

# SANYO

## SERVICE MANUAL

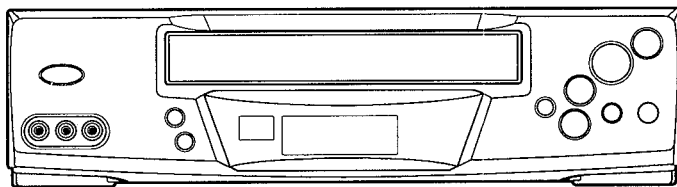
### Video Cassette Recorder

### VHR-899E

(Product Code : 143 179 43)  
(U.K.)

### VHR-899EV

(Product Code : 143 179 47)  
(Europe)



(VHR-899EV)



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Please see other materials with Reference number given in table below.

Materials	Model No.	Reference No.
Mechanism Manual	VC Mechanism	MM531683

#### PRODUCT SAFETY NOTICE

The components designated by a symbol ( $\triangle$ ) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the parts List. Do not deviate from the resistance, wattage, and voltage ratings shown.

- NOTE: 1. Parts order must contain model number, part number, and description.  
2. Substitute parts may be supplied as the service parts.  
3. N.S.P. : Not available as service parts.

Design and specifications are subject to change without notice.

# SELF-DIAGNOSIS DISPLAY

## Mechanism Mode Display / Head Output Drop Warning Display

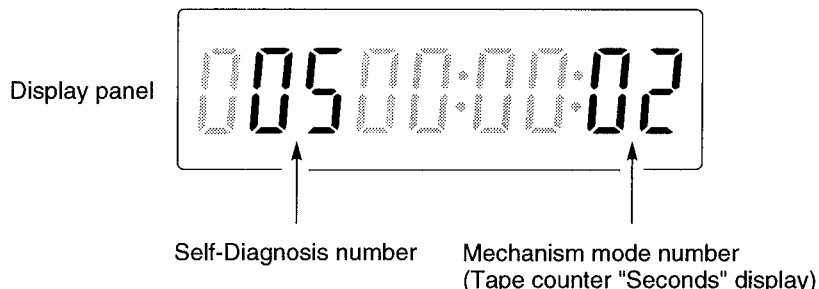
This unit displays the diagnosis contents of abnormalities and the mechanism mode on its display panel in 2-digit numbers.

When the head playback output has dropped, the "L" sign will be blinked.

These display shows the outline of the problems. Use it as a reference when servicing the unit.

### 1. Self-Diagnosis Contents and Mechanism Mode Display

- When the STOP button on the remote control is pressed for about 10 seconds continuously, the self-diagnosis number will be displayed on the display panel and number indicating the failed mechanism mode (changed mode when being shifted) on the tape counter "seconds" display for 10 seconds each.
- During self-diagnosis display, displays other than the diagnosis number/mechanism mode number will be turned off and when displays end, the normal display will be returned automatically.
- Refer to "Self-Diagnosis Contents" for the self-diagnosis numbers and the "Mechanism Mode Display Contents" for the mechanism mode numbers.
- When the "0" button on the remote control unit is pressed during display, and clearing the self-diagnosis display and mechanism mode display.



### Self-Diagnosis Contents

No.	Problem	Main Possible Cause	Mechanism Operations and State After Occurrence
00	There is no abnormality in the mechanism.		
01	The cylinder motor does not rotate.	<ul style="list-style-type: none"> <li>• The cylinder motor is faulty.</li> <li>• The control of the cylinder motor is faulty.</li> <li>• The tape winds around the cylinder.</li> </ul>	Shifts to the STANDBY mode, and the power goes off.
02	The take-up reel or supply reel does not rotate.	<ul style="list-style-type: none"> <li>• The take-up reel or supply reel is caught.</li> <li>• The reel belt is faulty.</li> <li>• The reel torque has decreased.</li> </ul>	Shifts to the STANDBY mode, and the power goes off.
03	The capstan motor does not rotate.	<ul style="list-style-type: none"> <li>• The capstan motor is faulty.</li> <li>• The control of the capstan motor is faulty.</li> </ul>	Shifts to the STANDBY mode, and the power goes off.
04	The tape cannot be loaded with the cassette inserted. (But unloading can be performed.)	<ul style="list-style-type: none"> <li>• Error in the operations of the tape loading mechanism.</li> <li>• Foreign particles in the tape loading mechanism.</li> <li>• The tape end sensor is faulty.</li> <li>• The reel brake of the tape cassette has not been released.</li> </ul>	Unloads, shifts to the INITIAL mode, and the power goes off.
05	Tape loading and unloading cannot be performed with the cassette inserted.	<ul style="list-style-type: none"> <li>• The tape guide is caught.</li> <li>• The loading motor is faulty.</li> <li>• The control of the loading motor is faulty.</li> </ul>	The power is forcibly turned off with the mechanism at its current position.

No.	Problem	Main Possible Cause	Mechanism Operations and State After Occurrence
06	Front unloading cannot be performed when ejecting the cassette. (Front loading can be performed.)	<ul style="list-style-type: none"> <li>The cassette drive mechanism is faulty.</li> <li>The front door is caught.</li> </ul>	<p>Front loads and shifts to the STOP or INITIAL mode.</p> <ul style="list-style-type: none"> <li>When the power switch is turned on before eject operations: Shifts to the STOP mode.</li> <li>When the power switch is turned off before eject operations: Shifts to the INITIAL mode and the power goes off.</li> </ul>
07	Front loading and front unloading cannot be performed when ejecting the cassette.	<ul style="list-style-type: none"> <li>The tape cassette is caught in the cassette drive mechanism.</li> <li>The main cam and front rack gear of the front loading mechanism have not engaged properly.</li> <li>The gears of the front loading drive mechanism have not engaged properly.</li> </ul>	The power is forcibly turned off with the mechanism at its current position.
08	The mechanism becomes 1 (REVIEW) while moving from 2 (IDLER), 3 (STILL), 4 (BRAKE), and to 5 (STOP).	<ul style="list-style-type: none"> <li>The mechanism mode switch contact is faulty.</li> </ul>	The power is forcibly turned off with the mechanism at its current position.
09	The mechanism becomes 7 (INITIAL) while moving from 1 (REVIEW), 2 (IDLER), 3 (STILL), 4 (BRAKE), and to 5 (STOP).	<ul style="list-style-type: none"> <li>The mechanism mode switch contact is faulty.</li> </ul>	Carries out tape take-up operations, shifts to the STANDBY mode, and the power goes off.
10	The capstan motor does not rotate and cassette tape eject when cassette tape insert.	<ul style="list-style-type: none"> <li>The capstan motor is faulty.</li> <li>The control of the capstan motor is faulty.</li> </ul>	Shifts to the EJECT mode. Protect cassette tape.
11	The cylinder motor does not rotate and cassette tape eject when cassette tape insert.	<ul style="list-style-type: none"> <li>The cylinder motor is faulty.</li> <li>The control of the cylinder motor is faulty.</li> </ul>	Shifts to the EJECT mode. Protect cassette tape.
12	The supply reel does not rotate and cassette tape eject when tape unloading.	<ul style="list-style-type: none"> <li>The supply reel is caught.</li> <li>The reel belt is faulty.</li> <li>The reel torque has decreased.</li> </ul>	Shifts to the EJECT mode. Protect cassette tape.

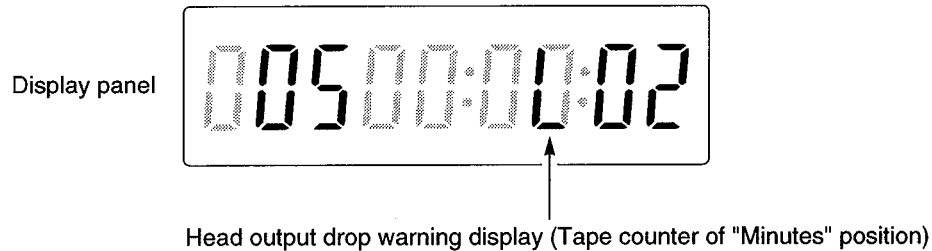
**Note:** For details of mechanism operations corresponding to the mechanism positions of the self-diagnosis numbers 08 and 09 above, refer to the separate volume on the VC mechanism manual. These manual reference numbers are shown in the cover.

### Mechanism Mode Display Contents

Mode No.	Mechanism Mode	Mode No.	Mechanism Mode	Mode No.	Mechanism Mode
00	CASSETTE OUT	07	SLOW	14	FAST FORWARD
01	STANDBY	08	PLAY	15	REWIND
02	STOP	09	REC	16	VIDEO INSERT
03	STILL	10	AUDIO DUBBING	17	VIDEO INSERT-PAUSE
04	REC-PAUSE	11	X2 SPEED PLAY	18	AUDIO/VIDEO INSERT
05	AUDIO DUBBING-PAUSE	12	CUE	19	REVERSE X2 SPEED PLAY
06	FRAME ADVANCE	13	REVIEW	99	OTHERS

## 2. Head Output Drop Warning Display

- When the STOP button on the remote control is pressed for 10 seconds continuously 10 seconds after play starts, "L" will be displayed blinking at the minutes position on the tape counter when the head output is lower than the specified value to indicate an abnormality.
- The cause of the abnormality may be due to drop in the playback output caused by drop in the efficiency of the cassette used or head clogging. Refer to "Head Playback Output Voltage Check" as a means to judge the abnormality.



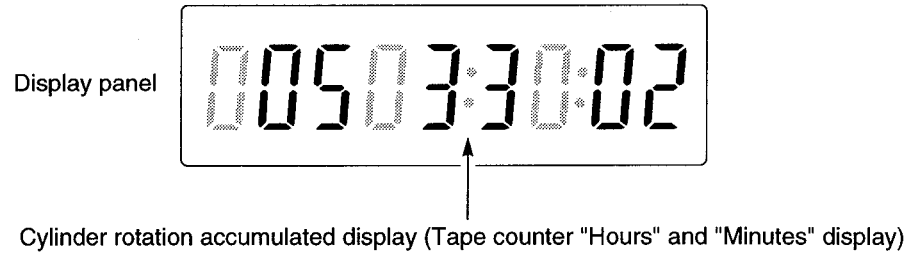
### Head playback output voltage check

Cassette Used	Warning Display	Envelope Detection Output Voltage	Main Cause
Cassette with normal playback output	-	<p>Envelope detection output (IC301 Pin 85 or C3016 HOT side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-1)</p> <p>4V 0V 0.5~0.95V</p>	<p>When the output voltage difference of the two channels is 0.5 to 0.95V</p> <ul style="list-style-type: none"> <li>• The video heads of both are normal</li> </ul>
Recorded cassette (with tabs)	"L" blinking	<p>Envelope detection output (IC301 Pin 85 or C3016 HOT side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-1)</p> <p>4V 0V More than 0.95V</p>	<p>When the output voltage difference of the two channels is more than 0.95V</p> <ul style="list-style-type: none"> <li>• Tracking adjustment has not been performed accurately</li> <li>• One video head is clogged</li> <li>• One video head has worn out</li> </ul>
	"L" blinking	<p>Envelope detection output (IC301 Pin 85 or C3016 HOT side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-1)</p> <p>4V 0V Less than 0.5V</p>	<p>When the average output voltage of the two channels is less than 0.5V</p> <ul style="list-style-type: none"> <li>• Tracking adjustment has not been performed accurately</li> <li>• Both video heads are clogged</li> <li>• Both video heads have worn out</li> </ul>
Rental cassette (without tabs)	"L" blinking	<p>Envelope detection output (IC301 Pin 85 or C3016 HOT side: see Fig. 2-1-1) Switching pulse (TP183: see Fig. 2-1-1)</p> <p>4V 0V More than 0.95V</p>	<p>When the output voltage difference of the two channels is more than 0.95V</p> <ul style="list-style-type: none"> <li>• Tracking adjustment has not been performed accurately</li> <li>• One video head is clogged</li> <li>• One video head has worn out</li> </ul>
<p>• Some rental cassettes may have extremely low video playback outputs even when both video heads are normal. As the average output voltage of the two heads may be less than 0.5V for some, no warning displays will be shown.</p>			



### 3. Cylinder rotation accumulated time display

- Press the STOP button on the remote control for approximately 10 seconds and the cylinder rotation accumulated time excluding the cassette out and standby operation time will be displayed on the "Hours" and "Minutes" display in units of 100 hours. ("33" will be displayed for 10 seconds for 3,200 to 3,299 hours.)
- To erase the cylinder rotation accumulated time display, press the RESET button on the remote control during the accumulated time display.



# 1. DISASSEMBLY

## 1-1. REMOVAL OF CABINET, MECHANISM UNIT, AND MAIN BOARD

### REMOVING THE CABINET PARTS (Fig. 1-1-1)

1. Remove the cabinet by removing the four screws (1).
2. Remove the front panel by removing the locks of the clamps (A) using a screwdriver, etc. and slightly rotating the bottom part in the direction of the arrow.

**Notes:** • Electrical adjustments for the this model can be performed with only the cabinet removed.

### REMOVING THE MECHANISM MAIN UNIT AND THE CP-1 PWB ASSEMBLY (Fig. 1-1-2 and 1-1-3)

After removing the cabinet parts, remove the mechanism unit and the CP-1 PWB assembly connected as follows.

1. Remove the five screws (2) as shown in Fig. 1-1-2.
2. Remove the two screws (3) at the CP-1 board, and then disconnect the bottom cover.
3. Remove the two screws (4) and two screws (5) of the mechanism unit. The two screws (5) of the cassette tray can be removed easily by pushing the lid opener lever in the arrow direction to remove the lock as shown in the enlarge view.
4. Lift up the whole mechanism unit and main board (CP-1 PWB assembly), and as shown in Fig. 1-1-3, so that they can be removed from the chassis.

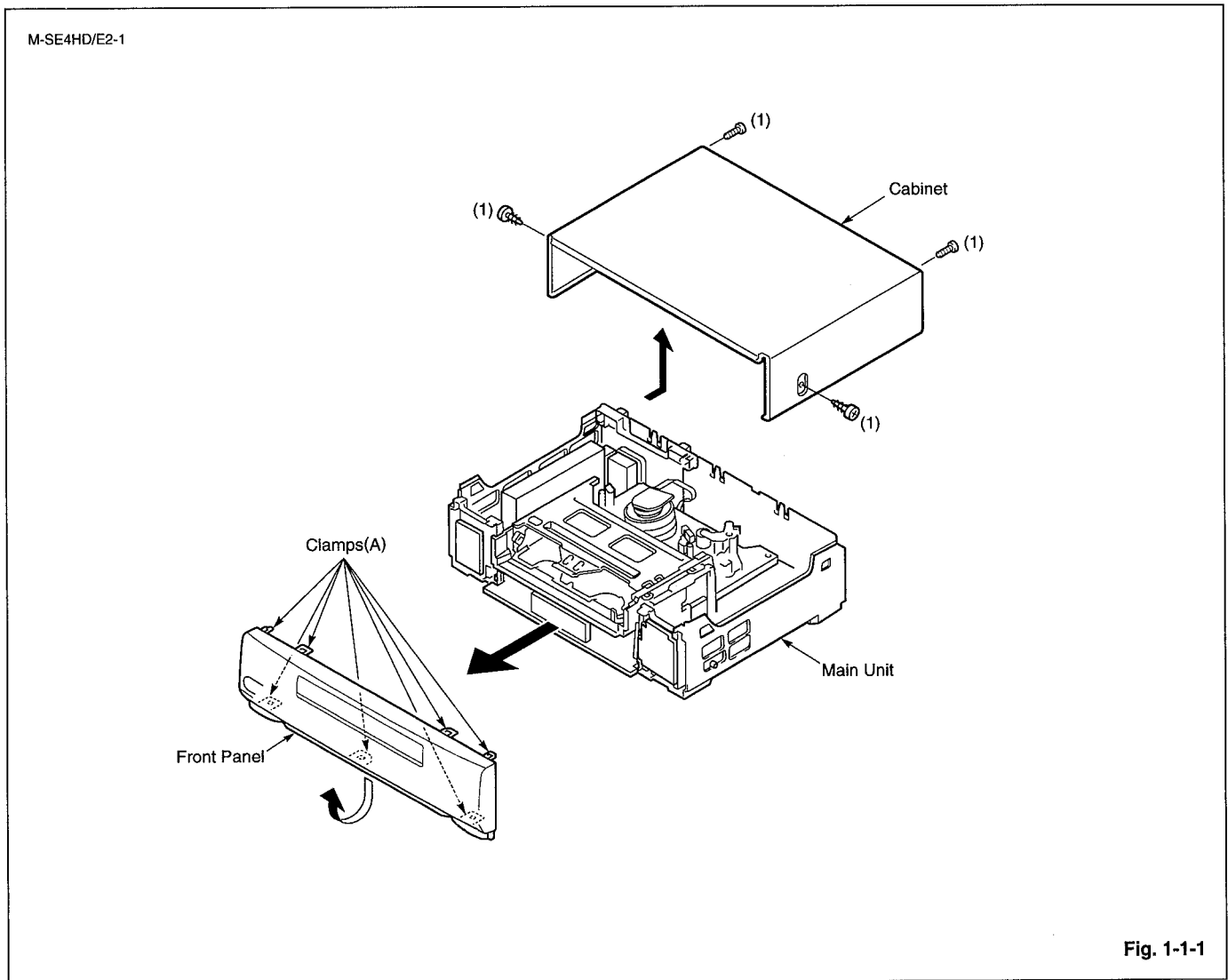


Fig. 1-1-1

M-SE4HD/E2-2

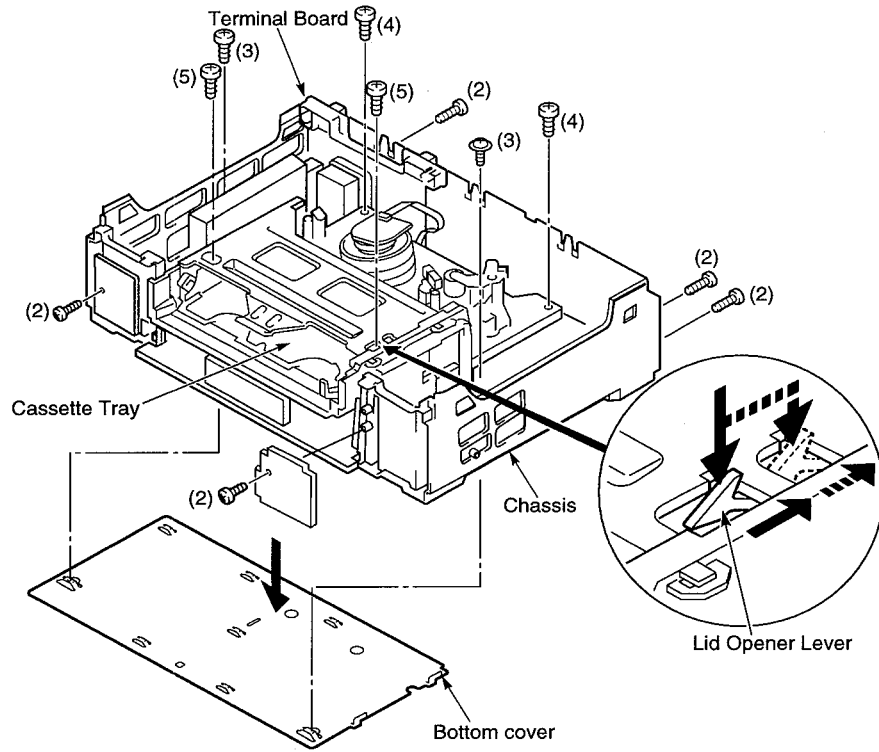


Fig. 1-1-2

M-SE4HD/E2-3

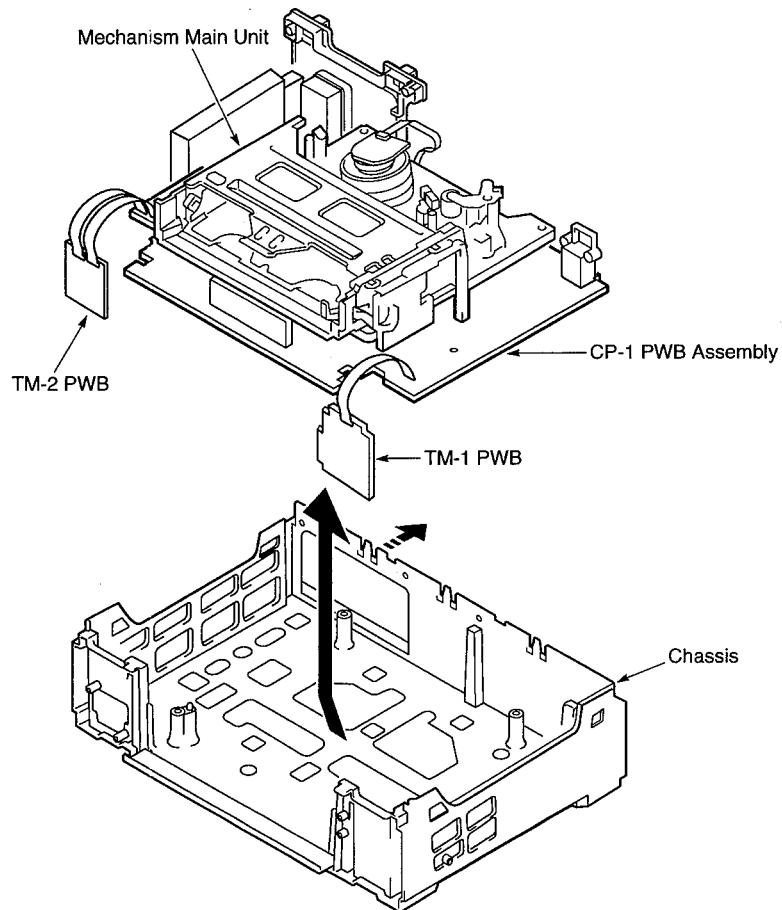
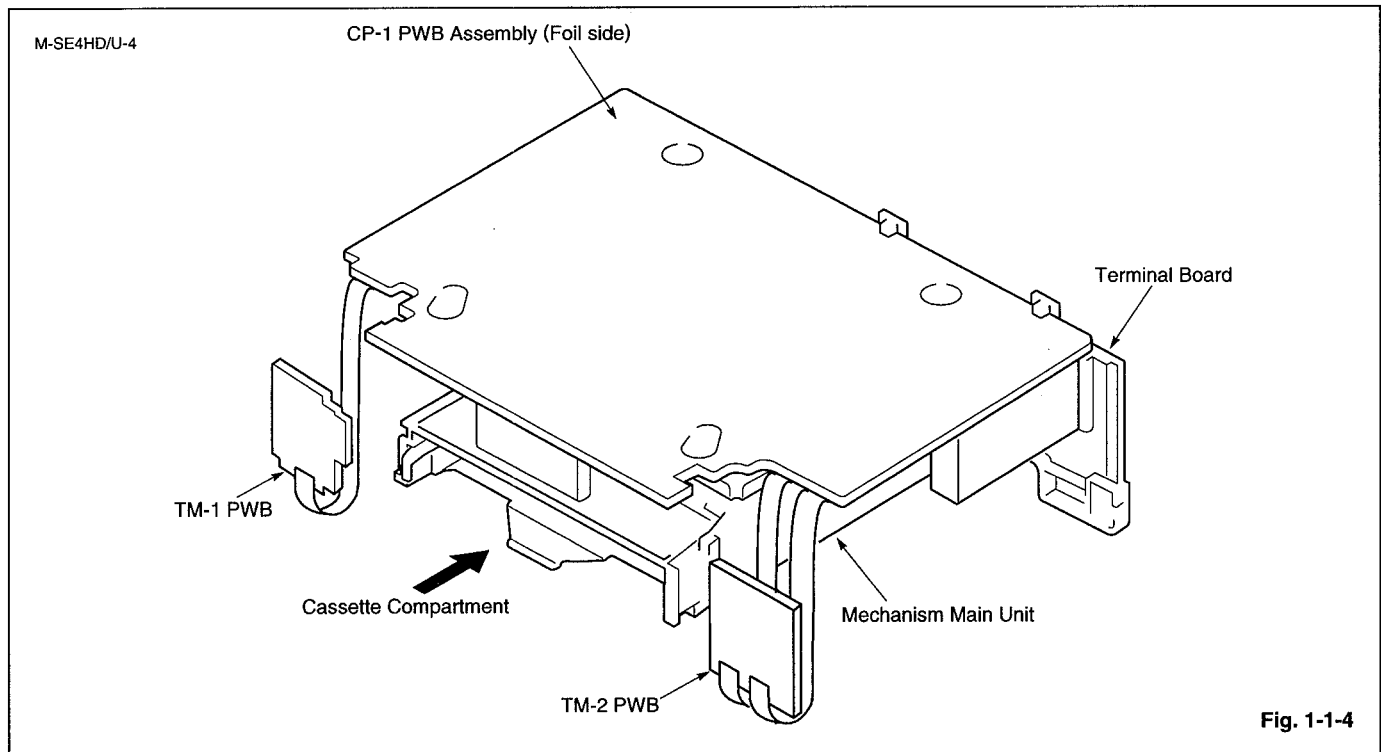


Fig. 1-1-3

## 1-2. TEMPORARILY SETTING UP AND CONNECTING CP-1 PWB ASSEMBLY

The following is an example of how to place and connect the main board without a jig, when repairing the CP-1 PWB assembly.

1. Place the mechanism unit and main board up side down as a whole on a flat surface with foil side of the main board facing up.
2. Operate the unit using the buttons on CP-1 PWB or the remote control.

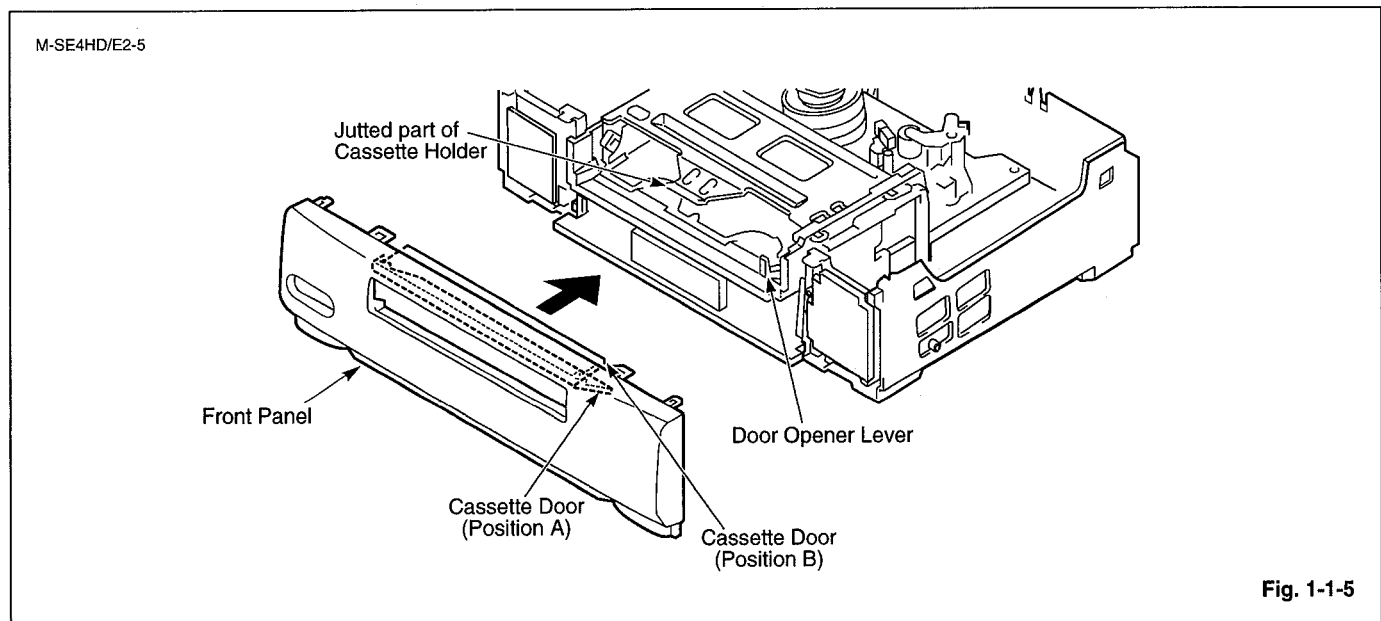


## 1-3. INSTALLATION OF THE FRONT PANEL

When installing the front panel to the chassis after repairs and adjustments.

1. Pressing down the door opener lever of the mechanism main unit.
2. Set the cassette door to half-opened state as shown in Fig. 1-1-5, and install the front panel to the chassis.

**Note:** Opened cassette door position does not install the front panel to the chassis.



**Note:** Before assembling the mechanism unit and the CP-1 board, check the eject mode positioning marks as shown in Fig. 1-1-6 and Fig. 1-1-7.

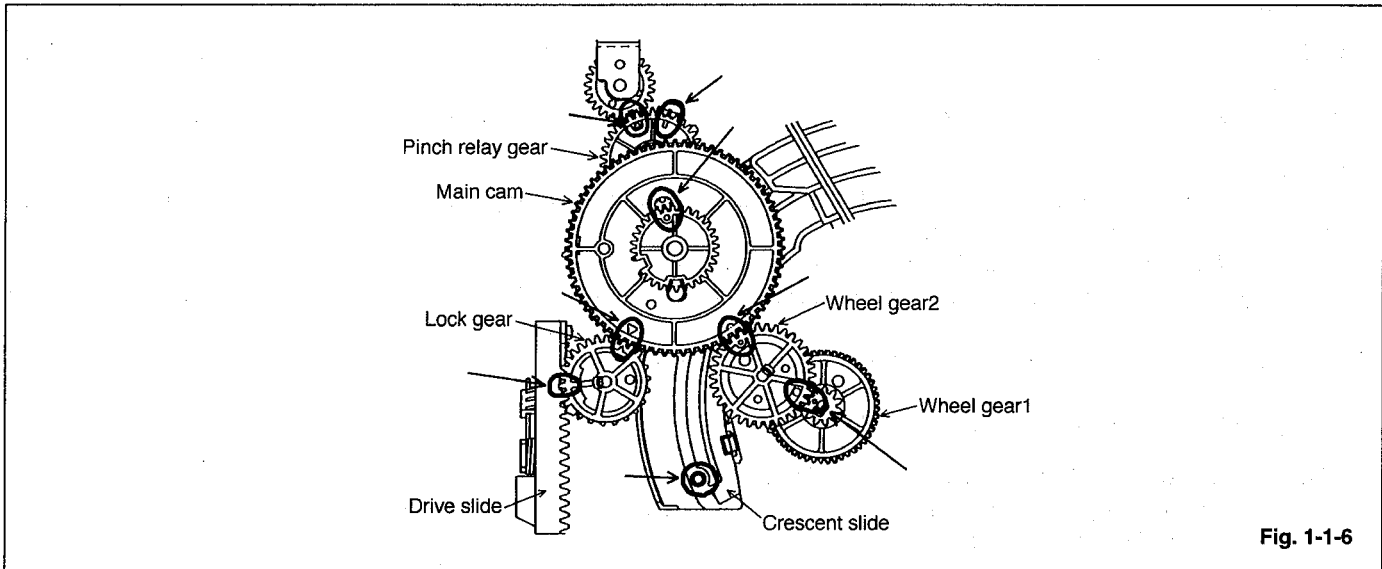


Fig. 1-1-6

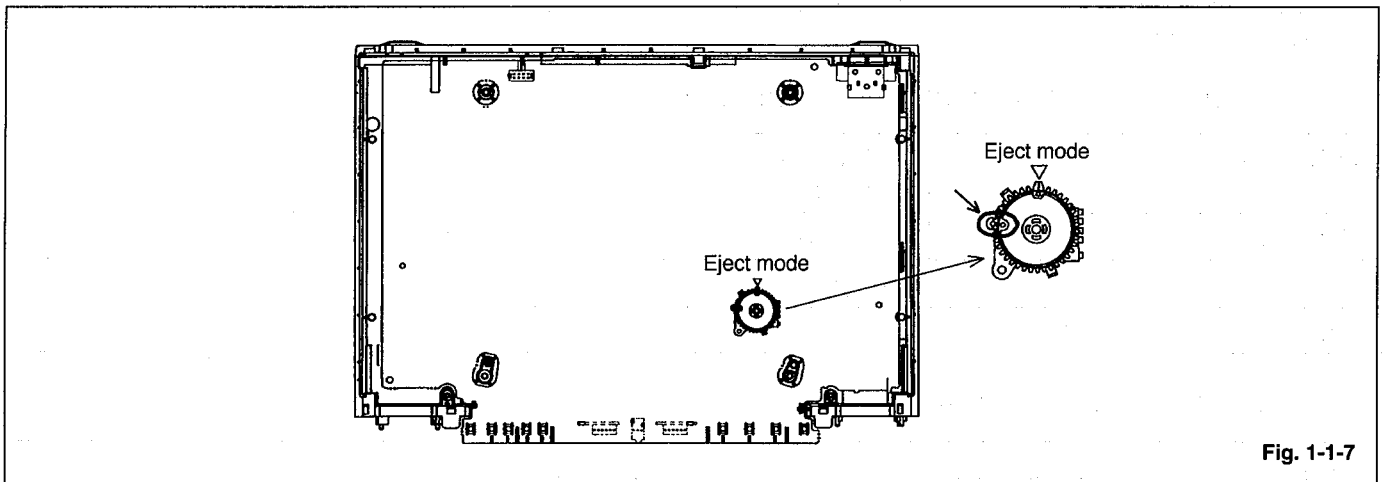
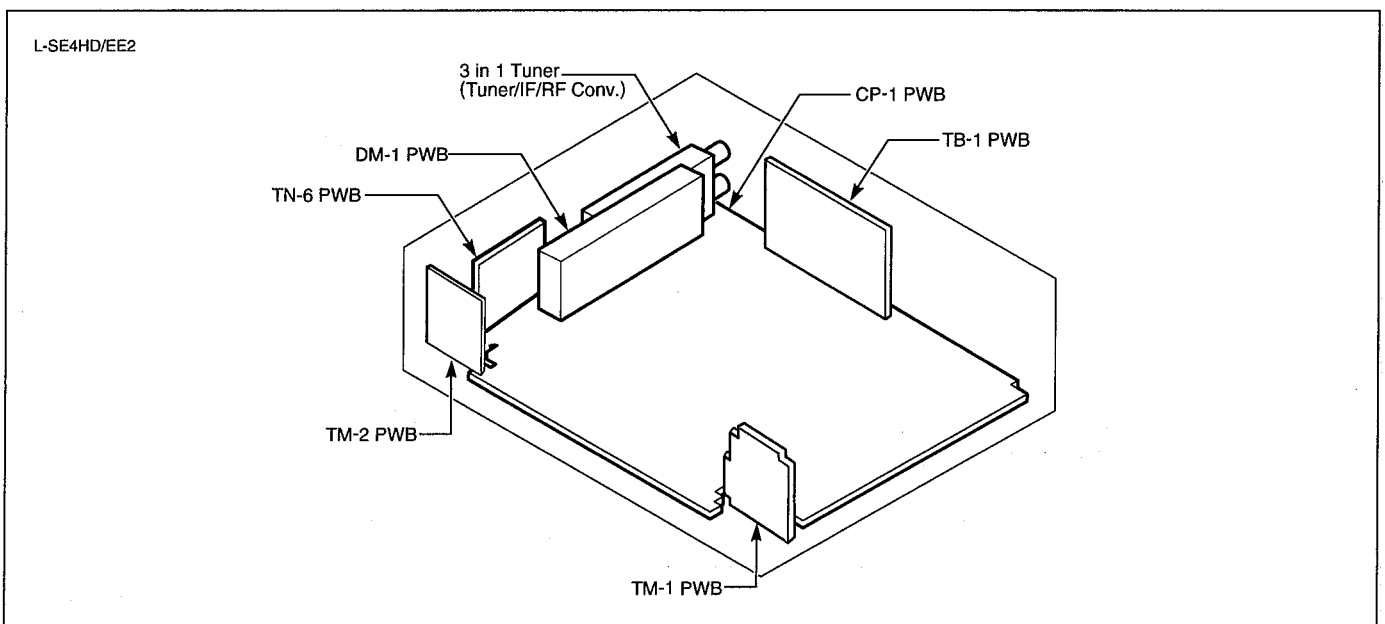


Fig. 1-1-7

## 1-4. CIRCUIT BOARD LOCATIONS



## 2. ELECTRICAL ADJUSTMENT

### VCR PRESETTING

This VCR need three basic presetting by using the menus displayed on-screen. After all connection have been made, then follow steps 1 to 3 to preset the VCR.

The three presetting steps will be displayed in sequence on TV screen. The setting are entered with the remote control.

Turn on the VCR

1. Adjusting the TV receiver to the video channel: The AUTO SETUP screen will appear. When the video channel has been preset, press the OK button on the remote control.
2. Country selection: Using the numeric button, select the country of use.
3. Language selection: When the desired language has been select, press the MENU/TV button directly before prevent auto tuning will start.

When steps 1 to 3 have been finish, ready to operate the all operating mode.

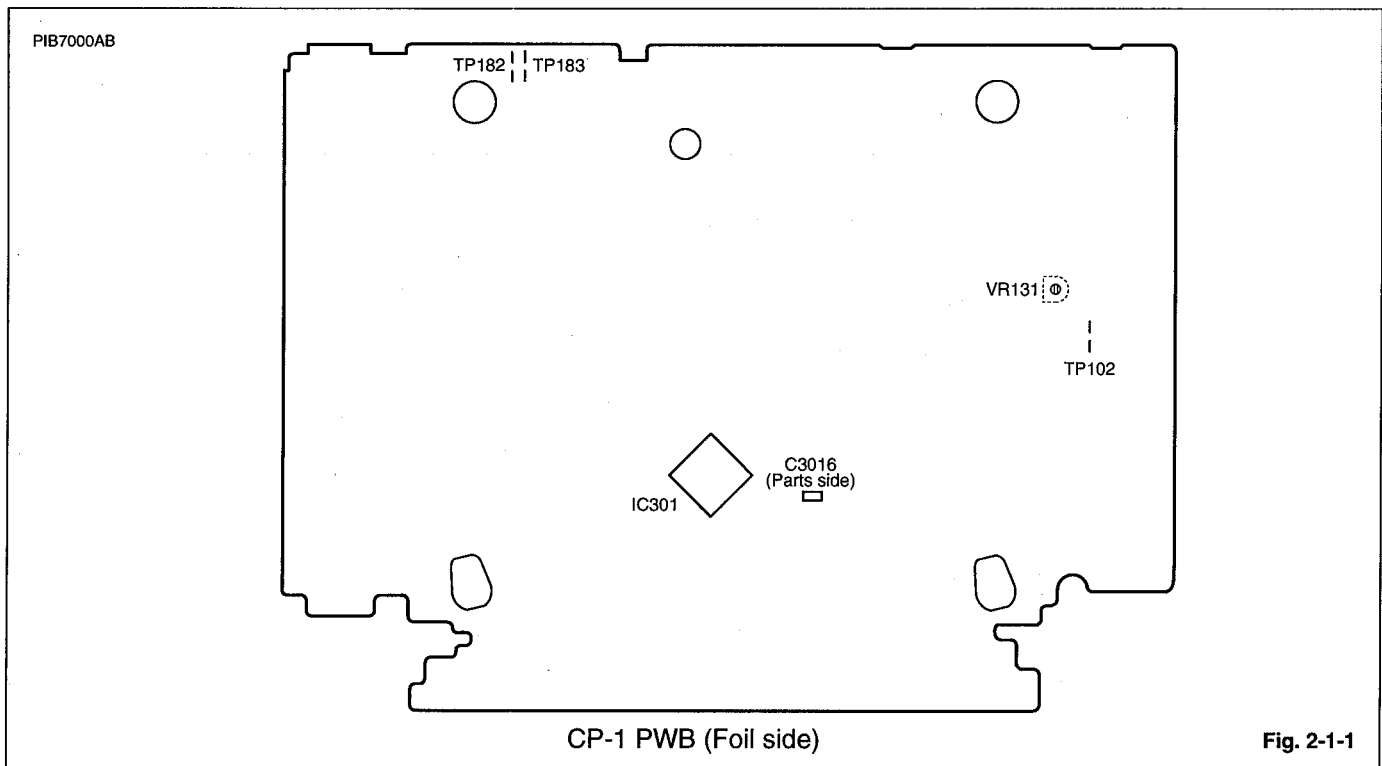
### 2-1. SERVO CIRCUIT ADJUSTMENT

- These adjustments should be done upon completion of the tape transport adjustments.
- If the tape transport adjustments (except the tilt adjustment) are done after these adjustments, follow the procedures again in section 2-1-3, "Switching position adj."
- When a cassette tape is loaded, auto-tracking will be set immediately after starting the first playback. As this will daviate the tracking center set, be sure to press the CH/TRACK buttons (+) and (-) once directly after starting playback to prevent auto-tracking from being set.

#### 2-1-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Oscilloscope	Vertical sensitivity : 5 mV/DIV, external trigger Bandwidth : more than 10 MHz
Alignment Tape	VHJ-0009 or VHJ-0023 : SP mode, monoscope, 6 KHz
Blank Tape	VHS-type cassette tape
Monitor TV	

#### 2-1-2. LOCATION OF ADJUSTMENT POINTS



**Note:**

- Set the REC/PLAY SPEED button to indicator panel in the SP mode.
- Self-recording means "Record any broadcasting or video signal and playback the just-recorded portion."

**2-1-3. SWITCHING POSITION ADJ.**

Measuring Point	Measuring Equipment	Adj. Condition
TP102 (VIDEO LEVEL) TP183 (RF SW-P)	Oscilloscope	PLAY (SP) mode Alignment tape VHJ-0009 (PM-S6)
<b>Adj. Location</b>		<b>Adj. Value</b>
REC button CH/TRACK (+) / (-) button PLAY button		6.5 H ± 0.5 H

1. At playback starts, press the REC button 3 times within 3 seconds after the playback picture comes out. However, these 3-push must be done within 2 seconds, and last push must be kept pressed for 0.5 seconds. (Fig. 2-1-3)
2. "P 0:00" is appeared in FLD, and it becomes the adjustment mode. This indication value changes automatically, and 6.5 H adjustment is done. When this value stops, adjustment value almost becomes 6.5 H.
3. Observe the video output signal by the oscilloscope, triggered by the fall down point of RF SW PULSE (TP183), and confirm that a front edge of V-SYNC is delayed for 6.5 H ± 0.5 H from the fall down point of RF SW PULSE. (Fig. 2-1-4)
4. After the adjustment data is fixed (it should be within 15 seconds from the adjustment mode start), press the PLAY button more than 1 second. Then the indication changes to "P - : -", it writes the data (delay quantity) to the E<sup>2</sup>PROM. (If it passes through 15 seconds before pushing the PLAY button, the intake of the data isn't done, and it finishes the adjustment mode.)
5. If it is not in 6.5 H ± 0.5 at the time of the confirmation by the above 3., make manual fine adjustment by pressing the CH/TRACK button, and do the operation of 4.

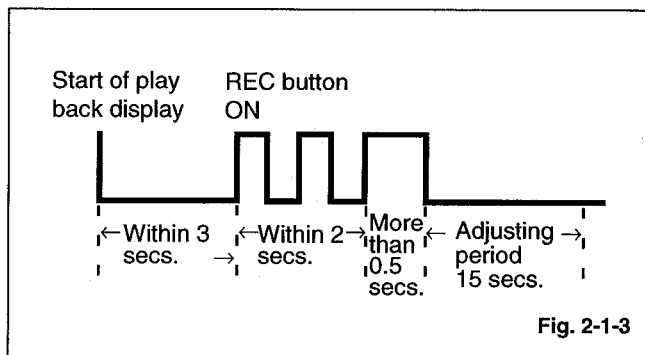


Fig. 2-1-3

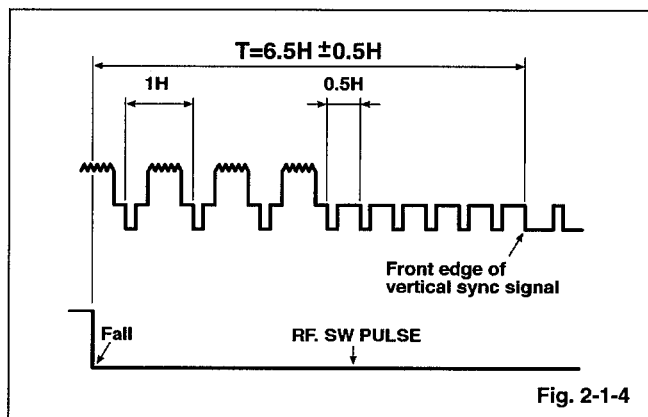


Fig. 2-1-4

**2-1-4. SP STILL V-LOCK ADJ.**

Measuring Point	Measuring Equipment	Adj. Condition
Picture of monitor	Monoscope pattern	Self-recording (SP mode) STILL mode
<b>Adj. Location</b>		<b>Adj. Value</b>
CH/TRACK (+) or (-) button		The minimum vertical shake

1. Set the REC/PLAY SPEED button to the SP mode.
2. Play back the own recorded portion of the tape and then set the VCR in the STILL mode.
3. Press the CH/TRACK (+) or (-) button so that the vertical shake of picture becomes its minimum.

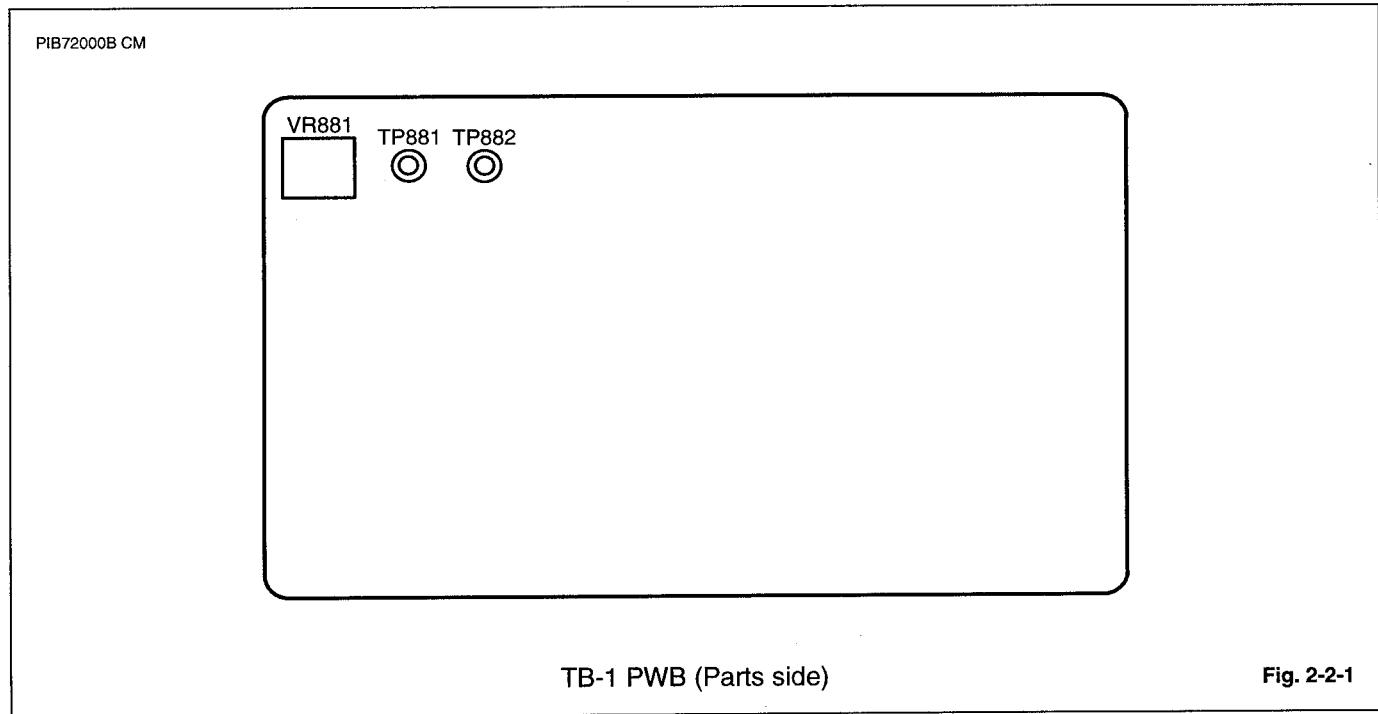
## 2-2. CM CUT CIRCUIT ADJUSTMENT for VHR-899EV

- Before making these adjustments, be sure to make the adjustments described in section 2-1. "Servo Circuit" and "MECHANISM".

### 2-2-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Oscilloscope	Vertical sensitivity : 5 mV/DIV Bandwidth : more than 30 MHz
Blank Tape	VHS-type cassette tape

### 2-2-2. LOCATION OF ADJUSTMENT POINTS



#### Note:

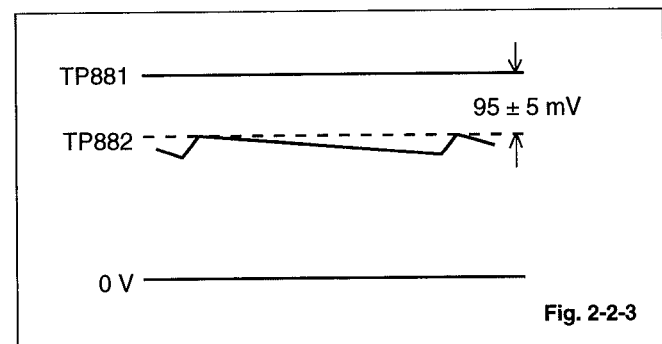
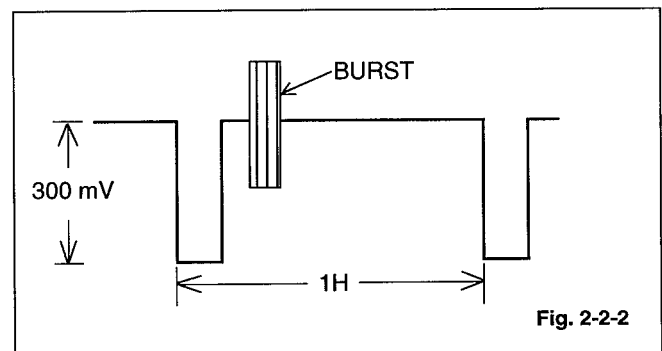
- Set the following remote control button to the positions indicated below, before making following adjustments.

REMOTE CONTROL BUTTON	POSITION
TAPE SPEED	SP
INPUT	AV

### 2-2-3. DC LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP881, TP882 Tuner (GND)	Oscilloscope (10:1 probe)	REC (SP) mode Blank tape
Adj. Location		Adj. Value
VR881		$95 \pm 5$ mV

1. Input BLACK BURST signal to the VIDEO INPUT terminal. (Fig. 2-2-2)
2. Load the VCR with a blank tape and select the REC mode.
3. Adjust VR881 so that the difference between the DC level of TP881 and the DC level of TP882 is  $95 \pm 5$  mV.



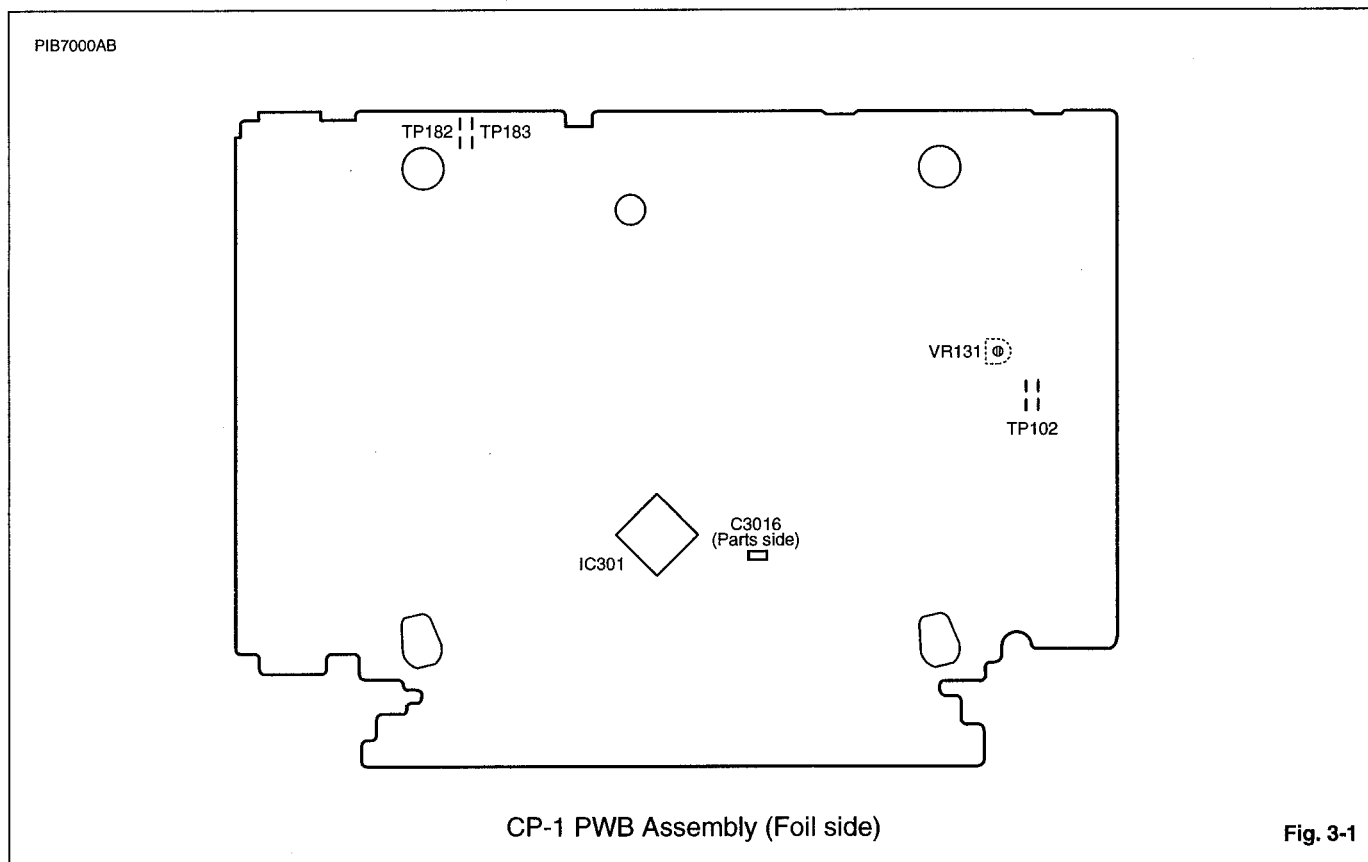


### 2-3. CHECKING THE RF CHANNEL

If the TV and VCR are connected by an aerial output cable which has poor shielding characteristics, turn off the RF converter of the VCR and use the VCR with an AV cable. To turn the RF converter off, input "00" when setting the RF (when "RF" is displayed) during VCR pre-setting.

### 3. TEST POINTS FOR TAPE PATH ADJUSTMENT

Test points TP182 (ENV) and TP183 (SW-P) for tape path adjustment are shown in figure below. For adjustment, refer to the separate volume "VC Mechanism Manual" (MM531683).

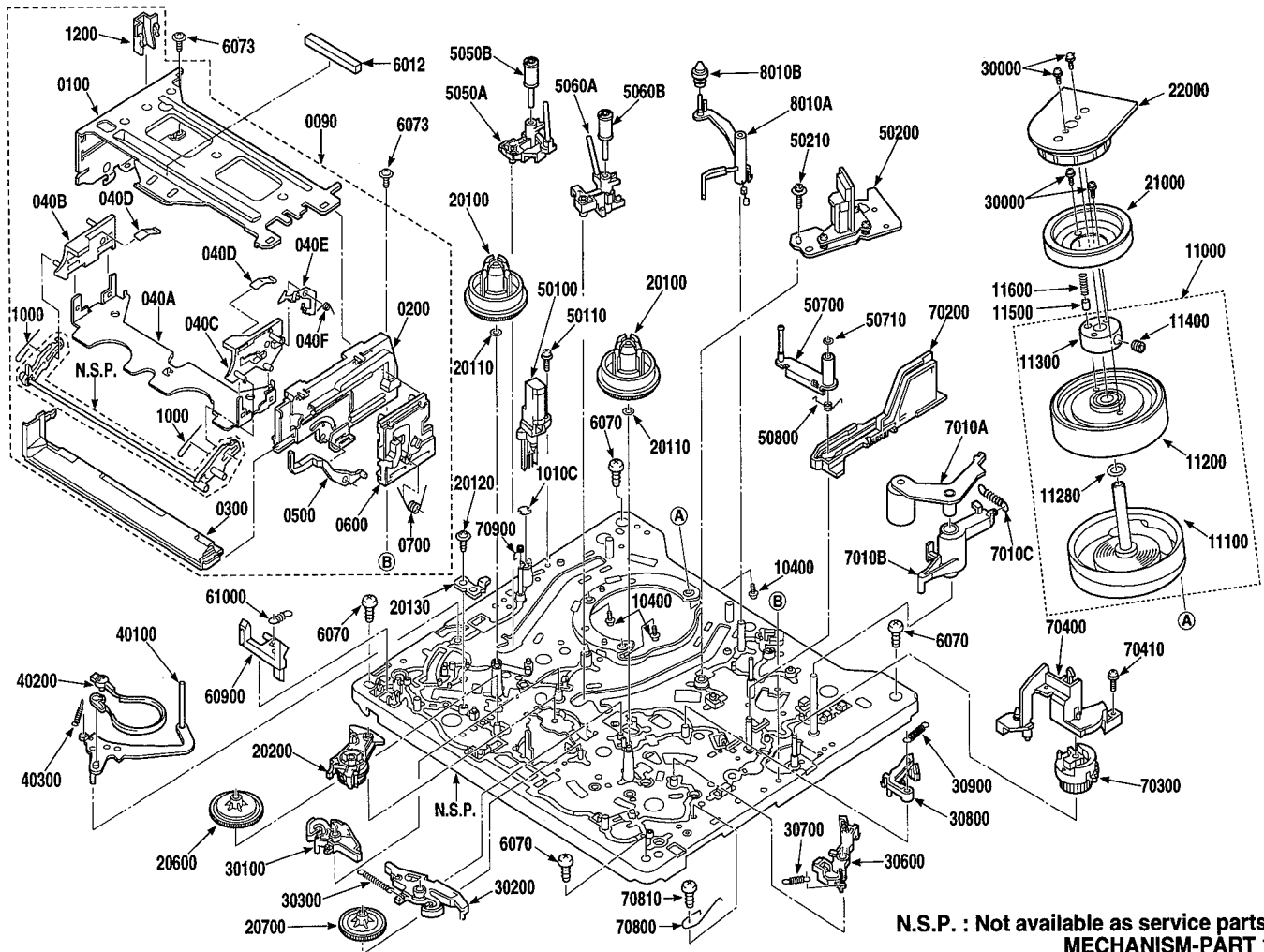


# 4. PARTS LIST

## MECHANISM PARTS

LOCATION	PARTS NO.	DESCRIPTION
<b>MECHANISM PARTS 1</b>		
11000	613 182 7769	COMPL,CYLINDER,4H6P-R3
OR	613 182 7752	COMPL,CYLINDER,4H6P-R3
11100	613 182 7875	ASSY,CYLINDER,LWR 6
OR	613 182 7882	ASSY,CYLINDER,LWR 6
11200	613 182 7783	ASSY,CYLINDER,UPR 4H6P-R3
OR	613 182 7790	ASSY,CYLINDER,UPR 4H6P-R3
11280	613 182 6366	SPACER,CYLINDER
11300	613 182 6311	MOUNTING,MOTOR,CYLINDER
11400	411 158 0208	SCR SET HEX-SCT 4X6
11500	613 182 6229	EARTH,CHIP,CYLINDER
11600	613 182 6533	SPRING,EARTH,CYLINDER
21000	645 030 3678	MOTOR,ROTOR,CYL DC 2W VC
22000	645 030 3661	MOTOR,STATOR,CYL DC 2W VC
30000	412 036 5001	SPECIAL SCREW 2.3X6
6012	613 151 6618	PAD
6073	411 177 3709	SCR S-TPG CUP 2.6X6
0090	613 187 2646	COMPL,CASSETTE MECHA VC
0100	613 182 3778	STAND,L VC
0200	613 182 3785	STAND,R VC
0300	613 152 0660	FRAME UNDER
040A	613 168 0937	TRAY,VC
040B	613 187 2769	GUIDE,CASSETTE L VC
040C	613 182 3723	GUIDE,CASSETTE R VC
040D	613 182 3815	SPRING,PLATE VC
040E	613 182 3730	LEVER,LID OPENER VC
040F	613 182 3822	SPRING,LID OPENER VC
0500	613 182 3747	LEVER,DOOR OPENER VC
0600	613 182 3808	SLIDE,DRIVE VC
0700	613 182 3839	SPRING,START VC

LOCATION	PARTS NO.	DESCRIPTION
1000	613 183 8277	SPRING,TRAY VC
1200	613 184 6630	HOOD,SENSOR VC
6070	411 021 7907	SCR S-TPG BIN 4X12
1010C	613 182 4461	GUIDE,S VC
10400	412 052 6204	SPECIAL SCREW-2.6X5.5
20100	613 182 7035	REEL,SPINDLE VC
20110	412 059 1509	SPECIAL WASHER 3.4X0.3
OR	412 058 0503	SPECIAL WASHER 3.4X0.4
OR	412 059 1608	SPECIAL WASHER 3.4X0.5
20120	411 025 5107	SCR P-TPG BIN 2.6X8
20130	613 185 8978	MOUNTING,BT BAND VC
20200	613 186 3804	COMPL,MOUNTING,IDLER VC
20600	613 182 3297	GEAR,REEL S VC
20700	613 182 3303	GEAR,REEL T VC
30100	613 182 4676	ASSY,BRAKE S VC
30200	613 182 4683	ASSY,BRAKE T VC
30300	613 182 6588	SPRING,BRAKE MAIN VC
30600	613 182 4690	ASSY,BRAKE,SOFT T VC
30700	613 182 6595	SPRING,BRAKE SOFT T VC
30800	613 151 8490	ASSY,BRAKE CAPSTAN
30900	613 152 0356	SPRING,BRAKE CAPSTAN
40100	613 151 8759	ASSY,LEVER,BT
40200	613 160 5282	ASSY,BRAKE,BAND
40300	613 152 0271	SPRING,BT
50100	645 030 0950	HEAD,ERASE FULL VC
OR	645 030 7331	HEAD,ERASE FULL VC
50110	412 049 1700	SPECIAL SCREW-2.6X10
50200	613 184 5916	ASSY,HEAD R/P ACE VC
50210	412 052 3500	SPECIAL SCREW 2.6X12
5050A	613 182 3228	ASSY,MOUNTING,INCL S VC



N.S.P. : Not available as service parts.  
MECHANISM-PART 1

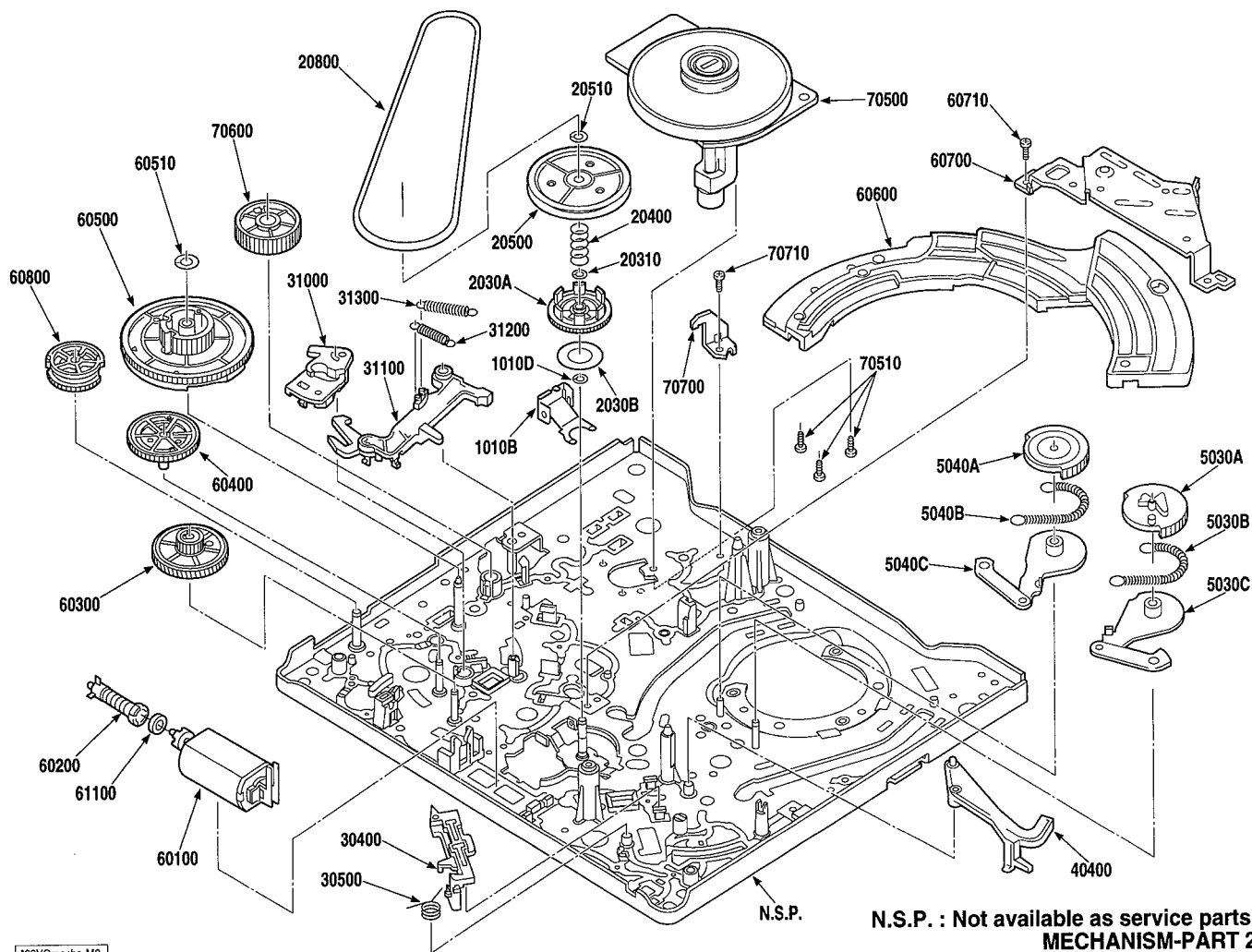
VCmecha.P.M1

LOCATION	PARTS NO.	DESCRIPTION
5050B	613 184 4384	ASSY,ROLLER,GUIDE
5060A	613 182 3242	ASSY,MOUNTING,INCL T VC
5060B	613 184 4384	ASSY,ROLLER,GUIDE
50700	613 182 5758	ASSY,LEVER LOAD VC
50710	411 109 1902	WASHER Y 3.1X6X0.5
OR	411 109 2404	WASHER Y 3.1X6X0.4
OR	411 179 0805	WASHER Y 3.1X6X0.6
50800	613 182 6540	SPRING,LEVER LOAD VC
60900	613 182 4249	LEVER,EP SW VC
61000	613 182 4256	SPRING,EP SW VC
7010A	613 182 6809	ASSY,LEVER,PINCH VC
7010B	613 182 6328	MOUNTING,LIFT PINCH VC
7010C	613 182 6557	SPRING,PINCH ROLLER VC
70200	613 182 6250	GEAR,RACK PINCH VC
70300	613 182 6243	GEAR,CAM PINCH VC
70400	613 182 6335	MOUNTING,OPENER VC
70410	412 049 1700	SPECIAL SCREW-2.6X10
70800	613 185 7490	SPRING,EARTH VC
70810	412 048 8007	SPECIAL SCREW-2.6X6
70900	613 186 5129	SPRING,GUIDE EARTH VC
8010A	613 171 9606	LEVER,CLEANER
8010B	613 171 9439	ASSY,MOUNTING CLEANER

LOCATION	PARTS NO.	DESCRIPTION
20510	412 045 4806	SPECIAL WASHER 2.4X6X0.25
20800	613 182 3259	BELT,REEL VC
30400	613 182 6526	SLIDE,SOFT S VC
30500	613 182 6601	SPRING,BRAKE SOFT S VC
31000	613 182 6298	LEVER,CONTROL BRAKE VC
31100	613 182 5765	COMPL,LEVER,ACT BRAKE VC
31200	613 182 6571	SPRING,CHANGE CLUTCH VC
31300	613 182 6564	SPRING,RETURN BRAKE VC
40400	613 153 7583	ASSY,LEVER SPRING BT
5030A	613 152 2763	GEAR,LOAD S
5030B	613 152 0370	SPRING,LOAD S
5030C	613 160 3691	ASSY,LEVER,LOAD S
5040A	613 152 2770	GEAR,LOAD T
5040B	613 152 0363	SPRING,LOAD T
5040C	613 160 3707	ASSY,LEVER,LOAD T
60100	645 029 7014	ASSY,MOTOR LOADING BB VC
60200	613 151 8599	COMPL,GEAR,WORM
60300	613 151 9138	GEAR,WHEEL 1
OR	613 187 4602	GEAR,WHEEL 1
60400	613 160 3790	GEAR,WHEEL 2
60500	613 182 3273	CAM,MAIN VC
60510	412 054 6806	SPECIAL WASHER 3.6X0.5
60600	613 182 3419	SLIDE,CRESCENT VC
60700	613 182 4485	MOUNTING CRESCENT VC
60710	412 048 8007	SPECIAL SCREW-2.6X6
60800	613 182 6236	GEAR,LOCK VC
61100	613 151 9107	DAMPER
70500	645 030 3388	MOTOR,CAPSTAN DC 3W VC
70510	412 048 7604	SPECIAL SCREW-2.6X6
70600	613 182 3327	GEAR,RELAY PINCH VC
70700	613 167 5926	MOUNTING CAPSTAN
70710	412 048 8007	SPECIAL SCREW-2.6X6

### MECHANISM PARTS 2

1010B	613 182 3358	LEVER,CLUTCH VC
1010D	411 120 1400	WASHER Y 2.6X4.7X0.25
2030A	613 182 3310	GEAR,CLUTCH VC
2030B	412 058 7908	SPECIAL WASHER 7.3X16X0.5
20310	411 109 4002	WASHER Y 2.6X4.7X0.5
20400	613 182 7042	SPRING,CLUTCH VC
20500	613 182 2986	ASSY,PULLEY,FRICTION VC

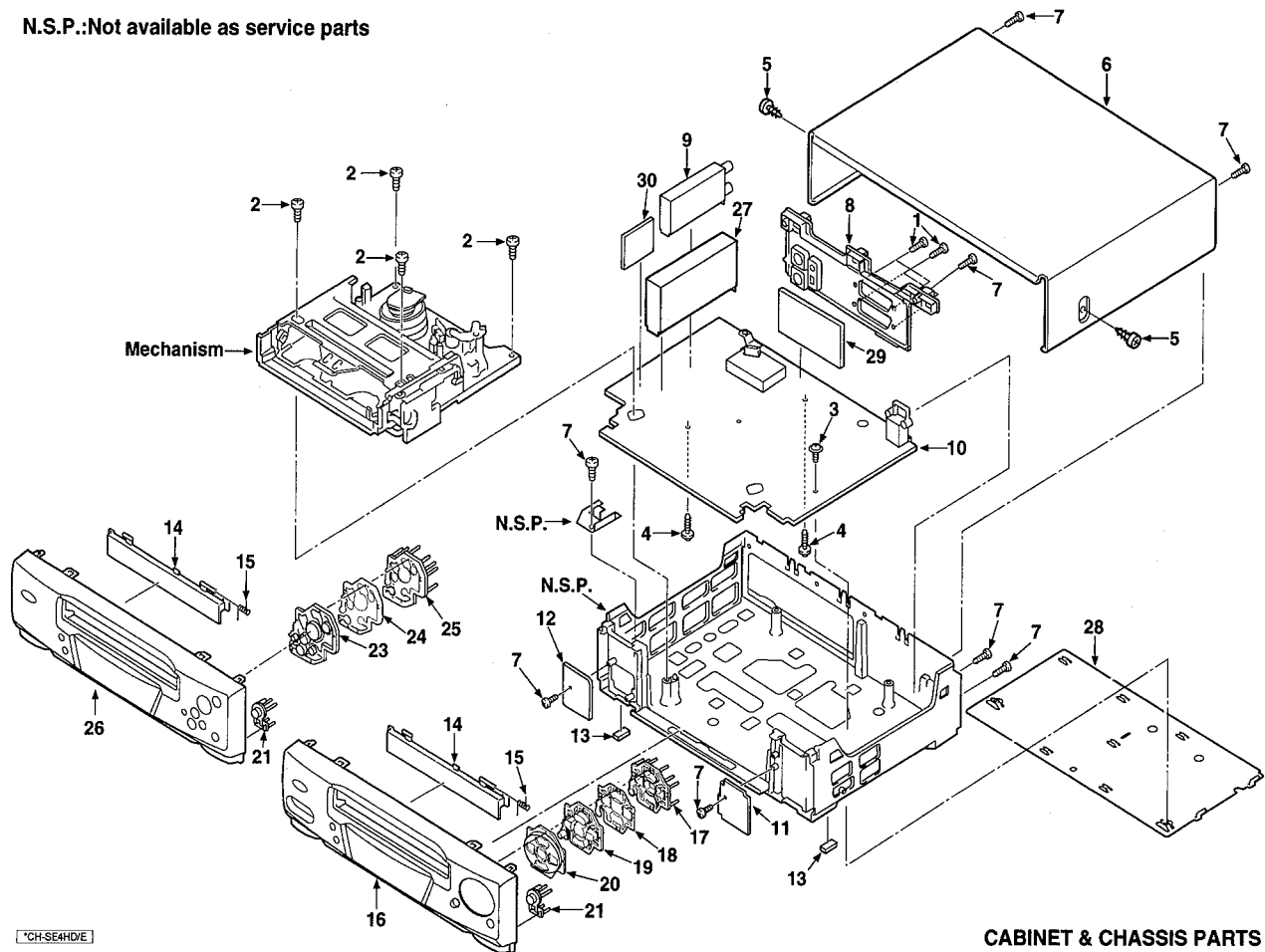


\*99Vcmecha-M2

LOCATION	PARTS NO.	DESCRIPTION
<b>CABINET &amp; CHASSIS PARTS</b>		
1	411 137 0007	SCR L-TPG BIN 3X10
2	411 021 7907	SCR S-TPG BIN 4X12
3	411 142 9200	SCR S-TPG PAN+FLG 3X10
4	412 052 5108	SPECIAL SCREW-2.6X12
5	412 028 9406	SPECIAL SCREW
6	613 187 5814	COVER TOP, VHR-899E ONLY
6	613 187 5821	COVER TOP, VHR-899EV ONLY
7	411 025 5404	SCR S-TPG BIN 3X12
8	613 184 1574	TERMINAL, VHR-899E ONLY
8	613 184 8238	TERMINAL, VHR-899E ONLY
9	645 031 0812	TUNER, RF/TU/IF, VHR-899EV ONLY
9	645 031 0850	TUNER, RF/TU/IF, VHR-899E ONLY
10	613 186 2975	COMPL PWB, CP-1-AVHR-899E ONLY
10	613 187 3681	COMPL PWB, CP-1-A, VHR-899EV ONLY
11	613 184 9310	COMPL PWB, TM-1, VHR-899EV ONLY
11	613 186 4276	COMPL PWB, TM-1, VHR-899E ONLY
12	613 186 2722	COMPL PWB, TM-2
13	613 121 1001	STAND, FELT, (FRONT)
14	613 186 2005	DOOR CASSETTE, VHR-899E ONLY

LOCATION	PARTS NO.	DESCRIPTION
14	613 187 3094	DOOR CASSETTE, VHR-899EV ONLY
15	613 183 9700	SPRING
16	613 186 1923	ASSY, CABINET FRONT SID, VHR-899E ONLY
17	613 183 8789	HOLDER 6P, VHR-899E ONLY
18	613 183 8758	DEC, SHEET, VHR-899E ONLY
19	613 183 8536	BUTTON, 6P, VHR-899E ONLY
20	613 184 2274	DEC, BUTTON, VHR-899E ONLY
21	613 186 3347	BUTTON, VHR-899E ONLY
21	613 187 3032	BUTTON, VHR-899EV ONLY
23	613 184 6548	BUTTON, 6P, VHR-899EV ONLY
24	613 186 6263	DEC, SHEET, VHR-899EV ONLY
25	613 183 8796	HOLDER 6P, VHR-899EV ONLY
26	613 187 2967	ASSY, CABINET FRONT SJC, VHR-899EV ONLY
27	613 186 2692	COMPL PWB, DM-1, VHR-899E ONLY
27	613 188 2263	COMPL PWB, DM-1, VHR-899EV ONLY
28	613 183 7898	COVER BOTTOM
29	613 186 2715	COMPL PWB, TB-1, VHR-899E ONLY
29	613 187 3834	COMPL PWB, TB-1, VHR-899EV ONLY
30	613 181 8224	COMPL PWB, TN-6

N.S.P.: Not available as service parts



CABINET & CHASSIS PARTS

# ELECTRICAL PARTS

Note:

1. Materials of Capacitors and Resistors are abbreviated as follows ;

**Resistors**

**MT-FILM** Metallized Film Resistor  
**MT-GLAZE** Metallized Glaze Resistor  
**OXIDE-MT** Oxide Metallized Film Resistor

**Capacitors**

**MT-POLYEST** Metallized Polyester Capacitor  
**MT-COMPO** Metallized Composite Capacitor  
**TA-SOLD** Tantalum Solid Capacitor  
**AL-SOLID** Aluminum Solid Capacitor  
**NP-ELECT** Non-Polarized Electrolytic Capacitor  
**OS-SOLID** Aluminum Solid Capacitors with Organic Semiconductive Electrolytic Capacitor  
**DL-ELECT** Double Layered Electrolytic Capacitor

2. Tolerance of Capacitor (10pF over) and Resistor are noted with follow symbols.

F .....1%      G .....2%      J .....5%      K .....10%  
M .....20%      N .....30%      Z .....+80% ~ -20%

3. Capacitors

U :  $\mu$ F      P : pF

4. Inductors

UH :  $\mu$ H      MH : mH

5. N.S.P. : Not available as service parts.

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
<b>COMPL PWB,CP-1-A</b>			Q1014	405 002 6706	TR 2SA1179-M6
	613 187 3681	VHR-899EV ONLY	OR	405 002 0308	TR 2SA1037K-R
	613 186 2975	VHR-899E ONLY	OR	405 002 0407	TR 2SA1037K-S
			Q1081	405 035 6100	TR 2SC2413K-Q
			Q1301	405 002 6508	TR 2SA1179-M5
			OR	405 002 6706	TR 2SA1179-M6
			OR	405 002 0308	TR 2SA1037K-R
			OR	405 002 0407	TR 2SA1037K-S
			Q1401	405 002 6508	TR 2SA1179-M5
			OR	405 002 6706	TR 2SA1179-M6
			OR	405 002 0308	TR 2SA1037K-R
			OR	405 002 0407	TR 2SA1037K-S
			Q1802	405 015 8407	TR 2SC2812-L5
			OR	405 015 8704	TR 2SC2812-L6
			OR	405 014 4509	TR 2SC2412K-R
			OR	405 014 4608	TR 2SC2412K-S
			Q1851	405 015 8407	TR 2SC2812-L5
			OR	405 015 8704	TR 2SC2812-L6
			OR	405 014 4509	TR 2SC2412K-R
			OR	405 014 4608	TR 2SC2412K-S
			Q2071	405 003 5609	TR 2SA1318-S
			OR	405 003 5708	TR 2SA1318-T
			OR	405 003 5807	TR 2SA1318-U
			Q2072	405 024 9709	TR 2SD734-E
			OR	405 024 9907	TR 2SD734-F
			Q2073	405 018 0002	TR 2SC3331-S
			OR	405 018 0101	TR 2SC3331-T
			OR	405 018 0200	TR 2SC3331-U
			Q2074	405 018 0002	TR 2SC3331-S
			OR	405 018 0101	TR 2SC3331-T
			OR	405 018 0200	TR 2SC3331-U
			Q2075	405 003 5609	TR 2SA1318-S
			OR	405 003 5708	TR 2SA1318-T
			OR	405 003 5807	TR 2SA1318-U
			Q2101	405 000 0508	TR DTA114ES
			OR	405 003 7900	TR 2SA1348
			Q2102	405 029 3504	TR DTC144EK
			OR	405 018 1900	TR 2SC3395
			Q2103	405 018 0002	TR 2SC3331-S
			OR	405 018 0101	TR 2SC3331-T
			OR	405 018 0200	TR 2SC3331-U
			Q2301	405 000 5305	TR DTC143TK
			OR	405 045 2208	TR 2SC3900
			Q2302	405 000 5305	TR DTC143TK
			OR	405 045 2208	TR 2SC3900
			Q2303	405 000 2007	TR DTA144EK
			OR	405 003 7108	TR 2SA1341
			Q2304	405 000 2007	TR DTA144EK
			OR	405 003 7108	TR 2SA1341
			Q2305	405 029 3504	TR DTC144EK
			OR	405 018 1900	TR 2SC3395
			Q2306	405 099 8201	TR 2SA1782S
			OR	405 006 1707	TR 2SA933S-Q
			OR	405 093 0508	TR KSA1175-Y
			OR	405 099 8300	TR 2SA1782T-AC
CN181	645 030 7393	SOCKET,FFC 10P (N.S.P)			
CN202	645 029 8011	SOCKET,2P (N.S.P)			
CN350	645 029 8011	SOCKET,2P (N.S.P)			
CN351	645 009 4095	SOCKET,FFC 5P (N.S.P)			
OR	645 012 4945	SOCKET,FPC 5P (N.S.P)			
CN352	645 008 1842	PLUG,8P (N.S.P)			
CN373	645 009 4194	SOCKET,FFC 15P (N.S.P)			
OR	645 010 2349	SOCKET,FFC 15P (N.S.P)			
CN501	△ 645 000 5411	SOCKET,INLET AC			
OR	△ 645 028 4885	SOCKET,INLET AC			
		<b>(SEMICONDUCTORS)</b>			
Q1002	405 035 6100	TR 2SC2413K-Q			
Q1003	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q1004	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
Q1005	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q1006	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q1007	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q1008	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
Q1009	405 029 3504	TR DTC144EK			
OR	405 018 1900	TR 2SC3395			
Q1010	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q1011	405 029 3504	TR DTC144EK			
OR	405 018 1900	TR 2SC3395			
Q1012	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
Q1013	405 035 6100	TR 2SC2413K-Q			
Q1014	405 002 6508	TR 2SA1179-M5			

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
Q2306	405 006 1806	TR 2SA933S-R	IC301	410 347 9701	IC MN101D02FBT,VHR-899E ONLY
Q2307	405 029 3504	TR DTC144EK	IC301	410 351 9407	IC MN101D02GBY,VHR-899EV ONLY
OR	405 018 1900	TR 2SC3395	IC302	409 440 4508	IC LB1643L
Q2308	405 029 3504	TR DTC144EK	IC304	409 415 0009	IC BMR03H-04
OR	405 018 1900	TR 2SC3395	IC305	409 372 1002	IC AT24C08-10PC
Q3010	405 002 6508	TR 2SA1179-M5	OR	409 455 0106	IC 24LC08B/P
OR	405 002 6706	TR 2SA1179-M6	OR	409 458 9304	IC 24LC08B-I/P
OR	405 002 0308	TR 2SA1037K-R	IC307	409 304 6402	IC NJM2246M
OR	405 002 0407	TR 2SA1037K-S	IC371	409 424 6900	IC MN12510F
Q3012	405 015 8407	TR 2SC2812-L5	IC501	409 460 7602	IC MA3810-4109
OR	405 015 8704	TR 2SC2812-L6	OR	409 409 3801	IC MA3810-4105
OR	405 014 4509	TR 2SC2412K-R	IC511	409 180 2307	IC UPC1093J
OR	405 014 4608	TR 2SC2412K-S	OR	409 067 7203	IC L5431
Q3013	405 015 8407	TR 2SC2812-L5	IC512	409 391 6200	IC PQ09RD11
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q3020	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
Q3021	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
Q3030	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q3031	405 015 8407	TR 2SC2812-L5			
OR	405 015 8704	TR 2SC2812-L6			
OR	405 014 4509	TR 2SC2412K-R			
OR	405 014 4608	TR 2SC2412K-S			
Q5002	405 089 2202	TR 2SC4483-T			
Q5101	405 125 3200	TR 2SC5070			
Q5102	405 089 2103	TR 2SC4483-S			
OR	405 089 2202	TR 2SC4483-T			
OR	405 104 3108	TR 2SD1858-Q			
OR	405 029 4501	TR 2SD1858-R			
Q5103	405 013 6801	TR 2SC2274-E			
OR	405 013 7006	TR 2SC2274-F			
OR	405 013 7204	TR 2SC2274K-E			
OR	405 013 7303	TR 2SC2274K-F			
Q5104	405 089 2103	TR 2SC4483-S			
OR	405 089 2202	TR 2SC4483-T			
OR	405 104 3108	TR 2SD1858-Q			
OR	405 029 4501	TR 2SD1858-R			
Q5105	405 099 8508	TR 2SC4640S			
OR	405 011 8401	TR 2SC1740S-Q			
OR	405 093 0607	TR KSC2785-Y			
OR	405 099 8607	TR 2SC4640T			
OR	405 011 8500	TR 2SC1740S-R			
Q5106	405 089 2103	TR 2SC4483-S			
OR	405 089 2202	TR 2SC4483-T			
OR	405 104 3108	TR 2SD1858-Q			
OR	405 029 4501	TR 2SD1858-R			
Q5110	405 083 6305	TR DTB113ZK			
Q5111	405 000 2007	TR DTA144EK			
Q5112	405 000 4100	TR DTC124EK			
Q5113	405 000 2908	TR DTC114EK			
Q5114	405 125 3200	TR 2SC5070			
Q5115	405 029 3504	TR DTC144EK			
Q5116	405 000 4100	TR DTC124EK			
Q5117	405 083 6305	TR DTB113ZK			
Q5120	405 013 6801	TR 2SC2274-E			
OR	405 013 7006	TR 2SC2274-F			
OR	405 013 7204	TR 2SC2274K-E			
OR	405 013 7303	TR 2SC2274K-F			
Q6051	405 000 5305	TR DTC143TK			
OR	405 045 2208	TR 2SC3900			
Q6055	405 002 6508	TR 2SA1179-M5			
OR	405 002 6706	TR 2SA1179-M6			
OR	405 002 0308	TR 2SA1037K-R			
OR	405 002 0407	TR 2SA1037K-S			
		<b>(INTEGRATED CIRCUITS)</b>			
IC101	409 445 6408	IC LA71592M-MPB			
IC141	410 324 1605	IC LC74793JM-MPB			
IC231	409 443 9302	IC AN3650NFBB			
			D1001	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D2301	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3010	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3011	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3030	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3031	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3510	407 207 0107	LED LN59LT.SL, LED VC MECHA
			D3511	407 208 6603	PHOTO,DIODE PN205LT.SN
			D3512	407 208 6603	PHOTO,DIODE PN205LT.SN
			D3701	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3702	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3704	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3705	407 012 4406	DIODE 1SS133,VHR-899E ONLY
			OR	407 007 9904	DIODE GMA01,VHR-899E ONLY
			OR	407 142 0804	DIODE WG713,VHR-899E ONLY
			OR	407 151 2905	DIODE WG713A,VHR-899E ONLY
			D3709	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3711	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3712	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3713	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A
			D3714	407 012 4406	DIODE 1SS133
			OR	407 007 9904	DIODE GMA01
			OR	407 142 0804	DIODE WG713
			OR	407 151 2905	DIODE WG713A

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
D3716	407 012 4406	DIODE 1SS133	X1002	645 005 1197	OSC,CRYSTAL 4.433619MHZ
OR	407 007 9904	DIODE GMA01	OR	613 120 8865	OSC,CRYSTAL 4.433619MHZ
OR	407 142 0804	DIODE WG713	OR	645 014 8231	OSC,CRYSTAL 4.433619MHZ
OR	407 151 2905	DIODE WG713A	X3001	645 008 7899	OSC,CRYSTAL 14.31818MHZ
D3717	407 012 4406	DIODE 1SS133	X3002	613 109 0972	OSC,CRYSTAL 32KHZ
OR	407 007 9904	DIODE GMA01	X3701	645 006 3435	OSC,CERAMIC 4.000MHZ
OR	407 142 0804	DIODE WG713	OR	613 124 2142	RESONATOR,CERAMIC 4MHZ
OR	407 151 2905	DIODE WG713A			
D3718	407 012 4406	DIODE 1SS133			
OR	407 007 9904	DIODE GMA01	(INDUCTORS)		
OR	407 142 0804	DIODE WG713	L1002	645 002 1510	INDUCTOR,68U J
OR	407 151 2905	DIODE WG713A	OR	645 003 8228	INDUCTOR,68U J
D3720	407 012 4406	DIODE 1SS133,VHR-899E ONLY	L1003	645 001 4611	INDUCTOR,120U J
OR	407 007 9904	DIODE GMA01,VHR-899E ONLY	OR	645 003 7948	INDUCTOR,120U J
OR	407 142 0804	DIODE WG713,VHR-899E ONLY	L1004	645 006 3886	INDUCTOR,1U K
OR	407 151 2905	DIODE WG713A,VHR-899E ONLY	L1011	645 006 3602	INDUCTOR,1.1UH
D3725	407 012 4406	DIODE 1SS133	L1081	645 002 1411	INDUCTOR,10U J
OR	407 007 9904	DIODE GMA01	OR	645 003 7894	INDUCTOR,10U J
OR	407 142 0804	DIODE WG713	L1451	645 001 4642	INDUCTOR,22U J,VHR-899E ONLY
OR	407 151 2905	DIODE WG713A	OR	645 003 8013	INDUCTOR,22U J,VHR-899E ONLY
D3726	407 012 4406	DIODE 1SS133	L2071	645 003 6934	INDUCTOR,100U J
OR	407 007 9904	DIODE GMA01	OR	645 003 7634	INDUCTOR,100U J
OR	407 142 0804	DIODE WG713	L2101	645 020 7396	INDUCTOR,180U K
OR	407 151 2905	DIODE WG713A	L2901	645 003 6910	INDUCTOR,10U J
D3727	407 012 4406	DIODE 1SS133	OR	645 003 7627	INDUCTOR,10U J
OR	407 007 9904	DIODE GMA01	L3001	645 006 3602	INDUCTOR,1.1UH
OR	407 142 0804	DIODE WG713	L3002	645 006 3602	INDUCTOR,1.1UH
OR	407 151 2905	DIODE WG713A	L3003	645 006 3602	INDUCTOR,1.1UH
D5001	407 197 6509	DIODE DB155G-S	L3004	645 006 3602	INDUCTOR,1.1UH
OR	407 104 5304	DIODE S1WB(A)60	L3005	645 006 3602	INDUCTOR,1.1UH
D5002	407 004 9808	DIODE DSK10E	L3006	645 006 3602	INDUCTOR,1.1UH
D5011	407 198 2401	DIODE SFT14	L3007	645 006 3602	INDUCTOR,1.1UH
OR	407 100 6909	DIODE AG01	L5001	△ 645 013 5620	LINE FILTER
OR	407 091 6902	DIODE ERA38-04	OR	△ 645 035 6704	LINE FILTER
OR	407 210 0705	DIODE 1E3	L5101	645 011 6957	INDUCTOR,10U
D5012	407 198 2401	DIODE SFT14	OR	645 002 4122	INDUCTOR,10U K
OR	407 100 6909	DIODE AG01	L5102	645 011 6957	INDUCTOR,10U
OR	407 091 6902	DIODE ERA38-04	OR	645 002 4122	INDUCTOR,10U K
OR	407 210 0705	DIODE 1E3	L6001	645 003 6972	INDUCTOR,15U J
D5013	△ 407 169 5608	PHOTO COUPLE PC123U2	OR	645 003 7658	INDUCTOR,15U J
D5014	407 078 2705	DIODE 1SS244	L6003	645 003 6910	INDUCTOR,10U J
D5015	407 078 2705	DIODE 1SS244	OR	645 003 7627	INDUCTOR,10U J
D5016	407 099 5402	ZENER DIODE MTZJ6.2B	L6052	645 003 7108	INDUCTOR,33U J
D5019	407 078 2705	DIODE 1SS244	OR	645 003 7733	INDUCTOR,33U J
D5102	407 205 7009	DIODE D2FS6			
OR	407 205 7009	DIODE D2FS6	(TRANSFORMERS)		
D5103	407 078 2705	DIODE 1SS244	T2001	645 018 3515	TRANS,OSC,70KHZ
D5104	407 198 2401	DIODE SFT14	T2101	613 109 3485	TRANS,OSC
OR	407 100 6909	DIODE AG01	OR	613 127 4341	TRANS,OSC 70KHZ
OR	407 091 6902	DIODE ERA38-04	T5001	△ 645 027 3599	TRANS,POWER,PULSE
OR	407 210 0705	DIODE 1E3			
D5105	407 167 8007	DIODE D1FL20U	(CAPACITORS)		
OR	407 167 8007	DIODE D1FL20U	C1001	403 192 5905	CERAMIC 0.1U K 25V
D5106	407 119 0400	DIODE ERC62M-004	C1002	403 130 3109	CERAMIC 0.047U K 50V
D5107	407 099 5303	ZENER DIODE MTZJ5.6B	C1003	403 191 8709	ELECT 1U M 50V
D5108	407 099 5303	ZENER DIODE MTZJ5.6B	C1004	403 135 4002	ELECT 47U M 6.3V
D5109	407 099 5303	ZENER DIODE MTZJ5.6B	C1005	403 068 0409	CERAMIC 0.1U Z 25V
D5110	407 099 6508	ZENER DIODE MTZJ12A	C1006	403 069 5601	CERAMIC 0.01U K 50V
D5111	407 099 5600	ZENER DIODE MTZJ6.8A	C1007	403 020 0409	CERAMIC 27P J 50V
D5112	407 091 6902	DIODE ERA38-04	C1008	403 024 7107	CERAMIC 390P J 50V
D5115	407 078 2705	DIODE 1SS244	C1009	403 147 2904	CERAMIC 4.7P C 50V
D5116	407 055 4708	ZENER DIODE RD24MB1	C1010	403 191 8709	ELECT 1U M 50V
OR	407 055 4807	ZENER DIODE RD24M-B2	C1011	403 014 9203	CERAMIC 180P J 50V
OR	407 120 7108	ZENER DIODE RD24MB3	C1012	403 014 3409	CERAMIC 18P J 50V
D5118	407 150 7703	DIODE RB441Q	C1013	403 189 2405	ELECT 10U M 16V
D5119	407 150 7703	DIODE RB441Q	C1014	403 167 6500	ELECT 33U M 6.3V
D5120	407 150 7703	DIODE RB441Q	C1016	403 139 2608	ELECT 0.47U M 50V
D5125	407 099 5402	ZENER DIODE MTZJ6.2B	C1017	403 069 5601	CERAMIC 0.01U K 50V
D6001	407 099 9905	ZENER DIODE MTZJ33B	C1019	403 192 5905	CERAMIC 0.1U K 25V
D6051	407 012 4406	DIODE 1SS133	C1020	403 192 5905	CERAMIC 0.1U K 25V
OR	407 007 9904	DIODE GMA01	C1022	403 139 2707	ELECT 1U M 50V
OR	407 142 0804	DIODE WG713	C1023	403 139 1502	ELECT 10U M 16V
OR	407 151 2905	DIODE WG713A	C1024	403 139 2707	ELECT 1U M 50V
		(PHOTO COUPLERS)	C1025	403 069 5601	CERAMIC 0.01U K 50V
PC351	407 206 6704	PHOTO COUPLE SG-269	C1026	403 069 5601	CERAMIC 0.01U K 50V
PC352	407 206 6704	PHOTO COUPLE SG-269	C1027	403 069 5601	CERAMIC 0.01U K 50V
		(CRYSTAL DEVICES)	C1028	403 069 5601	CERAMIC 0.01U K 50V
X1002	613 080 9407	OSC,CRYSTAL 4.43MHZ	C1029	403 068 0409	CERAMIC 0.1U Z 25V
			C1030	403 139 1007	ELECT 47U M 6.3V
			C1031	403 069 5601	CERAMIC 0.01U K 50V
			C1032	403 139 2707	ELECT 1U M 50V
			C1033	403 069 5601	CERAMIC 0.01U K 50V

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
C1034	403 139 2707	ELECT1U M 50V	C2314	403 107 9905	ELECT10U M 16V
C1035	403 072 1607	CERAMIC 0.022U K 50V	C2316	403 163 8409	ELECT47U M 16V
C1036	403 163 7907	ELECT47U M 6.3V	C2318	403 107 9905	ELECT10U M 16V
C1037	403 121 9509	CERAMIC 0.1U Z 50V	C2320	403 121 2104	ELECT22U M 10V
C1038	403 139 2707	ELECT1U M 50V	C2322	403 107 9905	ELECT10U M 16V
C1039	403 072 1607	CERAMIC 0.022U K 50V	C2323	403 068 5107	CERAMIC 0.047U Z 25V
C1041	403 130 3109	CERAMIC 0.047U K 50V	C2324	403 070 9803	CERAMIC 0.015U K 50V
C1042	403 072 1607	CERAMIC 0.022U K 50V	C2327	403 068 5107	CERAMIC 0.047U Z 25V
C1047	403 014 3409	CERAMIC 18P J 50V	C2336	403 070 9803	CERAMIC 0.015U K 50V
C1049	403 068 0409	CERAMIC 0.1U Z 25V	C2351	403 068 0409	CERAMIC 0.1U Z 25V
C1050	403 026 2803	CERAMIC 47P J 50V	C2353	403 069 5601	CERAMIC 0.01U K 50V
C1051	403 192 5905	CERAMIC 0.1U K 25V	C2355	403 068 0409	CERAMIC 0.1U Z 25V
C1055	403 069 5601	CERAMIC 0.01U K 50V	C2357	403 068 0409	CERAMIC 0.1U Z 25V
C1059	403 068 5107	CERAMIC 0.047U Z 25V	C2361	403 069 1702	CERAMIC 1000P K 50V
C1060	403 068 0409	CERAMIC 0.1U Z 25V	C2362	403 069 1702	CERAMIC 1000P K 50V
C1071	403 068 0409	CERAMIC 0.1U Z 25V	C2363	403 109 6308	ELECT1U M 50V
C1072	403 068 0409	CERAMIC 0.1U Z 25V	C2372	403 071 8102	CERAMIC 2200P K 50V
C1080	403 018 7403	CERAMIC 220P J 50V	C2373	403 107 9905	ELECT10U M 16V
C1081	403 022 8205	CERAMIC 33P J 50V	C2901	403 193 7601	ELECT220U M 6.3V
C1082	403 069 5601	CERAMIC 0.01U K 50V	C2921	403 068 0409	CERAMIC 0.1U Z 25V
C1301	403 068 0409	CERAMIC 0.1U Z 25V	C2922	403 069 5601	CERAMIC 0.01U K 50V
C1302	403 150 6500	ELECT22U M 16V	C2923	403 069 5601	CERAMIC 0.01U K 50V
C1303	403 028 4102	CERAMIC 56P J 50V	C2924	403 068 0409	CERAMIC 0.1U Z 25V
C1403	403 191 8709	ELECT1U M 50V	C2925	403 068 0409	CERAMIC 0.1U Z 25V
C1404	403 069 9500	CERAMIC 0.01U Z 50V	C2926	403 069 5601	CERAMIC 0.01U K 50V
C1405	403 163 7907	ELECT47U M 6.3V	C2927	403 212 1603	CERAMIC 0.22U Z 25V
C1412	403 191 8709	ELECT1U M 50V	C3001	403 008 7406	CERAMIC 10P D 50V
C1414	403 069 5601	CERAMIC 0.01U K 50V	C3002	403 008 7406	CERAMIC 10P D 50V
C1415	403 167 7002	ELECT4.7U M 50V	C3003	403 018 0503	CERAMIC 22P J 50V
C1416	403 215 2508	CERAMIC 0.056U K 50V	C3004	403 014 3409	CERAMIC 18P J 50V
C1451	403 022 8205	CERAMIC 33P J 50V,VHR-899E ONLY	C3005	403 121 9509	CERAMIC 0.1U Z 50V
C1801	403 068 0409	CERAMIC 0.1U Z 25V	C3006	403 068 0409	CERAMIC 0.1U Z 25V
C1802	403 163 7907	ELECT47U M 6.3V	C3007	403 069 1702	CERAMIC 1000P K 50V
C1803	403 068 0409	CERAMIC 0.1U Z 25V	C3008	403 189 2405	ELECT10U M 16V
C1804	403 191 8709	ELECT1U M 50V	C3010	403 068 0409	CERAMIC 0.1U Z 25V
C1805	403 069 5601	CERAMIC 0.01U K 50V	C3011	403 159 8109	ELECT100U M 6.3V
C1806	403 069 5601	CERAMIC 0.01U K 50V	C3015	403 068 0409	CERAMIC 0.1U Z 25V
C1807	403 069 5601	CERAMIC 0.01U K 50V	C3016	403 159 8109	ELECT100U M 6.3V
C1808	403 022 8205	CERAMIC 33P J 50V	C3017	403 086 2805	NP-ELECT 1U M 50V
C1809	403 022 8205	CERAMIC 33P J 50V	C3018	403 009 5708	CERAMIC 100P J 50V
C1810	403 022 8205	CERAMIC 33P J 50V	C3019	403 069 1702	CERAMIC 1000P K 50V
C1811	403 022 8205	CERAMIC 33P J 50V	C3020	403 071 8102	CERAMIC 2200P K 50V
C1852	403 069 5601	CERAMIC 0.01U K 50V	C3021	403 069 5601	CERAMIC 0.01U K 50V
C2001	403 121 9509	CERAMIC 0.1U Z 50V	C3027	403 069 1702	CERAMIC 1000P K 50V
C2002	403 135 4002	ELECT47U M 6.3V	C3028	403 191 8709	ELECT1U M 50V
C2003	403 068 0409	CERAMIC 0.1U Z 25V	C3029	403 018 7403	CERAMIC 220P J 50V
C2004	403 135 3708	ELECT33U M 6.3V	C3030	403 159 8109	ELECT100U M 6.3V
C2006	403 135 3708	ELECT33U M 6.3V	C3031	403 193 7502	ELECT22U M 6.3V
C2008	403 074 7607	CERAMIC 5600P K 50V	C3033	403 193 7502	ELECT22U M 6.3V
C2009	403 121 3507	ELECT4.7U M 50V	C3034	403 068 0409	CERAMIC 0.1U Z 25V
C2010	403 068 0409	CERAMIC 0.1U Z 25V	C3035	403 159 8109	ELECT100U M 6.3V
C2016	403 191 8709	ELECT1U M 50V	C3036	403 072 5605	CERAMIC 2700P K 50V
C2017	403 070 8806	CERAMIC 1500P K 50V	C3037	403 163 8409	ELECT47U M 16V
C2019	403 069 1702	CERAMIC 1000P K 50V	C3038	403 073 4201	CERAMIC 3900P K 50V
C2020	403 069 5601	CERAMIC 0.01U K 50V	C3040	403 069 5601	CERAMIC 0.01U K 50V
C2021	403 107 9905	ELECT10U M 16V	C3042	403 069 5601	CERAMIC 0.01U K 50V
C2022	403 167 7002	ELECT4.7U M 50V	C3043	403 069 5601	CERAMIC 0.01U K 50V
C2023	403 069 1702	CERAMIC 1000P K 50V	C3044	403 069 5601	CERAMIC 0.01U K 50V
C2071	403 135 4002	ELECT47U M 6.3V	C3045	403 069 5601	CERAMIC 0.01U K 50V
C2072	403 163 7907	ELECT47U M 6.3V	C3046	403 069 5601	CERAMIC 0.01U K 50V
C2073	403 081 3302	POLYPRO 0.022U J 100V	C3047	403 069 1702	CERAMIC 1000P K 50V
C2081	403 069 5601	CERAMIC 0.01U K 50V	C3048	403 139 1502	ELECT10U M 16V
C2082	403 073 1200	CERAMIC 0.033U K 50V	C3049	403 069 1702	CERAMIC 1000P K 50V
C2101	403 163 7907	ELECT47U M 6.3V	C3050	403 189 2405	ELECT10U M 16V
C2102	403 081 7409	POLYPRO 0.033U J 100V	C3051	403 069 5601	CERAMIC 0.01U K 50V
C2121	403 069 5601	CERAMIC 0.01U K 50V	C3052	403 069 5601	CERAMIC 0.01U K 50V
C2122	403 069 5601	CERAMIC 0.01U K 50V	C3053	403 069 5601	CERAMIC 0.01U K 50V
C2301	403 121 2104	ELECT22U M 10V	C3054	403 069 5601	CERAMIC 0.01U K 50V
C2302	403 189 2405	ELECT10U M 16V	C3055	403 191 8808	ELECT2.2U M 50V
C2303	403 121 3507	ELECT4.7U M 50V	C3056	403 068 0409	CERAMIC 0.1U Z 25V
C2304	403 121 3507	ELECT4.7U M 50V	C3057	403 163 8409	ELECT47U M 16V
C2305	403 129 5602	ELECT33U M 10V	C3060	403 068 0409	CERAMIC 0.1U Z 25V
C2306	403 189 2405	ELECT10U M 16V	C3061	403 033 4500	CERAMIC 82P J 50V
C2307	403 189 2405	ELECT10U M 16V	C3062	403 033 4500	CERAMIC 82P J 50V
C2308	403 107 9905	ELECT10U M 16V	C3065	403 069 5601	CERAMIC 0.01U K 50V
C2309	403 107 9905	ELECT10U M 16V	C3067	403 189 2405	ELECT10U M 16V
C2310	403 129 5602	ELECT33U M 10V	C3068	403 069 5601	CERAMIC 0.01U K 50V
C2312	403 135 4002	ELECT47U M 6.3V	C3070	403 069 5601	CERAMIC 0.01U K 50V



LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
C3072	403 130 4106	CERAMIC 0.068U K 25V	R1013	401 038 6307	MT-GLAZE 470 JA 1/10W
C3073	403 072 1607	CERAMIC 0.022U K 50V	R1014	401 037 5400	MT-GLAZE 1K JA 1/10W
C3074	403 033 4609	CERAMIC 82P J 50V	R1017	401 038 5102	MT-GLAZE 3.9K JA 1/10W
C3078	403 333 1001	DL-ELECT 0.1F Z 5.5V	R1018	401 037 5400	MT-GLAZE 1K JA 1/10W
C3080	403 189 2405	ELECT 10U M 16V	R1019	401 037 6704	MT-GLAZE 1.2K JA 1/10W
C3082	403 068 0409	CERAMIC 0.1U Z 25V	R1020	401 037 5400	MT-GLAZE 1K JA 1/10W
C3083	403 189 2405	ELECT 10U M 16V	R1021	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3500	403 068 0409	CERAMIC 0.1U Z 25V	R1022	401 039 0403	MT-GLAZE 8.2K JA 1/10W
C3502	403 068 0409	CERAMIC 0.1U Z 25V	R1025	401 037 5400	MT-GLAZE 1K JA 1/10W
C3701	403 028 9909	CERAMIC 560P J 50V	R1026	401 038 5102	MT-GLAZE 3.9K JA 1/10W
C3702	403 028 9909	CERAMIC 560P J 50V	R1031	401 037 6803	MT-GLAZE 12K JA 1/10W
C3703	403 028 9909	CERAMIC 560P J 50V	R1032	401 037 5806	MT-GLAZE 1M JA 1/10W
C3704	403 028 9909	CERAMIC 560P J 50V	R1034	401 037 5202	MT-GLAZE 100 JA 1/10W
C3705	403 167 7002	ELECT 4.7U M 50V	R1039	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C3706	403 068 0409	CERAMIC 0.1U Z 25V	R1040	401 037 5202	MT-GLAZE 100 JA 1/10W
C5001	△ 404 070 4201	MT-POLYEST 0.068U M 250V	R1041	401 037 5400	MT-GLAZE 1K JA 1/10W
C5002	△ 404 070 4201	MT-POLYEST 0.068U M 250V	R1042	401 039 0403	MT-GLAZE 8.2K JA 1/10W
C5005	△ 404 074 2104	CERAMIC 1000P M 250V	R1043	401 021 4006	CARBON 56K JA 1/4W
C5007	△ 404 074 2104	CERAMIC 1000P M 250V	R1044	401 037 6704	MT-GLAZE 1.2K JA 1/10W
C5010	403 249 0204	ELECT 47U M 400V	R1045	401 037 6704	MT-GLAZE 1.2K JA 1/10W
C5012	403 247 3702	CERAMIC 3300P K 1K	R1046	401 038 6505	MT-GLAZE 47K JA 1/10W
C5013	403 222 1303	CERAMIC 1000P K 1KV	R1056	401 038 7601	MT-GLAZE 560 JA 1/10W
C5014	403 192 5905	CERAMIC 0.1U K 25V	R1057	401 038 9506	MT-GLAZE 75 JA 1/10W
C5015	403 069 5601	CERAMIC 0.01U K 50V	R1061	401 037 6803	MT-GLAZE 12K JA 1/10W
C5016	403 192 5905	CERAMIC 0.1U K 25V	R1062	401 037 5400	MT-GLAZE 1K JA 1/10W
C5101	403 314 0207	ELECT 1000U M 16V	R1063	401 037 9200	MT-GLAZE 1.8K JA 1/10W
C5102	403 147 9200	ELECT 1000U M 6.3V	R1064	401 038 0800	MT-GLAZE 22K JA 1/10W
C5103	403 314 0108	ELECT 470U M 16V	R1067	401 037 5400	MT-GLAZE 1K JA 1/10W
C5104	403 125 5507	ELECT 1000U M 16V	R1068	401 037 5400	MT-GLAZE 1K JA 1/10W
C5105	403 304 9302	ELECT 47U M 50V	R1071	401 037 5400	MT-GLAZE 1K JA 1/10W
C5106	403 301 1309	ELECT 47U M 35V	R1081	401 038 3504	MT-GLAZE 330 JA 1/10W
C5107	403 301 1507	ELECT 220U M 6.3V	R1082	401 037 5400	MT-GLAZE 1K JA 1/10W
C5111	403 107 9905	ELECT 10U M 16V	R1083	401 038 6505	MT-GLAZE 47K JA 1/10W
C5112	403 189 2405	ELECT 10U M 16V	R1084	401 038 6505	MT-GLAZE 47K JA 1/10W
C5113	403 189 2405	ELECT 10U M 16V	R1301	401 037 5400	MT-GLAZE 1K JA 1/10W
C5114	403 107 9905	ELECT 10U M 16V	R1303	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C5115	403 135 7805	ELECT 3.3U M 50V	R1411	401 038 3603	MT-GLAZE 3.3K JA 1/10W
C5116	403 107 9905	ELECT 10U M 16V	R1413	401 037 5608	MT-GLAZE 10K JA 1/10W
C5117	403 135 7805	ELECT 3.3U M 50V	R1414	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C5118	403 192 5905	CERAMIC 0.1U K 25V	R1415	401 037 5608	MT-GLAZE 10K JA 1/10W
C5119	403 189 2405	ELECT 10U M 16V	R1416	401 038 7700	MT-GLAZE 5.6K JA 1/10W
C5120	403 192 5905	CERAMIC 0.1U K 25V	R1417	401 037 5608	MT-GLAZE 10K JA 1/10W
C5122	403 192 5905	CERAMIC 0.1U K 25V	R1451	401 038 7601	MT-GLAZE 560 JA 1/10W, VHR-899E ONLY
C5125	403 192 5905	CERAMIC 0.1U K 25V	R1807	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C5127	403 192 5905	CERAMIC 0.1U K 25V	R1808	401 037 5608	MT-GLAZE 10K JA 1/10W
C5128	403 192 5905	CERAMIC 0.1U K 25V	R1810	401 038 3603	MT-GLAZE 3.3K JA 1/10W
C5129	403 192 5905	CERAMIC 0.1U K 25V	R1812	401 038 2002	MT-GLAZE 270 JA 1/10W
C5135	403 068 0409	CERAMIC 0.1U Z 25V	R1852	401 038 2002	MT-GLAZE 270 JA 1/10W
C6002	403 135 7409	ELECT 22U M 50V	R1853	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C6003	403 107 9905	ELECT 10U M 16V	R2005	401 038 3702	MT-GLAZE 33K JA 1/10W
C6004	403 107 9905	ELECT 10U M 16V	R2006	401 037 5608	MT-GLAZE 10K JA 1/10W
C6008	403 009 5708	CERAMIC 100P J 50V, VHR-899E ONLY	R2007	401 038 3900	MT-GLAZE 3.3M JA 1/10W
C6011	403 008 7406	CERAMIC 10P D 50V	R2008	401 038 6406	MT-GLAZE 4.7K JA 1/10W
C6012	403 009 5708	CERAMIC 100P J 50V	R2009	401 038 6406	MT-GLAZE 4.7K JA 1/10W
C6022	403 107 9905	ELECT 10U M 16V	R2011	401 038 5102	MT-GLAZE 3.9K JA 1/10W
C6045	403 026 2803	CERAMIC 47P J 50V	R2013	401 038 5102	MT-GLAZE 3.9K JA 1/10W
C6051	403 068 0409	CERAMIC 0.1U Z 25V	R2018	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C6052	403 068 0409	CERAMIC 0.1U Z 25V	R2023	401 037 6803	MT-GLAZE 12K JA 1/10W
C6055	403 073 1200	CERAMIC 0.033U K 50V	R2024	401 038 6406	MT-GLAZE 4.7K JA 1/10W
C6057	403 068 0409	CERAMIC 0.1U Z 25V	R2025	401 037 6803	MT-GLAZE 12K JA 1/10W
C6058	403 011 4904	CERAMIC 120P J 50V	R2026	401 038 3801	MT-GLAZE 330K JA 1/10W
C6059	403 030 7009	CERAMIC 68P J 50V	R2027	401 038 1203	MT-GLAZE 240 JA 1/10W
C6060	403 070 9803	CERAMIC 0.015U K 50V	R2028	401 037 7305	MT-GLAZE 1.3K JA 1/10W
C6061	403 068 0409	CERAMIC 0.1U Z 25V	R2029	401 038 2200	MT-GLAZE 27K JA 1/10W
C6062	403 068 0409	CERAMIC 0.1U Z 25V	R2071	401 038 0800	MT-GLAZE 22K JA 1/10W
C6063	403 068 0409	CERAMIC 0.1U Z 25V	R2072	401 011 8809	CARBON 1 JA 1/4W
	<b>(RESISTORS)</b>		R2073	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R1001	401 038 3702	MT-GLAZE 33K JA 1/10W	R2074	401 038 6208	MT-GLAZE 47 JA 1/10W
R1002	401 037 8005	MT-GLAZE 15K JA 1/10W	R2075	401 038 7601	MT-GLAZE 560 JA 1/10W
R1003	401 037 5608	MT-GLAZE 10K JA 1/10W	R2076	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1004	401 037 9309	MT-GLAZE 18K JA 1/10W	R2077	401 037 5400	MT-GLAZE 1K JA 1/10W
R1006	401 037 5400	MT-GLAZE 1K JA 1/10W	R2078	401 037 5608	MT-GLAZE 10K JA 1/10W
R1007	401 038 3504	MT-GLAZE 330 JA 1/10W	R2079	401 038 0800	MT-GLAZE 22K JA 1/10W
R1008	401 038 3504	MT-GLAZE 330 JA 1/10W	R2101	401 038 6208	MT-GLAZE 47 JA 1/10W
R1009	401 038 9001	MT-GLAZE 680 JA 1/10W	R2102	401 037 8005	MT-GLAZE 15K JA 1/10W
R1010	401 038 2101	MT-GLAZE 2.7K JA 1/10W	R2103	401 018 1506	CARBON 33 JA 1/4W
R1011	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R2104	401 012 3308	CARBON 10 JA 1/4W
R1012	401 037 9200	MT-GLAZE 1.8K JA 1/10W	R2106	401 016 4707	CARBON 22K JA 1/4W

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
R2107	401 038 3702	MT-GLAZE 33K JA 1/10W	R3051	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2301	401 038 6505	MT-GLAZE 47K JA 1/10W	R3052	△ 402 043 8300	FUSIBLE RES 3.3 JA 1/2W
R2302	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3053	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R2303	401 038 6505	MT-GLAZE 47K JA 1/10W	R3054	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R2304	401 038 6505	MT-GLAZE 47K JA 1/10W	R3055	401 038 3009	MT-GLAZE 3K JA 1/10W
R2305	401 038 6505	MT-GLAZE 47K JA 1/10W	R3056	401 038 0800	MT-GLAZE 22K JA 1/10W
R2306	401 038 6505	MT-GLAZE 47K JA 1/10W	R3057	401 038 0800	MT-GLAZE 22K JA 1/10W
R2307	401 038 6505	MT-GLAZE 47K JA 1/10W	R3058	401 037 5400	MT-GLAZE 1K JA 1/10W
R2308	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3059	401 037 5400	MT-GLAZE 1K JA 1/10W
R2309	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3060	401 037 5608	MT-GLAZE 10K JA 1/10W
R2310	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3061	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2311	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3062	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2312	401 038 5003	MT-GLAZE 390 JA 1/10W	R3063	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2313	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3064	401 037 5400	MT-GLAZE 1K JA 1/10W
R2314	401 038 5003	MT-GLAZE 390 JA 1/10W	R3065	401 037 5608	MT-GLAZE 10K JA 1/10W
R2317	401 038 0909	MT-GLAZE 220K JA 1/10W	R3066	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2318	401 038 0909	MT-GLAZE 220K JA 1/10W	R3067	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R2321	401 038 6505	MT-GLAZE 47K JA 1/10W	R3068	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R2322	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3070	401 038 0602	MT-GLAZE 220 JA 1/10W
R2323	401 038 6505	MT-GLAZE 47K JA 1/10W	R3071	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R2324	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3072	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R2333	401 038 2200	MT-GLAZE 27K JA 1/10W	R3073	401 038 5300	MT-GLAZE 39K JA 1/10W
R2334	401 038 7700	MT-GLAZE 5.6K JA 1/10W	R3074	401 037 5400	MT-GLAZE 1K JA 1/10W
R2335	401 037 5400	MT-GLAZE 1K JA 1/10W	R3075	401 037 5400	MT-GLAZE 1K JA 1/10W
R2336	401 038 7106	MT-GLAZE 510 JA 1/10W	R3076	401 037 5400	MT-GLAZE 1K JA 1/10W
R2337	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R3078	401 038 3702	MT-GLAZE 33K JA 1/10W
R2338	401 038 7106	MT-GLAZE 510 JA 1/10W	R3079	401 038 3702	MT-GLAZE 33K JA 1/10W
R2339	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R3080	401 037 5608	MT-GLAZE 10K JA 1/10W
R2351	401 038 0800	MT-GLAZE 22K JA 1/10W	R3081	401 037 5608	MT-GLAZE 10K JA 1/10W
R2352	401 038 2101	MT-GLAZE 2.7K JA 1/10W	R3084	401 037 9309	MT-GLAZE 18K JA 1/10W
R2361	401 037 5400	MT-GLAZE 1K JA 1/10W	R3086	401 037 5202	MT-GLAZE 100 JA 1/10W
R2362	401 037 5400	MT-GLAZE 1K JA 1/10W	R3087	401 037 5202	MT-GLAZE 100 JA 1/10W
R2379	401 038 5102	MT-GLAZE 3.9K JA 1/10W	R3088	401 037 5202	MT-GLAZE 100 JA 1/10W
R2380	401 038 9209	MT-GLAZE 6.8K JA 1/10W	R3090	401 037 7008	MT-GLAZE 1.2M JA 1/10W
R2901	401 038 3702	MT-GLAZE 33K JA 1/10W	R3502	401 038 2002	MT-GLAZE 270 JA 1/10W
R2902	401 037 6902	MT-GLAZE 120K JA 1/10W	R3503	401 038 2002	MT-GLAZE 270 JA 1/10W
R3001	401 038 3801	MT-GLAZE 330K JA 1/10W	R3504	401 014 2804	CARBON 150 JA 1/4W
R3002	401 037 5400	MT-GLAZE 1K JA 1/10W	R3701	401 037 5608	MT-GLAZE 10K JA 1/10W
R3003	401 012 4404	CARBON 100 JA 1/4W	R3702	401 037 5608	MT-GLAZE 10K JA 1/10W
R3004	401 037 8104	MT-GLAZE 150K JA 1/10W	R3703	401 037 5608	MT-GLAZE 10K JA 1/10W
R3005	401 037 7800	MT-GLAZE 150 JA 1/10W	R3704	401 037 5608	MT-GLAZE 10K JA 1/10W
R3006	401 038 3504	MT-GLAZE 330 JA 1/10W	R3705	401 038 7601	MT-GLAZE 560 JA 1/10W
R3007	401 038 3504	MT-GLAZE 330 JA 1/10W	R3706	401 038 7601	MT-GLAZE 560 JA 1/10W
R3009	401 039 0304	MT-GLAZE 820 JA 1/10W	R3707	401 038 7601	MT-GLAZE 560 JA 1/10W
R3010	401 037 9200	MT-GLAZE 1.8K JA 1/10W	R3708	401 038 7601	MT-GLAZE 560 JA 1/10W
R3011	401 038 0602	MT-GLAZE 220 JA 1/10W	R3709	401 038 9308	MT-GLAZE 68K JA 1/10W
R3012	401 037 5202	MT-GLAZE 100 JA 1/10W	R3710	401 038 9308	MT-GLAZE 68K JA 1/10W
R3015	401 037 5400	MT-GLAZE 1K JA 1/10W	R3711	401 038 9308	MT-GLAZE 68K JA 1/10W
R3016	401 037 5400	MT-GLAZE 1K JA 1/10W	R3712	401 038 9308	MT-GLAZE 68K JA 1/10W
R3017	401 037 5400	MT-GLAZE 1K JA 1/10W	R3713	401 038 9308	MT-GLAZE 68K JA 1/10W
R3018	401 038 0909	MT-GLAZE 220K JA 1/10W	R5001	402 013 9108	SOLID 2.7M KB 1/2W
R3020	401 039 0403	MT-GLAZE 8.2K JA 1/10W	R5002	401 021 4907	CARBON 560K JA 1/4W
R3021	401 038 9001	MT-GLAZE 680 JA 1/10W	R5003	401 021 4907	CARBON 560K JA 1/4W
R3022	401 038 9001	MT-GLAZE 680 JA 1/10W	R5010	401 060 9901	OXIDE-MT 3.3 JA 1W
R3023	401 038 9209	MT-GLAZE 6.8K JA 1/10W	R5011	401 015 0403	CARBON 18 JA 1/4W
R3024	401 037 5608	MT-GLAZE 10K JA 1/10W	R5012	401 064 7309	OXIDE-MT 100 JA 2W
R3025	401 016 4707	CARBON 22K JA 1/4W	R5013	401 037 5400	MT-GLAZE 1K JA 1/10W
R3027	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R5014	401 038 3504	MT-GLAZE 330 JA 1/10W
R3028	401 037 5608	MT-GLAZE 10K JA 1/10W	R5015	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R3029	401 037 5707	MT-GLAZE 100K JA 1/10W	R5016	401 038 9001	MT-GLAZE 680 JA 1/10W
R3031	401 038 3702	MT-GLAZE 33K JA 1/10W	R5017	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R3032	401 037 5608	MT-GLAZE 10K JA 1/10W	R5101	401 019 0904	CARBON 390 JA 1/4W
R3035	401 037 8005	MT-GLAZE 15K JA 1/10W	R5102	401 037 7800	MT-GLAZE 150 JA 1/10W
R3036	401 037 8005	MT-GLAZE 15K JA 1/10W	R5103	401 038 7601	MT-GLAZE 560 JA 1/10W
R3037	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R5104	401 012 6903	CARBON 10K JA 1/4W
R3038	401 037 5400	MT-GLAZE 1K JA 1/10W	R5105	401 016 2505	CARBON 220 JA 1/4W
R3039	401 037 5707	MT-GLAZE 100K JA 1/10W	R5106	401 020 0702	CARBON 470 JA 1/4W
R3040	401 038 0800	MT-GLAZE 22K JA 1/10W	R5108	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R3041	401 037 8203	MT-GLAZE 1.5M JA 1/10W	R5109	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R3042	401 038 3702	MT-GLAZE 33K JA 1/10W	R5110	△ 402 080 0206	FUSIBLE RES 27 JA 1/4W
R3043	401 038 6505	MT-GLAZE 47K JA 1/10W	R5111	401 038 7601	MT-GLAZE 560 JA 1/10W
R3044	401 038 0800	MT-GLAZE 22K JA 1/10W	R5113	401 037 5608	MT-GLAZE 10K JA 1/10W
R3045	401 037 8203	MT-GLAZE 1.5M JA 1/10W	R5116	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R3046	401 038 3702	MT-GLAZE 33K JA 1/10W	R5119	401 038 6505	MT-GLAZE 47K JA 1/10W
R3047	401 038 6505	MT-GLAZE 47K JA 1/10W	R5120	△ 402 004 0107	FUSIBLE RES 10 JA 1/4W
R3048	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R5121	401 017 7509	CARBON 3.9 JA 1/4W
R3049	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R5122	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R3050	401 038 6406	MT-GLAZE 4.7K JA 1/10W	R5123	401 039 0304	MT-GLAZE 820 JA 1/10W

LOCATION	PARTS NO.	DESCRIPTION
R5126	401 037 5400	MT-GLAZE 1K JA 1/10W
R5127	401 037 5400	MT-GLAZE 1K JA 1/10W
R5135	401 037 6605	MT-GLAZE 120 JA 1/10W
R6001	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R6002	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R6003	401 038 5003	MT-GLAZE 390 JA 1/10W
R6004	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R6005	△ 402 078 3202	FUSIBLE RES 390 GA 1/4W
R6006	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R6007	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R6009	401 037 5400	MT-GLAZE 1K JA 1/10W
R6010	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R6015	401 037 5400	MT-GLAZE 1K JA 1/10W
<b>(JUMPERS)</b>		
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
<b>(SWITCHES)</b>		
S3500	645 029 7076	SWITCH,MODE 1P-1T VC, MODE SWITCH
OR	645 031 5497	SWITCH,MODE 1P-1T VC, MODE SWITCH
S3501	645 029 7069	SWITCH,DETECTOR 1P-1T VC, FL START & SAFETY
S3702	645 008 8049	SWITCH,PUSH 1P-1T, CH DOWN
OR	645 006 2797	SWITCH,PUSH 1P-1T, CH DOWN
OR	645 001 9777	SWITCH,PUSH 1P-1T, CH DOWN
S3704	645 008 8063	SWITCH,PUSH 1P-1T, CH UP
<b>(REMOTE RECEIVERS)</b>		
RR371	645 027 5654	UNIT,IR RECEIVER PACK
<b>(DISPLAYS)</b>		
A3701	645 031 0096	FLUORESCENT TUBE
OR	645 031 0089	FLUORESCENT TUBE
<b>(FUSES)</b>		
F5001	△ 423 021 8402	FUSE 250V 2.5A
OR	△ 423 022 6506	FUSE 250V 2.5A
OR	△ 423 025 9900	FUSE 250V 2.5A
<b>(PROTECTORS)</b>		
PR511	△ 645 005 9834	PROTECTOR,IC 1.0A 50V
PR512	△ 645 014 2550	PROTECTOR,2A 125V
PR513	△ 645 014 2529	PROTECTOR,1.25A 125V
<b>(JACKS)</b>		
JK231	645 032 8954	JACK,RCA-2
<b>(MISCELLANEOUS)</b>		
	613 053 8055	FIXER
	613 053 8048	FIXER
	613 182 3341	HOLDER,END SENSOR VC
	613 182 3334	HOLDER,LED VC
	613 183 5337	HOLDER FL, FL HOLDER
OR	613 164 2447	HOLDER FL, FL HOLDER
	645 008 7677	HOLDER,FUSE,F5001
OR	645 008 7660	HOLDER,FUSE,F5001
OR	645 016 0479	HOLDER,FUSE,F5001

### COMPL PWB,DM-1

	613 186 2692	VHR-899E ONLY
	613 188 2263	VHR-899EV ONLY
<b>(CONNECTORS)</b>		
CN401	645 000 6784	PLUG,10P (N.S.P)
CN402	645 000 6807	PLUG,12P (N.S.P)
CN461	645 000 6784	PLUG,10P (N.S.P),VHR-899E ONLY
<b>(SEMICONDUCTORS)</b>		
Q4001	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4003	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4004	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4005	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4006	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6

LOCATION	PARTS NO.	DESCRIPTION
Q4006	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4007	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4008	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4009	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4010	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4013	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4014	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4015	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4016	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4017	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4018	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4101	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4102	405 002 6508	TR 2SA1179-M5
OR	405 002 6706	TR 2SA1179-M6
OR	405 002 0308	TR 2SA1037K-R
OR	405 002 0407	TR 2SA1037K-S
Q4103	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q4613	405 003 7108	TR 2SA1341,VHR-899E ONLY
OR	405 000 2007	TR DTA144EK,VHR-899E ONLY
Q4640	405 015 8407	TR 2SC2812-L5,VHR-899E ONLY
OR	405 015 8704	TR 2SC2812-L6,VHR-899E ONLY
OR	405 014 4509	TR 2SC2412K-R,VHR-899E ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899E ONLY
Q4644	405 015 8407	TR 2SC2812-L5,VHR-899E ONLY
OR	405 015 8704	TR 2SC2812-L6,VHR-899E ONLY
OR	405 014 4509	TR 2SC2412K-R,VHR-899E ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899E ONLY
Q4648	405 015 8407	TR 2SC2812-L5,VHR-899E ONLY
OR	405 015 8704	TR 2SC2812-L6,VHR-899E ONLY
OR	405 014 4509	TR 2SC2412K-R,VHR-899E ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899E ONLY
Q4651	405 083 5209	TR DTC343TK,VHR-899E ONLY
Q4652	405 083 5209	TR DTC343TK,VHR-899E ONLY
<b>(INTEGRATED CIRCUITS)</b>		
IC401	409 244 2403	IC BA7046F
IC402	409 306 1009	IC MM1031XM
IC404	409 444 6607	IC LA7407M-MPB
IC405	409 305 9303	IC LC7480M
IC406	409 326 9405	IC LC74401E
IC407	409 374 4209	IC LC344250Z
IC408	409 312 6104	IC M51285BFP

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
IC411	409 451 6904	IC NJM0086V	C4003	403 059 3006	POLYESTER 2200P J 50V
IC412	410 301 7903	IC LC74788JM-9696	C4004	403 191 8709	ELECT1U M 50V
IC461	409 405 6004	IC MM1369BD,VHR-899E ONLY	C4005	403 068 0409	CERAMIC 0.1U Z 25V
IC462	409 192 7109	IC BA15218F,VHR-899E ONLY	C4006	403 163 7907	ELECT47U M 6.3V
	<b>(DIODES)</b>		C4007	403 191 8709	ELECT1U M 50V
D3707	407 012 4406	DIODE 1SS133,VHR-899EV ONLY	C4008	403 020 5503	CERAMIC 270P J 50V
OR	407 007 9904	DIODE GMA01,VHR-899EV ONLY	C4009	403 068 0409	CERAMIC 0.1U Z 25V
OR	407 142 0804	DIODE WG713,VHR-899EV ONLY	C4010	403 043 8802	ELECT4.7U M 16V
OR	407 151 2905	DIODE WG713A,VHR-899EV ONLY	C4011	403 193 8608	ELECT0.47U M 50V
D3715	407 012 4406	DIODE 1SS133,VHR-899EV ONLY	C4012	403 193 8202	ELECT0.1U M 50V
OR	407 007 9904	DIODE GMA01,VHR-899EV ONLY	C4013	403 072 5902	CERAMIC 0.027U K 50V
OR	407 142 0804	DIODE WG713,VHR-899EV ONLY	C4014	403 068 0409	CERAMIC 0.1U Z 25V
OR	407 151 2905	DIODE WG713A,VHR-899EV ONLY	C4015	403 163 7907	ELECT47U M 6.3V
D3724	407 012 4406	DIODE 1SS133,VHR-899EV ONLY	C4016	403 068 0409	CERAMIC 0.1U Z 25V
OR	407 007 9904	DIODE GMA01,VHR-899EV ONLY	C4017	403 068 0409	CERAMIC 0.1U Z 25V
OR	407 142 0804	DIODE WG713,VHR-899EV ONLY	C4018	403 189 2405	ELECT10U M 16V
OR	407 151 2905	DIODE WG713A,VHR-899EV ONLY	C4019	403 068 0409	CERAMIC 0.1U Z 25V
	<b>(CRYSTAL DEVICES)</b>		C4020	403 163 7907	ELECT47U M 6.3V
X4002	645 014 8255	OSC,CRYSTAL 4.433619MHZ	C4021	403 167 7002	ELECT4.7U M 50V
OR	645 005 1197	OSC,CRYSTAL 4.433619MHZ	C4022	403 012 2800	CERAMIC 130P J 50V
X4003	645 001 5380	OSC,CERAMIC 500KHZ	C4023	403 215 3000	CERAMIC 0.082U K 25V
X4004	645 022 7950	OSC,CRYSTAL 17.73447MHZ	C4024	403 139 2608	ELECT0.47U M 50V
X4005	645 006 3459	OSC,CERAMIC 500.0KHZ	C4025	403 139 2202	ELECT4.7U M 25V
X4101	613 002 8709	CRYSTAL	C4026	403 139 2202	ELECT4.7U M 25V
OR	613 127 1555	OSC,CRYSTAL 17.734475MHZ	C4027	403 022 8205	CERAMIC 33P J 50V
OR	645 014 8774	OSC,CRYSTAL 17.734475MHZ	C4028	403 028 4102	CERAMIC 56P J 50V
	<b>(FILTERS)</b>		C4029	403 139 2202	ELECT4.7U M 25V
XF404	610 247 3322	FILTER,EMI 22000PF	C4030	403 163 7907	ELECT47U M 6.3V
XF405	610 247 3322	FILTER,EMI 22000PF	C4031	403 068 0409	CERAMIC 0.1U Z 25V
XF406	645 009 0387	FILTER,EMI 47PF	C4032	403 068 0409	CERAMIC 0.1U Z 25V
XF407	645 009 0387	FILTER,EMI 47PF	C4033	403 068 0409	CERAMIC 0.1U Z 25V
XF408	645 009 0387	FILTER,EMI 47PF	C4034	403 068 0409	CERAMIC 0.1U Z 25V
XF409	645 009 0387	FILTER,EMI 47PF	C4035	403 069 5601	CERAMIC 0.01U K 50V
XF410	645 009 0387	FILTER,EMI 47PF	C4036	403 167 7002	ELECT4.7U M 50V
XF411	645 009 0387	FILTER,EMI 47PF	C4037	403 069 5601	CERAMIC 0.01U K 50V
XF412	645 009 0387	FILTER,EMI 47PF	C4038	403 167 7002	ELECT4.7U M 50V
XF413	645 009 0387	FILTER,EMI 47PF	C4039	403 167 7002	ELECT4.7U M 50V
XF414	645 008 5116	FILTER,BP 4.43MHZ	C4040	403 068 0409	CERAMIC 0.1U Z 25V
XF415	645 009 5870	FILTER,BP 4.43MHZ	C4041	403 159 8109	ELECT100U M 6.3V
	<b>(INDUCTORS)</b>		C4042	403 068 0409	CERAMIC 0.1U Z 25V
L4001	645 003 6934	INDUCTOR,100U J	C4043	403 159 8109	ELECT100U M 6.3V
OR	645 003 7634	INDUCTOR,100U J	C4044	403 068 0409	CERAMIC 0.1U Z 25V
L4002	645 003 6934	INDUCTOR,100U J	C4045	403 159 8109	ELECT100U M 6.3V
OR	645 003 7634	INDUCTOR,100U J	C4046	403 191 8808	ELECT2.2U M 50V
L4003	645 001 4581	INDUCTOR,100U K	C4047	403 069 5601	CERAMIC 0.01U K 50V
OR	645 003 7924	INDUCTOR,100U K	C4048	403 068 0409	CERAMIC 0.1U Z 25V
L4004	645 003 6934	INDUCTOR,100U J	C4049	403 159 8109	ELECT100U M 6.3V
OR	645 003 7634	INDUCTOR,100U J	C4050	403 068 0409	CERAMIC 0.1U Z 25V
L4006	645 003 6934	INDUCTOR,100U J	C4051	403 159 8109	ELECT100U M 6.3V
OR	645 003 7634	INDUCTOR,100U J	C4052	403 191 8709	ELECT1U M 50V
L4007	645 003 6934	INDUCTOR,100U J	C4053	403 159 8109	ELECT100U M 6.3V
OR	645 003 7634	INDUCTOR,100U J	C4054	403 068 0409	CERAMIC 0.1U Z 25V
L4008	645 003 6934	INDUCTOR,100U J	C4055	403 191 8808	ELECT2.2U M 50V
OR	645 003 7634	INDUCTOR,100U J	C4056	403 069 5601	CERAMIC 0.01U K 50V
L4009	645 003 6934	INDUCTOR,100U J	C4057	403 068 0409	CERAMIC 0.1U Z 25V
OR	645 003 7634	INDUCTOR,100U J	C4058	403 193 7601	ELECT220U M 6.3V
L4010	645 003 6934	INDUCTOR,100U J	C4059	403 139 2202	ELECT4.7U M 25V
OR	645 003 7634	INDUCTOR,100U J	C4060	403 191 8709	ELECT1U M 50V
L4011	645 003 6934	INDUCTOR,100U J	C4062	403 018 7403	CERAMIC 220P J 50V
OR	645 003 7634	INDUCTOR,100U J	C4063	403 069 1702	CERAMIC 1000P K 50V
L4012	645 003 6934	INDUCTOR,100U J	C4064	403 191 8709	ELECT1U M 50V
OR	645 003 7634	INDUCTOR,100U J	C4065	403 192 5905	CERAMIC 0.1U K 25V
L4013	645 003 6934	INDUCTOR,100U J	C4066	403 020 5503	CERAMIC 270P J 50V
OR	645 003 7634	INDUCTOR,100U J	C4067	403 069 5601	CERAMIC 0.01U K 50V
L4014	645 001 5533	INDUCTOR,82U J	C4068	403 021 0200	CERAMIC 3P C 50V
OR	645 003 7610	INDUCTOR,82U J	C4069	403 191 8808	ELECT2.2U M 50V
L4015	645 001 5533	INDUCTOR,82U J	C4070	403 069 5601	CERAMIC 0.01U K 50V
OR	645 003 7610	INDUCTOR,82U J	C4071	403 193 8608	ELECT0.47U M 50V
L4016	645 001 4574	INDUCTOR,100U J	C4072	403 069 1702	CERAMIC 1000P K 50V
OR	645 003 7917	INDUCTOR,100U J	C4073	403 072 1607	CERAMIC 0.022U K 50V
L4017	645 001 4574	INDUCTOR,100U J	C4074	403 072 1607	CERAMIC 0.022U K 50V
OR	645 003 7917	INDUCTOR,100U J	C4075	403 068 0409	CERAMIC 0.1U Z 25V
L4102	645 001 4642	INDUCTOR,22U J	C4076	403 159 8109	ELECT100U M 6.3V
OR	645 003 8013	INDUCTOR,22U J	C4077	403 192 5905	CERAMIC 0.1U K 25V
	<b>(CAPACITORS)</b>		C4078	403 192 5905	CERAMIC 0.1U K 25V
C2325	403 107 9905	ELECT10U M 16V,VHR-899EV ONLY	C4079	403 191 8709	ELECT1U M 50V
C2326	403 107 9905	ELECT10U M 16V,VHR-899EV ONLY	C4080	403 073 9107	CERAMIC 4700P K 50V
C4002	403 191 8709	ELECT1U M 50V	C4081	403 192 5905	CERAMIC 0.1U K 25V

LOCATION	PARTS NO.	DESCRIPTION	LOCATION	PARTS NO.	DESCRIPTION
C4082	403 139 1502	ELECT 10U M 16V	R4022	401 037 8708	MT-GLAZE 16K JA 1/10W
C4083	403 009 5708	CERAMIC 100P J 50V	R4023	401 037 6803	MT-GLAZE 12K JA 1/10W
C4086	403 008 7406	CERAMIC 10P D 50V	R4024	401 037 7305	MT-GLAZE 1.3K JA 1/10W
C4087	403 012 6808	CERAMIC 15P J 50V	R4025	401 038 3603	MT-GLAZE 3.3K JA 1/10W
C4088	403 018 0503	CERAMIC 22P J 50V	R4026	401 037 5806	MT-GLAZE 1M JA 1/10W
C4089	403 018 0503	CERAMIC 22P J 50V	R4029	401 039 0502	MT-GLAZE 82K JA 1/10W
C4090	403 028 4102	CERAMIC 56P J 50V	R4030	401 037 5608	MT-GLAZE 10K JA 1/10W
C4091	403 073 9107	CERAMIC 4700P K 50V	R4031	401 038 7205	MT-GLAZE 5.1K JA 1/10W
C4092	403 022 8205	CERAMIC 33P J 50V	R4032	401 038 2002	MT-GLAZE 270 JA 1/10W
C4093	403 025 1609	CERAMIC 4P C 50V	R4033	401 037 5608	MT-GLAZE 10K JA 1/10W
C4094	403 068 0409	CERAMIC 0.1U Z 25V	R4034	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C4101	403 086 2805	NP-ELECT 1U M 50V	R4035	401 037 5707	MT-GLAZE 100K JA 1/10W
C4103	403 191 8709	ELECT 1U M 50V	R4036	401 038 1203	MT-GLAZE 240 JA 1/10W
C4104	403 086 2805	NP-ELECT 1U M 50V	R4037	401 038 7007	MT-GLAZE 51 JA 1/10W
C4105	403 191 8709	ELECT 1U M 50V	R4038	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C4107	403 163 7907	ELECT 47U M 6.3V	R4039	401 037 5806	MT-GLAZE 1M JA 1/10W
C4108	403 068 0409	CERAMIC 0.1U Z 25V	R4041	401 038 1401	MT-GLAZE 24K JA 1/10W
C4109	403 163 7907	ELECT 47U M 6.3V	R4042	401 038 1401	MT-GLAZE 24K JA 1/10W
C4110	403 068 0409	CERAMIC 0.1U Z 25V	R4044	401 037 5400	MT-GLAZE 1K JA 1/10W
C4111	403 010 8507	CERAMIC 12P J 50V	R4045	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C4112	403 010 8507	CERAMIC 12P J 50V	R4047	401 037 5400	MT-GLAZE 1K JA 1/10W
C4115	403 191 8709	ELECT 1U M 50V	R4048	401 039 0304	MT-GLAZE 820 JA 1/10W
C4116	403 009 5708	CERAMIC 100P J 50V	R4049	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C4117	403 069 5601	CERAMIC 0.01U K 50V	R4050	401 038 9605	MT-GLAZE 750 JA 1/10W
C4118	403 191 8709	ELECT 1U M 50V	R4051	401 038 7601	MT-GLAZE 560 JA 1/10W
C4119	403 070 5508	CERAMIC 1200P K 50V	R4052	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C4120	403 008 7406	CERAMIC 10P D 50V	R4054	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C4121	403 018 0503	CERAMIC 22P J 50V	R4056	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C4122	403 028 4102	CERAMIC 56P J 50V	R4058	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C4125	403 068 0409	CERAMIC 0.1U Z 25V	R4059	401 038 7908	MT-GLAZE 560K JA 1/10W
C4601	403 150 6500	ELECT 22U M 16V,VHR-899E ONLY	R4060	401 037 5400	MT-GLAZE 1K JA 1/10W
C4602	403 075 0706	CERAMIC 6800P K 50V,VHR-899E ONLY	R4061	401 038 6604	MT-GLAZE 470K JA 1/10W
C4603	403 010 1102	CERAMIC 1000P J 50V,VHR-899E ONLY	R4062	401 039 0304	MT-GLAZE 820 JA 1/10W
C4604	403 168 6103	MT-POLYEST 0.1U J 50V,VHR-899E ONLY	R4063	401 038 5003	MT-GLAZE 390 JA 1/10W
C4607	403 163 8409	ELECT 47U M 16V,VHR-899E ONLY	R4064	401 038 5003	MT-GLAZE 390 JA 1/10W
C4609	403 191 8808	ELECT 2.2U M 50V,VHR-899E ONLY	R4065	401 037 5608	MT-GLAZE 10K JA 1/10W
C4614	403 069 5601	CERAMIC 0.01U K 50V,VHR-899E ONLY	R4066	401 038 5102	MT-GLAZE 3.9K JA 1/10W
C4615	403 069 5601	CERAMIC 0.01U K 50V,VHR-899E ONLY	R4067	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C4616	403 069 5601	CERAMIC 0.01U K 50V,VHR-899E ONLY	R4068	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C4617	403 069 5601	CERAMIC 0.01U K 50V,VHR-899E ONLY	R4069	401 038 2101	MT-GLAZE 2.7K JA 1/10W
C4619	403 010 1102	CERAMIC 1000P J 50V,VHR-899E ONLY	R4070	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C4620	403 168 6103	MT-POLYEST 0.1U J 50V,VHR-899E ONLY	R4071	401 037 5400	MT-GLAZE 1K JA 1/10W
C4622	403 075 0706	CERAMIC 6800P K 50V,VHR-899E ONLY	R4073	401 037 5400	MT-GLAZE 1K JA 1/10W
C4623	403 150 6500	ELECT 22U M 16V,VHR-899E ONLY	R4079	401 038 3504	MT-GLAZE 330 JA 1/10W
C4624	403 193 7809	ELECT 100U M 16V,VHR-899E ONLY	R4080	401 037 5400	MT-GLAZE 1K JA 1/10W
C4632	403 189 2405	ELECT 10U M 16V,VHR-899E ONLY	R4082	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C4636	403 189 2405	ELECT 10U M 16V,VHR-899E ONLY	R4083	401 039 0403	MT-GLAZE 8.2K JA 1/10W
C4640	403 189 2405	ELECT 10U M 16V,VHR-899E ONLY	R4084	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C4642	403 193 8400	ELECT 0.22U M 50V,VHR-899E ONLY	R4092	401 037 6605	MT-GLAZE 120 JA 1/10W
C4644	403 191 8808	ELECT 2.2U M 50V,VHR-899E ONLY	R4093	401 038 0701	MT-GLAZE 2.2K JA 1/10W
C4651	403 139 1601	ELECT 22U M 16V,VHR-899E ONLY	R4094	401 039 0304	MT-GLAZE 820 JA 1/10W
C4652	403 150 6500	ELECT 22U M 16V,VHR-899E ONLY	R4095	401 037 9200	MT-GLAZE 1.8K JA 1/10W
C4655	403 068 0409	CERAMIC 0.1U Z 25V	R4096	401 039 0304	MT-GLAZE 820 JA 1/10W
C4656	403 018 0503	CERAMIC 22P J 50V	R4097	401 038 0602	MT-GLAZE 220 JA 1/10W
C4657	403 018 0503	CERAMIC 22P J 50V	R4098	401 039 0304	MT-GLAZE 820 JA 1/10W
C6008	403 068 0409	CERAMIC 0.1U Z 25V,VHR-899EV ONLY	R4099	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C6043	403 030 6903	CERAMIC 68P J 50V,VHR-899EV ONLY	R4101	401 037 5400	MT-GLAZE 1K JA 1/10W
C6044	403 030 6903	CERAMIC 68P J 50V,VHR-899EV ONLY	R4103	401 037 5400	MT-GLAZE 1K JA 1/10W
R1451	401 037 5004	MT-GLAZE 0.000 ZA 1/10W,VHR-899EV ONLY	R4104	401 037 5202	MT-GLAZE 100 JA 1/10W
R4001	401 037 5400	MT-GLAZE 1K JA 1/10W	R4105	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R4003	401 037 5608	MT-GLAZE 10K JA 1/10W	R4106	401 037 5806	MT-GLAZE 1M JA 1/10W
R4005	401 107 8003	MT-FILM 130K FD 1/4W	R4107	401 038 0602	MT-GLAZE 220 JA 1/10W
R4006	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R4108	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R4008	401 037 7909	MT-GLAZE 1.5K JA 1/10W	R4109	401 037 5400	MT-GLAZE 1K JA 1/10W
R4009	401 037 8609	MT-GLAZE 1.6K JA 1/10W	R4110	401 037 5400	MT-GLAZE 1K JA 1/10W
R4010	401 037 5400	MT-GLAZE 1K JA 1/10W	R4111	401 039 0908	MT-GLAZE 910 JA 1/10W
R4011	401 039 0304	MT-GLAZE 820 JA 1/10W	R4112	401 037 5400	MT-GLAZE 1K JA 1/10W
R4012	401 037 8203	MT-GLAZE 1.5M JA 1/10W	R4113	401 038 7601	MT-GLAZE 560 JA 1/10W
R4013	401 037 7909	MT-GLAZE 1.5K JA 1/10W	R4114	401 037 5400	MT-GLAZE 1K JA 1/10W
R4014	401 038 5003	MT-GLAZE 390 JA 1/10W	R4117	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R4015	401 038 5003	MT-GLAZE 390 JA 1/10W	R4119	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R4016	401 037 8609	MT-GLAZE 1.6K JA 1/10W	R4120	401 037 5400	MT-GLAZE 1K JA 1/10W
R4017	401 038 5003	MT-GLAZE 390 JA 1/10W	R4121	401 037 5400	MT-GLAZE 1K JA 1/10W
R4018	401 037 5202	MT-GLAZE 100 JA 1/10W	R4122	401 037 5400	MT-GLAZE 1K JA 1/10W
R4019	401 038 3603	MT-GLAZE 3.3K JA 1/10W	R4123	401 037 5400	MT-GLAZE 1K JA 1/10W
R4020	401 037 5806	MT-GLAZE 1M JA 1/10W	R4124	401 037 5400	MT-GLAZE 1K JA 1/10W
R4021	401 037 7305	MT-GLAZE 1.3K JA 1/10W	R4125	401 037 6704	MT-GLAZE 1.2K JA 1/10W
			R4126	401 039 0304	MT-GLAZE 820 JA 1/10W

LOCATION	PARTS NO.	DESCRIPTION
R4127	401 039 0304	MT-GLAZE 820 JA 1/10W
R4602	401 038 8004	MT-GLAZE 5.6M JA 1/10W,VHR-899E ONLY
R4604	401 037 9507	MT-GLAZE 1.8M JA 1/10W,VHR-899E ONLY
R4605	401 038 2408	MT-GLAZE 2.7M JA 1/10W,VHR-899E ONLY
R4606	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899E ONLY
R4609	401 037 5202	MT-GLAZE 100 JA 1/10W,VHR-899E ONLY
R4610	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899E ONLY
R4618	401 038 9704	MT-GLAZE 7.5K JA 1/10W,VHR-899E ONLY
R4623	401 037 5806	MT-GLAZE 1M JA 1/10W,VHR-899E ONLY
R4631	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-899E ONLY
R4632	401 038 5102	MT-GLAZE 3.9K JA 1/10W,VHR-899E ONLY
R4636	401 038 5102	MT-GLAZE 3.9K JA 1/10W,VHR-899E ONLY
R4637	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-899E ONLY
R4640	401 038 6406	MT-GLAZE 4.7K JA 1/10W,VHR-899E ONLY
R4641	401 038 0909	MT-GLAZE 220K JA 1/10W,VHR-899E ONLY
R4642	401 038 7809	MT-GLAZE 56K JA 1/10W,VHR-899E ONLY
R4643	401 038 7809	MT-GLAZE 56K JA 1/10W,VHR-899E ONLY
R4644	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899E ONLY
R4645	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899E ONLY
R4646	401 039 0502	MT-GLAZE 82K JA 1/10W,VHR-899E ONLY
R4647	401 037 9309	MT-GLAZE 18K JA 1/10W,VHR-899E ONLY
R4648	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-899E ONLY
R4649	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899E ONLY
R4650	401 038 9209	MT-GLAZE 6.8K JA 1/10W,VHR-899E ONLY
R4651	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-899E ONLY
R4652	401 038 7700	MT-GLAZE 5.6K JA 1/10W,VHR-899E ONLY
R4653	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-899E ONLY
R4654	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-899E ONLY
R4661	401 037 6704	MT-GLAZE 1.2K JA 1/10W,VHR-899E ONLY
R4662	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-899E ONLY
R4663	401 037 6704	MT-GLAZE 1.2K JA 1/10W,VHR-899E ONLY
R4664	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-899E ONLY
R4665	401 037 5608	MT-GLAZE 10K JA 1/10W
	(JUMPERS)	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
	(MISCELLANEOUS)	
	613 053 8055	FIXER

**COMPL PWB,TM-1**

	613 184 9310	VHR-899EV ONLY
	613 186 4276	VHR-899E ONLY
	(CONNECTORS)	
CN711	645 009 4194	SOCKET,FFC 15P (N.S.P)
OR	645 010 2349	SOCKET,FFC 15P (N.S.P)
	(SEMICONDUCTORS)	
Q7101	405 000 2908	TR DTC114EK
Q7102	405 000 2908	TR DTC114EK
Q7103	405 000 2908	TR DTC114EK
Q7104	405 000 2908	TR DTC114EK
Q7105	405 000 2908	TR DTC114EK
Q7106	405 000 2908	TR DTC114EK
	(DIODES)	
D7101	408 040 3607	LED SLZ-796C-01H-AB-T1, STOP, VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, STOP,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, STOP,VHR-899E ONLY
D7102	408 040 3607	LED SLZ-796C-01H-AB-T1, STOP, VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, STOP,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, STOP,VHR-899E ONLY
D7103	408 040 3607	LED SLZ-796C-01H-AB-T1, REW, VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, REW,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, REW,VHR-899E ONLY
D7104	408 040 3607	LED SLZ-796C-01H-AB-T1, FF,VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, FF,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, FF,VHR-899E ONLY
D7105	408 039 5100	LED SLZ-496E-01H-AB-T1, PLAY, VHR-899EV ONLY
OR	408 040 3607	LED SLZ-796C-01H-AB-T1, PLAY, VHR-899E ONLY
OR	407 169 8203	LED SEL2913KM, PLAY,VHR-899EV ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, PLAY,VHR-899E ONLY
D7105	408 040 4208	LED SEL2513EMTP6-C, PLAY,VHR-899E ONLY

LOCATION	PARTS NO.	DESCRIPTION
D7106	408 039 5308	LED SLZ-996E-01H-AB-T1, REC
OR	407 169 2901	LED SEL2213CM
D7107	408 040 3607	LED SLZ-796C-01H-AB-T1, PAUSE, VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, PAUSE,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, DMSS,VHR-899E ONLY
D7108	408 040 3607	LED SLZ-796C-01H-AB-T1, PAUSE, VHR-899E ONLY
OR	408 040 4307	LED SEL2513EMTP6-D, PAUSE,VHR-899E ONLY
OR	408 040 4208	LED SEL2513EMTP6-C, DMSS,VHR-899E ONLY
D7111	408 039 5100	LED SLZ-496E-01H-AB-T1, STOP, VHR-899EV ONLY
OR	407 169 8203	LED SEL2913KM, STOP,VHR-899EV ONLY
D7113	408 039 5100	LED SLZ-496E-01H-AB-T1, REW, VHR-899EV ONLY
OR	407 169 8203	LED SEL2913KM, REW,VHR-899EV ONLY
D7114	408 039 5100	LED SLZ-496E-01H-AB-T1, FF,VHR-899EV ONLY
OR	407 169 8203	LED SEL2913KM, FF,VHR-899EV ONLY
D7116	408 039 5100	LED SLZ-496E-01H-AB-T1, DMSS, VHR-899EV ONLY
OR	407 169 8203	LED SEL2913KM, DMSS,VHR-899EV ONLY
	(RESISTORS)	
R7101	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7101	401 017 0708	CARBON 270 JA 1/4W,VHR-899EV ONLY
R7102	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7103	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7103	401 017 0708	CARBON 270 JA 1/4W,VHR-899EV ONLY
R7104	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7104	401 017 0708	CARBON 270 JA 1/4W,VHR-899EV ONLY
R7105	401 015 1509	CARBON 180 JA 1/4W
R7106	401 015 1509	CARBON 180 JA 1/4W
R7107	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7108	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7108	401 015 1509	CARBON 180 JA 1/4W,VHR-899E ONLY
R7116	401 015 1509	CARBON 180 JA 1/4W,VHR-899EV ONLY
	(SWITCHES)	
S7101	613 093 8596	SW,PUSH, REC
OR	645 005 1302	SWITCH,PUSH 1P-1T, REC
S7102	613 093 8596	SW,PUSH, FF,VHR-899E ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, FF,VHR-899E ONLY
S7103	613 093 8596	SW,PUSH, REW,VHR-899E ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, REW,VHR-899E ONLY
S7104	613 093 8596	SW,PUSH, PAUSE,VHR-899E ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, PAUSE,VHR-899E ONLY
S7105	613 093 8596	SW,PUSH, PLAY
OR	645 005 1302	SWITCH,PUSH 1P-1T, PLAY
S7106	613 093 8596	SW,PUSH, STOP/EJECT,VHR-899E ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-899E ONLY
S7107	645 008 8049	SWITCH,PUSH 1P-1T, REC LIST DELUX
OR	645 006 2797	SWITCH,PUSH 1P-1T, REC LIST DELUX
OR	645 001 9777	SWITCH,PUSH 1P-1T, REC LIST DELUX
S7112	613 093 8596	SW,PUSH, FF,VHR-899EV ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, FF,VHR-899EV ONLY
S7113	613 093 8596	SW,PUSH, REW,VHR-899EV ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, REW,VHR-899EV ONLY
S7114	613 093 8596	SW,PUSH, DMSS,VHR-899EV ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, DMSS,VHR-899EV ONLY
S7116	613 093 8596	SW,PUSH, STOP/EJECT,VHR-899EV ONLY
OR	645 005 1302	SWITCH,PUSH 1P-1T, STOP/EJECT, VHR-899EV ONLY

**COMPL PWB,TM-2**

	613 186 2722	
	(CONNECTORS)	
CN721	645 003 1762	SOCKET,RIBBON 5P (N.S.P)
CN722	645 003 1755	SOCKET,RIBBON 4P (N.S.P)
	(DIODES)	
D7201	408 039 4509	LED SLZ-381B-09H-AB-T1, POWER LED
OR	408 040 4000	LED SEL2415EMTP6-C, POWER LED
OR	408 040 4109	LED SEL2415EMTP6-D, POWER LED
	(CAPACITORS)	
C7201	403 018 7403	CERAMIC 220P J 50V
C7202	403 018 7403	CERAMIC 220P J 50V
	(RESISTORS)	
R7201	401 012 5609	CARBON 1K JA 1/4W

LOCATION	PARTS NO.	DESCRIPTION
R7202	401 012 5609	CARBON 1K JA 1/4W
R7204	401 014 2804	CARBON 150 JA 1/4W
		<b>(SWITCHES)</b>
S7201	613 093 8596	SW,PUSH, POWER
OR	645 005 1302	SWITCH,PUSH 1P-1T, POWER
OR	613 006 3700	PUSH SWITCH, POWER
OR	613 079 4178	SW,PUSH, POWER
		<b>(JACKS)</b>
JK721	645 025 7735	JACK,RCA-3

### COMPL PWB,TB-1

613 186 2715 VHR-899E ONLY  
613 187 3834 VHR-899EV ONLY

#### (CONNECTORS)

CN851	645 008 5031	PLUG,8P (N.S.P),VHR-899E ONLY
CN851	645 003 0925	PLUG,11P (N.S.P),VHR-899EV ONLY
CN861	645 003 0949	PLUG,14P (N.S.P),VHR-899E ONLY
CN861	645 003 0956	PLUG,16P (N.S.P),VHR-899EV ONLY
CN871	645 018 7605	SOCKET,RGB 21P (N.S.P)
OR	645 021 1096	SOCKET,RGB 21P (N.S.P)
CN872	645 018 7605	SOCKET,RGB 21P (N.S.P),VHR-899E ONLY
OR	645 021 1096	SOCKET,RGB 21P (N.S.P),VHR-899E ONLY
CN872	645 020 9475	SOCKET,RGB 21P (N.S.P),VHR-899EV ONLY

#### (SEMICONDUCTORS)

Q8604	405 029 3504	TR DTC144EK,VHR-899E ONLY
Q8605	405 002 0308	TR 2SA1037K-R,VHR-899EV ONLY
OR	405 002 0407	TR 2SA1037K-S,VHR-899EV ONLY
Q8610	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
Q8802	405 014 4509	TR 2SC2412K-R,VHR-899EV ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899EV ONLY
Q8803	405 014 4509	TR 2SC2412K-R,VHR-899EV ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899EV ONLY
Q8804	405 002 0308	TR 2SA1037K-R,VHR-899EV ONLY
OR	405 002 0407	TR 2SA1037K-S,VHR-899EV ONLY
Q8805	405 002 0308	TR 2SA1037K-R,VHR-899EV ONLY
OR	405 002 0407	TR 2SA1037K-S,VHR-899EV ONLY
Q8806	405 014 4509	TR 2SC2412K-R,VHR-899EV ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899EV ONLY
Q8807	405 014 4509	TR 2SC2412K-R,VHR-899EV ONLY
OR	405 014 4608	TR 2SC2412K-S,VHR-899EV ONLY

#### (INTEGRATED CIRCUITS)

IC861	409 432 4806	IC LA7147M-MPB
IC862	409 003 4501	IC BA7021
IC881	409 018 4008	IC LA6393M,VHR-899EV ONLY

#### (DIODES)

D8604	407 012 4406	DIODE 1SS133
D8605	407 012 4406	DIODE 1SS133
D8606	407 012 4406	DIODE 1SS133,VHR-899EV ONLY
D8607	407 012 4406	DIODE 1SS133,VHR-899EV ONLY
D8608	407 063 8804	ZENER DIODE MTZJ5.6A
D8609	407 063 8804	ZENER DIODE MTZJ5.6A
D8610	407 063 8804	ZENER DIODE MTZJ5.6A,VHR-899EV ONLY
D8611	407 063 8804	ZENER DIODE MTZJ5.6A,VHR-899EV ONLY
D8612	407 099 7000	ZENER DIODE MTZJ15B,VHR-899EV ONLY
D8613	407 099 7000	ZENER DIODE MTZJ15B
D8614	407 063 8804	ZENER DIODE MTZJ5.6A

#### (VARIABLE RESISTORS)

VR881	645 003 5654	VR,SEMI,10K N,VHR-899EV ONLY
OR	645 003 5111	VR,SEMI,10K N,VHR-899EV ONLY

#### (INDUCTORS)

L8502	645 025 0644	INDUCTOR,0.75UH
L8503	645 025 0644	INDUCTOR,0.75UH
L8504	645 006 3602	INDUCTOR,1.1UH
L8505	645 006 3817	INDUCTOR,0.22U K
OR	645 010 6651	INDUCTOR,0.22U M
L8801	645 003 8563	INDUCTOR,56U K,VHR-899EV ONLY
OR	645 003 8198	INDUCTOR,56U K,VHR-899EV ONLY

#### (CAPACITORS)

C8504	403 018 7403	CERAMIC 220P J 50V
C8508	403 010 1102	CERAMIC 1000P J 50V
C8511	403 010 1102	CERAMIC 1000P J 50V,VHR-899EV ONLY
C8513	403 018 7403	CERAMIC 220P J 50V
C8524	403 018 7403	CERAMIC 220P J 50V
C8528	403 010 1102	CERAMIC 1000P J 50V
C8531	403 010 1102	CERAMIC 1000P J 50V,VHR-899EV ONLY

LOCATION	PARTS NO.	DESCRIPTION
C8533	403 018 7403	CERAMIC 220P J 50V
C8572	403 189 2405	ELECT 10U M 16V,VHR-899EV ONLY
C8573	403 189 2405	ELECT 10U M 16V,VHR-899EV ONLY
C8575	403 189 2405	ELECT 10U M 16V,VHR-899EV ONLY
C8576	403 191 8709	ELECT 1U M 50V,VHR-899EV ONLY
C8577	403 163 8409	ELECT 47U M 16V,VHR-899EV ONLY
C8578	403 189 2405	ELECT 10U M 16V,VHR-899EV ONLY
C8579	403 191 8709	ELECT 1U M 50V,VHR-899EV ONLY
C8581	403 191 8709	ELECT 1U M 50V,VHR-899EV ONLY
C8582	403 191 8709	ELECT 1U M 50V,VHR-899EV ONLY
C8601	403 191 8709	ELECT 1U M 50V
C8602	403 191 8709	ELECT 1U M 50V
C8603	403 026 2803	CERAMIC 47P J 50V
C8604	403 189 2405	ELECT 10U M 16V
C8605	403 068 0409	CERAMIC 0.1U Z 25V
C8606	403 163 8409	ELECT 47U M 16V
C8607	403 068 0409	CERAMIC 0.1U Z 25V,VHR-899EV ONLY
C8609	403 135 4101	ELECT 470U M 6.3V
C8610	403 189 2405	ELECT 10U M 16V
C8611	403 189 2405	ELECT 10U M 16V
C8612	403 167 6906	ELECT 10U M 50V
C8613	403 026 2803	CERAMIC 47P J 50V
C8614	403 026 2803	CERAMIC 47P J 50V
C8615	403 163 7907	ELECT 47U M 6.3V
C8616	403 068 0409	CERAMIC 0.1U Z 25V
C8617	403 026 2803	CERAMIC 47P J 50V
C8618	403 026 2803	CERAMIC 47P J 50V
C8620	403 013 3004	CERAMIC 150P J 50V
C8801	403 068 0409	CERAMIC 0.1U Z 25V,VHR-899EV ONLY
C8802	403 163 7907	ELECT 47U M 6.3V,VHR-899EV ONLY
C8803	403 192 5905	CERAMIC 0.1U K 25V,VHR-899EV ONLY
C8804	403 192 5905	CERAMIC 0.1U K 25V,VHR-899EV ONLY
C8805	403 010 1102	CERAMIC 1000P J 50V,VHR-899EV ONLY

#### (RESISTORS)

R8502	401 037 5400	MT-GLAZE 1K JA 1/10W
R8504	401 038 9001	MT-GLAZE 680 JA 1/10W
R8505	401 038 0909	MT-GLAZE 220K JA 1/10W,VHR-899EV ONLY
R8508	401 037 5400	MT-GLAZE 1K JA 1/10W
R8509	401 038 9001	MT-GLAZE 680 JA 1/10W,VHR-899EV ONLY
R8510	401 038 0909	MT-GLAZE 220K JA 1/10W,VHR-899EV ONLY
R8522	401 037 5400	MT-GLAZE 1K JA 1/10W
R8524	401 038 9001	MT-GLAZE 680 JA 1/10W
R8525	401 038 0909	MT-GLAZE 220K JA 1/10W,VHR-899EV ONLY
R8528	401 037 5400	MT-GLAZE 1K JA 1/10W
R8529	401 038 9001	MT-GLAZE 680 JA 1/10W,VHR-899EV ONLY
R8530	401 038 0909	MT-GLAZE 220K JA 1/10W,VHR-899EV ONLY
R8591	401 037 5004	MT-GLAZE 0.000 ZA 1/10W,VHR-899E ONLY
R8591	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-899EV ONLY
R8592	401 037 5004	MT-GLAZE 0.000 ZA 1/10W,VHR-899E ONLY
R8592	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-899EV ONLY
R8601	401 038 9506	MT-GLAZE 75 JA 1/10W
R8602	401 038 9506	MT-GLAZE 75 JA 1/10W
R8609	401 038 9506	MT-GLAZE 75 JA 1/10W
R8611	401 018 2701	CARBON 330 JA 1/4W,VHR-899EV ONLY
R8612	401 014 2804	CARBON 150 JA 1/4W,VHR-899EV ONLY
R8613	401 014 2804	CARBON 150 JA 1/4W,VHR-899EV ONLY
R8614	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R8615	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R8624	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-899EV ONLY
R8625	401 038 6406	MT-GLAZE 4.7K JA 1/10W,VHR-899EV ONLY
R8626	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R8628	401 037 5202	MT-GLAZE 100 JA 1/10W
R8629	401 037 5202	MT-GLAZE 100 JA 1/10W
R8630	401 037 6803	MT-GLAZE 12K JA 1/10W,VHR-899EV ONLY
R8631	401 039 0403	MT-GLAZE 8.2K JA 1/10W,VHR-899EV ONLY
R8805	401 038 6406	MT-GLAZE 4.7K JA 1/10W,VHR-899EV ONLY
R8806	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-899EV ONLY
R8807	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899EV ONLY
R8808	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-899EV ONLY
R8809	401 037 5608	MT-GLAZE 10K JA 1/10W,VHR-899EV ONLY
R8810	401 037 5400	MT-GLAZE 1K JA 1/10W,VHR-899EV ONLY
R8811	401 038 0602	MT-GLAZE 220 JA 1/10W,VHR-899EV ONLY
R8812	401 038 3603	MT-GLAZE 3.3K JA 1/10W,VHR-899EV ONLY
R8813	401 038 0701	MT-GLAZE 2.2K JA 1/10W,VHR-899EV ONLY
R8814	401 037 6704	MT-GLAZE 1.2K JA 1/10W,VHR-899EV ONLY

#### (JUMPERS)

401 037 5004 MT-GLAZE 0.000 ZA 1/10W



LOCATION	PARTS NO.	DESCRIPTION
<b>COMPL PWB, TN-6</b>		
	613 181 8224	
	<b>(CONNECTORS)</b>	
CN681	645 003 0925	PLUG, 11P (N.S.P)
	<b>(SEMICONDUCTORS)</b>	
Q6803	405 015 8407	TR 2SC2812-L5
OR	405 015 8704	TR 2SC2812-L6
OR	405 014 4509	TR 2SC2412K-R
OR	405 014 4608	TR 2SC2412K-S
	<b>(INTEGRATED CIRCUITS)</b>	
IC681	409 409 4600	IC TDA9874H
OR	409 409 4600	IC TDA9874H
	<b>(DIODES)</b>	
D6801	407 205 7702	VARACTOR DI BB135
OR	407 169 8005	VARACTOR DI BB405B
	<b>(CRYSTAL DEVICES)</b>	
X6801	645 026 6928	OSC, CRYSTAL 24.576MHZ
	<b>(INDUCTORS)</b>	
L6802	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
L6803	645 002 1640	INDUCTOR, 1.8U K
OR	645 005 3870	INDUCTOR, 1.8U M
L6806	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
L6808	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
L6810	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
L6811	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
L6812	645 001 5441	INDUCTOR, 2.2U K
OR	645 005 3887	INDUCTOR, 2.2U M
	<b>(CAPACITORS)</b>	
C6801	403 215 3109	CERAMIC 0.1U Z 16V
C6803	403 026 2803	CERAMIC 47P J 50V
C6804	403 215 3109	CERAMIC 0.1U Z 16V
C6806	403 069 5601	CERAMIC 0.01U K 50V
C6807	403 121 3507	ELECT 4.7U M 50V
C6808	403 109 6308	ELECT 1U M 50V
C6809	403 012 6808	CERAMIC 15P J 50V
C6810	403 206 8601	CERAMIC 0.33U Z 16V
C6811	403 073 1200	CERAMIC 0.033U K 50V
C6812	403 069 5601	CERAMIC 0.01U K 50V
C6813	403 121 3507	ELECT 4.7U M 50V
C6815	403 215 3109	CERAMIC 0.1U Z 16V
C6817	403 069 5601	CERAMIC 0.01U K 50V
C6818	403 121 3507	ELECT 4.7U M 50V
C6820	403 163 7907	ELECT 4.7U M 6.3V
C6824	403 215 3109	CERAMIC 0.1U Z 16V
C6826	403 069 5601	CERAMIC 0.01U K 50V
C6828	403 069 5601	CERAMIC 0.01U K 50V
C6830	403 069 5601	CERAMIC 0.01U K 50V
C6831	403 121 3507	ELECT 4.7U M 50V
C6832	403 069 5601	CERAMIC 0.01U K 50V
C6833	403 135 4002	ELECT 4.7U M 6.3V
C6834	403 069 5601	CERAMIC 0.01U K 50V
C6835	403 125 5606	ELECT 100U M 16V
C6838	403 121 3408	ELECT 2.2U M 50V
C6841	403 121 3408	ELECT 2.2U M 50V
C6842	403 069 5601	CERAMIC 0.01U K 50V
C6843	403 069 5601	CERAMIC 0.01U K 50V
C6844	403 012 6808	CERAMIC 15P J 50V
C6847	403 135 4002	ELECT 4.7U M 6.3V
	<b>(RESISTORS)</b>	
R6803	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R6804	401 038 5300	MT-GLAZE 39K JA 1/10W
R6805	401 037 5608	MT-GLAZE 10K JA 1/10W
R6806	401 038 5300	MT-GLAZE 39K JA 1/10W
R6812	401 037 5400	MT-GLAZE 1K JA 1/10W
R6816	401 037 5400	MT-GLAZE 1K JA 1/10W
R6817	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R6818	401 037 5608	MT-GLAZE 10K JA 1/10W
R6819	401 038 0800	MT-GLAZE 22K JA 1/10W
R6822	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R6823	401 038 6406	MT-GLAZE 4.7K JA 1/10W

LOCATION	PARTS NO.	DESCRIPTION
	(JUMPERS)	
	401 037 5004	MT-GLAZE 0.000 ZA 1/10W

### FLEXIBLE FLAT CABLE

645 031 6081	FLEXIBLE FLAT CABLE, CP1(CN351)-STATOR CYL(CN1)
645 032 2136	FLEXIBLE FLAT CABLE, CN701-CN711

### ACCESSORIES

613 179 9882	COVER BATTERY, FOR REMOCON, INFRARED
645 034 6613	REMOCON, INFRARED, WITH COVER BATTERY, VHR-899E ONLY
645 035 9057	REMOCON, INFRARED, WITH COVER BATTERY, VHR-899EV ONLY
613 186 1640	INSTRUCTION MANUAL, VHR-899E ONLY
613 187 2257	INSTRUCTION MANUAL, VHR-899EV ONLY
613 188 3468	INSTRUCTION MANUAL, VHR-899EV ONLY
645 023 4170	CABLE, ANT PAL
OR 645 025 1382	CABLE, ANT PAL
△ 613 136 6411	CORD, POWER, VHR-899E ONLY
OR △ 645 019 1923	CORD, POWER-1.8MK, VHR-899E ONLY
OR △ 645 023 4156	CORD, POWER-1.5MK, VHR-899E ONLY
△ 645 023 4163	CORD, POWER-1.5MK, VHR-899EV ONLY
OR △ 645 024 0522	CORD, POWER-1.5MK, VHR-899EV ONLY
OR △ 645 025 0767	CORD, POWER-1.5MK, VHR-899EV ONLY
OR △ 645 028 3086	CORD, POWER-1.525MK, VHR-899EV ONLY
613 134 3054	PAD(CORD POWER, RC UNIT) VHR-899E ONLY

### PACKING MATERIALS

613 186 0384	CARTON CASE, VHR-899E ONLY
613 187 2233	CARTON CASE, VHR-899EV ONLY
613 183 5856	CUSHION, FRONT(SID)
613 183 5863	CUSHION, BACK(SID)
613 139 8047	POLYE COVER, INNER-K



SANYO Electric Co., Ltd.  
Osaka, Japan



# VHR-899E VHR-899EV

## BLOCK DIAGRAMS,CIRCUIT DIAGRAMS & PRINTED WIRING BOARDS


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**NOTES:**

1. All resistance values in "OHMS" unless otherwise noted.  
(K=1,000; M=1,000,000)
2. All capacitance values in "μF" unless otherwise noted.  
p=pico farad ; μ ,u or U=micro farad
3. All inductance values in "μH" unless otherwise noted.  
μ ,u or U=micro henry ; m=milli henry

**PRODUCT SAFETY NOTICE**

THE COMPONENTS DESIGNATED BY A SYMBOL (  ) IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DONOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLT-AGERATINGSSHOWN.

**EXPLANATORY NOTES (EXAMPLES)**

Resistor 10K:1/16J means 10kilo ohm  $\pm 5\%$ , 1/16watt max.  
1M:1/10K means 1mega ohm  $\pm 10\%$ , 1/10watt max.  
Capacitor 0.047:F means 0.047micro farad, Ftype.  
Electrolytic capacitor  
10:16 means 10micro farad, 16volt max.  
Inductor 330:J means 330micro henry  $\pm 5\%$   
470:K means 470micro henry  $\pm 10\%$   
No description J or K means  $\pm 5\%$

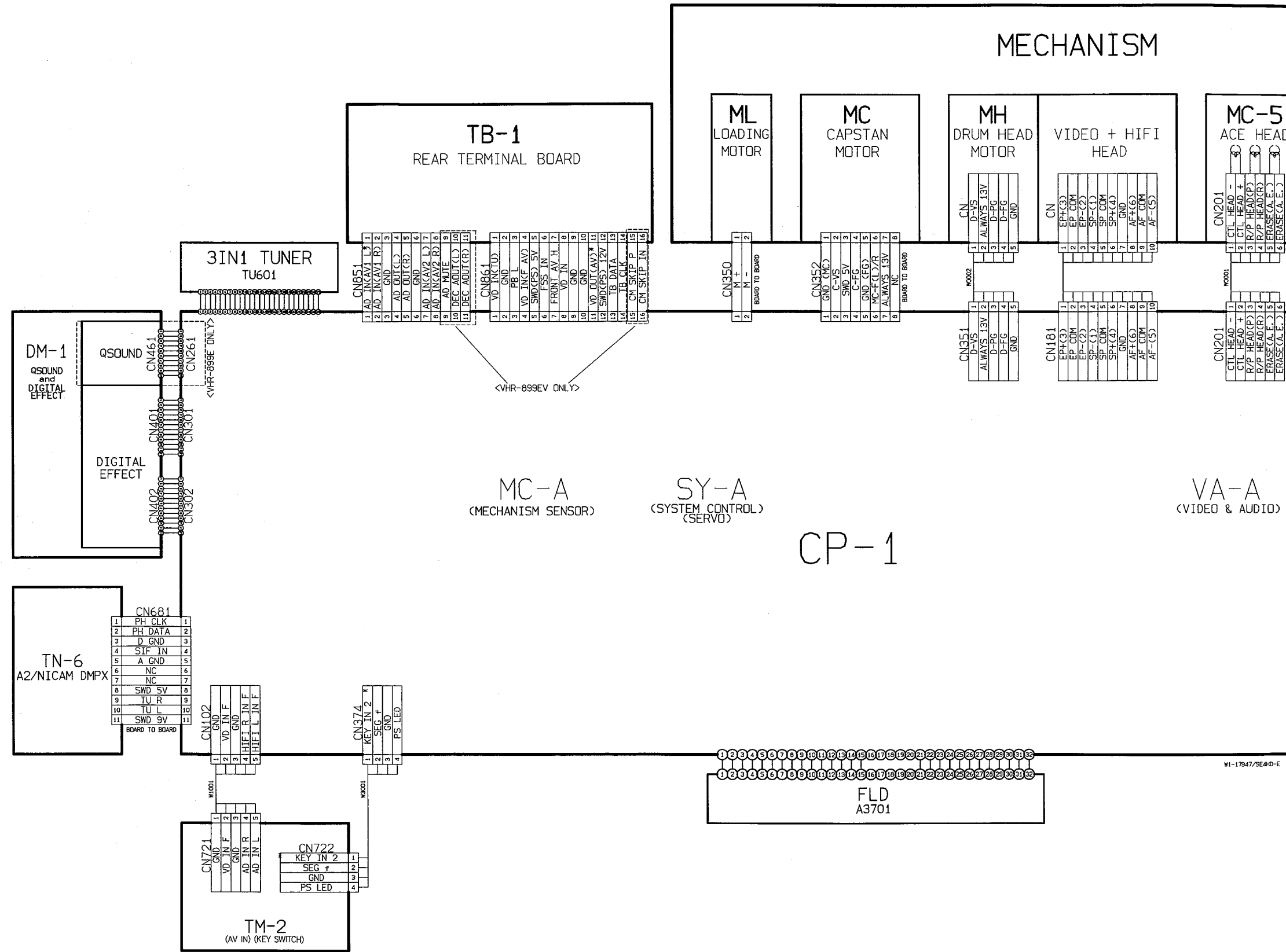
1. OVERALL WIRING & BLOCK DIAGRAMS

OVERALL WIRING

MECHANISM

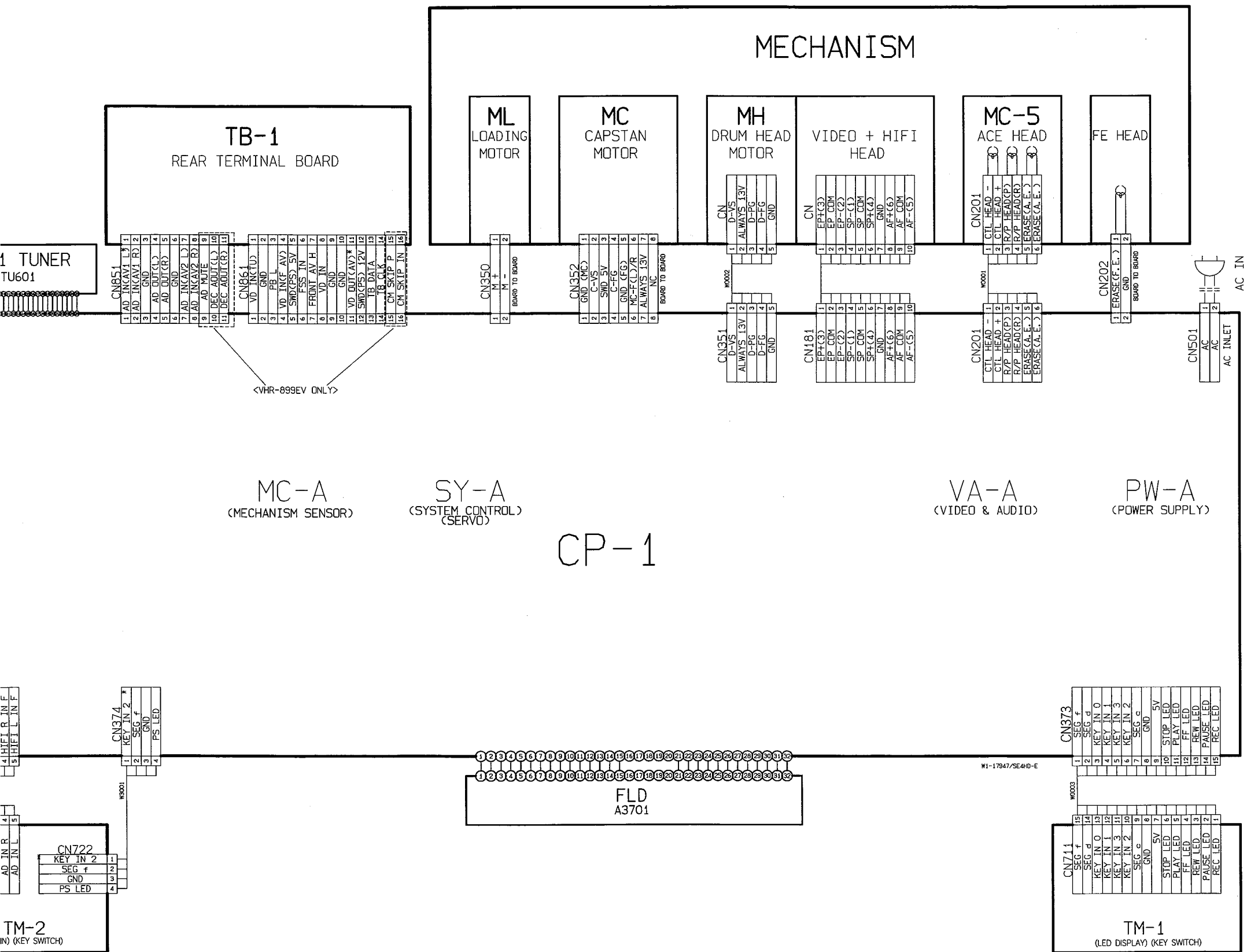
K  
J  
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A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

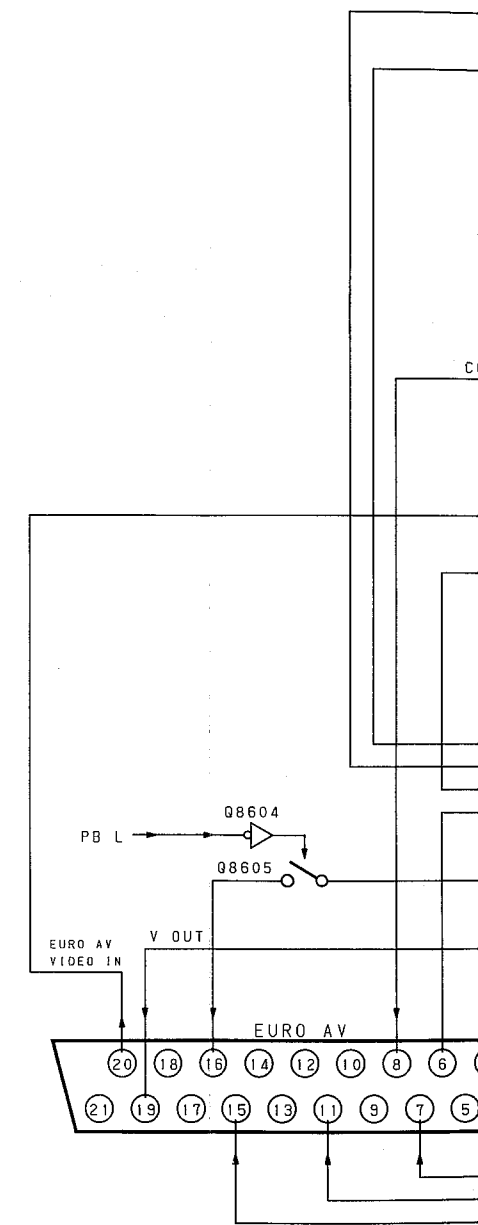
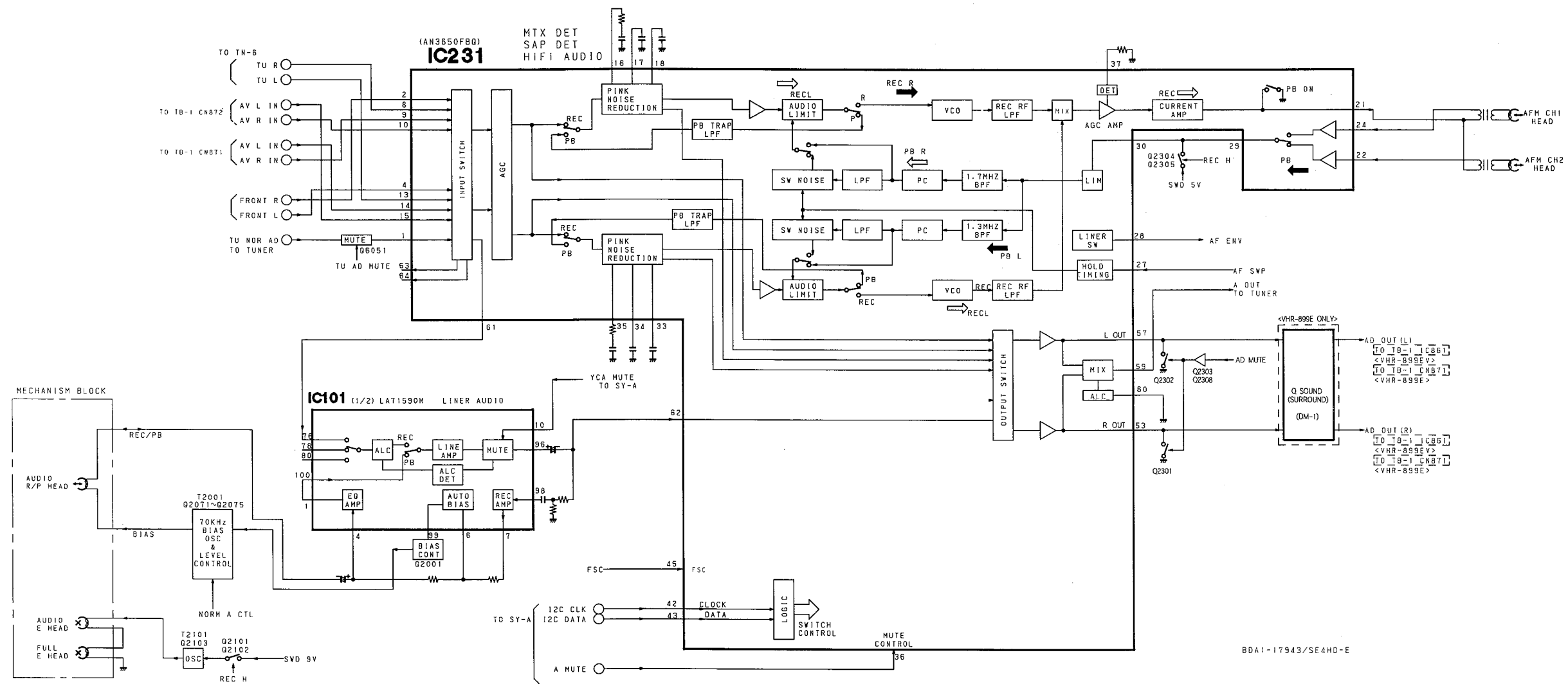


W1-17947/SE#40-E

OVERALL WIRING



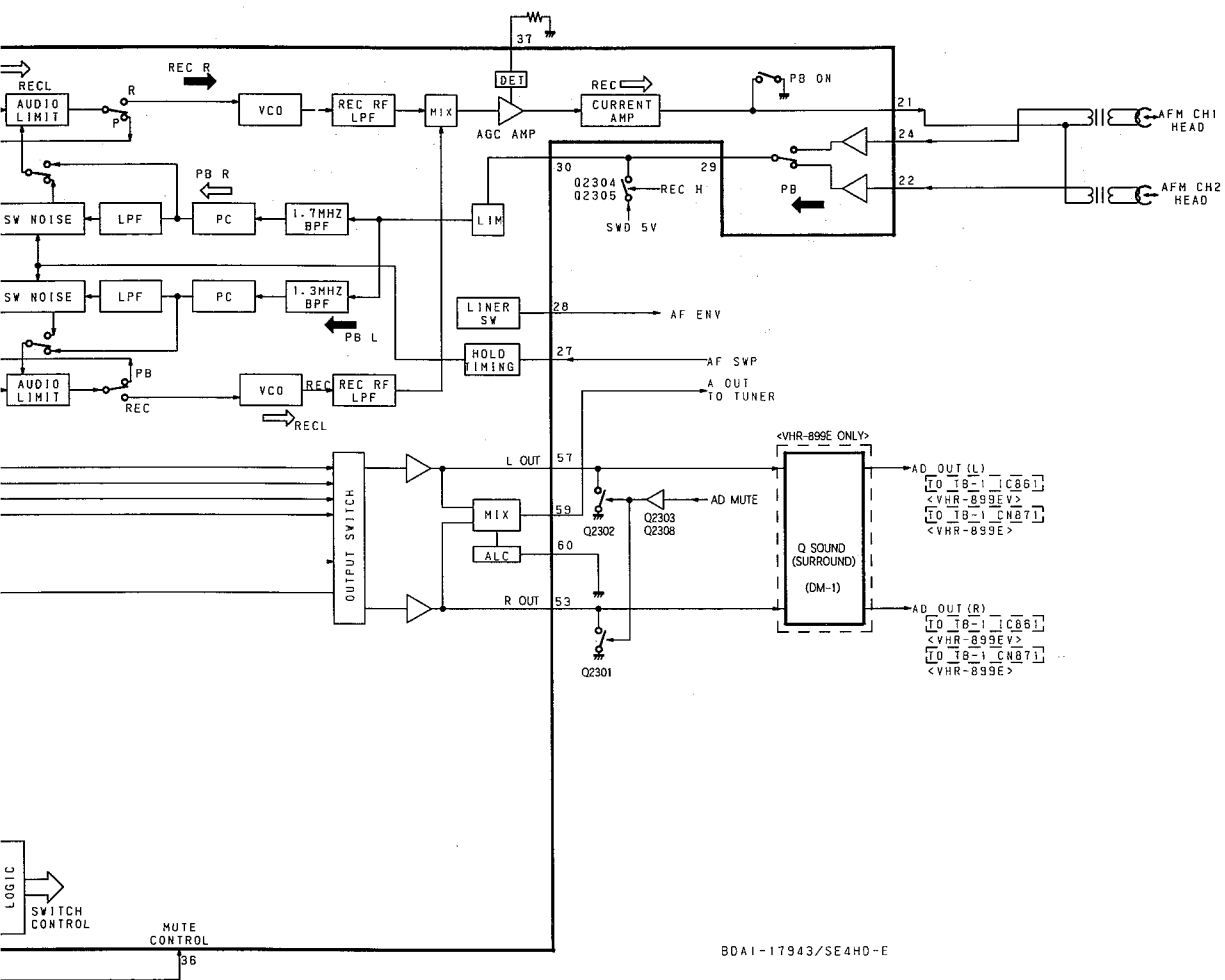
# AUDIO CIRCUIT



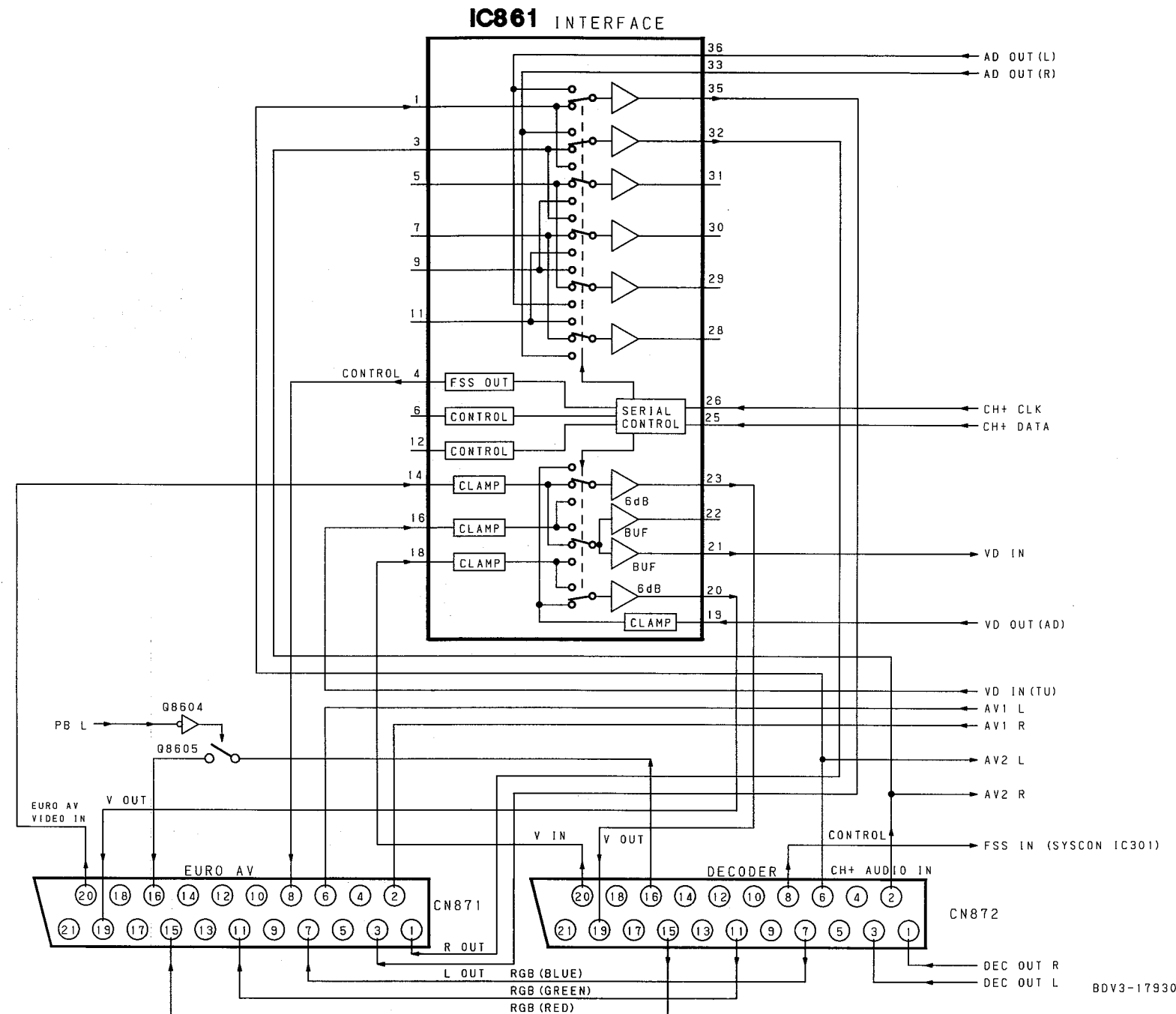
K  
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

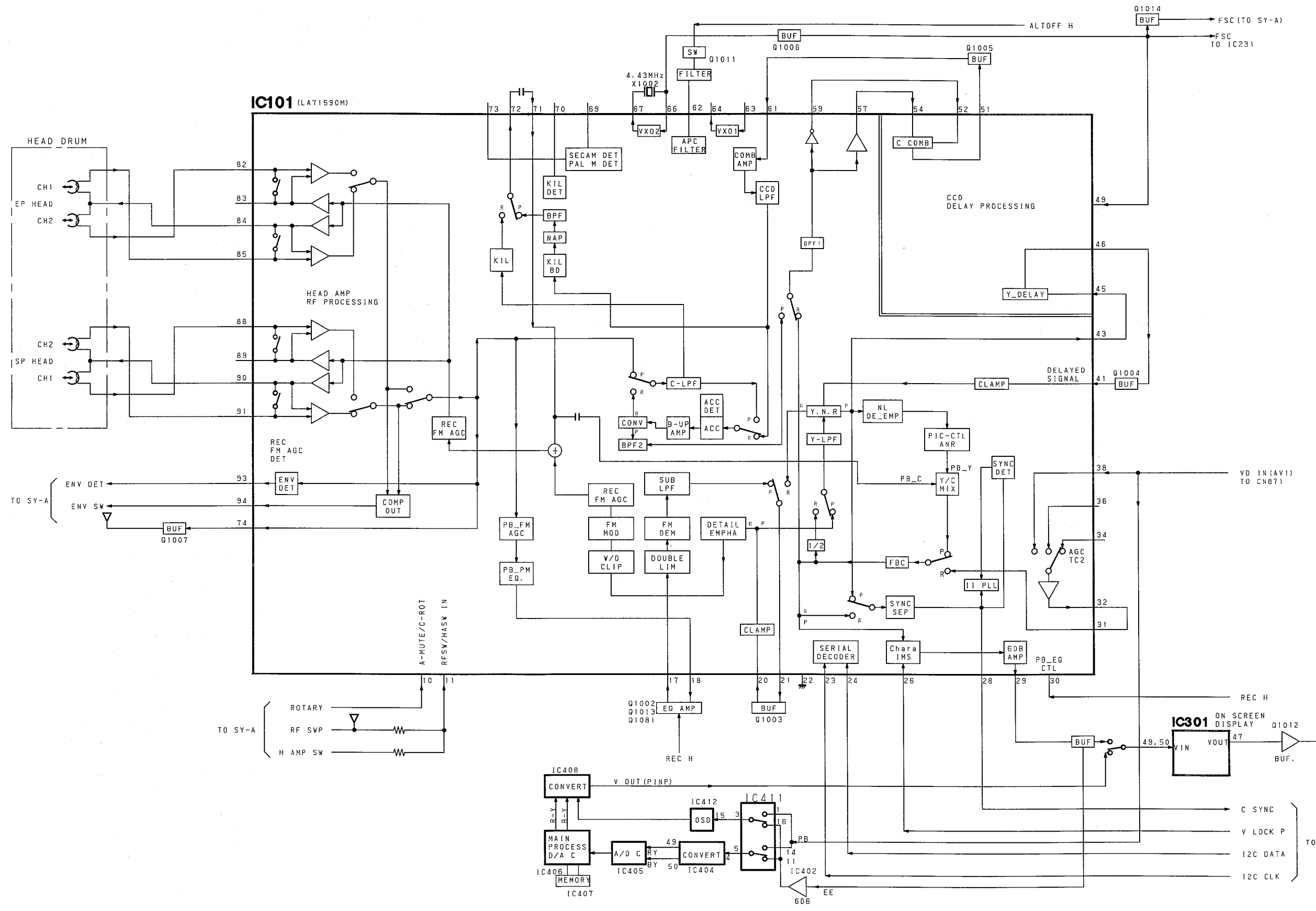
VIDEO CIRCUIT



TERMINAL & INPUT/OUTPUT SELECTOR CIRCUIT (VHR-899EV)



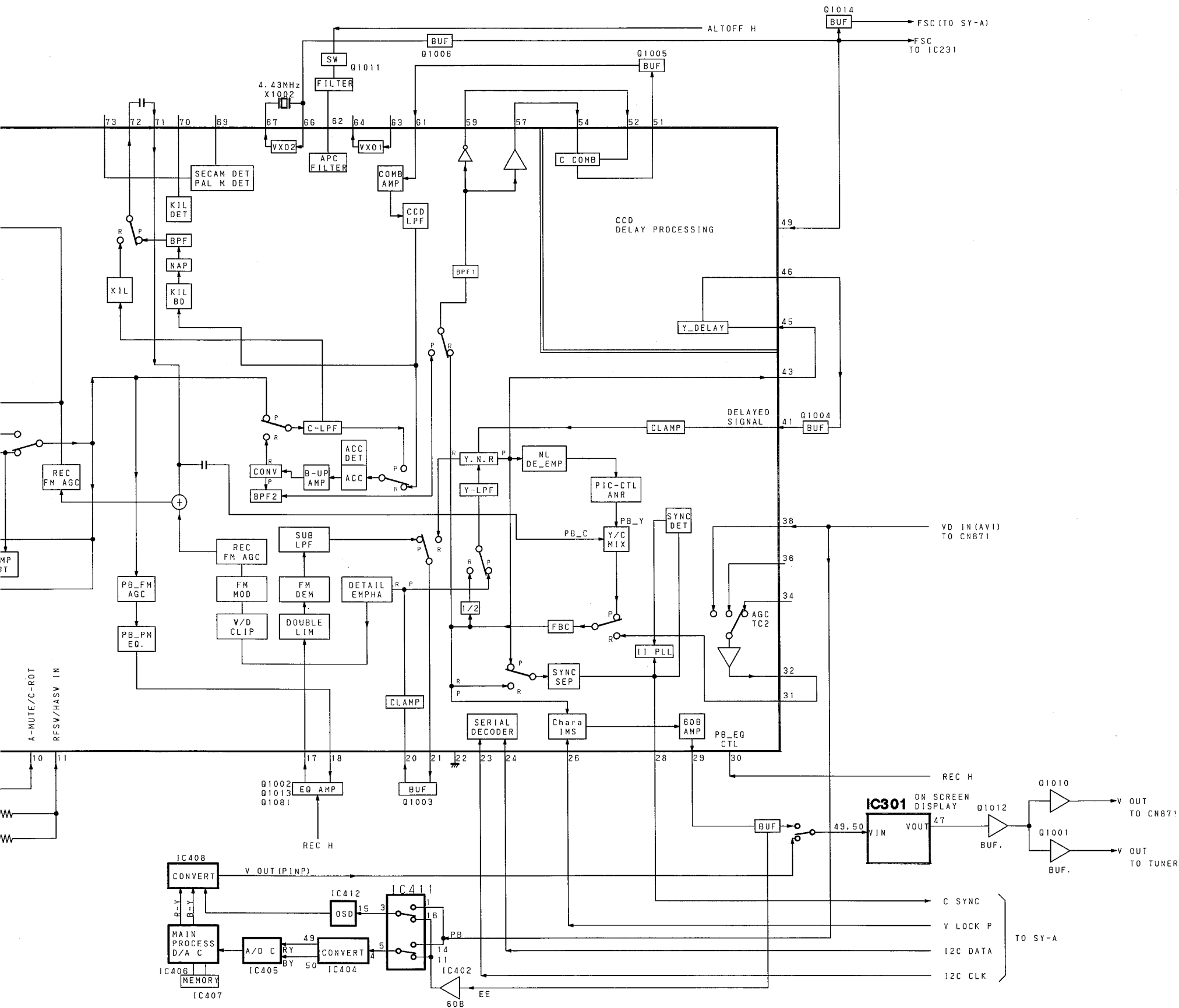
VIDEO CIRCUIT



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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

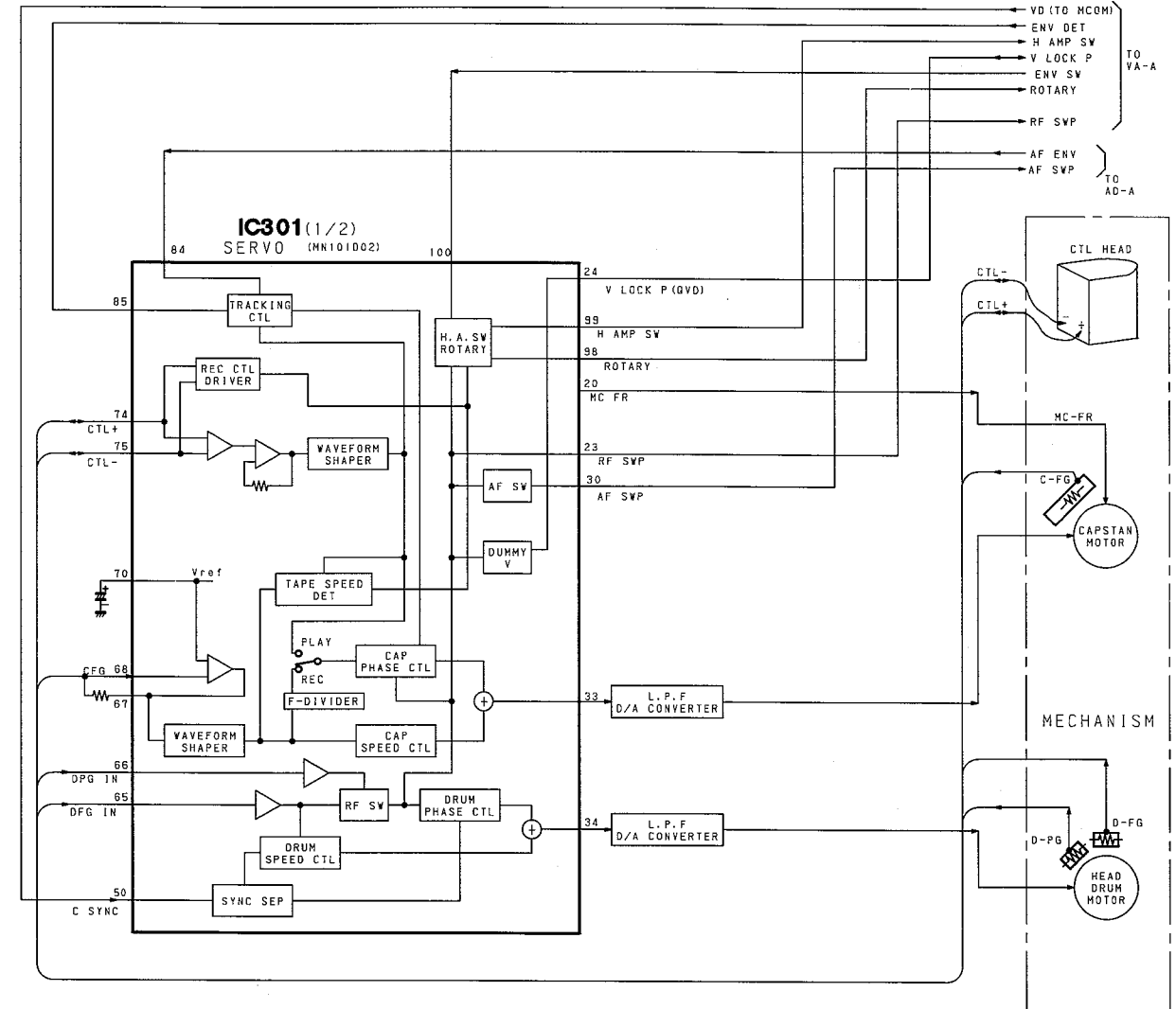
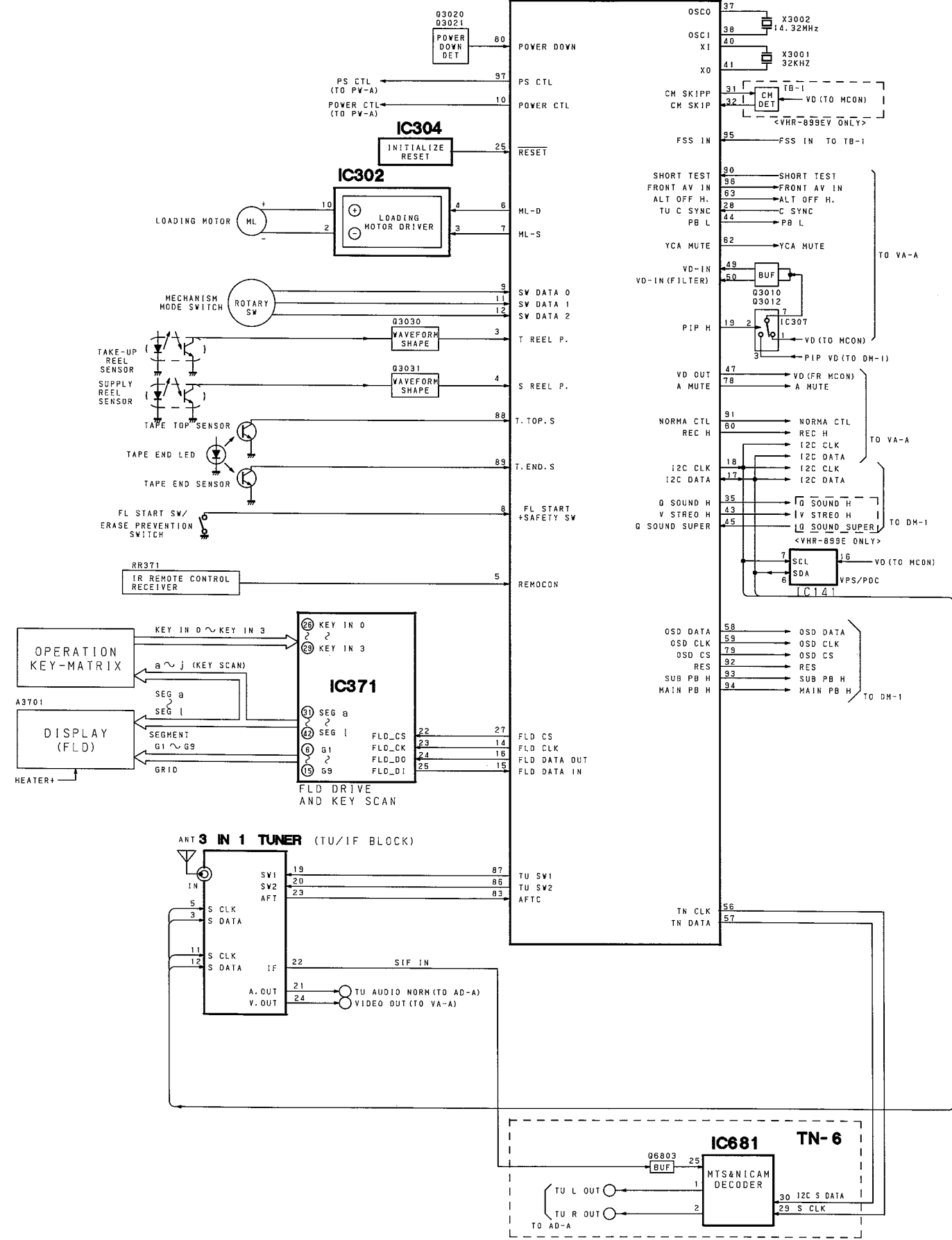
VIDEO CIRCUIT



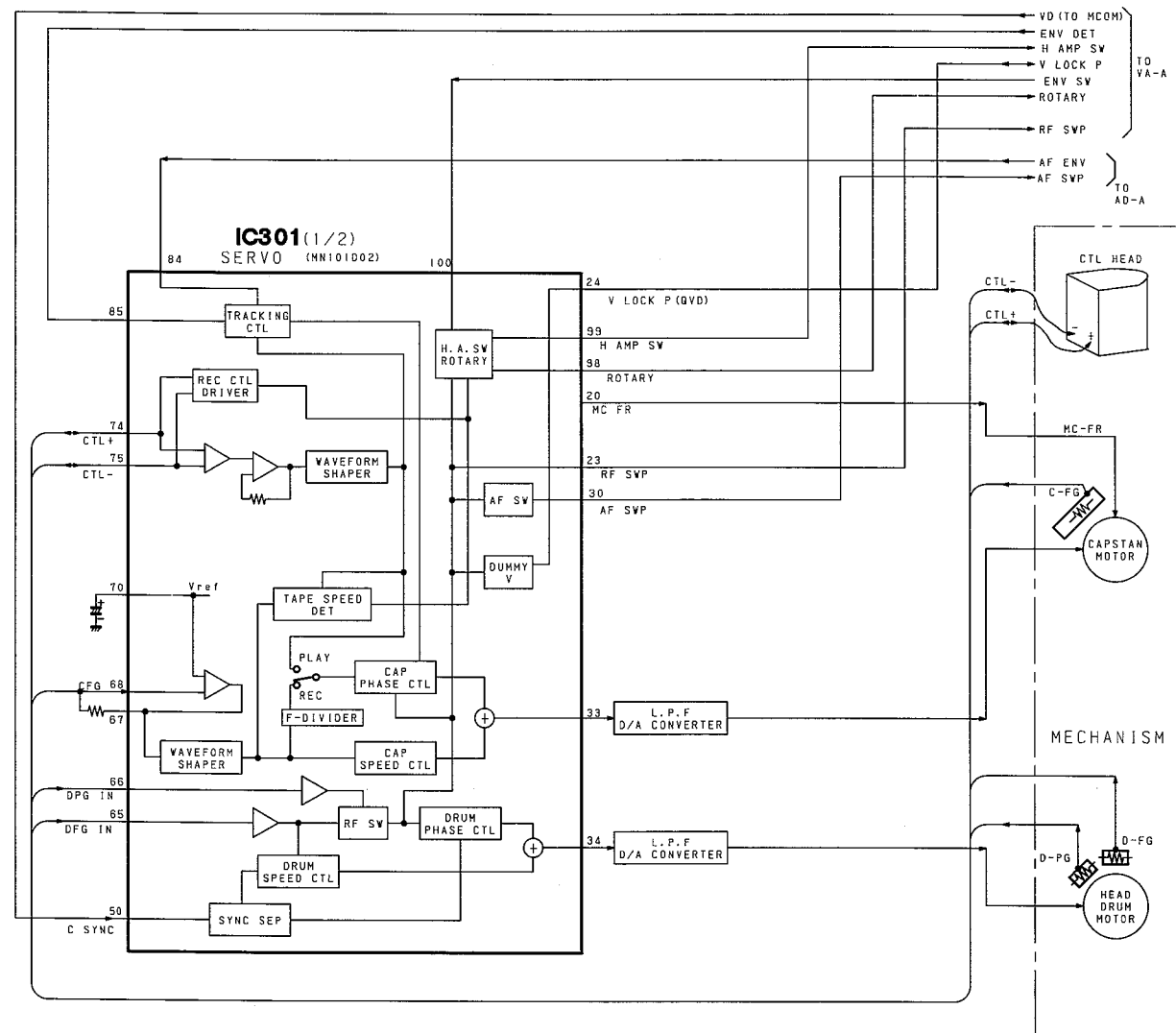


SYSTEM CONTROL & SERVO CIRCUIT

IC301 (1/2) MPU  
SYSTEM CONTROL, OSD  
TIMER, TUNING CONTROL



2. CIR  
 VIDEO  
 IC101  
 PLAY  
 100m  
 IC101  
 REC/  
 100m  
 IC101  
 STILL  
 2V/20  
 IC101  
 REC/  
 1V/20  
 IC101  
 REC/  
 500m  
 IC101  
 REC  
 200m  
 IC101  
 REC/  
 100m



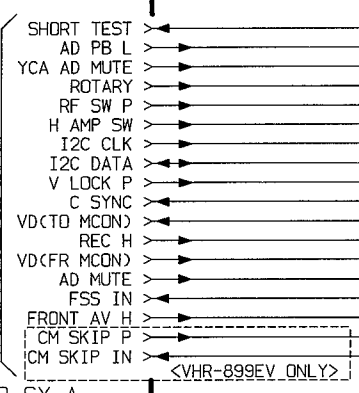
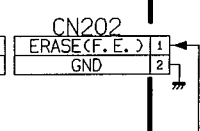
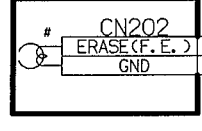
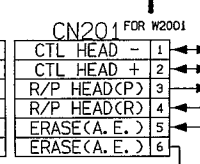
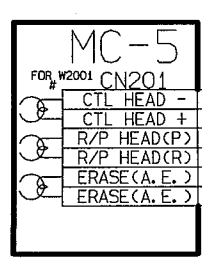
BDSI-17943/SE4H0-E

VIDEO CIRCUIT WAVEFORMS

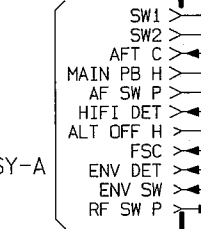
TEST LOCATION	WAVE FORM	TEST LOCATION	WAVE FORM
IC101 PIN17 PLAY 100mV/500ns/div		IC101 PIN43,45 REC/PLAY 100mV/20µs/div	
IC101 PIN20,21 REC/PLAY 100mV/20µs/div		IC101 PIN57,59 REC/PLAY 100mV/20µs/div	
IC101 PIN26 STILL 2V/200µs/div		IC101 PIN51,61 REC/PLAY 100mV/20µs/div	
IC101 PIN28 REC/PLAY 1V/20µs/div		IC101 PIN71,72 REC 100mV/20µs/div	
IC101 PIN29 REC/PLAY 500mV/20µs/div		IC101 PIN71,72 PLAY 100mV/20µs/div	
IC101 PIN34,36,38 REC 200mV/20µs/div		IC101 PIN90 REC 1V/200ns/div	
IC101 PIN41,46 REC/PLAY 100mV/20µs/div			

WF\_V\_SE4

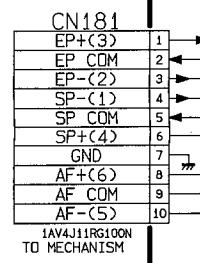
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TO SY-A

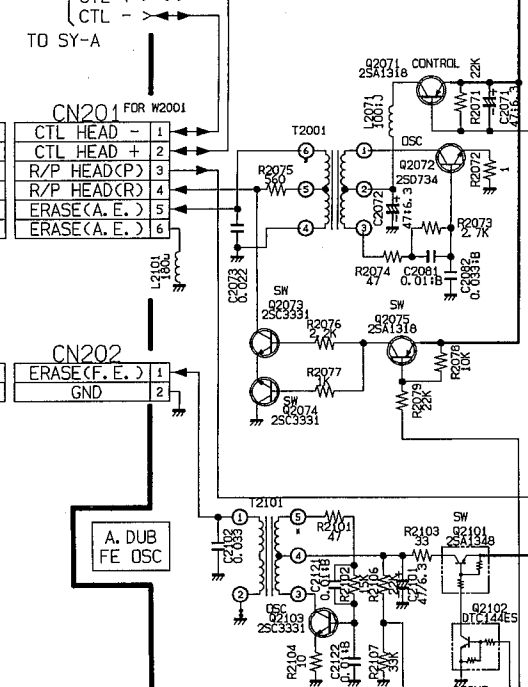


TO SY-A

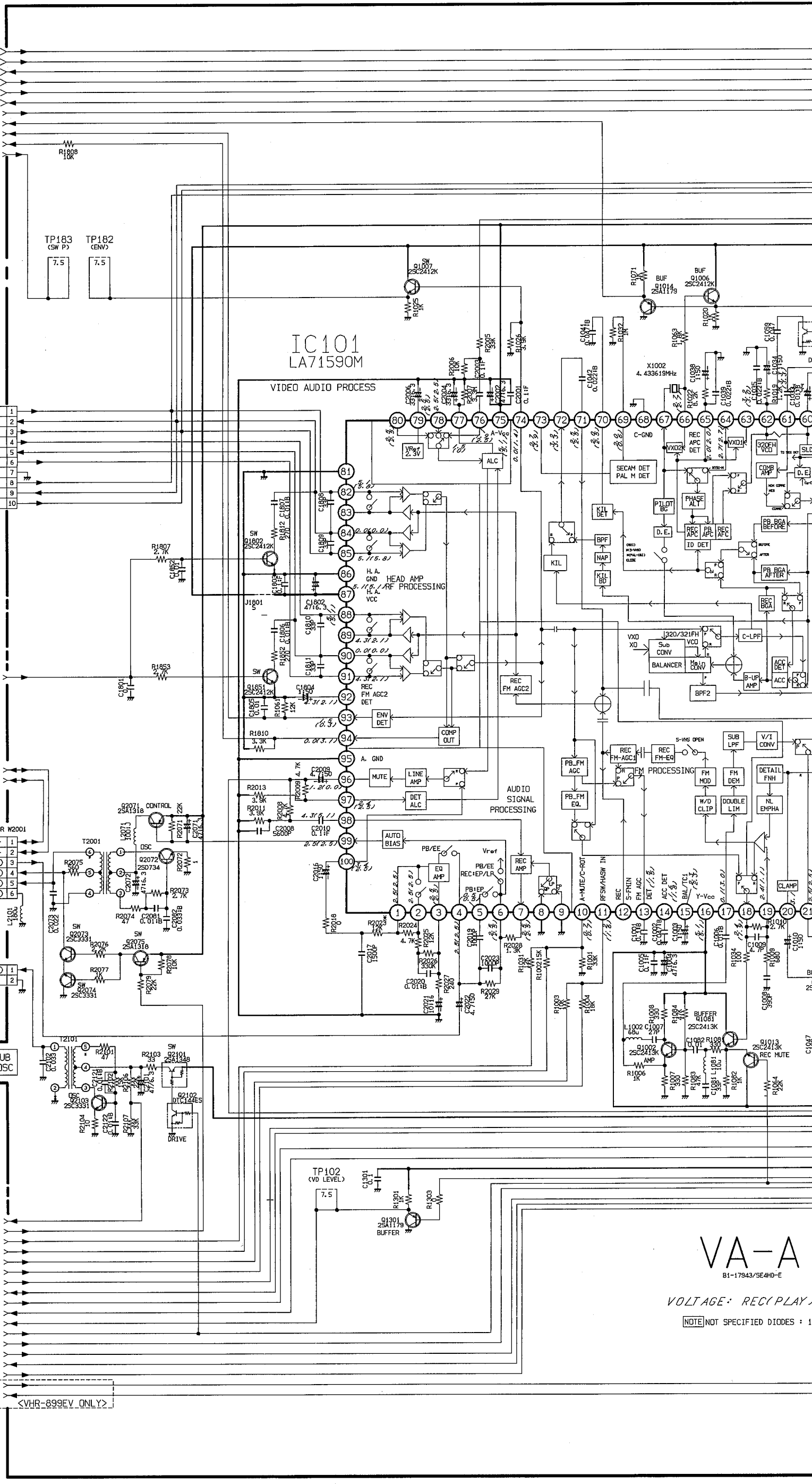


1AV4J1R8100N TO MECHANISM

TO SY-A



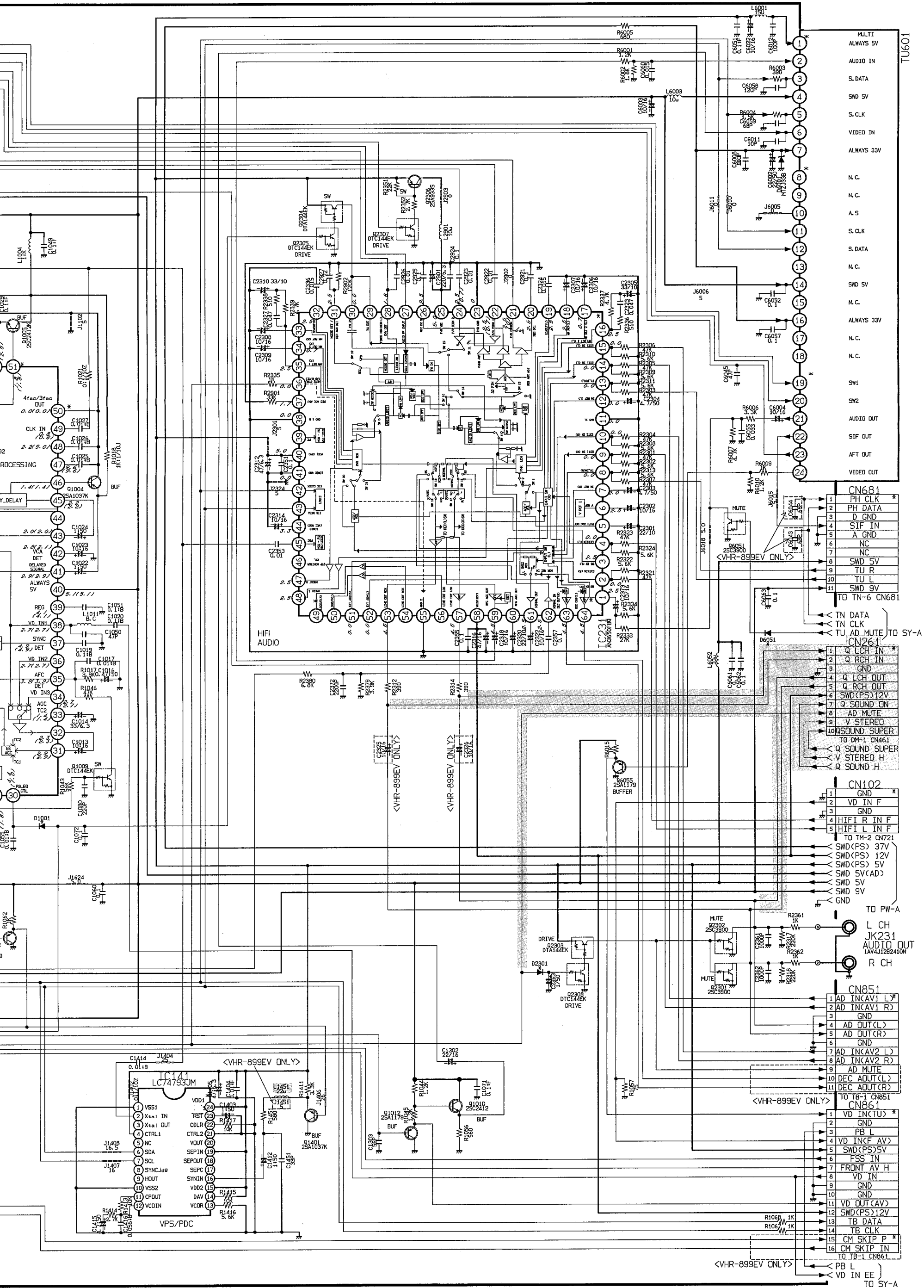
<VHR-899EV ONLY>



VA-A  
B1-17943/5E4HD-E  
VOLTAGE: REC(PLAY)  
NOTE: NOT SPECIFIED DIODES: 1SS



A) VIDEO & AUDIO



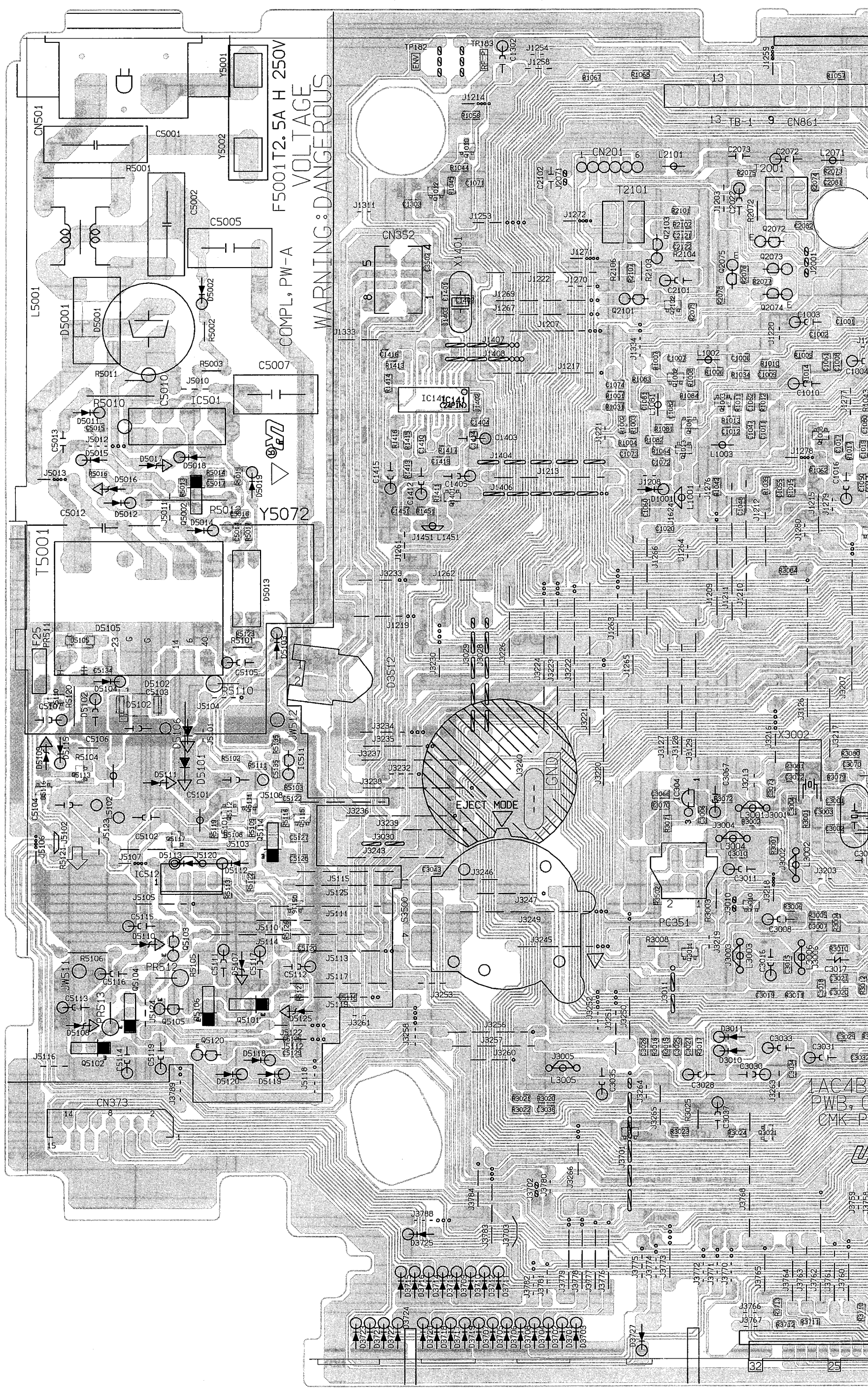
NOTES:

— : Common parts for VHR-899E & VHR-899EV  
 The parts marked   are VHR-899E ONLY



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1 2 3 4 5 6 7 8 9 10 11

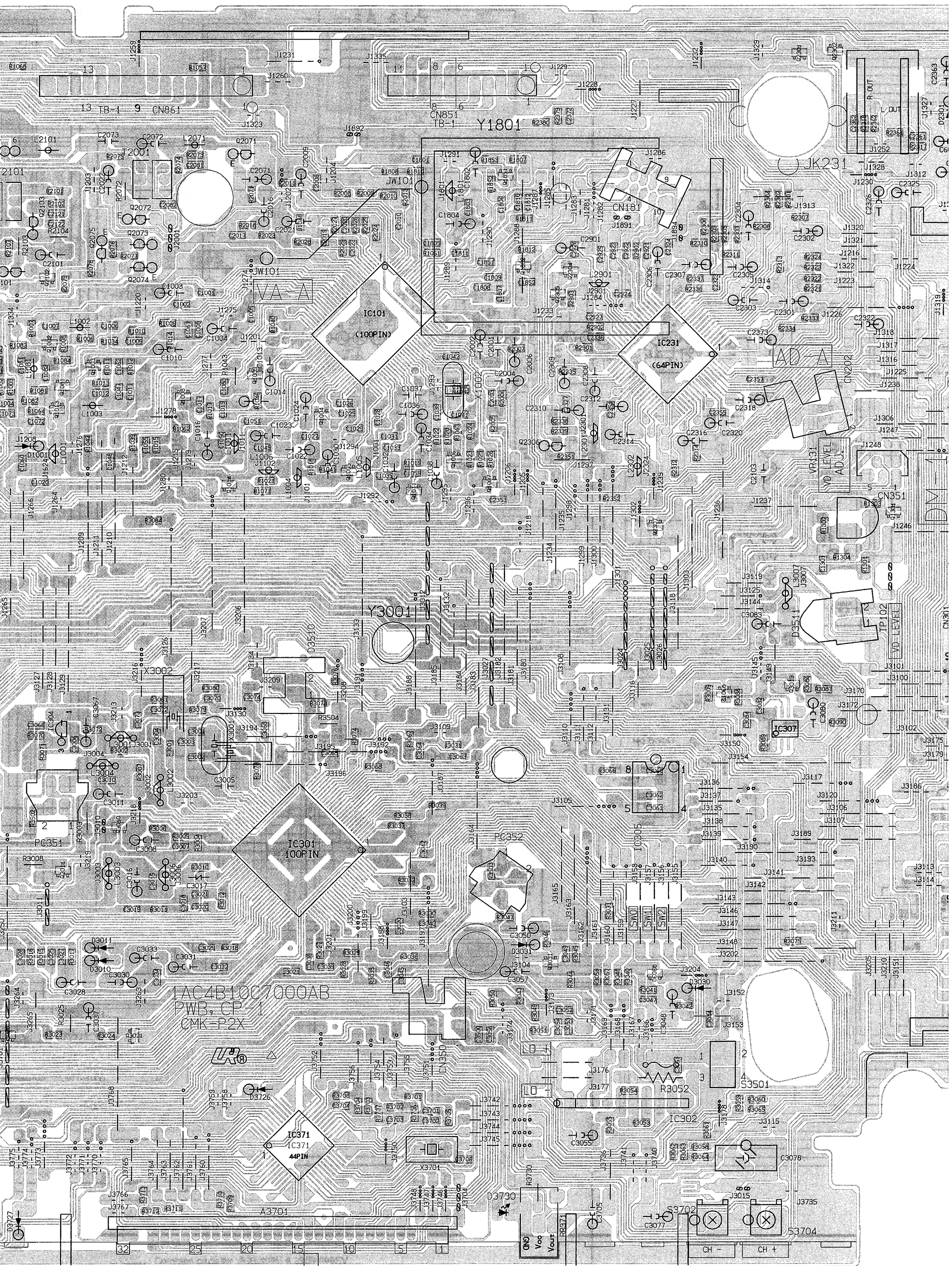


F5001T2.5A H 250V  
COMPL, PW-A  
VOLTAGE  
WARNING: DANGEROUS

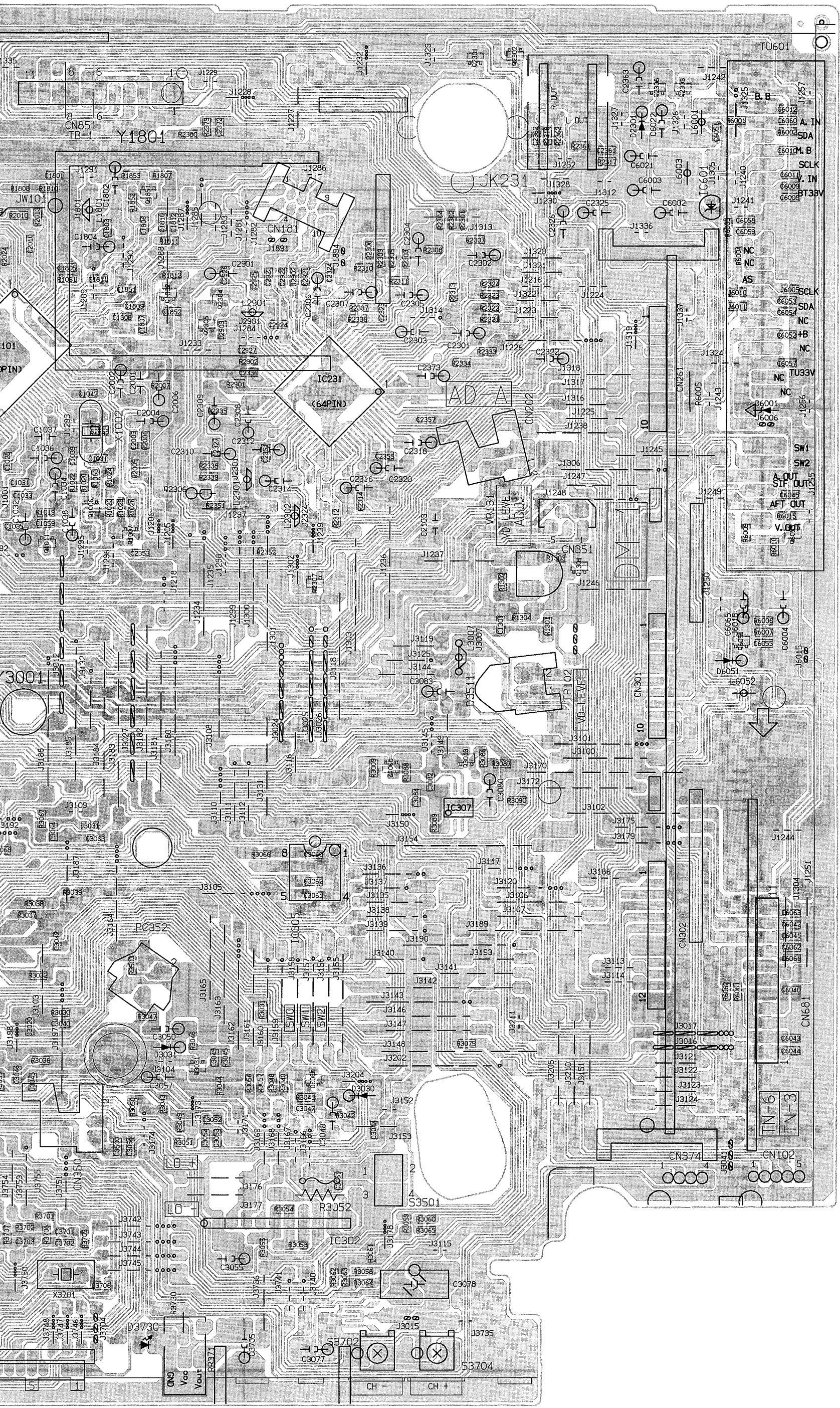
EJECT MODE  
GND

1AC4B  
PWB, C  
CMK P2







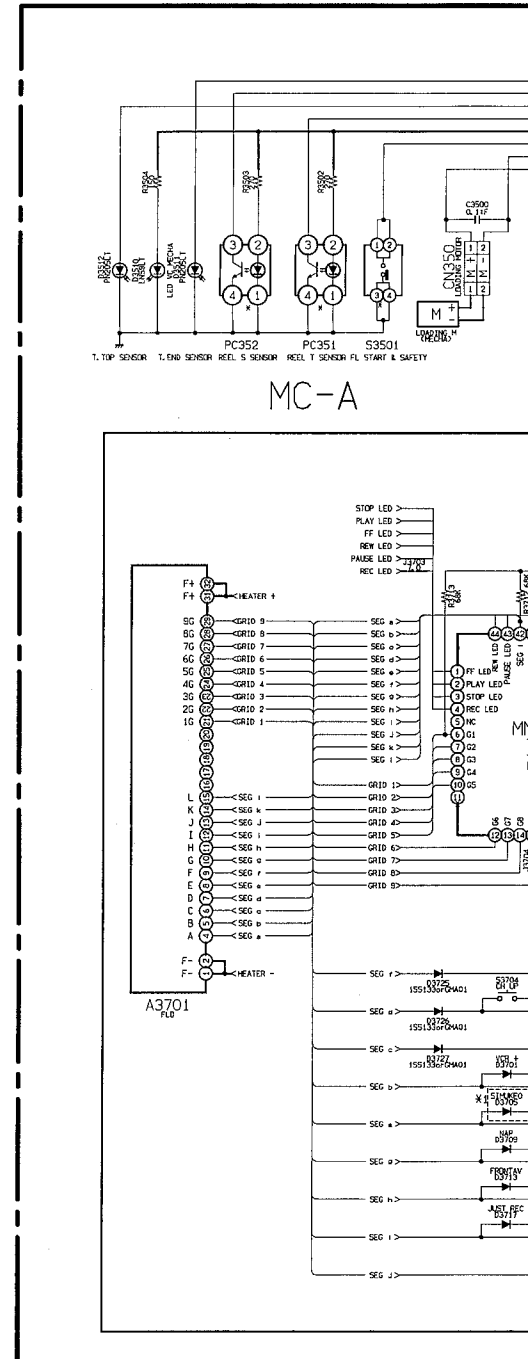




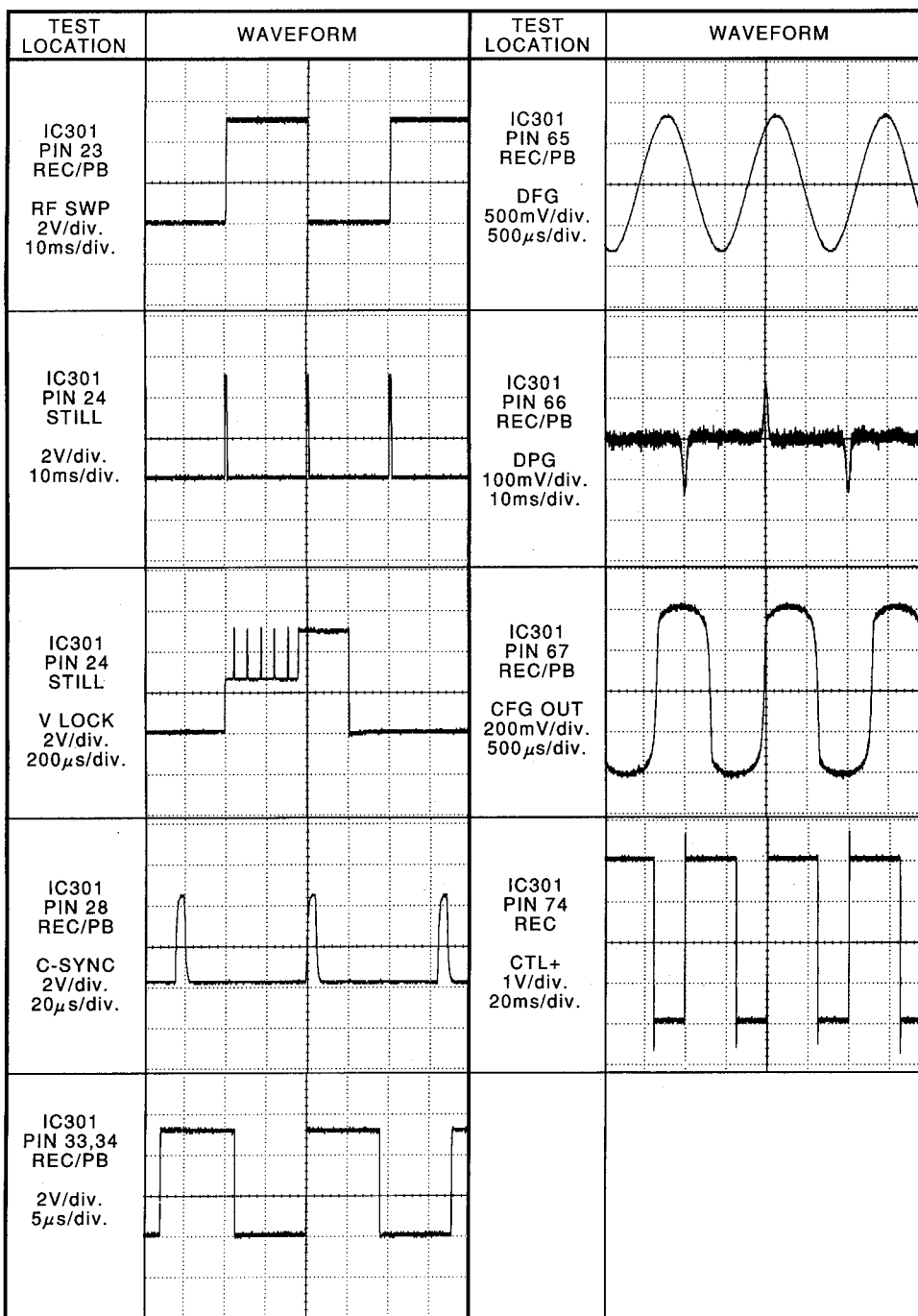
## IC301 SYSTEM CONTROL, TIMER, TUNING CONTROL, OSC & SERVO MPU PIN FUNCTIONS

No.	Name	I/O	HL	Signal Function	No.	Name	I/O	HL	Signal Function
1	RUNAWAY	-	-	-	51	VDD2	-	-	Always 5V
2	PWB CHECK	-	-	-	52	AFCC	-	-	-
3	T REEL P	I	-	Pulse signal from take up reel moving sensor.	53	AFCLPF	-	-	-
4	S REEL P	I	-	Pulse signal from supply up reel moving sensor.	54	FSC IN	I	-	Fsc (4.43MHz) clock input.
5	REMOCON IN	I	-	Remote control signal input.	55	FSC LPF	-	-	-
6	ML-D	O	-	Loading motor rotation indication signal. (Load "H", Brake "M", Unload "L")	56	TN CLK	O	-	Clock signal to control MTS and NICAM decoder.
7	ML-S	O	-	Loading motor rotation speed indication signal. (High "H", Middle "M", Low "L")	57	TN SDATA	O	-	Data signal to control MTS and NICAM decoder.
8	FLSTART + SAFETY	I	L	Switch input indicating start of cassette loading or discharge by cassette mechanism and detecting accidental erasure prevention tab of cassette tape.	58	OSD DATA	O	-	Data signal to control on screen display of digital effect circuit.
9	SW0	I	-	Data indicating operation position of mechanism.	59	OSD CLK	O	-	Clock signal to control on screen display of digital effect circuit.
10	POWER UP	O	H	High output except when power is off.	60	REC H	O	H	Signal to indicate recording mode.
11	SW1	I	-	Data indicating operation position of mechanism.	61	N.C.	-	-	-
12	SW2	I	-	Data indicating operation position of mechanism.	62	YCA AD MUTE	O	L	Video and Audio mute signal.
13	REMOCON OUT	-	-	-	63	ALT OFF H	O	H	Signal to switch the time constant of APC circuit while special mode.
14	FLD SCLK	O	-	Clock pulse for FLD display drive IC.	64	N.C.	-	-	-
15	FLD SDIN	I	-	Data signal input from FLD display drive IC.	65	DFG SIG IN	I	-	Head drum FG pulse input.
16	FLD SDOT	O	-	Data signal output to FLD display drive IC.	66	PG SIG IN	I	-	Head drum PG(phase) pulse input.
17	I2C DAT	O	-	Control signal output to tuner, video-audio and HiFi audio IC.	67	FG OUT	O	-	Head drum FG amp output.
18	I2C CLK	O	-	Clock signal output to tuner, video-audio and HiFi audio IC.	68	CFG SIG IN	O	-	Capstan FG pulse input.
19	PINP H	O	H	Signal to switch picture in picture video signal.	69	AMP BIAS	O	-	Bias voltage for DFG amp.
20	MC F/R	O	-	Capstan motor rotation (normal/reverse) indication signal. (reverse H)	70	VRI	O	-	-
21	N.C.	-	-	-	71	AVSS	-	-	Ground terminal.
22	TU AD MUTE	O	H	Signal disable tuner audio signal output.	72	CTLA	-	-	-
23	RF SW P	O	-	RF switching pulse created by head drum PG.	73	AVDD	O	-	Always 5V.
24	QVD	O	-	Quasi vertical synchronizing signal.	74	CTL+	I/O	-	Control pulse I/O.
25	RESET	I	L	Initial reset terminal for this IC.	75	CTL-	I/O	-	Control pulse I/O.
26	N.C.	-	-	-	76	CO	-	-	-
27	FLD CS	O	H	Chip select signal to FLD display drive IC.	77	ROM COR. OP	-	-	-
28	C-SYNC	I	-	Composite synchronizing signal input.	78	AD MUTE	O	H	Signal disable audio signal output.
29	CLK ADJ	-	-	-	79	OSD CS	O	H	CS signal to on screen display of digital circuit.
30	AF SW P	O	-	AF switching pulse created by head drum PG.	80	POWER DOWN	I	L	Power failure detection circuit.
31	CM SKIP P	O	-	Timing pulse to detect the CM.	81	N.C.	-	-	-
32	CM SKIP IN	I	H	Signal indicating the CM.	82	OPEN	-	-	-
33	MC-PWM	O	-	Output of capstan motor servo control signal. (PWM signal)	83	AFT C	I	-	Tuner AFT S-curve signal for tuner AFT control.
34	MH-PWM	O	-	Output of head drum motor servo control signal. (PWM signal)	84	AF ENV	I	-	HiFi audio head envelope detection signal input.
35	Q SOUND H	O	H	Signal to indicate "Q SOUND" is on.	85	VD ENV	I	-	Video head envelope detection signal input for ATR function.
36	VDD	-	-	Back up 5V.	86	TU SW1	O	-	Detect the system of RF out. (PALI H).
37	OSCO	O	-	IC clock OSC terminal.	87	TU SW2	O	-	Detect the system of RF out. (PALDK H).
38	OSCI	I	-	14.318MHz	88	T TOP S	I	L	Sensor signal input for tape beginning detection.
39	VSS	-	-	Ground terminal.	89	T END S	I	L	Sensor signal input for tape end detection.
40	XI	I	-	IC timer clock OSC terminal.	90	SHORT TEST	I	-	Signal to indicate audio record mode.
41	XO	O	-	32.768KHz	91	NORM A CTL	O	-	L during audio playback.
42	SXI	-	-	-	92	RES	O	-	Signal to control digital effect circuit.
43	V STREO H	I	-	IC clock OSC terminal.	93	SUB PB H	O	H	Signal to control digital effect circuit.
44	PB L	O	L	Signal for indicating for playback mode.	94	MAIN PB H	O	H	Signal to control digital effect circuit.
45	Q SOUND SUPER	O	H	Signal for indicating "Q SOUND" effect is strong.	95	FSS IN	I	-	CH+ mode control signal input.
46	N.C.	-	-	-	96	FRONT AV H	O	H	H during front av in.
47	VD OUT	O	-	Video output signal from on screen display circuit.	97	PS CTL	O	H	H during power save mode.
48	VSS2	-	-	Ground terminal.	98	ROTARY	O	-	Video head CH1/CH2 confirmation signal. Used in the processing of image circuit color signals.
49	VD IN	I	-	Video input signal to on screen display circuit.	99	H AMP SW	O	-	Main head and sub head switching signal.
50	VD IN FILTER	I	-	Video input signal to on screen display circuit and servo circuit.	100	ENV SW	I	-	Input comparison signal between main head and sub head.

SE4HD\_IC301

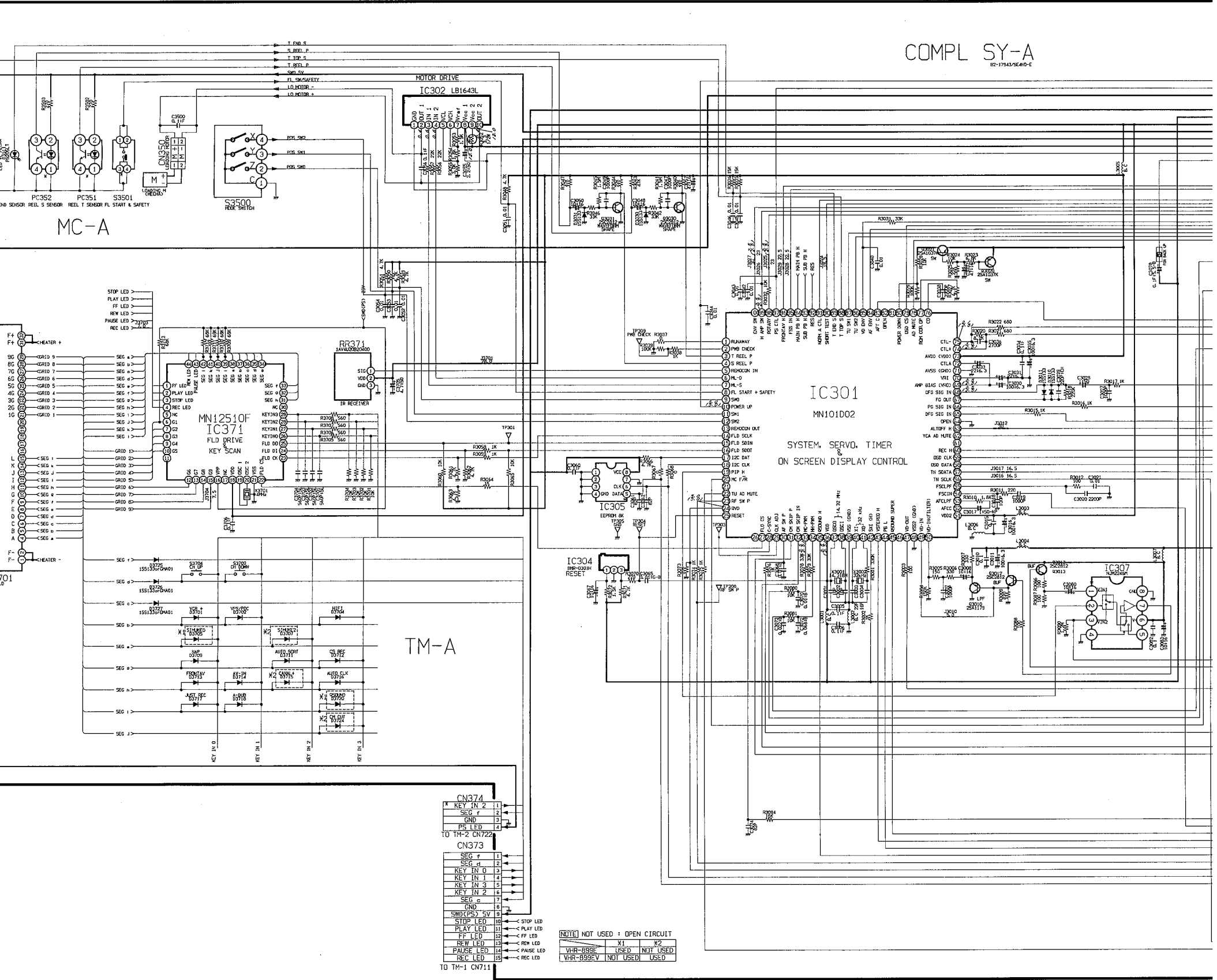


## SERVO CIRCUIT WAVEFORMS

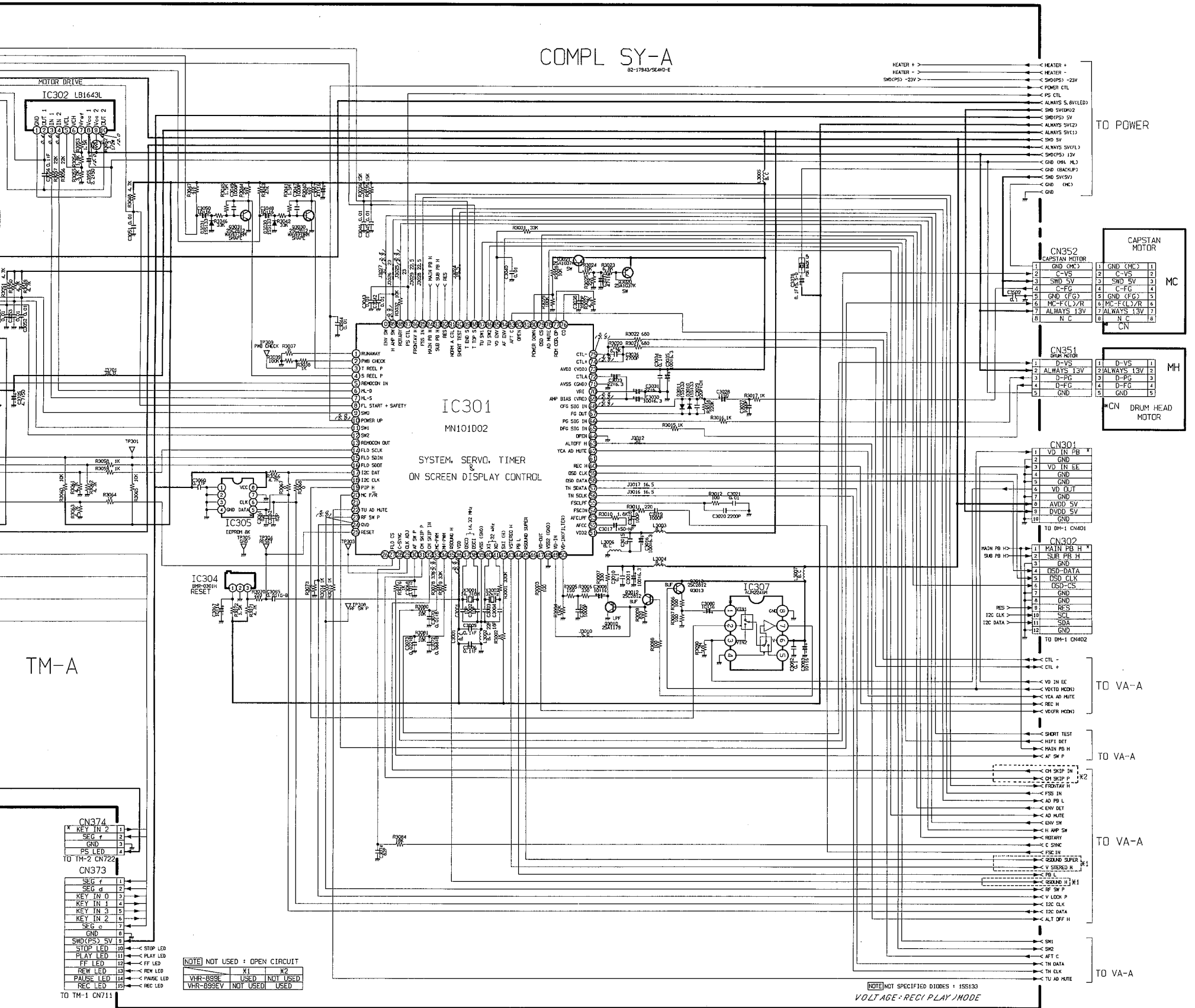


WF-S-AF4H-Z

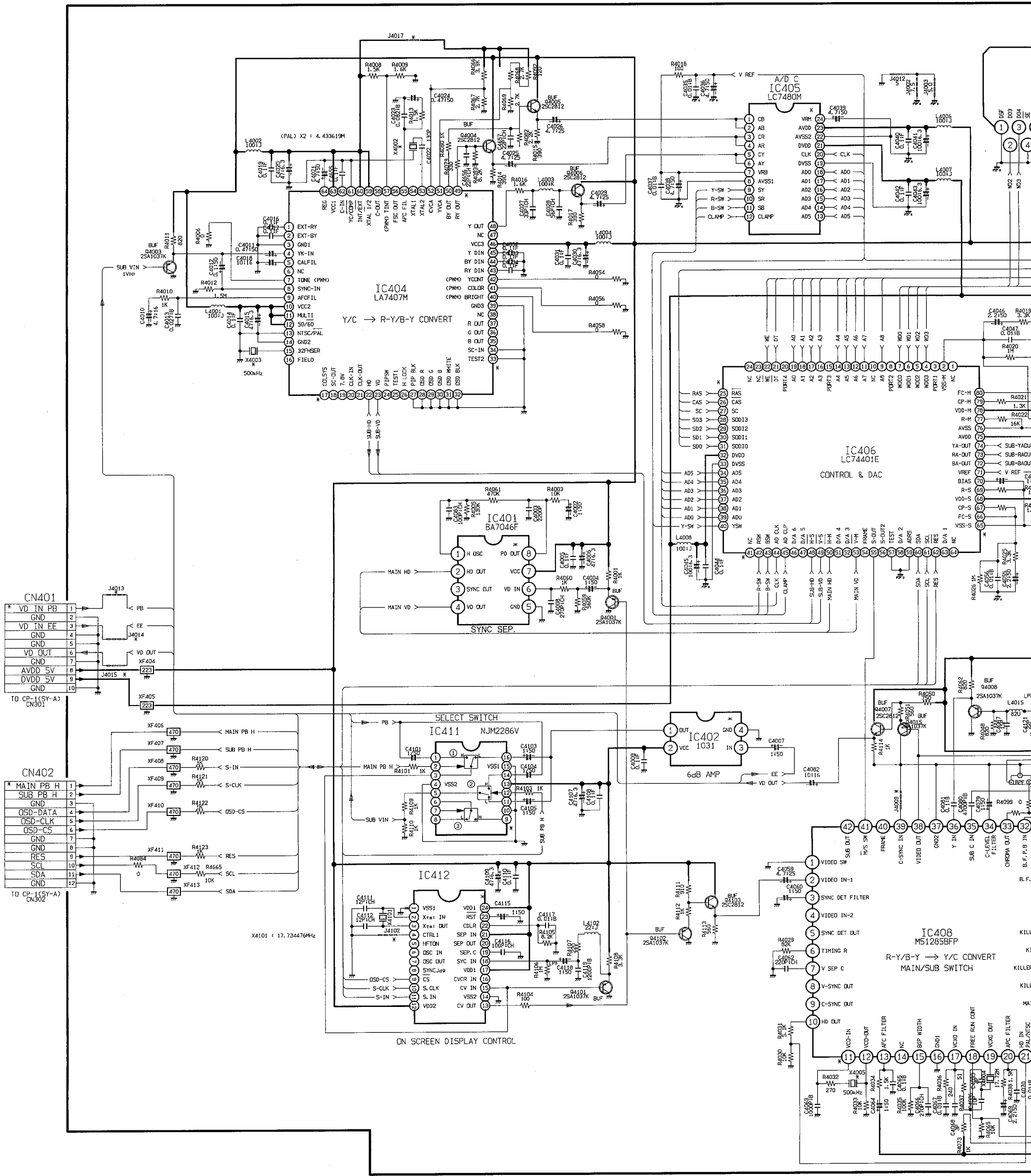
CP-1 BOARD (SY-A,MC-A,TM-A) SYSTEM CONTROL, TIMER, OSC & SERVO



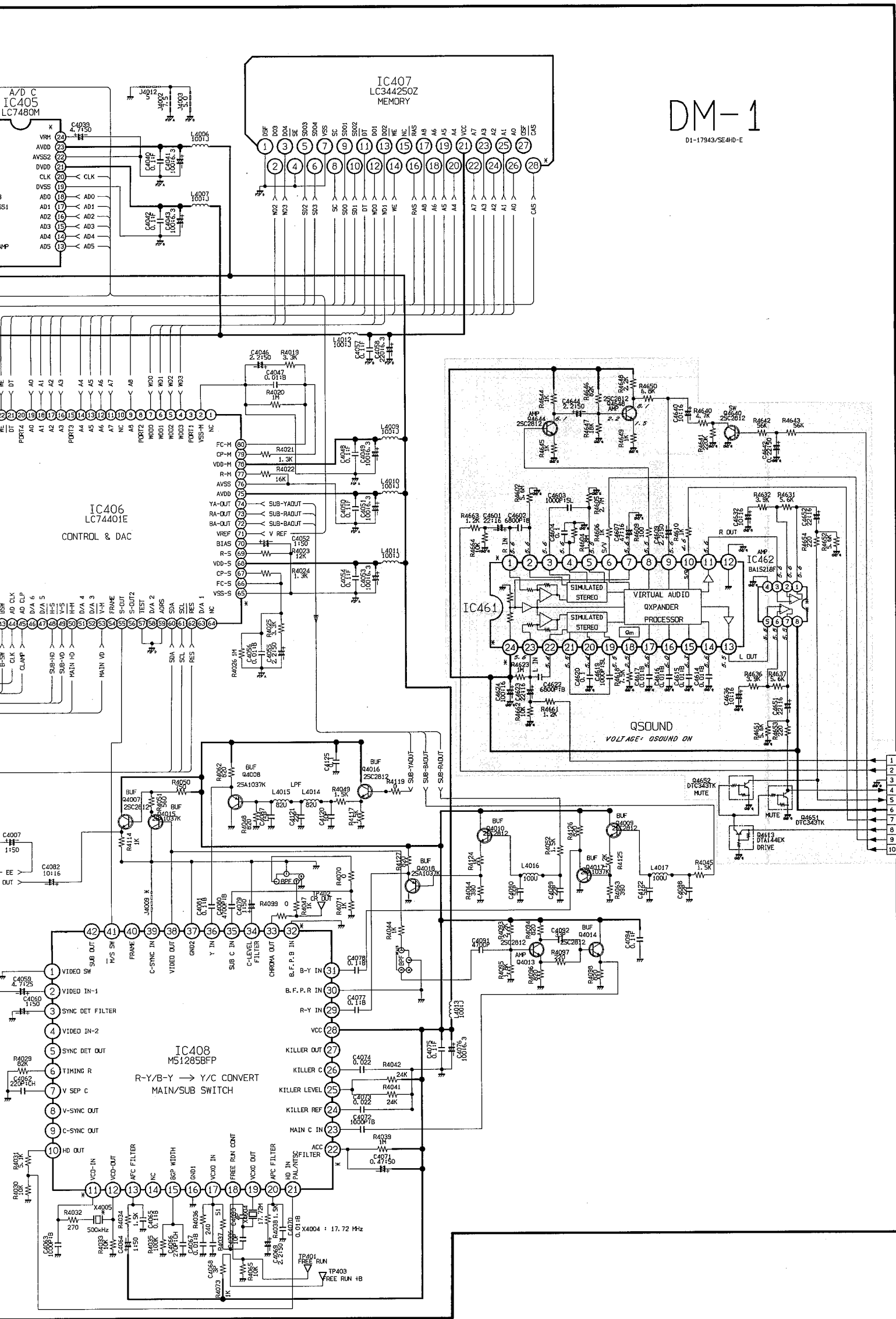
CP-1 BOARD (SY-A,MC-A,TM-A) SYSTEM CONTROL, TIMER, OSC & SERVO



DM-1 BOARD DIGITAL EFFECT & SURROUND

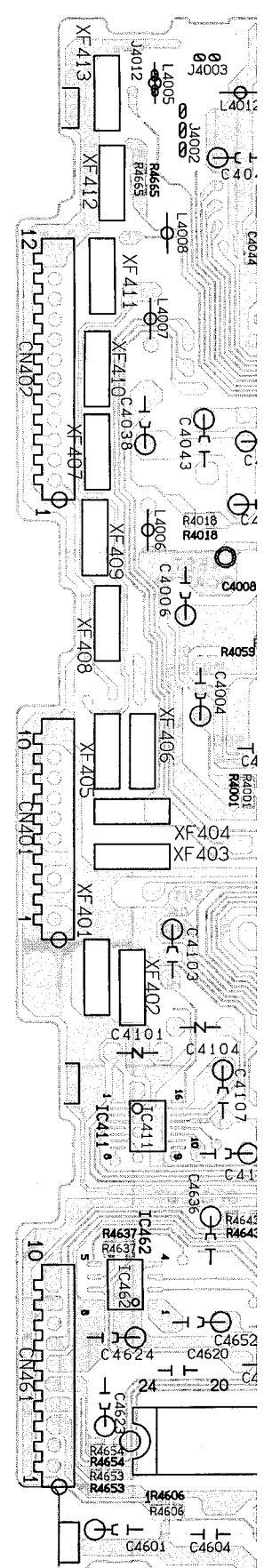


NOTES:  
 \_\_\_\_\_ : Common parts for V...  
 The parts marked [shaded box] are...



DM-1  
D1-17943/SE4HD-E

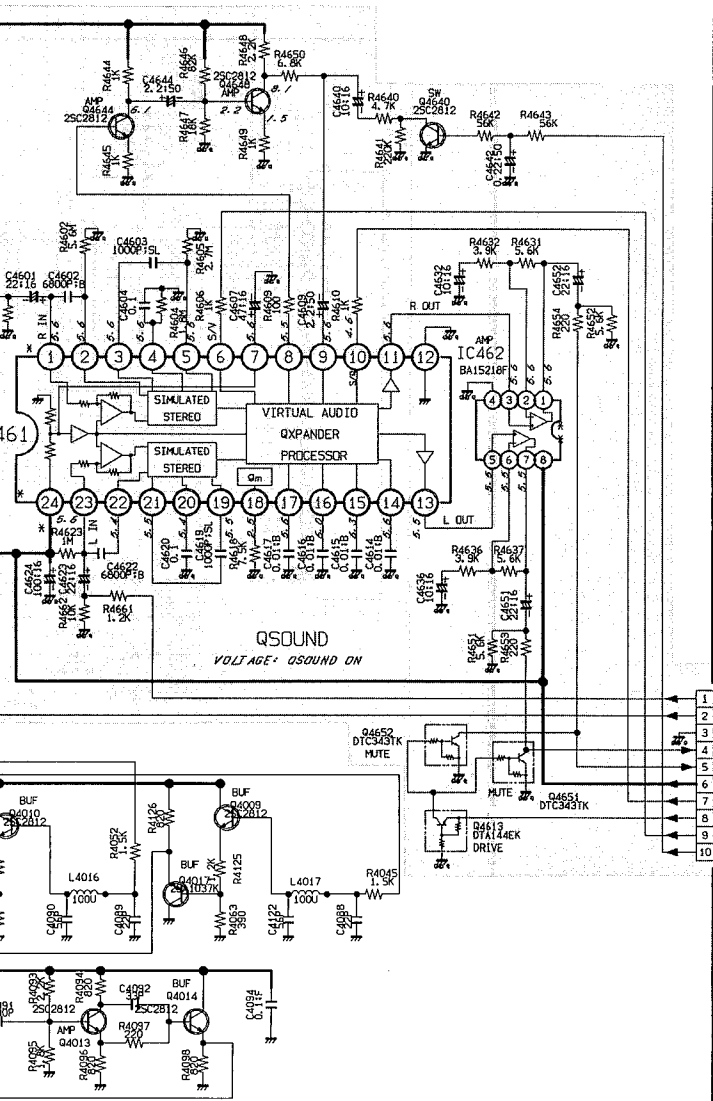
NOTES:  
 \_\_\_\_\_ : Common parts for VHR-899E & VHR-899EV  
 The parts marked  are VHR-899E ONLY



A3  
23  
A2  
24  
A1  
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A0  
26  
A0  
27  
CAS  
28  
CAS

# DM-1

D1-17943/SE4HD-E

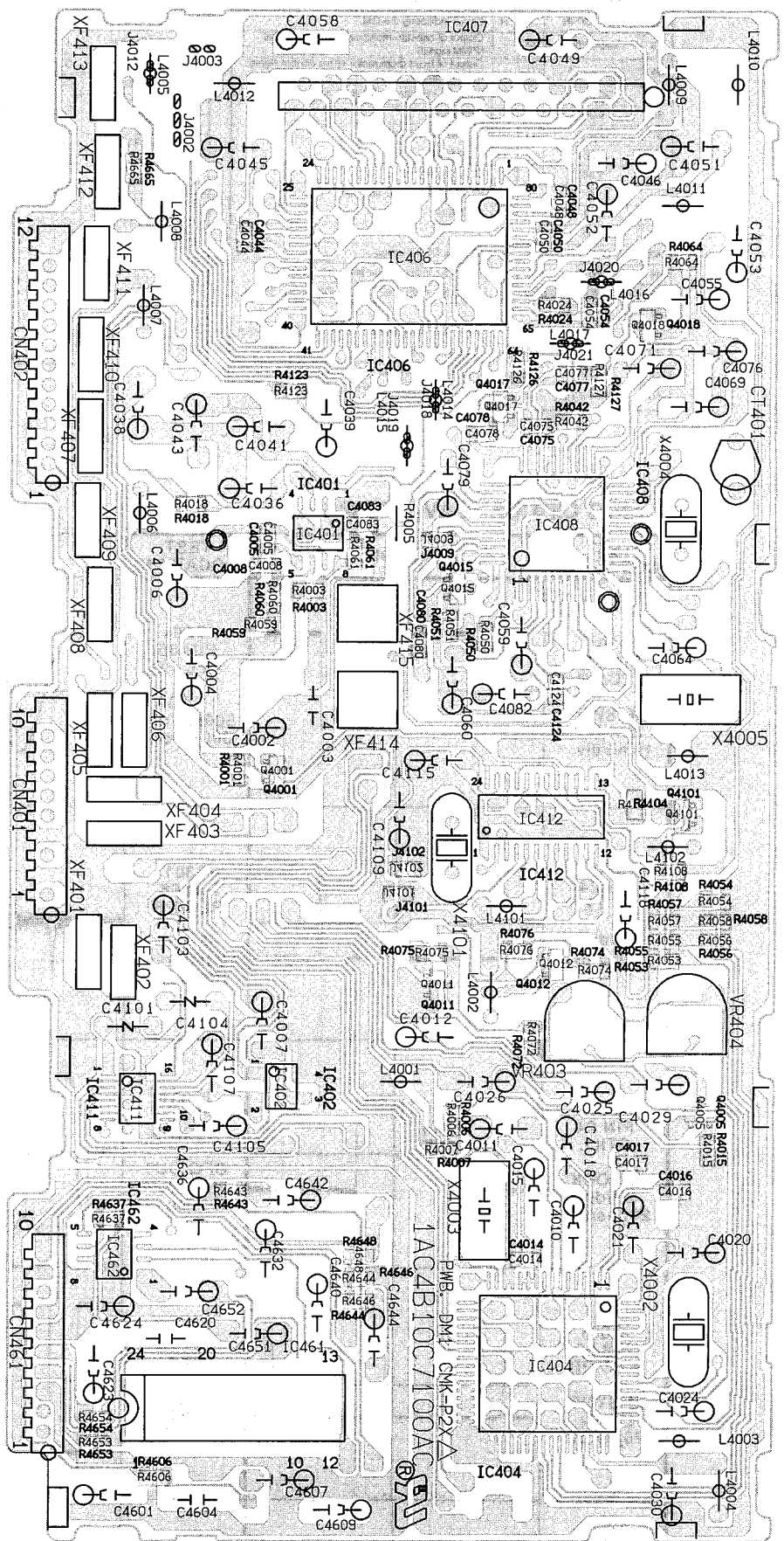


TO CP-1(CVA-A)  
CN261

1	Q LCH IN
2	Q RCH IN
3	GND
4	Q LCH OUT
5	Q RCH OUT
6	ALWAYS (GND) 12V
7	Q SOUND ON
8	AD MUTE
9	V SUPER
10	Q SOUND SUPER

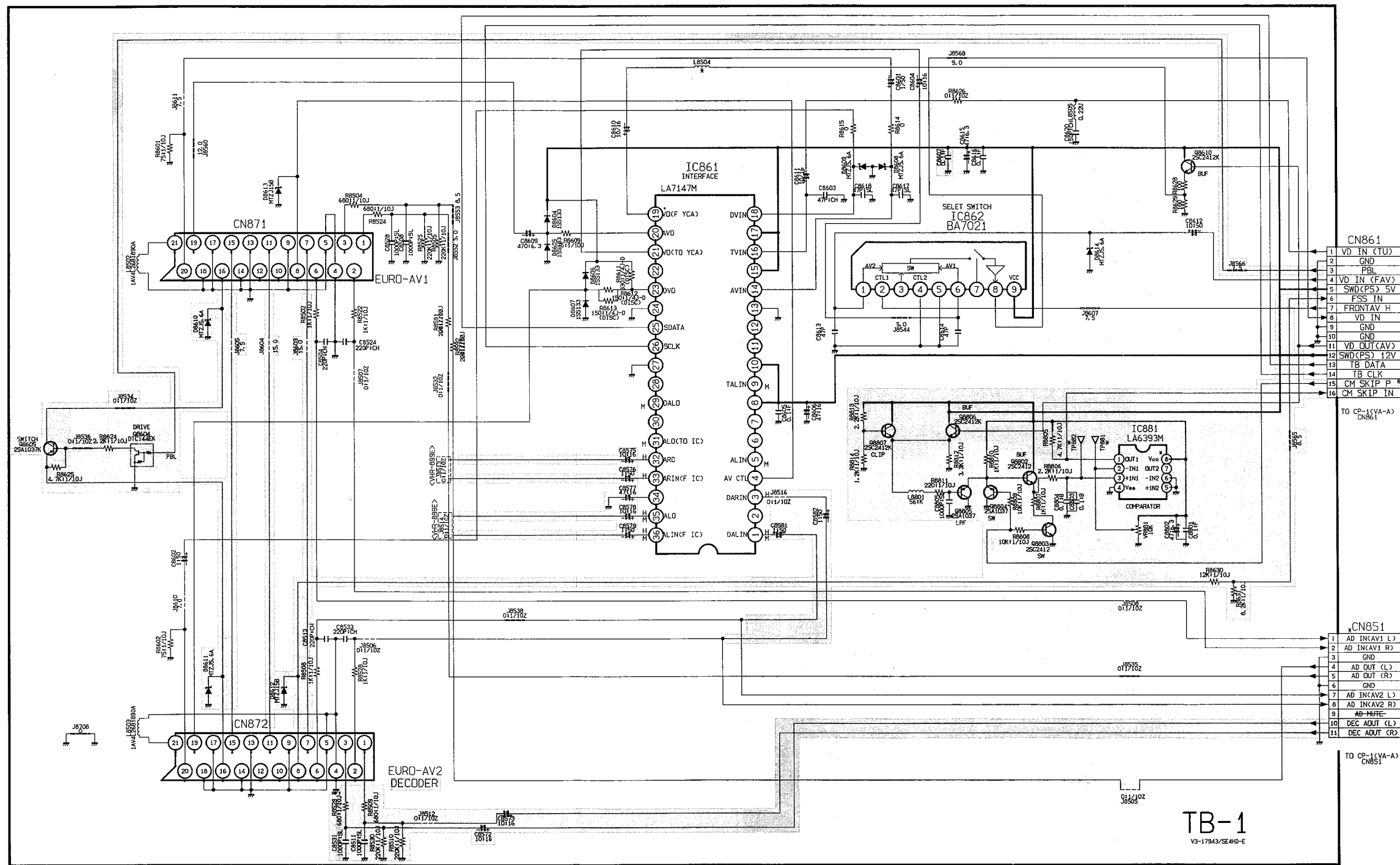
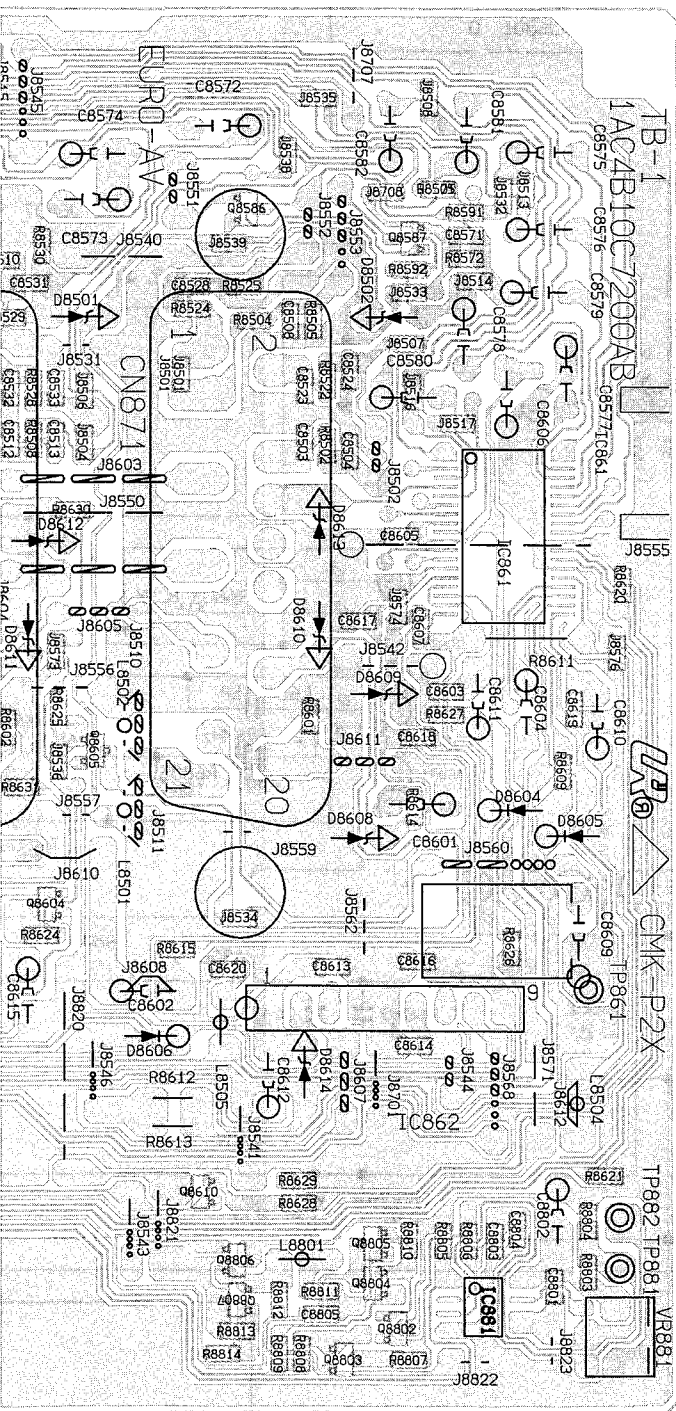
HS NORMAL 30  
LS SUPER 30

## DM-1 P.W.B. (SIDE A)







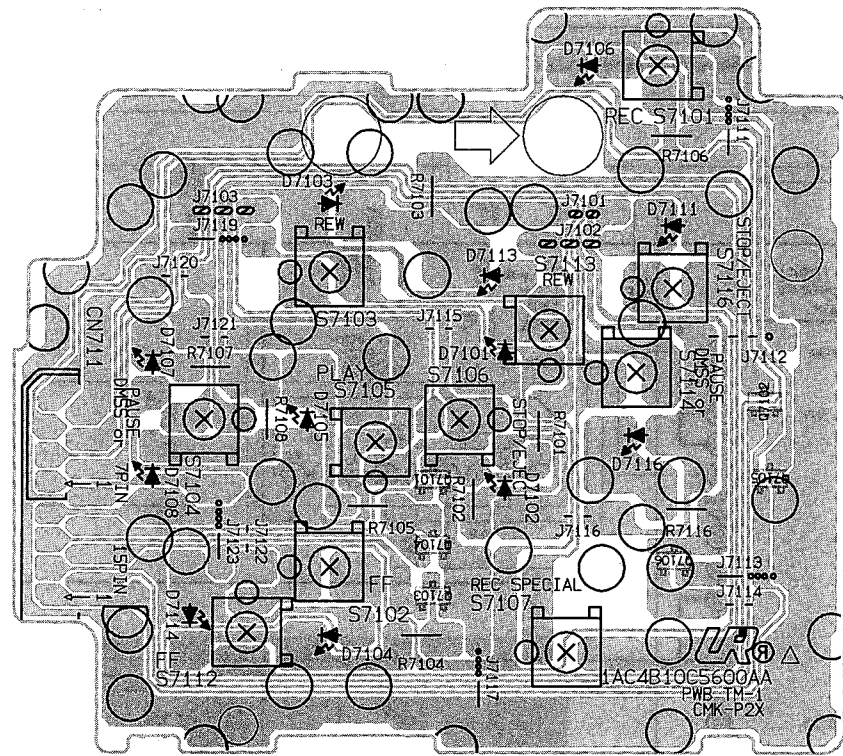


**NOTES:**

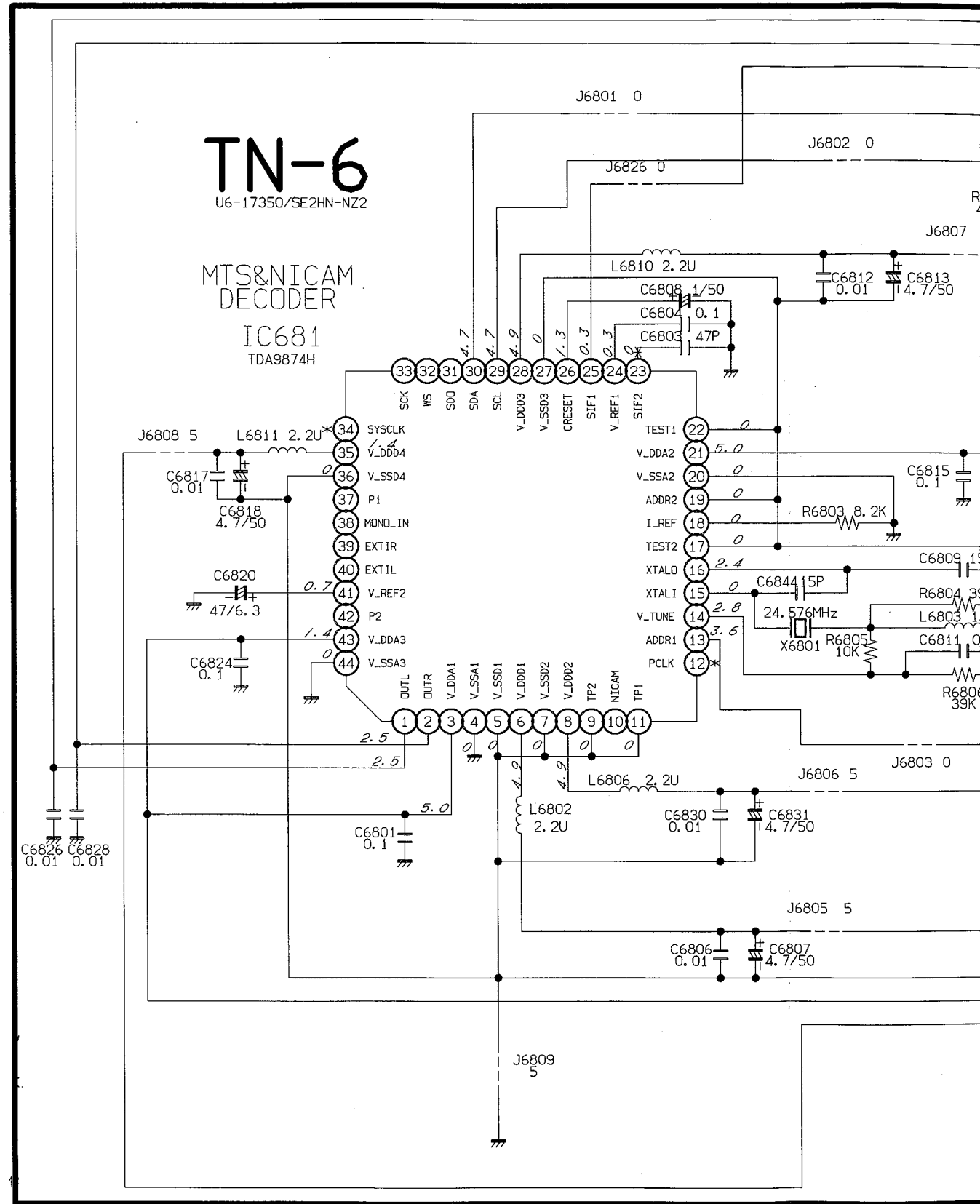
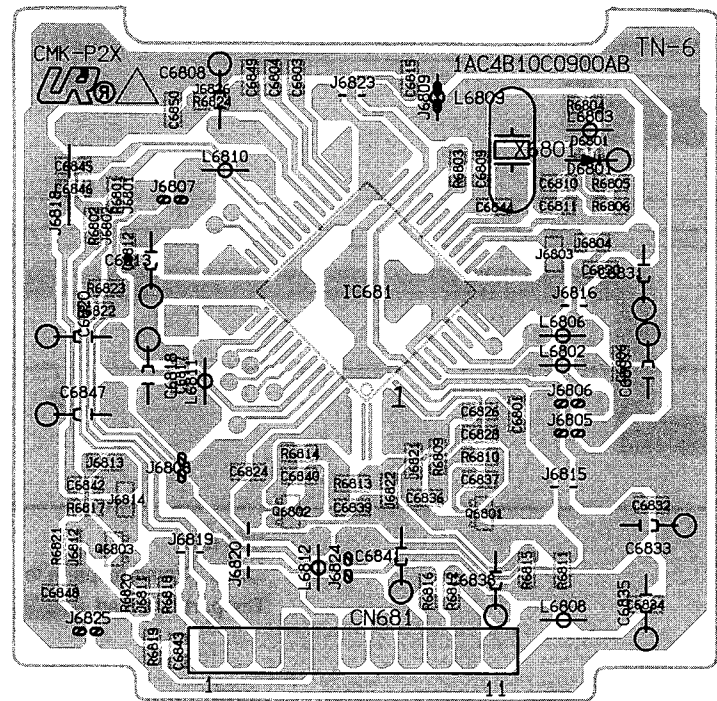
- : Common parts for VHR-899E & VHR-899EV
- The parts marked  are VHR-899EV ONLY



TM-1 P.W.B.



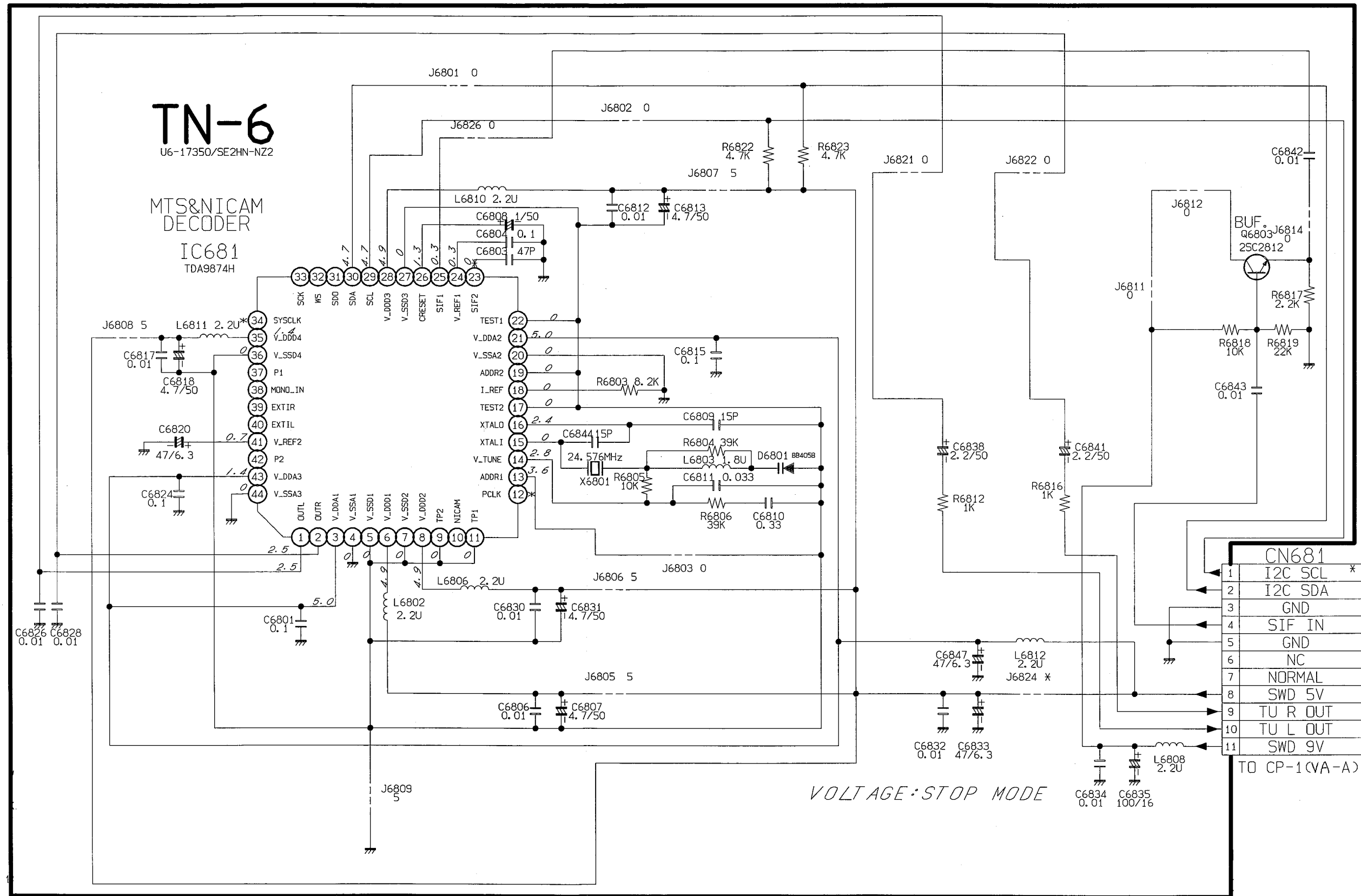
TN-6 P.W.B.



K  
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A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

TN-6 BOARD MTS & NICAM DECODER



**TN-6**  
U6-17350/SE2HN-NZ2

MTS & NICAM  
DECODER  
IC681  
TDA9874H

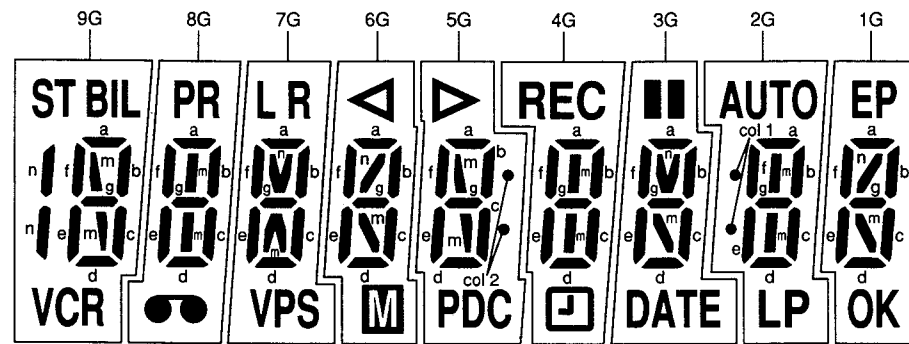
CN681			
1	I2C SCL	*	
2	I2C SDA		
3	GND		
4	SIF IN		
5	GND		
6	NC		
7	NORMAL		
8	SWD 5V		
9	TU R OUT		
10	TU L OUT		
11	SWD 9V		

TO CP-1 (VA-A)

VOLTAGE STOP MODE

**A3701 DISPLAY (FLD) GRID/ANODE ASSIGNMENT DRAWING & TABLE**

**GRID & SEGMENT ASSIGNMENT**

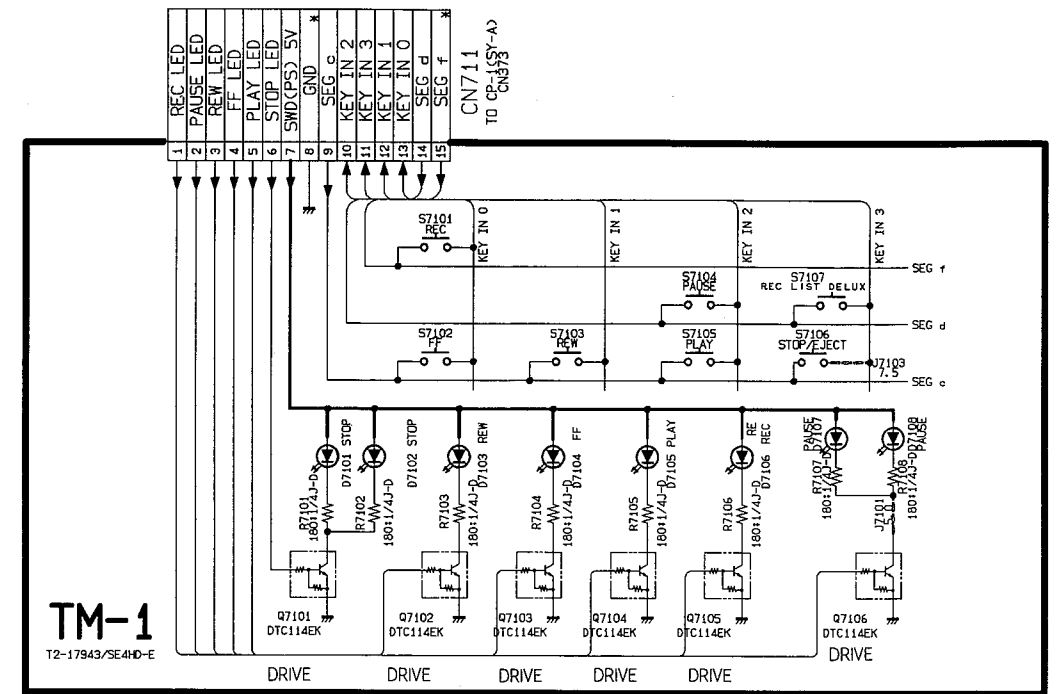


**ANODE CONNECTION**

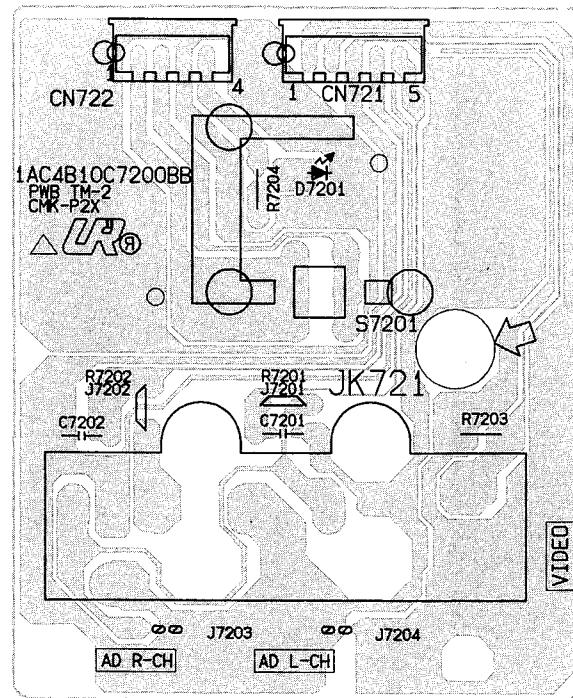
GRID \ SEGMENT	9G	8G	7G	6G	5G	4G	3G	2G	1G
a	ST	PR	L	◀	▶	REC	■	AUTO	EP
b	n	-	n	n	-	-	n	-	n
c	a	a	a	a	a	a	a	a	a
d	b	b	b	b	b	b	b	b	b
e	c	c	c	c	c	c	c	c	c
f	d	d	d	d	d	d	d	d	d
g	e	e	e	e	e	e	e	e	e
h	f	f	f	f	f	f	f	f	f
i	g	g	g	g	g	g	g	g	g
j	m	m	m	m	m	m	m	m	m
k	BIL	-	VPS	-	col 2	-	-	col 1	-
l	VCR	☎	R	M	PDC	☐	DATE	LP	OK

GR-00800

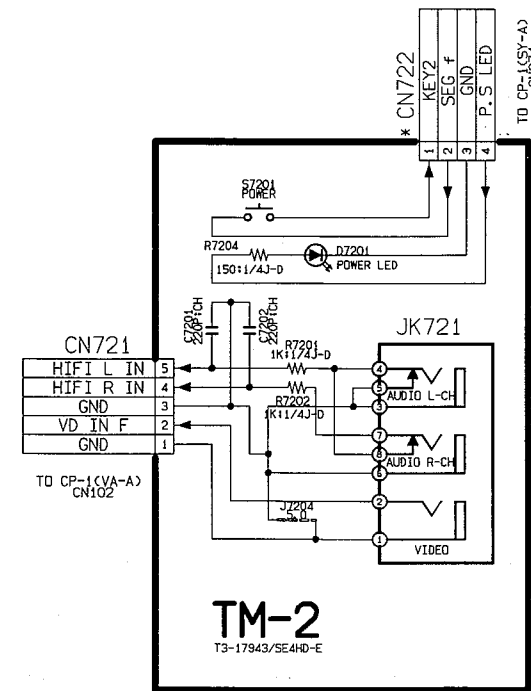
**TM-1 BOARD LED DISPLAY AND KEY SWITCH (VHR-899E)**



**TM-2 P.W.B.**



**TM-2 BOARD FRONT AV IN**



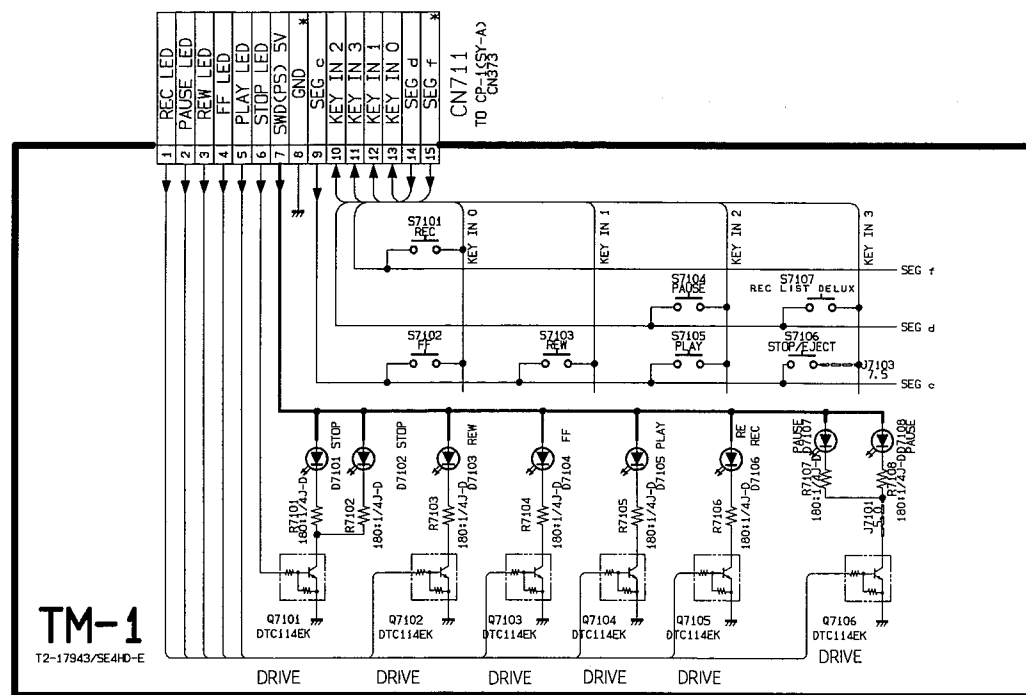
G & TABLE

ANODE CONNECTION

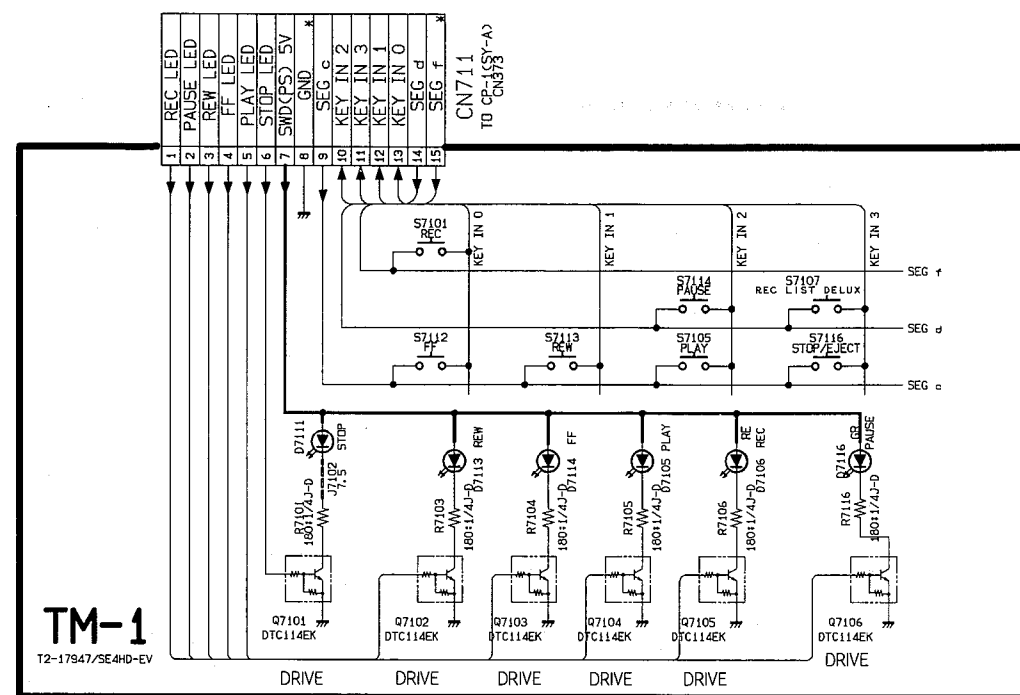
8G	7G	6G	5G	4G	3G	2G	1G
T	PR	L	◀	▶	REC	■	AUTO
n	n	n	n	n	n	n	n
a	a	a	a	a	a	a	a
b	b	b	b	b	b	b	b
c	c	c	c	c	c	c	c
d	d	d	d	d	d	d	d
e	e	e	e	e	e	e	e
f	f	f	f	f	f	f	f
g	g	g	g	g	g	g	g
m	m	m	m	m	m	m	m
IL	VPS	col 2	col 1				
CR	R	PDC	DATE	LP	OK		

GR-00800

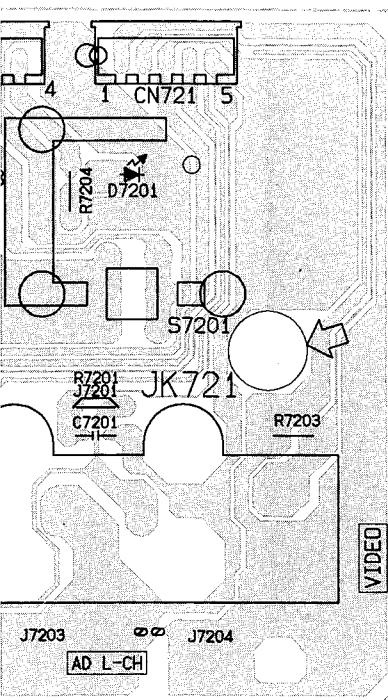
TM-1 BOARD LED DISPLAY AND KEY SWITCH (VHR-899E)



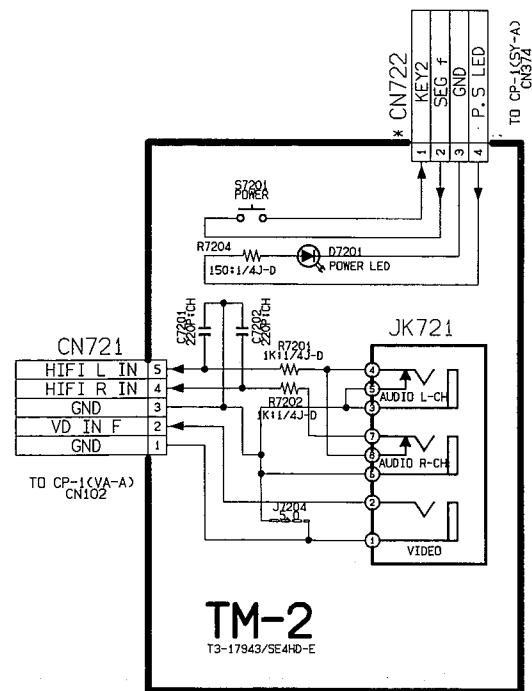
TM-1 BOARD LED DISPLAY AND KEY SWITCH (VHR-899EV)



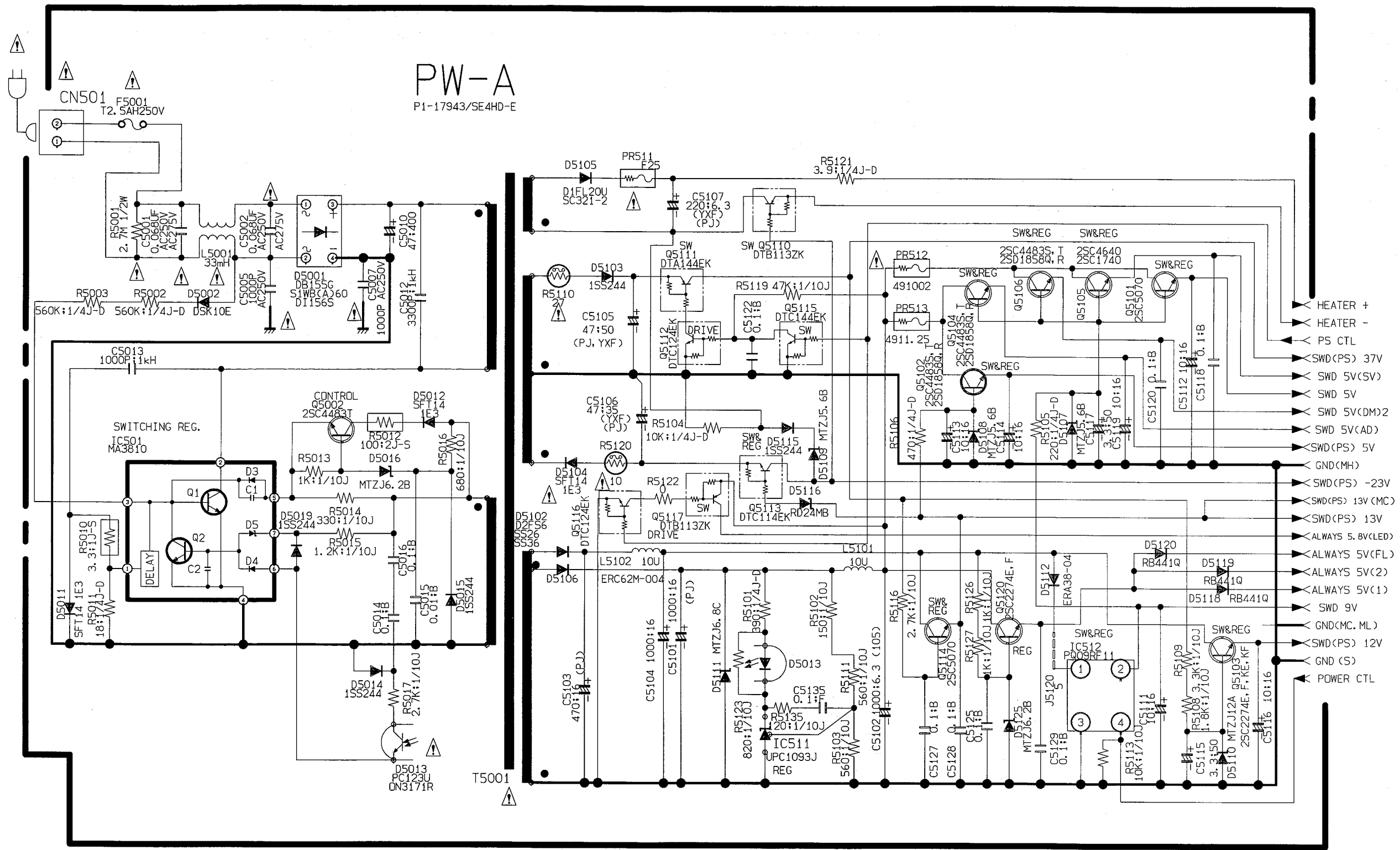
TM-2 P.W.B.



TM-2 BOARD FRONT AV IN



CP-1 BOARD (PW-A) POWER SUPPLY



K  
J  
I  
H  
G  
F  
E  
D  
C  
B  
A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

BOARD (PW-A) POWER SUPPLY

