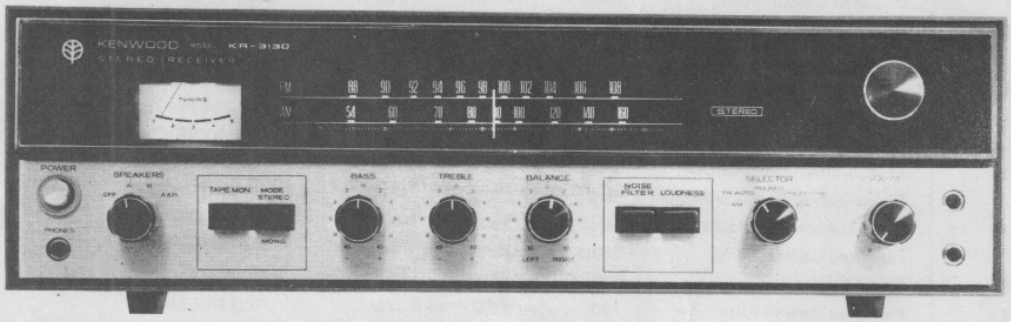
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KR-3130



SOLID STATE AM-FM STEREO RECEIVER

PARTS DESCRIPTION LIST

MAIN CHASSIS (AF1K) SECTION

P C Board

–	TUNER UNIT (UA5406K3)	X09-0006-13
–	PRE, TONE & MAIN UNIT (UA6001J1)	X09-0013-01

Symbol No.	Description				Part No.	Remarks
CAPACITOR						
C1	Ceramic	0.04μF	+80%,	−20%	CK94YGE403Z	
C2	Electrolytic Tubular	47μF	3.15WV		CE04W0F470	
C101	Mylar	0.027μF	±20%		CQ92M1H273M	
C111	Mylar	0.0033μF	±20%		CQ92M1H332M	
C112	Mylar	0.056μF	±20%		CQ92M1H563M	
C113	Mylar	0.0056μF	±20%		CQ92M1H562M	
C171	Electrolytic Tubular	1000μF	35WV		CE02W1V102	
C201	Mylar	0.027μF	±20%		CQ92M1H273M	
C211	Mylar	0.0033μF	±20%		CQ92M1H332M	
C212	Mylar	0.056μF	±20%		CQ92M1H563M	
C213	Mylar	0.0056μF	±20%		CQ92M1H562M	
C271	Electrolytic Tubular	1000μF	35WV		CE021WV102	
C301	Oil Impregnated	0.01μF	±20%		CP052W103M	
C302, 303	Oil Impregnated	0.01μF	±20%		CP022J103M	
C304	Electrolytic Tubular	1000μF	50WV		CE62A1H102	
C305	Electrolytic Tubular	470μF	25WV		CE02W1E471	
RESISTOR						
R1	Insulated Carbon Film	1kΩ	±10%	1/4W	PD14BY2E102K	
R101	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R102	Insulated Carbon Film	390kΩ	±10%	1/4W	PD14BY2E394K	
R103	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
R111	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R112	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
R113	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R171	Fixed Carbon Composition	330Ω	±10%	1/2W	RC05GF2H331K	
R172	Fixed Carbon Composition	1kΩ	±10%	1/2W	RC05GF2H102K	
R201	Insulated Carbon Film	10kΩ	±10%	1/2W	PD14BY2E103K	
R202	Insulated Carbon Film	390kΩ	±10%	1/4W	PD14BY2E394K	
R203	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
R211	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R212	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
R213	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R271	Fixed Carbon Composition	330Ω	±10%	1/4W	RC05GF2H331K	
R272	Fixed Carbon Composition	1kΩ	±10%	1/4W	RC05GF2H102K	
R301	Fixed Carbon Composition	1MΩ	±10%	1/2W	RC05GF2H105K	
R302	Insulated Carbon Film	330Ω	±5%	4W	RW14AG3G331J	
R303	Fixed Carbon Composition	3.9kΩ	±10%	1/2W	RC05GF2H392K	
R304	Insulated Carbon Film	120Ω	±5%	1W	RW14AG3A121J	
R305	Fixed Carbon Composition	2.2kΩ	±10%	1/2W	RC05GF2H222K	
R306	Insulated Carbon Film	390Ω	±5%	2W	RW14AG3D391J	
R307	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R308	Fixed Carbon Composition	22Ω	±10%	1/2W	RC05GF2H220K	
POTENTIOMETER						
VR1	VOLUME 50kΩ (B) Dual				R06-4005-05	

PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
VR2	BALANCE 100kΩ (W) Slide	R03-4026-05	
VR3	BASS 50kΩ (A) Dual	R08-4042-05	
VR4	TREBLE 50kΩ (A) Dual	R08-4042-05	
	TRANSISTOR/DIODE/THERMISTOR		
Q1 ~ 4	2SC1060		
D1	S1B02-03B		
TH1, 2	5T-31		
	SWITCH		
S1	SPEAKERS (Rotary) F · 1 · 4 · 4	S04-1024-05	
S2	SELECTOR (Rotary) F · 4 · 4 · 5	S04-4012-05	
S3	TAPE MONITOR (Two Push buttons)	S41-2001-05	
S4	MODE (Two Push buttons)	S41-2001-05	
S5	LOUDNESS (Two Push buttons)	S41-2001-05	
S6	NOISE FILTER (Two Push buttons)	S41-2001-05	
S7	PRE-MAIN SEPARATE SW (Slide)	S10-22D	
S8	POWER SW (Push button)	S39-1010-05	
S9	AC VOLTAGE SELECT	S31-2004-05	
	MISCELLANEOUS		
–	Chassis	A10-0211-11	
–	Panel	A20-0327-05	
–	Sub-Panel	A22-0077-02	
–	Rear-Panel	A23-0168-02	
–	Reflector (A)	A33-0009-03	
–	Sole Plate	A40-0058-03	
–	Thermistor Holder x 2	A90-310B	
–	AMP Holder x 2	A3882	
–	METER Holder	A5107B	
–	ANT Holder	A5065	
–	Ring	B07-0064-04	
–	Sticker	B09-190	
–	Caution Sticker	B09-192	
–	Front Glass	B10-0035-02	
–	Filter	B19-0088-03	
–	Dial	B20-0163-03	
–	Dial Pointer (Yellow)	B21-4004-05	
P. L	Pilot Lamp (Fuse Type) x 4	B30-0015-15	
M	Meter (for Signal)	B31-0006-05	
–	Certification	B42-0009-04	
–	Decorated Plate	B42-0226-02	
–	Schematic Diagram	B52-0073-00	
–	Pulley	D04-90M	
–	Flywheel	D05-052	
–	Dial Spring	D06-01	
–	Small Pulley x 5	D09-14B	
–	Small Bushing x 4	D10-05	
–	Small Bushing	D10-09	
–	Metal Fittings (for Dial)	D11-10	
–	Dial Shaft	D20-0079-03	
J	Pin Jack (1P)	E08-11C	
J	Pin Jack (4P)	E08-14G	

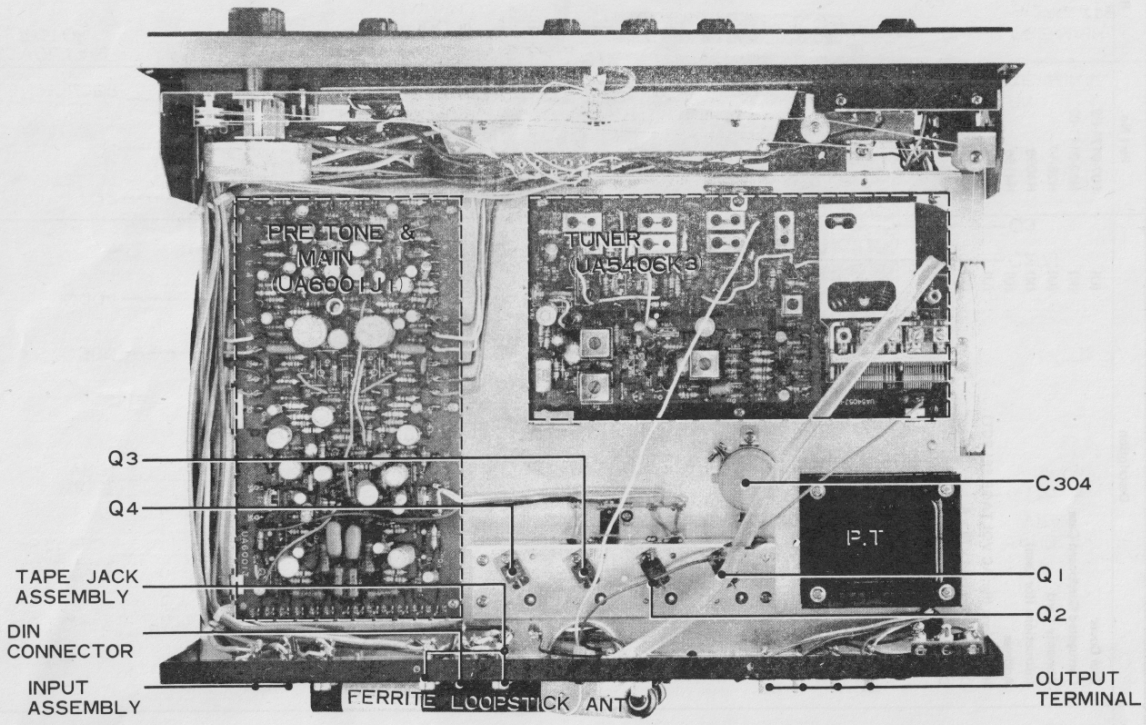
PARTS DESCRIPTION LIST

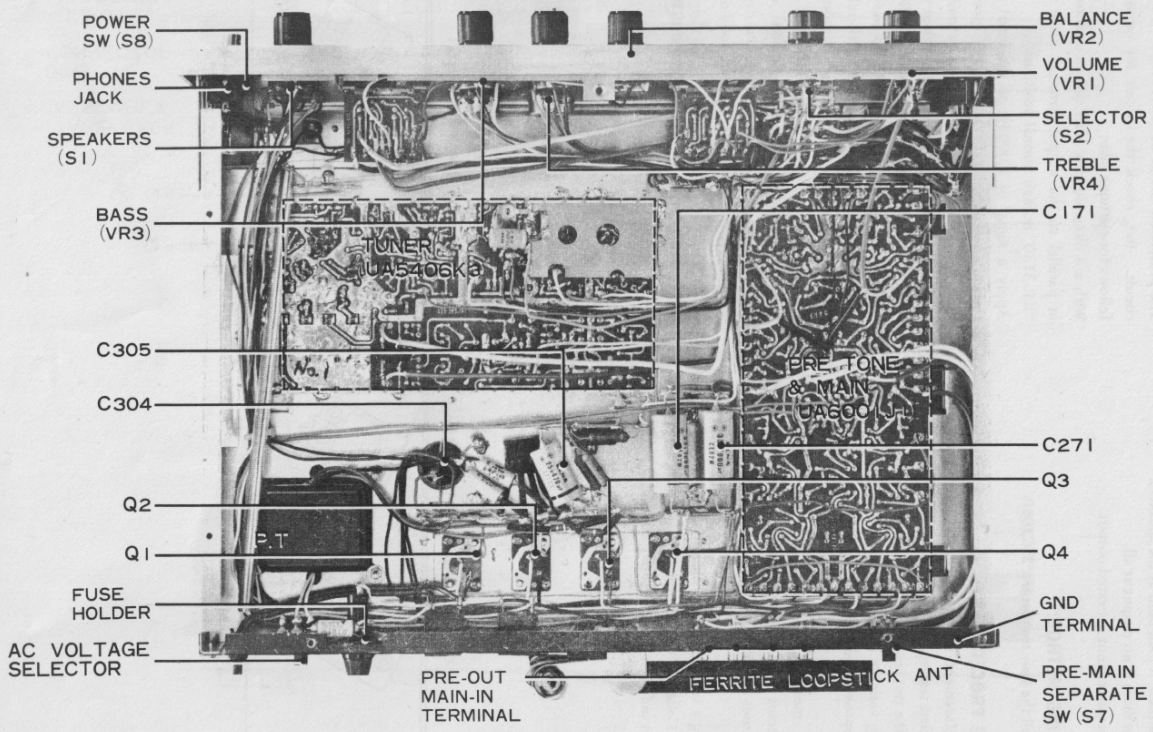
Symbol No.	Description		Part No.	Remarks
J	Pin Jack (6P)		E08-16D	
–	AC Outlet (UL) x 2		E08-0205-05	
J	PHONES Jack		E11-0002-05	
J	Pin Jack with DIN CONNECTOR (4P)		E13-0401-05	
J	MIC Jack		E16-22	
–	Transistor Socket x 4		E4086	
–	Radiator		F01-0071-03	
–	Shield Plate		F10-0051-04	
–	Blind (for METER)		F19-0048-03	
–	Rubber Bushing (for BEACON)		G02-020	
–	Legs x 4		G10-02	
–	Cord Bushing		G11-19	
–	AC Cord Bushing		G11-25	
–	Corrugated Cardboard Case		H01-0509-03	
–	Warranty Card		H26-02	
–	Fuse Holder x 4		J13-0023-05	
–	Front Glass Holder x 2		J19-0062-04	
–	Dial Holder		J19-0064-04	
–	Switch Stopper		J19-0082-04	
–	Front Glass Holder (A) x 2		J19-0089-04	
–	Fornt Glass Holder (B) x 2		J19-0090-04	
–	Front Glass Holder x 3		J19-0091-04	
–	Meter Holder		J21-0679-03	
–	Switch Holder		J21-0703-04	
–	P C Board		J25-0429-04	
–	P C Board		J25-0430-04	
–	Knob (28φ, TUNING)		K23-0047-03	
–	Knob (20φ, SPEAKERS, BASS, TREBLE, BALANCE, SELECTOR, VOLUME)		K23-0049-03	
P. T.	Power Transformer		L03-0004-05	
–	FM Antenna		L10-04	
–	Ferrite-Loopstick Antenna		L15-34	
L1	Choke Coil		L20-010	
–	Fuse Holder		S15-13	
P. L	Pilot Lamp (for BEACON)		S16-19	
F	Fuse (1A)		S17-61	
–	Feeder Holder		S21-29	
–	Lead Holder		S21-44	
–	Switch Stopper		S4103	
–	Slider		S4132	
–	AC Cord with Plug		W09-15	
In USA, added to the parts of (K), and In PX, added to the parts of (U)				
–	Case	(K)	A01-0120-02	
–	Cabinet	(U)	A03-0063-02	
–	Instruction Manual	(K)	B50-0456-00	
–	Instruction Manual	(U)	B50-0486-00	
–	Instructions (for Power Supply)	(U)	B50-0003-00	
–	Pin Plug x 4	(U)	E09-410	

PARTS DESCRIPTION LIST

Symbol No.	Description		Part No.	Remarks
–	Dial Cover	(U)	F07-0171-03	
–	Corrugated Cardboard Case	(K)	H02-0111-03	
–	Warranty Card	(U)	H26-17	
–	Instructions (for Case)	(K)	H4068	
–	Address	(U)	H4156	
–	Instructions (for AC VOLTAGE SELECT)	(U)	H4190	
–	Decorated Screw (4 x 8) x 4	(K)	N08-0003-04	
–	Decorated Screw (4 x 14) x 4	(U)	N08-0005-04	

CHASSIS TOP VIEW





CHASSIS BOTTOM VIEW

PROCEDURE FOR REPLACING OUTPUT TRANSISTOR

SYMPTOMS:

A. When there is load hum at the speakers.
B. When there is no output at all.
C. When you cannot get rated output.

REPLACING METHOD:

Replace all the four transistors, 2SC1060.

TESTING PROCEDURES:

Until replacement is completed, do not operate the unit without first testing.

Perform the test according to the following procedures.

1. Using variable transformer, lower the AC line voltage to approximately 30 V.

2. Also measure the voltage between the chassis and Collector of the power transistor Q1 or Q4. If a tester indicates approximately 47 V, it is normal.

3. Using a tester, measure the voltage between the chassis and Collector of the power transistor Q2 or Q3. If a tester indicates approximately 23 V, it is normal.

PROTECTION ADJUSTMENT PROCEDURES:

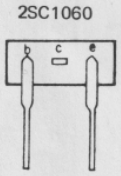
The protection circuit in "UA6001J1" is a non-adjustment circuit. But, check the circuit for normal operation as follows for cautions sake;

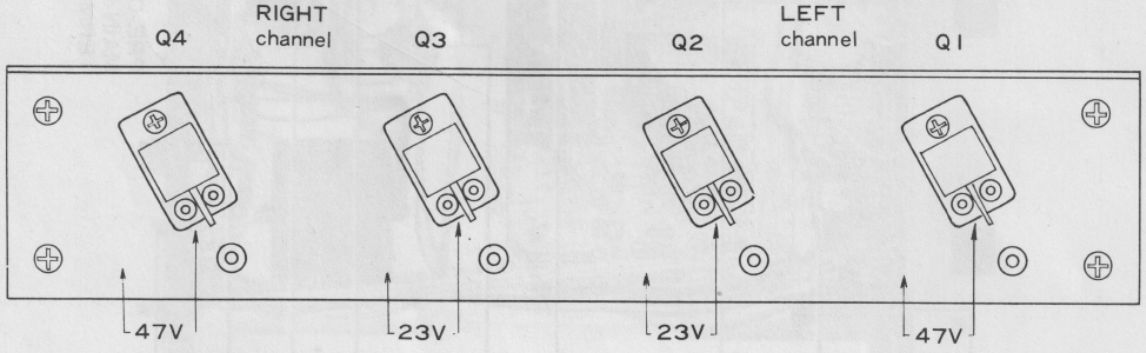
With a 8 ohms dummy load and an oscilloscope connected in parallel to the output terminal, place the controls on "KR-3130" in their normal positions.

Apply a signal of 1,000 Hz to the input and adjustment the volume control until "UA6001J1" provides an output of 10 W as measured across the dummy load.

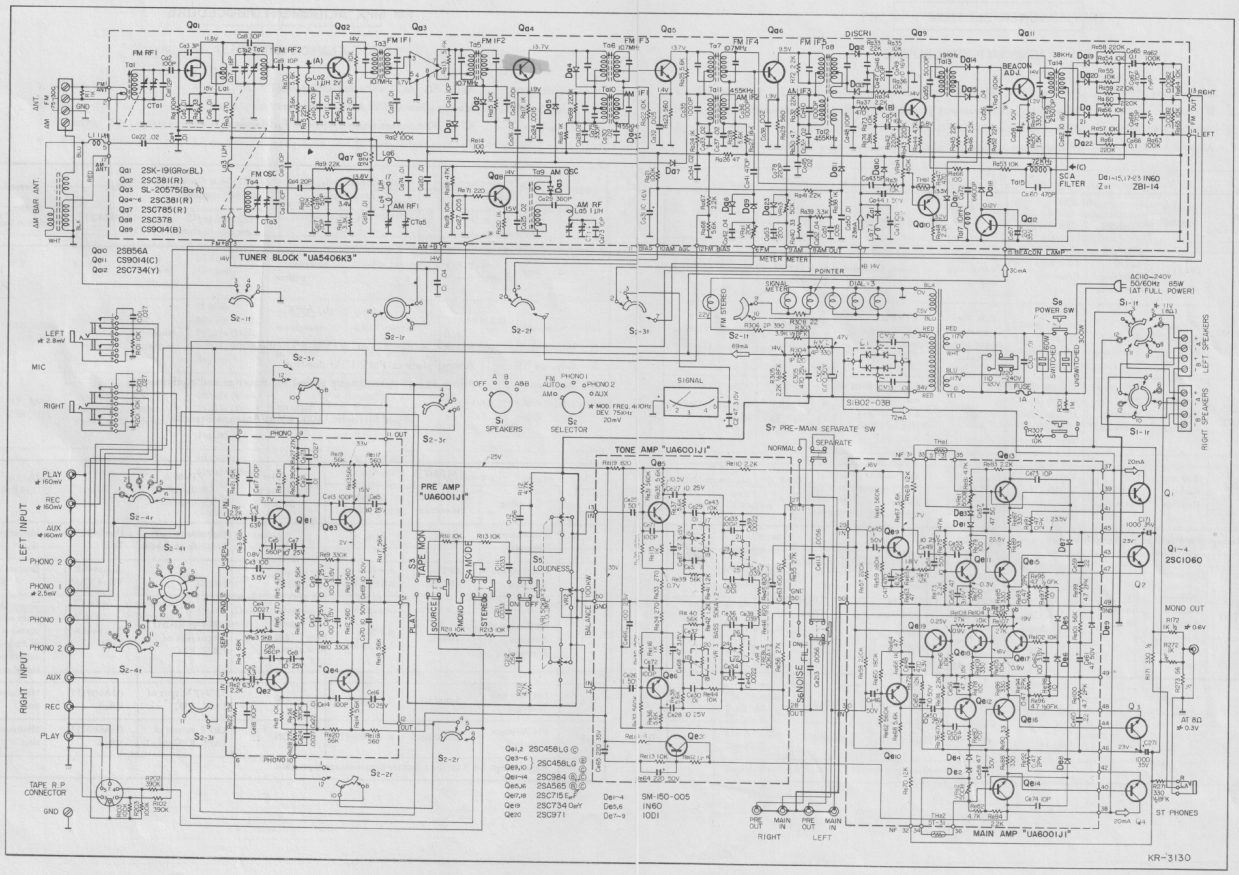
Try to short across the dummy and then restore it to the normal connection under the above conditions and check to see that the scope sweeps with no waveform once and then with the waveform represented, thereby showing that the protection circuit is operated normally. If the protection circuit fails to operate, turn off the power switch immediately, otherwise the final stage transistors may be damaged. And then check transistors, Qe17 ~ 19 and Diodes, De5, 6 whether they are good or not.

BOTTOM VIEW OF TRANSISTORS





SCHEMATIC DIAGRAM



ALIGNMENT PROCEDURE

TUNER SECTION

FM ALIGNMENT PROCEDURE

1. Instruments: FM SG, AC VTVM and Oscilloscope
2. Warm-up: Allow 30 minutes warm-up period for receiver and equipments
3. Selector SW: Always place in FM AUTO position
4. Alignment tool: IF transformers require a plastic screwdriver-type alignment tool

STEP	Align	Dummy Antenna	FM SSG		Tuning Dial Setting	Output Indicator	Adjust	Remarks
			Coupling	Input Signal				
1	IFT	Direct	High side to (A) Low side to Chassis	10.7 MHz (Unmod.)	Any non-interferring setting	Tuning Indicator	(UA5406K3) Ta3, Ta5~7 Top & Bottom	Maximum Deflection
2	DISCRIMINATOR	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 0.5~1 mV (Input)	Tune for maximum using tuning indicator	VTVM at LEFT output jack of TAPE REC	(UA5406K3) Ta8 Top & Bottom	Maximum Deflection
3	RF AMP CIRCUIT	300 ohm Carbon Resistor	FM Antenna Terminal	90 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5~2μV (Input)	90 MHz	VTVM & X-tal earphone at LEFT output jack of TAPE REC	(UA5406K3) Ta1, Ta2, Ta4	Maximum Deflection
4	RF AMP CIRCUIT	300 ohm Carbon Resistor	FM Antenna Terminal	106 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5~2μV (Input)	106 MHz	VTVM & X-tal earphone at LEFT output jack of TAPE REC	(UA5406K3) CTa1~3	Maximum Deflection
5	Repeat steps 3 & 4 until no further improvement is possible.							
6	METER SETTING	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1mV (Input)	Tune for maximum deflection VTVM & X-tal earphone at LEFT output jack of TAPE REC	Tuning Indicator	(UA5406K3) VRa1	"4" Indicator

ALIGNMENT PROCEDURE

FM MPX ALIGNMENT PROCEDURE

(a) SCA FILTER

1. Instruments: Audio SG, AC VTVM & Oscilloscope
2. Selector SW: Always place in FM AUTO position
3. Warm-up: Allow 30 minutes warm-up period for Receiver and equipments

STEP	Audio Signal Generator Coupling	Audio Signal Generator Frequency	AC VTVM & Oscilloscope Coupling	Adjust	Remarks
1	High side to (B) Low side to chassis	66 kHz (0.5V)	High side to (C) Low side to chassis	(UA5406K3) Ta15	Minimum Deflection

(b) MPX

1. Instruments: FM SG, Audio SG, AC VTVM & Oscilloscope
2. Selector SW: Always place in FM AUTO position
3. Warm-up: Allow 30 minutes warm-up period for Receiver and equipments.

(Field Strength: 1000 μV at Antenna Terminal)

STEP	FM SSG			19 kHz Pilot Carrier Switch	VTVM & Oscilloscope Connection	Adjust	Remarks
	Coupling	Modulation Frequency	Input Selector				
1	FM Antenna Terminal	OFF	OFF	ON	High side to (C) Low side to chassis	(UA5406K3) Ta13	Maximum Deflection
2	FM Antenna Terminal	OFF or 400 Hz	A + B or REVERSE	ON	OFF	(UA5406K3) VRa4 VRa5	Beacon Lamp "ON"
3	To distant of Antenna Terminal	400 Hz	A + B or REVERSE	ON	LEFT or RIGHT output jack of TAPE REC	(UA5406K3) Ta14	To obtain a wave form with maximum amplitude and minimum distortion at 400 Hz on oscilloscope
4	FM Antenna Terminal	2,000 Hz	A or LEFT	ON	RIGHT output of TAPE REC	(UA6001J1) VRe3	Minimum Deflection
5	FM Antenna Terminal	2,000 Hz	B or RIGHT	ON	LEFT output of TAPE REC	(UA6001J1) VRe3	Minimum Deflection
6	Repeat steps 4 & 5 until no further improvement is possible.						

(c) BEACON LAMP

1. Instruments: FM SG, FM Stereo Signal Generator
   Audio SG, AC VTVM (or Circuit Tester) & Oscilloscope
2. Selector SW: Always place in FM AUTO position
3. Warm-up: Allow 30 minutes warm-up period for Receiver and equipments

STEP	FM SSG			19 kHz Pilot Carrier Switch	AC VTVM Oscilloscope Connection	DC VTVM or Circuit Tester Connection	Adjust	Remarks
	Coupling	Modulation Frequency	Input Selector					
1	FM Antenna Terminal	DEV. 35 kHz ±5 kHz	Normal	ON	LEFT or RIGHT output Jack of TAPE REC	OFF	(UA5406K3) VRa4	Beacon Lamp "ON"
2	FM Antenna Terminal	DEV. 35 kHz ±5 kHz	Normal	ON	LEFT or RIGHT output Jack of TAPE REC	OFF	(UA5406K3) VRa4	Beacon Lamp Threshold of light off
3	FM Antenna Terminal	DEV. 67.5 kHz 10μV	Normal	ON	LEFT or RIGHT output Jack of TAPE REC	OFF	(UA5406K3) VRa4	Certify the light of Beacon Lamp

ALIGNMENT PROCEDURE

AM ALIGNMENT PROCEDURE

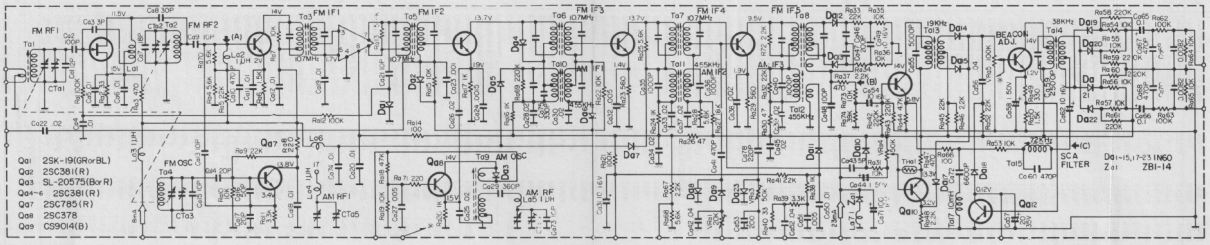
1. Alignment tool: IF transformers require a plastic screwdriver-type alignment tool
2. Instruments: AM SG, AC VTVM & Oscilloscope
3. Selector SW: Always place in AM position
4. Warm-up: Allow 30 minutes warm-up period for Receiver and equipment

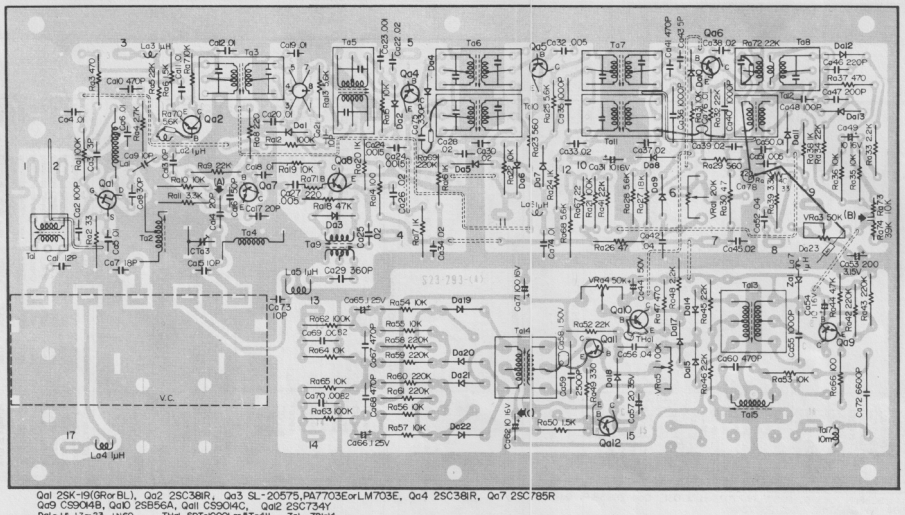
STEP	Dummy Antenna	AM Signal Generator Coupling	Signal Generator Frequency	Tuning Dial Setting	Indicating Meter	Adjust	Remarks
1	Direct	High side to AM antenna terminal, Low side to chassis	455 kHz (400 Hz 30% AM)	Any non-interferring	Tuning Indicator	(UA5406K3) Ta10, 11, 12	Maximum Deflection
2	Direct	Connect to short loop of wire, Radiate Signal into ferrite loop stick antenna of receiver	600 kHz (400 Hz 30% AM)	600 kHz	Tuning Indicator	(UA5406K3) Ta9 (BAR ANT.)	Maximum Deflection
3	Direct	Connect to short loop of wire, Radiate Signal into ferrite loop stick antenna of receiver	1,400 kHz (400 Hz 30% AM)	1,400 kHz	Tuning Indicator	(UA5406K3) CTa4, 5	Maximum Deflection
4	Repeat steps 2 & 3 until no further improvement is possible.						

PARTS DESCRIPTION LIST

Symbol No.	Description				Part No.	Remarks
	CAPACITORS					
Ca1	Ceramic	12pF	±10%		CC94SL1H120K	
Ca2	Ceramic	100pF	±10%		CK94SL1H101K	
Ca3	Ceramic	3pF	±0.25pF		CC94SL1H030C	
Ca4 ~ 6	Ceramic	0.01μF	+80%,	−20%	CK94YG1E103Z	
Ca7	Ceramic	18pF	±10%		CC94TH1H180K	
Ca8	Ceramic	30pF	±10%		CC94SH1H300K	
Ca9	Ceramic	10pF	±10%		CC94TH1H100K	
Ca10	Ceramic	470pF	±10%		CK94YX1H471K	
Ca11, 12	Ceramic	0.01μF	+80%,	−20%	CK94YG1E103Z	
Ca13	Ceramic	10pF	±10%		CC94TH1H100K	
Ca14	Ceramic	20pF	±10%		CC94RG1H200K	
Ca15	Ceramic	10pF	±10%		CC94SG1H100K	
Ca16	Ceramic	50pF	±10%		CC94TH1H500K	
Ca17	Ceramic	20pF	±10%		CC94TH1H200K	
Ca18 ~ 20	Ceramic	0.01μF	+80%,	−20%	CK94YG1E103Z	
Ca21	Ceramic	10pF	±0.5pF		CC94SL1H100D	
Ca22	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203Z	
Ca23	Ceramic	0.001μF	±20%		CK94YY1H102M	
Ca24	Ceramic	0.0015μF	±20%		CK94YY1H152M	
Ca25, 26	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203Z	
Ca27	Ceramic	0.005μF	+80%,	−20%	CK94YG1E502Z	
Ca28	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203Z	
Ca29	Ceramic	360pF	±10%		CK94YX1H361K	
Ca30	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203M	
Ca31	Electrolytic Tubular	10μF	16WV		CE04W1C100	
Ca32	Ceramic	0.005μF	+80%,	−20%	CK94YY1H502M	
Ca33, 34	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203M	
Ca35, 36	Polystrene Film	1000pF	±5%		CQ08S2B102J	
Ca37 ~ 39	Ceramic	0.02μF	+80%,	−20%	CK94YG1E203M	
Ca40	Polystyrene Film	1000pF	±5%		CQ0852B102J	
Ca41	Ceramic	470pF	±10%		CK94YX1H471K	
Ca42	Ceramic	0.04μF	+80%,	−20%	CK94YG1E403Z	
Ca43	Ceramic	5pF	±0.5pF		CC94SL1H050D	
Ca44	Electrolytic Tubular	1μF	50WV		CE94W1H010	
Ca45	Ceramic	0.02μF	+80%,	−20%	CK941G1E203M	
Ca46, 47	Ceramic	200pF	±10%		CK94SL1H201K	
Ca48	Ceramic	100pF	±10%		CK94SL1H101K	
Ca49	Electrolytic Tubular	10μF	16WV		CE04W1C100	
Ca50	Ceramic	0.01μF	±20%		CK94YY1H103M	
Ca51	Ceramic	0.005μF	±20%		CK94YY1H502M	
Ca52	Ceramic	0.04μF	+80%,	−20%	CK94YG1E403Z	
Ca53	Electrolytic Tubular	200μF	3.15WV		CE04W0F201	
Ca54	Electrolytic Tubular	10μF	16WV		CE041C100	
Ca55	Polystyrene Film	5000pF	±5%		CQ08S2B502J	
Ca56	Ceramic	0.04μF	+80%,	−20%	CK94YG1E403Z	
Ca57	Electrolytic Tubular	20μF	35WV		CE04W1V200	
Ca58	Electrolytic Tubular	1μF	50WV		CE04W1H010	
Ca59	Polystyrene Film	2500pF	±5%		CQ08S2B252J	
Ca60	Polystyrene Film	470pF	±5%		CM93F1H471J	
Ca62	Electrolytic Tubular	10μF	16WV		CE04W1H100	
Ca65, 66	Solid Aluminum	0.1μF	±20%		CA04W1E0R1M	
Ca67, 68	Ceramic	470pF	±10%		CK94YX1H471K	
Ca69, 70	Mylar	0.0082μF	±5%		CQ93M1H822J	
Ca71	Electrolytic Tubular	100μF	16WV		CE04W1C101	
Ca72	Polystyrene Film	6600pF	±5%		CQ08S2B662J	
Ca73	Ceramic	10pF	±10%		CC94TH1H100K	
Ca74	Ceramic	0.01μF	±20%		CK94YY1H103M	
Ca75	Polystyrene Film	330pF	±5%		CM93F1H331J	
Ca78	Ceramic	220pF	±10%		CK94SL1H221K	
CTa3	Ceramic Trimmer				C4036	
	RESISTORS					
Ra1	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
Ra2	Insulated Carbon Film	33Ω	±10%	1/4W	PD14BY2E330K	
Ra3	Insulated Carbon Film	470Ω	±10%	1/4W	PD14BY2E471K	
Ra4	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra5	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra6	Insulated Carbon Film	1.5kΩ	±10%	1/4W	PD14BY2E152K	
Ra7	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra8	Insulated Carbon Film	220Ω	±10%	1/4W	PD14BY2E221K	
Ra9	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra10	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra11	Insulated Carbon Film	3.3kΩ	±10%	1/4W	PD14BY2E332K	
Ra12	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
Ra13	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra14	Insulated Carbon Film	100Ω	±10%	1/4W	PD14BY2E101K	
Ra15	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra16, 17	Insulated Carbon Film	1kΩ	±10%	1/4W	PD14BY2E102K	
Ra18	Insulated Carbon Film	47kΩ	±10%	1/4W	PD14BY2E473K	
Ra19	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra20	Insulated Carbon Film	1kΩ	±10%	1/4W	PD14BY2E102K	
Ra21	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
Ra22	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra23	Insulated Carbon Film	560Ω	±10%	1/4W	PD14BY2E561K	
Ra24	Insulated Carbon Film	1kΩ	±10%	1/4W	PD14BY2E102K	
Ra25	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra26	Insulated Carbon Film	47Ω	±10%	1/4W	PD14BY2E470K	
Ra27	Insulated Carbon Film	18kΩ	±10%	1/4W	PD14BY2E183K	
Ra28	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra29	Insulated Carbon Film	560Ω	±10%	1/4W	PD14BY2E561K	
Ra30	Insulated Carbon Film	47Ω	±10%	1/4W	PD14BY2E470K	
Ra31	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra32	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra33, 34	Insulated Carbon Film	2.2kΩ	±10%	1/4W	PD14BY2E222K	
Ra35, 36	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
Ra37	Insulated Carbon Film	470Ω	±10%	1/4W	PD14BY2E471K	
Ra38	Insulated Carbon Film	1kΩ	±10%	1/4W	PD14BY2E102K	
Ra39	Insulated Carbon Film	3.3kΩ	±10%	1/4W	PD14BY2E332K	
Ra40	Insulated Carbon Film	33Ω	±10%	1/4W	PD14BY2E330K	
Ra41	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra42, 43	Insulated Carbon Film	220kΩ	±10%	1/4W	PD14BY2E224K	
Ra44	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
Ra45	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra46	Insulated Carbon Film	2.2kΩ	±10%	1/4W	PD14BY2E222K	
Ra47	Insulated Carbon Film	470Ω	±10%	1/4W	PD14BY2E471K	
Ra48	Insulated Carbon Film	2.2kΩ	±10%	1/4W	PD14BY2E222K	
Ra49	Insulated Carbon Film	330Ω	±10%	1/4W	PD14BY2E331K	
Ra50	Insulated Carbon Film	1.5kΩ	±10%	1/4W	PD14BY2E152K	
Ra52	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra53	Insulated Carbon Film	10Ω	±10%	1/4W	PD14BY2E100K	
Ra54~57	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	

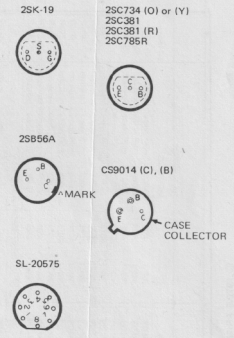
Symbol No.	Description				Part No.	Remarks
Ra58~61	Insulated Carbon Film	220kΩ	±5%	1/4W	PD14BY2E224J	
Ra62, 63	Insulated Carbon Film	100kΩ	±5%	1/4W	PD14BY2E104J	
Ra64, 65	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Ra66	Insulated Carbon Film	100Ω	±10%	1/4W	PD14BY2E101K	
Ra67	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra68	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra69	Insualted Carbon Film	220kΩ	±10%	1/4W	PD14BY2E224K	
Ra70	Insulated Carbon Film	5.6kΩ	±10%	1/4W	PD14BY2E562K	
Ra71	Insulated Carbon Film	220Ω	±10%	1/4W	PD14BY2E221K	
Ra72	Insulated Carbon Film	22kΩ	±10%	1/4W	PD14BY2E223K	
Ra73	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Ra74	Insulated Carbon Film	39kΩ	±5%	1/4W	PD14BY2E393J	
	POTENTIOMETERS					
VRa1	20kΩ	(B)			R10-75	
VRa3	50kΩ	(B)			R10-101	
VRa4	50kΩ	(B)			R10-101	
VRa5	100kΩ	(B)			R10-91	
	COILS/TRANSFORMERS					
La1	Choke Coil				L20-010D	
La2	Choke Coil	1μH			L33-0002-04	
La3 ~ 6	Ferri-Inductor	FL5H-IROM		1μH	L33-0086-05	
La7	Choke Coil				L20-010	
Ta1	FM ANT, Coil				L24-UA1129JA	
Ta2	FM RF Coil				L24-UA5406KR	
Ta3	FM IFT				L02-105	
Ta4	FM OSC Coil				L24-UA5406KS	
Ta5	FM IFT				L02-106	
Ta6	FM IFT				L02-107	
Ta7	FM IFT1				L02-108	
Ta8	FM IFT				L02-91	
Ta9	AM OSC				L01-95	
Ta10	AM IFT				L01-93	
Ta11	AM IFT				L01-94	
Ta12	AM IFT				L01-65	
Ta13	19 kHz Coil				L17-49	
Ta14	38 kHz Coil				L17-50	
Ta15	72 kHz Coil				L17-44	
Ta17	Ferri-Inductor	FL8H-103J		10 mH		
	IC/TRANSISTORS					
Qa1	2SK-19 (GR or BL) FET					
Qa2	2SC381R					
Qa3	SL-20575 (R or BL) IC					
Qa4 ~ 6	2SC381R					
Qa7	2SC785R					
Qa8	2SC378					
Qa9	CS9014B (2SC458L, B or C)					
Qa10	2SB56A					
Qa11	CS9014C (2SC458L, C)					
Qa12	2SC734Y					
	DIODES/THERMISTOR					
Da1 ~ 15, 17~23	1N60					
Za1	ZB1-14					
THa1	SDT-1000L or 5T-41L					
	MISCELLANEOUS					
–	P C Board				S23-293	
V. C	Variable Capacitor				D01-171	
–	Pin x 17				E23-0008-04	
–	Shield Board A				F10-0003-04	
–	Shield Board B				F10-0004-04	
–	Shield Board C				F10-0187-04	





Qa1 2SK-19(GRorBL), Qa2 2SC381R, Qa3 SL-20575,PA7703EorLM703E, Qa4 2SC381R, Qa7 2SC785R
Qa9 CS9014B, Qa10 2SB56A, Qa11 CS9014C, Qa12 2SC734Y
Da1~15,17~23, IN60 Ha1 SDT-1000LorST-41L, Za1 ZBI-14.

BOTTOM VIEW OF TRANSISTOR



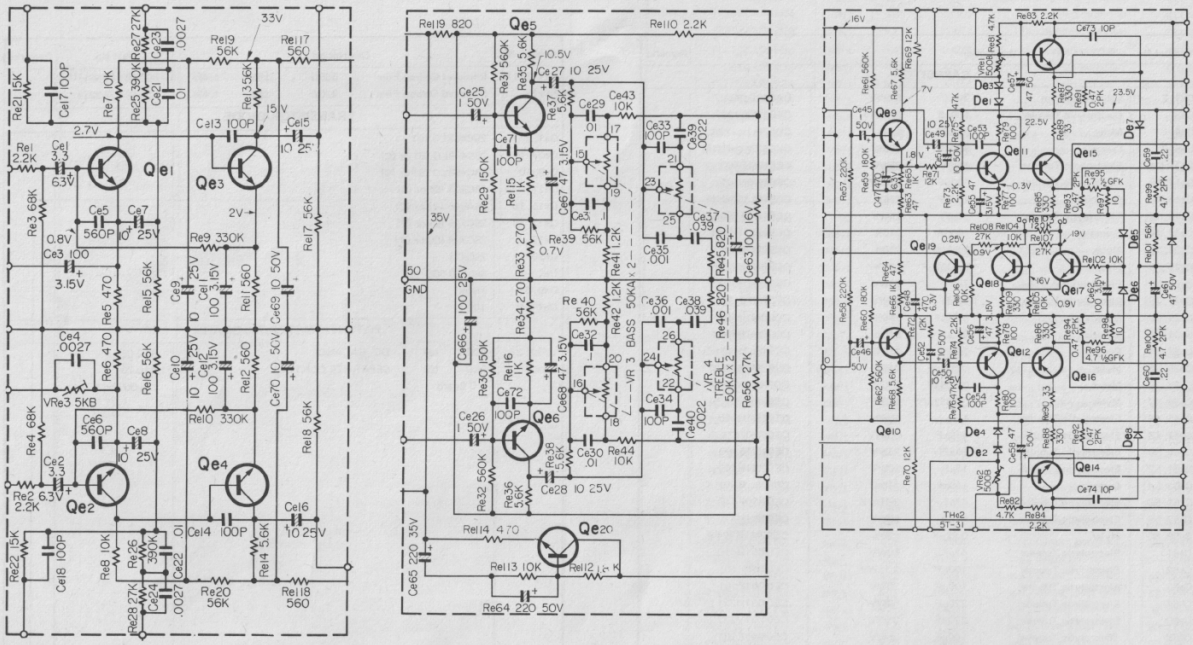
PARTS DESCRIPTION LIST

Symbol No.	Description				Part No.	Remarks
	CAPACITOR					
Ce1, 2	Solid Aluminum	3.3μF	6.3WV		CA04E0J3RXT	
Ce3	Electrolytic Tubular	100μF	3.15WV		CE04W0F101	
Ce4	Mylar	0.0027μF	±10%		CQ93M1H272K	
Ce5, 6	Ceramic	560pF	±20%		CK94YY1H561M	
Ce7 ~ 10	Electrolytic Tubular	10μF	25WV		CE04W1E100	
Ce11, 12	Electrolytic Tubular	100μF	3.15WV		CE04W0F101	
Ce13, 14	Ceramic	100pF	±10%		CC94SL1H101K	
Ce15, 16	Electrolytic Tubular	10μF	25WV		CE04W1E100	
Ce17, 18	Ceramic	100pF	±10%		CC94SL1H101K	
Ce21, 22	Mylar	0.01μF	±10%		CQ93M1H103K	
Ce23, 24	Mylar	0.0027μF	±10%		CQ93M1H272K	
Ce25, 26	Electrolytic Tubular	1μF	50WV		CE04W1H010	
Ce27, 28	Electrolytic Tubular	10μF	25WV		CE04W1E100	
Ce29, 30	Mylar	0.01μF	±10%		CQ93M1H103K	
Ce31, 32	Mylar	0.1μF	±10%		CQ93M1H104K	
Ce33, 34	Ceramic	100pF	±10%		CC94SL1H101K	
Ce35, 36	Mylar	0.001μF	±10%		CQ93M1H102K	
Ce37, 38	Mylar	0.039μF	±10%		CQ93M1H393K	
Ce39, 40	Mylar	0.0022μF	±10%		CQ93M1H222K	
Ce45, 46	Electrolytic Tubular	1μF	50WV		CE04W1H010	
Ce47, 48	Electrolytic Tubular	470μF	6.3WV		CE04W0J471	
Ce49, 50	Electrolytic Tubular	10μF	25WV		CE04W1E100	
Ce51, 52	Electrolytic Tubular	10μF	50WV		CE04W1H100	
Ce53, 54	Ceramic	100pF	±10%		CC94SL1H101K	
Ce55, 56	Electrolytic Tubular	47μF	3.15WV		CE04W0F470	
Ce57, 58	Electrolytic Tubular	47μF	50WV		CE04W1H470	
Ce59, 60	Mylar	0.22μF	±20%		CQ93M1H224M	
Ce61	Electrolytic Tubular	47μF	50WV		CE04W1H470	
Ce62	Electrolytic Tubular	100μF	3.15WV		CE04W0F101	
Ce63	Electrolytic Tubular	100μF	25WV		CE04W1E101	
Ce64	Electrolytic Tubular	220μF	50WV		CE04W1H221	
Ce65	Electrolytic Tubular	220μF	35WV		CE04W1V221	
Ce66	Electrolytic Tubular	100μF	25WV		CE04W1E101	
Ce67, 68	Electrolytic Tubular	47μF	3.15WV		CE04W0F470	
Ce69, 70	Electrolytic Tubular	10μF	50WV		CE04W1H100	
Ce71, 72	Ceramic	100pF	±10%		CC94SL1H101K	
Ce73, 74	Ceramic	10pF	±0.5pF		CC94SL1H100D	
	RESISTOR					
Re1, 2	Insulated Carbon Film	2.2kΩ	±5%	1/4W	PD14BY2E222J	
Re3, 4	Insulated Carbon Film	68kΩ	±5%	1/4W	PD14BY2E683J	
Re5, 6	Insulated Carbon Film	470Ω	±5%	1/4W	PD14BY2E471J	
Re7, 8	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Re9, 10	Insulated Carbon Film	330kΩ	±5%	1/4W	PD14BY2E334J	
Re11, 12	Insulated Carbon Film	560Ω	±5%	1/4W	PD14BY2E561J	
Re13, 14	Insulated Carbon Film	5.6kΩ	±5%	1/4W	PD14BY2E562J	
Re15 ~ 20	Insulated Carbon Film	56kΩ	±5%	1/4W	PD14BY2E563J	
Re21, 22	Insulated Carbon Film	15kΩ	±5%	1/4W	PD14BY2E153J	
Re25, 26	Insulated Carbon Film	390kΩ	±5%	1/4W	PD14BY2E394J	
Re27, 28	Insulated Carbon Film	27kΩ	±5%	1/4W	PD14BY2E273J	
Re29, 30	Insulated Carbon Film	150kΩ	±5%	1/4W	PD14BY2E154J	
Re31, 32	Insulated Carbon Film	560kΩ	±5%	1/4W	PD14BY2E564J	
Re33, 34	Insulated Carbon Film	270Ω	±5%	1/4W	PD14BY2E271J	
Re35 ~ 38	Insulated Carbon Film	5.6kΩ	±5%	1/4W	PD14BY2E562J	
Re39, 40	Insulated Carbon Film	56kΩ	±5%	1/4W	PD14BY2E563J	
Re41, 42	Insulated Carbon Film	1.2kΩ	±5%	1/4W	PD14BY2E122J	
Re43, 44	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Re45, 46	Insulated Carbon Film	820Ω	±5%	1/4W	PD14BY2E821J	
Re55, 56	Insulated Carbon Film	27kΩ	±5%	1/4W	PD14BY2E273J	
Re57, 58	Insulated Carbon Film	220kΩ	±5%	1/4W	PD14BY2E273J	
Re59, 60	Insulated Carbon Film	180kΩ	±5%	1/4W	PD14BY2E184J	
Re61, 62	Insulated Carbon Film	560kΩ	±5%	1/4W	PD14BY2E564J	
Re63, 64	Insulated Carbon Film	47Ω	±5%	1/4W	PD14BY2E470J	
Re65, 66	Insulated Carbon Film	1kΩ	±5%	1/4W	PD14BY2E102J	
Re67, 68	Insulated Carbon Film	5.6kΩ	±5%	1/4W	PD14BY2E562J	
Re69 ~ 72	Insulated Carbon Film	12kΩ	±5%	1/4W	PD14BY2E123J	
Re73, 74	Insulated Carbon Film	2.2kΩ	±5%	1/4W	PD14BY2E222J	
Re75, 76	Insulated Carbon Film	47kΩ	±5%	1/4W	PD14BY2E473J	
Re77 ~ 80	Insulated Carbon Film	100Ω	±5%	1/4W	PD14BY2E101J	
Re81, 82	Insulated Carbon Film	4.7kΩ	±5%	1/4W	PD14BY2E472J	
Re83, 84	Insulated Carbon Film	2.2kΩ	±5%	1/4W	PD14BY2E222J	
Re85 ~ 88	Insulated Carbon Film	330Ω	±5%	1/4W	PD14BY2E331J	
Re89, 90	Insulated Carbon Film	33Ω	±5%	1/4W	PD14BY2E330J	
Re91 ~ 94	Metal Film	0.47Ω	±10%	2W	RN14AB3DR47K	
Re95, 96	Fixed Carbon Composition	4.7Ω	±10%	1/2W	RC05GF2H4R7K	
Re97, 98	Insulated Carbon Film	10Ω	±5%	1/4W	PD14BY2E100J	
Re99, 100	Metal Film	4.7Ω	±10%	2W	RN14AB3D4R7K	
Re101	Insulated Carbon Film	56kΩ	±5%	1/4W	PD14BY2E563J	
Re102	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Re103	Insulated Carbon Film	120kΩ	±5%	1/4W	PD14BY2E124J	
Re104~106	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Re107, 108	Insulated Carbon Film	27kΩ	±5%	1/4W	PD14BY2E273J	
Re109	Insulated Carbon Film	330Ω	±5%	1/4W	PD14BY2E331J	
Re110	Insulated Carbon Film	2.2kΩ	±5%	1/4W	PD14BY2E222J	
Re112	Insulated Carbon Film	1.8kΩ	±5%	1/4W	PD14BY2E182J	
Re113	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Re114	Fixed Carbon Composition	470Ω	±10%	1/2W	RC05GF2H471K	
Re115, 116	Insulated Carbon Film	1kΩ	±5%	1/4W	PD14BY2E102J	
Re117, 118	Insulated Carbon Film	560Ω	±5%	1/4W	PD14BY2E561J	
Re119	Insulated Carbon Film	820Ω	±5%	1/4W	PD14BY2E821J	
	TRANSISTOR/DIODE					
Qe1, 2	2SC458LG (C)					
Qe3 ~ 6	2SC458LG (B) or (C)					
Qe9, 10	2SC458LG (B) or (C)					
Qe11 ~ 14	2SC984 (B) or (C)					
Qe15, 16	2SA565 (B) or (C)					
Qe17, 18	2SC715 (E) or (F)					
Qe19	2SC734 (O) or (Y)					
Qe20	2SC971					
De1 ~ 4	SM-150-005					
De5, 6	1N60					
De7 ~ 9	10D1					
	POTENTIOMETER/P C BOARD					
VRe1, 2	500Ω (B)	DC BALANCE			R10-69	
VRe3	5kΩ (B)	SEPARATE CONTROL			R10-70	
–	P C Board				J25-0078-03	

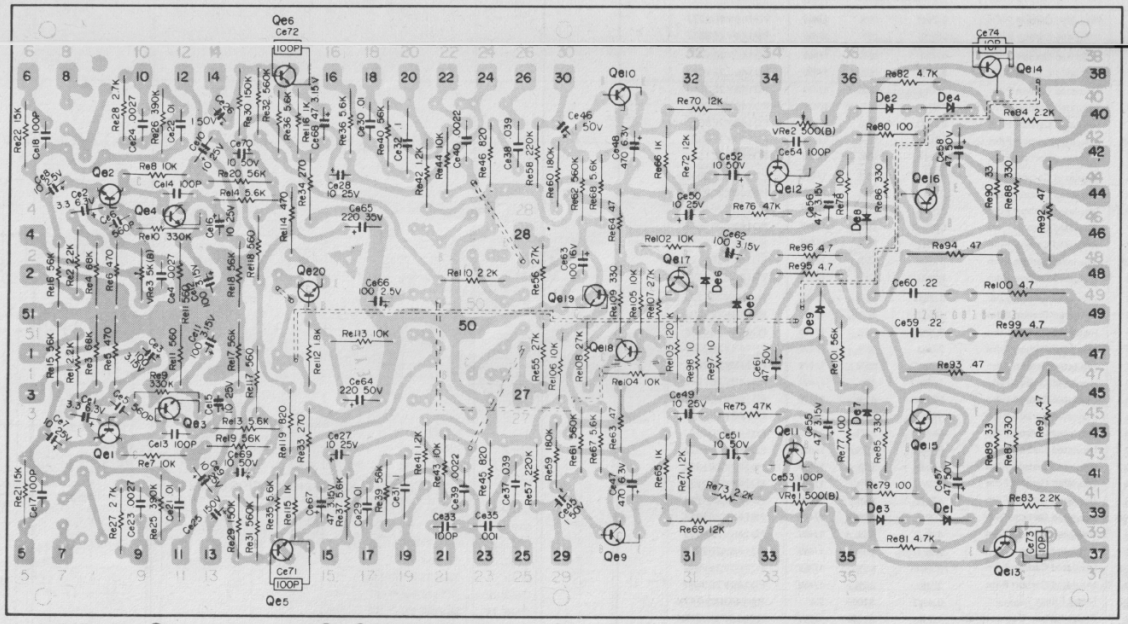
KENWOOD — PRE, TONE & MAIN (UA6001J1) SECTION

(KR-3130)

SCHEMATIC DIAGRAM

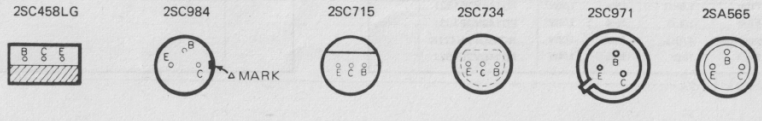


SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS

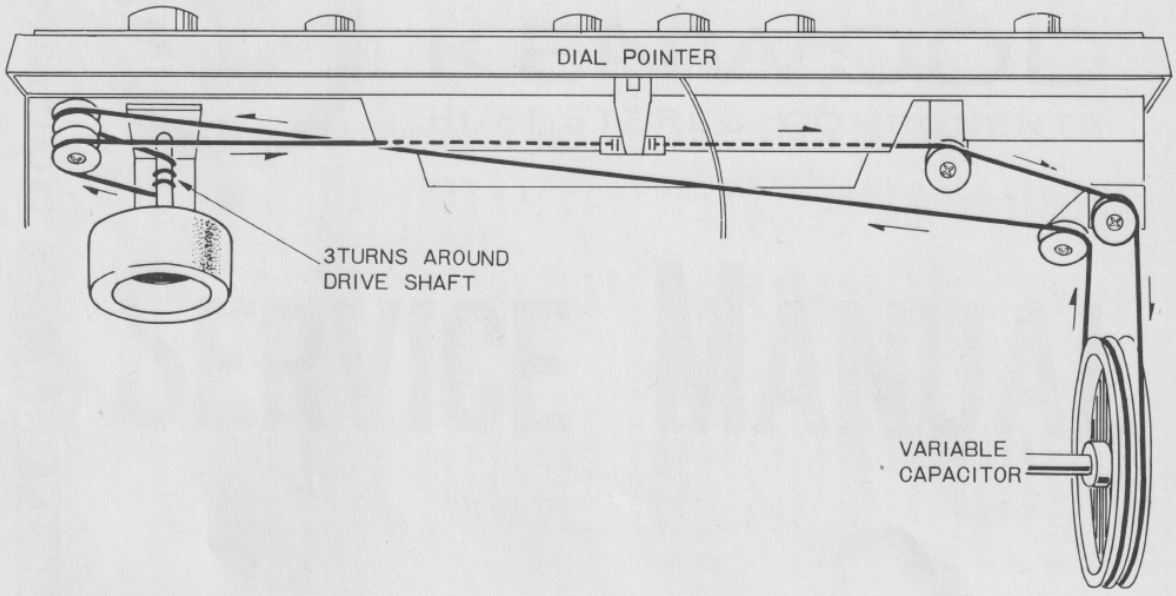


Qe1,2	2SC458LG Ⓒ	Qe11~14	2SC984 Ⓑ or Ⓒ	Qe17,18	2SC715 Ⓔ or Ⓕ	Qe20	2SC971
Qe3~6	2SC458LG Ⓑ	Qe15,16	2SA565 Ⓑ or Ⓒ	Qe19	2SC734 Ⓠ or Ⓨ	De1~4	SM-150-005
Qe9,10	2SC458LG Ⓒ					De5,6	1N60
						De7~9	1001

BOTTOM VIEW OF TRANSISTOR



DIAL CORD STRINGING



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