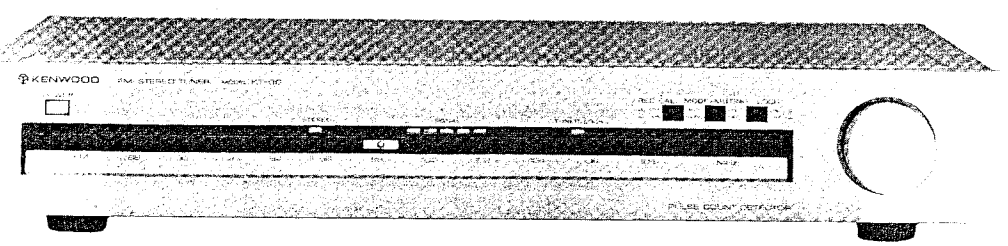
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KT-80

An item of adjustment is written in three languages — English, French and German.
Un article sur réglages est écrit en trois langues, Anglais, Français et Allemand.
Ein Artikel der Abgleich wird auf drei Sprachen, Englische, Französisch und Deutsch geschrieben.



FM STEREO TUNER

KT-80

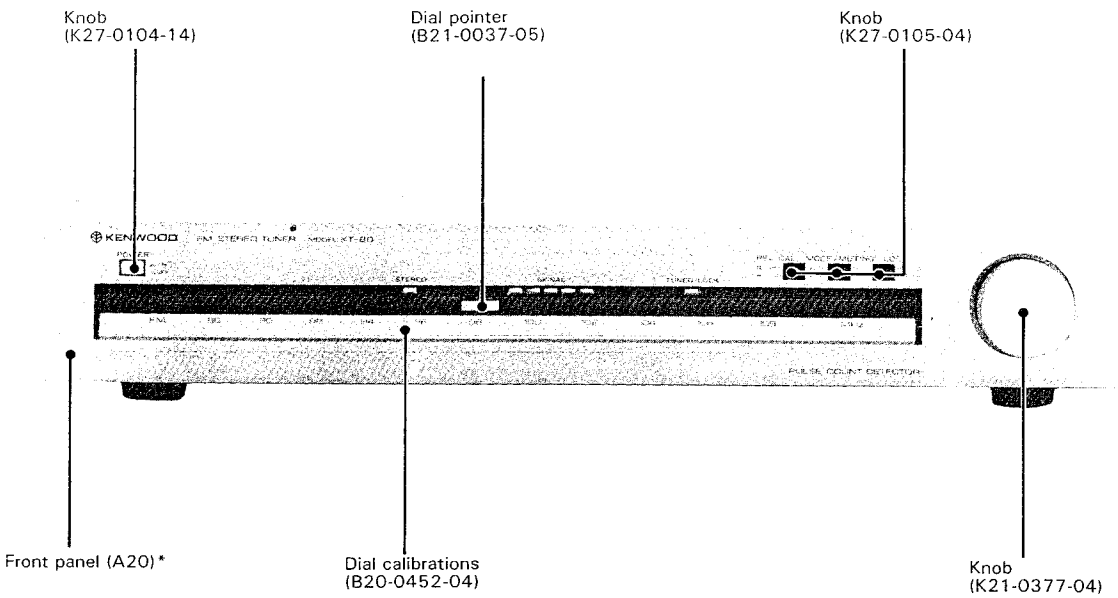
CONTENTS

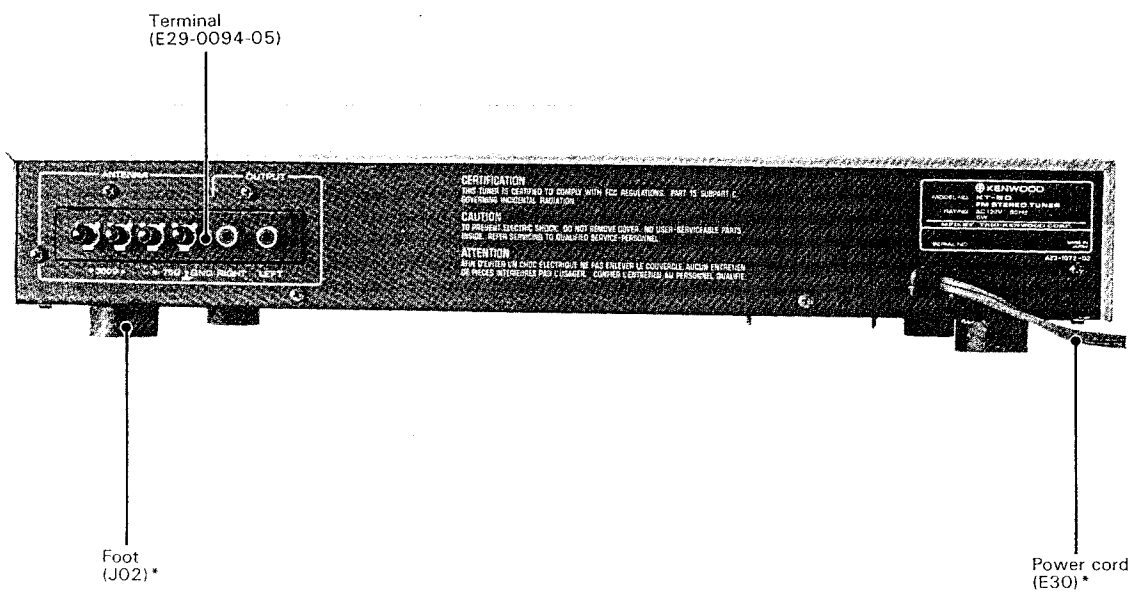
Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe & Scandinavia (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Region	Code
U.S.A.	K
Canada	P
PX	U
Australia	X
Europe & Scandinavia	E
England	T
Other Areas	M

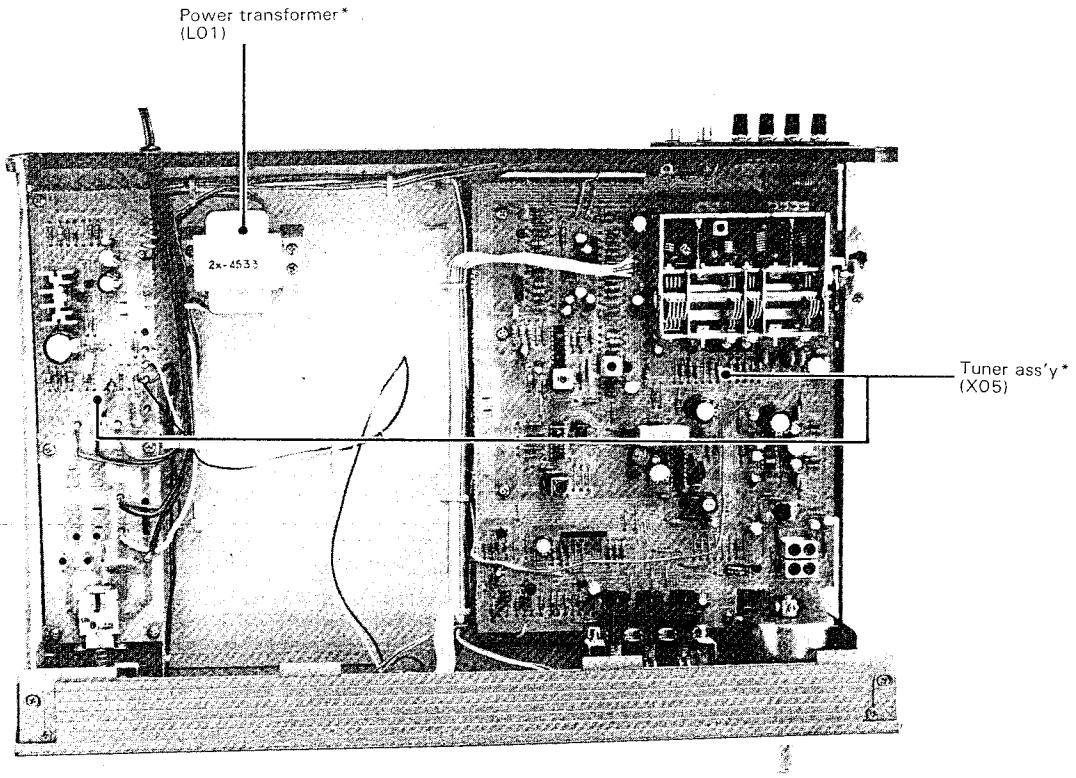
EXTERNAL VIEW





* Refer to Parts List.

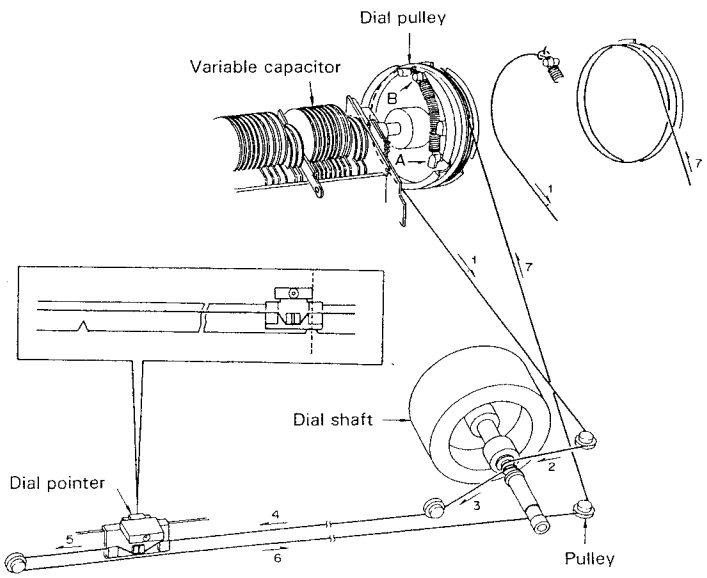
INTERNAL VIEW / DIAL CORD STRINGING



* Refer to Parts List.

DIAL CORD STRINGING

1. Tie the end of the dial cord to the spring.
2. Hook the spring to the boss A and B.
3. Dress the dial cord in the direction of "1" and wind it 2 turns around the dial shaft starting from its upper side.
4. Dress the dial cord in the direction of "3" through "7".
5. Wind the dial cord 2 turns around the dial pulley starting from its upper side.
6. Fix the dial cord to the rear-side boss.
7. Remove the dial spring from the boss B.
8. Fully open the variable capacitor.
9. Mount the dial pointer as illustrated.



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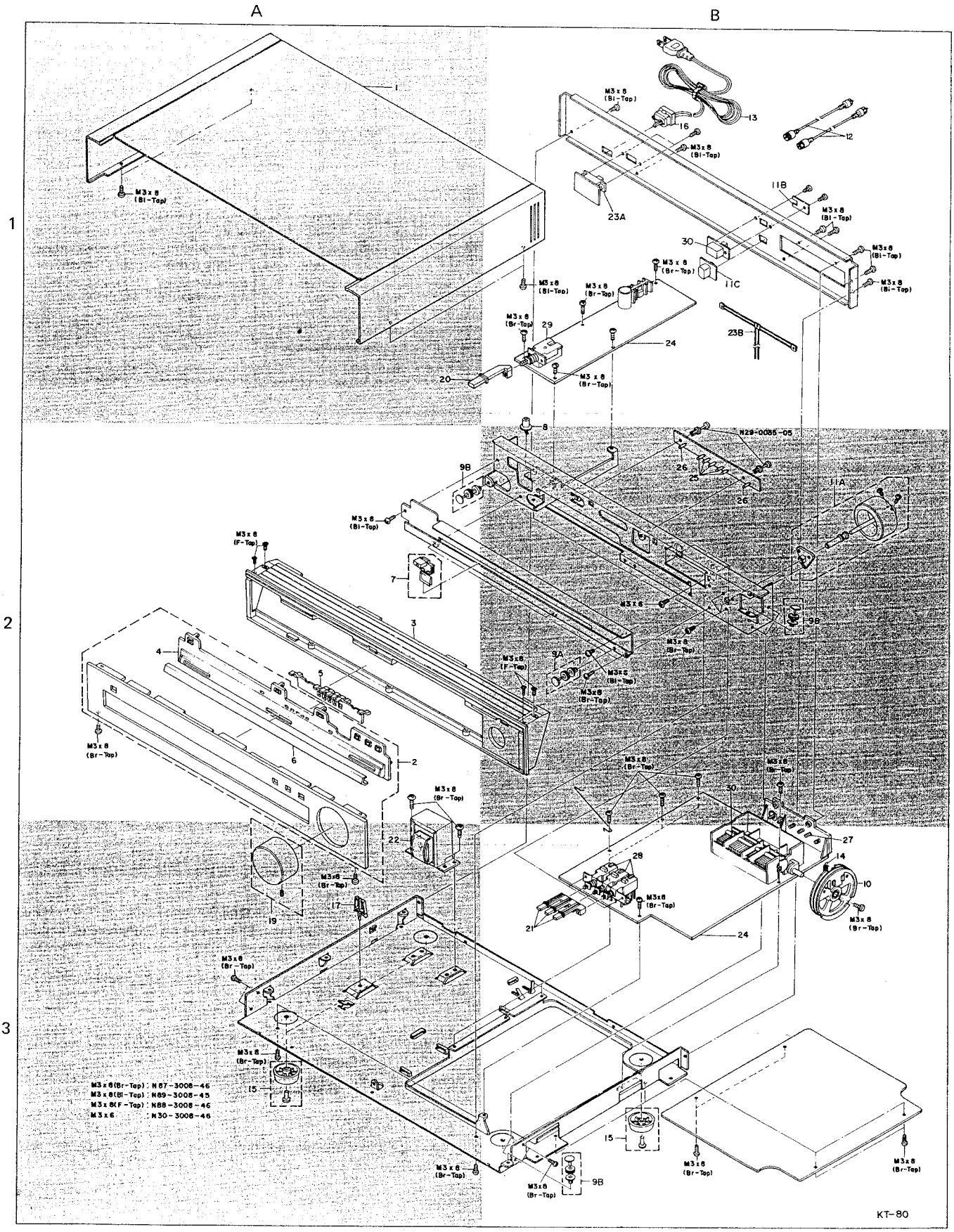
EXPLODED VIEW



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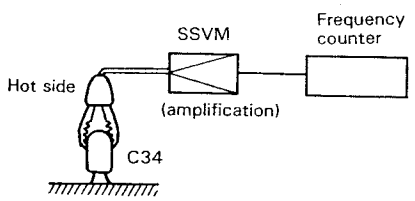
ADJUSTMENT

NO.	ALIGNMENT	TEST EQUIPMENTS		TUNER SETTING	OUTPUT INDICATOR	ADJUSTMENT POINTS	REMARKS
		CONNECTION	SETTINGS				
1	VCO	Ⓐ	95 MHz 0 (Dev) 60 dB (ANT input)	95 MHz	Frequency counter to C34 via SSVM. Set SSVM so that the waveform is clipped for preventing the influence of the hum.*1	VR1	76 kHz
2	SEPARATION	Ⓑ	95 MHz 1 kHz (Mod) ±68.25 kHz (Dev) SELECTOR: L or R Pilot: ON 60 dB (ANT input)	95 MHz	Ⓒ	VR2	Minimum crosstalk
3	IFT (1)	Ⓑ	ditto	95 MHz Short-circuit the source and drain of Q4	Ⓒ	T1 (Front end)	Minimum distortion
4	IFT (2)	Ⓑ	ditto	95 MHZ AFC: in operation	Ⓒ	T2	ditto
5	REC CAL	—	—	REC CAL : ON	Ⓒ	VR3	REC CAL output is half the level of the standard output.*2

NOTE

*** 1**



*** 2**

The standard output is derived when an SG signal of 1 kHz, ±75 kHz deviation is fed to the antenna terminal.
Reference value of the standard output: 750 mV
Reference value of REC CAL output: 375 mV

*** 3**

Repeat the alignment No. 3 and No. 4 several times.

*** 4**

Normally, T3 needs no adjustment.
See KT-615 service manual.

*** 5**

0 dB = 1 μV

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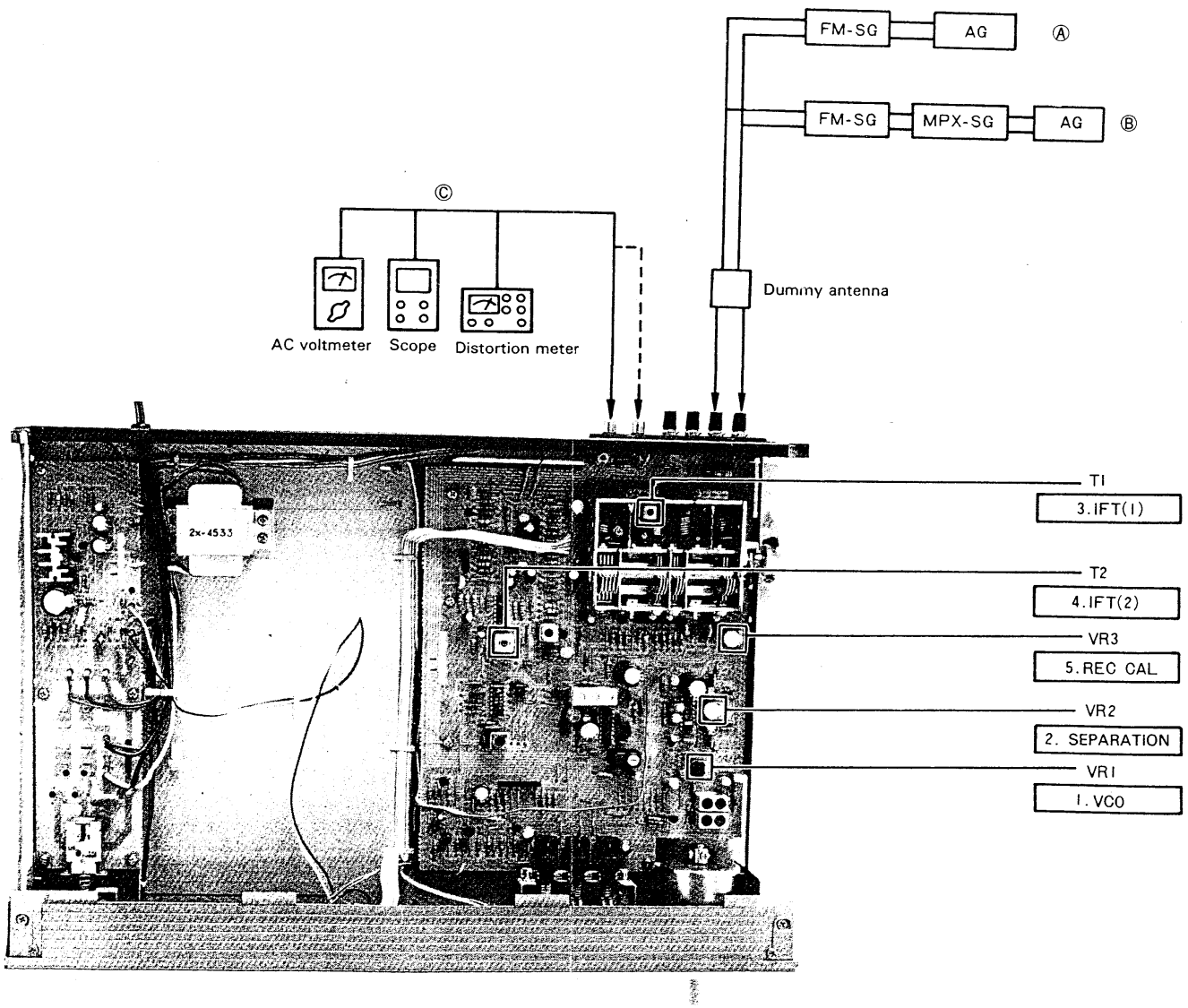
ADJUSTMENT / RÉGLAGES / ABGLEICH

TEST INSTRUMENTS	APPAREILLAGE	PRÜFINSTRUMENTE	
Oscilloscope	Oscilloscope	Oszilloskop	SCOPE
AM signal generator	Générateur MA	MW-Signalgenerator	AM-SG
FM signal generator	Générateur MF	UKW-Signalgenerator	FM-SG
Audio generator	Générateur audio fréquences	NF-Signalgenerator	AG
AC voltmeter	Voltmètre CA	Wechselspannungsmesser	
FM multiplex generator	Générateur multiplex stéréo	UKW-Multiplexgenerator	FM-MPX
Frequency counter	Fréquencemètre	Frequenzzähler	
DC voltmeter	Voltmètre CC	Gleichspannungsmesser	
Distortion meter	Distorsiomètre	Klirrfaktormesser	
Dummy antenna	Antenne fictive	Antennennachbildung	

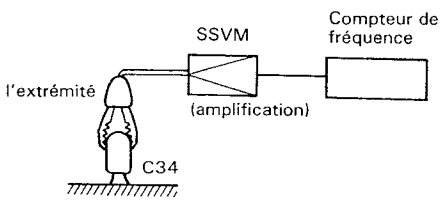


RÉGLAGES

N°	ALIGNEMENT	APPAREILLAGE		RÉGLAGE DU TUNER	INDICATEUR DE SORTIE	POINTS DE REGLAGES	REMARQUES
		RACCORDEMENT	RÉGLAGE				
1	OSCILLATEUR 76 kHz	Ⓐ	95 MHz 0 (Dev) 60 dB (ENTRÉE ANT)	95 MHz	Compteur de fréquence à C34 par SSVM. Régler SSVM de manière à ce que la forme d'onde soit écrêtée pour empêcher l'influence du souffle.*1	VR1	76 kHz
2	SÉPARATION	Ⓑ	95 MHz 1 kHz (Mod) ±68,25 kHz (Dev) SELECTION: L ou R Signal pilote 60 dB (ENTRÉE ANT)	95 MHz	©	VR2	Diaphonie minimale
3	TFI (1)	Ⓑ	idem	95 MHz Mettre en court-circuit la source et le drain de Q4.	©	T1 Partie frontale	Distorsion minimale
4	TFI (2)	Ⓑ	idem	95 MHZ Le circuit AFC (contrôle automatique de fréquence) est en fonctionnement.	©	T2	idem
5	REC CAL	—	—	REC CAL : ON	©	VR3	Le niveau de sortie de REC CAL est la moitié du niveau de sortie normal.*2

REMARQUE SUR LE RÉGLAGE

*** 1**



*** 2**

La sortie normale est dérivée quand un signal SG (générateur de signal) de 1 kHz, déviation ±75 kHz est alimenté à la borne d'antenne.
Valeur de référence de la sortie normale: 750 mV
Valeur de référence de la sortie REC CAL: 375 mV

*** 3**

Repéter les points 3 et 4 plusieurs fois.

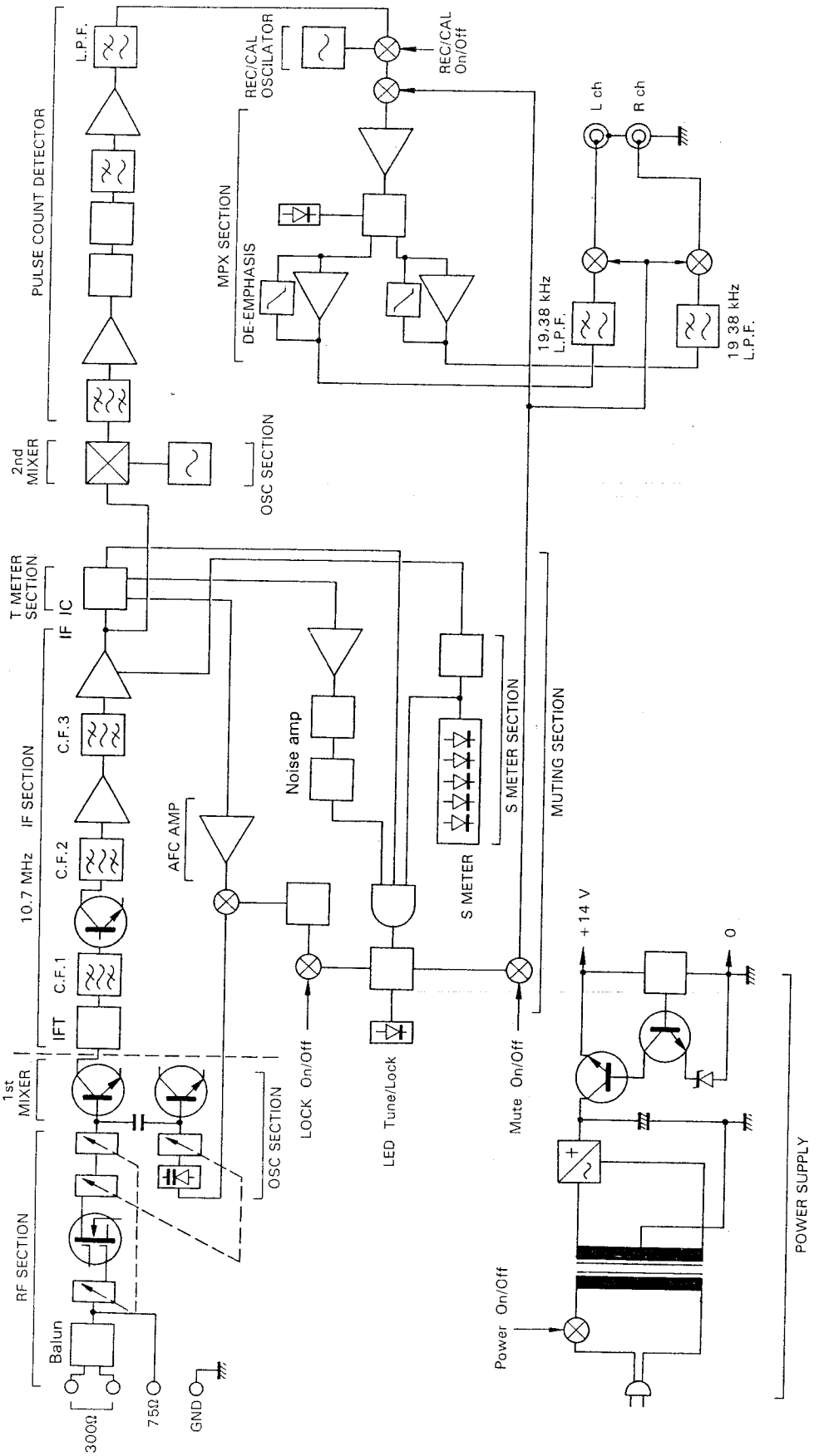
*** 4**

Le T3 n'a pas besoin d'être réglé.
Voir le manuel d'entretien du KT-615.

*** 5**

0 dB = 1 μV

BLOCK DIAGRAM



INSTRUCTION FOR PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
18 1A	A01-0608-12	METALLIC CABINET	*
19 2A	A20-1979-11	FRONT PANEL ASSY	*K
19 2A	A20-1979-11	FRONT PANEL ASSY	PM
19 2A	A20-1979-11	FRONT PANEL ASSY	SU
19 2A	A20-1979-11	FRONT PANEL ASSY	XW
R221	R43-1333-15	FL-PROOF RD330 J 2H	*
R222	R43-1368-15	FL-PROOF RD680 J 2H	*
VR1 ,2	R12-3301-05	TRIMMING POT, 20K(B)	
VR3 ,4	R19-4305-05	POTENTIOMETER (OUTPUT)	*
VR5 ,6	R12-2302-05	TRIMMING POT, 5K(B)	

① Exploded view drawing No.
② Position in exploded view.
③ Symbol of new parts.
④ Area to which parts are shipped. Example: A20-1979-11 is the parts No. of FRONT PANEL ASS'Y for the "K" type products (for USA).
When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.
⑤ Reference No. in schematic diagram.
⑥ Abbreviation of "Flame proof metal oxide film resistor". All capacitors and resistors are listed using abbreviations.
⑦ Abbreviations

* Abbreviations of capacitors (Parts No. with initial letter "C").
ELECTRO ..... Electrolytic capacitor
LL-ELEC ..... Low leak electrolytic capacitor
NP-ELEC ..... Non-pole electrolytic capacitor
MICA ..... Mica capacitor
POLYSTY ..... Polystyrene capacitor
MYLAR ..... Mylar capacitor
CERAMIC ..... Ceramic capacitor
TANTAL ..... Tantalum capacitor
MF ..... Metallized film capacitor
OIL ..... Oil capacitor
The unit "UF" is used in lieu of "μF"

* Abbreviations of resistors (Parts No. with initial letters "R").
RC ..... Carbon composition resistor
RD ..... Carbon film resistor
FL-PROOF RD ..... Flame-proof carbon film resistor
RW ..... Wire wound power resistor
FL-PROOF RS ..... Flame-proof metal oxide film resistor
RN ..... Metal film resistor
2B ..... Rated wattage 1/8W
2E ..... Rated wattage 1/4W
2H ..... Rated wattage 1/2W
3A ..... Rated wattage 1W
3D ..... Rated wattage 2W
3F ..... Rated wattage 3W
3G ..... Rated wattage 4W
3H ..... Rated wattage 5W
All resistor values are indicated with the unit (Ω) omitted.

* Abbreviations common to capacitors and resistors.
C ..... ±0.25pF (Used for capacitors only)
D ..... ±0.5pF (Used for capacitors only)
F ..... ±1%
G ..... ±2%
J ..... ±5%
K ..... ±10%
M ..... ±20%
Z ..... +80%, −20% (Used for capacitors only)
P ..... +100%, −0% (Used for capacitors only)

⑧ Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.

⑨ CODEs in X05-1710
K: X05-1710-11
M: X05-1710-21
P: X05-1711-01
T: X05-1710-51
E: X05-1712-71

PARTS LIST

Ref. No. 参照番号	Parts No. 部品番号	Description 部品名／規格	Remarks 備考
R9	R43-1210-15	FL-PROOF RD100 J 2E	
R11	R43-1210-15	FL-PROOF RD100 J 2E	
R24	R49-6268-23	RN 6.8K F 2E	
R26	R43-1218-05	FL-PROOF RD18 J 2E	
R48	R43-1210-15	FL-PROOF RD100 J 2E	PM
R48	R43-1210-15	FL-PROOF RD100 J 2E	TX
R48	R43-1210-15	FL-PROOF RD100 J 2E	E
R66	R43-1218-05	FL-PROOF RD18 J 2E	
R82	R43-1210-15	FL-PROOF RD100 J 2E	
R83	R43-1222-05	FL-PROOF RD22 J 2E	
R104	R43-1222-15	FL-PROOF RD220 J 2E	
R111	R47-5518-15	FL-PROOF RS180 J 3D	
R121	R92-0173-05	RC 2.2M M 2H	PK
VR1	R12-1041-05	TRIMMING POTENTIOMETER	
VR2	R12-3051-05	TRIMMING POTENTIOMETER	
VR3	R12-3046-05	TRIMMING POTENTIOMETER	
S1	S42-3032-05	PUSH SWITCH FIG28	*
S4	S40-2092-05	PUSH SWITCH FIG29	*P
S4	S40-2092-05	PUSH SWITCH FIG29	MX
S4	S40-2092-05	PUSH SWITCH FIG29	K
S4	S40-2100-05	PUSH SWITCH FIG29	*T
S4	S40-2100-05	PUSH SWITCH FIG29	E
S5	S31-2047-05	SLIDE SWITCH EMPHASIS	M
D8 ,9	V11-0076-05	1S1555 ,1S2076	
D11 ,12	V11-0076-05	1S1555 ,1S2076	PM
D11 ,12	V11-0076-05	1S1555 ,1S2076	TX
D11 ,12	V11-0076-05	1S1555 ,1S2076	E
D13	V11-0051-05	1N60	
D16 ,17	V11-0295-05	W06B	
D19	V11-0273-05	1S2076A	
D20	V11-0295-05	W06B	
D21 -23	V11-4101-20	XZ-060	
D24	V11-4103-70	XZ-142	
D25	V11-0076-05	1S1555 ,1S2076	
IC1	V30-0087-05	TA7060P	
IC2	V30-0133-05	HA1137W	
IC3	V30-0356-10	AN610	*
IC4	V30-0296-20	TR-4010A	
IC5	V30-0359-10	HA12016	*
IC6	V30-0353-10	AN6551	*
IC7	V30-0295-10	M51903L	
IC8	V30-0357-10	AN6135	*
Q1	V03-1675-00	2SC1675	
Q2 ,3	V03-2320-00	2SC2320 ,2SC945	PM
Q2 ,3	V03-2320-00	2SC2320 ,2SC945	TX
Q2 ,3	V03-2320-00	2SC2320 ,2SC945	E
Q4	V09-0127-20	2SK105	
Q5 -8	V03-2320-00	2SC2320 ,2SC945	
Q9	V04-0330-20	2SD330(E,F)	
Q10 ,11	V03-2320-00	2SC2320 ,2SC945	
-	W02-0027-05	FM FRONT END	*
FM FRONT END (W02-0027-05)			
D1	V11-3100-50	1S2236	
IC1	V30-0345-10	SC114	
Q1	V09-0150-10	3SK85	

CERAMIC CAPACITORS WITH AN NEW APPEARANCE

In the KT-80, ceramic capacitors with an appearance the same as carbon film resistors are used for the first time.

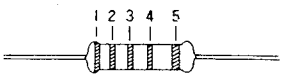


Fig. 1 Appearance

The body is colored light green when the voltage rating is 50 V and pink when it is 25 V. The coding and color values are the same as those for the fixed carbon film resistor (RD resistor) except that the fifth color band (characteristics) is added.

Table 1

	1st and 2nd bands(Sig. fig.)	3rd band (Multiplier)	4th band (Tolerance)	5th band(Characteristics)
Brown	1	10^1		Y
Red	2	10^2		D
Orange	3	10^3		
Yellow	4	10^4		RH
Green	5			
Blue	6			
Violet	7			UJ
Gray	8		±30%	X
White	9			SL
Black	0	10^0	±20%	CH
Gold		10^{-1}	±5%	V
Silver		10^{-2}	±10%	B

(1st and 2nd bands: value in PF)

Example)

1. 1st band Yellow 4
2. 2nd band Violet 7
3. 3rd band Black 10^0
4. 4th band Gold ±5%
5. 5th band White SL

} 47 pF, ±5% SL

There are three types of ceramic capacitors with this appearance.

1. Fixed ceramic capacitor (Type-I)

Standard: CC14SL1HXXX□
Parts. No.: C71-17XX-X□
Capacitance: 120 pF or less
Size: Same as 1/8-W carbon film resistor

This type of capacitor has a low capacitance, a high Q and superior temperature characteristics. This type is used for temperature compensation.

2. Fixed ceramic capacitor (Type-II)

Standard: CK14B1HXXXK
CK14D1HXXXM
Parts No.: C52-17XX-X6 (for CK14D1HXXXK)
C53-17XX-X7 (CK14D1HXXXM)
Capacitance: 150 ~ 1500 pF
Size: Same as 1/8-W carbon film resistor (150 ~ 1000 pF)
Same as 1/4-W carbon film ressitor (1500 pF)

This type of capacitor has a large capacitor. Since the temperature characteristics are not good, this type is not used for temperature compensation.

3. Fixed semi-conductive ceramic capacitor (Type-III)

Parts No.: C91-XXXX-05
Capacitance: 1500 ~ 22000 pF
Size: Same as 1/4-W carbon film resistor

This type of semi-conductive ceramic capacitor has higher permittivity and larger capacitance than the type-II, and has superior temperature characteristics.

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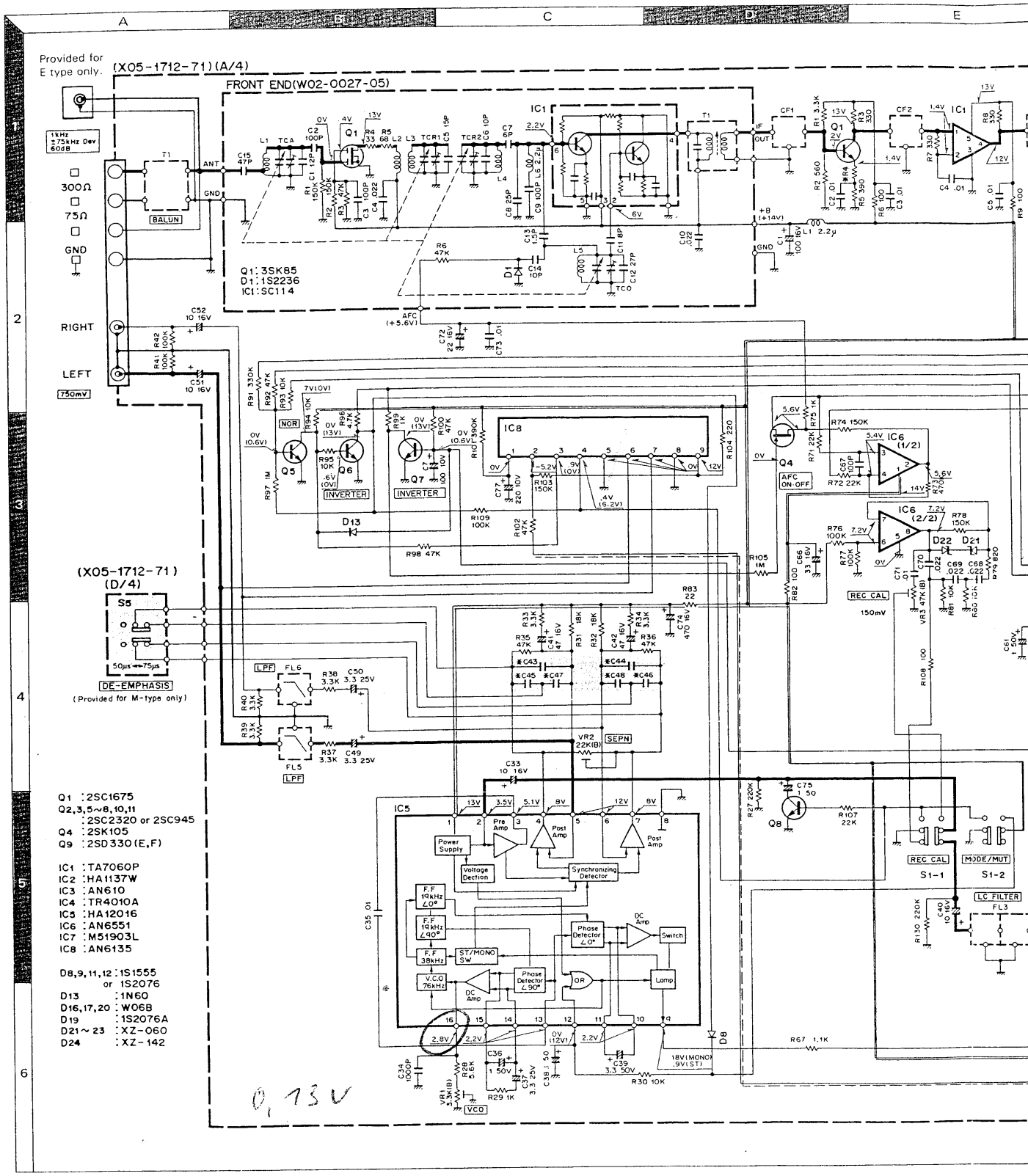
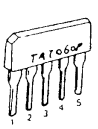


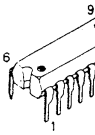
Type	Power switch S4	CF1~3	C91, C92		R121	De-emphasis			R4	Fuse F1	R119	R120	R93	Q2,3,D11,12 T4,R43~48,R50, 51,C53,C56~60
			Parts No.	Ref. No.		C43,44	C45,46	C47,48						
P(X05-1711-01)	S40-2100-05	L79-0110-05	C91-0079-05	C91	2.2M	.0015	N.P	N.P	10	N.P	6.8K	5.6K	10K	P
M(X05-1710-21)	S40-2100-05	L79-0110-05	C91-0023-05	C91	N.P	N.P	.0027	.0015	10	N.P	5.6K	6.8K	10K	P
E(X05-1712-71) T(X05-1710-51)	S40-2092-05	L79-0111-05	C54-3310-39	C91,92	N.P	.001	N.P	N.P	27	P	6.8K	5.6K	10K	P
X(X05-1712-71)	S40-2100-05	L79-0110-05	C91-0023-05	C91	N.P	.001	N.P	N.P	10	N.P	6.8K	5.6K	10K	P
K(X05-1710-11)	S40-2100-05	L79-0110-05	C91-0079-05	C91	2.2M	.0015	N.P	N.P	10	N.P	6.8K	5.6K	33K	N.P

(P: Provided, N.P: Not provided)

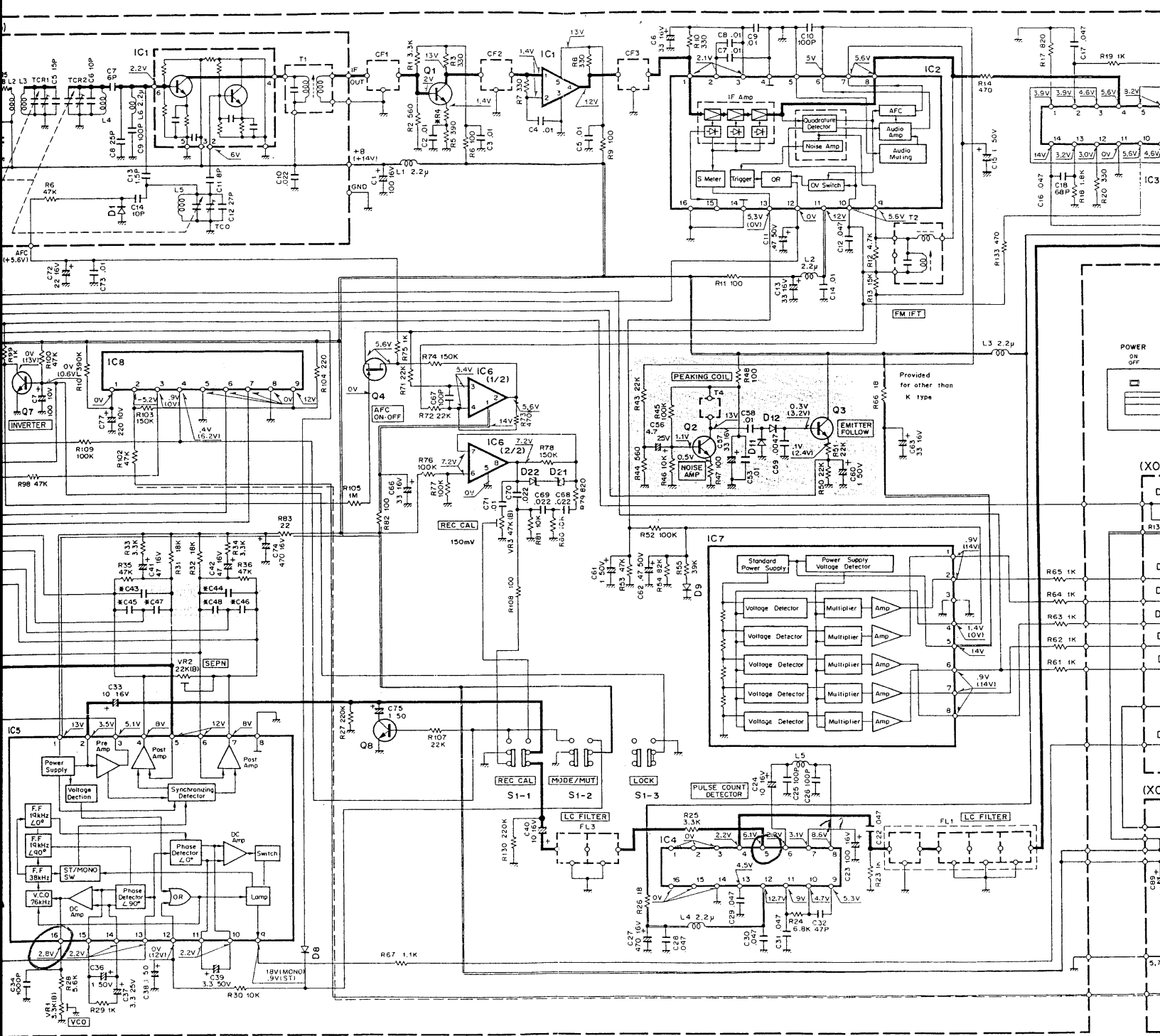
TA 7060P



HA1201
HA1137
TR4010

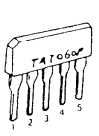


FM STEREO TUNER

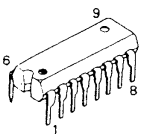


De-emphasis			R4	Fuse F1	R119	R120	R93	Q2,3,D11,12 T4,R43~48,R50, 51,C53,C56~60
C43,44	C45,46	C47,48						
.0015	N.P.	N.P.	10	N.P.	6.8K	5.6K	10K	P
N.P.	.0027	.0015	10	N.P.	5.6K	6.8K	10K	P
.001	N.P.	N.P.	27	P	6.8K	5.6K	10K	P
.001	N.P.	N.P.	10	N.P.	6.8K	5.6K	10K	P
.0015	N.P.	N.P.	10	N.P.	6.8K	5.6K	33K	N.P.

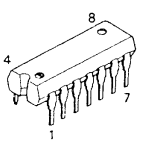
TA 7060P



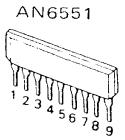
HA12016
HA1137W
TR4010A



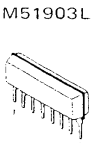
AN610



AN6135
AN6551

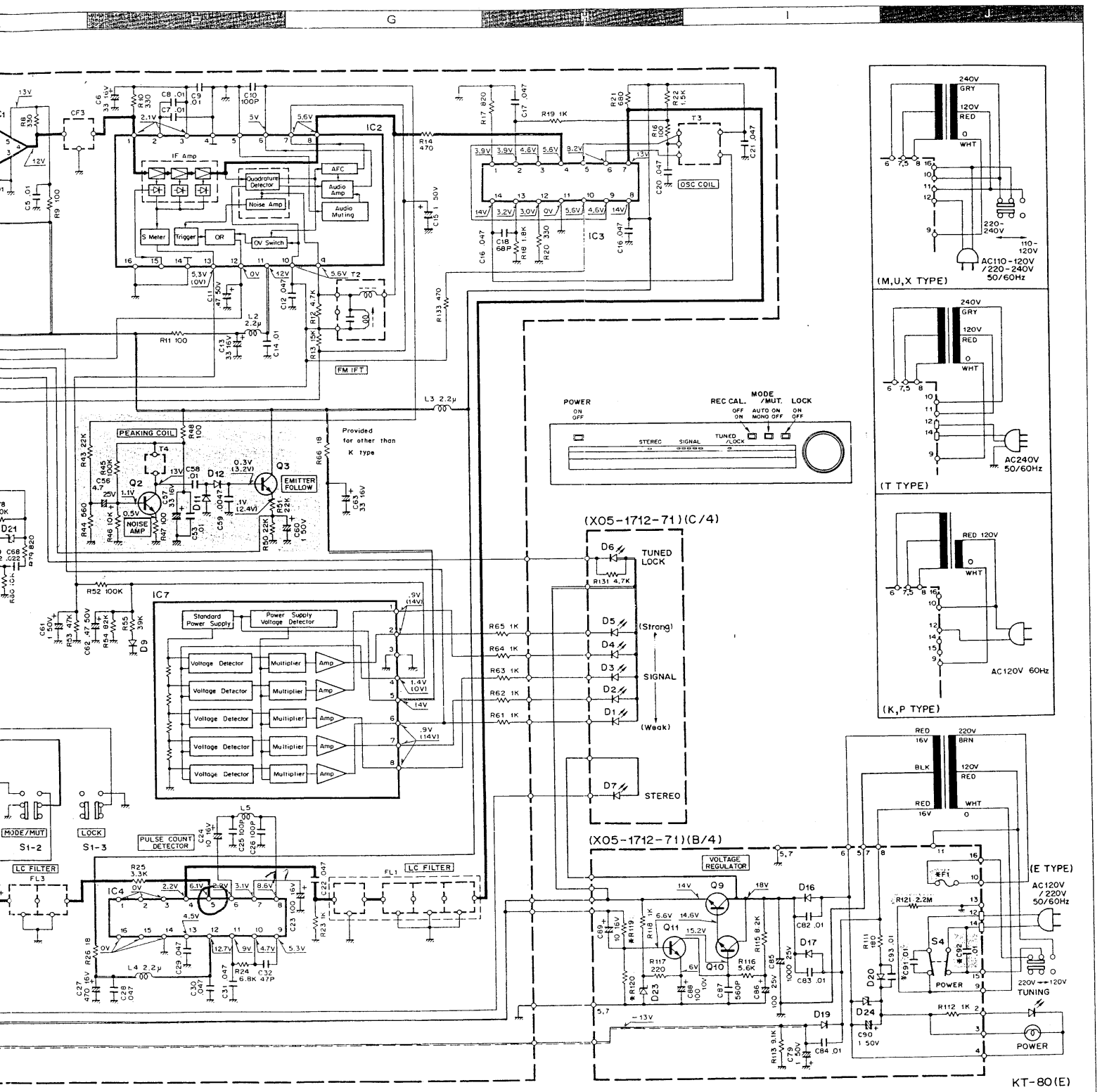


M51903L



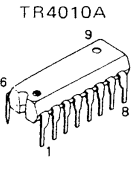
HA12017

FM STEREO TUNER



DC voltages are measured by a VOM with 20kΩ/V input impedance.

HA12016
HA1137W
TR4010A



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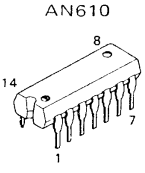

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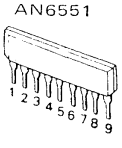

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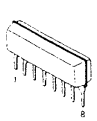

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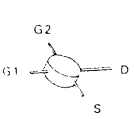

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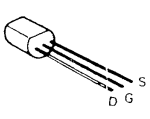

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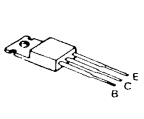

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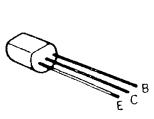
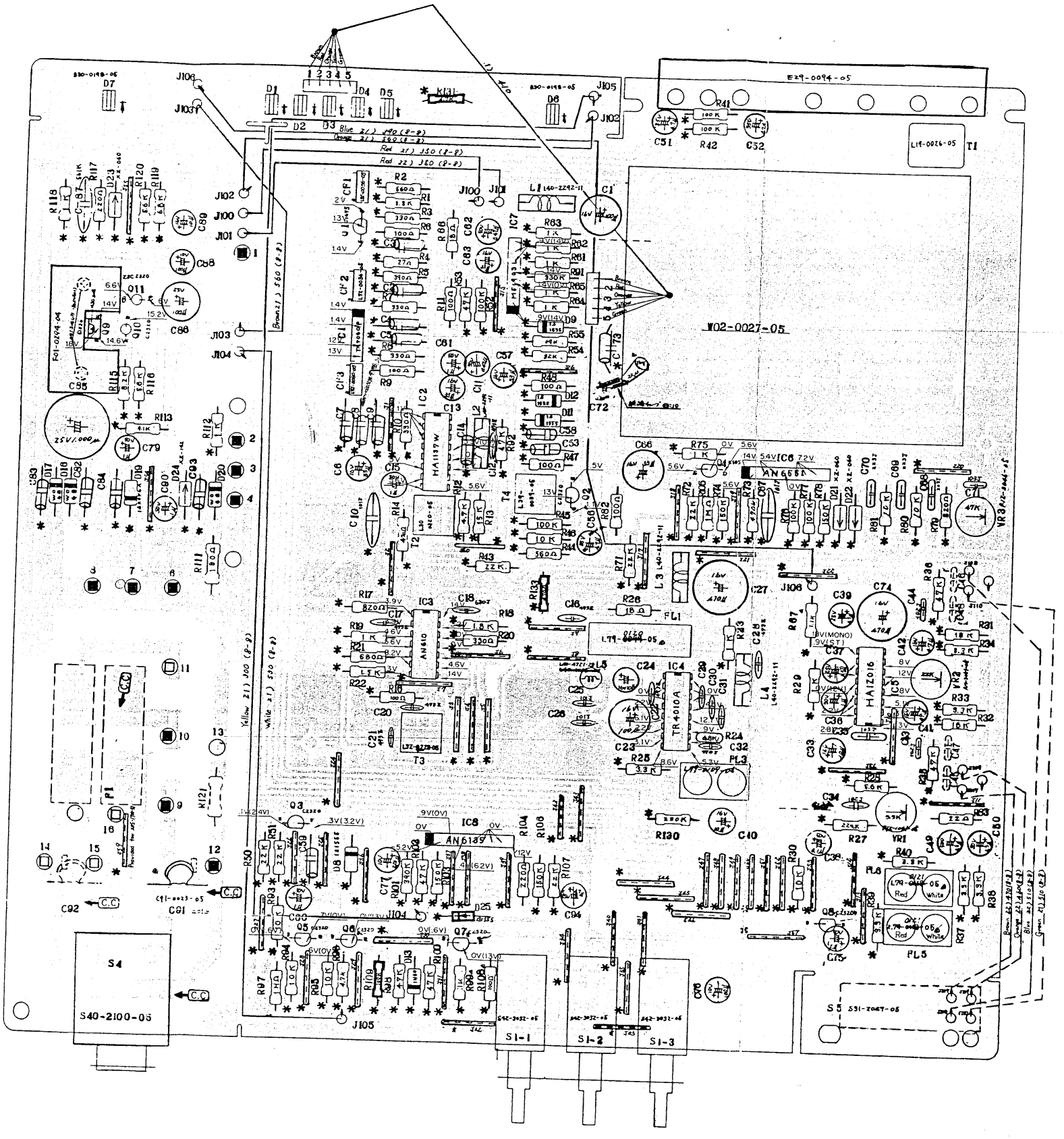


PC BOARD

710) Component side view



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