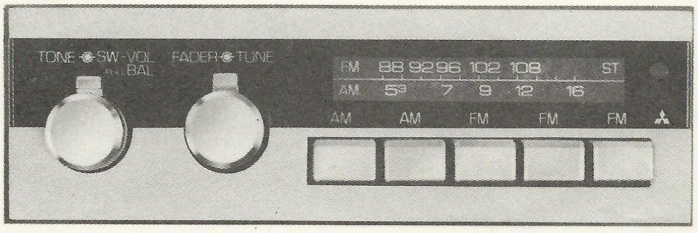
Feb. '85

MITSUBISHI

SERVICE MANUAL

AM.FM(MPX) CAR RADIO

MODEL : AR-2379FY MB382859



SPECIFICATIONS

SPEAKER LOAD:			4 Ω x 4 (with fader control)
POWER OUTPUT	10% DIST	400Hz:	4.0Wx 4
		1000Hz:	4.0Wx 4
FM			
	AFC:		± 250 KHz
	IF FREQUENCY:		10.7 MHz
	TUNING RANGE:		88 ~ 108 MHz
			With MPX, SRC and NK
AM			
	IF FREQUENCY:		455 KHz
	TUNING RANGE:		525 ~ 1605 KHz
	ANT:		Pole type 80pF ± 10%

CIRCUIT		
	AM:	RF ~ IF1IC
	FM:	QUADRATURE DET
CURRENT CONSUMPTION:		
	ILL:	0.18A
	ACC 1W/MAX:	1.18A/2.88A
WEIGHT:		0.93 kg (2.05 lb)
OUTSIDE DIMENSION		160 mm (6-1/4 in) 50 mm (2 in) 148 mm (5-7/8 in)

MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD.

73-75 EPPING ROAD NORTH RYDE N.S.W. 2113 SYDNEY AUSTRALIA

WHITE (BLU) COMMON
BLACK (WHT) FRONT RIGHT
" (YEL) " LEFT
" (RED) REAR LEFT
" (GRN) " RIGHT

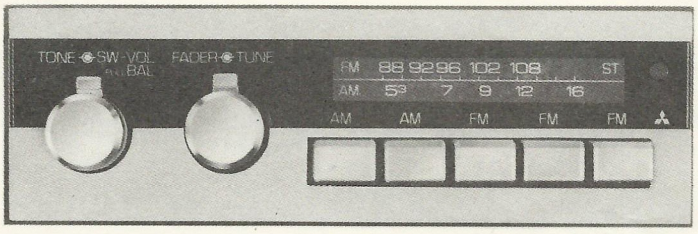
Feb. '85

MITSUBISHI

SERVICE MANUAL

AM.FM(MPX) CAR RADIO

MODEL : AR-2379FY MB382859



SPECIFICATIONS

SPEAKER LOAD:			4 Ω x 4 (with fader control)
POWER OUTPUT	10% DIST	400Hz:	4.0Wx 4
		1000Hz:	4.0Wx 4
FM			
	AFC:		± 250 KHz
	IF FREQUENCY:		10.7 MHz
	TUNING RANGE:		88 ~ 108 MHz
			With MPX, SRC and NK
AM			
	IF FREQUENCY:		455 KHz
	TUNING RANGE:		525 ~ 1605 KHz
	ANT:		Pole type 80pF ± 10%

CIRCUIT		
	AM:	RF ~ IF1IC
	FM:	QUADRATURE DET
CURRENT CONSUMPTION:		
	ILL:	0.18A
	ACC 1W/MAX:	1.18A/2.88A
WEIGHT:		0.93 kg (2.05 lb)
OUTSIDE DIMENSION		160 mm (6-1/4 in) 50 mm (2 in) 148 mm (5-7/8 in)

MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD.

73-75 EPPING ROAD NORTH RYDE N.S.W. 2113 SYDNEY AUSTRALIA

ADJUSTMENT PROCEDURE

1. AM ALIGNMENT (Power supply voltage: DC13.2 ± 0.2V) (AM/FM selector: in AM)

1-1 IF Alignment

Step	Circuit	Signal generator connection	Sweep gerarator output	Dial setting	Adjustment point	Procedure
	Preset: Turn T3 fully counterclockwise.					
1	IF	Figl 1: Connect SMG output thru. 0.01uF to PC Joiner (Fig.6) and pick up signal from R3.	400Hz 30% mono-modulation 70 – 80dB (uV)	High edge	T1, T2	Adjust for maximum voltage and best symmetry form at 455 KHz (Fig.2).
2	RF	Fig.1: Connect SSG output to ant. socket thru. dummy antenna.	80 - 100dB (uV)	High edge	T3	Adjust 2-peaks to be symmetory wave form at 455 KHz by increasing output by 10–20dB (Fig.3)
3			1640 – 1650KHz	High edge	VC2	Adjust to get 1640 – 1650 KHz receivable.
4			1400KHz	1400KHz	VC3 Antenna trimmer	Maximum output
5			600KHz	600KHz	L	Maximum output
6				Low edge		Confirm that 520KHz is receivable.
	Repeat Step 3 - 6 until to get best tracking.					

2. FM ALIGNMENT (Power supply voltage: DC13.2 ± 0.2V) (AM/FM selector: in FM)

Step	Circuit	Signal generator connection	Sweep gerarator mode	Dial setting	Adjustment point	Procedure
1	IF	Fig.1 Connect DC Voltmeter to R155 (hot side) and R156 (ground side).	–10dB (uV)	98MHz	T151	D.C. voltmeter points 0 ± 60mV
2			54dB (uV) 100% modulation		T152	D.C. voltmeter points at 0mV and minimum distortion.
	Repeat Step 1 – 2, if output is not satisfactory.					
3	Preset: Turn VR151 fully counterclockwise.					
	RF	Fig.1	87.8MHz 108.2MHz	Low edge High edge	VC103	Confirm output to be 87.8 and 108.2MHz respectively.
4			88MHz 98MHz 108MHz	88MHz 98MHz 108MHz		Confirm that limiting Sensitivity is less than 14dB (uV) at 88,98, 108MHz.
5			108MHz	108MHz	VC101, VC102 (in case of mistracking)	Maximum Limiting Sensitivity.
	Repeat Step 3-5 with VC101, 102, 103 until to get best tracking. (Fig.5)					
6	MPX	Fig.4 Connect Frequency Counter to R202 thru. 100KΩ	98MHz 54dB(uV) No modulation	98MHz	VR201	Counter indicates 76KHz ± 100Hz
7			98MHz 60dB (uV) Standard Stereo Modulation	98MHz	VR252	Maximum separation, Confirm L and R channel separation level more than 20dB.
8			98MHz 25dB (uV)	98MHz	VR202	Separation level should be 10 ± 2dB
9			98MHz 60dB(uV) Pilot signal modulation only	98MHz	VR251	Adjust to get 19KHz of Pilot signal minimum leakout level.
10			Standard Stereo Signal modulation			Confirm L and R channel separation level more than 20dB. (If less than 20dB, repeat Step 7–9 for adjustment.)

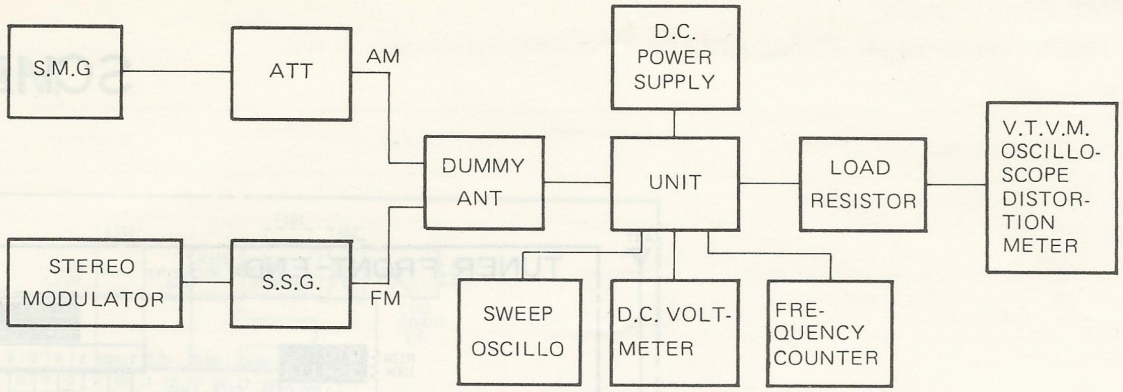


Fig.-1 CONNECTION

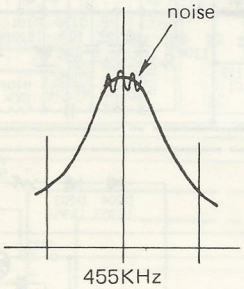
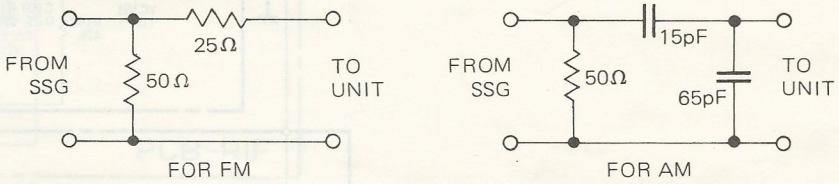


Fig.-2



DUMMY ANT (50Ω Load type SSG)

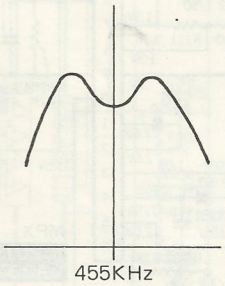


Fig.-3

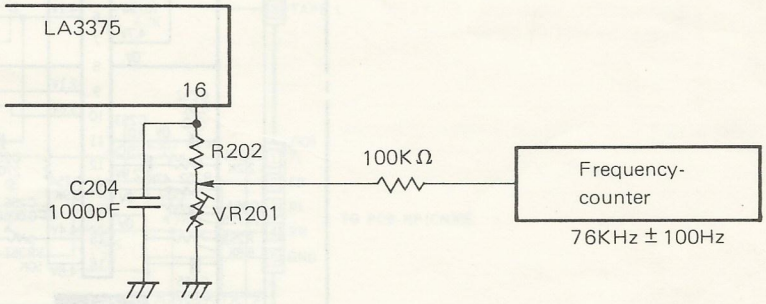


Fig.-4

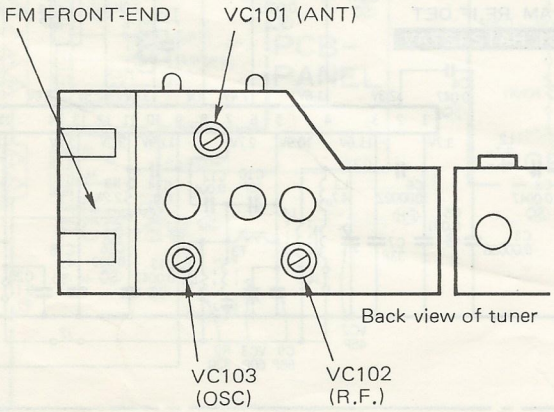


Fig.-5

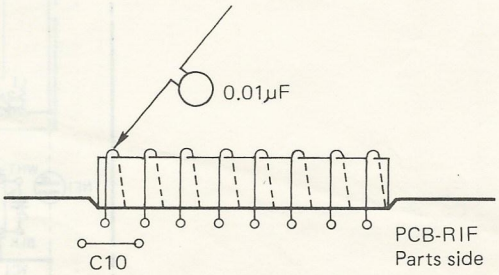
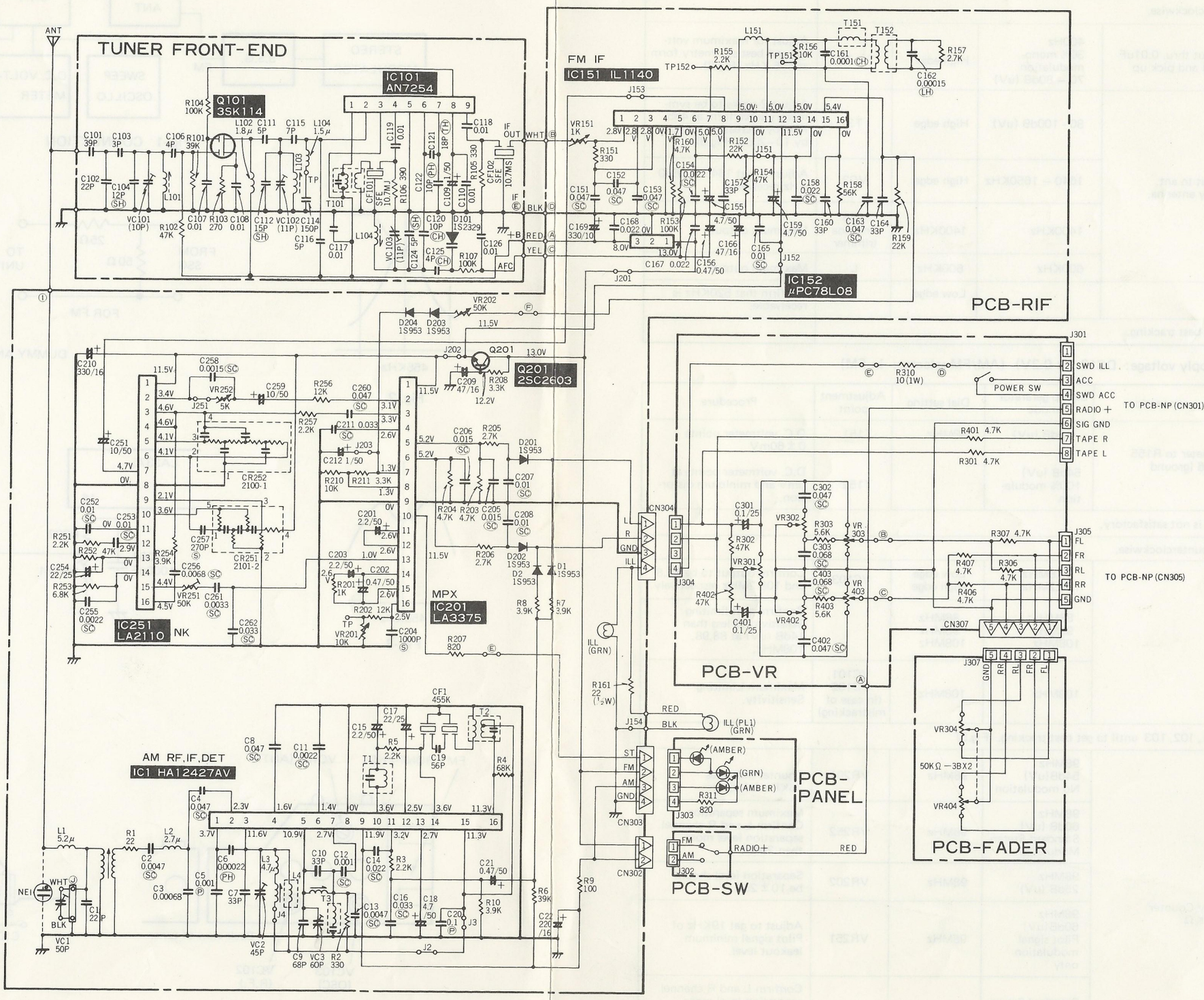
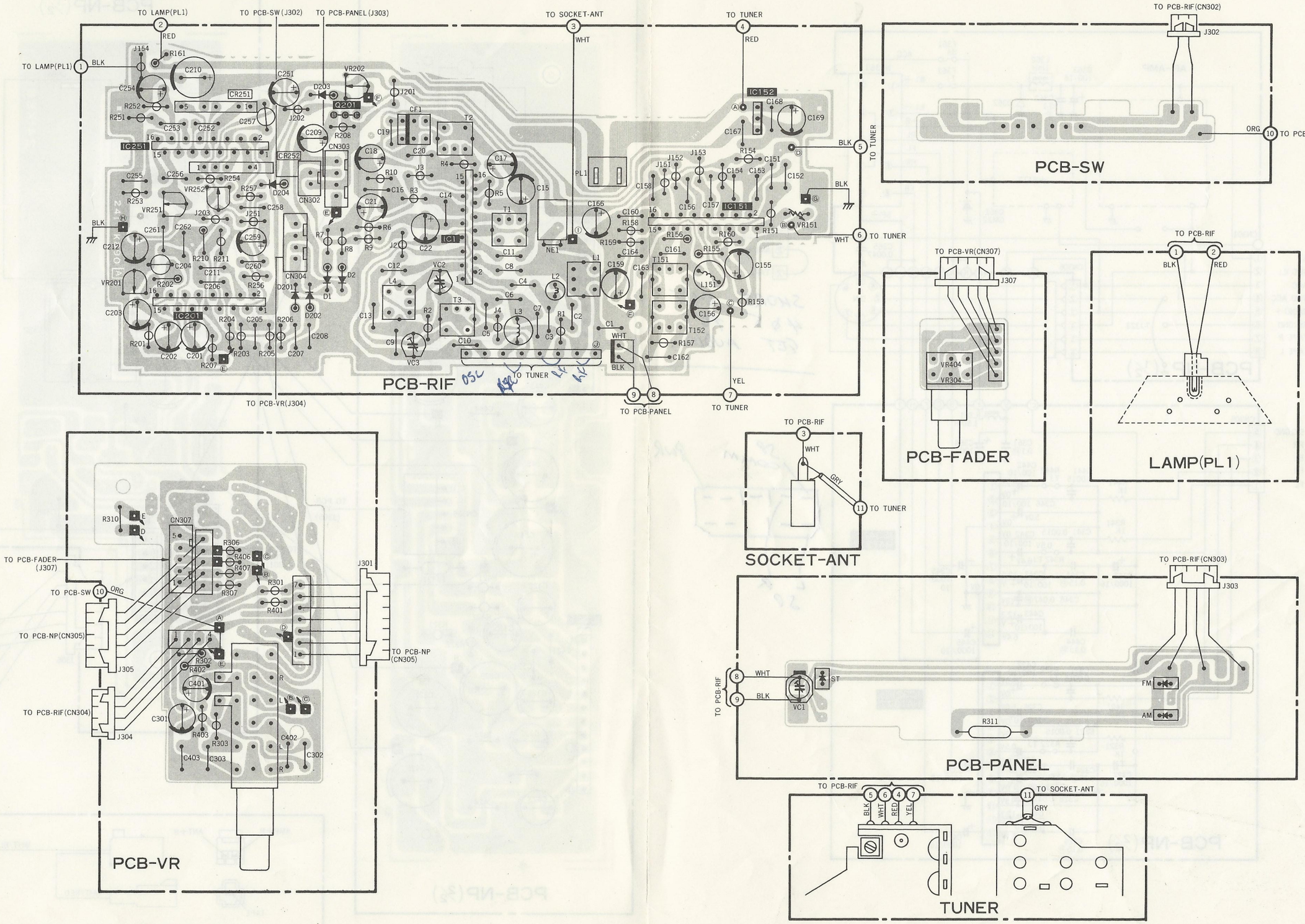


Fig.-6

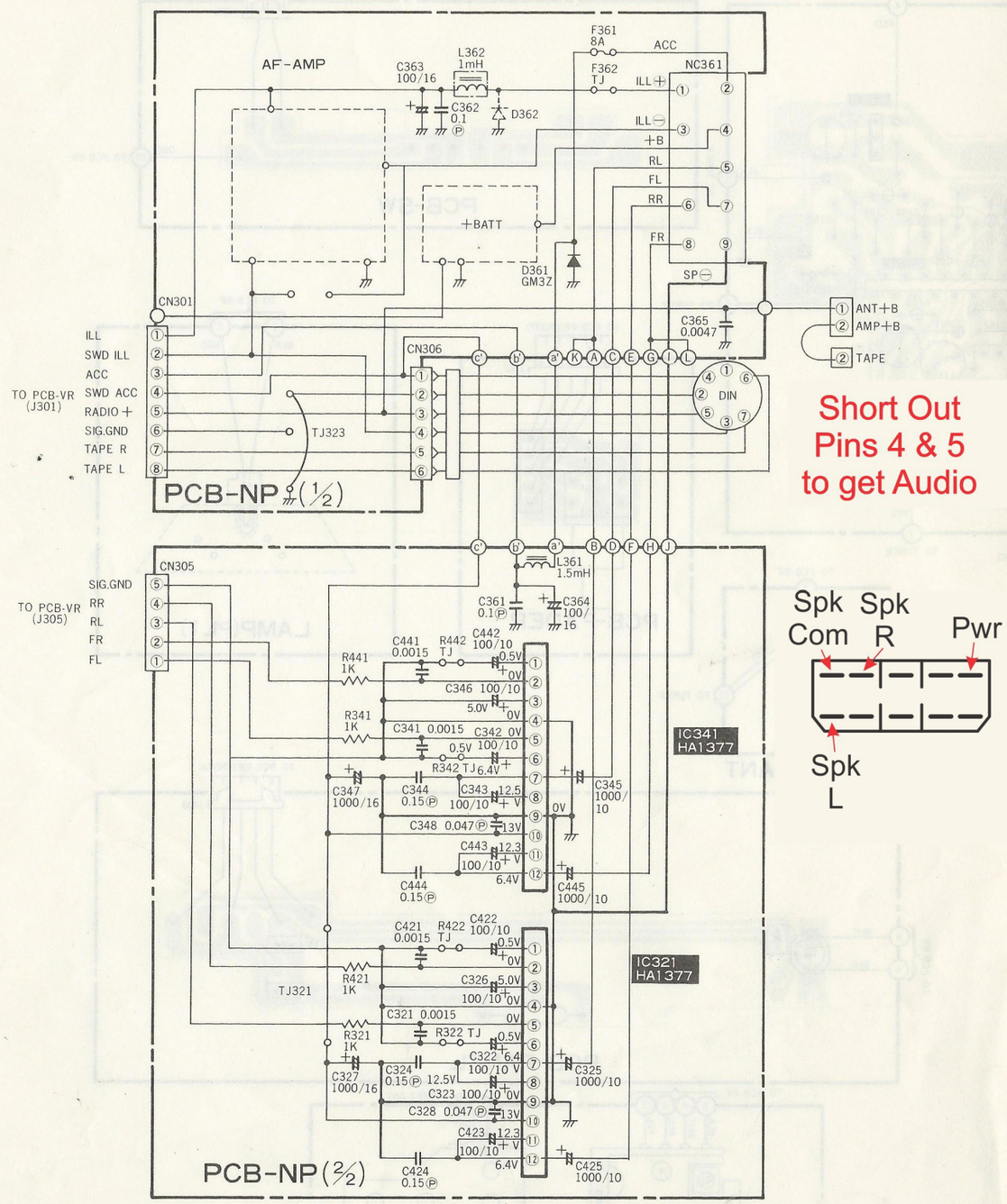
SCHEMATIC DIAGRAM



PRINTED CIRCUIT BOARD (Pattern Side)

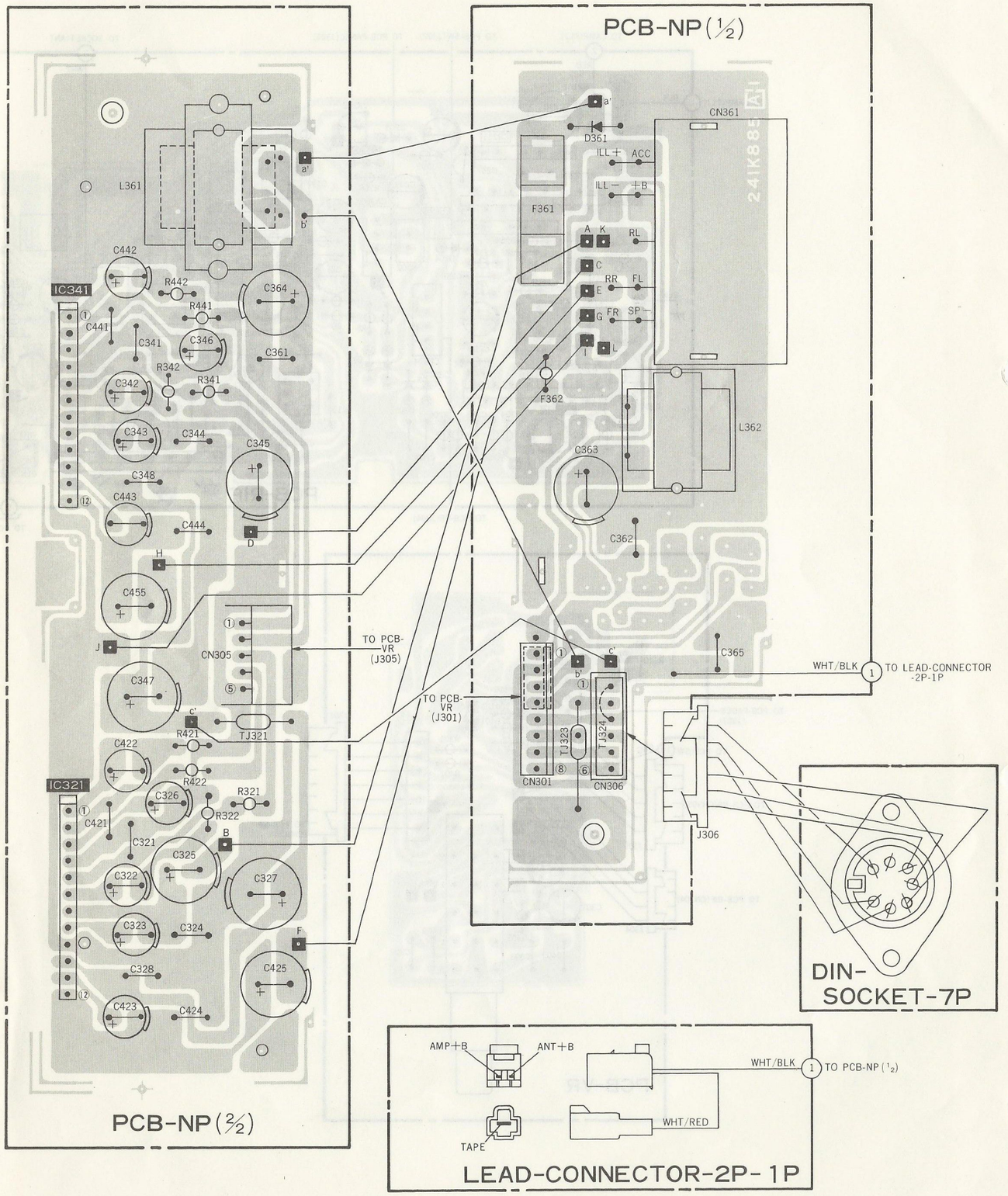


SCHEMATIC DIAGRAM



Short Out
Pins 4 & 5
to get Audio

PRINTED CIRCUIT BOARD (Pattern Side)



PARTS LIST

Ref. No.	Part No.	Description
RESISTORS		
VR301,302 303,402,403	122L11002	VR-DOUBLE SHAFT
VR252	127L00203	VR-SEMIFIXED 5K
VR201	127L00204	" 10K
VR202,251	127L00206	" 50K
VR151	127M03101	" 1K
VR304,404	129L17901	VR-FADER50K
CAPACITORS		
CR251	149L00901	CR-MULTIPLE
CR252	149L01001	CR-MULTIPLE
VC1	202L01801	C-TRIMMER 50PF
VC2	202P10904	" 45PF
VC3	202P10905	" 60PF
CF1	296P04201	CERAMIC FILTER
SEMICONDUCTORS		
Q201	260P33805	TR 2SC 2603G
D1,2,201, 202,203,204	264P11701	" 1S953
D361	264P13201	" GM-3Z
AM, ST	264P33901	" LE LN410YP (AMBER)
FM	264P34301	" LE LN310GPMY (GREEN)
IC1	266P01901	IC HA12427AV
IC321,341	266P35901	IC HA1377A
IC151	266P36601	IC LA1140
IC201	266P38901	IC LA3375
IC251	266P65101	IC LA2110
IC152	266P905A2	IC μPC78L08
TRANSFORMERS AND COILS		
L3	321P00106	COIL CHOKE
L2	351M00604	"
L361	351M00803	TRANS CHOKE
L362	351M01401	"
L151	351M01501	COIL IF
L4	373M00102	TRANS OSC
L1	373M00702	COIL RF
T151	374L03601	TRANS IF
T152	374L03602	"
T1	374L04501	"
T2	374L04601	"
T3	374M00501	TRANS TRAP

Ref. No.	Part No.	Description
OTHERS		
	242L24001	PC-JOINER
J302	242L39003	LEAD CONNECTOR-2S
J303	242L39109	" " -4S
J306	242L39307	" " -6S
MOTOR-ANT	242L46501	" " -2P-1P
J304	242L47201	" " -4S
J307	242L47208	" " -5S
J305	242L47301	" " -5S
J301	242L47509	" " -8S
NE1	253L02501	NEON LAMP
PL1	253L03005	ASSY LAMP
PL2	253L03904	LEAD LAMP
	295K10002	TUNER
	449L00501	SOCKET MPX
ANT	449L02502	SOCKET ANT
CN361	452D079A2	CONNECTOR-A
CN301	452D079A8	" -8P
	452M02303	" -8P
CN305	452D11105	" -5P
	452K00201	"
CN306	452M02301	" -6P
CN302	452M02402	" -2P
CN303,304	452M02404	" -4P
	457L00101	HOLDER FUSE
	590K36301	HOLDER PWB
	590K36401	HEAT SINK
	591L12303	UPPER COVER
	591L12401	BACK COVER
	591M81001	SHIELD CAP
	592M19801	HOLDER PWB
	592M19901	REFLEX PLATE
	704L20301	KNOB-B
	704M62104	KNOB-A
	704M65001	BUTTON-TUNER
	761M10403	POINTER
	963L28707	ASSY PANEL
	641M38401	CAP-RCA
	642M29201	SHEET-A
TUNER FRONT-END		
Q101	260M00909	FET 3SK114Y
D101	264M02503	DIODE 1S2329
IC101	266P37901	IC AN7254
CF101,102	296M00802	CERAMIC-FILTER