

Service Manual

Dolby NR-Equipped
Stereo Double Cassette Deck

Cassette Deck
RS-TR979

DOLBY B·C NR HX PRO

Colour

(K) ... Black Type



Area

Suffix for Model No.	Area	Colour
(PP)	U.S.A./Canada.	(K)
(EB)	Great Britain.	
(EG)	Germany, Italy and Continental Europe.	
(GC)	Asia, Latin America, Middle Near East and Africa.	

* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

NEW MECHANISM FOR RS-TR979 (AR-1)

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Heads	
DECK 1	Recording/Playback head (Permalloy) × 1 Erasing head (Double-gap ferrite) × 1
DECK 2	Recording/Playback head (Permalloy) × 1 Erasing head (Double-gap ferrite) × 1
Motors	
DECK 1	Capstan/reel table drive (DC servo motor) × 1 Reel table drive (DC motor) × 1
DECK 2	Capstan/reel table drive (DC servo motor) × 1 Reel table drive (DC motor) × 1
Tape speed	4.8 cm/sec. (1-7/8 ips)
Wow and flutter	
For (PP) area	0.1 % (WRMS)
For others	0.07 % (WRMS) ± 0.2 % (DIN)
Fast forward and rewind times	Approx. 45 seconds with C-60 cassette tape
Frequency response (Dolby NR off)	
NORMAL	40 Hz - 15 kHz ± 3 dB
For (PP) area	20 Hz - 17 kHz
For others	20 Hz - 16 kHz (DIN)
CrO ₂	40 Hz - 15 kHz ± 3 dB
For (PP) area	20 Hz - 17 kHz
For others	20 Hz - 16 kHz (DIN)

METAL

For (PP) area	40 Hz - 16 kHz ± 3 dB 20 Hz - 18 kHz
For others	20 Hz - 17 kHz (DIN)
S/N (Signal level = max recording level, CrO ₂ type tape)	
NR off	56 dB (A weighted)
Dolby B NR on	66 dB (A weighted)
Dolby C NR on	74 dB (A weighted)
Input sensitivity and impedance	
REC (IN)	100 mV/47 kΩ
Output voltage and impedance	
PLAY (OUT)	500 mV/500 Ω 37.5 mV/(8 Ω)
HEADPHONES	(Load impedance 8 Ω - 600 Ω)

■ GENERAL

Power consumption	28 W
Power supply	
For (PP) area	AC 60 Hz, 120 V
For (GC) area	AC 50/60 Hz, 110 V/127 V/220 V/240 V
For others	AC 50/60 Hz, 230 V - 240 V
Dimensions (W × H × D)	430 × 145 × 280 mm (16-15/16" × 5-23/32" × 11-1/32")
Weight	5.3 kg (11.7 lb.)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics

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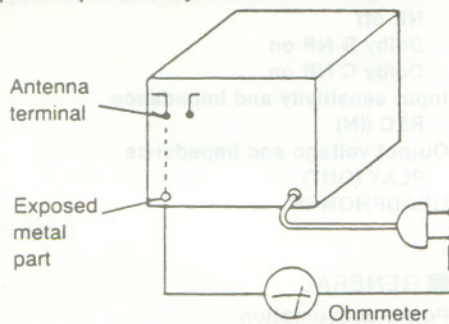
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

INSULATION RESISTANCE TEST

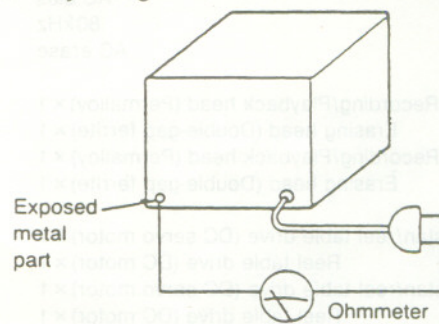
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts (Fig. A). Equipment without antenna terminals should read approximately infinity to all exposed parts (Fig. B).

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance=3 MΩ-5.2 MΩ

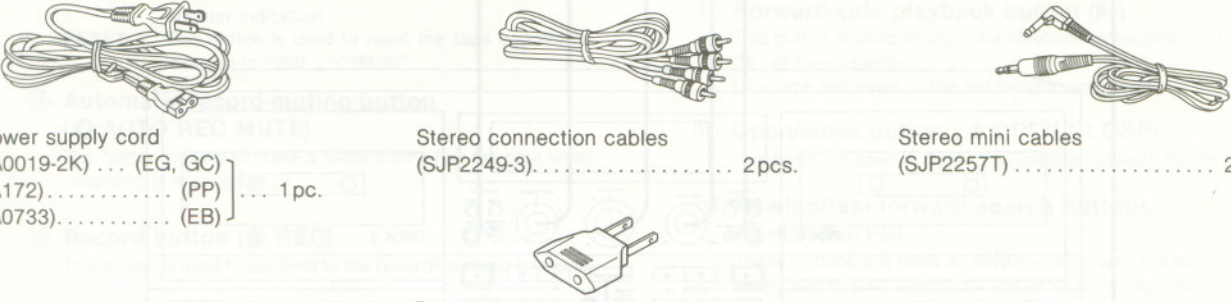


(Fig. B)

Resistance=Approx. ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES



AC power supply cord
 (RJA0019-2K) ... (EG, GC)
 (SJA172) ... (PP) ... 1 pc.
 (VJA0733) ... (EB)

Stereo connection cables
 (SJP2249-3) ... 2 pcs.

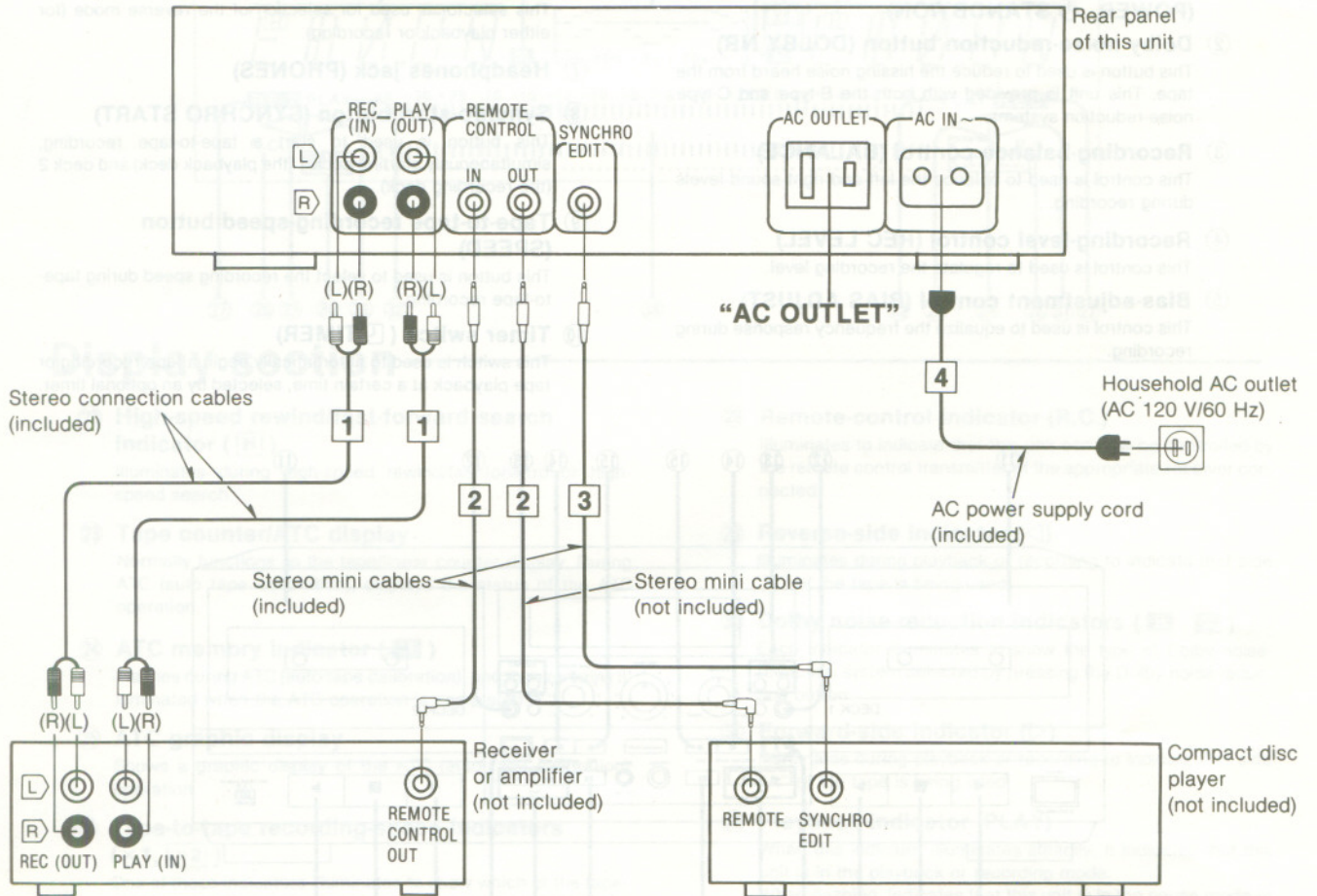
Stereo mini cables
 (SJP2257T) ... 2 pcs.

Power plug adaptor
 (SJP5213-2) ... 1 pc.
 (For GC area only)

CONNECTIONS

Before making connections, be sure that the power to this unit and all other system components is turned off first. See the operating instructions of the receiver (or amplifier) and the compact disc player for details.

Make connections in the numbered sequence by using the cables.
Note:
 Avoid letting the cables touch each other as much as possible, otherwise noise will be generated.



The following functions can be operated by remote control (When connected to the appropriate Technics receiver): Playback, Stop, Pause, Rewind/fast-forward search, Record, and 1-2 (A-B) deck selection.

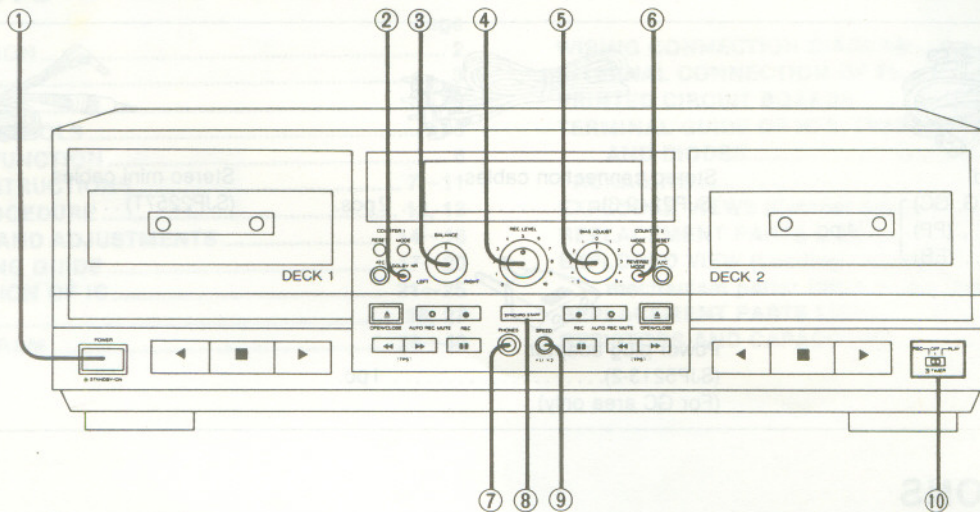
The REMOTE CONTROL “OUT” terminal is provided to connect a Technics Compact Disc Player or Graphic Equalizer.

The REMOTE CONTROL and SYNCHRO EDIT terminals can only be used with selected Technics Components. Please contact your dealer for details.

“AC OUTLET” (UNSWITCHED: PP area only)

Power is always available, regardless of the unit's power switch setting. Audio equipment rated up to 100 W can be connected.

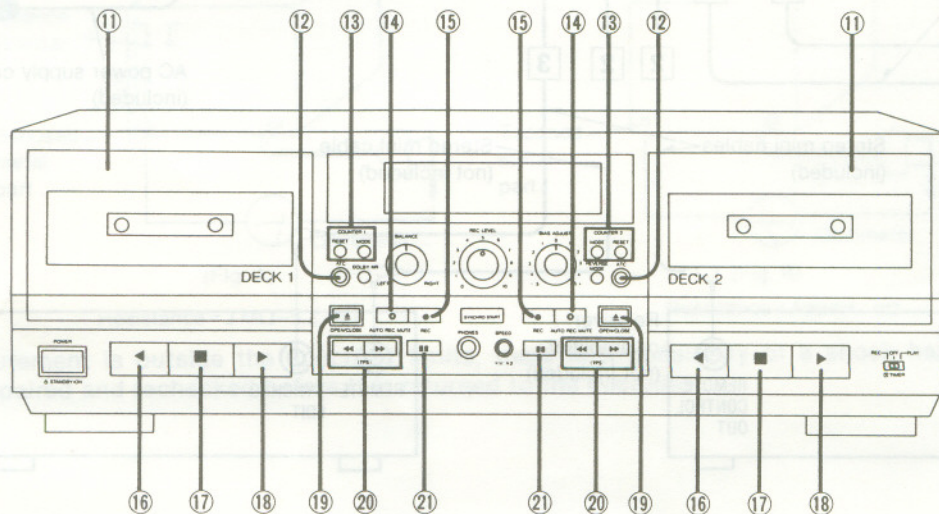
LOCATION OF CONTROL



Control section

Controls common to both tape decks

- ① **Power "⏻ STANDBY/ON" switch (POWER, ⏻ STANDBY/ON)**
- ② **Dolby noise-reduction button (DOLBY NR)**
This button is used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise-reduction systems.
- ③ **Recording-balance control (BALANCE)**
This control is used to balance the left and right sound levels during recording.
- ④ **Recording-level control (REC LEVEL)**
This control is used to regulate the recording level.
- ⑤ **Bias-adjustment control (BIAS ADJUST)**
This control is used to equalize the frequency response during recording.
- ⑥ **Reverse-mode selector (REVERSE MODE)**
This selector is used for selection of the reverse mode (for either playback or recording).
- ⑦ **Headphones jack (PHONES)**
- ⑧ **Synchro-start button (SYNCHRO START)**
This button is used to start a tape-to-tape recording, simultaneously starting deck 1 (the playback deck) and deck 2 (the recording deck).
- ⑨ **Tape-to-tape recording-speed button (SPEED)**
This button is used to select the recording speed during tape-to-tape recording.
- ⑩ **Timer switch (⏸ TIMER)**
This switch is used to automatically begin a tape recording or tape playback at a certain time, selected by an optional timer.

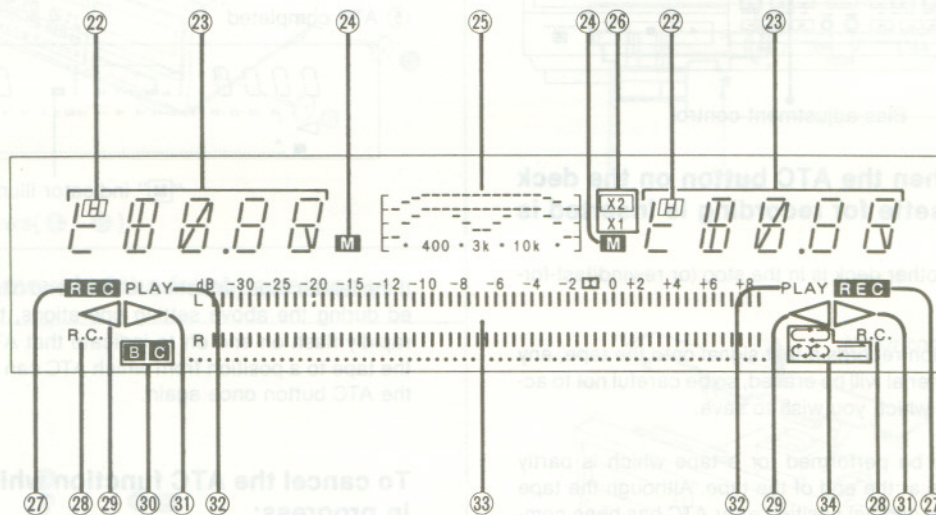


Control section (continued)

Controls applicable to tape deck 1 and/or 2

- ⑪ **Cassette holder**
- ⑫ **ATC button (ATC)**
This button is used to perform ATC (auto tape calibration). (See page 6.)

- 13 Tape counter buttons (COUNTER 1/COUNTER 2)**
MODE: This button is used to select the tape/linear counter indication.
RESET: This button is used to reset the tape counter indication to "000_" / "00.00".
- 14 Automatic-record-muting button (AUTO REC MUTE)**
 This button is used to make a silent interval on the tape while recording is in progress.
- 15 Record button (REC)**
 This button is used to set deck to the recording stand-by mode.
- 16 Reverse-side playback button (◀)**
 This button is used to start the playback or recording of side "B" of the cassette.
 (The tape will move in the right-to-left direction.)
- 17 Stop button (■)**
 This button is used to stop the tape movement.
- 18 Forward-side playback button (▶)**
 This button is used to start the playback or recording of side "A" of the cassette.
 (The tape will move in the left-to-right direction.)
- 19 Open/close button (▲ OPEN/CLOSE)**
 This button is used to open or close the cassette holder.
- 20 Rewind/fast-forward search buttons (◀▶ TPS)**
 These buttons are used to advance or rewind the tape, or to easily and quickly search for the program's beginning of the tape.
- 21 Pause button (⏸)**
 This button is used to temporarily stop the tape playback or recording.

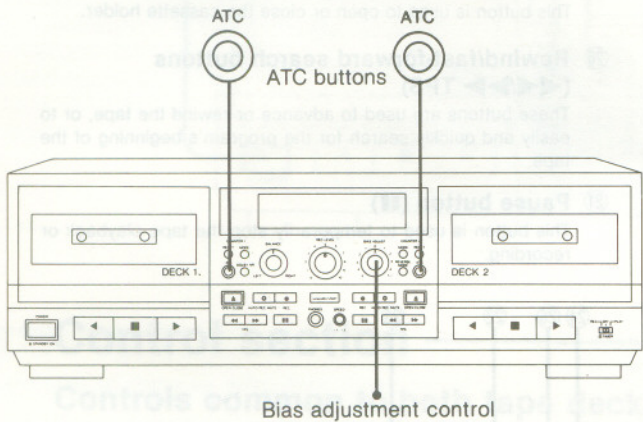


Display section

- 22 High-speed rewind/fast-forward search indicator (H)**
 Illuminates during high-speed rewind/fast-forward or high-speed search.
- 23 Tape counter/ATC display**
 Normally functions as the tape/linear counter display. During ATC (auto tape calibration), displays the status of the ATC operation.
- 24 ATC memory indicator (M)**
 Flashes during ATC (auto tape calibration), and then remains illuminated when the ATC operation is completed.
- 25 ATC graphic display**
 Shows a graphic display of the ATC (auto tape calibration) operation.
- 26 Tape-to-tape recording-speed indicators (x1, x2)**
 One of these indicators illuminates to show which of the tape-to-tape recording speeds was selected by pressing the tape-to-tape recording-speed button.
- 27 Recording indicator (REC)**
 Illuminates to indicate that this unit is in the recording stand-by mode or is recording.
- 28 Remote-control indicator (R.C.)**
 Illuminates to indicate that this unit can now be controlled by the remote control transmitter of the appropriate receiver connected.
- 29 Reverse-side indicator (◀)**
 Illuminates during playback or recording to indicate that side "B" of the tape is being used.
- 30 Dolby noise-reduction indicators (B, C)**
 Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing the Dolby noise-reduction button.
- 31 Forward-side indicator (▶)**
 Illuminates during playback or recording to indicate that side "A" of the tape is being used.
- 32 Playback indicator (PLAY)**
 When this indicator illuminates steadily, it indicates that this unit is in the playback or recording mode.
 When flashing, indicates that this unit is in the pause mode or in the recording stand-by mode.
- 33 Input level meter**
 During playback, this meter indicates the level of the recorded sound.
 During recording, it indicates the level being recorded, adjusted by the recording-level control.
- 34 Reverse-mode indicators (◀, ▶, ⏸)**
 Each indicator illuminates to show which of the reverse modes was selected by the reverse-mode selector.

■ ABOUT THE ATC FUNCTION

ATC (auto tape calibration) is the function which identifies the quality of the tape (concerning bias, level, equalizer) automatically and sets the most desirable recording condition. It takes about 1 minute to complete the setting.



ATC will begin when the ATC button on the deck in which the cassette for recording is inserted is pressed.

Perform ATC while the other deck is in the stop (or rewind/fast-forward) mode.

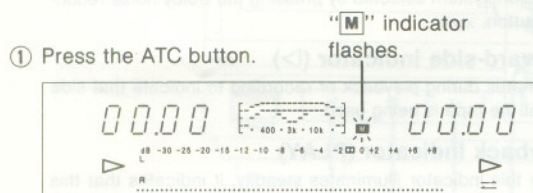
Because the ATC function records a test signal onto the tape, any previously recorded material will be erased, so be careful not to accidentally erase material which you wish to save.

Although ATC can also be performed for a tape which is partly wound, it is not possible at the end of the tape. Although the tape will be wound back to its original position after ATC has been completed, the position may be slightly different from the exact original position. Therefore, perform ATC 2 seconds or more after the end of the previous track.

Be sure to set the bias adjustment control to 0.

The display changes as follows while the ATC setting is taking place.

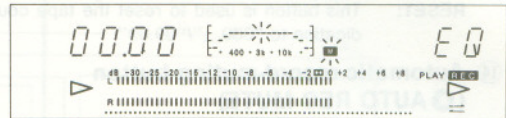
Example: Performing ATC on tape deck 2.



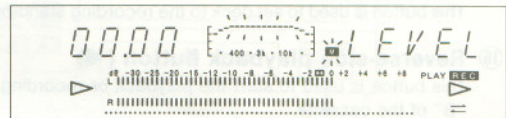
② Bias setting in progress.



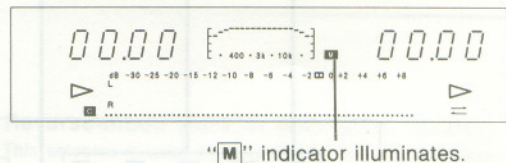
③ Equalizer setting in progress.



④ Level setting in progress.



⑤ ATC completed.



"M" indicator illuminates.

If the leader tape (attached to each end of recording tape) is reached during the above setting operations, the "M" indicator will rapidly flash on and off to indicate that ATC is not possible. Wind the tape to a position from which ATC can be performed and press the ATC button once again.

To cancel the ATC function while the settings are in progress:

Press the stop button.

To cancel the ATC settings after they have been made:

Press the ATC button. (The settings cannot be cancelled during recording.)

Notes:

ATC may not be possible on an old tape or on some special types of tapes.

The settings will be cancelled if the open/close button is pressed, so do not remove the tape cassette until recording has been completed.

Unless the ATC settings are cancelled, they will be stored in memory even after the power has been switched to the standby condition (or the AC power supply cord has been disconnected from the AC outlet).

ADJUSTMENT PROCEDURE

This unit holds recording bias and equalization data in its EEPROM chip. An internal CPU automatically adjusts playback gain, recording bias, overall gain, and overall frequency response according to the ROM data. Manual adjustment with potentiometers is no longer necessary except for head azimuth and tape speed. All other items require only measurement data checks.

The adjustment and checkout procedures are as follows.

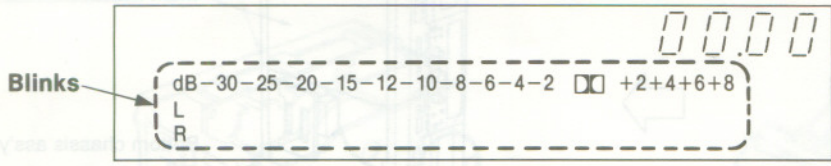
• Writing to EEPROM

The EEPROM chip holds the optimal recording bias and equalization data. If the chip has been replaced, be sure to write to it, following the steps below:

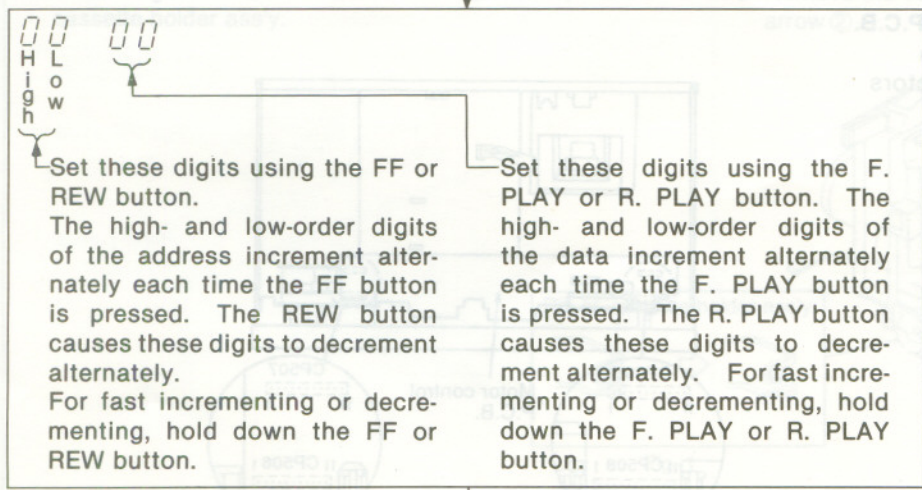
Short the Test Mode terminals with a shorting clip.

While holding down the STOP button on DECK2, press the POWER switch to ON.

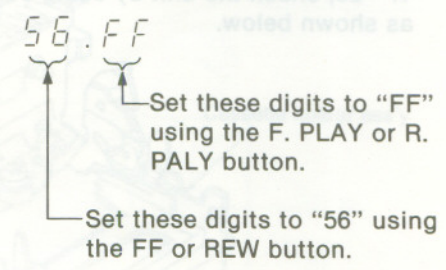
All FL display segments except for the four-digit counter on DECK2 will start blinking to indicate that the deck has entered Write mode. At this point the four-digit counter will indicate "00*~~*~~".



The counter shows a four-digit hex number. The two high-order digits indicate a ROM address, and the two low-order digits indicate the data stored at that address.

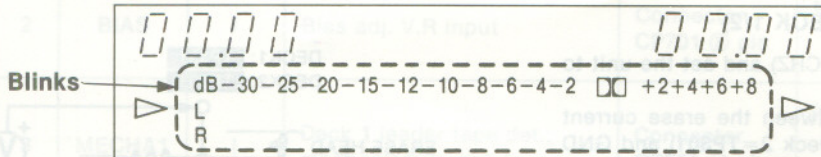


Example: Set "FF" in address 56 (see Fig. 1).



Set data (see Fig. 1) to addresses 22 through 7E. After this, set "00" (end) in address 7E and exit from Write mode.

After completing ROM writing, press the STOP button on DECK2 to restore the normal Test mode. The four-digit counter on DECK1 displays.



Remove the shorting clip from the Test Mode terminals. The FL display will stop blinking.

High Low	0	1	2	3	4	5	6	7
0	—	—	—	—	B0	68	30	88
1	—	—	—	—	00	78	68	68
2	—	—	D0	68	—	38	B0	FF
3	—	—	80	78	—	64	6C	B0
4	—	—	E0	38	—	A8	FF	C4
5	—	—	7C	64	—	50	A0	1C
6	—	—	FB	A8	80	FF	BA	68
7	—	—	F5	00	58	74	2C	78
8	—	—	0F	—	18	B8	—	50
9	—	—	2B	—	80	30	—	72
A	—	—	12	—	88	—	—	4A
B	—	—	07	—	96	—	—	55
C	—	—	—	84	—	—	80	—
D	—	—	—	60	—	—	58	—
E	—	—	—	30	—	84	18	00
F	—	—	—	68	—	60	80	—

Fig. 1

MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Rec. level control; Maximum
- Timer switch; Off
- Recording-balance control; Center
- Bias-adjustment control; Center
- Reverse-mode selector switch; \Rightarrow
- Tape-to-tape recording-speed switch; Off
- Dolby NR switch; Off
- ATC switch; Off

Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

Test tape

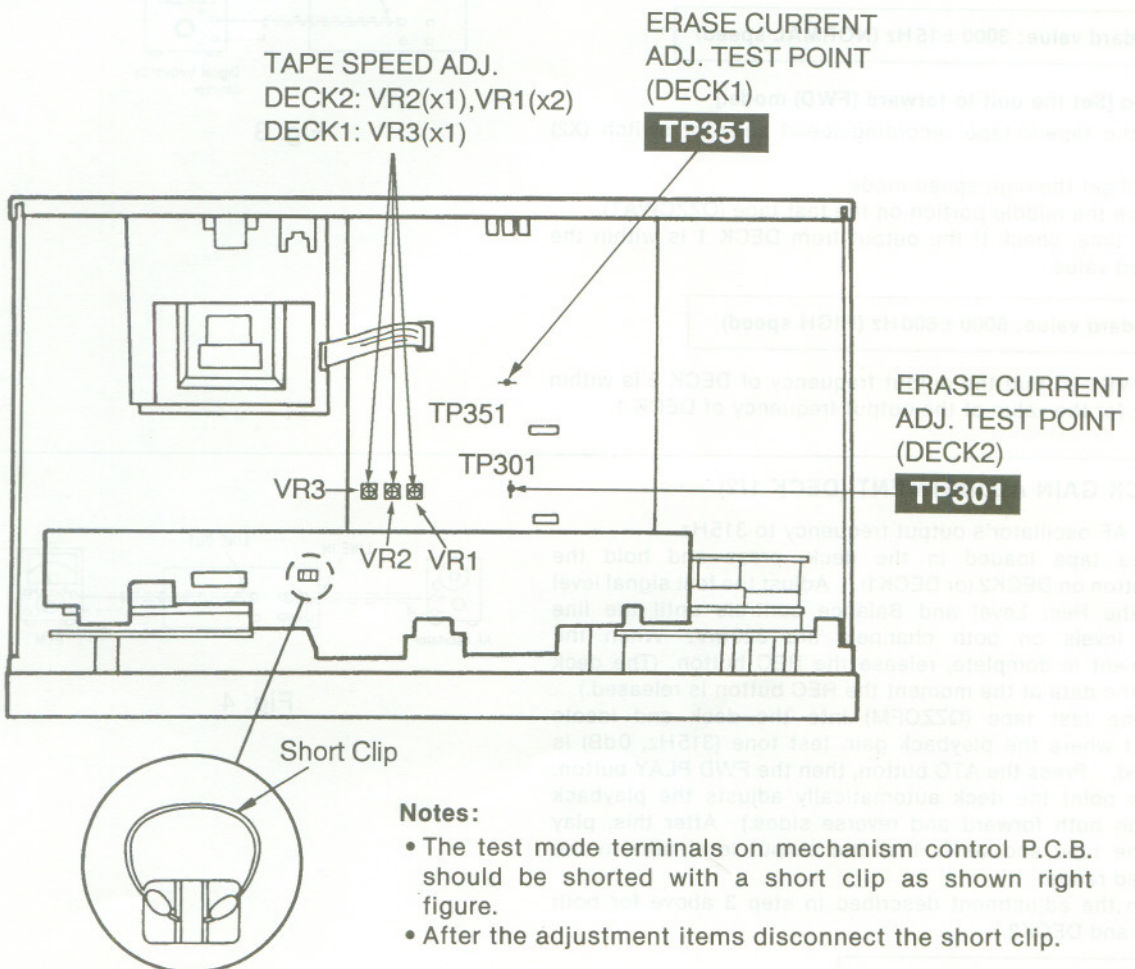
- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)

- ATT (Attenuator)
- DC voltmeter
- Resistor (600 Ω)

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall gain adjustment and Overall frequency response
Normal reference blank tape; QZZCRA
CrO₂ reference blank tape; QZZCRX
Metal reference blank tape; QZZCRZ

Adjustment Points



HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

1. Playback the azimuth adjustment portion (8kHz_r -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the play mode.
3. Repeat the same check in reverse play mode.
4. After the adjustment, apply screwlock to the azimuth adjusting screw.

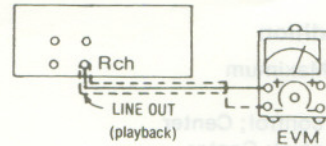


Fig. 1

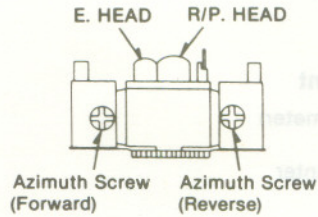


Fig. 2

TAPE SPEED ADJUSTMENT (DECK 1/2)

Normal speed

1. Playback the middle portion of the test tape (QZZCWAT).
2. Adjust Deck 1=VR3 and Deck 2=VR2 so that the output is within the standard value.

Standard value: 3000 ± 15 Hz (NORMAL speed)

High speed [Set the unit to forward (FWD) mode.]

3. Press the tape-to-tape recording-speed selector switch (X2) button.
This will set the high speed mode.
4. Playback the middle portion on the test tape (QZZCWAT).
5. At that time, check if the output from DECK 1 is within the standard value.

Standard value: 6000 ± 600 Hz (HIGH speed)

6. Adjust VR1 so that the output frequency of DECK 2 is within ±30Hz for the value of the output frequency of DECK 1.

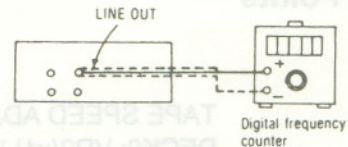


Fig. 3

PLAYBACK GAIN ADJUSTMENT (DECK 1/2)

1. Set the AF oscillator's output frequency to 315Hz.
2. With no tape loaded in the deck, press and hold the REC button on DECK2 (or DECK1). Adjust the test signal level using the Rec. Level and Balance controls until the line output levels on both channels are 320mV. When the adjustment is complete, release the REC button. (The deck stores the data at the moment the REC button is released.)
3. Load the test tape (QZZCFM) into the deck and locate the part where the playback gain test tone (315Hz, 0dB) is recorded. Press the ATC button, then the FWD PLAY button. (At this point the deck automatically adjusts the playback gains on both forward and reverse sides.) After this, playback the tape and verify that the output level falls in the specified range.
4. Perform the adjustment described in step 3 above for both DECK1 and DECK2.

Standard value: 320mV ± 0.5dB

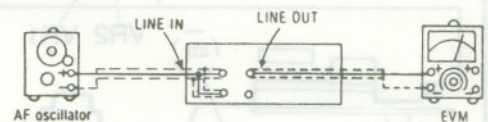


Fig. 4

PLAYBACK FREQUENCY RESPONSE (DECK 1/2)

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

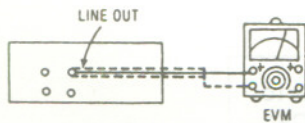


Fig. 5

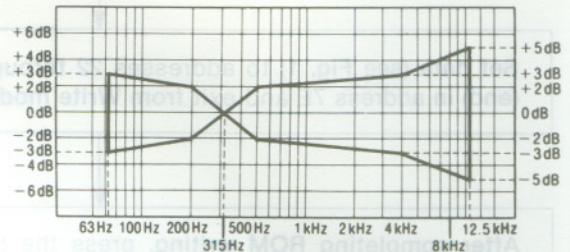


Fig. 6

ERASE CURRENT ADJUSTMENT (DECK 1/2)

1. Insert the Metal-blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Check if the output at this time between the erase current confirmation point Deck 1=TP351 (Deck 2=TP301) and GND (chassis) (the output on both edges of Deck 1=R358 (DECK 2=R308)) is within the standard value.

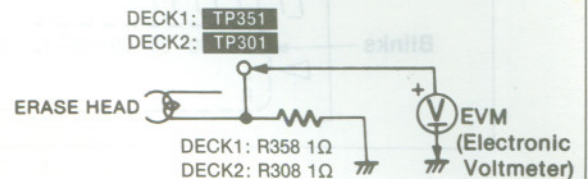


Fig. 7

Standard value: $180 \pm 20 \text{ mA (Metal)}$...EVM Reading: $180 \pm 20 \text{ mV}$

OVERALL GAIN ADJUSTMENT AND OVERALL FREQUENCY RESPONSE (DECK 1/2)

1. Load a Normal blank test tape (QZZCRA) into the deck under test. Press the ATC button, then the REC button. (At this point the deck automatically adjusts the overall gain and frequency response.)
2. With the deck placed in Record. Pause mode, apply the reference test signal (1kHz) to the Rec. input and adjust the output level to 320mV with the attenuator (ATT). After this, start recording.
3. While playing back the reference signal just recorded, verify that the output level falls in the following range.

Standard value: $320 \text{ mV} \pm 0.5 \text{ dB}$

4. Apply test signals (with the specified test frequencies covering the range from 50Hz to 10kHz) whose levels are 20dB lower than the reference signal level (1kHz) to the Rec. input and record these signals in sequence.
5. Play back the test signals just recorded and verify that the levels at the test frequencies fall in the ranges specified in Fig. 8 with respect to the reference signal level.
6. Repeat steps 4 and 5 above for CrO₂ blank test tape (QZZCRX) and Metal blank test tape (QZZCRZ), in these cases raising the upper end of the test signal frequency range to 12.5kHz. Verify that the signal levels at the test frequencies fall in the ranges specified in Fig. 9 with respect to the reference signal level.
7. Perform the same checks for both DECK1 and DECK2. Steps 1 through 4 above are concerned with overall gain; steps 5 through 7 pertain to overall frequency response.

Normal Overall frequency response chart (NR OUT)

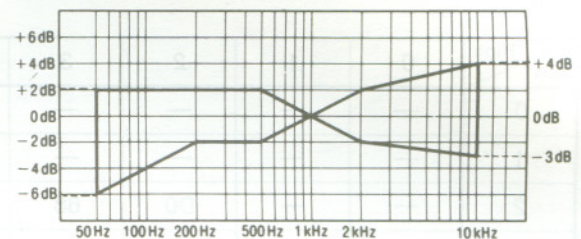


Fig. 8

CrO₂ Metal Overall frequency response chart (NR OUT)

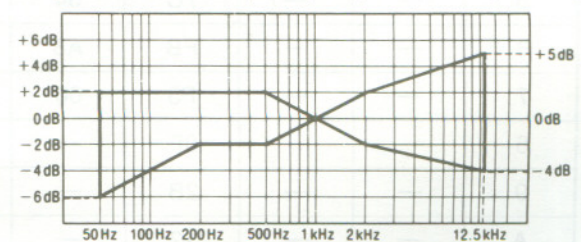


Fig. 9

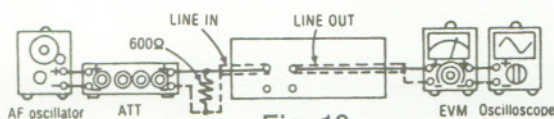
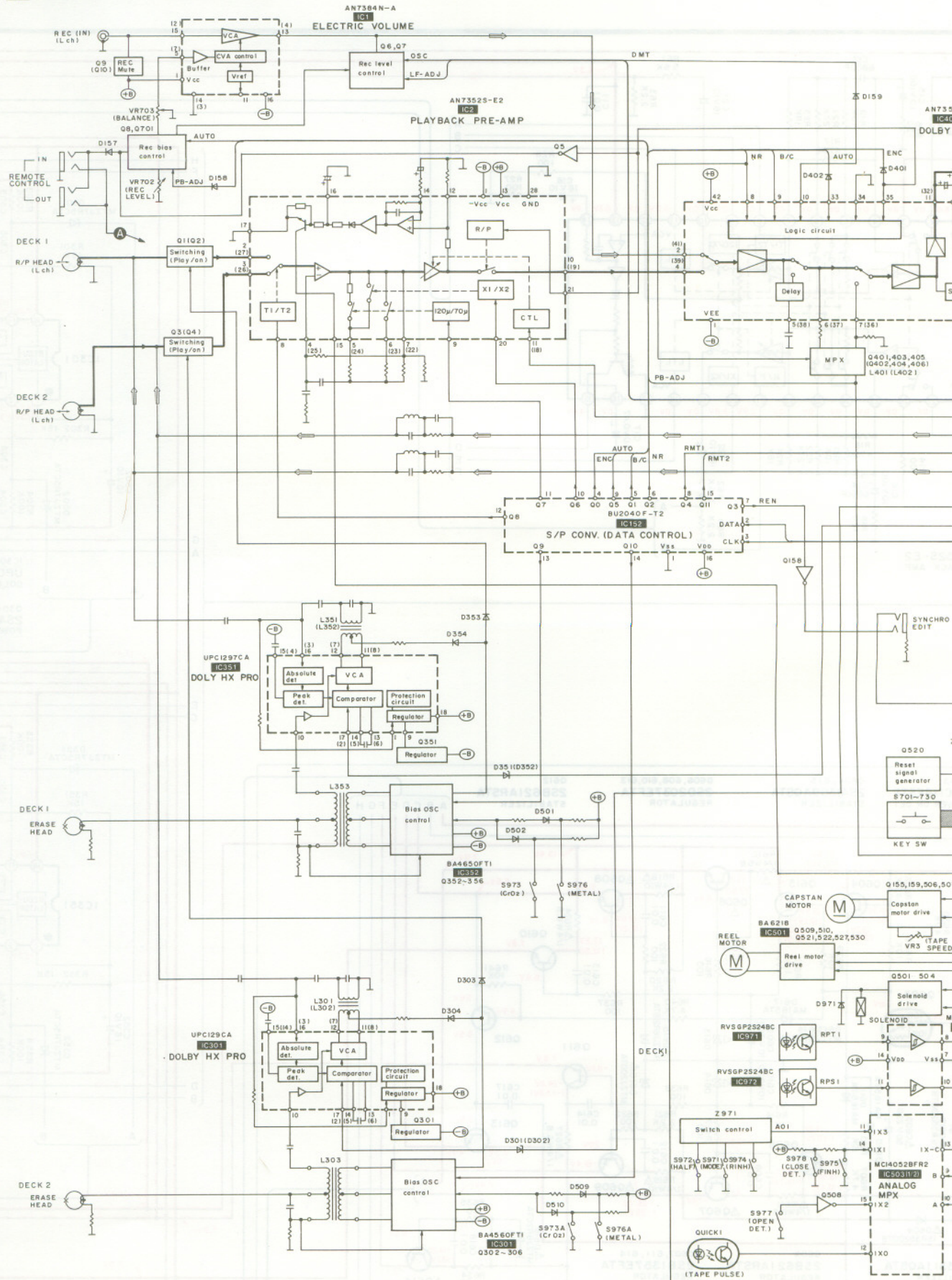
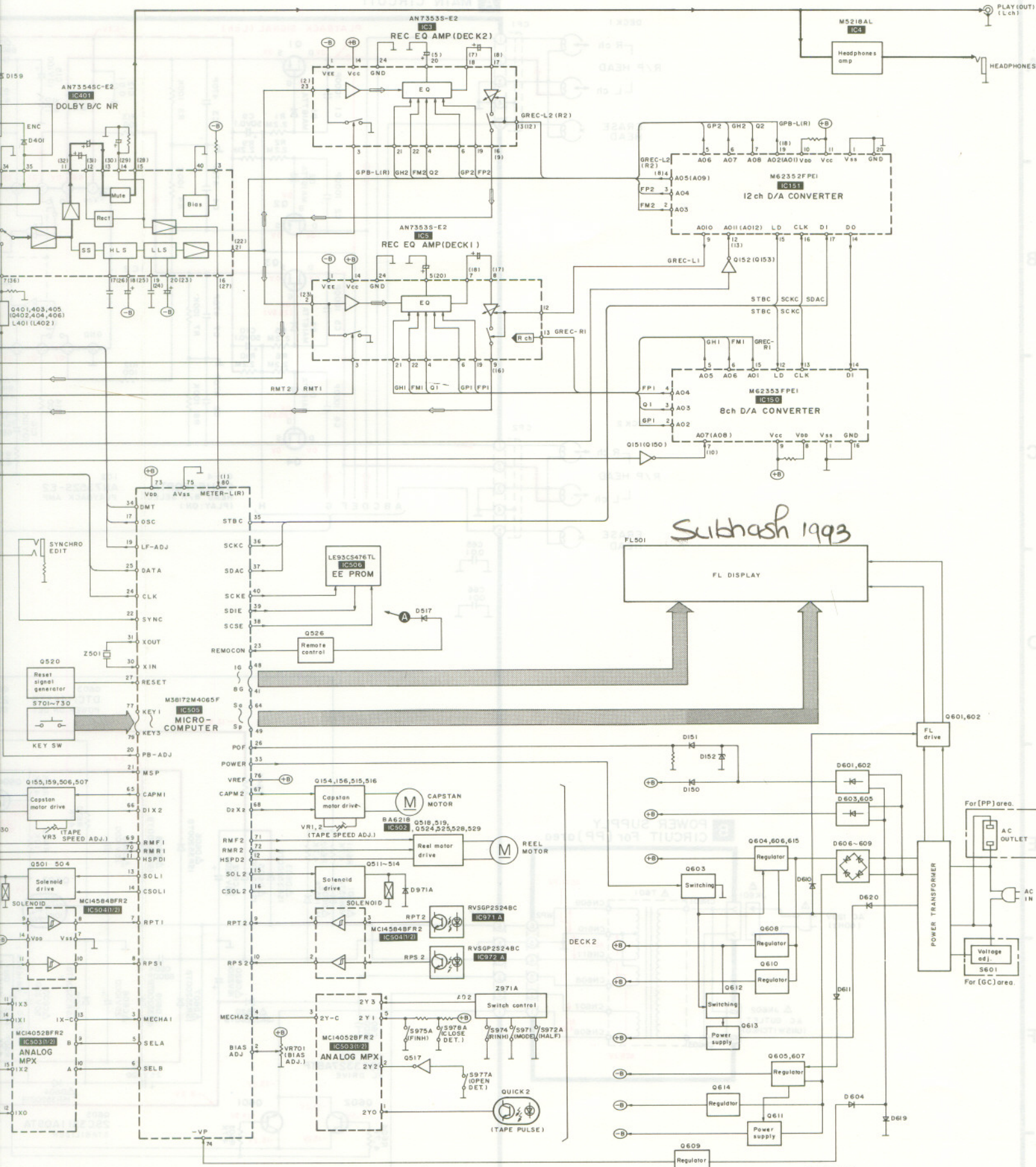


Fig. 10

BLOCK DIAGRAM





Subhash 1993

Notes:

- → Playback signal
- → Recording signal

1 2 3 4 5

A

B

C

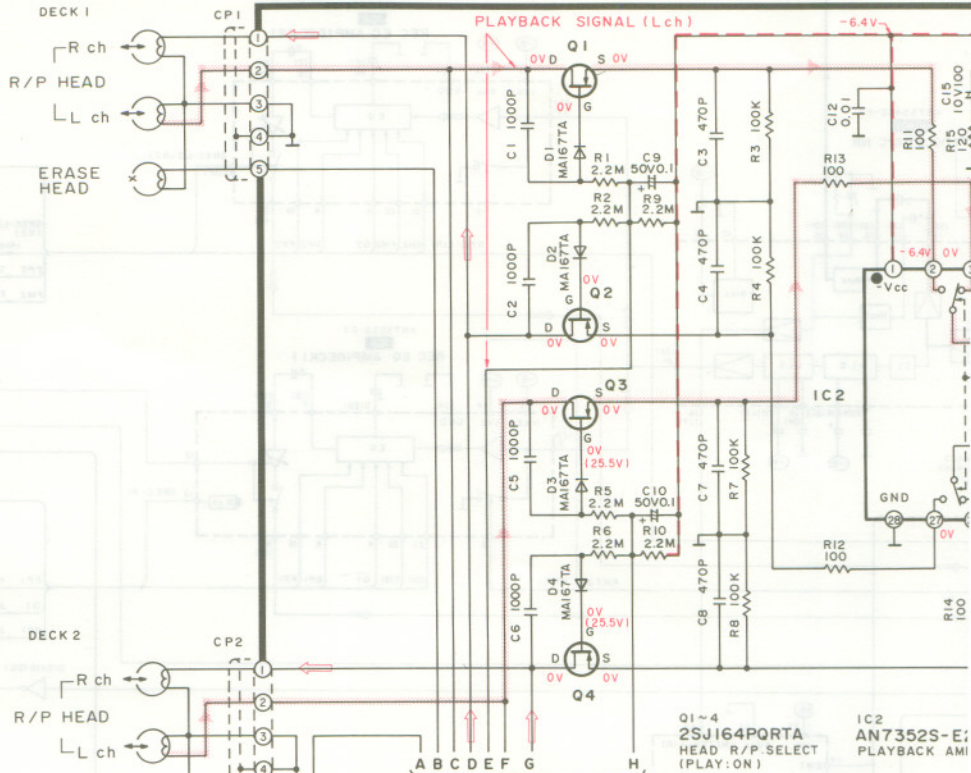
D

E

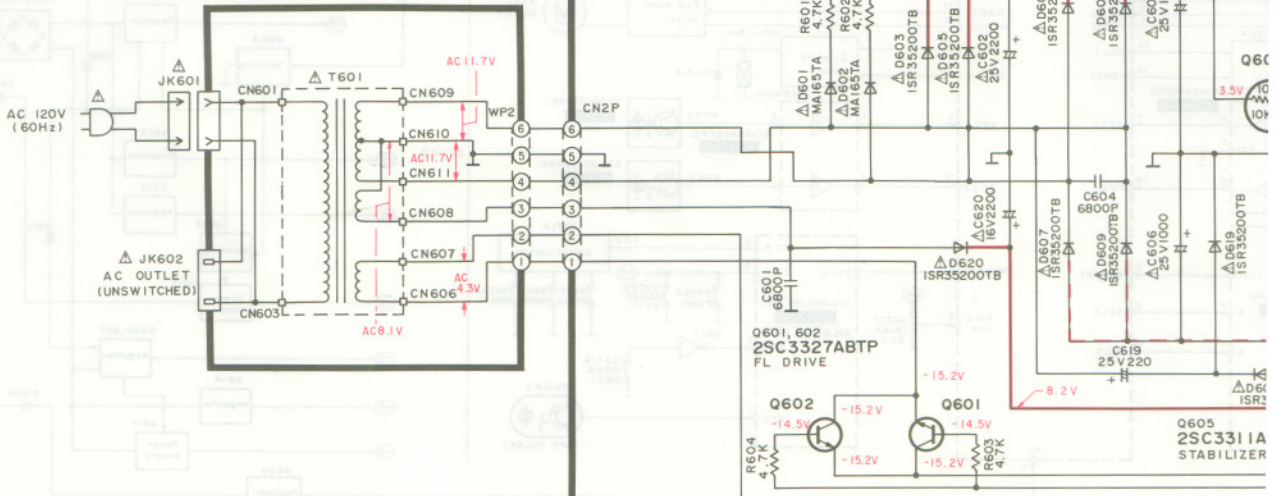
F

G

A MAIN CIRCUIT

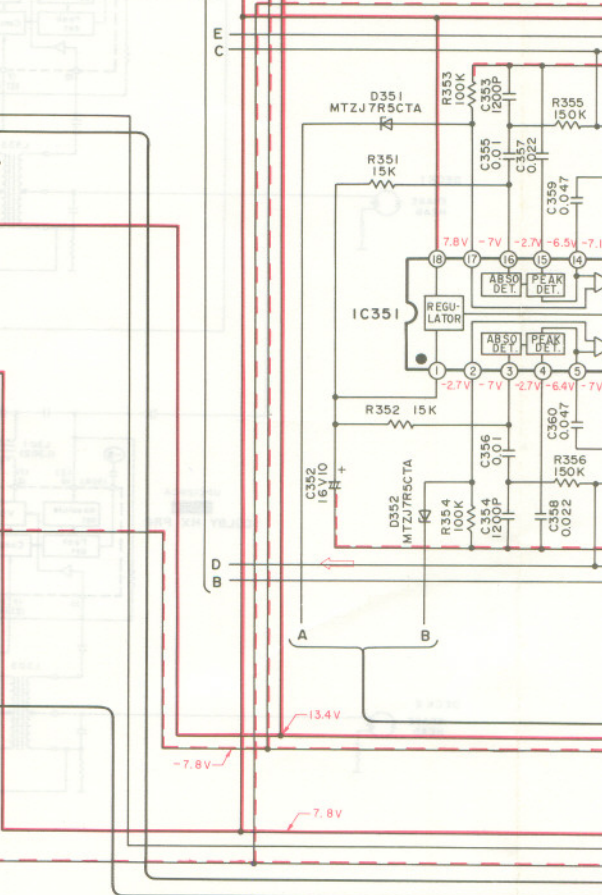
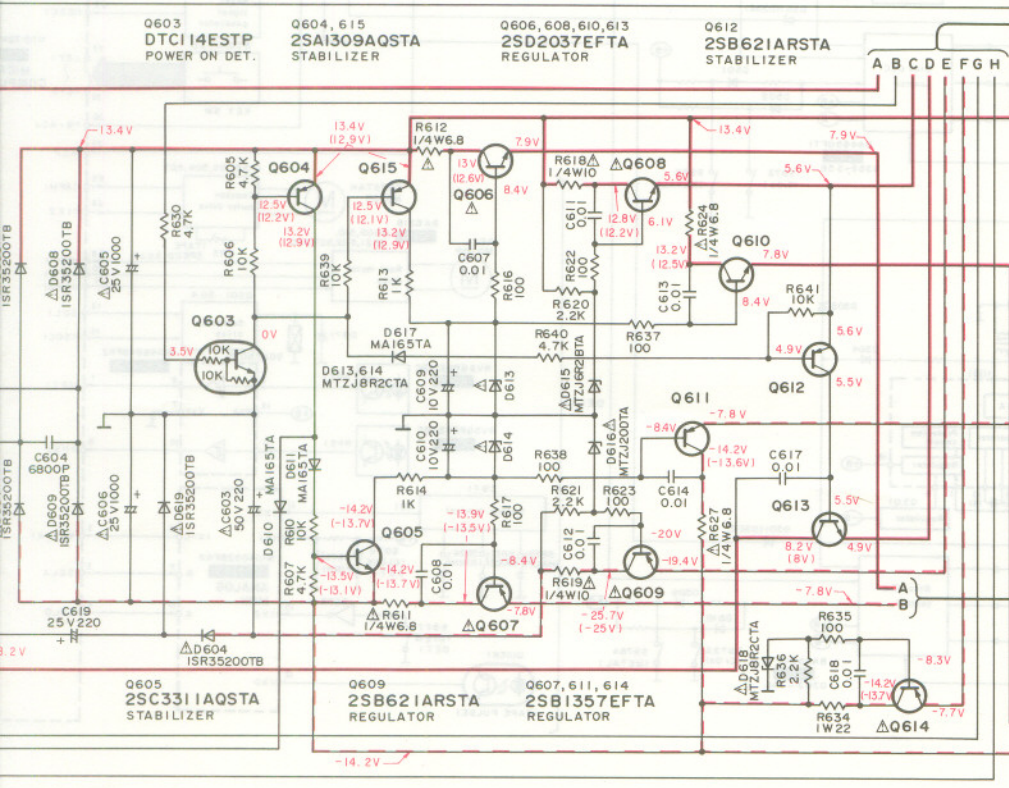
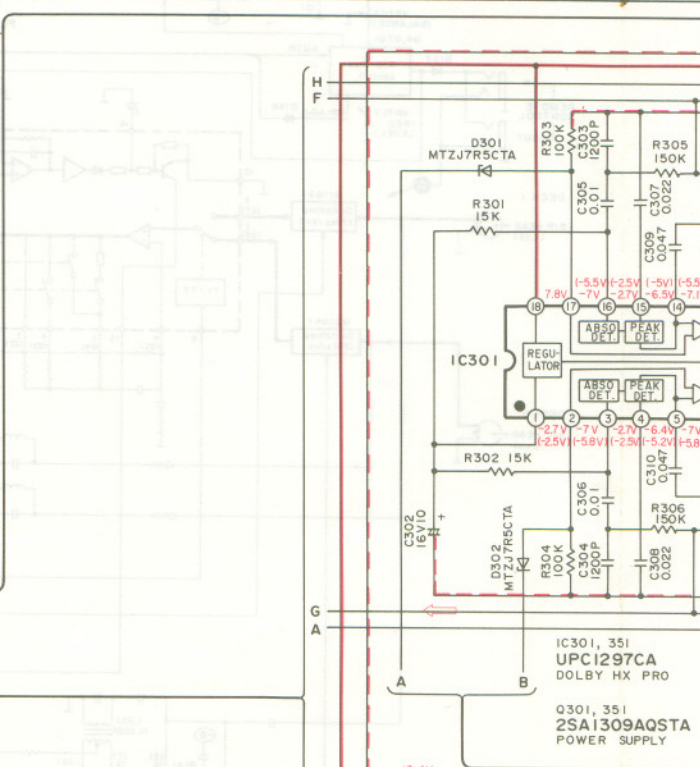
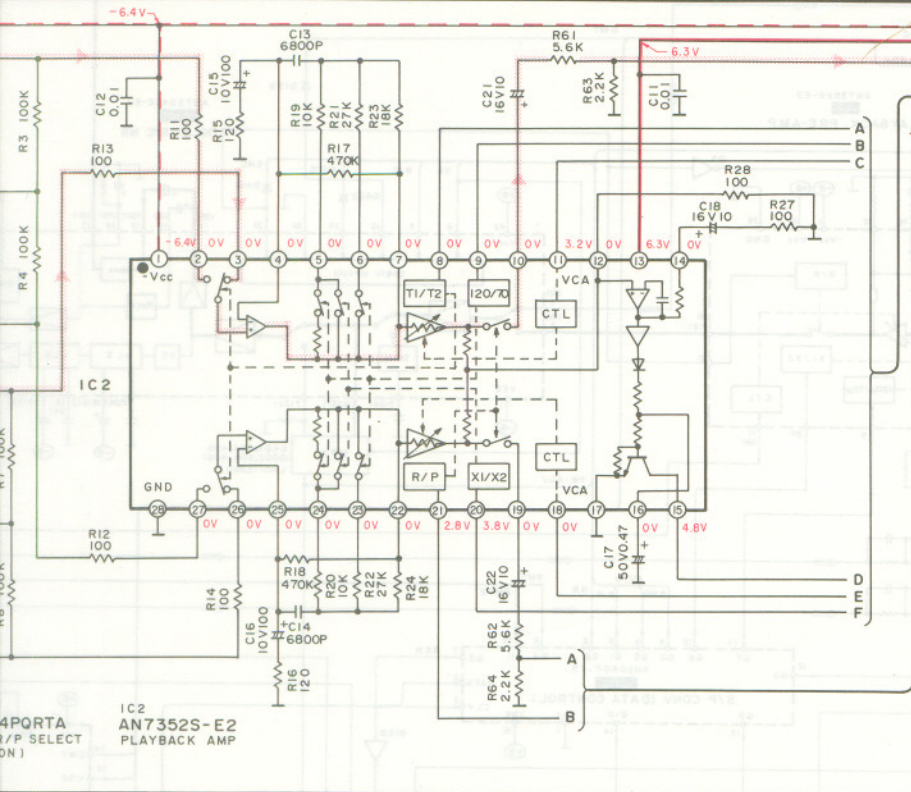


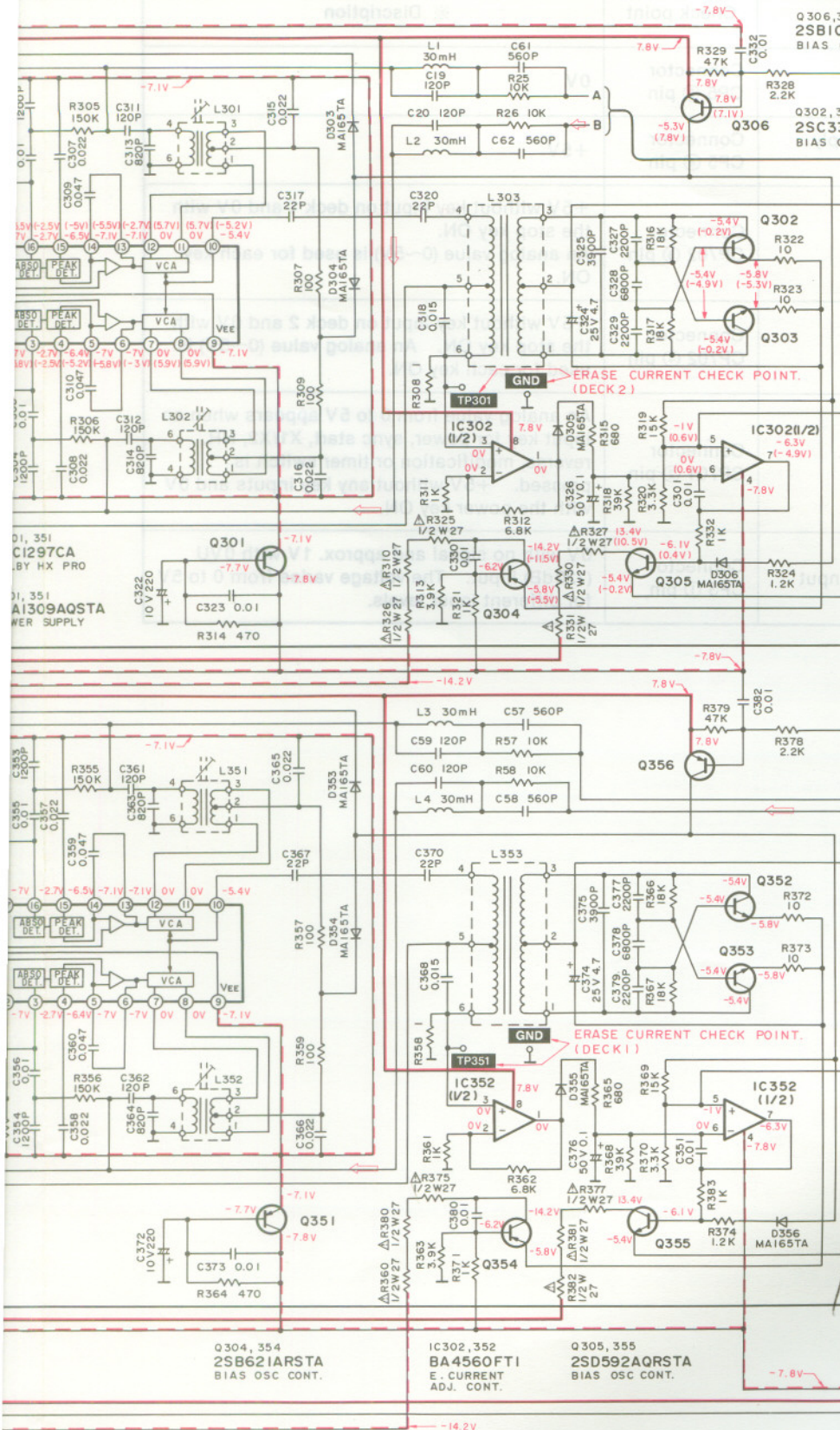
B POWER SUPPLY CIRCUIT For (PP) area.



Notes:

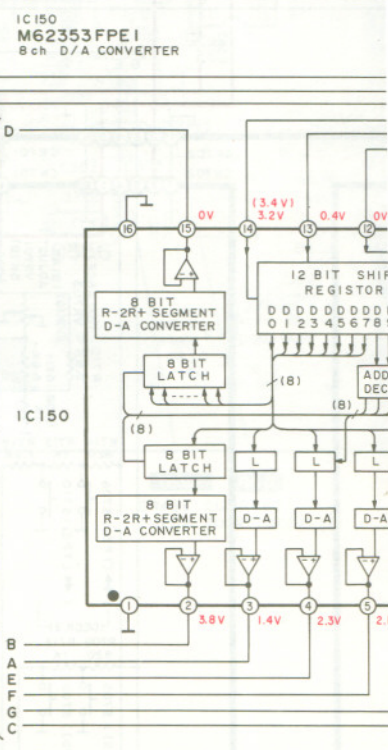
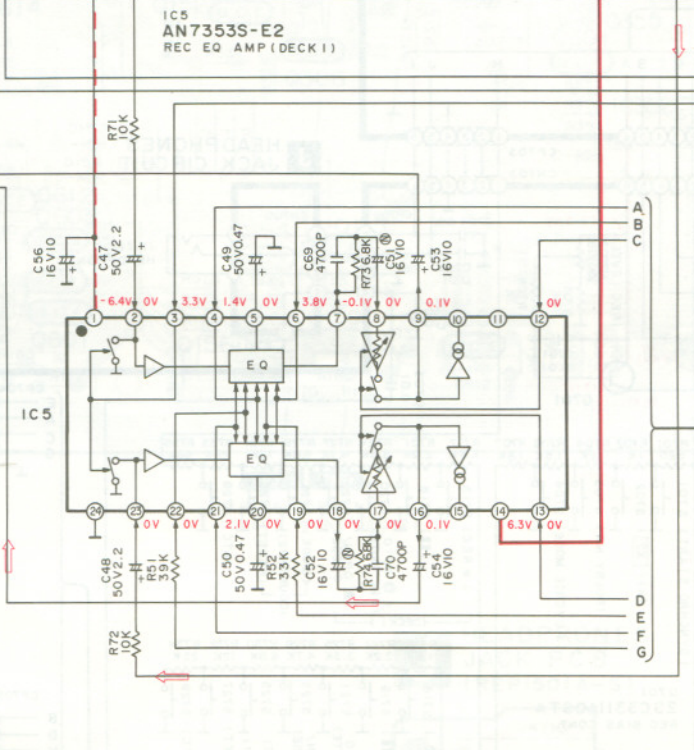
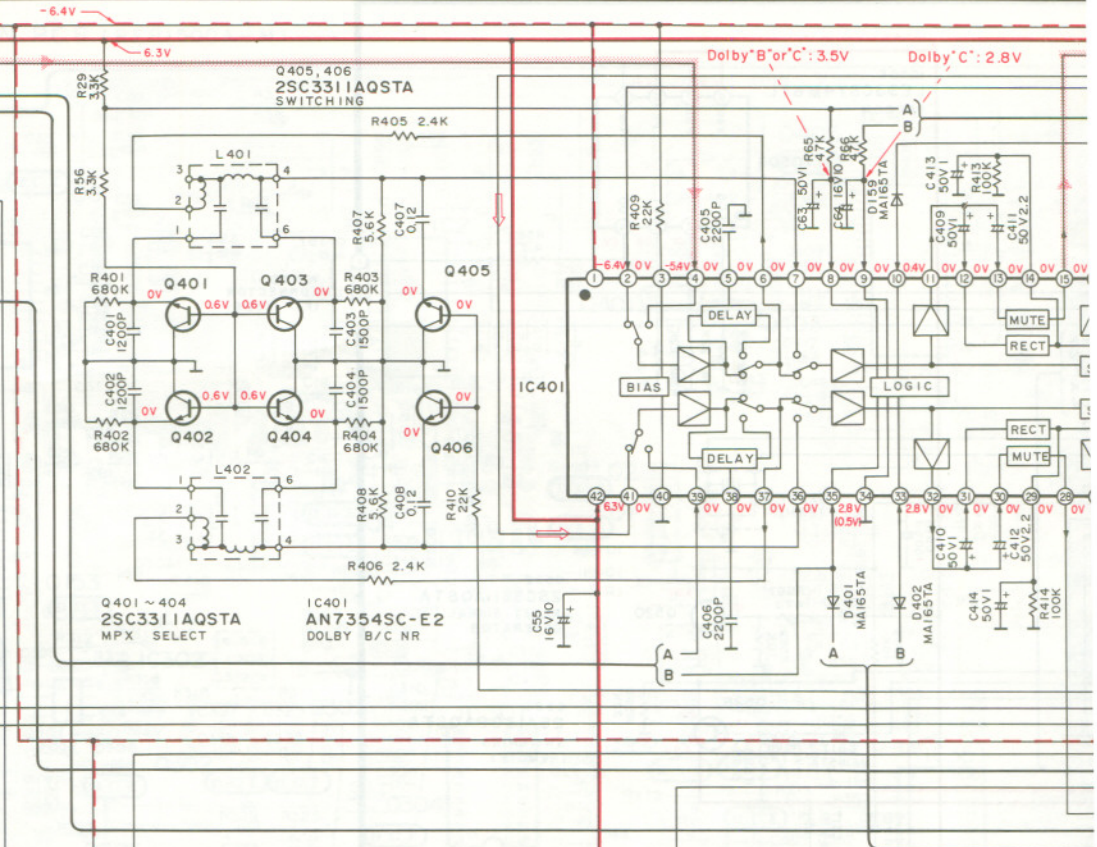
Playback signal →
Recording signal ←

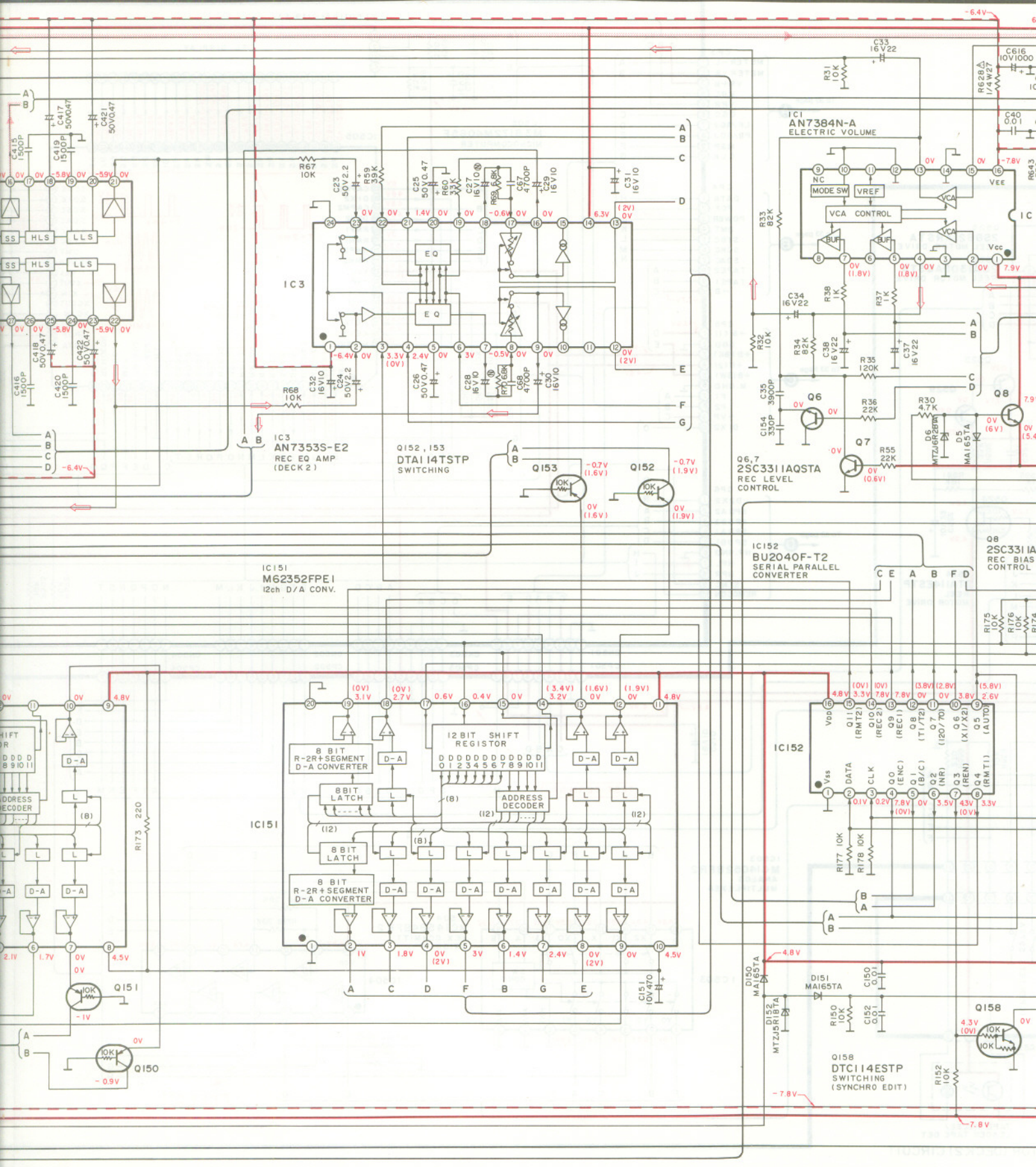




Subbook 1993

Pin No.	Mark	Division	Function
75	AV	—	BIAS OSC CONT.
76	V	—	BIAS OSC
77	KEY1	I	KEY switch input
78	KEY2	I	KEY switch input
79	KEY3	I	KEY switch input
80	LC	I	LC indication level





(This schematic dia new technology.)

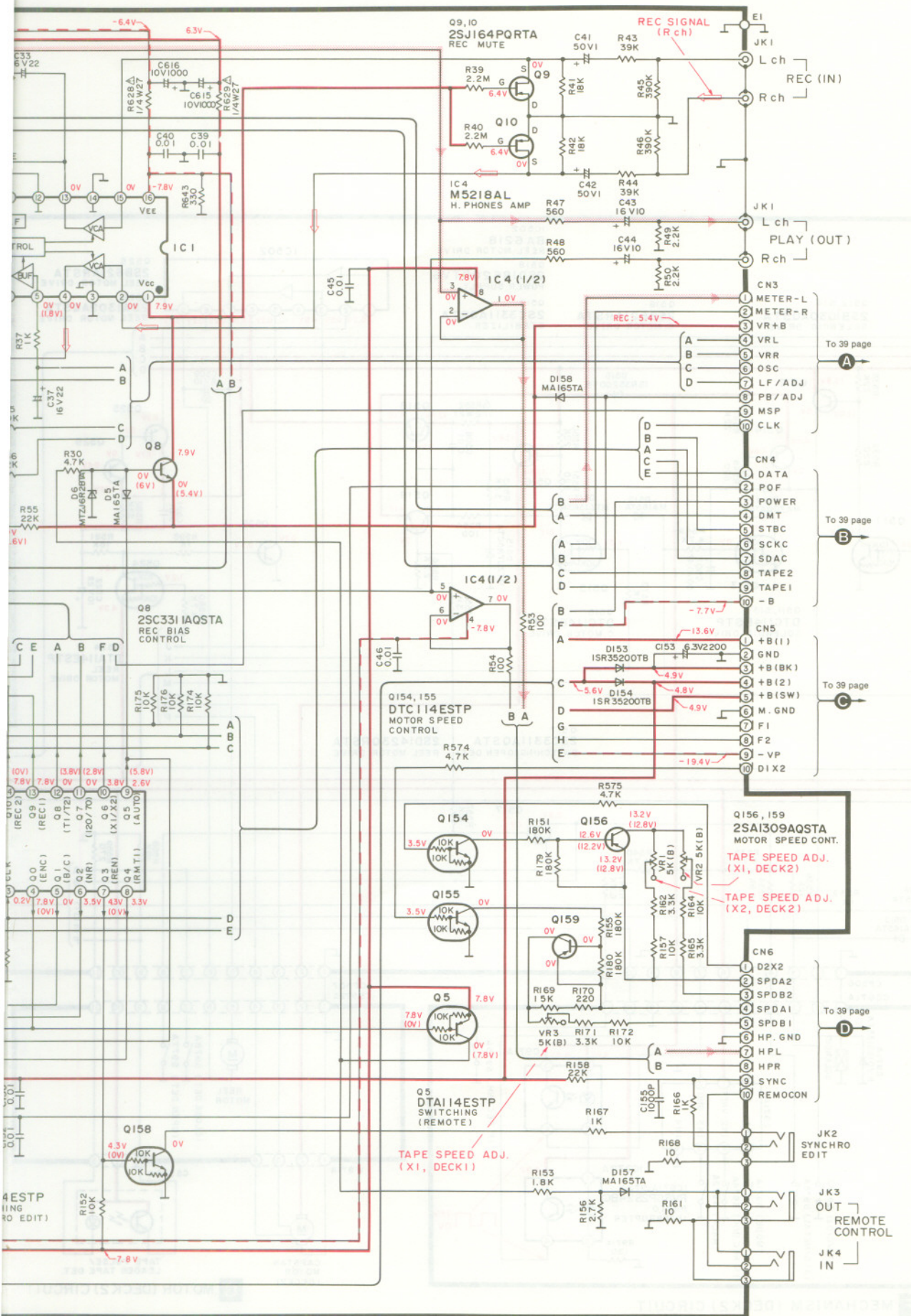
Note 1:

- S601: Voltage selector
- Resistance are in ohms 1K=1,000 (Ω), 1M=1,000,000 (Ω)
- Capacity are in micro-farads (μF)..... Voltage value in Volts (V)
- For measurement us Emitter (E) and Collector (C) components identified
- When replacing any of the components:
- (---<+B---) in
- (---<-B---) in
- (---<---) in
- (---<---) in
- The supply part number

Ref. No.	Product
IC1	AN73
IC4	M521
IC302, 352	BA45

Caution!

- IC and LSI are sensitive to static electricity
- Secondary trouble can occur after repair
- Cover the parts boxes when not in use
- Ground the soldering iron when not in use
- Put a conductive mat on the work surface
- Do not touch the legs of the components



SCHEMATIC DIAGRAM (Parts list on pages 59~64.)

(This schematic diagram may be modified at any time with the development of new technology.)

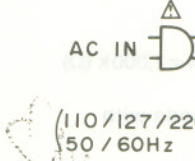
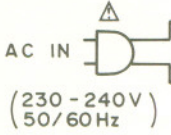
- Note 1:**
- S601: Voltage selector in "240V" position. (For [GC] area only.) (110V ↔ 127V ↔ 220V ↔ 240V)
 - Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K=1,000 (Ω), 1M=1,000k (Ω)
 - Capacity are in micro-farads (μF) unless specified otherwise.
 - All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
 - ()..... Voltage values at record mode.

For measurement us EVM.
 Important safety notice
 Components identified by Δ mark have special characteristics important for safety.
 When replacing any of these components, use only manufacturer's specified parts.

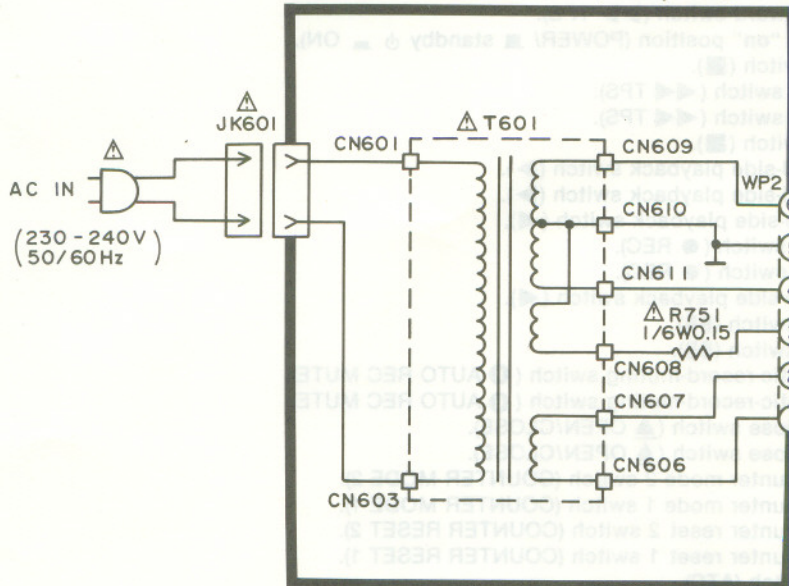
- ($\leftarrow +B \rightarrow$) indicates +B (bias).
- ($\leftarrow -B \rightarrow$) indicates -B (bias).
- ($\leftarrow \text{playback signal} \rightarrow$) indicates the flow of the playback signal.
- ($\leftarrow \text{record signal} \rightarrow$) indicates the flow of the record signal.
- The supply part number is described alone in the replacement parts list,

Ref. No.	Production Part No.	Supply Part No.
IC1	AN7384N-A	AN7384
IC4	M5218AL	M5218L
IC302, 352	BA4560FT1	SVIBA4560FT1

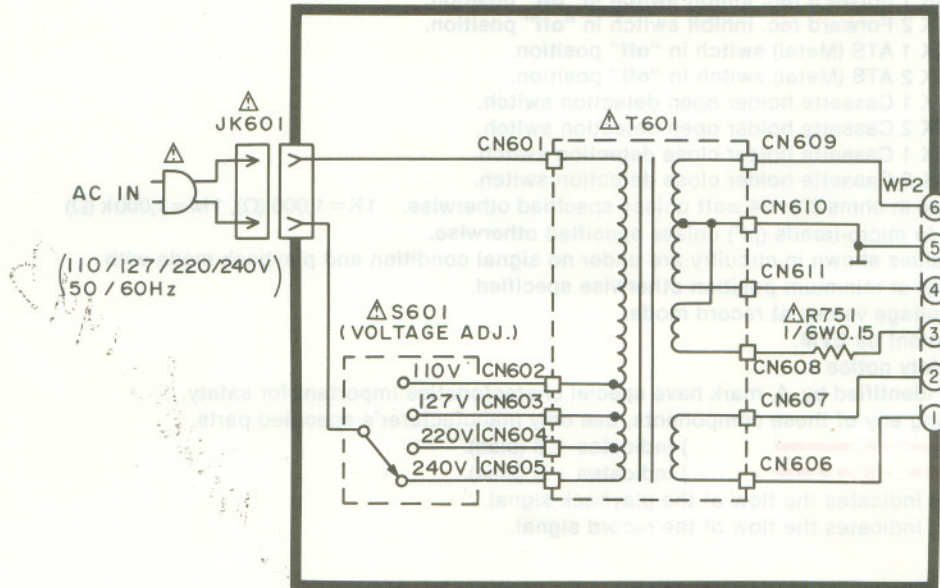
- Caution!**
- IC and LSI are sensitive to static electricity.
 Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
 - Ground the soldering iron.
 - Put a conductive mat on the work table.
 - Do not touch the legs of IC or LSI with the fingers directly.





























**B POWER SUPPLY
CIRCUIT For [EB,EG] areas.**



**B POWER SUPPLY
CIRCUIT For [GC] area.**








Note 2:

- S701 : Synchro-start switch (SYNCHRO START).
- S702 : Tape-to-tape recording-speed switch (SPEED; X1, X2).
- S703 : Dolby noise reduction switch (Dorby NR; , .
- S704 : Reverse-mode selector switch (REVERSE MODE; , , .
- S705 : DECK 1 Fast-forward switch ( TPS).
- S706 : DECK 2 Fast-forward switch ( TPS).
- S707 : Power switch in "on" position (POWER/  standby  ON).
- S708 : DECK 2 Stop switch (.
- S709 : DECK 1 Rewind switch ( TPS).
- S710 : DECK 2 Rewind switch ( TPS).
- S711 : DECK 1 Stop switch (.
- S712 : DECK 2 Forward-side playback switch (.
- S713 : DECK 1 Forward-side playback switch (.
- S714 : DECK 2 Reverse-side playback switch (.
- S715 : DECK 1 Record switch ( REC).
- S716 : DECK 2 Record switch ( REC).
- S717 : DECK 1 Reverse-side playback switch (.
- S718 : DECK 1 Pause switch (.
- S719 : DECK 2 Pause switch (.
- S720 : DECK 1 Automatic-record-muting switch ( AUTO REC MUTE).
- S721 : DECK 2 Automatic-record-muting switch ( AUTO REC MUTE).
- S722 : DECK 1 Open/close switch ( OPEN/CLOSE).
- S723 : DECK 2 Open/close switch ( OPEN/CLOSE).
- S724 : DECK 2 Tape counter mode 2 switch (COUNTER MODE 2).
- S725 : DECK 1 Tape counter mode 1 switch (COUNTER MODE 1).
- S726 : DECK 2 Tape counter reset 2 switch (COUNTER RESET 2).
- S727 : DECK 1 Tape counter reset 1 switch (COUNTER RESET 1).
- S728 : DECK 1 ATC switch (ATC).
- S729 : DECK 2 ATC switch (ATC).
- S730 : Timer switch ( TIMER).
- S971 : DECK 1 Mode switch in "off" position.
- S971A : DECK 2 Mode switch in "off" position.
- S972 : DECK 1 Cassette half detection switch in "off" position.
- S972A : DECK 2 Cassette half detection switch in "off" position.
- S973 : DECK 1 ATS (CrO₂) switch in "off" position.
- S973A : DECK 2 ATS (CrO₂) switch in "off" position.
- S974 : DECK 1 Reverse rec. inhibit switch in "off" position.
- S974A : DECK 2 Reverse rec. inhibit switch in "off" position.
- S975 : DECK 1 Forward rec. inhibit switch in "off" position.
- S975A : DECK 2 Forward rec. inhibit switch in "off" position.
- S976 : DECK 1 ATS (Metal) switch in "off" position.
- S976A : DECK 2 ATS (Metal) switch in "off" position.
- S977 : DECK 1 Cassette holder open detection switch.
- S977A : DECK 2 Cassette holder open detection switch.
- S978 : DECK 1 Cassette holder close detection switch.
- S978A : DECK 2 Cassette holder close detection switch.

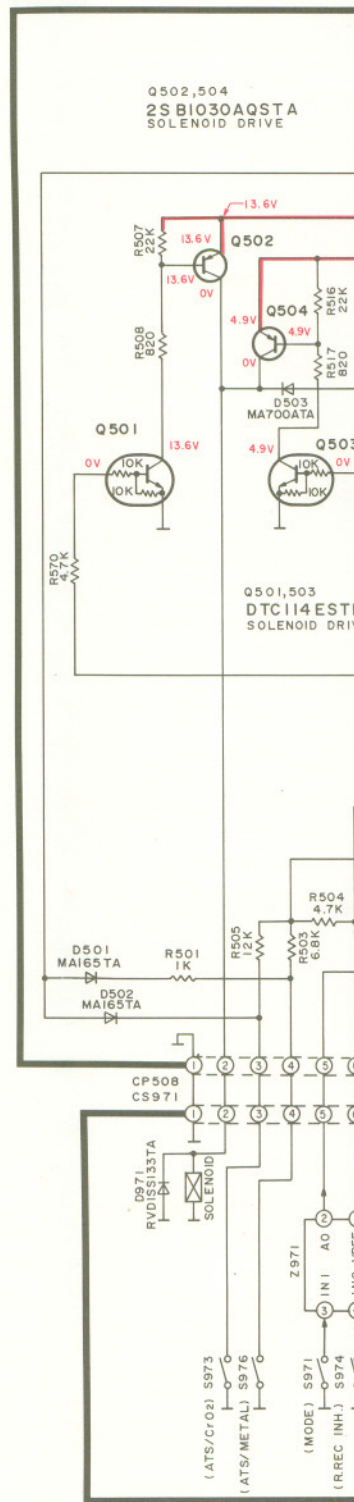
Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. 1K=1,000 (Ω), 1M=1,000k (Ω)
 Capacity are in micro-farads (μF) unless specified otherwise.

All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
 ()..... Voltage values at record mode.
 For measurement us EVM.

- Important safety notice
 Components identified by  mark have special characteristics important for safety.
 When replacing any of these components, use only manufacturer's specified parts.
- () indicates +B (bias).
- () indicates -B (bias).
- () indicates the flow of the playback signal.
- () indicates the flow of the record signal.

*** Caution!**
 IC and LSI are sensitive to static electricity.
 Secondary trouble can be prevented by taking care during repair.
 * Cover the parts boxes made of plastics with aluminum foli.
 * Ground the soldering iron.
 * Put a conductive mat on the work table.
 * Do not touch the legs of IC or LSI with the fingers directly.

C MOTOR CONTROL CIRCUIT

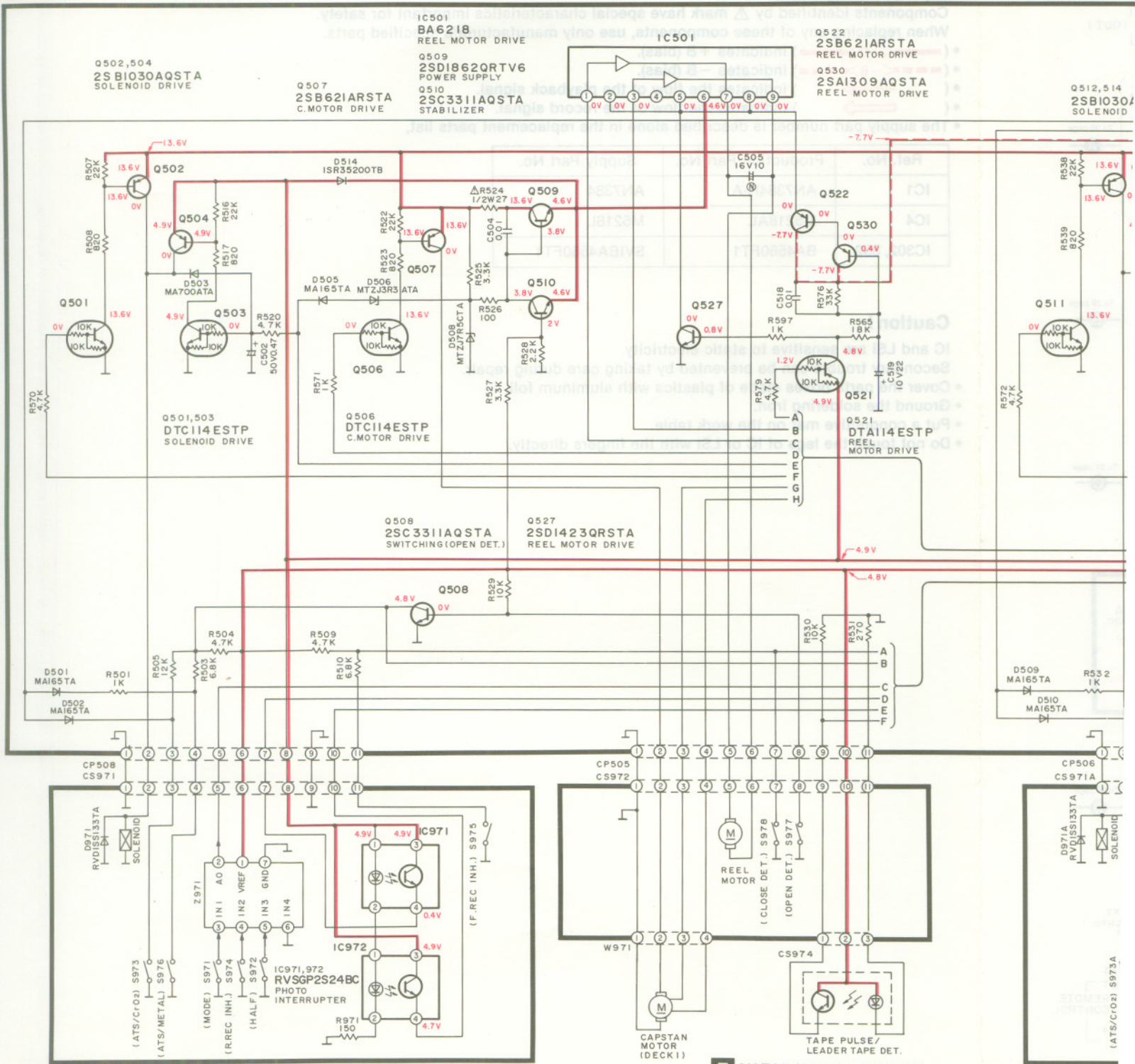


D MECHANISM (DECK

(This schematic diagram may be modified at any time with the development of new technology.)

Note 1: Voltage selector in "240V" position. For [GC] area only. (110V -- 127V -- 250V -- 240V)
Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
TK=1.000 (Ω), 1M=1,000K (Ω)
Capacity are in microfarads (μF) unless specified otherwise.
All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position unless otherwise specified.
Voltage values at record mode.
For measurement use EVM.
Important safety notice:
Components identified by a triangle have special characteristics for safety.
Wires and cables of these components, use only manufacturer's listed parts.
Cover the tape head with a plastic cap when the replacement part is not installed.

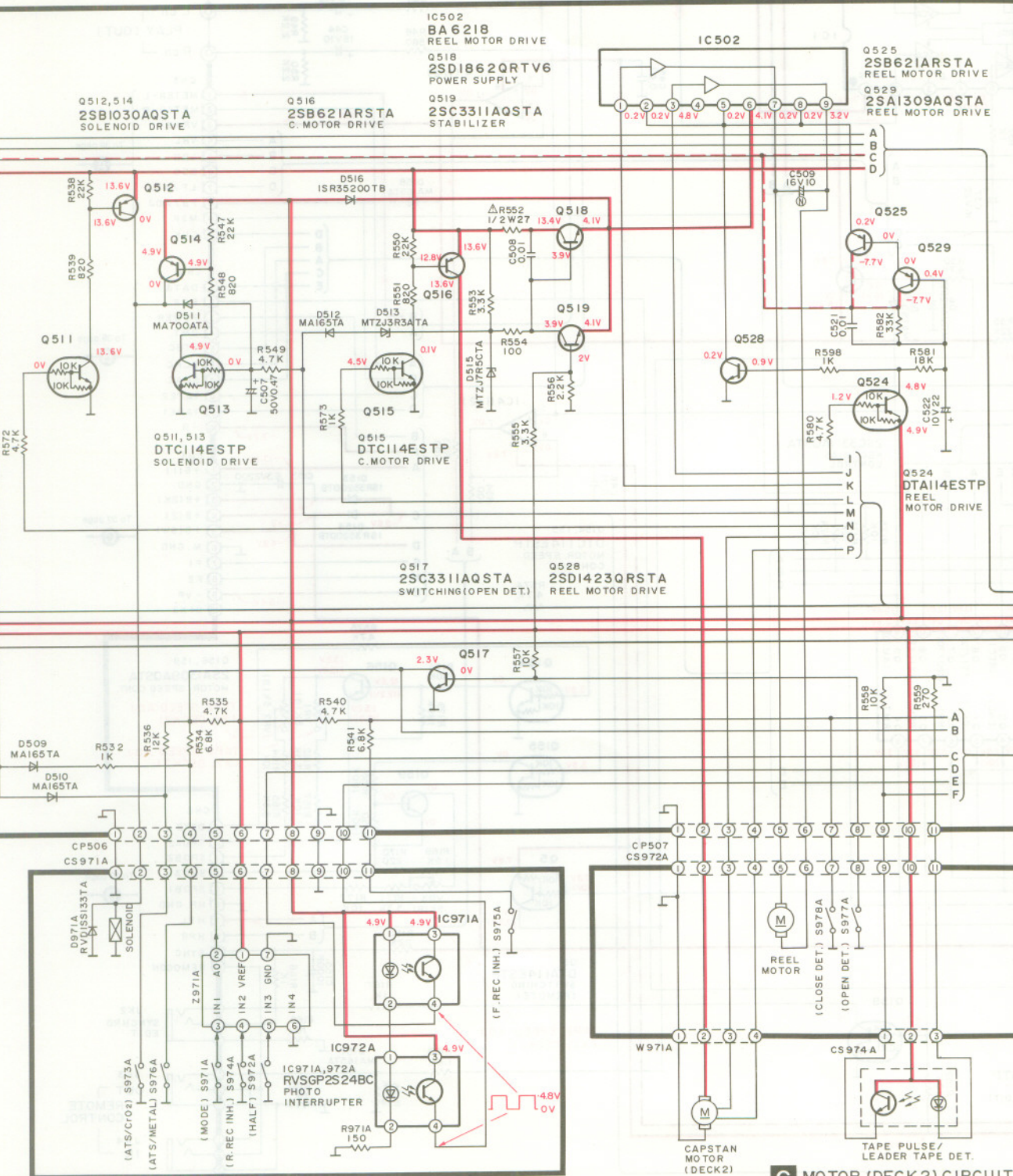
C MOTOR CONTROL CIRCUIT



D MECHANISM (DECK I) CIRCUIT

E MOTOR (DECK I) CIRCUIT

F MECHAN



To 33 page A

METER - L
METER - R
VR + B
VRL
VRR
OSC
LF/ADJ
PB/ADJ
MSP
CLK

To 33 page B

CP4
DATA
POF
POWER
DMT
STBC
SCKC
SDAC
TAPE 2
TAPE 1
- B

To 33 Page C

CP5
+B (11)
GND
+B (BK)
+B (2)
+B (SW)
M. GND
F1
F2
- VP
DI X2

To 33 page D

CP6
D2 X 2
SPD A 2
SPD B 2
SPD A 1
SPD B 1
HF. GND
HPL
HPR
SYNC
REMOCON

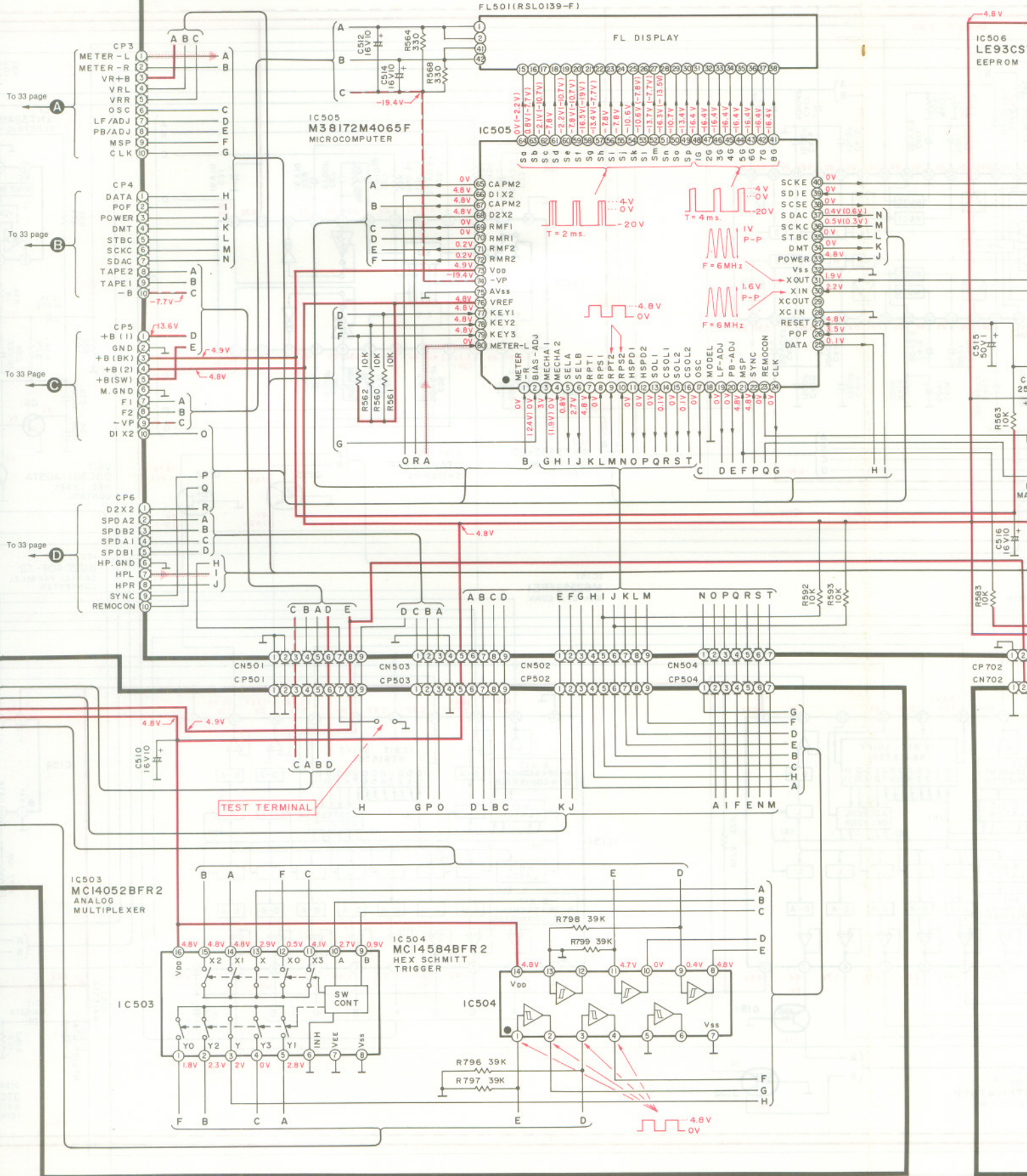
IC503
MC14052B
ANALOG
MULTIPLE X

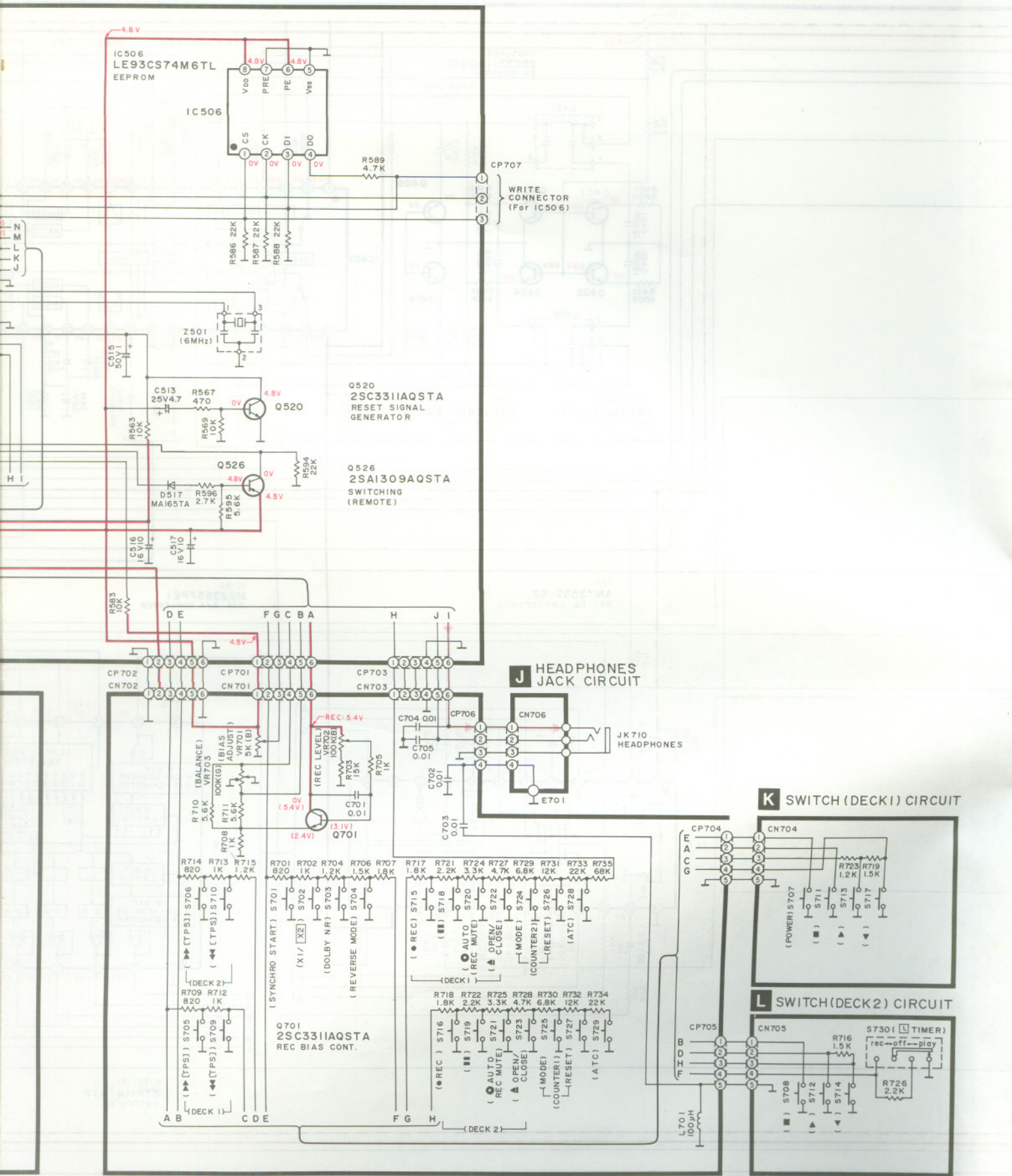
IC5

F MECHANISM (DECK2) CIRCUIT

G MOTOR (DECK 2) CIRCUIT

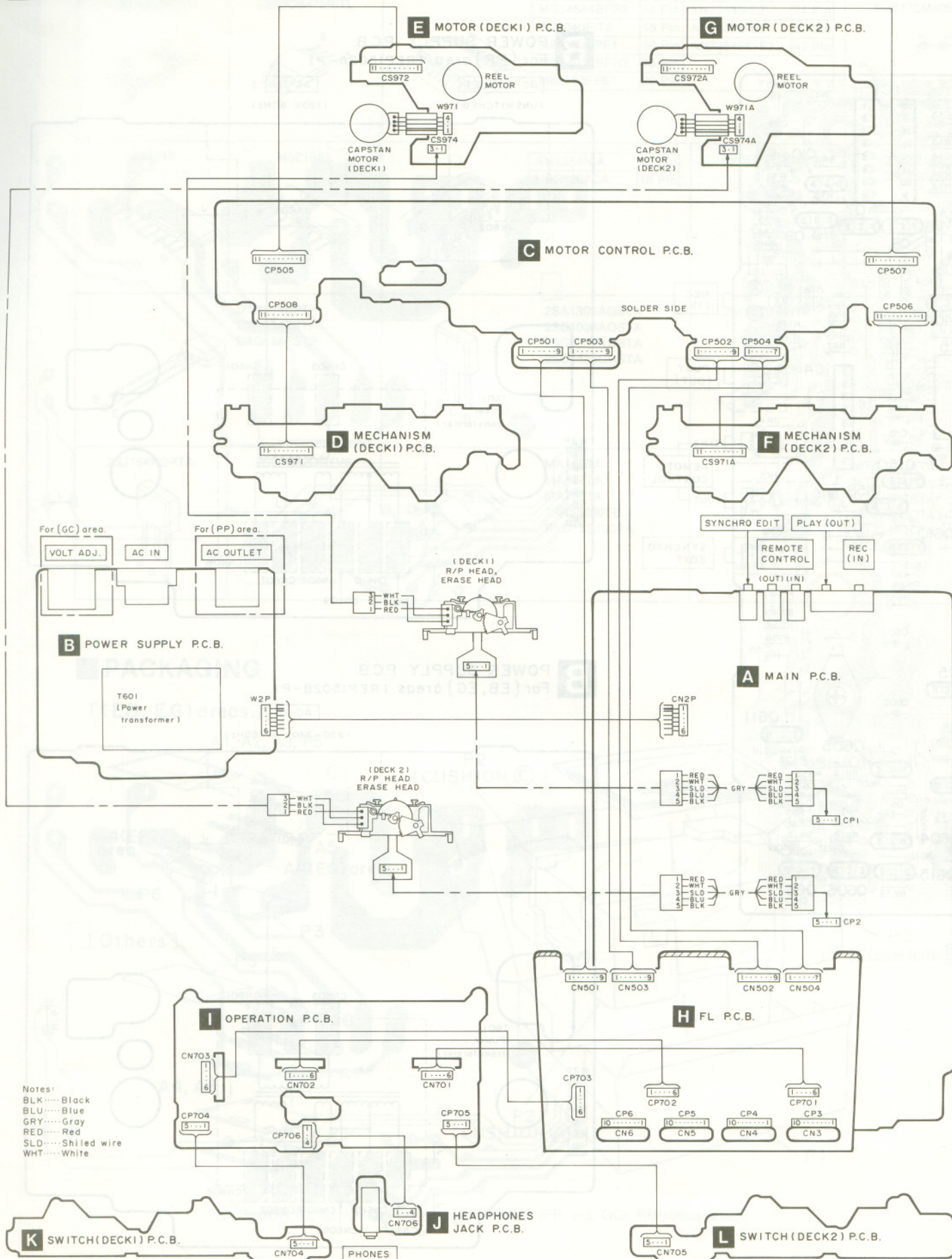
H FL CIRCUIT





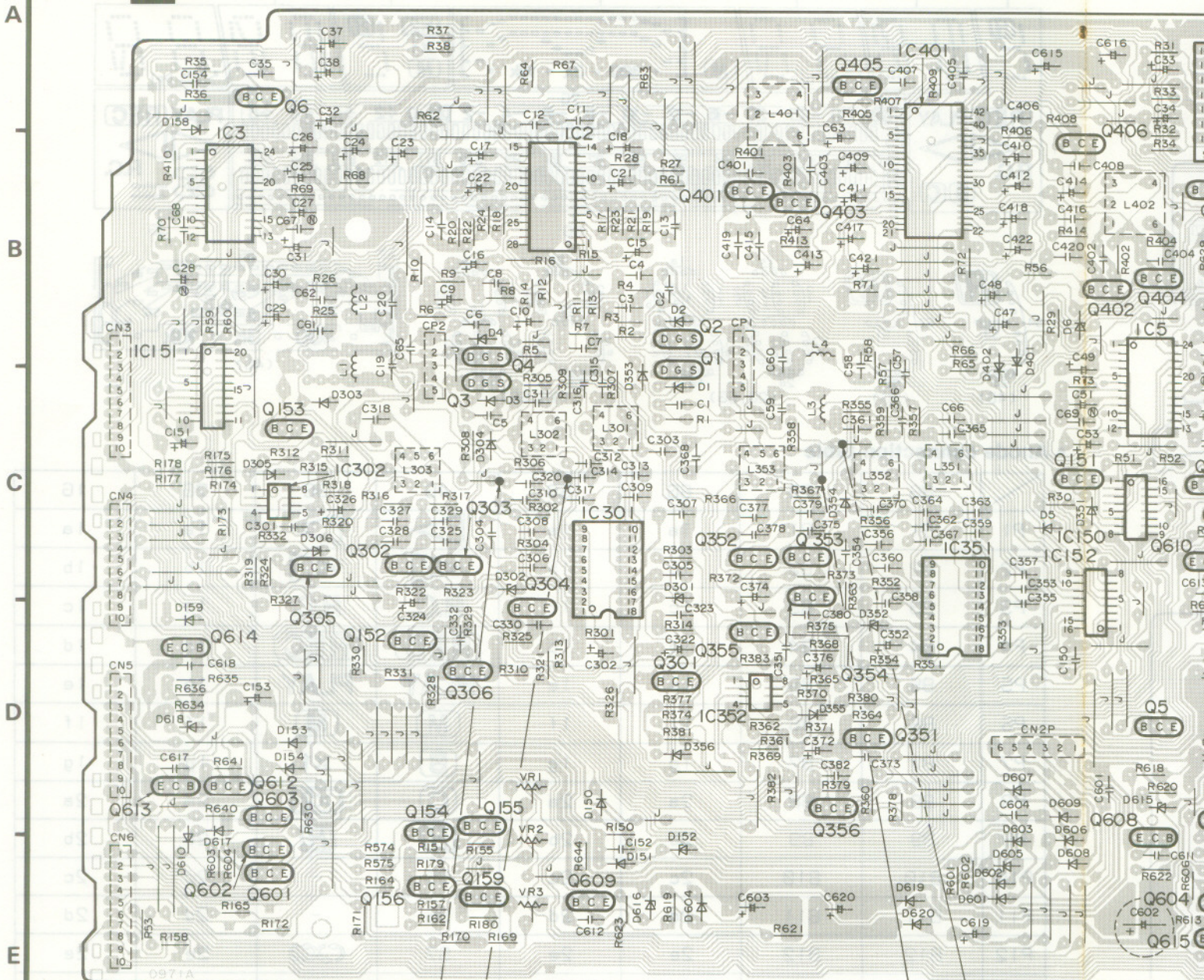
I OPERATION CIRCUIT

WIRING CONNECTION DIAGRAM



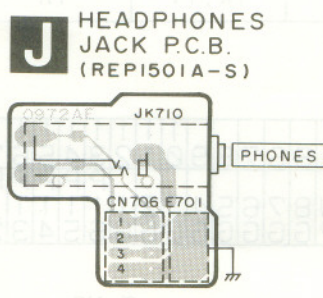
PRINTED CIRCUIT BOARDS

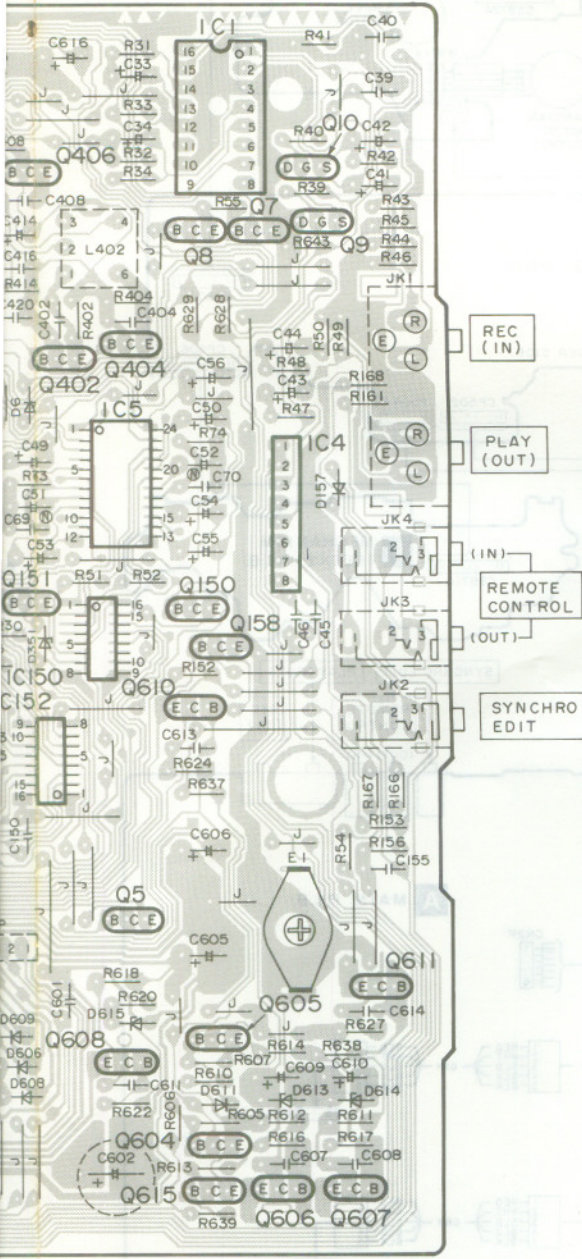
A MAIN P.C.B.(REPI500A-M)



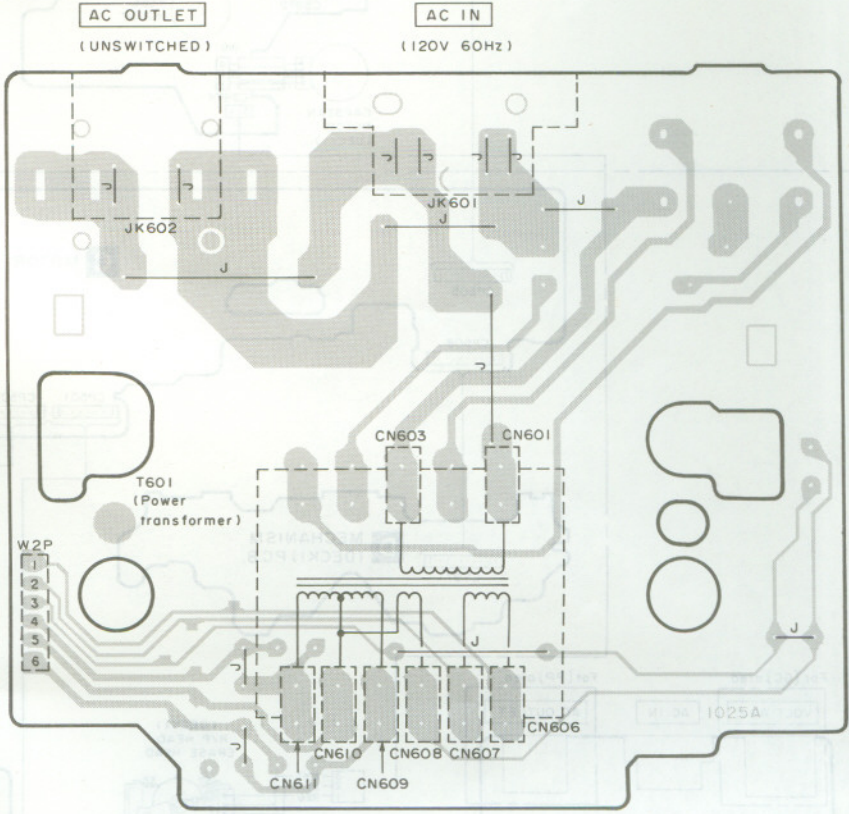
TP301 GND
 ERASE CURRENT CHECK POINT(DECK2)

TP351 GND
 ERASE CURRENT CHECK POINT(DECK1)

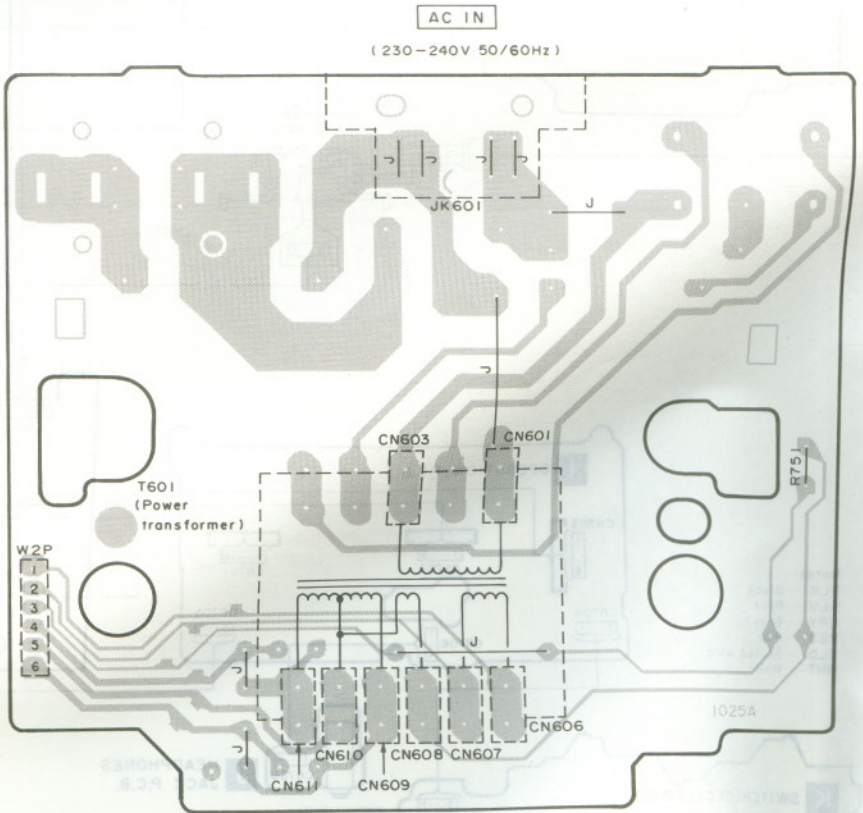




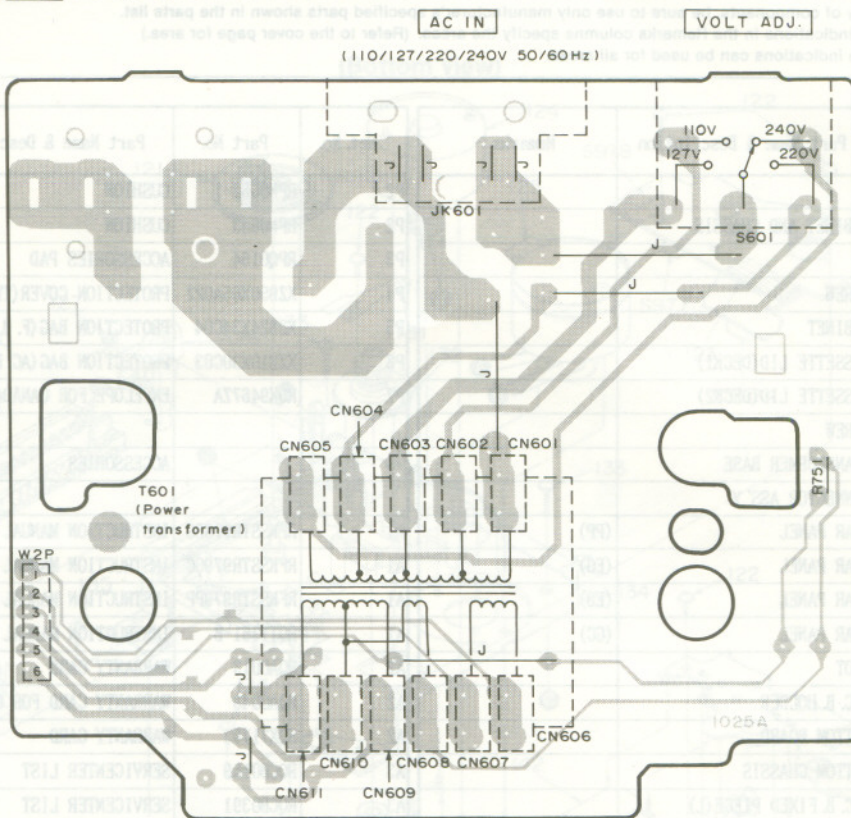
B POWER SUPPLY P.C.B.
For (PP) area. (REP1502A-P)



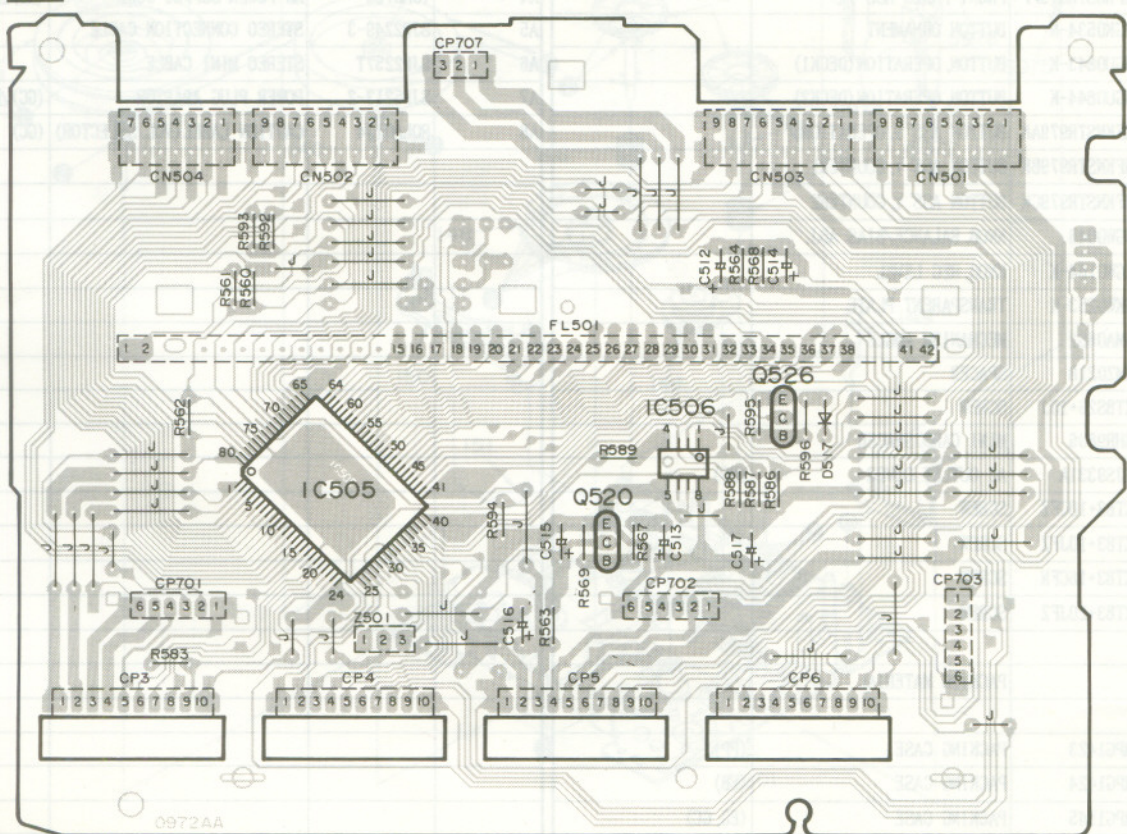
B POWER SUPPLY P.C.B.
For (EB, EG) areas. (REP1502B-P)



B POWER SUPPLY P.C.B.
For (GC) area. (REPI502D-P)



H FL P.C.B. (REPI501A-S)

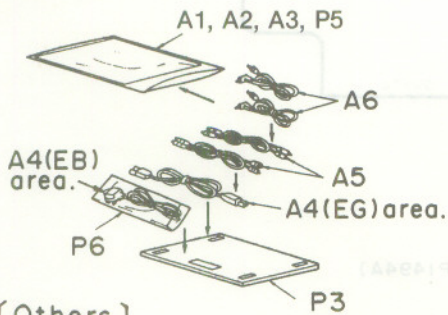


TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

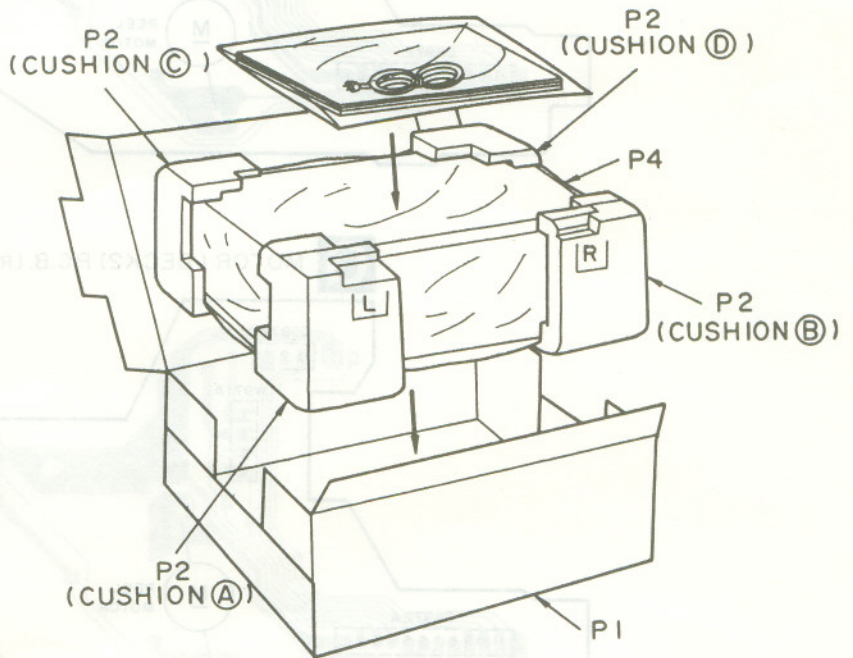
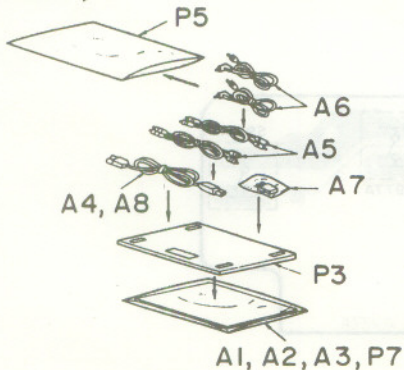
<p>BA4560FT1</p>	<p>LE93CS47M6TL</p>	<p>No. 1</p>	<table border="1"> <tr> <td>MC14584BFR2</td> <td>14 Pin</td> <td>AN7353S-E2</td> <td>24 Pin</td> </tr> <tr> <td>BU2040F-T2</td> <td>16 Pin</td> <td>AN7352S-E2</td> <td>28 Pin</td> </tr> <tr> <td>M62353FPE1</td> <td>16 Pin</td> <td>AN7354SC-E2</td> <td>42 Pin</td> </tr> <tr> <td>MC14052BFR2</td> <td>16 Pin</td> <td></td> <td></td> </tr> <tr> <td>M62352FPE1</td> <td>20 Pin</td> <td></td> <td></td> </tr> </table>	MC14584BFR2	14 Pin	AN7353S-E2	24 Pin	BU2040F-T2	16 Pin	AN7352S-E2	28 Pin	M62353FPE1	16 Pin	AN7354SC-E2	42 Pin	MC14052BFR2	16 Pin			M62352FPE1	20 Pin			<p>M38172M4065F</p>
MC14584BFR2	14 Pin	AN7353S-E2	24 Pin																					
BU2040F-T2	16 Pin	AN7352S-E2	28 Pin																					
M62353FPE1	16 Pin	AN7354SC-E2	42 Pin																					
MC14052BFR2	16 Pin																							
M62352FPE1	20 Pin																							
<p>BA6218</p>	<p>M5218AL</p>	<p>No. 1</p>	<table border="1"> <tr> <td>AN7384N-A</td> <td>16 Pin</td> </tr> <tr> <td>UPC1297CA</td> <td>18 Pin</td> </tr> </table>	AN7384N-A	16 Pin	UPC1297CA	18 Pin	<p>RVSGP2S24BC</p>	<p>2SB621ARSTA 2SD592AQRSTA</p>															
AN7384N-A	16 Pin																							
UPC1297CA	18 Pin																							
<p>DTA114ESTP DTA114TSTP DTC114ESTP</p>	<p>No. 1</p>	<p>2SA1309AQSTA 2SB1030AQSTA 2SC3311AQSTA 2SD1423QRSTA</p>	<p>2SC3327ABTP</p>	<p>2SB1357EFTA 2SD2037EFTA</p>																				
<p>2SJ164PQRSTA</p>	<p>2SD1862QRTV6</p>	<p>MA165TA MA167TA MA700TA 1SR35200TB RVD1SS133TA</p>	<p>MTZJ3R3ATA MTZJ5R1BTA MTZJ6R2BTA MTZJ7R5CTA MTZJ8R2CTA MTZJ20DTA</p>																					

PACKAGING

[(EB, EG) areas.]



[Others]



<CUSHION (A), (B), (C), (D) Part No.: RPN0662-1 (PP, EG, GC), RPN0663 (EB)>

RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS						
R1, 2	ERDS2TJ225	1/4W 2.2M	R156	ERDS2TJ272T	1/4W 2.7K	R363	ERDS2TJ392T	1/4W 3.9K
R3, 4	ERDS2TJ104	1/4W 100K	R157	ERDS2TJ103	1/4W 10K	R364	ERDS2TJ471	1/4W 470
R5, 6	ERDS2TJ225	1/4W 2.2M	R158	ERDS2TJ223	1/4W 22K	R365	ERDS2TJ681	1/4W 680
R7, 8	ERDS2TJ104	1/4W 100K	R161	ERDS2TJ100	1/4W 10	R366, 367	ERDS2TJ183T	1/4W 18K
R9, 10	ERDS2TJ225	1/4W 2.2M	R162	ERDS2TJ332	1/4W 3.3K	R368	ERDS2TJ393	1/4W 39K
R11-14	ERDS2TJ101	1/4W 100	R164	ERDS2TJ103	1/4W 10K	R369	ERDS2TJ153	1/4W 15K
R15, 16	ERDS2EJ121	1/4W 120	R165	ERDS2TJ332	1/4W 3.3K	R370	ERDS2TJ332	1/4W 3.3K
R17, 18	ERDS2TJ474	1/4W 470K	R166, 167	ERDS2TJ102	1/4W 1K	R371	ERDS2TJ102	1/4W 1K
R19, 20	ERDS2TJ103	1/4W 10K	R168	ERDS2TJ100	1/4W 10	R372, 373	ERDS2TJ100	1/4W 10
R21, 22	ERDS2TJ273	1/4W 27K	R169	ERDS2TJ153	1/4W 15K	R374	ERDS2TJ122	1/4W 1.2K
R23, 24	ERDS2TJ183T	1/4W 18K	R170	ERDS2TJ221	1/4W 220	R375	ERDS1FJ270	1/2W 27 Δ
R25, 26	ERDS2TJ103	1/4W 10K	R171	ERDS2TJ332	1/4W 3.3K	R377	ERDS1FJ270	1/2W 27 Δ
R27, 28	ERDS2TJ101	1/4W 100	R172	ERDS2TJ103	1/4W 10K	R378	ERDS2TJ222	1/4W 2.2K
R29	ERDS2TJ332	1/4W 3.3K	R173	ERDS2TJ221	1/4W 220	R379	ERDS2TJ473	1/4W 47K
R30	ERDS2TJ472	1/4W 4.7K	R174-178	ERDS2TJ103	1/4W 10K	R380-382	ERDS1FJ270	1/2W 27 Δ
R31, 32	ERDS2TJ103	1/4W 10K	R179, 180	ERDS2TJ184T	1/4W 180K	R383	ERDS2TJ102	1/4W 1K
R33, 34	ERDS2TJ823T	1/4W 82K	R301, 302	ERDS2TJ153	1/4W 15K	R401-404	ERDS2TJ684	1/4W 680K
R35	ERDS2TJ124T	1/4W 120K	R303, 304	ERDS2TJ104	1/4W 100K	R405, 406	ERDS2TJ242	1/4W 2.4K
R36	ERDS2TJ223	1/4W 22K	R305, 306	ERDS2TJ154	1/4W 150K	R407, 408	ERDS2TJ562	1/4W 5.6K
R37, 38	ERDS2TJ102	1/4W 1K	R307	ERDS2TJ101	1/4W 100	R409, 410	ERDS2TJ223	1/4W 22K
R39, 40	ERDS2TJ225	1/4W 2.2M	R308	ERDS2TJ1R0	1/4W 1	R413, 414	ERDS2TJ104	1/4W 100K
R41, 42	ERDS2TJ183T	1/4W 18K	R309	ERDS2TJ101	1/4W 100	R501	ERDS2TJ102	1/4W 1K
R43, 44	ERDS2TJ393	1/4W 39K	R310	ERDS1FJ270	1/2W 27 Δ	R503	ERDS2TJ682T	1/4W 6.8K
R45, 46	ERDS2TJ394	1/4W 390K	R311	ERDS2TJ102	1/4W 1K	R504	ERDS2TJ472	1/4W 4.7K
R47, 48	ERDS2TJ561	1/4W 560	R312	ERDS2TJ682T	1/4W 6.8K	R505	ERDS2TJ123	1/4W 12K
R49, 50	ERDS2TJ222	1/4W 2.2K	R313	ERDS2TJ392T	1/4W 3.9K	R507	ERDS2TJ223	1/4W 22K
R51	ERDS2TJ393	1/4W 39K	R314	ERDS2TJ471	1/4W 470	R508	ERDS2TJ821	1/4W 820
R52	ERDS2TJ333	1/4W 33K	R315	ERDS2TJ681	1/4W 680	R509	ERDS2TJ472	1/4W 4.7K
R53, 54	ERDS2TJ101	1/4W 100	R316, 317	ERDS2TJ183T	1/4W 18K	R510	ERDS2TJ682T	1/4W 6.8K
R55	ERDS2TJ223	1/4W 22K	R318	ERDS2TJ393	1/4W 39K	R516	ERDS2TJ223	1/4W 22K
R56	ERDS2TJ332	1/4W 3.3K	R319	ERDS2TJ153	1/4W 15K	R517	ERDS2TJ821	1/4W 820
R57, 58	ERDS2TJ103	1/4W 10K	R320	ERDS2TJ332	1/4W 3.3K	R520	ERDS2TJ472	1/4W 4.7K
R59	ERDS2TJ393	1/4W 39K	R321	ERDS2TJ102	1/4W 1K	R522	ERDS2TJ223	1/4W 22K
R60	ERDS2TJ333	1/4W 33K	R322, 323	ERDS2TJ100	1/4W 10	R523	ERDS2TJ821	1/4W 820
R61, 62	ERDS2TJ562	1/4W 5.6K	R324	ERDS2TJ122	1/4W 1.2K	R524	ERDS1FJ270	1/2W 27 Δ
R63, 64	ERDS2TJ222	1/4W 2.2K	R325-327	ERDS1FJ270	1/2W 27 Δ	R525	ERDS2TJ332	1/4W 3.3K
R65, 66	ERDS2TJ473	1/4W 47K	R328	ERDS2TJ222	1/4W 2.2K	R526	ERDS2TJ101	1/4W 100
R67, 68	ERDS2TJ103	1/4W 10K	R329	ERDS2TJ473	1/4W 47K	R527	ERDS2TJ332	1/4W 3.3K
R69, 70	ERDS2TJ682T	1/4W 6.8K	R330, 331	ERDS1FJ270	1/2W 27 Δ	R528	ERDS2TJ222	1/4W 2.2K
R71, 72	ERDS2TJ103	1/4W 10K	R332	ERDS2TJ102	1/4W 1K	R529, 530	ERDS2TJ103	1/4W 10K
R73, 74	ERDS2TJ682T	1/4W 6.8K	R351, 352	ERDS2TJ153	1/4W 15K	R531	ERDS2TJ271	1/4W 270
R150	ERDS2TJ103	1/4W 10K	R353, 354	ERDS2TJ104	1/4W 100K	R532	ERDS2TJ102	1/4W 1K
R151	ERDS2TJ184T	1/4W 180K	R355, 356	ERDS2TJ154	1/4W 150K	R534	ERDS2TJ682T	1/4W 6.8K
R152	ERDS2TJ103	1/4W 10K	R357	ERDS2TJ101	1/4W 100	R535	ERDS2TJ472	1/4W 4.7K
R153	ERDS2TJ182	1/4W 1.8K	R358	ERDS2TJ1R0	1/4W 1	R536	ERDS2TJ123	1/4W 12K
R155	ERDS2TJ184T	1/4W 180K	R359	ERDS2TJ101	1/4W 100	R538	ERDS2TJ223	1/4W 22K
			R360	ERDS1FJ270	1/2W 27 Δ	R539	ERDS2TJ821	1/4W 820
			R361	ERDS2TJ102	1/4W 1K	R540	ERDS2TJ472	1/4W 4.7K
			R362	ERDS2TJ682T	1/4W 6.8K	R541	ERDS2TJ682T	1/4W 6.8K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R547	ERDS2TJ223	1/4W 22K	R637, 638	ERDS2TJ101	1/4W 100	C17	ECEA1HKAR47B	50V 0.47U
R548	ERDS2TJ821	1/4W 820	R639	ERDS2TJ103	1/4W 10K	C18	ECEA1CKA100B	16V 10U
R549	ERDS2TJ472	1/4W 4.7K	R640	ERDS2TJ472	1/4W 4.7K	C19, 20	ECKR2H121KB5	500V 120P
R550	ERDS2TJ223	1/4W 22K	R641	ERDS2TJ103	1/4W 10K	C21, 22	ECEA1CKA100B	16V 10U
R551	ERDS2TJ821	1/4W 820	R643	ERDS2TJ331	1/4W 330	C23, 24	ECEA1HKA2R2B	50V 2.2U
R552	ERDS1FJ270	1/2W 27 Δ	R644	ERDS2TJ1R0	1/4W 1	C25, 26	ECEA1HKAR47B	50V 0.47U
R553	ERDS2TJ332	1/4W 3.3K	R701	ERDS2TJ821	1/4W 820	C27, 28	ECEA1CKN100B	16V 10U
R554	ERDS2TJ101	1/4W 100	R702	ERDS2TJ102	1/4W 1K	C29-32	ECEA1CKA100B	16V 10U
R555	ERDS2TJ332	1/4W 3.3K	R703	ERDS2TJ153	1/4W 15K	C33, 34	ECEA1CKA220B	16V 22U
R556	ERDS2TJ222	1/4W 2.2K	R704	ERDS2TJ122	1/4W 1.2K	C35	ECQB1H392JF3	50V 3900P
R557, 558	ERDS2TJ103	1/4W 10K	R705	ERDS2TJ102	1/4W 1K	C37, 38	ECEA1CKA220B	16V 22U
R559	ERDS2TJ271	1/4W 270	R706	ERDS2TJ152	1/4W 1.5K	C39, 40	ECBT1E103ZF	25V 0.01U
R560-563	ERDS2TJ103	1/4W 10K	R707	ERDS2TJ182	1/4W 1.8K	C41, 42	ECEA1HKA010B	50V 1U
R564	ERDS2TJ331	1/4W 330	R708	ERDS2TJ102	1/4W 1K	C43, 44	ECEA1CKA100B	16V 10U
R565	ERDS2TJ183T	1/4W 18K	R709	ERDS2TJ821	1/4W 820	C45, 46	ECBT1E103ZF	25V 0.01U
R567	ERDS2TJ471	1/4W 470	R710, 711	ERDS2TJ562	1/4W 5.6K	C47, 48	ECEA1HKA2R2B	50V 2.2U
R568	ERDS2TJ331	1/4W 330	R712, 713	ERDS2TJ102	1/4W 1K	C49, 50	ECEA1HKAR47B	50V 0.47U
R569	ERDS2TJ103	1/4W 10K	R714	ERDS2TJ821	1/4W 820	C51, 52	ECEA1CKN100B	16V 10U
R570	ERDS2TJ472	1/4W 4.7K	R715	ERDS2TJ122	1/4W 1.2K	C53-56	ECEA1CKA100B	16V 10U
R571	ERDS2TJ102	1/4W 1K	R716	ERDS2TJ152	1/4W 1.5K	C57, 58	ECBT1H561KB5	50V 560P
R572	ERDS2TJ472	1/4W 4.7K	R717, 718	ERDS2TJ182	1/4W 1.8K	C59, 60	ECKR2H121KB5	500V 120P
R573	ERDS2TJ102	1/4W 1K	R719	ERDS2TJ152	1/4W 1.5K	C61, 62	ECBT1H561KB5	50V 560P
R574, 575	ERDS2TJ472	1/4W 4.7K	R721, 722	ERDS2TJ222	1/4W 2.2K	C63	ECEA1HKA010B	50V 1U
R576	ERDS2TJ333	1/4W 33K	R723	ERDS2TJ122	1/4W 1.2K	C64	ECEA1CKA100B	16V 10U
R579, 580	ERDS2TJ472	1/4W 4.7K	R724, 725	ERDS2TJ332	1/4W 3.3K	C65, 66	ECBT1E103ZF	25V 0.01U
R581	ERDS2TJ183T	1/4W 18K	R726	ERDS2TJ222	1/4W 2.2K	C67-70	ECBT1C472KR5	16V 4700P
R582	ERDS2TJ333	1/4W 33K	R727, 728	ERDS2TJ472	1/4W 4.7K	C150	ECBT1E103ZF	25V 0.01U
R583	ERDS2TJ103	1/4W 10K	R729, 730	ERDS2TJ682T	1/4W 6.8K	C151	ECEA1AU471	10V 470U
R586-588	ERDS2TJ223	1/4W 22K	R731, 732	ERDS2TJ123	1/4W 12K	C152	ECBT1E103ZF	25V 0.01U
R589	ERDS2TJ472	1/4W 4.7K	R733, 734	ERDS2TJ223	1/4W 22K	C153	ECA0JM222B	6.3V 2200U
R592, 593	ERDS2TJ103	1/4W 10K	R735	ERDS2TJ683	1/4W 68K	C154	ECBT1H331KB5	50V 330P
R594	ERDS2TJ223	1/4W 22K	R751	ERQ16NKR15E	1/6W 0.15 (EB, EG, GC) Δ	C155	ECBT1H102KB5	50V 1000P
R595	ERDS2TJ562	1/4W 5.6K				C301	ECBT1E103ZF	25V 0.01U
R596	ERDS2TJ272T	1/4W 2.7K	R796-799	ERDS2TJ393	1/4W 39K	C302	ECEA1CKA100B	16V 10U
R597, 598	ERDS2TJ102	1/4W 1K	R971	ERDS2TJ151	1/4W 150 (DECK1)	C303, 304	ECBT1C122KR5	16V 1200P
R601-605	ERDS2TJ472	1/4W 4.7K	R971A	ERDS2TJ151	1/4W 150 (DECK2)	C305, 306	ECQB1H103JF3	50V 0.01U
R606	ERDS2TJ103	1/4W 10K				C307, 308	ECQB1H223JF3	50V 0.022U
R607	ERDS2TJ472	1/4W 4.7K			CHIP JUMPERS	C309, 310	ECQV1H473JM3	50V 0.047U
R610	ERDS2TJ103	1/4W 10K				C311, 312	ECBT1H121KB5	50V 120P
R611, 612	ERD2FCVJ6R8T	1/4W 6.8 Δ	J1-5	W5E-18H	CHIP JUMPER (DECK1)	C313, 314	ECKR2H821KB5	500V 820P
R613, 614	ERDS2TJ102	1/4W 1K	J1A-5A	W5E-18H	CHIP JUMPER (DECK2)	C315, 316	ECBT1E223ZF	25V 0.022U
R616, 617	ERDS2TJ101	1/4W 100				C317	ECBT1H220J5	50V 22P
R618, 619	ERD2FCVG100T	1/4W 10 Δ			CAPACITORS	C318	ECQP1153JZ	100V 0.015U
R620, 621	ERDS2TJ222	1/4W 2.2K				C320	ECBT1H220J5	50V 22P
R622, 623	ERDS2TJ101	1/4W 100	C1, 2	ECBT1H102KB5	50V 1000P	C322	ECEA1AU221	10V 220U
R624	ERD2FCVJ6R8T	1/4W 6.8 Δ	C3, 4	ECBT1H471KB5	50V 470P	C323	ECBT1E103ZF	25V 0.01U
R627	ERD2FCVJ6R8T	1/4W 6.8 Δ	C5, 6	ECBT1H102KB5	50V 1000P	C324	ECEA1EKA4R7B	25V 4.7U
R628, 629	ERD2FCVG270T	1/4W 27 Δ	C7, 8	ECBT1H471KB5	50V 470P	C325	ECKR1H392KB5	50V 3900P
R630	ERDS2TJ472	1/4W 4.7K	C9, 10	ECEA1HKAOR1B	50V 0.1U	C326	ECEA1HKAOR1B	50V 0.1U
R634	ERG1SJ220E	1W 22	C11, 12	ECBT1E103ZF	25V 0.01U	C327	ECKW1H222KB5	50V 2200P
R635	ERDS2TJ101	1/4W 100	C13, 14	ECQB1H682JF3	50V 6800P	C328	ECKD1H682KB	50V 6800P
R636	ERDS2TJ222	1/4W 2.2K	C15, 16	ECEA1AU101	10V 100U	C329	ECKW1H222KB5	50V 2200P

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks				
C330	ECBT1E103ZF	25V 0.01U	C602	ECEA1EU222B	25V 2200U Δ				
C332	ECBT1E103ZF	25V 0.01U	C603	ECA1HM221B	50V 220U Δ				
C351	ECBT1E103ZF	25V 0.01U	C604	ECKR2H682PE	500V 1000U				
C352	ECEA1CKA100B	16V 10U	C605, 606	ECA1EM102B	25V 1000U Δ				
C353, 354	ECBT1C122KR5	16V 1200P	C607, 608	ECBT1E103ZF	25V 0.01U				
C355, 356	ECQB1H103JF3	50V 0.01U	C609, 610	ECEA1AU221	10V 220U				
C357, 358	ECQB1H223JF3	50V 0.022U	C611-614	ECBT1E103ZF	25V 0.01U				
C359, 360	ECQV1H473JM3	50V 0.047U	C615, 616	ECA1AM102B	10V 1000U				
C361, 362	ECBT1H121KB5	50V 120P	C617, 618	ECBT1E103ZF	25V 0.01U				
C363, 364	ECKR2H821KB5	500V 820P	C619	ECA1EM221B	25V 220U				
C365, 366	ECBT1E223ZF	25V 0.022U	C620	ECA1CM222B	16V 2200U Δ				
C367	ECBT1H220J5	50V 22P	C701-705	ECBT1E103ZF	25V 0.01U				
C368	ECQP1153JZ	100V 0.015U							
C370	ECBT1H220J5	50V 22P							
C372	ECEA1AU221	10V 220U							
C373	ECBT1E103ZF	25V 0.01U							
C374	ECEA1EKA4R7B	25V 4.7U							
C375	ECKR1H392KB5	50V 3900P							
C376	ECEA1HKA0R1B	50V 0.1U							
C377	ECKW1H222KB5	50V 2200P							
C378	ECKD1H682KB	50V 6800P							
C379	ECKW1H222KB5	50V 2200P							
C380	ECBT1E103ZF	25V 0.01U							
C382	ECBT1E103ZF	25V 0.01U							
C401, 402	ECBT1C122KR5	16V 1200P							
C403, 404	ECBT1C152KR5	16V 1500P							
C405, 406	ECQB1H222JF3	50V 2200P							
C407, 408	ECQV1H124JM3	50V 0.12U							
C409, 410	ECEA1HKA010B	50V 1U							
C411, 412	ECEA1HKA2R2B	50V 2.2U							
C413, 414	ECEA1HKA010B	50V 1U							
C415, 416	ECQB1H152JF3	50V 1500P							
C417, 418	ECEA1HKAR47B	50V 0.47U							
C419, 420	ECQB1H152JF3	50V 1500P							
C421, 422	ECEA1HKAR47B	50V 0.47U							
C502	ECEA1HKAR47B	50V 0.47U							
C504	ECBT1E103ZF	25V 0.01U							
C505	ECEA1CN100SB	16V 10U							
C507	ECEA1HKAR47B	50V 0.47U							
C508	ECBT1E103ZF	25V 0.01U							
C509	ECEA1CN100SB	16V 10U							
C510	ECEA1CKA100B	16V 10U							
C512	ECEA1CKA100B	16V 10U							
C513	ECEA1EKA4R7B	25V 4.7U							
C514	ECEA1CKA100B	16V 10U							
C515	ECEA1HKA010B	50V 1U							
C516, 517	ECEA1CKA100B	16V 10U							
C518	ECBT1E103ZF	25V 0.01U							
C519	ECEA1AKA220B	10V 22U							
C521	ECBT1E103ZF	25V 0.01U							
C522	ECEA1AKA220B	10V 22U							
C601	ECKR2H682PE	500V 6800P							

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