

AM-FM STEREO TUNER

KT-3050/3050L

SERVICE MANUAL

KENWOOD

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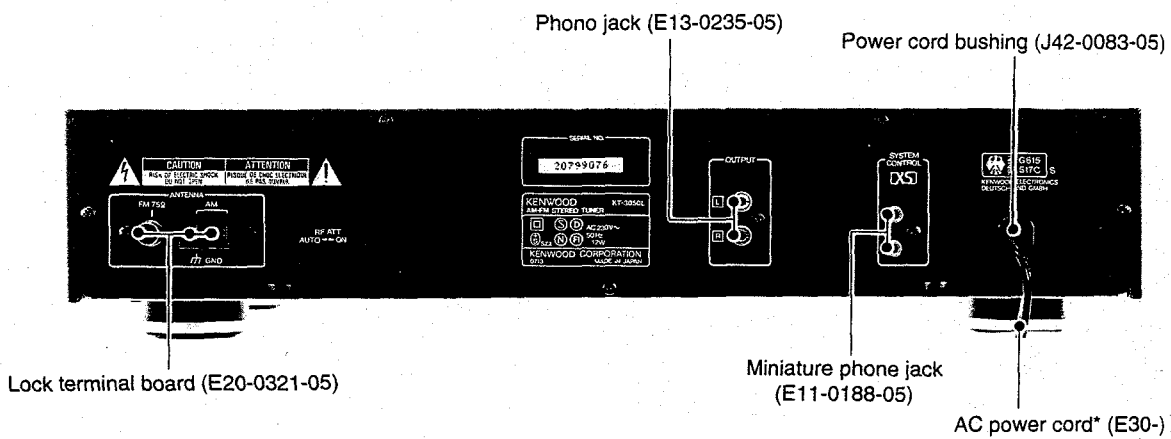
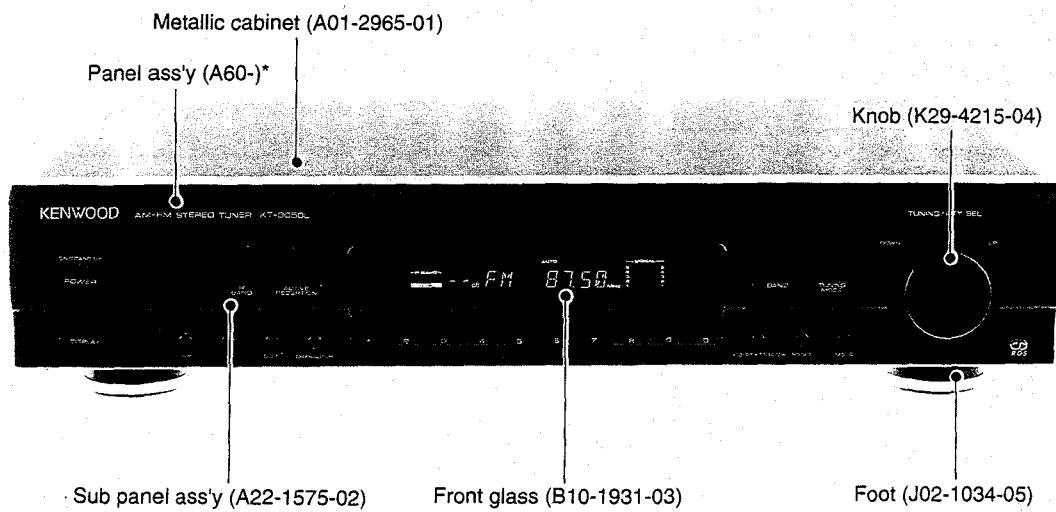


Photo is KT-3050L.
*Refer to Parts List on page 36.

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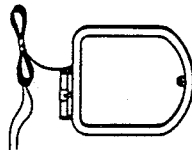
ACCESSORIES

FM indoor antenna 1



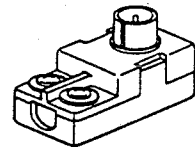
(T90-0176-05)

AM loop antenna 1



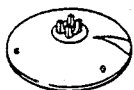
(T90-0173-05)

75 ohm/300 ohm
antenna adaptor 1



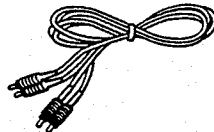
(T90-0185-05)

Loop antenna holder 1



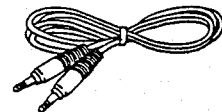
(J19-2815-04)

System control cord 1



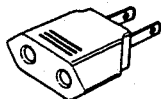
(E30-1392-05)

Audio cord 1



(E30-0505-05)

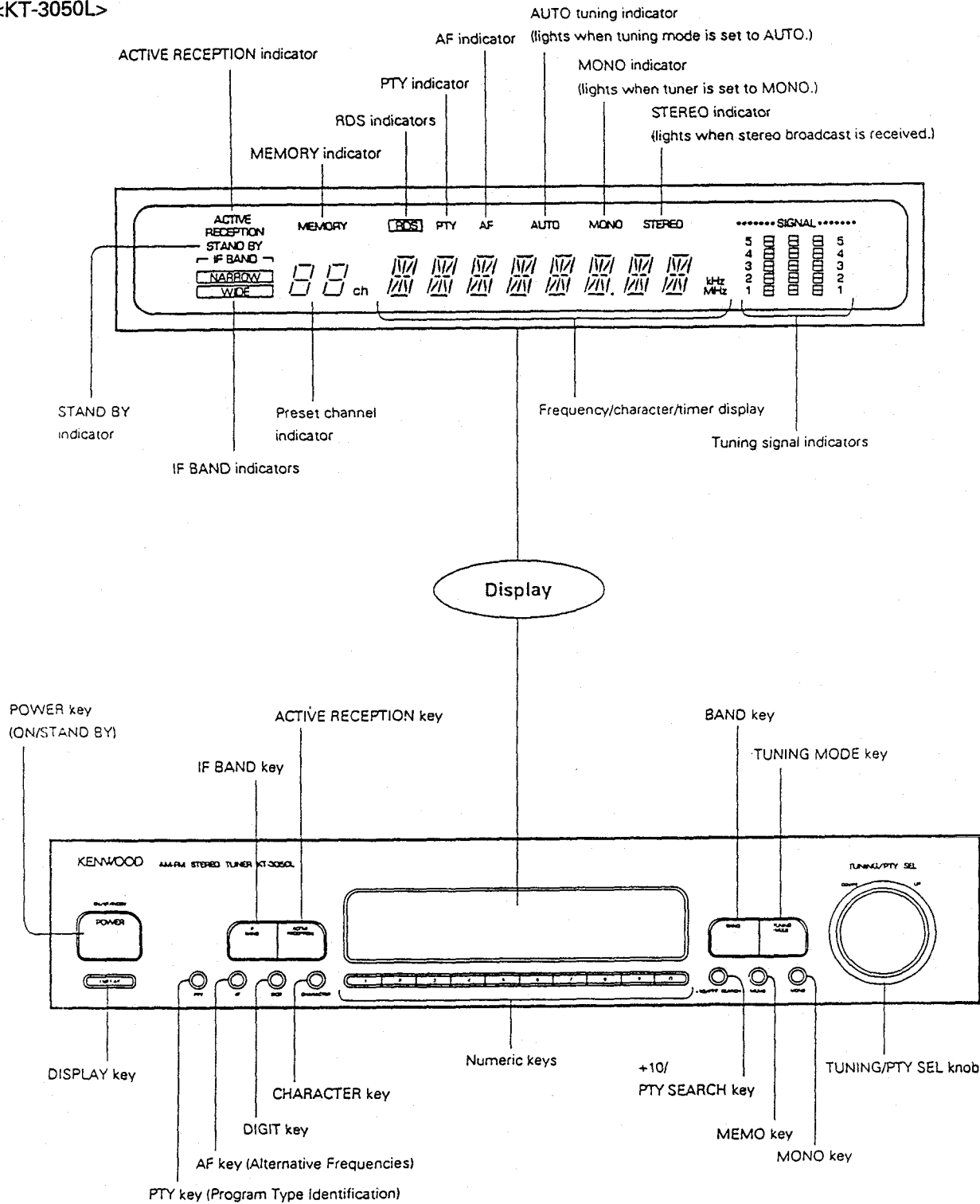
AC plug adaptor
(E03-0115-05) 1
(Except for some areas)



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CONTROLS AND INDICATORS

<KT-3050L>



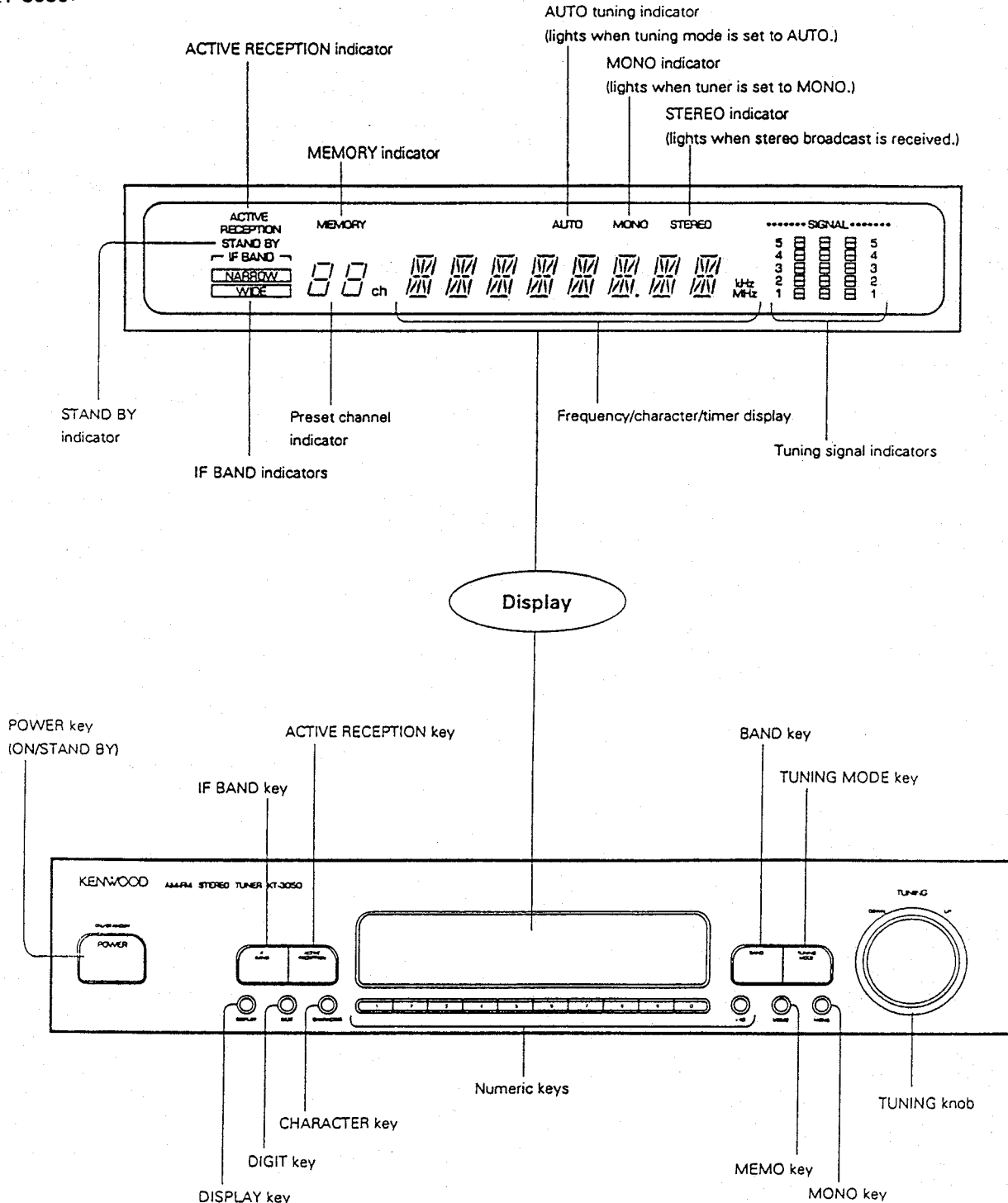
STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the STAND BY indicator lights up regardless of the ON/OFF setting of the POWER switch. This indicates that a small amount of current is being supplied to the unit to back up the memory contents. This mode is referred to as the Stand By mode.

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CONTROLS AND INDICATORS

<KT-3050>

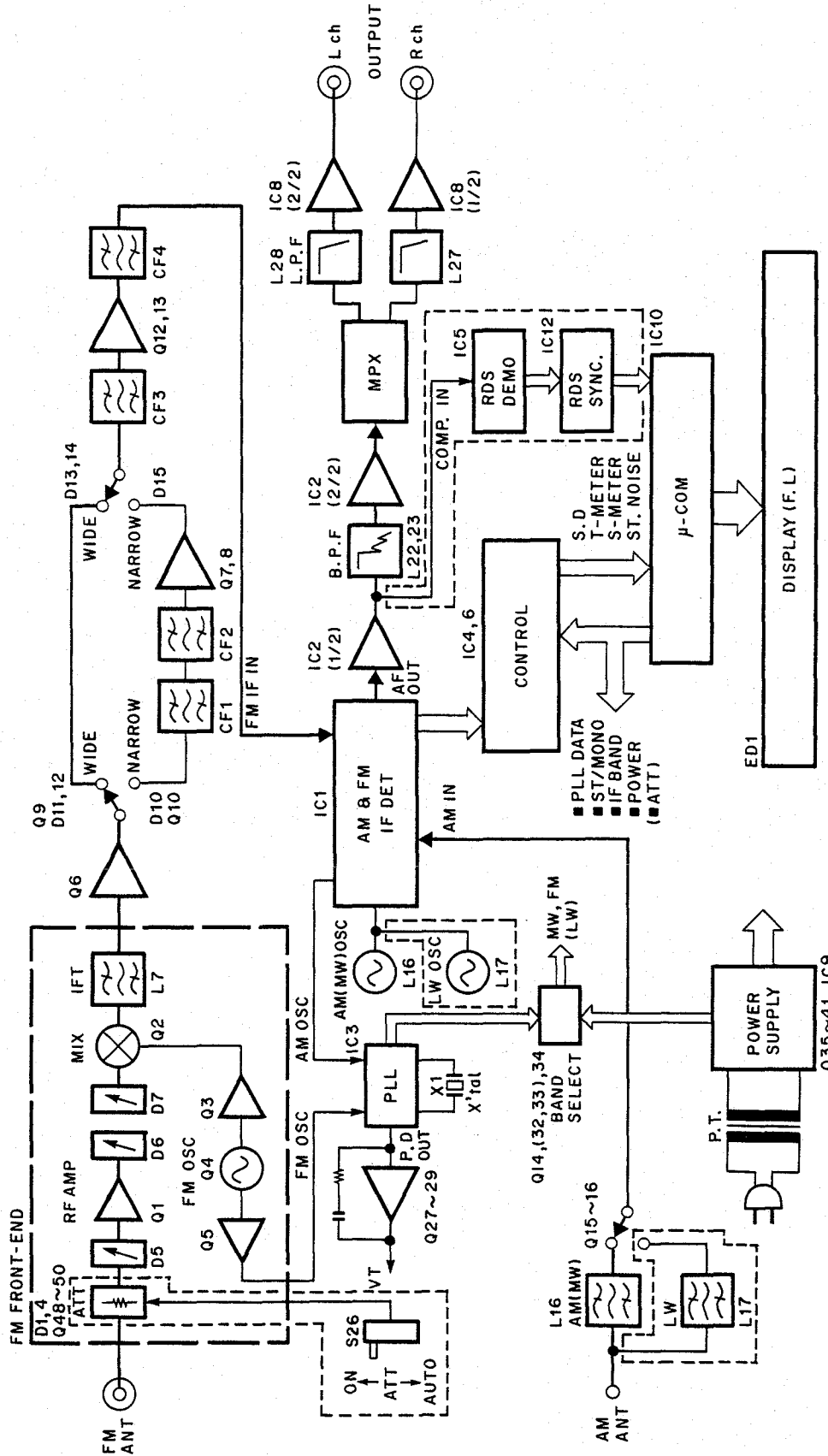


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BLOCK DIAGRAM



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CIRCUIT DESCRIPTION

1. Microprocessor: μ PD78043GF-011 (X05:IC10)

1.1 Initial Status

(1) Setting method: Hold down the MEMORY key and plug the tuner in.

(2) Contents:
Port output state

μ -com pin No.	Name	Output State
36	POWER Pin	Low ●●●● (POWER OFF)
37	MUTE Pin	Low ●●●● (MUTE ON)
49	WIDE/NARROW Pin	High ●●●● (WIDE)
50	MONO Pin	Low ●●●● (OFF)
51	ATT Pin	Low ●●●● (Attenuator OFF)
53	Reset pin for RDS μ -com	High ●●●● (reset)
54	TUNING Pin	Low
-	FL display	All lit

Setting State

RAM State	All clear
Tuning mode	AUTO
Preset channel memory	Test frequency
Last band	FM
Last frequency	Lower most limit of each band
Last preset channel	[- - ch]
Display mode	Frequency display

1.2 Test Mode

(1) Setting method

Hold down the BAND key and plug the tuner in.

(2) Display

When the power comes on, test mode is entered and all the fluorescent display segments light. The display segments stay lit until you press a key.

(3) Operation

● The preset channel definitions with +10 key and ten keys are different in the test mode. They are divided into four groups.

{01 ch - 10 ch / 0-ch / -- ch } : Group 1
{11 ch - 20 ch / 1-ch } : Group 2
{21 ch - 30 ch / 2-ch } : Group 3
{31 ch - 39 ch / 3-ch } : Group 4

If the current channel is in group 1, the 1 to 9 keys indicate 01 to 09 channels. 0 key indicates 10 channel. When you are in group 1, it does not change to another group until you press the +10 key. That is, you can change the group by pressing the +10 key. When the current channel belongs to group 1, "1-ch" is displayed, and the group changes to group 2. Group 2 changes group 3 ("2-ch" is displayed), and group 3 changes to group 4 ("3-ch" is displayed). Group 4 changes to group 1 ("0-ch" is displayed). If you press the 0 key when "3-ch" is

displayed, 10ch is recalled. Muting is off in test mode.

- Active reception is off in test mode. You can change between DIRECT and DISTANCE with the active reception key. DIRECT is selected when "ACTIVE RECEPTION" on the fluorescent display lights.
- AF search takes place roughly every two seconds. (KT-3050L only)

(4) Clear method

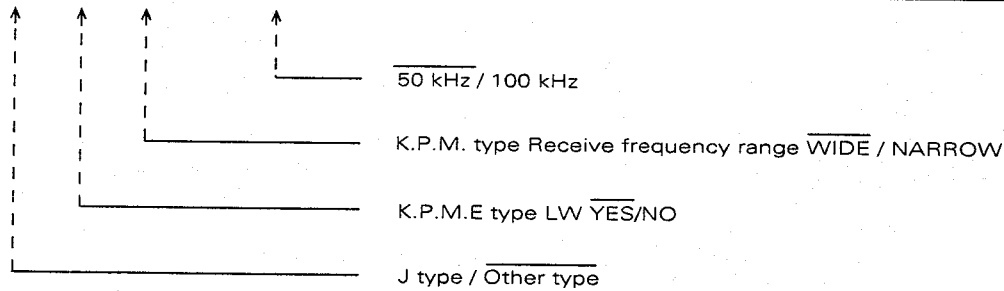
Unplug the tuner.

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CIRCUIT DESCRIPTION

1.3 Differences in specification according to destination and model

	Desti- nation	Microprocessor pin No.				Band	Receive frequency range	Channel step	I F
		21	22	23	57				
KT-3050	J	1	0	0	0	FM	76.0 MHz ~ 90.0 MHz	100 kHz	-10.7 MHz
						AM	531 kHz ~ 1602 kHz	9 kHz	+450 kHz
	M1	0	1	1	1	FM	87.5 MHz ~ 108.0 MHz	100 kHz	+10.7 MHz
						AM	530 kHz ~ 1610 kHz	10 kHz	+450 kHz
	K,P	0	1	0	1	FM	87.5 MHz ~ 108.0 MHz	100 kHz	+10.7 MHz
						AM	530 kHz ~ 1700 kHz	10 kHz	+450 kHz
	M2	0	1	1	0	FM	87.5 MHz ~ 108.0 MHz	50 kHz	+10.7 MHz
						AM	531 kHz ~ 1602 kHz	9 kHz	+450 kHz
KT-3050L	E	0	0	0	0	FM	87.5 MHz ~ 108.0 MHz	50 kHz	+10.7 MHz
						MW	531 kHz ~ 1602 kHz	9 kHz	+450 kHz
						LW	153 kHz ~ 279 kHz	9 kHz	+450 kHz

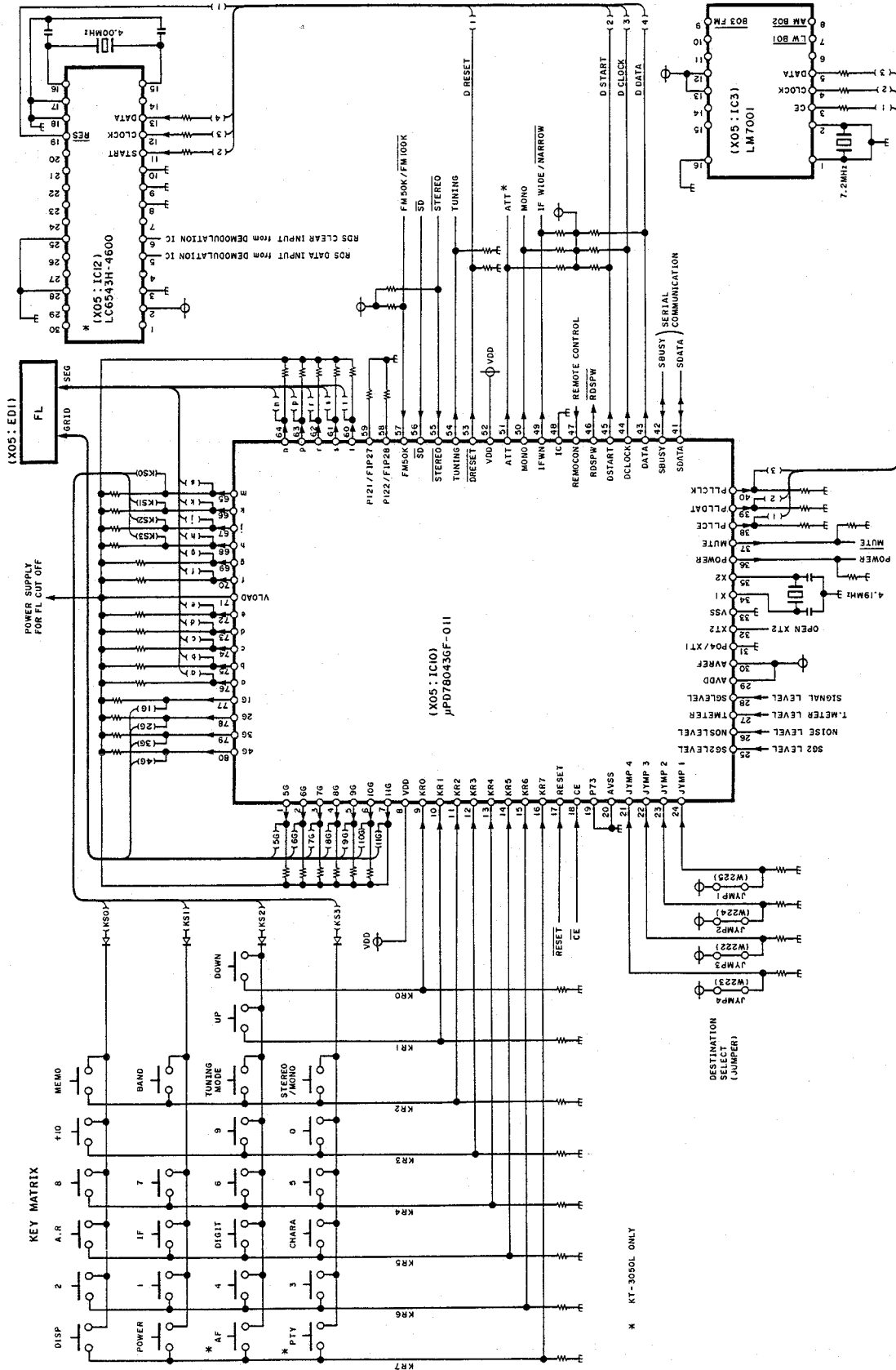


1: HIGH 0: LOW

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CIRCUIT DESCRIPTION

1.4 Block diagram of peripheral circuits of microprocessor



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CIRCUIT DESCRIPTION

1.5 Pin functions

Pin No.	Pin name	I / O	Name	Description
1	P94/FIP6	O	5G	FL Grid No. 5
2	P93/FIP5	O	6G	FL Grid No. 6
3	P92/FIP4	O	7G	FL Grid No. 7
4	P91/FIP3	O	8G	FL Grid No. 8
5	P90/FIP2	O	9G	FL Grid No. 9
6	P81/FIP1	O	10G	FL Grid No. 10
7	P80/FIP0	O	11G	FL Grid No. 11
8	VDD	O	VDD	+5V power supply
9	P27/SCK0	I	KR0	Key return 0
10	P26/SO0	I	KR1	Key return 1
11	P25/SI0	I	KR2	Key return 2
12	P24/BUSY	I	KR3	Key return 3
13	P23/STB	I	KR4	Key return 4
14	P22/SCK1	I	KR5	Key return 5
15	P21/SO1	I	KR6	Key return 6
16	P20/SI1	I	KR7	Key return 7
17	RESET	I		Reset
18	P74	I	CE	Chip enable
19	P73			No used (GND)
20	AVSS			GND
21	P17/AN17	I	JYMP4	Destination change jumper SW4 (W223) J type/Other type
22	P16/AN16	I	JYMP3	Destination change jumper SW3 (W222) K.P.M. type AM Receive frequency range WIDE/NARROW
23	P15/AN15	I	JYMP2	Destination change jumper SW2 (W224) With LW/Without LW
24	P14/AN14	I	JYMP1	Destination change jumper SW1 (W225)
25	P13/AN13	I	SG2LEVL	ACTIVE RECEPTION signal level input
26	P12/AN12	I	NOSLEVL	Noise level input
27	P11/AN11	I	TMETER	Tuning meter level input
28	P10/AN10	I	SGLEVL	Signal level input
29	AVdd			Vdd
30	AVref			Vdd
31	P04/XT1			GND
32	XT2			OPEN
33	VSS			GND
34	X1			4.19 MHz
35	X2			4.19 MHz
36	P37	O	POWER	POWER ('H'=POWER ON)
37	P36/BUZ	O	MUTE	Mute ('L'=Mute ON)
38	P35/PCL	O	PLLCE	PLL (LM7001) CE
39	P34/TI2	O	PLLDAT	PLL (LM7001) DATA
40	P33/TI1	O	PLLCLK	PLL (LM7001) CLOCK

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CIRCUIT DESCRIPTION

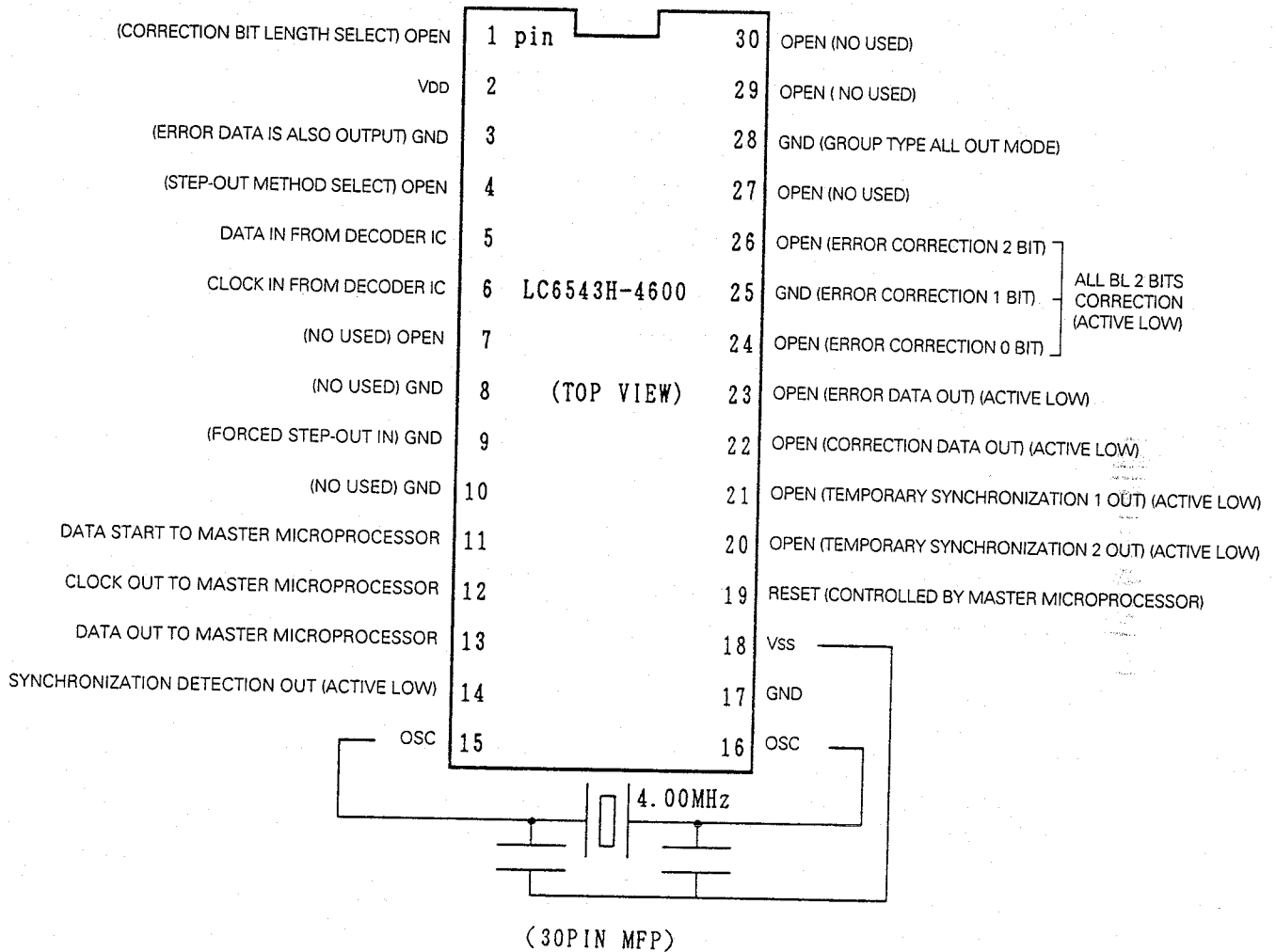
Pin No.	Pin name	I / O	Name	Description
41	P32/TO2	I/O	SDATA	DATA of serial communication
42	P31/TO1	I/O	SBUSY	BUSY of serial communication
43	P30/TO0	O	DATA	RDS synchronizing microprocessor DATA (Use KT-3050L only)
44	P03/INTP3	O	DCLOCK	RDS synchronizing microprocessor CLOCK (Use KT-3050L only)
45	P02/INTP2	O	DSTART	RDS synchronizing microprocessor START signal (Use KT-3050L only)
46	P01/INTP1	O	RDSPW	RDS synchronizing microprocessor Vdd control (Use KT-3050L only)
47	P00/INTP0	I	REMOCON	Remote control signal input (No used)
48	IC			GND
49	P72	O	IFWN	IF WIDE/NARROW selection ('L'=NARROW)
50	P71	O	MONO	Forced MONO control ('H'=Forced MONO)
51	P70	O	ATT	Attenuator control (High: Attenuator in) (Use KT-3050L only)
52	Vdd			+5V power supply
53	P127/FIP33	O	DRESET	RDS synchronizing microprocessor RESET ('L': Reset) (Use KT-3050L only)
54	P126/FIP32	O	TUNING	Tuning control
55	P125/FIP31	I	STEREO	STEREO ('L'=STEREO)
56	P124/FIP30	I	SD	SD signal input ('L'=SD)
57	P123/FIP29	I	FM50K	FM50K ('L'=FM50K, 'H'=FM100K)
58	P122/FIP28	I		No used (GND)
59	P121/FIP27	I		No used (GND)
60	P120/FIP26	O	t	Segment t
61	P117/FIP25	O	s	Segment s
62	P116/FIP24	O	r	Segment r
63	P115/FIP23	O	p	Segment p
64	P114/FIP22	O	n	Segment n
65	P113/FIP21	O	m	Segment m/Keyscan 0
66	P112/FIP20	O	k	Segment k/Keyscan 1
67	P111/FIP19	O	j	Segment j/Keyscan 2
68	P110/FIP18	O	h	Segment h/Keyscan 3
69	P107/FIP17	O	g	Segment g
70	P106/FIP16	O	f	Segment f
71	Vload			-30V power supply
72	P105/FIP15	O	e	Segment e
73	P104/FIP14	O	d	Segment d
74	P103/FIP13	O	c	Segment c
75	P102/FIP12	O	b	Segment b
76	P101/FIP11	O	a	Segment a
77	P100/FIP10	O	1G	FL grid No. 1
78	P97/FIP9	O	2G	FL grid No. 2
79	P96/FIP8	O	3G	FL grid No. 3
80	P95/FIP7	O	4G	FL grid No. 4

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CIRCUIT DESCRIPTION

2. RDS synchronizing microprocessor: LC6543H-4600 (X05:IC12, KT-3050L only)

2.1 Pin connection diagram

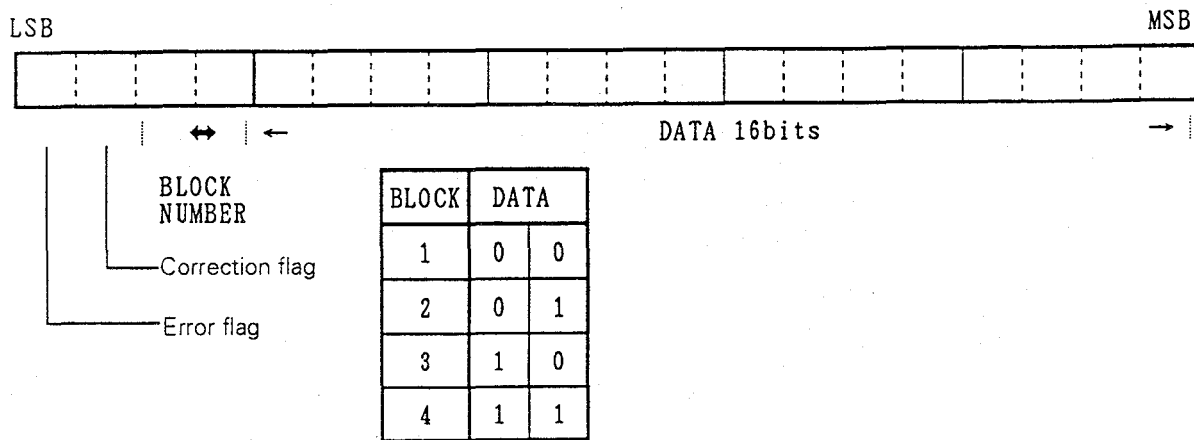


* The RESET pin is controlled statically by the master microprocessor, and a RESET pulse is output when AF/PI search takes place, the power is switched on, or the FM band is changed. So, the RESET circuit for the synchronizing microprocessor is not required.

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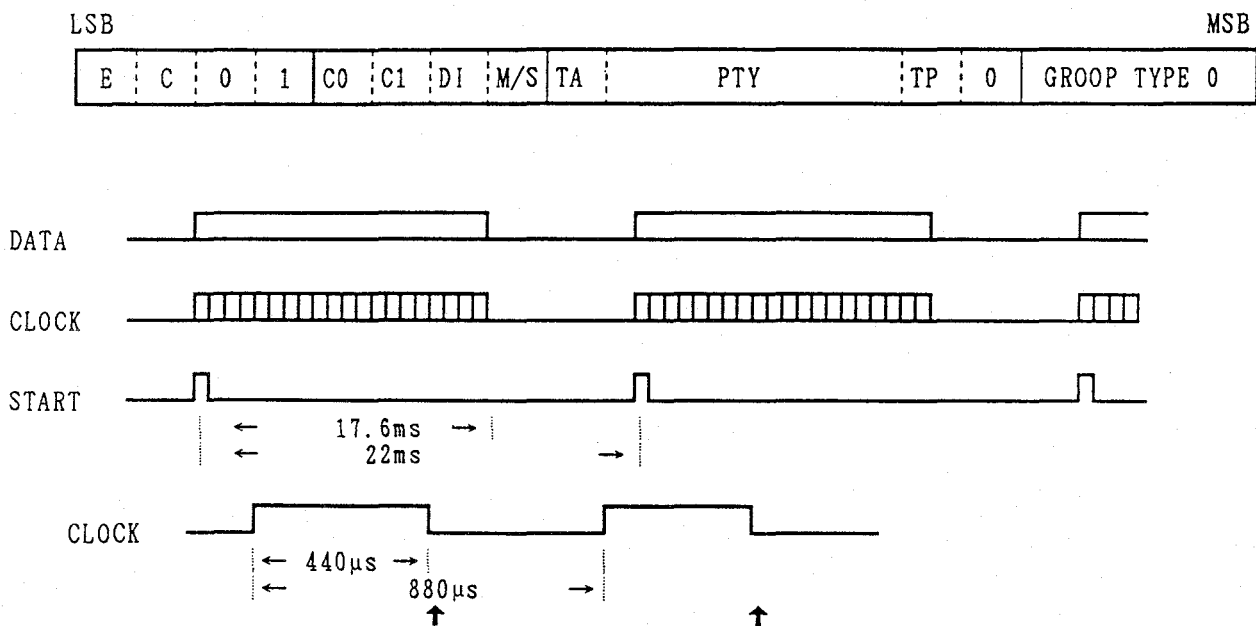
CIRCUIT DESCRIPTION

2.2 Synchronizing microprocessor data format



16-bit data is transferred from the LSB.

Example: Block 2 (Group type 0A)



Master microprocessor data input method

An interrupt occurs on the falling edge of the clock from the synchronizing microprocessor, and data is input. The beginning of a 20-bit data item is indicated by START. (START is always monitored; if it is detected, it is taken as the beginning of the next data item, even if the current data item is less than 20 bits long.)

CIRCUIT DESCRIPTION

3. RDS operation specification (KT-3050L only)

3.1 RDS overview

The RDS (radio data system) is a new feature for 87.5- to 108- MHz FM broadcasting. In RDS digital signals are broadcast using an FM sub-carrier (57 kHz). The digital signal is piggybacked on the normal FM multiplex signal. It does not have any effect on the transmitted audio signal.

RDS broadcasting is mainly intended to provide special services to mobile receivers.

3.2 Basic RDS functions

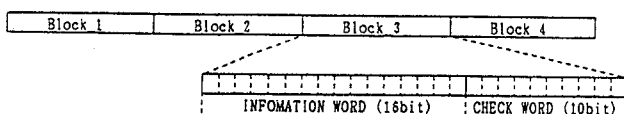
There are currently 14 basic RDS functions. New functions may be added in the future. The functions are listed below.

- ① PI (Program identification)
- ② PS (Program service name)
- ③ PTY (Program type)
- ④ TP (Traffic-program identification)
- ⑤ AF (List of alternative frequencies)
- ⑥ TA (Traffic-announcement identification)
- ⑦ DI (Decoder identification)
- ⑧ M/S (Music/speech switch)
- ⑨ PIN (Program item number)
- ⑩ RT (Radio text)
- ⑪ ON (Information concerning other networks)
- ⑫ TDC (Transparent data channel)
- ⑬ IH (In-house application)
- ⑭ CT (clock time and date)

This audio tuner (KT-3050L) uses functions ①, ②, ③, ⑤, and ⑭.

3.3 RDS data format

In RDS 104 bits are sent continuously as a group. The 104-bit data consists of four blocks, each block representing 26-bit data. This data consists of a 16-bit information word and a 10-bit check word. Its structure is shown below.



The 10-bit check word is error detection data, and is not detailed. The 16-bit information word is used to implement RDS functions.

① Block 1

This is 16-bit data indicating a PI (program identification) code. Block 1 for all groups is the PI code of the station originating the RDS broadcast.

② Block 2

This block contains various items of information. Basic data, group type code (4 bits), indicates the type of group containing that block. The Bo code (1 bit) indicates the group version. The 5-bit data item indicates the group type. (Basically, there are 32 groups consisting of XA and XB (X=0 to 15). Block 2 for all groups contains this code.

Another basic data item is TP data (1 bit) and PTY data (5 bits). TP is a traffic program identification code; PTY, a broadcasting program type code. These data items are also contained in Block 2 of all groups.

The use of the five remaining bits depends on the group type code.

③ Block 3

The use of Block 3 depends on the group type code. For group type XB (X=0 to 15), the same contents (PI code) as Block 1 are sent.

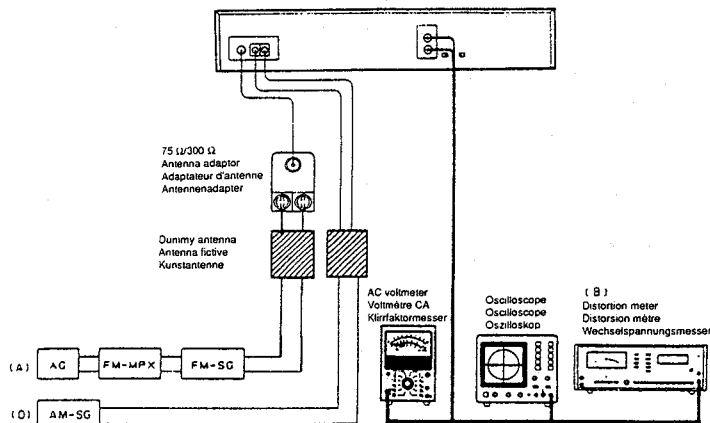
④ Block 4

The use of Block 4 depends on the group type code. To summarize, the use of the last five bits of Block 2, Block 3, and Block 4 is determined by the first five bits (group type code) of Block 2.

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ADJUSTMENT

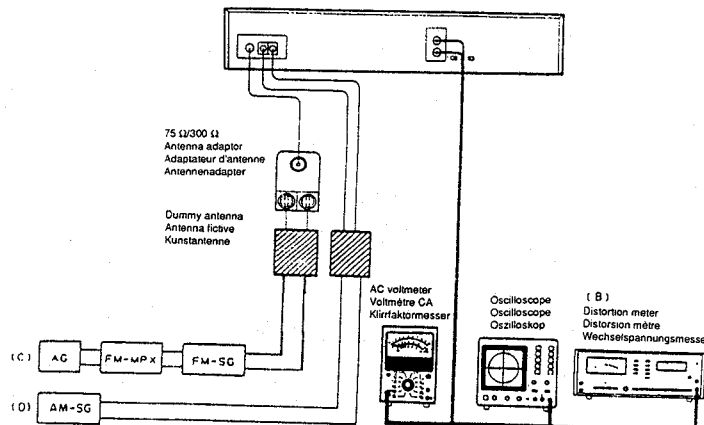
Item	Input setting	Output setting	Setting	Adjustment point	Adjustment method	FIG.	
1	Vr1		Test pin (11) V _T (12) GND DC voltmeter	87.5 MHz	L9	DC 2.0 V ± 0.1 V	(a)
2	Vr2		Test pin (11) V _T (12) GND DC voltmeter	108 MHz	TC1	DC 11.5 V ± 0.2 V	(a)
Adjust the voltage by repeating steps 1 and 2 above.							
3	Sensitivity 1	(A) 98 MHz 1 kHz ± 75 kHz dev 100 dB μ ~ 0 dB μ (ANT input)	OUTPUT Oscilloscope	IF: WIDE AR: OFF	L2, 4, 5	Turn the cores of L2, L4, and L5, in that order, so that the output waveform is the maximum and best.	
Adjust by repeating the above steps.							
4	Sensitivity 2	(A) 98 MHz 1 kHz ± 75 kHz dev 100 dB μ ~ 0 dB μ (ANT input)	OUTPUT Oscilloscope	IF: WIDE AR: OFF	L7	Turn the core to give the best output waveform (noise symmetry).	
5	S meter level	(A) 98 MHz 1 kHz ± 40 kHz dev 70 dB μ (ANT input)	Test pin (7) GND (9) S meter DC voltmeter	IF: WIDE AR: OFF	VR6	Set to 4.3 to 4.4 VDC. If the voltage cannot be adjusted to 4.4 V, set it to the minimum value.	(b)
6	FM auto-stop sensitivity 1	(A) 98 MHz 1 kHz ± 40 kHz dev 13 dB μ (ANT input)	Tuner signal strength meter	IF: WIDE AR: OFF	VR1	Turn VR1 counter- clockwise so that the first graduation of the signal strength meter lights.	
7	FM auto-stop sensitivity 2	(A) 98 MHz 1 kHz ± 40 kHz dev 13 dB μ (ANT input)	Tuner signal strength meter	IF: NARROW AR: OFF	VR2	Turn VR2 counter- clockwise so that the first graduation of the signal meter lights.	
8	TUNED	(A) 98 MHz 1 kHz ± 40 kHz dev 70 dB μ (ANT input)	Test pin (3) TUNED → HOT (4) V _{ref} → COLD DC voltmeter	IF: WIDE AR: OFF	L20	Turn the core of L20 so that the DC is within ±20 mV.	(c)
9	Distortion	(A) 98 MHz 1 kHz ± 40 kHz dev 80 dB μ (ANT input)	OUTPUT Oscilloscope	IF: WIDE AR: OFF	L21	Turn the core of L21 to minimize the distortion.	
Repeat steps 8 and 9 above two or three times.							
10	Separation	(A) 98 MHz 1 kHz ± 40 kHz dev 80 dB μ (ANT input)	OUTPUT Right channel (Left channel) Oscilloscope (Low-pass-filter used).	IF: WIDE AR: OFF	VR3	Turn VR3 so that the stereo separation is minimum.	
11	AM auto-stop sensitivity	(D) 999 kHz 400 Hz, 30% mod. 30dB μ (ANT input)	Tuner signal strength meter	MW (AM)	VR4	Turn VR4 so that the first graduation of the signal meter lights	



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REGLAGES

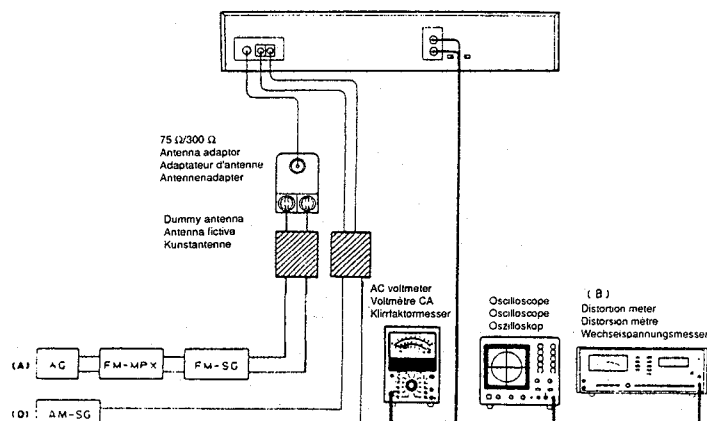
Item	Réglages d'entrée	Réglages de sortie	Réglages	Point de réglage	Méthode de réglage	FIG.
1	VT1		Fiche d'essai (11) VT (12) GND Voltmètre cc	87.5 MHz	L9	2.0 Vcc ± 0.1 V (a)
2	VT2		Fiche d'essai (11) VT (12) GND Voltmètre cc	108 MHz	TC1	11.5 V cc ± 0.2 V (a)
Régler la tension en reprenant les opérations 1 et 2 précédentes.						
3	Sensibilité 1	(A) 98 MHz 1kHz ± 75 kHz dév 100 dBμ - 0 dBμ (Entrée ANT)	SORTIE Oscilloscope	IF: LARGE AR: ARRET	L2, 4, 5	Régler par rotation L2, L4 et L5 dans cet ordre de telle sorte que la forme d'onde de sortie soit au maximum et la plus optimale possible.
Régler en reprenant les opérations précédentes.						
4	Sensibilité 2	(A) 98 MHz 1kHz ± 75 kHz dév 100 dBμ - 0 dBμ (Entrée ANT)	SORTIE Oscilloscope	IF: LARGE AR: ARRET	L7	Régler par rotation pour obtenir la meilleure forme d'onde de sortie possible (symétrie de bruit)
5	Niveau de l'indicateur de sensibilité	(A) 98 MHz 1kHz ± 40 kHz dév 70 dBμ (Entrée ANT)	Fiche d'essai (7) GND (9) Indicateur de sensibilité Voltmètre cc	IF: LARGE AR: ARRET	VR6	Régler sur 4.3 à 4.4 Vcc. Si le réglage à 4.4V n'est pas possible, régler aussi précisément que possible entre 4.3 et 4.4 V. (b)
6	Sensibilité 1 Arrêt automatique FM	(A) 98 MHz 1 kHz ± 40 kHz dév 13 dBμ (Entrée ANT)	Indicateur de puissance du signal du tuner	IF: LARGE AR: ARRET	VR1	Tourner VR1 dans le sens contraire au sens horloger jusqu'à ce que la première division sur l'indicateur de puissance du signal du tuner s'allume.
7	Sensibilité 2 Arrêt automatique FM	(A) 98 MHz 1 kHz ± 40 kHz dév 13 dBμ (Entrée ANT)	Indicateur de puissance du signal du tuner	IF: ETROIT AR: ARRET	VR2	Tourner VR2 dans le sens contraire au sens horloger jusqu'à ce que la première division sur l'indicateur de puissance du signal s'allume.
8	ACCORD	(A) 98 MHz 1kHz ± 40 kHz dév 70 dBμ (Entrée ANT)	Fiche d'essai (3) ACCORD→ACTIF (4) Vref→INACTIF Voltmètre cc	IF: LARGE AR: ARRET	L20	Régler L20 par rotation jusqu'à ce que la tension cc soit de ±20 mV. (c)
9	Distorsion	(A) 98 MHz 1 kHz ± 40 kHz dév 80 dBμ (Entrée ANT)	SORTIE Oscilloscope	IF: LARGE AR: ARRET	L21	Régler L21 par rotation de sorte à minimiser la distorsion.
Reprendre deux ou trois fois les opérations 8 et 9 précédentes.						
10	Séparation	(A) 98 MHz 1 kHz ± 40 kHz dév 80 dBμ (Entrée ANT)	SORTIE Canal droit (Canal gauche) Oscilloscope (Avec filtre passe-bas)	IF: LARGE AR: ARRET	VR3	Régler VR3 par rotation de sorte à réduire la séparation stéréo au minimum.
11	Sensibilité de l'arrêt automatique AM	(D) 999 kHz 400 Hz, 30% mod 30dBμ (Entrée ANT)	Indicateur de puissance du signal du tuner	MW (AM)	VR4	Tourner VR4 jusqu'à ce que la première division sur l'indicateur de puissance du signal s'allume.



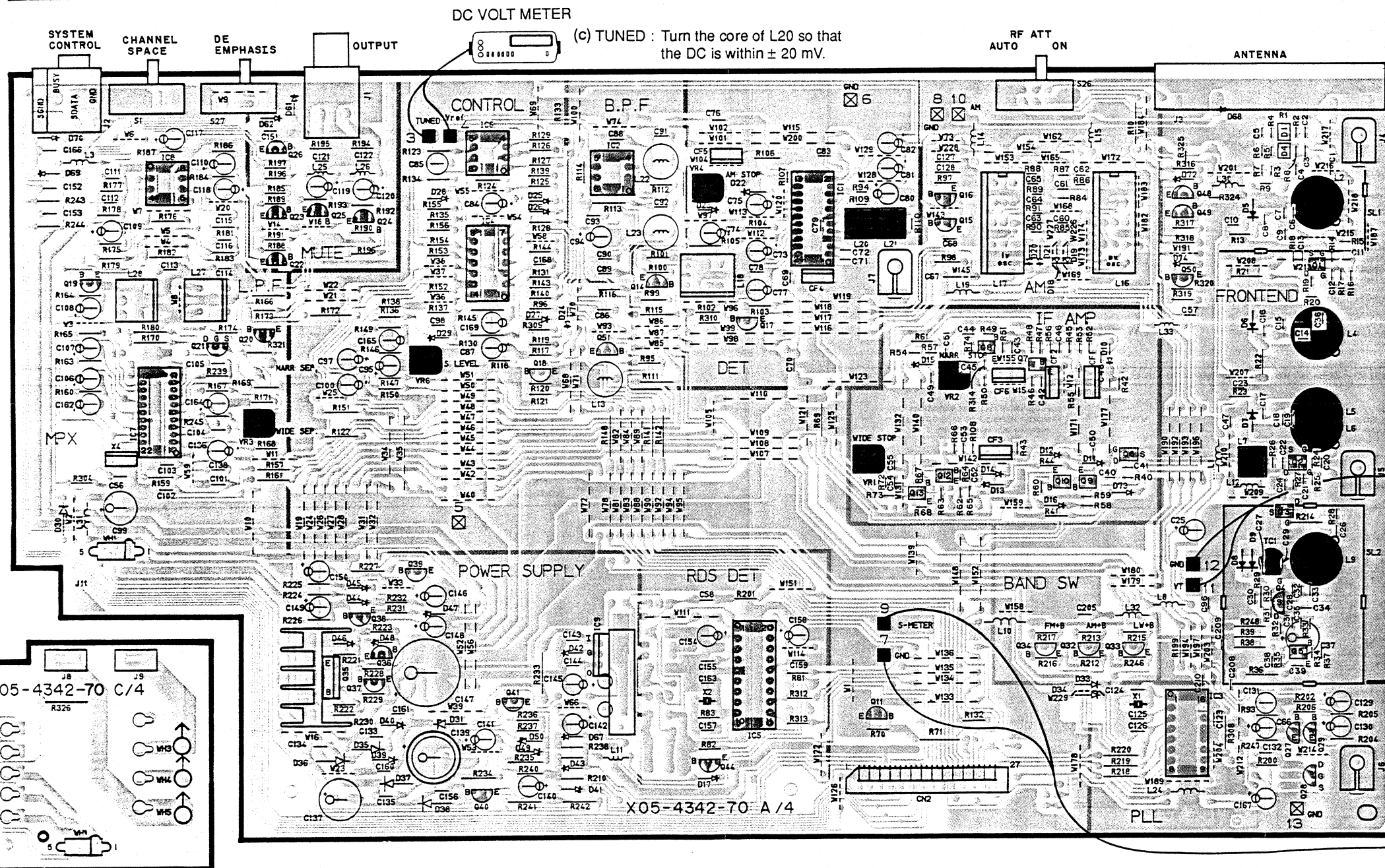
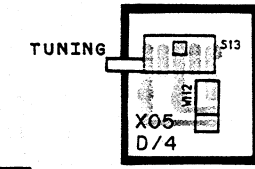
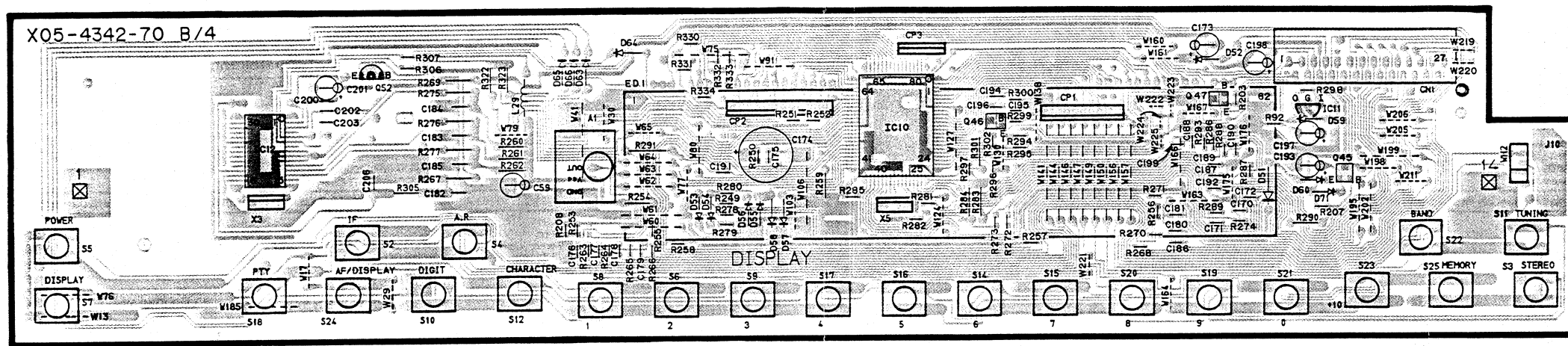
KT-3050/3050L

ABGLEICH

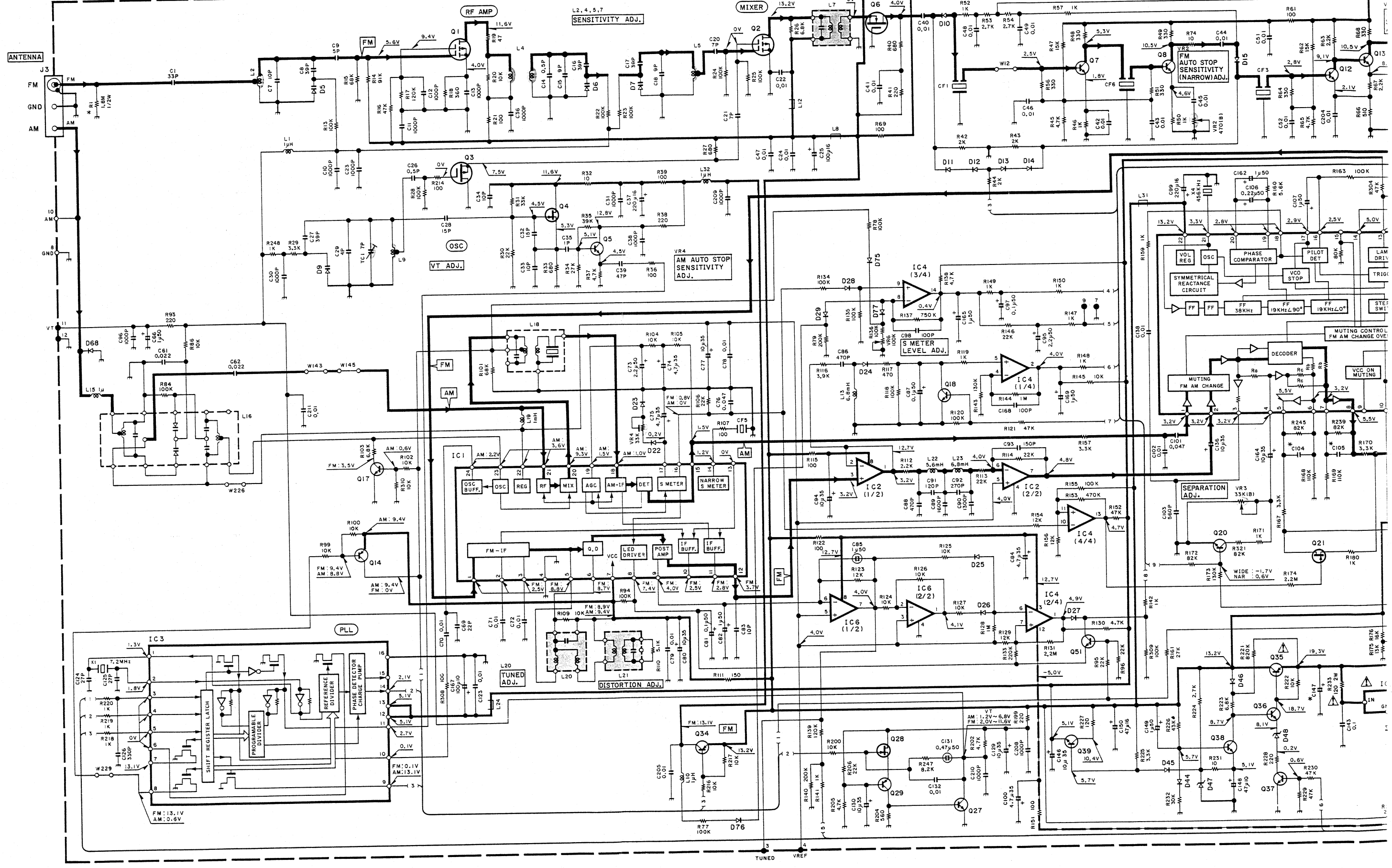
Einzelheit	Eingangseinstellung	Ausgangseinstellung	Einstellung	Einstellpunkt	Einstellverfahren	ABB.	
1	Vr1		Meßstift (11) VT (12) GND (Erdung) Gleichstrom-Voltmeter	87.5 MHz	L9	2.0 V GS ± 0.1 V	(a)
2	Vr2		Meßstift (11) VT (12) GND (Erdung) Gleichstrom-Voltmeter	108 MHz	TC1	11.5 V GS ± 0.2 V	(a)
Durch Wiederholung der obigen Schritte 1 und 2 die Spannung einstellen.							
3	Empfindlichkeit 1	(A) 98 MHz 1 kHz ± 75 kHz dev 100 dBµ - 0 dBµ (ANT Eingang)	OUTPUT (Ausgang) Oszilloskop	IF: WIDE (ZF: Breit) AR: OFF (AUS)	L2, 4, 5	Die Kerne von L2, L4 und L5 in gegebener Reihenfolge drehen, bis die maximale und beste Ausgangs-Wellenform erreicht wird.	
Nachstellen, indem die obigen Schritte wiederholt werden.							
4	Empfindlichkeit 2	(A) 98 MHz 1 kHz ± 75 kHz dev 100 dBµ - 0 dBµ (ANT Eingang)	OUTPUT (Ausgang) Oszilloskop	IF: WIDE (ZF: Breit) AR: OFF (AUS)	L7	Den Kern drehen, bis die beste Ausgangs-Wellenform (Rauschsymmetrie) erreicht wird.	
5	Signalstärke- Meßgerätpegel	(A) 98 MHz 1 kHz ± 40 kHz dev 70 dBµ (ANT Eingang)	Meßstift (7) GND (Erdung) Signalstärkemeßgerät	IF: WIDE (ZF: Breit) AR: OFF (AUS)	VR6	Auf 4.3 bis 4.4 VDC setzen. Wenn die Spannung nicht auf 4.4 V eingestellt werden kann, möglichst genau auf den Bereich 4.3 bis 4.4 V einstellen.	(b)
6	FM- Autostopp- Empfindlichkeit 1	(A) 98 MHz 1 kHz ± 40 kHz dev 13 dBµ (ANT Eingang)	Signalstärkemeßgerät für Tuner	IF: WIDE (ZF: Breit) AR: OFF (AUS)	VR1	VR1 nach links drehen, damit die erste Skalenteilung des Signalstärkemeßgeräts aufleuchtet.	
7	FM- Autostopp- Empfindlichkeit 2	(A) 98 MHz 1 kHz ± 40 kHz dev 13 dBµ (ANT Eingang)	Signalstärkemeßgerät für Tuner	IF: NARROW (ZF: Schmal) AR: OFF (AUS)	VR2	VR2 nach links drehen, damit die erste Skalenteilung des Signalstärkemeßgeräts aufleuchtet.	
8	TUNED	(A) 98 MHz 1 kHz ± 40 kHz dev 70 dBµ (ANT Eingang)	Meßstift (3) TUNE → HOT (Heiß) (4) Vref → COLD (Kalt) Gleichstrom-Voltmeter	IF: WIDE (ZF: Breit) AR: OFF (AUS)	L20	Den Kern von L20 drehen, bis der Gleichstrom ±20 mV beträgt.	(c)
9	Verzerrung	(A) 98 MHz 1 kHz ± 40 kHz dev 80 dBµ (ANT Eingang)	OUTPUT (Ausgang) Oszilloskop	IF: WIDE (ZF: Breit) AR: OFF (AUS)	L21	Den Kern von L21 drehen, bis die Verzerrung minimal ist.	
Obigen Schritte 8 und 9 zwei bis dreimal wiederholen.							
10	Trennung	(A) 98 MHz 1 kHz ± 40 kHz dev 80 dBµ (ANT Eingang)	OUTPUT (Ausgang) Rechter Kanal (Linker Kanal) Oszilloskop (Einsatz von Tiefpaßfilter)	IF: WIDE (ZF: Breit) AR: OFF (AUS)	VR3	VR3 drehen, bis die Stereo-Trennung minimal ist.	
11	AM- Autostopp- Empfindlichkeit	(D) 999 kHz 400 Hz, 30% mod 30dBµ (ANT Eingang)	Signalstärkemeßgerät für Tuner	MW (AM)	VR4	VR4 drehen, damit die erste Skalenteilung des Signalstärkemeßgeräts aufleuchtet.	



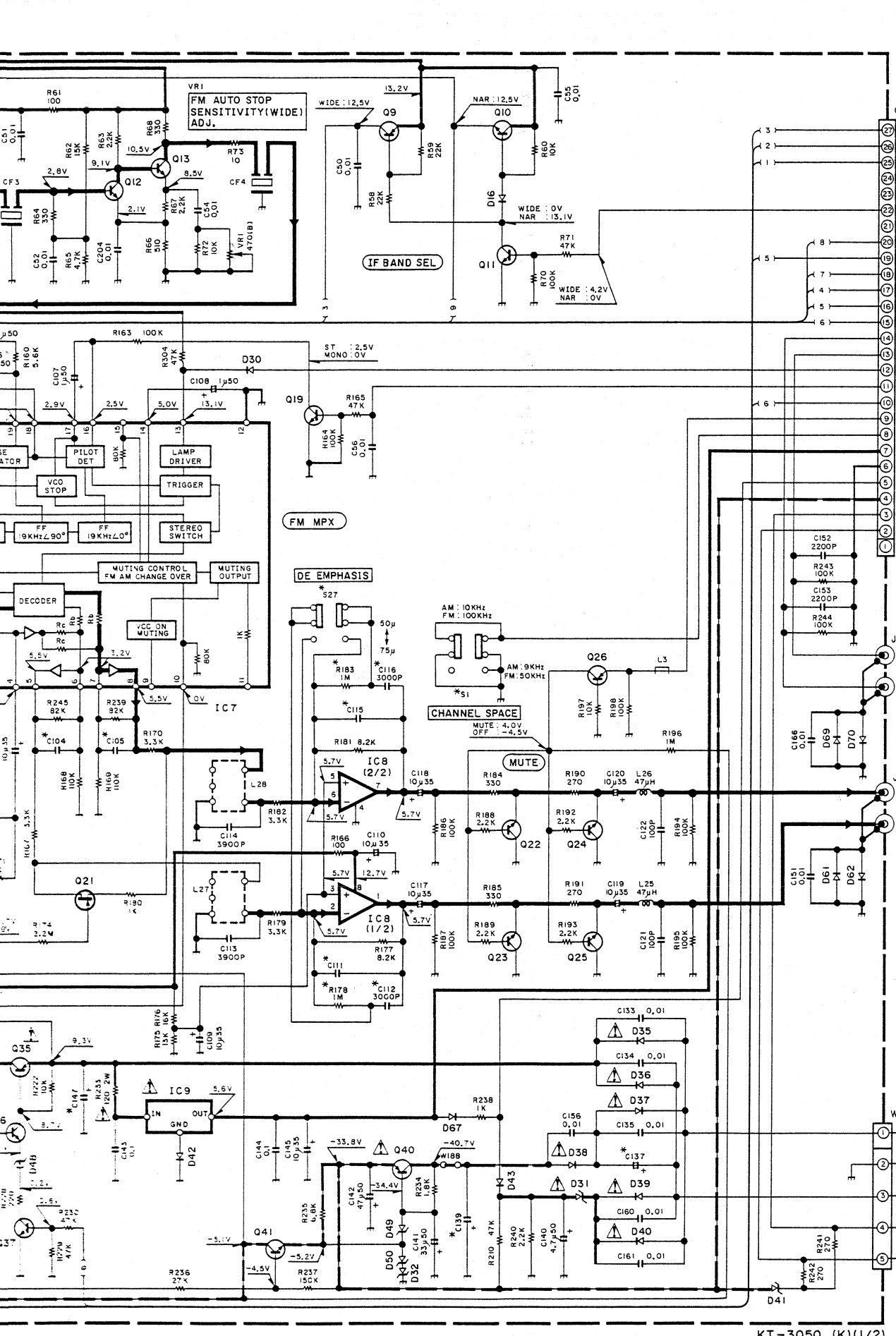
PC BOARD (Component side view)



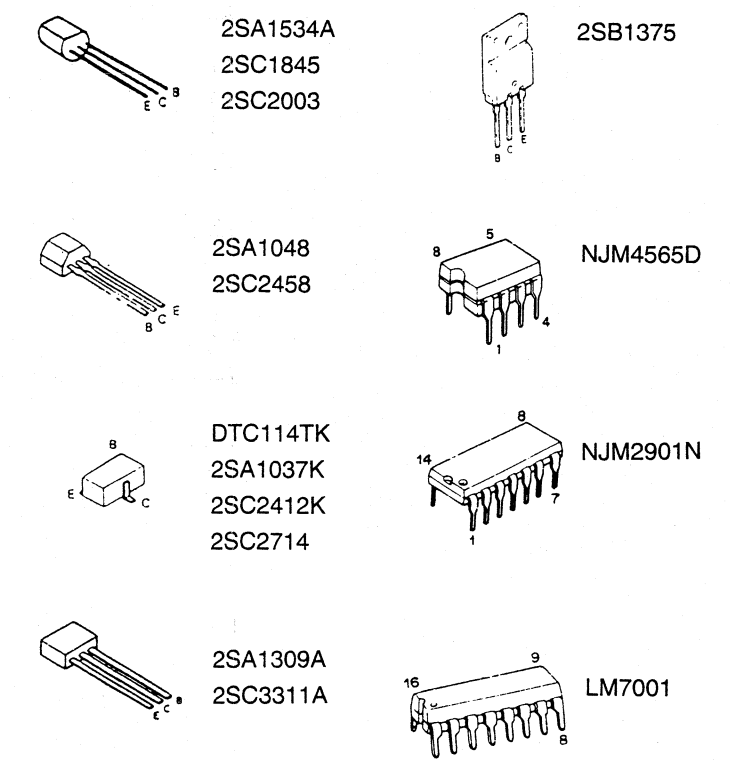
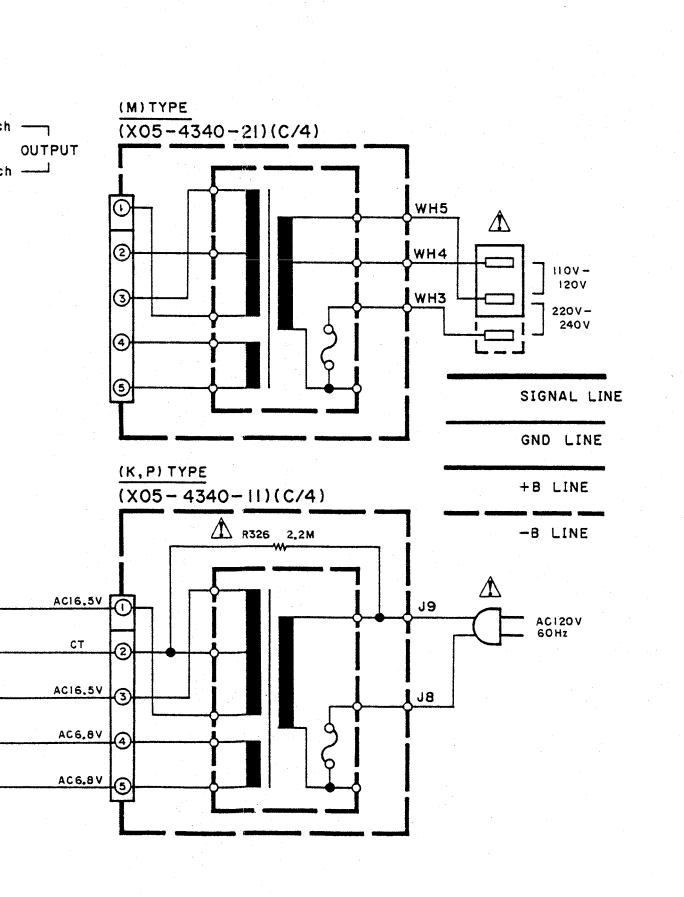
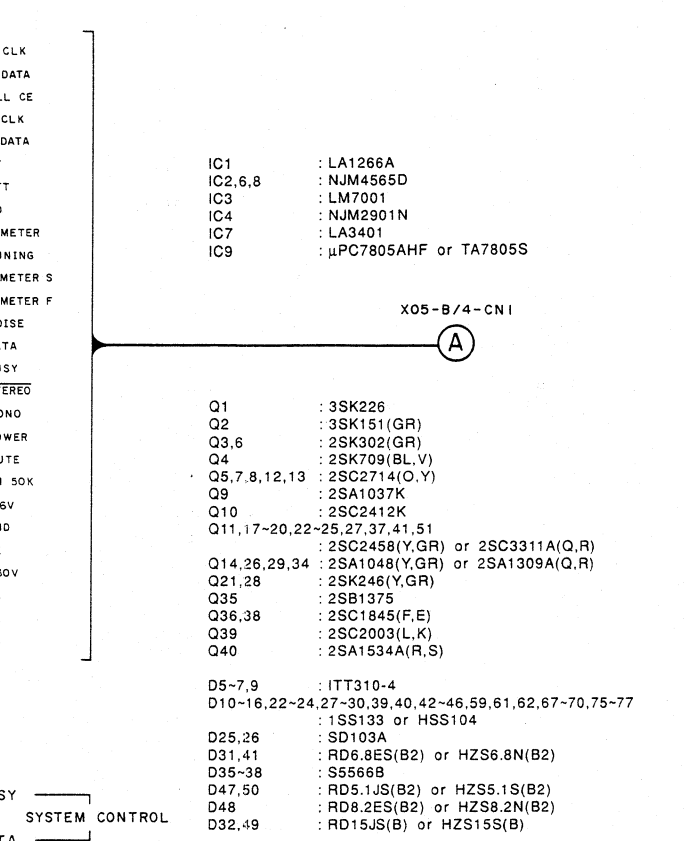
(X05-4340-11) (A/4)



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DESTINATION	UNIT NAME	C104 105	C111 115	C112 116	C137	C139	C147	R1	R178 183	S1, 27	
U.S.A.	K	X05-4340-11	910P	10P	NO	330μ25	330μ50	2200μ25	YES	NO	NO
CANADA	P	X05-4340-11	910P	10P	NO	330μ25	330μ50	2200μ25	YES	NO	NO
GENERAL MARKET	M	X05-4340-21	10P	6200P	YES	330μ35	330μ63	2200μ35	NO	YES	YES



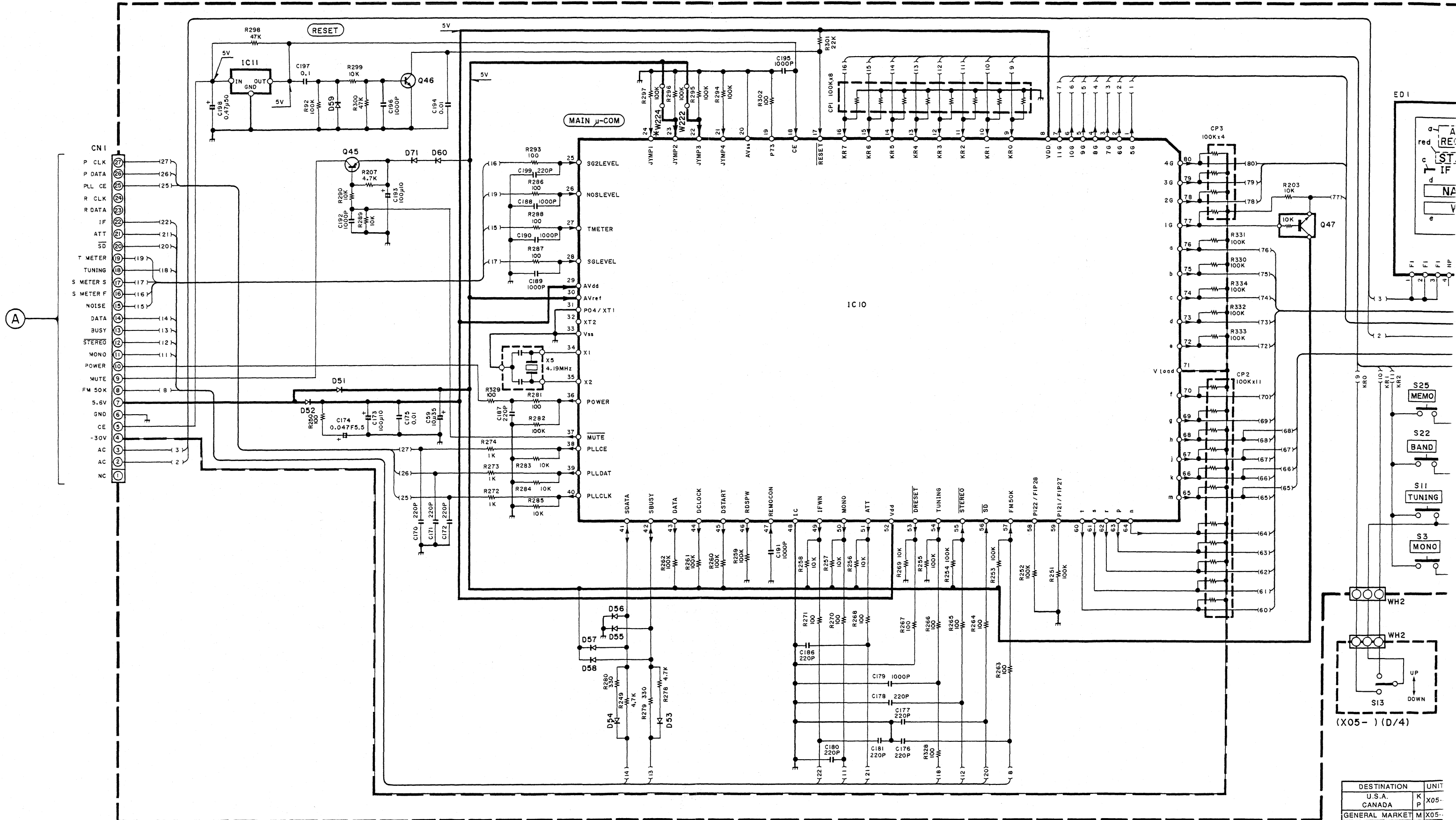
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels. Les valeurs entre parenthèses doivent être mesurées pendant la réception d'un signal de programme AM avec une force de signal de 60 dB à la borne ANT.

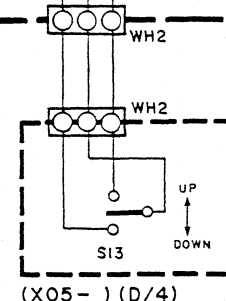
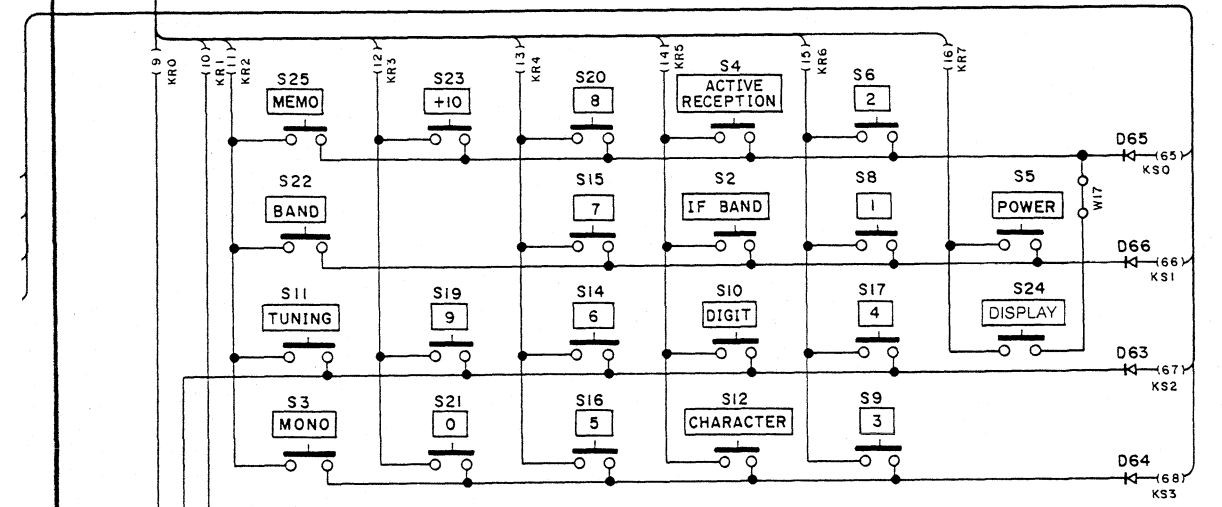
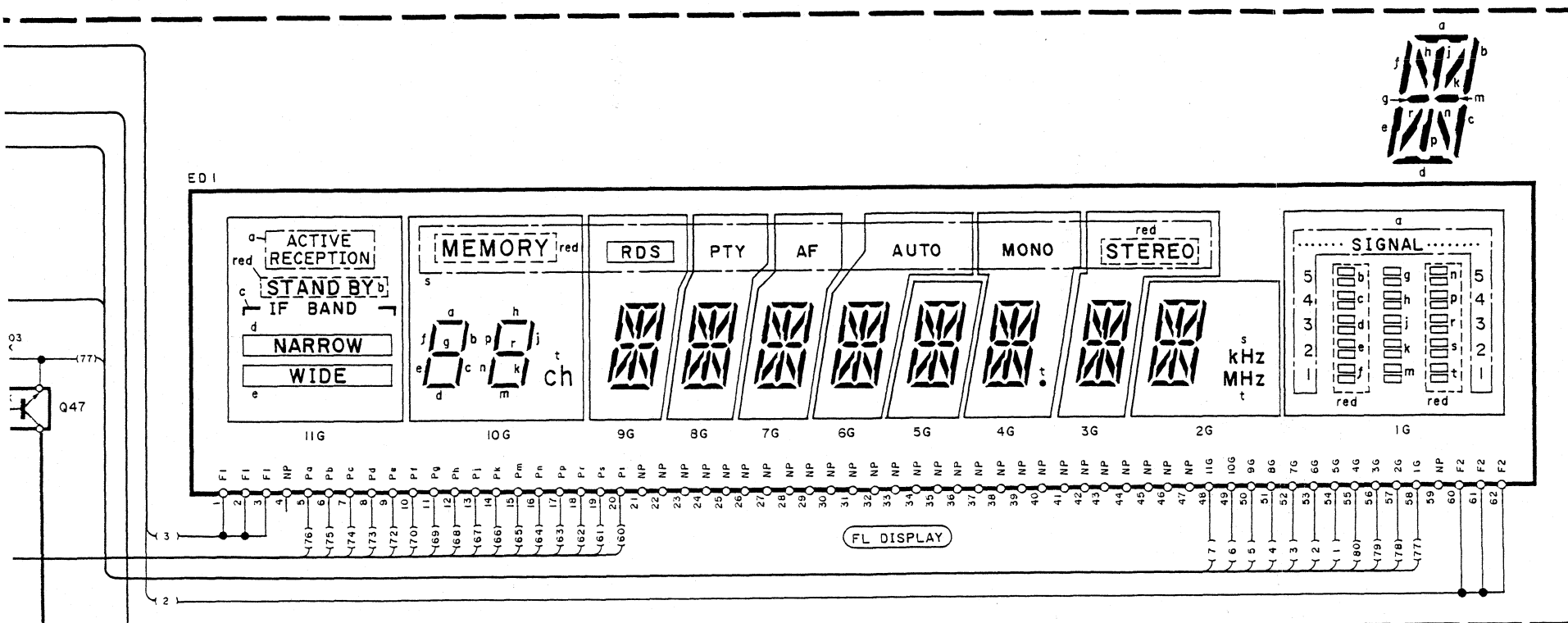
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten Gleichspannungswerte wurden bei Empfang eines MW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen.

(X05-4340-11) (B/4)



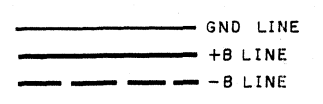
(X05-) (D/4)

DESTINATION	UNIT
U.S.A.	K X05-
CANADA	P X05-
GENERAL MARKET	M X05-



- IC10 : μPD78043GF-011
- IC11 : PST529D
- Q45 : 2SA1037K
- Q46 : 2SC2412K
- Q47 : DTC114TK
- D51-60.63-66.71 : ISS133 or HSS104
- ED1 : FIP11EM7R

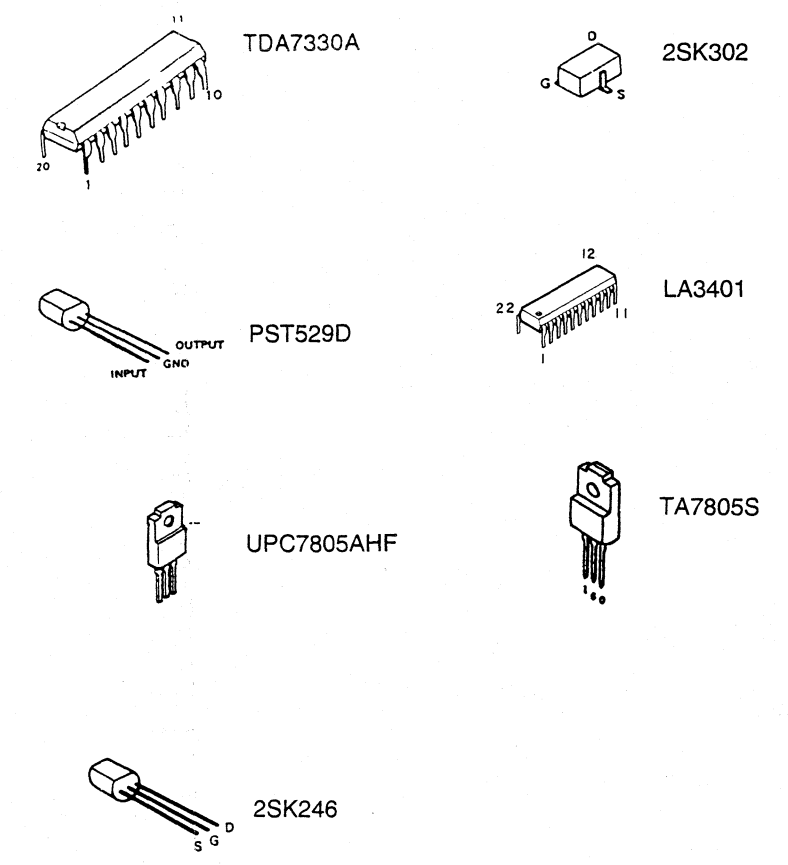
DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

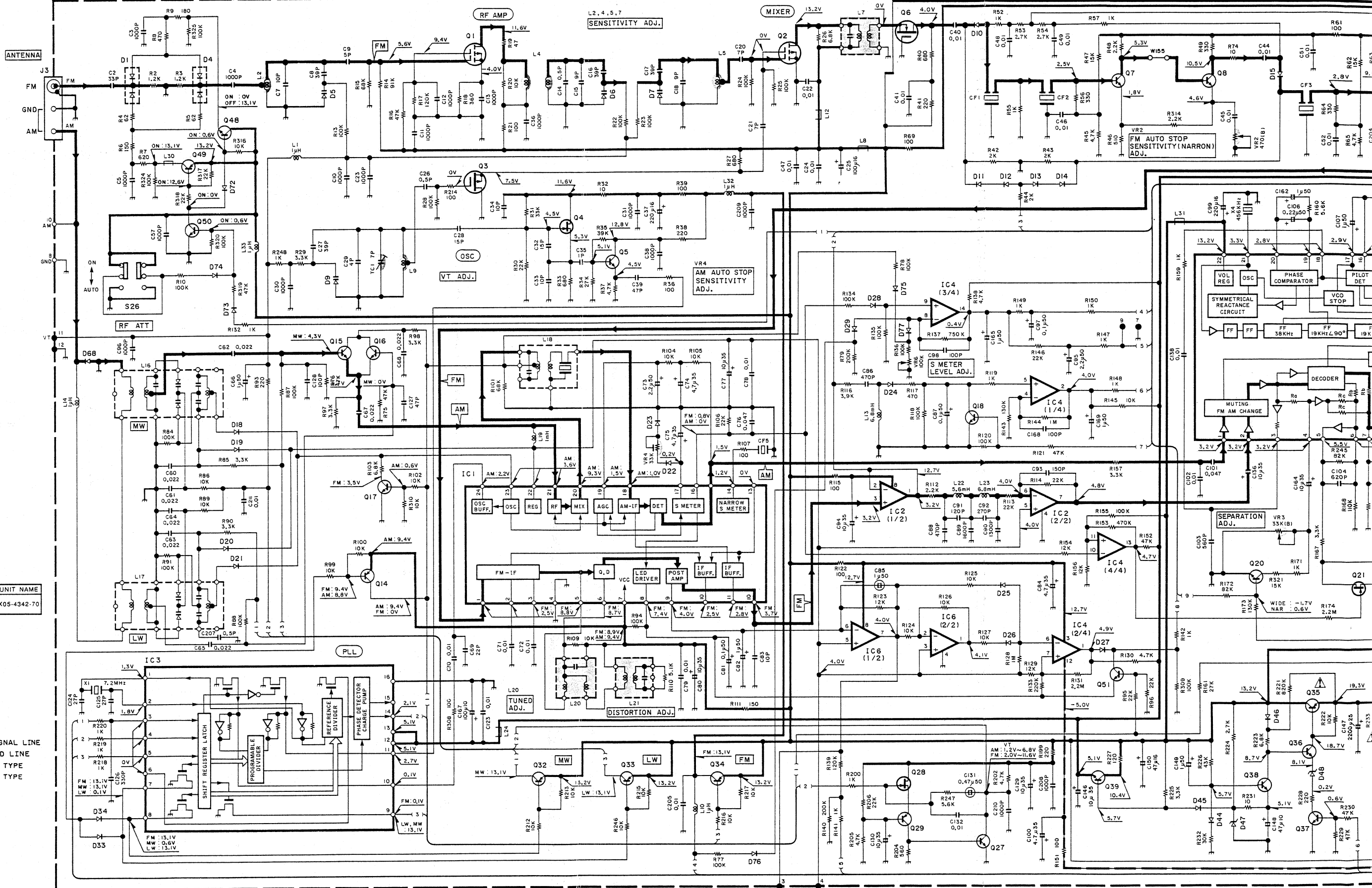
Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels. Les valeurs entre parenthèses doivent être mesurées pendant la réception d'un signal de programme AM avec une force de signal de 60 dB à la borne ANT).

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten Gleichspannungswerte wurden bei Empfang eines MW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen.



DESTINATION	UNIT NAME	W224
U.S.A.	K	X05-4340-11 NO
CANADA	P	
GENERAL MARKET	M	X05-4340-21 YES

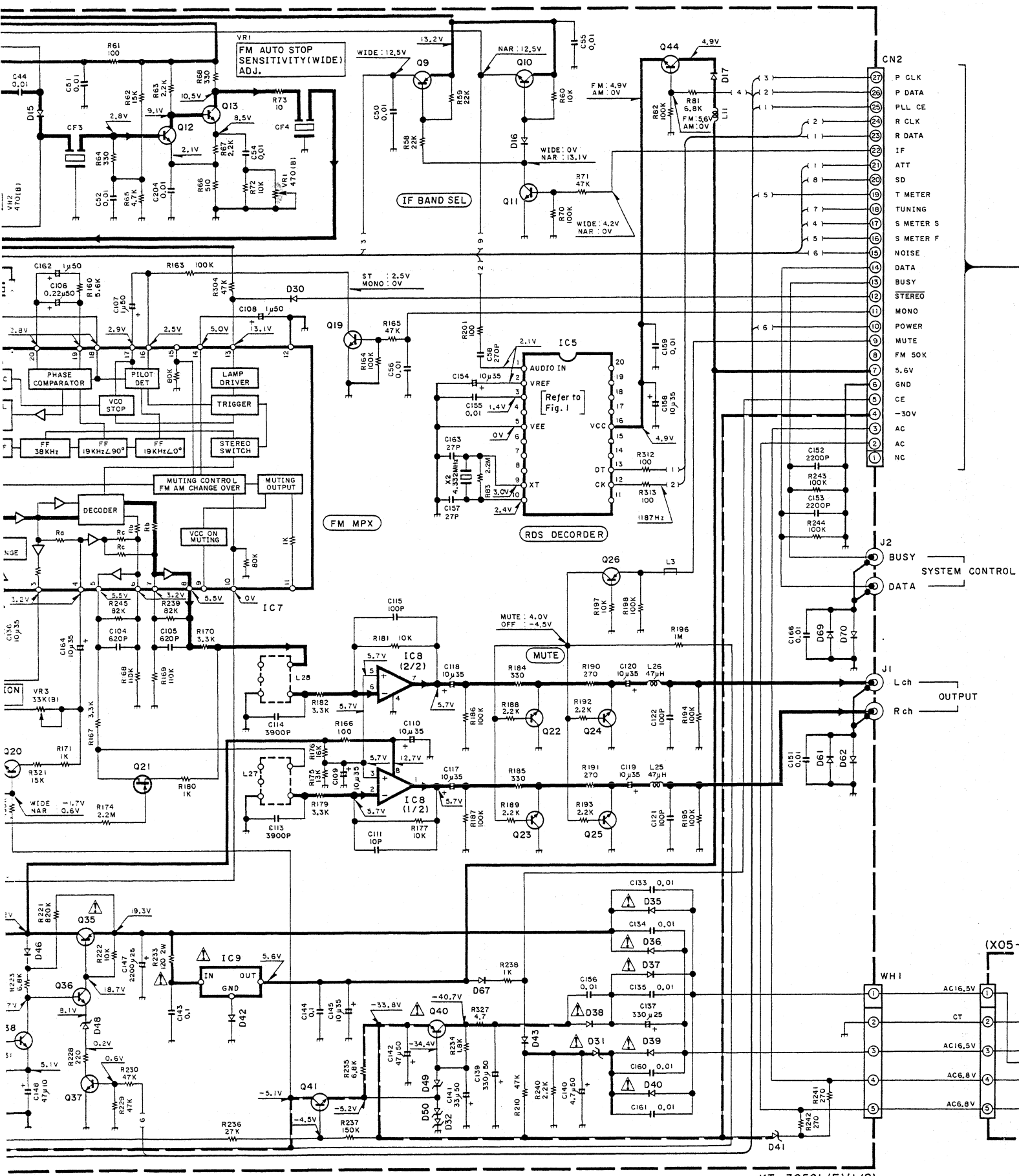
(X05-4342-70)(A/4)



DESTINATION	UNIT NAME
ENGLAND	T X05-4342-70
EUROPE	E

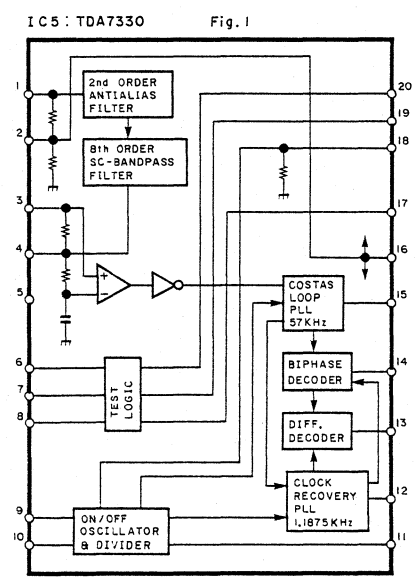
——— SIGNAL LINE
 ——— GND LINE
 ——— +B TYPE
 - - - - - -B TYPE

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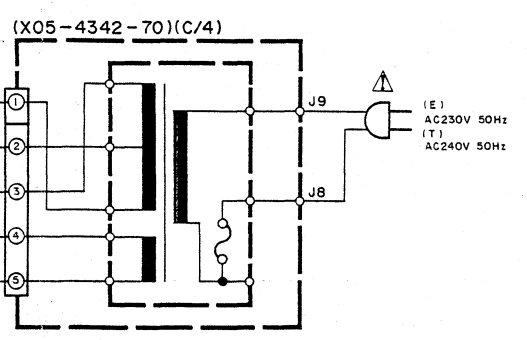


KT-3050L(E) (1/2)

- | | |
|--------------------------------------|----------------------------------|
| Q1 | : 3SK226 |
| Q2 | : 3SK151(GR) |
| Q3,6 | : 2SK302(GR) |
| Q4 | : 2SK709(BL,V) |
| Q5,7,8,12,13 | : 2SC2714(O,Y) |
| Q9 | : 2SA1037K |
| Q10 | : 2SC2412K |
| Q11,15-20,22-25,27,37,41,44,48,50,51 | : 2SC2458(Y,GR) or 2SC3311A(O,R) |
| Q14,26,29,32-34,49 | : 2SA1048(Y,GR) or 2SA1309A(Q,R) |
| Q21,28 | : 2SK246(Y,GR) |
| Q35 | : 2SB1375 |
| Q36,38 | : 2SC1845(F,E) |
| Q39 | : 2SC2003(L,K) |
| Q40 | : 2SA1534A(R,S) |



- | | |
|--|------------------------------|
| D1,4 | : 1SS268 |
| D5-7,9 | : 1TT310-4 |
| D10-24,27-30,33,34,39,40,42-46,61,62,67-70,72-77 | : 1SS133 or HSS104 |
| D25,26 | : SD103A |
| D31,41 | : RD6.8ES(B2) or HZS6.8N(B2) |
| D35-38 | : S5566B |
| D47,50 | : RD5.1JS(B2) or HZS5.1S(B2) |
| D48 | : RD8.2ES(B2) or HZS8.2N(B2) |
| D32,49 | : RD15JS(B) or HZS15S(B) |
-
- | | |
|---------|-------------------------|
| IC1 | : LA1266A |
| IC2,6,8 | : NJM4565D |
| IC3 | : LM7001 |
| IC4 | : NJM2901N |
| IC5 | : TDA7330A |
| IC7 | : LA3401 |
| IC9 | : μPC7805AHF or TA7805S |



- | | | | |
|--|----------|--|----------|
| | 2SA1534A | | 2SB1375 |
| | 2SC1845 | | 2SC2003 |
| | 2SA1048 | | 2SC2458 |
| | 2SC2412K | | NJM4565D |
| | DTC114TK | | 2SA1037K |
| | 2SC2412K | | 2SC2714 |
| | 2SA1309A | | 2SC3311A |
| | 2SC3311A | | NJM2901N |

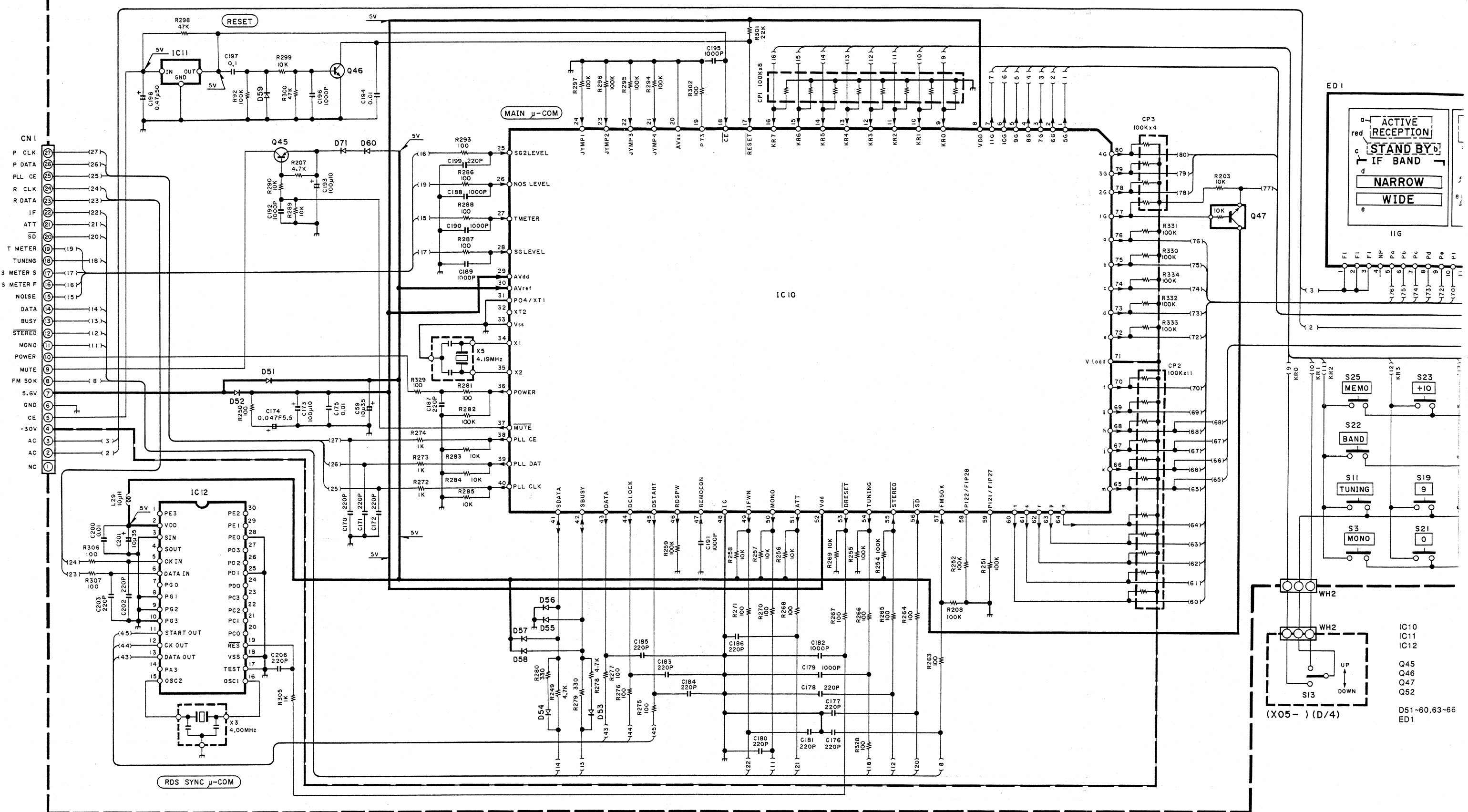
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels. Les valeurs entre parenthèses doivent être mesurées pendant la réception d'un signal de programme AM avec une force de signal de 60 dB à la borne ANT).

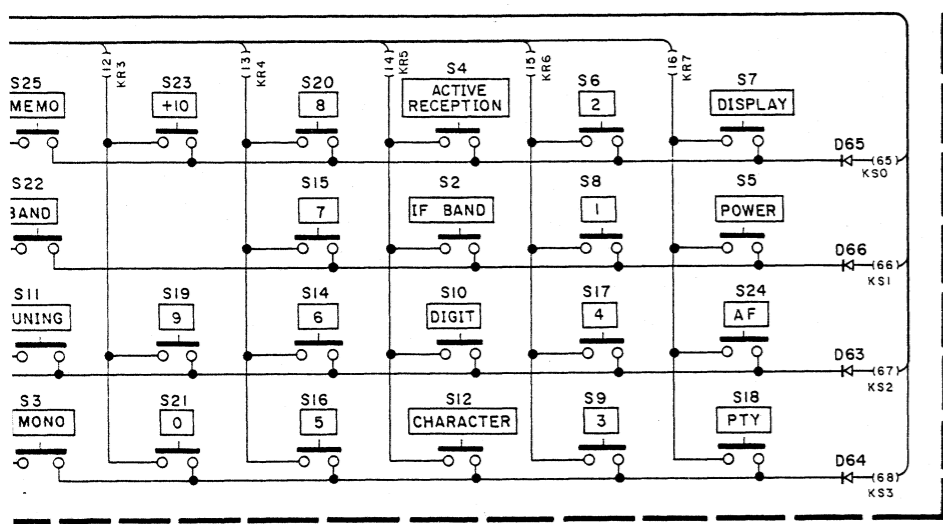
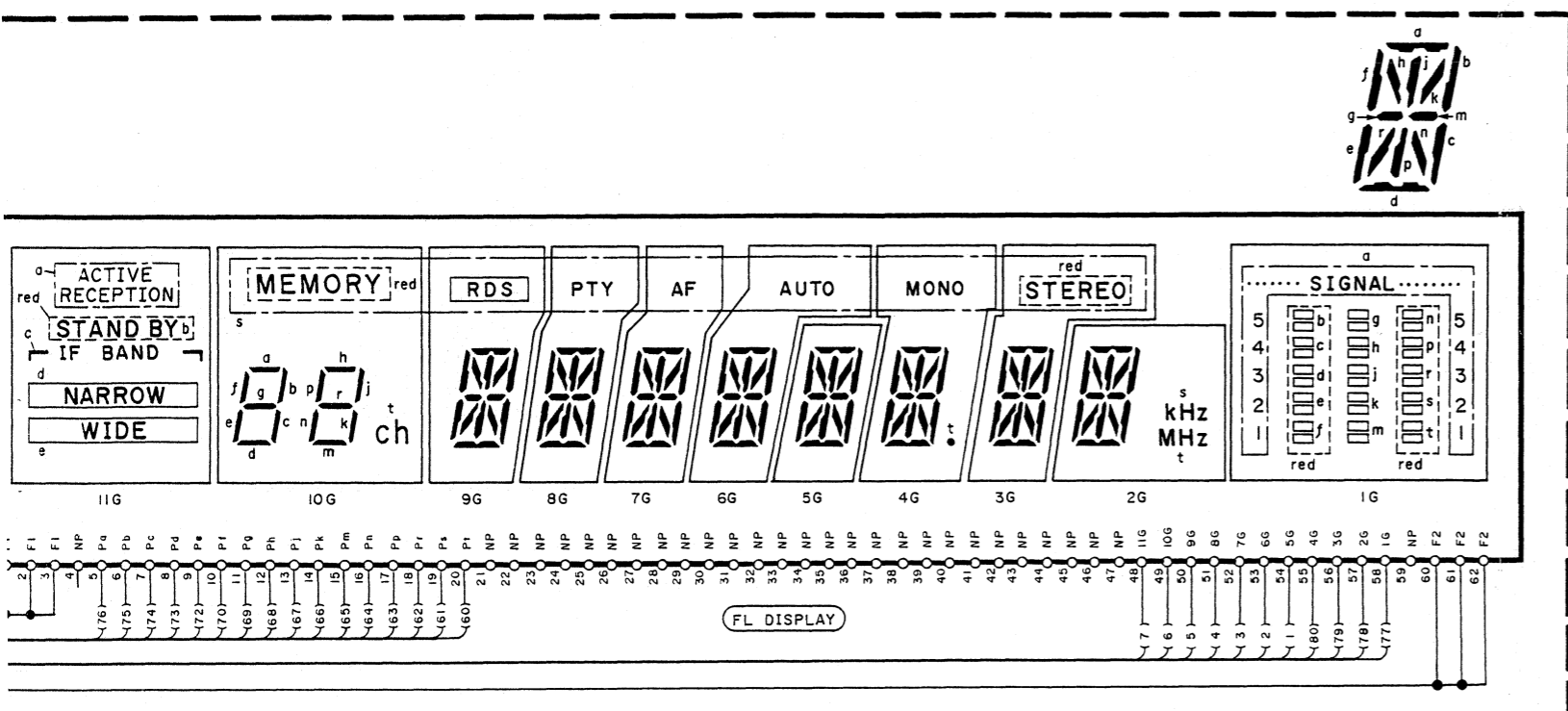
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten Gleichspannungswerte wurden bei Empfang eines MW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen.

(X05-4342-70) (B/4)



(X05-) (D/4)

- IC10
- IC11
- IC12
- Q45
- Q46
- Q47
- Q52
- D51-60,63-66
- ED1

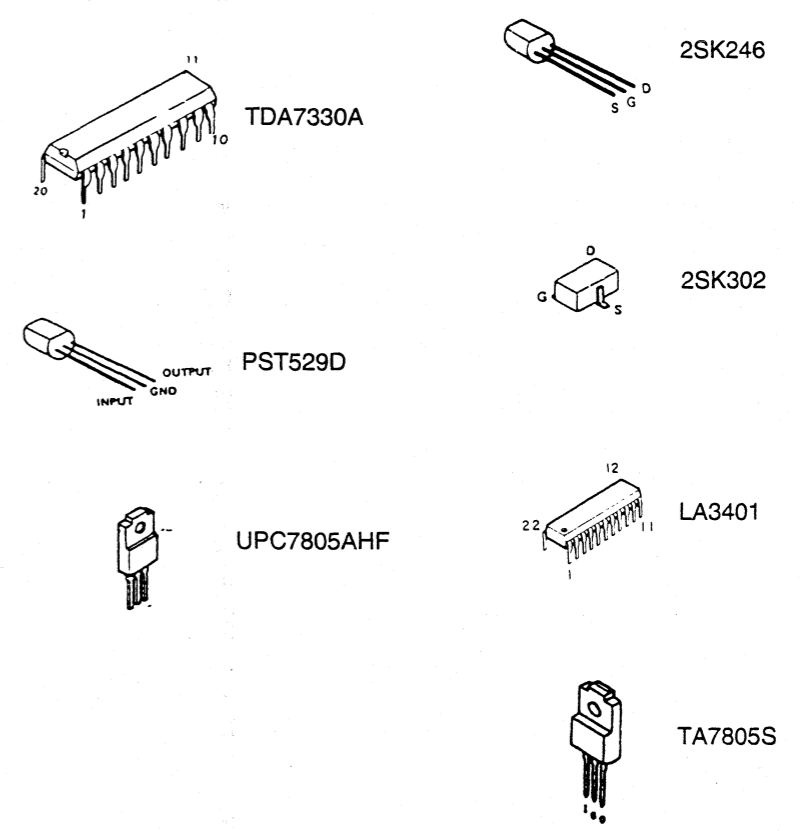


- IC10 : μPD78043GF-011
- IC11 : PST529D
- IC12 : LC6543H-4600
- Q45 : 2SA1037K
- Q46 : 2SC2412K
- Q47 : DTC114TK
- Q52 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
- D51-60,63-66,71 : ISSI33 or HSS104
- ED1 : FIP11EM7R

DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

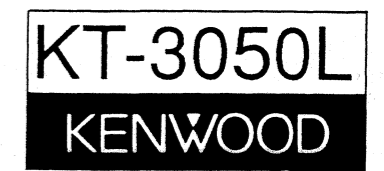
Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels. Les valeurs entre parenthèses doivent être mesurées pendant la réception d'un signal de programme AM avec une force de signal de 60 dB à la borne ANT)

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten Gleichspannungswerte wurden bei Empfang eines MW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen



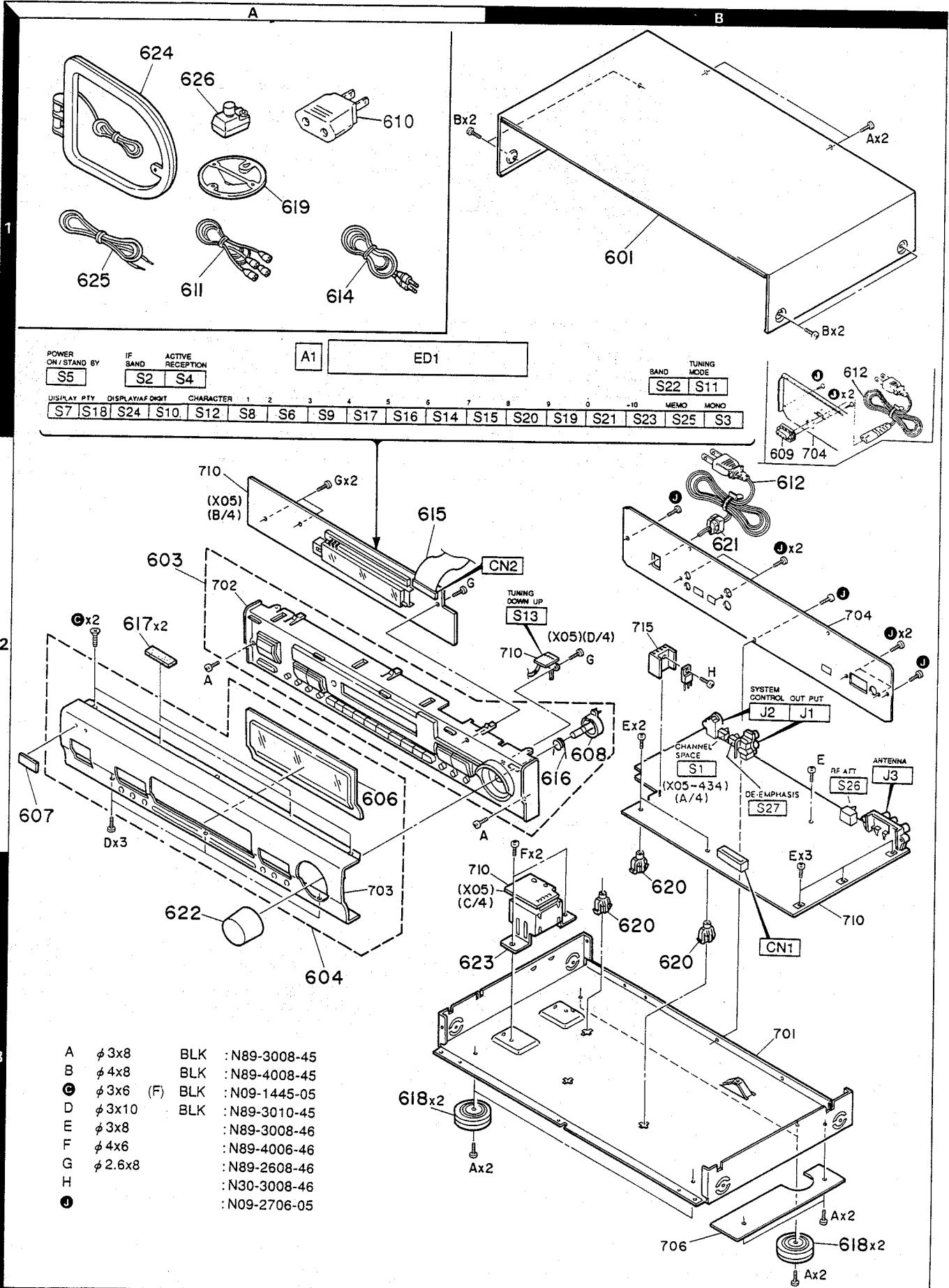
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Y07-3552-70



KT-3050/3050L

EXPLODED VIEW



A	φ 3x8	BLK	: N89-3008-45
B	φ 4x8	BLK	: N89-4008-45
C	φ 3x6	(F) BLK	: N09-1445-05
D	φ 3x10	BLK	: N89-3010-45
E	φ 3x8	BLK	: N89-3008-46
F	φ 4x6		: N89-4006-46
G	φ 2.6x8		: N89-2608-46
H			: N30-3008-46
I			: N09-2706-05

Parts with the exploded numbers larger than 700 are not supplied.

KT-3050/3050L

PARTS LIST

× New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
KT-3050(K,P,M type)						
601	1B	*	A01-2965-01	METALLIC CABINET		
603	2A	*	A22-1575-02	SUB PANEL ASSY		
604	3A	*	A60-0277-03	PANEL ASSY		
606	2A	*	B10-1931-03	FRONT GLASS		
607	2A		B43-0287-04	KENWOOD BADGE		
-			B46-0092-13	WARRANTY CARD		K
-			B46-0121-13	WARRANTY CARD		P
-			B46-0197-00	QUESTIONNAIRE CARD		K
-		*	B60-0920-00	INSTRUCTION MANUAL(S,C)		M
-		*	B60-1079-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-1080-00	INSTRUCTION MANUAL(FRENCH)		P
608	2B	*	D21-1688-04	SHAFT		
△	609	2B	E03-0102-25	AC INLET		M
△	610	1A	E03-0115-05	AC PLUG ADAPTER		M
△	611	1A	E30-0505-05	AUDIO CORD		
△	612	2B	E30-0974-05	AC POWER CORD		KP
	612	2B	E30-1329-15	AC POWER CORD (INLET)		M
	614	1A	E30-1392-05	CORD WITH PLUG		
	615	2A	E35-0019-05	FLAT CABLE		
	616	2B	* G01-3479-04	TORSION COIL SPRING		
	617	2A	G11-0155-14	SOFT TAPE (40X9X2)		
	-	*	H12-2122-03	PACKING FIXTURE		
	-	*	H12-2123-04	PACKING FIXTURE		
	-		H25-0181-04	PROTECTION BAG (150X260X0.05)		
	-		H25-0232-04	PROTECTION BAG (235X350X0.03)		
	-	*	H25-0691-04	PROTECTION BAG		
	-	*	H50-0435-04	ITEM CARTON CASE		
	618	3A, 3B	J02-1034-05	FOOT		
	619	1A	J19-2815-04	ANTENNA HOLDER		
	620	3B	J19-3179-05	UNIT HOLDER		
△	621	2B	J42-0083-05	POWER CORD BUSHING		KP
	-		J61-0307-05	WIRE BAND		M
	622	3A	K29-4215-04	KNOB (TUNING)		
△	623	3B	* L07-0565-05	POWER TRANSFORMER		KP
△	623	3B	* L07-0566-05	POWER TRANSFORMER		M
A	1B		N89-3008-45	BINDING HEAD TAPTITE SCREW		
B	1B		N89-4008-45	BINDING HEAD TAPTITE SCREW		
C	2A		N09-1445-05	SET SCREW (M3X8)		
D	2A		N89-3010-45	BINDING HEAD TAPTITE SCREW		
E	2B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
F	3B		N89-4006-46	BINDING HEAD TAPTITE SCREW		
G	2B		N89-2608-46	BINDING HEAD TAPTITE SCREW		
H	2B		N30-3008-46	PAN HEAD MACHINE SCREW		
J	2B		N09-2706-05	TAPTITE SCREW		
	624	1A	T90-0173-05	LOOP ANTENNA (AM)		
	625	1A	T90-0176-05	T TYPE ANTENNA (FM)		
	626	1A	T90-0185-05	ANTENNA ADAPTOR		

L:Scandinavia

K:USA

P:Canada

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KT-3050/3050L

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KT-3050L(T,E type)						
601	1B	*	A01-2965-01	METALLIC CABINET		
603	2A	*	A22-1575-02	SUB PANEL ASSY		
604	3A	*	A60-0276-03	PANEL ASSY		
606	2A	*	B10-1931-03	FRONT GLASS		
607	2A		B43-0287-04	KENWOOD BADGE		
-			B46-0122-23	WARRANTY CARD		
-			B46-0143-13	WARRANTY CARD		
-		*	B60-0917-00	INSTRUCTION MANUAL(FRENCH)	E	
-		*	B60-0919-00	INSTRUCTION MANUAL(G,D,I)	E	
-		*	B60-0921-00	INSTRUCTION MANUAL(SPANISH)	E	
-		*	B60-0955-00	INSTRUCTION MANUAL(ENGLISH)		
608	2B	*	D21-1688-04	SHAFT		
611	1A		E30-0505-05	AUDIO CORD		
△ 612	2B		E30-0459-05	AC POWER CORD	E	
△ 612	2B		E30-1416-05	AC POWER CORD	T	
614	1A		E30-1392-05	CORD WITH PLUG		
615	2A		E35-0019-05	FLAT CABLE		
616	2B	*	G01-3479-04	TORSION COIL SPRING		
617	2A		G11-0155-14	SOFT TAPE (40X9X2)		
-		*	H12-2122-03	PACKING FIXTURE		
-		*	H12-2123-04	PACKING FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	E	
-		*	H25-0691-04	PROTECTION BAG		
-		*	H50-0387-04	ITEM CARTON CASE		
618	3A, 3B		J02-1034-05	FOOT		
619	1A		J19-2815-04	ANTENNA HOLDER		
620	3B		J19-3179-05	UNIT HOLDER		
△ 621	2B		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND	T	
622	3A		K29-4215-04	KNOB (TUNING)		
△ 623	3B	*	L07-0563-05	POWER TRANSFORMER		
A	1B		N89-3008-45	BINDING HEAD TAPTITE SCREW		
B	1B		N89-4008-45	BINDING HEAD TAPTITE SCREW		
C	2A		N09-1445-05	SET SCREW (M3X8)		
D	2A		N89-3010-45	BINDING HEAD TAPTITE SCREW		
E	2B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
F	3B		N89-4006-46	BINDING HEAD TAPTITE SCREW		
G	2B		N89-2608-46	BINDING HEAD TAPTITE SCREW		
H	2B		N30-3008-46	PAN HEAD MACHINE SCREW		
J	2B		N09-2706-05	TAPTITE SCREW		
624	1A		T90-0173-05	LOOP ANTENNA		
625	1A		T90-0176-05	T TYPE ANTENNA		
626	1A		T90-0185-05	ANTENNA ADAPTOR		
KT-3050 TUNER UNIT (X05-4340-11:K,P type X05-4340-21:M type)						
C1			CC73FSL1H330J	CHIP C	33PF	J
C7			CC73FTH1H100D	CHIP C	10PF	D
C8			CC73FPH1H390J	CHIP C	39PF	J

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C9			CC73FSL1H050C	CHIP C 5PF C		
C10 -13			CK73FB1H102K	CHIP C 1000PF K		
C14			CC73FSL1H0R5C	CHIP C 0.5PF C		
C15		*	CC73FTH1H090D	CHIP C 9PF D		
C16 ,17			CC73FPH1H390J	CHIP C 39PF J		
C18		*	CC73FTH1H090D	CHIP C 9PF D		
C20 ,21		*	CC73FSL1H070D	CHIP C 7PF D		
C22			CK73FB1H103K	CHIP C 0.010UF K		
C23			CK73FB1H102K	CHIP C 1000PF K		
C24			CK73FB1H103K	CHIP C 0.010UF K		
C25			CE04KW1C101M	ELECTRO 100UF 16WV		
C26			CC73FSL1H0R5C	CHIP C 0.5PF C		
C27			CC73FPH1H390J	CHIP C 39PF J		
C28			CC73FTH1H150J	CHIP C 15PF J		
C29		*	CC73FTH1H040C	CHIP C 4PF C		
C30 ,31			CK73FB1H102K	CHIP C 1000PF K		
C32			CC73FSL1H150J	CHIP C 15PF J		
C33 ,34			CC73FSL1H100D	CHIP C 10PF D		
C35			CC73FSL1H010C	CHIP C 1PF C		
C36			CK73FB1H102K	CHIP C 1000PF K		
C37			CE04KW1C221M	ELECTRO 220UF 16WV		
C38			CK73FB1H102K	CHIP C 1000PF K		
C39			CC73FSL1H470J	CHIP C 47PF J		
C40 -52			CK73FB1H103K	CHIP C 0.010UF K		
C54 ,55			CK73FB1H103K	CHIP C 0.010UF K		
C56			CK45FF1H103Z	CERAMIC 0.010UF Z		
C59			CE04KW1V100M	ELECTRO 10UF 35WV		
C61 ,62			CK73FF1H223Z	CHIP C 0.022UF Z		
C66			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C69			CC73FSL1H220J	CHIP C 22PF J		
C70			CK45FF1H103Z	CERAMIC 0.010UF Z		
C71 ,72			CK73FB1H103K	CHIP C 0.010UF K		
C73			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C74 ,75			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C76			CK45FF1H473Z	CERAMIC 0.047UF Z		
C77			CE04KW1V100M	ELECTRO 10UF 35WV		
C78			CK45FF1H103Z	CERAMIC 0.010UF Z		
C79			CK73FB1H103K	CHIP C 0.010UF K		
C80			CE04KW1V100M	ELECTRO 10UF 35WV		
C81			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C82			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C83			CC45FSL1H100D	CERAMIC 10PF D		
C84			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C85			CE04HW1H010M	NP-ELEC 1.0UF 50WV		
C86			CK45FB1H471K	CERAMIC 470PF K		
C87			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C88			CK45FB1H471K	CERAMIC 470PF K		
C89			CF92FV1H162J	MF 1600PF J		
C90			CF92FV1H132J	MF 1300PF J		
C91			CC45FSL1H121J	CERAMIC 120PF J		
C92			CC45FSL1H271J	CERAMIC 270PF J		
C93			CC45FSL1H151J	CERAMIC 150PF J		
C94			CE04KW1V100M	ELECTRO 10UF 35WV		
C95			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C96			CK73FB1H102K	CHIP C 1000PF K		

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C97			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C98			CC45FSL1H101J	CERAMIC 100PF J		
C99			CE04KW1C221M	ELECTRO 220UF 16WV		
C100			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C101			CF92FV1H473J	MF 0.047UF J		
C102			CK45FF1H103Z	CERAMIC 0.010UF Z		
C103			CC45FSL1H561J	CERAMIC 560PF J		
C104, 105			CC45FSL1H100D	CERAMIC 10PF D	M	
C104, 105		*	CF92FV1H911J	MF 910PF J	KP	
C106			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C107, 108			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C109, 110			CE04KW1V100M	ELECTRO 10UF 35WV		
C111			CC45FSL1H100D	CERAMIC 10PF D	KP	
C111			CF92FV1H622J	MF 6200PF J	M	
C112			CF92FV1H302J	MF 3000PF J	M	
C113, 114			CF92FV1H392J	MF 3900PF J		
C115			CC45FSL1H100D	CERAMIC 10PF D	KP	
C115			CF92FV1H622J	MF 6200PF J	M	
C116			CF92FV1H302J	MF 3000PF J	M	
C117-120			CE04KW1V100M	ELECTRO 10UF 35WV		
C121, 122			CC45FSL1H101J	CERAMIC 100PF J		
C123			CK45FF1H103Z	CERAMIC 0.010UF Z		
C124, 125			CC45FCH1H270J	CERAMIC 27PF J		
C126			CC45FSL1H331J	CERAMIC 330PF J		
C129, 130			CE04KW1V100M	ELECTRO 10UF 35WV		
C131			CE04HW1HR47M	NP-ELEC 0.47UF 50WV		
C132-135			CK45FF1H103Z	CERAMIC 0.010UF Z		
C136			CE04KW1V100M	ELECTRO 10UF 35WV		
C137			CE04DW1E331M	ELECTRO 330UF 25WV	KP	
C137			CE04KW1V331M	ELECTRO 330UF 35WV	M	
C138			CK45FF1H103Z	CERAMIC 0.010UF Z		
C139			CE04KW1H331M	ELECTRO 330UF 50WV	KP	
C139			CE04KW1J331M	ELECTRO 330UF 63WV	M	
C140			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C141			CE04KW1H330M	ELECTRO 33UF 50WV		
C142			CE04KW1H470M	ELECTRO 47UF 50WV		
C143, 144			CF92FV1H104J	MF 0.10UF J		
C145, 146			CE04KW1V100M	ELECTRO 10UF 35WV		
C147			CE04KW1E222M	ELECTRO 2200UF 25WV	KP	
C147			CE04KW1V222M	ELECTRO 2200UF 35WV	M	
C148			CE04KW1A470M	ELECTRO 47UF 10WV		
C149			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C150			CE04KW1C470M	ELECTRO 47UF 16WV		
C151			CK45FF1H103Z	CERAMIC 0.010UF Z		
C152, 153			CK45FB1H222K	CERAMIC 2200PF K		
C156			CK45FF1H103Z	CERAMIC 0.010UF Z		
C160, 161			CK45FF1H103Z	CERAMIC 0.010UF Z		
C162			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C164			CE04KW1V100M	ELECTRO 10UF 35WV		
C165			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C166			CK45FF1H103Z	CERAMIC 0.010UF Z		
C167			CE04KW1A101M	ELECTRO 100UF 10WV		
C168			CC45FSL1H101J	CERAMIC 100PF J		
C169			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C170-172			CK73FB1H221K	CHIP C 220PF K		

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C173			CE04NW1A101M	ELECTRO 100UF 10WV		
C174			C90-1827-05	BACKUP 0.047F 5.5WV		
C175			CK73FB1H103K	CHIP C 0.010UF K		
C176-178			CK73FB1H221K	CHIP C 220PF K		
C179			CK73FB1H102K	CHIP C 1000PF K		
C180, 181			CK73FB1H221K	CHIP C 220PF K		
C186, 187			CK73FB1H221K	CHIP C 220PF K		
C188-192			CK73FB1H102K	CHIP C 1000PF K		
C193			CE04NW1A101M	ELECTRO 100UF 10WV		
C194			CK73FB1H103K	CHIP C 0.010UF K		
C195, 196			CK73FB1H102K	CHIP C 1000PF K		
C197			CF92FV1H104J	MF 0.10UF J		
C198			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C199			CK73FB1H221K	CHIP C 220PF K		
C204			CK73FB1H103K	CHIP C 0.010UF K		
C205			CK45FF1H103Z	CERAMIC 0.010UF Z		
C208-210			CK73FB1H102K	CHIP C 1000PF K		
C211			CK73FB1H103K	CHIP C 0.010UF K		
TC1			C05-0301-05	CERAMIC TRIMMER CAPACITOR(7PF)		
CN1	3B		E40-4207-05	FLAT CABLE CONNECTOR		
CN2	2B		E40-4167-05	FLAT CABLE CONNECTOR		
J1	2B		E13-0235-05	PHONE JACK(OUTPUT)		
J2	2B		E11-0188-05	MINIATURE PHONE JACK(S.CONTROL)		
J3	2B		E20-0321-05	LOCK TERMINAL BOARD(ANTENNA)		
J10 , 11			J11-0098-05	WIRE CLAMPER		
CF1			L72-0120-05	CERAMIC FILTER		
CF3 , 4			L72-0546-05	CERAMIC FILTER		
CF5			L72-0096-05	CERAMIC FILTER		
CF6			L72-0120-05	CERAMIC FILTER		
L1			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L2			L31-0545-05	FM-RF COIL<SENSITIVITY ADJ.>		
L3			L92-0017-05	FERRITE CORE		
L4			L31-0546-05	FM-RF COIL<SENSITIVITY ADJ.>		
L5			L31-0545-05	FM-RF COIL<SENSITIVITY ADJ.>		
L7			L30-0434-05	FM IFT <SENSITIVITY ADJ.>		
L8			L92-0017-05	FERRITE CORE		
L9			L32-0537-05	FM OSCILLATING COIL<VT ADJ.>		
L10			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L12			L92-0017-05	FERRITE CORE		
L13			L40-6825-29	SMALL FIXED INDUCTOR(6.8mH, J)		
L15			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L16			L39-0189-05	COMBINATION COIL		
L18			L30-0467-05	AM IFT		
L19			L40-1021-14	SMALL FIXED INDUCTOR(1.0mH, K)		
L20			L30-0484-05	FM IFT<TUNED ADJ.>		
L21			L30-0485-05	FM IFT<DISTORTION ADJ.>		
L22			L40-5625-29	SMALL FIXED INDUCTOR(5.6mH, J)		
L23			L40-6825-29	SMALL FIXED INDUCTOR(6.8mH, J)		
L24			L92-0017-05	FERRITE CORE		
L25 , 26			L40-4701-17	SMALL FIXED INDUCTOR(47UH, K)		
L27 , 28			L79-0790-05	LC FILTER		
L31			L92-0017-05	FERRITE CORE		
L32			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X1			L77-1122-05	CRYSTAL RESONATOR(7.2MHz)		

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X4			L78-0208-05	RESONATOR (456kHz)		
X5			L78-0218-05	RESONATOR (4.19MHz)		
CP1			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP2			R90-0851-05	MULTI-COMP 100KX11		
CP3			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
R1			RC05GF2H185M	RC 1.8M M 1/2W	KP	
R21			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R69			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R111			RD14AB2E151J	FL-PROOF RD 150 J 1/4W	KP	
R115			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R122			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R151			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R166			RD14AB2E101J	FL-PROOF RD 100 J 1/4W	KP	
R227			RD14AB2E121J	FL-PROOF RD 120 J 1/4W	KP	
R233			RS14DB3D121J	FL-PROOF RS 120 J 2W		
R235			RD14AB2E682J	FL-PROOF RD 6.8K J 1/4W		
VR1 ,2			R12-0607-05	TRIMMING POT 470<FM AUTO STOP>		
VR3 ,4			R12-3687-05	TRIMMING POT 33K<SEPARATION>		
VR6			R12-5651-05	TRIMMING POT 100K<S METER L.>		
W219-221			R92-0679-05	CHIP R 0 OHM		
W222			R92-0670-05	CHIP R 0 OHM		
W224			R92-0670-05	CHIP R 0 OHM	M	
S1	2B		S31-2094-05	SLIDE SWITCH(CHANNEL APACE)	M	
S2 -6	2A, 2B		S40-1064-05	TACT SWITCH		
S8 -12	2A, 2B		S40-1064-05	TACT SWITCH		
S13	2B		S64-0001-05	LEVER SWITCH (TUNING)		
S14 -17	2A, 2B		S40-1064-05	TACT SWITCH		
S19 -25	2A, 2B		S40-1064-05	TACT SWITCH		
S27	2B		S31-2094-05	SLIDE SWITCH(DE-EMPHASIS)	M	
D5 -7		*	ITT310-4	VARIABLE CAPACITANCE DIODE		
D9		*	ITT310-4	VARIABLE CAPACITANCE DIODE		
D10 -16			HSS104	DIODE		
D10 -16			1SS133	DIODE		
D22 -24			HSS104	DIODE		
D22 -24			1SS133	DIODE		
D25 ,26			SD103A	DIODE		
D27 -30			HSS104	DIODE		
D27 -30			1SS133	DIODE		
△ D31			HZS6.8N(B2)	ZENER DIODE		
△ D31			RD6.8ES(B2)	ZENER DIODE		
D32			HZS15S(B)	ZENER DIODE		
D32			RD15JS(B)	ZENER DIODE		
△ D35 -38			S5566B	DIODE		
△ D39 ,40			HSS104	DIODE		
△ D39 ,40			1SS133	DIODE		
D41			HZS6.8N(B2)	ZENER DIODE		
D41			RD6.8ES(B2)	ZENER DIODE		
D42 -46			HSS104	DIODE		
D42 -46			1SS133	DIODE		
D47			HZS5.1S(B2)	ZENER DIODE		
D47			RD5.1JS(B2)	ZENER DIODE		
D48			HZS8.2N(B2)	ZENER DIODE		
D48			RD8.2ES(B2)	ZENER DIODE		
D49			HZS15S(B)	ZENER DIODE		

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D49			RD15JS(B)	ZENER DIODE		
D50			HZS5.1S(B2)	ZENER DIODE		
D50			RD5.1JS(B2)	ZENER DIODE		
D51 -71			HSS104	DIODE		
D51 -71			1SS133	DIODE		
D75 -77			HSS104	DIODE		
D75 -77			1SS133	DIODE		
ED1	1A	*	FIP11EM7R	INDICATOR TUBE		
IC1			LA1266A	IC(FM,AM SYSTEM IC)		
IC2			NJM4565D	IC(OP AMP X2)		
IC3			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC4			NJM2901N	IC(QUAD COMPARATOR)		
IC6			NJM4565D	IC(OP AMP X2)		
IC7			LA3401	IC(FM MPX)		
IC8			NJM4565D	IC(OP AMP X2)		
△ IC9			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
△ IC9			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)		
IC10		*	UPD78043GF-011	IC(MICROPROCESSOR)		
IC11			PST529D	IC(SYSTEM RESET)		
Q1		*	3SK226	FET		
Q2			3SK151(GR)	FET		
Q3			2SK302(GR)	FET		
Q4			2SK709(BL,V)	FET		
Q5		*	2SC2714(Q,Y)	TRANSISTOR		
Q6			2SK302(GR)	FET		
Q7 ,8		*	2SC2714(Q,Y)	TRANSISTOR		
Q9			2SA1037K	TRANSISTOR		
Q10			2SC2412K	TRANSISTOR		
Q11			2SC2458(Y,GR)	TRANSISTOR		
Q11			2SC3311A(Q,R)	TRANSISTOR		
Q12 ,13		*	2SC2714(Q,Y)	TRANSISTOR		
Q14			2SA1048(Y,GR)	TRANSISTOR		
Q14			2SA1309A(Q,R)	TRANSISTOR		
Q17 -20			2SC2458(Y,GR)	TRANSISTOR		
Q17 -20			2SC3311A(Q,R)	TRANSISTOR		
Q21			2SK246(Y,GR)	FET		
Q22 -25			2SC2458(Y,GR)	TRANSISTOR		
Q22 -25			2SC3311A(Q,R)	TRANSISTOR		
Q26			2SA1048(Y,GR)	TRANSISTOR		
Q26			2SA1309A(Q,R)	TRANSISTOR		
Q27			2SC2458(Y,GR)	TRANSISTOR		
Q27			2SC3311A(Q,R)	TRANSISTOR		
Q28			2SK246(Y,GR)	FET		
Q29			2SA1048(Y,GR)	TRANSISTOR		
Q29			2SA1309A(Q,R)	TRANSISTOR		
Q34			2SA1048(Y,GR)	TRANSISTOR		
Q34			2SA1309A(Q,R)	TRANSISTOR		
△ Q35			2SB1375	TRANSISTOR		
△ Q36			2SC1845(F,E)	TRANSISTOR		
△ Q37			2SC2458(Y,GR)	TRANSISTOR		
△ Q37			2SC3311A(Q,R)	TRANSISTOR		
Q38			2SC1845(F,E)	TRANSISTOR		
Q39			2SC2003(L,K)	TRANSISTOR		
△ Q40			2SA1534A(R,S)	TRANSISTOR		
Q41			2SC2458(Y,GR)	TRANSISTOR		

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Q41			2SC3311A(Q,R)	TRANSISTOR		
Q45			2SA1037K	TRANSISTOR		
Q46			2SC2412K	TRANSISTOR		
Q47			DTC114TK	DIGITAL TRANSISTOR		
Q51			2SC2458(Y,GR)	TRANSISTOR		
Q51			2SC3311A(Q,R)	TRANSISTOR		
KT-3050L TUNER UNIT(X05-4342-70:T,E type)						
C2			CC73FSL1H330J	CHIP C 33PF	J	
C3	-5		CK73FB1H102K	CHIP C 1000PF	K	
C7			CC73FTH1H100D	CHIP C 10PF	D	
C8			CC73FPH1H390J	CHIP C 39PF	J	
C9			CC73FSL1H050C	CHIP C 5PF	C	
C10	-13		CK73FB1H102K	CHIP C 1000PF	K	
C14			CC73FSL1H0R5C	CHIP C 0.5PF	C	
C15		*	CC73FTH1H090D	CHIP C 9PF	D	
C16	,17		CC73FPH1H390J	CHIP C 39PF	J	
C18		*	CC73FTH1H090D	CHIP C 9PF	D	
C20	,21	*	CC73FSL1H070D	CHIP C 7PF	D	
C22			CK73FB1H103K	CHIP C 0.010UF	K	
C23			CK73FB1H102K	CHIP C 1000PF	K	
C24			CK73FB1H103K	CHIP C 0.010UF	K	
C25			CE04KW1C101M	ELECTRO 100UF	16WV	
C26			CC73FSL1H0R5C	CHIP C 0.5PF	C	
C27			CC73FPH1H390J	CHIP C 39PF	J	
C28			CC73FTH1H150J	CHIP C 15PF	J	
C29		*	CC73FTH1H040C	CHIP C 4PF	C	
C30	,31		CK73FB1H102K	CHIP C 1000PF	K	
C32			CC73FSL1H150J	CHIP C 15PF	J	
C33	,34		CC73FSL1H100D	CHIP C 10PF	D	
C35			CC73FSL1H010C	CHIP C 1PF	C	
C36			CK73FB1H102K	CHIP C 1000PF	K	
C37			CE04KW1C221M	ELECTRO 220UF	16WV	
C38			CK73FB1H102K	CHIP C 1000PF	K	
C39			CC73FSL1H470J	CHIP C 47PF	J	
C40	,41		CK73FB1H103K	CHIP C 0.010UF	K	
C44	-52		CK73FB1H103K	CHIP C 0.010UF	K	
C54	,55		CK73FB1H103K	CHIP C 0.010UF	K	
C56			CK45FF1H103Z	CERAMIC 0.010UF	Z	
C57			CK73FB1H102K	CHIP C 1000PF	K	
C58			CC45FSL1H271J	CERAMIC 270PF	J	
C59			CE04KW1V100M	ELECTRO 10UF	35WV	
C60	-65		CK73FF1H223Z	CHIP C 0.022UF	Z	
C66			CE04KW1H010M	ELECTRO 1.0UF	50WV	
C67	,68		CK45FF1H223Z	CERAMIC 0.022UF	Z	
C69			CC73FSL1H220J	CHIP C 22PF	J	
C70			CK45FF1H103Z	CERAMIC 0.010UF	Z	
C71	,72		CK73FB1H103K	CHIP C 0.010UF	K	
C73			CE04KW1H2R2M	ELECTRO 2.2UF	50WV	
C74	,75		CE04KW1V4R7M	ELECTRO 4.7UF	35WV	
C76			CK45FF1H473Z	CERAMIC 0.047UF	Z	
C77			CE04KW1V100M	ELECTRO 10UF	35WV	
C78			CK45FF1H103Z	CERAMIC 0.010UF	Z	
C79			CK73FB1H103K	CHIP C 0.010UF	K	
C80			CE04KW1V100M	ELECTRO 10UF	35WV	

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C81			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C82			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C83			CC45FSL1H100D	CERAMIC 10PF D		
C84			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C85			CE04HW1H010M	NP-ELEC 1.0UF 50WV		
C86			CK45FB1H471K	CERAMIC 470PF K		
C87			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C88			CK45FB1H471K	CERAMIC 470PF K		
C89			CF92FV1H162J	MF 1600PF J		
C90			CF92FV1H132J	MF 1300PF J		
C91			CC45FSL1H121J	CERAMIC 120PF J		
C92			CC45FSL1H271J	CERAMIC 270PF J		
C93			CC45FSL1H151J	CERAMIC 150PF J		
C94			CE04KW1V100M	ELECTRO 10UF 35WV		
C95			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C96			CK73FB1H102K	CHIP C 1000PF K		
C97			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C98			CC45FSL1H101J	CERAMIC 100PF J		
C99			CE04KW1C221M	ELECTRO 220UF 16WV		
C100			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C101			CF92FV1H473J	MF 0.047UF J		
C102			CK45FF1H103Z	CERAMIC 0.010UF Z		
C103			CC45FSL1H561J	CERAMIC 560PF J		
C104, 105		*	CF92FV1H621J	MF 620PF J		
C106			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C107, 108			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C109, 110			CE04KW1V100M	ELECTRO 10UF 35WV		
C111			CC45FSL1H100D	CERAMIC 10PF D		
C113, 114			CF92FV1H392J	MF 3900PF J		
C115			CC45FSL1H100D	CERAMIC 10PF D		
C117-120			CE04KW1V100M	ELECTRO 10UF 35WV		
C121, 122			CC45FSL1H101J	CERAMIC 100PF J		
C123			CK45FF1H103Z	CERAMIC 0.010UF Z		
C124, 125			CC45FCH1H270J	CERAMIC 27PF J		
C126			CC45FSL1H331J	CERAMIC 330PF J		
C127			C91-0737-05	CERAMIC 47PF J		
C128			C91-0745-05	CERAMIC 100PF K		
C129, 130			CE04KW1V100M	ELECTRO 10UF 35WV		
C131			CE04HW1HR47M	NP-ELEC 0.47UF 50WV		
C132-135			CK45FF1H103Z	CERAMIC 0.010UF Z		
C136			CE04KW1V100M	ELECTRO 10UF 35WV		
C137			CE04DW1E331M	ELECTRO 330UF 25WV		
C138			CK45FF1H103Z	CERAMIC 0.010UF Z		
C139			CE04KW1H331M	ELECTRO 330UF 50WV		
C140			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C141			CE04KW1H330M	ELECTRO 33UF 50WV		
C142			CE04KW1H470M	ELECTRO 47UF 50WV		
C143, 144			CF92FV1H104J	MF 0.10UF J		
C145, 146			CE04KW1V100M	ELECTRO 10UF 35WV		
C147			CE04KW1E222M	ELECTRO 2200UF 25WV		
C148			CE04KW1A470M	ELECTRO 47UF 10WV		
C149			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C150			CE04KW1C470M	ELECTRO 47UF 16WV		
C151			CK45FF1H103Z	CERAMIC 0.010UF Z		
C152, 153			CK45FB1H222K	CERAMIC 2200PF K		

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C154			CE04KW1V100M	ELECTRØ 10UF 35WV		
C155			CF92FV1H103J	MF 0.010UF J		
C156			CK45FF1H103Z	CERAMIC 0.010UF Z		
C157			CC45FCH1H270J	CERAMIC 27PF J		
C158			CE04KW1V100M	ELECTRØ 10UF 35WV		
C159-161			CK45FF1H103Z	CERAMIC 0.010UF Z		
C162			CE04KW1H010M	ELECTRØ 1.0UF 50WV		
C163			CC45FCH1H270J	CERAMIC 27PF J		
C164			CE04KW1V100M	ELECTRØ 10UF 35WV		
C165			CE04KW1H010M	ELECTRØ 1.0UF 50WV		
C166			CK45FF1H103Z	CERAMIC 0.010UF Z		
C167			CE04KW1A101M	ELECTRØ 100UF 10WV		
C168			CC45FSL1H101J	CERAMIC 100PF J		
C169			CE04KW1H010M	ELECTRØ 1.0UF 50WV		
C170-172			CK73FB1H221K	CHIP C 220PF K		
C173			CE04NW1A101M	ELECTRØ 100UF 10WV		
C174			C90-1827-05	BACKUP 0.047F 5.5WV		
C175			CK73FB1H103K	CHIP C 0.010UF K		
C176-178			CK73FB1H221K	CHIP C 220PF K		
C179			CK73FB1H102K	CHIP C 1000PF K		
C180,181			CK73FB1H221K	CHIP C 220PF K		
C182			CK45FB1H102K	CERAMIC 1000PF K		
C183-185			CC45FSL1H221J	CERAMIC 220PF J		
C186,187			CK73FB1H221K	CHIP C 220PF K		
C188-192			CK73FB1H102K	CHIP C 1000PF K		
C193			CE04NW1A101M	ELECTRØ 100UF 10WV		
C194			CK73FB1H103K	CHIP C 0.010UF K		
C195,196			CK73FB1H102K	CHIP C 1000PF K		
C197			CF92FV1H104J	MF 0.10UF J		
C198			CE04KW1HR47M	ELECTRØ 0.47UF 50WV		
C199			CK73FB1H221K	CHIP C 220PF K		
C200			CK73FB1H103K	CHIP C 0.010UF K		
C201			CE04KW1V100M	ELECTRØ 10UF 35WV		
C202,203			CK73FB1H221K	CHIP C 220PF K		
C204			CK73FB1H103K	CHIP C 0.010UF K		
C205			CK45FF1H103Z	CERAMIC 0.010UF Z		
C206			CC45FSL1H221J	CERAMIC 220PF J		
C207			CC73FSL1HOR5C	CHIP C 0.5PF C		
C208-210			CK73FB1H102K	CHIP C 1000PF K		
C211			CK73FB1H103K	CHIP C 0.010UF K		
TC1			C05-0301-05	CERAMIC TRIMMER CAPACITOR(7PF)		
CN1	3B		E40-4207-05	FLAT CABLE CONNECTOR		
CN2	2B		E40-4167-05	FLAT CABLE CONNECTOR		
J1	2B		E13-0235-05	PHONE JACK(OUTPUT)		
J2	2B		E11-0188-05	MINIATURE PHONE JACK(S.CONTROL)		
J3	2B		E20-0321-05	LOCK TERMINAL BOARD(ANTENNA)		
J10,11			J11-0098-05	WIRE CLAMPER		
CF1,2		*	L72-0572-05	CERAMIC FILTER		
CF3,4			L72-0120-05	CERAMIC FILTER		
CF5			L72-0096-05	CERAMIC FILTER		
L1			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L2			L31-0545-05	FM-RF COIL<SENSITIVITY ADJ.>		
L3			L92-0017-05	FERRITE CORE		

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D9		*	ITT310-4	VARIABLE CAPACITANCE DIODE		
D10 -24			HSS104	DIODE		
D10 -24			1SS133	DIODE		
D25 ,26			SD103A	DIODE		
D27 -30			HSS104	DIODE		
D27 -30			1SS133	DIODE		
△ D31			HZS6.8N(B2)	ZENER DIODE		
△ D31			RD6.8ES(B2)	ZENER DIODE		
D32			HZS15S(B)	ZENER DIODE		
D32			RD15JS(B)	ZENER DIODE		
D33 ,34			HSS104	DIODE		
D33 ,34			1SS133	DIODE		
△ D35 -38			S5566B	DIODE		
△ D39 ,40			HSS104	DIODE		
△ D39 ,40			1SS133	DIODE		
D41			HZS6.8N(B2)	ZENER DIODE		
D41			RD6.8ES(B2)	ZENER DIODE		
D42 -46			HSS104	DIODE		
D42 -46			1SS133	DIODE		
D47			HZS5.1S(B2)	ZENER DIODE		
D47			RD5.1JS(B2)	ZENER DIODE		
D48			HZS8.2N(B2)	ZENER DIODE		
D48			RD8.2ES(B2)	ZENER DIODE		
D49			HZS15S(B)	ZENER DIODE		
D49			RD15JS(B)	ZENER DIODE		
D50			HZS5.1S(B2)	ZENER DIODE		
D50			RD5.1JS(B2)	ZENER DIODE		
D51 -74			HSS104	DIODE		
D51 -74			1SS133	DIODE		
D75 -77			HSS104	DIODE		
D75 -77			1SS133	DIODE		
ED1	1A	*	FIP11EM7R	INDICATOR TUBE		
IC1			LA1266A	IC(FM,AM SYSTEM IC)		
IC2			NJM4565D	IC(OP AMP X2)		
IC3			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC4			NJM2901N	IC(QUAD COMPARATOR)		
IC5		*	TDA7330A	IC(RDS DEMODULATOR)		
IC6			NJM4565D	IC(OP AMP X2)		
IC7			LA3401	IC(FM MPX)		
IC8			NJM4565D	IC(OP AMP X2)		
△ IC9			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
△ IC9			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)		
IC10		*	UPD78043GF-011	IC(MICROPROCESSOR)		
IC11			PST529D	IC(SYSTEM RESET)		
IC12			LC6543H-4600	IC(RDS SYNC. MICROPROCESSOR)		
Q1		*	3SK226	FET		
Q2			3SK151(GR)	FET		
Q3			2SK302(GR)	FET		
Q4			2SK709(BL,V)	FET		
Q5		*	2SC2714(O,Y)	TRANSISTOR		
Q6			2SK302(GR)	FET		
Q7 ,8		*	2SC2714(O,Y)	TRANSISTOR		
Q9			2SA1037K	TRANSISTOR		
Q10			2SC2412K	TRANSISTOR		
Q11			2SC2458(Y,GR)	TRANSISTOR		

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Q11			2SC3311A(Q, R)	TRANSISTOR		
Q12 ,13		*	2SC2714(Q, Y)	TRANSISTOR		
Q14			2SA1048(Y, GR)	TRANSISTOR		
Q14			2SA1309A(Q, R)	TRANSISTOR		
Q15 -20			2SC2458(Y, GR)	TRANSISTOR		
Q15 -20			2SC3311A(Q, R)	TRANSISTOR		
Q21			2SK246(Y, GR)	FET		
Q22 -25			2SC2458(Y, GR)	TRANSISTOR		
Q22 -25			2SC3311A(Q, R)	TRANSISTOR		
Q26			2SA1048(Y, GR)	TRANSISTOR		
Q26			2SA1309A(Q, R)	TRANSISTOR		
Q27			2SC2458(Y, GR)	TRANSISTOR		
Q27			2SC3311A(Q, R)	TRANSISTOR		
Q28			2SK246(Y, GR)	FET		
Q29			2SA1048(Y, GR)	TRANSISTOR		
Q29			2SA1309A(Q, R)	TRANSISTOR		
Q32 -34			2SA1048(Y, GR)	TRANSISTOR		
Q32 -34			2SA1309A(Q, R)	TRANSISTOR		
△ Q35			2SB1375	TRANSISTOR		
Q36			2SC1845(F, E)	TRANSISTOR		
△ Q37			2SC2458(Y, GR)	TRANSISTOR		
△ Q37			2SC3311A(Q, R)	TRANSISTOR		
Q38			2SC1845(F, E)	TRANSISTOR		
Q39			2SC2003(L, K)	TRANSISTOR		
△ Q40			2SA1534A(R, S)	TRANSISTOR		
Q41			2SC2458(Y, GR)	TRANSISTOR		
Q41			2SC3311A(Q, R)	TRANSISTOR		
Q44			2SC2458(Y, GR)	TRANSISTOR		
Q44			2SC3311A(Q, R)	TRANSISTOR		
Q45			2SA1037K	TRANSISTOR		
Q46			2SC2412K	TRANSISTOR		
Q47			DTC114TK	DIGITAL TRANSISTOR		
Q48			2SC2458(Y, GR)	TRANSISTOR		
Q48			2SC3311A(Q, R)	TRANSISTOR		
Q49			2SA1048(Y, GR)	TRANSISTOR		
Q49			2SA1309A(Q, R)	TRANSISTOR		
Q50 ,51			2SC2458(Y, GR)	TRANSISTOR		
Q50 ,51			2SC3311A(Q, R)	TRANSISTOR		
Q52			2SA1048(Y, GR)	TRANSISTOR		
Q52			2SA1309A(Q, R)	TRANSISTOR		

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KT-3050/3050L

SPECIFICATIONS

<KT-3050>

FM tuner section

Reception frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (MONO at 75 Ω) 0.95 μ V/10.8 dBf

50 dB quieting sensitivity (at 75 Ω)

MONO 1.8 μ V/16.2 dBf

STEREO 24 μ V/38.8 dBf

Total harmonic distortion (at 1 kHz)

MONO 0.05 % (85 dBf input) (WIDE)

0.1 % (85 dBf input) (NARROW)

STEREO 0.08 % (85 dBf input) (WIDE)

0.18 % (85 dBf input)(NARROW)

Signal to noise ratio (at 1 kHz)

MONO 82 dB (85 dBf input)

STEREO 77 dB (85 dBf input)

Stereo separation

1 kHz 52 dB (WIDE)

40 dB (NARROW)

50 Hz ~ 10 kHz 35 dB (WIDE)

Captuer ratio (WIDE) 1.2 dB

(NARROW) 2.5 dB

Selectivity (\pm 400 kHz) 55 dB (WIDE)

75 dB (NARROW)

Image rejection ratio (at 98 MHz) 85 dB

IF rejection ratio (at 98 MHz) 110 dB

Spurious rejection ratio (at 98 MHz) 110 dB

AM suppression ratio 70 dB

Frequency response

(30 Hz ~ 15 kHz) +0.5 dB, -1.5 dB

Output level/impedance (at 1 kHz, 75 kHz dev.)

Fixed 0.8 V/600 Ω

AM tuner section

Reception frequency range

9 kHz step 531 kHz ~ 1,602 kHz

10 kHz step 530 kHz ~ 1,610 kHz

or 530 kHz ~ 1,700 kHz

(For the U.S.A. and Canada)

Usable sensitivity 15 μ V (400 μ V/m)

Signal to noise ratio

(at 30 % mod. 1 mV input) 50 dB

Total harmonic distortion 0.3 %

Image rejection ratio 35 dB

Selectivity 30 dB

Output level/impedance

(at 30 % mod. 1mV input) 0.24 V/600 Ω

General

Power consumption 12 W

Dimensions W: 440 mm (17 - 5/16")

H: 98 mm (3 - 7/8")

D: 283 mm (11 - 1/8")

Weight (net) 3.1 kg (6.8 lb)

KT-3050/3050L

SPECIFICATIONS

<KT-3050L>

FM tuner section

Reception frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (DIN at 75Ω)

MONO 0.8 μV

STEREO 28 μV

Limiting level (DIN at 75 Ω) 0.5 μV

Total harmonic distortion (DIN at 1 kHz)

MONO 0.05 % (85.2 dBf input) (WIDE)

0.25 % (85.2 dBf input) (NARROW)

STEREO 0.2 % (85.2 dBf input) (WIDE)

Signal to noise ratio (DIN weighted at 1 kHz)

MONO 71 dB (85.2 dBf input)

STEREO 66 dB (85.2 dBf input)

Stereo separation (DIN)

1 kHz 50 dB (WIDE)

35 dB (NARROW)

6.3 kHz 39 dB (WIDE)

Captuer ratio 2.0 dB (WIDE)

Selectivity (DIN ±300 kHz) 55 dB (WIDE)

(DIN ±200 kHz) 65 dB (NARROW)

Image rejection ratio (at 98 MHz) 85 dB

IF rejection ratio (at 98 MHz) 110 dB

Spurious rejection ratio (at 98 MHz) 110 dB

AM suppression ratio 70 dB

Sub carrier suppression (DIN) 55 dB (at 19 kHz)

65 dB (at 38 kHz)

Frequency response

(30 Hz ~ 15 kHz) +0.5 dB, -1.5 dB

Output level/impedance (FM at 1 kHz, 75 kHz dev.)

Fixed 0.8 V/600 Ω

MW tuner section

Reception frequency range 531 kHz ~ 1,602 kHz

Usable sensitivity 15 μV/(400 μV/m)

Signal to noise ratio

(at 30 % mod. 1 mV input) 50 dB

Total harmonic distortion 0.3 %

Image rejection ratio 30 dB

Selectivity 30 dB

Output level/impedance

(at 30 % mod. 1mV input) 0.24 V/600 Ω

LW tuner section

Reception frequency range 153 kHz ~ 279 kHz

Usable sensitivity 20 μV

Signal to noise ratio

(at 30 % mod. 1 mV input) 48 dB

Total harmonic distortion 0.5 %

Image rejection ratio 27 dB

Selectivity 35 dB

Output level/impedance

(at 30 % mod. 1mV input) 0.24 V/600 Ω

General

Power consumption 12 W

Dimensions W: 440 mm (17 - 5/16")

H: 98 mm (3 - 7/8")

D: 283 mm (11 - 1/8")

Weight (net) 3.1 kg (6.8 lb)

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Note

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (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.