Portable digital compact cassette player DCC134

/00/01/05/10 BK01

Service
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Service Manual

DIGITAL dcc COMPACT CASSETTE

CONTENTS

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PHILIPS

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

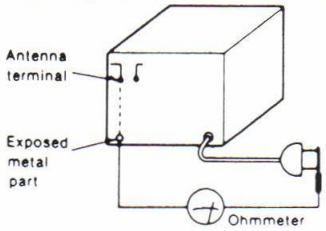
1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation 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

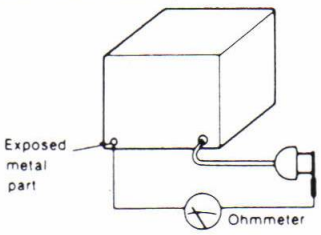
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with 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 = 3MΩ—5.2MΩ



(Fig B)
Resistance = Approx ∞



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

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgiältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SPECIFICATIONS

DIGITAL SIGNAL FORMAT:

Tape recording system	Digital compact cassette
Sampling frequencies:	48 kHz, 44.1 kHz, 32 kHz (selected automatically)
No. of quantizing bits:	16-bits, linear
Coding format	PASC
No. of channels:	2-channel, stereo

AUDIO PERFORMANCE:

DCC

Frequency response:	
fs:44.1 kHz	20 Hz – 20 kHz + 0.5 dB, –1.5 dB
fs:48 kHz	20 Hz – 22 kHz + 0.5 dB, –1.5 dB
fs:32 kHz	20 Hz – 14.5 kHz + 0.5 dB, –1.5 dB
S/N ratio	90 dB or more
Dynamic range:	90 dB or more
Wow and flutter	Quartz crystal precision

Compact cassette

Track format:	4 track 2-channel stereo
Frequency range:	20 Hz – 18 kHz
S/N ratio (CrO_2):	50 dB or more

TERMINALS

Line output (fixed):	35 mm jack
output level:	1.0 V (50 kΩ)
Phones output:	3.5 mm jack
max. output power:	10 mW +10mW (16 Ω)
DC input:	6.0 V

POWER REQUIREMENTS

Battery		Ni-Cd rechargeable battery
Playback time		Approx. 2.5 hours
Recharging time		Approx. 3 hours
External:	mains adapter	
USA/Canada	SBC6619/47	120 V, 60 Hz
Europe	SBC6619/30	220 – 230 V, 50 Hz
U. K.	SBC6619/35	240 V, 50 Hz
Australia/New Zealand	SBC6619/40	230 – 240 V, 50 Hz
Other countries	SBC6619/31	120 V, 60 Hz 230 V, 50 Hz

MISCELLANEOUS

Mechanism	
Head:	18 channel thin-film head
Motor:	Brushless motor
Tape speed	4.76 cm/sec.

GENERAL

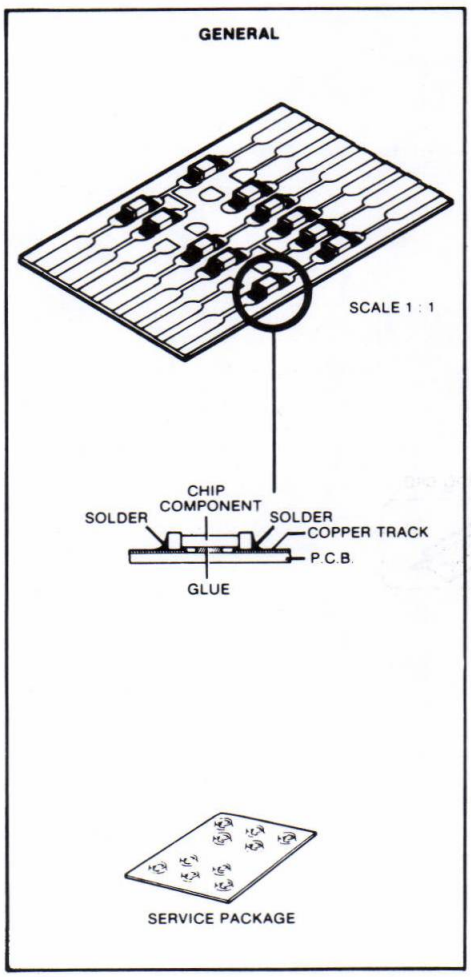
Dimensions (W x H x D):	111.6 x 32.4 x 99.8 mm (4 $^{13}/_{32}$ x 1 $^{9}/_{32}$ x 3 $^{15}/_{16}$ inch)
Weight (incl. rechargeable battery):	390 gr.

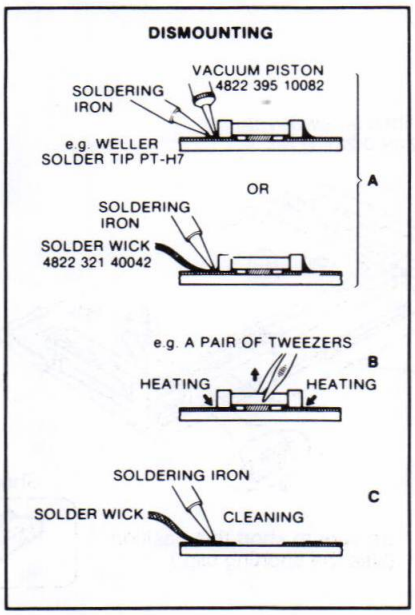
ACCESSORIES

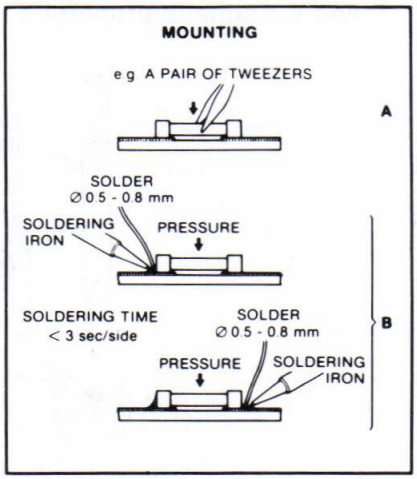
In-ear phones	SBC3179
Head band type	SBC3184 (only for BK01)
Remote control	SBC6234
Rechargeable battery:	SBC6434
Mains adapter:	
Carrying case	
HIFI connection cable	

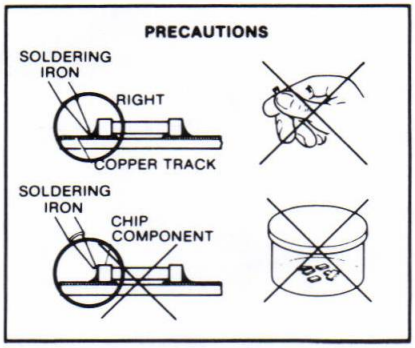
Note : These specifications are subject to change without notice.

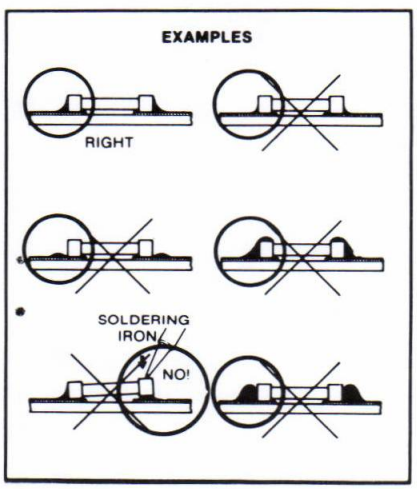
HANDLING CHIP COMPONENTS





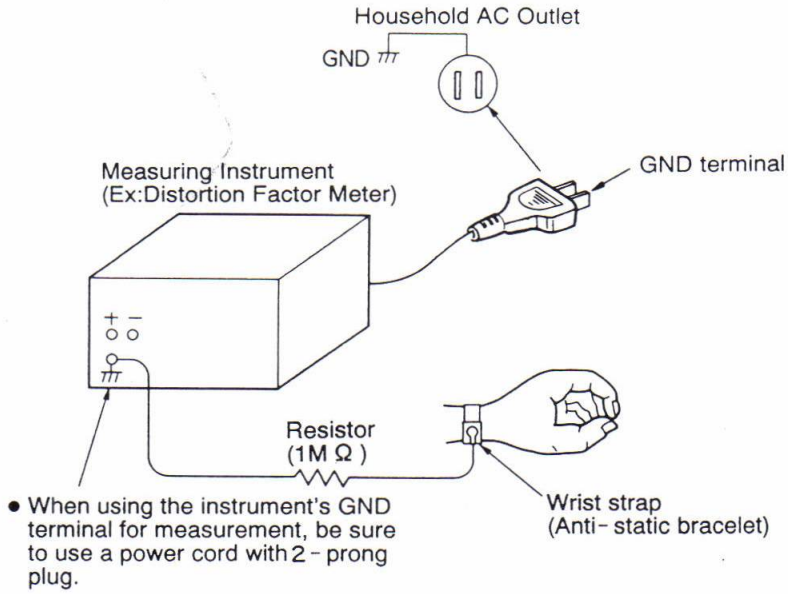






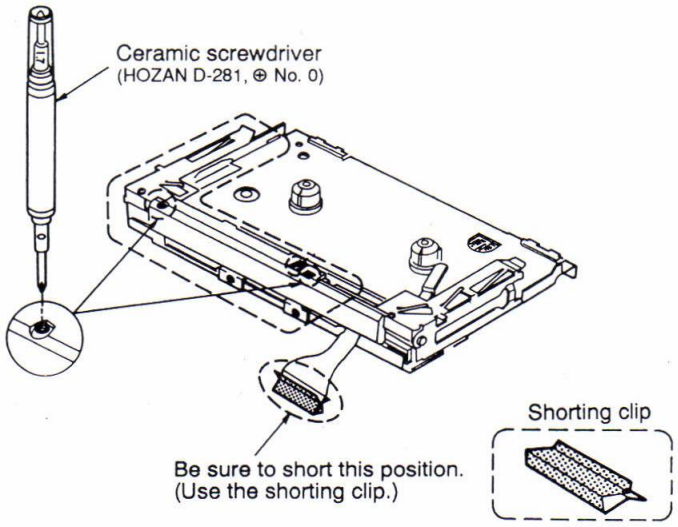
PRECAUTIONS FOR MECHANISM AND HEAD ASSEMBLY HANDLING

(1) Connect your wrist strap to the unit's GND or to the grounding post of a measuring instrument you are using.
To protect the head assembly from magnetic or electrostatic damage, be sure to wear the wrist strap whenever replacing the head assembly or handling the PC boards.



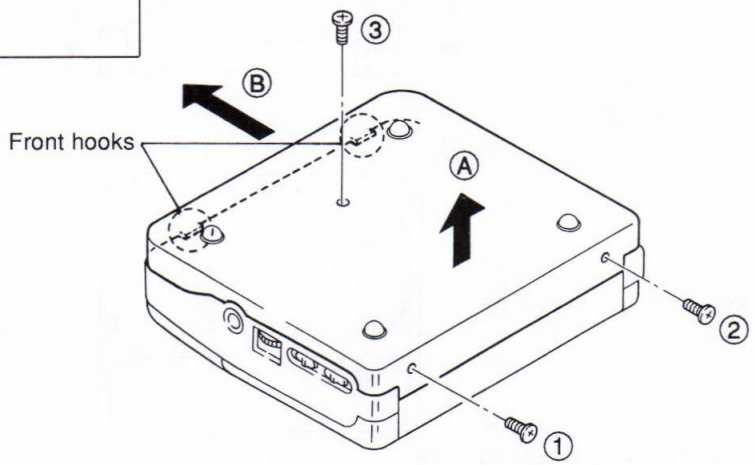
(2) When disconnecting the head FPC from the RF/Servo P.C.B., install a shorting clip on the FPC to protect it from magnetic or electrostatic damage.

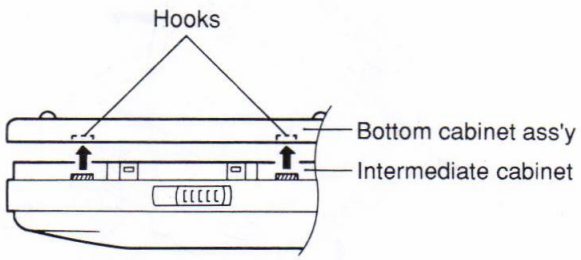
(3) • Use a ceramic screwdriver for all head replacement and adjustment.
• Keep magnetized metallic screwdrivers away from the head assembly, as they may damage the head's magnetic properties.



DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the bottom cabinet ass'y



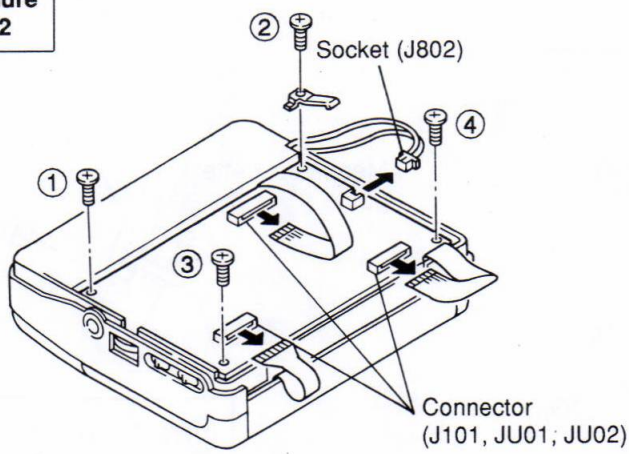


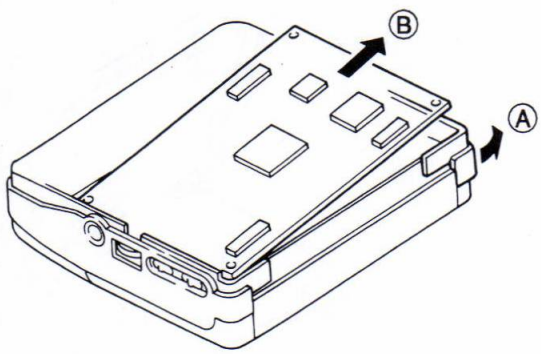
(2pcs.) ①,②
M1.4 x 2.5

(1pcs.) ③
B TITE1.4 x 3.0

1. Remove the 3 screws (① ~ ③).
2. Lift up the bottom cabinet ass'y in the direction of arrow Ⓐ, and push it in the direction of arrow Ⓑ to release the 2 front hooks.

Ref. No. 2	Removal of the digital P. C. B.
Procedure 1 → 2	



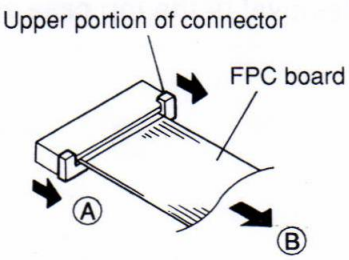


1. Remove the 3 FPC boards (J101, JU01, JU02).
2. Remove a socket of battery terminal wire (J802).
3. Remove the 4 screws (① ~ ④).
   (② is double fastening with earth.)
4. Open the intermediate cabinet in the direction of arrow Ⓐ, and then remove the LINE OUT jack. Remove the digital P. C. B. shifting in the direction of arrow Ⓑ.

Note: Be sure to use a clip to the terminal of the FPC board which is from the head during repair in order to avoid the static electricity.

Removal of the FPC board

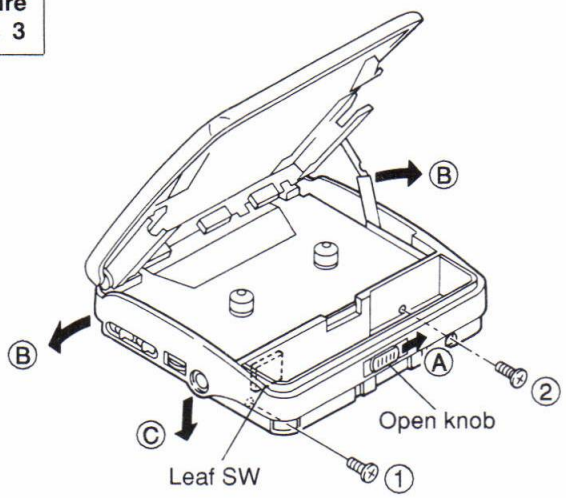
1. Push the upper portion of connector in the direction of arrow Ⓐ, and then pull the FPC board in the direction of arrow Ⓑ.

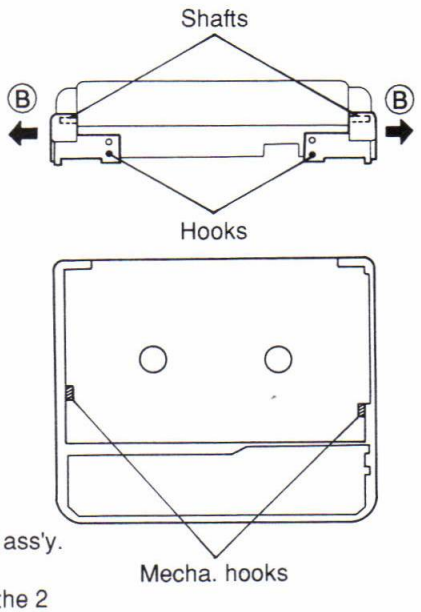


(2pcs.) ①,②
M1.4 x 2.5

(2pcs.) ③,④
B TITE1.4 x 2.5

Ref. No. 3	Removal of the intermediate cabinet
Procedure 1 → 2 → 3	



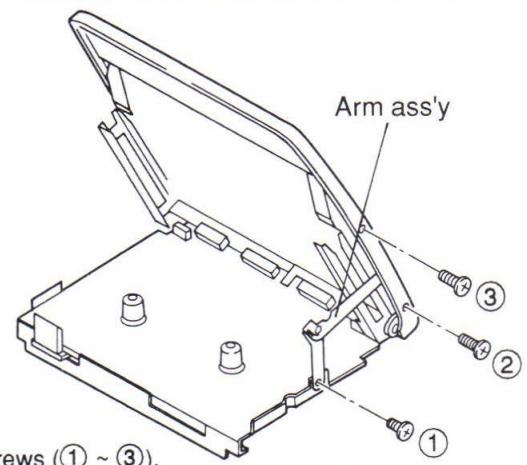


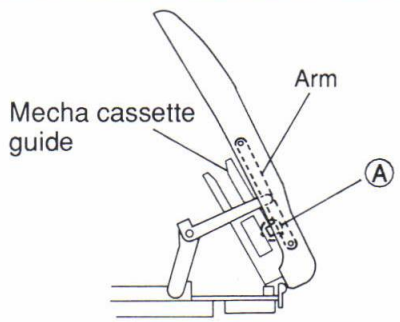
1. Push the open knob in the direction of arrow Ⓐ, and then open the cassette lid ass'y.
2. Remove the 2 screws (①, ②).
3. Stretch the intermediate cabinet in the direction of arrow Ⓑ, and then remove the 2 hooks of the back side bracket ass'y and the 2 shafts.
4. While stretching the intermediate cabinet, release the 2 mecha. hooks, and then remove the intermediate cabinet in the direction of arrow Ⓒ.

Note: Be sure not to hook the leaf SW up the intermediate cabinet.

(2pcs.) ①,② M1.4 x 2.5

Ref. No. 4	Removal of the arm ass'y
Procedure 1 → 2 → 3 → 4	





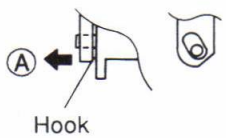
1. Remove the 3 screws (① ~ ③).

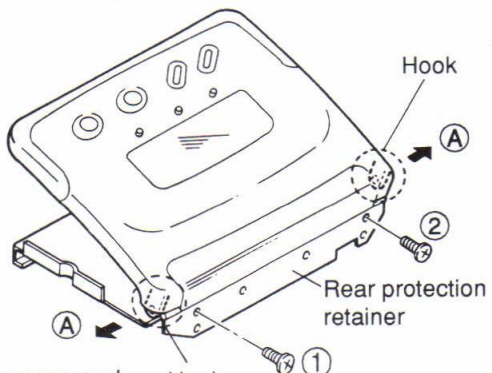
Note: Check the projection of head block holder at Ⓐ is in the link angles when assembling.

(1pcs.) ① M1.4 x 1.5

(2pcs.) ②,③ M1.4 x 2

Ref. No. 5	Removal of the top case ass'y
Procedure 1 → 2 → 3 → 4 → 5	

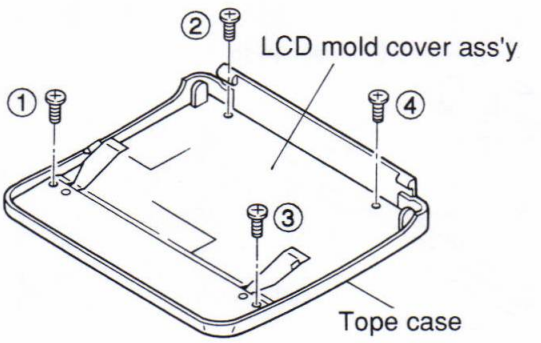




1. Remove the 2 screws (①, ②).
2. Stretch the hooks (Ⓐ), and then remove the top case ass'y.

(2pcs.) ①,② M1.4 x 2 SCREW HEAD Ø 2.0

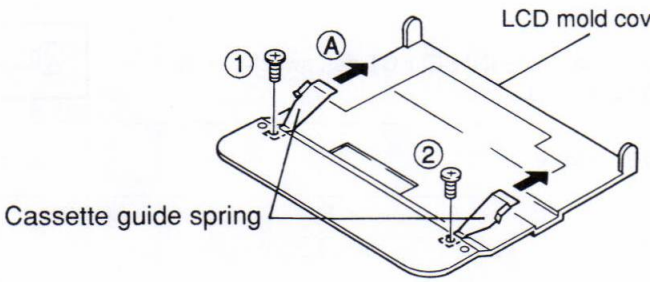
Ref. No. 6	**Removal of the LCD mold cover ass'y**
Procedure 1 → 2 → 3 → 4 → 5 → 6	



(4pcs.) ①~④
M1.4 x 2.5

1. Remove the 4 screws (① ~ ④).

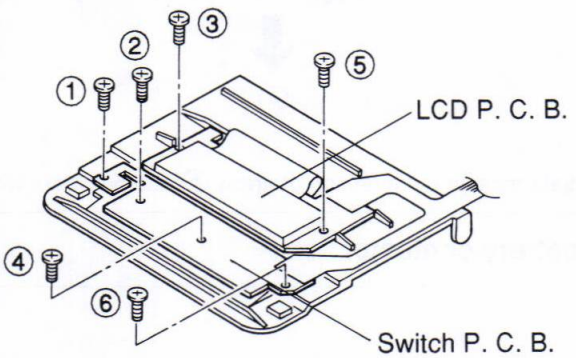
Ref. No. 7	**Removal of the cassette guide spring**
Procedure 1 → 2 → 3 → 4 → 5 → 7	



(2pcs.) ①,②
M1.4 x 2.5

1. Remove the 2 screws (① , ②).
2. Pull out the cassette guide spring in the direction of arrow Ⓐ.

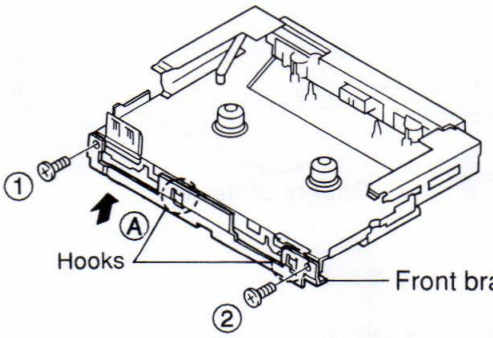
Ref. No. 8	**Removal of the LCD P. C. B. and the switch P. C. B.**
Procedure 1 → 2 → 3 → 4 → 5 → 6 → 8	



(6pcs.) ①~⑥
B TITE1.4 x 2.5

1. Remove the 6 screws (① ~ ⑥).

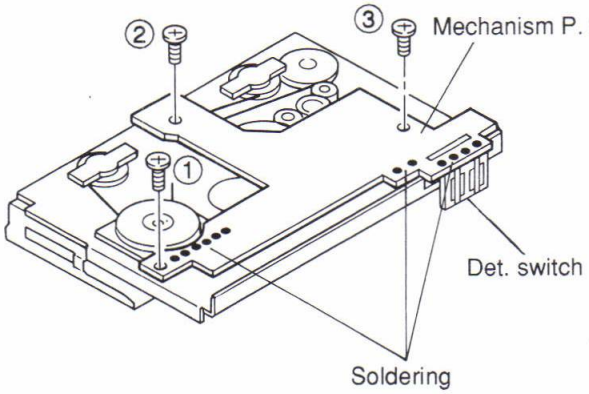
Ref. No. 9	**Removal of the mechanism chassis**
Procedure 1 → 2 → 3 → 4 → 5 → 9	

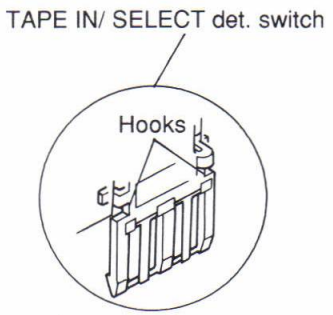


(2pcs.) ①,②
M1.4 x 2.5

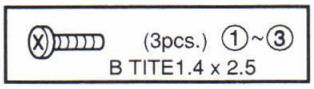
1. Remove the 2 screws (①, ②).
2. Lift up the front bracket, and then release the hooks. Remove it in the direction of arrow Ⓐ.

Ref. No. 10	**Removal of the mechanism P. C. B. and TAPE IN/ SELECT det. switch**
Procedure 1 ➡ 2 ➡ 3 ➡ 9 ➡ 10	

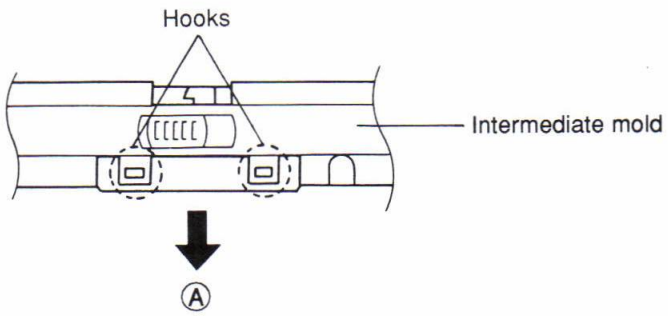




1. Remove the 12 soldering part (2 solenoids, 6 motors, 4 switches).
2. Remove the 3 screws (① ~ ③).
3. Remove the mechanism P. C. B.
   (Be sure not to damage at the connection of the TAPE IN/ SELECT det. switch).
4. Release the 2 hooks of TAPE IN/ SELECT det. switch.

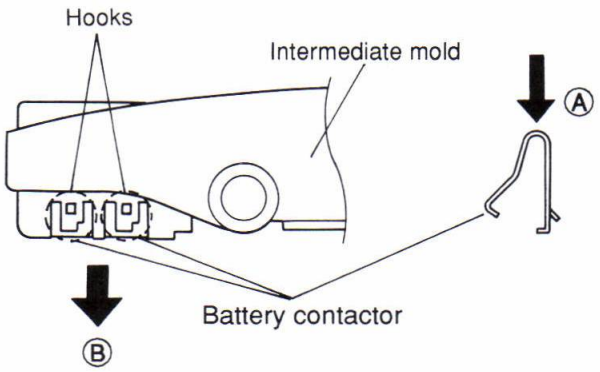


Ref. No. 11	**Removal of the lock lever ass'y**
Procedure 1 ➡ 2 ➡ 3 ➡ 11	



1. Lift up the hooks of the intermediate mold in the direction of arrow Ⓐ and pull it out with the pliers.

Ref. No. 12	**Removal of the battery contactor**
Procedure 1 ➡ 2 ➡ 3 ➡ 12	

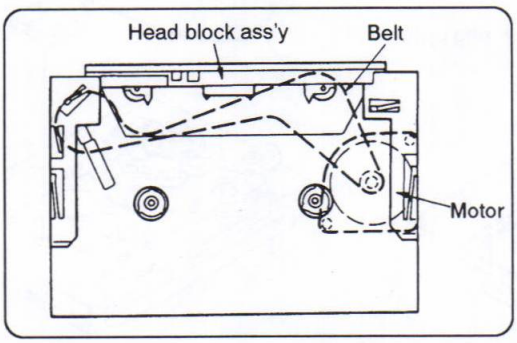


1. Lift up and remove the hooks of the intermediate cabinet.
2. Push from the inside of the intermediate cabinet in the direction of arrow Ⓐ and remove it in the direction of arrow Ⓑ.

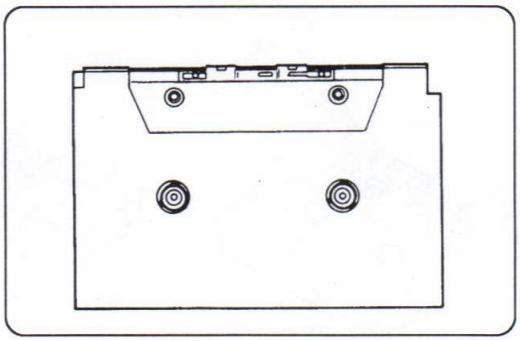
● How to replace the mechanism block

The mechanism block is supplied without other parts as a semi-assembly. The head block ass'y, motor and belt are supplied separately from the mechanism block.
If the mechanism block is exchanged as a replacement assembly, follow the preparation procedure below.

Preparation procedure
Remove the head block ass'y, motor and belt from the mechanism to be replaced and replace those parts to the new mechanism block. (Refer to Fig. 1 and 2.)
(Follow the procedures in Ref. No. 9, 10 in the Disassembly instructions. Refer to pages 5 and 6.)



Mechanism to be repaired
Fig. 1



Mechanism block
Fig. 2

● How to replace the head block ass'y

The head block is supplied as a head block ass'y. (Refer to Fig 3.)
The head and pinch roller arm(L)•(R) are supplied together in the head block ass'y.
The pinch roller arm(L)•(R) is also supplied separetely.

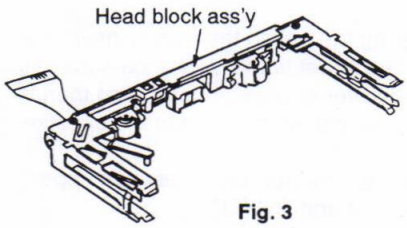


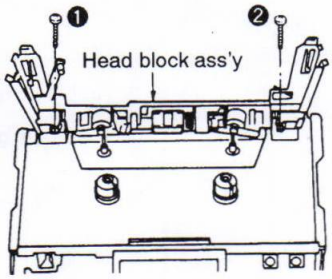
Fig. 3

● How to replace cam gear and solenoid

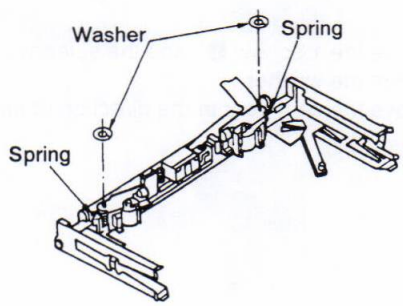
The cam gear and solenoid are included in the mechanism block. They are also supplied separately.

● How to remove the head block ass'y and pinch roller arm(L)•(R)

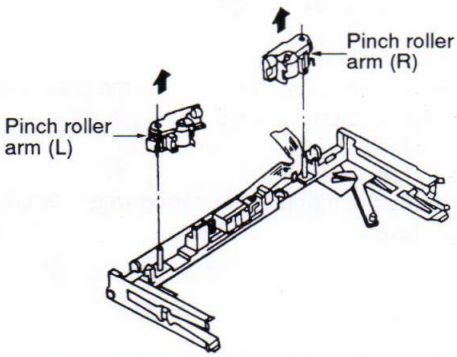
1. Follow the procedures in Ref. No. 1 ~ 5 in the Disassembly instructions. (Refer to pages 3 and 4.)



2. Remove the 2 screws(❶, ❷) to remove the head block ass'y.



3. Remove the 2 washers.
4. Remove the springs from the hook.



5. Lift up the pinch roller arm(L)•(R) in the direction of arrow.

● Removal of the motor and belt

1. Follow the procedures in Ref. No. 1 ~ 10 in the Disassembly instructions. (Refer to pages 3 ~ 6.)
2. Remove the 2 screws(❶, ❷).(Refer to Fig. 1.)
3. Remove the 2 screws(❸, ❹) and the fixing plate.(Refer to Fig. 2.)
4. Remove the motor in the direction of arrow.(Refer to Fig. 2.)
5. Remove the belt from the motor.(Refer to Fig. 3.)

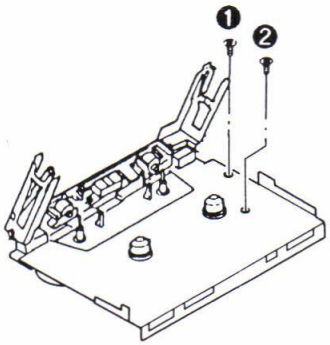


Fig. 1

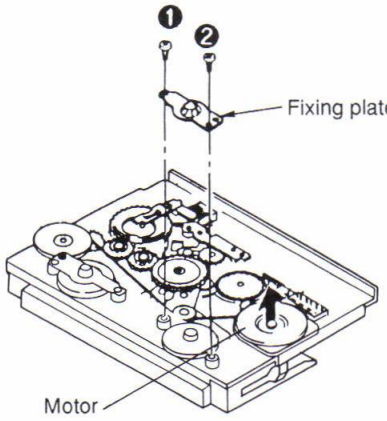


Fig. 2

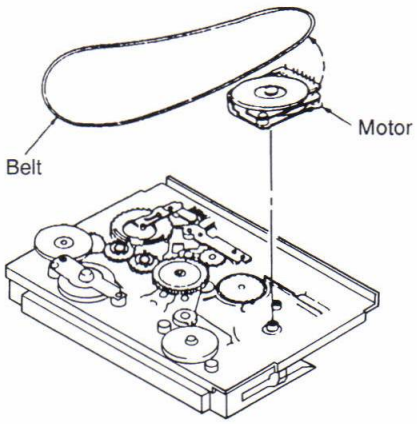


Fig. 3

- Befor installing the belt to the motor, insert the unmagnetized sheet to the clearance between chassis and lower portion of motor, and then push the upper portion of motor in the direction of arrow.
  Put the belt into the clearance between upper portion of motor and coil P.C.B.
  (Refer to Fig. 4 and 5.)

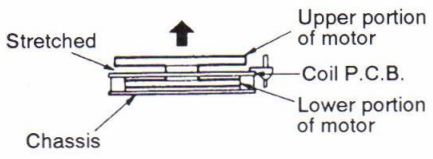


Fig. 4

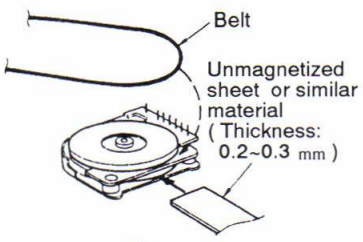
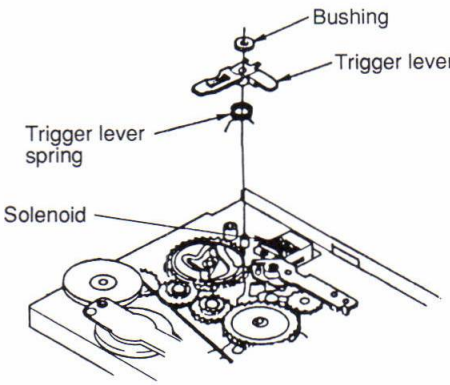
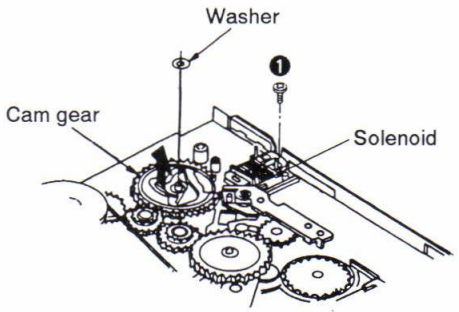


Fig. 5

● Removal of the cam gear and solenoid





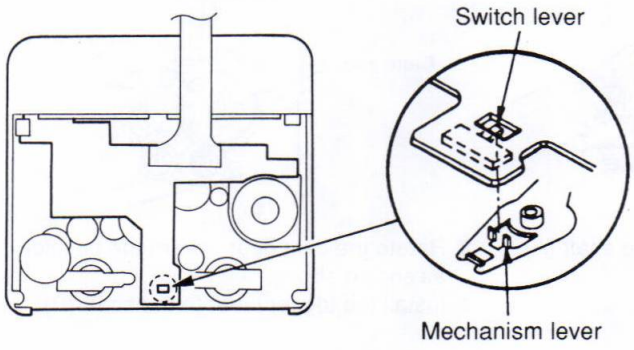
1. Follow the procedures in Ref. No. 1 ~ 10 in the Disassembly instructions. (Refer to pages 3 ~ 6.)
2. Pull out the bushing.
3. Remove the trigger lever.

Note: Avoid missing the trigger lever spring when removing the trigger lever.

4. Remove the 1 screw(❶) and the solenoid.
5. Remove the washer.
6. Remove the cam gear in the direction of arrow.

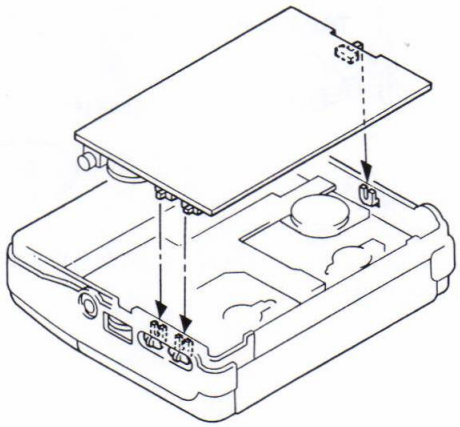
NOTE FOR ASSEMBLY

● Notice for assembling the Mechanism P.C.B.



• Align the switch lever with mechanism lever when installing the Mechanism P.C.B.

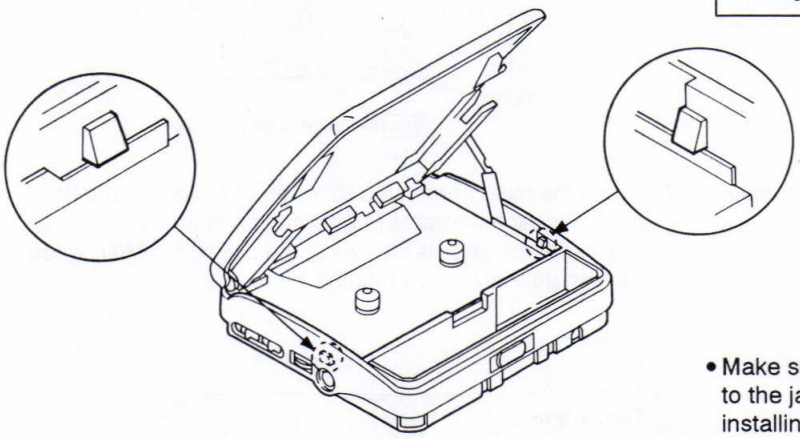
● Notice for assembling the jack ornament and switch ornament



• Align the switch levers with switch knobs when installing the switch ornament.

Note: Before installing the switch knob, be sure to check the claws for defects that would render the claws unserviceable.
(If a white line like white wax on a claw is found, the claw may be broken when installing the switch knob.)

● Notice for assembling the intermediate cabinet

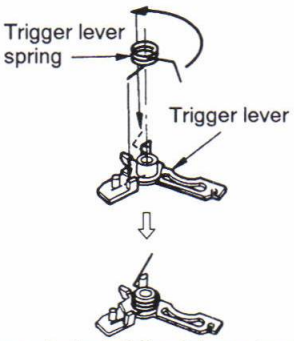


• Make sure the hooks inside the intermediate cabinet are joined to the jack ornament(Side L) and switch ornament(Side R) when installing the intermediate cabinet to unit.

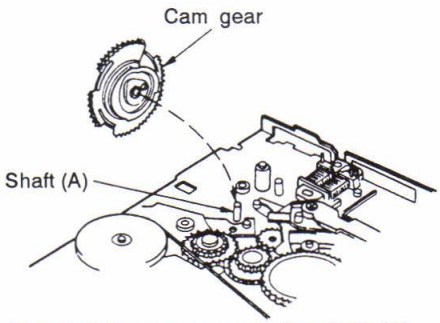
● Notice for assembling the Head block assembly

1. Unhook the pinch roller springs (L) and (R) on the head block.
2. Fix the screw the hold piece support (R) on the mechanism block.
3. Interlock an axis of the hold piece support (R) by opening the head block 50 ~ 60° to the mechanism chassis, and keep the condition. Do not damage to the pinch roller and control lod.
4. Hold the hold pieces support (L) with the screw by using tweezers, and then interlock a hole at the L side of the head block. Additionally, interlock a locating hole of the mechanism chassis with a boss at the bottom of the hold piece support (L).
5. Fix the screw the hold piece support (L) on the mechanism block.
6. Hook the pinch roller springs (L) and (R).

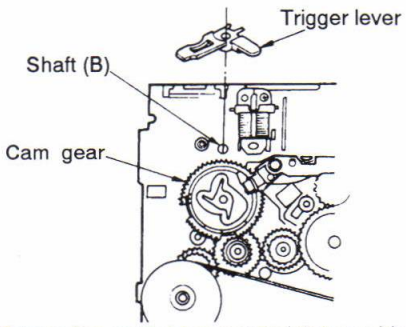
• Notice for assembling the cam gear



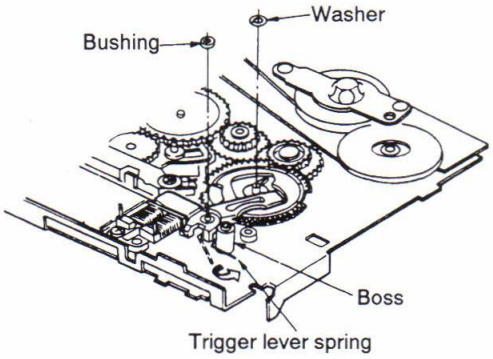
1. Temporarily install the trigger lever spring on trigger lever.



2. Install the cam gear to the shaft (A).

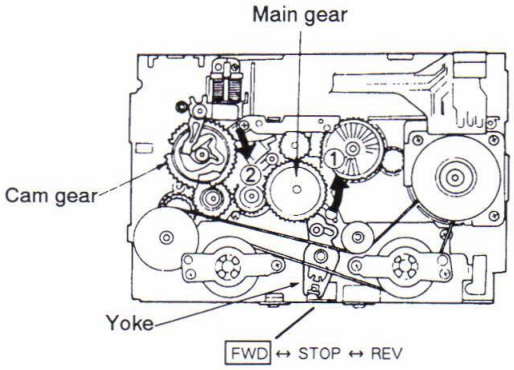


3. Rotate the cam gear toward the position as shown above.
4. Install the trigger lever to the shaft (B).

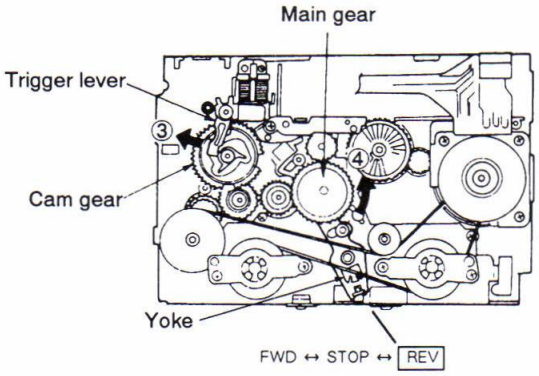


5. Latch the temporary attached trigger lever spring to the boss.
6. Install the bushing and washer.

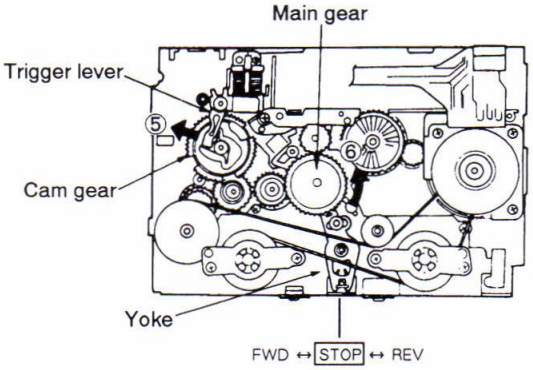
• Confirmation of cam gear operation



7. Rotate the main gear in the direction of arrow ①, and then the cam gear associates in the direcion of arrow ②.
8. Make sure the yoke is located at the posision "FWD" when the cam gear is ceased rotating.



9. Pull the trigger lever one time in the direction of arrow ③, and then rotate the main gear in the direction of arrow ④.
10. Make sure the yoke is located at the position "REV" when the cam gear is ceased rotating.

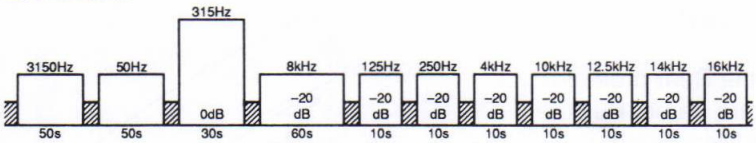


11. Further, pull the trigger lever one time in the direction of arrow ⑤, and then rotate the main gear in the direction of arrow ⑥.
12. Make sure the yoke is located at the position "STOP" when the cam gear is ceased rotating.

SERVICE TOOLS

Required Jigs, Test Tapes, and Measuring Instruments

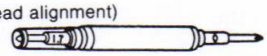
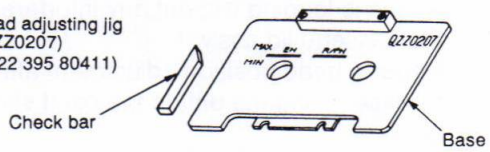
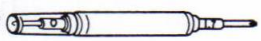
● Test tape

Part No.	Contents	Use
SBC420 (4822 397 30071)	315Hz: 0dB, 3150Hz: –10dB 125Hz~16kHz: –20dB 4.76cm/s 250nWb/m  time constant 3180μs and 120μs	Playback sensitivity check and adjustment High frequency response check and adjustment Tape speed check
SBC438 (4822 395 30288)	Mirror tape	Tape transport adjustment

● Mesuring instrument

Oscilloscope	Distortion factor meter	Frequency counter	Electronic voltmeter (E.V.M.) (AC/DC)

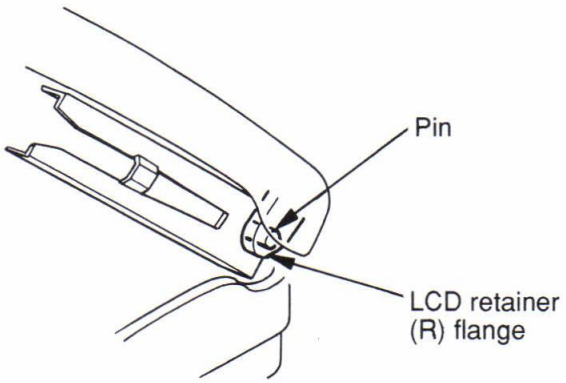
● Jigs and Tools

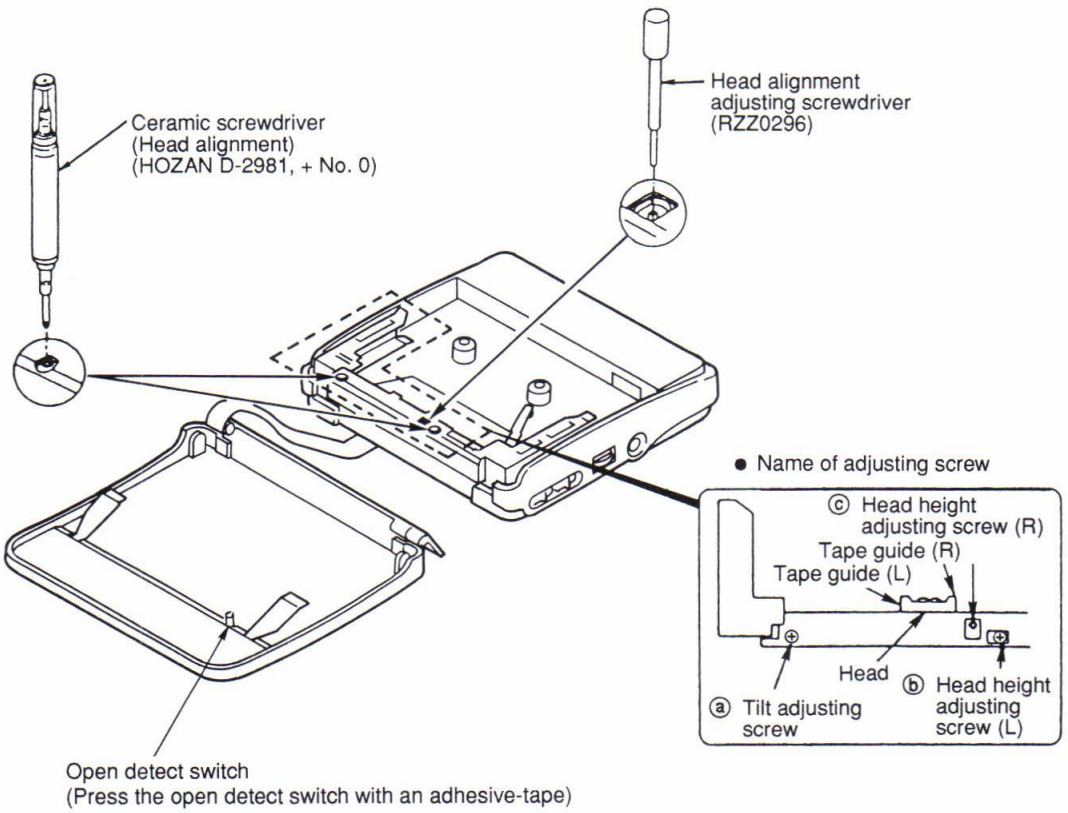
(A) MECHANISM ADJUSTMENT	Head alignment adjusting screwdriver (RZZ0296) (4822 395 50452)  Ceramic screwdriver (Head alignment) (HOZAN D-281, ⊕ No. 0) (4822 395 50451)  Head adjusting jig (QZZ0207) (4822 395 80411) 
(B) ELECTRICAL ADJUSTMENT	Ceramic screwdriver (HOZAN D-281, ⊕ No. 1.7) (4822 395 50451) 

MECHANISM ADJUSTMENT (HEAD POSITION ADJUSTMENT)

● Disassembly

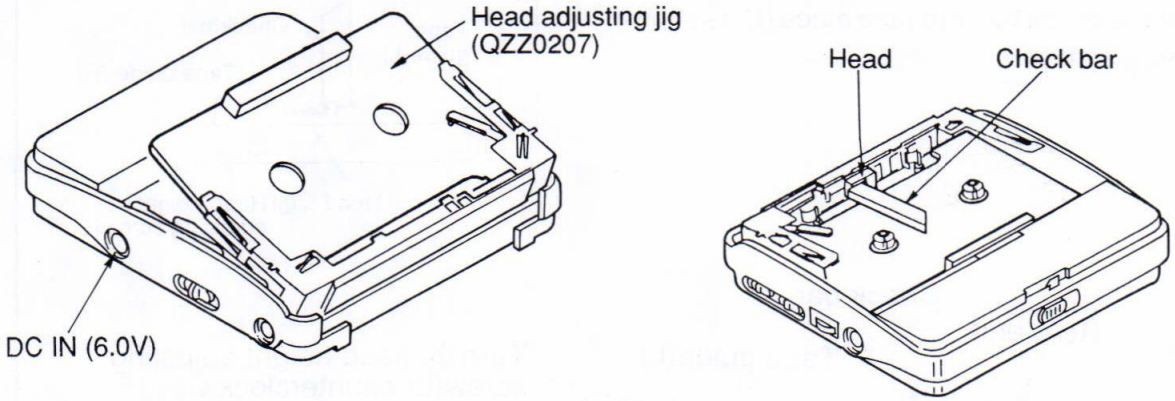
1. Remove the 2 screws of the arm on the cassette lid ass'y. (Refer Disassembly instruction Ref. No. 4 on page 4.)
2. Remove the 3 screws of the bottom cabinet ass'y and then, take out the bottom cabinet ass'y. (Refer Disassembly instruction Ref. No. 1 on page 3.)
3. Remove the LCD flexible board from the connector. (JU01)
4. Remove the 2 screws of the Rear protector retainer and open the centre frame. Pull the cassette lid ass'y. (Refer Disassembly instruction Ref. No. 5 on page 4.)
5. Insert the small (–) screwdriver into a clearance between the LCD retainer (R) flange and the cassette holder in the mechanism little by little, and then remove a pin at the mechanism side (shown on the right figure).
6. Remove a pin at the left side as well.
7. Connect the connecter (JU01) with the LCD flexible board which is removed on No. 3.
8. Press the open detecting switch with an adhesive tape and hold the power "ON".
   A tape is loading without any interference with the cassette lid ass'y.
9. Perform head position adjustment after disassembling the unit to the point shown on the below.





● Loading Head Adjusting Jig (QZZ0207)

1. Load the head adjusting jig (QZZ0207) into the unit.

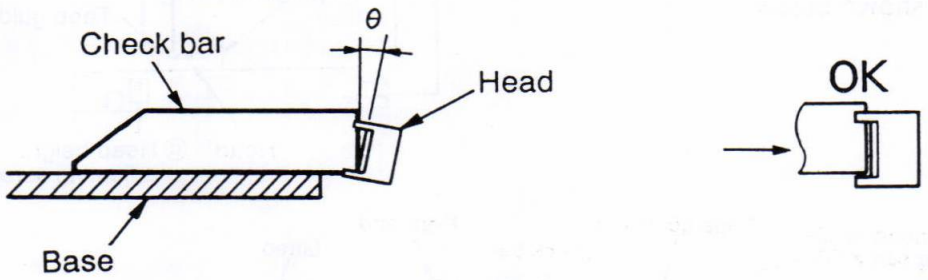


● Power Connection

1. Plug the accessory AC Adaptor (or other 6.0 V DC power supply) into the unit's DC IN jack.
2. Press the PLAY button to enter PLAY mode.

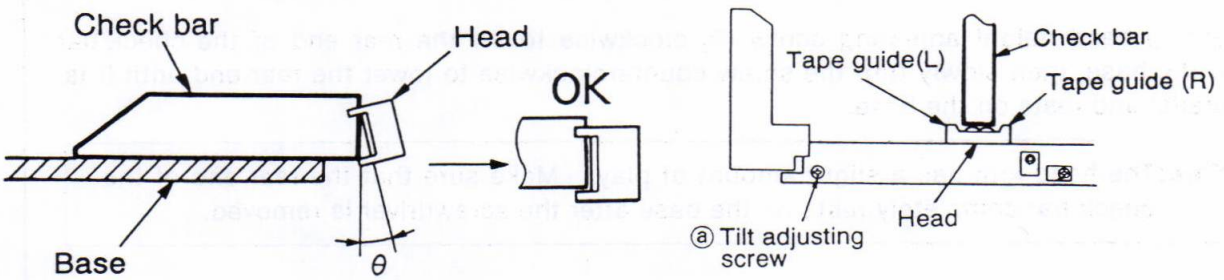
(1) Tilt Adjustment

• If the head tilts backward:



Turn the ⓐ tilt adjusting screw clockwise until the head surface is parallel with the end of the check bar (θ = within ±30′).

• If the head tilts forward:

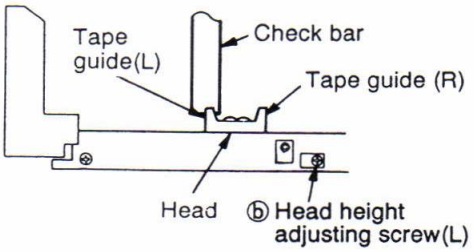


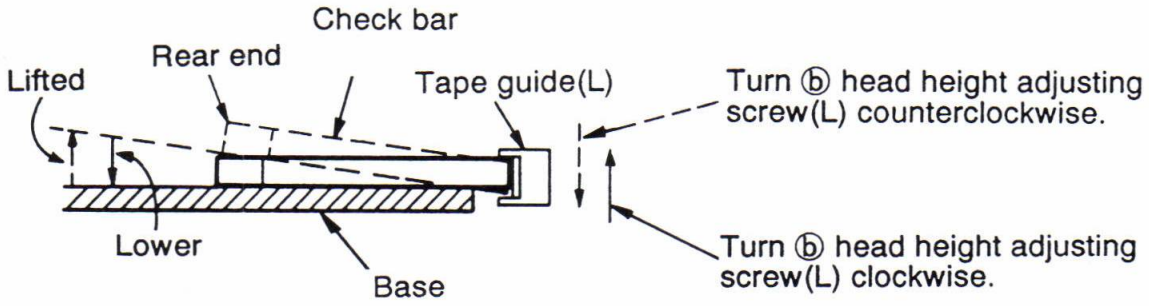
Turn ⓐ tilt adjusting screw counterclockwise until the head surface is parallel with the end of the check bar (θ = within ±30′).

(2) Guide Heights Adjustment

• Adjusting Guide (L)

Insert the check bar into tape guide (L) as shown below.

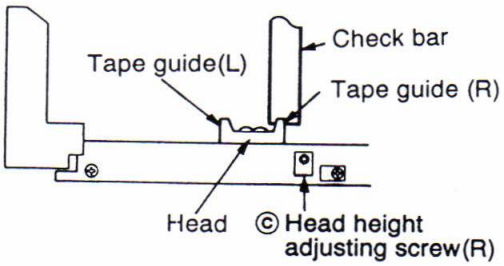


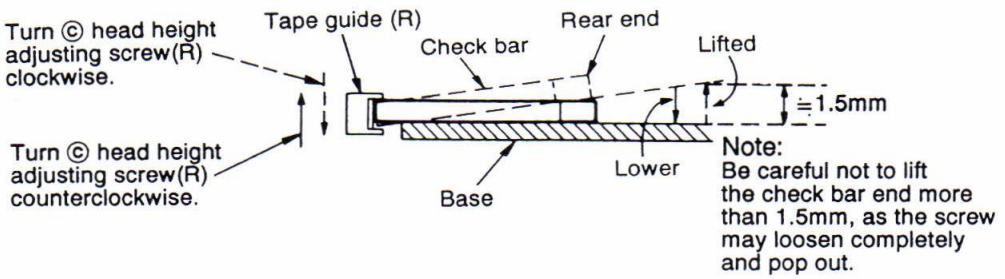


Turn ⓑ head height adjusting screw (L) counterclockwise to lift the rear end of the check bar off the base, then slowly turn the screw clockwise to lower the rear end until it is parallel and rests on the base.

• Adjusting Guide (R)

Insert the check bar into tape guide (R) as shown below.



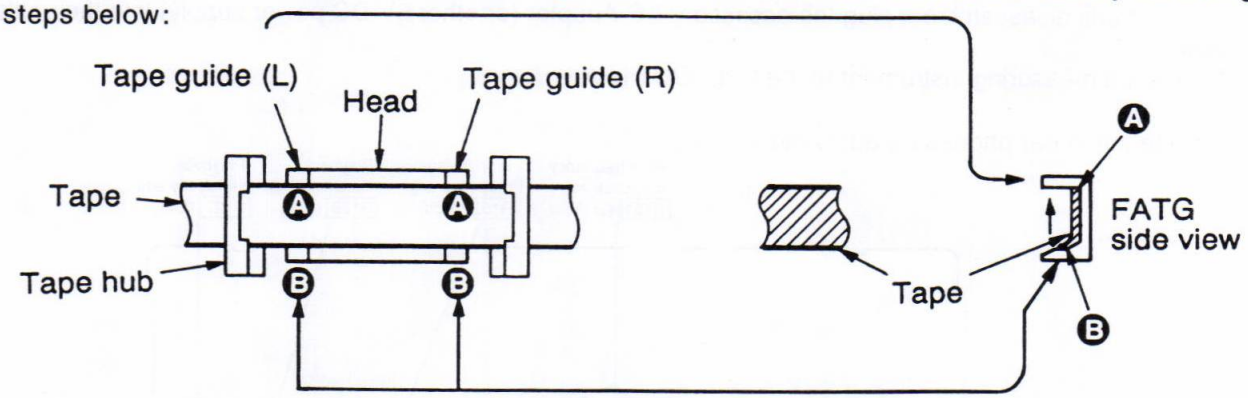


Turn ⓒ head height adjusting screw (R) clockwise to lift the rear end of the check bar off the base, then slowly turn the screw counterclockwise to lower the rear end until it is parallel and rests on the base.

Note: The head arm has a slight amount of play. Make sure that the rear end of the check bar completely rests on the base after the screwdriver is removed.

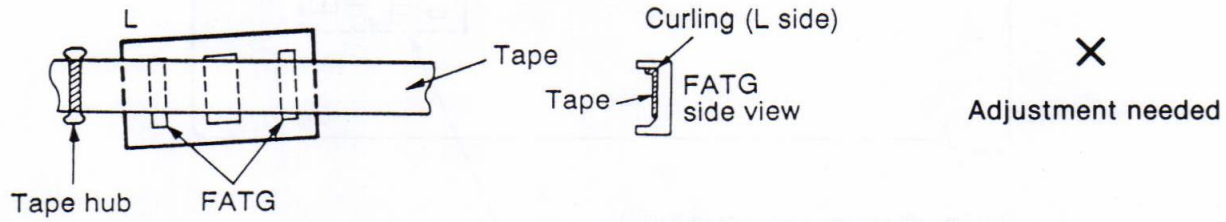
(3) Tape Transport Adjustment

• Load the mirror tape (SBC438) into the unit and check tape transport in PLAY mode, Check both forward and reverse directions. If the top edge of the tape is curled, remove the curl by following the steps below:

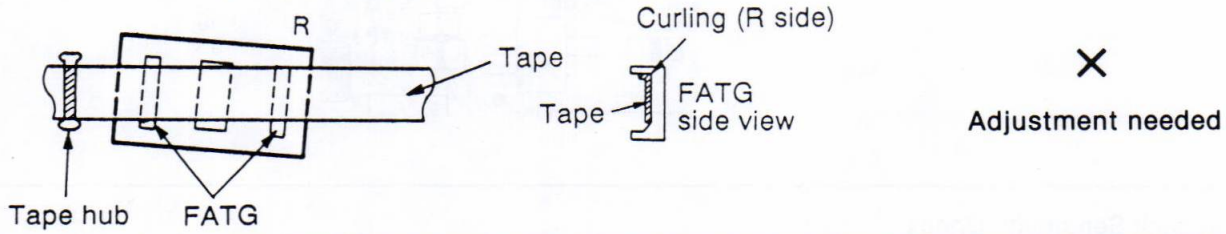


A curled tape edge will not occur at the bottom Ⓑ of the tape guide, as the tape is pushed up along a slope.
Check for a curled tape edge at the top Ⓐ of the tape guide.

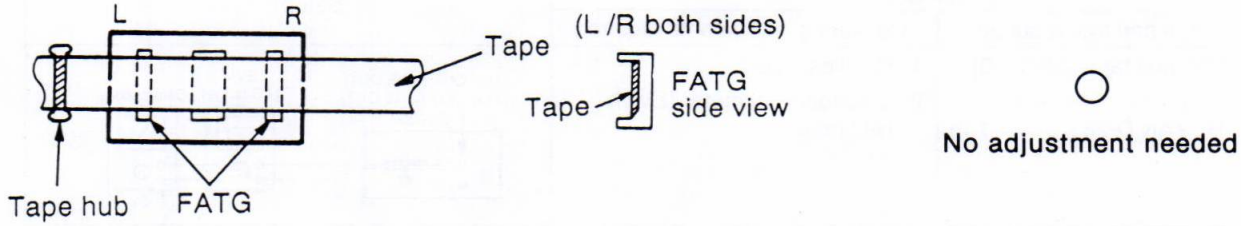
① If a curled tape edge occurs on FATG (L):
Turn ⓒ head height adjusting screw (R) clockwise until the curl is removed.



② If a curled tape edge occurs on FATG (R):
Turn ⓒ head height adjusting screw (R) counterclockwise until the curl is removed.



③ When the relative positioning of the tape hub and tape head (tape guides) is correct:



After completing the above adjustment, run the tape both forward and backward to check for a curled tape edge. If it still occurs, repeat step ① or ②.

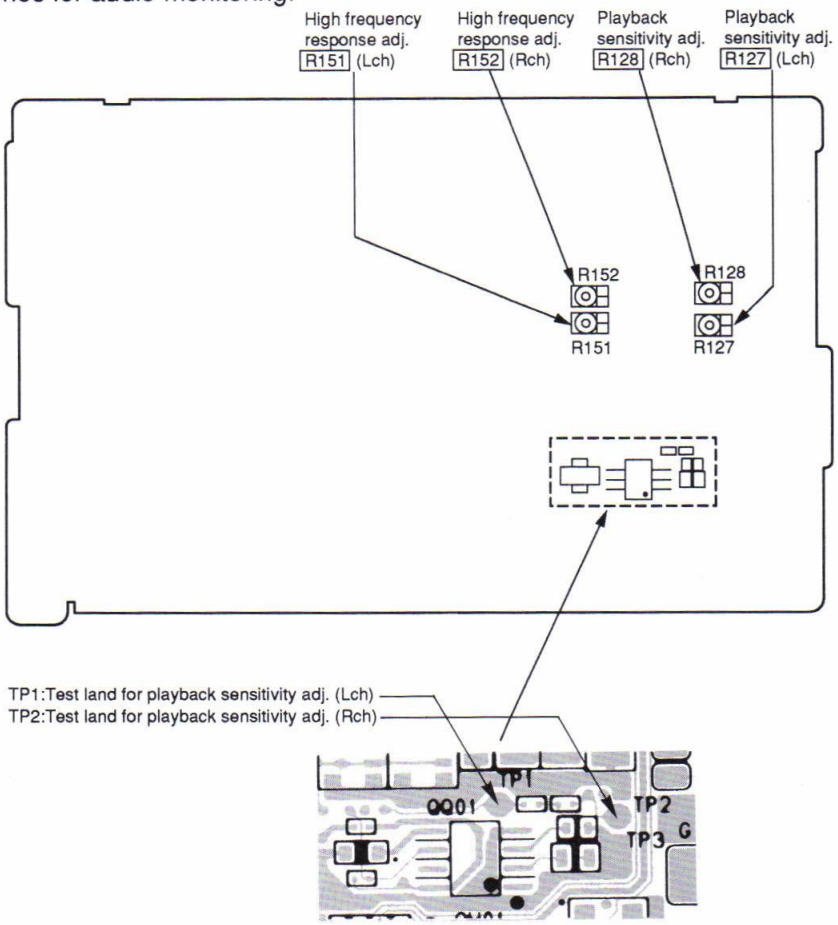
Note: Since the head arm has a slight amount of play, the degree to which the tape edge curls will differ before and after the adjustment screwdriver is removed. (Allow a sufficient adjustment margin.)

ELECTRICAL ADJUSTMENT

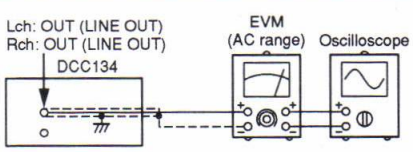
● Disassembly

1. Complete disassembly instruction Ref. No. 1 on page 3.
2. With the unit disassembled, plug the accessory AC Adaptor (or other 6V DC power supply) into the unit's DC IN jack.
3. Connect a measuring instrument to the LINE OUT jack.

Note: Use the in-ear phones for audio monitoring.



(1) Playback Sensitivity Check

Preparation		Setup
Test tape and tool required	Measuring instruments required	
1. ACC test tape (SBC420) 2. Ceramic screwdriver (HOZAN D-281, ⊕No. 1.7)	1. Oscilloscope 2. Electronic voltmeter (EVM) (AC range)	

● **Check Procedure**

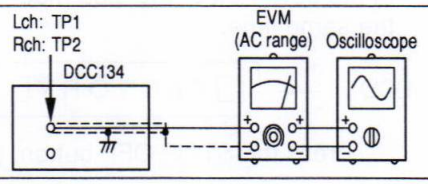
1. Play back the ACC Test Tape (SBC420: 315 Hz, 0 dB) forward.
2. Check that the line output levels on both channels fall within the following limits:

   Check Target: 410mV ±1dB

3. Reverse the direction of tape transport and perform the same check.

● If it is still outside the limits after realignment, do the Playback Sensitivity Adjustment described in item (2).

(2) Playback Sensitivity Adjustment

Preparation		Setup
Test tape and tool required	Measuring instruments required	
1. ACC test tape (SBC420) 2. Ceramic screwdriver (HOZAN D-281,⊕No. 1.7)	1. Oscilloscope 2. Electronic voltmeter (EVM) (AC range)	

- **Adjustment Procedure**
  1. Play back the ACC Test Tape (SBC420: 315 Hz, 0 dB) forward.
  2. Adjust R127 (L ch) and VR128 (R ch) until the test land TP1 (Lch) and TP2 (R ch) levels on both channels fall within the following limits:

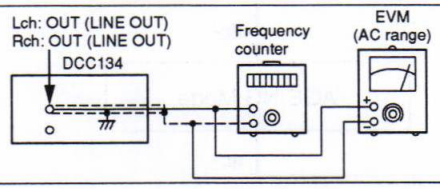
     Adjustment Target: 125mV ±1dB
  3. Reverse the direction of tape transport and perform the same check.

(3) High Frequency Response Check and Adjustment

Cautions:
- Be sure to check the frequency response after the head assembly is replaced.
- If the frequency response does not fall within the limits, perform the following adjustment.

Frequency Response Check

1. Play back 250 Hz, –20 dB and 12.5 kHz, –20 dB of the ACC Test Tape (SBC420) forward, and verify that the level difference between the two bands is within 0 ± 1dB.
2. Reverse the direction of tape transport and perform the same check.

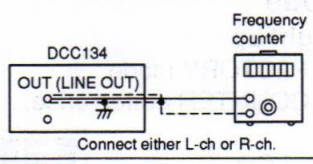
Preparation		Setup
Test tape and tool required	Measuring instruments required	
1. ACC test tape (SBC420) 2. Ceramic screwdriver (HOZAN D-281,⊕No. 1.7)	1. Frequency counter 2. Electronic voltmeter (EVM) (AC range)	

- **Adjustment Procedure**
  1. While playing back 250 Hz, –20 dB of ACC Test Tape (SBC420) forward, measure the LINE OUT levels on both channels. Use these levels as standards.
  2. Play back 12.5 kHz, –20 dB of the same test tape forward, and adjust R151 (L ch) and R152 (R ch) until the LINE OUT levels are identical to the standard levels obtained above.

     Adjustment Target: 0 ±0.5dB
  3. Reverse the direction of tape transport and perform the same check.

     Check Target: 0 ±1dB

(4) Tape Speed Check

Preparation		Setup
Test tape and tool required	Measuring instruments required	
1. ACC test tape (SBC420) 2. Ceramic screwdriver (HOZAN D-281,⊕No. 1.7)	1. Frequency counter	

1. Play back the ACC Test Tape (SBC420: 3150 Hz, –10 dB) forward.
2. Check that the line output levels on both channels fall within the following limits:

   Check Target: 3150±15Hz

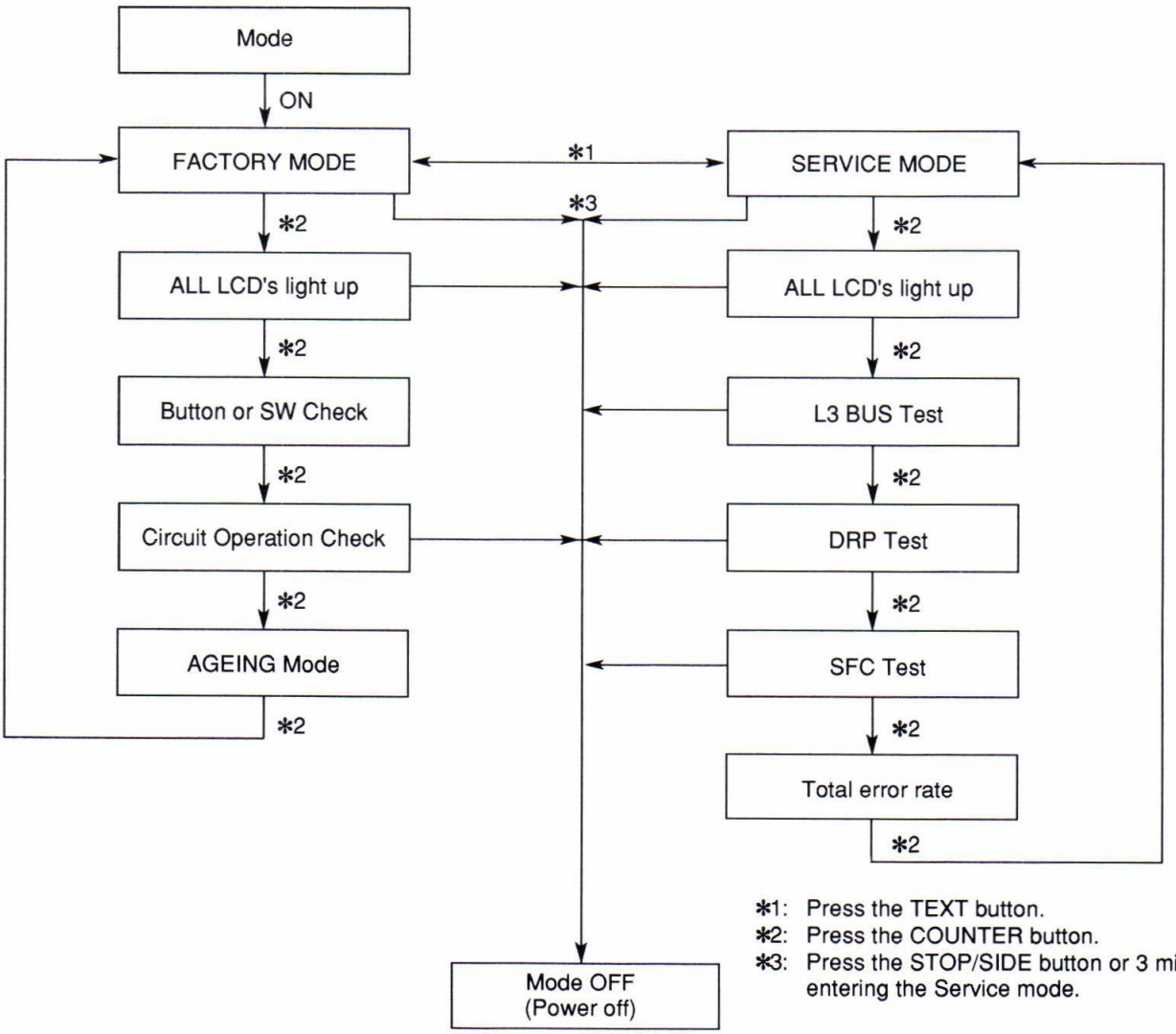
FACTORY/SERVICE MODES

● Mode ON/OFF

ON: 1. Insert a DCC tape.
2. In the power off or the stop mode, press the COUNTER button and the PLAY/SIDE button over 3 times at the same time.

LCD → □FACTORY□MODE□ (14 digits display)

OFF: Press the STOP/OFF button. (Disappear the indication after showing the "power off".)



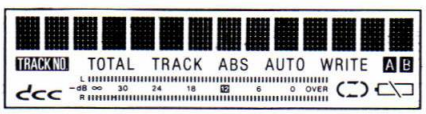
*1: Press the TEXT button.
*2: Press the COUNTER button.
*3: Press the STOP/SIDE button or 3 minutes after entering the Service mode.

● Factory mode

(1) All LCD's light up

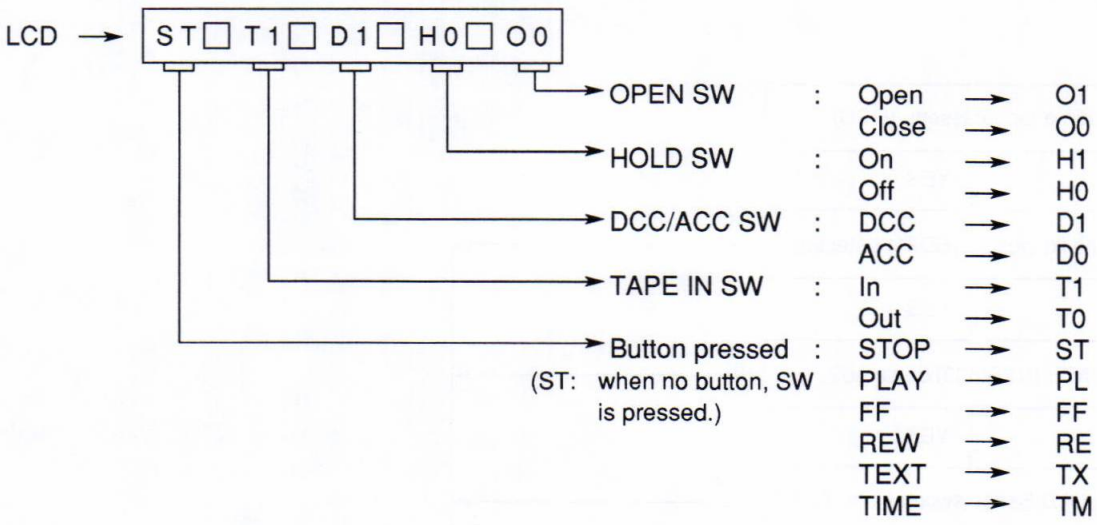
1. Set in the FACTORY mode.
2. Press the COUNTER button once.

LCD →



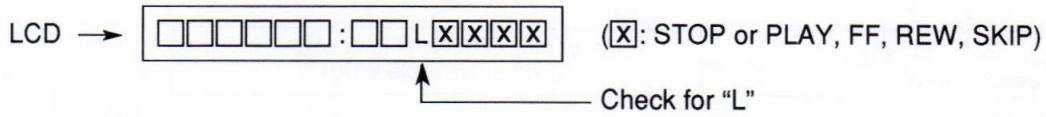
(2) Button, SW ON/OFF

1. Set in the FACTORY mode.
2. Press the COUNTER button twice. (Or, press the COUNTER button once on the all LCD's light up condition.)
3. Shown BUTTON and SW ON/OFF below.



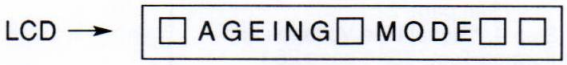
(3) Circuit operation

1. Set in the FACTORY mode.
2. Press the COUNTER button 3 times. (Or, press the COUNTER button once in the BUTTON, SW ON/OFF condition.)

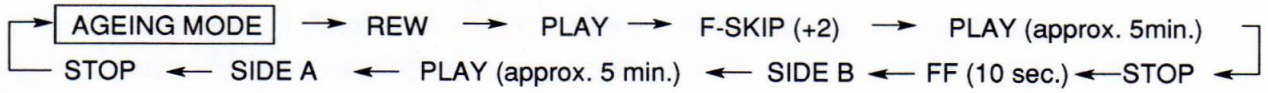


(4) Ageing mode

1. Set in the FACTORY mode.
2. Press the COUNTER button 4 times.
   (Or, press the COUNTER button once in the circuit operation.)



3. Repeat the same operating after indicated.



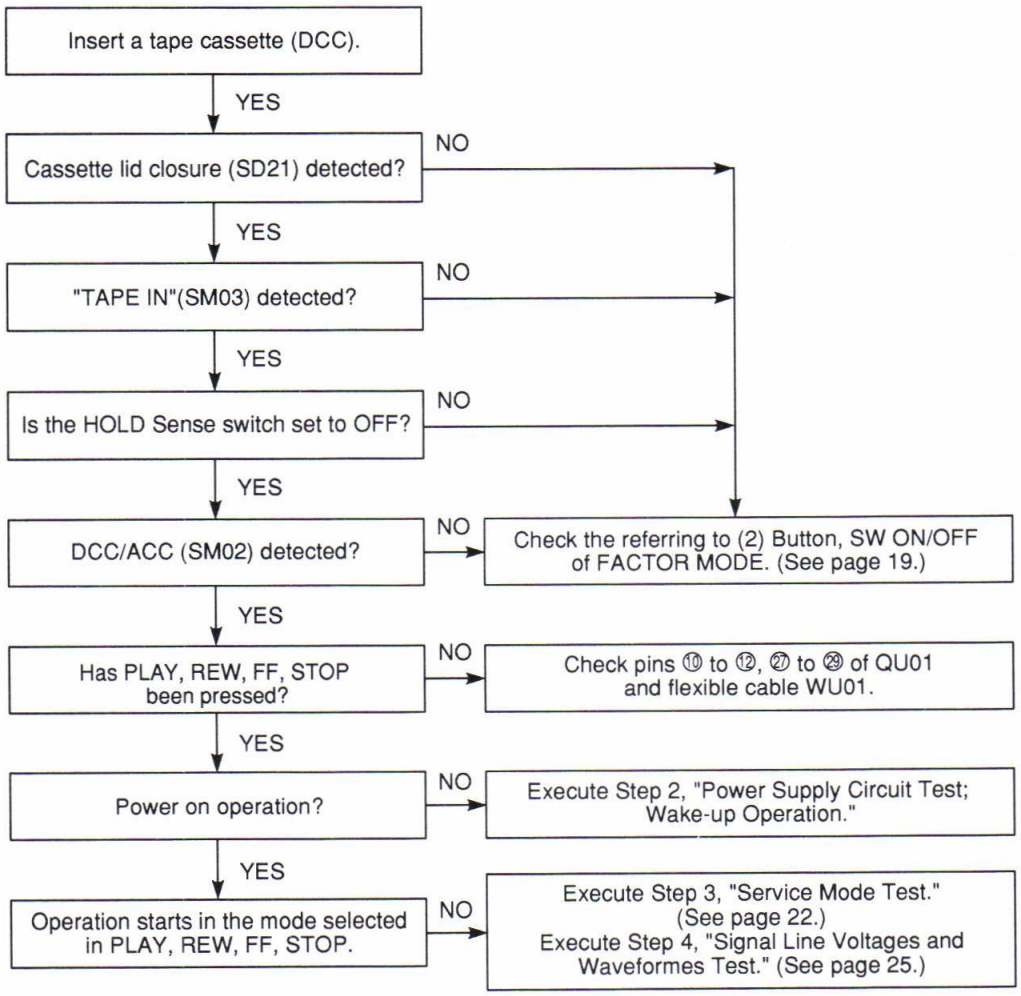
4. When pressing the COUNTER button, reset in the "FACTORY MODE".

● Service mode

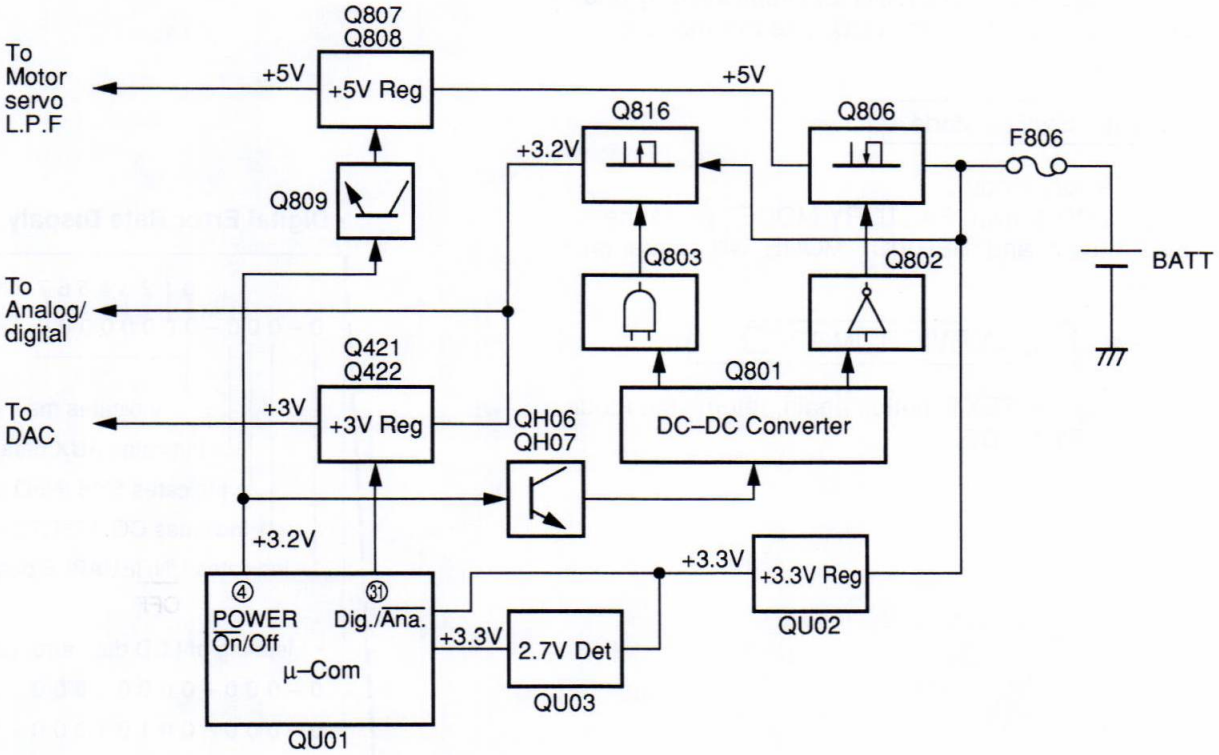
Refer Step 3 of Troubleshooting on page 22.

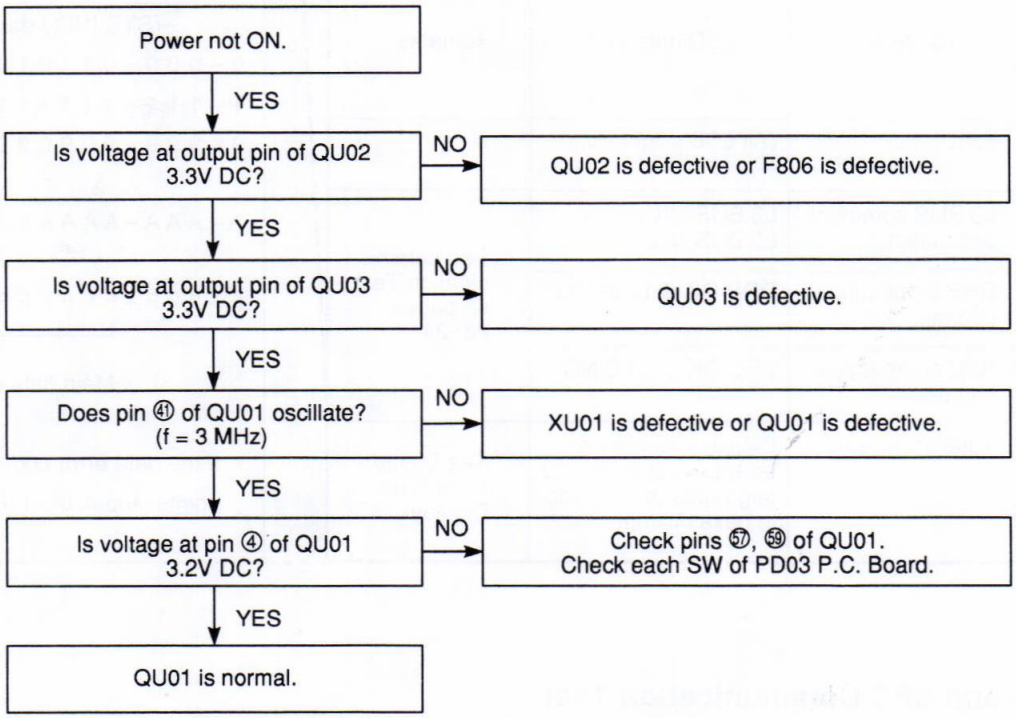
TROUBLESHOOTING

Step 1. Checking Operations from Tape Insertion though Operation Start



Step 2. Power Supply Circuit Test; Wake-Up Operation





Step 3. CPU ' IC's Communiction (Bus Line) test [Self Diagnostic (Factory/Service Mode)]

In Service mode, the CPU checks for circuit integrity and displays the test results on the LCD. Use this mode for quick fault isolation.

How To Enter Service Mode

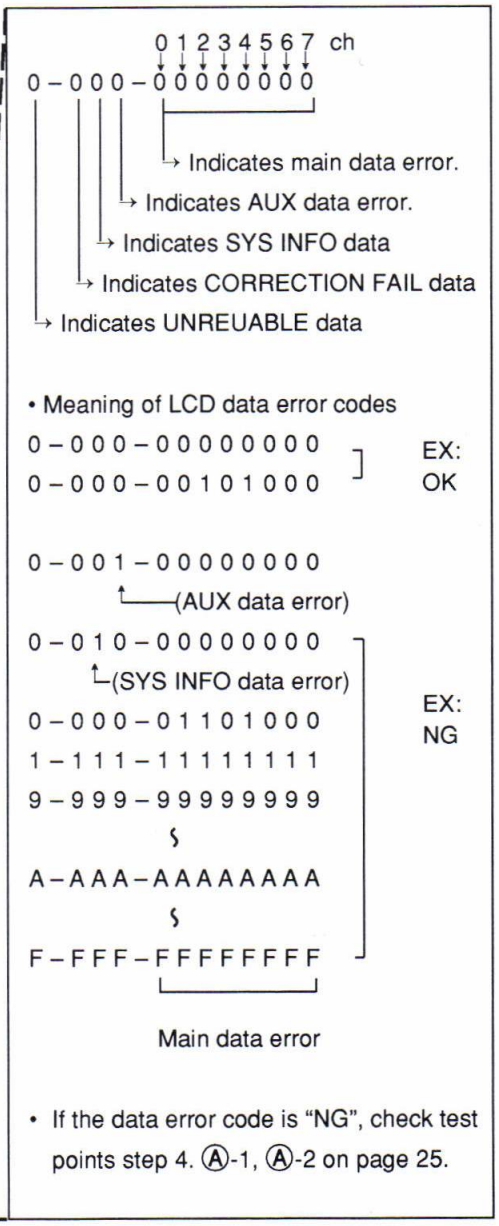
1. Set to "Factory mode".
2. With the LCD shown "FACTORY MODE", press the "TEXT" button, and "SERVICE MODE" will uppear on the LCD.

LCD → □SERVICE□MODE□

Note: Pressing the "TEXT" button again, returns the mode to the FACTORY MODE.

COUNTER RESET button operation count	Test item	LCD message	Remarks
1	(LCD) test	(All LCD's light up.)	
2	L3 BUS communication test	L3 BUS OK or L3 BUS NG	See communication Test on pages 23~24.
3	DRP communication test	DRP OK or DRP NG	
4	SFC communication test	SFC OK or SFC NG	
5	Total error rate	Displays number of errors generated in 32 segments (for 1.3 sec.) in hexa dicimal.	See Digital Error Rate Display.

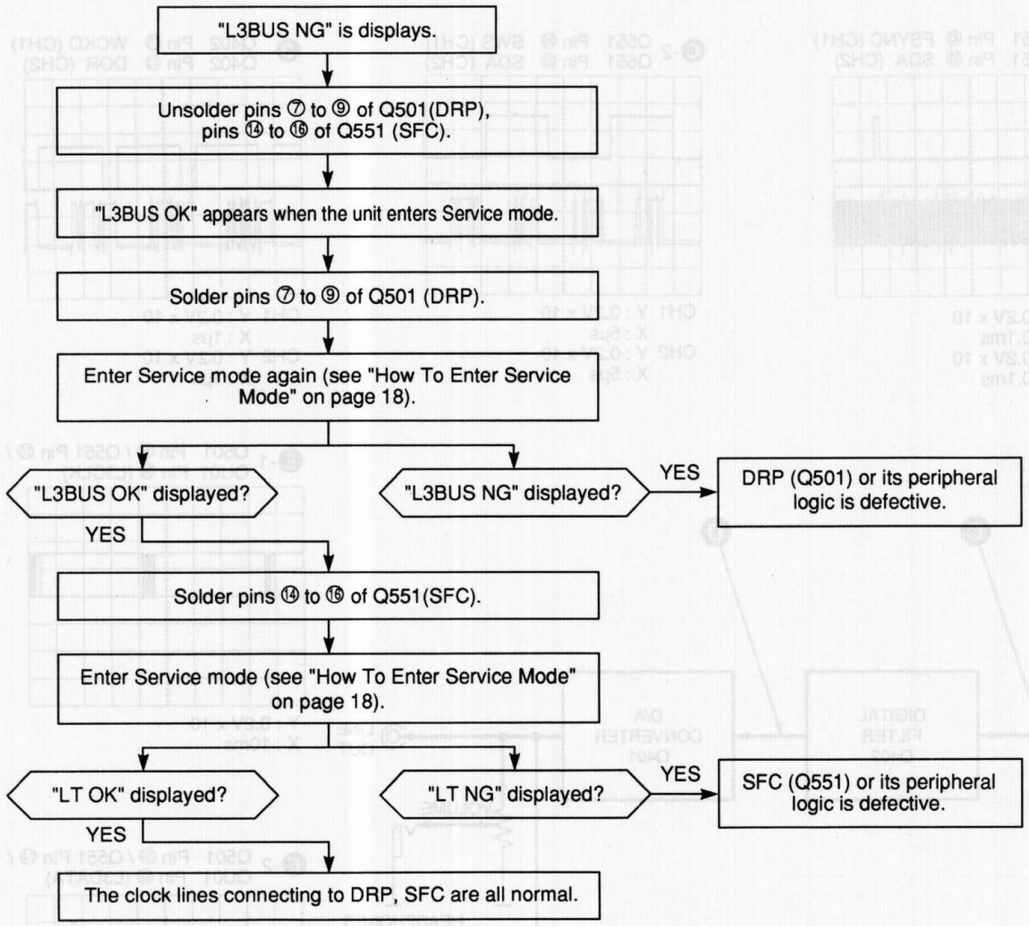
• Digital Error Rate Dispaly



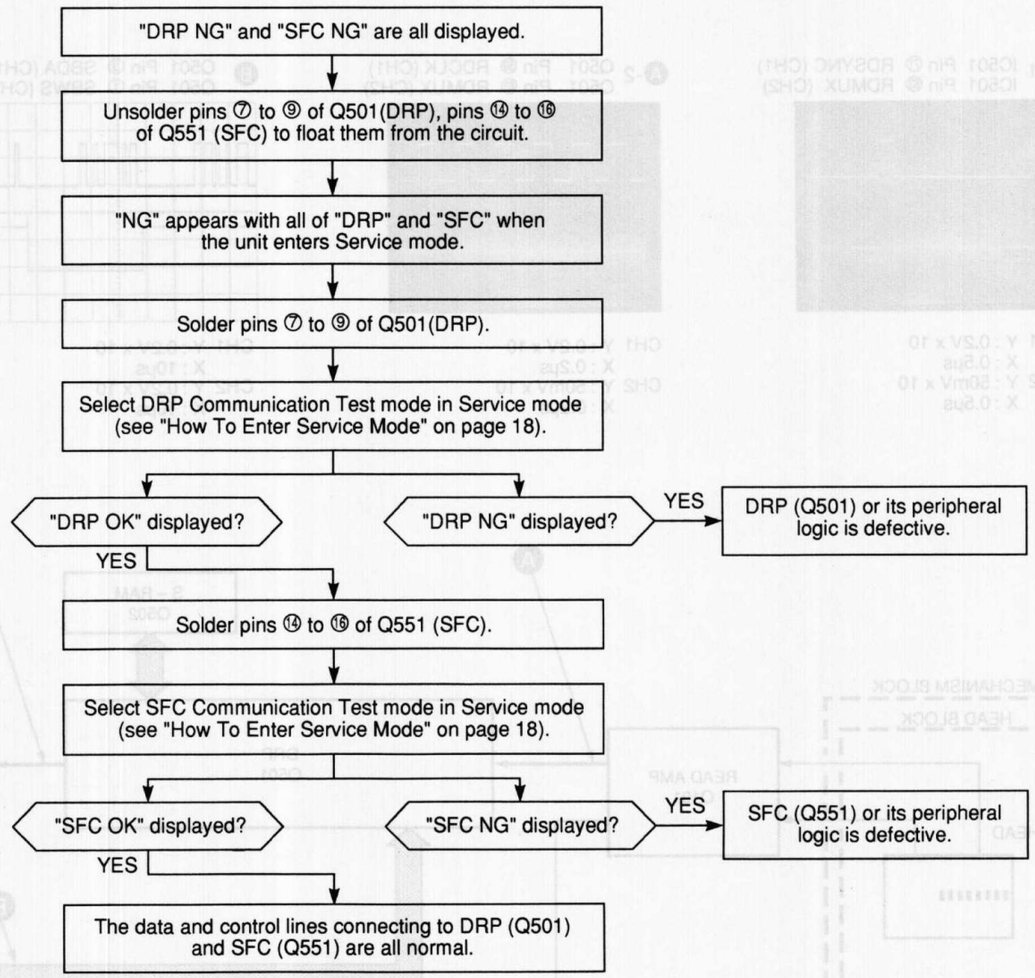
● LSI, DRP and SFC Communication Test

The CPU is connected to its peripheral ICs (DRP, SFC) via a parallel bus consisting of clock, data, and control lines. If an "NG" message is displayed on the LCD as a result of self diagnostics in Service mode, it is necessary to determins which IC out of DRP, SFC (including their peripheral components) is defective. The flowcharts on the follwing pages porovide a quick troubleshooting guide to locate the defective IC(s).

(1) Locating the defective division of LSI communication test (Clock Line: "L3BUS NG")



(2) Locating the defective division of DRP and SFC communication (Data and Control Line: "DRP/SFC NG")

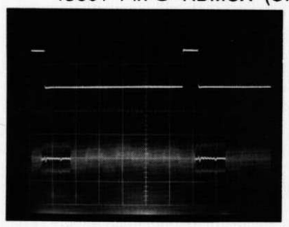


Notes:

- If an IC or its peripheral component is found to be defective, leave its pin(s) unsoldered or replace if with a functioning component.
- If a defective IC or peripheral is left soldered, an "NG" message will reappear when another IC is tested.
- ICs or peripherals found to be normal may be resoldered.
- More than one IC or peripheral may be defective at a time. Carry out all the troubleshooting steps even if a defective IC or component is discovered before you complete all the steps.
- The unit turns off if no button is operated for 3 minutes after entering Service mode.
- Use a normal (new) tape for troubleshooting.
- To exit Service mode, press the STOP button.

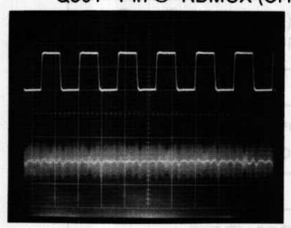
Step 4. Signal line Voltages and Waveforms Test

Ⓐ-1 IC501 Pin ㉑ RDSYNC (CH1)
IC501 Pin ㊸ RDMUX (CH2)



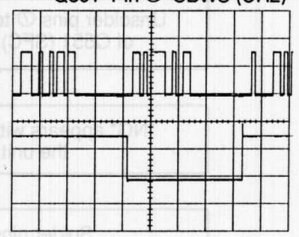
CH1 Y : 0.2V x 10
X : 0.5µs
CH2 Y : 50mV x 10
X : 0.5µs

Ⓐ-2 Q501 Pin ㊾ RDCLK (CH1)
Q501 Pin ㊸ RDMUX (CH2)



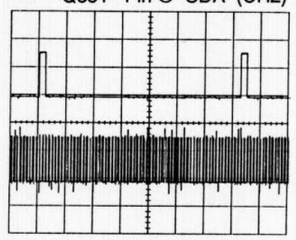
CH1 Y : 0.2V x 10
X : 0.2µs
CH2 Y : 50mV x 10
X : 0.2µs

Ⓑ Q501 Pin ③ SBDA (CH1)
Q501 Pin ① SBWS (CH2)



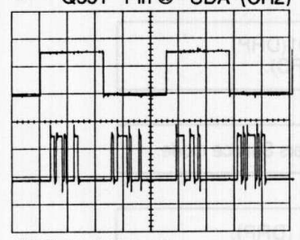
CH1 Y : 0.2V x 10
X : 10µs
CH2 Y : 0.2V x 10
X : 10µs

Ⓒ-1 Q551 Pin ㊹ FSYNC (CH1)
Q551 Pin ㉝ SDA (CH2)



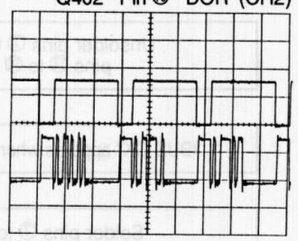
CH1 Y : 0.2V x 10
X : 0.1ms
CH2 Y : 0.2V x 10
X : 0.1ms

Ⓒ-2 Q551 Pin ㉟ SWS (CH1)
Q551 Pin ㉝ SDA (CH2)

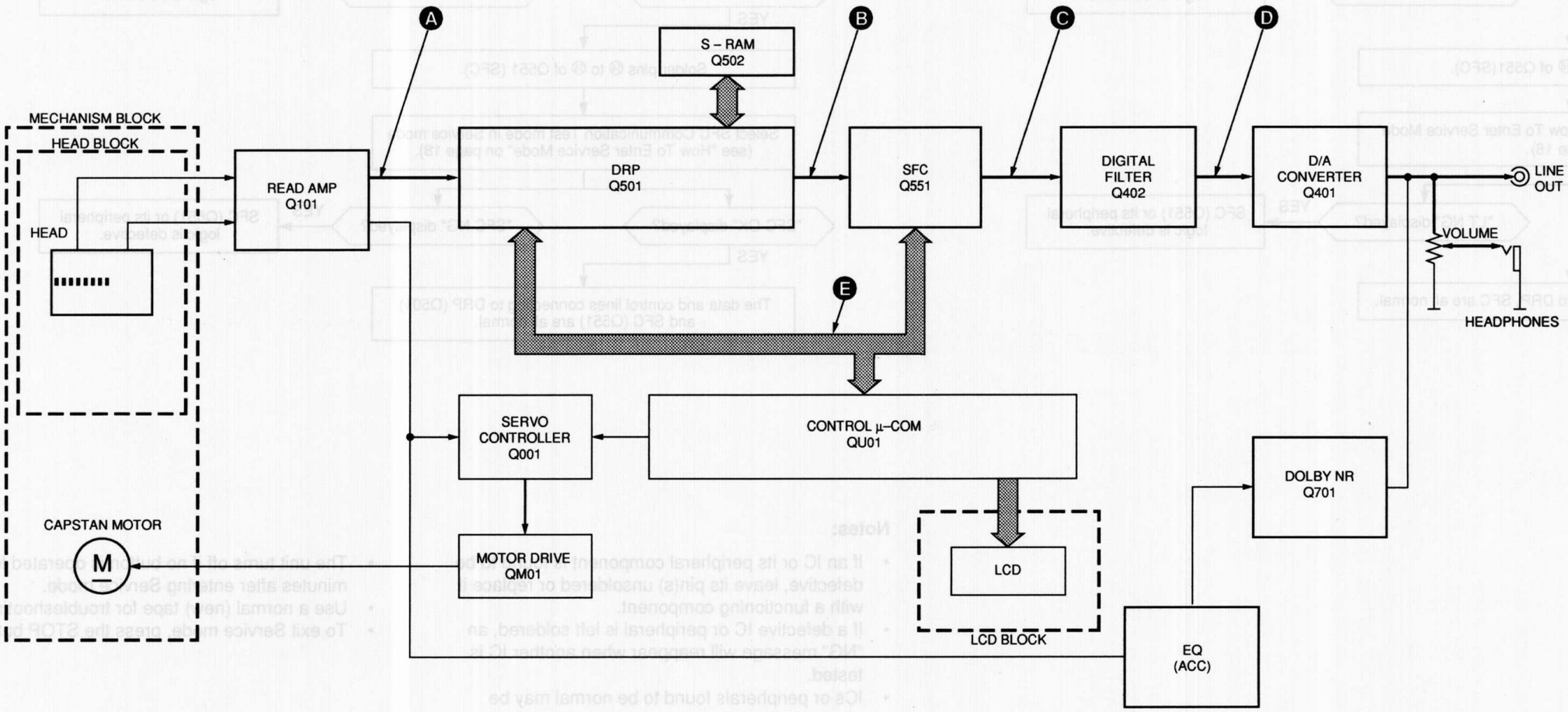


CH1 Y : 0.2V x 10
X : 5µs
CH2 Y : 0.2V x 10
X : 5µs

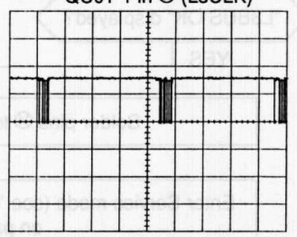
Ⓓ Q402 Pin ⑮ WCKO (CH1)
Q402 Pin ⑬ DOR (CH2)



CH1 Y : 0.2V x 10
X : 1µs
CH2 Y : 0.2V x 10
X : 1µs

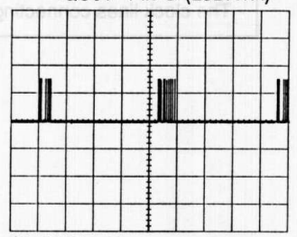


Ⓔ-1 Q501 Pin ⑧ / Q551 Pin ⑮ /
QU01 Pin ㊹ (L3CLK)



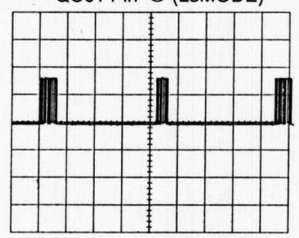
Y : 0.2V x 10
X : 10ms

Ⓔ-2 Q501 Pin ⑨ / Q551 Pin ⑭ /
QU01 Pin ㊷ (L3DATA)



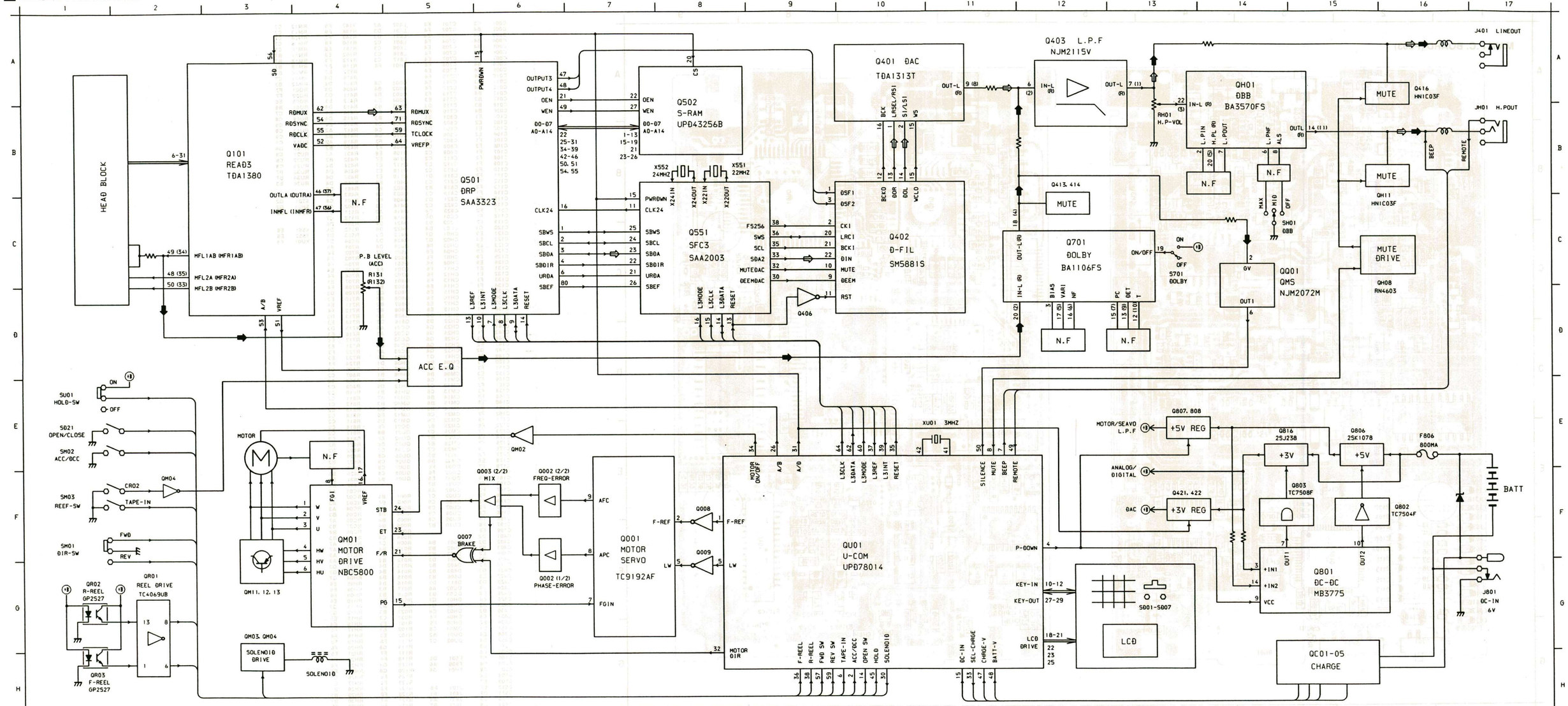
Y : 0.2V x 10
X : 10ms

Ⓔ-3 Q501 Pin ⑦ / Q551 Pin ⑯ /
QU01 Pin ㊵ (L3MODE)



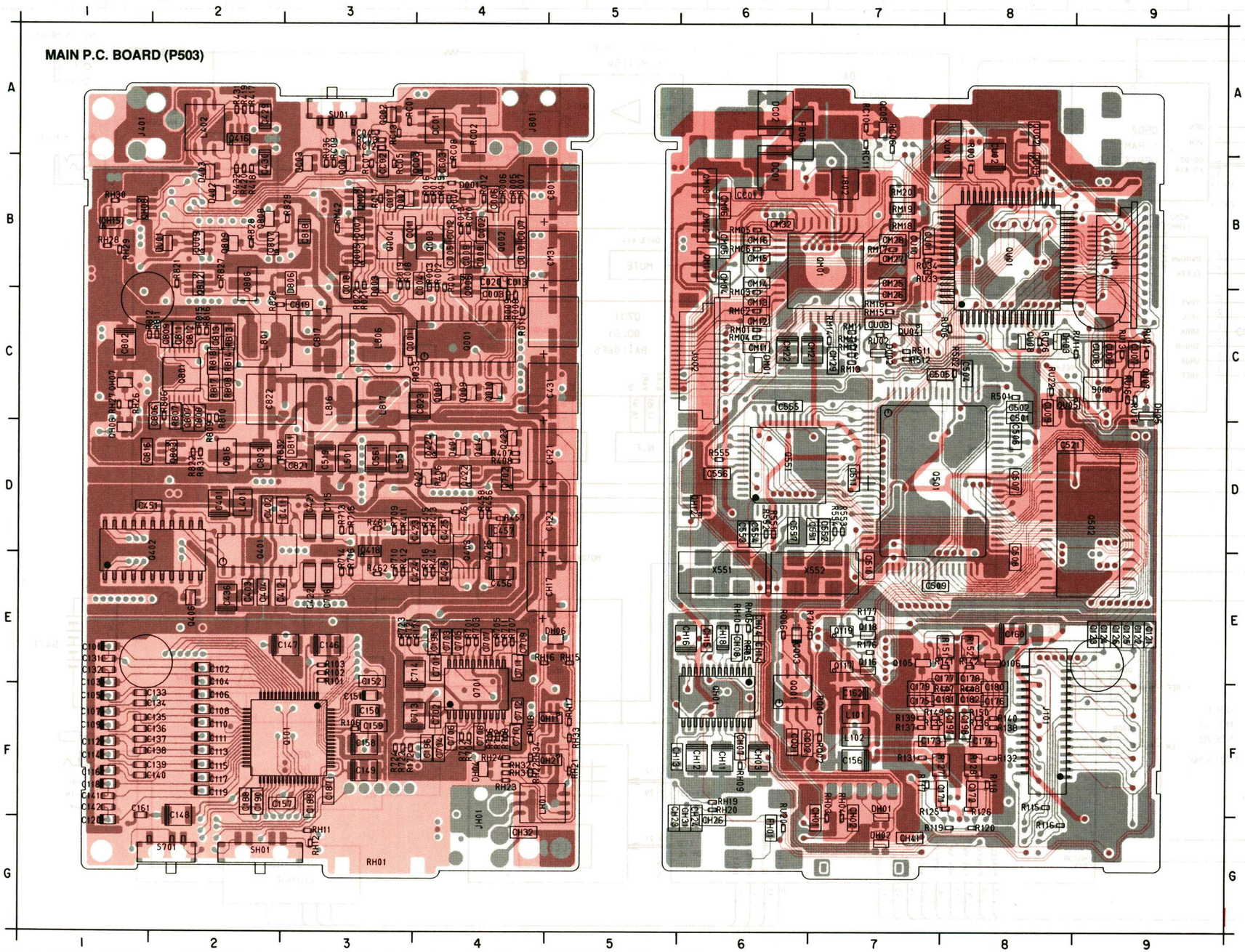
Y : 0.2V x 10
X : 10ms

BLOCK DIAGRAM



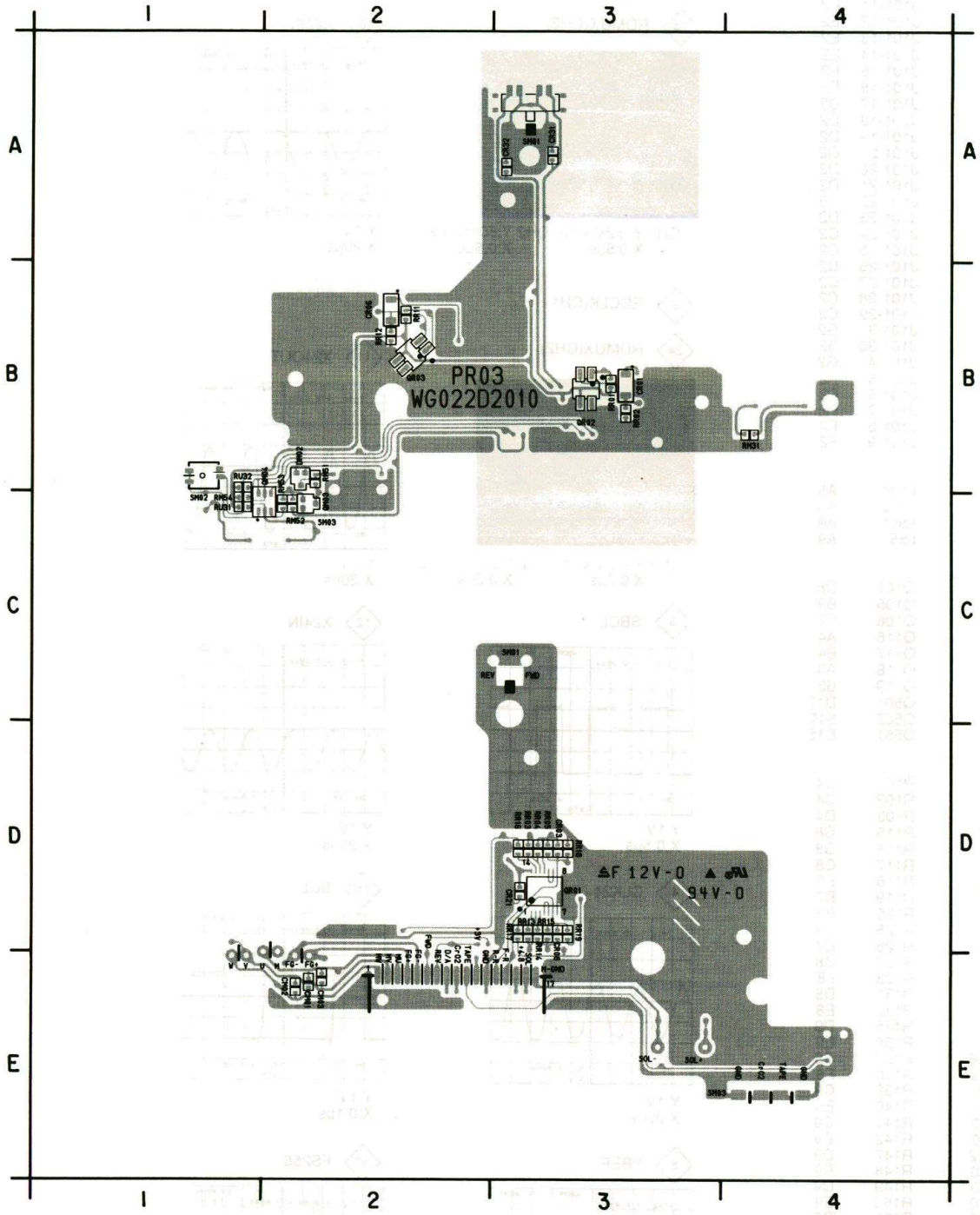
PRINTED CIRCUIT BOARDS DIAGRAM

MAIN P.C. BOARD (P503)

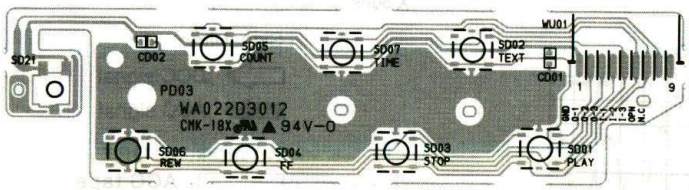


C001	C3	C701	E4	L402	A2	R147	F8	RM12	C7
C002	B4	C702	F4	L501	D3	R148	F8	RM13	C7
C003	C4	C703	E4	L551	D3	R149	F7	RM14	C7
C004	B4	C704	F4	L801	C2	R150	F8	RM15	C7
C005	B4	C705	E4	L806	C3	R151	E8	RM16	C7
C006	B4	C706	F4	L816	C3	R152	E8	RM17	B7
C007	B4	C707	E4	L817	C3	R172	F3	RM18	B7
C008	B4	C708	F4	LH01	F4	R176	E7	RM19	B7
C009	B4	C709	E4			R177	E7	RM20	B7
C010	B4	C710	F4			R406	D4	RM41	C7
C011	B3	C711	E4	Q001	C4	R407	D4	RM42	B3
C012	B4	C712	F4	Q002	B4	R408	D4	RQ01	F7
C013	B4	C713	F3	Q003	B4	R411	D3	RQ02	F7
C017	B3	C714	E3	Q004	B3	R412	E3	RQ06	E6
C018	B3	C715	D3	Q005	B3	R413	D4	RU01	B8
C020	B4	C716	E3	Q006	B4	R414	E4	RU02	C7
C101	E1	C801	B5	Q007	B3	R415	D4	RU06	C8
C102	E2	C802	C1	Q008	C4	R416	E4	RU11	C9
C103	E1	C803	D2	Q009	C4	R417	A2	RU13	C9
C104	E2	C806	C2	Q010	C4	R418	B2	RU16	C9
C105	F1	C807	C2	Q101	F3	R419	A2	RU17	C9
C106	F2	C808	C2	Q105	E7	R420	B2	RU20	G6
C107	F1	C809	C2	Q106	E8	R431	A2	RU21	C9
C108	F2	C811	C2	Q116	E7	R432	B2	RU22	C8
C109	F1	C812	C2	Q117	E7	R451	D4	RU26	C8
C110	F2	C813	C2	Q118	E7	R456	D4	RU33	B7
C111	F2	C816	D1	Q119	E7	R457	D4	RU34	B7
C112	F1	C817	C3	Q401	E2	R458	D4	RU36	B3
C113	F2	C818	B3	Q402	E1	R461	D3		
C114	F1	C819	C3	Q403	D4	R462	E3		
C115	F2	C821	D3	Q406	E2	R501	C8	S701	G2
C116	F1	C822	C2	Q414	D3	R502	C8	SH01	G2
C117	F2	C823	C4	Q416	A2	R511	C7	SU01	A3
C118	F1	CC01	B6	Q418	D3	R512	C7		
C119	F2	CC02	B3	Q421	D4	R551	D6		
C120	G1	CC03	B4	Q422	D4	R552	D6	X551	E6
C121	E9	CH01	G7	Q423	D3	R553	D7	X552	E6
C122	E9	CH02	G7	Q424	D3	R554	D7	XU01	A8
C123	E9	CH03	F6	Q426	D4	R701	E4		
C124	E9	CH04	E6	Q501	D7	R702	F4		
C125	E9	CH07	F6	Q502	D9	R703	E4		
C126	E9	CH08	E6	Q551	D6	R704	F4		
C131	E1	CH11	F6	Q701	F4	R705	E4		
C132	E1	CH12	F6	Q702	D4	R706	F4		
C133	F1	CH13	F5	Q801	C2	R707	E4		
C134	F1	CH14	E6	Q802	B2	R708	F4		
C135	F1	CH15	E6	Q803	D2	R709	E4		
C136	F1	CH16	E6	Q806	B2	R710	E3		
C137	F1	CH17	E5	Q807	B2	R711	E4		
C138	F1	CH18	E6	Q808	B2	R712	F4		
C139	F1	CH21	D5	Q809	B2	R713	D3		
C140	F1	CH22	D5	Q816	D2	R714	E3		
C141	F1	CH23	G5	QC01	A4	R715	D3		
C142	F1	CH24	G6	QC02	A3	R716	E3		
C146	E3	CH26	G6	QC03	B4	R717	E6		
C147	E2	CH31	G6	QC04	B3	R721	E3		
C148	G2	CH32	G4	QC05	A7	R722	F3		
C149	F3	CH41	G7	QH01	F6	R723	E3		
C150	F3	CM04	B6	QH06	D1	R724	F3		
C151	F3	CM05	B6	QH07	C1	R806	C2		
C152	E3	CM06	B6	QH08	B1	R807	C2		
C156	F7	CM11	C6	QH11	F5	R808	C2		
C157	F2	CM12	C6	QH12	D6	R809	C2		
C158	F3	CM13	C6	QH15	B1	R810	C2		
C159	F3	CM14	B6	QM01	B7	R811	C1		
C160	E8	CM15	B6	QM02	B3	R812	C1		
C161	G1	CM16	B6	QM11	B6	R813	C2		
C162	F7	CM21	C8	QM12	B6	R814	C2		
C171	F8	CM22	C6	QM13	B6	R815	C2		
C172	F8	CM25	B7	QQ01	F6	R816	C2		
C173	F7	CM26	C7	QU01	B8	R817	C2		
C174	F8	CM27	B7	QU02	A8	R818	C2		
C175	F7	CM28	B7	QU03	B8	R821	B2		
C176	F8	CM29	C7	QU04	C7	R822	B2		
C177	E8	CM31	B5	QU05	C8	R826	C2		
C178	E8	CM32	B6	QU06	C9	R827	B2		
C179	F7	CQ01	F6	QU07	C9	R828	B2		
C180	F8	CQ02	F6	QU08	C8	R829	B3		
C181	F8	CQ03	E6	QU09	B2	R831	D2		
C182	F8	CU01	B7			R832	D2		
C187	F3	CU02	A8			RC01	A3		
C188	F2	CU03	C7	R001	B4	RC02	A4		
C189	F3	CU06	C9	R002	B4	RC03	A3		
C190	F2	CU07	C9	R003	B4	RC04	A3		
C195	E4	CU08	C9	R004	B4	RC05	B3		
C196	F4	CU09	C8	R005	B4	RC06	A7		
C197	F8	CU10	B7	R006	B4	RC07	B3		
C198	F8			R007	B4	RC08	B4		
C401	D2			R008	C4	RC09	B3		
C402	D2	D001	B4	R009	C4	RC10	A7		
C403	E2	D002	B3	R010	B4	RC11	A7		
C404	E2	D003	B3	R011	C4	RC12	A3		
C411	D2	D401	D3	R012	B4	RC13	A3		
C412	D2	D402	B2	R013	B4	RH01	G3		
C421	D3	D403	B2	R014	B4	RH03	G7		
C422	E3	D806	B3	R015	B4	RH04	G7		
C423	D3	D811	D3	R016	B4	RH05	E6		
C424	E4	DC02	A6	R017	B3	RH06	E6		
C425	D4	DC03	B3	R018	B3	RH09	F6		
C426	E4	DH01	G7	R019	B3	RH10	E6		
C429	A2	DH02	G7	R021	B3	RH11	G3		
C430	B2	DH03	C8	R022	B3	RH12	G3		
C431	C5	DH04	F4	R033	C3	RH15	E5		
C436	E2	DH06	F5	R101	E3	RH16	E4		
C451	D1	DM01	C6	R102	E3	RH17	F5		
C456	E4	DU01	B2	R103	E3	RH18	F4		
C457	D4	DU02	C7	R115	F8	RH19	F6		
C501	C8			R116	G8	RH20	F6		
C502	C8			R117	F7	RH21	F5		
C505	C7	F501	D6	R118	F8	RH22	F4		
C506	D8	F806	A6	R119	G8	RH23	F4		
C507	D8	FH01	G6	R120	G8	RH24	F4		
C508	D8			R125	F8	RH26	C1		
C509	E7			R126	F8	RH27	C1		
C510	E7	J101	F8	R127	F8	RH28	B1		
C511	D7	J401	A1	R128	F8	RH29	B1		
C519	D3	J801	A4	R131	F7	RH30	B1		
C521	D8	J802	B7	R132	F8	RH33	F5		
C551	D7	JH01	G4	R135	F7	RH34	F4		
C552	D7	JU01	B9	R136	F8	RM01	C6		
C553	D6	JU02	C6	R137	F7	RM02	C6		
C554	D6			R138	F8	RM03	C6		
C555	C6			R139	F7	RM04	C6		
C556	D6	L101	F7	R140	F8	RM05	B6		
C557	D6	L102	F7	R141	E8	RM06	B6		
C561	D3	L401	D2	R142	E8	RM11	C7		

MECHANISM P.C. BOARD (PR03)



SWITCH P.C. BOARD (PD03)



CM01	E2	RM53	C2
CM02	E2	RM54	C1
CM03	E2	RR01	B3
CR01	B3	RR02	B3
CR03	D3	RR03	D3
CR06	B2	RR04	D3
CR08	D3	RR05	D3
CR21	D3	RR11	B2
CR31	A3	RR12	B2
CR32	A3	RR13	D3
		RR14	D3
		RR15	D3
DM02	B2	RR16	D3
		RR17	D3
		RR18	D3
QM03	C2	RR19	D3
QM04	C2	RU31	C1
QR01	D3	RU32	B1
QR02	B3		
QR03	B2		
		SM01	A3
		SM01	B1
RM31	B4	SM01	C3
RM51	B2	SM03	E4
RM52	C2		

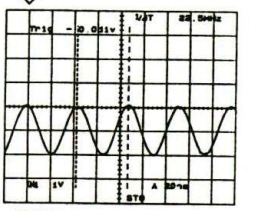
C101	C3	J101-1	G2
C102	C3	J101-10	F2
C103	C3	J101-11	E2
C104	C3	J101-12	E2
C105	C3	J101-13	E2
C106	C3	J101-14	E2
C108	D3	J101-15	E2
C109	D3	J101-16	E2
C110	D3	J101-17	D2
C111	E3	J101-18	D2
C112	E3	J101-19	D2
C113	E3	J101-2	G2
C114	F3	J101-20	D2
C115	F3	J101-21	D2
C116	F3	J101-22	D2
C117	F3	J101-23	D2
C118	F3	J101-24	C2
C119	G3	J101-25	C2
C120	G3	J101-26	C2
C121	G3	J101-27	C2
C122	F3	J101-28	C2
C123	E3	J101-29	C2
C124	D3	J101-3	G2
C125	C3	J101-30	B2
C126	C3	J101-4	G2
C131	C3	J101-5	F2
C132	C3	J101-6	F2
C133	C3	J101-7	F2
C134	C3	J101-8	F2
C135	D3	J101-9	F2
C136	D3		
C137	E3		
C138	E3	L101	A5
C139	F3	L102	A5
C140	F3	L501	A9
C141	F3	L551	A9
C142	G3		
C146	D4		
C147	D4	Q101	D6
C148	F7	Q105	B9
C149	B7	Q106	F9
C150	C5	Q116	A4
C151	C5	Q117	B4
C152	C4	Q118	A3
C156	A6	Q119	B3
C157	A6	Q501	D12
C158	B6	Q502	B12
C159	B6	Q551	C15
C160	A2		
C161	A3		
C162	A5	R101	C4
C171	D8	R102	C4
C172	E8	R103	D4
C173	D8	R115	G8
C174	E8	R116	G8
C175	D9	R117	C8
C176	E9	R118	E8
C177	C9	R119	B7
C178	E9	R120	B8
C179	D9	R125	D8
C180	E9	R126	E7
C181	D9	R127	C8
C182	E9	R128	F8
C187	C8	R131	D8
C188	F8	R132	E8
C189	C8	R135	D9
C190	E8	R136	E9
C195	G16	R137	C8
C196	G16	R138	F8
C197	D9	R139	C9
C198	D9	R140	E9
C501	F10	R141	C9
C502	F10	R142	E9
C505	G12	R147	D9
C506	E10	R148	E9
C507	E10	R149	D9
C508	C10	R150	E9
C509	B12	R151	C9
C510	C14	R152	F9
C511	E14	R171	G16
C519	A9	R172	G16
C521	A11	R176	A4
C551	A14	R177	A3
C552	A15	R501	F10
C553	A15	R502	F11
C554	A15	R511	A14
C555	D15	R512	A14
C556	B16	R551	A15
C557	B16	R552	A15
C561	A9	R553	A14
		R554	A15
		R555	C16
		X551	A15
		X552	A14

◇1 RDSYNC(CH1)

◇24 RDMUX(CH2)

CH1 Y:0.2V x 10 CH2 Y:50mV x 2
X:0.5µs X:0.5µs

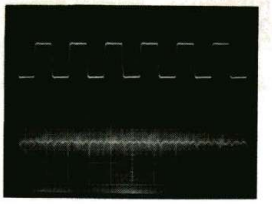
◇10 X22IN



Y:1V
X:20µs

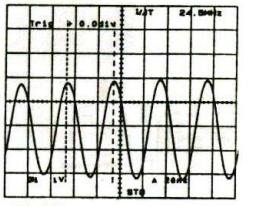
◇2 RDCLK(CH1)

◇24 RDMUX(CH2)



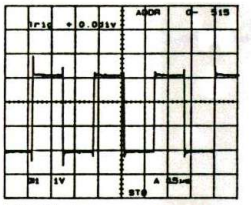
CH1 Y:0.2V x 10 CH2 Y:50mV x 10
X:0.2µs X:0.2µs

◇11 X24OUT



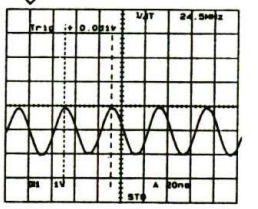
Y:1V
X:20ns

◇3 SBCL



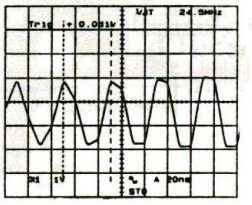
Y:1V
X:0.5µs

◇12 X24IN



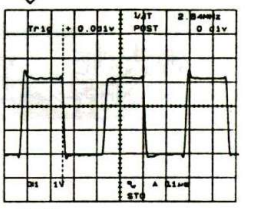
Y:1V
X:20ns

◇4 CLK24



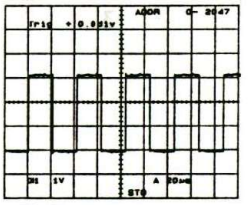
Y:1V
X:20ns

◇15 SCL



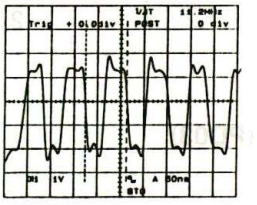
Y:1V
X:0.1µs

◇5 SBEF



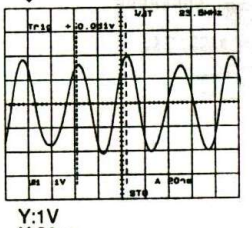
Y:1V
X:20µs

◇17 FS256



Y:1V
X:50ns

◇9 X22OUT



Y:1V
X:20µs

Signal line

⇨ :DCC signal

➡ :ACC signal

No mark: STOP

[ ]: ACC tape

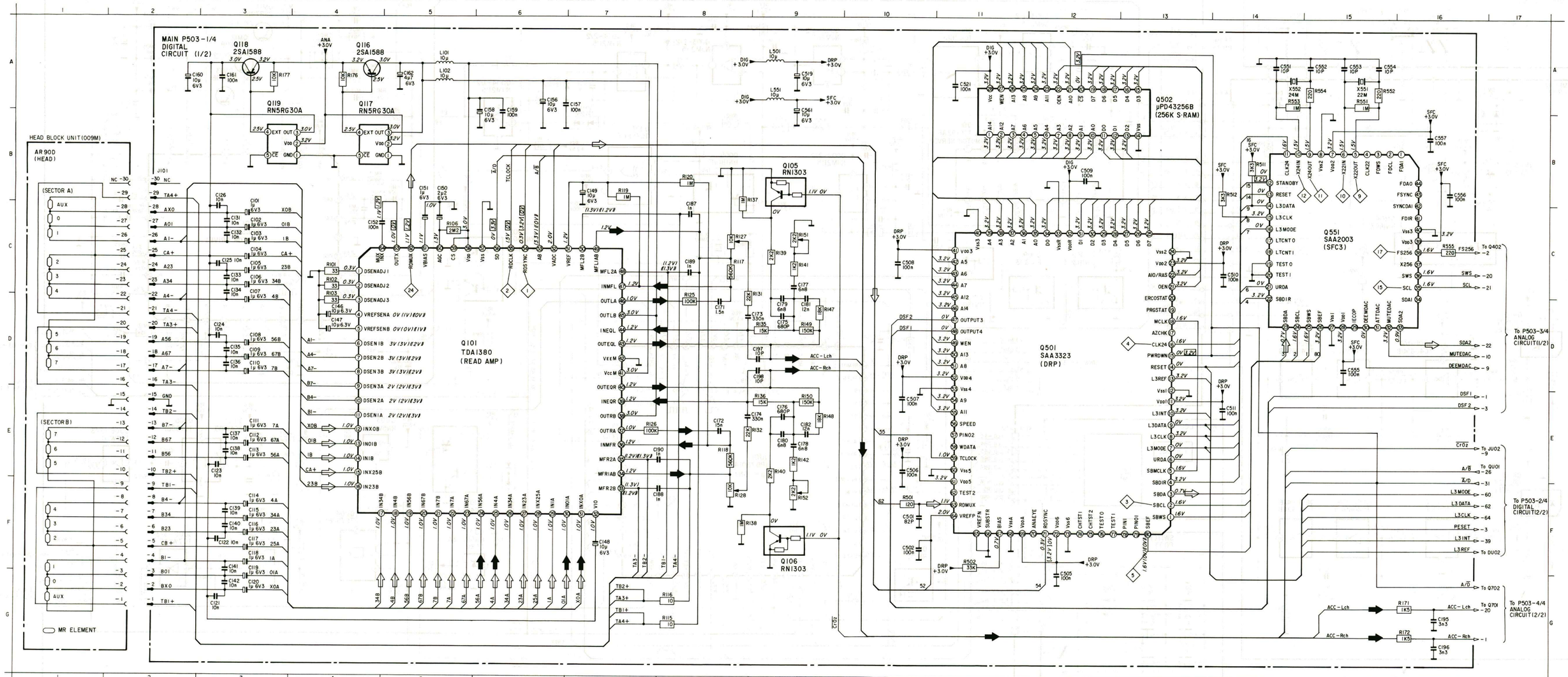
( ): PLAY (side A) (DCC tape)
PLAY (REV) (ACC tape)

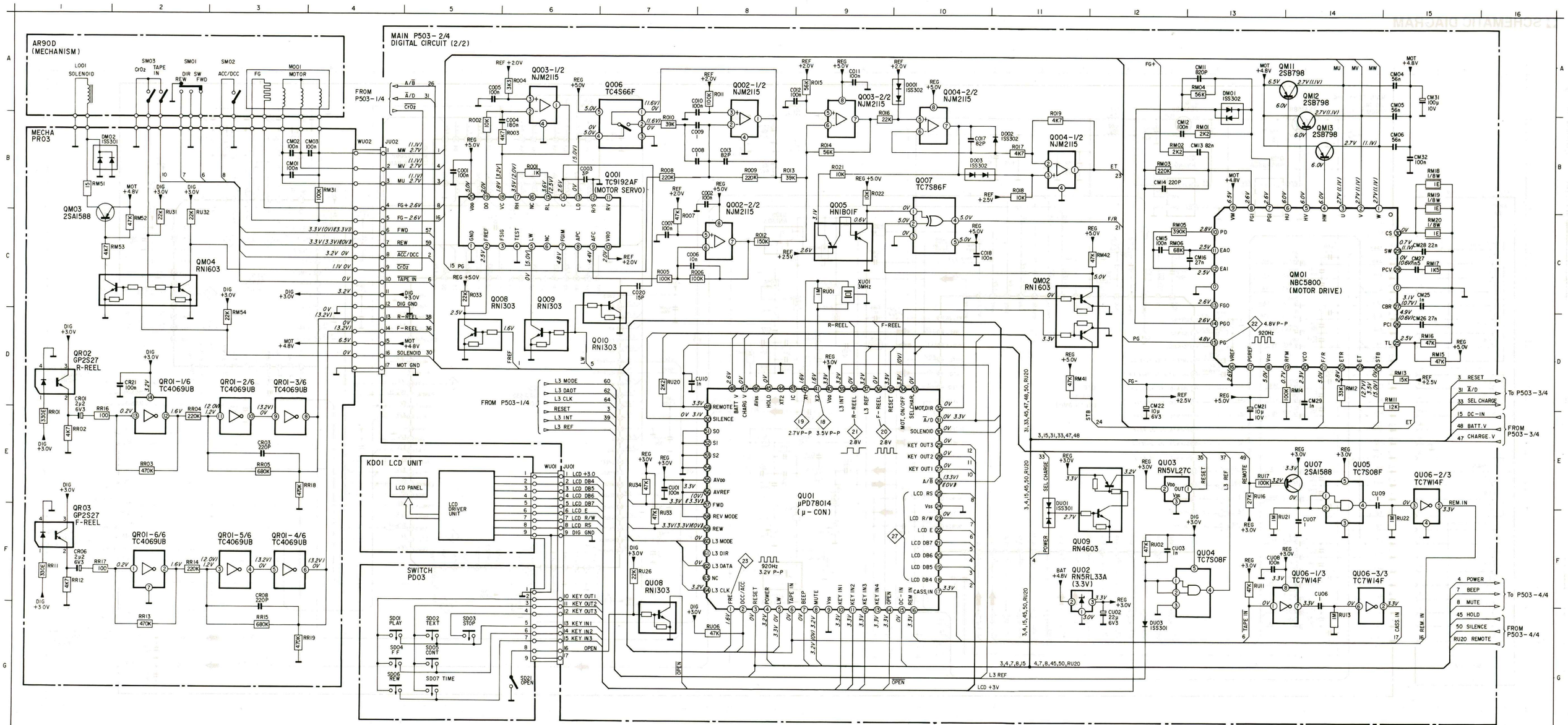
(( )): PLAY (side B) (DCC tape)
PLAY (FWD) (ACC tape)

[ ]: FF/REW

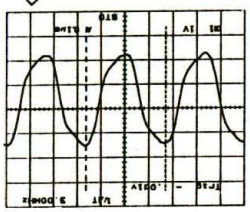
⌜ ⌟: REW

SCHEMATIC DIAGRAM



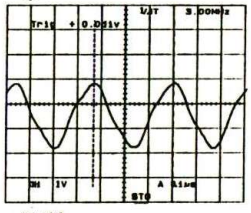


18 X2



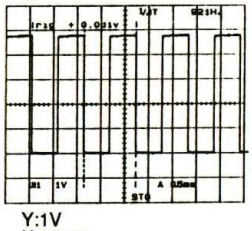
Y:1V
X:0.1µs

19 X1



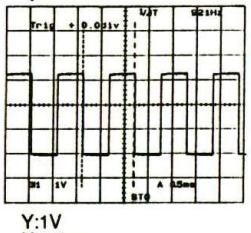
Y:1V
X:0.1µs

22 PG



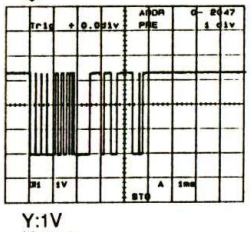
Y:1V
X:0.5ms

23 FRE



Y:1V
X:0.5ms

27 LCD



Y:1V
X:1ms

Signal line

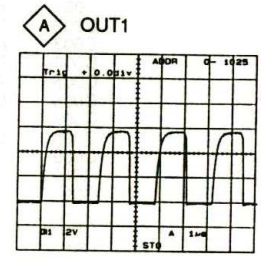
:DCC signal

:ACC signal

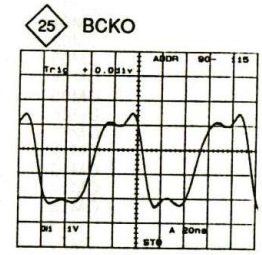
No mark: STOP
[ ]: ACC tape
( ): PLAY (side A) [DCC tape]
PLAY (REV) [ACC tape]
(( )): PLAY (side B) [DCC tape]
PLAY (FWD) [ACC tape]
[ ]: FF/REW
⌜ ⌟: REW

C001	B5	L001	A1	RR19	G3
C002	B8			RU01	C9
C003	B6			RU02	F12
C004	B6	M001	A3	RU06	G8
C005	A5			RU11	F13
C006	C7			RU13	G14
C007	C7	Q001	C6	RU16	E13
C008	B8	Q002-1/2	A6	RU17	E13
C009	B8	Q002-2/2	C8	RU20	D7
C010	A8	Q003-1/2	B8	RU21	F13
C011	A9	Q003-2/2	B9	RU22	F15
C012	A8	Q004-1/2	B11	RU26	F7
C013	B8	Q004-2/2	B10	RU31	C2
C017	B10	Q005	C9	RU32	C2
C018	C10	Q006	B7	RU33	F7
C020	C7	Q007	C10	RU34	E7
CD01	F4	Q008	D5		
CD01	F4	Q009	D6		
CM01	B3	Q010	C7	SD01	G4
CM02	B3	QM01	C14	SD02	G5
CM03	B4	QM02	D11	SD03	G5
CM04	A15	QM03	C1	SD04	G4
CM05	A15	QM04	C2	SD05	G5
CM06	B15	QM11	A14	SD06	G4
CM11	A13	QM12	B14	SD07	G5
CM12	B12	QM13	B14	SD21	G6
CM13	B13	QR01-4/6	F3	SM02	A3
CM14	B12	QR01-5/6	F3	SM03	A2
CM15	C12	QR01-6/6	F2	SW01	A2
CM16	C13	QR02	D1		
CM21	D13	QR03	F1		
CM22	D12	QU01	E9	WU01-1	E6
CM25	C15	QU02	F11	WU01-2	E6
CM26	D15	QU03	E12	WU01-3	E6
CM27	C15	QU04	F13	WU01-4	E6
CM28	C15	QU05	E14	WU01-5	F6
CM29	D14	QU06-1/3	F14	WU01-6	F6
CM31	A15	QU06-2/3	E15	WU01-7	F
CM32	B15	QU06-3/3	F14	WU01-8	F6
CR01	E1	QU07	E14	WU01-9	F6
CR03	E3	QU08	G7	WU02-1	B4
CR06	F1	QU09	E12	WU02-10	C4
CR08	G3			WU02-11	C4
CR21	D2			WU02-12	C4
CU01	E7	R001	B6	WU02-13	D4
CU02	G12	R002	B5	WU02-14	D4
CU03	F12	R003	B6	WU02-15	D4
CU06	F14	R004	A6	WU02-16	D4
CU07	F14	R005	C7	WU02-17	D4
CU08	F13	R006	C7	WU02-2	B4
CU09	E14	R007	C7	WU02-3	B4
CU10	D7	R008	B7	WU02-4	B4
		R009	B8	WU02-5	C4
		R010	B7	WU02-6	C4
D001	A10	R011	A8	WU02-7	C4
D002	B11	R012	C8	WU02-8	C4
D003	B10	R013	B8	WU02-9	C4
DM01	A13	R014	B9		
DM02	B2	R015	A9		
DU01	F11	R016	B9	XU01	C9
DU03	G12	R017	B11		
		R018	B11		
		R019	B11		
JU01-1	E6	R021	B9		
JU01-10	F6	R022	B9		
JU01-11	G6	R033	C5		
JU01-12	G6	RM01	B13		
JU01-13	G6	RM02	B12		
JU01-14	G6	RM03	B12		
JU01-15	G6	RM04	A13		
JU01-16	G6	RM05	C12		
JU01-17	G6	RM06	C12		
JU01-2	E6	RM11	D15		
JU01-3	E6	RM12	D14		
JU01-4	E6	RM13	D15		
JU01-5	F6	RM14	D14		
JU01-6	F6	RM15	D15		
JU01-7	F6	RM16	D15		
JU01-8	F6	RM17	C15		
JU01-9	F6	RM18	B15		
JU02-1	B4	RM19	B15		
JU02-10	C4	RM20	C15		
JU02-11	C4	RM31	B4		
JU02-12	C4	RM41	D11		
JU02-13	D4	RM42	C12		
JU02-14	D4	RM51	B2		
JU02-15	D4	RM52	C2		
JU02-16	D4	RM53	C1		
JU02-17	D4	RM54	D3		
JU02-2	B4	RR01	E1		
JU02-3	B4	RR02	E1		
JU02-4	B4	RR03	E2		
JU02-5	C4	RR04	E2		
JU02-6	C4	RR05	E3		
JU02-7	C4	RR11	F1		
JU02-8	C4	RR12	F1		
JU02-9	C4	RR13	G2		
		RR14	F2		
		RR15	G3		
KD01	E5	RR16	E1		
		RR17	F1		
		RR18	E3		

B071	A11	R808	D4
		R809	F4
		R810	F4
C401	C2	R811	F6
C402	C5	R812	F6
C403	D4	R813	E6
C404	D5	R814	E6
C411	C4	R815	F6
C412	D4	R816	F5
C436	B4	R817	D4
C451	A2	R818	E6
C801	A9	R821	D7
C802	A8	R822	E7
C803	B8	R826	A8
C806	E4	R827	B8
C807	E4	R828	A7
C808	E4	R829	A6
C809	E6	R831	B7
C811	E5	R832	B7
C812	E6	RC01	B10
C813	F6	RC02	C9
C816	E8	RC03	C9
C817	A7	RC04	D9
C818	A5	RC05	D8
C819	A7	RC06	E9
C821	B7	RC07	E9
C822	B6	RC08	C10
C823	B6	RC09	C10
CC01	B10	RC10	B9
CC02	E9	RC11	C9
CC03	C10	RC12	B9
		RC13	C9
D401	B3		
D806	A7	W801	A11
D811	B7		
DC01	A9		
DC02	C10		
DC03	C10		
F801	B10		
F802	B10		
F806	A9		
J801	B11		
J802	A10		
L401	A3		
L801	A8		
L806	A8		
L816	B6		
L817	B6		
Q401	C4		
Q402	E2		
Q406	F3		
Q421	B5		
Q422	C6		
Q423	A4		
Q424-1/2	B3		
Q424-2/2	B2		
Q801	E5		
Q802	D7		
Q803	E8		
Q806	A7		
Q807	A6		
Q808	A6		
Q809	C7		
Q816	B7		
QC01	C9		
QC02	C9		
QC03	D9		
QC04	D10		
QC05	B9		
R406	B5		
R407	A4		
R408	A4		
R806	E4		
R807	E4		



Y:2V
X:1µs



Y:1V
X:20ns

Signal line

:DCC signal

:ACC signal

No mark: STOP

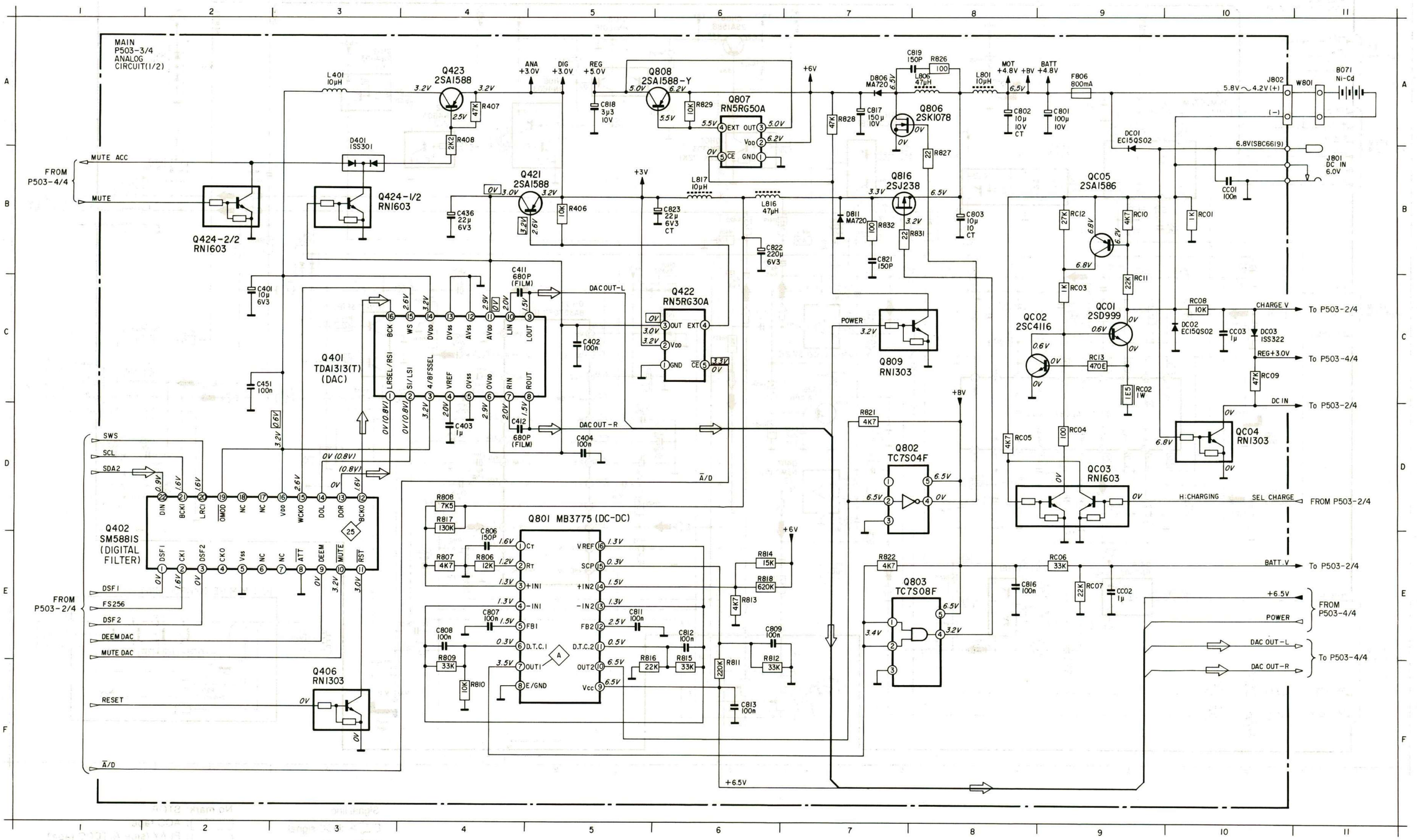
[ ]: ACC tape

( ): PLAY (side A) [DCC tape]
PLAY (REV) [ACC tape]

(( )): PLAY (side B) [DCC tape]
PLAY (FWD) [ACC tape]

[ ]: FF/REW

⌜ ⌟: REW



MAIN
P503-4/4
ANALOG CIRCUIT(2/2)

TO P503-3/4: +6.5V, +6.5V, POWER, MUTE

FROM P503-2/4: POWER, MUTE, REMOTE, BEEP, SILENCE, HOLD

FROM P503-1/4: A/D, ACC-Lch, ACC-Rch

FROM P503-3/4: MUTE ACC

DAC OUT(L)

DAC OUT(R)

QQ01 NJM2072M (QMS)

Q702 RN4603

Q416 HNIC03F(B)

QH06 2SA1588

QH07 RN1303 (22K/22K)

QH15 HNIC01F

QH08 RN4603

QH12 RN4603 1/2

QH12 RN4603 2/2

Q403 NJM2115V 1/2

Q426 2SA1586

Q414 RN2303

Q418 NIC03F(B)

DDA

Q701 BA1106FS (DOLBY)

QH01 BA3570FS (DBB)

QH11 HNIC03F(B)

S701 DOLBY

SU01 HOLD

RH01 VOLUME 20KΩ (A) x2

SH01 DBB

T.P.1

T.P.2

DH01 ISS302

DH02 ISS302

DH03 ISS302

DH04 ISS300

DH06 ISS301

D402 ISS300

D403 ISS301

L402 ZCYS51R5

LH01 ZCYS51R5

FH01 BK2125HM102

J401 LINE OUT

JH01 PHONES/REMOTE

T071 REMOTE CONTROL UNIT

J072 H.P OUT

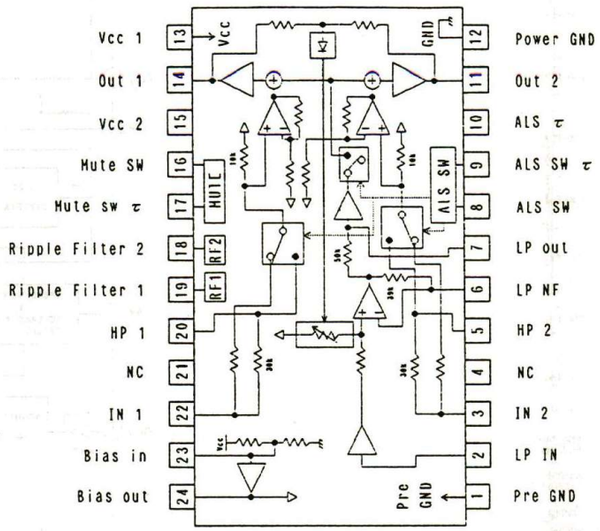
Signal line
:DCC signal
:ACC signal

No mark: STOP
[ ]: ACC tape
( ): PLAY (side A) [DCC tape]
PLAY (REV) [ACC tape]
(( )): PLAY (side B) [DCC tape]
PLAY (FWD) [ACC tape]
[ ]: FF/REW
⌜ ⌟: REW

C421	G2	QH12-1/2	B10
C422	G2	QH12-2/2	B9
C423	D5	QH15	B8
C424	E5	QQ01	B3
C425	C5		
C426	E5		
C429	C6	R411	G2
C430	C6	R412	G2
C431	C6	R413	D5
C456	E5	R414	E5
C457	E6	R415	C5
C701	D2	R416	F5
C702	E3	R417	C6
C703	C3	R418	C7
C704	E3	R419	C6
C705	D3	R420	C6
C706	E4	R431	B5
C707	C4	R432	B5
C708	E4	R451	C5
C709	C4	R456	D6
C710	E4	R457	E6
C711	D4	R458	D6
C712	E4	R461	F4
C713	C2	R462	F4
C714	E3	R701	D3
C715	C4	R702	E3
C716	F4	R703	D3
CH01	D6	R704	E3
CH02	F6	R705	D4
CH03	F7	R706	E4
CH04	F9	R707	D4
CH07	E7	R708	E4
CH08	E9	R709	C5
CH11	E7	R710	F5
CH12	E7	R711	D4
CH13	D7	R712	E4
CH14	E9	R713	C5
CH15	D9	R714	F4
CH16	D9	R715	F5
CH17	D7	R716	F5
CH18	E9	R717	C4
CH21	C9	R721	D2
CH22	D9	R722	E2
CH23	E12	R723	D2
CH24	E11	R724	E2
CH26	B11	RH01	G6
CH31	E11	RH03	D7
CH32	E12	RH04	F6
CH41	F9	RH05	F9
CQ01	C3	RH06	F9
CQ02	C3	RH09	E7
CQ03	B3	RH10	E9
		RH11	F9
		RH12	G9
D402	C5	RH15	C9
D403	B11	RH16	D9
DH01	C7	RH17	C9
DH02	D7	RH18	D9
DH03	A11	RH19	C11
DH04	C10	RH20	C11
DH06	E10	RH21	C10
		RH22	D10
FH01	D12	RH23	D10
		RH24	D10
		RH26	B7
J401	C12	RH27	A6
JH01	D12	RH28	B7
		RH29	A7
		RH30	A8
L402	C12	RH33	C10
LH01	D12	RH34	D10
		RQ01	C3
		RQ02	C3
Q403-1/2	E6	RQ06	B3
Q403-2/2	D6	RU20	D11
Q414	F3	RU36	A4
Q416	B5		
Q418	F4		
Q426	D6	S701	E2
Q701	D3	SH01	G9
Q702	B4	SU01	B4
QH01	D8		
QH06	A6		
QH07	B6	T.P.1	C3
QH08	B8	T.P.2	F4
QH11	D10		

IC BLOCK DIAGRAM AND TERMINAL FUNCTION OF IC'S

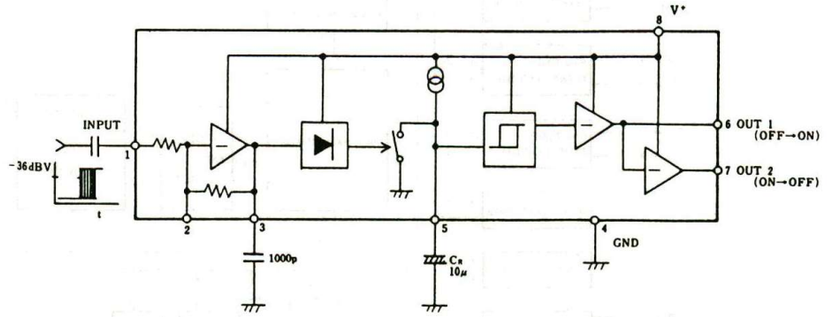
• QH01 BA3570FS HEAD PHON DRIVER



• QM01 NBC5800 MOTOR DRIVER

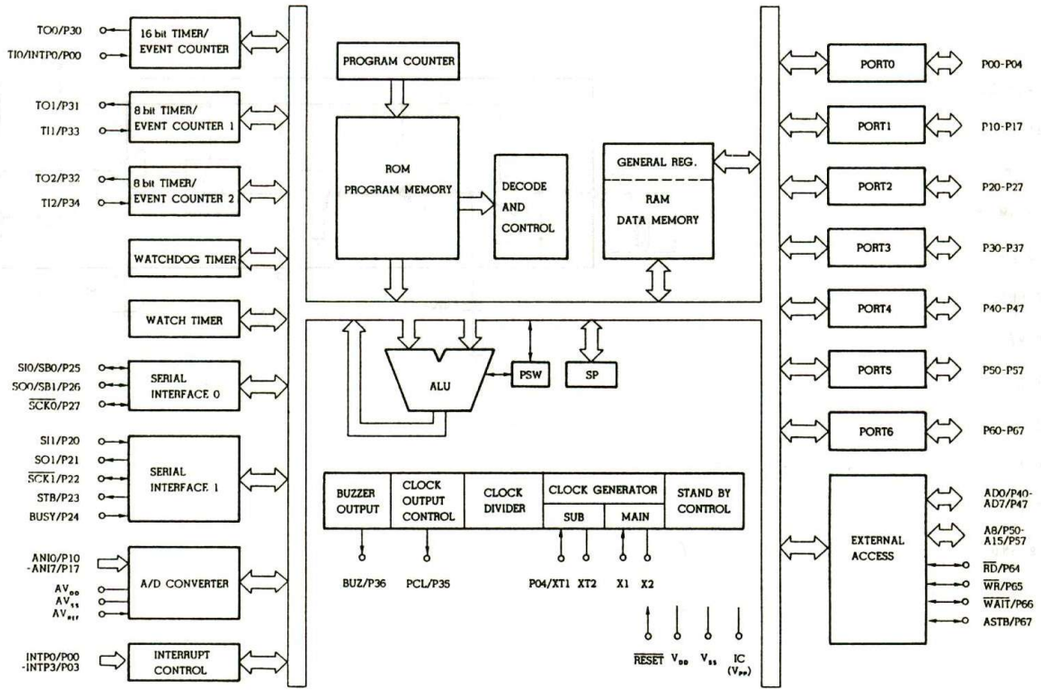
Pin No.	Mark	I/O Division	Function
1	W	O	W phase output terminal
2	V	O	V phase output terminal
3	U	O	U phase output terminal
4	HW	O	W phase pre-drive output
5	HV	O	V phase pre-drive output
6	HU	O	U phase pre-drive output
7	PGI	I	PG amp input
8	FGI	I	FG amp input
9	VM	I	Motor power supply terminal
10	PD	O	Phase det. terminal
11	EAO	O	Error amp output
12	EAI	I	Error amp input
13	FGOUT	O	FG amp output
14	PGOUT	O	PG amp output
15	PG	O	PG comparator output
16	VREF	I	Reference voltage terminal

• QQ01 NJM2072M LEVEL SENSOR



Pin No.	Mark	I/O Division	Function
17	PGREF	I	PG amp non-inversion input
18	VCC	I	Power supply terminal
19	RFM	—	Low frequency setting terminal
20	VCO	O	Voltage control OSC terminal
21	F/R	I	FWD/REV select terminal
22	ETR	I	Torque command voltage input
23	ET	I	Torque command input
24	STB	I	Standby input terminal
25	TL	I	Torque limit terminal
26	PCI	—	Phase compensating of current feedback terminal
27	CBR	—	Condition det. terminal
28	PCV	—	Phase compensating of voltage feedback terminal
29	SW	—	Slope OSC terminal
30	CS	I	Current det. input

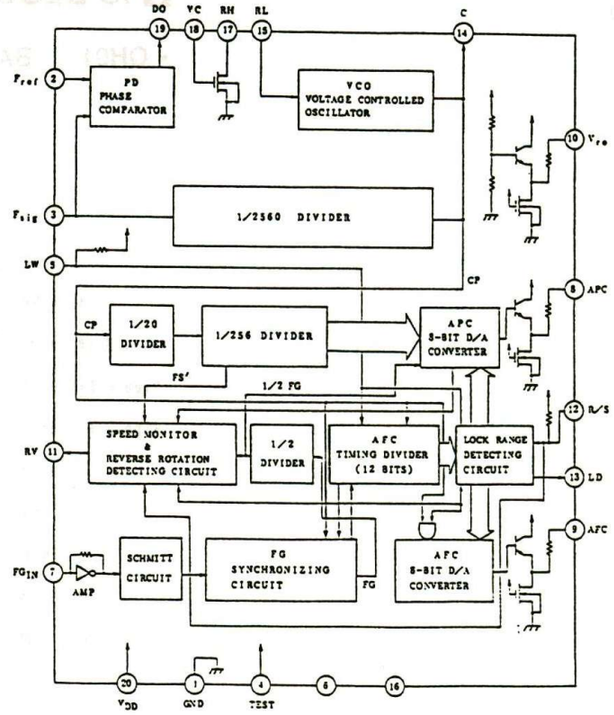
• QU01 μPD78014 μ-COM



PIN	PORT	USE	IN/OUT	ACTIVE	PORT NAME	NOTICE
1	P30	TO0	OUT	920 Hz	FRE	SQUARE WAVE OUT
2	P31		IN	H:DCC	DCC/ACC	SW
3	P32		OUT	H:reset	RESET	DCC ICs
4	P33		OUT	H:on	POWER	ALL CIRCUIT
5	P34	TI2	OUT	H:low_G	LW	
6	P35		IN	L:in	TAPE IN	SW
7	P36	BUZ	OUT		BEEP	BEEP SOUND
8	P37		OUT	H:mute	MUTE	FOR AUDIO
9		VSS	-		VSS	
10	P40		IN (R)		KEY IN1	KEY ASSIGN
11	P41		IN (R)		KEY IN2	KEY ASSIGN
12	P42		IN (R)		KEY IN3	KEY ASSIGN
13	P43		IN (R)		KEY IN4	KEY ASSIGN
14	P44		IN (R)	L:open	OPEN	
15	P45		IN (R)	L:in	DC-IN	for charge
16	P46		IN (R)	L:in	REM IN	WAKE UP REMOTE
17	P47		IN (R)	L:in	CASS_IN	WAKE UP CASSETT
18	P50		I/O		LCD DB4	LCD DATA BUS
19	P51		I/O		LCD DB5	LCD DATA BUS
20	P52		I/O		LCD DB6	LCD DATA BUS
21	P53		I/O		LCD DB7	LCD DATA BUS
22	P54		OUT		LCD E	LCD CONTROL
23	P55		OUT		LCD R/W	LCD CONTROL
24		VSS	-		VSS	
25	P56		OUT		LCD_RS	LCD CONTROL
26	P57		OUT	H:A	A/B	READ_3
27	P60		OUT		KEY OUT1	KEY ASSIGN
28	P61		OUT		KEY OUT2	KEY ASSIGN
29	P62		OUT		KEY OUT3	KEY ASSIGN
30	P63		OUT	H:on	SOLENOID	ON/OFF
31	P64		OUT	L:dig	A/D	Audio ana. or dig.
32	P65		OUT	H:CW	MOT_DIR	CW/CCW

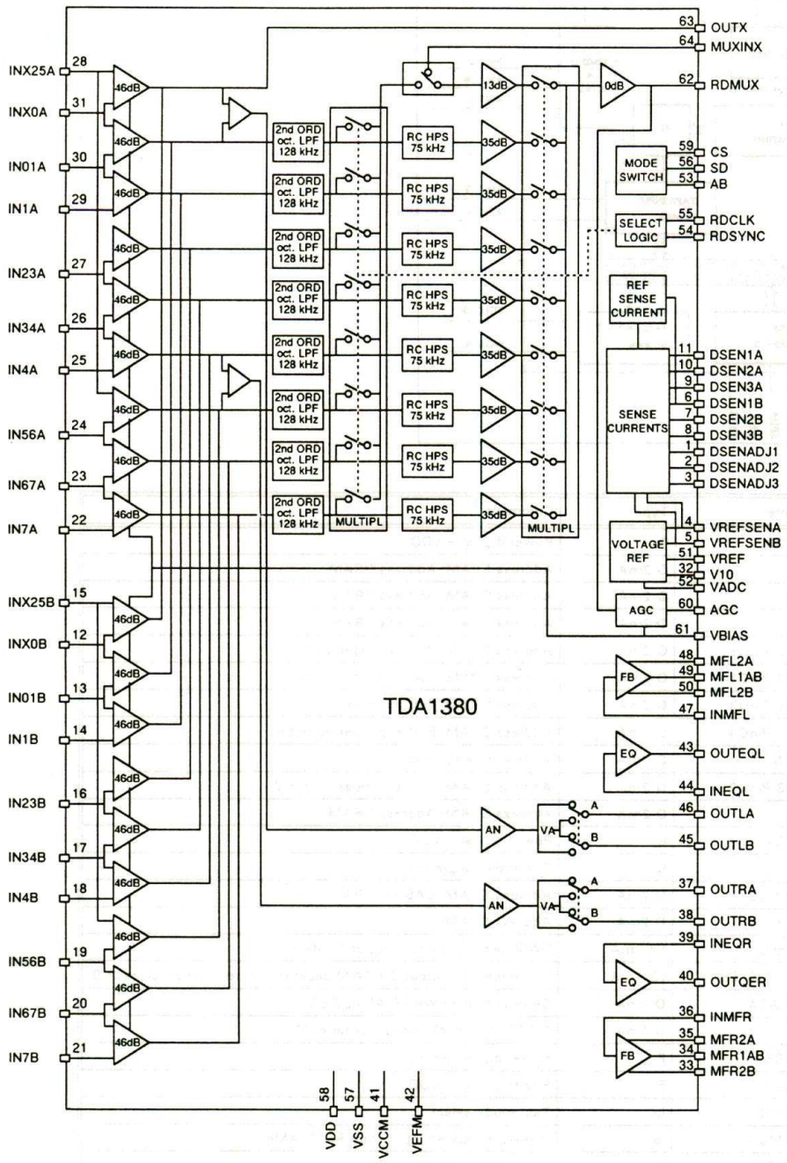
PIN	PORT	USE	IN/OUT	ACTIVE	PORT NAME	NOTICE
33	P66		OUT	H:quick	SEL_CHAR	Select R for charge
34	P67		OUT	L:on	MOT_ON/OFF	
35		RESET	-		RESETU	
36	P00	INTP0	INT		F-REEL	F_REEL DETECT
37	P01	INTP1	INT		I.3 REF	DRP(pos.edge)
38	P02	INTP2	INT		R-REEL	R-REEL DETECT
39	P03	INTP3	IN		I.3INT	DRP
40		VDD	-		VDD	
41		X2	-		X2	
42		X1	-		X1	
43		IC	-		IC	
44		XT2	-		XT2	
45	P04		IN	H:hold	HOLD	SW
46		AVSS	-		AVSS	
47	P10	ANI0	A/D		CHARG V	for charge
48	P11	ANI1	A/D		BATT V	BATTERY DETECT
49	P12	ANI2	A/D		REMOTE	REMOTE DETECT
50	P13	ANI3	A/D		SILENCE	
51	P14	ANI4	A/D		SO	COAX, OPT, x
52	P15	ANI5	A/D		SI	DEQ SEL.
53	P16	ANI6	A/D		S2	CONTINUE, x, x
54	P17	ANI7	A/D			
55		AVDD	-		AVDD	
56		AVREF	-		AVREF	
57	P20		IN	L:on	FWD	SW
58	P21		IN	H:rev	REV MODE	
59	P22		IN	L:on	REW	SW
60	P23		OUT		I.3MODE	I.3 CONTROL
61	P24		OUT		I.3DIR	FOR ICE DEBUG
62	P25	SI0	IN/OUT		I.3DATA	2 lines serial data
63	P26		OUT		NC	
64	P27	SCK0	OUT		I.3CLK	serial clock

• Q001 TC9192AF MOTOR CONTROLLER



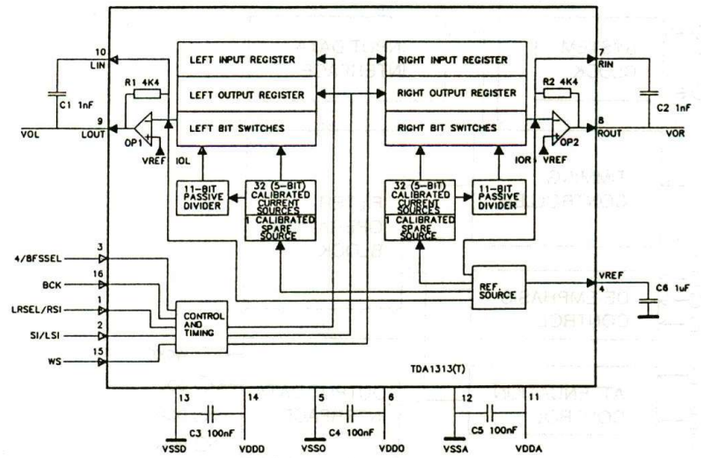
PIN NO.	SYMBOL	FUNCTION, OPERATION	REMARKS
20	V_{DD}	Power supply voltage terminal and grounding terminal.	
1	GND		
2	Fref	Reference frequency input terminal for phase comparator.	C-MOS input
3	Fsig	1/2560 dividing output terminal of VCO frequency, internally comparison signal is made.	C-MOS output
5	LW	Switching terminal of lock range. at LW="L", normal range. at LW="H", double range.	Built-in pull-up resistance speed
7	FG_{IN}	Pulse input terminal for indicating the rotation speed of motor.	Built-in amp.
8	APC	Output terminal of APC 8-bit D/A converter output.	Built-in bipolar transistor
9	AFC	Output terminal fo AFC 8-bit D/A converter output.	Built-in bipolar transistor
10	V_{ro}	Output terminal for reference voltage.	Built-in bipolar transistor
11	RV	Reverse rotation signal for output driver.	C-MOS output
12	RIS	RUN/STOP switching terminal of motor at RIS="L", RUN. at RIS="H", STOP	Built-in pull-up resistance
13	LD	Lock detecting terminal. When the rotation frequency is within lock range, "H" level, and in other cases, "L" level.	C-MOS output
14	C	Terminal attached with capacitor for adjusting frequency. Internal control signal is made.	
15	RL	Current control terminal for controlling VCO frequency.	
17	RH	Current control output terminal for VCO	Nch open drain
18	VC	Voltage control input terminal for VCO	
19	DO	Output terminal of phase comparator	C-MOS output
4	Test	Input terminal of internal test. Generally ground.	C-MOS input

• Q101 TDA1380 READ3



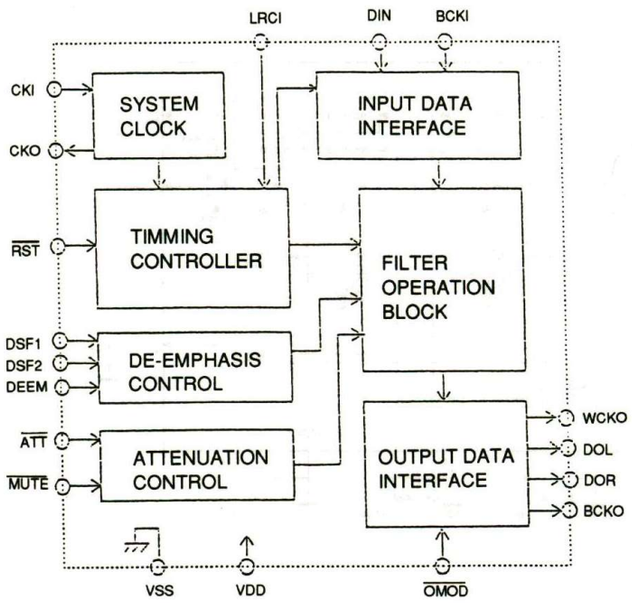
SYMBOL	PIN	DESCRIPTION
DSENADJ1	1	Adjust pin for DCC sense current 1 (A,B)
DSENADJ2	2	Adjust pin for DCC sense current 2 (A,B)
DSENADJ3	3	Adjust pin for DCC sense current 3 (A,B)
VREFSENA	4	Reference voltage output DCC sense (A)
VREFSENB	5	Reference voltage output DCC sense (B)
DSEN1B	6	DCC sense current output 1 (B)
DSEN2B	7	DCC sense current output 2 (B)
DSEN3B	8	DCC sense current output 3 (B)
DSEN3A	9	DCC sense current output 3 (A)
DSEN2A	10	DCC sense current output 2 (A)
DSEN1A	11	DCC sense current output 1 (A)
INX0B	12	Auxiliary channel input / channel 0 input (B)
IN01B	13	Channel 0 / 1 input (B)
IN1B	14	Channel 1 input (B)
INX25B	15	Channel AUX / 2 / 5 input (B)
IN23B	16	Channel 2 / 3 input (B)
IN34B	17	Channel 3 / 4 input (B)
IN4B	18	Channel 4 input (B)
IN56B	19	Channel 5 / 6 input (B)
IN67B	20	Channel 6 / 7 input (B)
IN7B	21	Channel 7 input (B)
IN7A	22	Channel 7 input (A)
IN67A	23	Channel 6 / 7 input (A)
IN56A	24	Channel 5 / 6 input (A)
IN4A	25	Channel 4 input (A)
IN34A	26	Channel 3 / 4 input (A)
IN23A	27	Channel 2 / 3 input (A)
INX25A	28	Channel AUX / 2 / 5 input (A)
IN1A	29	Channel 1 input (A)
IN01A	30	Channel 0 / 1 input (A)
INX0A	31	Auxiliary channel input / channel 0 input (A)
V10	32	Reference voltage output for DCC inputs
MFR2B	33	Right channel feedback amplifier output 2 (B)
MFR1AB	34	Right channel feedback amplifier output 1 (A,B)
MFR2A	35	Right channel feedback amplifier output 2 (A)
INMFR	36	Right channel feedback amplifier input
OUTRA	37	Right channel ACC output (A)
OUTRB	38	Right channel ACC output (B)
INEQR	39	Right channel pre-egalisation amplifier input
OUTEQR	40	Right channel pre-egalisation amplifier output
V_{CCM}	41	Positive supply for feedback amplifiers
V_{EEM}	42	Ground for feedback amplifiers
OUTEQL	43	Left channel pre-egalisation amplifier output
INEQL	44	Left channel pre-egalisation amplifier input
OUTLB	45	Left channel ACC output (B)
OUTLA	46	Left channel ACC output (A)
INMFL	47	Left channel feedback amplifier input
MFL2A	48	Left channel feedback amplifier output 2 (A)
MFL1AB	49	Left channel feedback amplifier output 1 (A,B)
MFL2B	50	Left channel feedback amplifier output 2 (B)
VREF	51	Reference voltage output
VADC	52	ADC reference voltage output
AB	53	Tape side A or B selection input
RDSYNC	54	Read sync pulse input
RDCLK	55	Read clock pulse input
SD	56	Select DCC mode input
V_{SS}	57	General ground
V_{DD}	58	General positive supply
CS	59	Chip select input
AGC	60	AGC time constant
VBIAS	61	DCC preamplifier gain control voltage input
RDMUX	62	Output of sampled and multiplexed auxiliary and main data signals
OUTX	63	Auxiliary channel preamplifier output
MUXINX	64	Auxiliary channel multiplexer input

• Q401 TDA1313T D/A CONVERTER



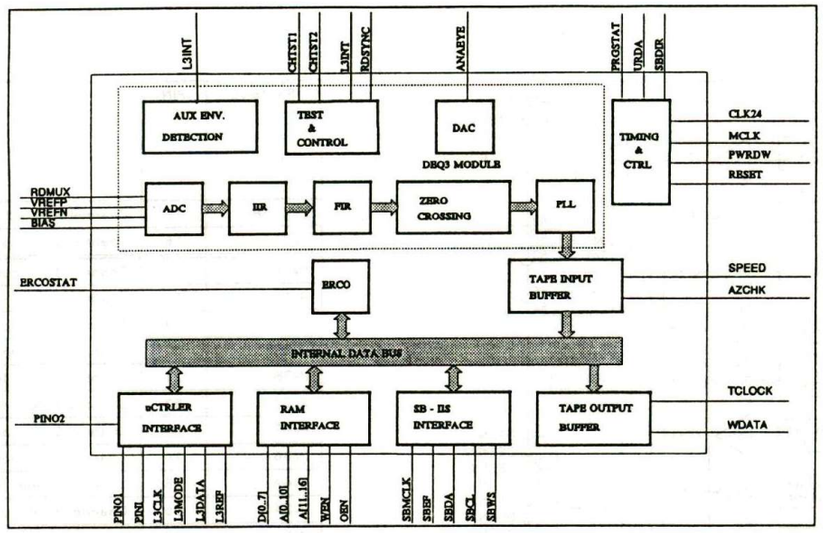
PIN NO.	NAME	FUNCTION
1	LRSEL/RSI	Left/Right select/ Right serial input
2	SI/LSI	Serial input/ Left serial input
3	4/8FSSEL	4/8 oversampling select
4	VREF	Reference output voltage
5	VSSO	Opamp ground
6	VDDO	Opamp supply voltage
7	RIN	Right analog input
8	ROUT	Right analog output
9	LOUT	Left analog input
10	LIN	Left analog input
11	VDDA	Analog supply voltage
12	VSSA	Analog ground
13	VSSD	Digital ground
14	VDDD	Digital supply voltage
15	WS	Word select
16	BCK	Bit clock input

• Q402 SM5881S DIGITAL FILTER



Pin No.	Mark	I/O Division	Function
1	DSF1	I	de-emphasis input terminal Pin Setting: DSF1 / DSF2 / fs(Hz) — DEEM: H / L — Etc.: Noise Shaper L / L / 44.1K / ON / OFF / ON L / H / 48.0K / ON / OFF / ON H / H / 32.0K / ON / OFF / ON H / L / OFF (test mode) / OFF
2	CKI	I	System clock input terminal
3	DSF2	I	De-emphasis select terminal
4	CKO	O	System clock output terminal
5	VSS	—	GND terminal
6	NC	—	Not connection
7	NC	—	Not connection
8	$\overline{ATT}$	I	Attenuation signal input ("H": OFF (−12dB), "L": ON (−12dB))
9	DEEM	I	De-emphasis ON/OFF control terminal ("L": OFF, "H": ON)
10	$\overline{MUTE}$	I	Muting signal input ("H": Soft mute OFF, "L": Soft mute ON)
11	$\overline{RST}$	I	System reset (initialize)
12	BCKO	O	Bit clock output
13	DOR	O	Rch data output with "$\overline{OMOD}$: "H" LR clock output with "$\overline{OMOD}$: "L"
14	DOL	O	Lch data output with "$\overline{OMOD}$: "H" L/Rch data output with "$\overline{OMOD}$: "L"
15	WCKO	O	Word clock (8fs) output
16	VDD	I	Power supply terminal
17	NC	—	Not connection
18	NC	—	Not connection
19	$\overline{OMOD}$	I	Output mode select terminal ("H": 18 bit, "L": 16 bit)
20	LRCI	I	Data sample rate (fs) clock input
21	BCKI	I	Bit clock (64 fs) input
22	DIN	I	Data (fs•18 bit) input

• Q501 SAA3323 DRP

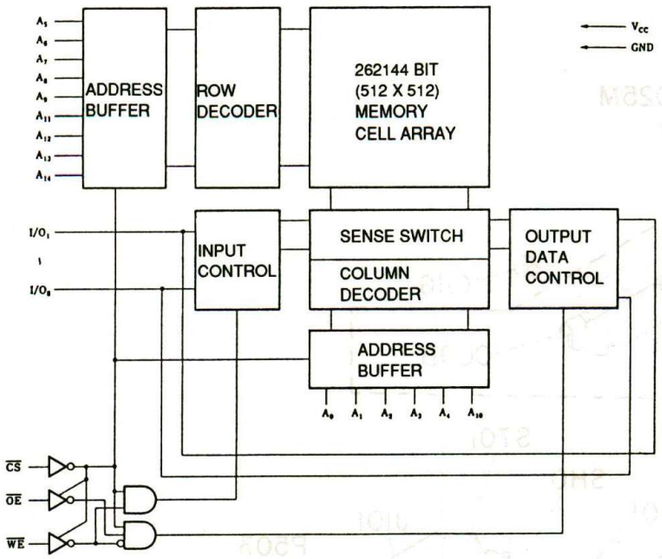


Pin No.	Name	Type	Comment
1	SBWS	I/O 1mA	Word select for SB-I2S interface
2	SBCL	I/O 1mA	Bit clock for SB-I2S interface
3	SBDA	I/O 1mA	Data line for SB-I2S interface
4	SBDIR	O 1mA	Direction line for SB-I2S interface
5	SBMCLK	I	Master clock for SB-I2S interface
6	URDA	O 1mA	Unreliable data
7	L3MODE	I	Mode line for L3 interface
8	L3CLK	I	Bit Clock line for L3 interface
9	L3DATA	I/O 2mA	Serial data line for L3 interface
10	L3INT	O 1mA	L3 interrupt output
11	VDD1	P	Digital +VDD
12	VSS1	P	Digital ground
13	L3REF	O 1mA	L3 bus timing reference
14	RESET	I	Reset DRP chip
15	PWRDWN	I	Put DRP into power down mode
16	CLK24	I	24.576 MHz clock input
17	AZCHK	O 1mA	channel 0 and channel 7 azimuth monitor
18	MCLK	O 1mA	6.144 MHz clock output
19	PRGSTAT	O 1mA	TFE3 program status, for test only
20	ERCOSTAT	O 1mA	ERCO status, for test only
21	OEN	O 2mA	Output Enable for RAM
22	A10/RAS	O 2mA	Address SRAM; RAS DRAM
23	VDD2	P	Power digital +VDD
24	VSS2	P	Power digital ground
25	D7	I/O 4mA	Data SRAM;
26	D6	I/O 4mA	Data SRAM;
27	D5	I/O 4mA	Data SRAM;
28	D4	I/O 4mA	Data SRAM;
29	D3	I/O 4mA	Data SRAM; Data DRAM
30	D2	I/O 4mA	Data SRAM; Data DRAM
31	D1	I/O 4mA	Data SRAM; Data DRAM
32	VDDR	P	Power digital +VDD for RAM
33	VSSR	P	Power digital ground for RAM
34	D0	I/O 4mA	Data SRAM; Data DRAM
35	A0	O 2mA	Address SRAM; Address DRAM
36	A1	O 2mA	Address SRAM; Address DRAM
37	A2	O 2mA	Address SRAM;Address DRAM
38	A3	O 2mA	Address SRAM; Address DRAM
39	A4	O 2mA	Address SRAM; Address DRAM
40	VSS3	P	Power digital ground

Pin No.	Name	Type	Comment
41	VDD3	P	Power digital +VDD
42	A5	O 2mA	Address SRAM; Address DRAM
43	A6	O 2mA	Address SRAM; Address DRAM
44	A7	O 2mA	Address SRAM; Address DRAM
45	A12/PinO5	O 2mA	Address SRAM; Port expander output 5
46	A14/PinO1	O 2mA	Address SRAM; Port expander output 1
47	A16/PinO3	O 2mA	Address SRAM; Port expander output 3
48	A15/PinO4	O 2mA	Address SRAM; Port expander output 4
49	WEN	O 2mA	Write enable for RAM
50	A13/PinO2	O 2mA	Address SRAM; Port expander output 2
51	A8	O 2mA	Address SRAM; Address DRAM
52	VDD4	P	Power digital +VDD
53	VSS4	P	Power digital ground
54	A9/CAS	O 2mA	Address SRAM; CAS for DRAM
55	A11	O 2mA	Address SRAM;
56	SPEED	tO 1mA	PWM capstan control output for deck
57	PinO2/SPEEDB	tO 1mA	Port expander output 2 / PWM capstan control output for deck B
58	WDATA	O 1mA	Serial output to WRITE AMPLIFIER
59	TCLOCK	O 1mA	3.072 MHz clock output for tape I/O
60	VSS5	P	Power digital ground
61	VDD5	P	Power digital +VDD
62	TEST2	Id	Test mode select
63	RDMUX	Ia	Analogue mpx'ed input from READ AMP
64	VREFP	Ia	ADC reference voltage P
65	VREFN	Ia	ADC reference voltage N
66	SUBSTR	Ia	Substrate connection
67	BIAS	Ia	Bias current for ADC
68	VSSA	P	Analogue ground
69	VDDA	P	Analogue +VDD
70	ANAEYE	Oa	Analogue eye pattern output
71	RDSYNC	O 1mA	Synchronization output for READ AMP
72	VDD6	P	Power digital +VDD
73	VSS6	P	Power digital ground
74	CHTST1	O 1mA	Channel test pin 1
75	CHTST2	O 1mA	Channel test pin 2
76	TEST0	Id	Test mode select
77	TEST1	Id	Test mode select
78	PINI	I	Port expander input
79	PINO1	O 1mA	Port expander output 1
80	SBEF	O 1mA	SB-I2S error flag line

Where: I = input, Ia = analogue input, Id = input with pull-down resistance, Ih = hysteresis input, I/O = bidirectional, O = output, tO = tri-state output, P = power.

• Q502 μPD43256BGU-B12 S-RAM



PIN NO.	NAME	I/O	FUNCTION
1	A14	I	Address input
2	A12	I	Address input
3	A7	I	Address input
4	A6	I	Address input
5	A5	I	Address input
6	A4	I	Address input
7	A3	I	Address input
8	A2	I	Address input
9	A1	I	Address input
10	A0	I	Address input
11	D0	I/O	Data input output
12	D1	I/O	Data input output
13	D2	I/O	Data input output
14	Vss	–	GND
15	D3	I/O	Data input output
16	D4	I/O	Data input output
17	D5	I/O	Data input output
18	D6	I/O	Data input output
19	D7	I/O	Data input output
20	CS	I	Chip select
21	A10	I	Address input
22	OEN	I	Output enable inout
23	A11	I	Address input
24	A9	I	Address input
25	A8	I	Address input
26	A13	I	Address input
27	WEN	I	Write enable input
28	Vcc	I	Power supply

• Q551 SAA2003 SFC3

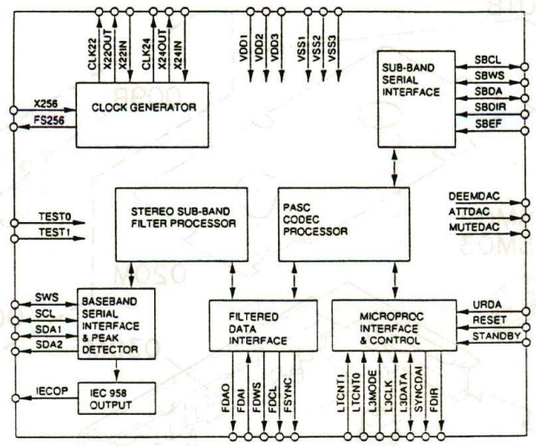
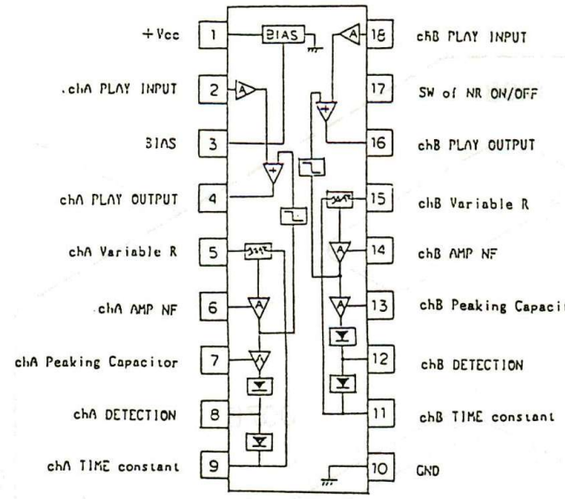


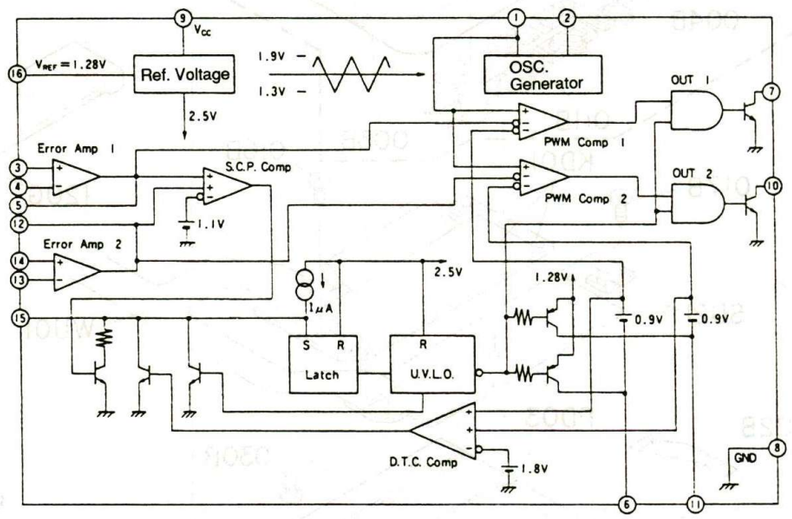
Table 1 Revised Device Pinning

Pin	Name	Type	Function
1	FDAI	I	filtered serial data input (from ADAS)
2	FDCL	O	filtered data bit clock
3	FDWS	O	filtered data word select
4	CLK22	O	22.5792 MHz buffered clock output
5	X22OUT	O	22.5792 MHz XTAL oscillator output
6	X22IN	I	22.5792 MHz XTAL oscillator input
7	VDD2		positive supply (clock oscillators)
8	VSS2		supply ground (clock oscillators)
9	X24OUT	O	24.576 MHz XTAL oscillator output
10	X24IN	I	24.576 MHz XTAL oscillator input
11	CLK24	O	24.576 MHz buffered clock output
12	STANDBY	I	device inactive
13	RESET	I	device reset
14	L3DATA	I/O	L3 interface serial data
15	L3CLK	I	L3 interface bit clock
16	L3MODE	I	L3 interface mode control
17	LTCNT0	I	LT compatible interface mode control
18	LTCNT1	I	LT compatible interface mode control
19	TEST0	I	test mode select
20	TEST1	I	test mode select
21	URDA	I	unreliable data from drive processing
22	SBDIR	I	sub-band data direction
23	SBDA	I/O	sub-band serial data
24	SBCL	I/O	sub-band bit clock
25	SBWS	I/O	sub-band word select
26	SBEF	I	sub-band error flag from drive processing
27	VSS1		supply ground (logic)
28	VDD1		positive supply (logic)
29	IECOP	O	IEC958 digital audio output
30	DEEMDAC	O	DAC control or general purpose output
31	ATTDAC	O	DAC control or general purpose output
32	MUTEDAC	O	DAC control or general purpose output
33	SDA2	O	baseband serial data output to DAC
34	SDA1	I/O	baseband serial data to/from DAIO and ADC
35	SCL	I/O	baseband bit clock
36	SWS	I/O	baseband word select
37	X256	I	master audio clock input from external source
38	FS256	O	master audio clock at 256 × sample frequency
39	VDD3		positive supply (FS256 pin)
40	VSS3		supply ground (FS256 pin)
41	FDIR	O	PASC mode encode/decode
42	SYNCDAI	O	settings synchronisation for DAIO
43	FSYNC	O	sub-band 0 sample synchronisation
44	FDAO	O	filtered serial data output (to ADAS)

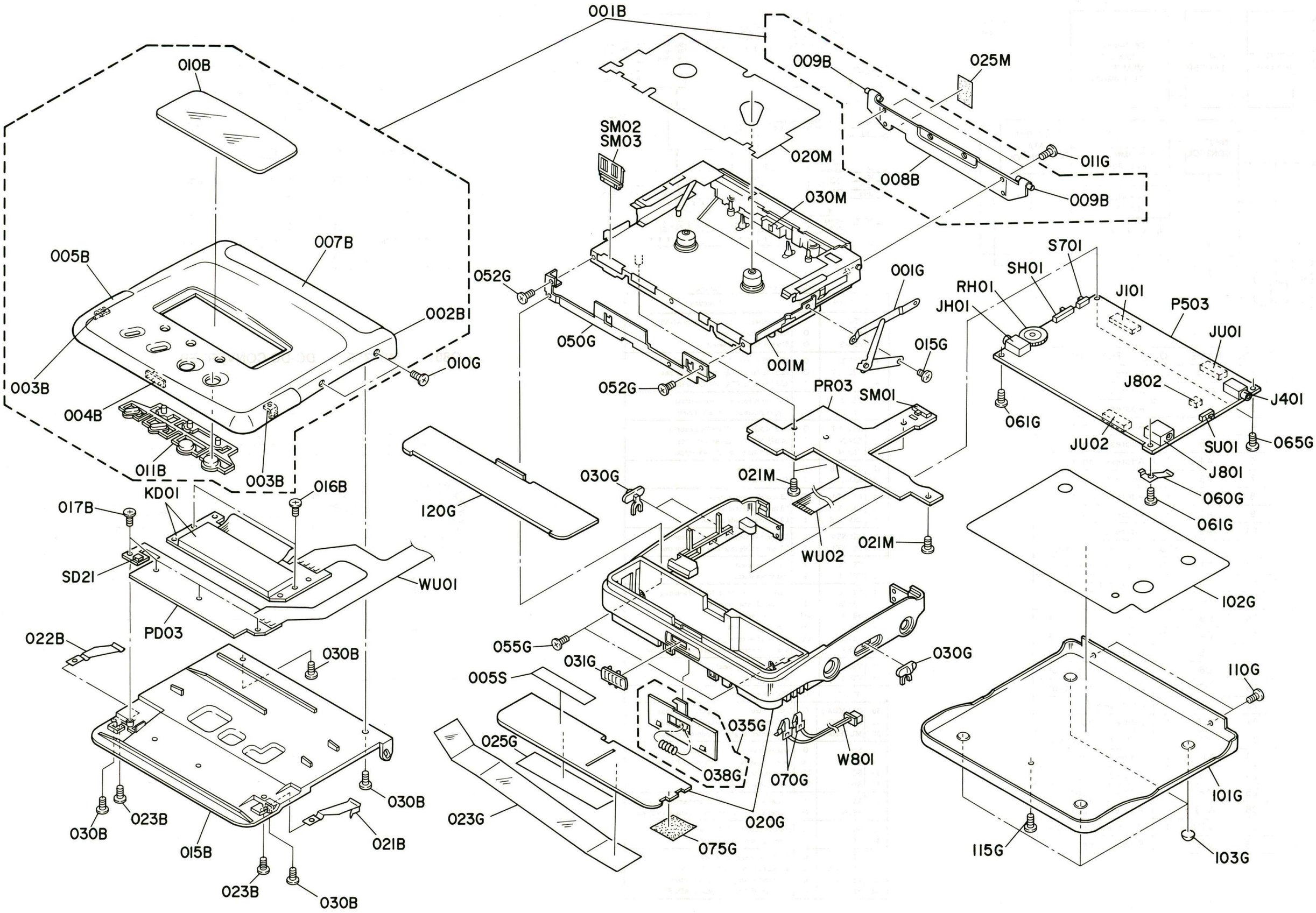
• Q701 BA1106FS DOLBY



• Q801 MB3775 DC-DC CONVERTER



SET EXPLODED VIEW AND PARTS LIST

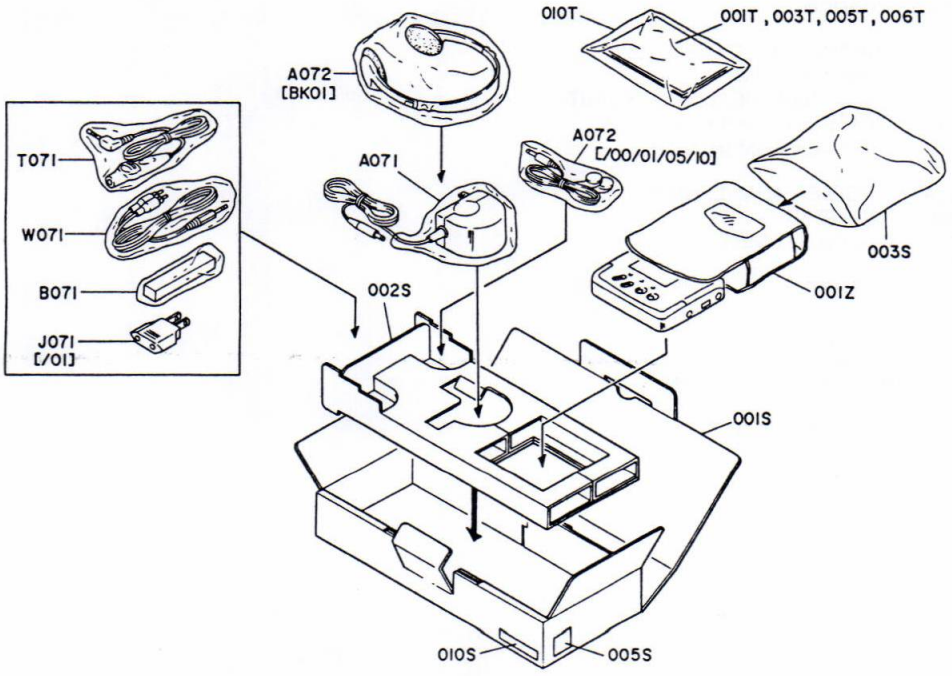


001B	4822 443 41405	TOP CASE KIT
010B	4822 450 62265	LCD WINDOW
011B	4822 410 63299	OPERATING BUTTON
015B	4822 443 64211	RETAINER, LCD MOLD COVER
016B	4822 502 30753	SCREW 1.4X2.5
017B	4822 502 30753	SCREW 1.4X2.5
021B	4822 492 71573	SPRING, CASSETE GUIDE (R)
022B	4822 492 71574	SPRING, CASSETE GUIDE (L)
023B	4822 502 21516	SCREW 1.4X2.5
030B	4822 502 21516	SCREW 1.4X2.5
001G	4822 403 71118	ARM ASS'Y
010G	4822 502 21421	SCREW 1.4X2
011G	4822 502 21428	SCREW 1.4X2
015G	4822 502 21517	SCREW 1.4X1.5
020G	4822 464 51041	CENTER FRAME KIT
030G	4822 411 61982	SLIDE KNOB
031G	4822 411 61983	OPEN KNOB
035G		LOCK LEVER ASS'Y
038G	4822 492 52408	SPRING, LOCK HOOK
052G	4822 502 21516	SCREW 1.4X2.5
055G	4822 502 21516	SCREW 1.4X2.5
061G	4822 502 21516	SCREW 1.4X2.5
065G	4822 502 30753	SCREW 1.4X2.5
070G	4822 492 71575	BATTERY CONTACTOR
101G	4822 443 51254	BOTTOM CASE [/00]
101G	4822 443 51255	BOTTOM CASE [/01]
101G	4822 443 51257	BOTTOM CASE [/05]
101G	4822 443 51256	BOTTOM CASE [/10]
101G	4822 443 51253	BOTTOM CASEN [BK01]
103G	4822 462 42119	LEG
110G	4822 502 21516	SCREW 1.4X2.5
115G	4822 502 30754	SCREW 1.4X2.5
120G	4822 443 64212	BATTERY LID
020M		MECHA ESCUTCHEON
021M	4822 502 30753	SCREW MOLD 1.4X2.5
JH01	4822 267 31787	JACK, HEADPHONES OUT
JU01	4822 265 41408	JACK, 17P
JU02	4822 265 41408	JACK, 17P
J101	4822 267 31791	JACK, 30P
J401	4822 267 31788	JACK, LINE OUT
J801	4822 267 31789	JACK, DC IN
J802	4822 265 31064	JACK, 1.25MM
KD01	4822 130 91371	LCD KIT
RH01	4822 101 30874	VARIABLE, VR 20KΩ (A)X2
SD21	4822 276 13526	PUSH SWITCH DOOR, OPEN
SM01	4822 277 21752	SLIDE SWITCH
SM02	4822 276 13531	PUSH SWITCH
SM03	4822 271 30848	MINI SWITCH
SH01	4822 277 21749	SLIDE SWITCH
SU01	4822 277 21748	SLIDE SWITCH
S701	4822 277 21748	SLIDE SWITCH
WU01	4822 466 10662	FLEXIBLE P.W.B
WU02	4822 466 10661	FLEXIBLE P.W.B.

PACKAGING

001T	4822 736 22026	USER MANUAL DCC 134 [/00/01/05/10]
001T	4822 736 22084	USER MANUAL DCC 134 [BK01]
001Z	4822 600 70764	CARRYING CASE
A071	4822 219 82697	AC ADAPTOR SBC6619/30 [/00]
A071	4822 219 82701	AC ADAPTOR SBC6619/31 [/01]
A071	4822 219 82698	AC ADAPTOR SBC6619/35 [/05]
A071	4822 219 82699	AC ADAPTOR SBC6619/40 [/10]
A071	4822 219 82696	AC ADAPTOR SBC6619/47 [BK01]
A072	4822 242 50083	HEAD PHONES IN EAR TYPE [/00/01/05/10]
A072	4822 242 50084	HEAD PHONES HEAD BAND TYPE [BK01]
B071	4822 138 10555	BATTERY PACK 4GPN7CM [/00/01/05/10]
B071	4822 138 10554	BATTERY PACK 4GPN7CM [BK01]
J071	4822 267 31647	JACK, PLUG ADAPTOR [/01]
J072	4822 267 31788	JACK, REMOTE
T071	4822 218 30762	UNIT K, REMOTE CONTROL
W071	4822 321 21602	CONNECTIVE CORD, AUDIO CABLE (SBC1059)

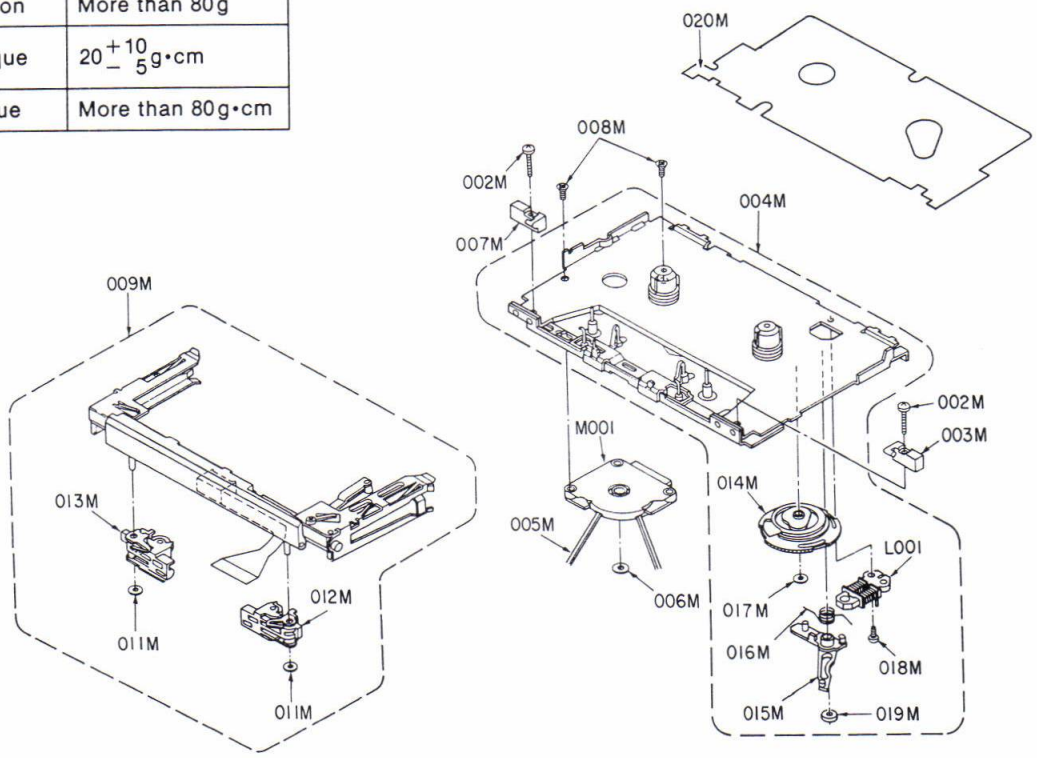
● PACKAGING



MECHANISM EXPLODED VIEW AND PARTS LIST

	FWD & REV mode
Wow and flutter	0.3% (WRMS) with ACC
Pressure of pinch roller	250±20g
Take-up tension	More than 80g
Playback torque	20^{+10}_{-5}g•cm
FF/REW torque	More than 80g•cm

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



002M	4822 502 21432	SCREW M1.4X5
003M	4822 417 11233	SUPPORT HOLD PIECE (R)
004M	4822 464 51042	CHASSIS BLOCK UNIT
005M	4822 358 31272	CP BELT
006M	4822 532 52593	WASHER
007M	4822 417 11234	SUPPORT HOLD PIECE (L)
008M	4822 502 21433	SCREW M1.4X2
009M	4822 403 70978	MECHANISM HEAD BLOCK UNIT
011M	4822 532 52594	NYRON WASHER RNW101ZA
012M	4822 528 70833	P ROLLER ARM (R) UNIT
013M	4822 528 70834	P ROLLER ARM (L) UNIT
014M	4822 522 33486	CAN GEAR
015M	4822 403 71117	TRIGGER LEVER
016M	4822 492 42715	SPRING
017M	4822 532 52595	WASHER
018M	4822 502 21446	SCREW
019M	4822 532 52596	WASHER
020M		MECHA ESCUTCHEON
L001	4822 281 50183	SOLENOID COIL
M001	4822 361 21654	D.C. MOTOR

P503 MAIN P.C. BOARD

CAPACITORS (ALL CHIPS) 0.001µF = 1nF = 1000PF

CC01	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CC02	4822 126 11678	CERAMIC	1µF	+80%-20%
CC03	4822 126 11678	CERAMIC	1µF	+80%-20%
CH01	4822 126 11678	CERAMIC	1µF	+80%-20%
CH02	4822 126 11678	CERAMIC	1µF	+80%-20%
CH03	4822 124 11427	TANTAL	33µF	4V
CH04	4822 126 13283	CERAMIC	0.082µF	± 10%
CH07	5322 126 11578	CERAMIC	1000PF	± 10%
CH08	5322 126 11578	CERAMIC	1000PF	± 10%
CH11	4822 124 11431	TANTAL	10µF	10V
CH12	4822 124 11431	TANTAL	10µF	10V
CH13	4822 126 11679	CERAMIC	0.22µF	+80%-20% 16V
CH14	4822 126 13283	CERAMIC	0.082µF	± 10%
CH15	4822 126 11679	CERAMIC	0.22µF	+80%-20% 16V
CH16	4822 124 11435	TANTAL	22µF	6.3V
CH17	4822 124 11432	TANTAL	100µF	10V
CH18	4822 124 11438	TANTAL	4.7µF	6.3V
CH21	4822 124 11396	TANTAL	220µF	4V
CH22	4822 124 11396	TANTAL	220µF	4V
CH23	5322 126 11583	CERAMIC	0.01µF	± 10%
CH24	5322 126 11583	CERAMIC	0.01µF	± 10%
CH26	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CH31	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CH32	4822 126 12848	CERAMIC	0.033µF	± 10%
CH41	5322 126 11578	CERAMIC	1000PF	± 10%
CM04	4822 126 13282	CERAMIC	0.056µF	± 10%
CM05	4822 126 13282	CERAMIC	0.056µF	± 10%
CM06	4822 126 13282	CERAMIC	0.056µF	± 10%
CM11	4822 126 12502	CERAMIC	820PF	± 10%
CM12	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CM13	4822 126 13283	CERAMIC	0.082µF	± 10%
CM14	4822 126 11668	CERAMIC	220PF	± 5%
CM15	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CM16	4822 125 60204	CERAMIC	0.027µF	± 10% 16V
CM21	4822 124 11431	TANTAL	10µF	10V
CM22	4822 124 41839	TANTAL	10µF	6.3V
CM25	5322 126 11578	CERAMIC	1000PF	±10 %
CM26	4822 125 60204	CERAMIC	0.027µF	± 10% 16V
CM27	4822 126 12495	CERAMIC	1500PF	± 10%
CM28	4822 126 11567	CERAMIC	0.022µF	± 10% 16V
CM29	5322 126 11578	CERAMIC	1000PF	± 10%
CM31	4822 124 11432	TANTAL	100µF	10V
CM32	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CQ01	4822 126 11679	CERAMIC	0.22µF	+80%-20% 16V
CQ02	4822 126 11668	CERAMIC	220PF	± 5%
CQ03	4822 124 11439	TANTAL	0.68µF	10V
CU01	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CU02	4822 124 11435	TANTAL	22µF	± 20% 6.3V
CU03	5322 126 11578	CERAMIC	1000PF	± 10%
CU06	4822 126 11678	CERAMIC	1µF	+80%-20%
CU07	4822 126 11678	CERAMIC	1µF	+80%-20%
CU08	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CU09	4822 126 11678	CERAMIC	1µF	+80%-20%
CU10	5322 126 11583	CERAMIC	0.01µF	± 10%
C001	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C002	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C003	4822 126 11659	CERAMIC	3PF	± 5%
C004	4822 126 13284	CERAMIC	0.18µF	+80%-20% 16V
C005	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C006	5322 126 11583	CERAMIC	0.01µF	± 10%
C007	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C008	4822 126 11678	CERAMIC	1µF	+80%-20%
C009	4822 126 11678	CERAMIC	1µF	+80%-20%
C010	4822 126 11687	CERAMIC	0.1µF	+80%-20%

CAPACITORS (ALL CHIPS)

C011	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C012	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C013	4822 122 33788	CERAMIC	82PF	± 5%
C017	4822 122 33788	CERAMIC	82PF	± 5%
C018	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C020	4822 122 33752	CERAMIC	15PF	± 5%
C101 ⟆ C120	4822 124 11428	TANTAL	1µF	6.3V
C121 ⟆ C126	5322 126 11583	CERAMIC	0.01µF	± 10%
C131 ⟆ C142	5322 126 11583	CERAMIC	0.01µF	± 10%
C146 ⟆ C149	4822 124 41839	TANTAL	10µF	6.3V
C150	4822 124 11434	TANTAL	2.2µF	6.3V
C151	4822 124 11428	TANTAL	1µF	6.3V
C152	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C156	4822 124 41839	TANTAL	10µF	6.3V
C157	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C158	4822 124 41839	TANTAL	10µF	6.3V
C159	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C160	4822 124 41839	TANTAL	10µF	6.3V
C161	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C162	4822 124 11438	TANTAL	4.7µF	6.3V
C171	4822 126 13279	CERAMIC	0.015µF	+80%-20%
C172	4822 126 13279	CERAMIC	0.015µF	+80%-20%
C173	4822 126 13281	CERAMIC	0.33µF	+80%-20% 16V
C174	4822 126 13281	CERAMIC	0.33µF	+80%-20% 16V
C175	4822 126 11702	CERAMIC	680PF	± 10%
C176	4822 126 11702	CERAMIC	680PF	± 10%
C177 ⟆ C180	5322 126 11582	CERAMIC	6800PF	± 10%
C181	4822 126 12846	CERAMIC	0.012µF	± 10%
C182	4822 126 12846	CERAMIC	0.012µF	± 10%
C187 ⟆ C190	5322 126 11578	CERAMIC	1000PF	± 10%
C195	5322 126 11579	CERAMIC	3300PF	± 10%
C196	5322 126 11579	CERAMIC	3300PF	± 10%
C197	4822 122 33741	CERAMIC	10PF	± 0.5PF
C198	4822 122 33741	CERAMIC	10PF	± 0.5PF
C401	4822 124 41839	TANTAL	10µF	6.3V
C402	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C403	4822 126 11678	CERAMIC	1µF	+80%-20%
C404	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C411	4822 123 30406	MICA	680PF	± 5%
C412	4822 123 30406	MICA	680PF	± 5%
C421	4822 124 11434	TANTAL	2.2µF	6.3V
C422	4822 124 11434	TANTAL	2.2µF	6.3V
C423	4822 123 30405	MICA	2700PF	± 5%
C424	4822 123 30405	MICA	2700PF	± 5%
C425	4822 123 30404	MICA	100PF	± 5%
C426	4822 123 30404	MICA	100PF	± 5%
C429	4822 124 11438	TANTAL	4.7µF	6.3V
C430	4822 124 11438	TANTAL	4.7µF	6.3V
C431	4822 124 11436	TANTAL	220µF	6.3V
C436	4822 124 11435	TANTAL	22µF	6.3V
C451	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C456	4822 124 11438	TANTAL	4.7µF	6.3V
C457	4822 124 11434	TANTAL	2.2µF	6.3V
C501	4822 122 33788	CERAMIC	82PF	± 5%
C502	4822 126 11687	CERAMIC	0.1µF	+80%-20%

CAPACITORS (ALL CHIPS)

C505				
S	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C511				
C519	4822 124 41839	TANTAL	10µF	6.3V
C521	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C551				
S	4822 122 33741	CERAMIC	10PF	± 5% 50V
C554				
C555	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C556	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C557	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C561	4822 124 41839	TANTAL	10µF	6.3V
C701	4822 126 11678	CERAMIC	1µF	+80%-20%
C702	4822 126 11678	CERAMIC	1µF	+80%-20%
C703	4822 126 12848	CERAMIC	0.033µF	± 10%
C704	4822 126 12848	CERAMIC	0.033µF	± 10%
C705	4822 126 11685	CERAMIC	4700PF	± 10%
C706	4822 126 11685	CERAMIC	4700PF	± 10%
C707	5322 126 11583	CERAMIC	0.01µF	± 10%
C708	5322 126 11583	CERAMIC	0.01µF	± 10%
C709	4822 126 12848	CERAMIC	0.033µF	± 10%
C710	4822 126 12848	CERAMIC	0.033µF	± 10%
C711	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C712	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C713	4822 124 11435	TANTAL	22µF	6.3V
C714	4822 124 11435	TANTAL	22µF	6.3V
C715	4822 124 11434	TANTAL	2.2µF	6.3V
C716	4822 124 11434	TANTAL	2.2µF	6.3V
C801	4822 124 11432	TANTAL	100µF	10V
C802	4822 124 11431	TANTAL	10µF	10V
C803	4822 124 11431	TANTAL	10µF	10V
C806	4822 122 33753	CERAMIC	150PF	± 5%
C807				
S	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C809				
C811				
S	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C813				
C816	4822 126 11687	CERAMIC	0.1µF	+80%-20%
C817	4822 124 11433	TANTAL	150µF	10V
C818	4822 124 11437	TANTAL	3.3µF	10V
C819	4822 122 33753	CERAMIC	150PF	± 5%
C821	4822 122 33753	CERAMIC	150PF	± 5%
C822	4822 124 11436	TANTAL	220µF	6.3V
C823	4822 124 11435	TANTAL	22µF	6.3V

RESISTORS (ALL CHIPS)

RC01	4822 117 11295	1KΩ	± 5% 1/16W
RC02	4822 117 11341	1.5Ω	± 5% 1W
RC03	4822 117 11295	1KΩ	± 5% 1/16W
RC04	4822 117 11294	100Ω	± 5% 1/16W
RC05	4822 117 11321	4.7KΩ	± 5% 1/16W
RC06	4822 117 11315	33KΩ	± 5% 1/16W
RC07	4822 117 11309	22KΩ	± 5% 1/16W
RC08	4822 117 11296	10KΩ	± 5% 1/16W
RC09	4822 117 11322	47KΩ	± 5% 1/16W
RC10	4822 117 11321	4.7KΩ	± 5% 1/16W
RC11	4822 117 11309	22KΩ	± 5% 1/16W
RC12	4822 117 11312	27KΩ	± 5% 1/16W
RC13	4822 117 11319	470Ω	± 5% 1/16W
RH01	4822 101 30874	VARIABLE, VR 20KΩ (A)X2	
RH03	4822 117 11303	15KΩ	± 5% 1/16W
RH04	4822 117 11303	15KΩ	± 5% 1/16W
RH05	4822 117 11297	100KΩ	± 5% 1/16W
RH06	4822 117 11297	100KΩ	± 5% 1/16W
RH09	4822 117 11309	22KΩ	± 5% 1/16W
RH10	4822 117 11309	22KΩ	± 5% 1/16W
RH11	4822 117 11327	6.8KΩ	± 5% 1/16W

RESISTORS (ALL CHIPS)

RH12	4822 117 11324	5.6KΩ	± 5% 1/16W
RH15	4822 117 11295	1KΩ	± 5% 1/16W
RH16	4822 117 11295	1KΩ	± 5% 1/16W
RH17	4822 117 11306	22Ω	± 5% 1/16W
RH18	4822 117 11306	22Ω	± 5% 1/16W
RH19	4822 117 11302	1.5KΩ	± 5% 1/16W
RH20	4822 117 11302	1.5KΩ	± 5% 1/16W
RH21	4822 117 11338	4.7Ω	± 5% 1/16W
RH22	4822 117 11338	4.7Ω	± 5% 1/16W
RH23	4822 117 11323	560Ω	± 5% 1/16W
RH24	4822 117 11323	560Ω	± 5% 1/16W
RH26	4822 117 11321	4.7KΩ	± 5% 1/16W
RH27	4822 117 11322	47KΩ	± 5% 1/16W
RH28	4822 117 11296	10KΩ	± 5% 1/16W
RH29	4822 117 11322	47KΩ	± 5% 1/16W
RH30	4822 117 11297	100KΩ	± 5% 1/16W
RH33	4822 117 11292	0Ω	1/16W JUMPER
RH34	4822 117 11292	0Ω	1/16W JUMPER
RM01	4822 117 11308	2.2KΩ	± 5% 1/16W
RM02	4822 117 11308	2.2KΩ	± 5% 1/16W
RM03	4822 117 11311	220KΩ	± 5% 1/16W
RM04	4822 117 11325	56KΩ	± 5% 1/16W
RM05	4822 117 11318	390KΩ	± 5% 1/16W
RM06	4822 117 11328	68KΩ	± 5% 1/16W
RM11	4822 117 11301	12KΩ	± 5% 1/16W
RM12	4822 117 11315	33KΩ	± 5% 1/16W
RM13	4822 117 11303	15KΩ	± 5% 1/16W
RM14	4822 117 11297	100KΩ	± 5% 1/16W
RM15	4822 117 11322	47KΩ	± 5% 1/16W
RM16	4822 117 11322	47KΩ	± 5% 1/16W
RM17	4822 117 11302	1.5KΩ	± 5% 1/16W
RM18	4822 117 11339	1Ω	± 5% 1/8W
RM19	4822 117 11339	1Ω	± 5% 1/8W
RM20	4822 117 11339	1Ω	± 5% 1/8W
RM41	4822 117 11322	47KΩ	± 5% 1/16W
RM42	4822 117 11322	47KΩ	± 5% 1/16W
RQ01	4822 117 11303	15KΩ	± 5% 1/16W
RQ02	4822 117 11303	15KΩ	± 5% 1/16W
RQ06	4822 117 11296	10KΩ	± 5% 1/16W
RU01	4822 117 11298	1MΩ	± 5% 1/16W
RU02	4822 117 11322	47KΩ	± 5% 1/16W
RU06	4822 117 11322	47KΩ	± 5% 1/16W
RU11	4822 117 11322	47KΩ	± 5% 1/16W
RU13	4822 117 11298	1MΩ	± 5% 1/16W
RU16	4822 117 11312	27KΩ	± 5% 1/16W
RU17	4822 117 11297	100KΩ	± 5% 1/16W
RU20	4822 117 11308	2.2KΩ	± 5% 1/16W
RU21	4822 117 11298	1MΩ	± 5% 1/16W
RU22	4822 117 11298	1MΩ	± 5% 1/16W
RU26	4822 117 11309	22KΩ	± 5% 1/16W
RU33	4822 117 11322	47KΩ	± 5% 1/16W
RU34	4822 117 11322	47KΩ	± 5% 1/16W
RU36	4822 117 11322	47KΩ	± 5% 1/16W
R001	4822 117 11295	1KΩ	± 5% 1/16W
R002	4822 117 11296	10KΩ	± 5% 1/16W
R003	4822 117 11321	4.7KΩ	± 5% 1/16W
R004	4822 117 11314	3.3KΩ	± 5% 1/16W
R005	4822 117 11297	100KΩ	± 5% 1/16W
R006	4822 117 11297	100KΩ	± 5% 1/16W
R007	4822 117 11322	47KΩ	± 5% 1/16W
R008	4822 117 11311	220KΩ	± 5% 1/16W
R009	4822 117 11311	220KΩ	± 5% 1/16W
R010	4822 117 11317	39KΩ	± 5% 1/16W
R011	4822 117 11297	100KΩ	± 5% 1/16W
R012	4822 117 11304	150KΩ	± 5% 1/16W
R013	4822 117 11317	39KΩ	± 5% 1/16W
R014	4822 117 11325	56KΩ	± 5% 1/16W

RESISTORS (ALL CHIPS)

R015	4822 117 11325	56KΩ	± 5% 1/16W
R016	4822 117 11309	22KΩ	± 5% 1/16W
R017	4822 117 11321	4.7KΩ	± 5% 1/16W
R018	4822 117 11296	10KΩ	± 5% 1/16W
R019	4822 117 11321	4.7KΩ	± 5% 1/16W
R021	4822 117 11296	10KΩ	± 5% 1/16W
R022	4822 117 11296	10KΩ	± 5% 1/16W
R033	4822 117 11309	22KΩ	± 5% 1/16W
R101	4822 117 11313	33Ω	± 5% 1/16W
R102	4822 117 11313	33Ω	± 5% 1/16W
R103	4822 117 11313	33Ω	± 5% 1/16W
R115 S R118	4822 117 11293	10Ω	± 5% 1/16W
R119	4822 117 11298	1MΩ	± 5% 1/16W
R120	4822 117 11298	1MΩ	± 5% 1/16W
R125	4822 117 11297	100KΩ	± 5% 1/16W
R126	4822 117 11297	100KΩ	± 5% 1/16W
R127	4822 100 12186	10KΩ	POTMETER
R128	4822 100 12186	10KΩ	POTMETER
R131	4822 117 11309	22KΩ	± 5% 1/16W
R132	4822 117 11309	22KΩ	± 5% 1/16W
R135	4822 117 11303	15KΩ	± 5% 1/16W
R136	4822 117 11303	15KΩ	± 5% 1/16W
R137	4822 117 11298	1MΩ	± 5% 1/16W
R138	4822 117 11298	1MΩ	± 5% 1/16W
R139	4822 117 11308	2.2KΩ	± 5% 1/16W
R140	4822 117 11308	2.2KΩ	± 5% 1/16W
R141	4822 117 11299	1.2KΩ	± 5% 1/16W
R142	4822 117 11299	1.2KΩ	± 5% 1/16W
R147	4822 117 11305	18KΩ	± 5% 1/16W
R148	4822 117 11305	18KΩ	± 5% 1/16W
R149	4822 117 11304	150KΩ	± 5% 1/16W
R150	4822 117 11304	150KΩ	± 5% 1/16W
R151	4822 100 12186	2.2KΩ	POTMETER
R152	4822 100 12186	2.2KΩ	POTMETER
R171	4822 117 11302	1.5KΩ	± 5% 1/16W
R172	4822 117 11302	1.5KΩ	± 5% 1/16W
R176	4822 117 11296	10KΩ	± 5% 1/16W
R177	4822 117 11296	10KΩ	± 5% 1/16W
R406	4822 117 11296	10KΩ	± 5% 1/16W
R407	4822 117 11322	47KΩ	± 5% 1/16W
R408	4822 117 11308	2.2KΩ	± 5% 1/16W
R411	4822 117 11312	27KΩ	± 5% 1/16W
R412	4822 117 11312	27KΩ	± 5% 1/16W
R413	4822 117 11302	1.5KΩ	± 5% 1/16W
R414	4822 117 11302	1.5KΩ	± 5% 1/16W
R415	4822 117 11315	33KΩ	± 5% 1/16W
R416	4822 117 11315	33KΩ	± 5% 1/16W
R417	4822 117 11322	47KΩ	± 5% 1/16W
R418	4822 117 11322	47KΩ	± 5% 1/16W
R419	4822 117 11302	1.5KΩ	± 5% 1/16W
R420	4822 117 11302	1.5KΩ	± 5% 1/16W
R431	4822 117 11319	470Ω	± 5% 1/16W
R432	4822 117 11319	470Ω	± 5% 1/16W
R451	4822 117 11306	22Ω	± 5% 1/16W
R456	4822 117 11325	56KΩ	± 5% 1/16W
R457	4822 117 11315	33KΩ	± 5% 1/16W
R458	4822 117 11309	22KΩ	± 5% 1/16W
R461	4822 117 11322	47KΩ	± 5% 1/16W
R462	4822 117 11322	47KΩ	± 5% 1/16W
R501	4822 117 11353	120Ω	± 5% 1/16W
R502	4822 117 11315	33KΩ	± 5% 1/16W
R511	4822 117 11314	3.3KΩ	± 5% 1/16W
R512	4822 117 11314	3.3KΩ	± 5% 1/16W
R551	4822 117 11298	1MΩ	± 5% 1/16W
R552	4822 117 11307	220Ω	± 5% 1/16W
R553	4822 117 11298	1MΩ	± 5% 1/16W

RESISTORS (ALL CHIPS)

R554	4822 117 11307	220Ω	± 5% 1/16W
R555	4822 117 11307	220Ω	± 5% 1/16W
R701	4822 117 11322	47KΩ	± 5% 1/16W
R702	4822 117 11322	47KΩ	± 5% 1/16W
R703	4822 117 11314	3.3KΩ	± 5% 1/16W
R704	4822 117 11314	3.3KΩ	± 5% 1/16W
R705	4822 117 11316	330KΩ	± 5% 1/16W
R706	4822 117 11316	330KΩ	± 5% 1/16W
R707	4822 117 11329	820KΩ	± 5% 1/16W
R708	4822 117 11329	820KΩ	± 5% 1/16W
R709	4822 117 11324	5.6KΩ	± 5% 1/16W
R710	4822 117 11324	5.6KΩ	± 5% 1/16W
R711	4822 117 11297	100KΩ	± 5% 1/16W
R712	4822 117 11297	100KΩ	± 5% 1/16W
R713	4822 117 11308	2.2KΩ	± 5% 1/16W
R714	4822 117 11308	2.2KΩ	± 5% 1/16W
R715	4822 117 11296	10KΩ	± 5% 1/16W
R716	4822 117 11296	10KΩ	± 5% 1/16W
R717	4822 117 11293	10Ω	± 5% 1/16W
R721	4822 117 11321	4.7KΩ	± 5% 1/16W
R722	4822 117 11321	4.7KΩ	± 5% 1/16W
R723	4822 117 11302	1.5KΩ	± 5% 1/16W
R724	4822 117 11302	1.5KΩ	± 5% 1/16W
R806	4822 117 11301	12KΩ	± 5% 1/16W
R807	4822 117 11337	4.7KΩ	± 1% 1/10W
R808	4822 116 82735	7.5KΩ	± 1% 1/10W
R809	4822 117 11315	33KΩ	± 5% 1/16W
R810	4822 117 11296	10KΩ	± 5% 1/16W
R811	4822 117 11311	220KΩ	± 5% 1/16W
R812	4822 117 11315	33KΩ	± 5% 1/16W
R813	4822 117 11337	4.7KΩ	± 1% 1/10W
R814	4822 117 11291	15KΩ	± 1% 1/10W
R815	4822 117 11315	33KΩ	± 5% 1/16W
R816	4822 117 11309	22KΩ	± 5% 1/16W
R817	4822 117 11356	130KΩ	± 1% 1/10W
R818	4822 116 83231	620KΩ	± 1% 1/10W
R821	4822 117 11321	4.7KΩ	± 5% 1/16W
R822	4822 117 11321	4.7KΩ	± 5% 1/16W
R826	4822 117 11294	100Ω	± 5% 1/16W
R827	4822 117 11306	22Ω	± 5% 1/16W
R828	4822 117 11322	47KΩ	± 5% 1/16W
R829	4822 117 11296	10KΩ	± 5% 1/16W
R831	4822 117 11306	22Ω	± 5% 1/16W
R832	4822 117 11294	100Ω	± 5% 1/16W

SEMICONDUCTORS (ALL CHIPS)

DC01	4822 130 83718	DIODE	EC15QS02L
DC02	4822 130 83718	DIODE	EC15QS02L
DC03	5322 130 83285	DIODE	1SS322
DH01	4822 130 81324	DIODE	1SS302
DH02	4822 130 81324	DIODE	1SS302
DH03	4822 130 81324	DIODE	1SS302
DH04	4822 130 83721	DIODE	1SS300
DH06	4822 130 83715	DIODE	1SS301
DM01	4822 130 81324	DIODE	1SS302
DU01	4822 130 83715	DIODE	1SS301
DU02	4822 130 83715	DIODE	1SS301
D001	4822 130 81324	DIODE	1SS302
D002	4822 130 81324	DIODE	1SS302
D003	4822 130 81324	DIODE	1SS302
D401	4822 130 83715	DIODE	1SS301
D402	4822 130 83721	DIODE	1SS300
D403	4822 130 83715	DIODE	1SS301
D806	4822 130 82452	DIODE	MA720
D811	4822 130 82452	DIODE	MA720
QC01	4822 130 43954	TRANSISTOR	2SD999
QC02	4822 130 61541	TRANSISTOR	2SC4116GR
QC03	4822 111 92185	DIGITAL TRANSISTOR	RN1603

SEMICONDUCTORS (ALL CHIPS)

QC04	4822 111 92184	DIGITAL TRANSISTOR	RN1303
QC05	4822 130 61554	TRANSISTOR	2SA1586 (Y,G)
QH01	4822 209 32583	IC, HEAD PHON DRIVER	BA3570FS
QH06	4822 130 63609	TRANSISTOR	2SA1588 (Y)
QH07	4822 111 92184	DIGITAL TRANSISTOR	RN1303
QH08	4822 111 92188	DIGITAL TRANSISTOR	RN4603
QH11	4822 111 92187	DIGITAL TRANSISTOR	HN1C03F (B)
QH12	4822 111 92188	DIGITAL TRANSISTOR	RN4603
QH15	4822 111 92186	DIGITAL TRANSISTOR	HN1C01F (G)
QM01	4822 209 32621	IC, MOTOR DRIVER	NBC5800
QM02	4822 111 92185	DIGITAL TRANSISTOR	RN1603
QM11 ∫ QM13	4822 130 42734	TRANSISTOR	2SB798
QQ01	5322 209 32044	IC, LEVEL SENSOR	NJM2072M
QU01	4822 209 33574	MICROPROCESSOR	µPD78014
QU02	4822 209 33571	IC, V-REGULATOR 3.3V	RN5RL33A
QU03	4822 209 33569	IC, V-DETECTOR 2.7V	RN5VL27C
QU04	4822 209 63557	IC,	TC7S08F
QU05	4822 209 63557	IC,	TC7S08F
QU06	4822 209 33573	IC,	TC7W14F
QU07	4822 130 63609	TRANSISTOR	2SA1588 (Y)
QU08	4822 111 92184	DIGITAL TRANSISTOR	RN1303
QU09	4822 111 92188	DIGITAL TRANSISTOR	RN4603
Q001	4822 209 33572	IC, MOTOR CONTROLLER	TC9192AF
Q002	4822 209 33563	IC, OP AMP	NJM2115V
Q003	4822 209 33563	IC, OP AMP	NJM2115V
Q004	4822 209 33563	IC, OP AMP	NJM2115V
Q005	4822 111 92189	DIGITAL TRANSISTOR	HN1B01F
Q006	4822 209 61747	IC,	TC4S66F
Q007	4822 209 31754	IC,	TC7S86F
Q008	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q009	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q010	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q101	4822 209 33558	IC, READ3	TDA1380
Q105	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q106	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q116	4822 130 63609	TRANSISTOR	2SA1588 (Y)
Q117	4822 209 33556	IC, V-REGULATOR 3.0V	RN5RG30A
Q118	4822 130 63609	TRANSISTOR	2SA1588 (Y)
Q119	4822 209 33556	IC, V-REGULATOR 3.0V	RN5RG30A
Q401	4822 209 33562	IC, D/A CONVERTER	TDA1313T
Q402	4822 209 33555	IC, DIGITAL FILTER	SM5881S
Q403	4822 209 33563	IC, OP AMP	NJM2115V
Q406	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q414	4822 111 92183	DIGITAL TRANSISTOR	RN2303
Q416	4822 111 92187	DIGITAL TRANSISTOR	HN1C03F(B)
Q418	4822 111 92187	DIGITAL TRANSISTOR	HN1C03F(B)
Q421	4822 130 63609	TRANSISTOR	2SA1588 (Y)
Q422	4822 209 33556	IC, V-REGULATOR 3.0V	RN5RG30A
Q423	4822 130 63609	TRANSISTOR	2SA1588 (Y)
Q424	4822 111 92185	DIGITAL TRANSISTOR	RN1603
Q426	4822 130 61554	TRANSISTOR	2SA1586 (Y,GR)
Q501	4822 209 33559	IC, DRP	SAA3323
Q502	4822 209 33564	IC, S-RAM	µPD43256BGU-B12
Q551	4822 209 33399	IC, SFC3	SAA2003
Q701	4822 209 32622	IC, DOLBY	BA1106FS
Q702	4822 111 92188	DIGITAL TRANSISTOR	RN4603
Q801	4822 209 33561	IC, DC-DC CONVERTER	MB3775
Q802	4822 209 60335	IC,	TC7S04F
Q803	4822 209 63557	IC,	TC7S08F
Q806	4822 130 63612	FET	2SK1078
Q807	4822 209 33554	IC, V-REGULATOR 5.0V	RN5RG50A
Q808	4822 130 63609	TRANSISTOR	2SA1588 (Y)
Q809	4822 111 92184	DIGITAL TRANSISTOR	RN1303
Q816	4822 130 63611	FET	2SJ238

MISCELLANEOUS (ALL MSD)

FH01	4822 156 21729	FERRITE BEAD BK2125HM102
F501	4822 156 21729	FERRITE BEAD BK2125HM102
F806	4822 252 51166	FUSE, 125V 800MA
JH01	4822 267 31787	JACK, HEADPHONES OUT
JU01	4822 265 41408	JACK, 17P
JU02	4822 265 41408	JACK, 17P
J101	4822 267 31791	JACK, 30P
J401	4822 267 31788	JACK, LINE OUT
J801	4822 267 31789	JACK, DC IN
J802	4822 265 31064	JACK, 1.25MM
LH01	4822 157 71226	COMMON MODE COIL
L101	4822 157 63437	COIL ELJ-FA100J
L102	4822 157 63437	COIL ELJ-FA100J
L401	4822 157 63437	COIL ELJ-FA100J
L402	4822 157 71226	COMMON MODE COIL
L551	4822 157 63437	COIL ELJ-FA100J
L801	4822 157 71227	COIL CD54-100K
L806	4822 157 71228	COIL CDR74-470K
L816	4822 157 71228	COIL CDR74-470K
L817	4822 157 71227	COIL CD54-100K
SH01	4822 277 21749	SLIDE SWITCH
SU01	4822 277 21748	SLIDE SWITCH
S701	4822 277 21748	SLIDE SWITCH
XU01	4822 242 81792	CERAMIC VIBRATOR KBR3.0MWS
X551	4822 242 81793	OTHER VIBRATORS CS-20 (22.5792MHZ) CL=10P TYPE
X552	4822 242 81794	OTHER VIBRATORS CS-20 (24.5760MHZ) CL=10P TYPE

PD03 SWITCH P.C. BOARD

MISCELLANEOUS (ALL SMD)

SD01 ∫ SD07	4822 276 13525	PUSH SWITCH
SD21	4822 276 13526	PUSH SWITCH, DOOR OPEN

PR03 MECHANISM P.C. BOARD

CAPACITORS (ALL CHIPS)

CM01	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CM02	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CM03	4822 126 11687	CERAMIC	0.1µF	+80%-20%
CR01	4822 124 11434	TANTAL	2.2µF	6.3V
CR03	4822 126 11668	CERAMIC	220PF	± 5%
CR06	4822 124 11434	TANTAL	2.2µF	6.3V
CR08	4822 126 11668	CERAMIC	220PF	± 5%
CR21	4822 126 11687	CERAMIC	0.1µF	+80%-20%

RESISTORS (ALL CHIPS)

RM31	4822 051 30104	100KΩ	± 5% 1/16W
RM51	4822 051 30159	15KΩ	± 5% 1/16W
RM52	4822 051 30473	47KΩ	± 5% 1/16W
RM53	4822 051 30472	4.7KΩ	± 5% 1/16W
RM54	4822 051 30223	22KΩ	± 5% 1/16W
RR01	4822 051 30331	330Ω	± 5% 1/16W
RR02	4822 051 30472	4.7KΩ	± 5% 1/16W
RR03	4822 051 30474	470KΩ	± 5% 1/16W
RR04	4822 051 30224	220KΩ	± 5% 1/16W
RR05	4822 051 30684	680KΩ	± 5% 1/16W
RR11	4822 051 30331	330Ω	± 5% 1/16W
RR12	4822 051 30472	4.7KΩ	± 5% 1/16W
RR13	4822 051 30474	470KΩ	± 5% 1/16W
RR14	4822 051 30224	220KΩ	± 5% 1/16W

RESISTORS (ALL CHIPS)

RR15	4822 051 30684	680KΩ	± 5% 1/16W
RR16	4822 051 30101	100Ω	± 5% 1/16W
RR17	4822 051 30101	100Ω	± 5% 1/16W
RR18	4822 051 30474	470KΩ	± 5% 1/16W
RR19	4822 051 30474	470KΩ	± 5% 1/16W
RU31	4822 051 30223	22KΩ	± 5% 1/16W
RU32	4822 051 30223	22KΩ	± 5% 1/16W

SEMICONDUCTORS (ALL CHIPS)

DM02	4822 130 83715	DIODE	1SS301
QM03	4822 130 63609	TRANSISTOR	2SA1588
QM04	4822 111 92185	DIGITAL TRANSISTOR	RN1603
QR01	4822 209 33557	IC,	MC14069UBDTEL
QR02	4822 130 63399	PHOTO UNIT, REEL SENS	GP2S27
QR03	4822 130 63399	PHOTO UNIT, REEL SENS	GP2S27

MISCELLANEOUS (ALL CMD)

SM01	4822 277 21752	SLIDE SWITCH
SM02	4822 276 13531	PUSH SWITCH
SM03	4822 271 30848	MINI SWITCH