

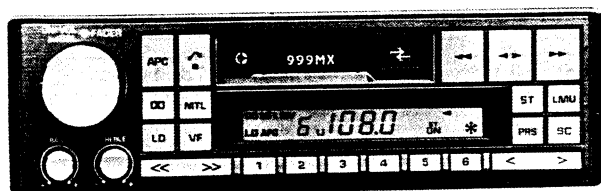

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Service Manual


Model 999MX (PE-9056A)

■ SPECIFICATIONS:

Radio section

Circuit system: Superheterodyne
 Tuning system: Electronic tuning
 Receiving frequency: LW 153kHz to 281kHz
 MW 531kHz to 1,602kHz
 UKW(FM) 87.5MHz to 108MHz

Intermediate frequency:

LW, MW 459kHz
 UKW(FM) 10.7MHz

Tape section

Reproduction system: Auto reversing
 4 track, 2 channel stereo
 cassette tape playback
 (Monaural also capable)

Tape speed: 4.76cm/sec. (1 $\frac{7}{8}$ ips)

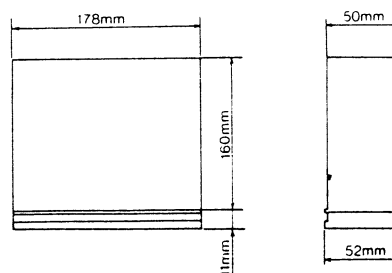
Composite

Output impedance: 10k Ω

Output level: More than 250mV
 (at TAPE mode, 1kHz,
 OVU, max. output)

Power supply voltage: DC 14.4V(10.8V to 15.6V)
 Negative ground
 Power consumption: Less than 2.5A
 (at max. output)

Dimensions:

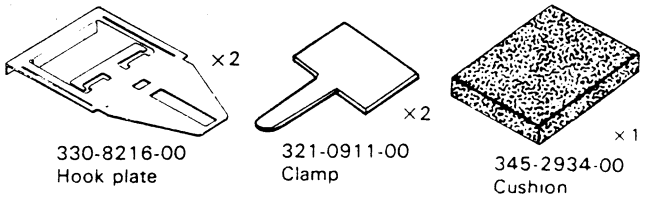
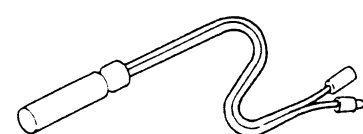
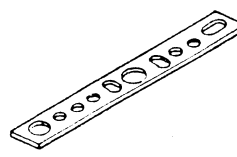
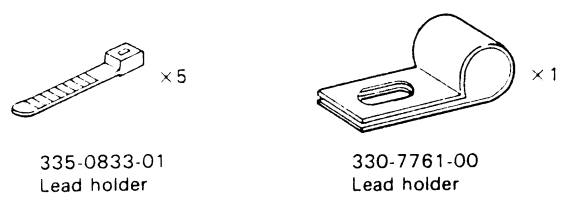
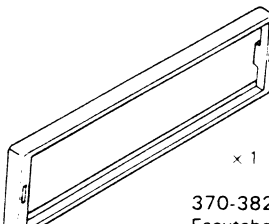
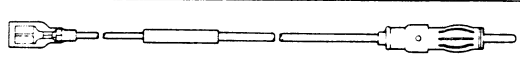
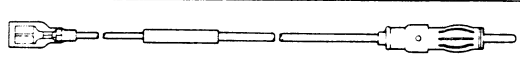
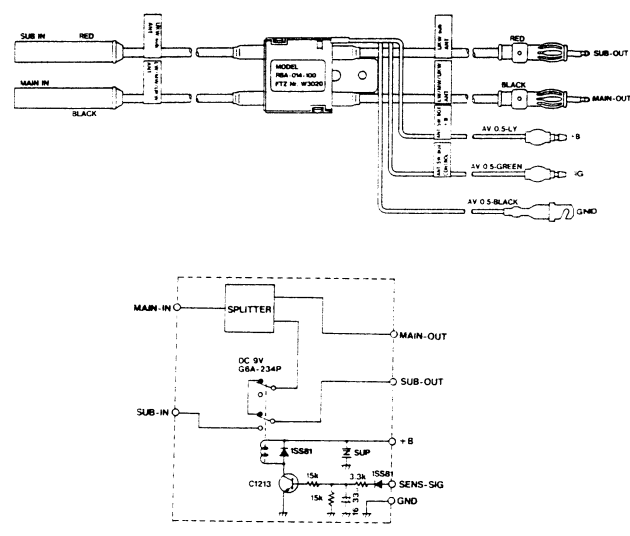


Weight: 1.8kg

- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

COMPONENT VIEW:


● 999MX (PE-9056A-A)

Main unit	1	Parts bag	921-8224-00	1
Thermistor	002-0199-00	1	 <p>330-8216-00 Hook plate 321-0911-00 Clamp 345-2934-00 Cushion</p>	
Mounting bracket	300-6954-00	1		
Mounting bracket	300-7110-00	1		
Parts bag	921-7555-00	1	 <p>335-0833-01 Lead holder (x5) 330-7761-00 Lead holder (x1)</p> <p>700-5016-10 Tap screw (x1) 723-5000-11 Hex-nut (x1) 734-5016-31 D-sems hex-bolt (x1) 740-5000-10 Flat washer (x1)</p>	
Parts bag	922-1396-00	1	 <p>370-3822-00 Escutcheon (x1)</p>	
Film antenna	089-0004-00	1		
Antenna jumper	093-0846-01	1		
Ant. switch box	RBA-014-100	1	 <p>Wiring diagram showing connections for SUB-IN (RED, BLACK), MAIN-IN (BLACK), SUB-OUT (RED, BLACK), MAIN-OUT (BLACK), AV 0.5-V (RED, GREEN, BLACK), and GND. Includes a circuit diagram with components like SPLITTER, DC 9V GSA-234P, SUP, C1213, and SENS-SIG.</p>	

FEATURES:

- MW/LW/FM-MPX electronic tuner with auto reverse stereo deck (Full feather tape mechanism).
- Provided radio traffic information (VF) system.
- Dolby NR (NR).
- Station Call (SC).
- Diversity tuning system.(DIV)
- Program Recognizing Scanner (PRS).
- Tape selector (MTL).
- Loudness (LD).
- Separate Bass/Treble controls.
- Automatic Program Control (APC).
- Ice Warning indicator.
- Wireless Remote Control (Option)

ADJUSTMENT:

Adjustment item	Mode	Adjustment point	Procedure	
Main	1. IF-1	DIV.	IFT102	<ol style="list-style-type: none"> 1. Set 0V-adjusting VR and S-meter adjusting VR to the mechanical center. 2. Drop TP101 to GND. 3. Input 98.0MHz, input 55dB, 400Hz, 100%-modulation. 4. Adjust IFT102 to make the distortion rate minimum (point).
	2. 0V	DIV.	VR102	<ol style="list-style-type: none"> 1. Input 98MHz, input 25dB, 400Hz, 30%-modulation. 2. Apply the tester at ⑦ and ⑩, and adjust VR102 to make $0V \pm 50mV$.
	3. IF-2	DIV.	IFT101 (Main tuner block)	<ol style="list-style-type: none"> 1. Input 98MHz, input 10dB, 400Hz, 30%-modulation. 2. Adjust IFT101 to make the output maximum.
	4. S-meter voltage	DIV.	VR101	<ol style="list-style-type: none"> 1. Input 98MHz, input 65dB, 400Hz, 30%-modulation. 2. Apply the tester on ⑬ and GND, and adjust VR101 to put to 4.0 to 4.8V. 3. Confirm that upon reducing the input to 45dB, 2.65 to 3.25V is obtained, and upon reducing the input to 15dB, 1.1 to 1.6V is obtained.
Sub	1. IF-1	DIV.	IFT104	<ol style="list-style-type: none"> 1. Set 0V-adjusting VR and S-meter adjusting VR to the mechanical center. 2. Drop TP102 to GND. 3. Input 98.0MHz, input 55dB, 400Hz, 100%-modulation. 4. Adjust IFT104 to make the distortion rate minimum (point).
	2. 0V	DIV.	VR104	<ol style="list-style-type: none"> 1. Input 98MHz, input 25dB, 400Hz, 30%-modulation. 2. Apply the tester at ⑦ and ⑩, and adjust VR104 to make $0V \pm 50mV$.
	3. IF-2	DIV.	IFT201 (Sub tuner block)	<ol style="list-style-type: none"> 1. Input 98MHz, input 10dB, 400Hz, 30%-modulation. 2. Adjust IFT201 to make the output maximum.
	4. S-meter voltage	DIV.	VR103	<ol style="list-style-type: none"> 1. Input 98MHz, input 65dB, 400Hz, 30%-modulation. 2. Apply the tester on ⑬ and GND, and adjust VR103 to put to 4.0 to 4.8V. 3. Confirm that upon elevating the input to 45dB, 2.65 to 3.25V is obtained and upon elevating the input to 65dB, 4.0 to 4.8V is obtained. 4. Confirm that the value at time of input 15dB is main value $\pm 0.2V$. When no input is made, again, adjust the main S-meter voltage.
SASC	PRS (Main ANT.)	VR303	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input a 65dB, 7kHz modulation frequency, 30% modulation degree SSG signal, and then turn on ST. SW. 2. Adjust the output level of the volume controller to 0dBm (0.775V). 3. Set the SSG output to 40dB and adjust VR303 so that the output level is $-3dBm$. 	
Pilot canceller	PRS (Main ANT.)	VR305	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input a 65dB, modulation (PL 10%). 2. Adjust VR305 so that output of the set is minimum. 	
Separation	PRS (Main ANT.)	VR304	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR304 so that the maximum separation is obtained. 	
DK VCO	DIV. (Main ANT.)	VR201	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input a 65dB non-modulated SSG signal, 2. Connect the frequency counter to TP201 through a 22kΩ resistor and adjust VR201 so that the counter indicates 125Hz. 	
SD1	DIV. (Main ANT.)	VR404	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input a 25dB non-modulated SSG signal. 2. Adjust VR404 so that the voltage of TP404 is in the range 1.0 to 4.0V. 	
SD2	PRS (Sub ANT.) * 1	VR405	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input a 25dB non-modulated SSG signal. 2. Adjust VR405 so that the voltage of TP405 is in the range 1.0 to 4.0V. 	
Level 1	DIV. (Main ANT.)	VR402	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input 55dB, 400Hz, 30% modulation signal. 2. TP401 is connected with milli-voltmeter and adjust VR402 to obtain $245mV \pm 1dB$. 	
Level 2	DIV. (Sub ANT.)	VR401	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input 55dB, 400Hz, 30% modulation signal. 2. TP402 is connected with milli-voltmeter and adjust VR401 to obtain $245mV \pm 1dB$. 	
Deviation	DIV. (Main ANT.)	VR403	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input 55dB, 400Hz, 4% modulation signal. 2. Connect TP403 with tester to make voltage 2.0 to 3.0V by adjusting VR403. 	
Dolby level		VR301 and VR302	Insert a Dolby level test tape (400Hz-200nWb/m), connect the milli-volt meter to TP501 and TP502, and adjust VR301 and VR302 to obtain an output of 300mV.	
Temperature		VR501	<ol style="list-style-type: none"> 1. Connect a resistor of 3.87kΩ to sensor terminal. 2. Adjust VR501 to a point where  indicator begins blinking. 	
DK level	DIV. (Main ANT.)	VR506	<ol style="list-style-type: none"> 1. Tune at 98.0MHz, input 55dB (ARI-modulation) signal, and turn on VF switch. 2. Adjust VR506 to make DIN output $8.7mV \pm 3dB$ when VOL is set to MIN. 	

[NOTE] After the adjustment of frequency range, be sure that:

- (1) Band edge frequency of LW shall be 148.5kHz $-20kHz$
- (2) Band edge frequency of UKW shall be 87.5MHz $+100kHz$
 $-160kHz$

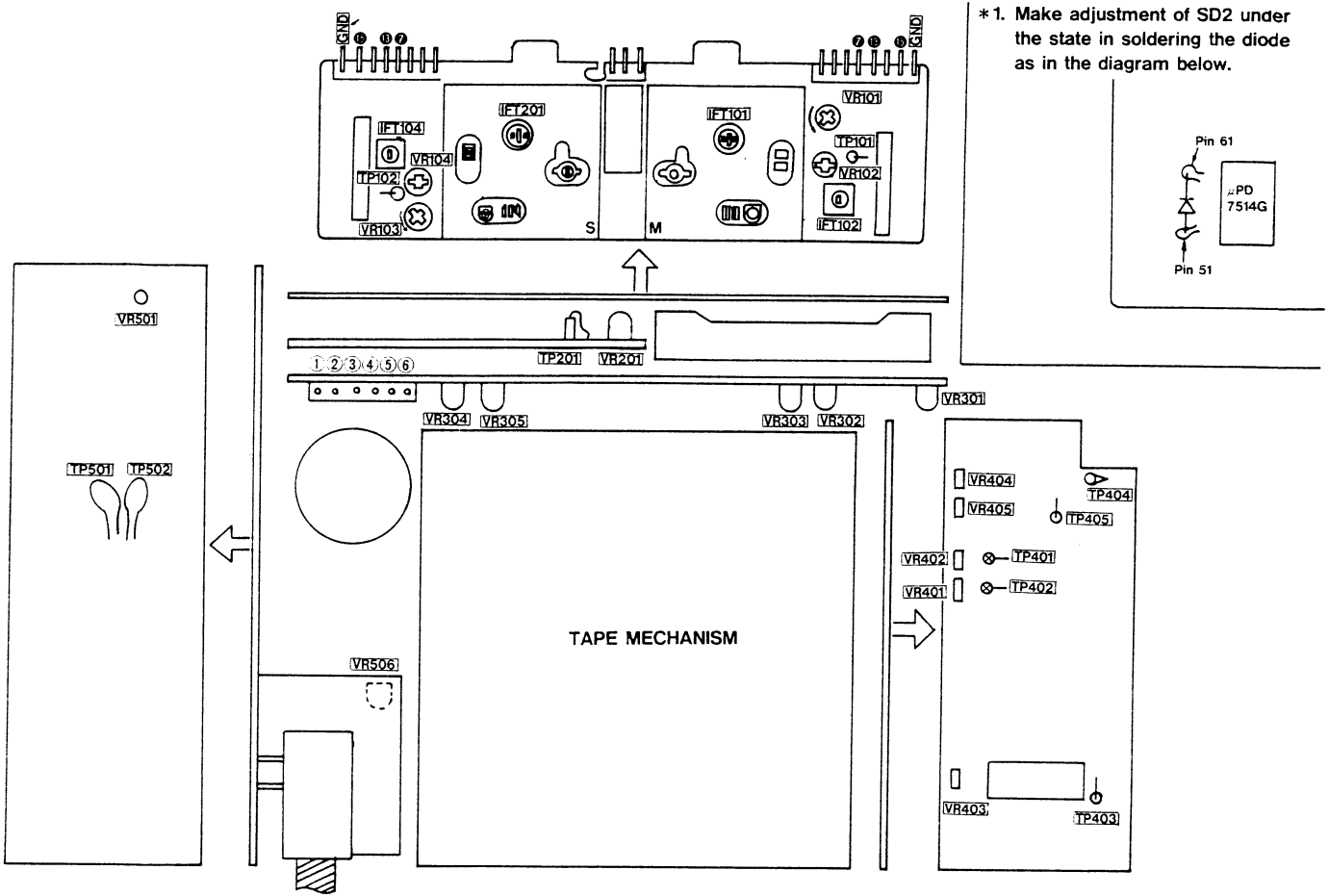
at low end. And shall be lower than 108.16MHz at upper end.

● MAIN/SUB switching

- (1) It can be switched to the main channel by shorting ① & ②.
- (2) It can be switched to the sub channel by shorting ① & ③, and connecting ② to ⑥ through a 1k Ω resistor.

- SPECIFICATION —LIMIT— Quieting sensitivity: MW Less than 33dB (at 20dB S/N)
LW Less than 40dB (at 20dB S/N)
UKW Less than 12dB (at 30dB S/N)
- Stereo separation: UKW More than 20dB

● ADJUSTMENT POINT

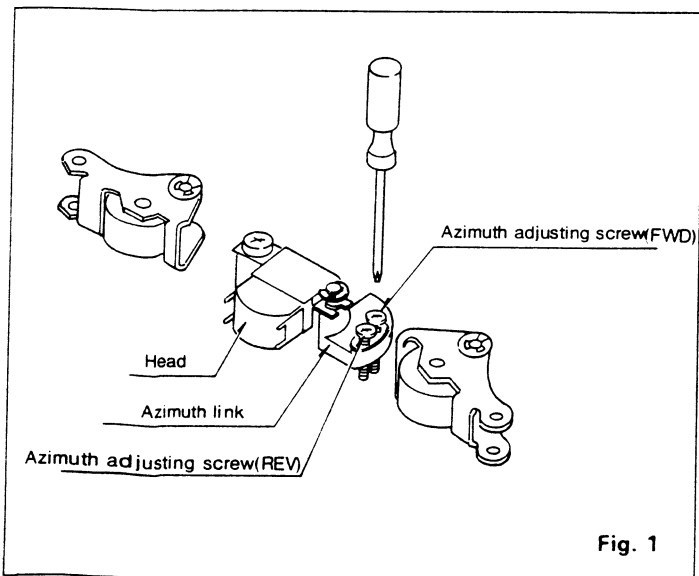


■ ADJUSTMENT:

< TAPE MECHANISM >

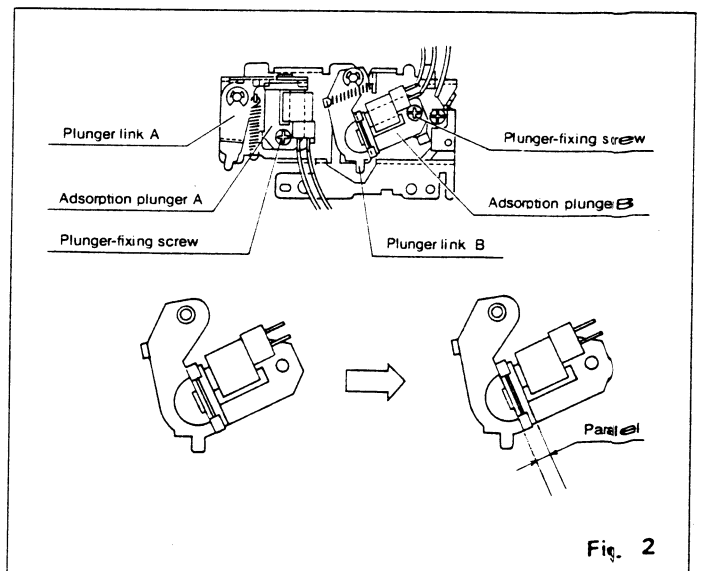
1. Head-azimuth Adjustment

Make playback for the azimuth-tape (8kHz, -10VU), and turn each azimuth-adjusting screw to make each FWD & REV maximum. After adjustment, make adhesion with bond.



2. Adjustment of Adsorption Plunger B

Under FF-operation, when adsorption plunger is released, mount the plunger to make the adsorption-surface of adsorption plunger B in parallel to the bent surface of plunger link B, and make adhesion of the rear side of the screw with bond.



3. Adjustment of Adsorption Plunger A

Under REW-operation, when adsorption plunger is released, mount the plunger to make the adsorption-surface of adsorption plunger A in parallel to the bent surface of plunger link A, and make adhesion of the rear side of the screw with bond.

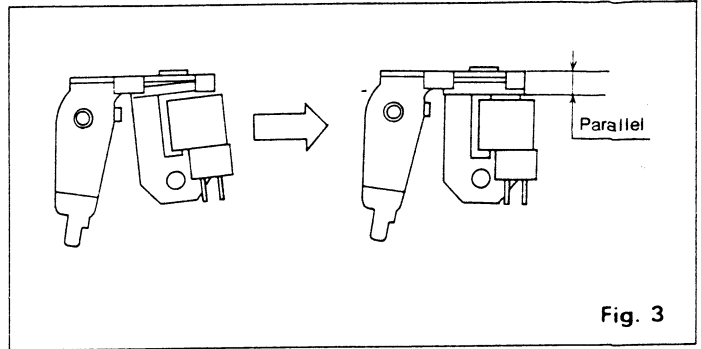


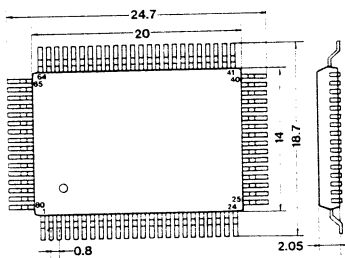
Fig. 3

- SPECIFICATION –LIMIT– Wow & flutter : Less than 0.25%(W.R.M.S.)

EXPLANATION OF IC's:

■ μ PD7514G(M)-811 051-0813-00 Micro Computer

I Outward Form



II Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	-0.3 ~ +7.0	V
Input voltage	V_I	-0.3 ~ $V_{DD} + 0.3$	V
Output voltage	V_O	-0.3 ~ $V_{DD} + 0.3$	V

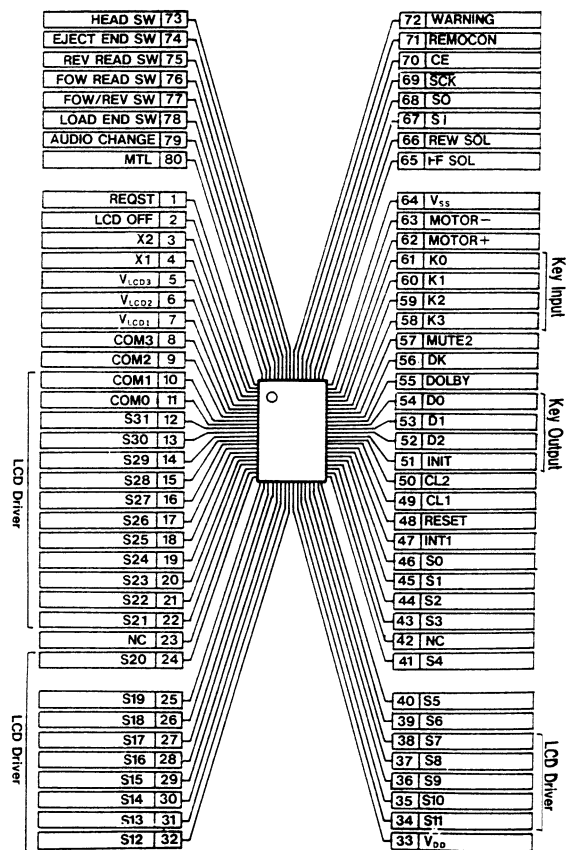
III Outline of functions

- 1) Expression with LCD display
- 2) Reading of key matrix
- 3) Reading of initial setting diode matrix
- 4) Reading of remote control key
- 5) Control of full-logic mechanism
- 6) Signal-switching control of RADIO/TAPE
- 7) MUTE-control ON/OFF for both RADIO/TAPE
- 8) ON/OFF control of DK interrupt
- 9) ON/OFF control of DOLBY
- 10) ON/OFF control of MTL
- 11) Detection of ICE WARNING
- 12) Memory of preset-memory station
- 13) Memory of main receiving station and strong (high) electric field (FM 5 stations)
- 14) SK detection of Main Tuner
- 15) DK detection of Main Tuner
- 16) ST detection of Main Tuner
- 17) Detection of TAPE APC
- 18) Data transaction with slave microcomputer (μ PD7508HG)

IV Receive Bands

Destination	Band	Frequency Range	Channel Space		Reference Frequency	Intermediate Frequency
			Manual	Auto		
Europe	UKW	87.5 ~ 108.0MHz	50kHz	50kHz	25kHz	+10.7MHz
	MW	531 ~ 1,602kHz	9kHz	9kHz	9kHz	459kHz
	LW	153 ~ 281kHz	1kHz	9kHz	1kHz	459kHz
Japan	FM	76.0 ~ 90.0MHz	100kHz	100kHz	25kHz	-10.7MHz
	AM	522 ~ 1,629kHz	9kHz	9kHz	9kHz	450kHz

V Terminal Connection



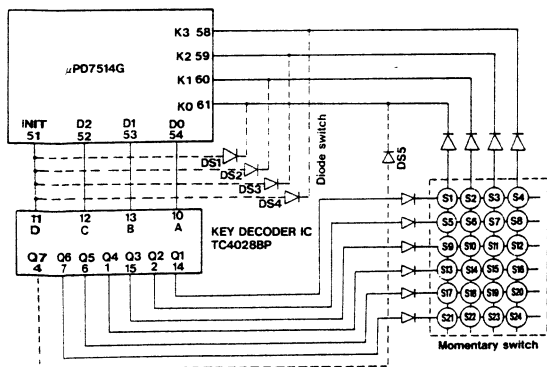
VI Terminal Function Table

Pin No.	Terminal Name	Function
1	REQST	Data-transfer forced signal output terminal to INT1 of μ D 7508HG.
2	LCD OFF	ON/OFF control signal output terminal of LCD-display.
3	X2	Not in use. (Open)
4	X1	Crystal connection terminal. It is connected to the terminal # (349.52 kHz) of ϕ OUT of μ PD7508HG.
5	V_{LCD3}	Power input terminal for LCD.
6	V_{LCD2}	
7	V_{LCD1}	
8	COM3	Not in use. (Open)
9	COM2	
10	COM1	Common signal output terminal to the LCD panel.
11	COM0	
12	S31	Segment signal output terminal to the LCD panel.
23	S21	
22	NC	Not in use. (Open)
24	S20	Segment signal output terminal to the LCD panel.
32	S12	

Pin No.	Terminal Name	Function
33	V _{0b}	Power supply terminal. (5V)
34	S11	Segment signal output terminal to the LCD panel.
38	S7	
39	S6	Not in use. (Open)
46	S0	
47	INT1	SC̄K-demand signal input terminal. It is connected to REQST-terminal of μ PD7508HG.
48	RESET	Reset signal input terminal when system power ON.
49	CL1	C, R connecting terminal for system clock oscillation circuit.
50	CL2	
51	INIT	Key matrix signal output terminal and reset signal output terminal when main power ON.
52	D2	Key matrix signal output terminal.
54	D0	
55	DOLBY	DOLBY ON/OFF control signal output terminal. Active High.
56	DK	DK-interrupt control signal output terminal. Active Low.
57	MUTE2	MUTE signal output terminal for both radio and tape.
58	K3	Key matrix signal input terminal.
61	K0	
62	MOTOR+	Motor-normal control signal output terminal. Motor-normal rotation at Low.
63	MOTOR-	Motor-reverse control signal output terminal. Motor-reverse rotation at Low.
64	V _{ss}	GND
65	FF SOL	FF-SOL drive control signal output terminal. FF-release at High.
66	REW SOL	REW-SOL drive control signal output terminal. REW-release at High.
67	SI	Input in synchronizing with the rise of SC̄K. Connection to SO-terminal of μ PD7508HG.
68	SO	Input in synchronizing with the fall of SC̄K. Connection to SI-terminal of μ PD7508HG.
69	SC̄K	Transfer of serial data to SC̄K-terminal of μ PD7508HG.
70	CE	Chip enable terminal.
71	REMOCON	Input terminal for wired remote control (serial data).
72	WARNING	Detecting signal input terminal for lighting WARNING indicator. Lighting with Low.
73	HEAD SW	HEAD SW detect signal input terminal. When the head is at the back, input Low and when it is at the front, input High.
74	EJECT END SW	EJECT END SW detect signal input terminal. EJECT completed \rightarrow Low, other \rightarrow High.
75	REV READ SW	REVERSE READ SW detect signal input terminal.
76	FOW READ SW	FORWARD READ SW detect signal input terminal.
77	FOW/REV SW	FOW/REV SW detect signal input terminal. FOW \rightarrow Low, REV \rightarrow High.
78	LOAD END SW	LOAD END SW detect signal input terminal. LOADING completed \rightarrow Low, other \rightarrow High.
79	AUDIO CHANGE	RADIO/TAPE select control signal output terminal.
80	MTL	METAL ON/OFF control signal output terminal. Active High.

VII Key Matrix

1) Key Matrix Connection



2) Diode Switch

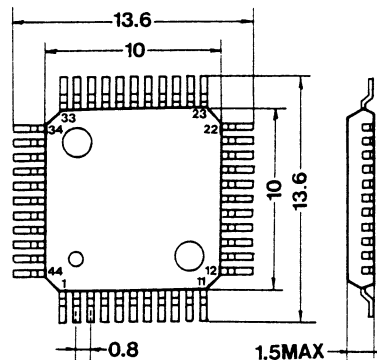
SW No.	Function
DS1	Selecting SW for fixing or not of Sub-Tuner. Diode YES in fixing Sub-Tuner.
DS2	Selecting SW for European band or Japanese band. Diode NO in case of European band.
DS3	Selecting SW for ARI. Diode NO in the use of VF.
DS4	Selecting SW for memory system. In the use of one-touch memory \rightarrow Diode NO. In the use of ordinary memory system \rightarrow Diode YES.
DS5	Selecting switch if there is radio monitor or not. In the use of radio monitor, Diode NO.

(3) Momentary Switch

SW No.	Key	Function
S1		STOP/EJECT key of tape. ① YES-setting of radio monitor. Stop is made by pressing the key during operation of tape, and switching is made into radio-voice. By pressing the key under the state of STOP, tape is ejected. ② Setting of radio monitor NO. By pressing key during tape-operation, tape is ejected, shifting to radio voice.
S2		REW (FF) key.
S3		PLAY/PROGRAM select key.
S4		FF (REW) key.
S5		DOLBY NR ON/OFF key.
S6		METAL/Normal select key.
S7		Popping-up of tape ON/OFF key.
S8		LOUDNESS ON/OFF key.
S9		SEEK DOWN key.
S10		SEEK UP key.
S11		Preset-calling key and preset-write key. (case setting one-touch memory system)
S16		
S17		Memory-enable key. (ordinary-memory system setting case)
S18		Station Call Key. At FM-receiving time, by pressing the key during the time of lighting or flickering of SC-indicator, strong station is called out. It is possible to call out the station up to its number 5 (stations). Also, main station can be called out.
S19		Manual Down Key.
S20		Manual Up Key.
S21		PRS-DIV switching key. At time of FM-reception, PRS-mode and DIV-mode are selected. PRS Function With FM-reception, operation is made by PRS-key at time of PRS-mode. With PRS-mode, main tuner makes the ordinary reception. Subtuner repeats the scanning in the band automatically. In catching the station by scanning of subtuner, distinction should be made from the program content of the receiving station by main tuner, and field strength is judged, also, the same program-station and the strongest station are memorized. Even if the receiving state of the receiving station by tuner is good, when there is a stronger station than the receiving station by main tuner, again, distinction of program content and judgement of field strength are done. When the receiving station by subtuner is judged to be stronger than the main tuner, the receiving frequency by main tuner is changed automatically. At this time, no judgement is made for the field strength and distinction again (PRS-switching). Moreover, when the receiving state of the receiving station by main tuner is continuously wrong for a while, also, if there is no station of the same program, the receiving frequency by main tuner is changed automatically into the strongest station caught by subtuner (Retune). Accordingly, in time of PRS-switching, the same program alone is automatically receiving, but in "Retune", the reception is changed into the other program. Also, in PRS operation at time of VF-key ON, PRS-switching is done among VF-stations of the same program, and in "Retune", it is VF-station of the other program.
S22		Band-switching key. Setting case of European band: \rightarrow FM \rightarrow MW \rightarrow LW \rightarrow Setting case of Japanese band: \rightarrow FM \rightarrow AM \rightarrow
S23	ST	Stereo/Monaural select key.
S24	VF	VF ON/OFF switching key. With VF-ON at FM-reception, operation is made for VF-search, DK-interrupt and Auto-VF Retune.

■ μ PD7508HG-525 051-0814-00 Micro Computer

I Outward Form



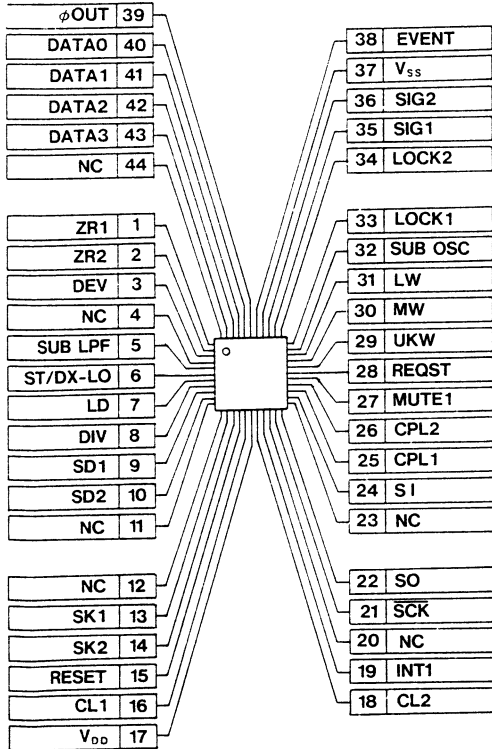
II Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	-0.3 ~ +7.0	V
Input voltage	V _I	-0.3 ~ V _{DD} +0.3	V
Output voltage	V _O	-0.3 ~ V _{DD} +0.3	V

III Outline of Functions

- 1) Scanning and reception of Main Tuner (FM)
- 2) Scanning and reception of Sub Tuner (FM)
- 3) Scanning and reception of LW/MW Tuner
- 4) Band changeover of LW/MW/UKW
- 5) Mode changeover of PRS/DIV
- 6) SD detection of Main Tuner and AM Tuner
- 7) SD detection of Sub Tuner
- 8) No-modulation detection of Main Tuner
- 9) Distinction of reception content in between Main Tuner and Sub Tuner (zero-cross count)
- 10) Ranking of electric field strength of Main Tuner
- 11) Ranking of electric field strength of Sub Tuner
- 12) Memory of same broadcasting station
- 13) Memory of the strongest electric field station
- 14) Transmission of data of stronger electric field station (FM 6 stations) into master microcomputer (μPD7514G)
- 15) ON/OFF control of Sub Tuner OSC
- 16) ON/OFF control of LPF for Sub Tuner
- 17) ON/OFF control of Mute for radio
- 18) ON/OFF control of Stereo-Monaural
- 19) ON/OFF control of LOUDNESS
- 20) SK detection of Main Tuner
- 21) SK detection of Sub Tuner
- 22) Data-transaction with Master microcomputer (μPD7514G)

IV Terminal Connection



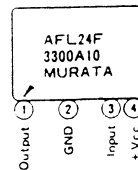
Pin No.	Terminal Name	Function
13	SK1	VF-station distinction signal input terminal of main tuner. Distinction from VF-station with Low.
14	SK2	VF-station distinction signal input terminal of sub tuner. Distinction from VF-station with Low.
15	RESET	Reset signal input terminal when system power ON and main power ON.
16	CL1	Connection terminal for crystal oscillator. (4.194304MHz)
18	CL2	
17	V _{DD}	Power supply terminal. (5V)
19	INT1	Data-transfer forced signal input terminal from μPD7514G.
20	NC	Not in use. (GND)
21	SCK	Transfer of serial data in synchronism with SCK of μPD7514G.
22	SO	Output in synchronism with the fall of SCK. Connection with SI-terminal of μPD7514G.
23	NC	Not in use. (Open)
24	SI	Output in synchronism with the rise of SCK. Connection with SO-terminal of μPD7514G.
25	CPL1	Main PLL data control clock signal output terminal.
26	CPL2	Sub PLL data control clock signal output terminal.
27	MUTE1	Tuner voice muting control signal output terminal. Mute ON with High.
28	REQST	SCK-request signal output terminal at time transferring the data among microcomputer. Possible of data-transfer with High.
29	UKW	High at receiving time of UKW.
30	MW	High at receiving time of MW.
31	LW	High at receiving time of LW.
32	SUB OSC	Sub-OSC power control signal output at time of PRS-mode. OSC power ON with High.
33	LOCK1	Lock-detecting signal input terminal of main PLL.
34	LOCK2	Lock-detecting signal input terminal of sub PLL.
35	SIG1	Electric field-strength detecting signal input terminal of main tuner at time receiving of UKW.
36	SIG2	Electric field-strength detecting signal input terminal of sub tuner at time of PRS-mode.
37	V _{SS}	GND
38	EVENT	Not in use. (GND)
39	φOUT	Clock signal (1/12 fcc) output terminal. Connection with X1-terminal of μPD7514G.
40	DATA0	PLL and ladder-network control signal output terminal. (4bit)
43	DATA3	
44	NC	Not in use. (Open)

■AFL24F3300A10 051-0484-03 18dB/oct LOW PASS FILTER

Absolute Maximum (Ta = 25°C)
Power voltage +16V

Electrical Characteristics (V_{CC} = +12V, Ta = -30°C ~ +80°C)
Cutoff frequency (3dB down) 3300Hz
Gain (at 300Hz) -1.0dB
Max. input level 2.0mVrms
Input impedance More than 50kΩ
Output impedance Less than 300Ω
Load resistance More than 10kΩ
Signal source resistance Less than 5kΩ

Terminal Connection



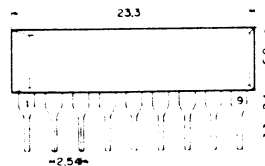
V Terminal Function Table

Pin No.	Terminal Name	Function
1	ZR1	Input terminal for main tuner zero-cross count.
2	ZR2	Input terminal for sub tuner zero-cross count.
3	DEV	Input terminal for detecting main-tuner non-modulation. Non-modulation is detected by Low.
4	NC	Not in use. (GND)
5	SUB LPF	Power-control signal output terminal of LPF for VT of sub tuner. LPF power is to ON by Low.
6	ST/DX-LO	DX/LO switching control signal output terminal at time of MW/LW and switching Stereo/Monaural. High with stereo and Local.
7	LD	LOUDNESS ON/OFF select control signal output terminal. High → LOUDNESS ON.
8	DIV	PRS/DIV mode select control signal output terminal. High → DIV mode.
9	SD1	Main-tuner broadcasting station distinction signal input terminal. Distinction from broadcasting station with High.
10	SD2	Sub-tuner broadcasting station distinction signal input terminal. Distinction from broadcasting station with High.
11	NC	Not in use. (Open)
12	NC	

AN6262 051-0566-00
 ■AN6262N 051-0566-01
 AN6263 051-0561-00
 AN6263N 051-0561-01

MUSIC INTERVAL DETECTION IC

Drawing of General View



Terminal Connection Diagram

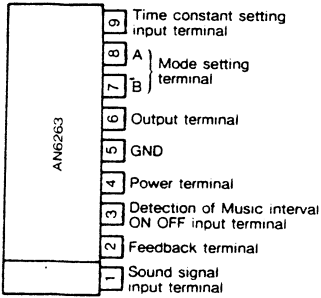


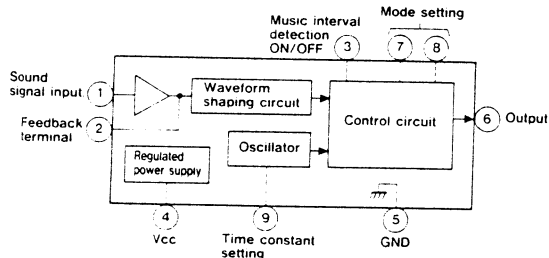
Table of Modes

A	B	Mode	
		AN6262.N	AN6263.N
L	L	OFF	OFF
L	H	PLAY	FF/RWD
H	L	FF/RWD	PLAY
H	H	OFF	OFF

Description of Terminal

1	Sound signal input	Sound signal is input.
2	Feedback terminal	Sound signal amplifier feedback terminal.
3	Music interval detection ON/OFF	When "H" is input, Music interval detecting function is actuated.
4	Power terminal	
5	GND	
6	Output	When the Music interval is detected, "L" pulse is output.
7	Mode setting B	Modes of OFF, PLAY and FF/REW are set. Refer to Table of Modes.
8	Mode setting A	
9	Time constant setting	Sets the oscillation cycle of oscillator which specifies the timing of IC function. Refer to Summary of Functions.

Block Diagram



When the Music interval detection ON/OFF terminal (3 pins) is set to "H", the IC is reset at the "rise" and the output (6 pins) becomes "L". Then, the sound signal is changed into the pulse by the waveform shaping circuit, but when this pulse is input into the control circuit of 3968 * 1 pcs, the IC recognizes the existence of a curve. Then, while 3712 * 2 pcs of output pulses from the oscillator are being output, the IC assumes that there is a music interval. If there is no pulse by the sound signal while 3712 * 2 pcs of output pulse of oscillation are being output, and "H" is output (pin 6) only while 265 pcs of output pulse from the oscillator are being output.

- * 1 384 pcs in FF/RWD
- * 2 128 pcs in FF/RWD

The period T_{osc} of oscillator is decided as follows by the capacity C of the condenser connected to the time constant setting terminal (pin 9)

$$T_{osc} = (8.64 \div 1.9) C \text{ msec}$$

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating		Unit
		AN6262 AN6263	AN6262N AN6263N	
Power voltage	V _{CC}	16	16	V
Power current	I _t	210	280	mA
Allowable loss	P _{tot}	420	450	mW
Output current	I _o	150	150	mA

Electrical Characteristics (Unless specified otherwise, V_{CC} = 4.5 ~ 16V, Ta = -30° ~ 80°C)

No	Item	Symbol	Test circuit	Condition	Allowable value			Unit	Note
					min	typ	max		
1	Power current	I _{CC}			12.5	21.0	mA	DC inspection item	
2	Oscillation frequency	f _{osc}	1	V _{in} = 0mV V ₁ = V ₂ = V ₃ = 0V	0.9	1.2	1.47	kHz	
3	Signal detection level	V _{in}	1	V _{in} = 10kHz V ₁ = V ₂ = 2V, V ₃ = 0V	1.7	2.7	mVrms		
4	Music interval ON/OFF level	V _{1,3}			1.1	1.6	V	DC inspection item	
5	Music interval detection OFF outflow current	I _h			-1.2	-0.6	mA		
6	Mode switching level 7 terminal	V _{7,5}			1.0	1.5	V		
7	Mode switching level 8 terminal	V _{8,5}			1.0	1.5	V		
8	Mode switching circuit outflow current 7 terminal	I _h			-1.2	-0.6	mA		
9	Mode switching circuit outflow current 8 terminal	I _h			-1.2	-0.6	mA		

■HA12438FP 051-0730-00 FM FRONTEND

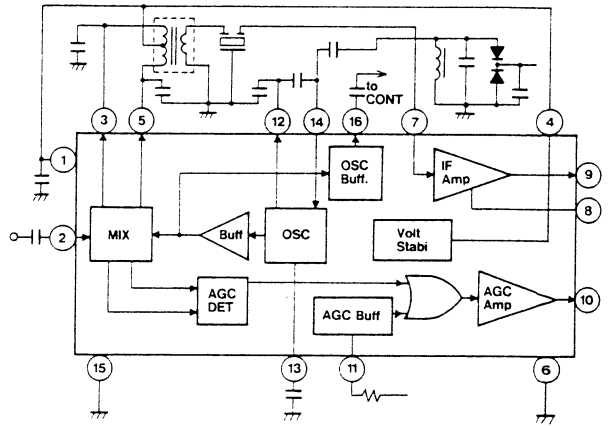
Absolute Maximum Ratings

Supply Voltage	V _{CC}	10V	(Ta = 25°C)
Power Dissipation	P _D	300mW	(Ta = 75°C)

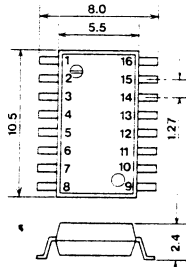
Electrical Characteristics

(V _{CC} = 8.2V, f _C = 98MHz, f _m = 400Hz, Δf = ±75kHz, Ta = 25°C)			
Power Gain	PG	(Input = 40dBμ, 75Ω/9pin Load = 330Ω)	48.5dB
Signal/Noise	S/N	(Input = 100dBμ, with 400Hz H.P.F.)	84.0dB
OSC Buffer Output	V _{osc}	(f _{osc} = 108.7MHz, Load = 75Ω)	145mV
AGC In Threshold	V _{I(th)}	(Voltage of 11pin when 10pin turns to 6V)	2.1V
AGC Output High level	V _{O(H)}	(No input signal, 11pin = 0V)	7.4V
AGC Output Low level	V _{O(L)}	(No input signal, 11pin = 3V)	0.05V
AM Reduction Ratio	AMRR	(Input = 60dBμ, 1kHz, 30% mod)	50dB
Quieting Sensitivity	Us	(S/N = 40dB)	18dBμ

Block Diagram

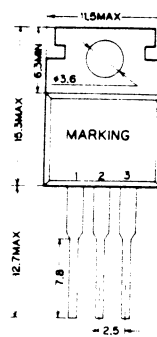


Figure

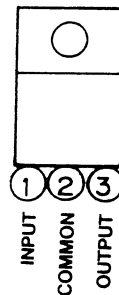


■HA17806W 051-0562-50 3-terminal Fixed Voltage Regulator

Outward Form



Terminal Connection



Absolute Maximum Ratings (Ta = 25°C)

Input Voltage	V _i	35V
Power Dissipation	P _D	15W

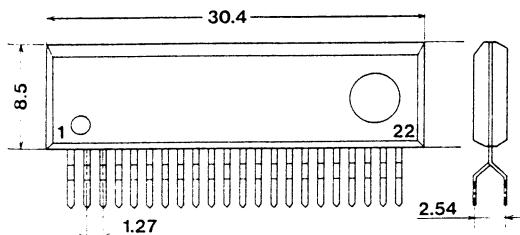
Electrical Characteristics

(V_{in} = 11V, I_{out} = 500mA, 0°C ≤ T_i ≤ 125°C, C_{in} = 0.33μF, C_{out} = 0.1μF)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Output Voltage	V _{out}	T _i = 25°C	5.75	6.0	6.15	V
		8V ≤ V _i ≤ 21V, 5mA ≤ I _o ≤ 1.0A, P _T ≤ 15W	5.7	—	—	—
Input Stability	ΔV _{L, in}	8V ≤ V _i ≤ 25V	—	5	10	mV
		9V ≤ V _i ≤ 13V	—	1.5	10	mV
Load Stability	ΔV _{L, out}	5mA ≤ I _o ≤ 1.5A	—	14	10	mV
		250mA ≤ I _o ≤ 750mA	—	4	10	mV
Output Noise Voltage	V _n	Ta = 25°C, 10Hz ≤ f ≤ 100kHz	—	45	—	μV
Ripple Rejection Ratio	R _{RR}	f = 120Hz	59	75	—	dB
I/O Voltage difference	V _{drop}	I _o = 1.0A, T _i = 25°C	—	2.0	—	V
Output Resistance	R _{out}	f = 1kHz	—	19	—	mΩ
Output short Current	I _{vs}	T _i = 25°C	—	550	—	mA
Peak Output Current	I _{o, peak}	T _i = 25°C	—	2.2	—	A

■LA2220 051-0739-00 VF System SK TYPE
(Tentative Standard)

Figure



Functions

- (1) SK operation : LED display through AND using 57kHz (SK) and 23.75 to 53.98Hz (BK). Voice output control (Muting) through AND using above frequencies.
- (2) MUTING SW : When Pin 4 is set to GND, signal is put in the through mode regardless existence of SK and BK. LED display is available in the SK and BK operations.
- (3) OSC-STOP SW : When voltage (5V to Vcc -1.4V) is applied to Pin 20, the oscillating circuit stops and signal is put in the through mode. (LED turns OFF).
- (4) DK and BK output : The system contains a 57kHz AM detect circuit to send DK and BK signals. In the OSC-STOP mode, the system stops detect operation.
- (5) SK-STOP : When frequency of 57kHz (SK) exists, voltage at Pin 16 turns LOW. This function is used as the STOP signal in the auto search mode. (When 57kHz (SK) exists: V16=0V) (When 57kHz (SK) does not exist: V16=3.6V)
- (6) Turn-ON level control : When voltage is applied to Pin 17, 57kHz (SK) detect level goes upward. This function is used to prevent LEDs from turning ON with weak signals.

Feature

- (1) The system uses 456kHz ceramic oscillator and 57kHz BPF, which have materialized no need of adjustment of the freerun frequency and coil.
- (2) The system contains BK signal detect circuit displaying with LED in the AND operations of SK and BK, in order to prevent malfunction when RDS (or PI system) is received.
- (3) Turn-ON level may be altered by changing C,R installed outside the BPF.
- (4) Only SK can be detected in the auto search mode (through SK-STOP terminal at Pin 16).
- (5) Turn-ON level may be raised by applying DC voltage (through VL-CONT terminal at Pin 17).

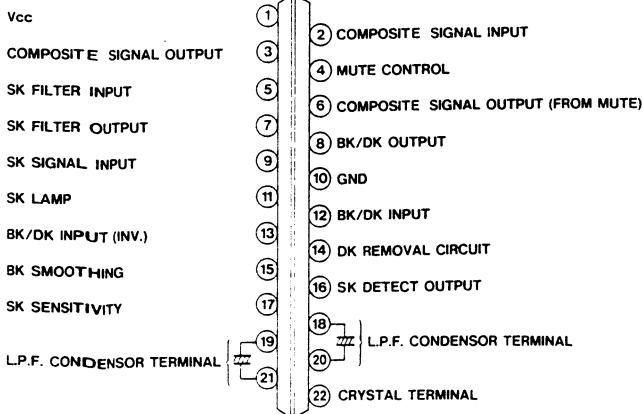
Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	Vcc	$\begin{cases} V_{1-10} & 16V \\ V_{1-11} & 16V \end{cases}$
Input Current	Id	1mA
Lamp Drive Current	I _D	30mA
Power Dissipation	P _D	574mW

Electrical Characteristics (Ta=25°C, Vcc=8V, Vin=200mV, L+R=85%, 19kHz=10%, 57kHz=5%, f=1kHz)

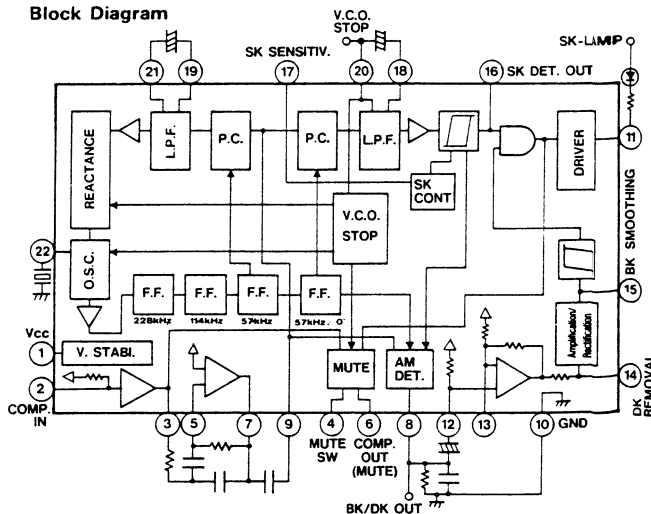
Item	Symbol	Condition	SPEC			Unit
			MIN	TYP	MAX	
Non-signal current	I _{CCO}		17	24	34	mA
Input resistance	r _i		—	40k	—	Ω
SK detect level	V _{SK}	f=57kHz, Input Pin 2	2.5	3.6	5.5	mV
SK Hysteresis	h _{SK}	f=57kHz, Input Pin 2	—	5.5	—	dB
BK detect level	V _{BK}	f=23.75Hz, Input Pin 12	—	17	—	mV
BK Hysteresis	h _{BK}	f=23.75Hz, Input Pin 12	—	3	—	dB
Capture range	C.R	f=57kHz, V _{IN} =10mV	—	±1.2	—	%
Output level	V _{NAF}	f=1kHz, V _{IN} =200mV	147	210	294	mV
DK output level	V _{NBK}	f=57kHz, V _{IN} =10mV, 125Hz, 30%mod.	27	38	54	mV
Total harmonic distortion	THD	f=1kHz, V _{IN} =200mV	—	0.13	0.5	%
Signal attenuation degree	MUTE	f=1kHz, V _{IN} =200mV, DIN/AUDIO filter	-60	-75	—	dB
Free-run frequency	F ₀	Pin2 - C=GND at CSB456F11(TYP)	451	454.8	458.5	kHz

Terminal Connection



No.	Name of terminal	Function
1	Vcc	Supply terminal. The recommended voltage is 8V.
2	COMPOSITE SIGNAL INPUT	Input of a composite signal.
3	COMPOSITE SIGNAL OUTPUT	Output of a composite signal amplified in the IC.
4	MUTE CONTROL	When no BK/DK signal exists with this terminal set to OPEN, mute is applied to the composite signal output at Pin 6. When this terminal is set to GND, no mute operation is performed.
5	SK FILTER INPUT	Input terminal of filter amplifier for SK signal detection.
6	COMPOSITE SIGNAL OUT (FROM MUTE)	Muting output terminal of composite signal (See description on Pin 4).
7	SK FILTER OUTPUT	Output terminal of filter amplifier for SK signal detection.
8	BK/DK OUTPUT	Output of SK signal detected in the AM mode.
9	SK SIGNAL INPUT	Receives SK signal separated from composite signal.
10	GND	For grounding.
11	SK LAMP	Turns a lamp on when SK and BK signals are detected simultaneously.
12	BK/DK INPUT	Receives BK and DK signals.
13	BK/DK INPUT (INV.)	Inverted input terminal of BK and DK signals. Normally not used.
14	DK removal terminal	Connects L.P.F. condenser to reject DK signal.
15	BK smoothing	Connects L.P.F. condenser to smooth a rectified BK signal.
16	SK DETECT OUTPUT	Sends "High" when SK signal exists.
17	SK SENSITIVITY	Normally set to OPEN. When voltage is applied, SK signal detect sensitivity drops.
18	L.P.F. condenser terminal	Terminal used to connect a condenser constituting L.P.F. When DC voltage of 5V to Vcc - 1.4V is applied to Pin 20, V.C.O. stops.
21	L.P.F. condenser terminal	Terminal used to connect a condenser constituting L.P.F. When DC voltage of 5V to Vcc - 1.4V is applied to Pin 20, V.C.O. stops.
22	Crystal terminal	Connects crystal or ceramic resonator.

Block Diagram

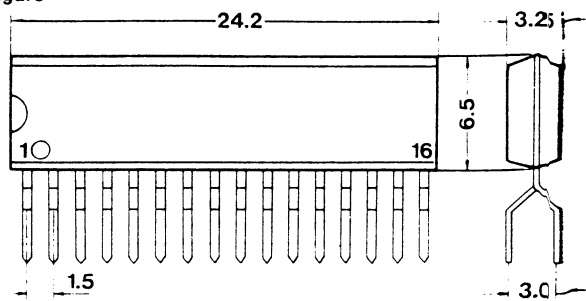


■LA3430 051-0733-00 FM MPX (Tentative Standard)

Feature

FM stereo multiplexer built in functions as pilot canceller, stereo noise controller, high frequency cut controller and automatic changer between stereo and monaural.

Figure



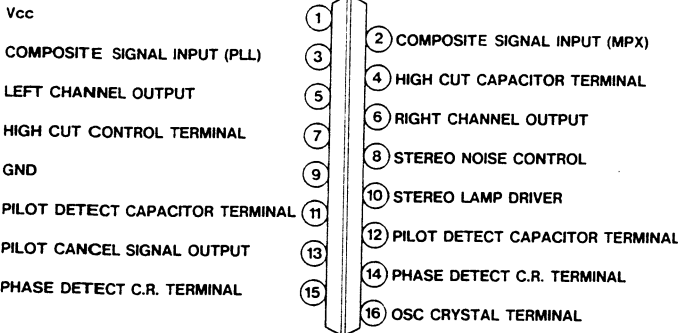
Absolute Maximum Ratings (Ta = 25°C)

Supply Voltage	V _{CC}	16V
Lamp Drive Current	I _D	30mA
Power Dissipation	P _D	520mW

Electrical Characteristics (Ta = 25°C, V_{CC} = 10V, V_i = 300mV, f = 1kHz, L + R = 90%, PILOT = 10%)

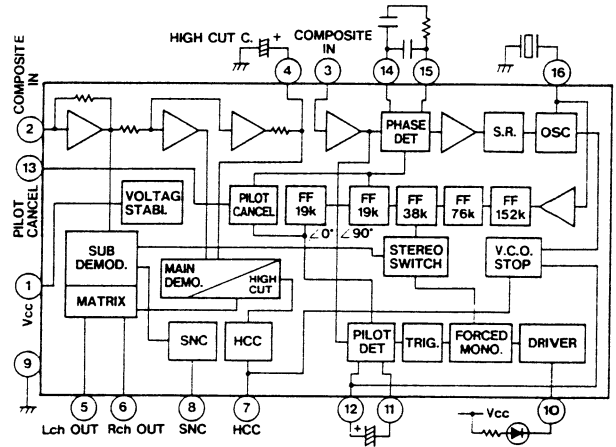
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Non-signal current	I _{CCO}	No input		28	38	mA
Channel separation	Sep		40	50		dB
Total harmonic distortion	THD	Monaural		0.07	0.2	%
		Main		0.07	0.2	%
Lamp turn-ON level	V _L	L + R = 90%, PILOT = 10%	60	85	120	mV
Lamp hysteresis	hy			3	6	dB
Capture range	CR			±1		%
Output signal level	V _O	sub	150	215	300	mV
Signal/noise ratio	S/N	R _g = 20kΩ	68	74		dB
		R _g = 10kΩ	70	78		dB
Input resistance (Pin 2)	r _i			20		kΩ
SCA reject ratio	SCA _{rej}			80		dB
Allowable input voltage	V _i	THD = 1% R _g = 20kΩ	700	900		mV
		THD = 1% R _g = 10kΩ		450		mV
SNC output attenuation degree	Att SNC	V _B = 0.8V, L - R = 90%, PILOT = 10%	-8.5	-3.0	-0.3	dB
SNC output voltage	V _{O sub}	V _B = 0.1V, L - R = 90%, PILOT = 10%			5	mV
HCC output attenuation degree	Att HCC(1)	V ₇ = 0.6V, L + R = 90%, PILOT = 10%	-15.0	-6.0	-0.5	dB
		V ₇ = 1V, L + R = 90%, PILOT = 10%	-2.0		0	dB
Supply voltage ripple rejection	R _r			35		dB
VCC STOP voltage				7.3		V
Channel balance				0.5	1.5	dB
Pilot cancelling degree				20	27	dB
Stereo amplifier current		Minimum stereo operating current		1.0		mA
Saturation voltage (Pin 10)		I _L = 10mA		1.0		V

Terminal Connection



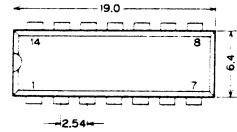
10	Stereo lamp driver	Absorbs the stereo lamp drive current of up to 30mA.
11	Pilot detect condenser terminal	Connects a condenser for detection of the pilot signal.
13	Pilot cancel signal output	Generates a false triangular wave of 19kHz to cancel the pilot signal.
14	Phase detect C.R. terminal	Connects C.R. for phase detection.
16	OSC CRYSTAL terminal	Connects a oscillating crystal or ceramic resonator.

Block Diagram



NJM2901N 051-0255-50 Quad Single-Supply Comparator

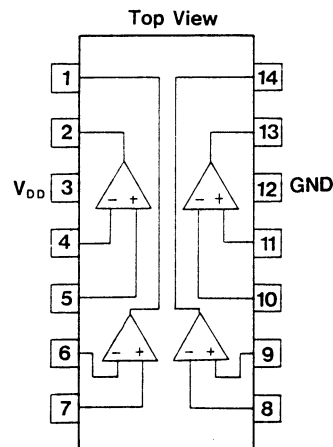
Outward Form



Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V*	36(±18)	V
Differential input voltage	V _{ID}	36	V
Input voltage	V _{IN}	-0.3 ~ +36	V
Power dissipation	P _D	570	mW

Block Diagram



No.	Name of terminal	Function
1	V _{CC}	Connected to power supply.
2	Composite signal input (MPX)	Composite signal input terminal to MPX unit.
3	Composite signal input (PLL)	Composite signal input terminal to PLL unit.
4	High-cut condenser terminal	Connects a condenser to improve S/N ratio on audio sensitivity by attenuating high-pass of voice signal in the weak electric field.
5	Left channel output	Generates voice signal in the left channel.
6	Right channel output	Generates voice signal in the right channel.
7	High-cut control (HCC)	When voltage applied to this terminal is dropped down to about 1.0V or less (when V _{CC} = 10V), 7kHz or more of the main signal (Monaural signal) is dropped, so that S/N ratio for the audio sensitivity may be improved. When voltage of 7V or more is applied to this terminal, V.C.O. oscillation is stopped, putting the system in the forcible monaural mode. In this case, HCC and SNC become not operatable.
8	Stereo noise control (SNC)	As voltage applied to this terminal is decreased gradually, output of SUB DETECTOR (differential signal) drops gradually, so that the voice signal output is put nearly in the monaural mode, providing the favourable S/N ratio in the weak electric field.
9	GND	For grounding

■ NJM2903D 051-0617-51 DUAL SINGLE-SUPPLY COMPARATOR

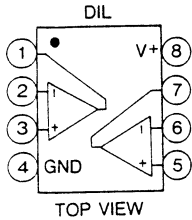
Absolute Maximum Ratings

Supply Voltage	V ⁺	36V
Power Dissipation	P _D	500mW

Electrical Characteristics

Input Offset Voltage	V _{IO}	± 7mV	(max.)
Input Offset Current	I _{IO}	± 50nA	(max.)
Input Bias Current	I _{IB}	250nA	(max.)
Voltage Gain	A _V (R _L = 15kΩ)	200V/mV	(typ.)
Response Time	t _R (R _L = 5.1kΩ)	1.5μS	(typ.)

Block Diagram



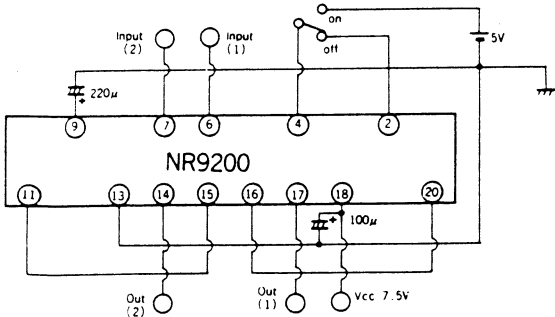
■ NR9200 051-0523-00 Dolby NR
■ NR9200A-1 051-0523-02

Absolute Maximum Ratings

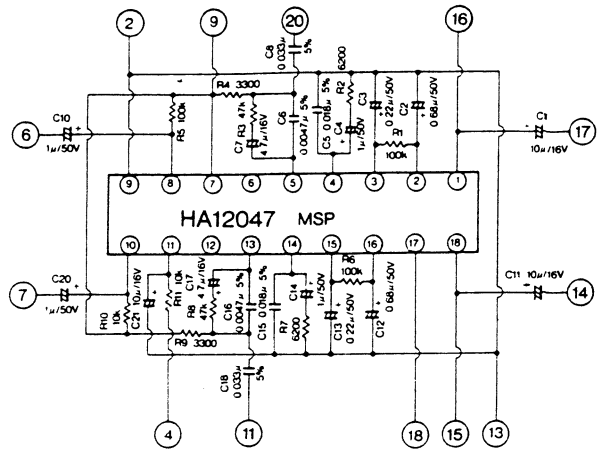
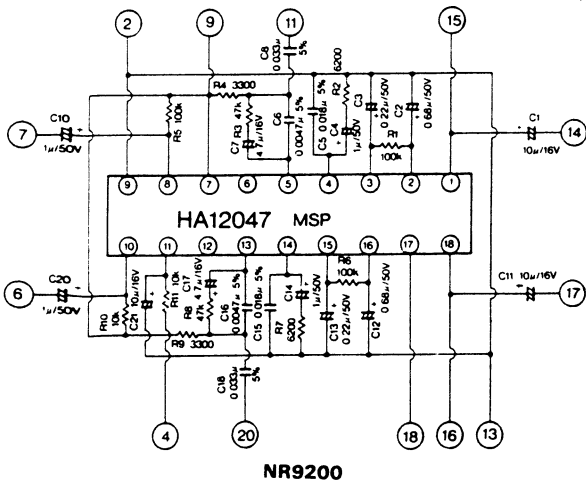
Supply Voltage	V _{CC}	15V
Power Dissipation	P _D	800mW

Electrical Characteristics (T_a = 25°C, V_{CC} = 7.5V, 300mV = 0dB, f = 400Hz, NR OFF V_{I(1)(17)} = 0dB)

Item	Symbol	MIN	TYP	MAX	Unit	NR	Condition
Operation Voltage	V _{OP}	6.0	7.5	12	V	—	
Voltage Gain	G _{VIA}	20.5	22	23.5	dB	off	20log(V _{I(1)(17)} /V _{I(1)}), f = 400Hz, V _{I(1)(17)} = 0dB
Output Voltage	V _{O max}	14.5	16		dB	on	V _{I(1)} = 0dB, f = 1kHz, THD = 1%
Total Harmonic Distortion (DEC)	THD _(DEC)		0.05	0.3	%	on	f = 1kHz, V _{I(1)(17)} = 0dB



Circuit Diagram

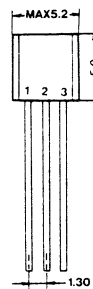


NR9200A-1

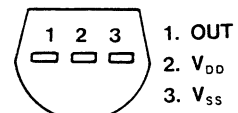
Note) Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
 Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

■ S-8052ALO 051-0820-00 C-MOS Voltage Detector
■ S-8054ALB 051-0821-00

Outward Form



Terminal Connection

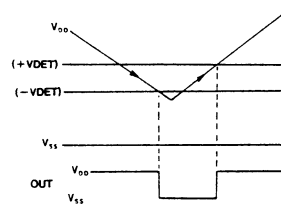


Bottom View

Absolute Maximum Ratings

Item	Symbol	Rating	Unit
Supply voltage range	V _{DD} - V _{SS}	12.0	V
Input voltage	V _{in}	V _{SS} - 0.3 - V _{DD} + 0.3	V
Output voltage	V _{out}	V _{SS} - 0.3 - V _{DD} + 0.3	V
Output current	I _{out}	50	mA
Power dissipation	P _D	200	mW

Operating Timing Chart

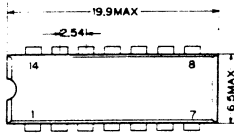


Electrical Characteristics

Item	Symbol	IC	MIN.	TYP.	MAX.	Unit
Detect voltage	-VDET	S-8052ALO	2.395	-VDET	2.605	V
		S-8054ALB	3.995	-VDET	4.305	V
Operating voltage	V _{DD}	S-8052ALO	1.5		10.0	V
		S-8054ALB	1.6		10.0	V

TC4001BP 051-0138-00 QUAD 2-INPUT POSITIVE NOR GATE

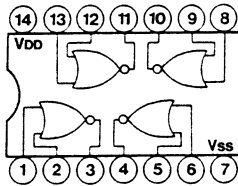
Outward Form



Maximum Ratings

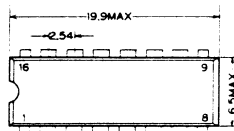
Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Input voltage	V_{IN}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Output voltage	V_{OUT}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Input current	I_{IN}	± 10	mA
Power dissipation	P_D	300	mW

Block Diagram



TC4028BP 051-0822-00 BCD To Decimal Decoder

Outward Form



Outline

TC4028BP is BCD-To-Decimal decoder for converting BCD-signal into decimal signal.

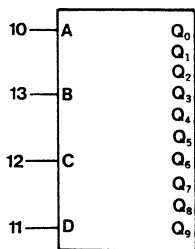
Among 10 outputs from $Q_0 - Q_9$, the output corresponding to the input BCD code shows "H" level, and all other outputs show "L" level.

By the use of 3 inputs, A-C, D is used as inhibitory input, thereby, it can be used as Binary-To-Octal decoder.

Maximum Ratings

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Input voltage	V_{IN}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Output voltage	V_{OUT}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Input current	I_{IN}	± 10	mA
Power dissipation	P_D	300	mW

Block Diagram



V_{DD} ; 16, V_{SS} ; 8

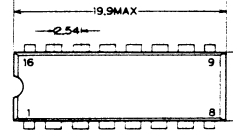
Truth Table

INPUTS				SELECTED OUTPUT "H"
D	C	B	A	
L	L	L	L	Q_0
L	L	L	H	Q_1
L	L	H	L	Q_2
L	L	H	H	Q_3
L	H	L	L	Q_4
L	H	L	H	Q_5
L	H	H	L	Q_6
L	H	H	H	Q_7
H	*	*	L	Q_8
H	*	*	H	Q_9

* Don't care

TC4050BP 051-0173-00 Hex Buffer/Converter Non-Inverting Type

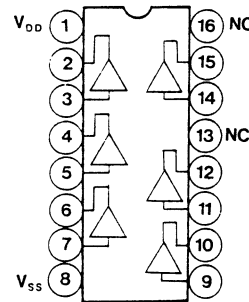
Outward Form



Maximum Ratings

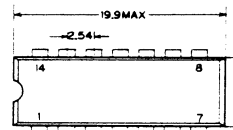
Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Input voltage	V_{IN}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Output voltage	V_{OUT}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Input current	I_{IN}	-10	mA
Power dissipation	P_D	300	mW

Block Diagram



TC4069UBP 051-0175-00 Hex Inverter

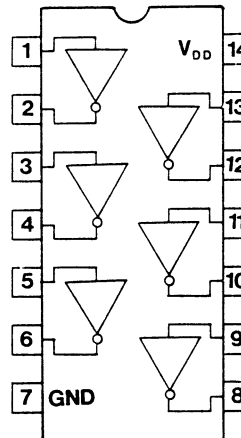
Outward Form



Maximum Ratings

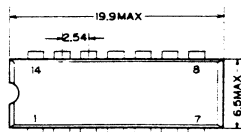
Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Input voltage	V_{IN}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Output voltage	V_{OUT}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Input current	I_{IN}	± 10	mA
Power dissipation	P_D	300	mW

Block Diagram



TC4081BP 051-0180-00 QUAD 2-INPUT POSITIVE AND GATE

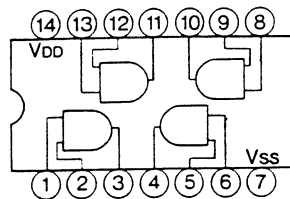
Outward Form



Maximum Ratings

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	$V_{SS} - 0.5 - V_{SS} + 20$	V
Input voltage	V_{IN}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Output voltage	V_{OUT}	$V_{SS} - 0.5 - V_{DD} + 0.5$	V
Input current	I_{IN}	± 10	mA
Power dissipation	P_o	300	mW

Block Diagram



PARTS LIST: ⓄElectrical section

ⓄCONTROL P.W.B

ⓄPRE/MPX P.W.B

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
^{302.701.801.802} ^{804.805.806.808} ^{811.812.814.815} ⁹⁰¹⁻⁹²¹	001-0330-00	Diode (1SS119)	33
D ₈₁₃	001-0377-44	Diode (MA4082M)	1
D _{803.807.809.810}	001-0377-47	Diode (MA4091M)	4
D ₃₀₁	001-0421-24	Diode (MTZ9.1J)	1
D ₉₂₂	001-0454-00	Diode (MA700)	1
L ₇₀₁	010-2046-17	Coil (5.6μH)	1
VR ₃₀₄	012-4318-06	Variable resistor (10kΩ)	1
VR ₃₀₃	012-4318-08	Variable resistor (33kΩ)	1
VR _{301.302}	012-4318-09	Variable resistor (47kΩ)	2
VR ₃₀₅	012-4318-10	Variable resistor (100kΩ)	1
CCT ₉₀₂	050-0077-03	Component circuit (33kΩx4)	1
CCT ₉₀₁	050-0088-03	Component circuit (10kΩx7)	1
CCT ₈₀₁	050-0093-03	Component circuit (33kΩx6)	1
CCT ₃₀₁	050-0099-00	Component circuit	1
IC ₉₀₄	051-0138-00	IC (TC4001BP)	1
IC _{802.806}	051-0158-00	IC (TC4016BP)	2
IC ₉₀₃	051-0175-00	IC (TC4069UBP)	1
IC ₉₀₇	051-0180-00	IC (TC4081BP)	1
IC _{801.803}	051-0394-05	IC (MN6147S)	2
IC ₃₀₄	051-0407-00	IC (LA2110)	1
IC ₉₀₆	051-0447-00	IC (TD62004P)	1
IC ₈₀₅	051-0504-00	IC (BA3802)	1
IC ₃₀₁	051-0539-00	IC (TA7405P)	1
IC ₃₀₃	051-0541-00	IC (μPC1266G)	1
IC ₃₀₂	051-0566-01	IC (AN6262N)	1
IC ₃₀₅	051-0733-00	IC (LA3430)	1
IC ₉₀₅	051-0813-00	IC (μPD7514G)	1
IC ₈₀₄	051-0814-00	IC (μPD7508HG)	1
IC ₉₀₂	051-0820-00	IC (S8052ALO)	1
IC ₉₀₁	051-0821-00	IC (S8054ALB)	1
IC ₉₀₈	051-0822-00	IC (TC4028BP)	1
X ₃₀₁	060-0115-53	Ceramic resonator	1
SUP ₇₀₁	060-0122-00	Surge protector	1
X _{801.802}	061-1053-00	Crystal-OSC (4.5MHz)	2
X ₈₀₃	061-1062-00	Crystal (4.19MHz)	1
Q _{302.304.701}	100-1175-60	Transistor (2SA1175)	3

REF. NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
Q _{902.903}	101-0911-00	Transistor (2SB911MPQR)	2
Q _{303.305.308.801} ^{802.803.804.807} ⁸⁰⁸	102-2458-51	Transistor (2SC2458GR,BL)	9
^{301.306.307.309} ^{702.805.806.809} ^{814.815.901} ⁹⁰⁴⁻⁹⁰⁶	102-3400-00	Transistor (2SC3400)	14
Q ₈₁₁	102-3420-00	Transistor (2SC3420-Y,GR,BL)	1
Q ₈₁₀	103-1225-50	Transistor (2SD1225MQ)	1
Q _{812.813.816.817}	103-1450-50	Transistor (2SD1450ST)	4
R ₈₂₇	111-4791-81	Film resistor (1/2W4.7Ω)	1
C _{701.702.705.706}	043-0213-00	Ceramic capacitor (0.033μF)	4
^{303-306.317} ^{318.335.807.819} ⁹¹¹⁻⁹¹⁴	160-1022-05	Ceramic capacitor (1000pF B) HD	13
C ₃₂₈	160-6812-05	Ceramic capacitor (680pF B) HD	1
^{325.326.339.345} ^{346.804.908.909} ⁹¹⁰	171-1033-06	Ceramic capacitor (0.01μF SR) SC	9
C _{347.348}	171-1533-06	Ceramic capacitor (0.015μF SR) SC	2
C ₃₃₀	171-2223-06	Ceramic capacitor (0.0022μF SR) SC	1
C _{314.338.904}	171-2233-06	Ceramic capacitor (0.022μF SR) SC	3
C _{329.810.822}	171-3333-06	Ceramic capacitor (0.033μF SR) SC	3
C ₃₃₆	171-4723-06	Ceramic capacitor (0.0047μF SR) SC	1
C ₇₀₄	171-4733-06	Ceramic capacitor (0.047μF SR) SC	1
^{809.813.821.825} ⁸³³	172-1042-20	Polyester capacitor (0.1μF) SS	5
C _{315.333}	172-4732-20	Polyester capacitor (0.047μF) SS	2
C _{308.309}	173-1031-10	Polyester capacitor (0.01μF J) S	2
C _{827.828}	174-1000-13	Ceramic capacitor (10pF CH) TC	2
^{811.812.823.824} ⁹¹⁵	174-2200-13	Ceramic capacitor (22pF CH) TC	5
C ₉₀₆	174-3300-13	Ceramic capacitor (33pF CH) TC	1
C _{829.907}	042-0250-00	Electrolytic capacitor (16V0.33μF TAN)	2
C ₉₀₂	042-0347-00	Electrolytic capacitor (0.1μF)	1
C ₉₀₃	179-1073-22	Electrolytic capacitor (10V100μF) S	1
^{802.817.905}	183-1043-62	Electrolytic capacitor (50V0.1μF) USS	3
^{322.323.324.337} ^{342.343.344.703} ^{806.834.835}	183-1053-62	Electrolytic capacitor (50V1μF) USS	11
C _{313.316.340.832}	183-1063-32	Electrolytic capacitor (16V10μF) USS	4
C _{320.321.341}	183-2243-62	Electrolytic capacitor (50V0.22μF) USS	3
C ₃₂₇	183-2263-32	Electrolytic capacitor (16V22μF) USS	1
C _{801.816}	183-3343-62	Electrolytic capacitor (50V0.33μF) USS	2
C ₈₀₅	183-3353-62	Electrolytic capacitor (50V3.3μF) USS	1
^{808.814.820.826}	183-4743-62	Electrolytic capacitor (50V0.47μF) USS	4
^{307.310.311.334} ⁹⁰¹	183-4753-52	Electrolytic capacitor (35V4.7μF) USS	5
^{301.302.312.319} ^{331.332.803.818} ^{830.831}	183-4763-32	Electrolytic capacitor (16V47μF) USS	10

◎SK-DK P.W.B

◎A-D CONVERSION P.W.B

◎AUDIO P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D _{403,506,902}	001-0330-00	Diode (1SS119)	3
D ₅₀₄	001-0333-31	Diode (MA2082B)	1
D ₉₀₁	001-0360-00	Diode (S5566B)	1
D _{401,402}	001-0361-10	Diode (1SS198)	2
D ₉₀₃	001-0454-00	Diode (MA700)	1
VR _{201,403,404,405}	012-4318-06	Variable resistor (10kΩ)	4
VR _{401,402}	012-4318-11	Variable resistor (220kΩ)	2
VR ₅₀₆	012-4431-05	Variable resistor (4.7kΩ)	1
VR ₅₀₁	012-4431-07	Variable resistor (22kΩ)	1
CCT _{201,202}	050-0103-00	Component circuit (TCB06T0006)	2
CCT ₄₀₁	050-0108-00	Component circuit	1
IC ₄₀₇	051-0173-00	IC (TC4050BP)	1
IC ₄₀₅	051-0255-50	IC (NJM2901N)	1
IC ₄₀₁	051-0422-51	IC (NJM4558D)	1
IC _{404,502}	051-0422-53	IC (NJM2904D)	2
IC _{402,403}	051-0484-03	IC	2
IC ₂₀₂	051-0501-00	IC (LA3365)	1
IC ₅₀₃	051-0523-02	IC (NR9200A-1)	1
IC ₅₀₄	051-0552-00	IC (H8D1525B)	1
IC ₅₀₁	051-0562-50	IC (HA17806W)	1
IC ₅₀₅	051-0606-00	IC (BT3S501)	1
IC ₄₀₆	051-0617-51	IC (NJM2903D)	1
IC _{201,203}	051-0739-00	IC (LA2220)	2
X _{201,202}	060-0115-01	Ceramic resonator	2
Q _{401-406,502-505}	102-2458-51	Transistor (2SC2458GR,BL)	10
Q _{506,507}	102-3400-00	Transistor (2SC3400AC)	2
Q ₅₀₁	103-1450-50	Transistor (2SD1450ST)	1
R ₄₃₂	032-0059-10	Film resistor (10kΩ)	1
R ₄₂₇	032-0059-52	Film resistor (18kΩ)	1
R ₅₀₉	114-1011-11	Film resistor (1W100Ω) OM	1

◎TUNER P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D ₁₀₁₋₁₀₃	001-0330-00	Diode (1SS119)	3
TH _{101,102}	002-0184-00	Thermistor (30kΩ)	2
IFT _{101,103}	005-0836-00	IF-transformer (MA)	2
IFT _{102,104}	005-0982-00	IF-transformer (7KM)	2
L _{101,102}	010-1180-00	Coil	2
VR _{101,103}	012-3808-00	Variable resistor (330Ω)	2
VR _{102,104}	012-3808-11	Variable resistor (220kΩ)	2
RY ₁₀₁	014-0531-00	Relay	1
IC _{101,102}	051-0363-01	IC (LA1140C)	2
Q ₁₀₁	100-1175-60	Transistor (2SA1175)	1

◎FM TUNER BLOCK 880-1409A

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D _{101,201}	001-0368-00	Diode (1SV121)	2
D _{102,202}	001-0423-13	Diode (MA4033)	2
D _{103-105,203-205}	001-0442-00	Diode (1SV147)	6
TC _{101,201}	004-1567-00	Trimmer (20pF)	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
R ₅₀₁	114-2291-11	Film resistor (1W2.2Ω) OM	1
R ₅₄₀	114-2711-11	Film resistor (1W270Ω) OM	1
C ₂₀₂	171-4733-06	Ceramic capacitor (0.047μF SR) SC	1
C _{501,502}	173-1042-10	Polyester capacitor (0.1μF) S	2
C ₄₁₉	173-5622-10	Polyester capacitor (0.0056μF) S	1
C _{209,223}	173-6832-10	Polyester capacitor (0.068μF) S	2
C ₂₁₃	042-0249-00	Electrolytic capacitor (16V0.22μF TAN)	1
C ₅₀₄	179-1073-22	Electrolytic capacitor (10V100μF) S	1
C ₅₀₃	179-2273-22	Electrolytic capacitor (10V220μF) S	1
C ₅₂₂	179-4773-33	Electrolytic capacitor (16V470μF) S	1
C _{406,418}	182-1053-62	Electrolytic capacitor (50V1μF) SS	2
C _{416,510,511,516,517,518,528,529,530,531,532}	182-1063-32	Electrolytic capacitor (16V10μF) SS	11
C ₄₀₃	182-1073-22	Electrolytic capacitor (10V100μF) SS	1
C _{509,521}	182-1073-32	Electrolytic capacitor (16V100μF) SS	2
C _{512,513}	182-2243-62	Electrolytic capacitor (50V0.22μF) SS	2
C _{420,505,506,523,524,525,526,527}	182-2253-62	Electrolytic capacitor (50V2.2μF) SS	8
C _{519,520}	182-4753-52	Electrolytic capacitor (35V4.7μF) SS	2
C _{507,508}	182-4763-32	Electrolytic capacitor (16V47μF) SS	2
C _{211,217,401,402,405,407,408,411,412,414,417}	183-1053-62	Electrolytic capacitor (50V1μF) USS	11
C _{201,210}	183-1063-32	Electrolytic capacitor (16V10μF) USS	2
C _{207,221}	183-2243-62	Electrolytic capacitor (50V0.22μF) USS	2
C _{514,515}	183-2253-62	Electrolytic capacitor (50V2.2μF) USS	2
C _{208,222}	183-2263-32	Electrolytic capacitor (16V22μF) USS	2
C _{204,219}	183-3343-62	Electrolytic capacitor (50V0.33μF) USS	2
C _{421,422}	183-3353-62	Electrolytic capacitor (50V3.3μF) USS	2
C ₂₁₄	183-3363-02	Electrolytic capacitor (4V33μF) USS	1
C _{203,218}	183-4743-62	Electrolytic capacitor (50V0.47μF) USS	2
C _{205,212,220}	183-4753-52	Electrolytic capacitor (35V4.7μF) USS	3
C _{206,215,216,404,409,410,413,415}	183-4763-32	Electrolytic capacitor (16V47μF) USS	8

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
Q _{102,103}	102-3400-00	Transistor (2SC3400)	2
R _{108,119}	032-0059-05	Film resistor (22kΩ)	2
C _{106,120}	043-0213-00	Ceramic capacitor (0.033μF)	2
C _{111,112,113,125}	160-1022-05	Ceramic capacitor (1000pF B) HD	4
C _{110,124}	160-1512-05	Ceramic capacitor (150pF B) HD	2
C _{101-104,108,114,115-118,122}	171-1033-06	Ceramic capacitor (0.01μF) SC	11
C _{109,123}	183-1053-62	Electrolytic capacitor (50V1μF) USS	2
C _{107,121}	183-2253-62	Electrolytic capacitor (50V2.2μF) USS	2
C _{105,119}	183-4743-62	Electrolytic capacitor (50V0.47μF) USS	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
L _{102.202}	010-2046-14	Coil (3.3μH)	2
L _{106.206}	010-2104-00	Coil (OSC)	2
L _{103.105.203.205}	010-2105-00	Coil (L4.5T ANT/RF)	4
IC _{101.201}	051-0730-00	IC (HA12438FP)	2
Q _{104.205.206}	102-2714-15	Transistor (2SC2714-O)	3
Q ₂₀₄	102-2996-50	Transistor (2SC2996-OY)	1
Q _{102.202}	124-0114-15	FET (3SK114-O)	2
Q _{101.201}	125-0001-01	Transistor (UN2111)	2
Q _{103.203}	125-0006-00	Transistor (UN2110)	2
R _{110.113.115 210.213.215}	117-1011-10	Chip resistor (1/16W100Ω) S	6
R _{106.111.114 206.211.214}	117-1021-10	Chip resistor (1/16W1kΩ) S	6
R _{112.212.251.254}	117-1031-10	Chip resistor (1/16W10kΩ) S	4
R _{103.108.203.208}	117-1041-10	Chip resistor (1/16W100kΩ) S	4
R ₂₅₂	117-1221-10	Chip resistor (1/16W1.2kΩ) S	1
R _{105.205}	117-2211-10	Chip resistor (1/16W220Ω) S	2
R ₂₅₇	117-2221-10	Chip resistor (1/16W2.2kΩ) S	1
R ₂₅₆	117-2701-10	Chip resistor (1/16W27Ω) S	1
R _{102.109.150 202.209.250}	117-3331-10	Chip resistor (1/16W33kΩ) S	6
R _{107.207}	117-4701-10	Chip resistor (1/16W47Ω) S	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
R ₂₅₃	117-4711-10	Chip resistor (1/16W470Ω) S	1
R ₂₅₈	117-4741-10	Chip resistor (1/16W470kΩ) S	1
R ₁₅₂	117-6801-10	Chip resistor (1/16W68Ω) S	1
R _{104.204}	117-6831-10	Chip resistor (1/16W68kΩ) S	2
R _{151.255}	117-8241-10	Chip resistor (1/16W820kΩ) S	2
C ₂₅₁	171-1033-06	Ceramic capacitor (0.01μF) SC	1
C _{102.202}	174-8090-13	Ceramic capacitor (8pF) TC	2
C _{111.211.253.258}	176-1007-00	Ceramic chip capacitor (10pF) TC.S	4
C _{151.257}	176-1096-00	Ceramic chip capacitor (1pF) TC.S	2
C _{103.106.117.203 206.254.255}	176-1501-00	Ceramic chip capacitor (15pF) TC.S	7
C _{114.116.150.252}	176-2201-00	Ceramic chip capacitor (22pF) TC.S	4
C _{104.204}	176-5601-00	Ceramic chip capacitor (56pF) TC.S	2
C _{105.109.113 205.209.213}	176-6097-00	Ceramic chip capacitor (6pF) TC.S	6
C _{120.210.220.290}	178-1022-05	Ceramic chip capacitor (0.001μF) HD.S	4
C _{101.108.110.115 152.201.208.221 256.259}	178-1032-05	Ceramic chip capacitor (0.01μF) HD.S	10
C _{153.250}	178-1045-06	Ceramic chip capacitor (0.1μF) HD.S	2
C _{107.112.118 207.212.218}	178-2232-05	Ceramic chip capacitor (0.022μF) HD.S	6
C _{119.219}	183-1053-62	Electrolytic capacitor (50V1μF) USS	2

Note : OM (Oxidized Metal) SC (Semi-Conductor) LL (Low Leak)
 S (Small) SS (Super Small) USS (Ultra Super Small)
 HD (Higher Dielectric) TC (Temperature-Compensating)

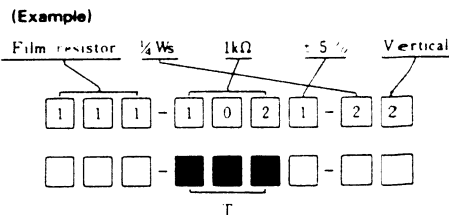
● How to read resistor

Resistors are deleted from the table of electric components. (except metal film resistors and special resistors) They can be converted to product Nos. as follows

Film resistor (Carbon film resistor)



Classification	Resistance *	Tolerance of the value of resistance	Rated power	Shape	
1111		0	0	0	
	Example	1	+ 5%	1 1/4W	Approx. 3.7mm
	33Ω = 330	2	2	1/4Ws	Approx. 6.5mm
	33kΩ = 333	3	3		
		4	4	1/2W	Approx. 9mm
			7	1/6W	Approx. 3.5mm
			8	1/2Ws	Approx. 6.6mm
			9	1/4Wss	Approx. 3.2mm

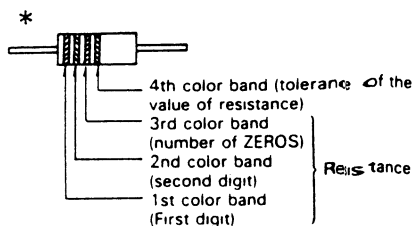


Note 1 The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this. Unit is given in ohm (Ω)

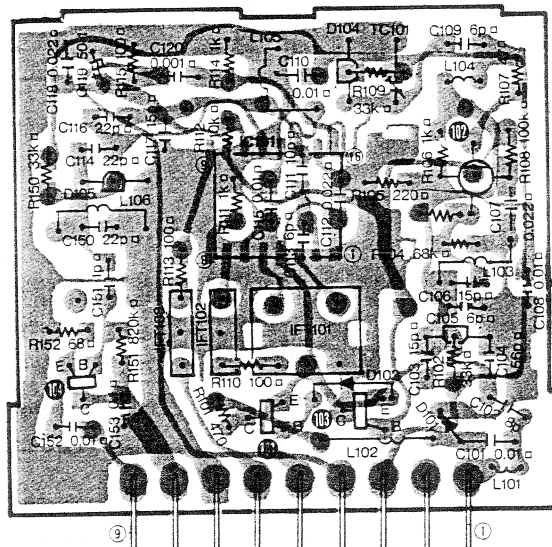
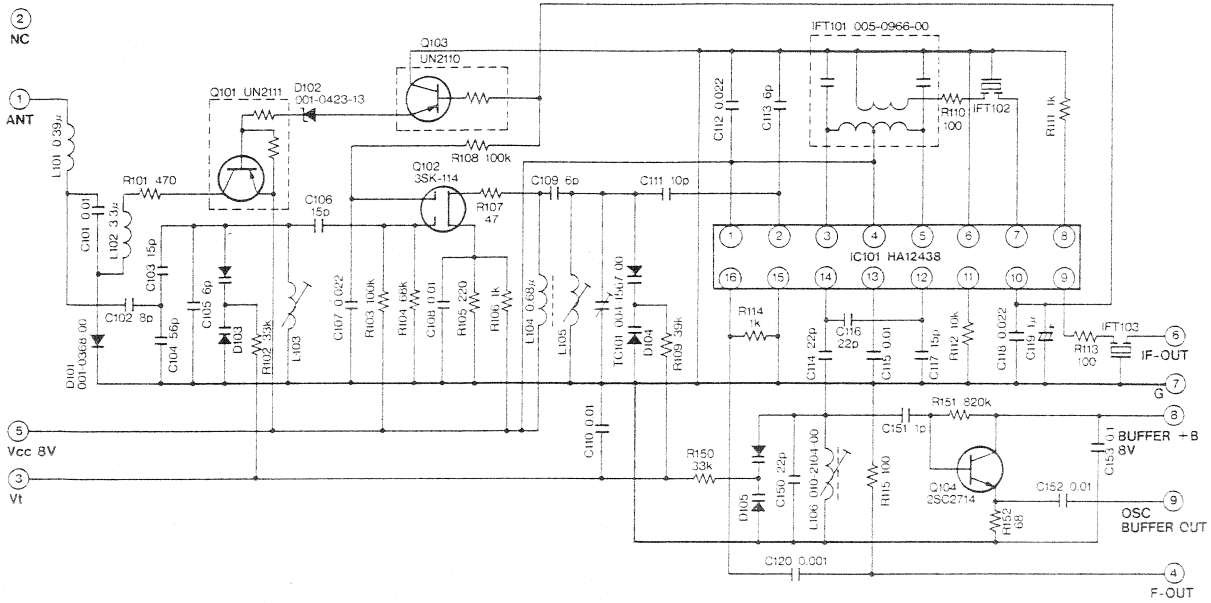
Example of conversion of resistance

R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I
01	10	100	1000	10000	100000	1000000	10000000	100000000	1000000000	10000000000	100000000000	1000000000000	10000000000000	100000000000000	1000000000000000	10000000000000000	100000000000000000	1000000000000000000	10000000000000000000

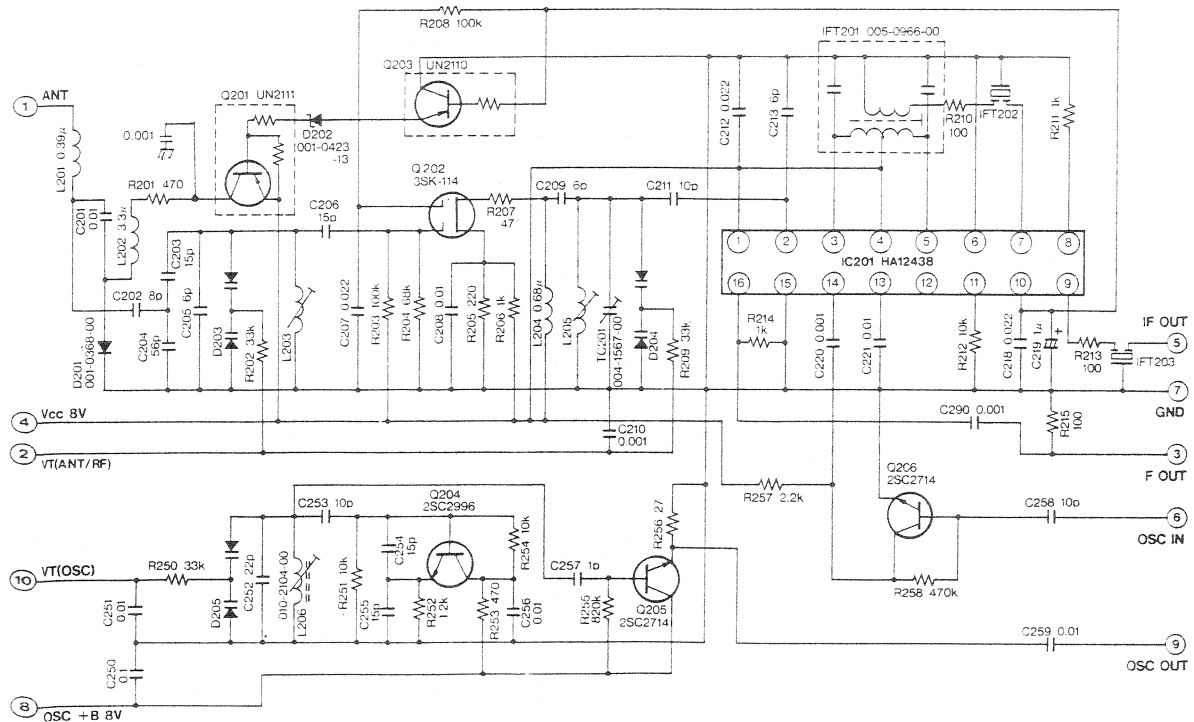
COLOR	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	GOLD	SILVER	NO COLOR
1st color band	0	1	2	3	4	5	6	7	8	9			
2nd color band	0	1	2	3	4	5	6	7	8	9			
3rd color band	10 ⁰	10 ¹	10 ²	10 ³	10 ⁴	10 ⁵	10 ⁶				10 ¹	10 ²	
4th color band											±5%	±10%	±20%

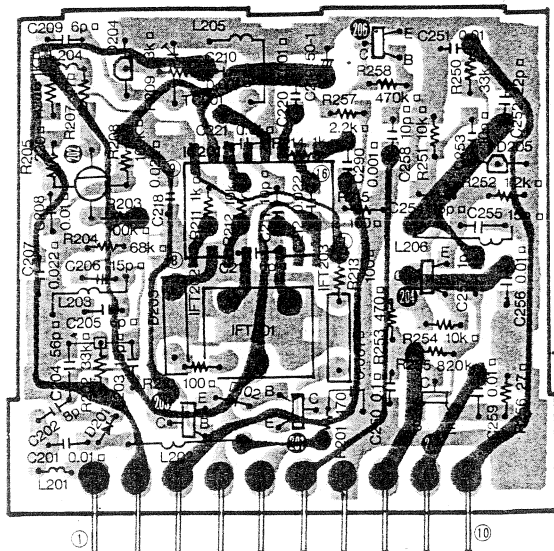


FM TUNER BLOCK Ass'y (MAIN) 880-1409A

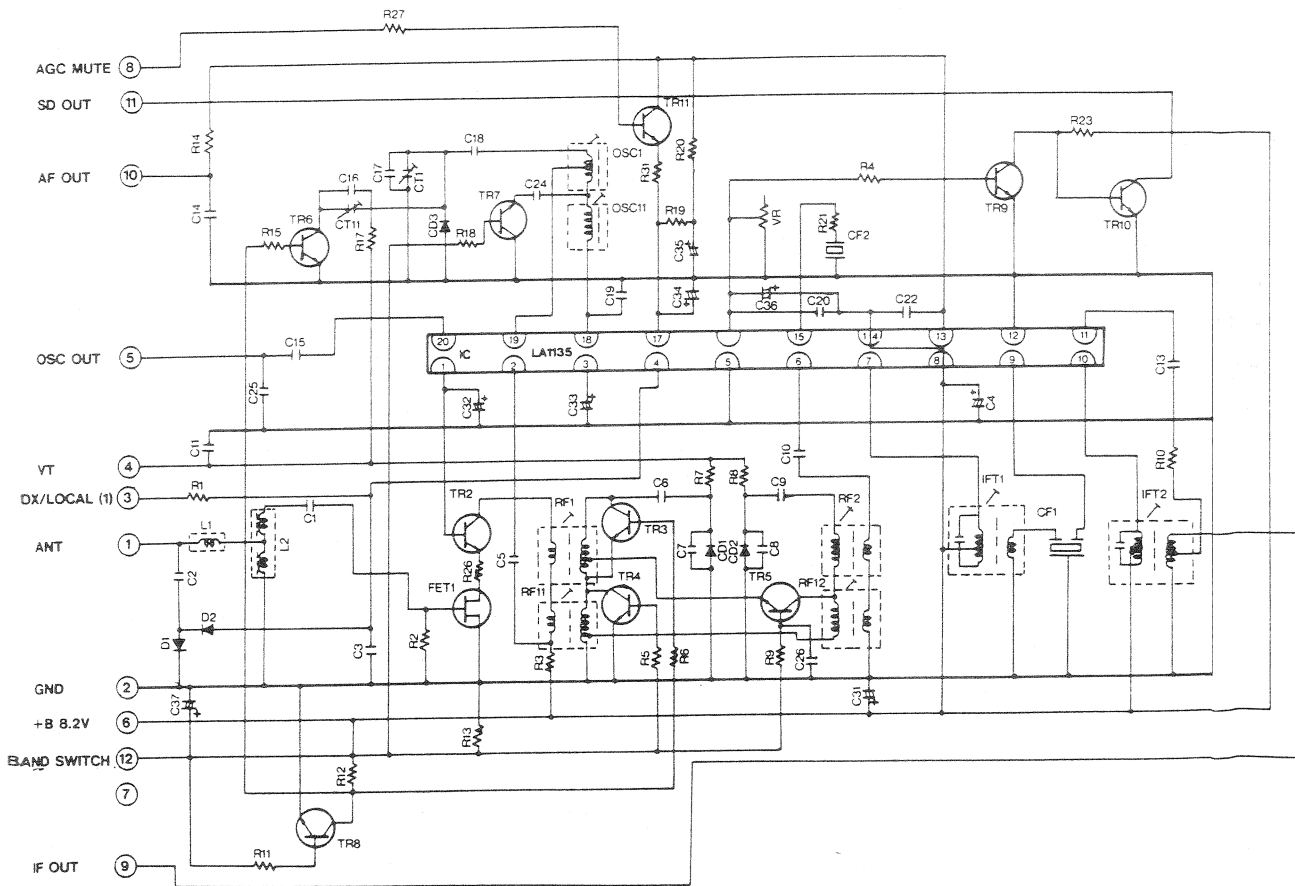


FM TUNER BLOCK Ass'y (SUB) 880-1409A

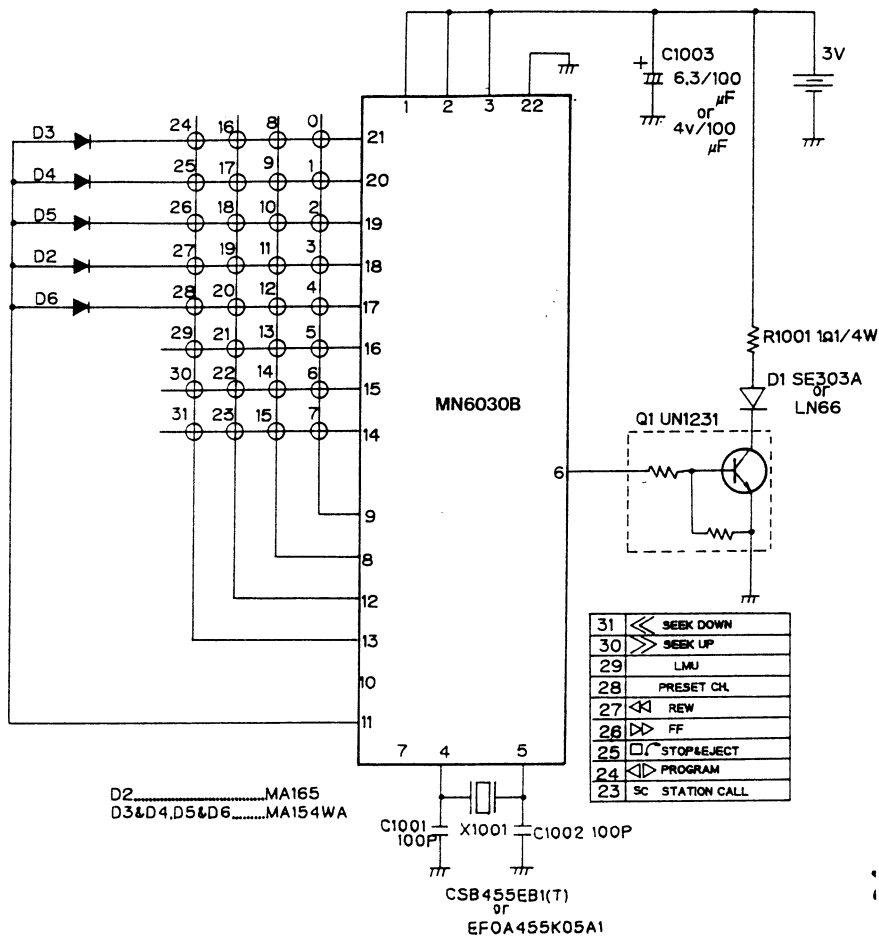




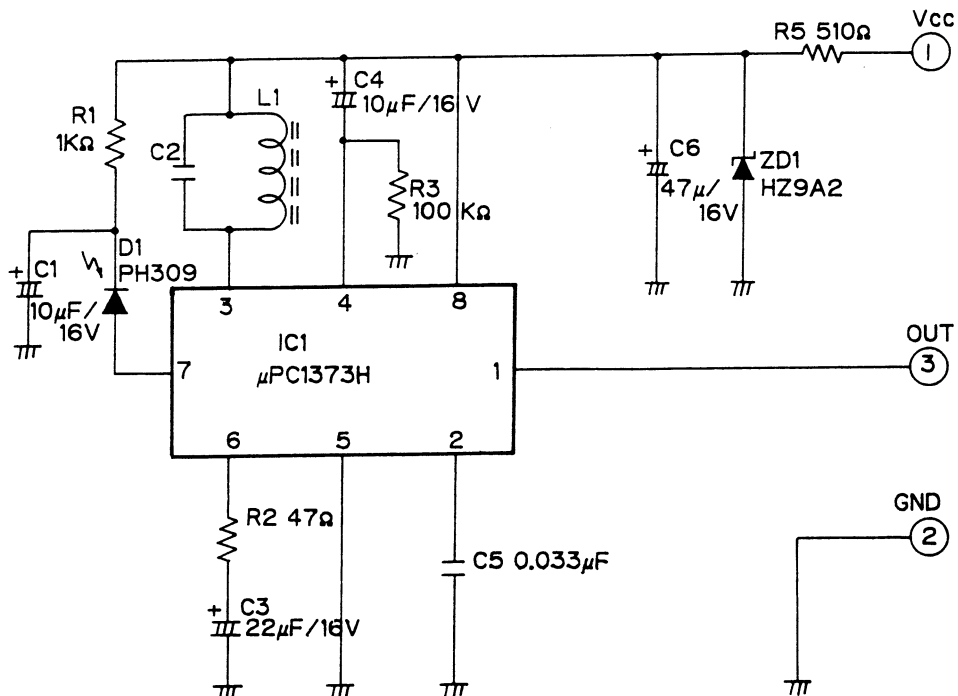
MW/LW TUNER PACK: 941-0159-00



● RCB-015-100
(Remote Control Unit)

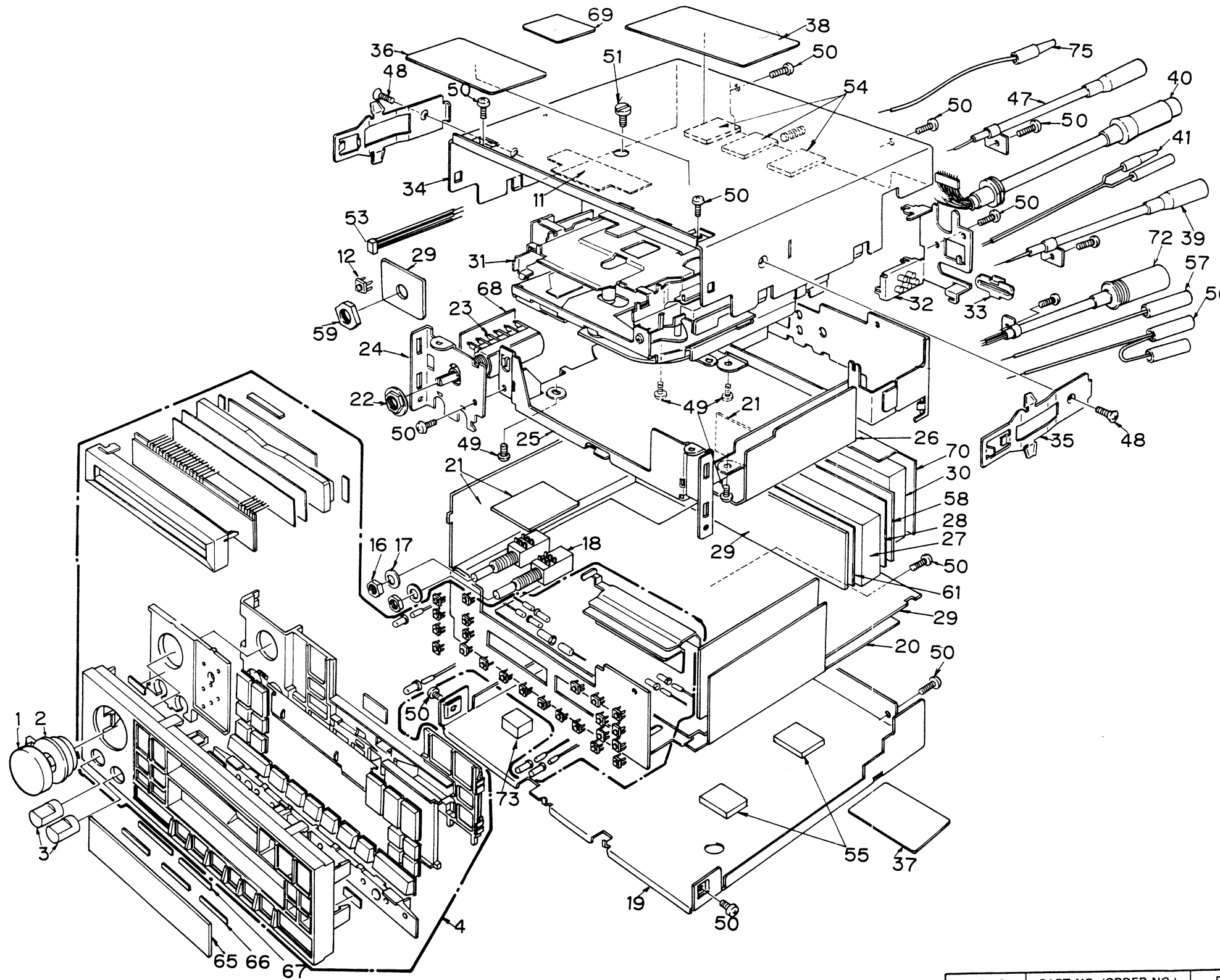


● RCB-016-100
(Sensor)



EXPLODED VIEW • PARTS LIST:

©Main section

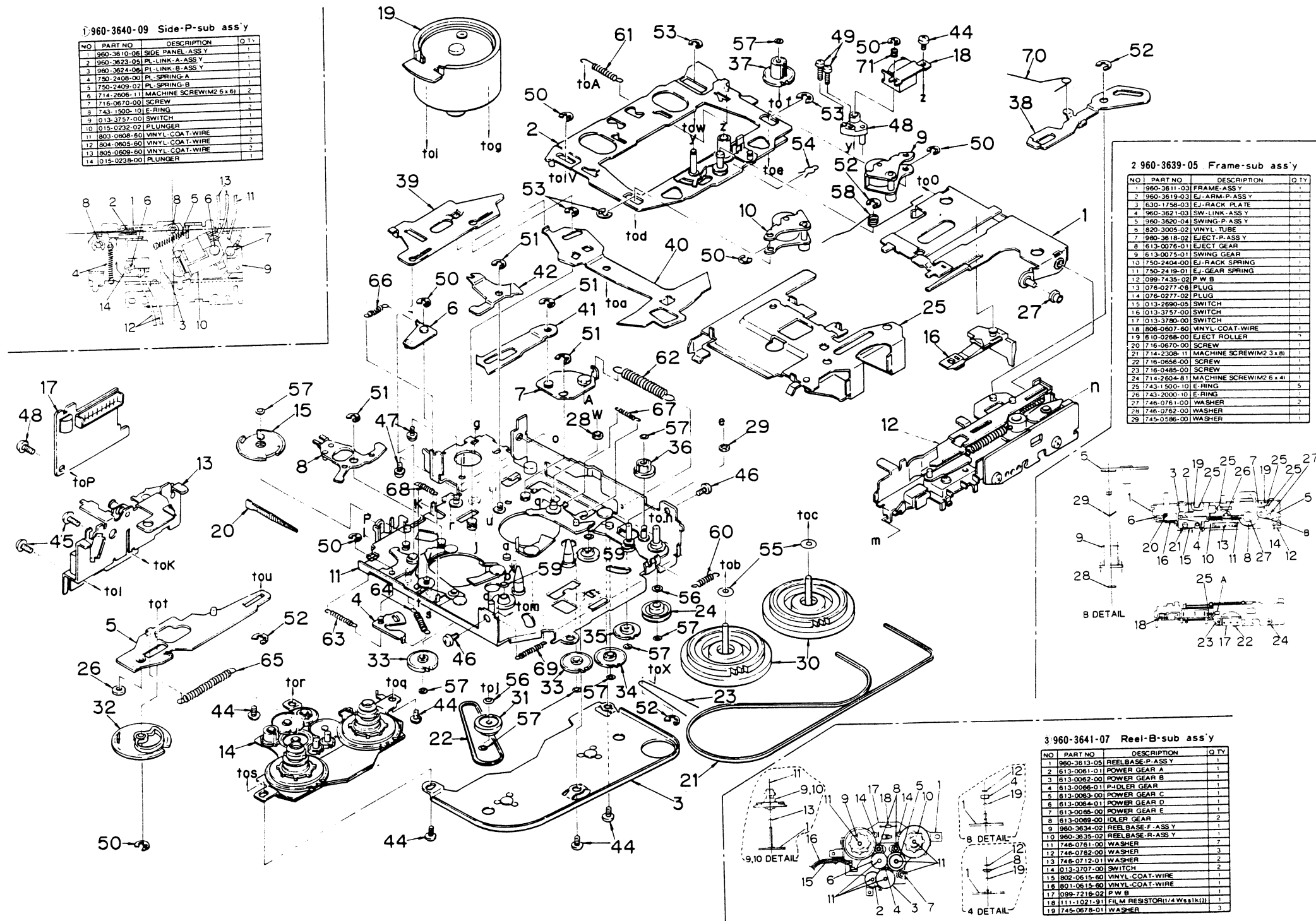


REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
16	722-0332-00	Nut	2
17	745-0560-00	Washer	2
18	012-4070-00	Variable resistor	2
19	304-0382-02	Lower cover	1
20	347-1871-02	Insulator	1
21	099-7774-00	P.W.B	1
22	722-0417-00	Nut	1
23	012-4375-00	Variable resistor	1
24	330-8228-00	VR holder	1
25	312-0257-01	Chassis	1
26	347-1869-00	Insulator	1
27	941-0159-00	L/M tuner pack	1
28	347-2197-00	Insulator	1
29	099-7773-00	P.W.B	1
30	880-1409A	FM tuner block	1
31	930-0530-01	Tape mechanism	1
32	944-0705-00	Filter ass'y	1
33	335-0818-00	Lead holder	1
34	310-1231-02	Upper case	1
35	750-2486-00	Spring	2
36	285-1000-00	Guide label (LOCK SCREW)	1
37	286-5866-00	Set plate	1
38	285-0915-00	Guide label (SERVICE)	1
39	092-0607-00	Antenna receptacle (MAIN)	1
40	852-8687-00	Extension lead (12P)	1
41	851-2136-01	Speaker lead (TEMP)	1
47	092-0607-01	Antenna receptacle (SUB)	1
48	714-3006-41	Machine screw (M3x6)	2
49	714-3004-81	Machine screw (M3x4)	4
50	731-3005-80	Tap tight (M3x5)	12
51	716-0706-00	Screw	1
53	852-8716-00	Extension lead	1
54	345-4332-00	Spacer	3
55	345-4162-00	Spacer	2
56	852-9282-00	Extension lead	1
57	852-9281-00	Extension lead	1
58	099-7772-00	P.W.B	1
59	722-0231-00	Nut	1
61	347-2185-00	Insulator	1
65	373-0460-00	Dial cover	1
66	347-2183-00	Adhesive tape	3
67	347-2085-00	Adhesive tape	2
68	347-0704-00	Insulator	1
69	290-4111-00	Label	1
70	347-2184-00	Insulator	1
72	852-9315-00	Extension lead	1
73	345-3556-00	Spacer	1
75	850-1580-01	A-lead	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	380-4293-01	Knob	1
2	380-4295-00	Knob	1
3	380-4294-01	Knob	2
4	940-0621A	Escutcheon ass'y	1
11	347-2039-00	Insulator	1
12	013-3694-00	Switch	1

EXPLODED VIEW • PARTS LIST:

©Tape mechanism section



1 960-3640-09 Side-P-sub ass'y

NO	PART NO.	DESCRIPTION	QTY
1	960-3610-06	SIDE PANEL ASS'Y	1
2	960-3623-03	PL-LINK-A ASS'Y	1
3	960-3624-06	PL-LINK-B ASS'Y	1
4	750-2408-00	PL-SPRING-A	1
5	750-2409-02	PL-SPRING-B	1
6	714-2505-11	MACHINE SCREW(M2.5x6)	2
7	716-0670-00	SCREW	1
8	743-1500-10	E-RING	7
9	013-3757-00	SWITCH	1
10	015-0232-02	PLUNGER	1
11	803-0808-60	VINYL-COAT-WIRE	1
12	804-0605-60	VINYL-COAT-WIRE	1
13	805-0609-60	VINYL-COAT-WIRE	1
14	015-0239-00	PLUNGER	1

2 960-3639-05 Frame-sub ass'y

NO	PART NO.	DESCRIPTION	QTY
1	960-3611-03	FRAME ASS'Y	1
2	960-3619-03	EJ-ARM-P ASS'Y	1
3	630-1798-03	EJ-RACK PLATE	1
4	960-3621-03	SW-LINK ASS'Y	1
5	960-3620-04	SWING-P ASS'Y	1
6	820-3005-02	VINYL-TUBE	1
7	960-3618-02	EJECT-P ASS'Y	1
8	613-0076-01	EJECT GEAR	1
9	613-0075-01	SWING GEAR	1
10	750-2404-00	EJ-RACK SPRING	1
11	750-2419-01	EJ-GEAR SPRING	1
12	099-7435-02	P.W.B	1
13	076-0277-06	PLUG	1
14	076-0277-02	PLUG	1
15	013-2890-05	SWITCH	1
16	013-3757-00	SWITCH	1
17	013-3780-00	SWITCH	1
18	806-0607-60	VINYL-COAT-WIRE	1
19	610-0268-00	EJECT ROLLER	1
20	716-0670-00	SCREW	1
21	714-2326-11	MACHINE SCREW(M2.3x8)	1
22	716-0656-00	SCREW	1
23	716-0485-00	SCREW	1
24	714-2604-81	MACHINE SCREW(M2.6x4)	1
25	743-1500-10	E-RING	5
26	743-2000-10	E-RING	2
27	746-0761-00	WASHER	1
28	746-0762-00	WASHER	1
29	745-0586-00	WASHER	1

3 960-3641-07 Reel-B-sub ass'y

NO	PART NO.	DESCRIPTION	QTY
1	960-3613-05	REEL BASE-P ASS'Y	1
2	613-0061-01	POWER GEAR A	1
3	613-0062-00	POWER GEAR B	1
4	613-0066-01	POWER GEAR C	1
5	613-0063-00	POWER GEAR D	1
6	613-0064-01	POWER GEAR E	1
7	613-0065-00	POWER GEAR F	1
8	613-0069-00	IDLER GEAR	2
9	960-3634-02	REEL BASE-F ASS'Y	1
10	960-3635-02	REEL BASE-R ASS'Y	1
11	746-0781-00	WASHER	2
12	746-0782-00	WASHER	3
13	746-0712-01	WASHER	2
14	013-3707-00	SWITCH	2
15	802-0615-60	VINYL-COAT-WIRE	1
16	801-0616-60	VINYL-COAT-WIRE	1
17	099-7216-02	P.W.B	1
18	111-1021-91	FILM RESISTOR(1/4 W 5K1K)	1
19	745-0678-01	WASHER	3

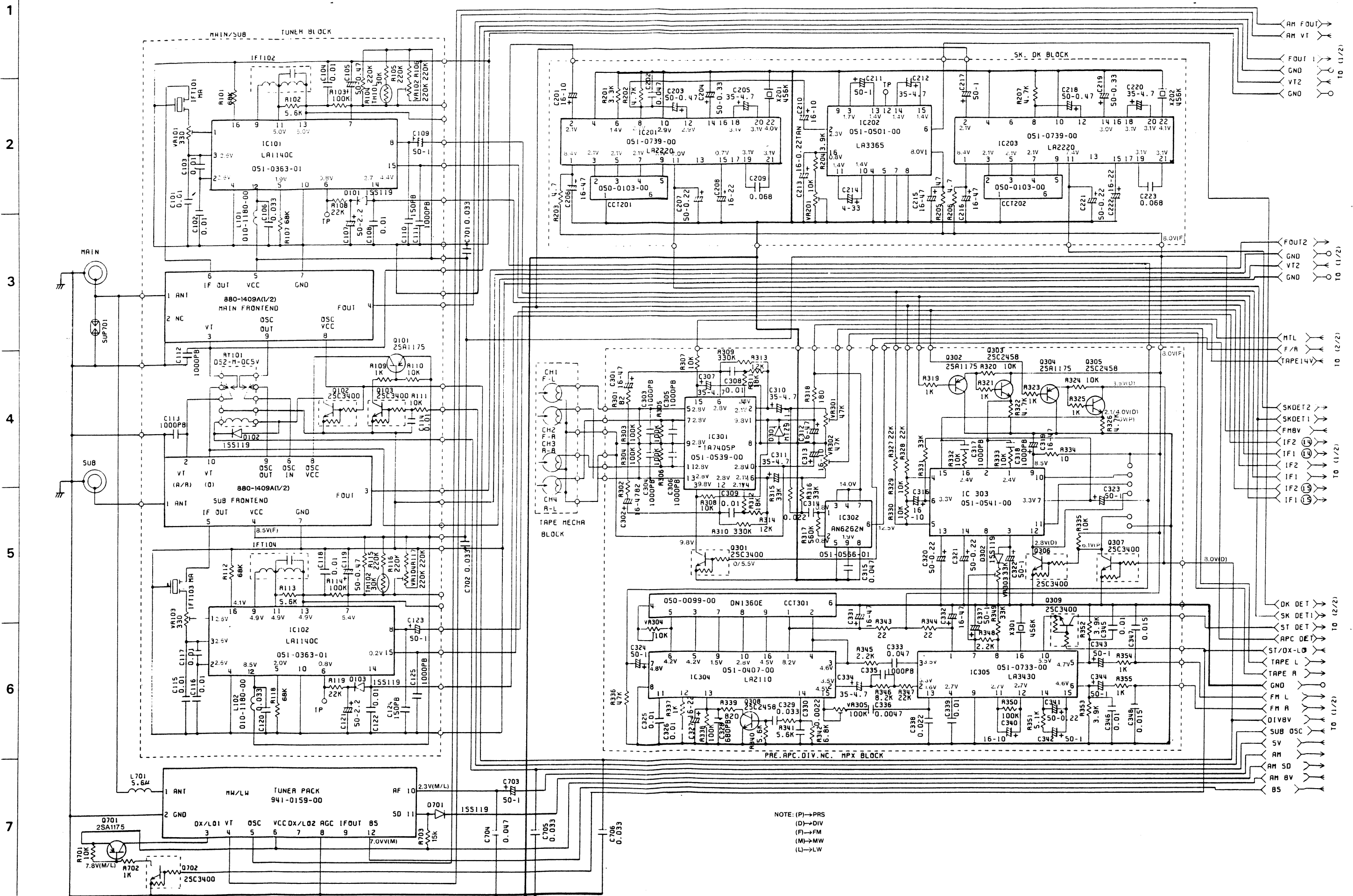
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	960-3609-04	Guide arm ass'y	1
2	960-3612-04	Head plate ass'y	1
3	960-3617-00	Flywheel-P ass'y	1
4	960-3626-02	Timing-P ass'y	1
5	960-3627-04	Power-P ass'y	1
6	960-3628-01	P-lock-P ass'y	1
7	960-3631-03	Power link ass'y	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
8	960-3632-02	REW-link ass'y	1
9	960-3738-00	Roller-F ass'y	1
10	960-3739-00	Roller-R ass'y	1
11	960-3638-05	Deck plate ass'y	1
12	960-3639-05	Frame-sub ass'y ②	1
13	960-3640-09	Side-P-sub ass'y ①	1
14	960-3641-07	Reel-B-sub ass'y ③	1

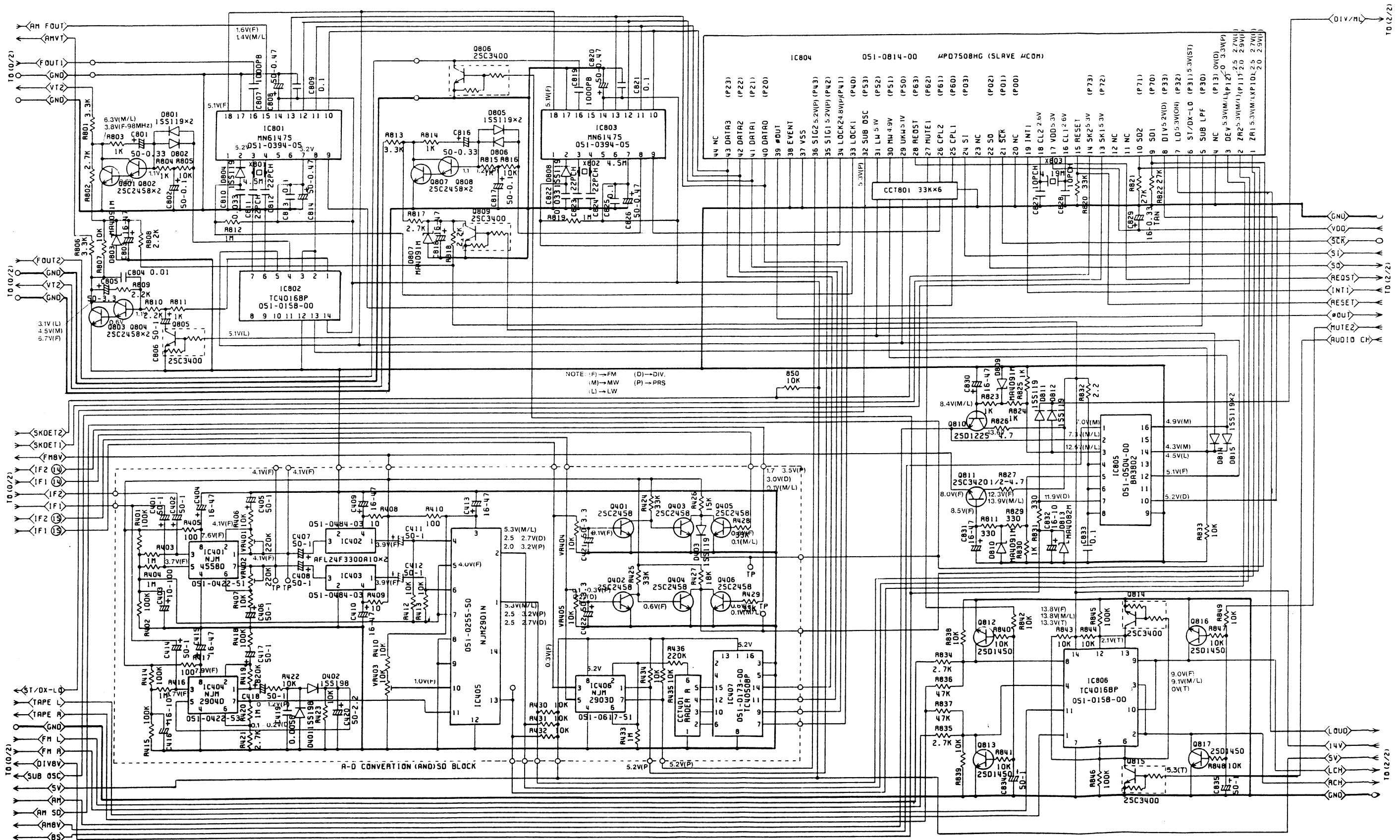
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
15	960-3642-03	CH-gear ass'y	1
16	960-3643-02	Pack-ST ass'y	1
17	990-0614-01	P.W.B ass'y	1
18	011-0291-04	Head	1
19	SMA105-100	DC motor ass'y	1
20	335-0833-01	Lead holder	1
21	602-0091-01	Belt-A	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
22	602-0092-02	Belt-B	1
23	750-2421-00	Change-A spring	1
24	604-0029-01	Tension pulley	1
25	606-0079-05	Pack guide	1
26	610-0266-00	Cam roller	1
27	610-0267-00	Guide roller	1
28	610-0281-00	Head-P-roller	1
29	610-0282-00	H-P-roller B	1
30	611-0072-02	Flywheel	2
31	613-0060-01	Pulley gear	1
32	613-0067-04	Cam gear	1
33	613-0070-00	FF-gear	2
34	613-0071-00	Loading gear-A	1
35	613-0072-00	Loading gear-B	1
36	613-0073-00	Loading gear-C	1
37	613-0074-00	Loading gear-D	1
38	630-1759-03	Eject arm	1
39	630-1760-02	Change plate	1
40	630-1761-00	Change arm	1
41	630-1762-02	Head lock plate	1
42	630-1763-01	FF-link	1
43	631-0461-01	Azimuth link	1
44	714-2003-81	Machine screw (M2x3)	6
45	714-2603-81	Machine screw (M2.6x3)	2
46	714-2604-81	Machine screw (M2.6x4)	2
47	716-0347-00	Screw (MOTOR)	2
48	716-0485-00	Screw (P.W.B)	1
49	716-0654-01	Screw (AZIMUTH)	2
50	743-1500-10	E-ring	7
51	743-2000-10	E-ring	4
52	743-2500-10	E-ring	4
53	744-0031-10	E-ring	4
54	744-0028-00	Snap retainer	1
55	745-0646-00	Washer (FLYWHEEL)	2
56	746-0624-00	Washer	2
57	746-0761-00	Washer	9
58	750-2422-03	Roller spring	1
59	746-0747-00	Washer (BEARING)	2
60	750-2405-02	Loading spring	1
61	750-2406-03	Head-P-spring	1
62	750-2407-03	P-link spring	1
63	750-2410-00	G-lock spring	1
64	750-2411-00	Timing spring	1
65	750-2412-00	Power-P-spring	1
66	750-2413-00	P-lock spring	1
67	750-2414-02	FF-spring	1
68	750-2415-01	REW-spring	1
69	750-2416-01	Brake spring	1
70	750-2418-02	EJ-arm spring-B	1
71	750-2420-00	Azimuth spring	1

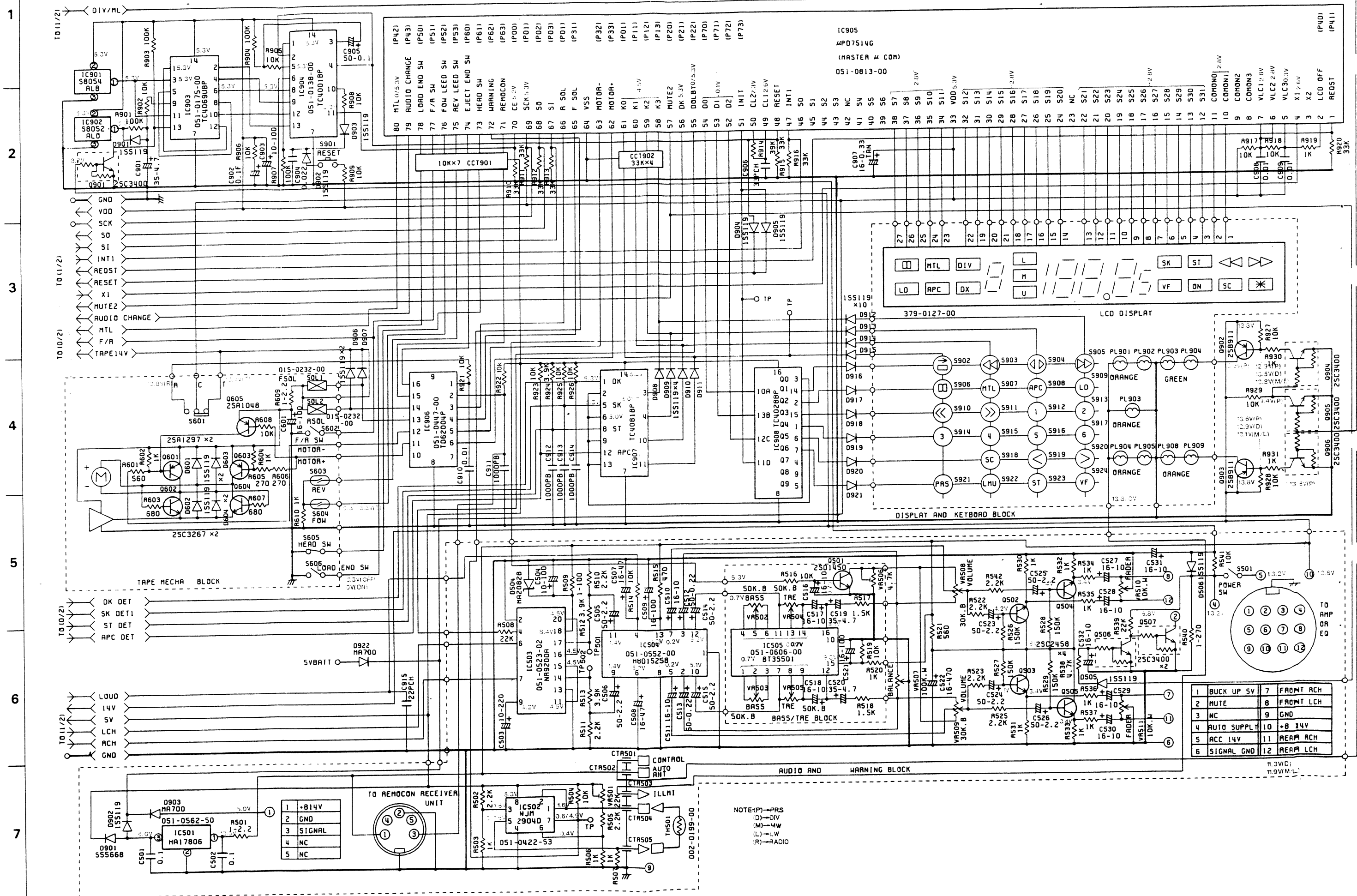
CIRCUIT DIAGRAM: (0/2)



CIRCUIT DIAGRAM: (1/2)



CIRCUIT DIAGRAM: (2/2)



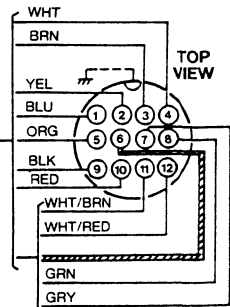
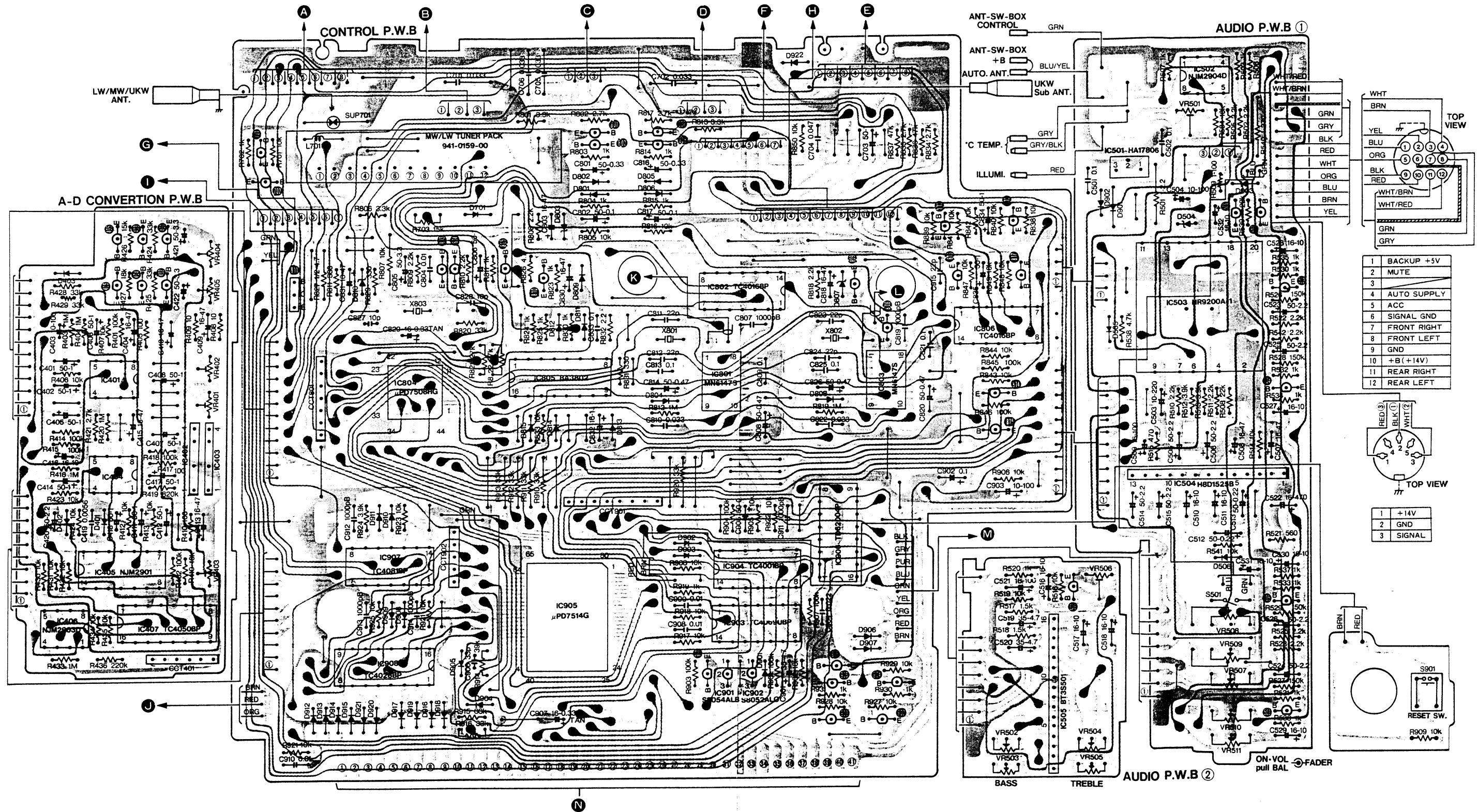
IP42	MTL	10/5.3V
IP43	RADIO CHANGE	
IP50	LD	
IP51	F/R SW	
IP52	FOH LEED SW	
IP53	REV LEED SW	
IP60	EJECT END SW	
IP61	HEAD SW	
IP62	WARNING	
IP63	REMOCON	
IP00	CE 5.3V	
IP01	SCK 5.3V	
IP02	50	
IP03	51	
IP01	50	
IP01	51	
IP31	50	
IP32	51	
IP33	MOTOR	
IP01	K1	4.5V
IP11	K1	4.5V
IP12	K2	
IP13	K3	
IP20	MUTE2	
IP21	DK 5.3V	
IP22	DOLBY 0.5.3V	
IP70	00	
IP71	01	0.1V
IP72	02	
IP73	03	

IC905	AP07514G	
	(MASTER & COM)	
	051-0813-00	
80	MTL	10/5.3V
79	RADIO CHANGE	
78	LD	
77	F/R SW	
76	FOH LEED SW	
75	REV LEED SW	
74	EJECT END SW	
73	HEAD SW	
72	WARNING	
71	REMOCON	
70	CE 5.3V	
69	SCK 5.3V	
68	50	
67	51	
66	50	
65	51	
64	VSS	
63	MOTOR	
62	K0	
61	K1	4.5V
60	K1	4.5V
59	K2	
58	K3	
57	MUTE2	
56	DK 5.3V	
55	DOLBY 0.5.3V	
54	00	
53	01	0.1V
52	02	
51	03	
50	CL2 3V	
49	CL1 2.6V	
48	RESET	
47	INT1	
46	50	
45	51	
44	52	
43	53	
42	NC	
41	54	
40	55	
39	56	
38	57	
37	58	
36	59	2.8V
35	510	
34	511	
33	VDD 5.3V	
32	512	
31	513	
30	514	
29	515	
28	516	2.8V
27	517	
26	518	
25	519	
24	520	
23	NC	
22	521	
21	522	
20	523	
19	524	
18	525	
17	526	2.8V
16	527	
15	528	
14	529	
13	530	
12	531	
11	CONONO	2.8V
10	CONON2	
9	CONON3	
8	VLC1 2.8V	
7	VLC2 2.8V	
6	VLC3 3.3V	
5	X1 2.6V	
4	X2	
3	LCD OFF	
2	REOST	
1	IP40	IP41

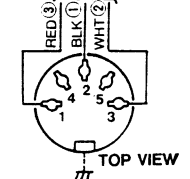
1	BUCK UP 5V	7	FRONT RCH
2	MUTE	8	FRONT LCH
3	NC	9	GND
4	AUTO SUPPLY	10	+B 14V
5	ACC 14V	11	REAR RCH
6	SIGNAL GND	12	REAR LCH

NOTE (P) - PRS
 (D) - DIV
 (M) - MW
 (L) - LW
 (R) - RADIO

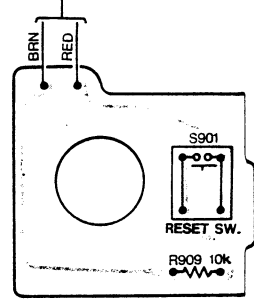
PRINTED WIRING BOARD:



1	BACKUP +5V
2	MUTE
3	
4	AUTO SUPPLY
5	ACC
6	SIGNAL GND
7	FRONT RIGHT
8	FRONT LEFT
9	GND
10	+B (+14V)
11	REAR RIGHT
12	REAR LEFT



1	+14V
2	GND
3	SIGNAL



PRINTED WIRING BOARD:

