Sub-emphasis	Temporal emphasis Vertical emphasis Main emphasis Sub-emphasis	
	White clip/dark clip 240%/110%	240%/110%	
Audio	Input/output signals Analog 2 channels PCM 2/4 channels	Analog 2 channels	Analog 2 channels PCM 2/4 channels
	Recording format Independent audio track frequency multiplex recording with special rotating head	Frequency multiplex deep-layer recording with special rotating head	Independent audio track frequency multiplex recording with special rotating head (CH1 = left; CH2 = right)
	Recording signal processing Analog FM recording QPSK recording (PCM)	Analog FM recording	Analog FM recording QPSK recording (PCM)
Head	Recording format Rotating head azimuth recording	Rotating head azimuth recording	
	Video heads 4 heads facing 180°	2 heads facing 180°	4 heads facing 180°
	Audio heads 2 heads facing 180°	2 heads facing 180°	
	Recording tracks 3 tracks recorded at a time (2 video + audio)	1 track recorded at a time (video + audio)	3 tracks recorded at a time (2 video + audio)
	Rotation rate 1800 rpm	1800 rpm	
Tape	Tape Newly developed W-VHS tape (metal particle)	Newly developed W-VHS tape (metal particle)	
	Tape width/thickness 1/2" / 14.4 µm	1/2" / 14.4 µm	
	Recording time 3 hours (using WT-180)	9 hours (using WT-180)	3 hours (using WT-180)
	Tape speed 33.35 mm/s	11.12 mm/s	33.35 mm/s
	Linear speed 5.8 m/s	5.8 m/s	
	Track pitch 58 µm/field	19 µm/field	58 µm/field

Table 7-3-2 Basic Specifications

7.3.3 Basic principles of W-VHS signal processing

Table 7-3-3 and Figures 7-3-1 and 7-3-2 show the basic principle for W-VHS signal processing.

1. Basic principles of W-VHS signal processing

Processing	Signal name or processing circuit	Band	HD signal input							
			Frame (1125 lines)		Frame (1125 lines)					
			Field (60 Hz)	Field (60 Hz)	Field (60 Hz)	Field (60 Hz)				
HD input signal	Y signal	14 MHz	Input as HD base band signal and passed through a low pass filter with a pass band of 14 MHz.							
	Pb signal	4 MHz	The color difference signal base band is input and the color difference signal band is set to 4 MHz with the low pass filter circuit.							
	Pr signal	4 MHz	Same as above							
↓										
AD conversion	AD converter	30.24 MHz	For the brightness signal, an effective horizontal video time of $29.63 \mu s$ is sampled 696 times with a sampling frequency of 30.24 MHz ($896 \times 33.75 \text{ kHz}$). As the effective recording area, 768 samples are processed as the recording signal.							
↓										
		The HD signal sampled at 30.24 MHz is read from memory at 14.3 MHz the time axis is expanded, and recording is processed with the same time axis as for NTSC.								
HDC time axis conversion	Y(main) Y(sub)		V1/2 (even line signal) V1/2 (odd line signal)	Data is managed with each line sampled 768 times	The time axis is roughly doubled to process equivalent to NTSC field signals.					
	Pb Pr		Pb/2 (odd) Pr/2 (even)	Pb managed with 256 data items. Pr managed with 256 data items.	The color signals processed in line sequence are passed through a vertical filter to average the vertical direction color signal.					
↓										
TCI signal pre-processing	Y (main) Y (sub)		The HD video data sampled 768 times for the horizontal period has its time axis doubled with still 768 samples and is processed equivalent to NTSC ($63.5 \mu s$) Ym (262.5 lines) even line/Ys (262.5 lines) odd line/control signal addition							
	C signal		For the color difference signal, 768 TTL data items, 256 data items each for Pb and for Pr and 256 delimiter data items, are output as the C signal.							
↓										
TCI compression processing	Basic principles of TC		In order to insert the color difference signal into the Y main and Y sub signals corresponding to the recording tracks, the signals are compressed and the color signals added to each signal.							
	Y main signal		The Y signal (768 samples) and C signal (256 samples) written with the 14.3-MHz clock are read out with the 17.2-MHz clock and compressed in order to combine the Y signal and the C signal as the TCI signal.							
	Y (sub) signal		The Y (sub) signal combines the odd line Y signal (768 samples) and Pb signal (256 samples). The Y (main) signal combines the even line Y signal (768 samples) and Pr signal (256 samples).							
↓										
Relationship with HD signal		1st Field		2nd Field						
Recording signal	FM	FM 8 MHz - 10.5 MHz Frequency displacement 2.5 MHz		Same as on the left						
TCI	TCI signal (HD)	Y (main) signal	Y (sub) signal	Y (main) signal	Y (sub) signal					
	(SD)	NTSC-TCI signal	-	NTSC-TCI signal	-					
	(SD II)	NTSC-TCI (1 program)	NTSC-TCI (2 programs)	NTSC-TCI (1 program)	NTSC-TCI (2 programs)					
Head	Recording/playback head (HD)	WP1 (+15°)	WQ2 (-15°)	WP2 (-15°)	WQ1 (+15°)					
	(SD)	WP1	-	WP2	-					
	(SD II)	WP1	WQ2	WP2	WQ1					

Table 7-3-3 Basic principles of W-VHS signal processing

2. Basic principles of W-VHS recording signal processing

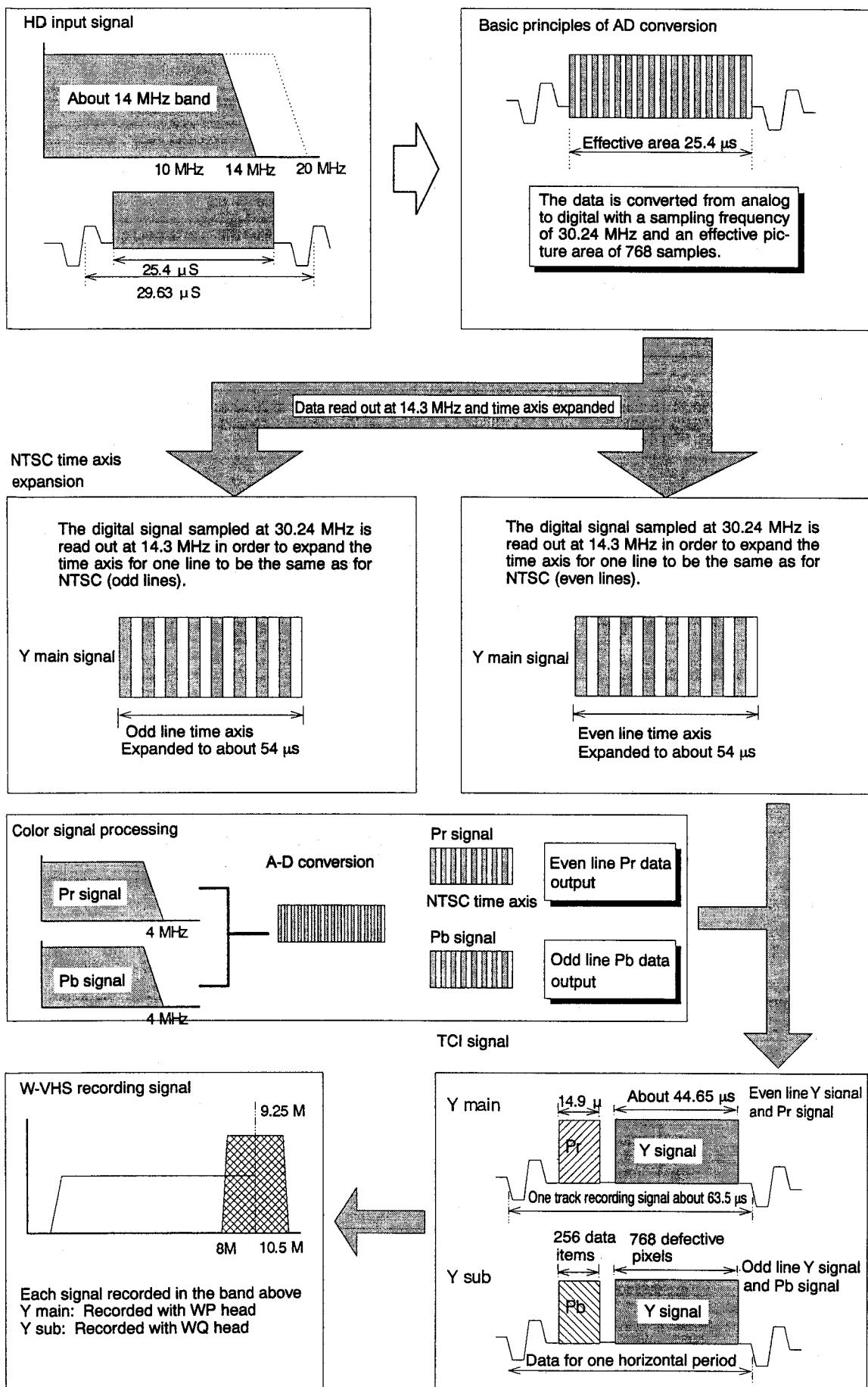


Figure 7-3-1 Basic Principles of Signal Processing for W-VHS Recording

3. Basic principles of W-VHS HD signal processing

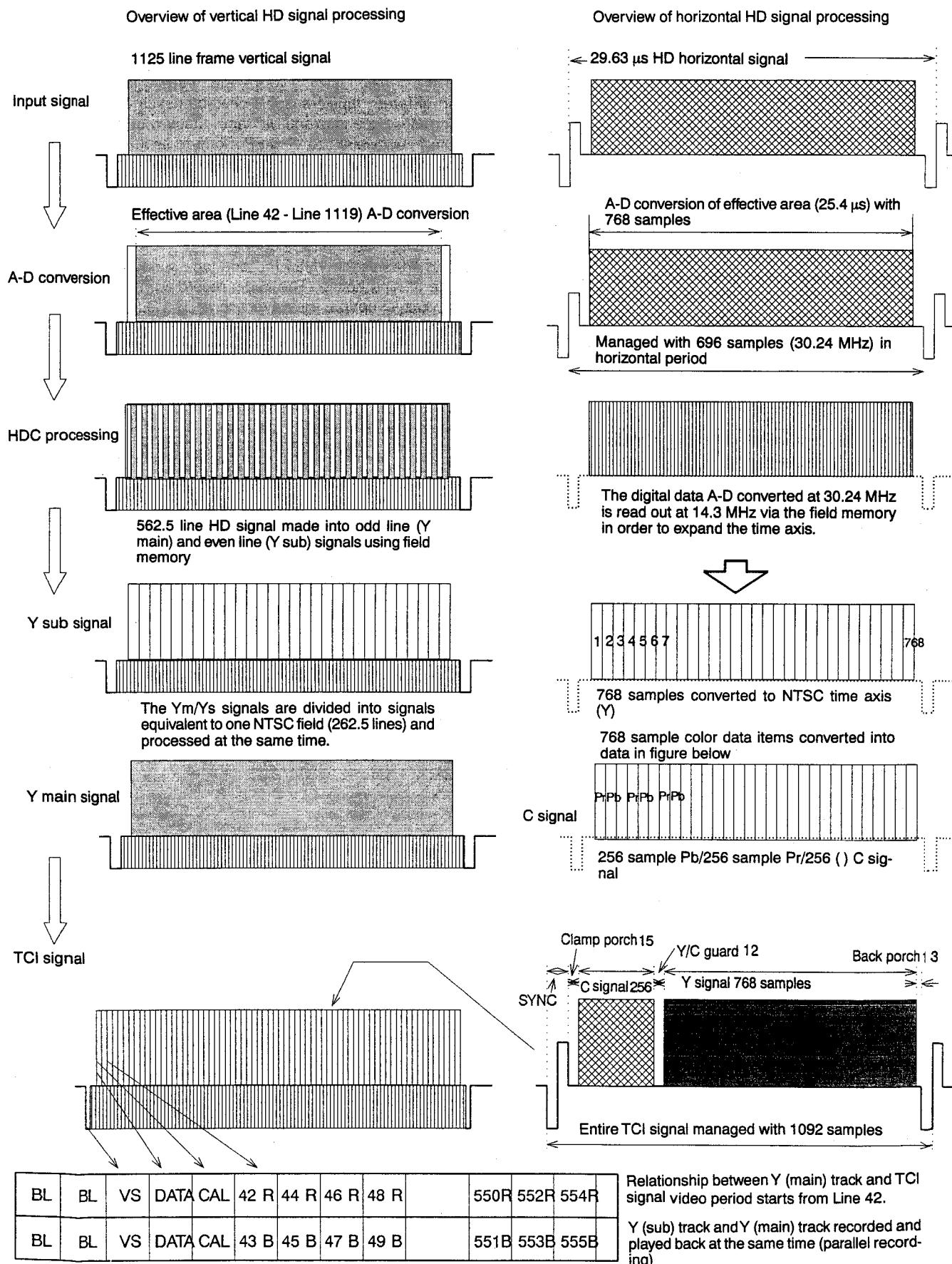


Figure 7-3-2 Basic Principles of W-VHS HD Signal Recording

7.3.4 High performance video head (HD/SD/S-VHS/VHS)

The foundation of high picture quality is the head. This model has high performance heads developed especially for each of the following modes: HD, SD, S-VHS, and VHS.

1. Sendust HD pro head (HD/SD)

W-VHS uses metal tape and exchanges greater volumes of data with the tape, so the demands placed on the head are more severe than those for S-VHS/VHS. The sendust HD pro head uses laminar sundast alloy not only for the gap section, but for the entire magnetic circuit in order to realize good recording characteristics over the entire band from the low region to the high region and at the same time low noise for playback. In HD mode, 2-channel parallel recording is used, so two heads must be in contact with the tape constantly. Since the tape is only wrapped halfway around the circumference of the rotating drum on which the heads are installed, the four sendust HD pro heads are divided into two sets of two located 180° apart on the rotating drum.

2. Super crystal pro head (S-VHS/VHS standard mode)

Video recording and playback use a pair of heads, but in order to assure picture quality for searching and other special playback, heads with different track widths have been used in previous models. The super crystal pro heads have balanced settings that give the two heads the optimum track width for picture quality by suppressing the influence of neighboring tracks. It was possible to increase the track width for the head with the narrower track by 17%. This made it possible to balance the head characteristics and extract high picture quality.

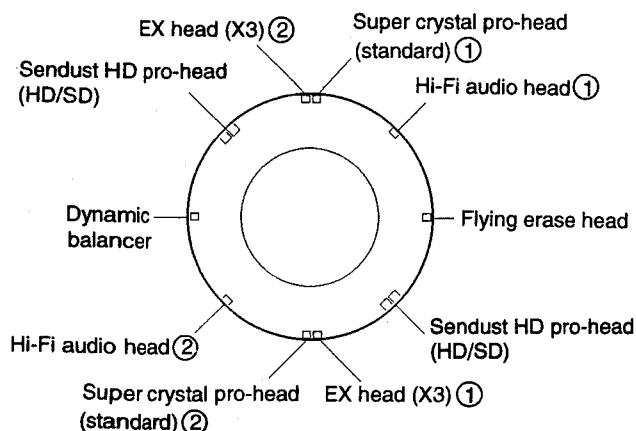


Figure 7-3-3 Head Layout

3. Tape pattern

The tape transport system is the same as for VHS and the basics of the format, such as drum rotation speed and tape speed, have not been changed. Therefore the back tension, head extension, sliding width, etc. were optimized to establish different tape transport characteristics and head touch for metal oxide tape and MP tape. Track width is set to about 19 µm, equivalent to VHS/EP mode to secure the horizontal alignment. Also the heads are given an azimuth angle of ±15° to reduce crosstalk.

HD mode and SD2 mode insert audio at the VHS/SP mode tape speed and record three tracks at the same time. The recording time is three hours.

SD mode has the VHS/EP mode tape speed and a recording time of nine hours. The audio recording format is FM with PCM as an option. However while SD mode and SD2 mode have the same deep layer recording as VHS, HD mode records using the third track. The tracking servo uses the long track CTL signal as its reference signal.

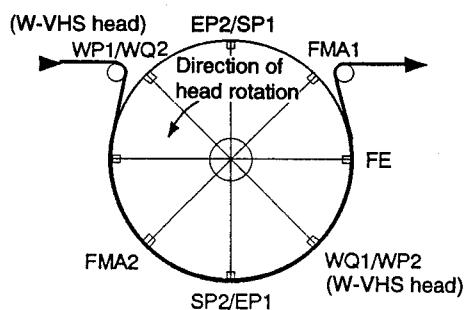


Figure 7-3-4 Head Layout

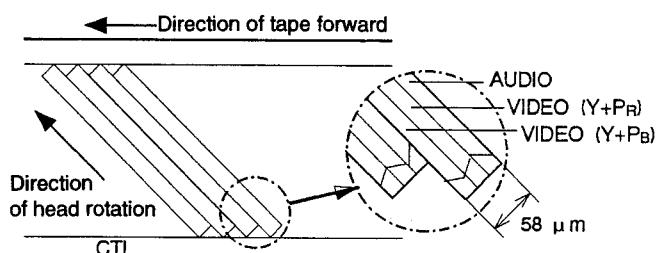


Figure 7-3-5 Tape Pattern (HD Mode)

7.3.5 Relation Between Modes and Tracks

1. Relation between HD mode recording head and tracks

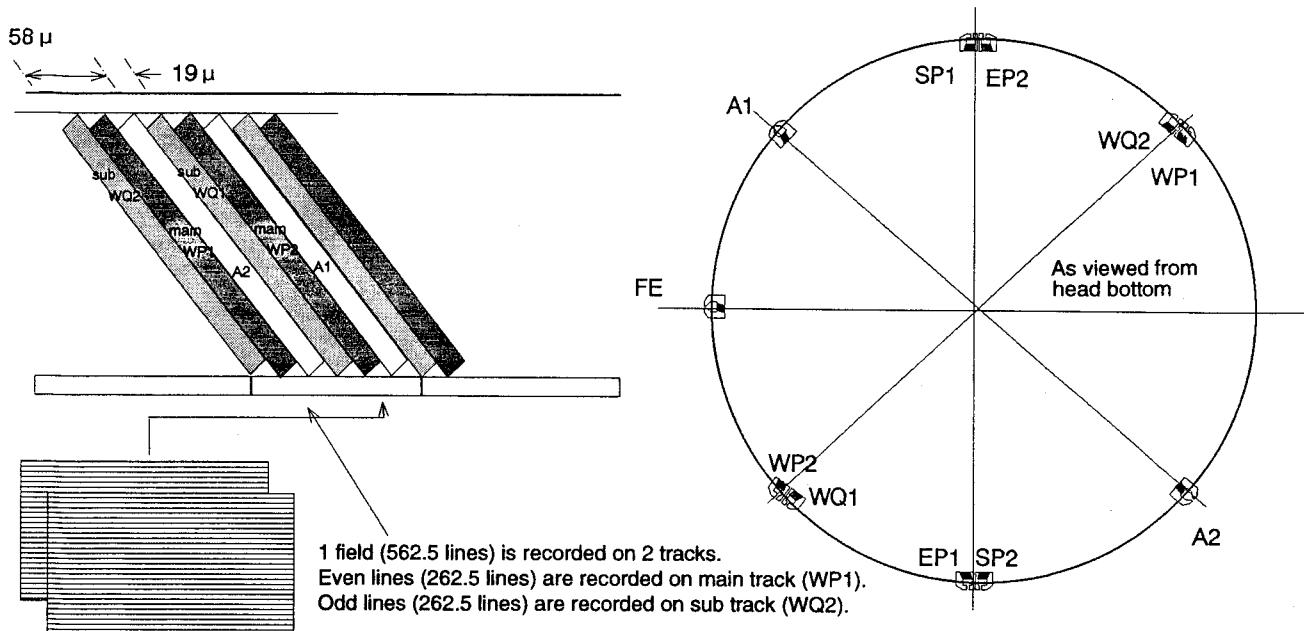


Figure 7-3-6 Relationship Between HD Mode Recording Head and Tracks

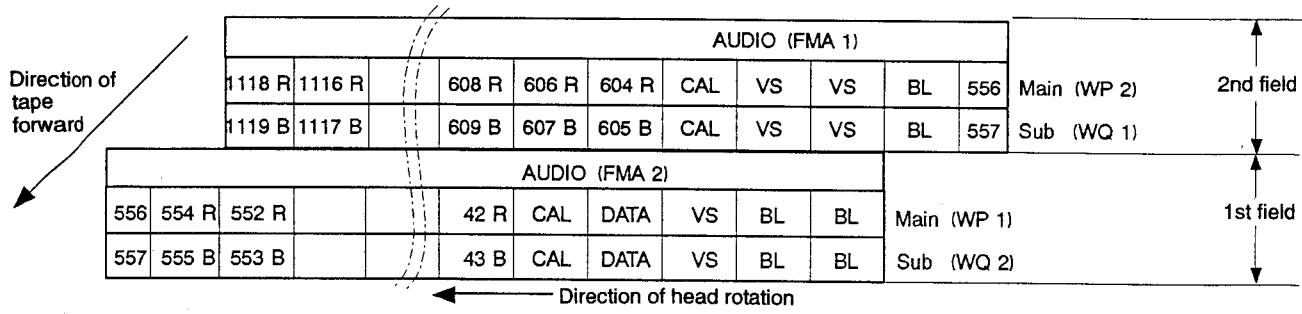


Figure 7-3-7 Tape Pattern (HD Mode)

2. Relation between SD mode recording head and tracks

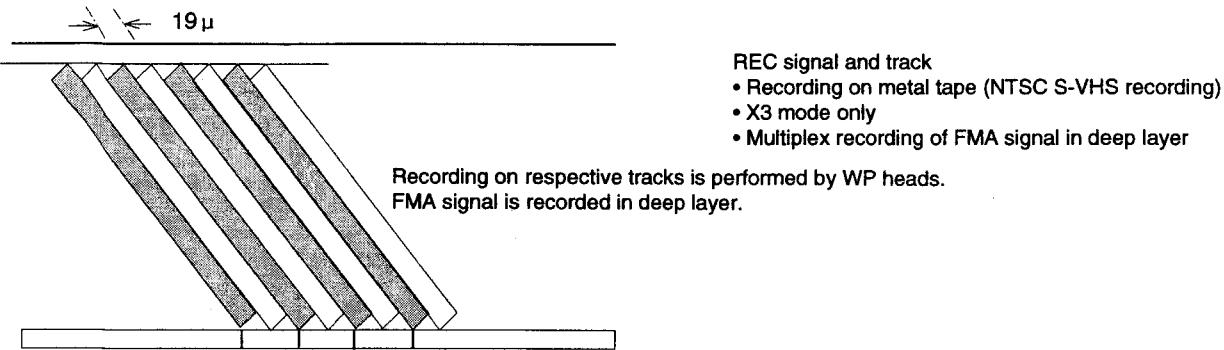


Figure 7-3-8 Relationship Between SD Mode Recording Head and Tracks

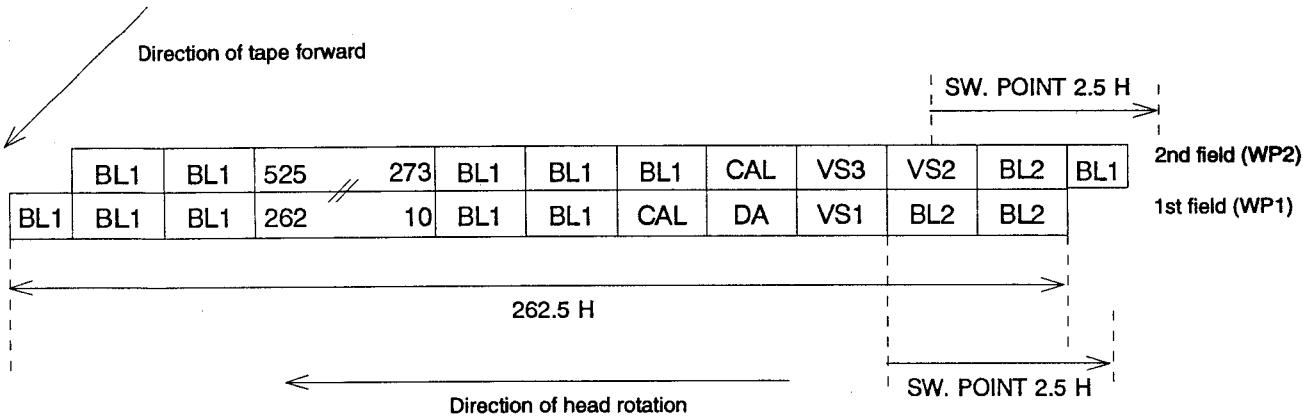


Figure 7-3-9 Tape Pattern (SD Mode)

3. Audio signal recording tracks

HD audio uses the same FM audio as VHS/S-VHS and PCM audio. The head is common with a VHS/S-VHS audio head (azimuth $\pm 30^\circ$). Also, the recording format is not deep-layer format but rather the No. 3 track. However, this model does not yet have normal audio.

(HD/SD mode)

	A1	A2
HD	Independent	Independent
SD	Deep-layer	Deep-layer
SDII	Independent monaural	Independent monaural

Table 7-3-4 Contents of Recording

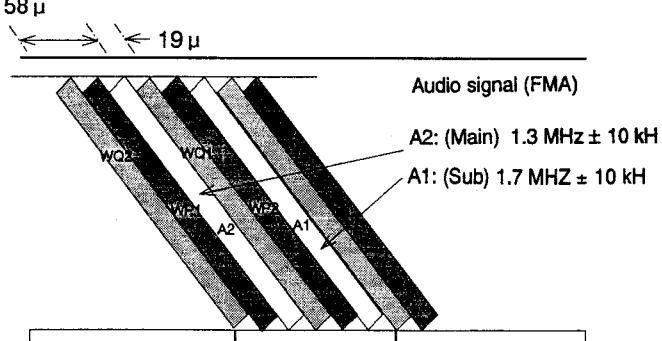


Figure 7-3-10 Audio Signal Recording Tracks

7.4 HD MODE RECORDING SYSTEM

7.4.1 Overview of HD mode video system

Figure 7-4-1 shows the HD mode signal processing block

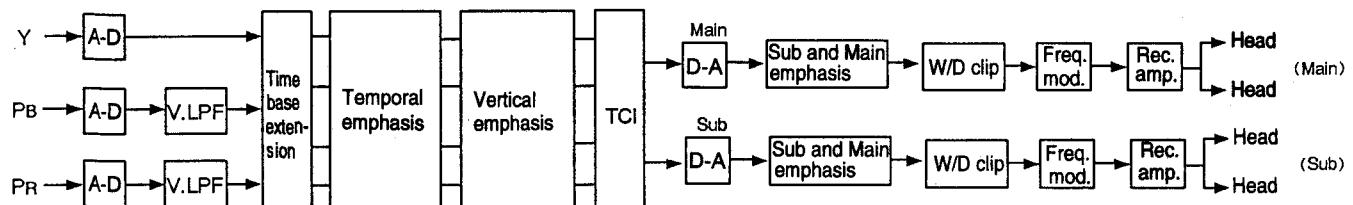


Figure 7-4-1 Signal Processing System Block Diagram (HD Mode)

For the hi-vision Y, Pb, and Pr base band signals, the 1032 effective scanning lines out of the total of 1125 lines are extracted and divided in two. After the divided signals are each converted from analog to digital, the brightness signals are divided in two into the even field and odd field for each line within the field and the scanning lines for the color signal are divided in half. The time axis is expanded for both the brightness and color signals and temporal emphasis and vertical emphasis noise reduction processing carried out. The Y (odd lines) and Pb (odd lines) on the one hand and the Y (even lines) and Pr (even lines) are each time compression integrated (TCI). The vertical blanking is added to create a pseudo-NTSC signal (TCI signal) with 525 scanning lines (262.5 x 2).

After that, the signals are D-A converted, emphasised, W/D clipped, FM modulated and recorded two each (main & sub) on the four W-VHS heads (one field/two tracks).

7.4.2 HD signal Input circuit operation

1. Clamp and ADC circuit

The HD input signals are DC clamped just before the A-D conversion. The DC clamp pulses are output with the width of eight samples of Y data directly after the DC horizontal sync signals made within the HDC. The DC clamped HD signals are converted to 8-bit digital signals in the ADC. The ADC receives the 30.24MHz clock signal from the HDC and converts the effective video period (shown in Figure 7-4-5) of the HD signal into 768-sample digital data.

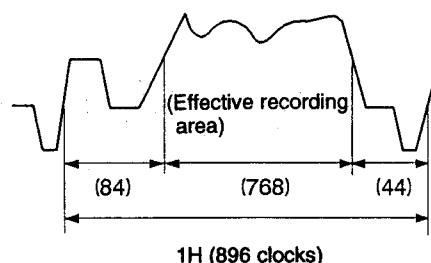


Figure 7-4-2 HD Signal Recording Area

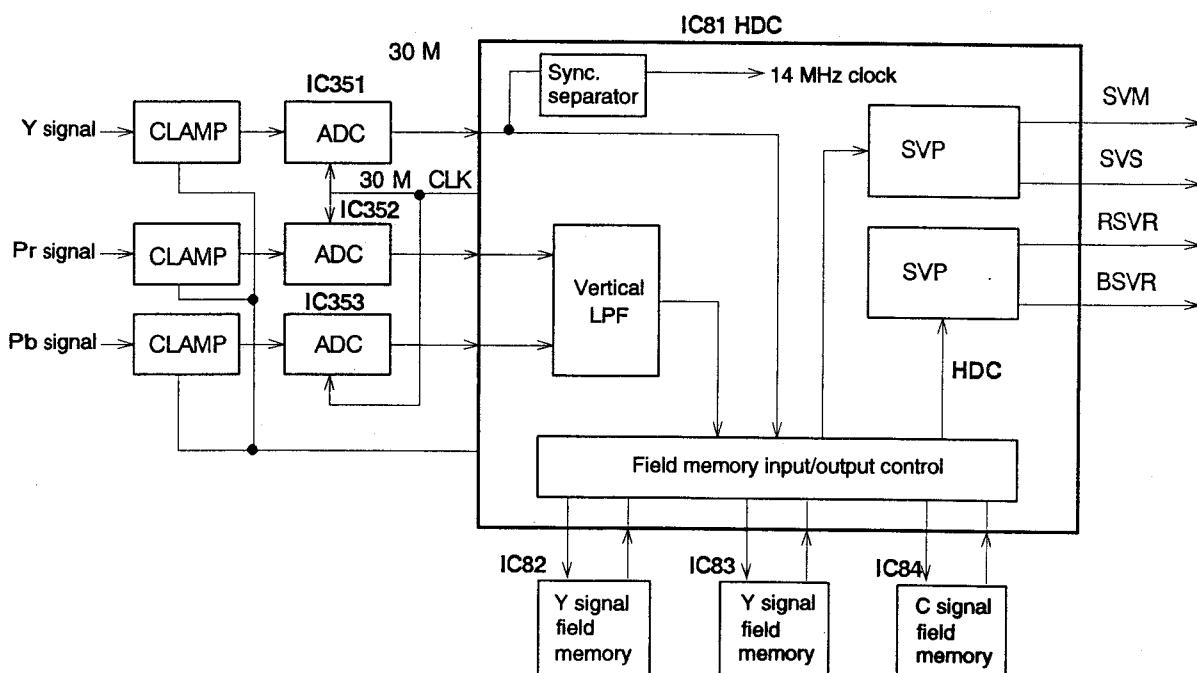


Figure 7-4-3 HD Signal Input Circuit

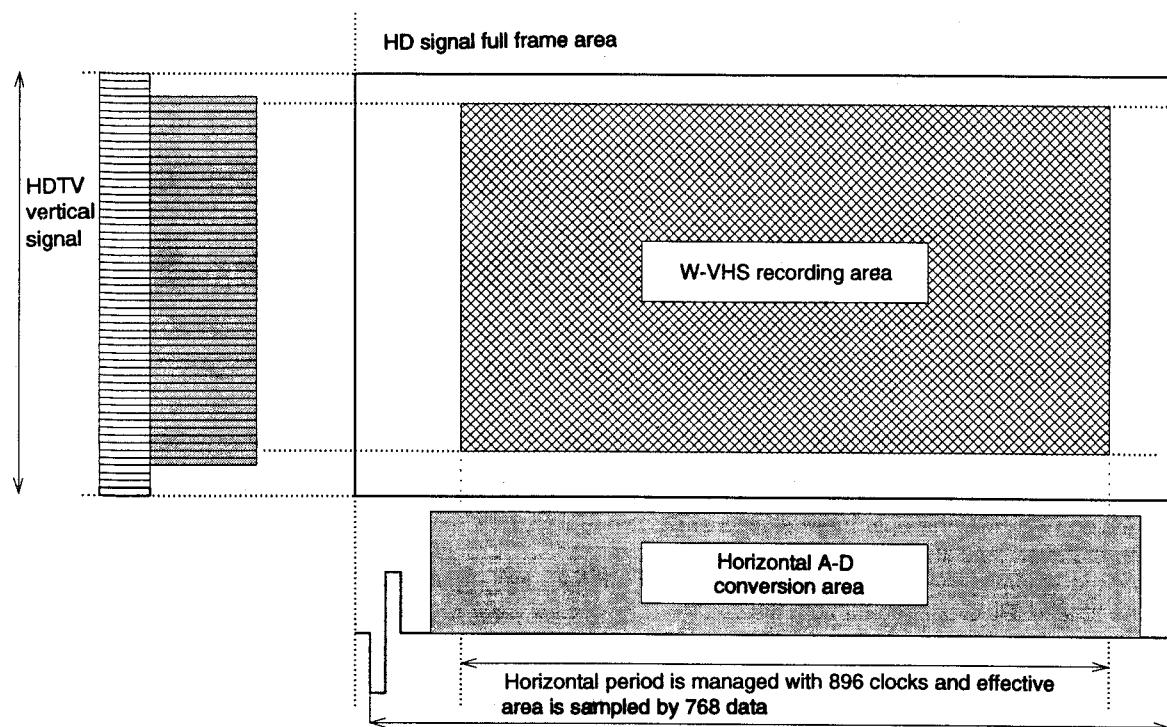


Figure 7-4-4 Horizontal A-D Conversion Area

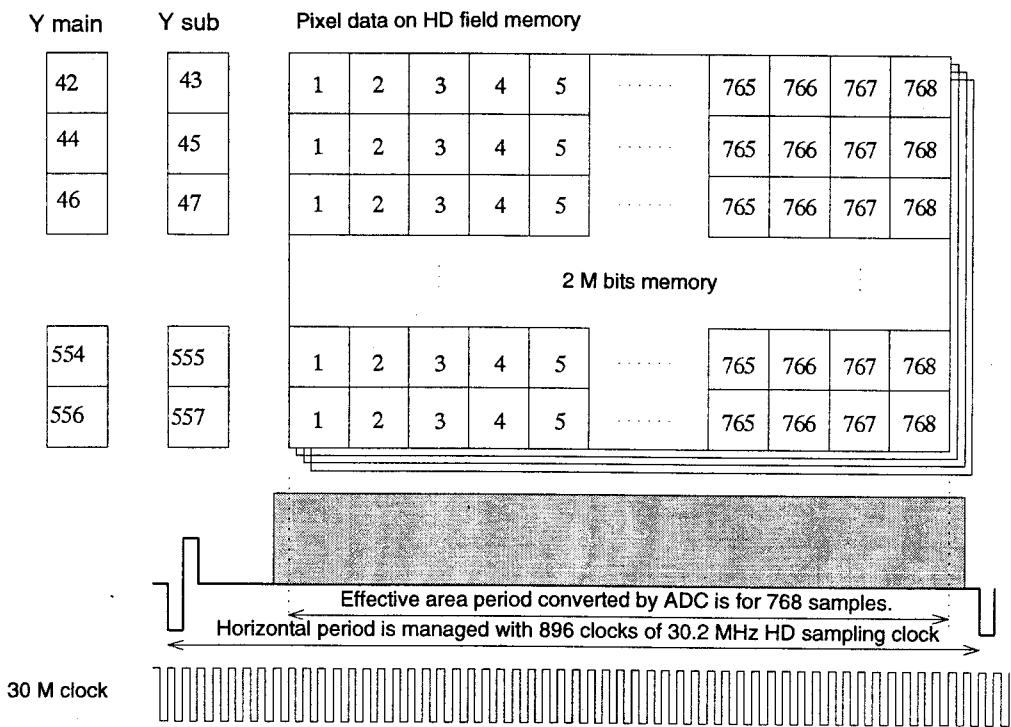


Figure 7-4-5 768 Sample Data Conversion

2. HDC time axis conversion

The HD signals sampled in the ADC circuit at 30.24 MHz are read out from memory at 14.3 MHz. This expands the time axis to be the same as for NTSC.

For the vertical HD signals, the even line (Y main) and odd line (Y sub) signals are made using field memory for 562.5 lines and each line is managed with 768 samples. The Y signal for the horizontal HD signal is read out at 14.3 MHz via the field memory. This expands the time axis and converts the 768 samples to the NTSC time axis. For the color signals, the 768 sample data items are processed with the vertical LPF circuit.

1) Vertical LTF circuit

The color signals processed in line sequence pass through the vertical filter and vertical direction color signal averaging is carried out. The digitized Pr and Pb signals are made into $(n - 1)/4 + n/2 + (n - 1)/4$ composite color signals like those in the basic principles diagram in Figure 7-4-6 by the vertical low pass filter.

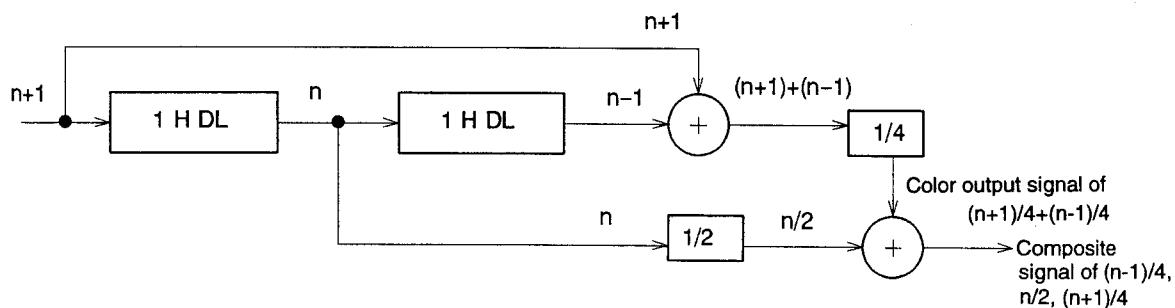


Figure 7-4-6 Vertical LPF Circuit Basic Principles Block Diagram

2) Field memory

The color signals from the vertical low pass filter are written into memory as one 8-bit signal in memory comprising the Pr signal, the Pb signal and no signal in the clock order. Figure 7-4-7 shows the layout of the color signals in memory.

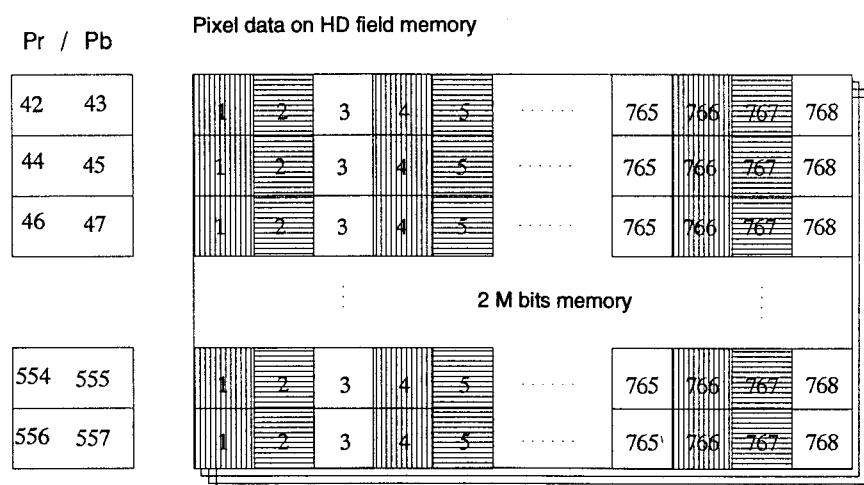


Figure 7-4-7 Layout of Color Signals in Memory

7.4.3 Temporal emphasis

Temporal emphasis applies the idea of emphasis by extending it to the time axis direction. This technology uses digital signal processing to apply emphasis that works from changes from the video signal in the previous frame to each pixel in the entire frame.

In conventional playback time axis direction noise reduction technology, there is a tendency for unnaturalness to occur for movement and various technological steps are taken to suppress this side effect, but this problem as well is solved at the level of basic principle with temporal emphasis through the complementary recording and playback operations. Figure 7-4-8 shows the general concepts of temporal emphasis. Temporal emphasis is basically a travelling type of noise reduction (NR) that utilizes the picture frame interrelationship. Since this noise reduction can suppress the low frequency noise and contour noise, which are most easily perceived, it provides a wonderful effect when combined with emphasis suppressing horizontal and vertical hi-frequency noise.

However, in frame interrelationship noise reduction for playback only, there is the disadvantage of after images in moving sections.

As Figure 7-4-8 shows, this form of temporal emphasis makes a reverse after image ahead of time for moving sections, records it, and uses it to cancel the after image that should be generated by playback noise reduction processing.

Since this technique does not have the disadvantage mentioned above for moving sections, it is possible to apply noise reduction a few dB more without any deterioration of the picture.

7.4.4 Vertical emphasis

There are many technologies for reducing noise. Among these, the simplest and most straightforward is to treat small signals as noise and remove them, but this technique removes detail from video signals and can not be considered a superior method.

To reduce just the noise without that type of side effect is the thinking behind emphasis, which records accurately pre-emphasizing just the detailed signal component lost in recording and playback.

In this concept, since recording and playback work as a complementary pair, just the noise is reduced without losing the detailed signals. In the past with VHS and S-VHS, the emphasis techniques of main emphasis and sub emphasis have been used as horizontal direction signal processing. Vertical emphasis applies this technology in the vertical direction. The introduction of vertical emphasis can be said to have made it possible to reduce noise without losing the signal details.

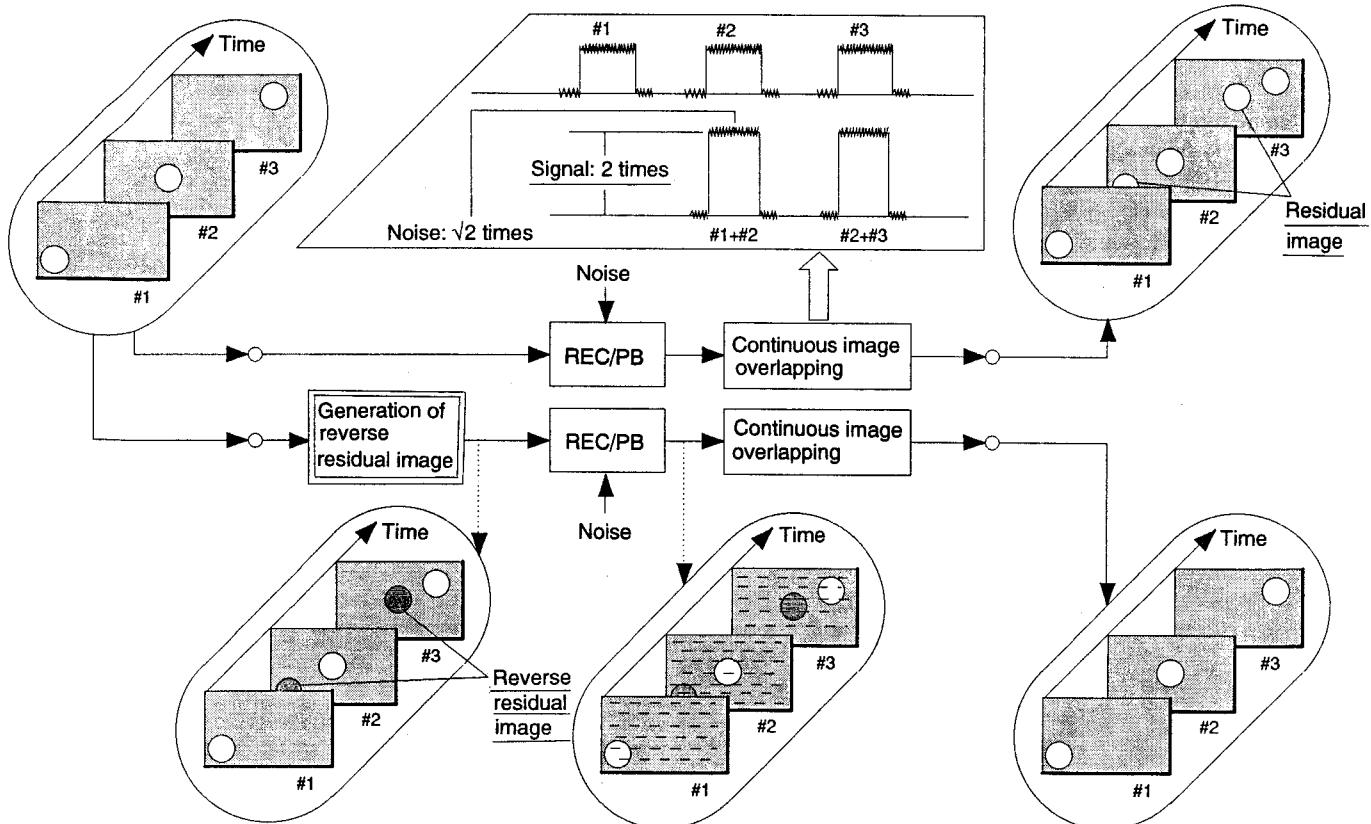


Figure 7-4-8 Conceptual Diagram for Temporal Emphasis

7.4.5 Time compression integration (TCI)

Current TV signals broadcast the brightness signal that indicates the brightness and the composite signal that conveys the overlaid color signals. In conventional home VCRs, the brightness signals and color signals require different signal processing, so those signals are temporarily separated, but finally the frequency modulated (FM) brightness signal and the color signals frequency modulated to the low region are recorded overlaid. Of course, the frequencies used are different, but the conventional technique has many technical issues that must be taken into consideration, for example the cross-signal interference that arises from recording the brightness signal and the color signals at the same time. On the other hand, hi-vision is a component technique in which the broadcast itself separately sends the brightness signal and the color difference signals expressing the color. The time compression integration (TCI) technique was developed to utilize the advantages of the component technique.

With TCI, the brightness signal and the color difference signals expressing the color are compressed on the time axis, rearranged, then recorded on the tape. In other words, the brightness signal and the color signals are not recorded simultaneously and are recorded on different positions on the tape. Fundamentally, this technique has extremely minimal cross-signal interference.

1. Concepts of TCI signal processing

Figure 7-4-9 is a conceptual diagram for time axis expansion/compression 2-division TCI conversion. Figure 7-4-10 shows the TCI signal waveform. The lines have the horizontal sync, clamp reference, line sequence color signals, and brightness signals compressed on the time axis and multiplexed. Therefore, mutual interference does not occur between the brightness signals and the color signals. The TCI signal band is about 8 MHz.

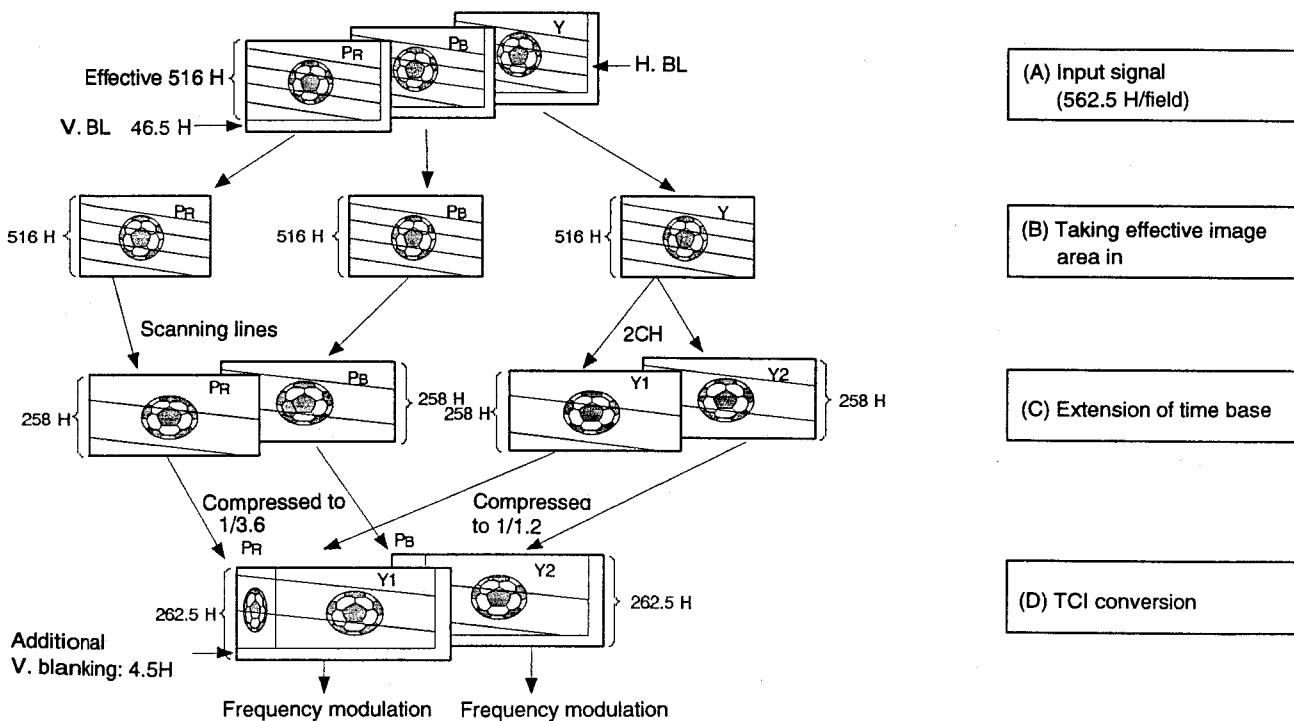


Figure 7-4-10 Time Axis Expansion/Compression 2-Division TCI Conversion

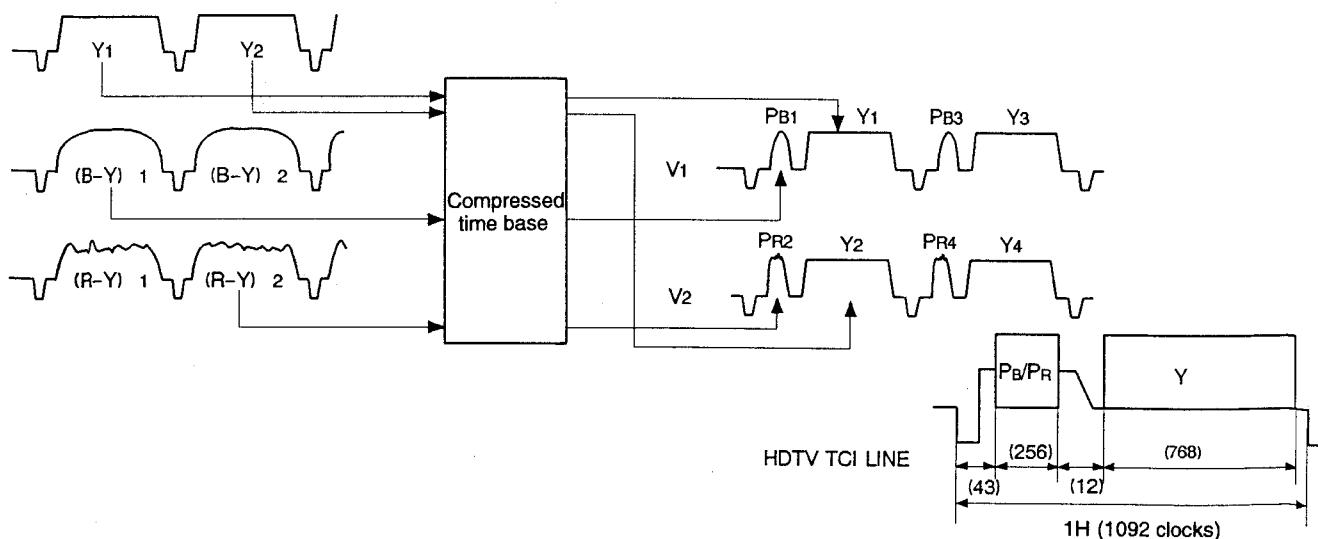


Figure 7-4-9 TCI Signal Waveform (time axis compressed multiplexed component signals)

2. Relationship between TCI signal processing and synchronization

Figure 7-4-11 is a block diagram for HD recording mode sync processing and clock pulses.

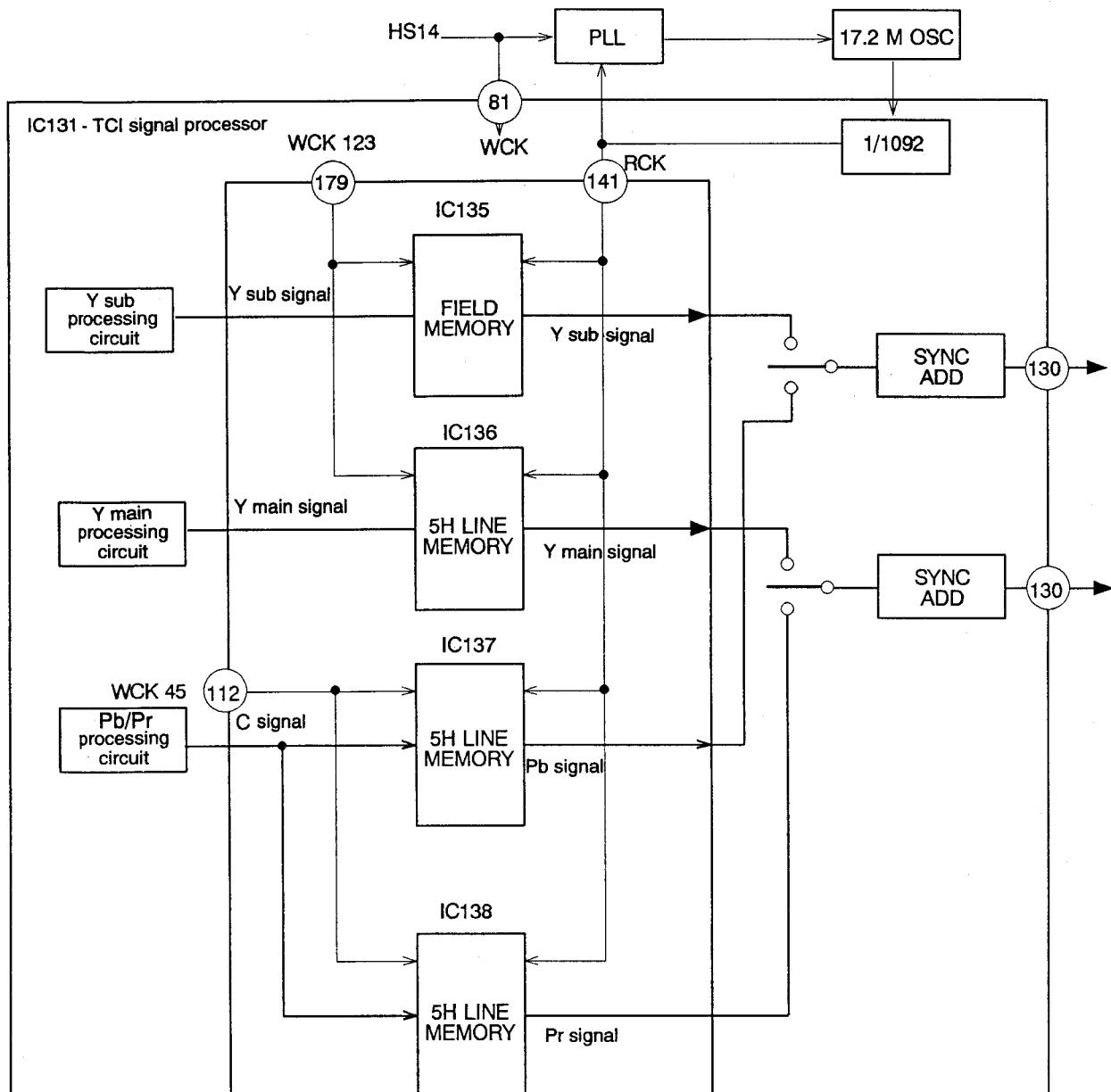


Figure 7-4-11 TCI Signal Processing Block

1) TCI compression processing

In the TCI signal processing circuit, compression processing is carried out for each signal in order to insert the color difference signals into the Y main signal and the Y sub signal corresponding to the recording tracks and the color signals are added to each signal.

For HD recording mode, the compression processing writes 768 samples of the Y signal into line memory at 14.3 MHz and reads it out at 17.2 MHz to compress the output signal to 44.5 μ s. Also, for the C signal, of the 768 samples, the 256 samples each for the Pb and Pr signals are written at 14.3 MHz and read out at 17.2 MHz, the same as for the Y signal. This produces a Pr/Pb signal of approximately 14.85 μ s.

The Y signal (768 samples) written with the 14.3 MHz clock and the C signals (256 samples) are read out with the 17.2 MHz clock and compressed. This combines the Y signal and the C signal as the TCI signal.

The Y main signal combines the even line Y signal (768 samples) and the Pr signal (256 samples). The Y sub signal combines the odd line Y signal (768 samples) and the Pb signal (256 samples).

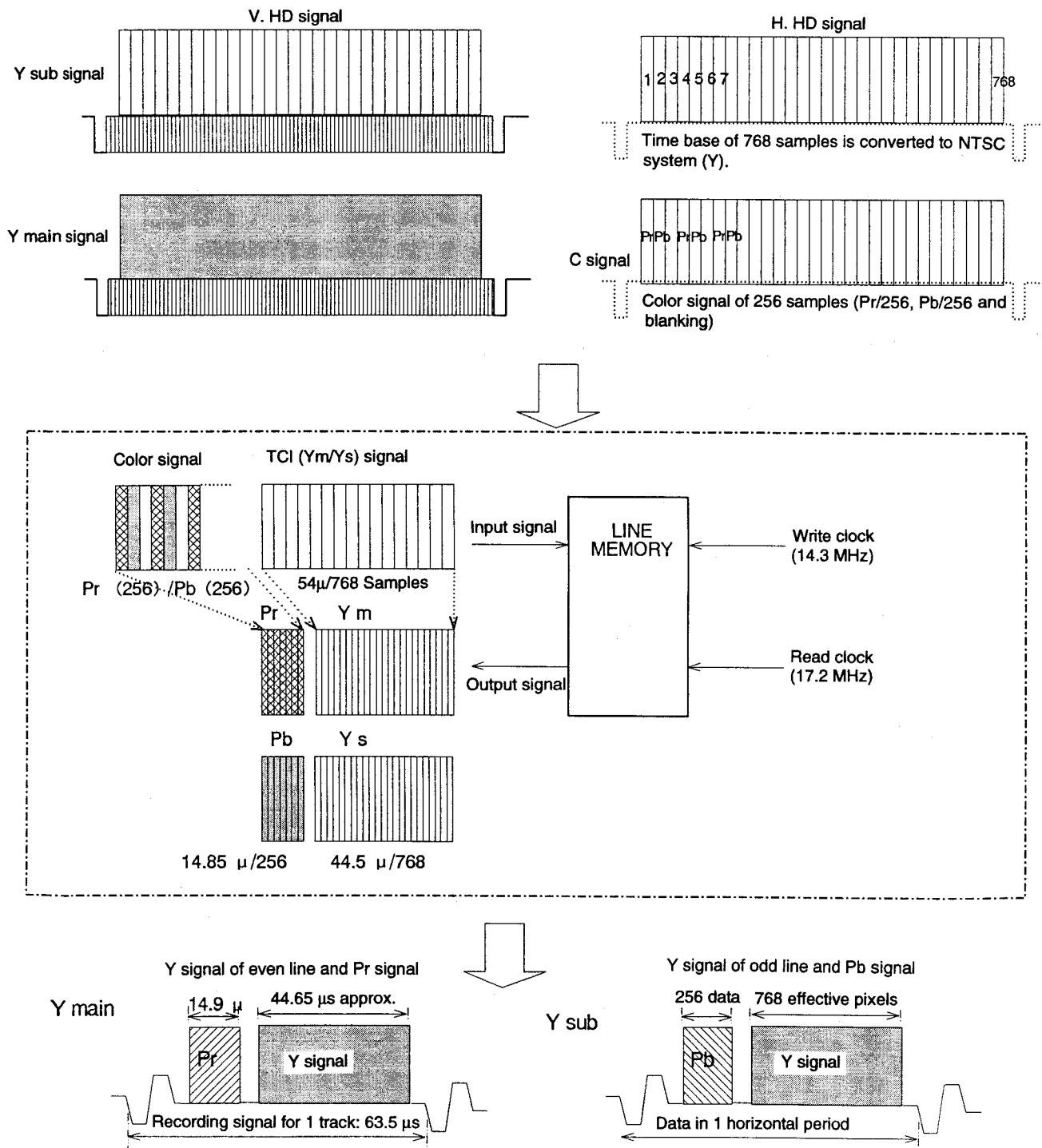


Figure 7-4-12 TCI Compression Processing

2) Relationship between TCI signals and clock

The TCI signal manages 1H with 1092 clock pulses with the contents as shown in Figure 7-4-13: sync 28 clock pulses, clamp porch 15 clock pulses, C signal 256 clock pulses, Y signal 768 clock pulses, and back porch 13 clock pulses.

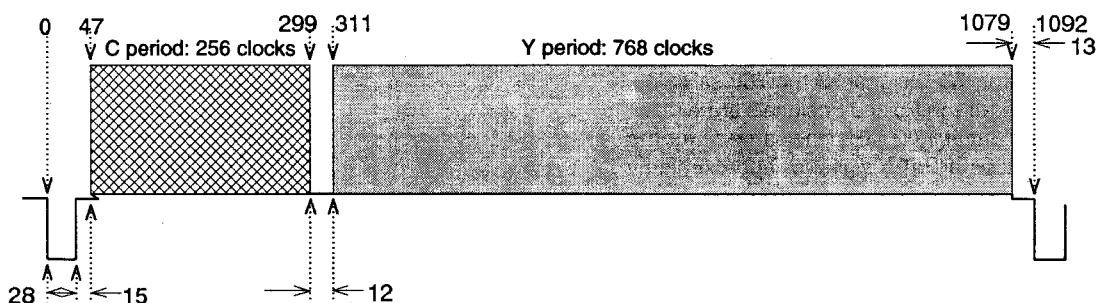


Figure 7-4-13 Relationship between TCI Signals and Clock

3. Added vertical blanking signal

When the HD signals are time compression integrated (TCI), vertical blanking is added to make a 525-line (262.5x2) pseudo-NTSC signal.

Figure 7-4-14, Figure 7-4-15, and Figure 7-4-16 show the added blanking signal configuration and waveform.

The data is 128 bits, of which 56 bits are the video format and other such data and 32 bits are time codes. CAL is a calibration brightness signal for such functions as matching levels between channels. BL is a switching point blanking signal and VS is a vertical sync signal that makes possible field discrimination.

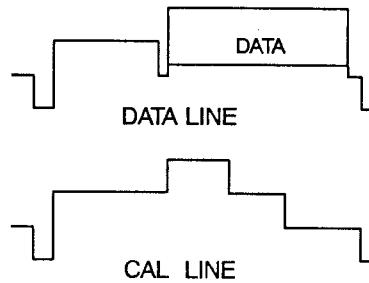
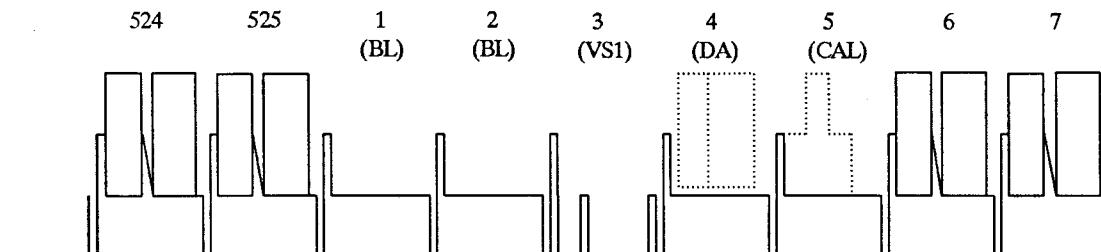


Figure 7-4-14 Added Vertical Blanking Signal

TCI signal line No.



HD signal line No.

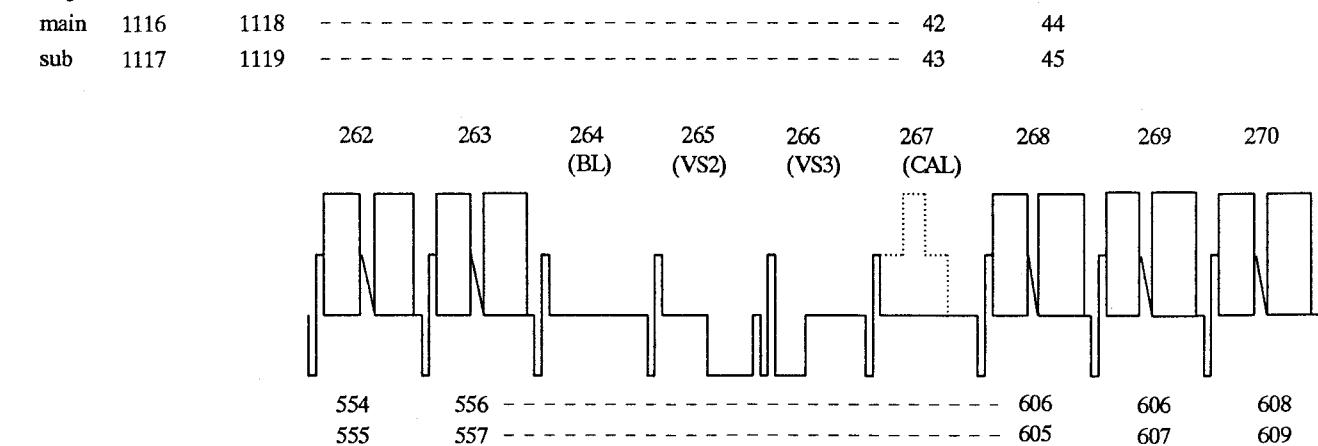


Figure 7-4-15 HD TCI Signal Layout

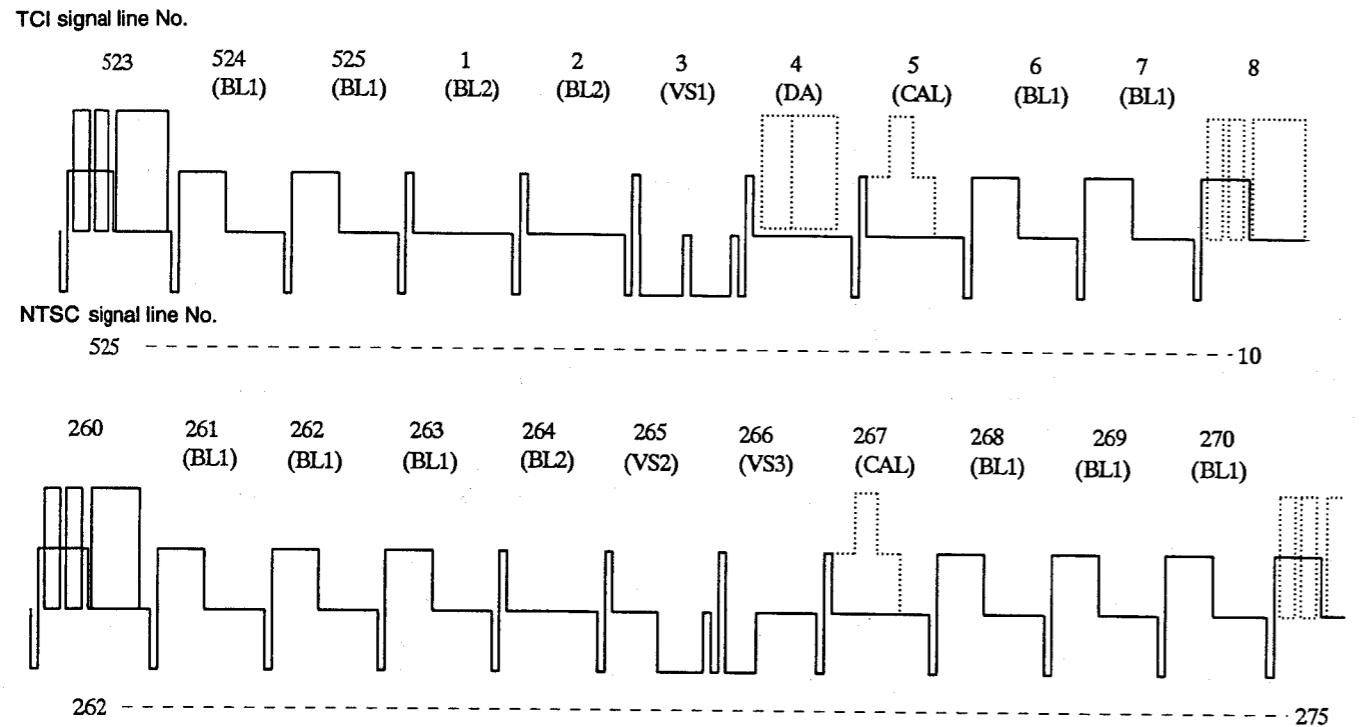


Figure 7-4-16 NTSC TCI Signal Layout

7.4.6 2-track parallel recording

Compared to current TV signals, hi-vision signals have about 4x to 5x the information, so it is difficult to assure the necessary technological assets by just developing single elements, such as introducing high-performance tape for example. For W-VHS HD mode, in order to secure this enormous amount of data, a major technique was developed and established: hi-vision signals are divided in 2 with digital processing and recorded and played back with two video signal tracks at a time. This 2-track parallel recording combines the signals from the two tracks divided during playback to recompose the original hi-vision signals.

1. 2-track parallel (HD mode) recording technique

2-track parallel recording divides the effective lines of the hi-vision signals over 2 channels and records the signals for one field on two tracks at the same time. The 58 µm track width equivalent to current VHS standard mode is divided in three, with two parts used for video signals and one part used for audio signals.

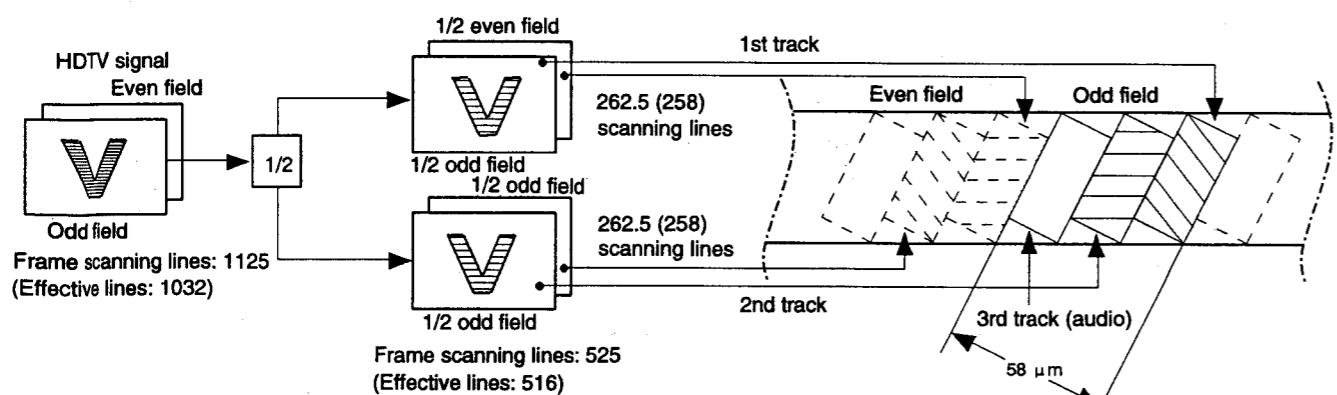


Figure 7-4-17 2-Track Parallel Recording (HD Mode)

7.4.7 Relationship between HD circuit sync signals and clocks

Relation between sync signal and clock in the HD circuit is shown in the figure below.

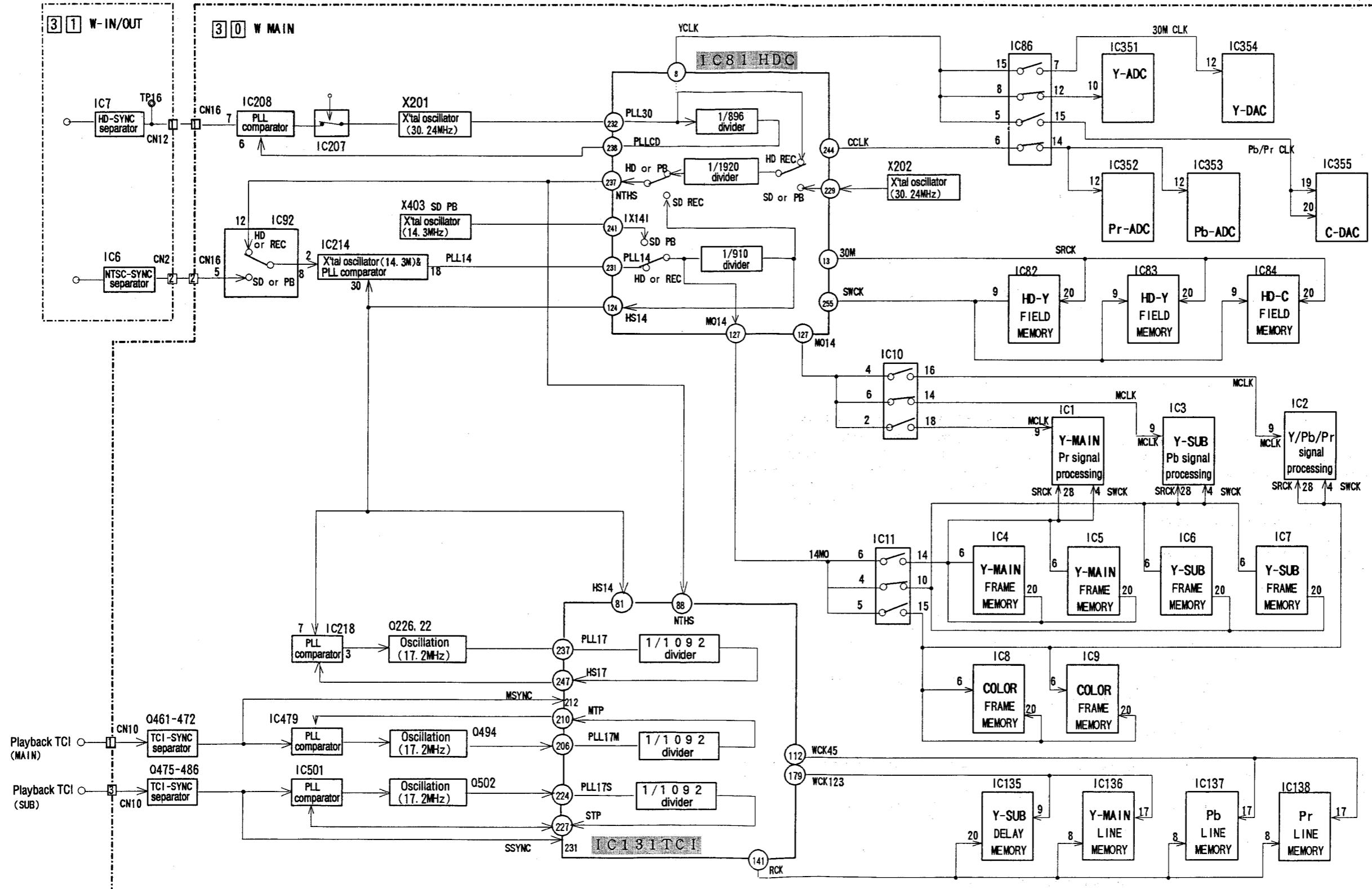


Table 7-4-18 Relationship between HD Circuit Sync Signal and Clock

7.4.8 SD mode recording system

The figure is a block diagram for SD mode signal processing.

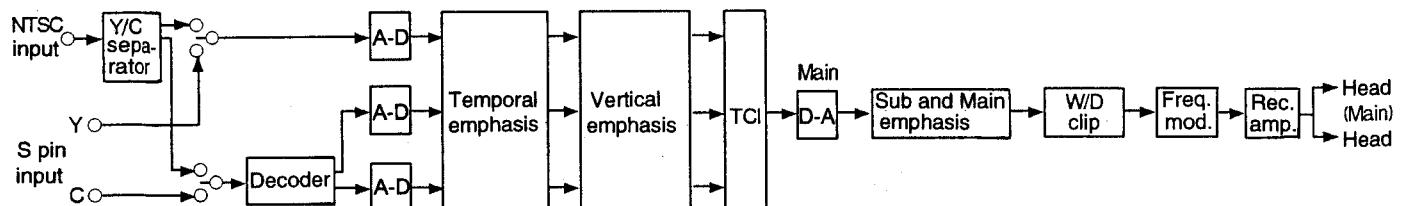


Figure 7-4-19 SD Mode Signal Processing Block Diagram

For composite signal input, Y/C separation is carried out by the Y/C separation circuit and the brightness signal is A-D converted as is. The color signals are converted to R-Y and B-Y color difference signals by the decoder circuit and A-D converted.

Then, the vertical emphasis and temporal emphasis noise reduction processing is carried out, then the Y, B-Y, and R-Y signals are time compression integrated to make the NTSC TCI signals shown below.

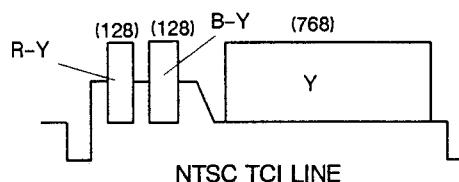
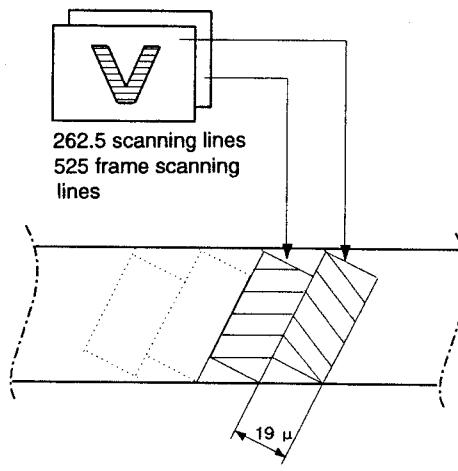


Figure 7-4-20 NTSC TCI Signal Waveform

After the NTSC TCI signal is D-A converted, then it is passed through the sub/main emphasis and W/D clip circuit, frequency modulated, and recorded by two W-VHS (main) heads (1 field/1 track).

Also, the audio is deep-layer recorded onto the same track as the video.



Audio signal is recorded on the same track but in the deeper layer.

Figure 7-4-21 SD Mode Recording Technique

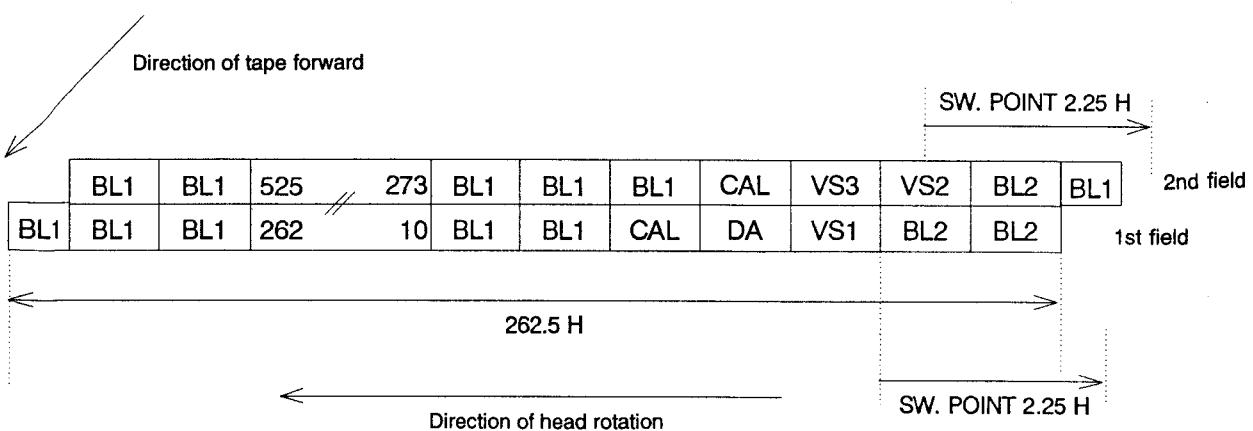


Figure 7-4-22 SD Mode Tape Pattern

7.4.9 SDII mode recording system

The SDII mode processing block has two of the SD mode recording blocks, but uses the track pattern below in order to record two channels at a time.

The program for one channel is recorded by the two main heads and the program for the other channel is recorded by the two sub heads (1 field/2 tracks).

Also, the audio is FM recorded onto a separate track in the same manner as for HD mode. However, one channel is recorded as the left audio and the other channel is recorded as the right audio. Below is the SDII mode tape pattern.

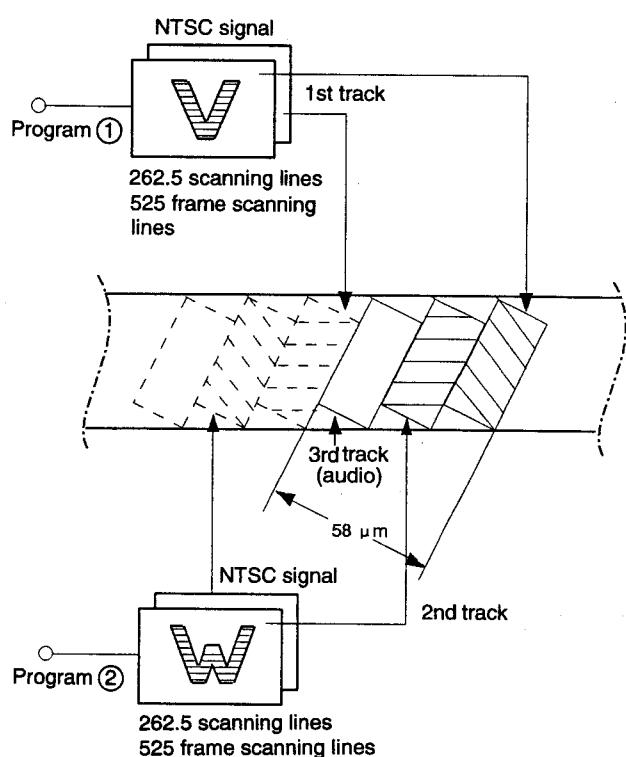


Figure 7-4-23 SDII Mode Recording

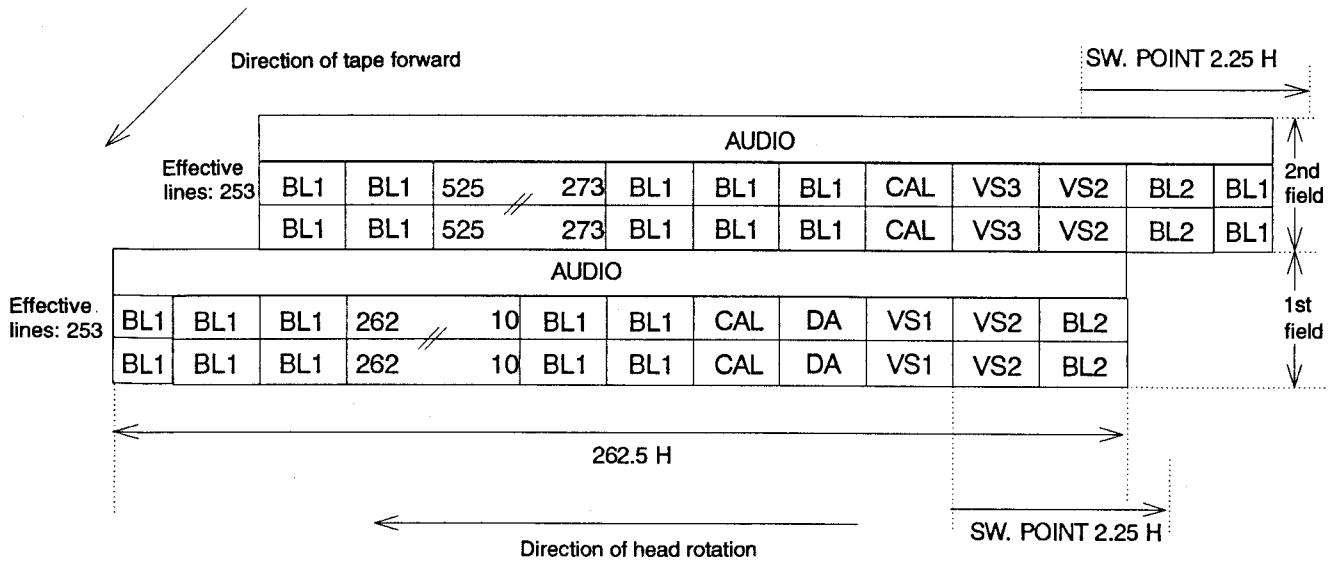


Figure 7-4-24 SD II Mode Tape Pattern

7.4.10 W-Main Wiring Diagram Abbreviations Table

ADDREVIATION	TERM
ADVV	ADVANCED V
AGC	AUTOMATIC GAIN CONTROL
APT	APERTURE
BCP	BLUE CLAMP PULSE
BSVR	BLUE SVP RECORDING
EDP	EDITTING POINT
ENVM	MAIN ENVELOPE
ENVS	SUB ENVELOPE
HS14	HORIZONTAL SYNC 14MHz CLOCK
HS17	HORIZONTAL SYNC 17MHz CLOCK
IEM	INPUT ENABLE MAIN
IGFLGA	CPU terminal name
IMODE	CPU terminal name
MCP	MAIN CLAMP PULSE
MDFE	MAIN DRUM FF EDGE
MDFF	MAIN DRUM FF
MDO	MAIN DROP OUT
MGP	MAIN GATE PULSE
MHDT	MAIN HORIZONTAL DETECT
MODA	MAIN DROP OUT ADVANCED
MPX	MULTIPLEX
MRST	MASTER RESET
MSEARCH	METAL SEARCH
MSHP	MAIN SAMPLE HOLD PULSE
MSVR	MAIN SVP RECORDING
MTP	MAIN TRAPEZOID PULSE
NTHS	NTSC HORIZONTAL SYNC
OE	ODD EVEN
PBOE	PLAYBACK ODD EVEN
RCP	RED CLAMP PULSE
REB	READ ENABLE BLUE
REM	READ ENABLE MAIN
RER	READ ENABLE RED
RSTM	RESET MAIN
RSTWRH	RESET WRITE READ HIGH
RSVR	RED SVP RECORDING

7.5 DIGITAL TBC CIRCUIT

7.5.1 HD digital time base corrector (TBC)

In HD W-VHS mode, the hi-vision signals are divided over two video tracks and recorded with 2-track parallel recording to realize high-density recording.

By realizing this 2-track parallel recording, the HD digital TBC corrects the inter-track jitter due to the difference in time axes that is a problem in play back and provides stable images restored to the original signal.

7.5.2 SD digital TBC

In SD mode, the video signal is recorded onto one track. If the signals were left like this, tiny differences in the relative head speeds for recording and playback would cause jitter. In order to realize high-grade recording and playback, SD mode also uses an SD digital TBC to prevent the time axis fluctuation that is the cause of image jitter.

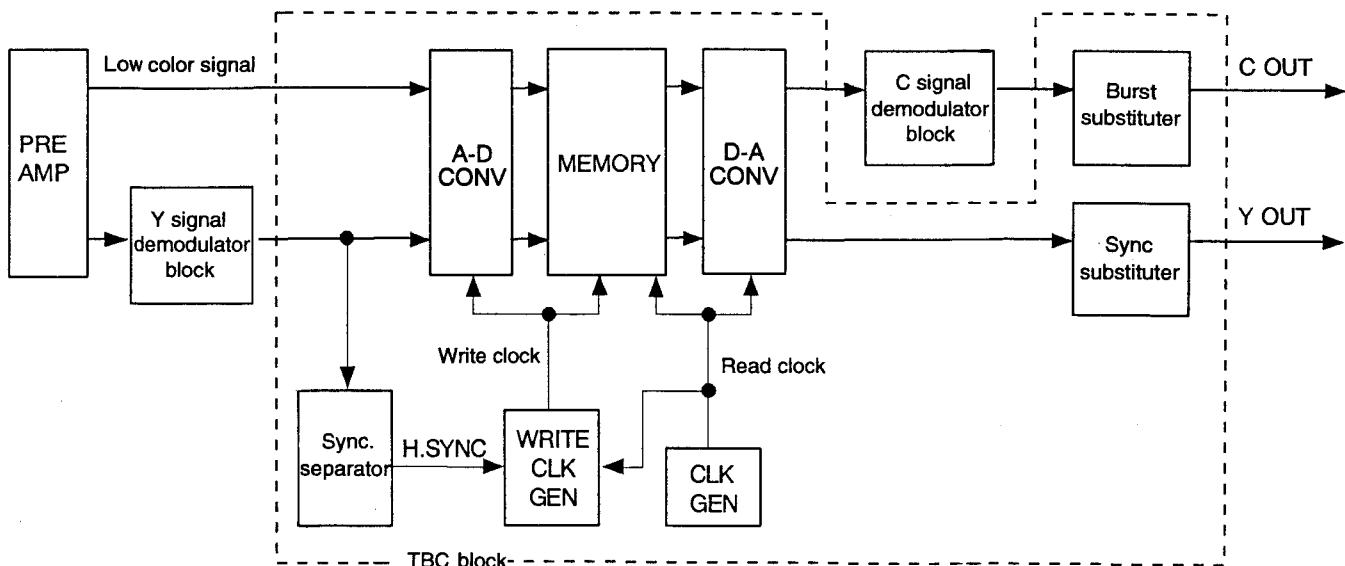


Figure 7-5-1 TBC Circuit Basic Configuration Block Diagram

7.5.3 Digital TBC

The TBC eliminates screen distortion by correcting the scanning line time axis fluctuation (jitter) caused by tape travel and vibration and also provides images that are always stable, but whereas ordinary TBCs only correct the vertical line fluctuation, the newly developed 629 digital TBC corrects the time axis for color signals converted to the low region (629 kHz) and for the brightness signals. In this way, it also reduces the color phase changes that are a secondary effect of jitter and realizes stable color reproduction. Compared to a conventional TBC, this TBC also provides major benefit for higher region jitter.

1. Basic circuit configuration

Figure 7-5-1 is a block diagram of the basic configuration of the TBC circuit used in this machine.

2. TBC circuit

The TBC circuit block diagram in Figure 7-5-2 will be useful for following this explanation.

The TBC circuit in this machine primarily composes six circuit blocks (sync separation, A-D conversion, memory, D-A conversion, clock generation, and burst/sync separation).

The low region color signals output from the pre-amp are fed directly to the A-D converter, but the brightness signals are demodulated, then fed to the A-D converter and the sync separation circuits. The signals fed to the sync separation circuit have the H sync taken out to be used as a reference signal for the clock generation circuit.

The write clock output from the clock generation circuit is synchronized with H. Sync to track jitter in the playback signal, so brightness signals sampled with this clock have the jitter component eliminated at the stage of writing into memory. When these signals are read out from memory, the clock created by the crystal is used as the clock, so it is possible to obtain brightness signals with no jitter.

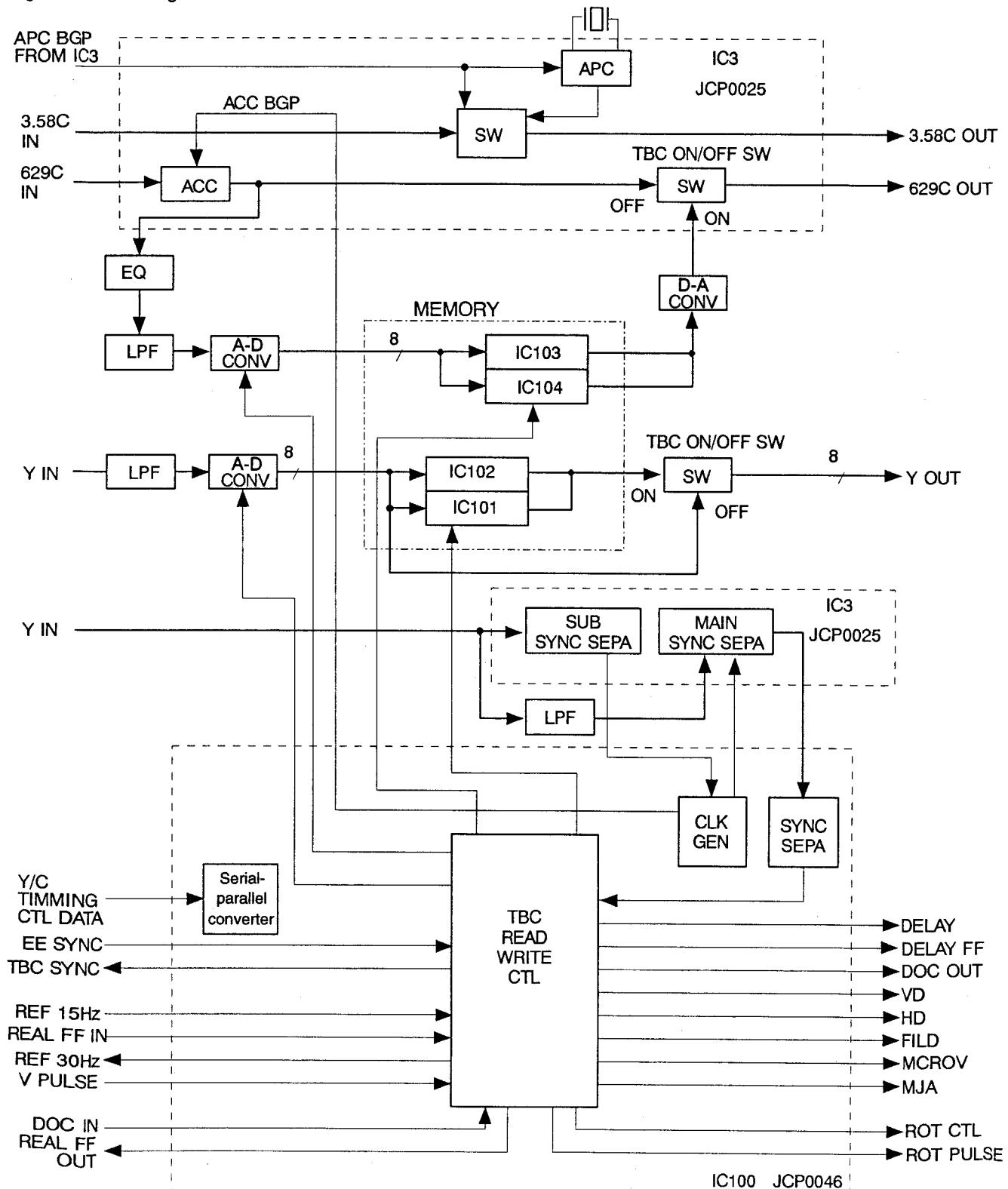


Figure 7-5-2 TBC circuit

3. Features of the TBC circuit

Here are the main features of the TBC circuit used in this machine.

- ① Line APC jitter correction that realizes high-speed response to jitter
- ② TBC correction for low region color signals that corrects the color phase fluctuation in color signals due to jitter
- ③ Sample hold type sync separation and digital sync AFC circuit that can provide stable jitter detection even for signals with deteriorated S/N ratios
- ④ Corrects the color phase displacement and skew generated during special playback and at switching points.
- ⑤ The system is simplified, so it reduces the memory length to 2H each for Y and C.

Here is how the circuit realizes each of these features.

1) Line APC jitter correction

Look at Figure 7-5-3.

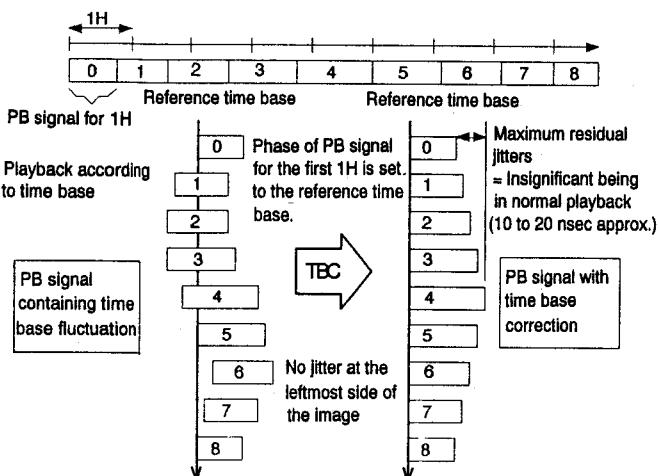


Figure 7-5-3 TBC Circuit Jitter Correction

In this system, when the playback signals are written into memory, the line memory write address is reset with the sync timing, and the data is written with the head of the horizontal period is matched with the head of the line memory to eliminate jitter.

As a write clock generation mechanism the AFC technique using a VCO such as a PLL is not used, but rather a fixed clock generated with a stable crystal is fed to multi-stage delay elements to generate multiple clocks with slightly different phases and from those, the clock whose phase is closest to that of the sync signal is selected. This makes this an APC technique that can instantaneously obtain a clock that tracks jitter. Figure 7-5-4 shows the write clock generation circuit and Figure 7-5-5 shows its operations.

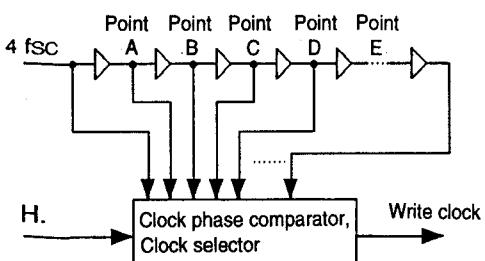


Figure 7-5-4 Write Clock Generation Circuit

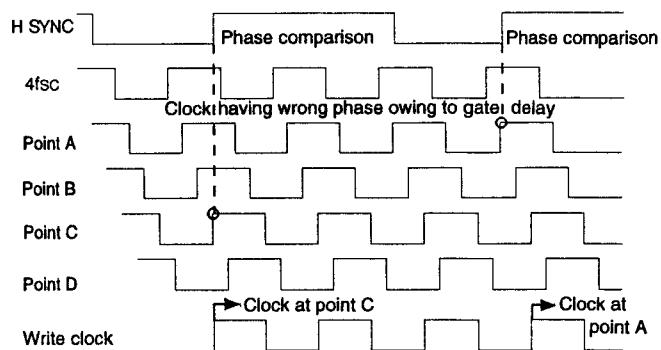


Figure 7-5-5 Write Clock Generation Circuit Operation

Since this technique is a feed forward configuration with no feedback loop, there is no phase delay and jitter can be completely tracked for each line. Therefore, the use of this technique makes it possible to realize a system that has a high-speed response that tracks even skew for switching points and searches, especially head impact error. The line APC technique completely tracks the jitter for each line, but it does not track the velocity error, which is the time axis fluctuation component within each line. At the end of each line, in other words at the right edge of the screen, the residual jitter is at its maximum.

Now if the horizontal sync frequency is f_H , the degree of residual jitter $E(f)$ below $f_H/2$ is $E(f) = 2 \sin \pi (f/f_H)$. Figure 7-5-6 shows this characteristic.

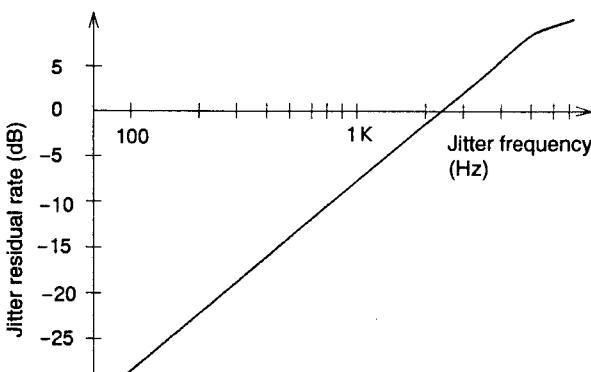


Figure 7-5-6 Degree of Residual Jitter Characteristic

2) Low region color signal TBC correction

Look at Figure 7-5-1. In this system, the advantages of the TBC built into the VCR are utilized. TBCs are placed before and after the color signal demodulation system and the time axis is corrected at the low region color signal stage. This eliminates the phase fluctuation due to jitter. This technique has the advantage of avoiding the picture quality deterioration due to decoding and encoding, which could not be avoided in conventional TBCs that process color signal with color difference signals.

3) Sample hold sync separation + digital sync AFC

For signals with deteriorated S/N ratios and signals with much sag, sync signal breakup, etc., for the sake of sync separation with good precision, the precision signal sync tip and pedestal electropotential are sampled and held and that intermediate electropotential is used as the comparison electropotential. Also, by varying the comparison electropotential with the sync section and the signal section, generation of pseudo-sync by noise is prevented. Figure 7-5-7 shows this.

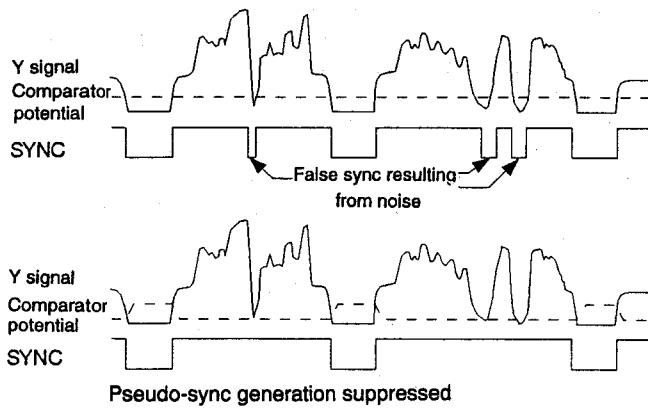


Figure 7-5-7 Sync Separation Operations

However, since the front edge section of the sync signal obtained in this manner has a reduced S/N ratio due to the dark clip and emphasis during recording and playback, the sync signal rear edge section is used as the jitter detection reference.

Also, for signals with many drop outs, the sync AFC is used to prevent malfunctioning due to missing sync. The sync AFC comprises just digital circuits and has no PLL or the like. It forecasts the position of the front edge section of the next sync signal from the rear edge section of the sync signal 1H before and if the edge is not detected, inserts a dummy sync signal at the position where the rear edge should be. In this way, it realizes a high-precision, stable AFC circuit.

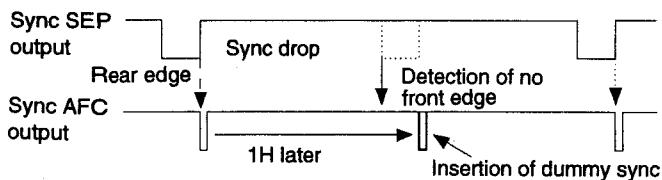
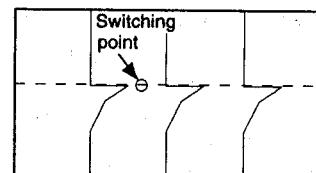


Figure 7-5-8 Sync AFC Operation

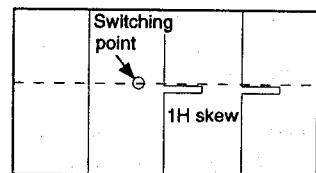
4) Special playback functions

(1) Skew correction

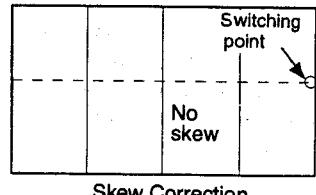
This line APC system can track steep jitter such as skew for each line and can suppress the generation of skew for 1H. The system corrects the skew by controlling to bring the head switch point to the end of the line and hiding the switching point at the right edge of the screen.



Skew at switching point



Correction by TBC



Skew Correction

Figure 7-5-9 Skew Correction

(2) Color phase displacement correction

Just before and after the head switching, the playback signal time axis is disrupted by skew. In particular, for searching, the line being played back can be skipped over, so the color PS rotation phase regularity is lost. That is why in addition to eliminating skew with the line APC technique jitter correction, the time lag due to the main signal TBC delay is utilized to detect the color burst phase digitally and send the rotation error data as an ID to the color signal demodulation system. This corrects the color phase displacement and eliminates the color phase disruption at the switching point.

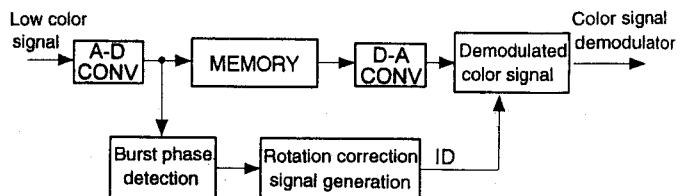


Figure 7-5-10 Color Phase Displacement Correction

5) Memory length

The memory length is 211 for both Y and C. (C has half the sampling rate of Y, so needs just half the stages.) Generally, if the jitter amount exceeds the memory length, the memory writing and reading timing are reversed, so the playback signal line count is increased/decreased by the memory length and V play occurs. Therefore, by holding the increase/decrease in the number of lines to 1H with memory control, by increasing/decreasing the number of replacement sync lines as well, and by matching the video signal V and the replacement sync V, the signals are corrected enough that vertical play is not visible on the screen, and the function as the TBC can be realized with just 211 units of memory.

7.5.4 3-dimensional digital adamal processing

The digital adamal processing using frame memory greatly reduces the fine noise added to the brightness signal during recording and playback. In addition to the signal processing appropriate to the noise frequency and level, movement correction using movement vector detection has been developed.

1. Overview of adamal noise reduction

Conventional noise reduction works by subtracting noise extracted with an HPF and a limiter as in Figure 7-5-11 from the original signal.

However, this method has the disadvantage that for signals with relatively low frequencies of a few hundred kHz, because of HPF output phase displacement, noise remains on the sloped parts of the signal.

To solve this problem, adamal conversion was used. This makes it possible to eliminate the noise on signals with relatively low frequencies of a few hundred kHz, which could not be eliminated with conventional noise reduction, without damaging the original picture.

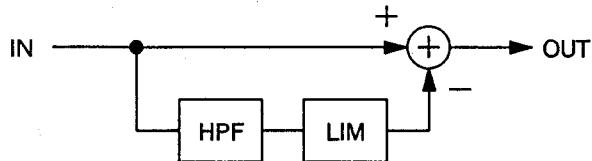


Figure 7-5-11 Conventional Noise Reduction

2. Band division with adamal conversion

In adamal conversion, multiple points on a signal that varies with time (time domain signals) are sampled, each data item is added and subtracted and the frequency spectrum decomposed to obtain a frequency domain signal. Figure 7-5-13 summarizes adamal noise reduction.

In adamal noise reduction, first the original signal is divided into a number of frequency regions with adamal conversion. By applying noise reduction in each region obtained through the frequency region division, the S/N ratio for signal slope sections is improved as in Figure 7-5-12.

Another feature of adamal conversion is that it does not have the phase displacement generated in the HPF of conventional noise reduction circuits.

In other words, adamal noise reduction can eliminate the slope section noise (the noise on sections with gentle slopes [cheek noise] where there is a difference in the brightness, such as human face shadows), which can not be eliminated with conventional noise reduction.

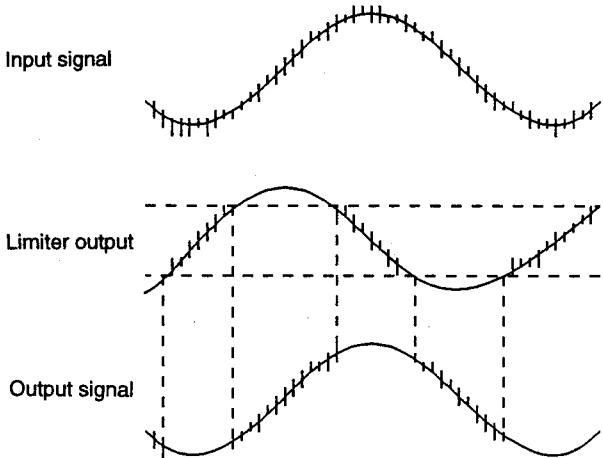


Figure 7-5-12 Problems in Conventional Noise Reduction

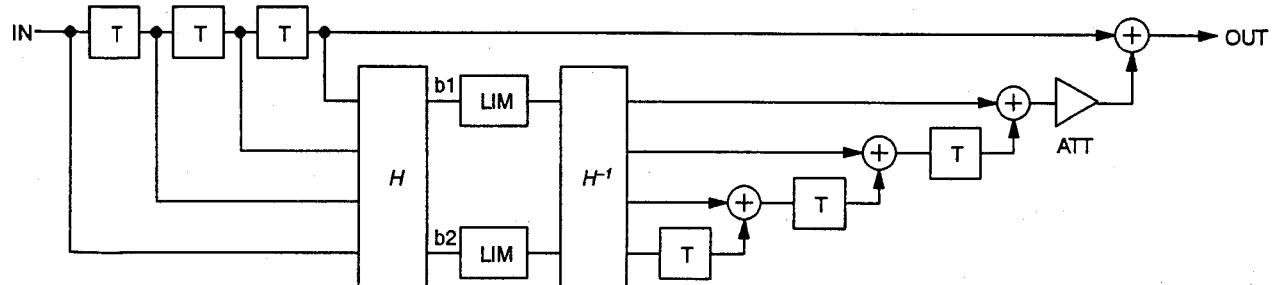


Figure 7-5-13 Basic Block Diagram for Adamal Noise reduction

7.5.5 Digital circuit block diagram by mode

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1. Digital circuit block diagram

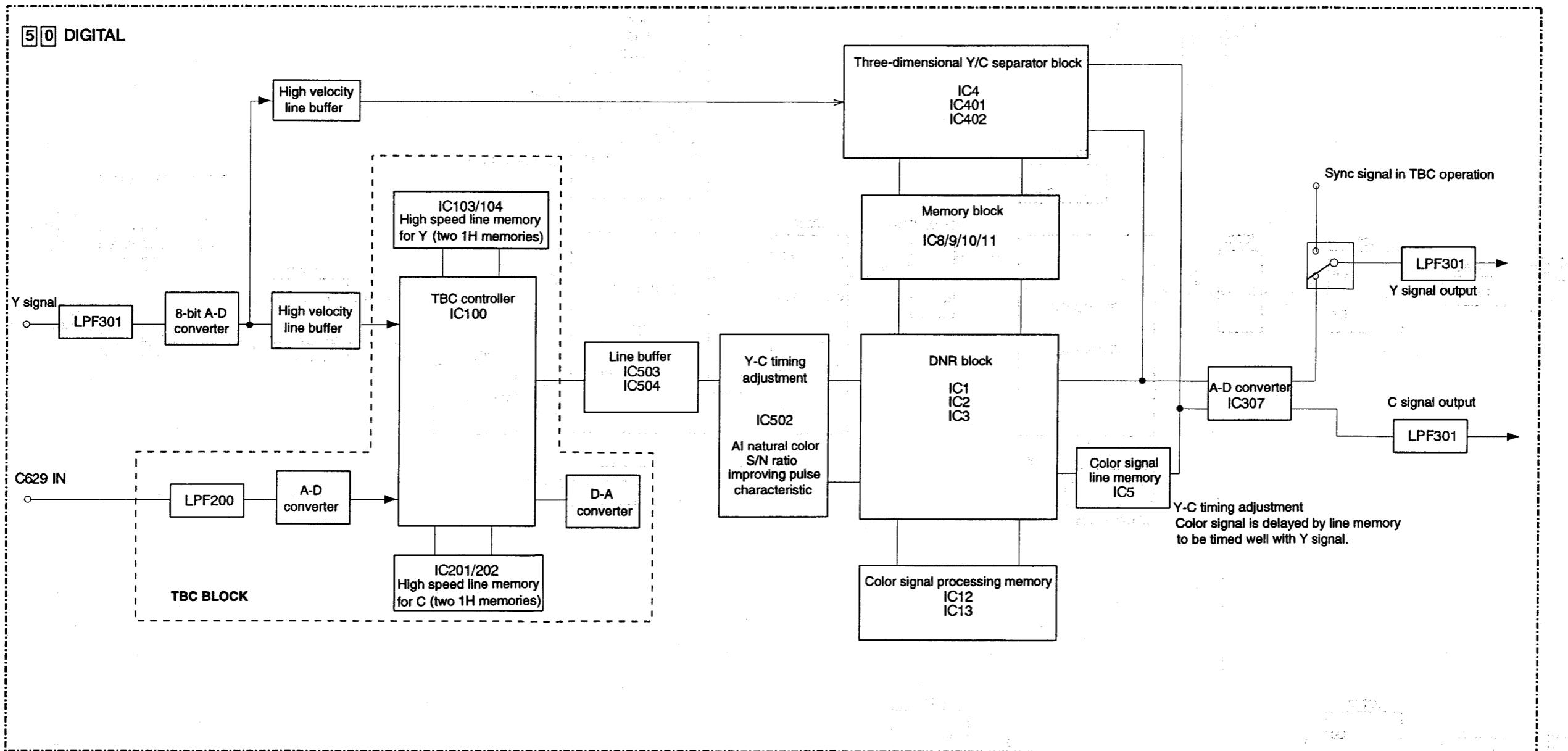


Figure 7-5-14 Digital circuit block diagram

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2. EE mode signal flow

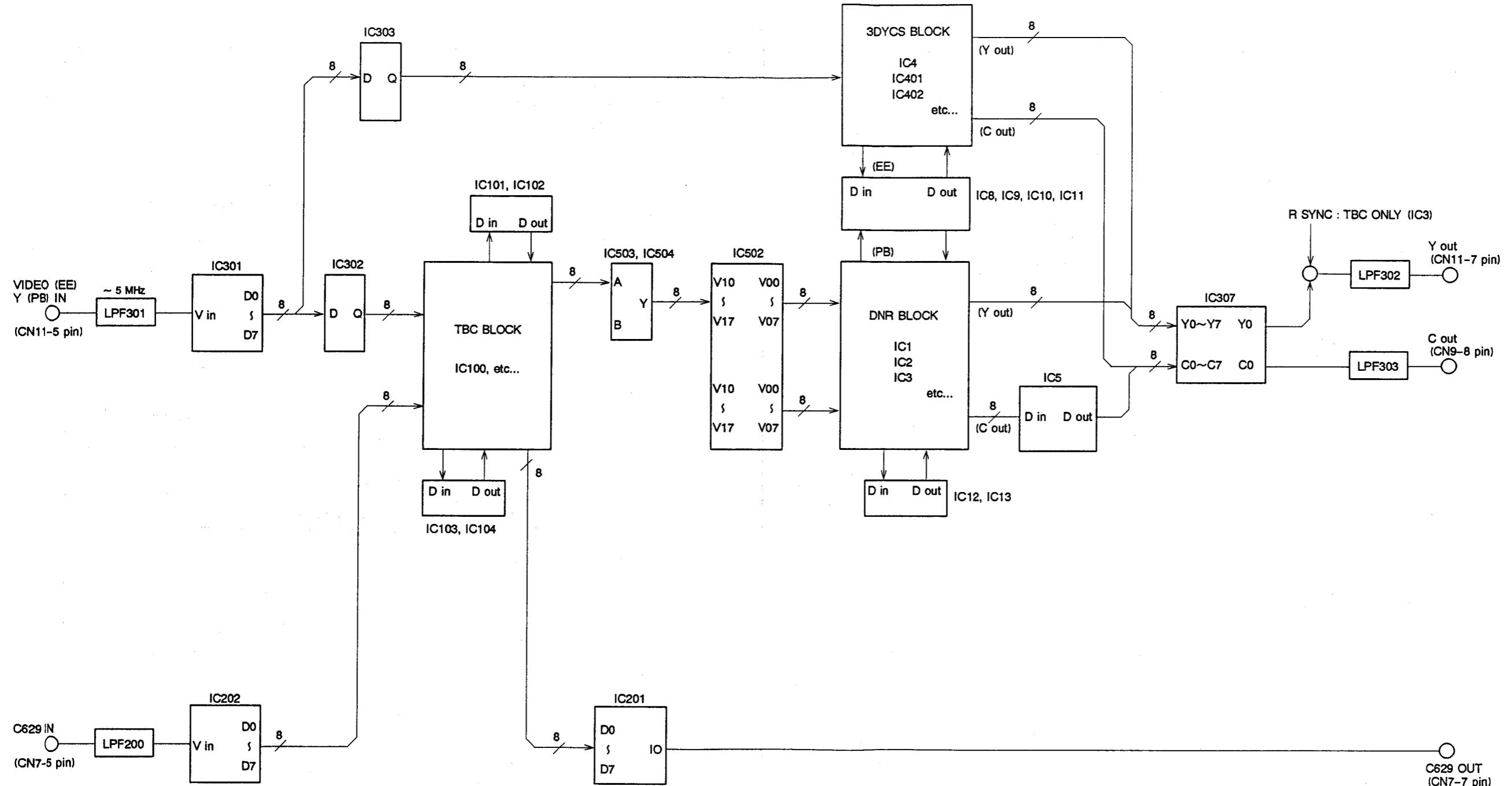


Figure 7-5-15 EE Mode Signal flow

3. EE mode (3-dimensional Y/C separation) clamp pulses and clamp voltage flow

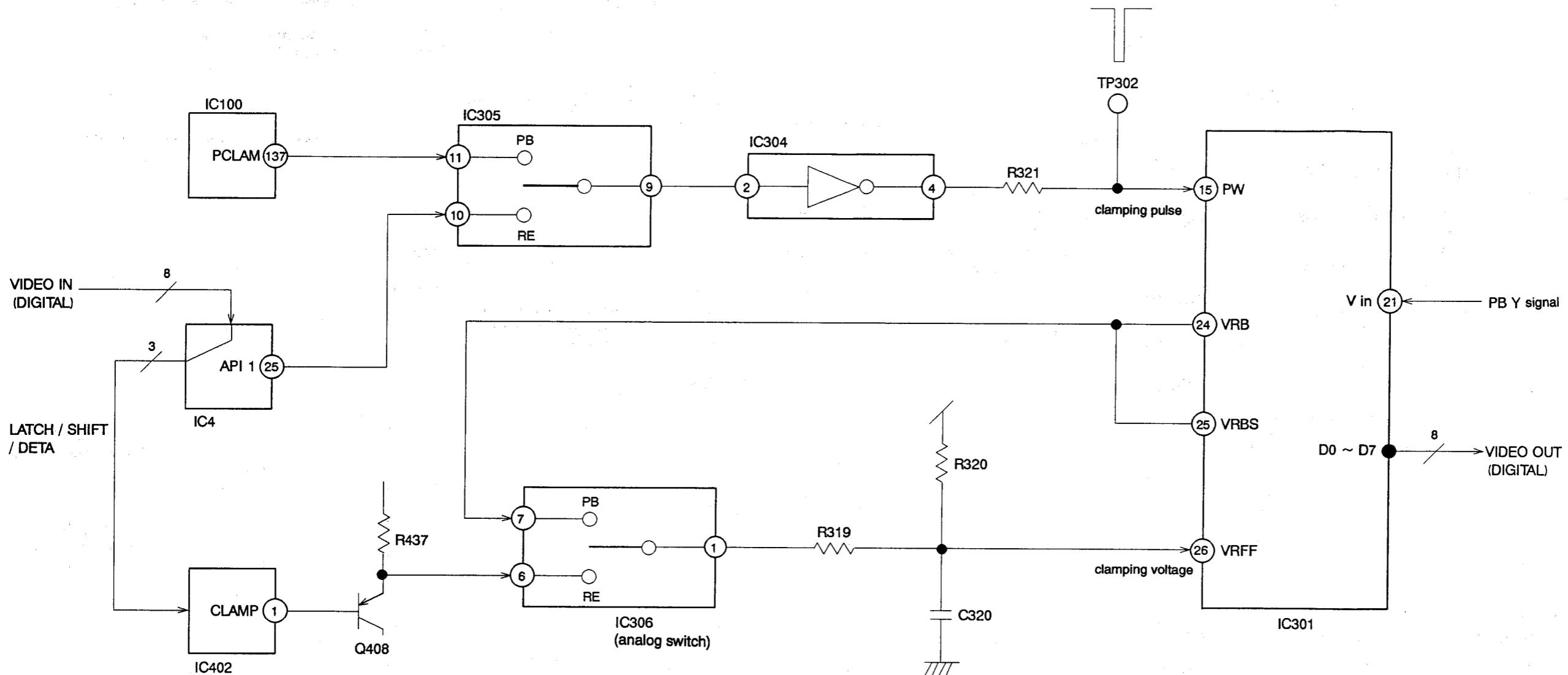


Figure 7-5-16 EE Mode (3-Dimensional Y/C Separation) Clamp Pulses and Clamp Voltage Flow

4. EE mode 3DYCS signal flow

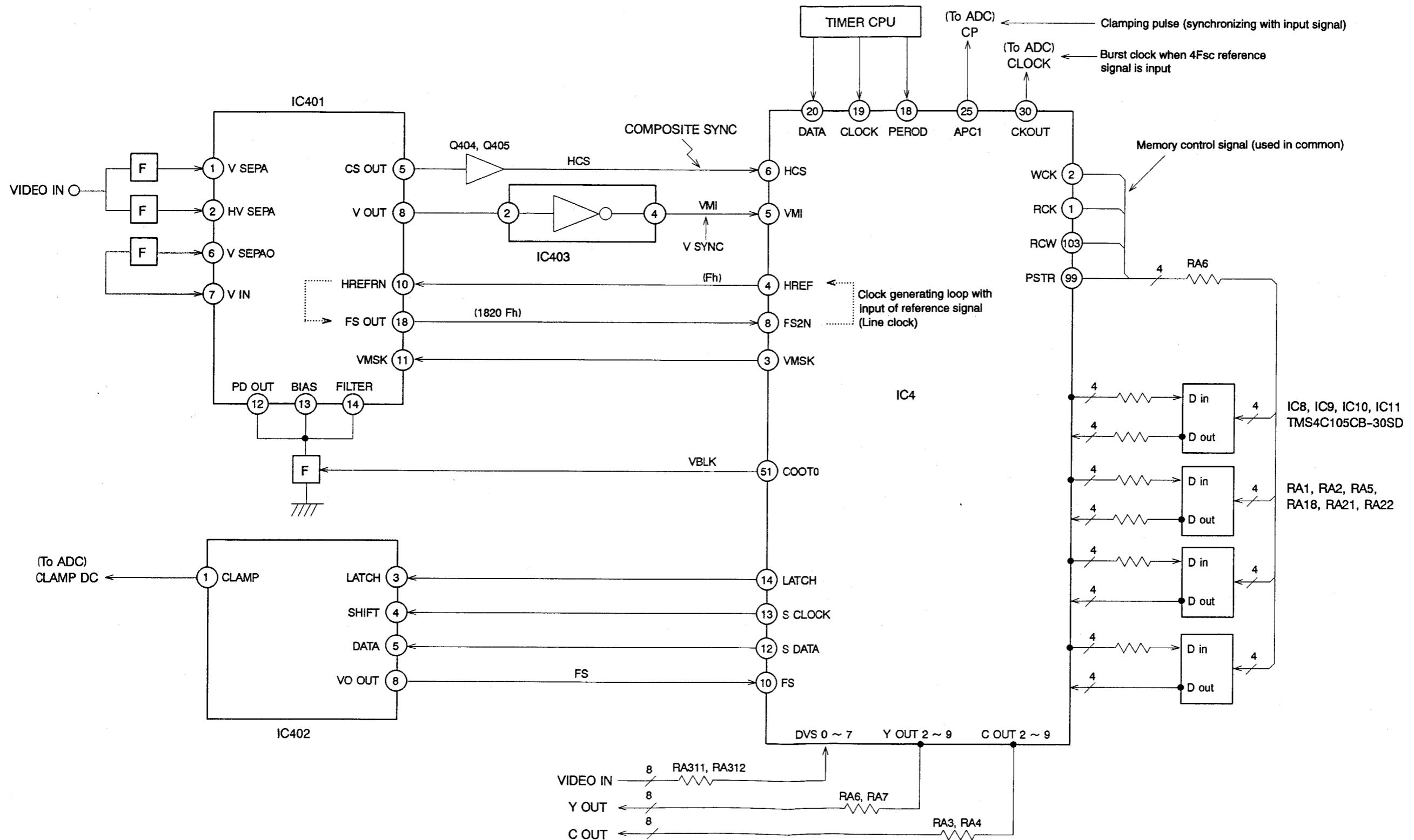


Figure 7-5-17 EE Mode 3DYCS Signal Flow

5. EE mode (3-dimensional Y/C separation) clock flow

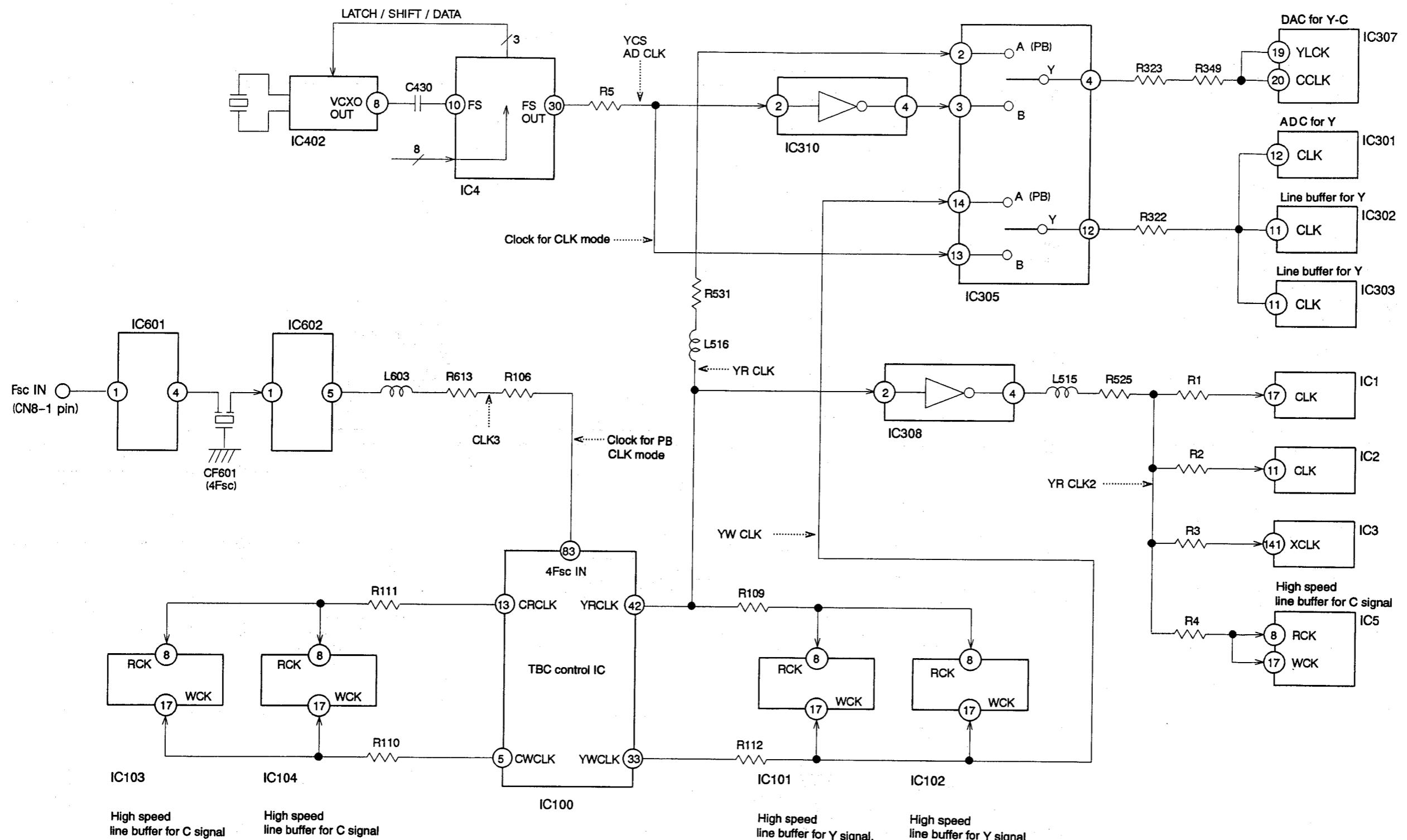


Figure 7-5-18 EE Mode (3-Dimensional Y/C Separation) Clock Flow

7.6 VIDEO CIRCUITS

7.6.1 Input/output processing (video I/O circuit)

1. EE (composite) mode

Figure 7-6-1 shows the input/output signal flow for EE composite mode (TU/BS/BS return/AUX). First, the input is selected with IC3, IC4, and IC7 from among TU video signals, BS video signals, and 3 sets of AUX input signals. The selected input composite video signals are 3-dimensionally Y/C separated with a digital circuit, then are processed by the Y system and C system recording circuits.

Here are explanations of the output processing for each signal.

1) Composite signal output processing (EE/PB)

The composite video signals pass through IC8 and IC7 and are fed to IC9.

IC9 handles character overlay for OSD mode (blue background/superimposition) and output signal selection processing. For superimposition, the blanking signals and the character signals fed from the OSD IC are overlaid on the composite video signals. For blue background, the blue background video signals (composite) output from the OSD IC are selected with IC7 and fed to IC9. For blue background, the overlay processing (superimposition) is not carried out and the input to IC9 is output as is.

2) Y signal output processing (EE/PB)

The Y signal resulting from 3-dimensional Y/C separation and the PB Y signal pass through IC10 and are fed to IC9.

For superimposition, the same as for composite signals, the character and blanking signals are overlaid on the Y signal.

For blue background, the Y signal fed from IC10 Pin 14 is not used. The blue background video signal (composite), which is the IC7 output, has its Y signal separated from the C signal in the super digital comb. The blue background Y signal resulting from Y/C separation is fed to IC9 and output as is.

3) C signal output processing (EE/PB)

The C signal resulting from 3-dimensional Y/C separation or the PB C signal passes through the DC voltage overlay circuit for supporting full blue background and is output. For blue background, the blue background video signal (composite), which is the IC7 output, has its C signal separated from the Y signal in the super digital comb and is selected at the video circuit side and fed to the DC voltage overlay circuit.

• EE (composite) mode block diagram

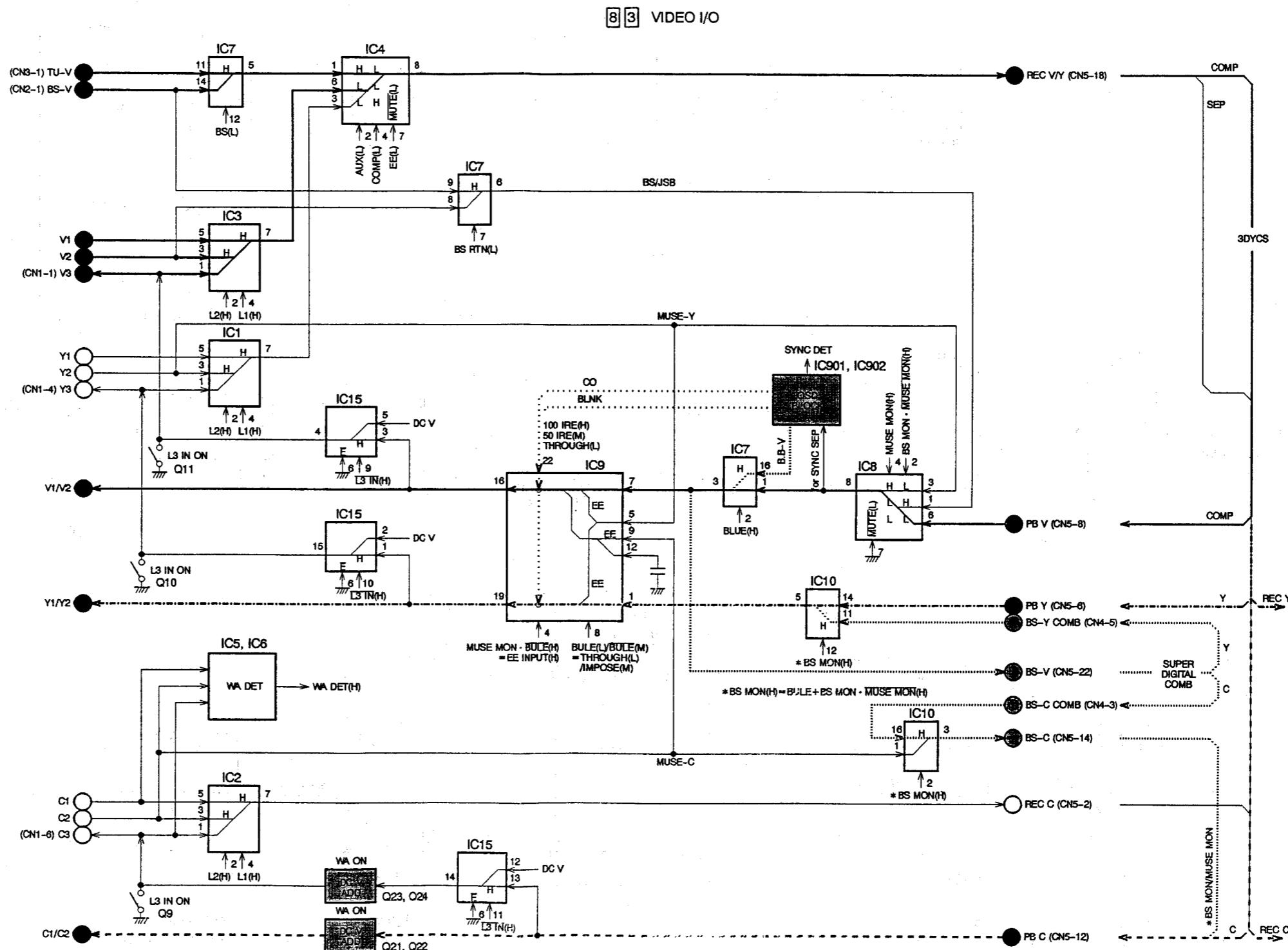


Figure 7-6-1 EE (Composite) Mode Block Diagram

2. EE (Y/C separation) mode

Figure 7-6-2 shows the input/output signal flow for EE separate mode (AUX). First, the input is selected by IC1 and IC2 from among the three AUX input S video signals. The selected input S video signals are fed to the video circuit and processed by the Y system and C system recording circuits, respectively. The output processing for each signal is the same as for composite mode.

• EE (Y/C separation) mode block diagram

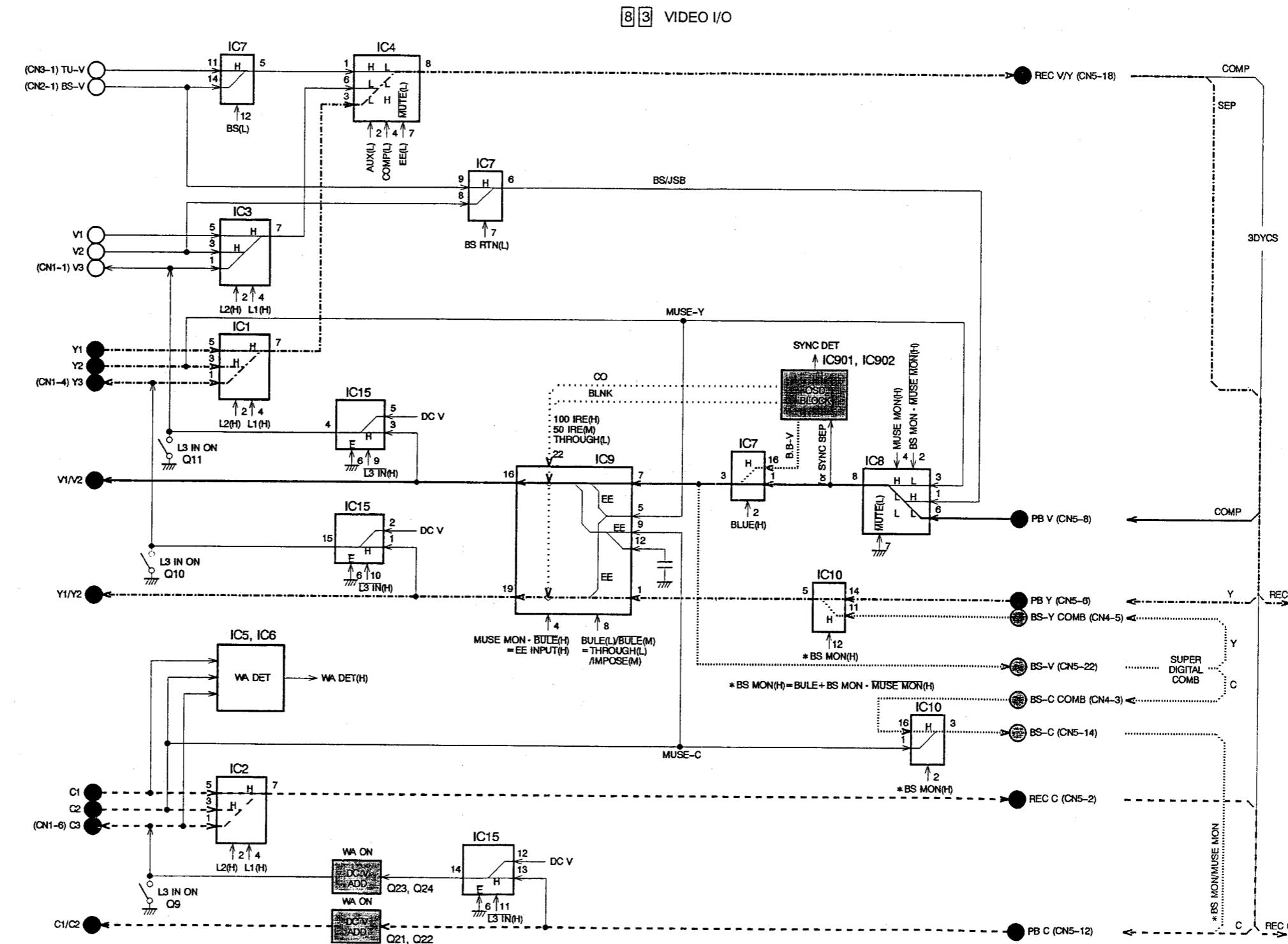


Figure 7-6-2 EE (Y/C Separate) Mode Block Diagram

7.6.2 Recording signal processing

Look at Figure 7-6-3.

The input composite video signal selected by the video I/O circuit is fed to IC11, then fed to the Y/C separation circuit. For Y/C separate input, the signals do not pass through the 3-dimensional Y/C separation circuit and the Y signal and the C signal are fed to their respective recording processing circuits.

1. Y signal recording processing

The Y signal resulting from the 3-dimensional Y/C separation is input again to the video circuit, passes through the IC11 and IC9 clear sync circuit, and is fed on the one hand to IC11 as EE output. On the other hand, it is fed to the discrete detail enhancers as the recording signal and processed to improve the details. This output is fed to IC14 and subjected to recording processing (frequency modulation). For S-VHS recording, unlike with conventional systems, a separate IC (IC8) is used for that processing. The objective of this is to secure a high S/N ratio for S-VHS recording.

7.6.3 C signal recording processing

The C signal resulting from 3-dimensional Y/C separation passes through IC3 and IC11 and is fed again to IC11 as the EE output on the one hand. On the other hand, it is fed to IC4 as the recording signal and is subject to recording processing (low-region conversion).

The C signal converted to the low region is feed to the DG compensation circuit and the level is corrected based on the Y signal. Next, the C signal has its gain adjusted with the discrete ACC circuit and is fed to the pre-recording circuit.

- EE/REC mode block diagram

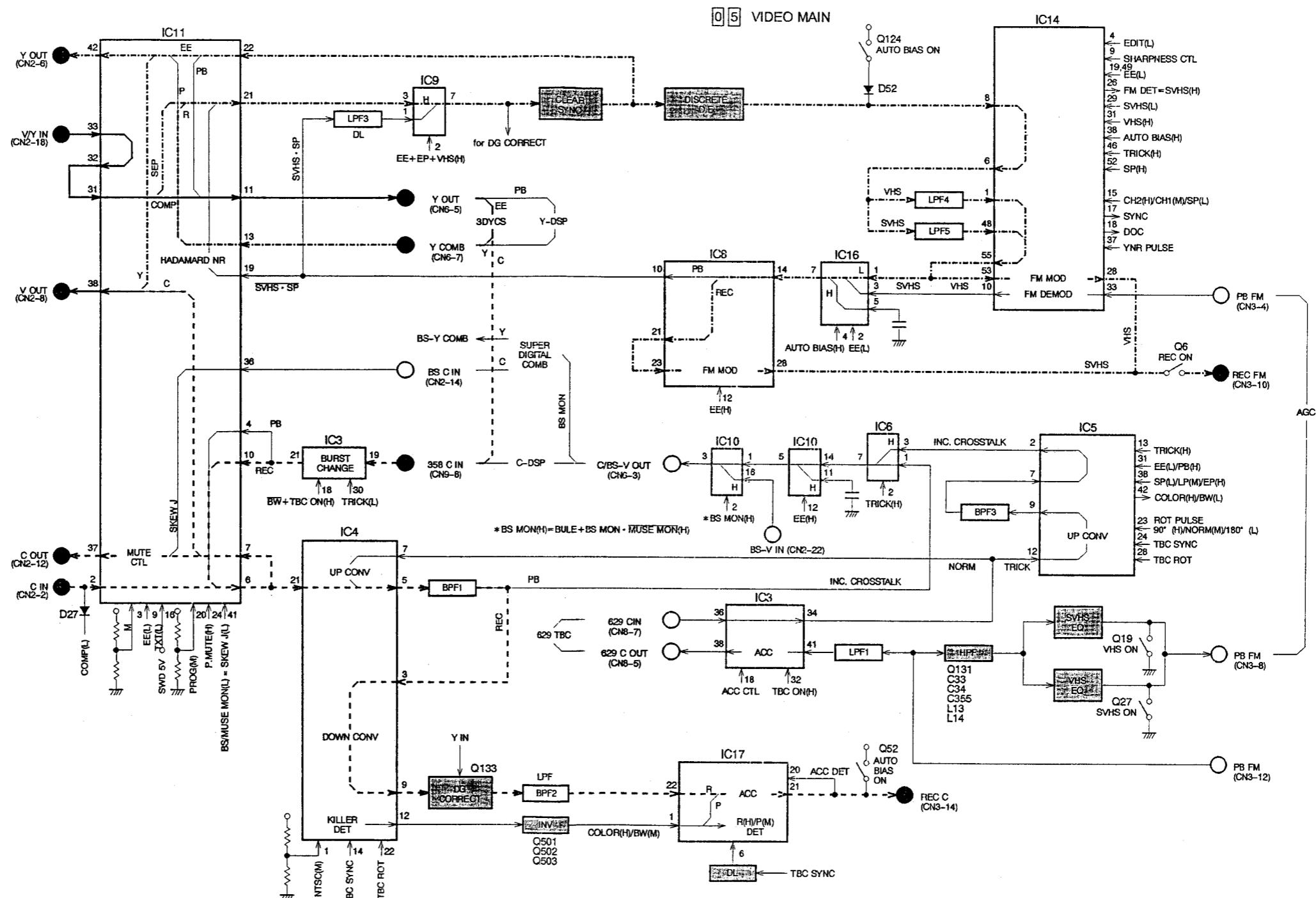


Figure 7-6-3 EE/REC Mode Block Diagram

7.6.4 Playback signal processing

Look at Figure 7-6-4.

The FM video signals are fed from the pre-recording circuit and divided into the FM Y signal and low-region C signal.

1. Y signal playback processing

The FM Y signal separated by the HPF is subject to equalizing processing in each mode, then fed to the pre-recording circuit. AGC processing is carried out in the pre-recording circuit and the signal is frequency demodulated by IC14 in the video circuit.

The demodulated Y signals pass through IC16 and IC18 and one is fed to IC11 and one is fed to LPF3. The signal is split because the adaman noise reduction (analog) within IC11 is not used. LPF3 is used to correct the time difference with the Y signal subject to adaman noise reduction processing. In S-VHS SP mode, 3-dimensional digital adaman alone provides an adequate S/N ratio.

After these Y signals are selected with IC9, the noise generated within the sync signal by the clear sync circuit is eliminated with the wave forming.

The Y signals pass through IC11 and are fed to the Y-DSP circuit. Here, the Y signals are processed for noise reduction with the digital TBC and 3-dimensional digital adaman. Each digitally processed Y signal is fed to IC11 and the Y output and C signals are mixed and output as the composite signals.

2. C signal playback processing

The low-region C signal resulting from separation by the LPF is ACC processed, then fed to the digital TBC circuit. The low-region C signal whose jitter has been reduced by the TBC circuit passes through IC3 and is fed to the normal playback processing circuit on the one hand and to the special playback processing circuit on the other hand and is converted into a 3.58-MHz C signal. This establishes both high signal-to-noise ratio signal processing and a high-speed transient response characteristic.

The C signal that has been processed for playback passes through IC6 and IC10 and is fed to the C-DSP circuit.

Here, since the C signal has still not received playback PS processing, it receives digital pure color processing (logical PS processing), then receives AI natural color processing (CRI and other processing) and 3-dimensional dynamic color processing (DNR processing).

The digitally processed C signal is fed to the video circuit and receives burst signal rearranging, which is one part of the digital TBC processing.

Finally, the C signal is fed to IC11 and the C output and the Y signals are mixed and output as a composite signal.

• PB mode block diagram

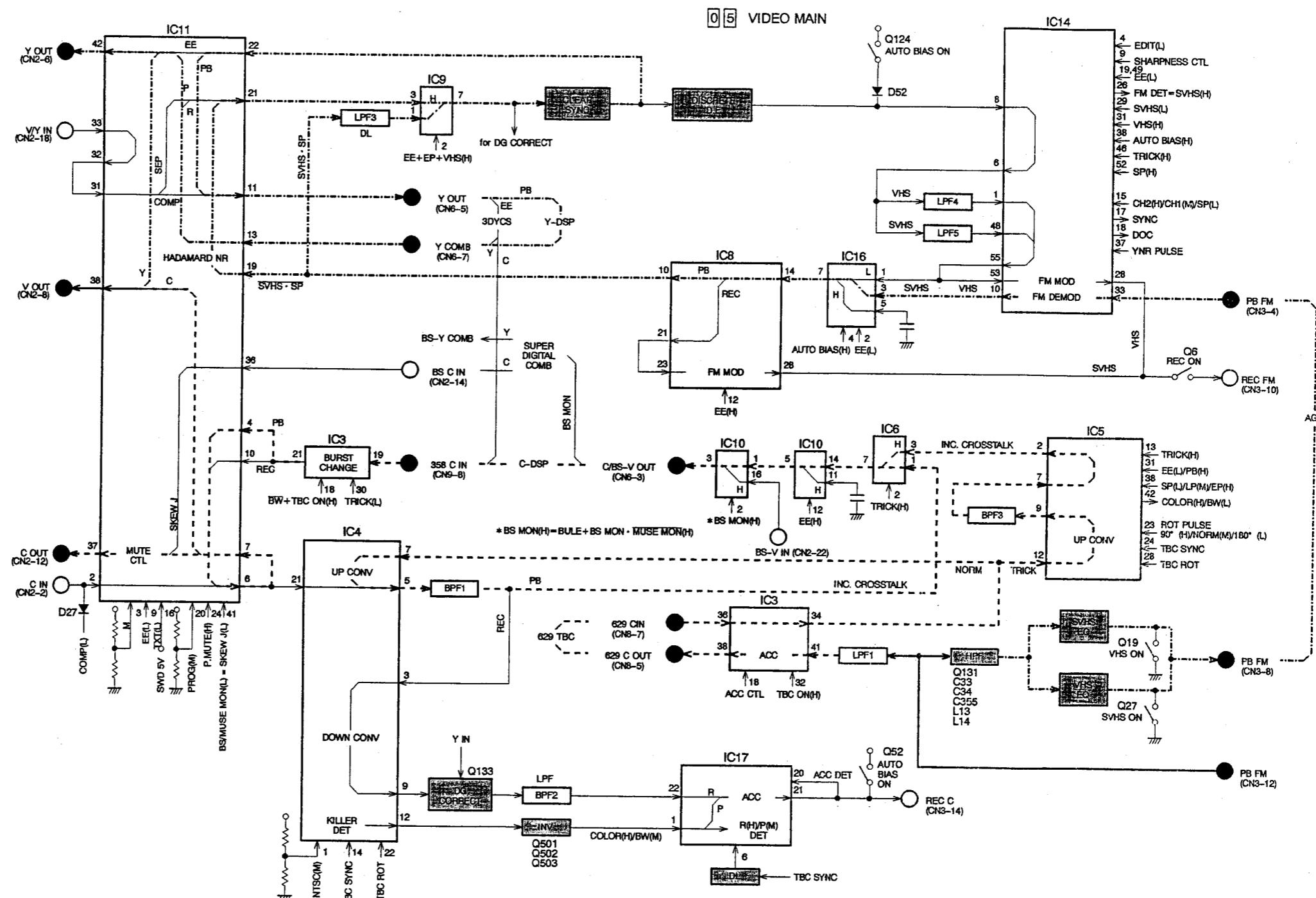


Figure 7-6-4 PB Mode Block Diagram

7.6.5 Discrete detail enhancer

By redesigning new individual detail enhancers, which reverse the fine signal characteristic deterioration that accompanies signal recording and playback, the detail improvement characteristics was upgraded and noise reduced. In using these discrete detail enhancers, the detail improvement processing within ICs carried out in conventional systems is not used. Figure 7-6-5 is a block diagram of the discrete detail enhancer. Here, an inversion amp and a BPF made up of an RLC circuit is used to extract just the roughly 7-MHz component of the input Y signal, amplify it, and subtract it from the main signal actually, pass it through the inversion amp, then add it) to improve the details. At this time in edit mode, the limiter lamps to reduce the amount of emphasis. Also, in edit mode and aux mode, the final RC LPF cut off frequency is lowered to 8 MHz so as to not emphasize the extraneous band component.

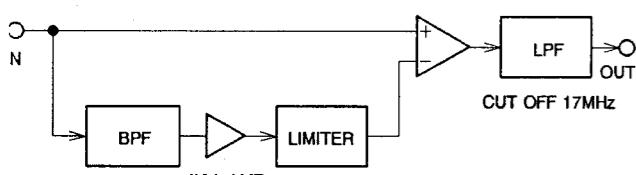


Figure 7-6-5 Discrete Detail Enhancer

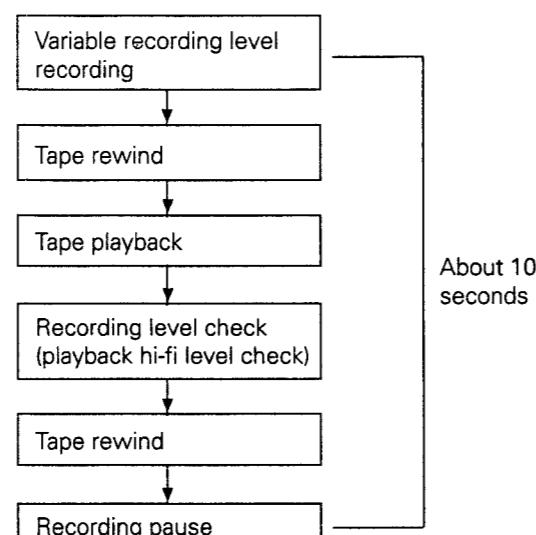


Figure 7-6-7 Calibration Operations

The AI automatic calibration system uses microcomputer control to automatically optimize the video recording level to match the tape level, stores that data and when recording pictures on the same tape with the same mode, calls out that data so that it can optimally record both audio and video. Conventional systems take about 50 seconds for calibration operations to accurately detect the optimum recording level. In this machine, a new algorithm has been introduced to speed up these operations to only 10 seconds without lowering the detection precision. Table 7-6-1 compares a conventional system and the new AI automatic calibration.

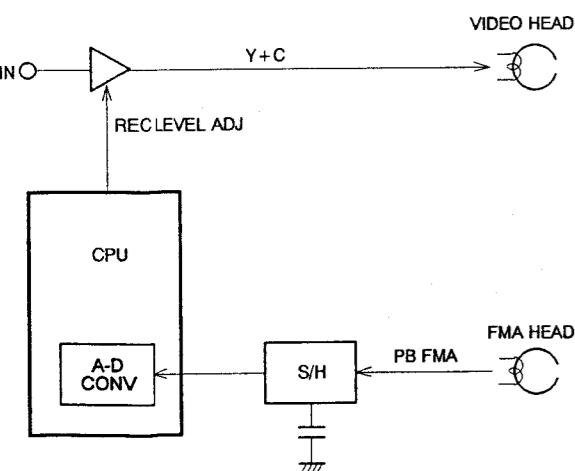


Figure 7-6-6 AI Automatic Calibration

Item	Model	Conventional	New system
Operation time		About 50 s	About 10 s
Detection signals		Video & audio	Audio
Variable signals		Y signals	Y + C signals

Table 7-6-1 Comparison of Conventional and New Automatic Calibration

In conventional systems, both the video signals and hi-fi audio signals were required as detection signals, but the new system introduces an algorithm that needs only the hi-fi audio signals. Also, by varying the Y+C signals, the new system eliminates the problem in conventional systems of differences between the recording levels for the Y signals and for the C signals.

Automatic calibration is started by holding down the calibration button for at least 2 seconds with recording paused.

The M-CTL CPU adjusts the video recording level and records a null signal. At this time, the null signal audio is deep layer recorded with a certain recording level.

Next, the tape is rewound and played back. Detection of the optimum recording levels uses the playback FM level detection circuit used for automatic tracking.

The M-CTL CPU detects the playback hi-fi output, calculates the optimum video recording level with its algorithm, and stores it into memory. Data can be stored for four combinations of tape recording formats and tape speeds. When automatic calibration is carried out, the previous data is overwritten.

Table 7-6-2 shows the memory positions for the optimum recording level data for each mode.

Mode	Tape	S tape	N tape
	EP1	EP2	EP3
S-VHS	SP	Memory A	
	EP	Memory B	
VHS	SP	Memory A	Memory C
	EP	Memory B	Memory D

Table 7-6-2 Automatic Calibration Data Storage Positions

In the previous system, six memory areas were used to store six combinations of tape recording format and recording speed, but in this machine, four memory areas are used. Specifically, the same memory areas are used for S-VHS and VHS recording on S tape, so be careful when calling out calibration data from memory.

After the completion of detection, the tape is erased with the full erase head and rewound to its original position to complete automatic calibration.

7.6.7 Hyper-parallel FET pre-amp

The pre-amp for amplifying the very low level signal from the video head with the CN ratio is an indispensable element for attaining high picture quality. The newly developed hyper-parallel FET pre-amps have multiple low-noise pre-amps for each playback head, so they realize breakthrough ultra-low noise and provide the following features.

- ① Low-noise FETs used to reduce high-region noise
- ② Total of 18 amps for standard and 3x to lower the 1/f noise and reduce the low-region conversion color noise as well

Figure 7-6-8 summarizes the system (for 3x mode). For each head, the output of 5 FET pre-amps are combined to greatly reduce the noise generated within the elements. This system makes it possible for the first time to take complete advantage of the characteristics of high-performance heads.

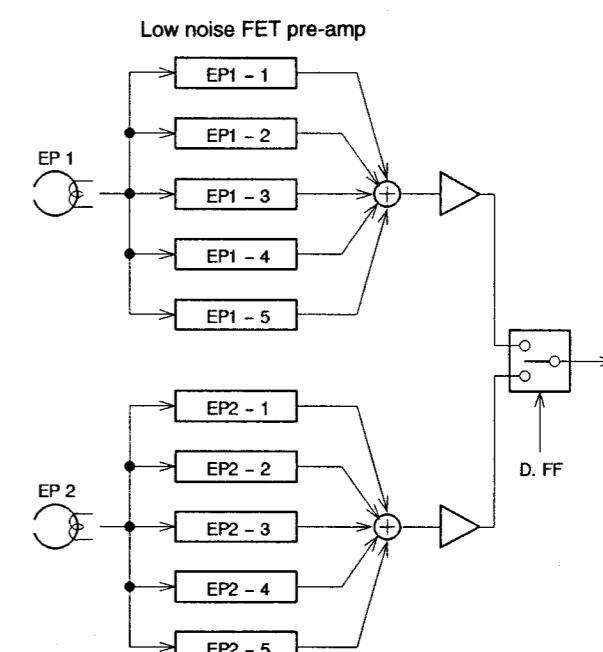


Figure 7-6-8 Hyper-Parallel FET Pre-Amps (diagram for 3x mode only)

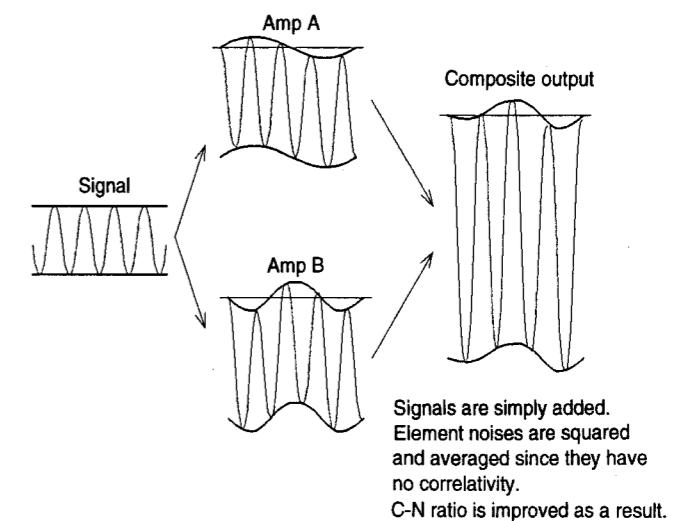


Figure 7-6-9 CN Ratio Improvement with Parallel Amp

7.7 MECHAON/SERVO CIRCUIT

7.7.1 Pin functions of MECHAON/SERVO CPU (IC1)

1. Table of MECHAON/SERVO CPU (IC1) pin functions

PIN No.	SYMBOL	LABEL	IN/OUT	NOTE
1	P17	A/M/S	OUT	Head switching (PB: H, SP Best Search: M, Still: L)
2	P16	D.S/S	OUT	Digital Slow/Still mode: H
3	P15	SLOW P	OUT	SLOW pulse output
4	P14	A.MUTE	OUT	Audio mute control (Mute ON: H)
5	P13	AT SEARCH	OUT	Logical Hi-Fi NR control (NR OFF: L)
6	P12	A.CLK	OUT	Data transfer clock output/Audio circuit
7	P11	A.DATA	OUT	Audio IC control serial data output
8	P10	BUSY	OUT	Data transfer enable/Timer CPU
9	P67	T.REEL REV	OUT	Take-up reel reverse rotation: L
10	P66	S.REEL REV	OUT	Supply reel reverse rotation: L
11	P65	T.REEL STOP	OUT	Take-up reel stop: H
12	P64	S.REEL STOP	OUT	Supply reel stop: H
13	P63	LCM 1	OUT	
14	P62/STRB1	LCM 2	OUT	Motor drive control (Loading motor, Housing motor)
15	P61/BUZZ	LCM 3	OUT	
16	P60/CLO	CAP REV	OUT	Capstan motor reverse rotation: L
17	VSS	GND	-	GND
18	P57	D. CLK	IN	Data transfer clock input (Deck terminal circuit)
19	P56	D. DATA	IN	Deck terminal EXP. data input (Deck terminal circuit)
20	P55	W. CLK	OUT	Data transfer clock input (HD MAIN circuit)
21	P54	INDEX	IN/OUT	Control pulse write/read control (INDEX ON: H)
22	P53	V.FM	OUT	PB FM signal switching (VIDEO FM: H)
23	P52	SOL BRAKE	OUT	Solenoid brake control (BRAKE ON: L)
24	P51	REV	OUT	REV mode: L
25	P50	TOP SPEED	OUT	Motor drive voltage switching (Top speed mode: H)
26	P47	HD DATA1	OUT	HDC IC control data output, Serial-parallel conversion (IC13)
27	P46	P.MUTE	OUT	Video mute control (PICTURE MUTE ON: H)
28	P45	EE	OUT	EE mode: L
29	P44	SP	OUT	SP mode: L
30	P43	HD DATA2	OUT	HDC IC control data output, Serial-parallel conversion (IC13)
31	P42	TRICK	OUT	Trick mode: H
32	P41	D.TRICK	OUT	Digital Trick mode: L
33	P40	EP BEST	OUT	EP Best mode: H
34	PWM0	DRUM CTL	OUT	Drum motor rotation control voltage output (1H correction)
35	PWM1	CAPSTAN CTL	OUT	Capstan motor rotation control voltage output
36	VDD	VDD	-	VDD (System power supply)
37	MODE	MODE	-	GND
38	XT1/P86	XT1	-	Not connected
39	XT2	XT2	-	Not connected
40	VSS	GND	-	GND
41	X2	X2	OUT	Main system clock (12.0 MHz)
42	X1	X1	IN	
43	RESET	RESTE	IN	CPU reset terminal (RESET ON: L)
44	P80	S.REEL GAIN	OUT	Supply reel motor drive correction control
45	P81	T.REEL GAIN	OUT	Take-up reel motor drive correction control
46	P82/PWM2	S.REEL CTL	OUT	Supply reel motor drive control voltage output
47	P83/PWM3	REEL CTL	OUT	Take-up reel motor drive control voltage output

Table 7-7-1(A) Table of MECHAON/SERVO CPU (IC1) pin functions

- Table of MECHAON/SERVO CPU (IC1) pin functions

PIN No.	SYMBOL	LABEL	IN/OUT	NOTE
48	P84/PWM4	AUTO B.V	OUT	Auto-calibration recording level control
49	P85/PWM5	M. V. CTL	OUT	Motor drive voltage switching
50	P87/CTLDDLY	VDD	-	VDD (System power supply)
51	PTO10	REF 15Hz	IN	Reference signal input (REF 15 Hz)
52	P30/PTO00	DRUM FF	IN	DRUM FF input (Drum motor rotation detection/Timing control)
53	P31/PTO01	AUDIO FF	IN	AUDIO FF input
54	P32/PTO02	AUTO B.CTL	OUT	AUTO CAL BAL mode: L
55	P33/PTO11	REC CTL OUT	OUT	Recording control pulse output
56	P34/CLR0	DRUM P	IN	DRUM PG input
57	P35/SI0	SI	IN	Serial data input (Data communication with M/S Timer CPU)
58	P36/SO0/SB0	SO	OUT	Serial data output
59	P37/SCK0	SCK	IN	Data transfer clock input
60	NMI	NMI	-	Not connected
61	P21/INTP0	S.REEL FG	IN	Supply reel FG input
62	P22/INTP1	T.REEL FG	IN	Take-up reel FG input
63	P23/INTP2	CS	IN	Data transfer enable input (Timer CPU)
64	P24/CT110	CAPSTAN FG	IN	CAPSTAN FG input
65	P25/CT100	DRUM FG	IN	DRUM FG input
66	P26/CT111		IN	Control pulse input
67	P27/CLR1	REF 30Hz	IN	Reference signal input (REF 30 Hz)
68	AN10	DEW SENS	IN	Dew detection (SENSOR ON: H)
69	AN11	THERM	IN	Temperature compensation detection (Slow brake timing control)
70	AN12	-	-	GND
71	AN13	AVG FM (S)	IN	Auto-tracking data input (HD SUB)
72	AN14	T.REEL CS	IN	Take-up reel MDA feedback data input
73	AN15	S.REEL CS	IN	Supply reel MDA feedback data input
74	AN16	AVG FM (M)	IN	Auto-tracking data input (HD MAIN, SD, S-VHS, VHS)
75	AN17	TENSION	IN	Tension pole position detection
76	P70/AN18	FRAME	IN	REC: 30 Hz, PB: Switching point control
77	P71/AN19	HD DET	IN	HD input detection (HD IN: H)
78	P72/AN10	2PRO	IN	Not connected (for SD2 mode detection, SD2: H)
79	P73/AN111	WIDE A.	IN	Wide aspect detection (16:9 = H, 4:3 = L)
80	P74/AN112/AMPOUT0	END SENS	IN	End sensor, Trailer tape detection (SENSOR ON: L)
81	P75/AN113/AMPIN0-	NOISE DET	IN	Hi-Fi audio recording detection (Non-Hi-Fi-signal playback: L)
82	P76/AN114/AMPIN0+	FM DET	IN	S-VHS/VHS recording detection (S-VHS: L)
83	AVDD	AVDD	-	AVDD (Analog system power supply)
84	AVREF	AVREF	-	AVREF (Analog system reference voltage)
85	AVSS	AVSS	-	AVSS (GND for analog system)
86	P93/AMPIN 1+	REC SAFETY	IN	Erroneous erasure protection tab detection (Tab detection: L)
87	P91/AMPIN 2+	R. PAUSE	IN	Remote pause control (PAUSE ON: L)
88	P92/AMPOUT1	S.REEL F/R	IN	Supply reel rotation direction detection (REV: L)
89	P93/SCK1	T.REEL F/R	IN	Take-up reel rotation direction detection (REV: L)
90	VSS	VDD	-	VDD
91	P94/S01	ADJ MODE	-	TP205 (for tension pole adjustment)
92	P95/S11/BUSY1	-	-	Not connected
93	P07	FLY.E	OUT	F.E. head control (F.E. HEAD ON: H)
94	P06	H.REC ST	OUT	Hi-Fi REC START: L
95	P05	V.REC ST	OUT	VIDEO REC START: H
96	P04	CLEAN SOL	OUT	Head cleaner solenoid ON: H
97	P03	V. PULSE	OUT	V. pulse output (VIDEO MUTE: L)
98	P02	YNR PULSE	OUT	YNR pulse output
99	P01	NARR FF	OUT	NARR FF input
100	P00	-	-	Not connected

Table 7-7-1(B) Table of MECHAON/SERVO CPU (IC1) pin functions

2. Pin functions of serial-parallel conversion IC (IC13)

PIN NO.	SYMBOL	LABEL	IN/OUT	SIGNAL NAME		NOTE
				DATA 1	DATA 2	
1	GND	GND	-			
2	DATA	DATA	IN			Serial communication data input
3	CLK	CLK	IN			Data transfer clock input
4	D1	FREEZE (H)	OUT	FREEZE (H)	DATA 0	PB: Still picture REC: Temporal emphasis+stopped
5	D2	HD (H)	OUT	HD (H) / NTSC (L)	DATA 1	
6	D3	METAL (H)	OUT	METAL (H)	DATA 2	
7	D4	M. SEARCH (H)	OUT	METAL SEARCH (H)	DATA 3	
8	D5	AP CTL (H)	OUT	APATURE CTL (H)	DATA 4	
9	D6	N. R. (H)	OUT	NOISE REDUCTION	DATA 5	
10	D7	-	-	AGC OFF (H)	DATA 7	
11	D8	-	-	NO SYNC MUTE (L)	DATA 8	
12	D9	W. V REC ST (L)	OUT	REC START (L)	ADDRESS 0	
13	D10	THROUGH (H)	OUT	THROUGH (L)	ADDRESS 1	
14	D11	REC ST/END	OUT	REC START/END	ADDRESS 2	
15	D12	REC (H)	OUT	REC (H)	ADDRESS 3	
16	D13	A. HD (H)	OUT		SYNC MUTE (H)	
17	D14	S/S (H)	OUT			
18	D15	S-VHS (H)	OUT		WEE (L)	
19	D16	POWER CLT (H)	OUT			
20	Vcc	Vcc	-			Power supply

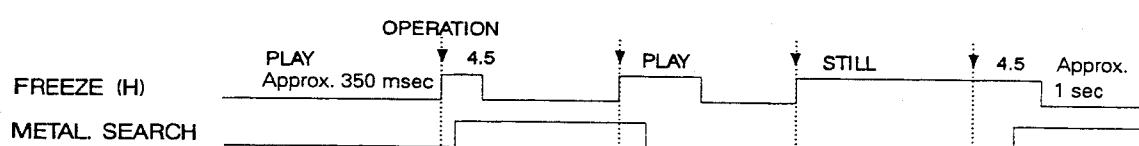
*1 DATA1 is regularly transmitted at an interval of 20 msec approx.

*2 DATA2 is transmitted for the addresses 0 to 4h and 8h to Bh at an interval of 20 msec.

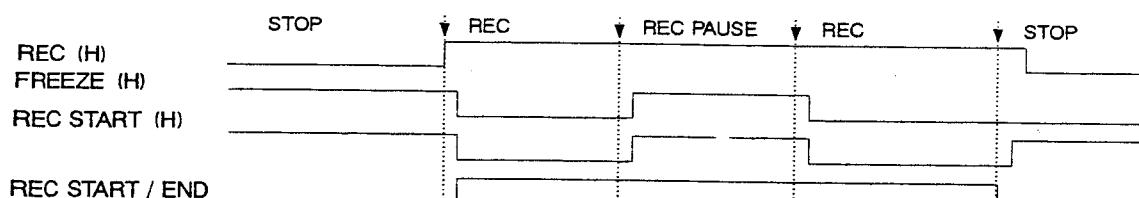
*3 SYNC MUTE for DATA2 is output with sync signal for HD.

*4 NO SYNC MUTE for DATA1 is output at a certain level for both of HD and NTSC.

Table 7-7-2 Table of serial-parallel conversion IC (IC13) pin functions



* FREEZE signal freezes SVP and the final step memory.



*1 REC (H) and REC START (L): TIME CODE START/STOP/RESET.

REC (H) is LOW: COUNTER RESET.

REC START (L) is LOW: COUNT ENABLE.

*2 At REC START END edge, TEMPORAL EMPHASIS START/END is written on data line.

• Table of DATA2 contents

FUNCTION	ADDRESS	HD	SD
YPrPb / RGB	0	0h	1h
HD CCP	1	19h	-
HD CPC	2	20h	-
HD IN YC	3	10h	-
HD OUT YC	4	3h	-
FMA, WIDE A	8	7h	7h / 8h
NT CCP	9	-	19h
NT CPC	A	-	20h
NT IN YC	B	-	18h
NT OUT YC	C	-	5h (7h)

3. Pin functions of I/O expander IC (IC1 on Deck Terminal 1 circuit)

PIN No.	SYMBOL	LABEL	IN/OUT	NOTE
1	DATA	D DATA	OUT	Deck terminal EXP. data input
2	CLK	D CLK	OUT	Data transfer clock input
3	D0	LS A	IN	Mechanism mode detection
4	D1	LS B	IN	Mechanism mode detection
5	D2	LS C	IN	Mechanism mode detection
6	D3	START SENS	IN	Start sensor, Leader tape detection (SENSOR ON: L)
7	D4	CASS SW	IN	Cassette sensor, Cassette loading/unloading detection (LOAD END: L)
8	GND	GND	-	GND
9	D5	S-CASS SW	IN	S-VHS cassette detection (S-VHS CASS: L)
10	D6	-	-	GND
11	D7	-	-	GND
12	D8	W. THICK SW	IN	Not connected (for Tape thickness detection)
13	D9	W. CASS SW	IN	W-VHS cassette detection (W-VHS CASS: L)
14	D10	W. REC SW	IN	Erroneous erasure protection tab detection (Tab in REC side: L)
15	D11	-	-	
16	Vcc	Vcc	-	Power supply

Table 7-7-3 Table of I/O expander IC (IC1 on Deck Terminal 1 circuit) pin functions

7.7.2 Mechacon/Servo block diagram

1. Mechacon/Servo block diagram 1

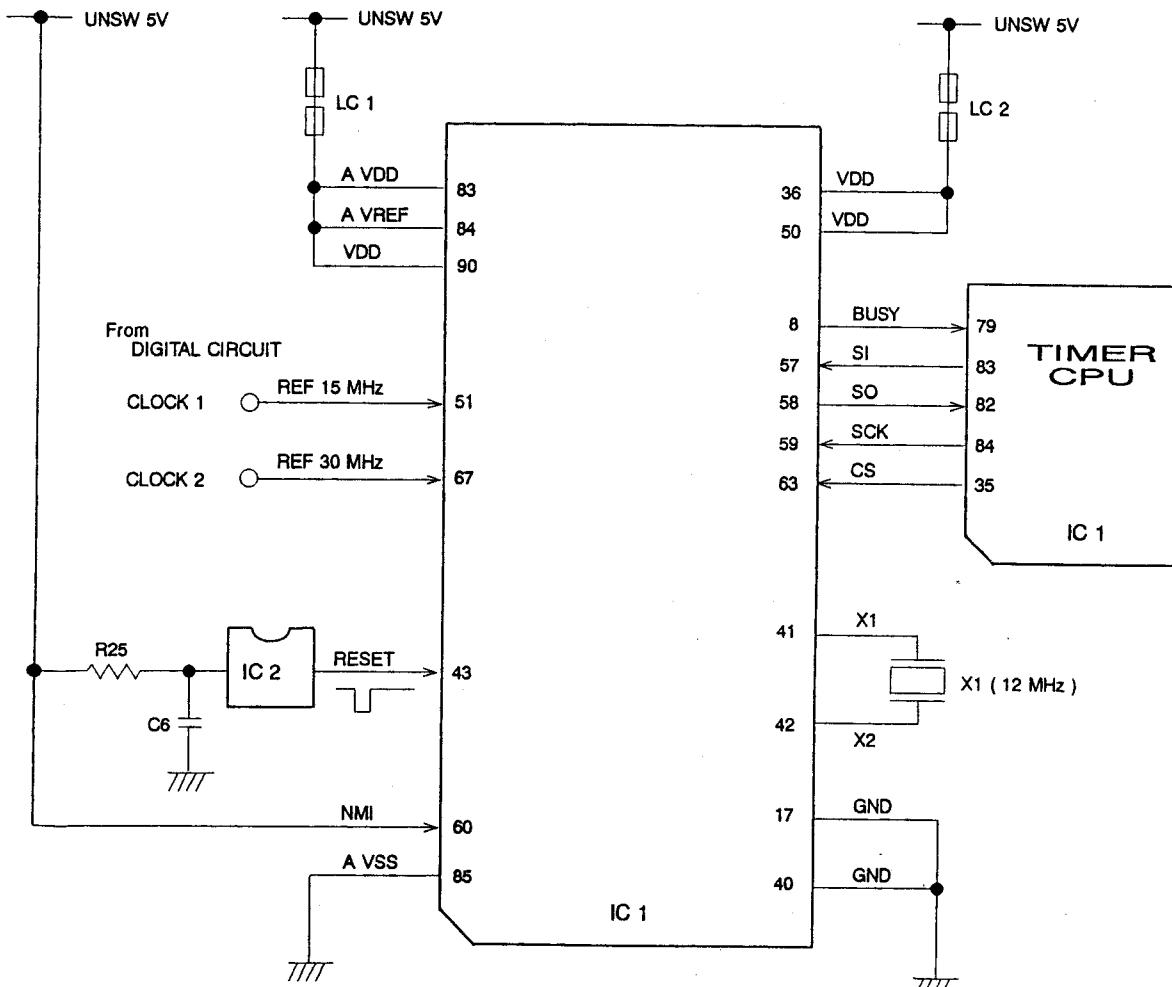


Fig. 7-7-1 Block diagram 1

2. Mechacon/Servo block diagram 2

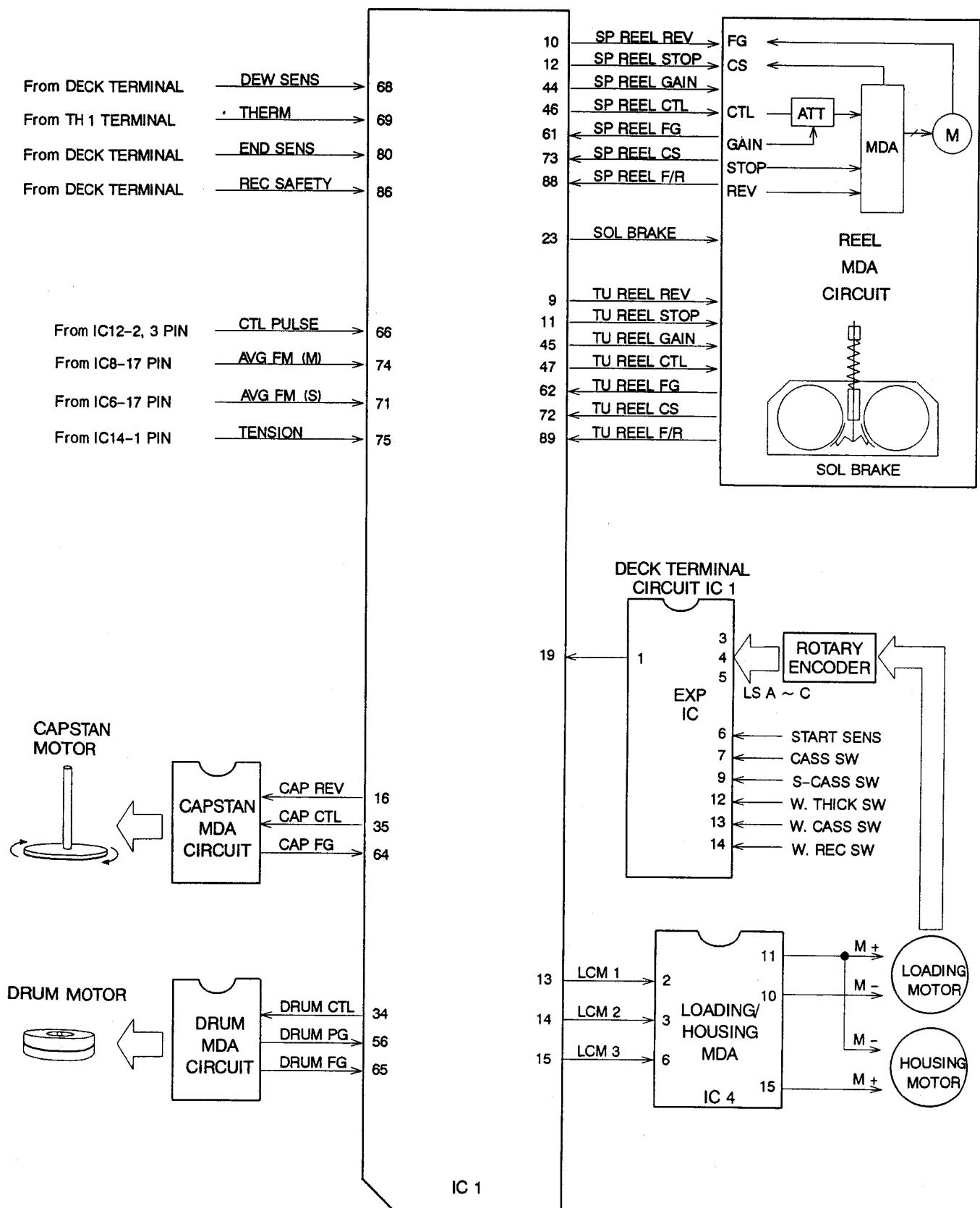


Fig. 7-7-2 Block diagram 2

7.7.3 16:9 auto wide system

The 16:9 auto wide system records an identification (ID) signal together with recording of full-size mode NTSC signal that the aspect ratio is compressed to 4-to-3 from 16-to-9 and by the MUSE-NTSC converter and is output from it, while this system detects the identification (ID) signal at the time of playback of the NTSC signal in order to control TV sets conforming to the wide aspect format.

The MUSE-NTSC converter is provided with the full-size mode to output video signal which HD video source formatted in the 16:9 aspect ratio is horizontally compressed to conform to the NTSC format of the 4:3 aspect ratio without dropout in the video information.

When the MUSE-NTSC converter outputs signal in the full-size mode, it duplexes DC voltage to color signal input through an S terminal.

When recording video signal for the full-size mode, this VTR detects the DC voltage and records an ID signal by changing the duty ratio of the control pulse.

In playback of compressed video signal, this VTR detects the duty ratio of the control pulse to recognize the ID signal while duplexing DC voltage to the color signal to be output from the S-VHS terminal to a wide aspect TV set.

With reception of such video signal, the wide aspect TV set detects the DC voltage of the color signal incoming from an S terminal and automatically expands the video signal for the full-size mode horizontally to output picture of 16:9 aspect ratio in the screen.

Moreover, this VTR is equipped with the force full-size mode switch taking a situation to record video signal coming from a videomovie with an anamorphic lens (a video signal equivalent to full-size mode video output of the MUSE-NTSC converter) into consideration. This force full-size mode switch is effective in the EE and recording modes only.

1. Discrimination of full-size mode input

When video signal input from the MUSE-NTSC converter is a full-size mode input (horizontally compressed video signal), the color signal input through an S terminal is duplexed with 2.5 to 5 V DC voltage. Detection of this DC voltage discriminates the input video signal as a full-size mode signal.

The input signals subject to discrimination of the full-size mode are those incoming through the S1, S2, S3 video input terminals and the S input terminal for BS decoder (= video input 2, for input from MUSE-NTSC converter).

Color signal input through an S terminal is sent to the smoothing circuit to remove color signal that is an AC component, and the duplexed voltage of a DC component of the signal is detected. This voltage is supplied to the M-CTL CPU to discriminate whether it is a full-size mode signal or not.

2. Recording of identification (ID) signal

When the M-CTL CPU recognizes input signal as a full-size mode signal, it changes the duty ratio of the recording control pulse for recording an identification (ID) signal on tape. Therefore, there are four kinds of control pulse different in the duty ratio from each other provided for the 16:9 auto wide system for recording an ID signal. Among those control pulses, those whose duty ratios are $62.5 \pm 0.5\%$ and $30 \pm 0.5\%$ respectively are classified into the "L" pulse, and the others whose duty ratios are $57.5 \pm 0.5\%$ and $25 \pm 0.5\%$ respectively are the "S" pulse.

3. Recording of normal video signal (4:3 aspect ratio)

• Normal recording

A control pulse whose duty ratio is 57.5 % is recorded as the ID code.

• Index recording

The control pulses whose duty ratios are 57.5 % and 25 % respectively are recorded according to the VHS control coding standard (VISS, etc.).

4. ID signal recording on reception of input of full-size mode signal (16:9 aspect ratio)

• Normal recording

The controls pulses whose duty ratios are 62.5 % ("L" pulse) and 57.5 % ("S" pulse) respectively are switched in the order of "LLSSLSS...", which is recorded as the ID code.

• Index recording

The controls pulses whose duty ratios are 62.5 % ("L" pulse), 30 % ("L" pulse) and 25 % ("S" pulse) respectively are switched in the order of "LLSSLSS...", which is recorded according to the VHS control coding standard (VISS, etc.).

5. Discrimination of ID signal on playback

On playing back video, the M-CTL CPU detects the duty ratio of the control pulse to discriminate the ID signal.

Namely, the M-CTL CPU compares the results of ID signal detection performed four times, and it recognizes the ID code as that for the full-size mode when two ID signals having the same duty ratio pattern are continuously detected as shown below.

LLSS, LLSS, or
LSSL, LSSL, or
SSLL, SSLL, or
SLLS, SLLS.

On the other hand, when nothing among the following duty ratio patterns is detected, the M-CTL CPU recognizes the video signal as that of the normal mode.

LLSS, or
LSSL, or
SSLL, or
SLLS.

In the ID code detection method mentioned above, it takes 0.27 sec for recognizing the full-size mode video while 0.53 sec for the normal mode video.

Therefore, if the ID code of a full-size mode video is disorderedly recorded owing to assembly editing, etc., it does not disturb discrimination of the ID code for the full-size mode from others.

6. Writing and erasure of index

On writing (marking) an index in recording, the duty ratio of the control pulse is determined according to a discrimination result of the full-size mode or not as well as the status of the force full-size mode switch.

On playback, the duty ratio of the control pulse is rewritten according to the discrimination result of the ID code.

On erasing an index, the duty ratio is rewritten according to a discrimination result of the ID code.

In case of marking and erasing index on a tape on which 4:3 aspect video signal has been recorded, the duty ratio is forcibly set in the full-size mode pattern (ID recording pattern) if the force full-size mode switch is activated.

7. Duty ratio in insert edit mode

The control pulse is not rewritten for the insert edit mode. If the insertion signal is short of the control pulse in the insert edit mode, the duty ratio of the control pulse is determined according to the result of the full-size mode discrimination for the input signal and the status of the force full-size mode switch.

If a tape on which 4:3 aspect video signal has been recorded undergoes insertion editing, for example, the full-size mode ID code (duty pattern) is recorded in the portion without control pulse if the force full-size mode switch is activated.

8. ID signal discrimination in retake mode

In the retake mode, discrimination of ID code is not operated in the reverse direction but operated in the forward direction only (as same as normal playback). A discrimination result is output according to a result of full-size mode discrimination for the input signal and the status of the force full-size mode switch.

9. ID signal discrimination in special playback

ID signal discrimination is not performed in a special playback mode and the recording status before the special playback is held.

10. Duplexing of DC voltage

When playback video signal is recognized as the full-size mode signal, the M-CTL CPU outputs WA PB:H signal to the DC voltage duplexing circuit to duplex 2.5 to 5 V DC to the color signal output from the S terminal. In that event, color signals subject to DC voltage duplex are those output from the video output 1, 2 and 3 terminals.

7.8 TIMER CIRCUIT

7.8.1 Timer CPU pin functions

PIN No.	SYMBOL	LABEL	IN/OUT	NOTE
1	NC	NC	—	Not connected
2	AVREF	AVREF	—	Reference power supply for A-D converter
3	AVDD	AVDD	—	System power supply for A-D converter
4	VDD	VDD	—	System power supply
5	VPP	VPP	—	VPP (usually connected with VDD)
6	X2	X2	—	Main system clock (4.194304 MHz)
7	X1	X1	—	
8	IC	GND	—	GND
9	XT2	NC	—	Not connected
10	XT1	NC	—	Not connected
11	VSS	VSS	—	GND
12	S16/P100	KO9	OUT	Key scan pulse output
13	S17/P101	KO8	OUT	
14	S18/P102	KO7	OUT	
15	S19/P103	KO6	OUT	
16	S20/P110	KO5	OUT	
17	S21/P111	KO4	OUT	
18	S22/P112	KO3	OUT	
19	S23/P113	KO2	OUT	
20	S0/P120	KO1	OUT	
21	S1/P121	KO0	OUT	
22	S2/P122	KO10	OUT	
23	S3/P123	KO11	OUT	
24	S4/P130	NC	—	Not connected
25	CTL	CTL OUT	OUT	Control pulse output
26	S6/P132	D CTL 0	OUT	Door close control output
27	S7/P133	D CTL 1	OUT	Door open control output
28	S8/P140	A MUTE	OUT	Audio system mute control (MUTE ON: H)
29	S9/P141	P MUTE	OUT	Video system mute control (MUTE ON: H)
30	VDD	VDD	—	VDD
31	VLOAD	VLOAD	—	GND
32	T15/S10/P142	TU MUTE	OUT	Audio system mute control (MUTE ON: H) (DEMOD circuit)
33	T14/S11/P143	MAIN SEL	OUT	Audio select (MAIN: L, SUB: H)
34	PH0/T13/S12/P150	TEL OUT	OUT	Telephone appointment, All AV computerizing control data output
35	PH1/T12/S13/P151	MS CS	OUT	Data transfer enable (Mechacon/Servo CPU)
36	PH2/T11/S14/P152	DM CS	OUT	Chip enable signal output to Door/LCD control microprocessor
37	PH3/T10/S15/P153	EM CS	OUT	Chip enable signal output to Memory IC
38	T9	NC	—	Not connected
39	T8	NC	—	
40	T7	NC	—	
41	T6	NC	—	
42	T5	NC	—	
43	T4	NC	—	
44	T3	NC	—	
45	T2	NC	—	
46	T1	NC	—	
47	T0	NC	—	
48	VDD	VDD	—	VDD
49	P83/S11	DM BUSY	IN	Data communication enable (Door/LCD control microprocessor)
50	P82/SO1	TEST	—	Test terminal (for clock adjustment)

Table 7-8-1(A) Table of Timer CPU pin functions

PIN No.	SYMBOL	LABEL	IN/OUT	NOTE
51	P81/SCK1	D OPEN	IN	Door status detection (OPEN: L, CLOSE: H)
52	P80/PPO	EM DI	IN	Data input from Memory IC
53	P73	K13	IN	Key scan data input
54	P72	K12	IN	
55	P71	K11	IN	
56	P70	K10	IN	
57	DATA 6	DATA 6	IN	Data reception from RS-232C interface
58	DATA 4	DATA 4	IN	
59	DATA 2	DATA 2	IN	
60	DATA 1	DATA 1	IN	
61	P53	OS RST	OUT	On-screen IC reset control
62	P52	OS CE	OUT	Data transfer enable (to On-screen IC)
63	P51	S CLK 0	OUT	Data transfer clock output (common clock)
64	P50	EXP CLK 1	OUT	Data transfer clock output (Video circuit)
65	VSS	VSS	—	VSS
66	P43	S DET	IN	Sync detection (No SYNC: H)
67	P42	L3 S IN	IN	S-terminal connection status detection (CONNECT ON: L)
68	P41	L2 S IN	IN	
69	P40	L1 S IN	IN	
70	P33/MD3	3D Y/C PER	OUT	Data transfer strobe signal output (3D Y/C Separate circuit)
71	P32/MD2	DIG CLK 2	OUT	Data transfer clock output (TBC circuit control)
72	DATA 3	DATA 3	IN	Data reception from RS-232C interface
73	P30/MD0	WIDE OUT	OUT	Wide aspect: L
74	P23/BUZ	BUZZ	OUT	Buzzer ON/OFF control (Buzzer ON: H)
75	P22/PCL	EXP CLK 2	OUT	Data transfer clock output (for LED control) (EXP. IC)
76	P21	S DATA	OUT	Serial data output (multiple use)
77	P20/PTO0	TU CLK	OUT	Data transfer clock output
78	P13/TI0	JUST CLK	IN	Automatic clock adjustment data input (440 Hz, 880 Hz)
79	P12/INT2	MS BUSY	IN	Serial communication data transfer enable
80	P11/INT1	TEL IN	IN	Telephone appointment adapter, Data input from AV apparatus
81	P10/INT0	IR IN	IN	Remote data input (16-bit serial data A/B code)
82	P03/S10/SB1	MS DATA 1	IN	Serial data input (communication with M/S CPU)
83	P02/S00/SB0	MS DATA 2	OUT	Serial data output
84	P01/SCK0	MS CLK	OUT	Data transfer clock output
85	P00/INT4	P DET	IN	Power drop/failure detection (Power down: H-L)
86	RESET	RESET	IN	Reset terminal (RESET IN: L)
87	AVSS	AVSS	—	A-D converter reference ground potential
88	AN7/P93	WIDE IN	IN	Full mode detection result input
89	DATA 0	DATA 0	IN	Data reception from RS-232C interface
90	DATA 7	DATA 7	IN	
91	DATA 5	DATA 5	IN	
92	AN3	TU LED	IN	Stereo/bilingual indication switching signal input (for Tuner)
93	AN2	GND	—	Not connected
94	NC	NC	—	Not connected

Table 7-8-1(B) Table of Timer CPU pin functions

7.8.2 Timer block diagram

1. Timer block diagram 1

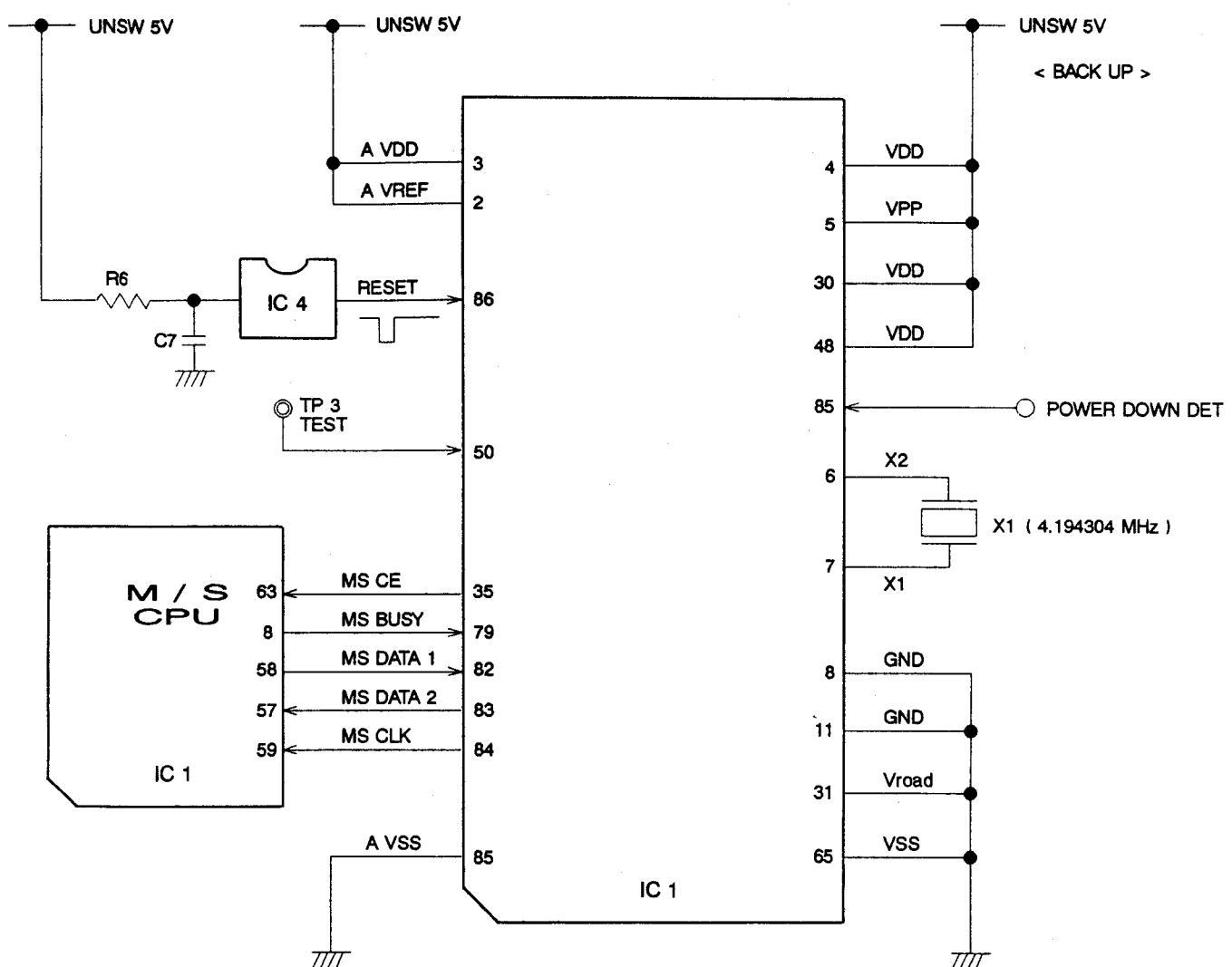


Fig. 7-8-1 Block diagram 1

2.Timer block diagram 2

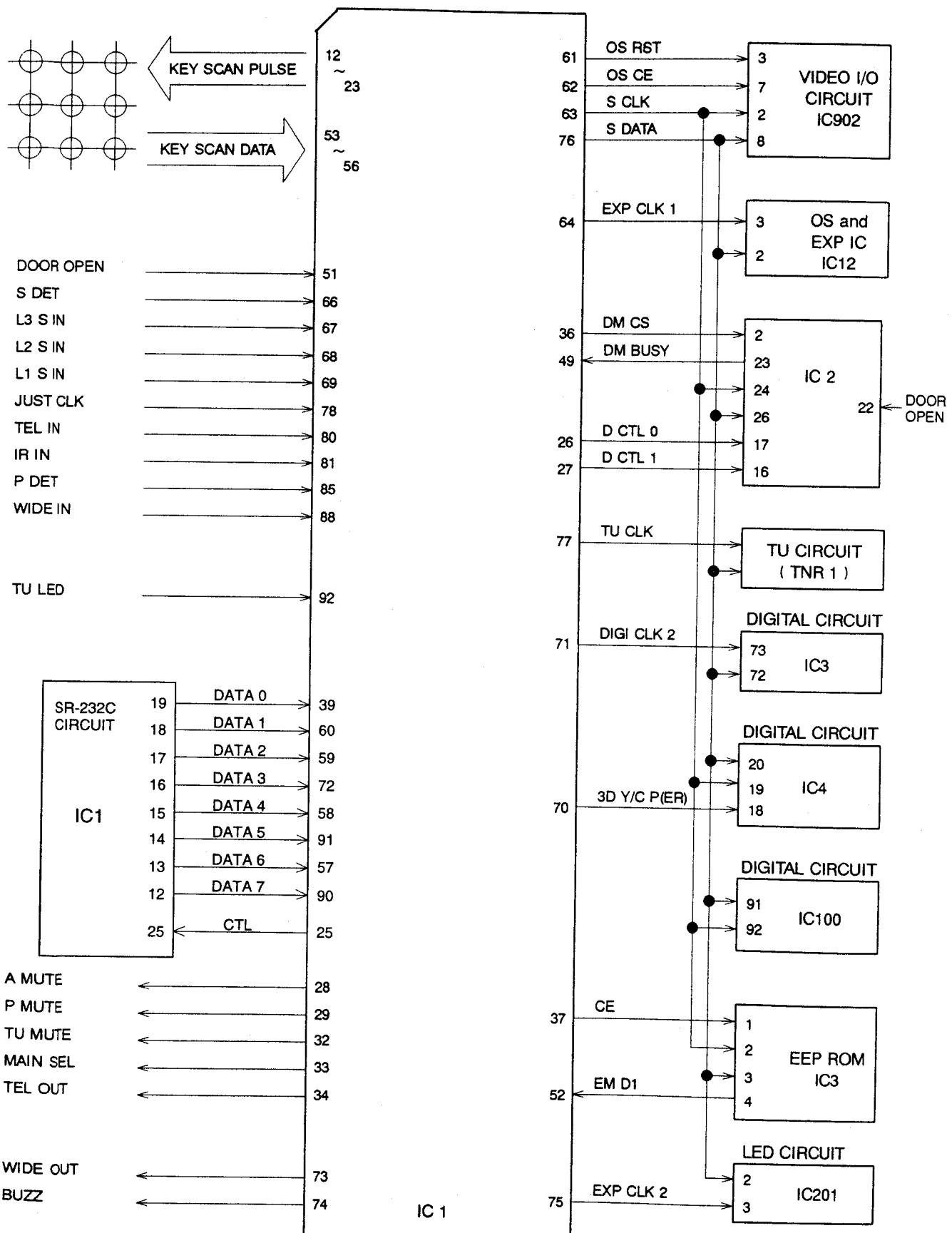


Fig. 7-8-2 Block diagram 2

