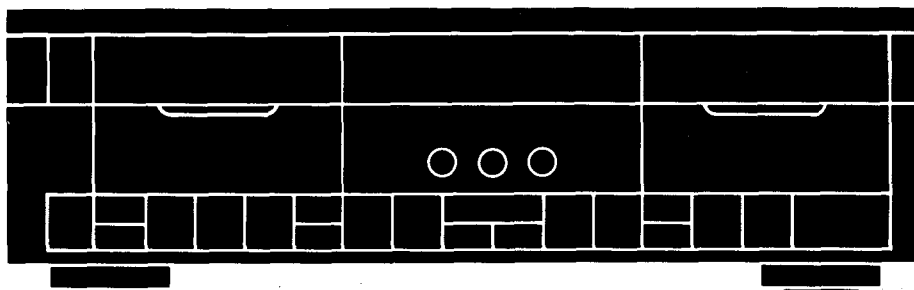


The Harman Kardon Model DC5300

DUAL CASSETTE DECK

Manual 177A

Technical Manual



The following marks found in the parts list of this manual identify the models as follows.

- BK** : North America area model Black version
- IB** : International model Black version
- BB** : Australia model Black version

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harman/kardon

Parts and Service Office
240 Crossways Park West, Woodbury, N.Y. 11797
1112-0010A152 P-129109 2000 Printed in Japan

DC5300

SPECIFICATIONS

		Nominal	Limit			Nominal	Limit
Track Configuration		4-track 2 Channel Stereo Cassette Deck		Dolby C NR		LN CrO ₂ Metal	66 dB 70 dB 70 dB 66 dB 66 dB 35 dB 60 dB
• MECHANICAL SECTION				Channel Separation Crosstalk			
Record/Playback Tape Speed		0.2% ≤ 2.0%		Record/Playback Distortion (Input 1 kHz)			
Drift 4.75 cm/sec.		2/1				LN	0.9%
Heads (Primary/Secondary)		0.05% ≤ 0.1%				CrO ₂	1.3%
Wow and Flutter		0.08%				Metal	1.1%
Take Up Torque		50 gr.cm	35 – 70 gr.cm	MPX Filter Attenuation			
Back Tension		2 gr.cm	2 – 6 gr.cm			at 15 kHz	0.3 dB
F.FWD Torque		100 gr.cm	70 – 150 gr.cm			at 19 kHz	35 dB
Rew Torque		100 gr.cm	70 – 150 gr.cm	Erase Ratio (Input 80 Hz)			
F.FWD/Rew Time (C-60 Tape)		85 sec.	≤ 100 sec.			LN	70 dB
						Metal	61 dB
• AMPLIFIER SECTION				Input Sensitivity (Input 1 kHz) at Line Input			43 mV
Record/Playback Frequency				Input Impedance (Input 1 kHz) at Line Input			23 kΩ
Response (at -3 dB)		LN	20 – 18 kHz				15 – 25 kΩ
		CrO ₂	20 – 18 kHz				
		Metal	20 – 18 kHz				
Copy Mode Frequency				• DIMENSIONS (WxHxD)			17-3/8" x 5" x 12-5/8"
Response		LN	40 – 16 kHz				(443 x 134 x 342) mm
		CrO ₂	40 – 16 kHz	• WEIGHT			17.2 lbs (7.8 kg)
		Metal	40 – 16 kHz				
Bias Frequency			105 kHz ±5 kHz	• POWER SUPPLY			
Playback Output			620 mV ±1.5 dB	U.S.A. and Canada models			AC120V, 60 Hz
Signal-to-Noise Ratio (at Line Input)				International model			AC230V/240V, 50/60 Hz
(Input 1 kHz, 100 mV)				• POWER CONSUMPTION			
IHF-A WTD (at Dolby level)				U.S.A. and Canada models			29 W
Dolby NR off		LN	51 dB	International model			31 W
		CrO ₂	54 dB				
		Metal	54 dB				
Dolby B NR		LN	61 dB				
		CrO ₂	64 dB				
		Metal	64 dB				

These specifications are service target specs.
Specifications and components are subject to change without notice.
Overall performance will be maintained or improved.

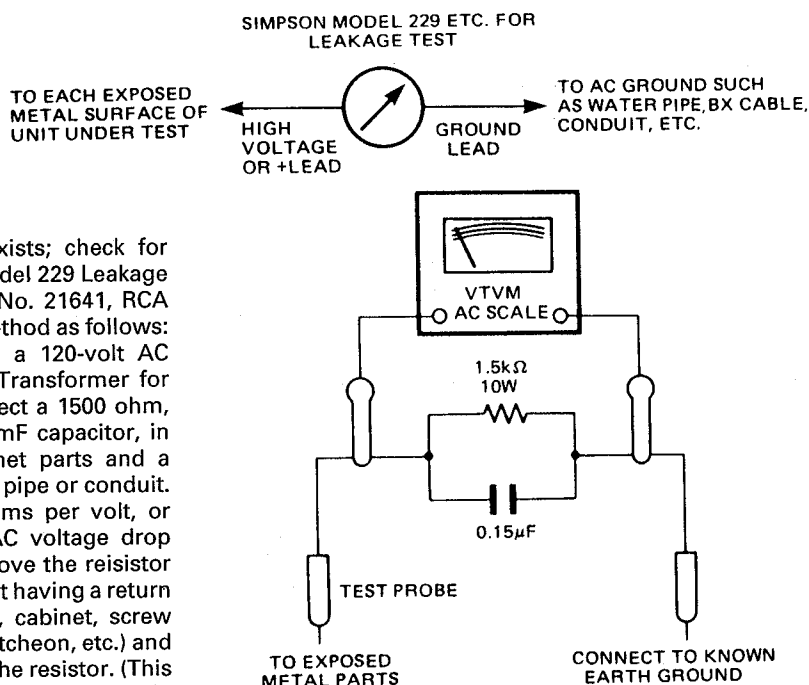
These specifications are service target specs.
Specifications and components are subject to change without notice.
Overall performance will be maintained or improved.

LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A.)

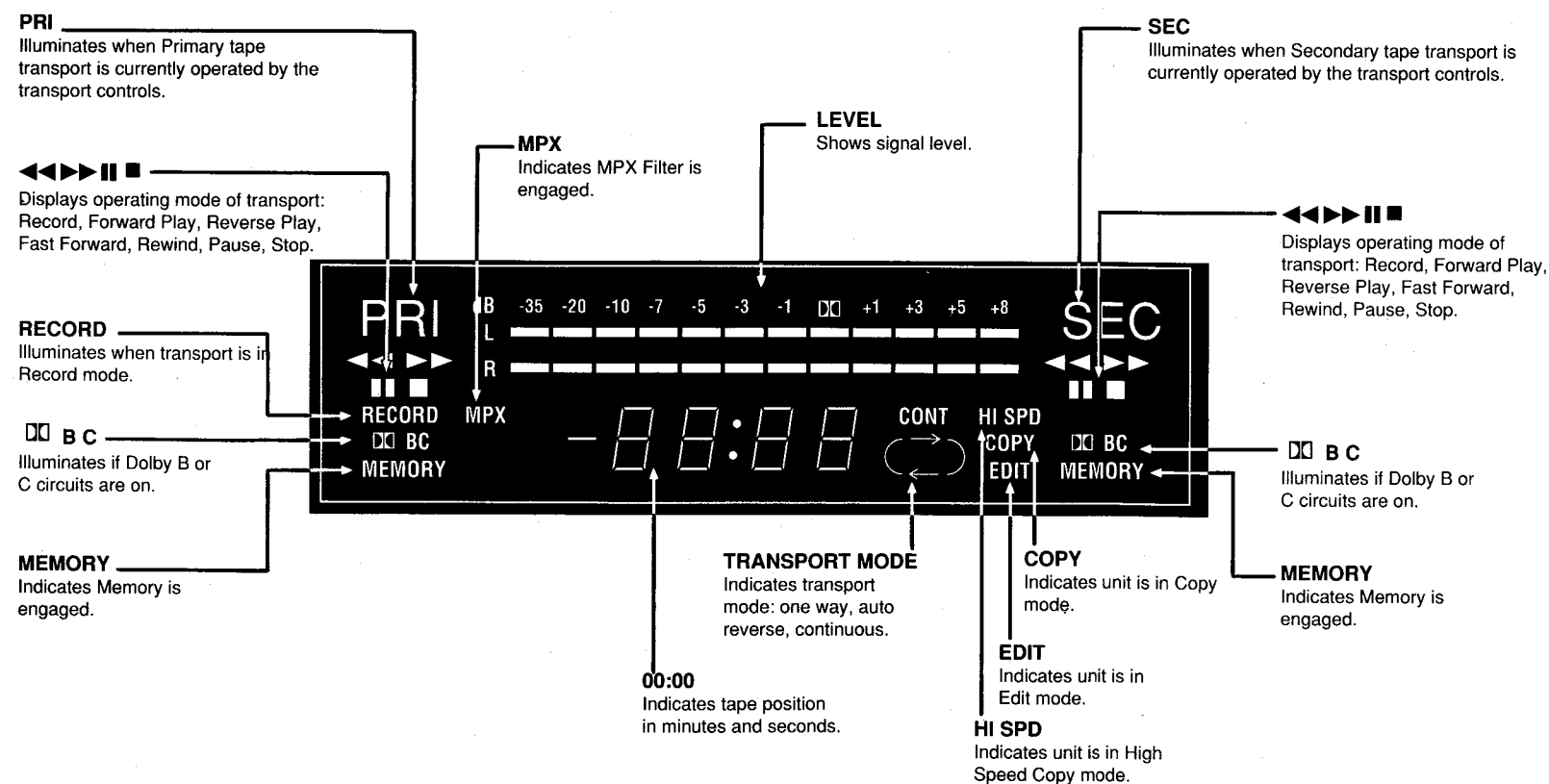
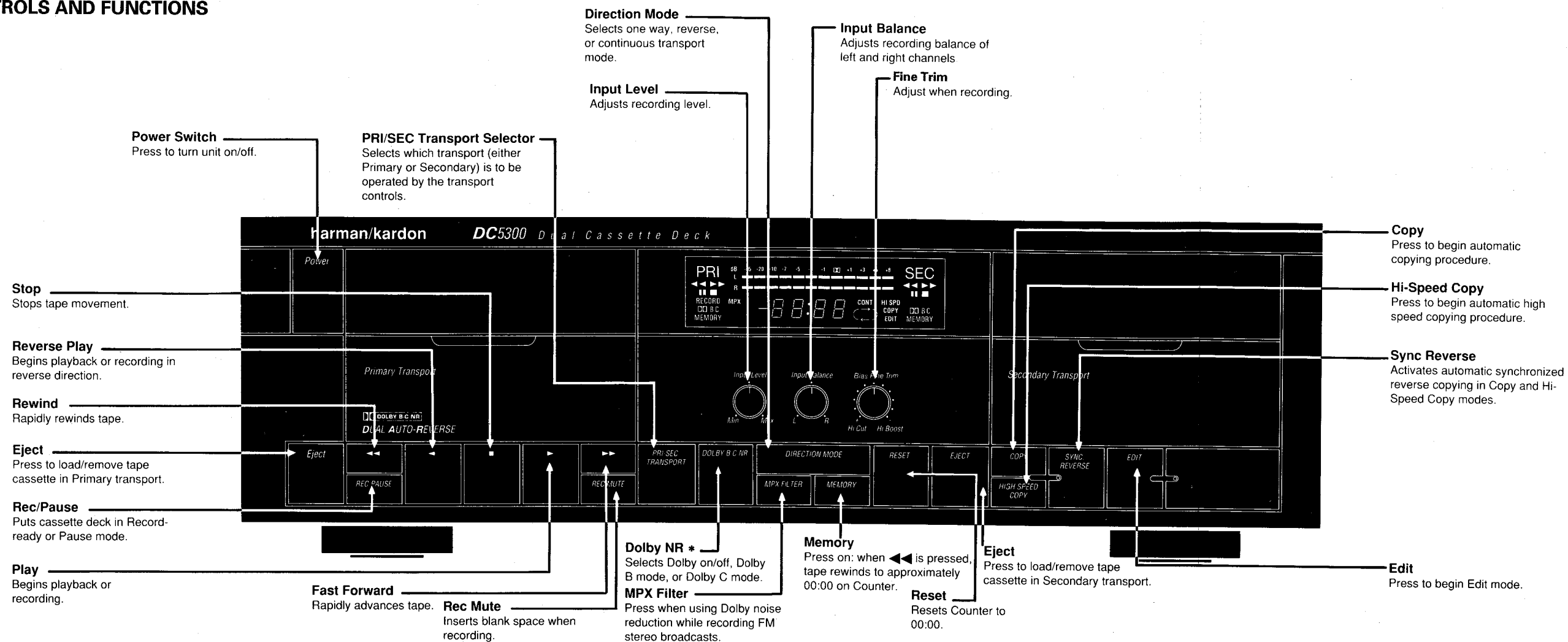
Before returning the unit to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, or shields, isolation resistor/capacitor networks, mechanical insulators, etc.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows:
Plug the AC line cord directly into a 120-volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohm, 10-watt resistor paralleled by a 0.15mF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See Diagram.) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.)

A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



CONTROLS AND FUNCTIONS



* NOTE

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

CONTROLS AND FUNCTIONS

Direction Mode
Selects one way, reverse, or continuous transport mode.

Input Level
Adjusts recording level.

Power Switch
Press to turn unit on/off.

PRI/SEC Transport Selector
Selects which transport (either Primary or Secondary) is to be operated by the transport controls.

Stop
Stops tape movement.

Reverse Play
Begins playback or recording in reverse direction.

Rewind
Rapidly rewinds tape.

Eject
Press to load/remove tape cassette in Primary transport.

Rec/Pause
Puts cassette deck in Record-ready or Pause mode.

Play
Begins playback or recording.

Fast Forward
Rapidly advances tape.

Rec Mute
Inserts blank space when recording.

Dolby NR *
Selects Dolby on/off, Dolby B mode, or Dolby C mode.

MPX Filter
Press when using Dolby reduction while recording stereo broadcasts.

PRI
Illuminates when Primary tape transport is currently operated by the transport controls.

Displays operating mode of transport: Record, Forward Play, Reverse Play, Fast Forward, Rewind, Pause, Stop.

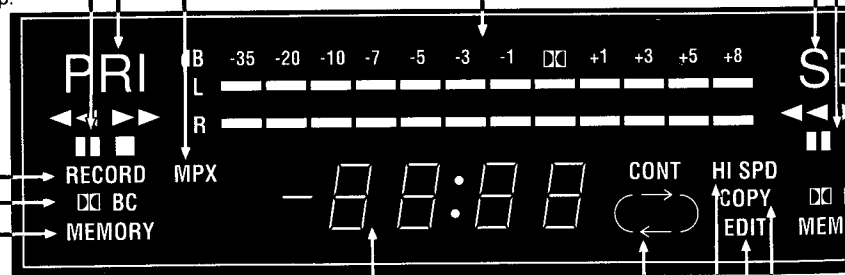
RECORD
Illuminates when transport is in Record mode.

BC
Illuminates if Dolby B or C circuits are on.

MEMORY
Indicates Memory is engaged.

MPX
Indicates MPX Filter is engaged.

LEVEL
Shows signal level.



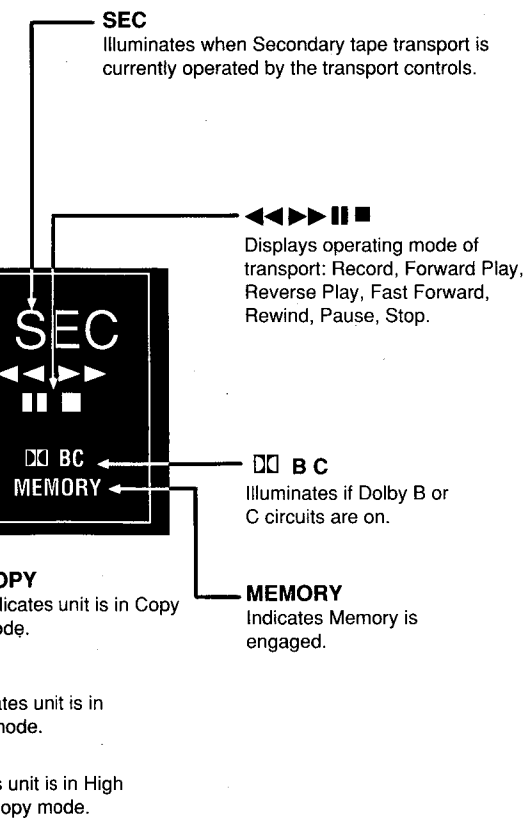
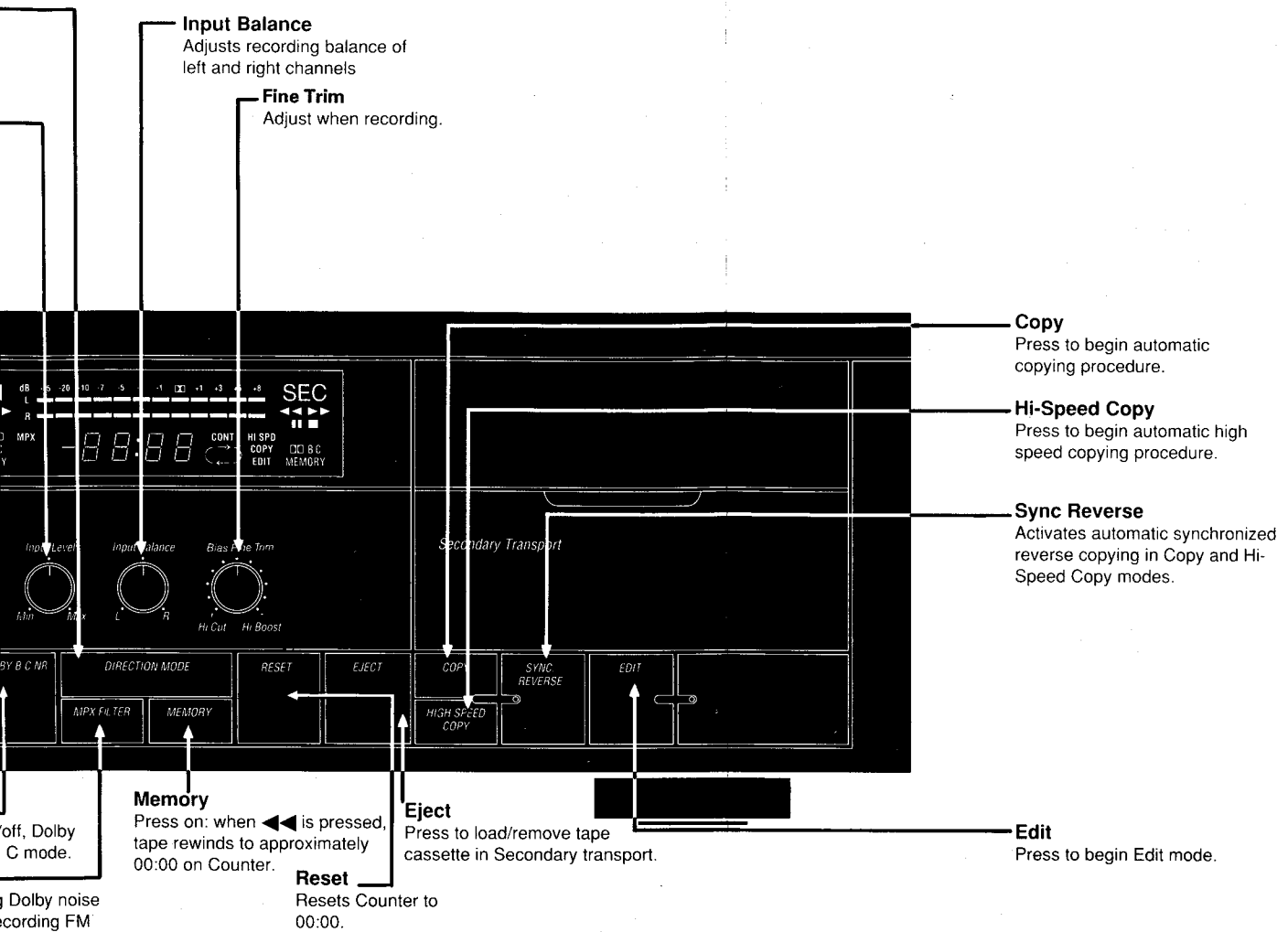
TRANSPORT MODE
Indicates transport mode: one way, auto reverse, continuous.

00:00
Indicates tape position in minutes and seconds.

COPY
Indicates unit in Copy mode.

EDIT
Indicates unit in Edit mode.

HI SPD
Indicates unit in Speed Copy mode.



* NOTE

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DISASSEMBLY PROCEDURES (REFER TO PAGE 9, 10 and 11)

1 TOP COVER (133) REMOVAL

Remove 4 screws (A) and 2 screws (B), and then remove the Top Cover (133).

2 FRONT PANEL ASSEMBLY (AA) REMOVAL

1. Remove the Top Cover (133).
2. Disconnect 1 connector (JL901) from (CN904) on the Main P. C. Board (PCB-1).
3. Remove 6 screws (C) and 3 screws (D), and then remove the Front Panel Assembly (AA).
4. If necessary, unsolder the lead wires.

3 CASSETTE TAPE RECORDER MECHANISM ASSEMBLY (103) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2.)
2. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (103).
3. Remove 4 screws (E), and then the Cassette Tape Recorder Mechanism Assembly (103).

4 CASSETTE TAPE PLAYER MECHANISM ASSEMBLY (104) REMOVAL

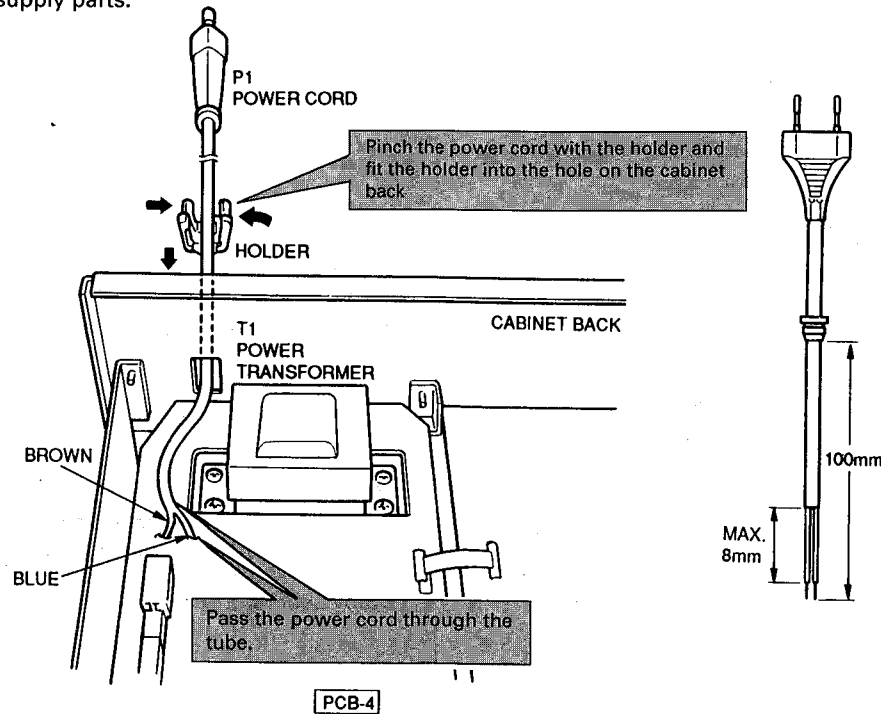
1. Remove the Front Panel Assembly (AA). (Refer to Step 2.)
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (104).
3. Remove 4 screws (F), and then the Cassette Tape Player Mechanism Assembly (104).

5 MAIN P. C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).

POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire shock hazard when replacing the power cord, follow the Procedure below to replace the part with the standard supply parts.



2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (103).
3. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (104).
4. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) from 5 connectors (CN805, CN804, CN803, CN802 and CN801) on the Power P. C. Board (PCB-4).
5. Remove 9 screws (G), 1 screw (H) and 2 screws (I) and then remove the Main P. C. Board (PCB-1).

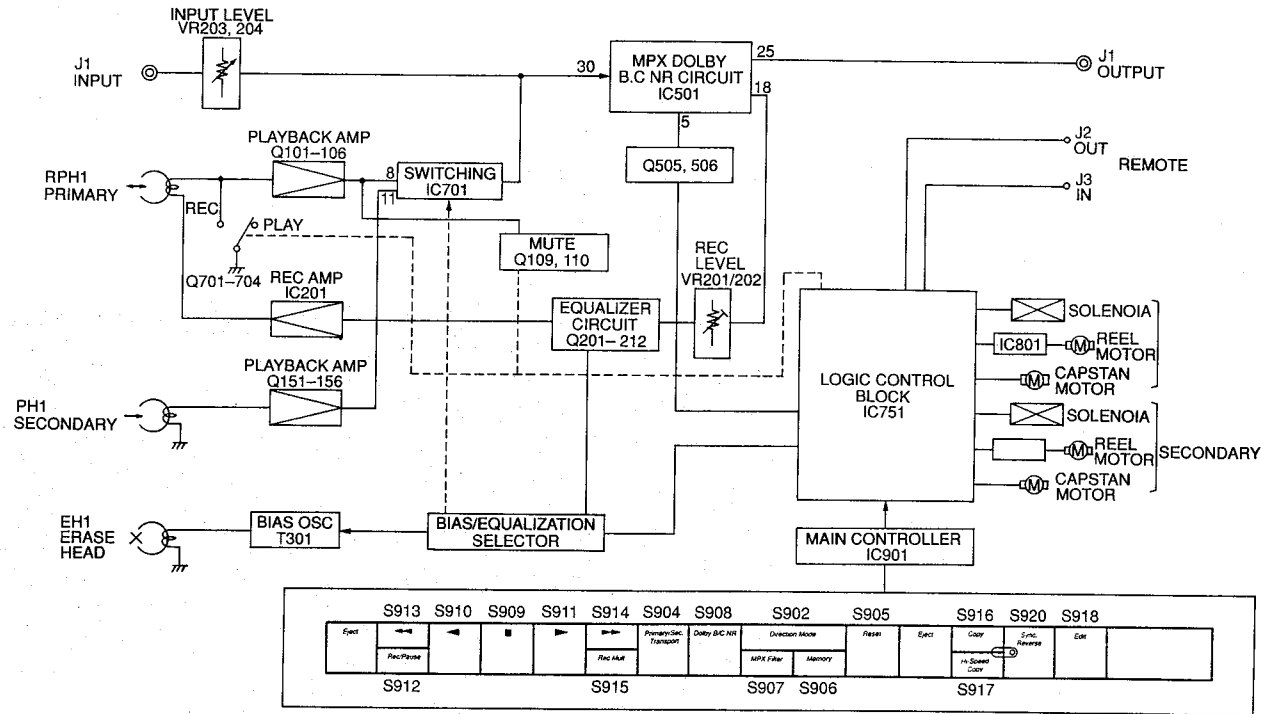
6 POWER P. C. BOARD (PCB-4) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) on the Power P. C. Board (PCB-4).
3. Disconnect 3 connectors (LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board.
4. Remove 5 screws (J) and 4 screws (K), and then remove the Power P. C. Board (PCB-4).

7 OTHER P.C. BOARDS REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Remove 4 screws (L), and then remove the Cont SW-L P. C. Board (PCB-7).
3. Remove 3 screws (M), and then remove the Cont SW-R P. C. Board (PCB-6).
4. Remove 3 Rotary Knobs (146) and 3 screws (N), and then remove the Volume P. C. Board (PCB-2).
5. Remove 7 screws (O), and then remove the Front P. C. Board (PCB-5).

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

PLAYBACK SIGNAL

The signal from the playback head (Primary Transport) is amplified by the playback amplifier Q101, Q103 and Q105 (L ch.), and is applied to the pin 29 (L ch.) and 2 (R ch.) of the Dolby NR IC501 (B/C type) through the Switching IC701. Use the same signal for both the secondary transport and the primary transport. Switching of the playback signal from the record mode (external input signal) to the playback mode is performed inside IC501.

IC501 is usually switched to the playback mode. However, the control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the record mode to the playback mode. The input signal to IC501 is output from the pins 25 (Lch.) and 6 (R ch.) and applied to the OUTPUT AMP.

RECORD SIGNAL

The signal from the INPUT jack is controlled by the INPUT LEVEL control. It is applied to the pins 30 (L ch.) and 1 (R ch.) of the Dolby NR IC501 (B/C type). Switching of the record signal from the playback mode to the record mode is performed inside IC501. The control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the playback mode to the record mode.

The input signal to the Dolby NR IC is output from the pins 28 (L ch.) and 3 (R ch.) of IC501 and passed through the MPX filter. Then it is input to the pins 27 (Lch.) and 4 (R ch.) and is output from the pins 24 (L ch.) and 7 (R ch.). The encoded signal is input to the pins 23 (L ch.) and 8 (Rch.) and then it is output from the pins 18 (Lch.) and 13 (R ch.). The signal output from IC501 passes through the record equalizer circuit and is amplified by the record amplifier of IC201. The amplified signal is then applied to the recording head after being synthesized by a bias signal.

MUTING OPERATION

The signal that mutes the sound produced at switching to recording or playback is applied from IC751 of the logic control block.

When the "STOP" button is pressed, the mute signal output from the pin 22 of IC751 turns ON Q709 (L ch.) and Q710 (R ch.) to short-circuit the output signals of the playback amplifiers for muting. For the purpose of preventing generation of noise at power ON/OFF, the mute signal is output from Q51. The muting is done by short circuiting the output signal with Q709 (L ch.) and Q710 (R ch.) turned ON.

LOGIC FOR RECORD MODE

When the "REC" button is pressed, the pin 11 of IC751 becomes high level and Q109 (L ch.) and Q110 (R ch.) turn ON. The input to the Dolby NR IC is muted. Also Q712 and Q713 turn ON and Q711 turns OFF. Therefore Q701, Q703 (L ch.) and Q702, Q704 (R ch.) turn OFF to release the muting of the outputs from the record amplifiers. Also, Q505 turns ON and Q506 turns OFF to make the pin 5 of IC501 high level. Therefore the mode is switched to the record mode.

LOGIC FOR RECORD TO PLAYBACK MODE

When the "STOP", "PAUSE" or "PLAY" button is pressed, the pin 12 of IC751 becomes high level. Q219 turns ON and Q213 (L ch.), Q214 (R ch.) turn ON to mute the inputs to the record amplifiers. Also, Q712 and Q713 turn OFF and Q711 turns ON to turn ON Q701, Q703 (L ch.) and Q702, Q704 (R ch.). Therefore the outputs from the record amplifiers are muted. Also, Q505 turns OFF and Q506 turns ON to make the pin 5 of IC501 low level. Therefore the mode is switched to the playback mode.

DISASSEMBLY PROCEDURES (REFER TO PAGE 9, 10 and 11)**1 TOP COVER (133) REMOVAL**

Remove 4 screws (A) and 2 screws (B), and then remove the Top Cover(133).

2 FRONT PANEL ASSEMBLY (AA) REMOVAL

1. Remove the Top Cover (133).
2. Disconnect 1 connector (JL901) from (CN904) on the Main P. C. Board (PCB-1).
3. Remove 6 screws (C) and 3 screws (D), and then remove the Front Panel Assembly (AA).
4. If necessary, unsolder the lead wires.

3 CASSETTE TAPE RECORDER MECHANISM ASSEMBLY (103) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2.)
2. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (103).
3. Remove 4 screws (E), and then the Cassette Tape Recorder Mechanism Assembly (103).

4 CASSETTE TAPE PLAYER MECHANISM ASSEMBLY (104) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2).
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (104).
3. Remove 4 screws (F), and then the Cassette Tape Player Mechanism Assembly (104).

5 MAIN P. C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).

2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (103).
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4. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) from 5 connectors (CN805, CN804, CN803, CN802 and CN801) on the Power P. C. Board (PCB-4).
5. Remove 9 screws (G), 1 screw (H) and 2 screws (I) and then remove the Main P. C. Board (PCB-1).

6 POWER P. C. BOARD (PCB-4) REMOVAL

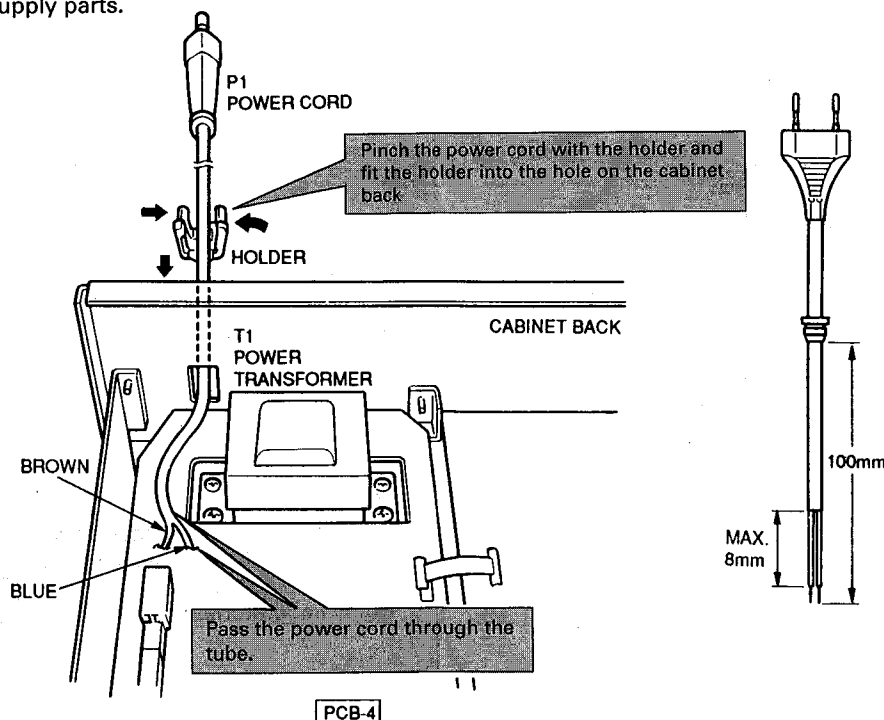
1. Remove the Front Panel Assembly (AA). (Refer to step 2).
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3. Disconnect 3 connectors (LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board.
4. Remove 5 screws (J) and 4 screws (K), and then remove the Power P. C. Board (PCB-4).

7 OTHER P.C. BOARDS REMOVAL

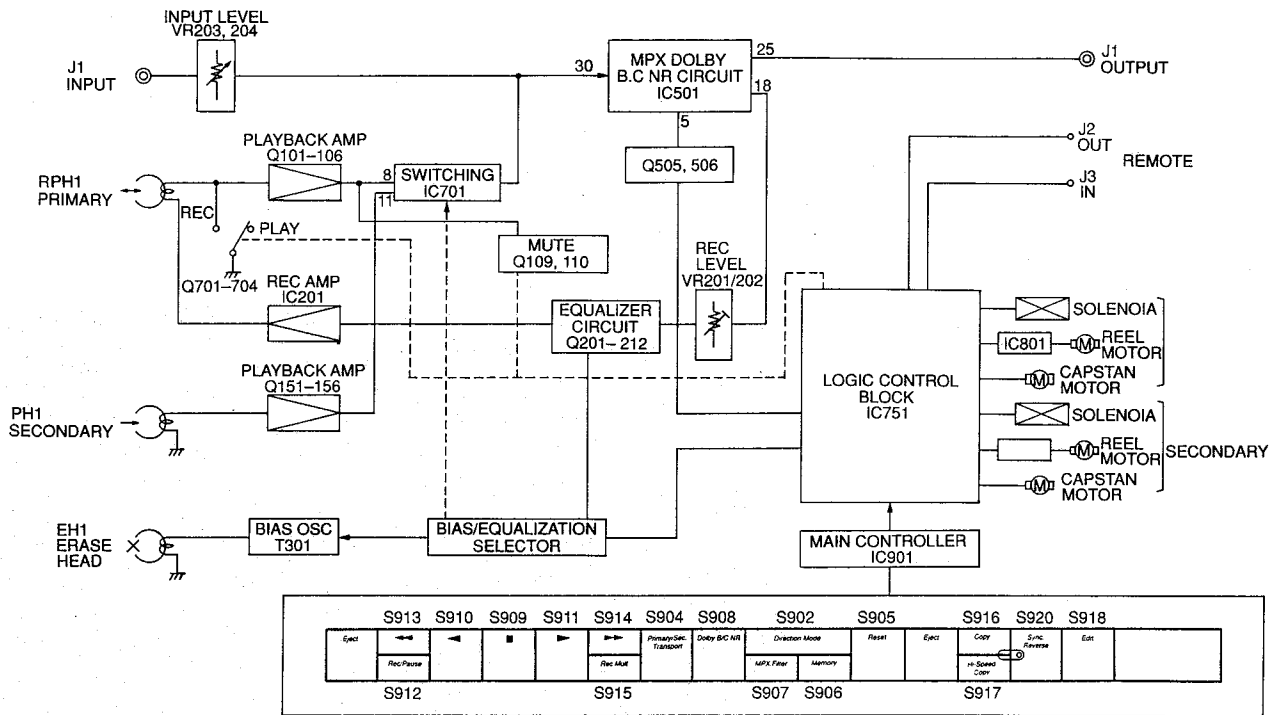
1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Remove 4 screws (L), and then remove the Cont SW-L P. C. Board (PCB-7).
3. Remove 3 screws (M), and then remove the Cont SW-R P. C. Board (PCB-6).
4. Remove 3 Rotary Knobs (146) and 3 screws (N), and then remove the Volume P. C. Board (PCB-2).
5. Remove 7 screws (O), and then remove the Front P. C. Board (PCB-5).

POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire shock hazard when replacing the power cord, follow the Procedure below to replace the part with the standard supply parts.



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

PLAYBACK SIGNAL

The signal from the playback head (Primary Transport) is amplified by the playback amplifier Q101, Q103 and Q105 (L ch.), and is applied to the pin 29 (L ch.) and 2 (R ch.) of the Dolby NR IC501 (B/C type) through the Switching IC701. Use the same signal for both the secondary transport and the primary transport. Switching of the playback signal from the record mode (external input signal) to the playback mode is performed inside IC501.

IC501 is usually switched to the playback mode. However, the control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the record mode to the playback mode. The input signal to IC501 is output from the pins 25 (Lch.) and 6 (Rch.) and applied to the OUTPUT AMP.

RECORD SIGNAL

The signal from the INPUT jack is controlled by the INPUT LEVEL control. It is applied to the pins 30 (L ch.) and 1 (R ch.) of the Dolby NR IC501 (B/Ctype). Switching of the record signal from the playback mode to the record mode is performed inside IC501. The control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the playback mode to the record mode.

The input signal to the Dolby NR IC is output from the pins 28 (L ch.) and 3 (R ch.) of IC501 and passed through the MPX filter. Then it is input to the pins 27 (Lch.) and 4 (R ch.) and is output from the pins 24 (L ch.) and 7 (R ch.). The encoded signal is input to the pins 23 (L ch.) and 8 (Rch.) and then it is output from the pins 18 (Lch.) and 13 (R ch.). The signal output from IC501 passes through the record equalizer circuit and is amplified by the record amplifier of IC201. The amplified signal is then applied to the recording head after being synthesized by a bias signal.

MUTING OPERATION

The signal that mutes the sound produced at switching to recording or playback is applied from IC751 of the logic control block.

When the "STOP" button is pressed, the mute signal output from the pin 22 of IC751 turns ON Q709 (L ch.) and Q710 (R ch.) to short-circuit the output signals of the playback amplifiers for muting. For the purpose of preventing generation of noise at power ON/OFF, the mute signal is output from Q51. The muting is done by short circuiting the output signal with Q709 (L ch.) and Q710 (R ch.) turned ON.

LOGIC FOR RECORD MODE

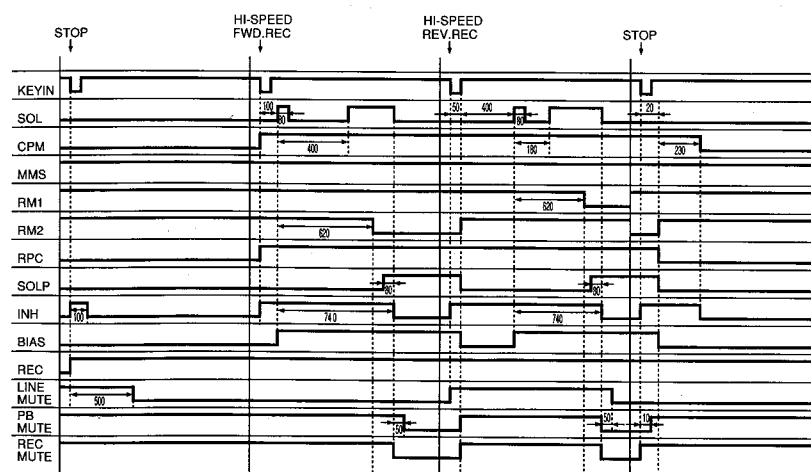
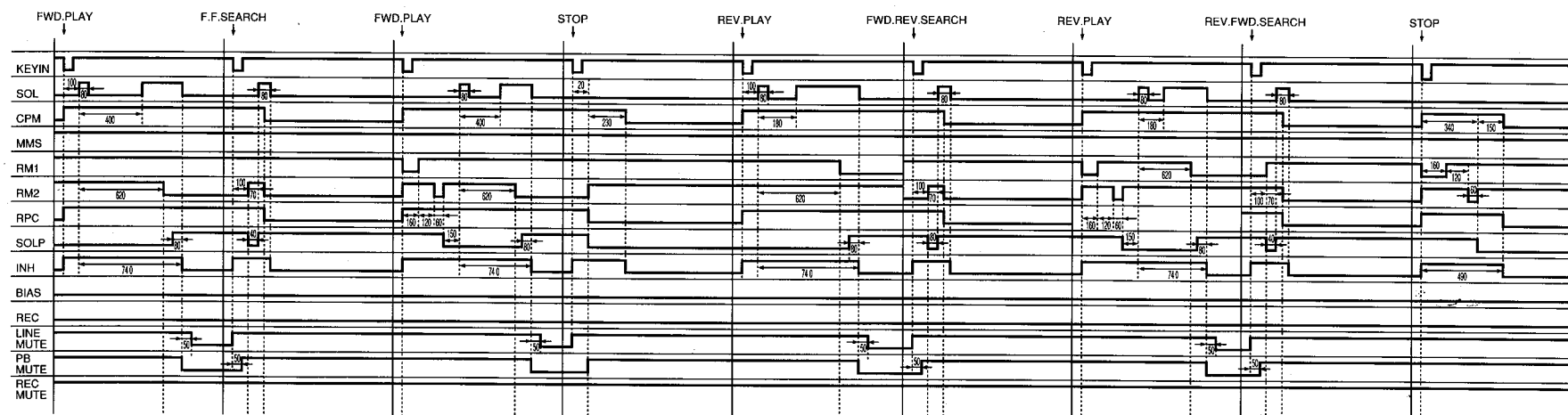
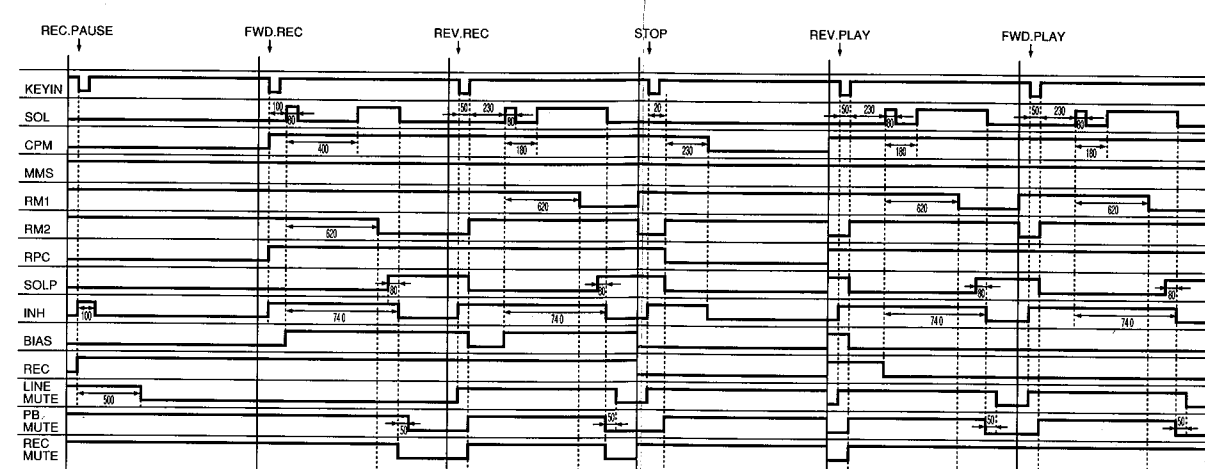
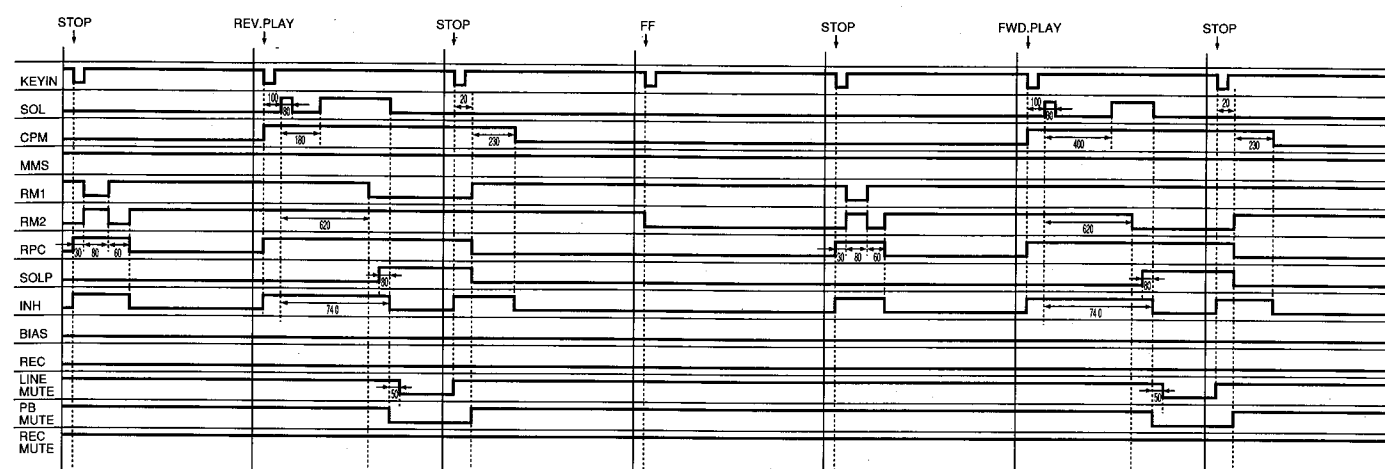
When the "REC" button is pressed, the pin 11 of IC751 becomes high level and Q109 (L ch.) and Q110 (R ch.) turn ON. The input to the Dolby NR IC is muted. Also Q712 and Q713 turn ON and Q711 turns OFF. Therefore Q701, Q703 (L ch.) and Q702, Q704 (R ch.) turn OFF to release the muting of the outputs from the record amplifiers.

Also, Q505 turns ON and Q506 turns OFF to make the pin 5 of IC501 high level. Therefore the mode is switched to the record mode.

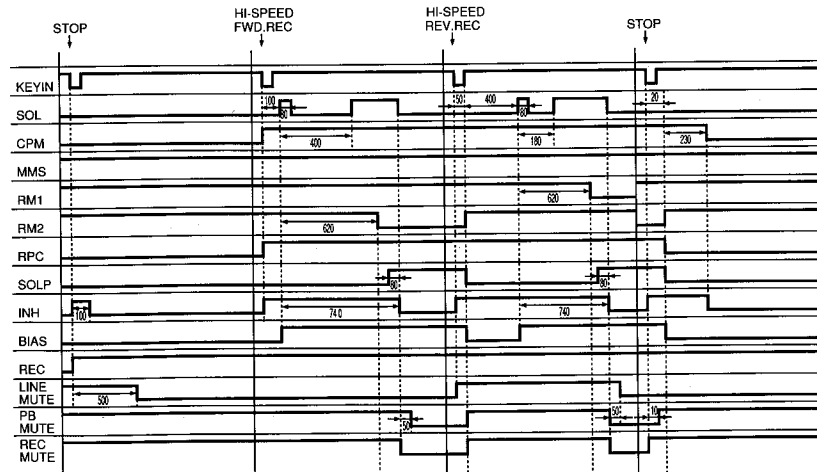
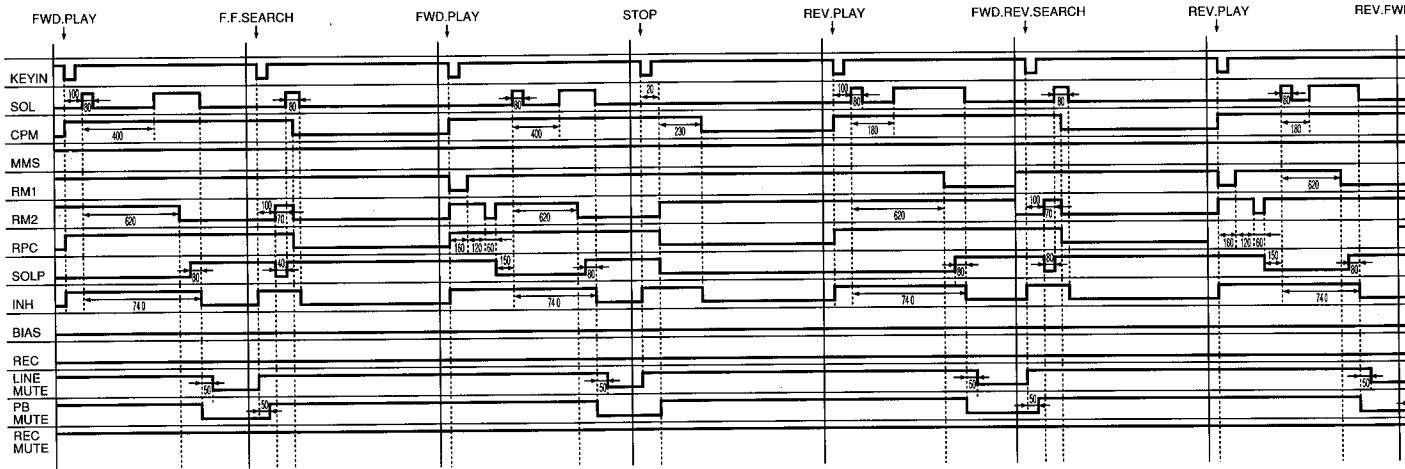
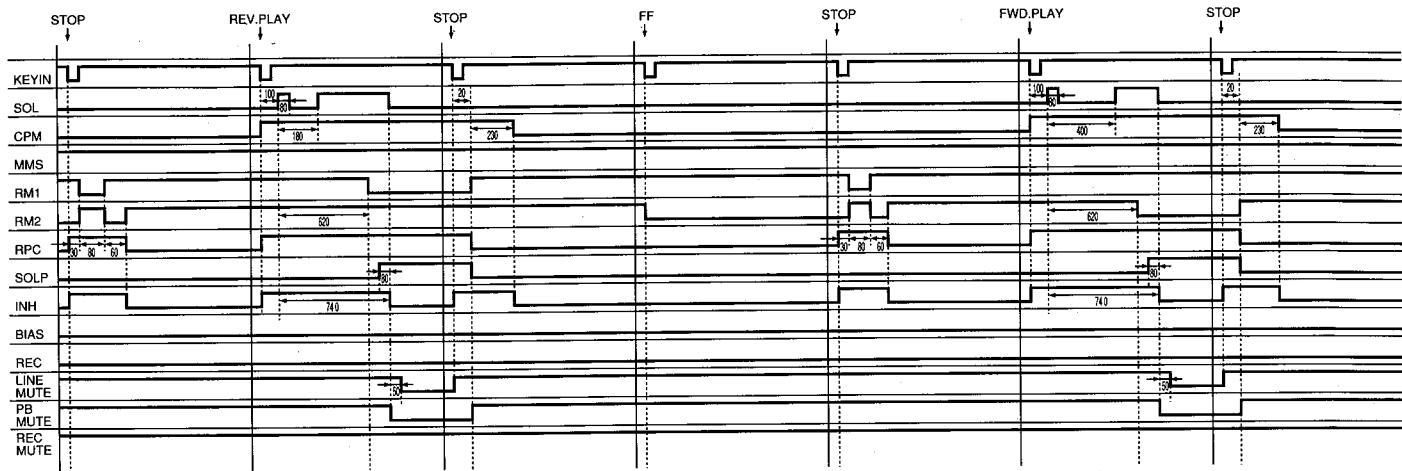
LOGIC FOR RECORD TO PLAYBACK MODE

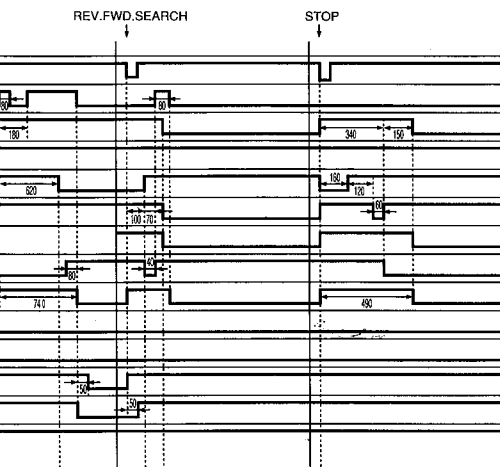
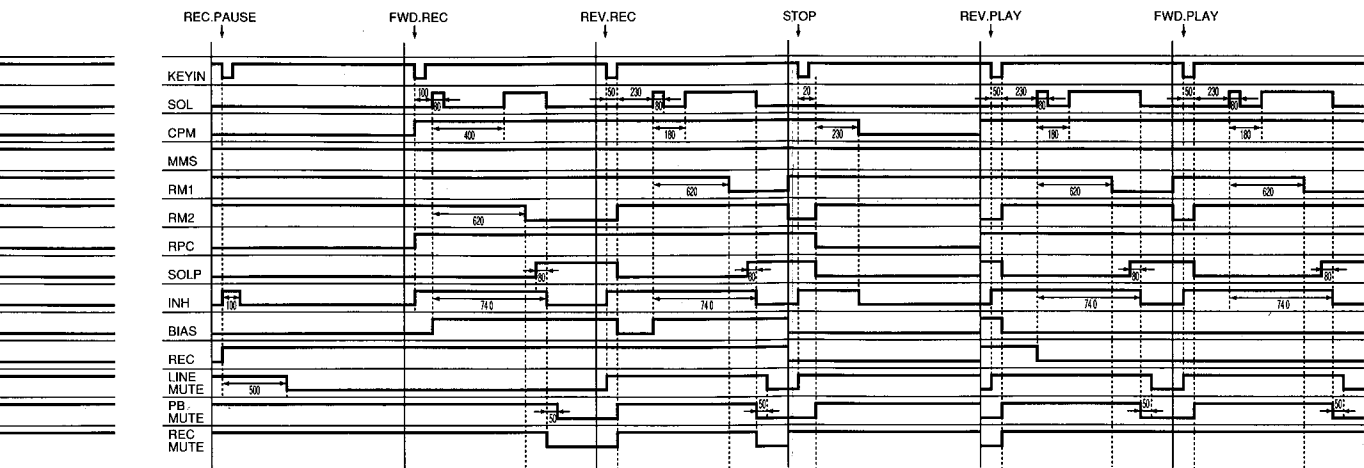
When the "STOP", "PAUSE" or "PLAY" button is pressed, the pin 12 of IC751 becomes high level. Q219 turns ON and Q213 (L ch.), Q214 (R ch.) turn ON to mute the inputs to the record amplifiers. Also, Q712 and Q713 turn OFF and Q711 turns ON to turn ON Q701, Q703 (L ch.) and Q702, Q704 (R ch.). Therefore the outputs from the record amplifiers are muted. Also, Q505 turns OFF and Q506 turns ON to make the pin 5 of IC501 low level. Therefore the mode is switched to the playback mode.

TIMING CHART



TIMING CHART





ALIGNMENT PROCEDURES (REFER TO PAGES 11, 12, 23, 24 AND 25)

CASSETTE MECHANISM CONFIRMATION

Make sure to confirm conditons of the cassette mechanism as follows before adjustment.

1. Confirmation of erase prevention function

- The switch should turn ON when a tape with erroneous erase preventive pawl is inserted. (Use a tape which is 0.2 mm smaller than the minimum size of 62.9 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch turn OFF.

2. Confirmation of cassette pack detection function

- The switch should turn ON when a tape is inserted. (Use a tape whose minimum size is 63.5 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch should turn OFF.

3. Confirmation of eject function

- The cassette compartment opens smoothly and no abnormal noise should be heard while opening and closing.
- The eject lever opens smoothly without contacting the chassis and damper.
- The eject button can not be pressed during playback.

4. Confirmation of playback, fast forward and rewind functions

- The torque used in each of the playback, fast forward and rewind modes should be within specification.
Playback35 gr.cm – 70 gr.cm
Fast Forward 70 gr.cm – 150 gr.cm
Rewind 70 gr.cm – 150 gr.cm
- No abnormal noise should be heard during operation in any mode. The solenoid switching sound should not be considered as a noise.

5. Confirmation of positions of record/playback head and playback head

- Head height
 - a) Set the M-300 head gauge.
 - b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 1.
 - c) The adjustment chip should not contact the tape guide of both record/playback head and playback head.

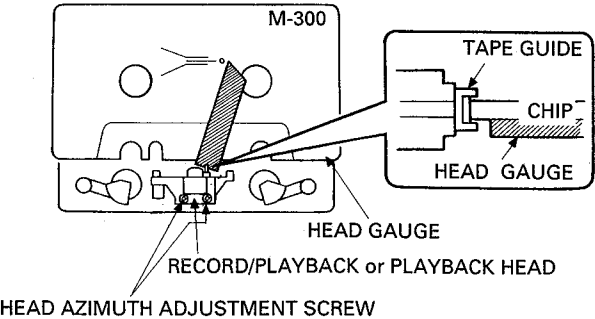


Fig. 1

- Head position
 - a) Set the M-300 head gauge.
 - b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 2.
 - c) With both record/playback head and playback head, the adjustment chip should be between MIN and MAX of the M-300 head gauge.

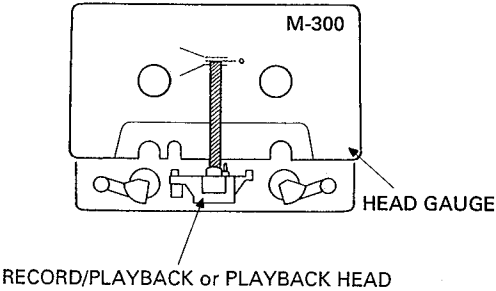


Fig. 2

ELECTRICAL ADJUSTMENT AND CONFIRMATION

1. Before adjustment

- Before electrical adjustment, make sure that confirmations of the cassette mechanism are all completed.
- After the power switch is pushed on, wait for 10 minutes before measuring to be sure of the most stable operation.
- Since head magnetization, dust accumulations, etc. are likely to introduce errors in the various characteristics, it is very important that the heads are properly demagnetized and cleaned before commencing any adjustment, particularly frequency response and head azimuth adjustment.

2. Instruments required

- Low frequency oscillator
- AC VTVM or dual channel AC VTVM
- Oscilloscope
- Wow/flutter meter
- Frequency counter
- Distortion meter

3. Test tapes

- Azimuth adjustment MTT-114 or TCC-153
- Tape speed adjustment MTT-111DN or TCC-112
- Playback output level adjustment MTT-150 or TCC-130
- Playback frequency characteristic confirmation TCC-1216 or TCC-162C and TCC-262C
- Reference tapes
 - LN SCC-502
 - CrO₂ SCC-1360
 - METAL SCC-565

Note:
C-90 differs with C-60 in the thickness and bias is of unequal, so adjust with the tape whose bias in of Specified Value.

4. General conditions (unless otherwise noted)

Controls and Switches	Settings
Dolby NR	Off
Input Level	Maximum
MPX Filter	Off
Bias Fine Trim	Center
Input Balance	Center

Azimuth Adjustment

When the maximum level point of R channel does not equal that L channel, connect the oscilloscope as shown in Fig. 3 and proceed with azimuth adjustment so that L and R channels are in phase.

- a) Connect L channel tape out to "X (or V)" and R channel to "Y (or H)". Observe the lissajous waveform.
- b) Set L and R channels to monaural. Adjust vertical and horizontal gain so that the waveform becomes 45 degree.
- c) Adjust azimuth so that the measurement of "a" becomes maximum and the measurement of "b" becomes minimum against the 45 degree line.

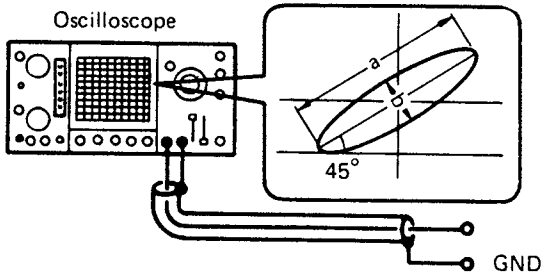


Fig. 3

PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-162C, TCC-262C

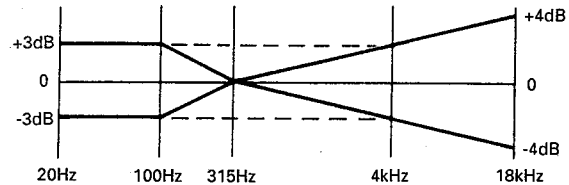


Fig. a

COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

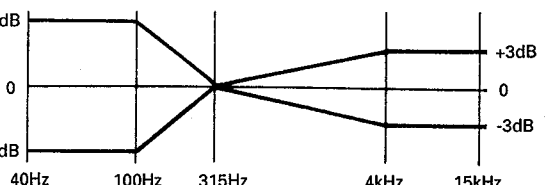


Fig. c

RECORD/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : SCC-502, SCC-1360, SCC-565
DOLBY NO : OFF

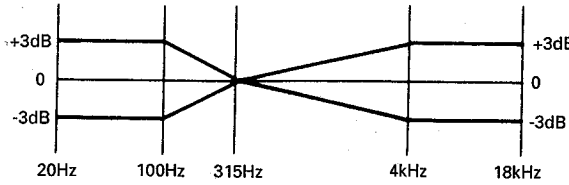


Fig. b

HI-SPEED COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

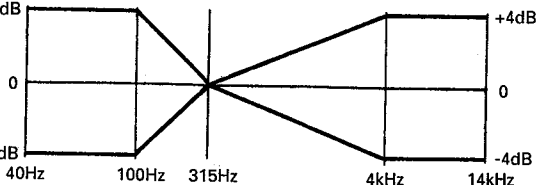


Fig. d

ALIGNMENT PROCEDURES (REFER TO PAGES 11, 12, 23, 24 AND 25)

CASSETTE MECHANISM CONFIRMATION

Make sure to confirm conditions of the cassette mechanism as follows before adjustment.

1. Confirmation of erase prevention function

- The switch should turn ON when a tape with erroneous erase preventive pawl is inserted. (Use a tape which is 0.2 mm smaller than the minimum size of 62.9 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch turn OFF.

2. Confirmation of cassette pack detection function

- The switch should turn ON when a tape is inserted. (Use a tape whose minimum size is 63.5 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch should turn OFF.

3. Confirmation of eject function

- The cassette compartment opens smoothly and no abnormal noise should be heard while opening and closing.
- The eject lever opens smoothly without contacting the chassis and damper.
- The eject button can not be pressed during playback.

4. Confirmation of playback, fast forward and rewind functions

- The torque used in each of the playback, fast forward and rewind modes should be within specification.

Playback 35 gr.cm – 70 gr.cm

Fast Forward 70 gr.cm – 150 gr.cm

Rewind 70 gr.cm – 150 gr.cm

- No abnormal noise should be heard during operation in any mode. The solenoid switching sound should not be considered as a noise.

5. Confirmation of positions of record/playback head and playback head

- Head height
 - a) Set the M-300 head gauge.
 - b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 1.
 - c) The adjustment chip should not contact the tape guide of both record/playback head and playback head.

• Head position

- a) Set the M-300 head gauge.
- b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 2.
- c) With both record/playback head and playback head, the adjustment chip should be between MIN and MAX of the M-300 head gauge.

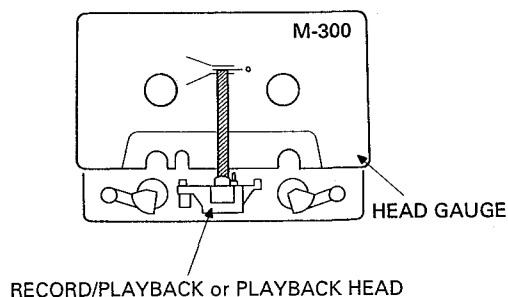


Fig. 2

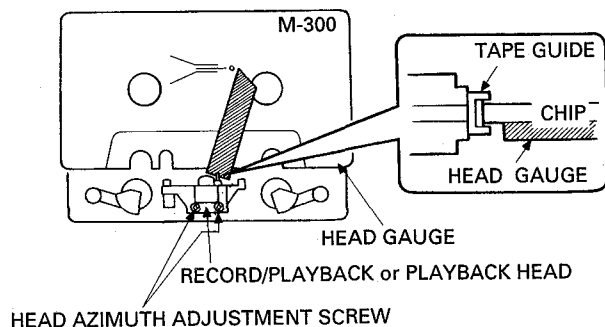


Fig. 1

ELECTRICAL ADJUSTMENT AND CONFIRMATION

1. Before adjustment

- Before electrical adjustment, make sure that confirmations of the cassette mechanism are all completed.
- After the power switch is pushed on, wait for 10 minutes before measuring to be sure of the most stable operation.
- Since head magnetization, dust accumulations, etc. are likely to introduce errors in the various characteristics, it is very important that the heads are properly demagnetized and cleaned before commencing any adjustment, particularly frequency response and head azimuth adjustment.

2. Instruments required

- Low frequency oscillator
- AC VTVM or dual channel AC VTVM
- Oscilloscope
- Wow/flutter meter
- Frequency counter
- Distortion meter

3. Test tapes

- Azimuth adjustment MTT-114 or TCC-153
- Tape speed adjustment MTT-111DN or TCC-112
- Playback output level adjustment MTT-150 or TCC-130
- Playback frequency characteristic confirmation TCC-1216 or TCC-162C and TCC-262C
- Reference tapes
LN SCC-502
CrO2 SCC-1360
METAL SCC-565

Note:

C-90 differs with C-60 in the thickness and bias is of unequal, so adjust with the tape whose bias in of Specified Value.

4. General conditions (unless otherwise noted)

Controls and Switches	Settings
Dolby NR	Off
Input Level	Maximum
MPX Filter	Off
Bias Fine Trim	Center
Input Balance	Center

Azimuth Adjustment

When the maximum level point of R channel does not equal that L channel, connect the oscilloscope as shown in Fig. 3 and proceed with azimuth adjustment so that L and R channels are in phase.

- a) Connect L channel tape out to "X (or V)" and R channel to "Y (or H)". Observe the lissajous waveform.
- b) Set L and R channels to monaural. Adjust vertical and horizontal gain so that the waveform becomes 45 degree.
- c) Adjust azimuth so that the measurement of "a" becomes maximum and the measurement of "b" becomes minimum against the 45 degree line.

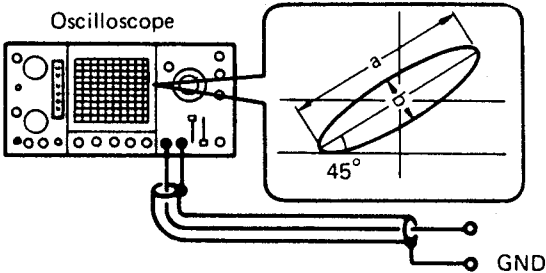


Fig. 3

PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-162C, TCC-262C

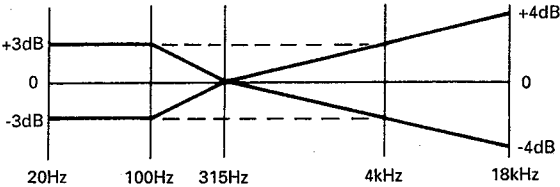


Fig. a

COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

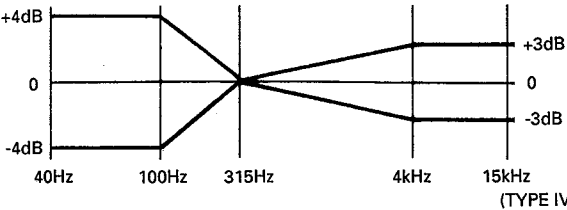


Fig. c

RECORD/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : SCC-502, SCC-1360, SCC-565
DOLBY NO : OFF

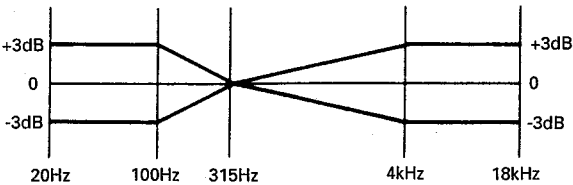


Fig. b

HI-SPEED COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

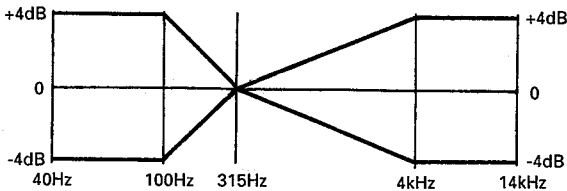


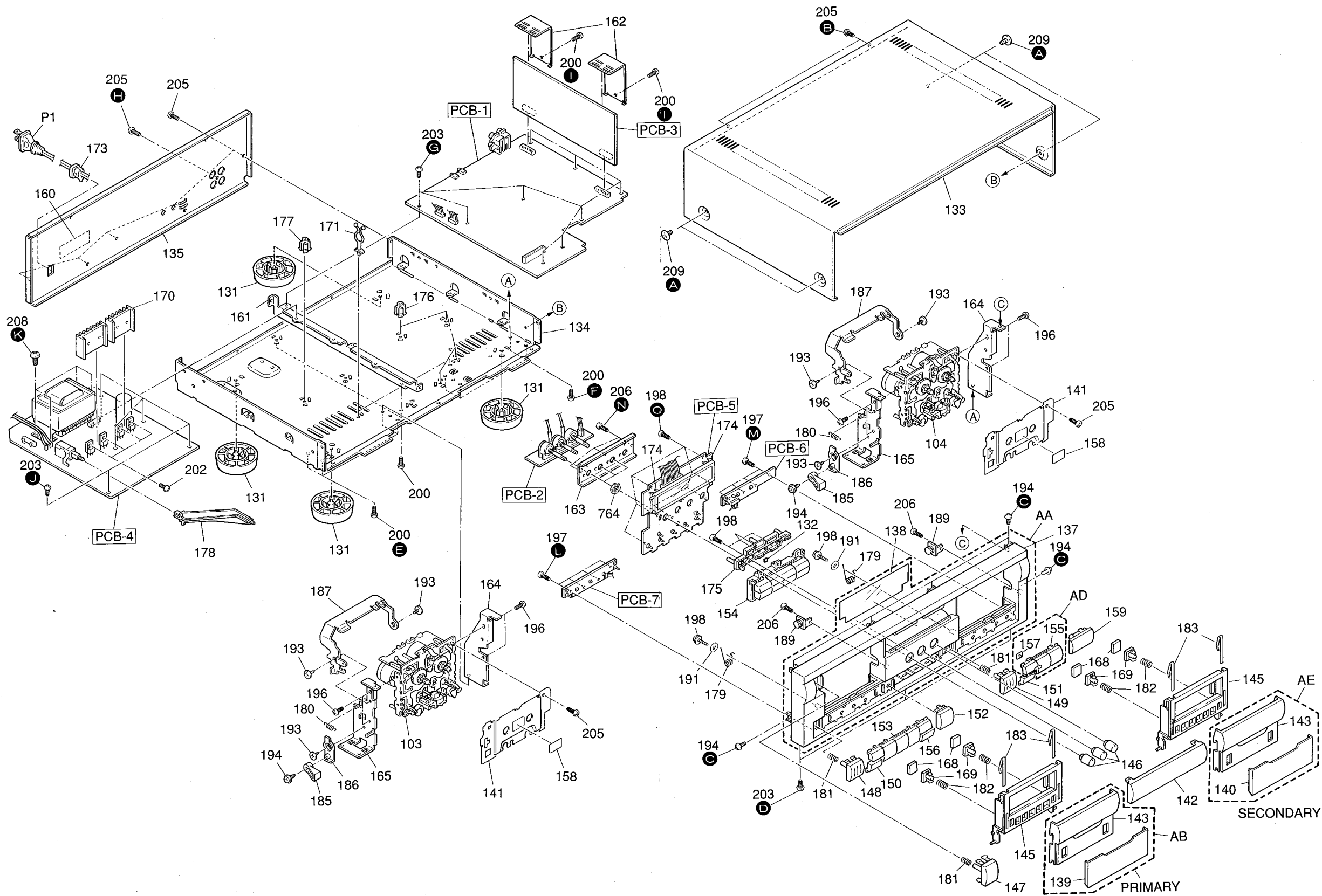
Fig. d

Step	Alignment	Instrument Required	Input Signal	Mode	Test Point	Adjustment	For
1	Primary Deck Quick sensor	VTVM Black tape with leader tape		PB (Primary)	TP809	VR803	Adjust VR803 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
2	Secondary Deck Quick sensor	VTVM Black tape with leader tape		PB (Secondary)	TP859	VR853	Adjust VR853 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
3	Azimuth	VTVM Oscilloscope Test tape (MTT-114 or TCC-153)		PB	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	Azimuth screw	Maximum output Refer to "Azimuth Adjustment" on page 6.
4	Primary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR801	6020 Hz $\pm$ 20 Hz (TP806 : GND connection) Adjust at the center of test tape.
5	Primary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR802	3010 Hz $\pm$ 10 Hz Adjust at the center of test tape.
6	Secondary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR851	6020 Hz $\pm$ 20 Hz (TP856 : GND connection) Adjust at the center of test tape.
7	Secondary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR852	3010 Hz $\pm$ 10 Hz Adjust at the center of test tape.
8	Primary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)		PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR101 (L ch) VR102 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
9	Secondary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)		PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND	VR157 (L ch) VR158 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
10	Primary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)		PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR103 VR104	Adjust VR103 and VR104 so the playback frequency response (1 kHz/18 kHz) is $\pm$ 0.6 ~ 0.7 dB. Refer to Fig. a
11	Secondary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)		PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR153 VR154	Adjust VR153 and VR154 so the playback frequency response (1 kHz/18 kHz) is $\pm$ 0.6 ~ 0.7 dB. Refer to Fig. a
12	Bias frequency confirmation	Frequency counter		REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	T301	105 kHz $\pm$ 3 kHz Use METAL tape.
13	Bias trap	VTVM		REC/PB (Primary)	TP201 (L ch), GND TP202 (R ch), GND	LC201, LC202	Minimum output Use METAL tape. INPUT VR. minimum
14	Bias level (pre-adjustment)	VTVM		REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	VR351 VR352	35 mV Test tape is METAL blank tape.
						VR353	20 mV Test tape is CrO ₂ blank tape.
						VR354	13 mV Test tape is Normal blank tape.
15	Record level (pre-adjustment)	VTVM Blank tapes METAL SCC-565 CrO ₂ SCC-1360 Normal SCC-502	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV in REC-PAUSE mode.	REC/PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR201, VR202 VR351, VR352	560 mV Tape selector is METAL position. Adjust VR351 and VR352 so that the distortion becomes 1.0% - 1.4%
						VR353 (CrO ₂) VR354 (Normal)	560 mV Adjust VR353 so that the distortion becomes 1.3% (CrO ₂). Adjust VR354 so that the distortion becomes 1.0% (Normal). This confirmation should be at each tape selector position.
16	Record/playback frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502	Apply 1 kHz signal to INPUT jack. The output at TP501 and TP502 are Dolby level -25 dB. Then adjust with a 20 Hz to 30 kHz sweep signal.	REC/PB	OUTPUT jack	VR353 L201, L202 (VR351, VR352)	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is CrO ₂ position.
						VR351 VR352	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is METAL position.
						VR354 L201, L202 (VR351, VR352)	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is Normal position.
17	Record level	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502	Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV (1 kHz) in REC-PAUSE mode.	REC/PB	TP501 (L ch), GND TP502 (R ch), GND		560 mV Perform adjustment using CrO ₂ . Perform checking only for Normal and METAL tapes.
18	High speed copy frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-185C		High Speed Copy Play	OUTPUT	L203, L204	Load TCC-185C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within $\pm$ 3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
19	High speed copy frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-285C		High Speed Copy Play	OUTPUT	L203, L204	Load TCC-285C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within $\pm$ 3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
20	Meter level	VTVM	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 1.5 dB below 775 mV.	REC/PAUSE	PEAK LEVEL METER	VR401 VR402	Adjust so the -1 dB segments light.
21	MPX filter characteristic confirmation	VTVM	Apply 19 kHz, 15 kHz and 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 775mV.	REC/PAUSE MPX filter ON	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	LC501 LC502	Adjust for -0.3 dB at 15 kHz and > 35 dB at 19 kHz

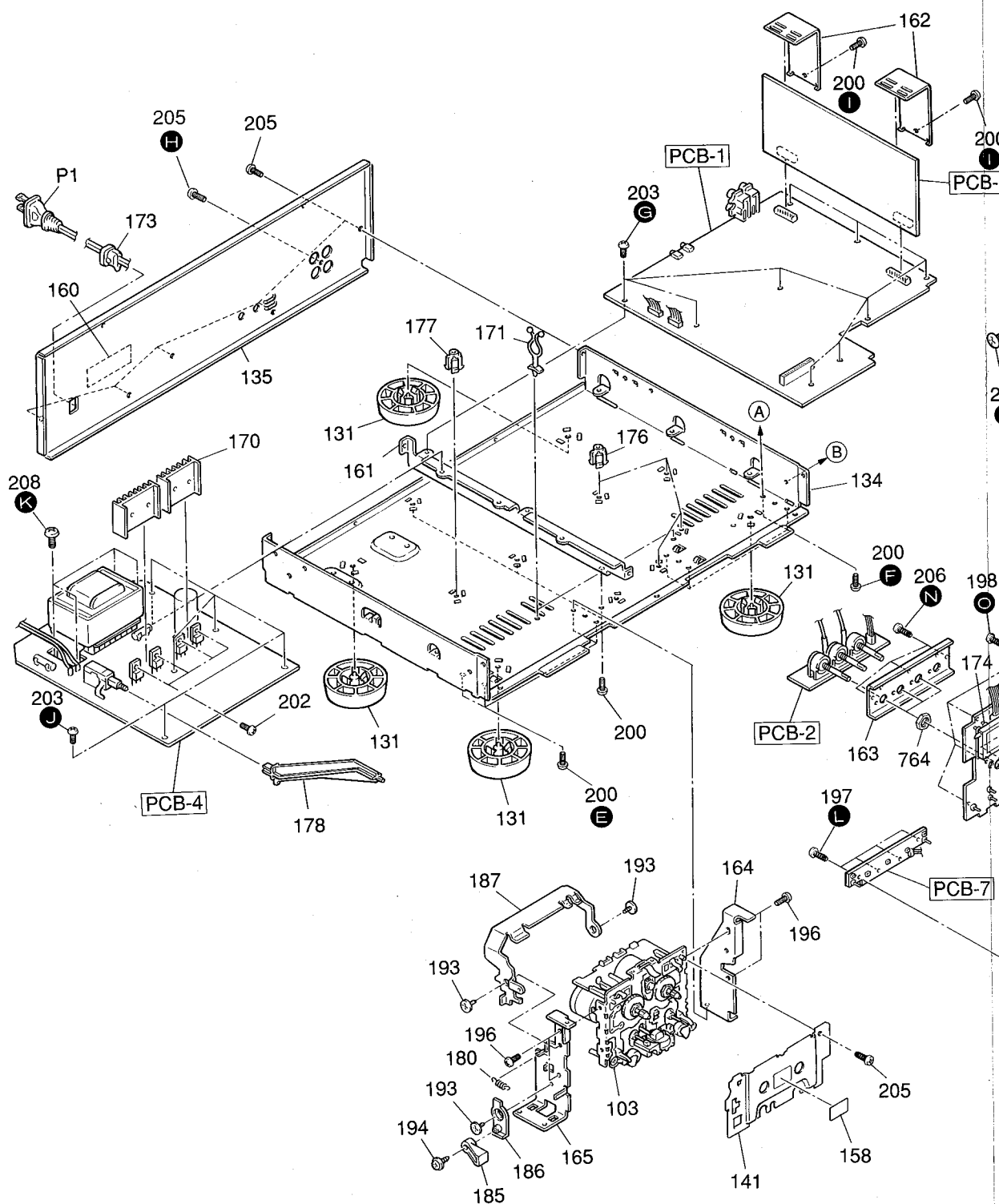
Step		Alignment	Instrument Required	Input Signal
1		Primary Deck Quick sensor	VTVM Black tape with leader tape	
2		Secondary Deck Quick sensor	VTVM Black tape with leader tape	
3		Azimuth	VTVM Oscilloscope Test tape (MTT-114 or TCC-153)	
4		Primary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
5		Primary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
6		Secondary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
7		Secondary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
8		Primary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)	
9		Secondary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)	
10		Primary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)	
11		Secondary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)	
12		Bias frequency confirmation	Frequency counter	
13		Bias trap	VTVM	
14	1	Bias level (pre-adjustment)	VTVM	
	2			
	3			
15		Record level (pre-adjustment)	VTVM Blank tapes METAL SCC-565 CrO ₂ SCC-1360 Normal SCC-502	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV in REC-PAUSE mode.
16	1	Record/playback frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502	Apply 1 kHz signal to INPUT jack. The output at TP501 and TP502 are Dolby level -25 dB. Then adjust with a 20 Hz to 30 kHz sweep signal.
	2			
	3			
17		Record level	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502	Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV (1 kHz) in REC-PAUSE mode.
18		High speed copy frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-185C	
19		High speed copy frequency characteristic	VTVM Blank tapes CrO ₂ SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-285C	
20		Meter level	VTVM	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 1.5 dB below 775 mV.
21		MPX filter characteristic confirmation	VTVM	Apply 19 kHz, 15 kHz and 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 775mV.

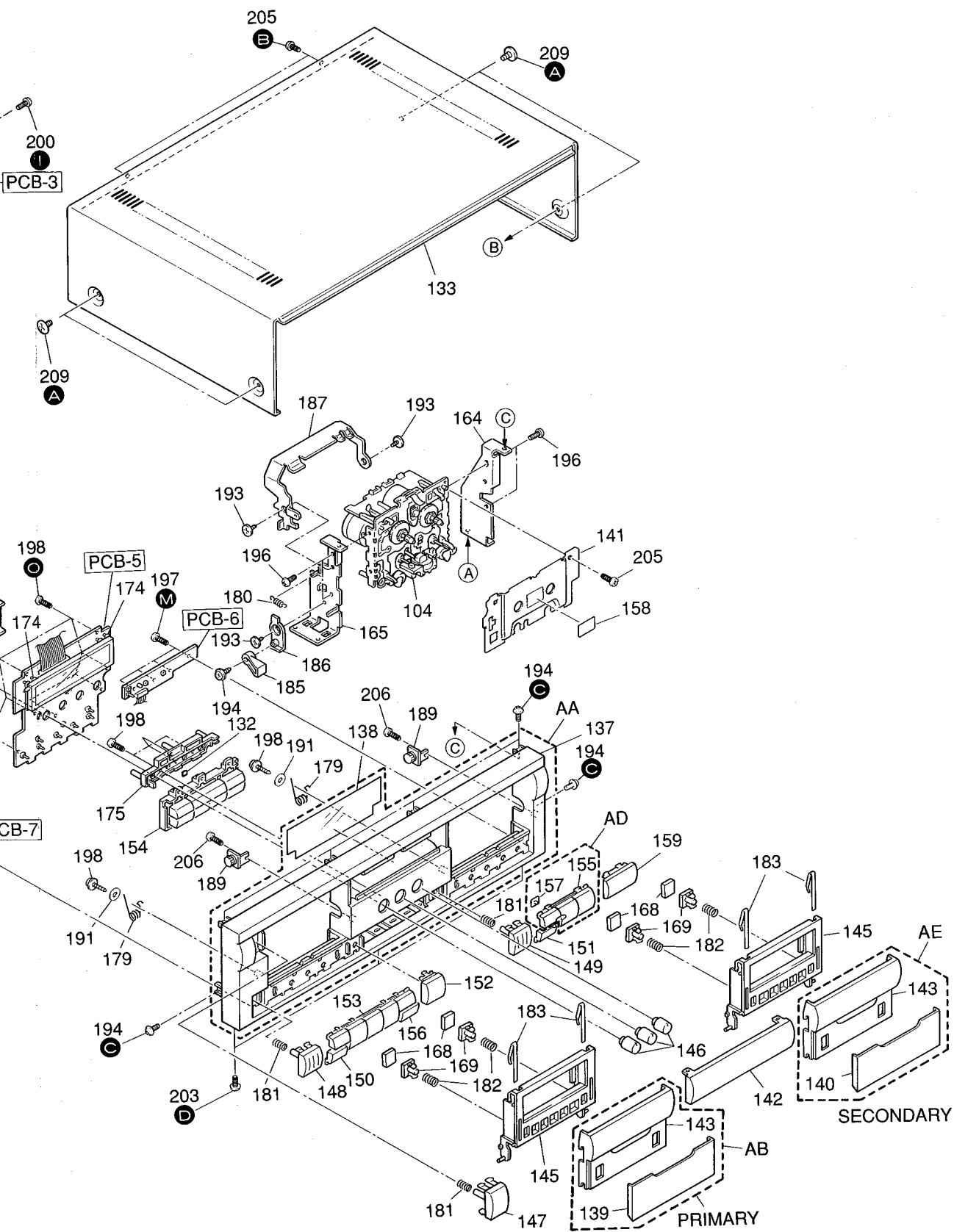
	Mode	Test Point	Adjustment	For
	PB (Primary)	TP809	VR803	Adjust VR803 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
	PB (Secondary)	TP859	VR853	Adjust VR853 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	Azimuth screw	Maximum output Refer to "Azimuth Adjustment" on page 6.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR801	6020 Hz ± 20 Hz (TP806 : GND connection) Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR802	3010 Hz ± 10 Hz Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR851	6020 Hz ± 20 Hz (TP856 : GND connection) Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR852	3010 Hz ± 10 Hz Adjust at the center of test tape.
	PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR101 (L ch) VR102 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
	PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND	VR157 (L ch) VR158 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
	PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR103 VR104	Adjust VR103 and VR104 so the playback frequency response (1 kHz/18 kHz) is $\pm 0.6 \sim 0.7$ dB. Refer to Fig. a
	PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR153 VR154	Adjust VR153 and VR154 so the playback frequency response (1 kHz/18 kHz) is $\pm 0.6 \sim 0.7$ dB. Refer to Fig. a
	REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	T301	105 kHz ± 3 kHz Use METAL tape.
	REC/PB (Primary)	TP201 (L ch), GND TP202 (R ch), GND	LC201, LC202	Minimum output Use METAL tape. INPUT VR. minimum
	REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	VR351 VR352	35 mV Test tape is METAL blank tape.
			VR353	20 mV Test tape is CrO ₂ blank tape.
			VR354	13 mV Test tape is Normal blank tape.
LEVEL knob 0 mV in	REC/PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR201, VR202 VR351, VR352	560 mV Tape selector is METAL position. Adjust VR351 and VR352 so that the distortion becomes 1.0% - 1.4%
			VR353 (CrO ₂) VR354 (Normal)	560 mV Adjust VR353 so that the distortion becomes 1.3% (CrO ₂). Adjust VR354 so that the distortion becomes 1.0% (Normal). This confirmation should be at each tape selector position.
at TP501 al.	REC/PB	OUTPUT jack	VR353 L201, L202 (VR351, VR352)	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is CrO ₂ position.
			VR351 VR352	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is METAL position.
			VR354 L201, L202 (VR351, VR352)	So that the record/playback frequency response is flat (at least within the range in Fig. b.) Tape selector is Normal position.
02 to GND e.	REC/PB	TP501 (L ch), GND TP502 (R ch), GND		560 mV Perform adjustment using CrO ₂ . Perform checking only for Normal and METAL tapes.
	High Speed Copy Play	OUTPUT	L203, L204	Load TCC-185C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ± 3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
	High Speed Copy Play	OUTPUT	L203, L204	Load TCC-285C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ± 3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
LEVEL knob dB below	REC/PAUSE	PEAK LEVEL METER	VR401 VR402	Adjust so the -1 dB segments light.
T jack. 02 to GND	REC/PAUSE MPX filter ON	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	LC501 LC502	Adjust for -0.3 dB at 15 kHz and > 35 dB at 19 kHz

GENERAL UNIT
EXPLODED VIEW



GENERAL UNIT EXPLODED VIEW





GENERAL UNIT PARTS LIST

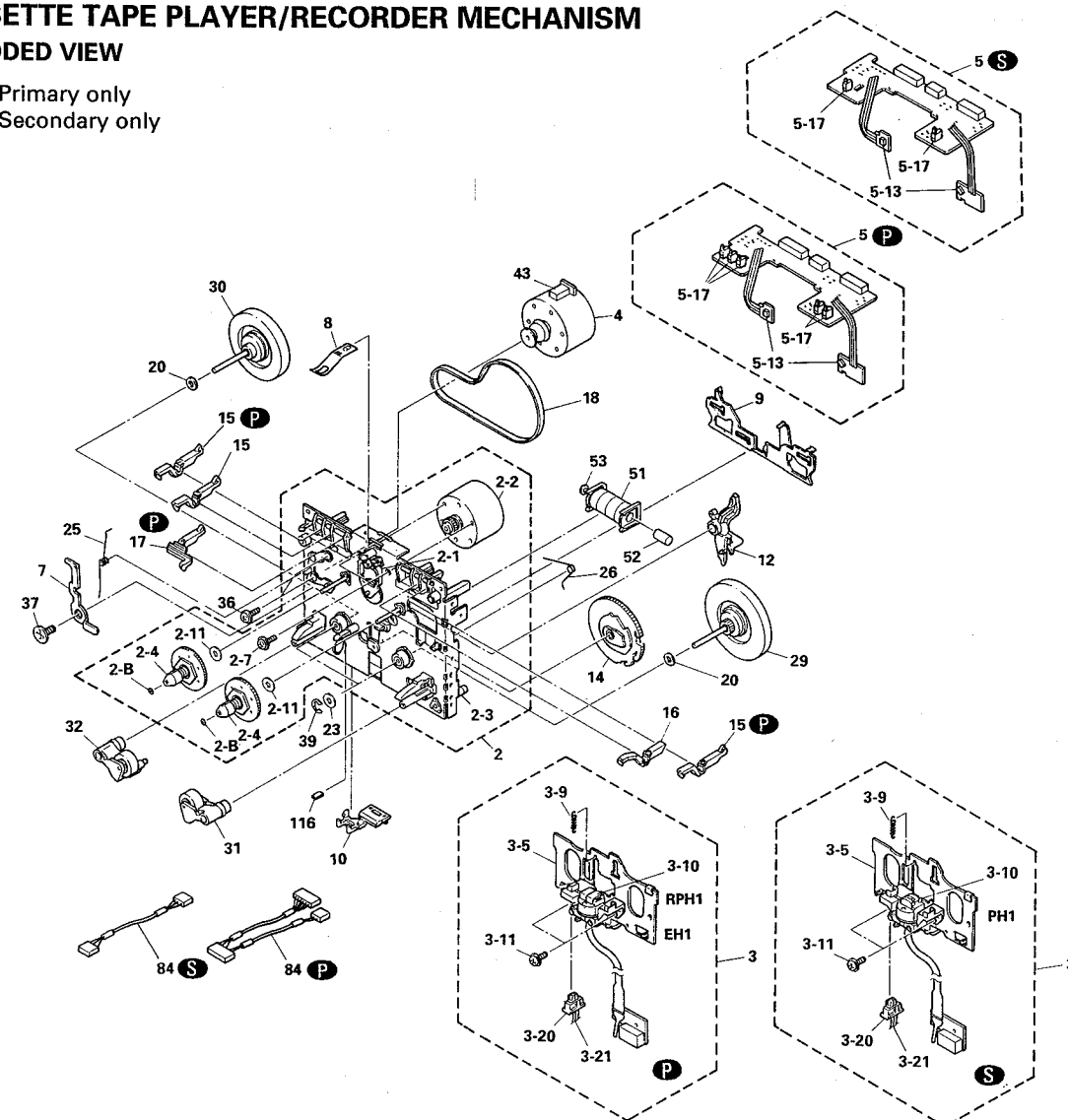
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
AA	A442-DC5300B	FRONT PANEL ASSEMBLY	167	2216-7197	SHIELD PLATE
AB	A532-DC5300B	WINDOW ASSEMBLY, PRI	168	2114-87143	BUSHING (x6)
AD	A662-DC5300B	PUSH BUTTON ASSEMBLY	169	2240-7371	HOLDER (x4)
AE	A532-DC5300F	WINDOW ASSEMBLY, SEC	170	2222-7281	HEAT SINK (x2)
103	3112-15903	REC BLOCK ASSEMBLY, PRI	171	2240-7050	HOLDER (x2)
104	3112-15904	REC BLOCK ASSEMBLY, SEC	172	2240-R0101	HOLDER (x5)
131	1319-03301	LEG (x4)	173	2240-364	HOLDER
132	1751-19702	LABEL	174	2240-7387	HOLDER (x2)
133	1414-16701	TOP COVER	175	2240-7391	HOLDER
134	1424-34201	CABINET BOTTOM	176	2360-7022	BOSS, SPE (x4)
135	1424-34301	CABI BACK ⓑ	177	2360-7063	BOSS, SPE
135	1424-34304	CABI BACK ⓑ ⓑⓑ	178	2601-7199	SHAFT
136	1751-22201	LABEL, WINDOW	179	2651-059	SPRING (x2)
137	1442-26801	PANEL, FRONT	180	2651-11212	SPRING (x2)
138	1511-22101	PLATE, DISPLAY	181	2651-2101732	SPRING (x3)
139	1512-07501	PLATE, CASS. LID (PRI)	182	2651-2101735	SPRING (x4)
140	1512-07502	PLATE, CASS. LID (SEC)	183	2652-105	LEAF SPRING (x4)
141	1514-23501	PLATE, MECHA (x2)	185	2672-7051	LEVER (x2)
142	1532-20901	WINDOW, DISPLAY	186	2672-7052	LEVER (x2)
143	1532-21001	WINDOW, CASS. LID (x2)	187	2672-7053	LEVER (x2)
145	1612-07801	CASS. LID (x2)	189	2692-015	DAMPER (x2)
146	1632-20401	ROTARY KNOB (x3)	191	2401-0216	WASHER, METAL (x2)
147	1662-58401	PUSH BUTTON, POWER	193	2320-044	SCREW, SPF+ (x6)
148	1662-65001	PUSH BUTTON, EJECT L	194	2340-7009	SCREW, SPF T+ (x8)
149	1662-65101	PUSH BUTTON, EJECT R	196	2347-260527	SCREW, BND T+ (2.6x5mm) (x8)
150	1662-65201	PUSH BUTTON, REC/PAUSE	197	2347-260626	SCREW, BND T+ (2.6x6mm) (x8)
151	1662-65301	PUSH BUTTON, HIGH SPEED COPY	198	2347-R0126122	SCREW, BND T+ (2.6x12mm) (x13)
152	1662-65401	PUSH BUTTON, TRANSPORT	200	2347-R0130062	SCREW, BND T+ (3x6mm) (x13)
153	1662-65501	PUSH BUTTON, CASS. L	202	2347-R0130082	SCREW, BND T(+) (3x8mm) (x4)
154	1662-65601	PUSH BUTTON, CENTER	203	2347-R0130082	SCREW, BND T(+) (3x8mm) (x17)
155	1662-65701	PUSH BUTTON, CASS. R	205	2347-R0130084	SCREW, BND T(+) (3x8mm) (x10)
156	1662-66301	PUSH BUTTON, REC MUTE	206	2347-R0130122	SCREW, BND T(+) (3x12mm) (x5)
157	1732-08201	INDICATOR	208	2347-R0140062	SCREW, BND T(+) (4x6mm) (x4)
158	1741-01601	ORNAMENT (x2)	209	2347-R0140064	SCREW, BND T(+) (4x6mm) (x4)
159	1742-08101	ORNAMENT, CASS. R	764	2440-62	NUT, SPE (x3)
160	1756-CSA	LABEL ⓑ	△ P1	4161-71151	CORD W/PLUG ⓑ
161	2219-8293	METAL FITTG, CENTER PCB	△ P1	4161-7256	CORD W/PLUG ⓑ
162	2219-8323	METAL FITTG, DOLBY PCB (x2)	△ P1	4161-04100	CORD W/PLUG ⓑ
163	2219-8324	METAL FITTG, VR HOLD			
164	2219-8325	METAL FITTG, MECHA R (x2)			
165	2210-8326	METAL FITTG, MECHA L (x2)			

NOTE:

△ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

CASSETTE TAPE PLAYER/RECORDER MECHANISM
EXPLODED VIEW

P : Primary only
S : Secondary only



PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
2	F511-496	CHASSIS BLK	10	FD45H-15	LEAD HOLDER
2-1	F517-049	IDLER BLK	12	FD45G-12	PLAY ARM
2-2	F564-280	MTR REEL BLK	14	FD45B-15	CAM GEAR (3R)
2-3	F612-168	CHASSIS BASE BLK	15	FD44T-14	SWITCH ARM, REC
2-4	F623-037	REEL BASE BLK	16	FD44Y-12	SWITCH ARM(R), PACK
2-7	FG156-11A	SCREW 2.6x6.4 ZN	17	FD44V-12	SWITCH ARM(L), METAL P
2-8	FJ111-17	WASHER 1.7x0.25	18	FF17G-21, 31	MAIN BELT
2-11	UJ12V-11	WASHER 2.1x0.25T	20	FJ111-30	WASHER 2.6x0.25
3	F513-550	PLATE HD BLK P	23	FJ111-14	WASHER 2.6x0.5
3	F513-619	PLATE HD BLK S	25	FK28M-15	EJECT PREVENTION SPRING (L)
3-5	FC52E-36	HEAD BASE	26	FK28R-11	SLIDE SPRING
3-9	FK26N-14	HB SP	29	FR23B-11	FLYWHEEL ASS'Y (ZDC)
3-10	FU17M-61	HADKH5560B P R/P HEAD	30	FR22K-13	FLYWHEEL ASS'Y (RVS)
3-10	FU17W-61	HADKH2516B S P HEAD	31	FR20L-21A	PINCH ROLLER ASS'Y(R)
3-11	UG19D-11	SCREW TT 2.0x5 ZN	32	FR20M-22	PINCH ROLLER ASS'Y(L)
3-20	AZ13P-00	SPI-320BC	36	FG114-14	SCREW 2.6x5 ZN
3-21	WG50M-03A	QS LEAD WIRE	37	UG15S-11A	SCREW
4	F525-256	MTR MAIN BLK	39	UG13U-15	E RING
5	F567-404	PCB CONTROL BLK P	43	FF17C-12	HOLDER CUSHION(L)
5	F567-405	PCB CONTROL BLK S	51	F765-263	SOLENOID BLK
5-1	F743-065	PCB BASE BLK	52	FL39H-12A	FIXED BAR
5-13	AZ15S-00	GP2S04B	53	FL39K-12	PLANGER
5-17	UE16E-11	PUSH SWITCH	84	WH52P-66	WIRE CONNECTOR (R/P) P
7	FC39L-70	EJECT PREVENTION ARM(L)	84	WH52N-04A	WIRE CONNECTOR (PB) S
8	FC52H-12	SPRING CASSETTE	116	UT11R-11	REFLECTION PLATE
9	FC52F-15	SLIDE PLATE			

GENERAL UNIT PARTS LIST

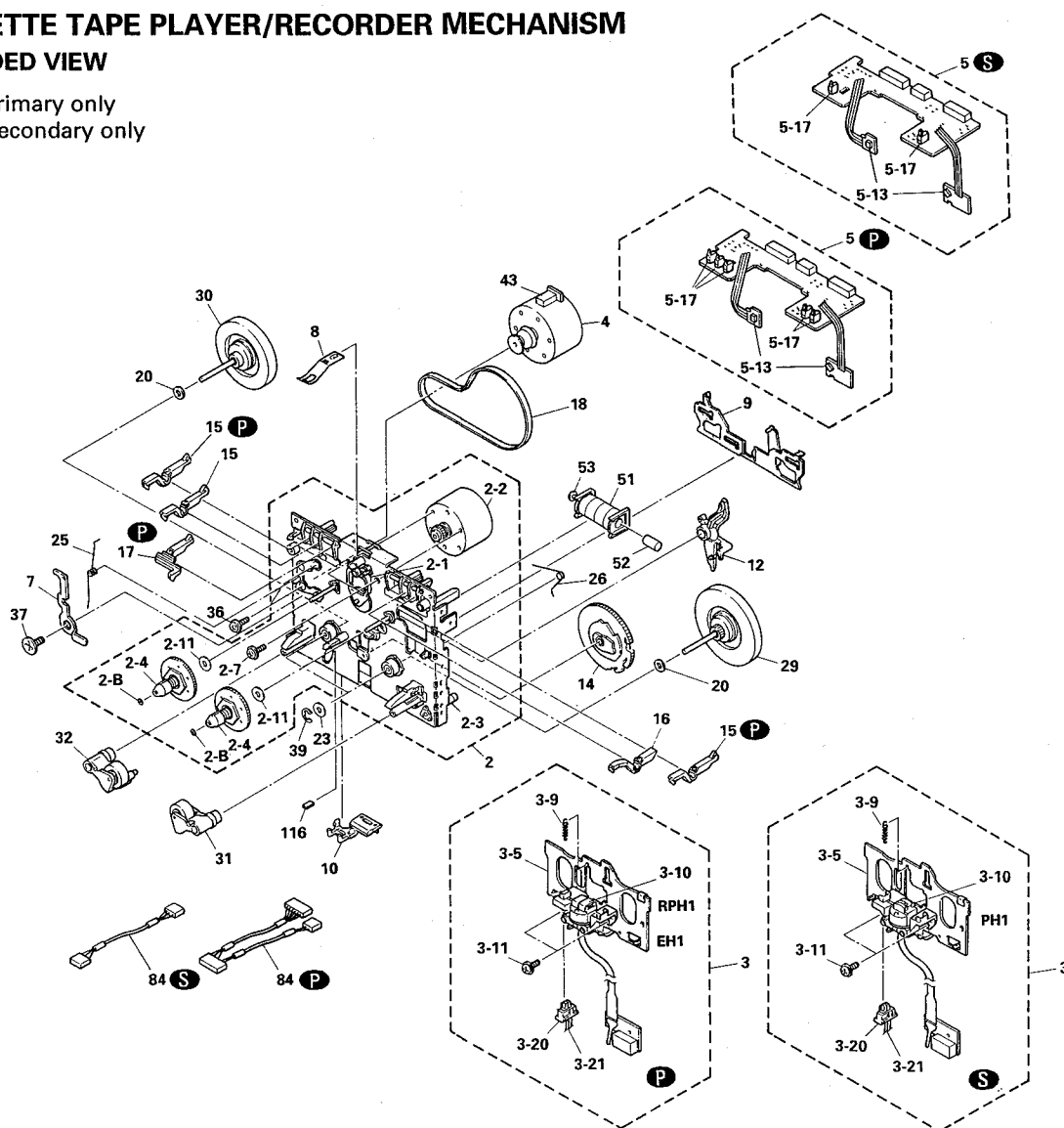
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AA	A442-DC5300B	FRONT PANEL ASSEMBLY	167	2216-7197	SHIELD PLATE
AB	A532-DC5300B	WINDOW ASSEMBLY, PRI	168	2114-87143	BUSHING (x6)
AD	A662-DC5300B	PUSH BUTTON ASSEMBLY	169	2240-7371	HOLDER (x4)
AE	A532-DC5300F	WINDOW ASSEMBLY, SEC	170	2222-7281	HEAT SINK (x2)
103	3112-15903	REC BLOCK ASSEMBLY, PRI	171	2240-7050	HOLDER (x2)
104	3112-15904	REC BLOCK ASSEMBLY, SEC	172	2240-R0101	HOLDER (x5)
131	1319-03301	LEG (x4)	173	2240-364	HOLDER
132	1751-19702	LABEL	174	2240-7387	HOLDER (x2)
133	1414-16701	TOP COVER	175	2240-7391	HOLDER
134	1424-34201	CABINET BOTTOM	176	2360-7022	BOSS, SPE (x4)
135	1424-34301	CABI BACK BK	177	2360-7063	BOSS, SPE
135	1424-34304	CABI BACK IB BB	178	2601-7199	SHAFT
136	1751-22201	LABEL, WINDOW	179	2651-059	SPRING (x2)
137	1442-26801	PANEL, FRONT	180	2651-11212	SPRING (x2)
138	1511-22101	PLATE, DISPLAY	181	2651-2101732	SPRING (x3)
139	1512-07501	PLATE, CASS. LID (PRI)	182	2651-2101735	SPRING (x4)
140	1512-07502	PLATE, CASS. LID (SEC)	183	2652-105	LEAF SPRING (x4)
141	1514-23501	PLATE, MECHA (x2)	185	2672-7051	LEVER (x2)
142	1532-20901	WINDOW, DISPLAY	186	2672-7052	LEVER (x2)
143	1532-21001	WINDOW, CASS. LID (x2)	187	2672-7053	LEVER (x2)
145	1612-07801	CASS. LID (x2)	189	2692-015	DAMPER (x2)
146	1632-20401	ROTARY KNOB (x3)	191	2401-0216	WASHER, METAL (x2)
147	1662-58401	PUSH BUTTON, POWER	193	2320-044	SCREW, SPF+ (x6)
148	1662-65001	PUSH BUTTON, EJECT L	194	2340-7009	SCREW, SPF T+ (x8)
149	1662-65101	PUSH BUTTON, EJECT R	196	2347-260527	SCREW, BND T+ (2.6x5mm) (x8)
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151	1662-65301	PUSH BUTTON, HIGH SPEED COPY	198	2347-R0126122	SCREW, BND T+ (2.6x12mm) (x13)
152	1662-65401	PUSH BUTTON, TRANSPORT	200	2347-R0130062	SCREW, BND T+ (3x6mm) (x13)
153	1662-65501	PUSH BUTTON, CASS. L	202	2347-R0130082	SCREW, BND T(+) (3x8mm) (x4)
154	1662-65601	PUSH BUTTON, CENTER	203	2347-R0130082	SCREW, BND T(+) (3x8mm) (x17)
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158	1741-01601	ORNAMENT (x2)	209	2347-R0140064	SCREW, BND T(+) (4x6mm) (x4)
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160	1756-CSA	LABEL BK	△ P1	4161-71151	CORD W/PLUG BK
161	2219-8293	METAL FITTG, CENTER PCB	△ P1	4161-7256	CORD W/PLUG IB
162	2219-8323	METAL FITTG, DOLBY PCB (x2)	△ P1	4161-04100	CORD W/PLUG BB
163	2219-8324	METAL FITTG, VR HOLD			
164	2219-8325	METAL FITTG, MECHA R (x2)			
165	2210-8326	METAL FITTG, MECHA L (x2)			

NOTE:

△ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

CASSETTE TAPE PLAYER/RECORDER MECHANISM **EXPLODED VIEW**

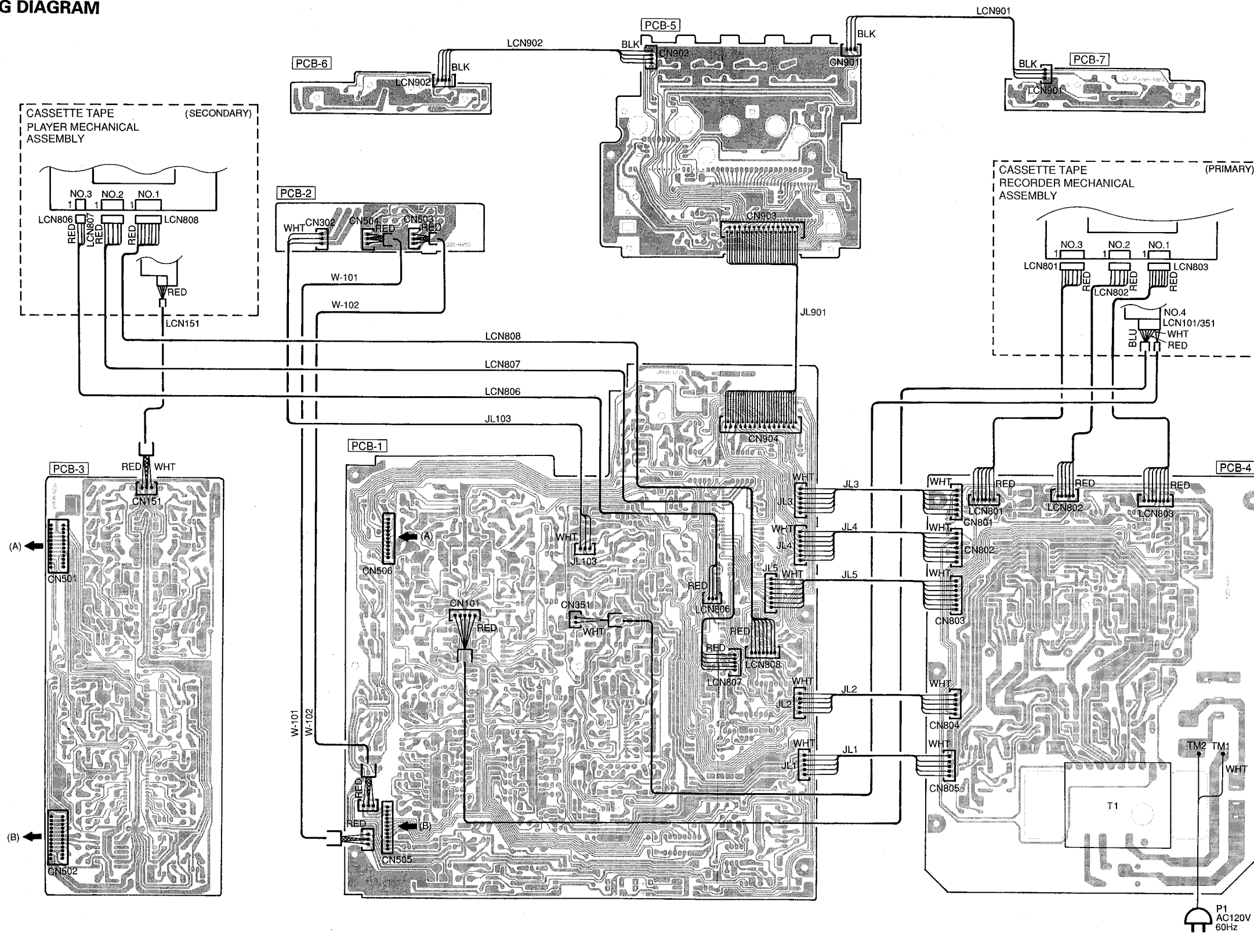
P : Primary only
S : Secondary only



PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
2	F511-496	CHASSIS BLK	10	FD45H-15	LEAD HOLDER
2-1	F517-049	IDLER BLK	12	FD45G-12	PLAY ARM
2-2	F564-280	MTR REEL BLK	14	FD45B-15	CAM GEAR (3R)
2-3	F612-168	CHASSIS BASE BLK	15	FD44T-14	SWITCH ARM, REC
2-4	F623-037	REEL BASE BLK	16	FD44Y-12	SWITCH ARM(R), PACK
2-7	FG156-11A	SCREW 2.6x6.4 ZN	17	FD44V-12	SWITCH ARM(L), METAL P
2-8	FJ111-17	WASHER 1.7x0.25	18	FF17G-21, 31	MAIN BELT
2-11	UJ12V-11	WASHER 2.1x0.25T	20	FJ111-30	WASHER 2.6x0.25
3	F513-550	PLATE HD BLK P	23	FJ111-14	WASHER 2.6x0.5
3	F513-619	PLATE HD BLK S	25	FK28M-15	EJECT PREVENTION SPRING (L)
3-5	FC52E-36	HEAD BASE	26	FK28R-11	SLIDE SPRING
3-9	FK26N-14	HB SP	29	FR23B-11	FLYWHEEL ASS'Y (ZDC)
3-10	FU17M-61	HADKH5560B P R/P HEAD	30	FR22K-13	FLYWHEEL ASS'Y (RVS)
3-10	FU17W-61	HADKH2516B S P HEAD	31	FR20L-21A	PINCH ROLLER ASS'Y(R)
3-11	UG19D-11	SCREW TT 2.0x5 ZN	32	FR20M-22	PINCH ROLLER ASS'Y(L)
3-20	AZ13P-00	SPI-320BC	36	FG114-14	SCREW 2.6x5 ZN
3-21	WG50M-03A	QS LEAD WIRE	37	UG15S-11A	SCREW
4	F525-256	MTR MAIN BLK	39	UG13U-15	E RING
5	F567-404	PCB CONTROL BLK P	43	FF17C-12	HOLDER CUSHION(L)
5	F567-405	PCB CONTROL BLK S	51	F765-263	SOLENOID BLK
5-1	F743-065	PCB BASE BLK	52	FL39H-12A	FIXED BAR
5-13	AZ15S-00	GP2S04B	53	FL39K-12	PLANGER
5-17	UE16E-11	PUSH SWITCH	84	WH52P-66	WIRE CONNECTOR (R/P) P
7	FC39L-70	EJECT PREVENTION ARM(L)	84	WH52N-04A	WIRE CONNECTOR (PB) S
8	FC52H-12	SPRING CASSETTE	116	UT11R-11	REFLECTION PLATE
9	FC52F-15	SLIDE PLATE			

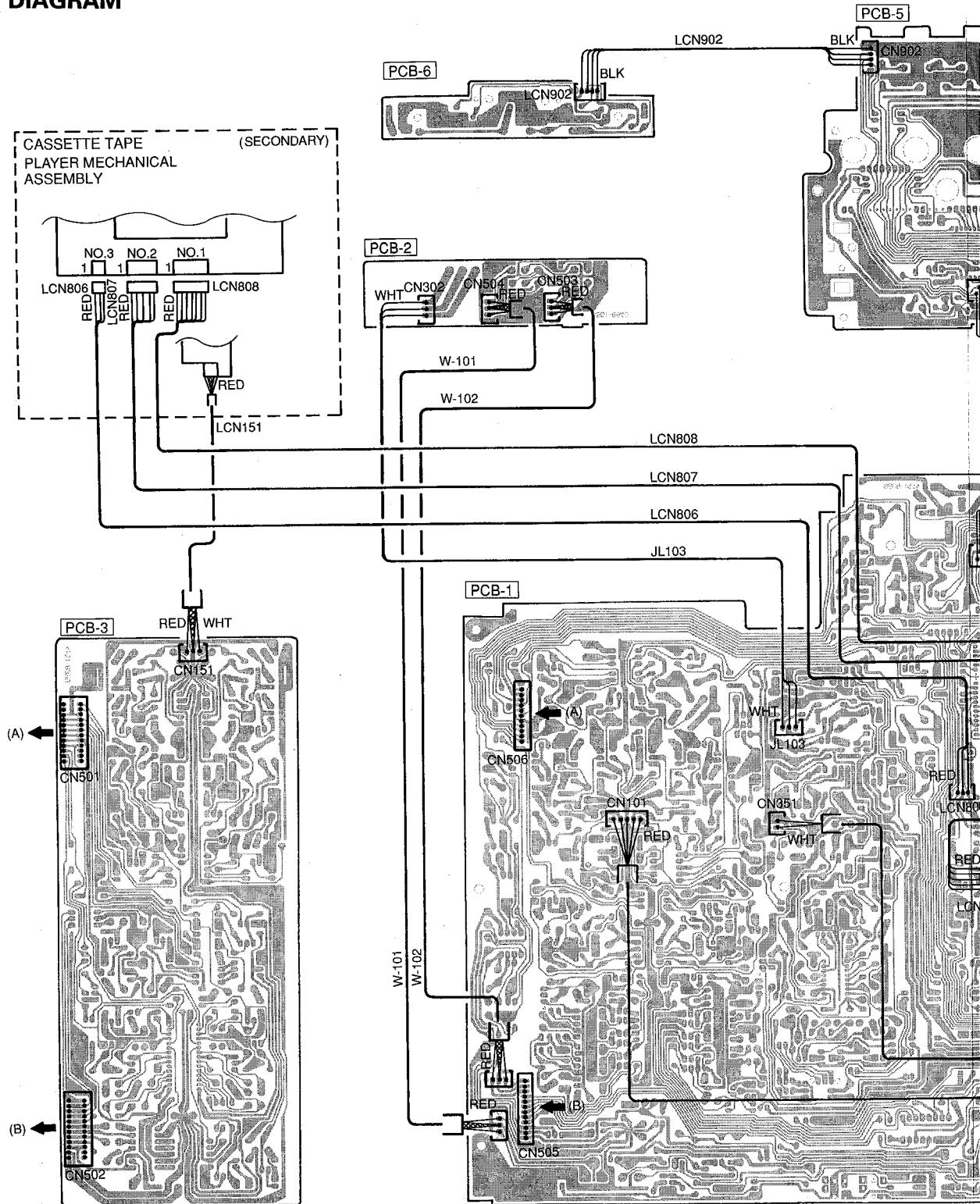
WIRING DIAGRAM



WIRE COLOR ABBREVIATIONS

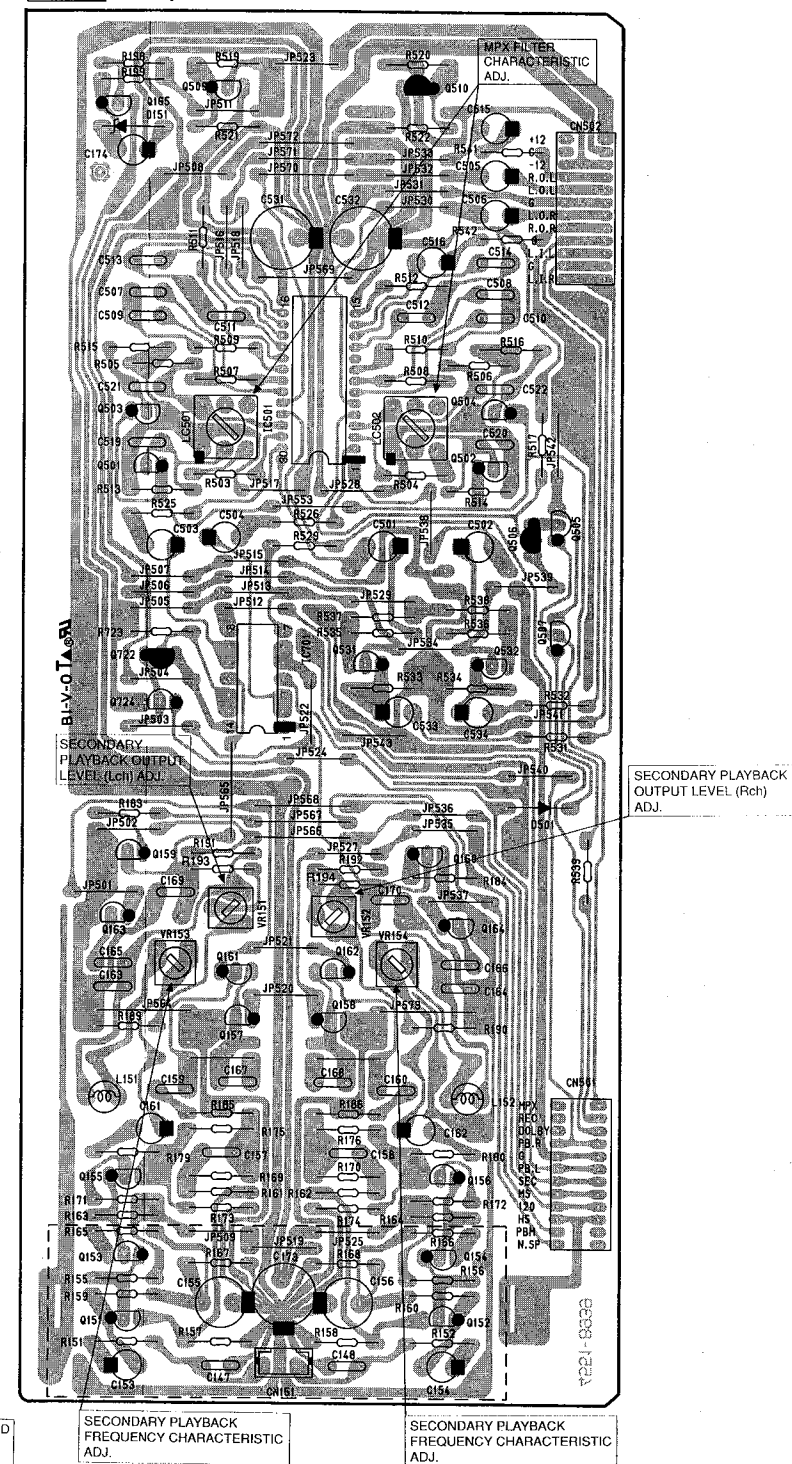
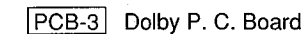
REC : Red	YEL : Yellow
ORG : Orange	PUP : Purple
BLU : Blue	PIK : Pink
WHT : White	BRN : Brown
BLK : Black	

WIRING DIAGRAM





PCB-1 Main P. C. Board



P. C. BOARD (1)

PCB-1 Main P. C. Board

PCB-2

PRIMARY
PLAYBACK
FREQUENCY
CHARACTERISTIC
ADJ.

PRIMARY PLAYBACK
OUTPUT LEVEL
(Rch) ADJ.

PRIMARY PLAYBACK
OUTPUT LEVEL
(Lch) ADJ.

PRIMARY PLAYBACK
FREQUENCY
CHARACTERISTIC ADJ.

BIAS
TRAP ADJ.RECORD/PLAYBACK
FREQUENCY
CHARACTERISTIC
ADJ.

SECONDARY
TAPE SPEED
(NORMAL) ADJ.

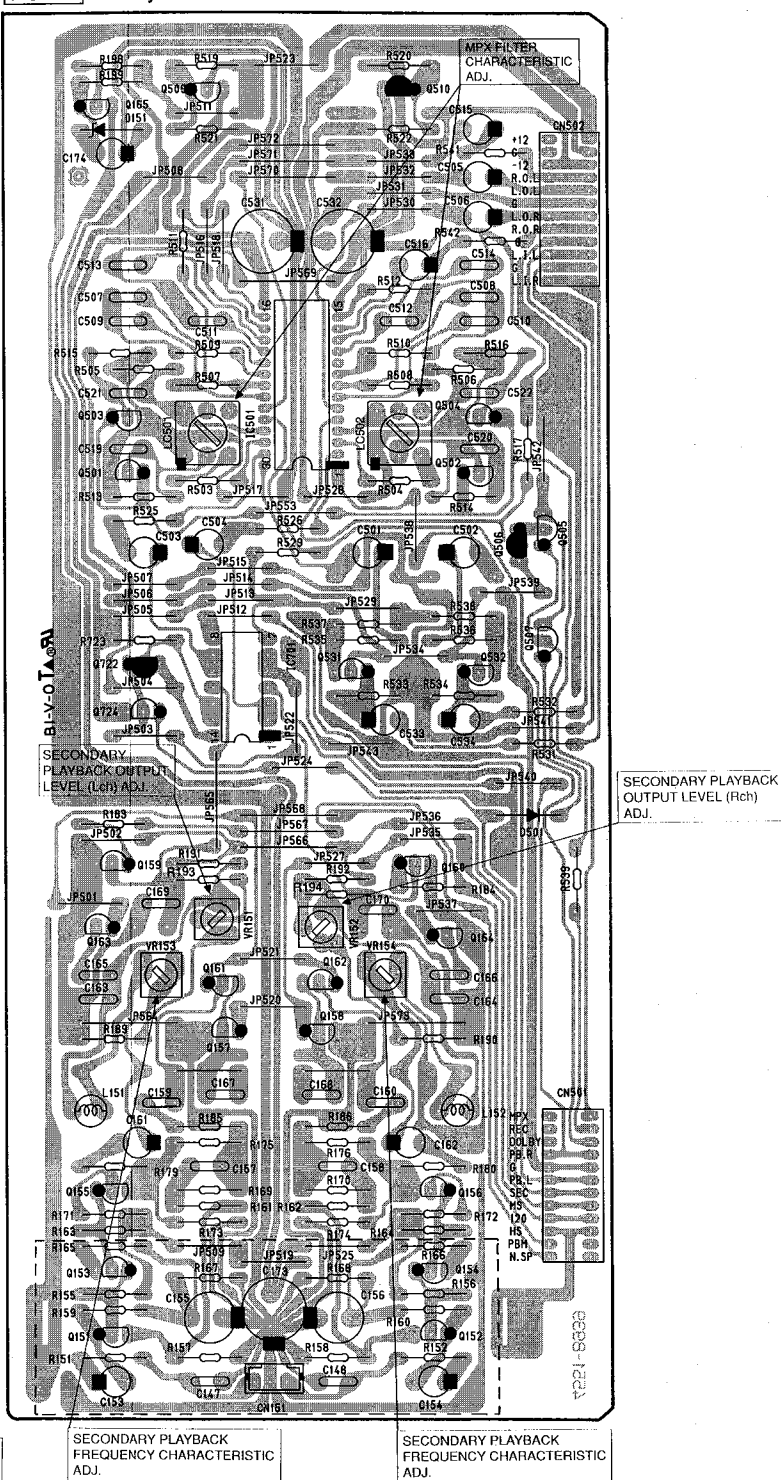
SECONDARY
TAPE SPEED (HI)
ADJ.

SECONDARY
QUICK SENSOR
ADJ.

RECORD/PLAYBACK FREQUENCY CHARACTERISTIC: (CrO₂) ADI

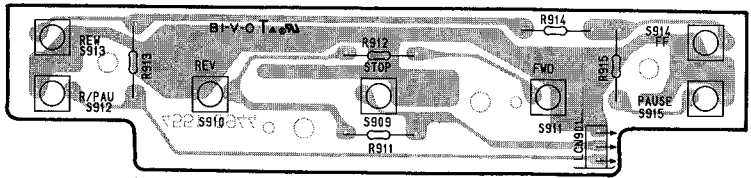
BIAS
FREQUENCY
ADJ.

RECORD/PLAYBACK
FREQUENCY
CHARACTERISTICRECORD/PLAYBACK
FREQUENCY CHAN

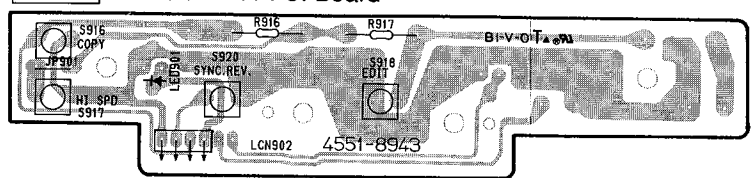


P. C. BOARD (2)

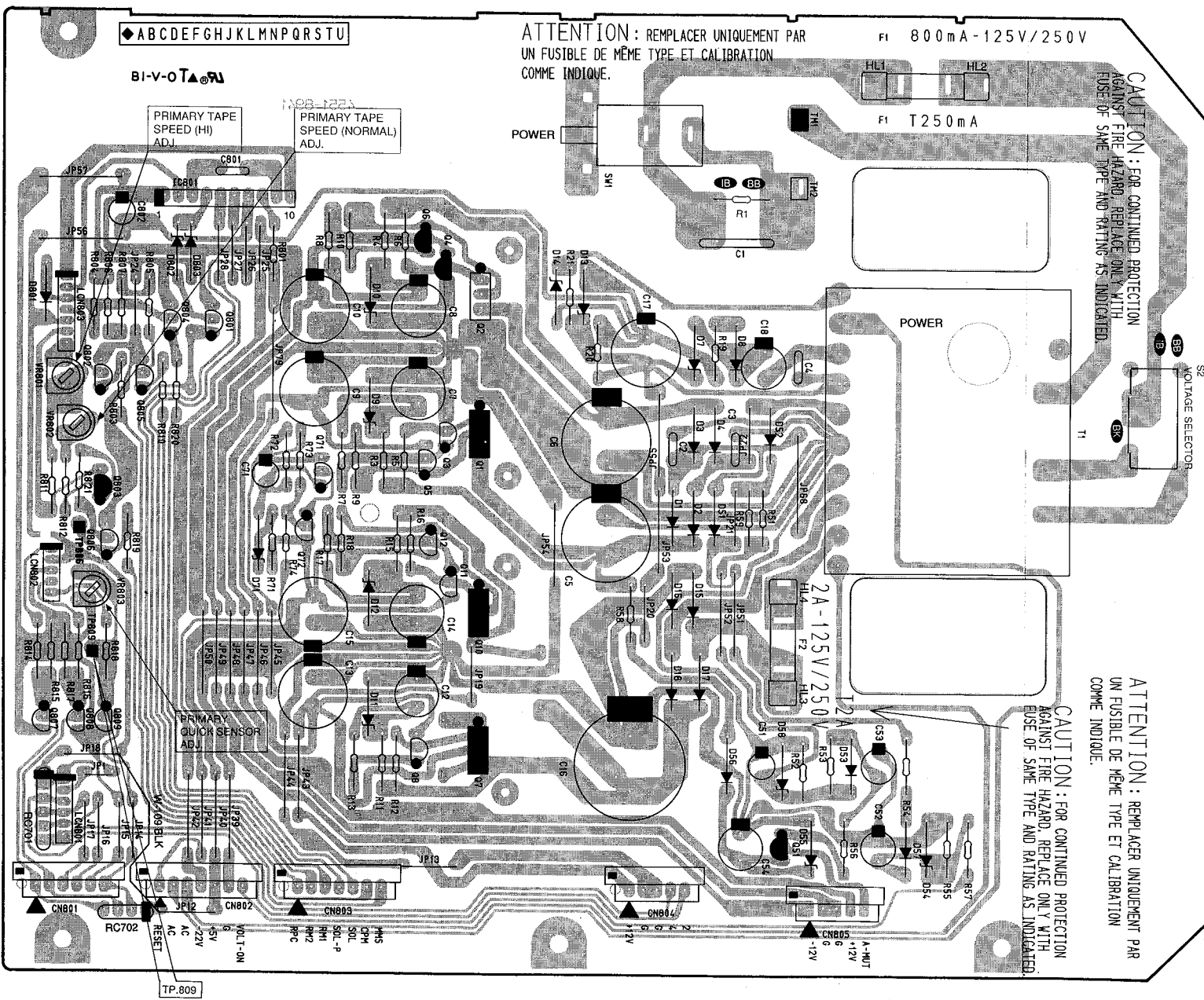
PCB-7 Cont SW-L P. C. Board



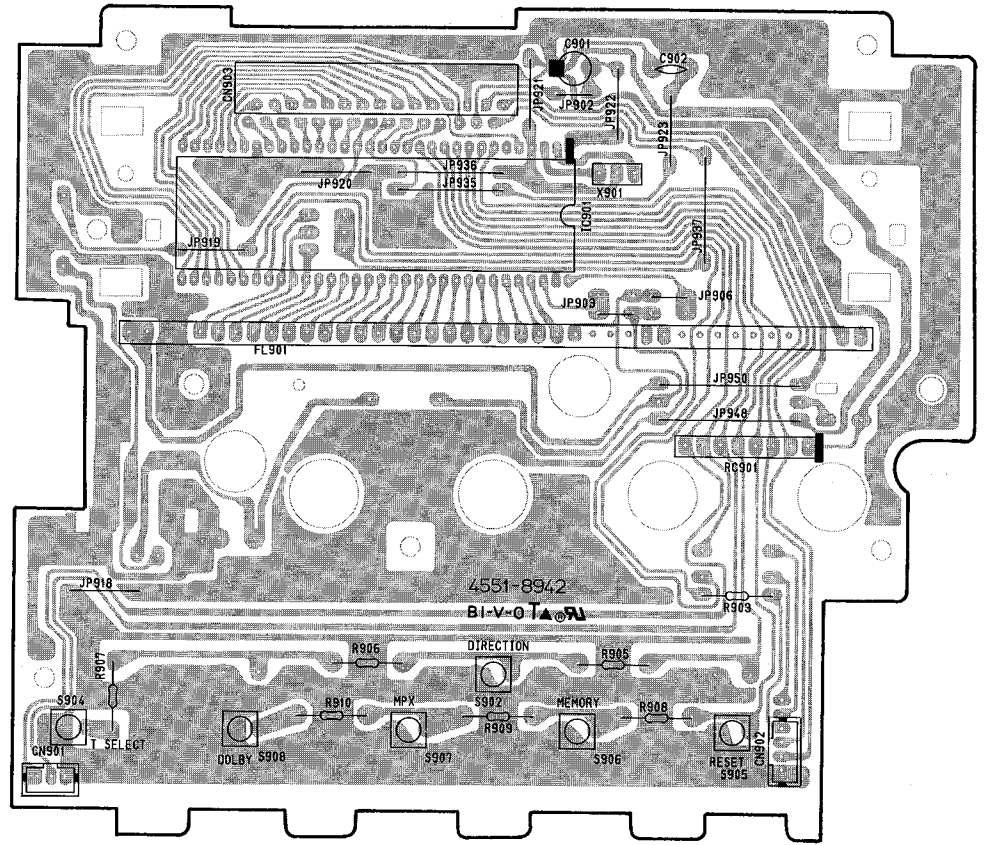
PCB-6 Cont SW-R P. C. Board



PCB-4 Power P. C. Board

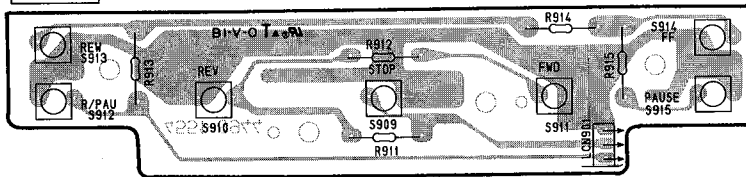


PCB-5 Front P. C. Board

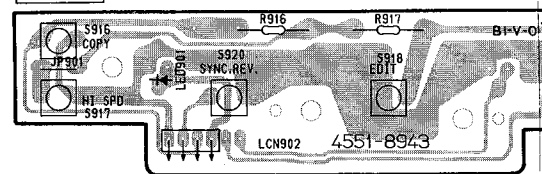


P. C. BOARD (2)

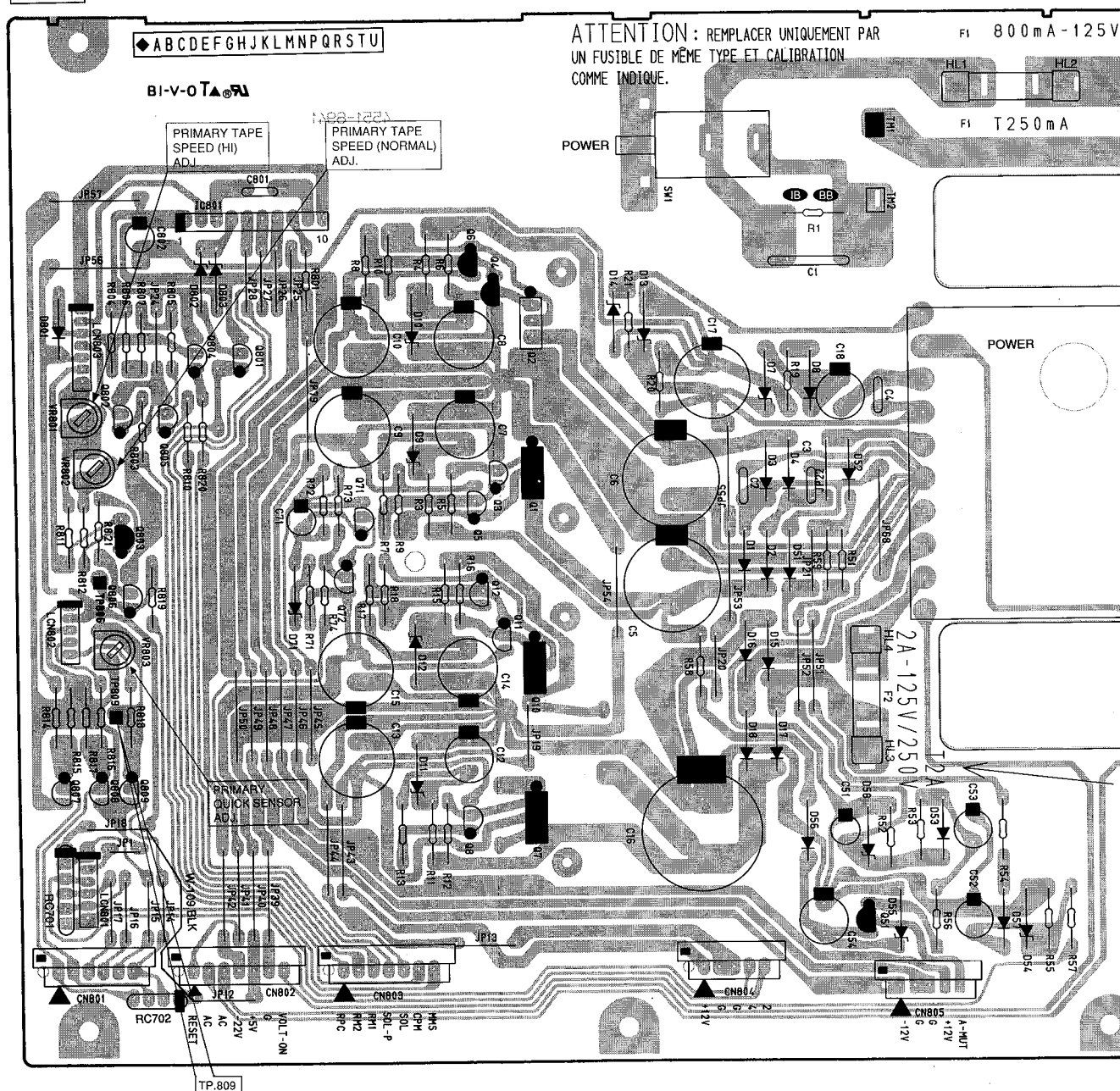
PCB-7 Cont SW-L P. C. Board



PCB-6 Cont SW-R P. C. Board



PCB-4 Power P. C. Board



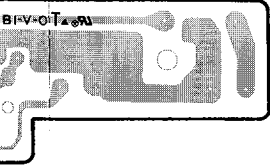
F

G

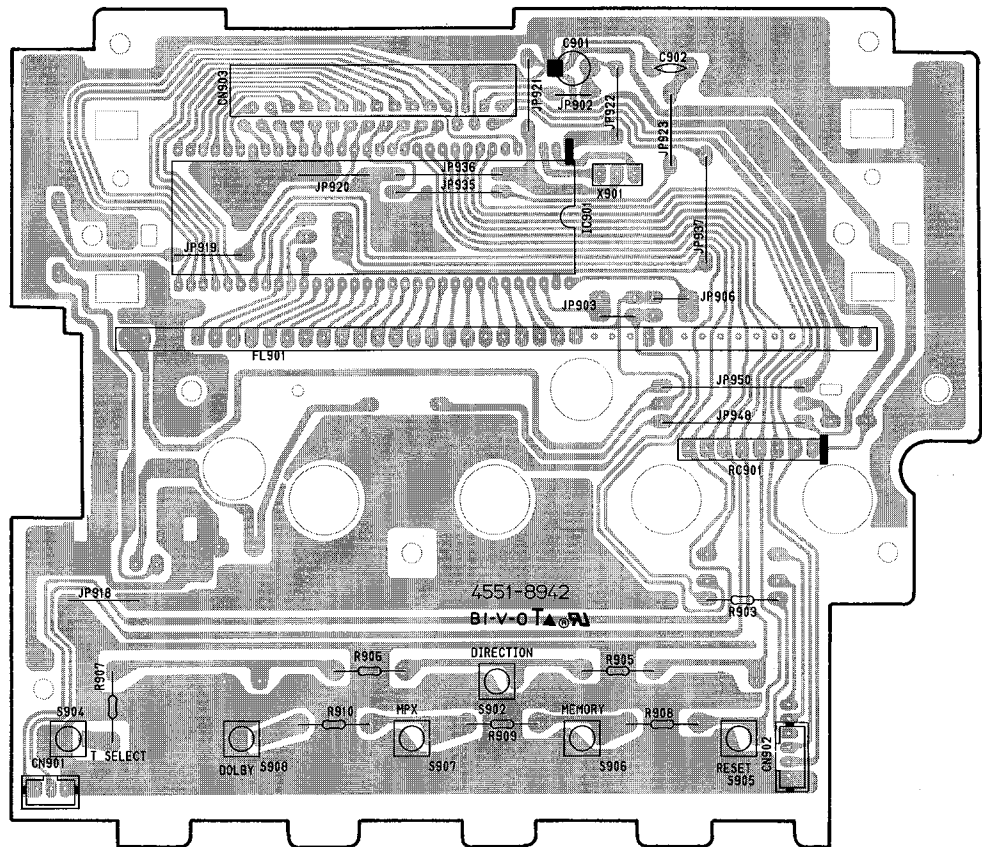
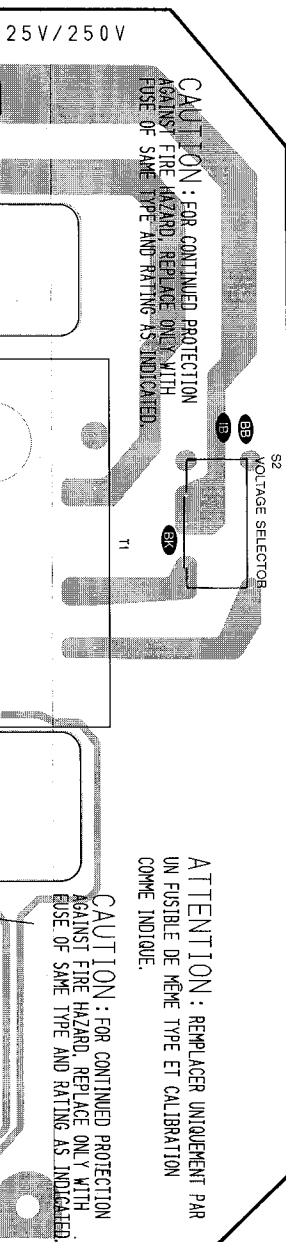
H

I

J



PCB-5 Front P. C. Board



ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
PCB-1 MAIN P. C. BOARD							
CAPACITORS							
323	C101	5353-101534	CAP, MCA 100P	724	C407	5345-475F041	CAP, MINI ELE 4.7μ/50V
323	C102	5353-101534	CAP, MCA 100P	724	C408	5345-475F041	CAP, MINI ELE 4.7μ/50V
315	C103	5345-106C0951	CAP, MINI ELE 10μ/16V	725	C409	5345-476D041	CAP, MINI ELE 47μ/25V
315	C104	5345-106C0951	CAP, MINI ELE 10μ/16V	680	C701	5345-106E041	CAP, MINI ELE 10μ/35V
316	C105	5345-227B0952	CAP, MINI ELE 220μ/10V	685	C747	5345-107C041	CAP, MINI ELE 100μ/16V
316	C106	5345-227B0952	CAP, MINI ELE 220μ/10V	683	C748	5345-226D041	CAP, MINI ELE 22μ/25V
324	C107	5359-6825851	CAP, PPP 6800P	680	C749	5345-106E041	CAP, MINI ELE 10μ/35V
324	C108	5359-6825851	CAP, PPP 6800P	680	C750	5345-106E041	CAP, MINI ELE 10μ/35V
324	C109	5359-6825851	CAP, PPP 6800P	689	C751	5359-S010J103	CAP, PPP .01μ
324	C110	5359-6825851	CAP, PPP 6800P	680	C753	5345-106E041	CAP, MINI ELE 10μ/35V
315	C111	5345-106C0951	CAP, MINI ELE 10μ/16V	686	C754	5345-106F0951	CAP, MINI ELE 10μ/50V
315	C112	5345-106C0951	CAP, MINI ELE 10μ/16V	680	C755	5345-106E041	CAP, MINI ELE 10μ/35V
325	C113	5359-S010J682	CAP, PPP 6800P	687	C761	5345-476D041	CAP, MINI ELE 47μ/25V
325	C114	5359-S010J682	CAP, PPP 6800P	684	C762	5345-107C041	CAP, MINI ELE 100μ/16V
326	C115	5359-S010J102	CAP, PPP 1000P	684	C763	5345-107C041	CAP, MINI ELE 100μ/16V
326	C116	5359-S010J102	CAP, PPP 1000P	685	C764	5345-107C041	CAP, MINI ELE 100μ/16V
318	C117	5345-477C041	CAP, MINI ELE 470μ/16V	680	C771	5345-106E041	CAP, MINI ELE 10μ/35V
317	C118	5345-336C041	CAP, MINI ELE 33μ/16V	682	C772	5342-476C041	CAP, ELE BP 47μ/16V
445	C201	5359-S010J152	CAP, PPP 1500P	681	C773	5342-106D041	CAP, ELE BP 10μ/25V
445	C202	5359-S010J152	CAP, PPP 1500P	681	C775	5342-106D041	CAP, ELE BP 10μ/25V
446	C203	5359-S010J821	CAP, PPP 820P	914	C851	5359-S010J103	CAP, PPP .01μ
446	C204	5359-S010J821	CAP, PPP 820P	RESISTORS			
447	C205	5359-S010J103	CAP, PPP .01μ	331	R101	5135-470522	RES, CBN 1/2P 47
447	C206	5359-S010J103	CAP, PPP .01μ	331	R102	5135-470522	RES, CBN 1/2P 47
444	C207	5359-S010J562	CAP, PPP 5600P	333	R105	5174-S010F223	RES, MTL 1/4P 22K
444	C208	5359-S010J562	CAP, PPP 5600P	333	R106	5174-S010F223	RES, MTL 1/4P 22K
448	C209	5359-S010J822	CAP, PPP 8200P	334	R107	5174-S010F331	RES, MTL 1/4P 330
448	C210	5359-S010J822	CAP, PPP 8200P	334	R108	5174-S010F331	RES, MTL 1/4P 330
457	C211	5359-S010J122	CAP, PPP 1200P	335	R109	5135-224522	RES, CBN 1/2P 220K
457	C212	5359-S010J122	CAP, PPP 1200P	335	R110	5135-224522	RES, CBN 1/2P 220K
456	C213	5359-S010J682	CAP, PPP 6800P	336	R111	5135-332522	RES, CBN 1/2P 3.3K
456	C214	5359-S010J682	CAP, PPP 6800P	336	R112	5135-332522	RES, CBN 1/2P 3.3K
451	C215	5359-S010J152	CAP, PPP 1500P	337	R113	5135-562522	RES, CBN 1/2P 5.6K
451	C216	5359-S010J152	CAP, PPP 1500P	337	R114	5135-562522	RES, CBN 1/2P 5.6K
452	C217	5359-S010J561	CAP, PPP 560P	331	R115	5135-470522	RES, CBN 1/2P 47
452	C218	5359-S010J561	CAP, PPP 560P	331	R116	5135-470522	RES, CBN 1/2P 47
439	C219	5345-105F0951	CAP, MINI ELE 1μ/50V	340	R117	5135-681522	RES, CBN 1/2P 680
439	C220	5345-105F0951	CAP, MINI ELE 1μ/50V	340	R118	5135-681522	RES, CBN 1/2P 680
458	C223	5354-124593	CAP, MYL .12μ	341	R119	5135-684522	RES, CBN 1/2P 680K
458	C224	5354-124593	CAP, MYL .12μ	341	R120	5135-684522	RES, CBN 1/2P 680K
453	C225	5359-S010J103	CAP, PPP .01μ	342	R121	5135-101522	RES, CBN 1/2P 100
453	C226	5359-S010J103	CAP, PPP .01μ	342	R122	5135-101522	RES, CBN 1/2P 100
454	C227	5359-S010J472	CAP, PPP 4700P	343	R123	5135-102522	RES, CBN 1/2P 1K
454	C228	5359-S010J472	CAP, PPP 4700P	343	R124	5135-102522	RES, CBN 1/2P 1K
440	C229	5345-225F0951	CAP, MINI ELE 2.2μ/50V	344	R125	5135-822522	RES, CBN 1/2P 8.2K
440	C230	5345-225F0951	CAP, MINI ELE 2.2μ/50V	344	R126	5135-822522	RES, CBN 1/2P 8.2K
443	C231	5361-4710423	CAP, CER 470P	346	R129	5135-151522	RES, CBN 1/2P 150
443	C232	5361-4710423	CAP, CER 470P	346	R130	5135-151522	RES, CBN 1/2P 150
442	C237	5345-227C041	CAP, MINI ELE 220μ/16V	348	R133	5135-103522	RES, CBN 1/2P 10K
442	C238	5345-227C041	CAP, MINI ELE 220μ/16V	348	R134	5135-103522	RES, CBN 1/2P 10K
455	C241	5359-S010J391	CAP, PPP 390P	349	R135	5135-392522	RES, CBN 1/2P 3.9K
455	C242	5359-S010J391	CAP, PPP 390P	349	R136	5135-392522	RES, CBN 1/2P 3.9K
449	C245	5359-S010J182	CAP, PPP 1800P	351	R139	5135-183522	RES, CBN 1/2P 18K
449	C246	5359-S010J182	CAP, PPP 1800P	351	R140	5135-183522	RES, CBN 1/2P 18K
450	C247	5359-S010J332	CAP, PPP 3300P	352	R141	5135-104522	RES, CBN 1/2P 100K
450	C248	5359-S010J332	CAP, PPP 3300P	352	R142	5135-104522	RES, CBN 1/2P 100K
520	C301	5354-S070K153	CAP MYL .015μ	345	R148	5135-101522	RES, CBN 1/2P 100
511	C304	5345-106E041	CAP, MINI ELE 10μ/35V	343	R149	5135-102522	RES, CBN 1/2P 1K
522	C305	5359-S010J682	CAP, PPP 6800P	459	R201	5135-152522	RES, CBN 1/2P 1.5K
522	C306	5359-S010J682	CAP, PPP 6800P	459	R202	5135-152522	RES, CBN 1/2P 1.5K
523	C307	5359-S010J223	CAP, PPP .022μ	460	R203	5135-222522	RES, CBN 1/2P 2.2K
511	C308	5345-106E041	CAP, MINI ELE 10μ/35V	460	R204	5135-222522	RES, CBN 1/2P 2.2K
521	C351	5361-1010423	CAP, CER 100P	471	R205	5135-154522	RES, CBN 1/2P 150K
521	C352	5361-1010423	CAP, CER 100P	471	R206	5135-154522	RES, CBN 1/2P 150K
512	C354	5345-105F041	CAP, MINI ELE 1μ/50V	462	R207	5135-223522	RES, CBN 1/2P 22K
511	C360	5345-227B041	CAP, MINI ELE 220μ/10V	462	R208	5135-223522	RES, CBN 1/2P 22K
513	C361	5345-226D041	CAP, MINI ELE 22μ/25V	464	R209	5135-822522	RES, CBN 1/2P 8.2K
515	C362	5345-476D041	CAP, MINI ELE 47μ/25V	464	R210	5135-822522	RES, CBN 1/2P 8.2K
725	C403	5345-476D041	CAP, MINI ELE 47μ/25V	464	R211	5135-912522	RES, CBN 1/2P 9.1K
725	C404	5345-476D041	CAP, MINI ELE 47μ/25V	494	R212	5135-912522	RES, CBN 1/2P 9.1K
724	C405	5345-475F041	CAP, MINI ELE 4.7μ/50V	464	R213	5135-822522	RES, CBN 1/2P 8.2K
724	C406	5345-475F041	CAP, MINI ELE 4.7μ/50V	494	R214	5135-822522	RES, CBN 1/2P 8.2K
				470	R215	5135-332522	RES, CBN 1/2P 3.3K
				470	R216	5135-332522	RES, CBN 1/2P 3.3K

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
466	R217	5135-272522	RES, CBN 1/2P 2.7K	736	R417	5135-104522	RES CBN 1/2P 100K
466	R218	5135-272522	RES, CBN 1/2P 2.7K	736	R418	5135-104522	RES, CBN 1/2P 100K
467	R219	5135-183522	RES, CBN 1/2P 18K	693	R523	5135-222522	RES, CBN 1/2P 2.2K
467	R220	5135-183522	RES, CBN 1/2P 18K	693	R524	5135-222522	RES, CBN 1/2P 2.2K
468	R221	5135-333522	RES, CBN 1/2P 33K	691	R701	5135-103522	RES, CBN 1/2P 10K
468	R222	5135-333522	RES, CBN 1/2P 33K	691	R702	5135-103522	RES, CBN 1/2P 10K
469	R223	5135-333522	RES, CBN 1/2P 33K	692	R703	5135-392522	RES, CBN 1/2P 3.9K
469	R224	5135-333522	RES, CBN 1/2P 33K	692	R704	5135-392522	RES, CBN 1/2P 3.9K
463	R225	5135-272522	RES, CBN 1/2P 2.7K	691	R705	5135-103522	RES, CBN 1/2P 10K
463	R226	5135-272522	RES, CBN 1/2P 2.7K	691	R706	5135-103522	RES, CBN 1/2P 10K
465	R227	5135-563522	RES, CBN 1/2P 56K	694	R711	5135-222522	RES, CBN 1/2P 2.2K
465	R228	5135-563522	RES, CBN 1/2P 56K	694	R712	5135-222522	RES, CBN 1/2P 2.2K
472	R229	5135-472522	RES, CBN 1/2P 4.7K	694	R713	5135-222522	RES, CBN 1/2P 2.2K
472	R230	5135-472522	RES, CBN 1/2P 4.7K	695	R714	5135-103522	RES, CBN 1/2P 10K
461	R231	5135-104522	RES, CBN 1/2P 100K	695	R715	5135-103522	RES, CBN 1/2P 10K
461	R232	5135-104522	RES, CBN 1/2P 100K	694	R727	5135-222522	RES, CBN 1/2P 2.2K
473	R233	5135-273522	RES, CBN 1/2P 27K	694	R728	5135-222522	RES, CBN 1/2P 2.2K
473	R234	5135-273522	RES, CBN 1/2P 27K	715	R740	5135-473522	RES, CBN 1/2P 47K
461	R235	5135-563522	RES, CBN 1/2P 56K	697	R747	5135-102522	RES, CBN 1/2P 1K
461	R236	5135-563522	RES, CBN 1/2P 56K	698	R751	5135-223522	RES, CBN 1/2P 22K
460	R237	5135-222522	RES, CBN 1/2P 2.2K	699	R755	5135-472522	RES, CBN 1/2P 4.7K
460	R238	5135-222522	RES, CBN 1/2P 2.2K	698	R757	5135-223522	RES, CBN 1/2P 22K
474	R239	5135-151522	RES, CBN 1/2P 150	715	R761	5135-473522	RES, CBN 1/2P 47K
474	R240	5135-151522	RES, CBN 1/2P 150	715	R762	5135-473522	RES, CBN 1/2P 47K
479	R241	5135-561522	RES, CBN 1/2P 560	697	R763	5135-102522	RES, CBN 1/2P 1K
479	R242	5135-561522	RES, CBN 1/2P 560	697	R764	5135-102522	RES, CBN 1/2P 1K
463	R243	5135-103522	RES, CBN 1/2P 10K	697	R765	5135-102522	RES, CBN 1/2P 1K
463	R244	5135-103522	RES, CBN 1/2P 10K	700	R766	5135-331522	RES, CBN 1/2P 330
463	R245	5135-103522	RES, CBN 1/2P 10K	697	R771	5135-102522	RES, CBN 1/2P 1K
463	R246	5135-103522	RES, CBN 1/2P 10K	697	R772	5135-102522	RES, CBN 1/2P 1K
463	R247	5135-103522	RES, CBN 1/2P 10K	697	R773	5135-102522	RES, CBN 1/2P 1K
463	R248	5135-103522	RES, CBN 1/2P 10K	697	R774	5135-102522	RES, CBN 1/2P 1K
460	R249	5135-222522	RES, CBN 1/2P 2.2K	697	R775	5135-102522	RES, CBN 1/2P 1K
460	R250	5135-222522	RES, CBN 1/2P 2.2K	697	R776	5135-102522	RES, CBN 1/2P 1K
475	R251	5135-331522	RES, CBN 1/2P 330	696	R777	5135-562522	RES, CBN 1/2P 5.6K
475	R252	5135-331522	RES, CBN 1/2P 330	697	R778	5135-102522	RES, CBN 1/2P 1K
476	R253	5135-472522	RES, CBN 1/2P 4.7K	697	R779	5135-102522	RES, CBN 1/2P 1K
476	R254	5135-472522	RES, CBN 1/2P 4.7K	696	R780	5135-562522	RES, CBN 1/2P 5.6K
463	R255	5135-103522	RES, CBN 1/2P 10K	918	△ R851	5102-1005116	RES, FUSE 10
463	R256	5135-103522	RES, CBN 1/2P 10K	920	R853	5135-103522	RES, CBN 1/2P 10K
477	R259	5135-823522	RES, CBN 1/2P 82K	921	R854	5135-150522	RES, CBN 1/2P 15
477	R260	5135-823522	RES, CBN 1/2P 82K	921	R855	5135-150522	RES, CBN 1/2P 15
478	R263	5135-680522	RES, CBN 1/2P 68	921	R856	5135-150522	RES, CBN 1/2P 15
478	R264	5135-680522	RES, CBN 1/2P 68	921	R857	5135-150522	RES, CBN 1/2P 15
526	R301	5135-6R8522	RES, CBN 1/2P 6.8	920	R860	5135-103522	RES, CBN 1/2P 10K
526	R302	5135-6R8522	RES, CBN 1/2P 6.8	923	R861	5174-S010F243	RES, MTL 1/4P 24K
527	R303	5135-393522	RES, CBN 1/2P 39K	919	R862	5174-S010F113	RES, MTL 1/4P 11K
527	R304	5135-393522	RES, CBN 1/2P 39K	922	R864	5135-222522	RES, CBN 1/2P 2.2K
528	R308	5135-820522	RES, CBN 1/2P 82	924	R865	5135-223522	RES, CBN 1/2P 22K
528	R315	5135-820522	RES, CBN 1/2P 82	922	R866	5135-222522	RES, CBN 1/2P 2.2K
529	△ R355	5102-1005116	RES, FUSE 10	924	R867	5135-223522	RES, CBN 1/2P 22K
530	R356	5135-184522	RES, CBN 1/2P 180K	925	R868	5135-471522	RES, CBN 1/2P 470
532	R357	5135-271522	RES, CBN 1/2P 270	920	R869	5135-103522	RES, CBN 1/2P 10K
531	R358	5135-102522	RES, CBN 1/2P 1K	920	R870	5135-103522	RES, CBN 1/2P 10K
531	R359	5135-102522	RES, CBN 1/2P 1K	927	R871	5135-224522	RES, CBN 1/2P 220K
533	R360	5135-153522	RES, CBN 1/2P 15K	890	R881	5135-392522	RES, CBN 1/2P 3.9K
534	R361	5135-564522	RES, CBN 1/2P 560K	889	R882	5135-470522	RES, CBN 1/2P 47
536	R362	5135-221522	RES, CBN 1/2P 220	892	R883	5135-271522	RES, CBN 1/2P 270
533	R363	5135-153522	RES, CBN 1/2P 15K	891	R884	5135-473522	RES, CBN 1/2P 47K
535	R367	5135-101522	RES, CBN 1/2P 100	926	R891	5135-473522	RES, CBN 1/2P 47K
538	R369	5135-222522	RES, CBN 1/2P 2.2K	926	R892	5135-473522	RES, CBN 1/2P 47K
537	R371	5135-103522	RES, CBN 1/2P 10K	926	R893	5135-473522	RES, CBN 1/2P 47K
730	R401	5135-102522	RES, CBN 1/2P 1K				
730	R402	5135-102522	RES, CBN 1/2P 1K				
731	R403	5135-222522	RES, CBN 1/2P 2.2K	421	IC201	5653-UPC4570C	IC, LINEAR
731	R404	5135-222522	RES, CBN 1/2P 2.2K	721	IC401	5652-NJM4558D	IC, MONO
732	R405	5135-102522	RES, CBN 1/2P 1K	722	IC402	5653-BA6138	IC, LINEAR
732	R406	5135-102522	RES, CBN 1/2P 1K	851	IC751	5654-MN15542	IC, DIGITAL
733	R407	5135-331522	RES, CBN 1/2P 330	663	IC752	5654-TC4011BP	IC, DIGITAL
733	R408	5135-331522	RES, CBN 1/2P 330	662	IC753	5654-TC4051BP	IC, DIGITAL
734	R409	5135-334522	RES, CBN 1/2P 330K	901	IC802	5653-BA6229	IC, LINEAR
734	R410	5135-334522	RES, CBN 1/2P 330K				
733	R411	5135-331522	RES, CBN 1/2P 330				
735	R415	5135-103522	RES, CBN 1/2P 10K	301	Q101	5613-1775(F)	XISTOR, NPN R
735	R416	5135-103522	RES, CBN 1/2P 10K	301	Q102	5613-1775(F)	XISTOR, NPN R

INTEGRATED CIRCUITS

5653-UPC4570C	IC, LINEAR
5652-NJM4558D	IC, MONO
5653-BA6138	IC, LINEAR
5654-MN15542	IC, DIGITAL
5654-TC4011BP	IC, DIGITAL
5654-TC4051BP	IC, DIGITAL
5653-BA6229	IC, LINEAR

TRANSISTORS

5613-1775(F)	XISTOR, NPN R
5613-1775(F)	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
784	TP501	4214-132	TERMINAL	393	R156	5174-S010F223	RES, MTL 1/4P 22K
784	TP502	4214-132	TERMINAL	394	R157	5174-S010F331	RES, MTL 1/4P 330
784	TP856	4214-132	TERMINAL	394	R158	5174-S010F331	RES, MTL 1/4P 330
784	TP859	4214-132	TERMINAL	395	R159	5135-224522	RES, CBN 1/2P 220K
929	X751	5693-CST4MGW	OSC, CER	395	R160	5135-224522	RES, CBN 1/2P 220K
PCB-2 VR P. C. BOARD				396	R161	5135-332522	RES, CBN 1/2P 3.3K
CONTROLS				396	R162	5135-332522	RES, CBN 1/2P 3.3K
763	VR203/	5113-S1102503	RES, V CBN 16 50K	397	R163	5135-562522	RES, CBN 1/2P 5.6K
	204			397	R164	5135-562522	RES, CBN 1/2P 5.6K
766	VR205/	5113-S1103104	RES, V CBN 16 100K	391	R165	5135-470522	RES, CBN 1/2P 47
	206			391	R166	5135-470522	RES, CBN 1/2P 47
768	VR307	5113-S1104502	RES, V CBN 16 5K	399	R167	5135-681522	RES, CBN 1/2P 680
MISCELLANEOUS				399	R168	5135-681522	RES, CBN 1/2P 680
799	CN302	4443-030185	CONNECTOR	400	R169	5135-684522	RES, CBN 1/2P 680K
799	CN503	4443-030185	CONNECTOR	400	R170	5135-684522	RES, CBN 1/2P 680K
799	CN504	4443-030185	CONNECTOR	401	R171	5135-101522	RES, CBN 1/2P 100
815	JL103	4242-R0503141	JUMPER LEAD	401	R172	5135-101522	RES, CBN 1/2P 100
PCB-3 DOLBY P. C. BOARD				402	R173	5135-102522	RES, CBN 1/2P 1K
CAPACITORS				402	R174	5135-102522	RES, CBN 1/2P 1K
383	C147	5353-101534	CAP, MCA 100P	403	R175	5135-682522	RES, CBN 1/2P 6.8K
383	C148	5353-101534	CAP, MCA 100P	403	R176	5135-682522	RES, CBN 1/2P 6.8K
375	C153	5345-106C0951	CAP, MINI ELE 10μ/16V	405	R179	5135-151522	RES, CBN 1/2P 150
375	C154	5345-106C0951	CAP, MINI ELE 10μ/16V	405	R180	5135-151522	RES, CBN 1/2P 150
376	C155	5345-227B0952	CAP, MINI ELE 220μ/10V	407	R183	5135-103522	RES, CBN 1/2P 10K
376	C156	5345-227B0952	CAP, MINI ELE 220μ/10V	407	R184	5135-103522	RES, CBN 1/2P 10K
384	C157	5359-8225851	CAP, PPP 8200P	408	R185	5135-332522	RES, CBN 1/2P 3.3K
384	C158	5359-8225851	CAP, PPP 8200P	408	R186	5135-332522	RES, CBN 1/2P 3.3K
386	C159	5359-8225851	CAP, PPP 8200P	410	R189	5135-183522	RES, CBN 1/2P 18K
386	C160	5359-8225851	CAP, PPP 8200P	410	R190	5135-183522	RES, CBN 1/2P 18K
375	C161	5345-106C0951	CAP, MINI ELE 10μ/16V	411	R191	5135-104522	RES, CBN 1/2P 100K
375	C162	5345-106C0951	CAP, MINI ELE 10μ/16V	411	R192	5135-104522	RES, CBN 1/2P 100K
387	C163	5359-S010J392	CAP, PPP 3900P	409	R193	5135-102522	RES, CBN 1/2P 1K
387	C164	5359-S010J392	CAP, PPP 3900P	409	R194	5135-102522	RES, CBN 1/2P 1K
385	C165	5359-S010J332	CAP, PPP 3300P	404	R198	5135-4R7522	RES, CBN 1/2P 4.7
385	C166	5359-S010J332	CAP, PPP 3300P	402	R199	5135-102522	RES, CBN 1/2P 1K
388	C167	5359-S010J682	CAP, PPP 6800P	654	R503	5135-332522	RES, CBN 1/2P 3.3K
388	C168	5359-S010J682	CAP, PPP 6800P	654	R504	5135-332522	RES, CBN 1/2P 3.3K
389	C169	5359-S010J821	CAP, PPP 820P	647	R505	5135-822522	RES, CBN 1/2P 8.2K
389	C170	5359-S010J821	CAP, PPP 820P	647	R506	5135-822522	RES, CBN 1/2P 8.2K
378	C173	5345-477C041	CAP, MINI ELE 470μ/16V	650	R507	5135-243522	RES, CBN 1/2P 24K
377	C174	5345-336C041	CAP, MINI ELE 33μ/16V	650	R508	5135-243522	RES, CBN 1/2P 24K
640	C501	5345-106C0951	CAP, MINI ELE 10μ/16V	651	R509	5135-561522	RES, CBN 1/2P 560
640	C502	5345-106C0951	CAP, MINI ELE 10μ/16V	651	R510	5135-561522	RES, CBN 1/2P 560
640	C503	5345-106C0951	CAP, MINI ELE 10μ/16V	652	R511	5135-102522	RES, CBN 1/2P 1K
640	C504	5345-106C0951	CAP, MINI ELE 10μ/16V	653	R512	5135-273522	RES, CBN 1/2P 27K
641	C505	5345-106C0951	CAP, MINI ELE 10μ/16V	658	R513	5135-105522	RES, CBN 1/2P 1M
641	C506	5345-106C0951	CAP, MINI ELE 10μ/16V	658	R514	5135-105522	RES, CBN 1/2P 1M
645	C507	5359-S010J222	CAP, PPP 2200P	658	R515	5135-105522	RES, CBN 1/2P 1M
645	C508	5359-S010J222	CAP, PPP 2200P	657	R516	5135-105522	RES, CBN 1/2P 1M
645	C509	5359-S010J222	CAP, PPP 2200P	657	R517	5135-223522	RES, CBN 1/2P 22K
645	C510	5359-S010J222	CAP, PPP 2200P	649	R519	5135-392522	RES, CBN 1/2P 3.9K
643	C511	5354-564593	CAP, MYL .56μ	649	R520	5135-392522	RES, CBN 1/2P 3.9K
643	C512	5354-564593	CAP, MYL .56μ	648	R521	5135-682522	RES, CBN 1/2P 6.8K
644	C513	5354-334593	CAP, MYL .33μ	648	R522	5135-682522	RES, CBN 1/2P 6.8K
644	C514	5354-334593	CAP, MYL .33μ	656	R525	5135-101522	RES, CBN 1/2P 100
641	C515	5345-106C0951	CAP, MINI ELE 10μ/16V	656	R526	5135-101522	RES, CBN 1/2P 100
641	C516	5345-106C0951	CAP, MINI ELE 10μ/16V	657	R529	5135-223522	RES, CBN 1/2P 22K
646	C519	5359-S010J182	CAP, PPP 1800P	652	R531	5135-102522	RES, CBN 1/2P 1K
646	C520	5359-S010J182	CAP, PPP 1800P	652	R532	5135-102522	RES, CBN 1/2P 1K
645	C521	5359-S010J222	CAP, PPP 2200P	659	R533	5135-104522	RES, CBN 1/2P 100K
645	C522	5359-S010J222	CAP, PPP 2200P	659	R534	5135-104522	RES, CBN 1/2P 100K
642	C531	5345-227B041	CAP, MINI ELE 220μ/10	652	R535	5135-102522	RES, CBN 1/2P 1K
642	C532	5345-227B041	CAP, MINI ELE 220μ/10	652	R536	5135-102522	RES, CBN 1/2P 1K
641	C533	5345-106C0951	CAP, MINI ELE 10μ/16V	652	R537	5135-102522	RES, CBN 1/2P 1K
641	C534	5345-106C0951	CAP, MINI ELE 10μ/16V	655	R538	5135-102522	RES, CBN 1/2P 1K
RESISTORS				660	R541	5135-221522	RES, CBN 1/2P 220
391	R151	5135-470522	RES, CBN 1/2P 47	660	R542	5135-221522	RES, CBN 1/2P 220
391	R152	5135-470522	RES, CBN 1/2P 47	714	R723	5135-473522	RES, CBN 1/2P 47K
393	R155	5174-S010F223	RES, MTL 1/4P 22K	INTEGRATED CIRCUITS			
				631	IC501	5653-CXA1330S	IC, LINEAR
				661	IC701	5654-TC4066BP	IC, DIGITAL

Ser. No.	Ref. No.	Part No.	Description
TRANSISTORS			
361	Q151	5613-1775(F)	XISTOR, NPN R
361	Q152	5613-1775(F)	XISTOR, NPN R
361	Q153	5613-1775(F)	XISTOR, NPN R
361	Q154	5613-1775(F)	XISTOR, NPN R
362	Q155	5613-2320L(F)	XISTOR, NPN R
362	Q156	5613-2320L(F)	XISTOR, NPN R
363	Q157	5613-C114TS	XISTOR, NPN R
363	Q158	5613-C114TS	XISTOR, NPN R
367	Q159	5613-2878(B)	XISTOR, NPN R
367	Q160	5613-2878(B)	XISTOR, NPN R
363	Q161	5613-C114TS	XISTOR, NPN R
363	Q162	5613-C114TS	XISTOR, NPN R
368	Q163	5613-C114YS	XISTOR, NPN R
368	Q164	5613-C114YS	XISTOR, NPN R
362	Q165	5613-2320L(F)	XISTOR, NPN R
634	Q501	5613-C114YS	XISTOR, NPN R
634	Q502	5613-C114YS	XISTOR, NPN R
634	Q503	5613-C114YS	XISTOR, NPN R
634	Q504	5613-C114YS	XISTOR, NPN R
634	Q505	5613-C114YS	XISTOR, NPN R
633	Q506	5611-A114YS	XISTOR, PNP R
634	Q507	5613-C114YS	XISTOR, NPN R
635	Q509	5613-2120(Y)	XISTOR, NPN R
632	Q510	5611-950(Y)	XISTOR, PNP R
636	Q531	5613-2320L(F)	XISTOR, NPN R
636	Q532	5613-2320L(F)	XISTOR, NPN R
671	Q722	5611-A114YS	XISTOR, PNP R
667	Q724	5613-C114YS	XISTOR, NPN R

DIODES			
370	D151	5635-HZ11B2L	DIODE, ZENER
637	D501	5631-1S2473	DIODE, DET

COILS			
371	L151	5995-S160J472	COIL W/CORE
371	L152	5995-S160J472	COIL W/CORE

CONTROLS			
372	VR151	5101-S0801203	RES, SEMI FIX 20K
372	VR152	5101-S0801203	RES, SEMI FIX 20K
373	VR153	5101-S0801501	RES, SEMI FIX 500
373	VR154	5101-S0801501	RES, SEMI FIX 500

MISCELLANEOUS			
793	CN151	4443-03201003	CONNECTOR
826	CN501	4443-01701012	CONNECTOR
827	CN502	4443-01701012	CONNECTOR
638	LC501	5214-13701	LC COMPOSITE
638	LC502	5214-13701	LC COMPOSITE

PCB-4 POWER P. C. BOARD

CAPACITORS			
593	△ C1	5352-S010M103	CAP, MTL .01μ
594	C2	5352-S060K104	CAP, MTL .1μ
594	C3	5352-S060K104	CAP, MTL .1μ
594	C4	5352-S060K104	CAP, MTL .1μ
571	C5	5345-228D041	CAP, MINI ELE 2200μ/25V
571	C6	5345-228D041	CAP, MINI ELE 2200μ/25V
572	C7	5345-227C041	CAP, MINI ELE 220μ/16V
572	C8	5345-227C041	CAP, MINI ELE 220μ/16V
573	C9	5345-108C041	CAP, MINI ELE 1000μ/16V
573	C10	5345-108C041	CAP, MINI ELE 1000μ/16V
575	C12	5345-477C041	CAP, MINI ELE 470μ/16V
573	C13	5345-108C041	CAP, MINI ELE 1000μ/16V
572	C14	5345-227C041	CAP, MINI ELE 220μ/16V
576	C15	5345-108B041	CAP, MINI ELE 1000μ/10V
574	C16	5341-109D0958	CAP, ELE 10000μ/25V
577	C17	5345-477E041	CAP, MINI ELE 470μ/35V
578	C18	5345-226F041	CAP, MINI ELE 22μ/50V
578	C51	5345-226F041	CAP, MINI ELE 22μ/50V
579	C52	5345-106F041	CAP, MINI ELE 10μ/50V
579	C53	5345-106F041	CAP, MINI ELE 10μ/50V
580	C54	5345-107D041	CAP, MINI ELE 100μ/25V
581	C71	5345-107B041	CAP, MINI ELE 100μ/10V

Ser. No.	Ref. No.	Part No.	Description
866	C801	5359-S010J103	CAP, PPP .01μ
865	C802	5345-106E041	CAP, MINI ELE 10μ/35V

RESISTORS			
042B	△ R1	5135-335522	RES, CBN 1/2P 3.3M IB BB
595	R3	5135-152522	RES, CBN 1/2P 1.5K
595	R4	5135-152522	RES, CBN 1/2P 1.5K
596	R5	5135-471522	RES, CBN 1/2P 470
596	R6	5135-471522	RES, CBN 1/2P 470
597	R7	5135-101522	RES, CBN 1/2P 100
597	R8	5135-101522	RES, CBN 1/2P 100
598	R9	5135-2R7522	RES, CBN 1/2P 2.7
598	R10	5135-2R7522	RES, CBN 1/2P 2.7
595	R11	5135-152522	RES, CBN 1/2P 1.5K
596	R12	5135-471522	RES, CBN 1/2P 470
597	R13	5135-101522	RES, CBN 1/2P 100
595	R15	5135-152522	RES, CBN 1/2P 1.5K
596	R16	5135-471522	RES, CBN 1/2P 470
597	R17	5135-101522	RES, CBN 1/2P 100
598	R18	5135-2R7522	RES, CBN 1/2P 2.7
599	R19	5135-221522	RES, CBN 1/2P 220
600	R20	5135-223522	RES, CBN 1/2P 22K
600	R21	5135-223522	RES, CBN 1/2P 22K
607	R51	5135-331522	RES, CBN 1/2P 330
608	R52	5135-562522	RES, CBN 1/2P 5.6K
609	R53	5135-154522	RES, CBN 1/2P 150K
610	R54	5135-102522	RES, CBN 1/2P 1K
610	R55	5135-102522	RES, CBN 1/2P 1K
611	R56	5135-104522	RES, CBN 1/2P 100K
612	R57	5135-103522	RES, CBN 1/2P 10K
613	R58	5135-182522	RES, CBN 1/2P 1.8K
607	R59	5135-331522	RES, CBN 1/2P 330
610	R71	5135-102522	RES, CBN 1/2P 1K
614	R72	5135-471522	RES, CBN 1/2P 470
612	R73	5135-103522	RES, CBN 1/2P 10K
610	R74	5135-102522	RES, CBN 1/2P 1K
874	△ R801	5102-1005116	RES, FUSE 10
878	R803	5135-103522	RES, CBN 1/2P 10K
879	R804	5135-150522	RES, CBN 1/2P 15
879	R805	5135-150522	RES, CBN 1/2P 15
879	R806	5135-150522	RES, CBN 1/2P 15
879	R807	5135-150522	RES, CBN 1/2P 15
878	R810	5135-103522	RES, CBN 1/2P 10K
881	R811	5174-S010F243	RES, MTL 1/4P 24K
877	R812	5174-S010F113	RES, MTL 1/4P 11K
880	R814	5135-222522	RES, CBN 1/2P 2.2K
882	R815	5135-223522	RES, CBN 1/2P 22K
880	R816	5135-222522	RES, CBN 1/2P 2.2K
882	R817	5135-223522	RES, CBN 1/2P 22K
883	R818	5135-471522	RES, CBN 1/2P 470
878	R819	5135-103522	RES, CBN 1/2P 10K
878	R820	5135-103522	RES, CBN 1/2P 10K
884	R821	5135-224522	RES, CBN 1/2P 220K

INTEGRATED CIRCUIT			
852	IC801	5653-BA6229	IC, LINEAR

TRANSISTORS			
541	Q1	5612-1375	XISTOR, PNP A
542	Q2	5614-2012	XISTOR, NPN A
544	Q3	5613-2320(F)	XISTOR, NPN R
543	Q4	5611-999(F)	XISTOR, PNP R
544	Q5	5613-2320(F)	XISTOR, NPN R
543	Q6	5611-999(F)	XISTOR, PNP R
541	Q7	5612-1375	XISTOR, PNP A
544	Q8	5613-2320(F)	XISTOR, NPN R
541	Q10	5612-1375	XISTOR, PNP A
544	Q11	5613-2320(F)	XISTOR, NPN R
544	Q12	5613-2320(F)	XISTOR, NPN R
545	Q51	5611-999(F)	XISTOR, PNP R
546	Q71	5613-2320(F)	XISTOR, NPN R
547	Q72	5611-A124ES	XISTOR, PNP R
858	Q801	5613-C114YS	XISTOR, NPN R
856	Q802	5613-2925(T)	XISTOR, NPN R
855	Q803	5611-933S(S)	XISTOR, PNP R

Ser. No.	Ref. No.	Part No.	Description
856	Q804	5613-2925(T)	XISTOR, NPN R
856	Q805	5613-2925(T)	XISTOR, NPN R
857	Q806	5613-1740S(S)	XISTOR, NPN R
857	Q807	5613-1740S(S)	XISTOR, NPN R
857	Q808	5613-1740S(S)	XISTOR, NPN R
859	Q809	5613-2320(F)	XISTOR, NPN R

DIODES

550	△	D1	5632-S5566B	DIODE, RECT
550	△	D2	5632-S5566B	DIODE, RECT
550	△	D3	5632-S5566B	DIODE, RECT
550	△	D4	5632-S5566B	DIODE, RECT
550	△	D7	5632-S5566B	DIODE, RECT
550	△	D8	5632-S5566B	DIODE, RECT
554		D9	5635-HZ12B2L	DIODE, ZENER
554		D10	5635-HZ12B2L	DIODE, ZENER
554		D11	5635-HZ12B2L	DIODE, ZENER
555		D12	5635-HZ6B2L	DIODE, ZENER
556		D13	5635-HZ22-2L	DIODE, ZENER
557		D14	5635-RD5R1EB3	DIODE, ZENER
550	△	D15	5632-S5566B	DIODE, RECT
550	△	D16	5632-S5566B	DIODE, RECT
550	△	D17	5632-S5566B	DIODE, RECT
550	△	D18	5632-S5566B	DIODE, RECT
550	△	D51	5632-S5566B	DIODE, RECT
550	△	D52	5632-S5566B	DIODE, RECT
559		D53	5631-1S2473	DIODE, DET
563		D54	5635-RD5R1EB2	DIODE, ZENER
565		D55	5635-HZ11A2L	DIODE, ZENER
550		D56	5632-S5566B	DIODE, RECT
550		D57	5632-S5566B	DIODE, RECT
564		D58	5635-HZ16-2L	DIODE, ZENER
566		D71	5635-HZ3B2	DIODE, ZENER
864		D801	5632-S5566B	DIODE, RECT
862		D802	5635-HZ5C2	DIODE, ZENER
861		D803	5635-HZ7C3L	DIODE, ZENER

TRANSFORMERS

569	△	T1	5584-S9401	XFORMER, POWER BK
569B	△	T1	5584-S9402	XFORMER, POWER IB BB

CONTROLS

868		VR801	5101-S0801103	RES, SEMI FIX 10K
868		VR802	5101-S0801103	RES, SEMI FIX 10K
869		VR803	5101-S0801502	RES, SEMI FIX 5K

MISCELLANEOUS

797		CN801	4443-060185	CONNECTOR
798		CN802	4443-070185	CONNECTOR
798		CN803	4443-070185	CONNECTOR
796		CN804	4443-050185	CONNECTOR
796		CN805	4443-050185	CONNECTOR
603	△	F1	5732-801031	FUSE BK
603B	△	F1	5732-251030	FUSE IB BB
604	△	F2	5732-202031	FUSE BK
604B	△	F2	5732-202030	FUSE IB BB
601	△	HL1	4472-04501	HOLDER, FUSE
601	△	HL2	4472-04501	HOLDER, FUSE
601	△	HL3	4472-04501	HOLDER, FUSE
601	△	HL4	4472-04501	HOLDER, FUSE
803		LCN801	4163-S0206151	CONNECTOR W/W
802		LCN802	4163-S0205151	CONNECTOR W/W
804		LCN803	4163-S0207151	CONNECTOR W/W
871		RC701	5212-S0305473	R COMPOSITE
872		RC702	5212-S0303473	R COMPOSITE
751	△	SW1	4433-01301	SWITCH, PU-PW
041B	△	SW2	4411-00501102	SWITCH, ROTARY IB BB
786		TM1	4214-122	TERMINAL
786		TM2	4214-122	TERMINAL
785		TP806	4214-132	TERMINAL
785		TP809	4214-132	TERMINAL

Ser. No.	Ref. No.	Part No.	Description
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PCB-5 FRONT P. C. BOARD**CAPACITORS**

835	C901	5345-106D0356	CAP, MINI ELE 10μ/25V
837	C902	5359-S010J103	CAP, PPP.01μ

RESISTORS

841	R903	5135-221522	RES, CBN 1/2P 220
842	R905	5135-472522	RES, CBN 1/2P 4.7K
843	R906	5135-682522	RES, CBN 1/2P 6.8K
844	R907	5135-183522	RES, CBN 1/2P 18K
842	R908	5135-472522	RES, CBN 1/2P 4.7K
843	R909	5135-682522	RES, CBN 1/2P 6.8K
844	R910	5135-183522	RES, CBN 1/2P 18K

INTEGRATED CIRCUIT

829	IC901	5654-MN187167	IC, DIGITAL
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MISCELLANEOUS

789	CN901	4443-0301140	CONNECTOR
790	CN902	4443-0401140	CONNECTOR
794	CN903	4443-05401030	CONNECTOR
771	FL901	5722-058	TUBE DISPLAY
839	RC901	5212-S0307123	R COMPOSITE
753	S902	4437-01202	SWITCH, PU-TC
753	S904	4437-01202	SWITCH, PU-TC
753	S905	4437-01202	SWITCH, PU-TC
753	S906	4437-01202	SWITCH, PU-TC
753	S907	4437-01202	SWITCH, PU-TC
753	S908	4437-01202	SWITCH, PU-TC
833	X901	5693-CST4MGW	OSC, CER

PCB-6 CONT SW-R P. C. BOARD**RESISTORS**

848	R916	5135-472522	RES, CBN 1/2P 4.7K
849	R917	5135-682522	RES, CBN 1/2P 6.8K

MISCELLANEOUS

809	LCN902	4163-S0104800	CONNECTOR W/W
830	LED901	5637-SEL2410E	LED
757	S916	4437-01201	SWITCH, PU-TC
759	S917	4437-01202	SWITCH, PU-TC
757	S918	4437-01201	SWITCH, PU-TC
757	S920	4437-01201	SWITCH, PU-TC

PCB-7 CONT SW-L P. C. BOARD**RESISTORS**

845	R911	5135-472522	RES, CBN 1/2P 4.7K
846	R912	5135-682522	RES, CBN 1/2P 6.8K
845	R913	5135-472522	RES, CBN 1/2P 4.7K
846	R914	5135-682522	RES, CBN 1/2P 6.8K
847	R915	5135-183522	RES, CBN 1/2P 18K

MISCELLANEOUS

808	LCN901	4163-S0103800	CONNECTOR W/W
754	S909	4437-01201	SWITCH, PU-TC
754	S910	4437-01201	SWITCH, PU-TC
754	S911	4437-01201	SWITCH, PU-TC
756	S912	4437-01202	SWITCH, PU-TC
754	S913	4437-01201	SWITCH, PU-TC
754	S914	4437-01201	SWITCH, PU-TC
756	S915	4437-01202	SWITCH, PU-TC

Ser. No. Ref. No. Part No. Description

ABBREVIATIONS IN PARTS LIST

CAPACITORS

CAP, MINI ELE : Electrolytic
 CAP, CER : Ceramic
 CAP, PPP : Polypropylene
 CAP, MYL : Mylar
 CAP, MCA : Mica
 470 μ : 470 μ F
 6800P : 6800PF
 .047 μ : 0.047 μ F

RESISTORS

RES, CBN 1/6P : Carbon 1/6W
 2.2K : 2.2k Ω
 220 : 220 Ω
 RES, FUSE : Fuse
 RES, CEM 5P : Cement 5W
 REC, MTL 1P : Metal 1W

TRANSISTORS

XISTOR : Transistor
 FET : Field Effect Transistor

CONTROLS

RES, V CBN : Variable Carbon Resistor
 RES, SEMI FIX : Semi - fixed Resistors

CHASSIS MISCELLANEOUS

772	Δ P1	4161-71151	CORD W/PLUG BK
772B	Δ P1	4161-7256	CORD W/PLUG IB
772C	Δ P1	4161-04100	CORD W/PLUG BB
773		4161-71184	CORD W/PLUG, RCA TYPE (ACCESSORY) (x2)
788	LUG1	4211-4	LUG, CABINET FRONT
788	LUG2	4211-4	LUG, CABINET FRONT

PACKAGE PARTS LIST

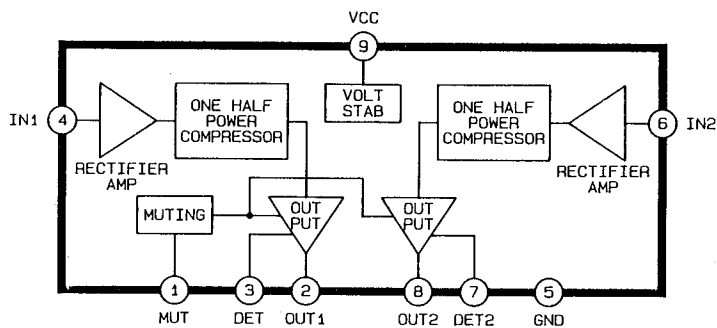
021B	1756-03108	LABEL (x2) IB
021C	1756-03111	LABEL (x2) BB
022B	1756-06303	LABEL IB BB
023C	1756-08501	LABEL 240V BB
024C	1111-J30319	OWNER GUIDE 240V CAUTION BB
109	1111-J30355	OWNER GUIDE BK BB
109B	1111-J30356	OWNER GUIDE IB
110	1113-02501	OWNER CARD BK
112	1116-03801	WARRANTY CARD BK
113	1119-04501	ATTACH SHEET, SERVICE STATION BK
114	1119-01201	ATTACH SHEET, SAFETY BK
117A	1221-30201	CARTON BOX BK IB BB
118	1222-7384	CUSHION, R
119	1222-7385	CUSHION, L
121	1223-R0220055	SOFT SHEET, SET FRONT
122	1223-00403012	SOFT SHEET, CASS. LID
123	1241-R0160600	POLYETHY BAG, SET
124	1241-R0123350	POLYETHY BAG, OG

NOTE:

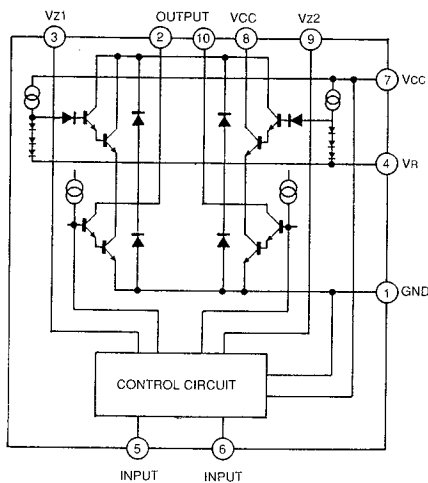
Δ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

IC BLOCK DIAGRAM

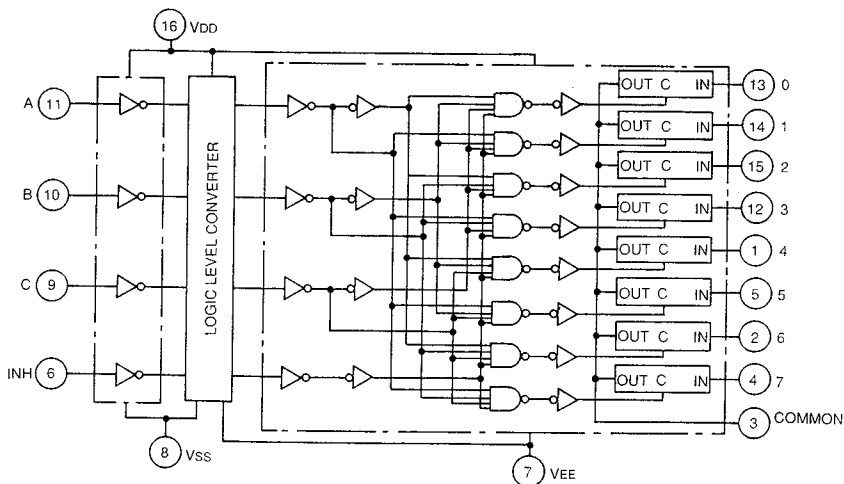
IC402 : BA6138
Signal Level Meter



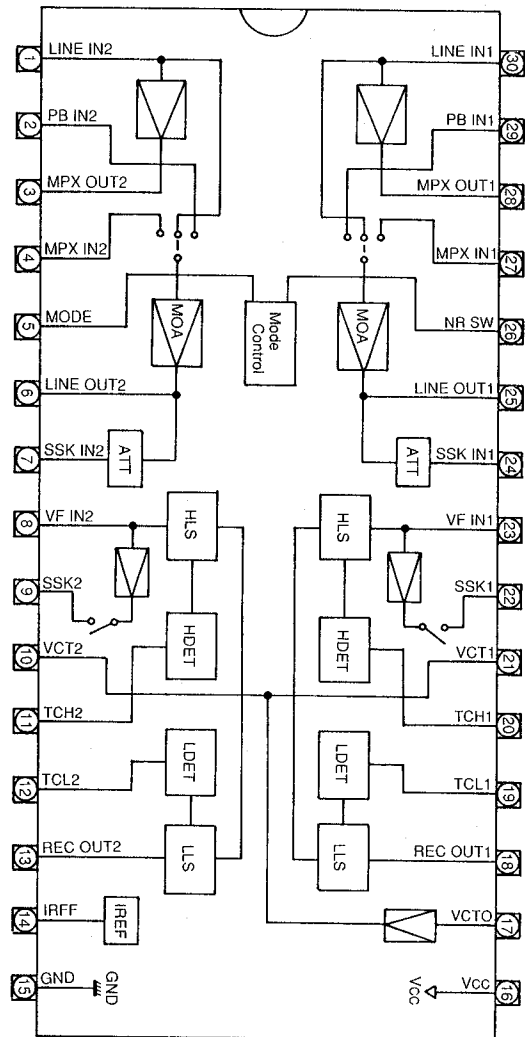
IC801, 802 : BA6229
Motor Driver



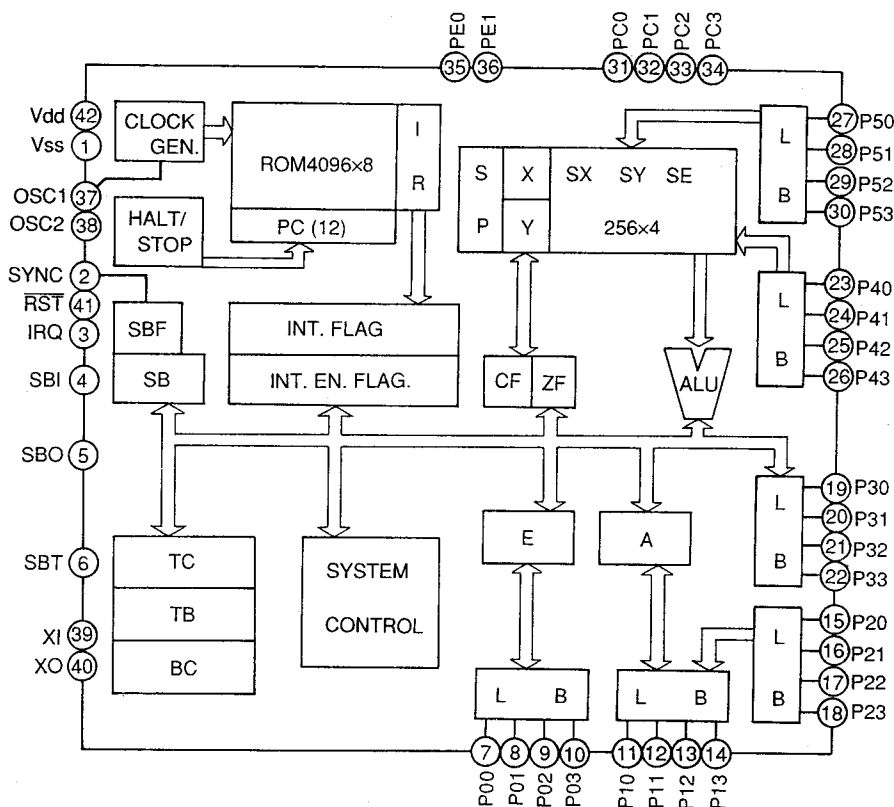
IC753 : TC4051BP



IC501 : CXA1330S
Dolby B/C NR



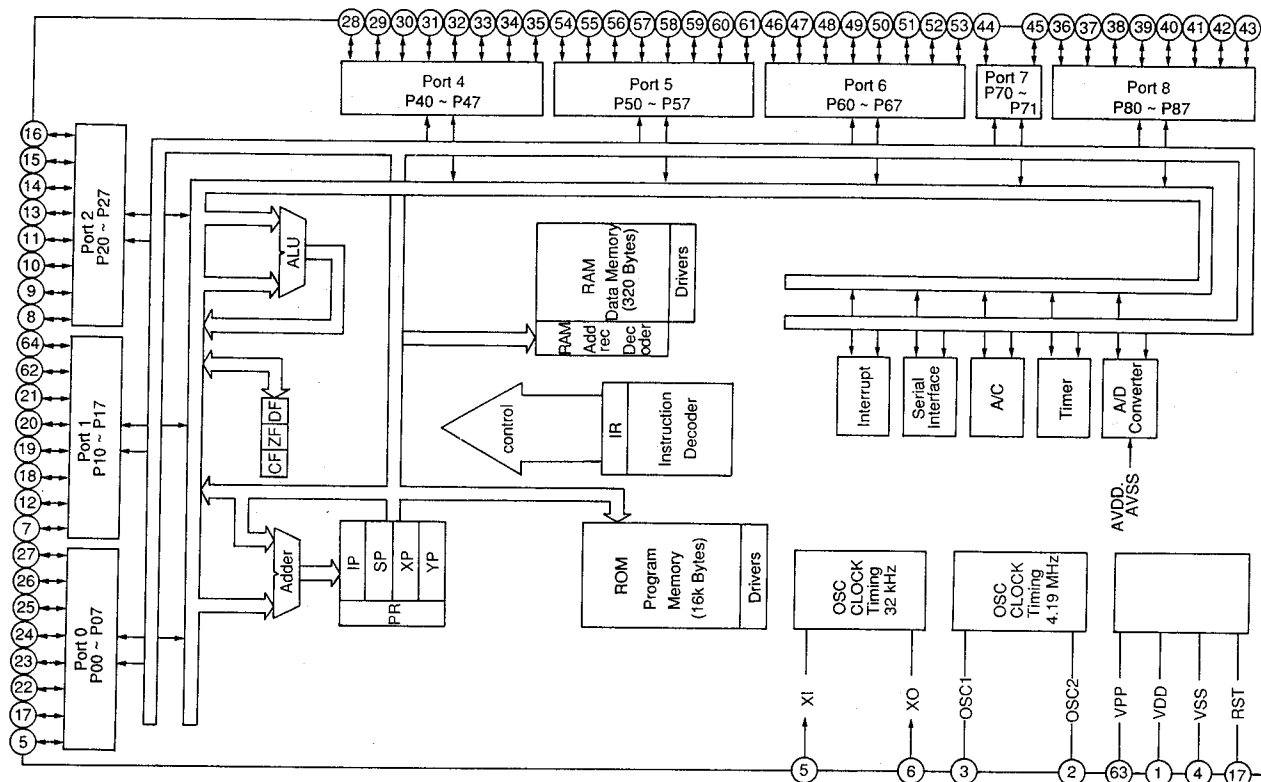
IC751 : MN15542 Logic Control Block



TERMINAL FUNCTIONS

NO.	Name	Functional Name	I/O	Description	NO.	Name	Functional Name	I/O	Description
1	Vss	Vss		GND	22	P33	LINE MUTE	O	Line mute output
2	SYNC			Not used	23	P40	SEC-RPC	O	SEC reel motor drive voltage change-over
3	IRQ	STB IN	I	STB input from MAIN	24	P41	SEC-RM2	O	SEC reel motor reverse drive output
4	SBI	DATA IN	I	Data input from MAIN	25	P42	SEC-RM1	O	SEC reel motor forward drive output
5					26	P43	SEC-SOLP	O	SEC solenoid retaining output
6	SBT	CLK IN/OUT	I/O	Clock input/output for data communication with SUB	27	P50	SEC-SOL	O	SEC solenoid trigger output
7	P00	SEC-RE MUTE	O	SEC playback mute output	28	P51	SEC-CPM	O	SEC capstan motor drive output
8	P01	SEC-REC MUTE	O	SEC REC mute output	29	P52	SEC-MMS	O	SEC capstan motor rpm change-over
9	P02	SEC-REC	O	SEC REC change-over output	30	P53	HI SPD	O	EQ change-over at high-speed copy
10	P03	SEC-BIAS	O	SEC bias drive output	31	PC0	PRI-DOLBY C	O	PRI Dolby C drive output
11	P10	PRO-PB MUTE	O	PRI playback mute output	32	PC1	PRI-DOLBY B	O	PRI Doby B drive output
12	P11	PRI-REC MUTE	O	PRI recording mute output	33	PC2	PRI-MPX	O	PRI MPX filter drive output
13	P12	PRI-REC	O	PRI recording mute change-over	34	PC3	SEC-DOLBY C	O	SEC Dolby C drive output
14	P13	PRI-BIAS	O	PRI bias drive output	35	PE0	SEC-DOLBY B	O	SEC Dolby B drive output
15	P20	PRI-RPC	O	PRI reel motor drive voltage change-over	36	PE1	BUSY OUT	O	
16	P21	PRI-RM2	O	PRI reel motor reverse drive output	37	OSC1	OSC1		Ceramic resonator connection
17	P22	PRI-RM2	O	PRI reel motor forward DRIVE output	38	OSC2	OSC2		Transmitting frequency : 4.0 MHz
18	P23	PRI-SOLP	O	PRI solenoid retaining power	39	X1			Not used
19	P30	PRI-SOL	O	PRI solenoid trigger output	40	X0			Not used
20	P31	PRI-CPM	O	PRI capstan motor drive output	41	RST	RESET	I	Reset
21	P32	PRI-MMS	O	PRI capstan motor rpm change-over	42	Vdd	Vdd		5V DC power connection

IC901 : MN187167 Main Controller



TERMINAL FUNCTIONS

NO.	Name	Functional Name	I/O	Description
1	Vdd	Vdd		5V DC power supply
2	OSC	OSC OUT		Ceramic resonator connection Transmitting frequency : 4.0 MHz
3	OSC	OSC IN		
4	Vss	Vss		GND
5	P06	BUSY IN	I	BUSY IN
6	X0			Not used
7	P17	SYNC. REV. KEY	I	SYNC. REVERSE key input
12	P16	A-PAUSE KEY	I	AUTO PAUSE key input
8	AD7	KEY IN 5	I	Key input
9	AD6	KEY IN 4	I	Judging which key has been pressed by DC
10	AD5	KEY IN 3	I	voltage detection with an A/D converter
11	AD4	KEY IN 2	I	
13	AD3	KEY IN 1	I	A/D input port for MS detection
14	AD2	MS IN	I	
15	AD1	METER R	I	Level meter right channel input
16	AD0	METER L	I	Level meter left channel input
17	RST	RESET	I	Reset
18	P15	SEC-REEL 2	I	SEC right reel pulse input
19	P14	SEC-REEL 1	I	SEC left reel pulse input
20	P13	SEC-PACK DET	I	SEC pack detection ; L when a cassette is present
21	P12	SEC-QUICK DET	I	SEC quick photo detection L at the leader tape position

NO.	Name	Functional Name	I/O	Description
22	P05	R-SI	I	Remote control input
23	P04	VOLT-DN	I	Power OFF detection ; L when OFF
24	P03	MS GAIN	I	MS amplifier gain control ; H when the gain is small
25	P02	CLK IN/OUT	I/O	Clock input/output terminal for data communication with SUB
26	P01	DATA IN	I	Serial data input from SUB
27	P00	DATA OUT	O	Serial data output to SUB
28	P47	SEC-F. REC	I	SEC tape front hook detection ; L when REC enabled
29	P46	SEC-R. REC	I	SEC tape rear hook detection
30	P45	PRI-REEL 2	I	PRI right reel pulse input
31	P44	PRI-REEL 1	I	PRI left reel pulse input
32	P43	PRI-PACK DET	I	PRI pack detection
33	P42	PRI-QUICK DET	I	PRI quick photo detection
34	P41	PRI-R. REC	I	PRI tape rear hook detection
35	P40	PRI-F. REC	I	PRI tape front hook detection
36	P87	STB OUT	O	STB output to SUB
37	P86	COPY	O	H when copying from SEC to PRI
38	P85	SEC	O	Voice output to LINE OUT and MS amplifier: H when SEC output and L when PRI output

NO.	Name	Functional Name	I/O	Description
39	P84	S. R. LED	O	H when SYNC. REVERSE LED is on
40	P83	A. P. LED	O	H when AUTO PAUSE LED is on
41	P82	G0	O	FL display grid drive output
42	P81	G1	O	
43	P80	G2	O	
44	P71	G3	O	
45	P70	G4	O	
46	P67	G5	O	FL display anode drive output
47	P66	G6	O	
48	P65	G7	O	
49	P64	G8	O	
50	P63	a	O	
51	P62	b	O	
52	P61	c	O	
53	P60	d	O	
54	P57	e	O	
55	P56	f	O	
56	P55	g	O	
57	P54	h	O	
58	P53	i	O	
59	P52	j	O	
60	P51	k	O	
61	P50	l	O	Initial setting SW B connection
62	P11	INI SET B	I	
63	Vpp	Vpp		Negative voltage load terminal for FL
64	P10	INI SET A	I	Initial setting SW A connection

SCHEMATIC DIAGRAM (1)

NOTES:

1. ALL RESISTANCES VALUES ARE IN Ω .
k Ω = 1000 Ω , M Ω = 1000k Ω .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS

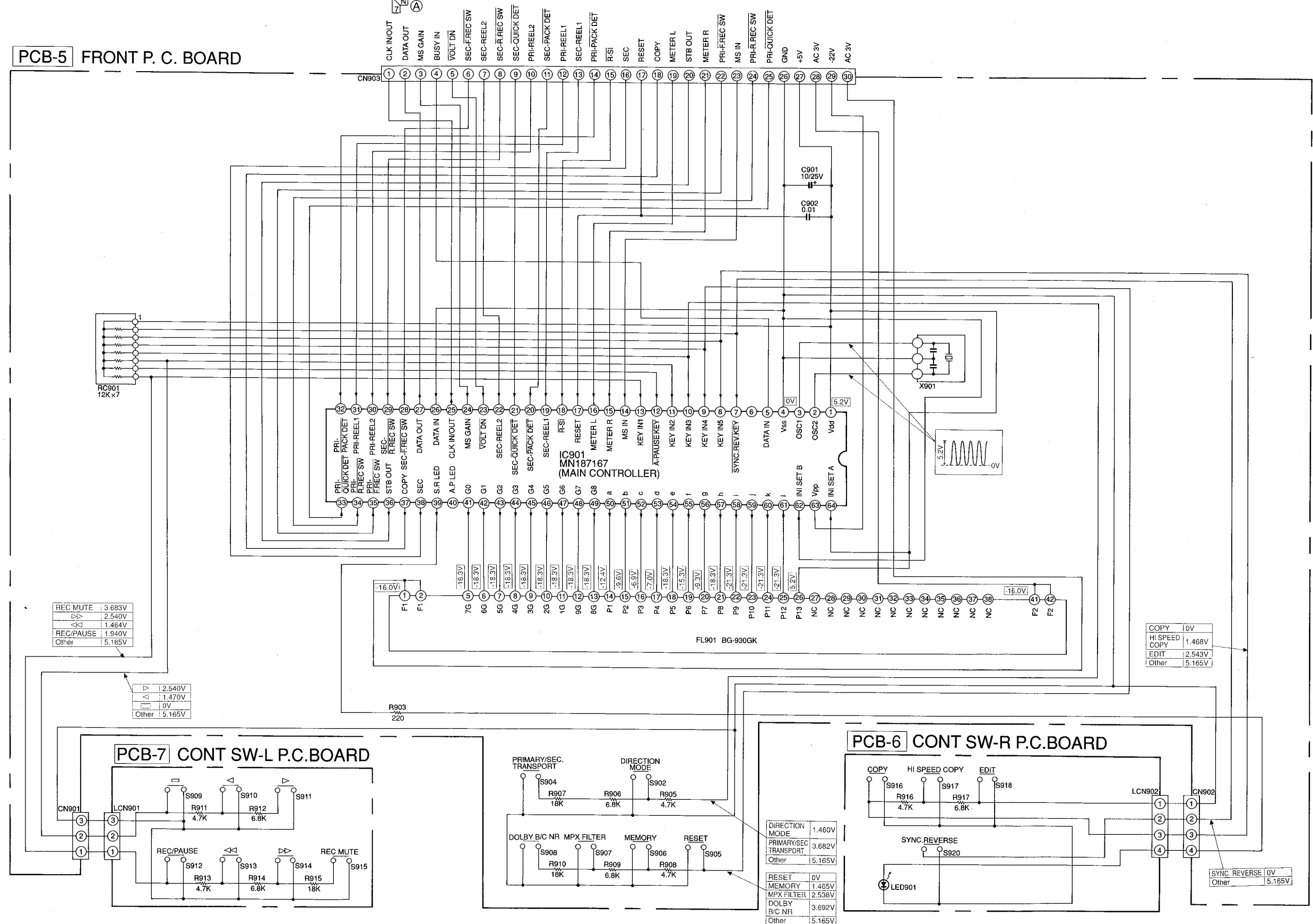
OTHERWISE NOTED.

3. ALL CAPACITANCES VALUES ARE IN μ F UNLESS OTHERWISE NOTED. P = μ F.
4. V : DC VOLTAGE AT NO SIGNAL.

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PCB-5 FRONT P. C. BOARD



SCHEMATIC DIAGRAM (1)

NOTES:

1. ALL RESISTANCES VALUES ARE IN Ω .
k Ω = 1000 Ω , M Ω = 1000k Ω .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.

OTHERWISE NOTED.

3. ALL CAPACITANCES VALUES ARE IN μ F UNLESS OTHERWISE NOTED. P = μ F.
4. V : DC VOLTAGE AT NO SIGNAL.

PCB-5 FRONT P. C. BOARD

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CLK IN/OUT
DATA OUT
MS GAIN
BUSY IN
VOLT DN
SEC-FREC SW
SEC-REEL2
SEC-R REC SW
SEC-QUICK DET
PRI-REEL2
SEC-PACK DET
PRI-REEL1
SEC-REEL1
PRI-PACK DET
R-SI
SEC
RESET

CN903

RC901
12K x7

REC MUTE	3.683V
$\triangleright$	2.540V
$\triangleleft$	1.464V
REC/PAUSE	1.940V
Other	5.165V

$\triangleright$	2.540V
$\triangleleft$	1.470V
$\square$	0V
Other	5.165V

PRI-QUICK DET
PRI-REEL1
PRI-REEL2
PRI-FREC SW
PRI-REEL2
SEC-FREC SW
SEC-REEL2
SEC-R REC SW
SEC-QUICK DET
SEC-PACK DET
SEC-REEL1
R-SI
RESET
METER L
METER R
MS IN
KEY IN

IC901
MN187167
(MAIN CONTROLLER)

-16.0V

F1

F1

7G

6G

5G

4G

3G

2G

1G

9G

8G

P2

P1

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

-16.3V

PCB-7 CONT SW-L P.C. BOARD

CN901

LCN901

S909

S910

S911

R911

R912

R913

R914

R915

REC/PAUSE

REC MUTE

PRIMARY/SEC. TRANSPORT

DIRECT

S904

R907

R906

18K

6.8K

DOLBY B/C NR

MEN

S908

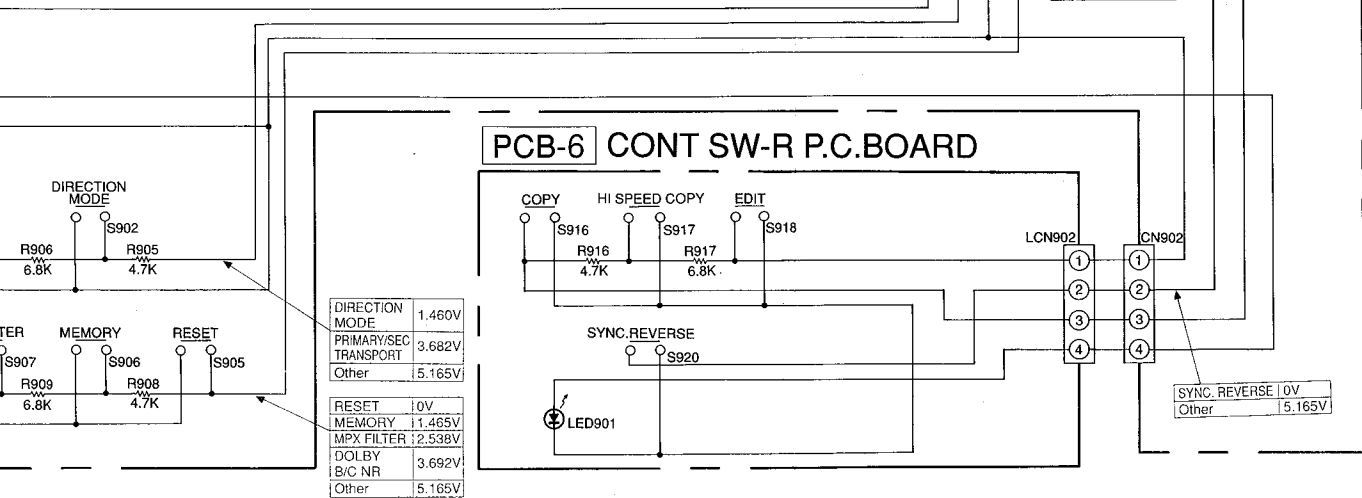
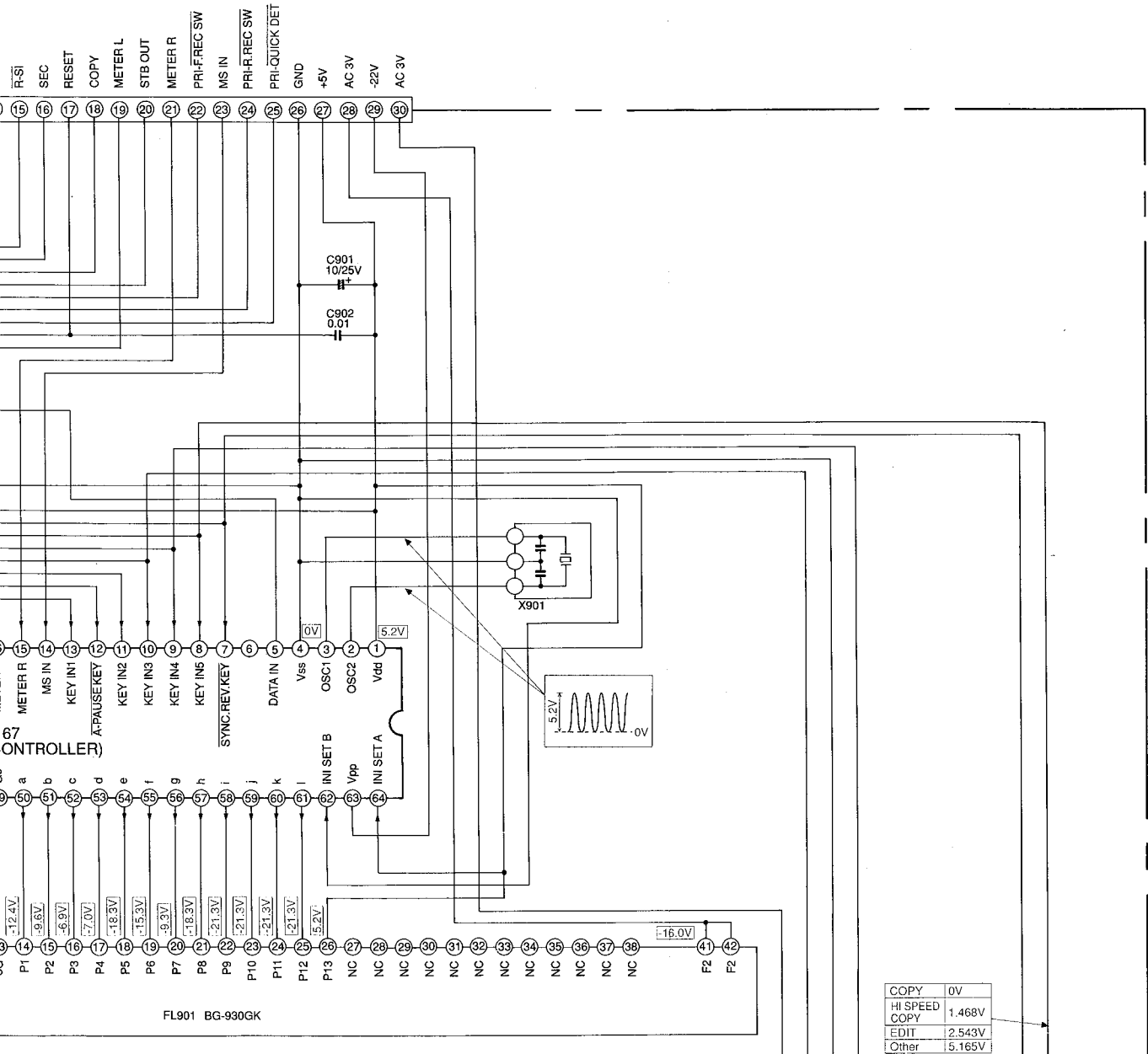
R910

R909

18K

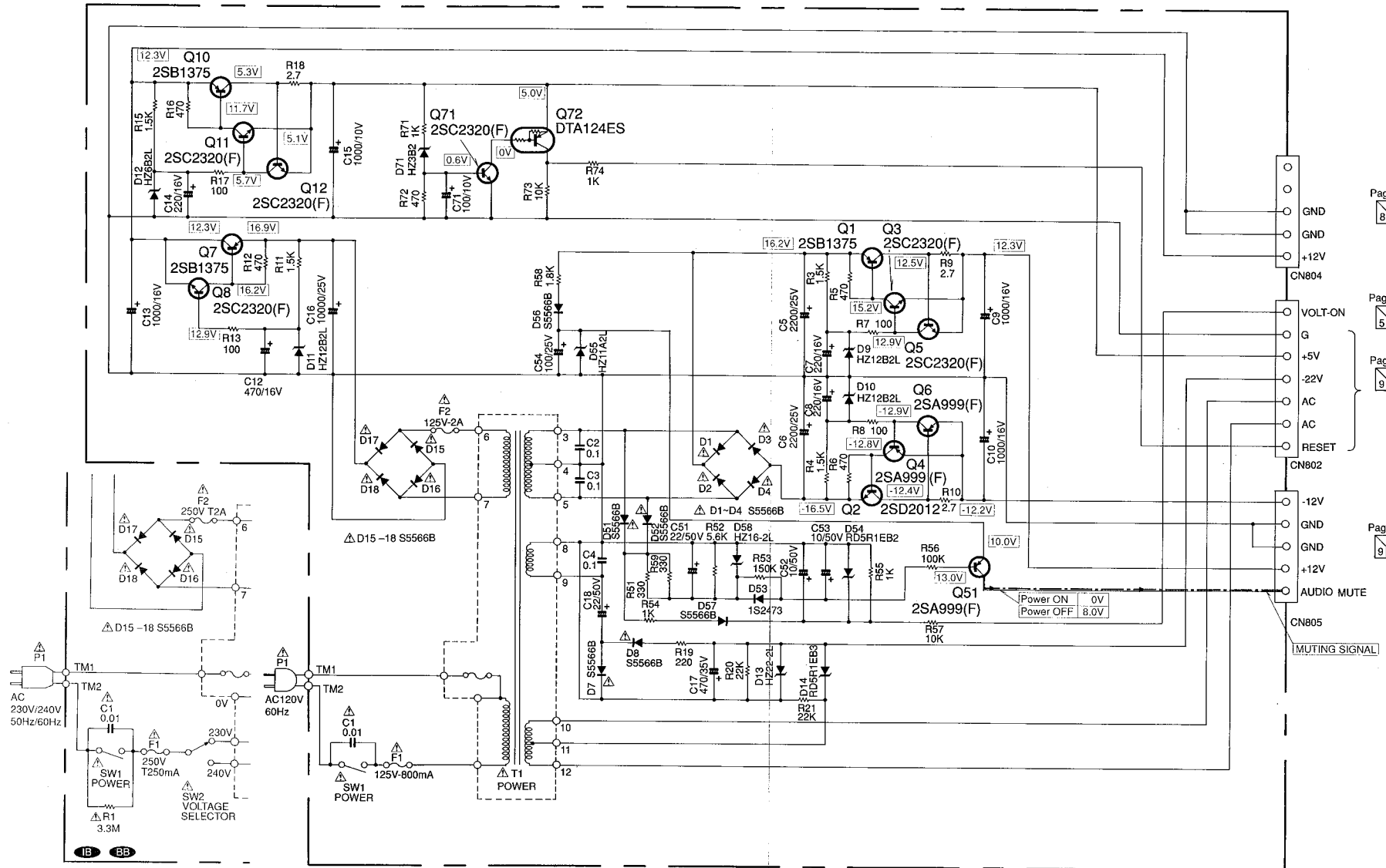
6.8K

F G H I J



SCHEMATIC DIAGRAM (2)

PCB-4 POWER P. C. BOARD (1/2)

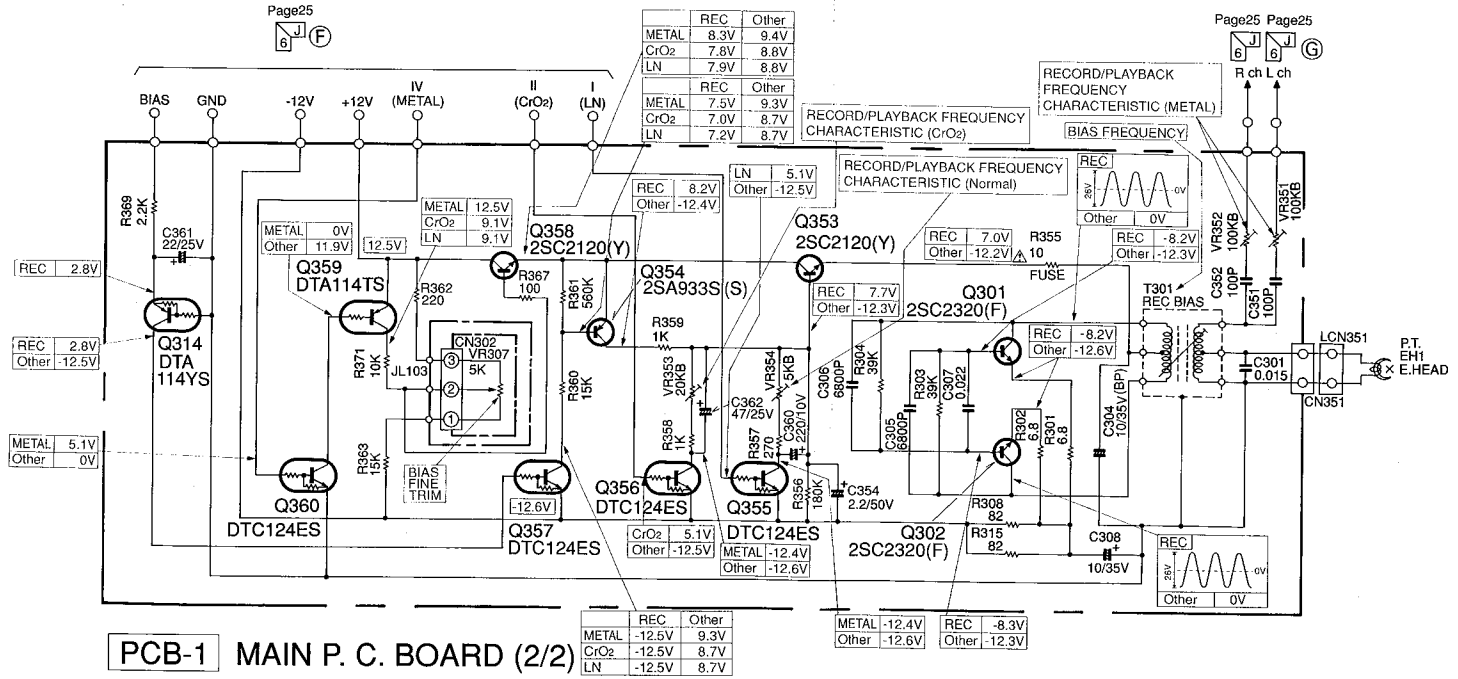


Type	R1	R2
DTC114YS	10K	47K
DTC124ES	22K	22K

Type	R1	R2
DTA114YS	10K	47K
DTA124ES	22K	22K
DTA143ES	4.7K	4.7K

Type	R1
DTC114TS	10K

PCB-1 MAIN P. C. BOARD (2/2)

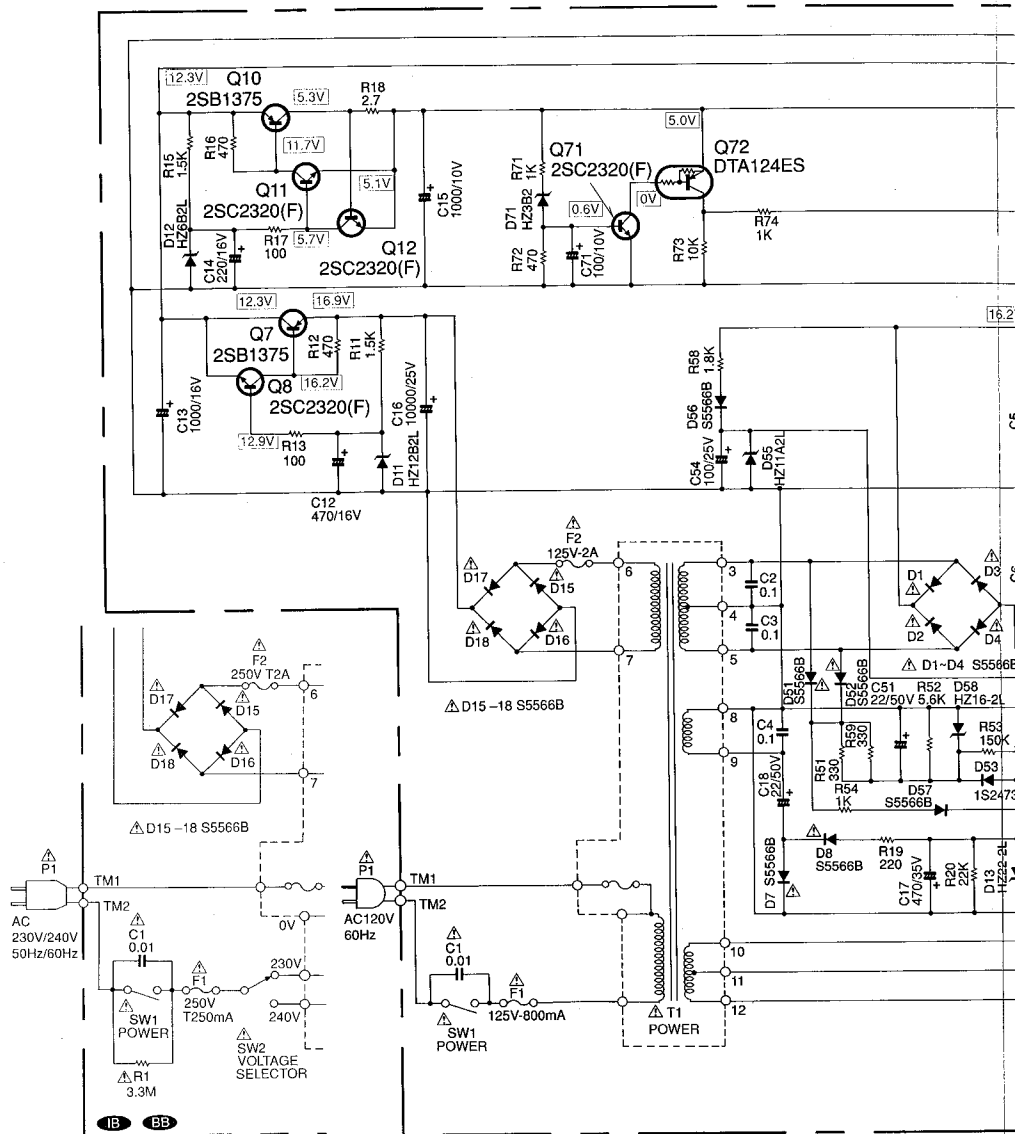


METAL	REC	Other
-12.5V	-12.5V	9.3V
-12.5V	-12.5V	8.7V
-12.5V	-12.5V	8.7V

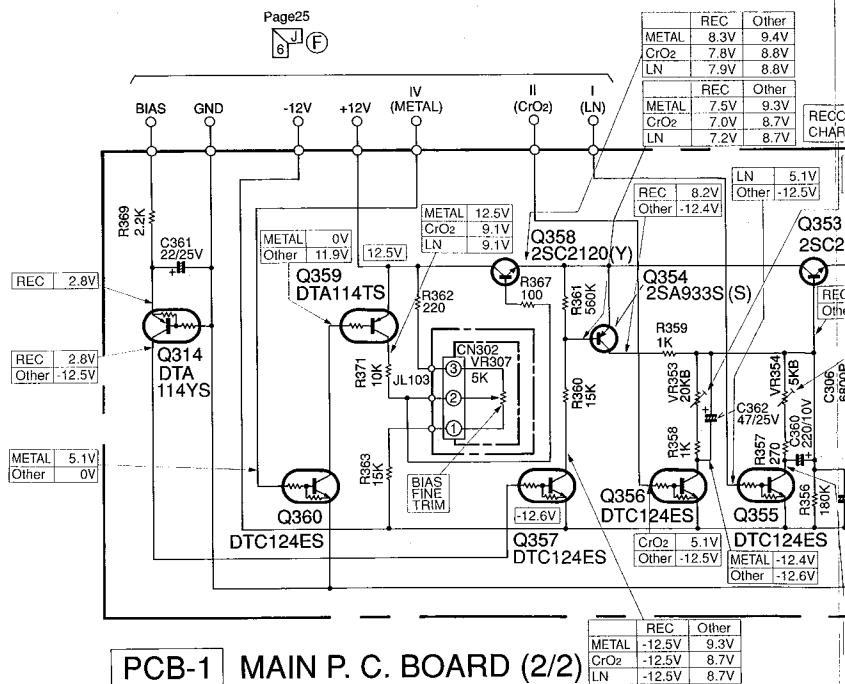
METAL	REC	Other
-12.4V	-12.4V	-8.3V
-12.6V	-12.6V	-12.3V

SCHEMATIC DIAGRAM (2)

PCB-4 POWER P. C. BOARD (1/2)



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PCB-1 MAIN P. C. BOARD (2/2)

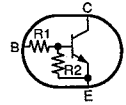
F

G

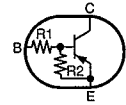
H

I

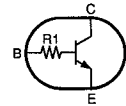
J



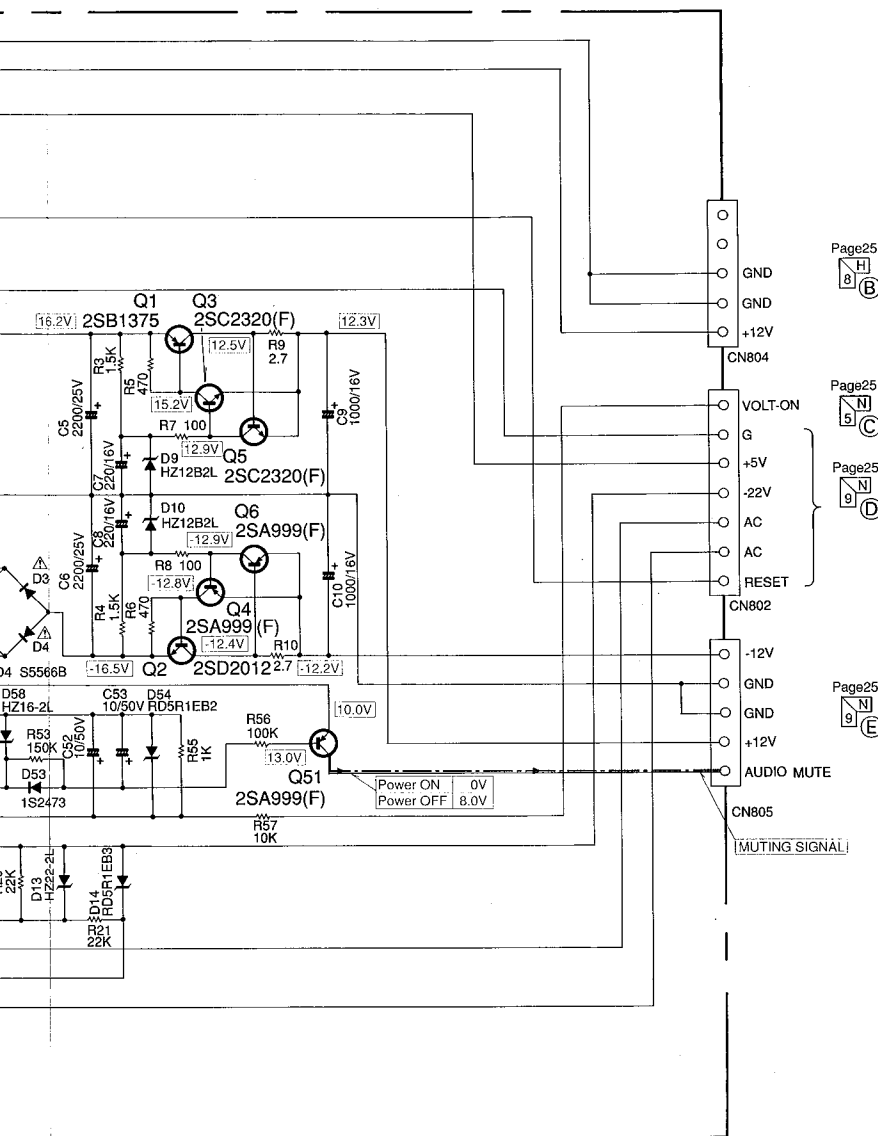
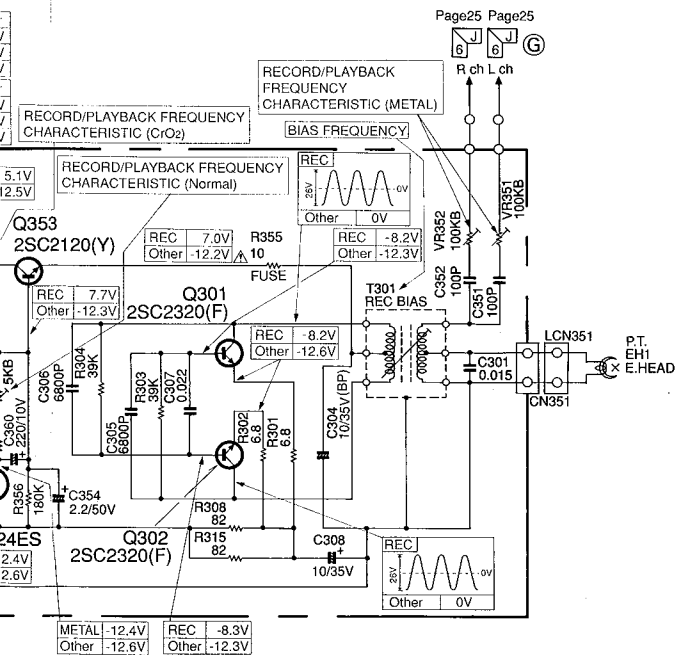
Type	R1	R2
DTC114YS	10K	47K
DTC124ES	22K	22K



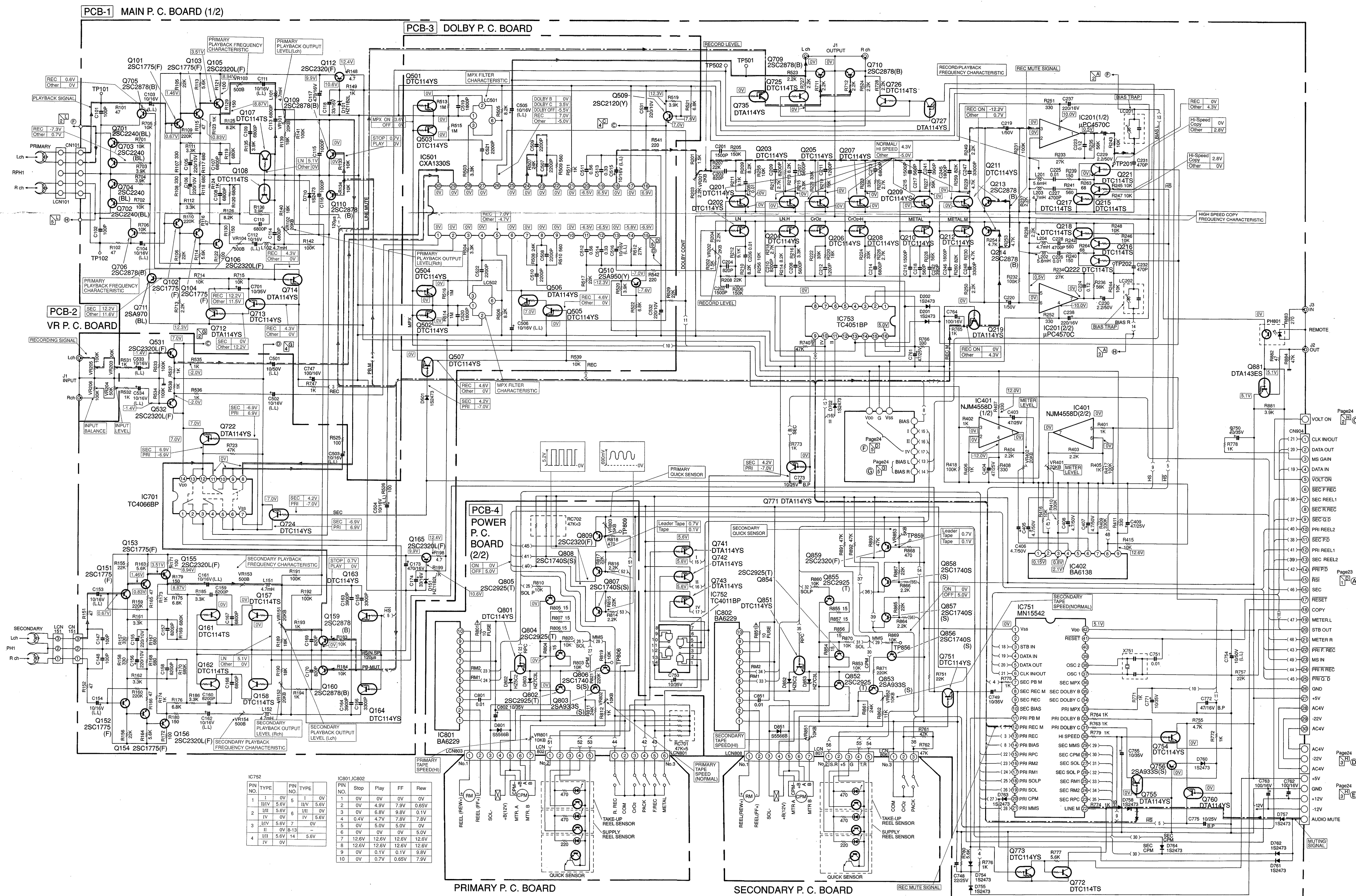
Type	R1	R2
DTA114YS	10K	47K
DTA124ES	22K	22K
DTA143ES	4.7K	4.7K



Type	R1
DTC114TS	10K

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8 H BPage25
5 N CPage25
9 N DPage25
9 N E

SCHEMATIC DIAGRAM (3)



PCB-1 MAIN P. C. BOARD (1/2)

