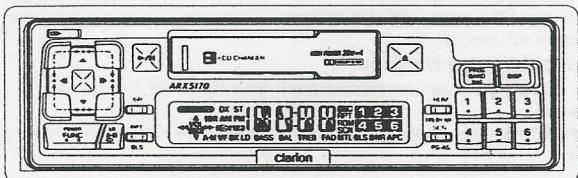


clarion Service Manual

Published by Service Dept.



Model **ARX5170** (PE-9948K-B)

■ SPECIFICATIONS:

FM Tuner

Frequency Range:	87.5 MHz to 108 MHz
Usable Sensitivity:	9 dBf
50 dB Quieting Sensitivity:	15 dBf
Alternate Channel Selectivity:	75 dB
Stereo Separation (1 kHz):	35 dB
Frequency Response (± 3 dB):	30 Hz to 15 kHz

AM Tuner

Frequency Range:	531 kHz to 1,629 kHz
Usable Sensitivity:	25 μ V

TAPE

Wow & Flutter (WRMS):	0.06%
Channel Separation (1 kHz):	45 dB
Signal to Noise Ratio:	70 μ s (CrO ₂ , FeCr, Metal) /Dolby B NR:58 dB/67 dB
Frequency Response (± 3 dB)	
120 μ s (normal):	30 Hz to 20 kHz
70 μ s(CrO ₂ ,FeCr,Metal):	30 Hz to 20 kHz

Power Amplifier

Maximum Power Output:	120 W (30 Wx4ch)
Continuous Average Power Output:	14 W x 4, into 4 Ω 20 Hz to 20 kHz, 1% THD

Pre-Amplifier

Basss Control Action (30 Hz):	± 15 dB
Treble Control Action (10 kHz):	± 10 dB
Line Output (1 kHz, 10 k Ω):	1,000 mV

General

Power Supply Voltage: 14.4 V (10.8 V to 15.6 V allowable)

Current Consumption: Less then10 A

Speaker Impedance: 4 Ω (4 Ω to 8 Ω allowable)

Dimensions:178(W)x50(H)x152(D)mm

Weight :45.8 oz (1.3 kg)

Notes:

- Specifications comply with EIA Standards.
- Specifications and design are subject to change without notice for further improvement.

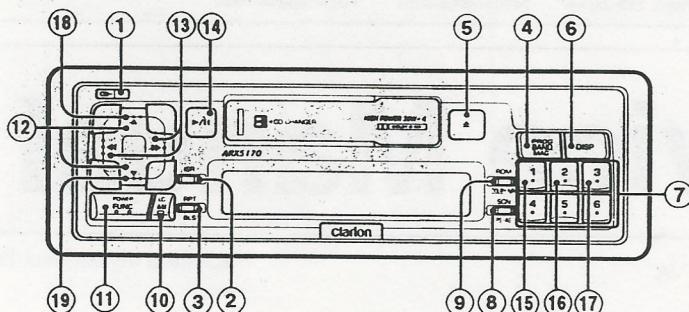
■ COMPONENT VIEW:

● PE-9948K-B		
Main Unit	921-9258-00	1
Part's Bag	330-8216-01	
Hook Plate	335-0833-01	
Lead Holde	716-0496-01	
Special.Sc		
Extension Lead	854-3800-01	1

Extension Lead

854-3800-01 1

■ OPERATION:



- ① DCP Release Button
- ② ISR (Instant Station Recall) Button [▲]
- ③ RPT (Repeat) Button [●], [◎]
- ④ PROG (Program) Button [●] BAND/T.MODE Button [▲] MAG (Magazine) Button [◎]
- ⑤ Eject (▲) Button [●]
- ⑥ DISP (Display Selector) Buutton
- ⑦ Preset Buttons [▲]
- ⑧ Direct Disc Buttons [◎]
- ⑨ SCN (Scan) Button [●], [◎]
- ⑩ PS/AS (Preset Scan/Auto Store) Button [▲]
- ⑪ DOLBY B NR Button [●]
- ⑫ RDM (Random) Button [◎]
- ⑬ A-M (Audio Mode) Button
- ⑭ LD (Loudness) Button
- ⑮ POWER Button
- ⑯ FUNC (Function) Button

Primary Function Control

- ⑭ Up and Down (▲ and ▼) Buttons
- ⑮ Left and Right (◀ and ▶) Buttons
- ⑯ Mute Button [▲] Play/Pause (▶/II) Button [●], [◎]
- ⑰ Function Button 1
- ⑱ Function Button 2
- ⑲ Function Button 3
- ⑳ Function Button 4 [▲]
- ㉑ Function Button 5 [▲]

[▲]: In the Radio Mode

[●]: In the Tape Mode

[◎]: In the CD Changer Mode

5. OPERATION

Basic Operation

CAUTION

Turning the power on and off with the volume set at the maximum position has a negative effect on the unit and could harm your ears. Be careful to set the volume to an appropriate level.

- 1) Press the POWER button ⑮.
- ★ To turn the power off, press the POWER button for at least 1 second.
- 2) Press the FUNC button ⑯ to select the operation mode. The mode switches as follows each time the FUNC button is pressed:
Radio → Tape → CD changer → Radio
★ If a component is not connected, that operation mode cannot be selected.
"CASS" appears when no tape is loaded in the ARX5170, and "DISC" appears when no disc is loaded in the CD changer.
- 3) Use the up and down buttons ⑭ to adjust the volume.
▲:Increases the volume.
▼:Decreases the volume.

Audio mode adjustments

- 1) Press the A-M button ⑬ to select the adjustment mode. The mode switches as follows each time the A-M button is pressed:
BASS/TREB → BAL/FAD → Previous mode
- 2) Use the left and right and the up and down buttons ⑮ ⑯ to adjust the bass and treble.
★ Adjusting the bass:
▶: Bass gets stronger.
◀: Bass gets weaker.
★ Adjusting the treble:
▲: Treble gets stronger.
▼: Treble gets weaker.

- 3) Use the left and right and the up and down buttons ⑮ ⑯ to adjust the balance and fader.
★ Adjusting the balance:
▶: Sound from right speakers gets stronger.
◀: Sound from left speakers gets stronger.
★ Adjusting the fader:
▲: Sound from front speakers gets stronger.
▼: Sound from rear speakers gets stronger.

* Loudness function

Press the LD button ⑭ for at least 2 seconds to turn the loudness function on and off.

* Switching the display

The display changes as follows each time the DISP button ⑥ is pressed:
Operation mode display → Time display → Operation mode display

* Setting the time

- 1) Press button ⑥ to switch to the time display.
- 2) Press button ⑥ for over 1 seconds to set the time.
★ The flashing item can be adjusted.
- 3) Use the right and left buttons ⑮ to select "HOURS" or "MINUTES".
- 4) Use the up and down buttons ⑭ and set the proper time.
- 5) Press button ⑥. The time is set.

Notes:

- If an operation which selects another mode is performed while setting the time, the time is not set.
- Reset the time if the battery is removed.

* Loading tapes

Insert the cassette tape into the tape insertion slot with the side on which the tape is exposed facing the right. Playback starts automatically.

★ The metal tape setting is set automatically when a metal or chrome tape is loaded.

★ When the end of the cassette tape is reached, the auto reverse mechanism is activated and the other side of the tape begins playing automatically.

Listening to a tape which is already loaded

Press the FUNC button ⑯ to select the tape mode. Playback begins automatically.

★ It is possible to listen to the radio during fast-forward, rewind or search operations.
Once the operation is complete, tape playback resumes (Monitor).

* Stopping playback temporarily

Press the play/pause button ⑭. Press the button again to resume playback.

* Ejecting cassette tapes

★ Press the eject button ⑤. The cassette tape is ejected.
The radio mode is set automatically 4 seconds after the eject button is pressed.

* Fast-forwarding and rewinding

Use the left and right buttons ⑮.
▶: Press this to fast-forward the tape.
◀: Press this to rewind the tape.

* APC (Auto Program Control)

Press the left or right button ⑬ twice.

►: Press this twice to move ahead to the beginning of the next selection.

◀: Press this twice to move back to the beginning of the current selection.

* Switching to the other side of the tape

Press the PROG button ④. Playback is switched to the other side of the cassette tape.

* FF scan function

When the SCN button ⑧ is pressed, "SCN" appears on the display, and the first 10 seconds of all the tracks on the cassette tape are played. Press the SCN button again to stop scanning.

* Repeat function

When the RPT button ③ is pressed, "RPT" appears on the display and the current track is played repeatedly. Press the RPT button again to cancel the repeat mode.

* Dolby B Noise Reduction system

Press the DOLBY B NR button ⑨. "B NR" appears on the display, and the Dolby B NR function is turned on.

Press the button again to turn the Dolby B NR function off.

★ Dolby Noise Reduction is manufactured under license of the Dolby Laboratories Licensing Corporation.

"DOLBY" and the double D mark (DD) are registered trademarks of the Dolby Laboratories Licensing Corporation.

* Blank skip Reduction system

Use this function to automatically skip to the beginning of the next recorded section when there is a blank section of 12 seconds or more on the tape.

When button ③ is pressed for more than 2 seconds, the blank skip mode is set and "BLS" appears on the display. Press the button for more than 2 seconds again to cancel the blank skip mode.

Notes:

The APC, scan, repeat and blank skip functions will not work with the following types of tapes:

- Tapes on which the recording level is low
- Tapes on which there is less than 4 seconds of blank space between selections
- Tapes on which there are long pauses in the middle of selections
- Tapes on which there is much noise between selections

Radio Operation

* Listening to the radio

- 1) Press the FUNC button ⑪ and select the radio mode. The radio turns on.
- 2) To tune in a preset station, first press the BAND button ④ and select FM1, FM2, FM3 or AM.
- The band changes as follows each time the BAND button is pressed: FM1 → FM2 → FM3 → AM → FM1
- 3) Use the preset buttons ⑦ to select the desired station.

* Seek tuning

- 1) Press the BAND button ④ and select the desired band.
- 2) The seek tuning mode is set when "SRCH" is lit on the display.
- 3) Press the left or right button ⑬. Seek tuning automatically stops when a station is found.

* Manual tuning

- 1) Press the BAND button ④ and select the desired band.
- 2) Press the BAND button again for more than 2 seconds. "SRCH" turns off and the manual tuning mode is set.
- 3) Use the left and right buttons ⑬ to tune in the desired frequency.

* Presetting stations

A total of 24 stations can be preset, 6 each for the FM1, FM2, FM3 and AM bands.

Note:

When a station is preset, the station previously stored in the memory at that position is cleared.

Presetting stations manually

- 1) Press the BAND button ④ to select the band at which to store the station.
- 2) Use the left and right buttons ⑬ to tune in the station to be preset.
- 3) Press the preset button ⑦ at which you want to store that station for at least 2 seconds.

Auto store function

- 1) Press the BAND button ④ to select the band at which to store the stations.
- 2) Press the AS button ⑧ for at least 2 seconds. Stations with good reception are automatically stored at preset buttons ⑦ 1 to 6. If there are fewer than 6 stations with good reception, the stations previously stored at the remaining buttons are not cleared.

* Preset scanning

When the PS button ⑧ is pressed, the preset memory numbers flash and the stations are tuned in for 7 seconds each in the order in which they were stored. Press the PS button again to cancel the preset scanning mode.

Note:

The auto store mode is set if the PS button is pressed for more than 2 seconds.

* Instant Station Recall (ISR) function

This function allows you to recall a specific radio station from any mode. Use it to find stations quickly when you want to hear specific information (such as traffic announcements) while driving. The ISR station is set to 87.9 MHz upon shipment from the factory.

Setting the ISR station

- 1) Press the FUNC button ⑪ to select the radio mode.
- 2) Tune in the station to be set as the ISR station.
- 3) Press the ISR button ② for more than 2 seconds to store that station in the memory as the ISR station.

Recalling the ISR station

Press the ISR button ② from any mode. "ISR" appears on the display and the set station is tuned in. To cancel, press the ISR button again.

* Area change function

Use this to listen to the radio outside of the United States.

Switchable frequency stepping

This car stereo is initially set to tune in frequency intervals of 10 kHz for AM and 200 kHz for FM, the standard calibrations in the U.S. When using the unit outside the U.S., use the following procedure to switch the frequency steps and frequency range:

- 1) Turn the power on and set the tuner mode.
 - 2) Keep button ④ pressed and while pressing the button, press button ⑩.
 - 3) Release the buttons.
- This procedure changes the factory setting to 9 kHz steps for AM and 50 kHz steps for FM, the standard calibrations for countries other than the U.S.
- To change the AM/FM setting back to the U.S. standard frequencies:
- 1) Set the tuner mode.
 - 2) While pressing button ④, press button ⑩.
 - 3) Release the buttons.
- Your car stereo will once again be calibrated to receive standard U.S. transmissions.

The chart below lists the frequency specifications for the U.S. and other countries.

		Initial Setting (U.S. standard)	New Setting (outside U.S.)
AM	Frequency spacing	10 kHz	9 kHz
	Frequency range	530 to 1710 kHz	531 to 1629 kHz
FM	Frequency spacing	200 kHz	50 kHz
	Frequency range	87.9 to 107.9 MHz	87.5 to 108 MHz

* Mute

Use this function to turn off the sound immediately. Press the MUTE button ⑩. The sound turns off and "MUTE" appears on the display. Press the MUTE button again to cancel the mute mode.

CD Changer Operation

When a separately sold CD changer (CDC605/CDC1205/CDC1805) is connected, it can be controlled from the ARX5170. CD-RDMs cannot be played.

* Listening to CDs

- 1) Press the FUNC button ① to select the CD changer mode. Playback starts automatically.
- ★ The pause mode is set when the CD changer mode is set after the power is turned on or while the magazine is being loaded in the CD changer.
- ★ In these cases, press the play/pause button ④ to start playback.
- 2) Press the play/pause button ④ to stop playback temporarily.
- 3) Use the direct buttons ⑦ to select the desired disc. Nothing happens if a direct button corresponding to the number of a magazine in which no disc is loaded is pressed.
- ★ When a disc which is currently playing is selected, playback resumes from the first track on that disc.
- 4) Use the left and right buttons ⑬ to select tracks.
- :Press this to start playback from the beginning of the next track.
- ◀:Press this to move back to the beginning of the current track. Press it again to move back to the beginning of the previous track.

* Fast forward and fast backward

Press and hold in the left and right buttons ⑬

►:Press this to move rapidly forward.
◀:Press this to move rapidly backward.

★ The disc moves at 3 times the normal speed after the button is held in 1 second, at 30 times the normal speed after it is held in 3 seconds.

* Scan function

When the SCN button ⑧ is pressed, "SCN" appears on the display, and the first 10 seconds of all the tracks on the disc are played. Press the SCN button again to stop scanning.

Disc scan function

When the SCN button ⑧ is pressed for more than 2 seconds, "DISC" and "SCN" appear and the first 10 seconds of the first track on all the discs are played. Press the SCN button again to stop scanning.

* Repeat function

When the RPT button ③ is pressed, "RPT" appears on the display and the current track is played repeatedly. Press the RPT button again to cancel the repeat mode.

Disc repeat function

When RPT button ③ is pressed for more than 2 seconds, "DISC" and "RPT" appear on the display and the current disc is played repeatedly. Press the RPT button again to cancel the disc repeat mode.

* Random playback

When the RDM button ⑨ is pressed, "RDM" appears on the display, and all the tracks on the disc are played in random order. Press the RDM button again to cancel the random play mode.

Disc random playback

When the RDM button ⑨ is pressed for more than 2 seconds, "DISC" and "RDM" appear on the display, and all the tracks on the disc are played in random order. Press the RDM button again to cancel the disc random play mode.

* Switching the magazine (When the CDC1205 or CDC1805 is connected)

This function can be used when a CD changer with multiple magazines is connected. The next magazine is selected each time the MAG button ④ is pressed.

Locking the magazine

Press the MAG button ④ for more than 2 seconds. "[G]" appears on the display, and only the currently displayed magazine is played. To cancel this, press the MAG button again for more than 2 seconds. Magazines can be selected even when a magazine is locked. When this is done, the selected magazine is locked. When a magazine is locked, scanning and random playback are only performed for the locked magazine.

* Switching the illumination color

Press button ⑯ while holding in button ⑥ to switch the illumination color between amber and green.

Note:

If the display is set to the time mode, the time setting mode is set if button ⑥ is held in for more than 2 seconds.

* Setting the DSP mode

If a Digital Sound Processor is part of your system, then be sure to set the DSP mode.

Set the volume to Max.(Vo33). Press button ⑯ while holding in button ⑥. The volume and tone can then be adjusted from the DSP unit.

* Setting the EQ mode

If an Equalizer is part of your audio system, then be sure to set the EQ mode.

Press button ⑯ while holding in button ⑥.

The bass and treble can then be adjusted from the equalizer.

* Triggered audio mute for cellular telephones

When a call is received, "TEL" appears on the display and the sound is muted.

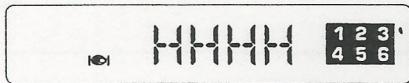
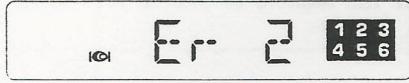
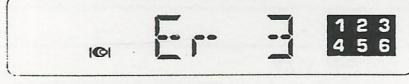
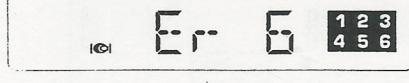
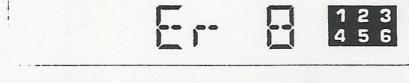
When the call is disconnected, the previous mode resumes.

The tape or CD stops during the mute mode so you don not miss any of the song.

Problem	Cause	Measure
Power does not turn on (or no sound is produced)	Fuse is blown.	Replace with a fuse of the same amperage as the old fuse.
	Connections are improper.	Read the connection instructions once more and connect carefully.
Sound quality is poor.	Playback head is dirty.	Use a cleaning tape, etc. to clean head.
Nothing happens when buttons are pressed, or display is wrong.	Microprocessor has malfunctioned due to electronic noise, etc.	Use a thin rod, etc. to press the reset button.



This unit is equipped with a number of self-diagnosis functions to protect the system. If a problem should occur, the user is warned through various error displays. Eliminate the problem using the procedures shown below.

Error Display	Procedure
	This indicates that playback has been stopped automatically due to a rise in the temperature inside the CD changer or a rise in the surrounding temperature. → The CD changer mechanism is likely damaged. Contact your store of purchase.
	This indicates that a problem has occurred with the CD changer's mechanism (disc cannot be changed or ejected, etc.). → The CD changer mechanism is likely damaged. Contact your store of purchase.
	This indicates that the pickup is out of focus during playback due to scratches on the disc, etc.
	This indicates that the CD's TOC (table of contents) cannot be read, for example because the selected disc is upside-down.
	This is displayed if a cassette tape gets stuck during loading or ejecting. → Remove the cause for which the cassette tape got stuck.

If a display other than one of the displays above appears, press the reset button. If the problem persists, turn the power off and contact your store of purchase.

■ FEATURES:

Tuner

- Electronic Quartz-Locked PLL Tuning ■ 18FM/6AM Touch-Button Memor ■ Seek Up/Down Tuning ■ Preset Station Scan ■ Automatic Station Store ■ MAGNETUNE® FM Reception System ■ Switchable Frequency Spacing

Tape

- Full Logic Tape Transport ■ Auto Reverse With Dual Azimuth Adjustment ■ Locking FF/REW ■ Electronic DC Servo Motor ■ Automatic Metal Tape Selector ■ Power-off Pinch Roller Release ■ Power Loading & Power Eject ■ Automatic Program Control (APC) ■ Blank Skip ■ Repeat ■ Intro Scan ■ Dolby B Noise Reduction ■ Hard Permalloy Dual Gutter Tape Head ■ Fail-Safe Tape Mechanism

CD Changer Control

- 6/12/18-Disc Changer Control ■ Play/Pause ■ Random Play (Track/Disc) ■ Intro Scan (Track/Disc) ■ Repeat (Track/Disc) ■ Track Search ■ Audible FF/FB ■ Magazine Lock

Audio

- Electronic Control (Volume/Bass/Treble/Balance/Fader) ■ DSP Mode ■ EQ Mode ■ Loudness ■ 4-Way Balance Controls ■ Audio Muting ■ 4-Channel RCA Line Level Output ■ 120 W (4x30 W)

General

- Instant Station Recall (ISR) ■ Night Illumination & Switchable Illumination Color ■ Digital Quartz Clock ■ Amp Turn-On Trigger ■ Full Information LCD Display ■ Triggered Audio Mute For Cellular Telephone ■ Monitor

Security

- Detachable Control Panel

Chassis

- DIN Chassis with ISO Mounting Capability
■ Dimensions: 7"(178mm) Widthx2"(50mm) Heightx6"(152mm) Depth

■ ADJUSTMENTS:

• FM Circuit (TUNER PACK)

ITEM	TEST-POINT	PROCEDURE
OV	IFT2	1.CONNECT THE DIGITAL VOLT-METER TO TP2 AND TP3. 2.INPUT THE 98.1MHZ/65dB SIGNAL (NO MOD.),AND ADJUST THE READING OF DIGITAL VOLT-METER TO $0 \pm 30mV$ BY IFT2.
S-METER	VR1	1.CONNECT THE DIGITAL VOLT-METER TO TP4. 2.INPUT THE 98.1MHZ/30dB SIGNAL (NO MOD.) 3.ADJUST THE LEVEL TO $2.4 \pm 0.1V$ BY VR1.
ADJUSTMENT POINT/TEST POINT		
TOP VIEW		BOTTOM VIEW

• AM CIRCUIT(TUNER PACK)

ITEM	TEST-POINT	PROCEDURE
● IF ● TRACKING	PRE-ADJUSTED TUNER	

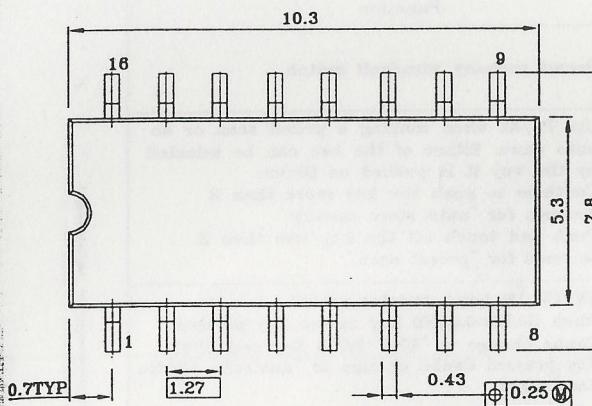
• MAIN PWB

ITEM	TEST-POINT	PROCEDURE
TAPE DOLBY NR	VR401 VR402	1.INSERT A DOLBY LEVEL TEST TAPE (400HZ-200nwb/m),CONNECT THE MILLI VOLT-METER TO TP5 (L) AND TP6 (R). 2.ADJUST VR 401 (L) AND VR 402 (R) TO OBTAIN AN OUTPUT OF $300mV \pm 1dB$.
FM NOISE CONVERGENCE	VR102	1.INPUT THE 98.1MHZ/65dB,SIGNAL (400Hz, 30% MOD.) 2.MAKE THE OUTPUT LEVEL TO 0dB. (1.41V) 3.SET THE INPUT LEVEL TO MINIMUM, AND ADJUST VR102 SO THAT THE OUTPUT LEVEL IS-17dB.
FM SNC	VR103	1.INPUT THE 98.1MHZ, CONNECT THE OUTPUT OF A STEREO MODULATOR TO THE EXTERNAL MODULATION TERMINAL, AND INPUT A 22dB. 2.SET THE STEREO MODULATOR TO THE L OR R-ch AND ADJUST VR103 SO THAT THE 3dB SEPARATION IS OBTAINED.
FM AUTO STOP SENSITIVITY	VR101	1.CONNECT THE TP 7 (PIN 14 OF TUNER). 2.INPUT THE 98.1MHZ/22dB SIGNAL (400Hz, 30% MOD.). 3.ADJUST VR101 SO THAT THE VOLTAGE OF TP7 IS HIGH LEVEL.
FM SEPARATION	VR104	1.INPUT THE 98.1MHZ, CONNECT THE OUTPUT OF A STEREO MODULATOR TO THE EXTERNAL MODULATION TERMINAL, AND INPUT A 65dB SIGNAL. 2.SET THE STEREO MODULATOR TO THE L OR R-ch AND ADJUST VR104 SO THAT THE MAXIMUM SEPARATION IS OBTAINED. (MORE THAN 20dB)

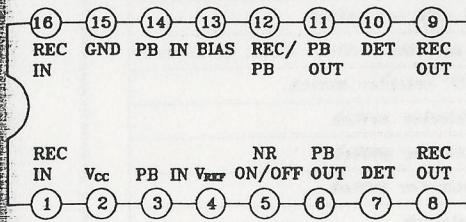
■ EXPLANATION OF IC's:

■ HA12134AF 051-1349-10

Outward Form

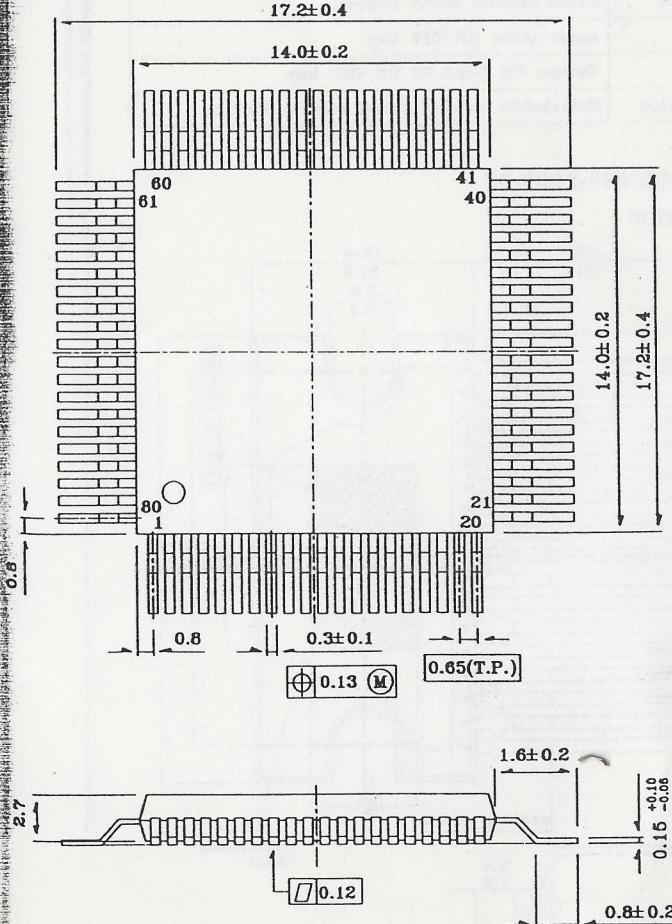


Terminal Connection



■ UPD78056GC-016-3B9(V) 052-3901-00

Outward Form

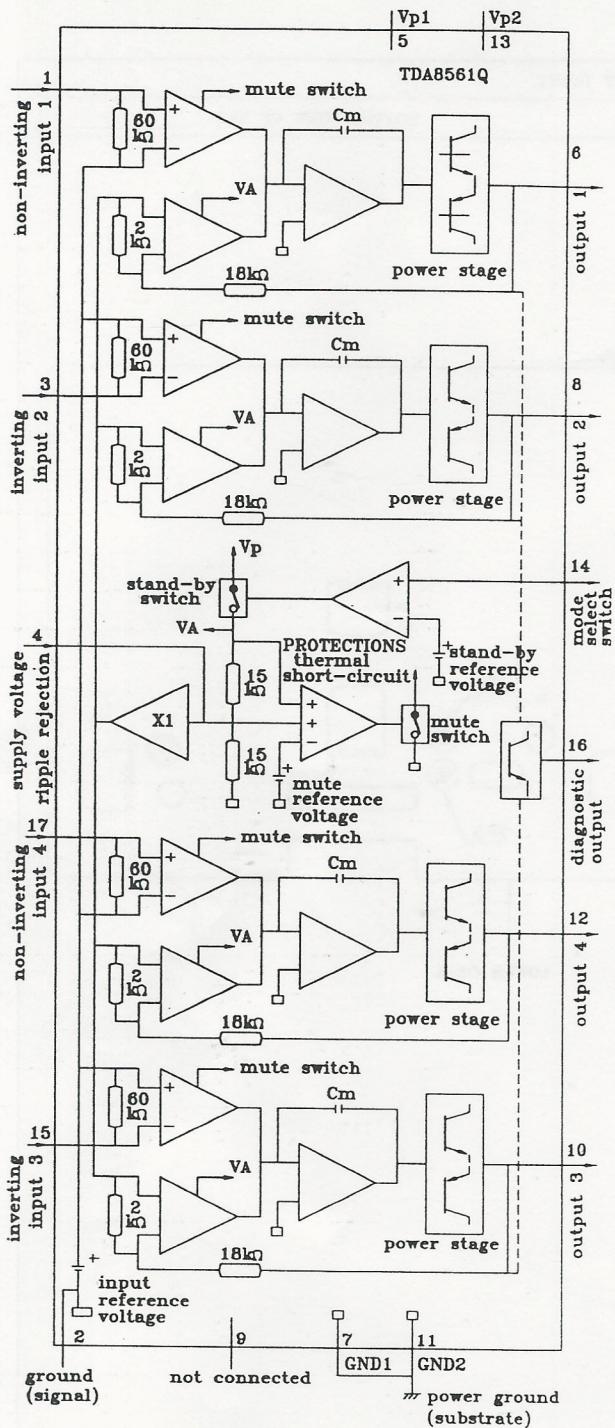


Terminal Description

Pin No.	Symbol	I/O	Function
01	PHONE INT	I	Telephone status "H" for being used.
02	P16	I	Unused.
03	P17	I	Unused.
04	AVSS	-	A/D convertor reference GND.
05	P130	I	Unused.
06	PLL CE	O	CE(chip enable)output terminal of PLL IC.
07	AVREF(5V)	I	A/D conversion reference voltage.
08	PLL DI	I	Input terminal for data from PLL IC.
09	PLL DO	O	Output terminal for data from PLL IC.
10	PLL SCK	O	CLK output terminal of PLL IC.
11	LCD SI	I	LCD driver control I/O terminal.
12	LCD SO	O	LCD driver control I/O terminal.
13	LCD SCK	O	LCD driver control I/O terminal.
14	LCD CE	O	LCD driver control I/O terminal.
15	P24	I	Unused.
16	C BUS SI	I	Data input and output and clock used for C-bus communication.
17	C BUS SO	O	Data input and output and clock used for C-bus communication.
18	C BUS SCK	O	Data input and output and clock used for C-bus communication.
19	P19	I	Unused.
26	P26	I	Unused.
27	MASTER ON	O	A terminal which output signal to Master. JAPAN is Unused.
28	SLAVE ON (JAPAN)	O	A terminal which input signal.
29	ILLUMI DET	I	Illumination power detect input terminal. Active "L".
30	MECHA ON	O	Cassette power supply control, main motor control,power motor and photo-reflector. Active "H".
31	SRQ	I	SRQ signal input terminal. Input terminal for interrupt signals from slave microcomputer. Active "L".
32	ACC CONT	O	Accessory control signal output. Outputs interrupt signals to operate microcomputer for a group of accessories controlled by C-BUS. ACC ON "H",ACC OFF "L".
33	GND	-	GND terminal.
34	ILLUMI 1	O	ILLUMI.(amber)signal output terminal. Active "H".
35	ILLUMI 2	O	ILLUMI.(green)signal output terminal. Active "H".
36	REM 5V	O	5V remote signal output terminal. Active "L".
37	REM+B	O	+B remote signal output. Outputs signal to supply REMOTE to the power source for the set ILLUMI and external accessory. Active "H".
38	MUTE	O	System MUTE signal output terminal. Active "L".
39	MOTOR-ANT (JAPAN)	O	Motor antenna control terminal. Active "H".

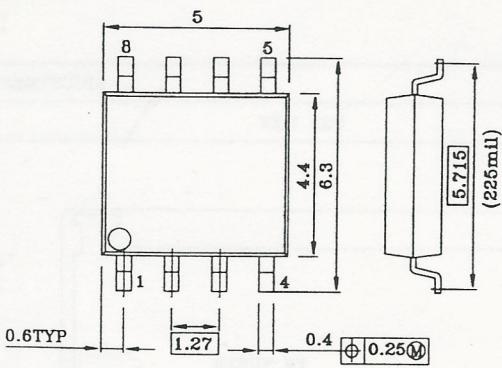
40 41	P1 P2	0	Tape motor drive control to control operational condition of mechanism.
		Control mode	P 1 P 2
		Loading direction	H L
		Eject direction	L H
		Brake	H H
		Stop	L L
42	MECHA MOTOR	0	Tape reel motor control "H" for motor ON.
43	MTL SW	I	Tape metal detection. "L":Normal, "H":Metal.
44 45 46	MODE_BIT3 MODE_BIT1 MODE_BIT2	I	Detects mode status of tape mechanism.
		MODE STATUS	BIT 1 BIT 2 BIT 3
		EJECT (NO TAPE)	H H H
		Loading/ejecting	H H L
		STOP	L H L
		FWD-FF(REV-RWD)	L L H
		FWD-REW(REV-FF)	H L L
		FWD-PLAY	H L H
		REV-PLAY	L H H
47	REEL PULSE	I	Reel rotation detection for tape running. "L/H" changes:on rotation.
48	APC_SENS	0	APC ON/OFF signal output terminal. PLAY "L",FF/REW "H".
49	APC_DET	I	Music detection input. "L":presence level, "H":Absence level.
50	BEEP	O	BEEP signal output. Terminal to output BEEP signals for emitting buzzer.
51	MTL_ON	I	Tape metal detection. "H" : Metal, "L" Normal.
52	FWD/REV	I	FWD/REV detect input terminal. "L":FWD, "H": REV.
53 54 55	EVOL_CLK EVOL_DATA EVOL_CE	O	Serial data output terminal to control electronic volume.
56	AM_SD	I	A terminal which detects AM station. With station: "H".
57	P125	I	Unused.
58	JPN/USA/K	I	Input terminal. "L":for JPN,USA, "H":for K.
59	JPN/USA	I	Input terminal. "L":for JPN, "H":for U.S.A.
60	RESET	I	System reset terminal. Active "L".
61	TIME BASE IN	I	Time base signal input. With time base for clock time counter being input,time base signal to output PLL IC is detected and clock counting starts.
62	BACK UP DET	I	When this pin is "L" the microcomputer goes into the BACK UP mode.
63	ACC DET	I	Accessory power supply detection. "H" for ACC ON.

Block Diagram

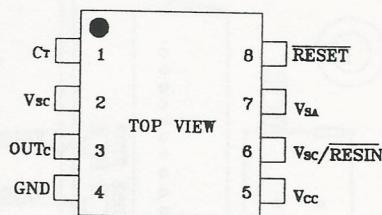


■ NJM2103M 051-0869-55

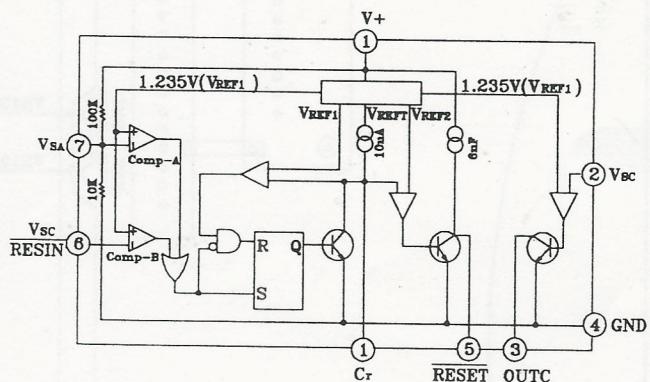
Outward Form



Terminal Connection

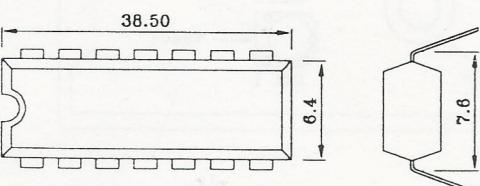


Block Diagram

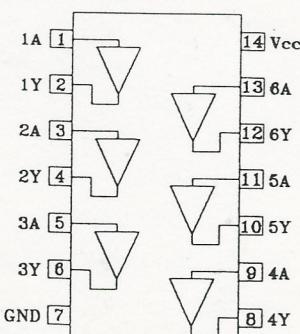


■ HD74LS07P 051-0160-01

Outward Form

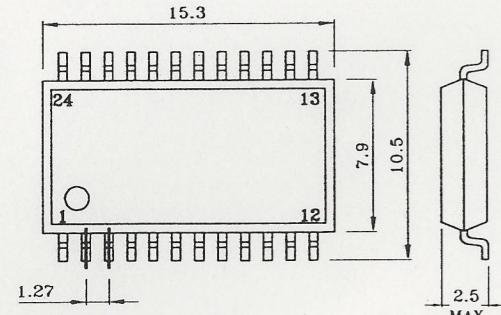


Block Diagram



■ LC7219M 051-1717-05

Outward Form

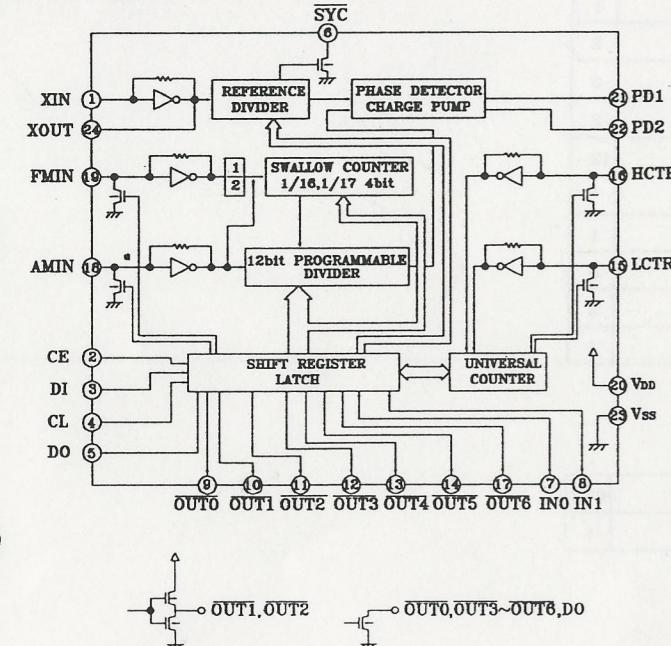


Terminal Connection

XOUT	VSS	PD2	PD1	VDD	FMIN	AMIN	OUT6	HCTR	LCTR	OUT5	OUT4
24	23	22	21	20	19	18	17	16	15	14	13
1	2	3	4	5	6	7	8	9	10	11	12

1	2	3	4	5	6	7	8	9	10	11	12
XIN	CE	DI	CL	DO	SYC	IN0	IN1	OUT0	OUT1	OUT2	OUT3

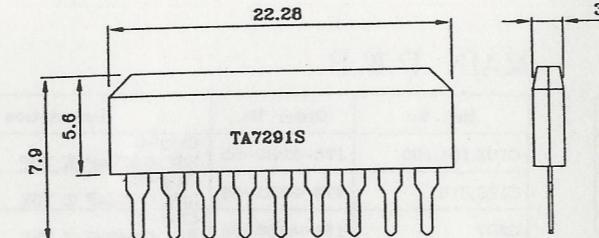
Block Diagram



Symbol	Function
XIN,XOUT	X'tal OSC(7.2MHz)
FMIN,AMIN	Local oscillation data input
CE, CL, DI, DO	Serial data I/O port
OUT0 OUT8	Output terminal
IN0,IN1	Input terminal
HCTR,LCTR	Counter input
PD1,PD2	Charge pump output
SYC	For controller clock (400kHz)

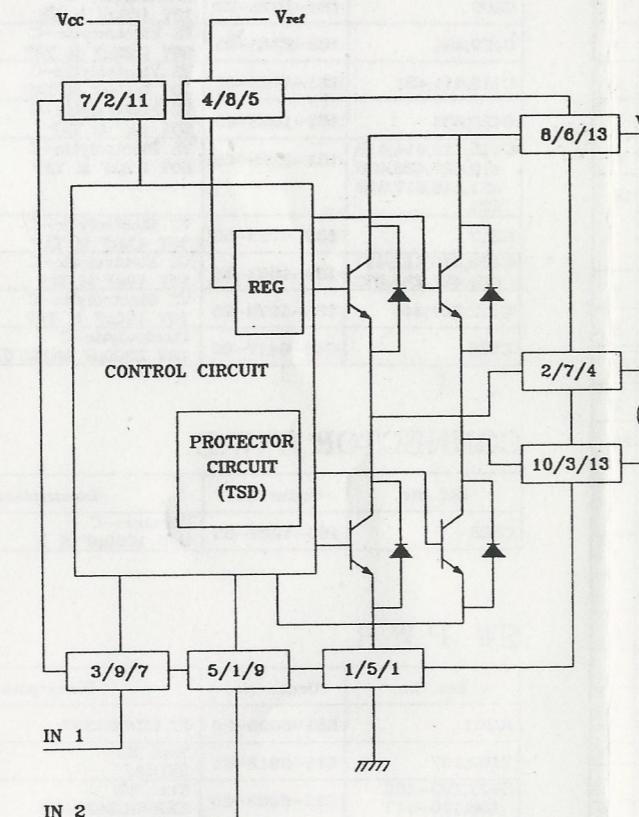
■ TA7291S 51-1014-10

Outward Form



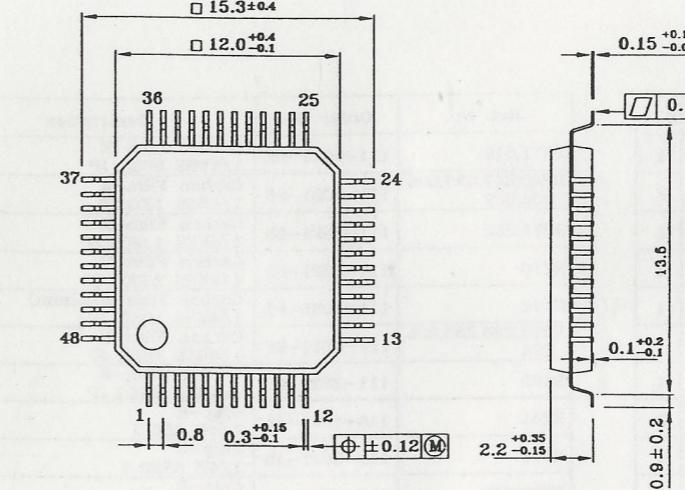
INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

Block Diagram

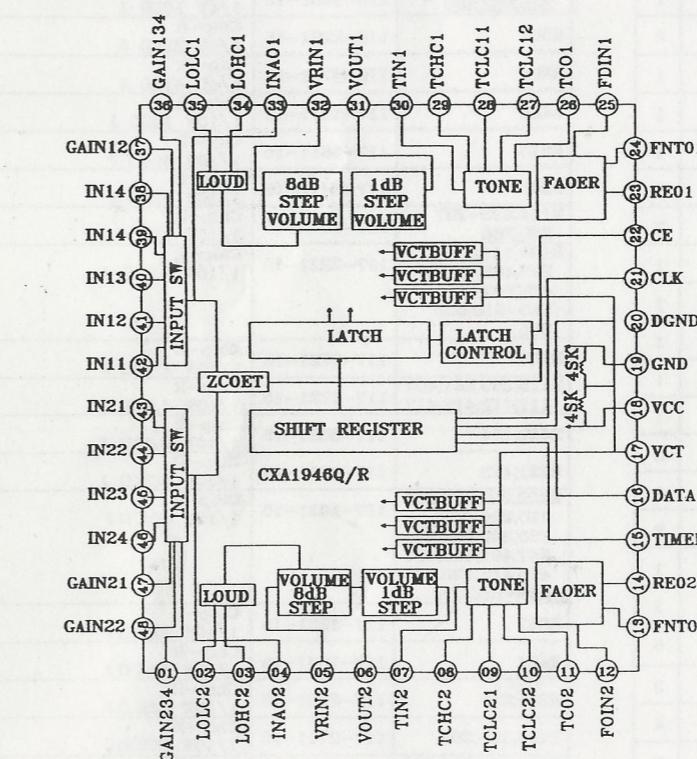


■ CXA1946Q 051-5004-00

Outward Form



Block Diagram



PART LIST:

• ARX5170 (PE-9948K-B)

MAIN P.W.B.:

Ref. No.	Order No.	Description	Q'ty
IC202	051-0160-01	IC HD74LS07P	1
IC402,403	051-0350-55	IC NJM4558M	2
IC203	051-1014-10	IC TA7291S	1
IC404	051-1349-10	IC HA12134AF	1
IC801	051-1717-05	IC LC7219M	1
IC401	051-5004-00	IC CXA1946Q	1
IC204	051-0869-55	IC NJM2013M	1
IC501,502	051-2009-00	IC TDA8561Q	2
IC201	052-3900-01	IC μPD78056GC-079-3B9(E)	1
VR104	012-9001-06	Semi Fixed VR TB069A-OC 5KΩ	1
VR101,102	012-9001-10	Semi Fixed VR TB069A-OC 100KΩ	2
VR103	012-9001-13	Semi Fixed VR TB069A-OC 200KΩ	1
VR401,402	012-9000-18	Semi Fixed VR TB069A70C 10KΩ	2
SW101	013-3932-01	TACT SW SKHHLML1510-CR1	1
L201	009-9004-00	CHOKE IMH EI=24mm	1
L202	010-9000-02	COIL 2340-221K	1
L101	010-9005-00	COIL 30μH	1
L801,802	010-9000-52	COIL 2340-221K	2
CN101	074-1058-00	Connector CAM-A45(D41-A341)	1
CN102	076-0433-20	Connector CPB9120-0101	1
X801	061-9002-00	X-TAL OSC 7.2MHz 20PPM	1
X201	060-1900-00	X-TAL OSC CAS419MG(4.19MHz)	1
SUP101	060-0122-10	Diode DSP-201N-S00B	1
D214,502	001-0346-33	Zener Diode MTZ 5.6 JC	2
D216	001-0346-45	Zener Diode MTZ 8.2 JC	1
D211,218	001-0346-48	Zener Diode MTZ 9.1 JC	2
D215	001-2004-90	Diode 1N4003	1
D501	001-0188-01	Diode 1S1885A	1
D201,202,203,212 213,217,219,220	001-0352-90	Diode 1SS176	8
Q218,801,802	190-1048-00	Transistor 2SA1048	3
Q501~504	192-1306-00	Transistor 2SD1306 ND,NE-TL	4
Q203,204	192-2710-00	Transistor 2SC2710	2
Q209,210,219,220	193-1858-00	Transistor 2SD1858	4
Q201	190-1431-00	Transistor 2SA1431	1
Q205,214,510	125-2003-93	Transistor RN1203	3
Q102,103	192-2458-28	Transistor 2SC2458 GR	2
Q202,207,212,215 217	192-2456-00	Transistor 2SC2458	5
Q206	191-1237-00	Transistor 2SB1237	1
Q211,216	191-1243-00	Transistor 2SB1243	2
Q213	102-1846-50	Transistor 2SC1846 R.S	1
R215	114-2291-11	Metal-R 1WS 2.2Ω JP	1
R269	111-1811-81	Carbon Film-R 1/2WS 1800 JP	1
R254	111-4711-81	Carbon Film-R 1/2WS 4700 JP	1
R211,219	111-6811-81	Carbon Film-R 1/2WS 680Ω JP	2
R250,251,270,271	111-1091-98	Carbon Film-R 1/4WSS 10 JP	4
R275	111-4711-98	Carbon Film-R 1/4WSS 4700 JP	1

MAIN P.W.B.:

Ref. No.	Order No.	Description	Q'ty
C103,104,109	178-2232-55	Chip-C 25V 0.022μF K Y5P	3
C120,219	178-2235-56	Chip-C 25V 0.022μF Z Y5V	2
C207	178-4735-56	Chip-C 25V 0.047μF Z Y5V	1
C108,406,426	178-6832-55	Chip-C 25V 0.068μF K Y5P	3
C202	178-1045-56	Chip-C 25V 0.1μF Z Y5V	1
C215	180-2253-65	Electrolytic-C 50V 2.2μF M	1
C213	180-2253-65	Electrolytic-C 16V 22μF M	1
C214	184-4763-29	Electrolytic-C 10V 47μF M	1
C212	184-1073-29	Electrolytic-C 10V 100μF M RB	1
C110	181-3353-62	SS Electrolytic-C 50V 3.3μF M RB(LN)	1
C403,404,413	182-2253-63	SS Electrolytic-C 50V 2.2μF M RB	3
C203,803	182-4763-23	SS Electrolytic-C 10V 47μF M RB	2
C218,435	182-1073-23	SS Electrolytic-C 10V 100μF M RB	2
C209	184-1073-33	Electrolytic-C 16V 100μF M RB	1
C429,434	183-2243-65	VS Electrolytic-C 50V 0.22μF M TAP	2
C113,411,421	183-4743-65	VS Electrolytic-C 50V 0.47μF M TAP	3
C432,534	183-1053-65	VS Electrolytic-C 50V 1μF M TAP	2
C115,116,414,418 419,427,428,430	183-2253-65	VS Electrolytic-C 50V 2.2μF M TAP	13
C217	183-4753-55	VS Electrolytic-C 35V 4.7μF M TAP	1
C408,410,412,417 420,422,424,433	183-1063-35	VS Electrolytic-C 18V 10μF M TAP	8
C112,201,440	183-1073-25	VS Electrolytic-C 10V 100μF M TAP	3
C523	042-0447-00	Electrolytic-C 16V 2200μF M (105°C)	1

CONNECTOR P.W.B.

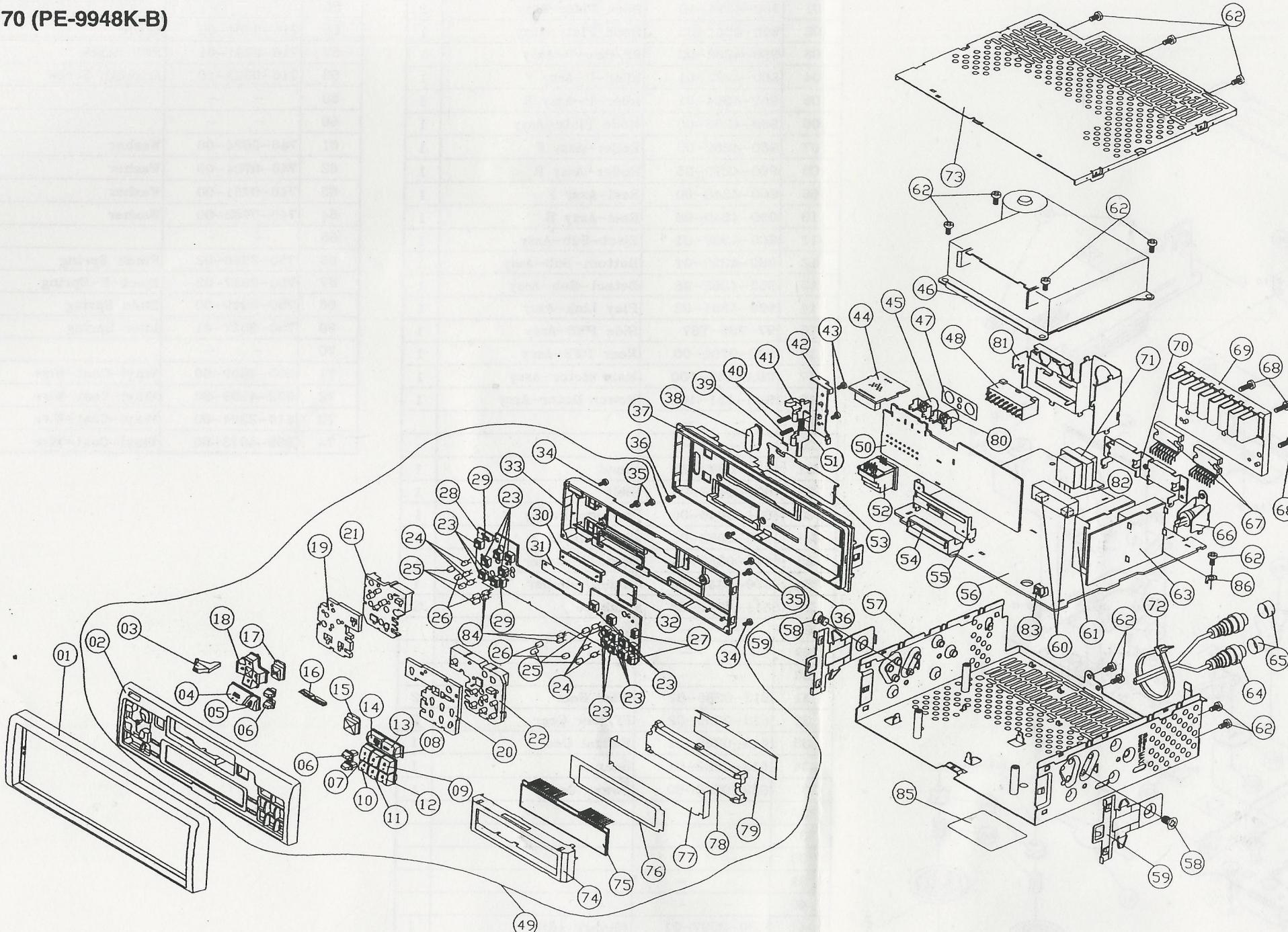
Ref. No.	Order No.	Description	Q'ty
C528	160-1022-05	Ceramic-C 50V 1000pF K B	1

SW P.W.B.

Ref. No.	Order No.	Description	Q'ty
IC101	051-6000-20	IC LC75853NW	1
S102,107	013-3812-01	Tact SW SKHLAJ	4
S101,103~106 108,110~117 119,120	013-6002-50	Tact SW SKHVBC3430-CR	16
S109,118	013-3812-11	Tact SW SKQCAC (260g)	2
PL101,102	017-9000-00	Pilot Lamp 14V 40mA	6
PL103,104,109	017-9001-00	Pilot Lamp 8V 68mA	4
D101~104	001-0352-90	Diode 1SS176	4
R101~104	117-2221-15	Chip-R 1/10W 2.2KΩ J	4
R106	117-1031-15	Chip-R 1/10W 10KΩ J	1
R105	117-6831-15	Chip-R 1/10W 68KΩ J	1
C441	171-1023-76	Ceramic-C 25V 1000PF M SR	1
C208,522	173-1042-19	Polyester-C 50V 0.1μF K	2
C806	176-2201-50	Chip-C 50V 22PF J CH	1
C205,206,805	176-3301-50	Chip-C 50V 33PF J CH	3
C401,402,405,426 803	176-1011-50	Chip-C 50V 100PF J CH	5
C101,102,105,204 211,220~224 407,415,425 524~530	178-1022-55	Chip-C 50V 1000PF K Y5P	20
C514,516,518,520	178-2222-55	Chip-C 50V 2200PF K Y5P	4
C409,423	178-3322-55	Chip-C 50V 3300PF K Y5P	2
C111,210,216,416	178-1032-55	Chip-C 50V 0.01μF K Y5P	4
C117,801	178-1035-56	Chip-C 50V 0.01μF Z Y5V	2

■ EXPLODED VIEW • PARTS LIST:

• ARX5170 (PE-9948K-B)



Ref. No	Order No.	Description	Q'ty
01	370-9006-02	Outer-ES	1
02	370-9011-02	Escutcheon	1
03	382-7682-00	Button (RELEASE)	1
04	382-7683-00	Button (FUNC)	1
05	382-7684-00	Button (AM)	1
06	382-7692-00	Button ASS'Y (RDM/SCN)	2
07	382-7703-00	Button (1)	1
08	382-7704-00	Button (2)	1
09	382-7705-00	Button (3)	1
10	382-7706-00	Button (4)	1
11	382-7707-00	Button (5)	1
12	382-7708-00	Button (6)	1

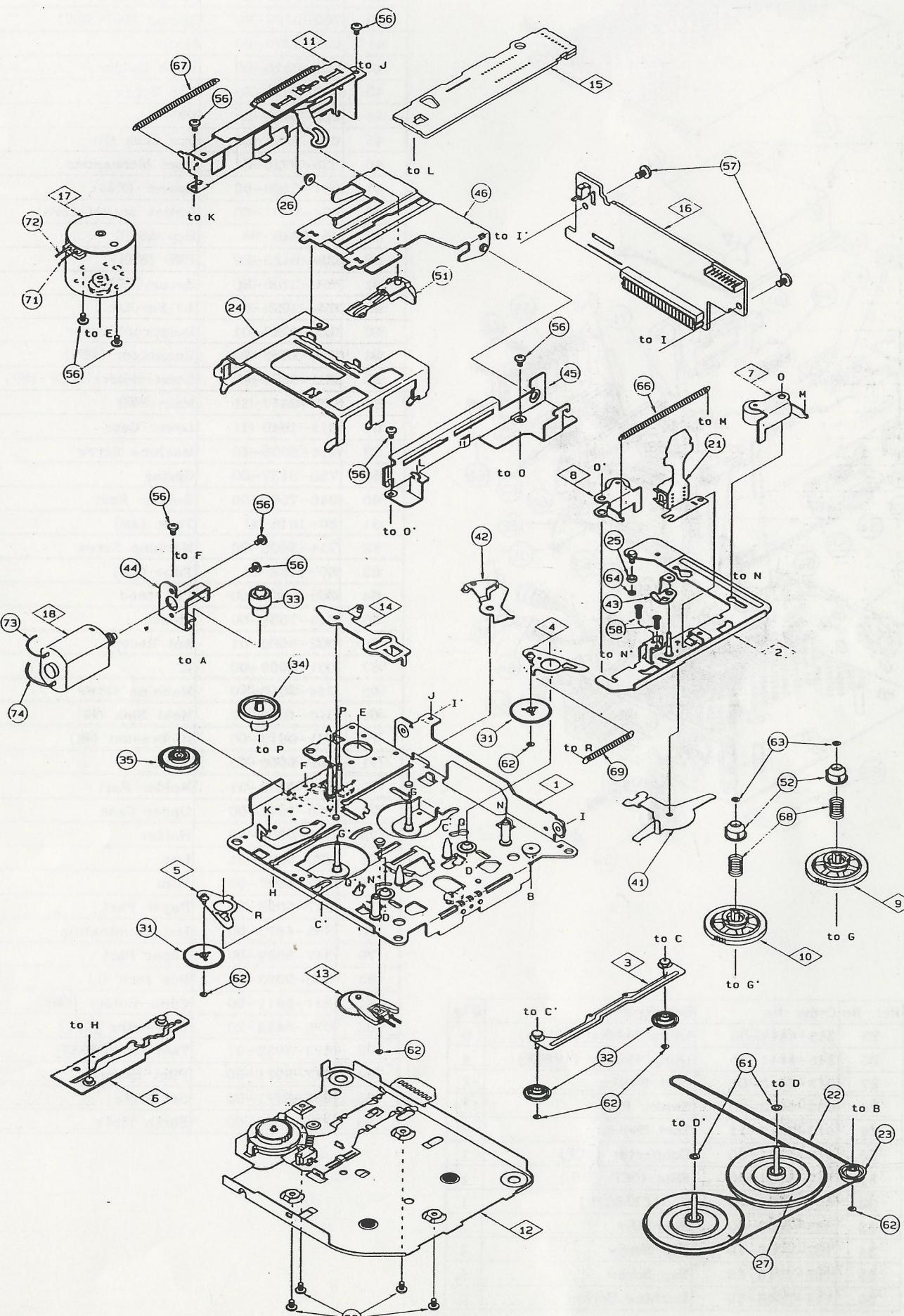
Ref. No	Order No.	Description	Q'ty
13	382-7689-00	Button (DISP)	1
14	382-7688-00	Button (BAND)	1
15	382-7687-00	Button (EJE)	1
16	335-4874-00	Ill. (TAPE DOOR)	1
17	382-7686-00	Button (PLAY)	1
18	382-7685-00	Button (<,>)	1
19	345-7637-00	Sponge (L)	1
20	345-7638-00	Sponge (R)	1
21	335-4871-00	Illumination (L)	1
22	338-4872-00	Illumination (R)	1
23	013-6002-50	Tact Switch	16
24	017-9000-00	Lamp (14V)	6

Ref. No	Order No.	Description	Q'ty
25	345-4441-55	Lamp Holder (GREEN)	6
26	345-4441-65	Lamp Holder (AMBER)	4
27	013-3812-01	Tact Switch	2
28	039-0423-00	Switch PWB	1/4
29	013-3812-11	Tact Switch	2
30	076-0481-00	Connector (DCP)	1
31	347-5101-00	Film (DCP CON.)	1
32	051-6000-20	IC (LC75853N)	1
33	335-4869-00	Rear-Cvr	1
34	702-2008-19	Tap Screw	2
35	702-2010-19	Tap Screw	4
36	714-2006-89	Machine Screw	2

Ref. No	Order No.	Description	Q'ty
37	370-9013-01	Inner-ES	1
38	382-7681-00	Button (EJE-OUT)	1
39	750-3169-02	Spring (DOOR)	1
40	750-3167-00	Spring (DCP OUT)	2
41	335-4870-00	Hook	1
42	331-0615-00	Hook Holder	1
43	702-2005-80	Tap Screw	2
44	039-0428-00	PWB	1
45	075-9004-00	Rca Jack (R)	1
46	930-0738-81	Tape Mechanism	1
47	347-5100-00	Spacer (RCA)	1
48	074-9001-00	Outlet Socket (16P)	1
49	45-9948-BA	Dcp ASS'Y	1
50	039-0422-20	PWB (SMK)	1
51	750-3168-00	Spring (HOOK)	1
52	074-1022-01	13 Pin Con.	1
53	320-0526-01	Dustproof Cover	1
54	074-1058-00	Connector (DCP)	1
55	331-0605-00	Conn-Holder (DCP 15P)	1
56	039-0417-11	Main PWB	1
57	311-1640-11	Lower Case	1
58	714-5008-40	Machine Screw	2
59	750-3137-00	Spring	2
60	345-7560-00	Rubber Part	2
61	80-1516-AI	Tune (AM)	1
62	714-3005-80	Machine Screw	12
63	80-1752-BI	Tune (FM)	1
64	855-8300-00	RCA Lead	1
65	345-7584-00	Sleeve	2
66	092-9000-01	Ant Recept	1
67	051-2009-00	IC	2
68	714-3010-80	Machine screw	3
69	313-1616-00	Heat Sink (HI)	1
70	331-0613-00	IC Bracket (HI)	1
71	009-9000-00	Choke	1
72	335-0833-01	Molder Part	1
73	310-1571-00	Upper Case	1
74	331-0607-00	Holder	1
75	379-9001-01	Lcd	1
76	347-5097-00	Film	1
77	347-5098-00	Paper Part	1
78	335-4873-00	Lcd Illumination	1
79	347-5099-00	Paper Part	1
80	075-9003-00	Rca Jack (L)	1
81	331-0611-00	Conn-Holder (SMK)	1
82	076-0433-20	Connector (GFC)	1
83	013-3932-01	Tact sw. (RESET)	1
84	017-9001-00	Pilot Lamp	4
85	286-8271-00	Set Plate	1
86	331-0643-00	Earth Plate	1

■ EXPLODED VIEW • PARTS LIST:

• ARX5170 (PE-9948K-B)

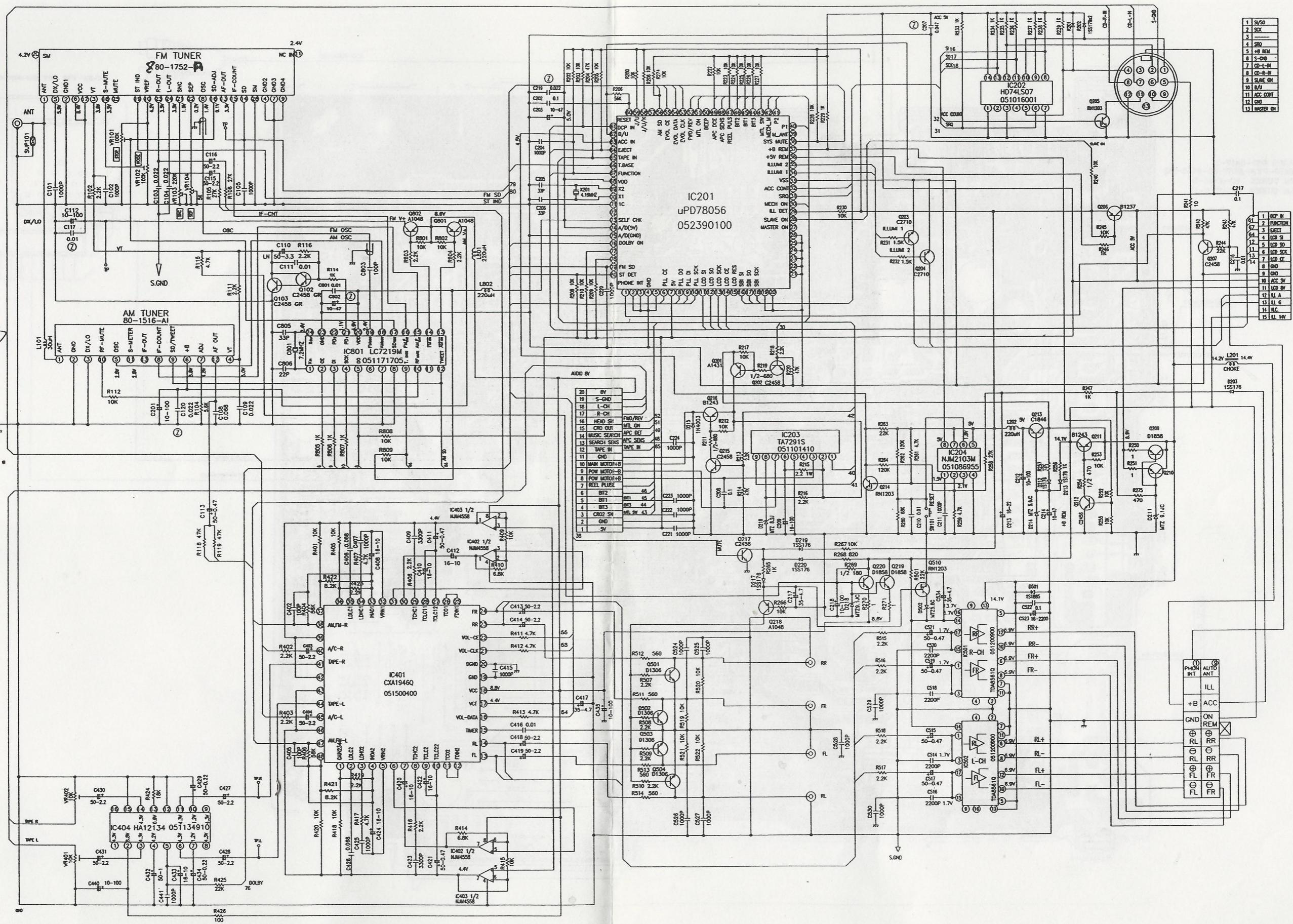


Ref. No	Order No.	Description	Q'ty
01	960-4294-10	Deck Plate-Assy	1
02	960-4261-05	Head Plate-Assy	1
03	960-4262-03	FF/Rew-P-Assy	1
04	960-4263-01	Idler-P-Assy F	1
05	960-4364-01	Idler-P-Assy R	1
06	960-4266-05	Mode Plate-Assy	1
07	960-4269-05	Roller-Assy F	1
08	960-4270-05	Roller-Assy R	1
09	960-4348-90	Reel-Assy F	1
10	960-4349-90	Reel-Assy R	1
11	960-4389-01	Eject-Sub-Assy	1
12	960-4338-01	Bottom-Sub-Assy	1
13	960-4282-98	Detect-Sub-Assy	1
14	960-4301-02	Play Link-Assy	1
15	97-735-Y67	Side PWB-Assy	1
16	990-0709-00	Rear PWB-Assy	1
17	SMA-130-100	Main Motor-Assy	1
18	SMA-131-100	Power Motor-Assy	1
19	—	—	
20	—	—	
21	011-0307-28	Head	1
22	602-0118-00	Belt	1
23	604-0046-00	Tension Pulley	1
24	606-0093-03	Pack Guide	1
25	610-0342-01	Head-P-Roller	1
26	610-0343-00	Gide-A-Roller	1
27	611-0091-03	Flywheel	2
28	—	—	
29	—	—	
30	—	—	
31	613-0285-02	Idler Gear	2
32	613-0286-02	FF/Rew Gear	2
33	613-0288-01	Helical Gear	1
34	613-0289-01	Gear A	1
35	613-0290-00	Power Gear	1
36	—	—	
37	—	—	
38	—	—	
39	—	—	
40	—	—	
41	630-2597-01	Change Link	1
42	630-2598-04	Eject Link	1
43	630-2600-01	Adjust Link	1
44	630-2601-02	Motor Plate	1
45	630-2626-02	PWB Frame	1
46	630-2642-01	Guide Arm	1
47	—	—	
48	—	—	
49	—	—	
50	—	—	
51	631-1992-01	Pack Stopper	1
52	631-1993-01	Slide Bush	2
53	—	—	
54	—	—	

Ref. No	Order No.	Description	Q'ty
55	—	—	
56	716-0484-00	Screw	13
57	716-0761-01	PWB Screw	2
58	716-0833-10	Azimuth Screw	2
59	—	—	
60	—	—	
61	746-0624-00	Washer	2
62	746-0724-00	Washer	6
63	746-0761-00	Washer	2
64	746-0762-00	Washer	1
65	—	—	
66	750-2946-02	Pinch Spring	1
67	750-2947-02	Eject-P-Spring	1
68	750-2949-00	Slide Spring	2
69	750-3017-01	Idler Spring	1
70	—	—	
71	800-4909-60	Vinyl-Coat-Wire	1
72	802-4909-60	Vinyl-Coat-Wire	1
73	816-2304-00	Vinyl-Coat-Wire	1
74	809-4913-60	Vinyl-Coat-Wire	1

CIRCUIT DIAGRAM:

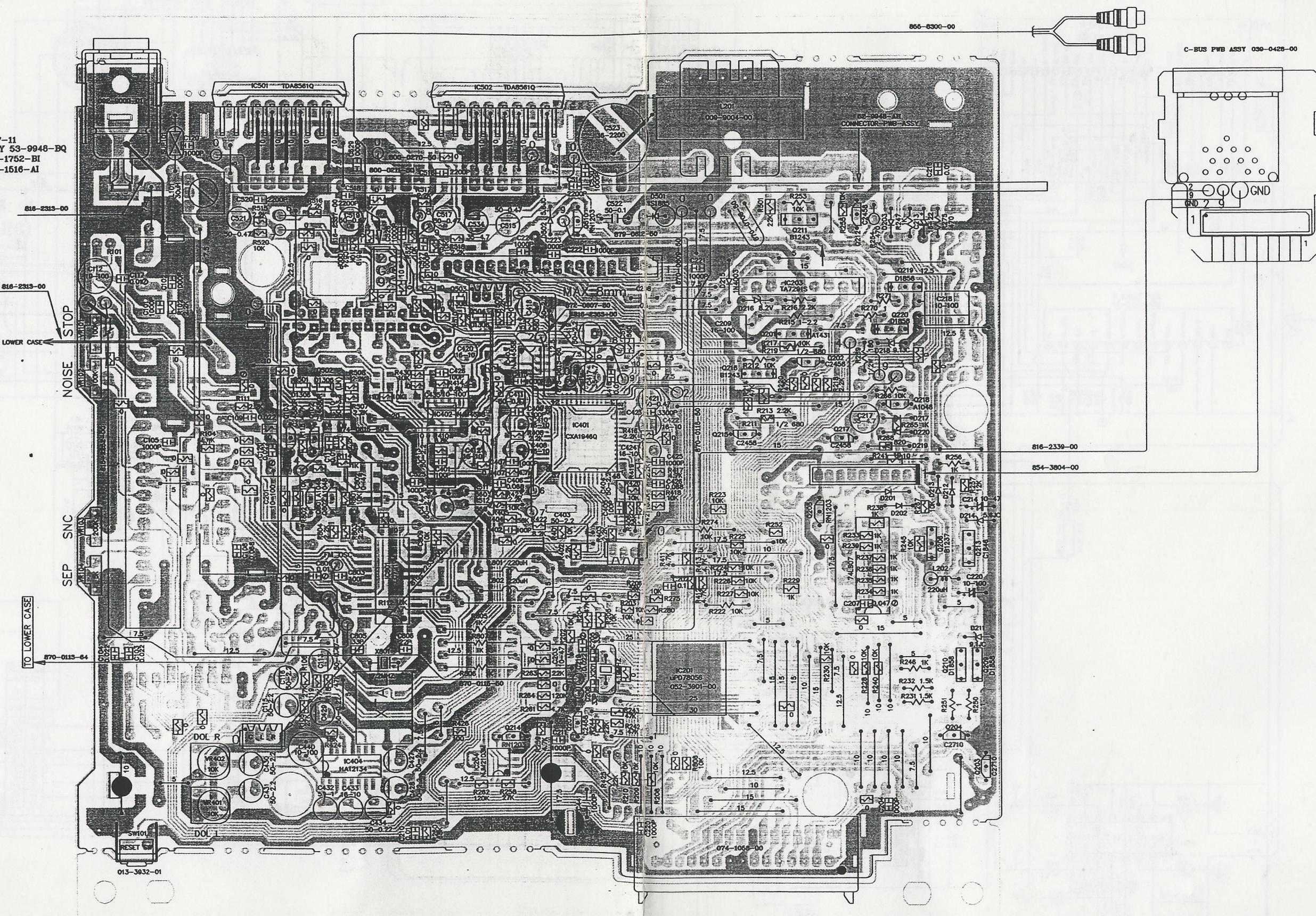
• ARX5170 (PE-9948K-B)

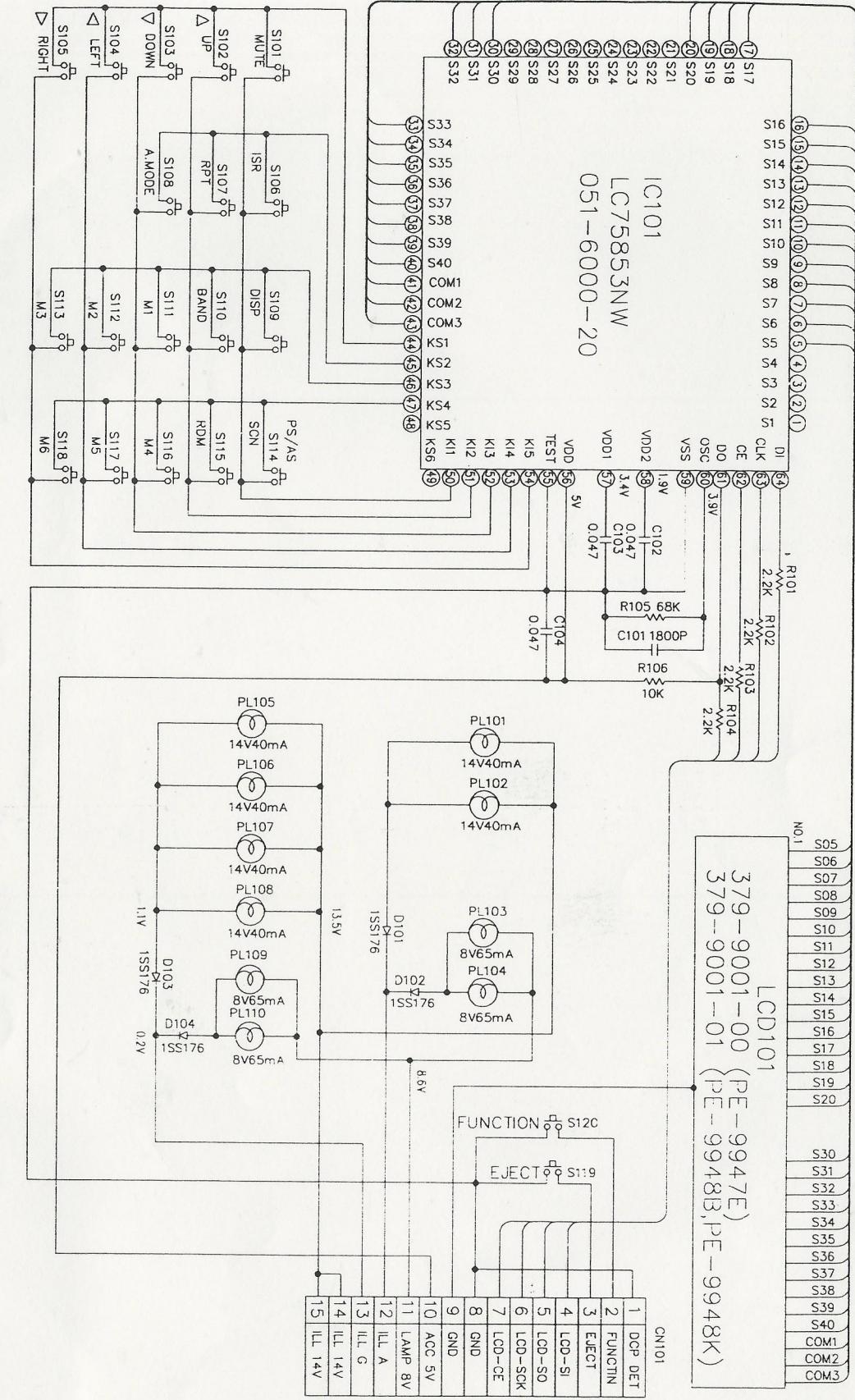
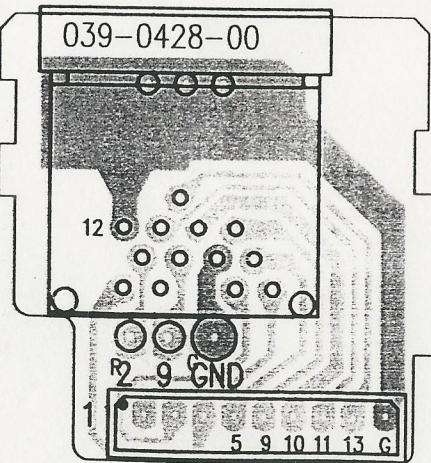
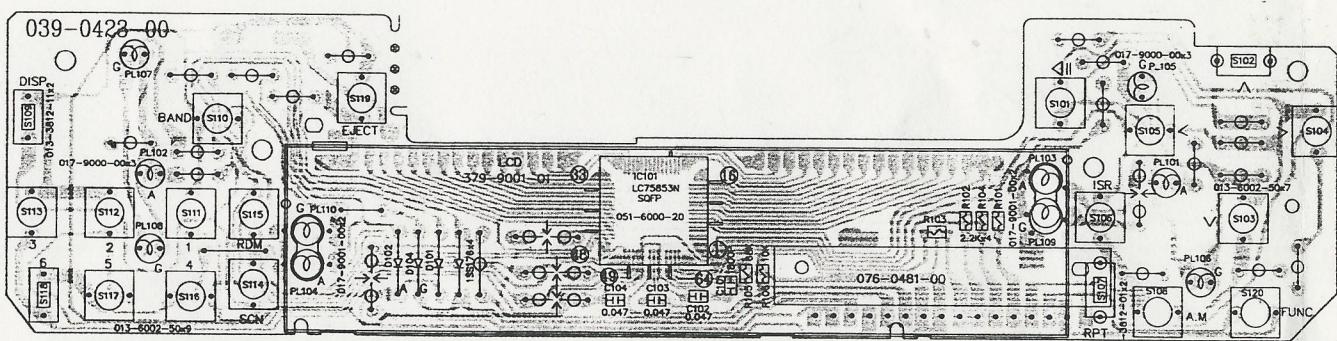
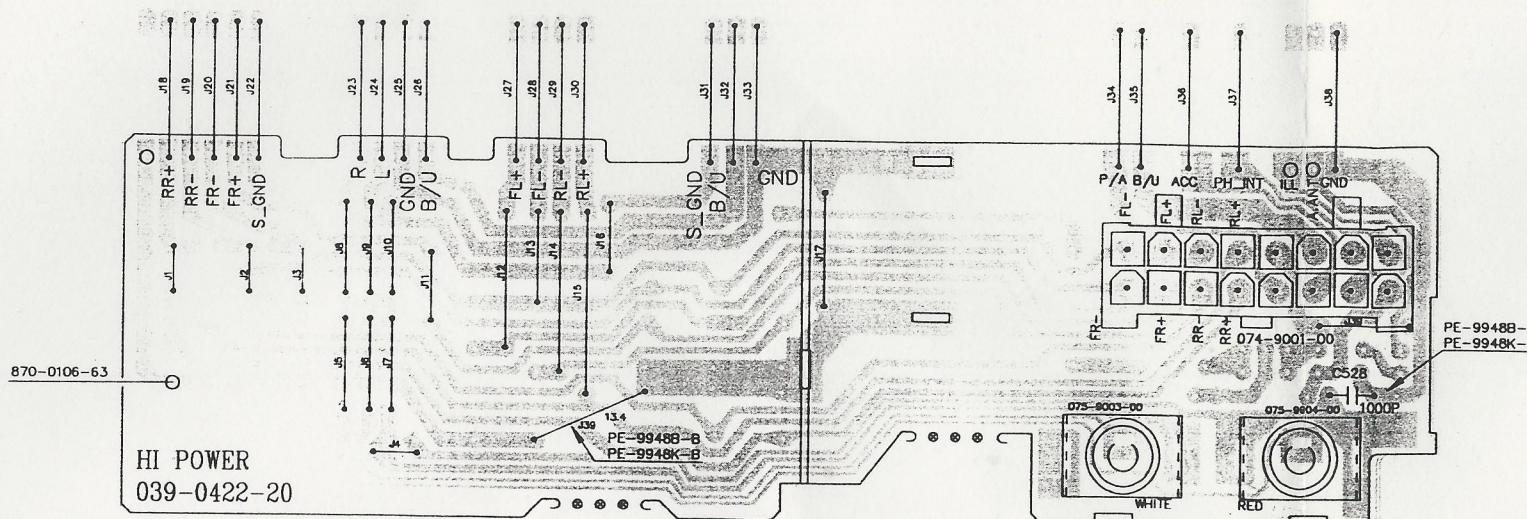


PRINTED WIRING BOARD:

• ARX5170 (PE-9948K-B)

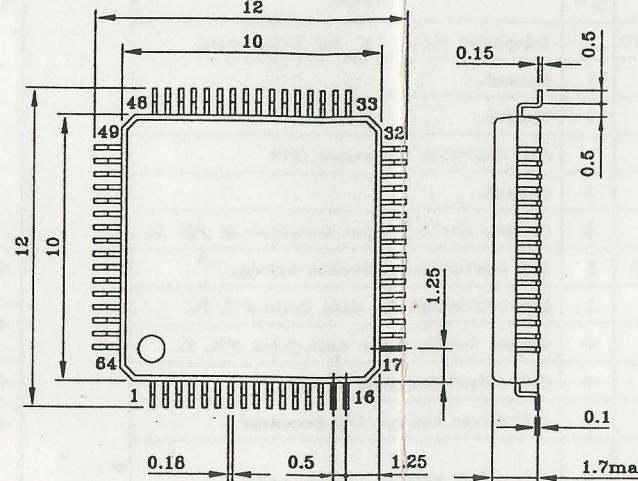
P.W.B 039-0417-11
MAIN-PWB-ASSY 53-9948-BQ
FM TUNER 80-1752-BI
AM TUNER 80-1516-AI





■ LC75853NW 051-6000-20

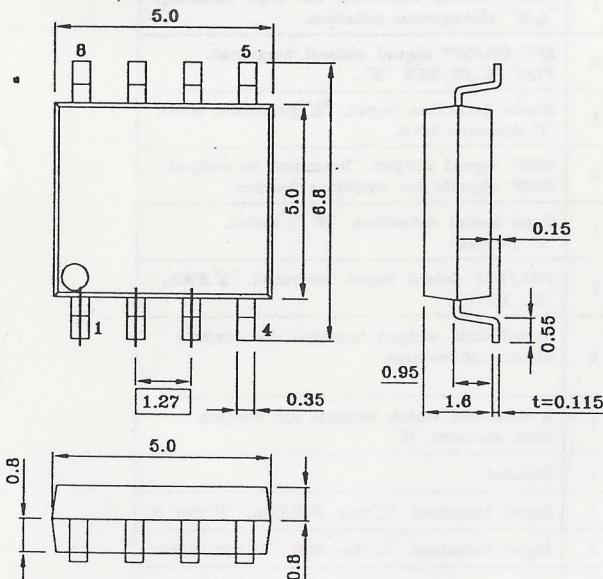
Outward Form



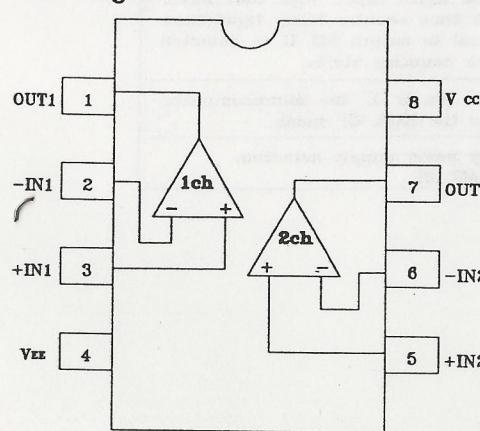
64	EJECT IN	I	Eject detection input. "L" for EJECT SW ON.
65	TAPE IN	I	Pack detection input. "H" for pack is present form loading to pack IN.
66	DCP DET	I	DCP detection input. With DCP "L".
67	POWER SW	I	Function SW detection input. "L" for Function SW ON.
68	VDD	-	Power supply voltage terminal.
69	X2	-	System clock terminal(4.19MHz).
70	X1	-	System clock terminal(4.19MHz).
71	GND	-	GND terminal.
72	XT2	-	System sub clock terminal.
73	VDD	I	Power supply voltage terminal.
74	AVDD	-	A/D convertor reference VDD.
75	AVREFO	-	Connected to GND.
76	DOLBY_ON	0	Tape Dolby output. "H" for Dolby ON.
77	P11	I	Unused.
78	P12	I	Unused.
79	FM-SD	I	A terminal which detects FM station. With station "H".
80	ST DET	I	Stereo signal input terminal. Active "L".

■ NJM4558M 051-0350-55

Outward Form



Block Diagram



Key Maxter Table

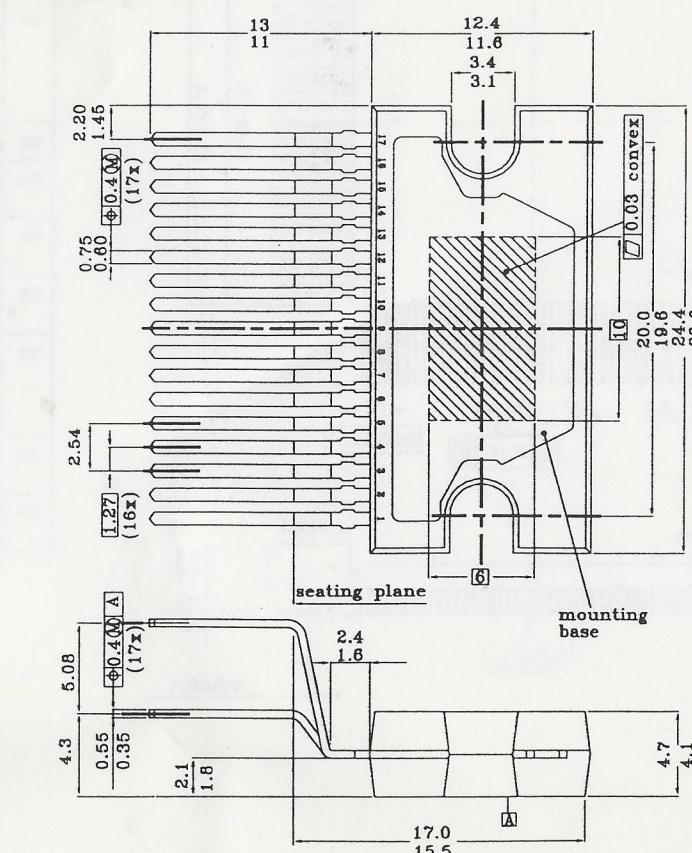
IN OUT	KI1	KI2	KI3	KI4	KI5
KS1	M1	M2	M3	M4 B NR	M5 APC
KS2	M6 MTL	BAND	A-MODE/ LOUD	V-UP	V-DOWN
KS3	PS/AS	MUTE	A-MODE/ DX/LO	UP	DOWN
KS4	DISPLAY	VF	ILL	R-MONI	LOUD

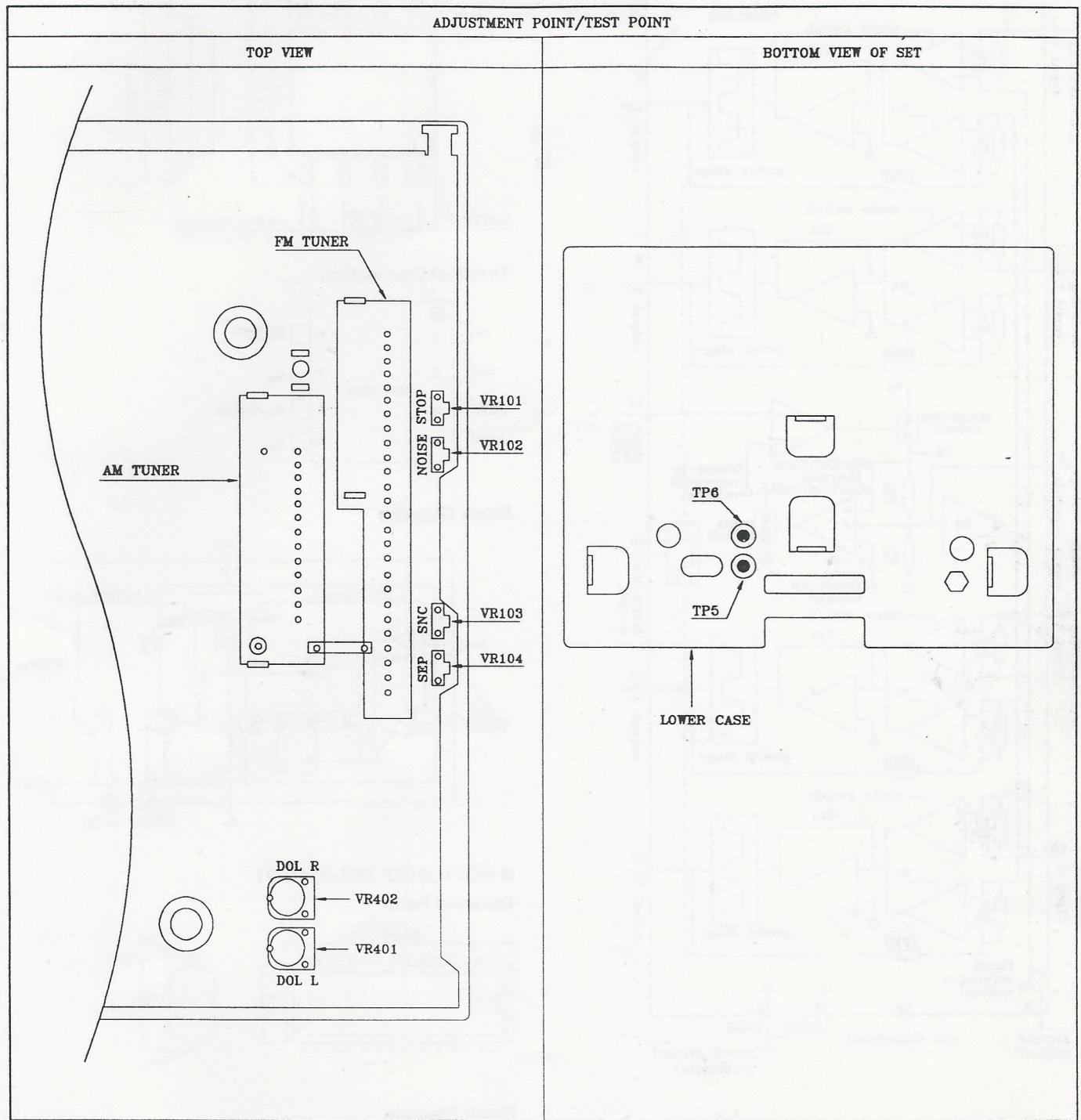
Momentary Sw.

Switch Name	Function
M1 ~ M6	Preset memory wire/call switch.
PS/AS	Use PS/AS when making a preset scan or an auto store. Either of the two can be selected by the way it is pushed as follows. Continus to push the key more than 2 seconds for "auto store memry". Push and touch off the key less then 2 seconds for "preset scan."
BAND	AM/FM/LM band selector switch. When B0,B1=0. BAND Key and up Key pressed Can be change to "USA" BAND Key and DOWN Key pressed Can be change to "australia Middle East" BAND.
UP DOWN	This switch is for manual tuning or SEEK tuning. UP/DOWN
T.MODE	SEEK or MANU selector switch
DISP	Display mode selector button. clock or frquncy
DOL-B (M4)	Dolby-B ON/OFF selector switch.
APC (M5)	APC ON/OFF selector switch
MTL (M6)	MTL ON/OFF selector switch
ILLUMI	ILLUMI color selector switch.
A-M/LOUD	Audio mode selector Volume → Bass → Treble → Balance → Fader ↑ ver 2 seconds, LOUNDESS ON.OFF selector
UP Button	Audio control UP Button.
DOWN Button	Audio control DOWN Button.
MUTE	Audio mute ON OFF key.
VF	Europe FM Band VF ON OFF key.
Release Button	Detachable control panel release Button.

■ TDA8561Q 051-2009-00

Outward Form





NO AC / turn on etc. check Q211 for o/c.