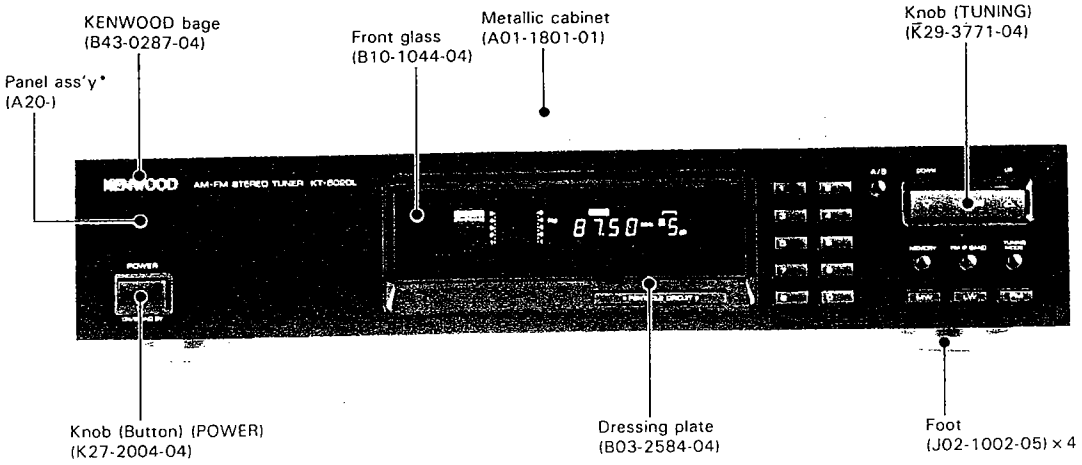
QUARTZ SYNTHESIZER AM-FM STEREO TUNER

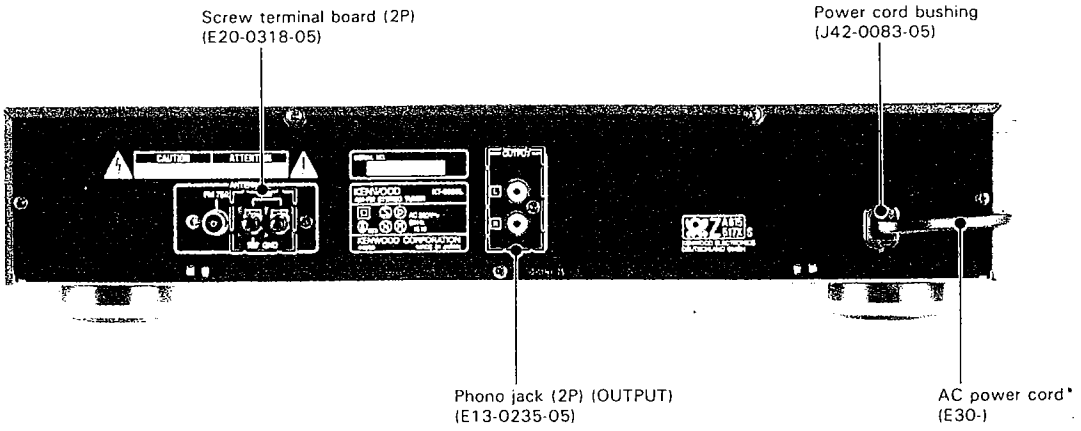
KT-5020/5020L

SERVICE MANUAL

KENWOOD

B51-3961-00(T)1800





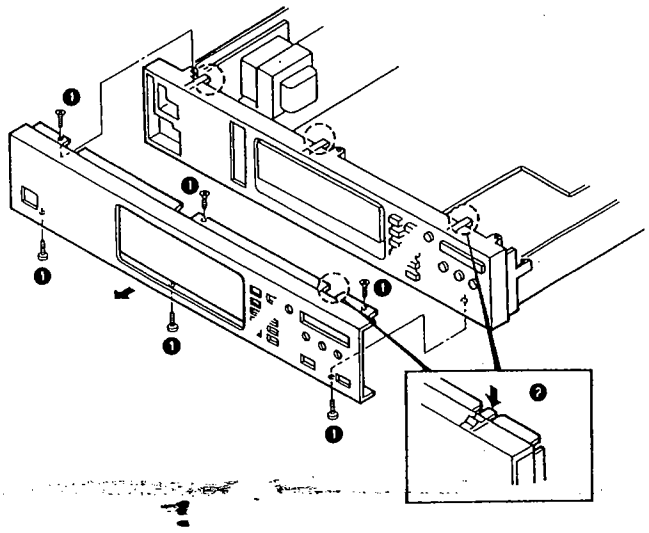
* Refer to Parts List on page
Photo is KT-5020L

KT-5020/5020L

CONTENTS

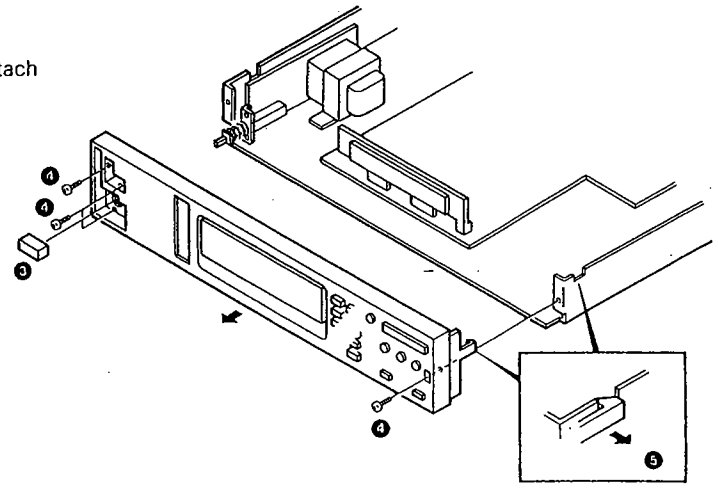
DISASSEMBLY FOR REPAIR

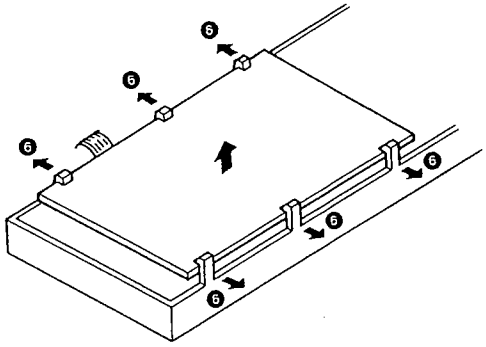
1. Remove the six screws (❶).
2. Undo the three cathes (❷), and detach the front panel.



DISASSEMBLY FOR REPAIR

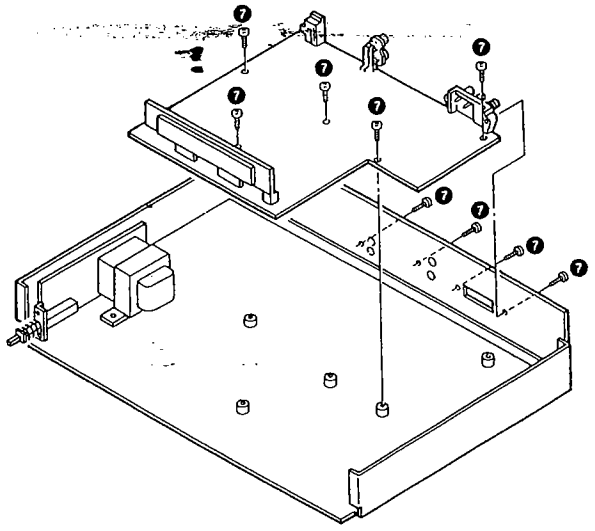
3. Detach the knob (❸).
4. Remove the four screws (❹).
5. Undo the two catches (❺) at the both sides, and detach the sub panel.





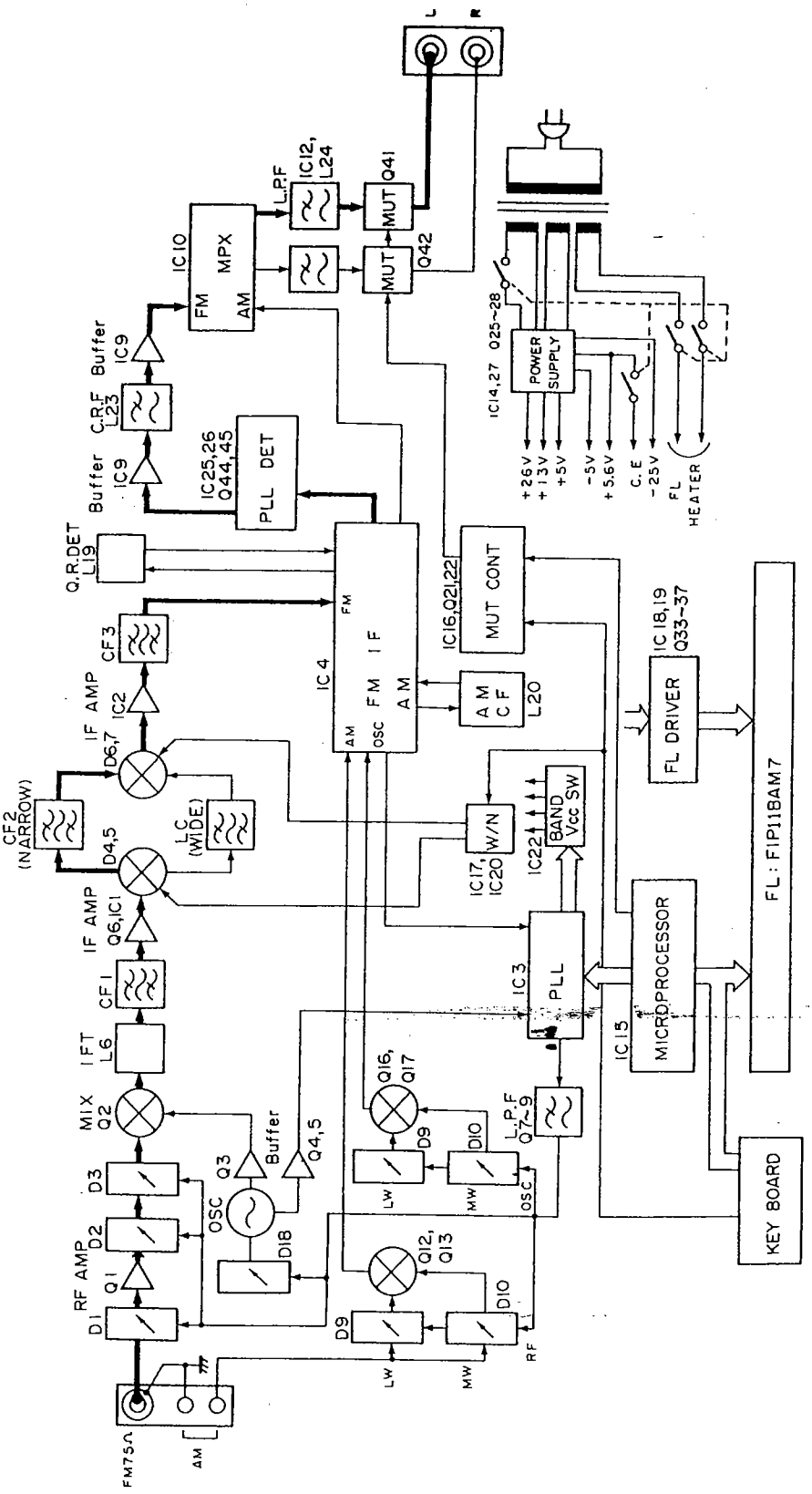
6. Undo the six catches (❻), and disconnect the board.

7. Remove the nine screws (❼), and desconnect the board.



KT-5020/5020L

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

Tuner unit (X05-3790-11: KT-5020) (X05-3792-71: KT-5020L)

Ref.No.	Name	Use and Function	Operation/Condition/Compatibility
IC1,2	BA401	FM IF amplifier	
IC3	LM7001	PLL IC	
IC4	LA1266	FM/AM IF control and detection	IF amplification, AM detection and FM control
IC5	M5218P	1/2 (pins 5-7): S-curve output	
		2/2 (pins 1-3): Inverting amplifier	
IC6	M5223P	1/2 (pins 5-7): Noise amplifier	
		2/2 (pins 1-3): SM conversion	
IC7,8,23, 24	μPC78L10J	3-component regulator	
IC9	M5218P	1/2 (pins 1-3): Buffer amplifier	L23 input impedance matching
		2/2 (pins 5-7): Buffer amplifier	L23 output impedance matching
IC10	LA3401	FM MPX	
IC12	NJM4560D	Output post amplifier	
IC13	M5223P	1/2 (pins 1-3): S-meter comparator	When the IF S-meter voltage is higher than the reference voltage, turns OFF for normal operation. When under a weak electric field, turns ON to operate Q18.
		2/2 (pins 5-7): Buffer amplifier	S-meter lighting
IC14	M5223P	+5 V and +13 V regulated voltage error amplifier	
IC15	μPD7538AC-045	Microprocessor	
IC16	μPD4069UBC	Mute control	
IC17	M5223P	WIDE/NARROW selection driver	
IC18	LB1241	FL driver	
IC19	LB1433N	S-meter driver	
IC20	μPD4013BC	WIDE/NARROW selection	
IC21	M5223P	T-meter comparator	
IC22	LA7910	FM/AM power selection	
IC25	μPC1163HA	FM IF amplifier	
IC26	NJM4560D	PLL detection control	
IC27	μPC7805HF	3-component regulator	
Q1		FM RF amplifier	
Q2		FM mixer	
Q3		FM OSC buffer	
Q4		FM OSC	
Q5		FM OSC buffer	
Q6		FM IF amplifier	
Q7-11		PLL LPF	
Q12,13		LW/MW Select SW	
Q16,17		LW/MW Select SW	
Q18		L-ch/R-ch signal blend	When under a weak electric field, turns ON for L-ch/R-ch signal blend.
Q19		T-meter control	When in the AM mode, turns ON to prevent the lighting of the T-meter in its either side.
Q20		Signal detection	At the time of scanning, when a signal is sensed and input, makes the microprocessor's SD pin "H" to stop scanning.
Q21, 22		Mute circuit	
Q25-28		Constant voltage power transistor	

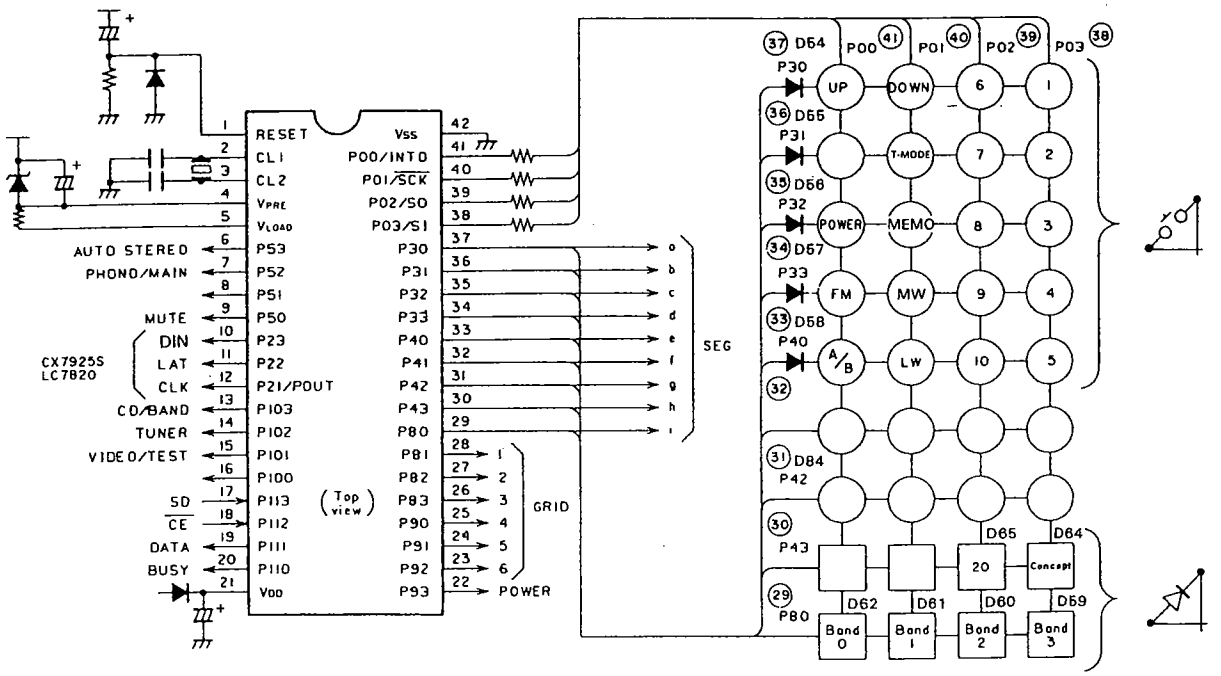
CIRCUIT DESCRIPTION

Ref.No.	Name	Use and Function	Operation/Condition/Compatibility
Q31		Switch	When in the AM mode, turns ON so that WIDE/NARROW selection is not accepted.
Q32		Switch	When in the AM mode, turns ON to display "FM IF BAND".
Q33-37		S-meter FL driver	
Q38, 39		Switch	In response to the microprocessor operation, controls the display of other portion of FL than by the microprocessor.
Q40		Switch	Frequency step selection (M type only)
Q41, 42		Switch	AF output ON/OFF under control of Q22
Q43		Microprocessor C.E. and reset control	With power OFF, turns ON to make C.E. into 0 V.
Q44, 45		VCO	PLL detection 10.7 MHz VCO
Q46		FM compulsory MONO	In manual scanning or detuning, when under a weak electric field, turns ON to put IC10 into the MONO operation.
Q47		Constant current FET	

CIRCUIT DESCRIPTION

IC15: μPD7538AC-045
Microprocessor IC

Terminal connection diagram & keymatrix connection



Functions of diodes and switches

Destination Type	Set Switches B3 B2 B1 B0	Band	Receiving Frequency Range	Inter-Channel Space	Intermadiate Frequency	PLL IC3(LM7001)				Auto Tuning
						PLL Reference Frequency	PLL Input Terminal	PLL Output		
								B02 (P8)	B03 (P9)	
J	0 0 0 0	FM	76.0 MHz ~ 90.0 MHz	100 kHz	− 10.75 MHz	25 kHz	FMIN	H	L	O
		AM	531 kHz ~ 1602 kHz	9 kHz	+ 450 kHz	9 kHz	AMIN	L	H	O
K, M1	1 0 0 0	FM	87.5 MHz ~ 108.0 MHz	100 kHz	+ 10.7 MHz	50 kHz	FMIN	H	L	O
		AM	530 kHz ~ 1610 kHz	10 kHz	+ 450 kHz	10 kHz	AMIN	L	H	O
M2	1 *a 1 0 0	FM	87.5 MHz ~ 108.0 MHz	50 kHz	+ 10.7 MHz	50 kHz	FMIN	H	L	O
		AM	531 kHz ~ 1602 kHz	9 kHz	+ 450 kHz	9 kHz	AMIN	L	H	O
E	1 1 *b 1 1	FM	87.5 MHz ~ 108.0 MHz	50 kHz	+ 10.7 MHz	50 kHz	FMIN	H	L	O
		MW	531 kHz ~ 1602 kHz	9 kHz	+ 450 kHz	9 kHz	AMIN	L	H	O
		LW	153 kHz ~ 281 kHz	1 kHz	+ 450 kHz	1 kHz	AMIN	H	H	*b

0: Without diode 1: With diode

*a) The KT-5020 of types M, U and UE, are modified into types E or K by replacing the rear panel inter-channel space with the CHANNEL SPACE SW (S21), and by adding a diode (D61) for BAND 2.
Before changing the setting of this switch, first turn the POWER switch OFF.
If the setting of the switch is changed with the POWER switch ON, the channel spacing will not be changed.

*b) With the KT-5020L (type E), a diode (D60) is added for BAND 1, to allow for manual tuning in LW mode only.

CIRCUIT DESCRIPTION

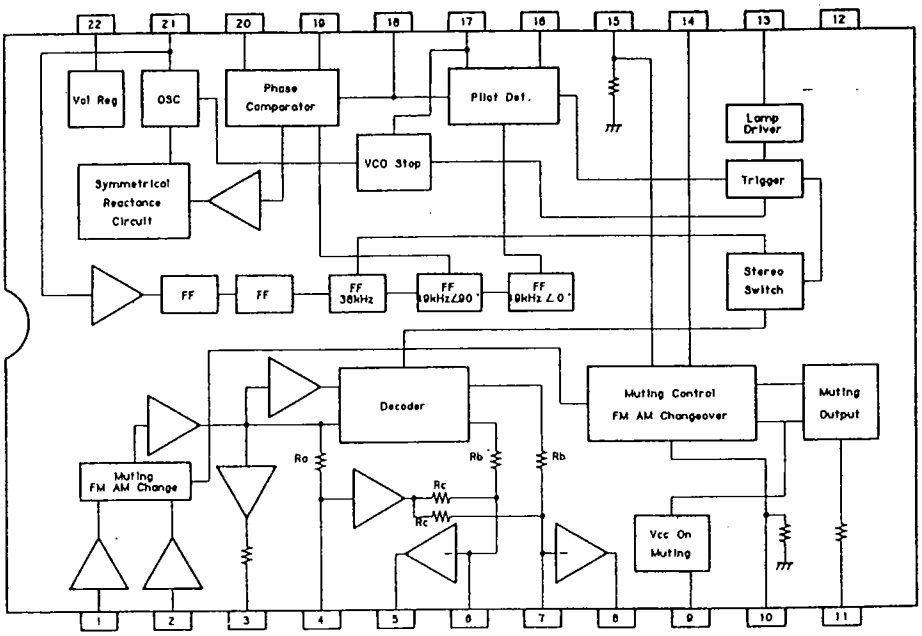
Port allocation

Terminal NO.	Symbol	I/O Mode	Active Mode	Name	Function
1	RESET	I	H		Reset signal
2	CL 1	—	—		Clock
3	CL 2	—	—		Clock
4	VPRE	—	—		Power supply for FL display pre-driver
5	VLOAD	—	—		Power supply for FL display driver (—30V)
6	P 53	O	H	AUTO STEREO	MONO/STEREO key to control Stereo :L, Mono :H
7	P 52	O	H		
8	P 51	O	H		
9	P 50	O	H	MUTE	Muting signal
10	P 23	O	H	DIN	DATA output for PLL IC (LM7001)
11	P 22	O	H	LAT	LAT output for PLL IC (LM7001)
12	P21/POUT	O	H	CLK	CLK output for PLL IC (LM7001)
13	P103	O	H		
14	P102	O	H		
15	P101	O	H	TEST	Input port: TEST pin (H)
16	P100	O	H		
17	P113	I	H	SD	Station detection pin for auto tuning mode
18	P112	I	L	$\overline{CE}$	Back up detection pin
19	P111	I/O	H	DATA	Serial signal DATA pin
20	P110	I/O	H	BUSY	Serial signal BUSY pin
21	VDD	—	—	VDD	Power supply input pin (+5V)
22	P 93	O	H		Power pin
23	P 92	O	H	G6	FL display digit control pin: GRID 6
24	P 91	O	H	G5	FL display digit control pin: GRID 5
25	P 90	O	H	G4	FL display digit control pin: GRID 4
26	P 83	O	H	G3	FL display digit control pin: GRID 3
27	P 82	O	H	G2	FL display digit control pin: GRID 2
28	P 81	O	H	G1	FL display digit control pin: GRID 1
29	P 80	O	H	i	Key strobe signal output, FL display segment output: i
30	P 43	O	H	h	Key strobe signal output, FL display segment output: h
31	P 42	O	H	g	Key strobe signal output, FL display segment output: g
32	P 41	O	H	f	Key strobe signal output, FL display segment output: f
33	P 40	O	H	e	Key strobe signal output, FL display segment output: e
34	P 33	O	H	d	Key strobe signal output, FL display segment output: d
35	P 32	O	H	c	Key strobe signal output, FL display segment output: c
36	P 31	O	H	b	Key strobe signal output, FL display segment output: b
37	P 30	O	H	a	Key strobe signal output, FL display segment output: a
38	P03/SI	I	H		Key return signal input
39	P02/SO	I	H		Key return signal input
40	P01/$\overline{SCK}$	I	H		Key return signal input
41	P00/INTO	I	H		Key return signal input
42	V_{SS}	—	—	V_{SS}	GND

CIRCUIT DESCRIPTION

IC10: LA3401
FM MPX

Block diagram



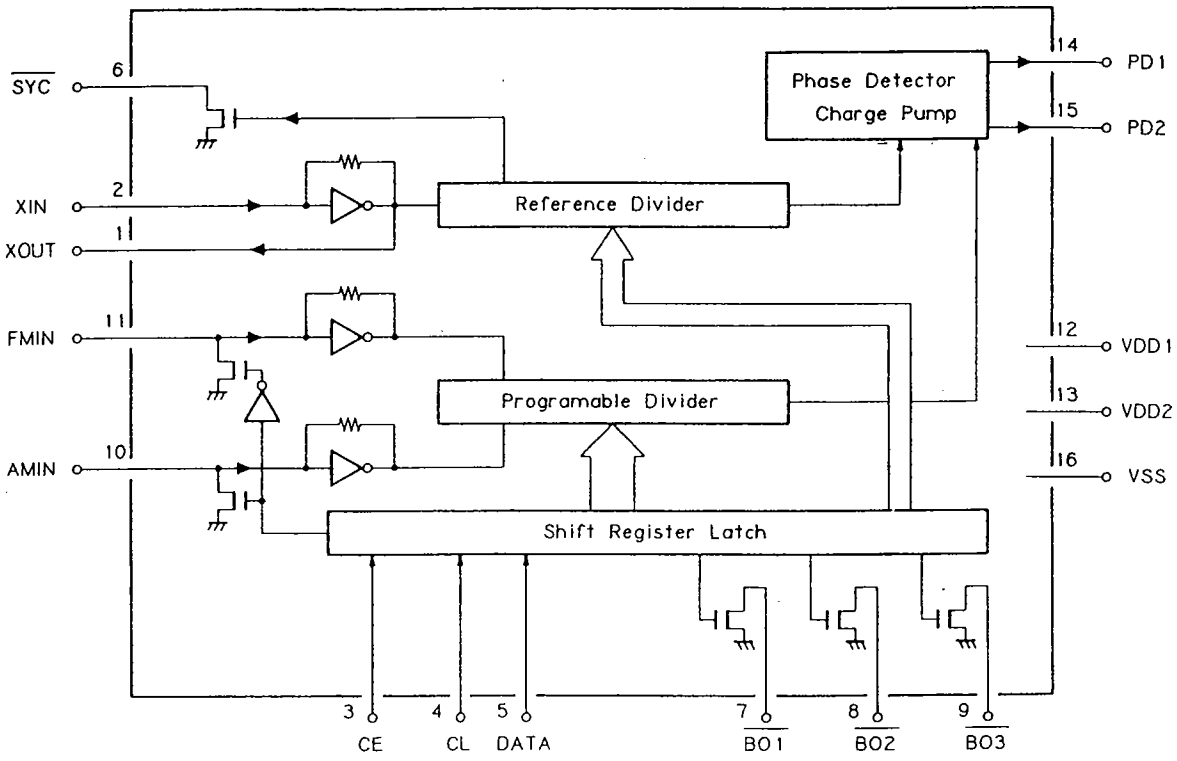
Terminal description

Pin no.	Voltage	Pin name	Remarks
1	3.3	AM input	Input resistance: 20kohms
2	3.3	FM input	Input resistance: 20kohms
3	3.3	Composite amp output	Output resistance: 1kohm
4	3.3	Separation adjustment	
5	3.3	Post amp output	L output
6	3.3	Post amp input	Negative (−) input
7	3.3	Post amp input	Negative (−) input
8	3.3	Post amp output	R output
9	3.3	Vcc ON muting	
10	—	AM/FM select	Input resistance: 80kohms
11	—	(Muting output) Not used	
12	0	GND	
13	—	Stereo indicator	Open collector
14	0 or 4.9	Select mute	Grounded by the cap acitor having 0.01 μF or more capacitance
15	—	(Muting) Not used	Input resistance: 80 kohms
16	2.7	Pilot sync detect filter	
17	2.7	Pilot sync detect filter, VCO STOP	
18	2.7	PLL input	
19	2.7	Loop filter	
20	2.7	Loop filter	
21	—	OSC	
22	VCC	Power supply	

CIRCUIT DESCRIPTION

IC3: LM7001
PLL frequency synthesizer

Block diagram

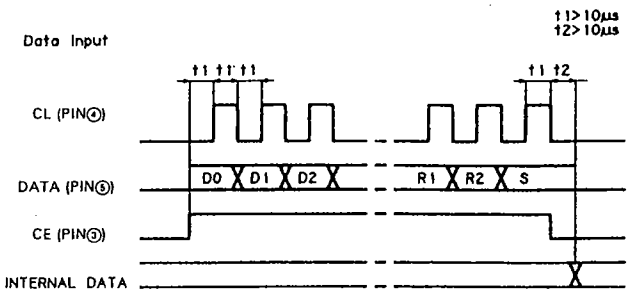


Terminal description

Pin no.	Pin name	I/O	Function
1	XOUT	O	Crystal oscillator (7.2 MHz).
2	XIN	I	
3	CE	I	Data input.
4	CL	I	
5	DATA	I	
6	$\overline{SYC}$	I/O	Clock for controller (400 kHz).
7	$\overline{BO1}$	O	Band data output. $\overline{BO1}$ can be used as a time base output (8 Hz)
8	$\overline{BO2}$	O	
9	$\overline{BO3}$	O	
10	AMIN	I	Local oscillator signal input.
11	FMIN	I	
12	VDD1		Power supply. VDD2 for back-up.
13	VDD2		
14	PDD1	O	Charge pump output.
15	PD2	O	
16	VSS		Power supply.

CIRCUIT DESCRIPTION

Data input



←Input at D0

D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	T0	T1	B0	B1	B2	TB	R0	R1	R2	S

(1) D0(LSB)~D13(MSB): Dividing ratio data
FMIN uses D0 - D13 and AMIN uses D4 - D13.

D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	
1	0	1	0	0	0	0	0	0	1	0	1	1	1	→ FMIN dividing ratio=14853
LSB													MSB	
X	X	X	X	0	0	0	0	0	1	0	1	1	1	→ AMIN dividing ratio=928
				LSB									MSB	

(2) T0, T1 For LSI checking (0,0):

(3) B0~B2: Band data
Time base data

Input				Output		
B0	B1	B2	TB	$\overline{B01}$	$\overline{B02}$	$\overline{B03}$
0	0	0	0	*	*	*
0	0	1	0	0	0	1
0	1	0	0	0	1	0
0	1	1	0	0	1	1
1	0	0	0	1	0	0
1	0	1	0	1	0	1
1	1	0	0	1	1	0
1	1	1	0	1	1	1
0	0	0	1	TB	*	*
X	1	0	1	TB	1	0
X	0	1	1	TB	0	1
X	1	1	1	TB	1	1
1	0	0	1	TB	0	0

$: Determined by R0~R2
X : don't care.
TB: 8 Hz

(4) R0~R2: Reference frequency data

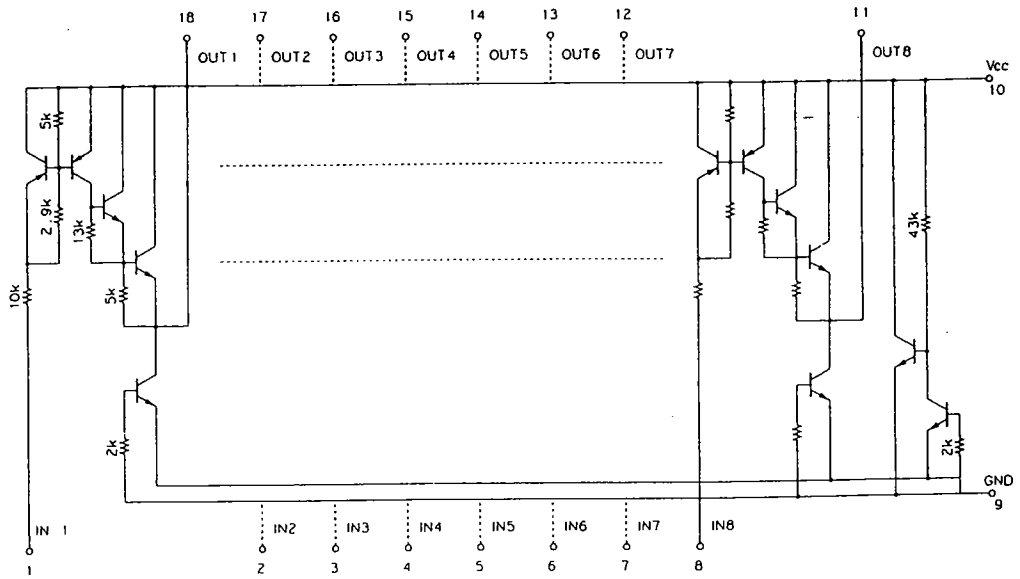
R0	R1	R2	fref	$\overline{B01}$	$\overline{B02}$	$\overline{B03}$
0	0	0	100 kHz	1	1	0
0	0	1	50	1	1	0
0	1	0	25	1	1	0
0	1	1	5	0	0	1
1	0	0	10	1	0	1
1	0	1	9	1	0	1
1	1	0	1	0	1	1
1	1	1	5	0	0	1

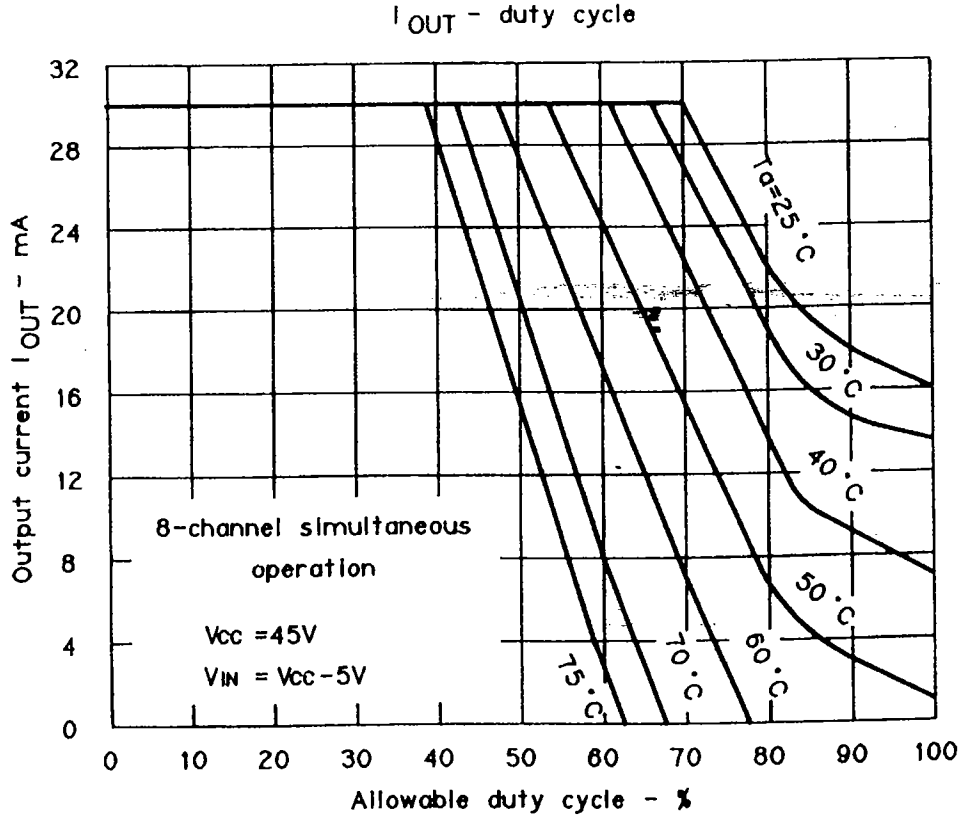
(5) S: Divider selection data
'1' : FMIN, '0' : AMIN

CIRCUIT DESCRIPTION

IC18: LB1241
FL driver IC

Equivalent block diagram





ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION	Unless otherwise specified, the individual switches should be set as following: SELECTOR: FM TUNING MODE: AUTO IF BAND: WIDE						
1	BAND EDGE (1)	–	Connect a DC voltmeter between TP5 and TP6(GND).	87.5MHz	L7	3.0±0.1V	(a)
2	BAND EDGE (2)	–	Connect a DC voltmeter between TP5 and TP6(GND).	108.0MHz	TC1	23.0±0.1V	(a)
Repeat alignments 1 and 2 several times.							
3	DISCRIMINATOR	(A) 98.0MHz 0 dev 100dBμ(ANT input)	Connect a DC voltmeter between TP7 and TP8.	98.0MHz	L19	0±10mV	(b)
4	PLL DETECTOR	(A) 98.0MHz 0 dev 100dBμ(ANT input)	Connect a DC voltmeter between TP9 and TP10.	98.0MHz	L22	0±50mV	(c)
5	RF ALIGNMENT	(A) 98.0MHz 1kHz, ±75kHz dev	(B)	98.0MHz	L1,2,3	Maximum amplitude and symmetry of the oscilloscope display.	
6	STOP LEVEL	(A) 98.0MHz 1kHz, ±75kHz ST 14dBμ(ANT input)	–	98.0MHz	VR1	To the position so that the lowest level of the S meter lights.	
7	SEPARATION (1) R to L	(C) 98.0MHz R,1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ(ANT input)	(B)	98.0MHz	VR3	Minimum crosstalk.	
8	SEPARATION (2) L to R	(C) 98.0MHz L,1kHz,±68.25kHz dev Pilot:±6.75kHz dev 80dBμ(ANT input)	(B)	98.0MHz	VR3	Minimum crosstalk.	
Repeat steps 7 and 8 so that the channel separation from right to left channel and vice versa is the same.							
AM-MW SECTION	Keep the AM loop antenna installed. SELECTOR: AM (KT-5020) or MW (KT-5020L) TUNING MODE: AUTO						
(1)	BAND EDGE (1)	–	Connect a DC voltmeter between TP5 and TP6(GND).	530kHz (531kHz)	L16	1.5±0.1V	(d)
(2)	BAND EDGE (2)	–	Connect a DC voltmeter between TP5 and TP6(GND).	1610kHz (1602kHz)	TC3	8.0±0.1V	(d)
Repeat alignments (1) and (2) several times.							
(3)	RF ALIGNMENT (1)	(D) 630kHz 1kHz,30% mod	(B)	630kHz	L18	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1440kHz 1kHz,30% mod	(B)	1440kHz	TC5	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
AM-LW SECTION (KT-5020L only)	Keep the AM loop antenna installed. SELECTOR: LW TUNING MODE: AUTO						
(5)	BAND EDGE (1)	–	Connect a DC voltmeter between TP5 and TP6(GND).	153kHz	L15	1.5±0.1V	(d)
(6)	BAND EDGE (2)	–	Connect a DC voltmeter between TP5 and TP6(GND).	281kHz	TC2	8.0±0.1V	(d)
Repeat alignments (5) and (6) several times.							
(7)	RF ALIGNMENT (1)	(D) 162kHz 1kHz,30% mod	(B)	162kHz	L17	Maximum amplitude and symmetry of the oscilloscope display.	
(8)	RF ALIGNMENT (2)	(D) 270kHz 1kHz,30% mod	(B)	270kHz	TC4	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (7) and (8) several times.							

REGLAGES

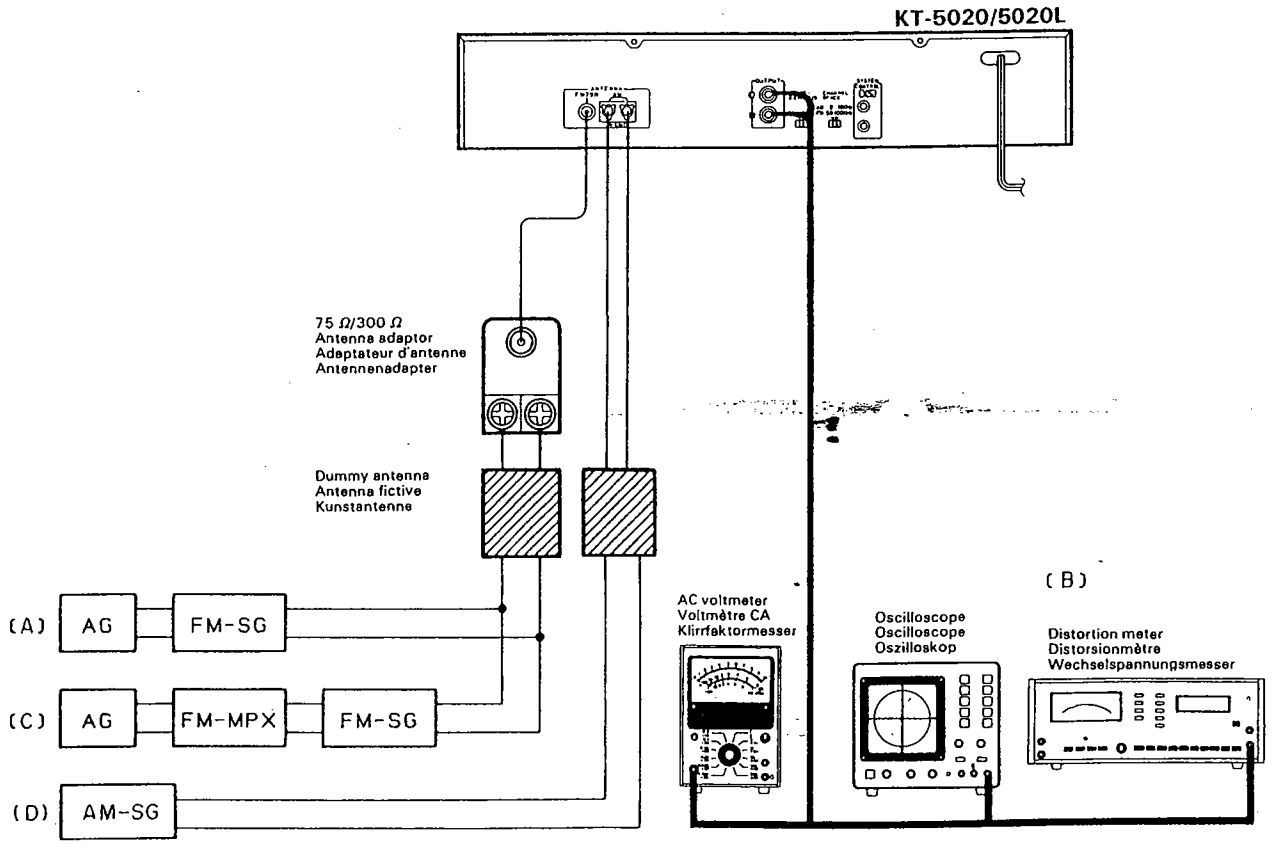
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF		Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SELECTEUR:FM TUNING MODE:AUTO IF BAND:WIDE					
1	BORD DE BANDE (1)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	87.5MHz	L7	3.0±0.1V	(a)
2	BORD DE BANDE (2)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	108.0MHz	TC1	23.0±0.1V	(a)
		Répéter les points 1 et 2 plusieurs fois.					
3	DISCRIMINATEUR	(A) 98.0MHz 0 dév 100dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP7 et TP8.	98.0MHz	L19	0±10mV	(b)
4	DETECTEUR PLL	(A) 98.0MHz 0 dév 100dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP9 et TP10.	98.0MHz	L22	0±50mV	(c)
5	ALIGNMENT HT	(A) 98.0MHz 1kHz.±75kHz dév	(B)	98.0MHz	L1.2.3	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
6	NIVEAU D'ARRET	(A) 98.0MHz 1kHz, ±75kHz ST 14dBμ(Entrée ANT)		98.0MHz	VR1	Sur la position où le niveau la plus basse du compteur S s'allume.	
7	SEPARATION (1) D → G	(C) 98.0MHz 1kHz.±68.25kHz dév Selection : R Pilote:±6.75kHz dév 80dBμ(Entrée ANT)	(B)	98.0MHz	VR3	Diaphonie minimale.	
8	SEPARATION (2) G → D	(C) 98.0MHz 1kHz.±68.25kHz dév Selection : L Pilote:±6.75kHz dév 80dBμ(Entrée ANT)	(B)	98.0MHz	VR3	Diaphonie minimale.	
		Répéter les étapes 7 et 8 pour que la séparation des canaux provenant des canaux de droite et de gauche et vice versa soient identiques.					
SECTION MA		Laisser l'antenne bouche MA installée. SELECTEUR: AM (KT-5020) ou MW (KT-5020L) TUNING MODE: AUTO					
(1)	BORD DE BANDE (1)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	530kHz (531kHz)	L16	1.5±0.1V	(d)
(2)	BORD DE BANDE (2)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	1610kHz (1602kHz)	TC3	8.0±0.1V	(d)
		Répéter les points (1) et (2) plusieurs fois.					
(3)	ALIGNEMENT HT (1)	(D) 630kHz 1kHz.30% mod	(B)	630kHz	L18	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	ALIGNEMENT HT (2)	(D) 1440kHz 1kHz.30% mod	(B)	1440kHz	TC5	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
		Répéter les points (3) et (4) plusieurs fois.					
SECTION GO (KT-5020L seulement)		Laisser l'antenne bouche MA installée. SELECTEUR:LW TUNING MODE:AUTO					
(5)	BORD DE BANDE (1)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	153kHz	L15	1.5±0.1V	(d)
(6)	BORD DE BANDE (2)	-	Relier un voltmètre CC entre les TP5 et TP6(GND).	281kHz	TC2	8.0±0.1V	(d)
		Répéter les points (5) et (6) plusieurs fois.					
(7)	ALIGNEMENT HT (1)	(D) 162kHz 1kHz.30% mod	(B)	162kHz	L17	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(8)	ALIGNEMENT HT (2)	(D) 270kHz 1kHz.30% mod	(B)	270kHz	TC4	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
		Répéter les point (7) et (8) plusieurs fois.					

ABGLEICH

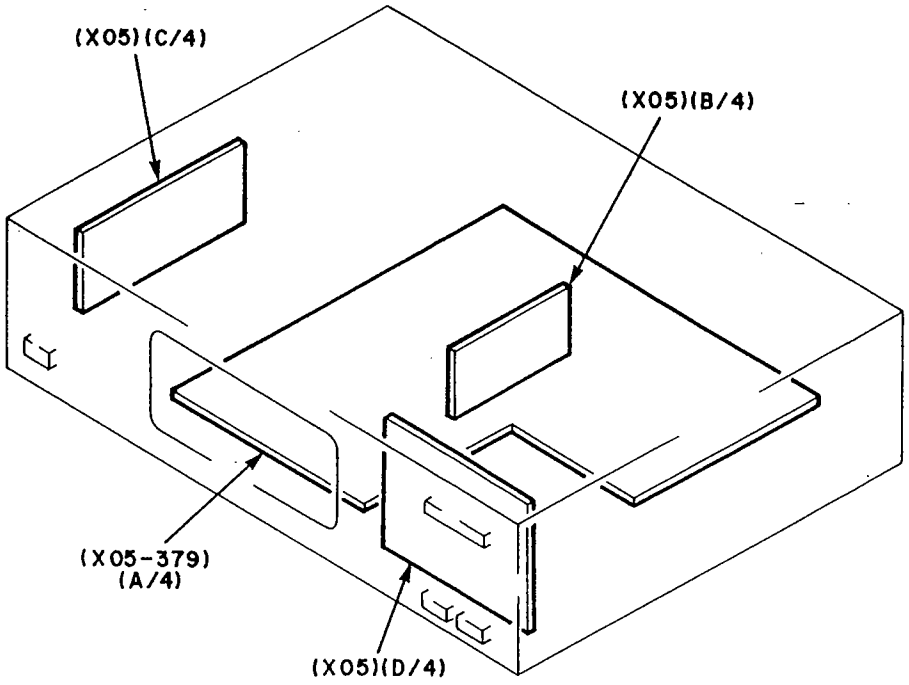
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: SELECTOR:FM TUNING MODE:AUTO IF BAND:WIDE							
1	BANDKANTE (1)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND). anschließen.	87.5MHz	L7	3.0±0.1V	(a)
2	BANDKANTE (2)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND). anschließen.	108.0MHz	TC1	23.0±0.1V	(a)
Abstimmungen 1 und 2 mehrere Male wiederholen.							
3	DISKRIMINATOR	(A) 98.0MHz 0 Hub 100dBμ(ANT Eingang)	Einen Gleichspannungs-messer zwischen TP7 und TP8 anschließen.	98.0MHz	L19	0±10mV	(b)
4	PLL-DETEKTOR	(A) 98.0MHz 0 Hub 100dBμ(ANT Eingang)	Einen Gleichspannungs-messer zwischen TP9 und TP10 anschließen.	98.0MHz	L22	0±50mV	(c)
5	EMPFANGS-BEREICH-ABSTIMMUNGEN	(A) 98.0MHz 1kHz. ±75kHz Hub	(B)	98.0MHz	L1,2,3	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
6	HALT PEGEL	(A) 98.0MHz 1kHz, ±75kHz ST 14dBμ(ANT Eingang)	–	98.0MHz	VR1	Auf die Position, so daß der niedrigste Pegel des S-Meters leuchtet.	
7	STEREO KANAL TRENNUNG (1) R → L	(C) 98.0MHz 1kHz. ±68.25kHz Hub Wähler: R Pilotten : ±6.75kHz Hub 80dBμ(ANT Eingang)	(B)	98.0MHz	VR3	Minimal Übersprechen.	
8	STEREO KANAL TRENNUNG (2) L → R	(C) 98.0MHz 1kHz. ±68.25kHz Hub Wähler: L Pilotten : ±6.75kHz Hub 80dBμ(ANT-Eingang)	(B)	98.0MHz	VR3	Minimal Übersprechen.	
Die Schritte 7 und 8 widerholen, so daß die Kanaltrennung vom rechten zum linken Kanal und umgekehrt die gleiche ist.							
MW-EMPFANGSABTEILUNG Die MW-Rahmenantenne angebracht lassen. SERECTOR: AM (KT-5020) oder MW (KT-5020L) TUNING MODE: AUTO							
(1)	BANDKANTE (1)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND). anschließen.	530kHz (531kHz)	L16	1.5±0.1V	(d)
(2)	BANDKANTE (2)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND). anschließen.	1610kHz (1602kHz)	TC3	8.0±0.1V	(d)
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	HF-ABGLEICH (1)	(D) 630kHz 1kHz. 30% mod	(B)	630kHz	L18	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	HF-ABGLEICH (2)	(D) 1440kHz 1kHz. 30% mod	(B)	1440kHz	TC5	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							

ABGLEICH

LW-EMPFANGSABTEILUNG (nur KT-5020L) Die MW-Rahmenantenne angebracht lassen. SELECTOR:LW TUNING MODE:AUTO							
(5)	BANDKANTE (1)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND). anschließen.	153kHz	L15	1,5±0,1V	(d)
(6)	BANDKANTE (2)	–	Einen Gleichspannungs-messer zwischen TP5 und TP6(GND) anschließen.	281kHz	TC2	8,0±0,1V	(d)
Abstimmungen (5) und (6) mehrere Male wiederholen.							
(7)	HF-ABGLEICH (1)	(D) 162kHz 1kHz.30% mod	(B)	162kHz	L17	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(8)	HF-ABGLEICH (2)	(D) 270kHz 1kHz.30% mod	(B)	270kHz	TC4	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (7) und (8) mehrere Male wiederholen.							



PC BOARD LAYOUT



KT-5020/5020L

VOLTAGE TABLES

TUNER UNIT (X05-3790-11)

IC1, 2

5	13V

IC4

1~3	FM: 2.5V AM: (1V)
4	0V
5~7	10V
8	10V/0V (7.5V/0V)
9	4V (3.5V)
10	1.8V
11	1.8V (1.2V)
12	3.8V (3.0V)
13	9V
14,15	1.4V
16,17	–
18	2.5V (1.2V)
19	1.6V (2.0V)
20	0V (10V)
21~23	4V (3.5V)
24	3.2V (2.2V)

IC5

1,2	–
3	13V
4	–
5	13V
6	4V (3.5V)
7	–
8	13V

IC6,9,12,13,14

8	13V

IC7

IN	13V
OUT	10V
GND	–

IC8

IN	13V
OUT	–
GND	–

IC10

13	ST: 0.5V MONO: 4V

IC15

4	–5V
5	–24V

IC17

1	W: 0.6V N: 11.5V
2~6	–
7	W: 11.5V N: 0.6V
8	13V

IC21

8	13V

IC22

9	13V

IC23

1	10V

IC26

1	5.6V
2	–
3	5.6V
4	–
5	5.6V
6	–
7	5.6V
8	13V

IC27

OUT	5.6V
IN	–
GND	11.5V

Q1

G1	3V
G2	–
D	5.6V
S	–

Q14

E	–
C	–
B	10V

Q25, 28

E	13V
C	–
B	–

Q26

E	5V
C	–
B	–

Q27

E	27V
C	26V
B	–

TUNER UNIT (X05-3792-71)

IC1, 2

5	13V

IC4

1~3	FM: 2.5V AM: (1V)
4	0V
5~7	10V
8	10V/0V (7.5V/0V)
9	4V (3.5V)
10	1.8V
11	1.8V (1.2V)
12	3.8V (3.0V)
13	9V
14,15	1.4V
16,17	–
18	2.5V (1.2V)
19	1.6V (2.0V)
20	0V (10V)
21~23	4V (3.5V)
24	3.2V (2.2V)

IC5

1,2	–
3	13V
4	–
5	13V
6	4V (3.5V)
7	–
8	13V

IC6,9,12,13,14

8	13V

IC7

IN	13V
OUT	10V
GND	–

IC8

IN	13V
OUT	–
GND	–

IC10

13	ST: 0.5V MONO: 4V

IC15

4	–5V
5	–24V

IC17

1	W: 0.6V N: 11.5V
2~6	–
7	W: 11.5V N: 0.6V
8	13V

IC21

8	13V

IC22

9	13V

IC23

1	10V

IC26

1	5.6V
2	–
3	5.6V
4	–
5	5.6V
6	–
7	5.6V
8	13V

IC27

OUT	5.6V
IN	–
GND	11.5V

Q1

G1	3V
G2	–
D	5.6V
S	–

Q14

E	–
C	–
B	10V

Q16,17

G	–
D	–
S	4V (3.5V)

Q25, 28

E	13V
C	–
B	–

Q26

E	5V
C	–
B	–

Q27

E	27V
C	26V
B	–

PC BOARD (Component side view) (KT-5020)

TUNER UNIT (X05-3790-11)

Ref. No. IC	Q	Address
	1	1D
	2	1E
	3	1E
	4	1F
	5	1F
	6	2D
	7	2E
	8	2E
	9	2E
	14	4D
	15	4D
	18	6D
	19	4G
	20	4G
	21	6G
	22	6C
	25	5E
	26	5F
	27	5F
	28	5F
	31	5G
	32	5H
	33	5H
	34	5H
	35	6H
	36	6H
	37	6H
	38	6I
	39	6I
	40	3I
	41	5C
	42	5C
	43	5G
	44	2I
	45	1I
	46	6D
	47	3F
1		2D
2		2E
3		3F
4		4D
5		3C
6		4C
7		3D
8		5E
9		5E
10		6D
12		6D
13		5D
14		5F
15		4H
16		5G
17		5G
18		5H
19		6H
20		5H
21		4G
22		3G
23		3F
24		3G
25		2H
26		1H
27		6F

DC voltmeter

(a) BAND EDGE (1)

3.0±0.1 V

(a) BAND EDGE (2)

23.0±0.1 V

(d) BAND EDGE (1)

1.5±0.1 V

(d) BAND EDGE (2)

8.0±0.1 V

FM 75Ω ANTENNA

GND

AM 300Ω

AM

DC voltmeter

(b) DISCRIMINATOR

0± 10 mV

DC voltmeter

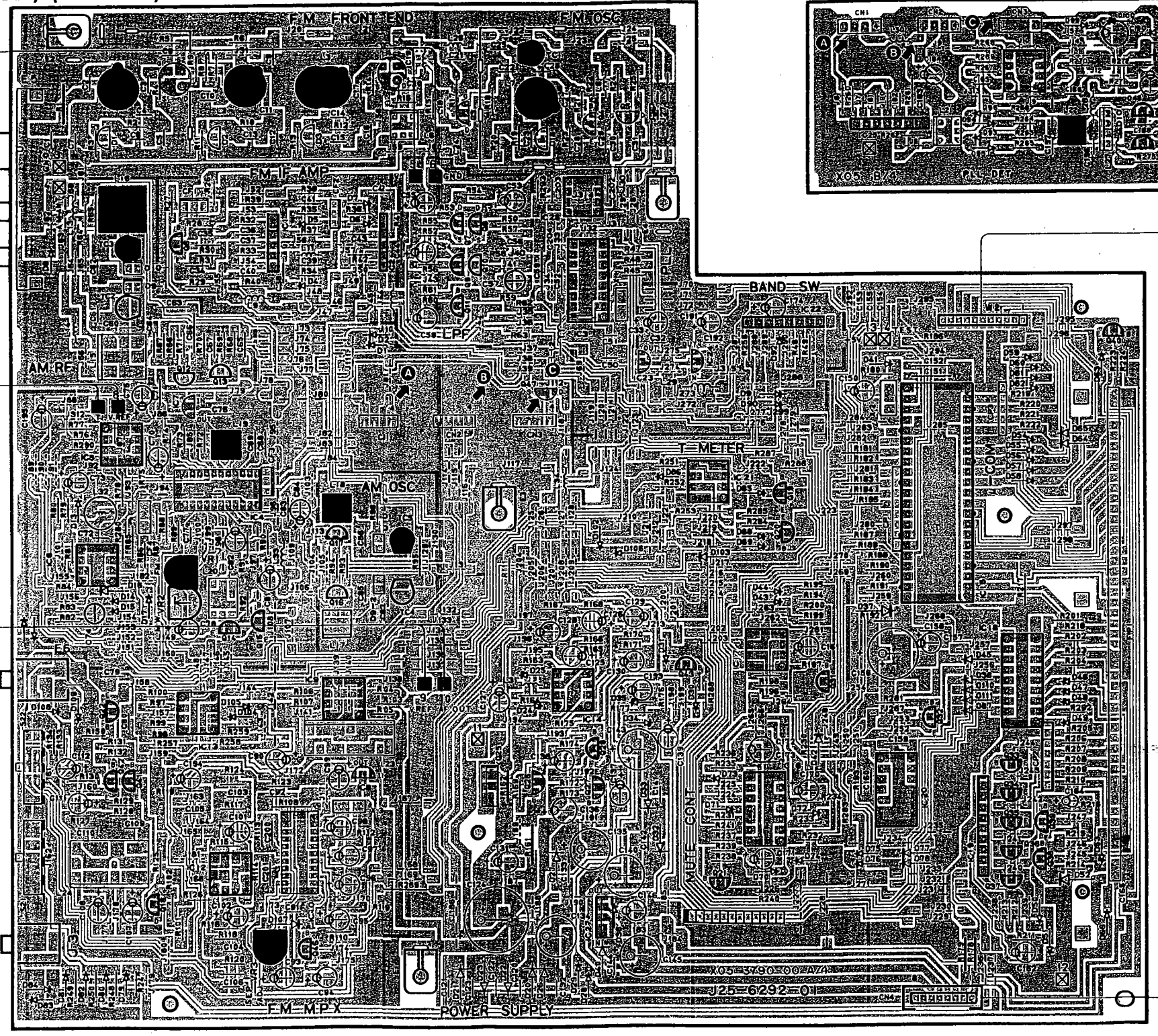
(c) PLL DETECTOR

0± 50 mV

OUTPUT

SYSTEM CONTROL

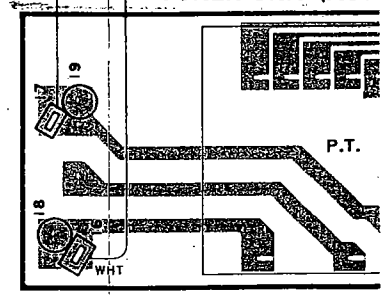
TUNER UNIT (X05-3790-11) (A/4)



TUNER UNIT (X05-3790-11) (B/4)

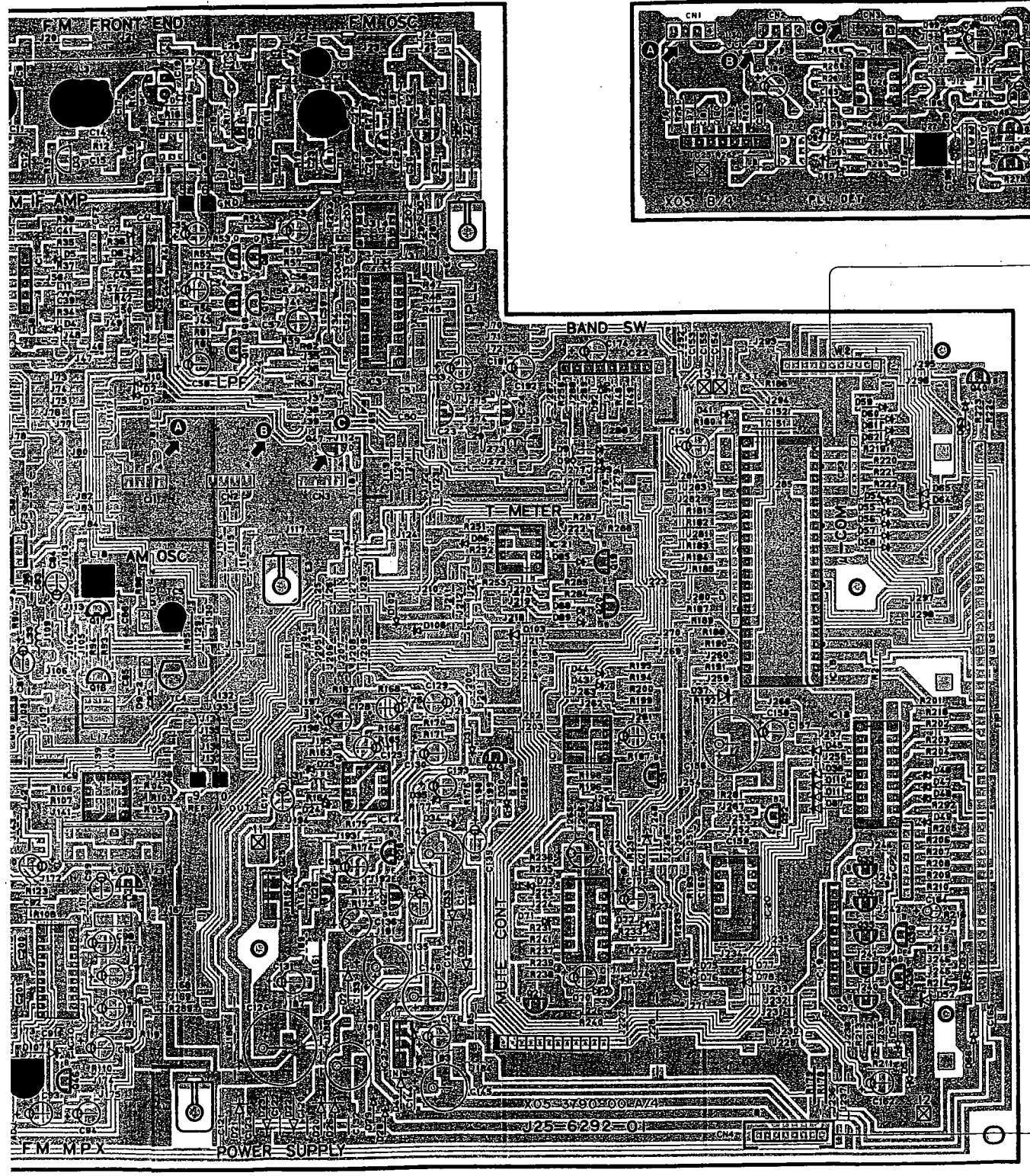
AC120V
50/60 Hz

TUNER UNIT (X05-



E F G H I J K L M N

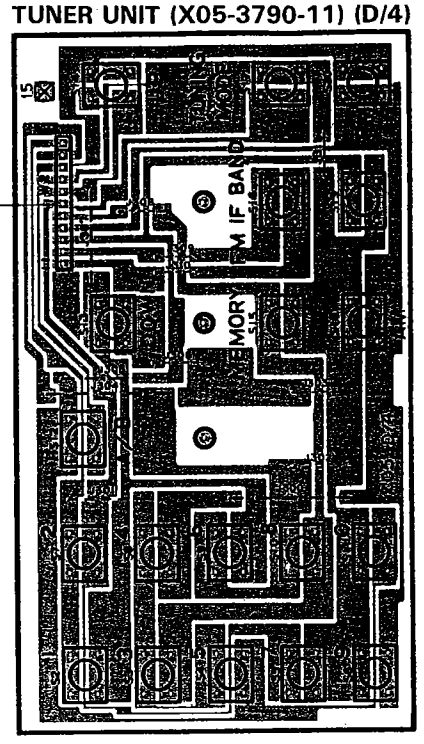
TUNER UNIT (X05-3790-11) (A/4)



TUNER UNIT (X05-3790-11) (B/4)

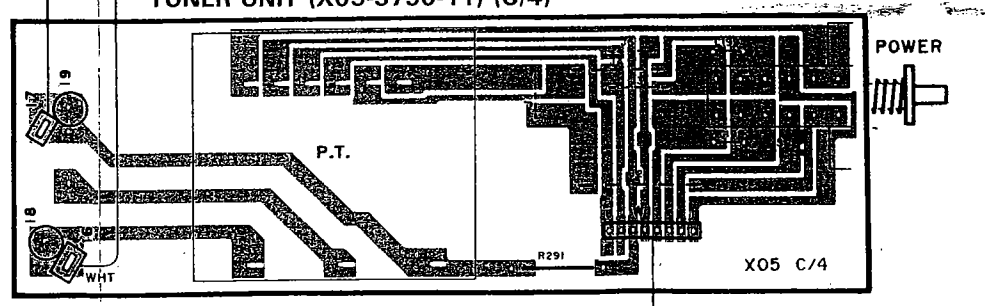
FRONT

TUNER UNIT (X05-3790-11) (D/4)



AC120V
50/60 Hz

TUNER UNIT (X05-3790-11) (C/4)



KT-5020 (K)

Refer to the schematic diagram for the values of resistors and capacitors.

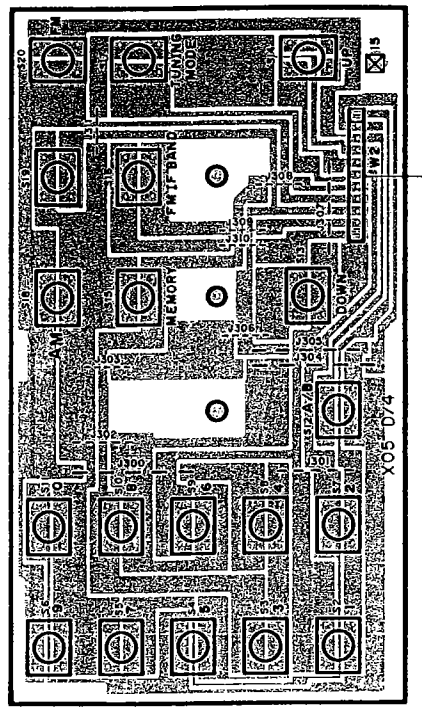
PC BOARD (Foil side view) (KT-5020)

TUNER UNIT
(X05-3790-11)

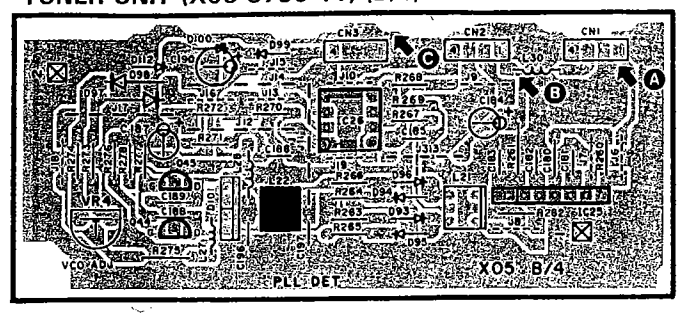
Ref. No. IC	Ref. No. Q	Address
	1	1Y
	2	1X
	3	1X
	4	2W
	5	1W
	6	2Y
	7	2X
	8	2X
	9	2X
	14	4Y
	15	4Y
	18	6Y
	19	4V
	20	4V
	21	6V
	22	5Z
	25	5X
	26	5W
	27	5W
	28	5W
	31	5V
	32	5U
	33	5U
	34	5U
	35	6U
	36	6U
	37	6U
	38	6T
	39	6T
	40	3T
	41	5Z
	42	5Z
	43	5V
	44	2T
	45	1T
	46	6Y
	47	3W
1		2Y
2		2X
3		2W
4		4Y
5		3Z
6		4Z
7		3Y
8		5X
9		5X
10		6Y
12		6Y
13		5Y
14		5W
15		4U
16		6V
17		5V
18		5U
19		6U
20		5U
21		4V
22		3V
23		3W
24		3V
25		2U
26		1U
27		6W

FRONT

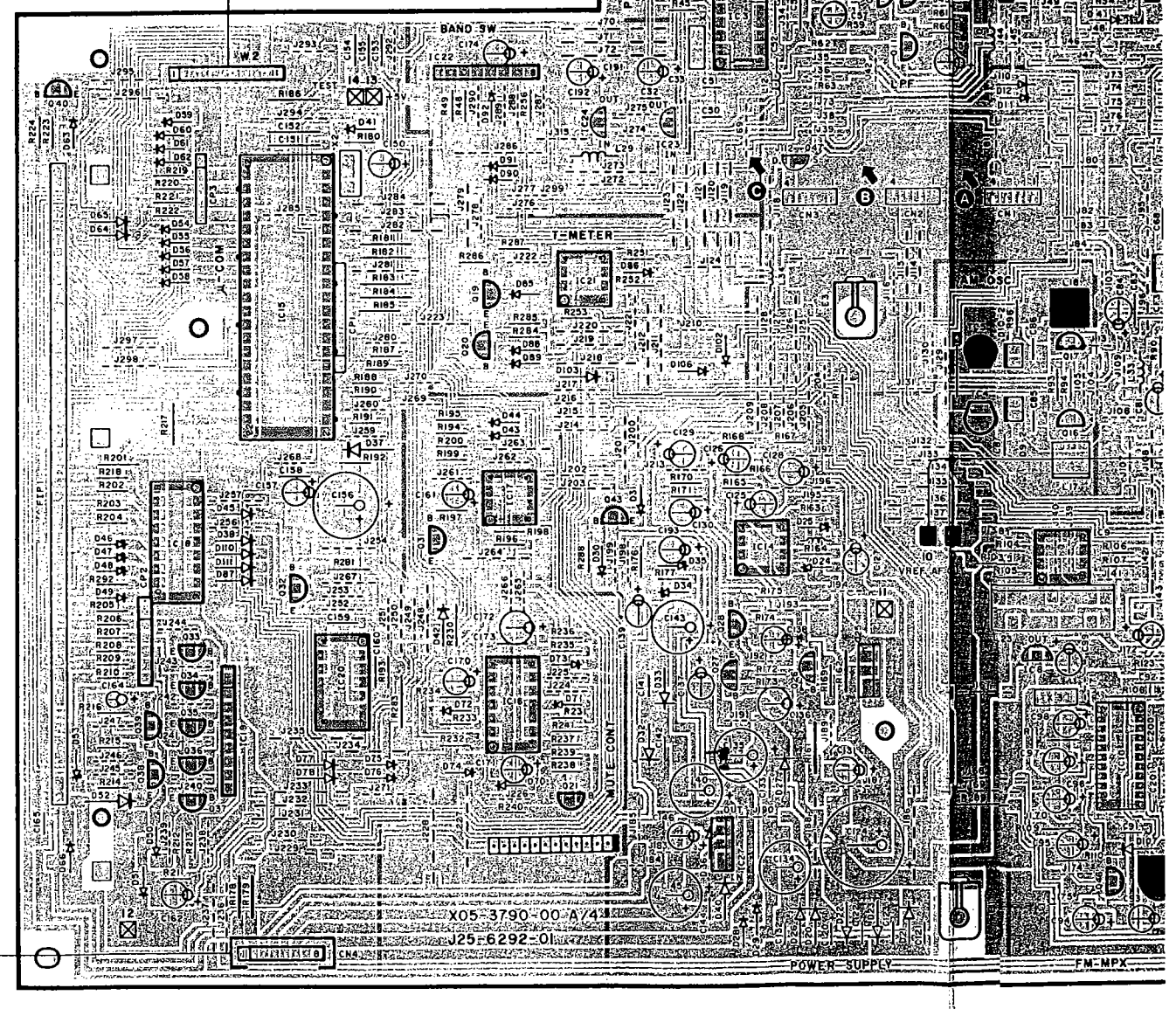
TUNER UNIT (X05-3790-11) (D/4)



TUNER UNIT (X05-3790-11) (B/4)

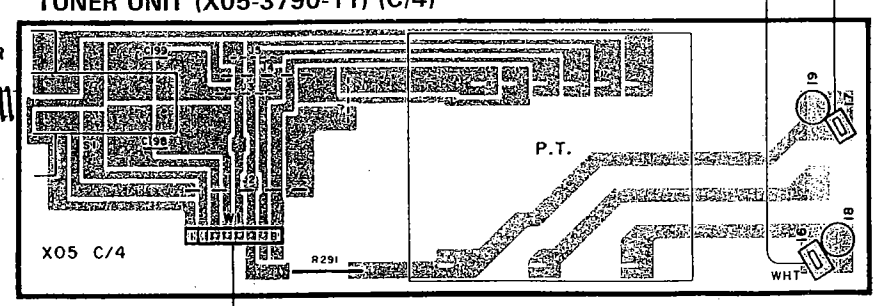


TUNER UNIT (X05-3790-11) (A/4)

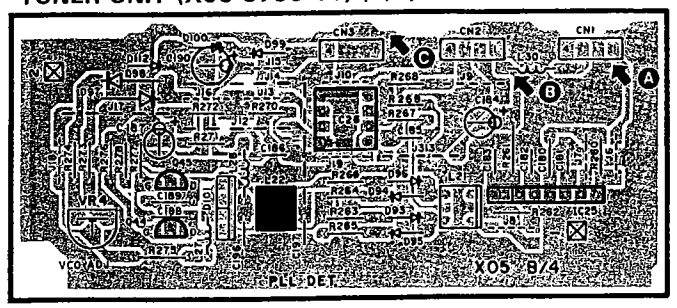


AC120V
50/60Hz

TUNER UNIT (X05-3790-11) (C/4)



TUNER UNIT (X05-3790-11) (B/4)



TUNER UNIT (X05-3790-11) (A/4)

DC voltmeter
(a) BAND EDGE (1) 3.0±0.1 V
(a) BAND EDGE (2) 23.0±0.1 V
(d) BAND EDGE (1) 1.5±0.1 V
(d) BAND EDGE (2) 8.0±0.1 V

FM75Ω
ANTENNA
GND
AM300Ω
AM

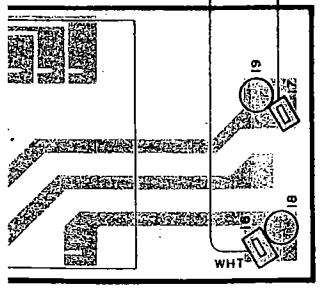
DC voltmeter
(b) DISCRIMINATOR 0±10 mV

DC voltmeter
(c) PLL DETECTOR 0±50 mV

OUTPUT

SYSTEM CONTROL

AC120V
50/60Hz

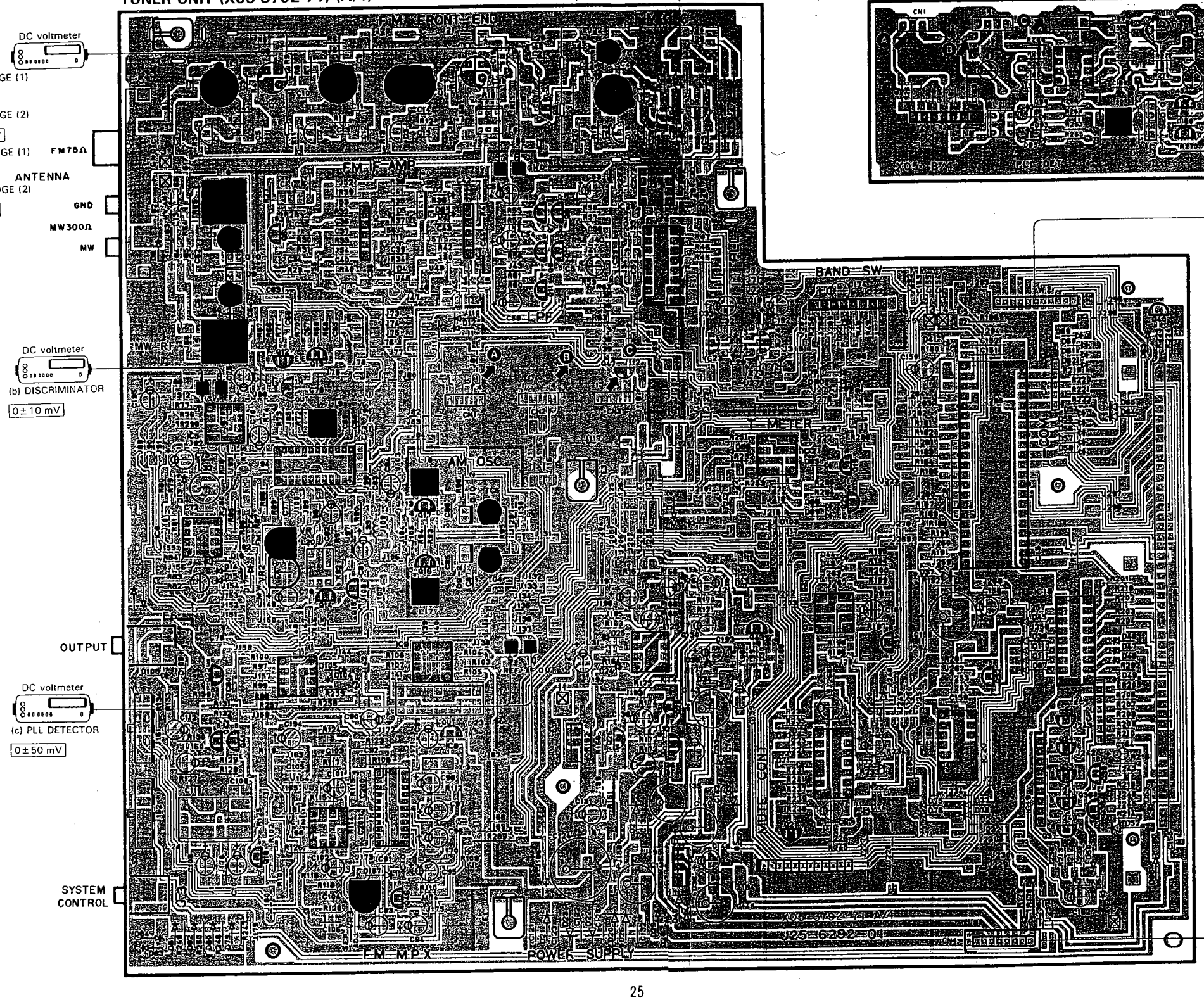


KT-5020 (K)

Refer to the schematic diagram for the values of resistors and capacitors.

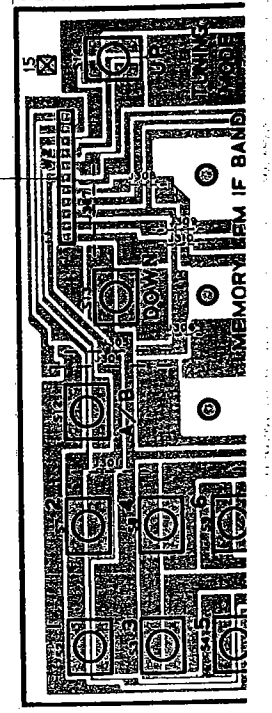
PC BOARD (Component side view) (KT-5020L)

TUNER UNIT (X05-3792-71) (A/4)



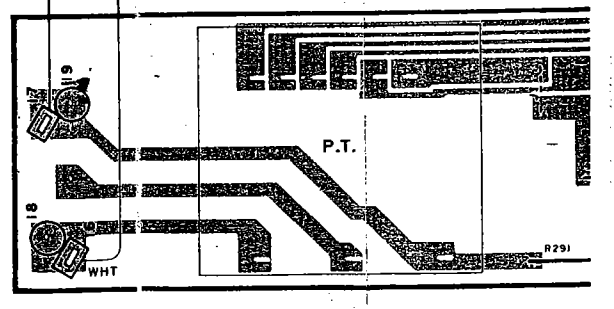
TUNER UNIT (X05-3792-71) (B/4)

TUNER UNIT (X05-

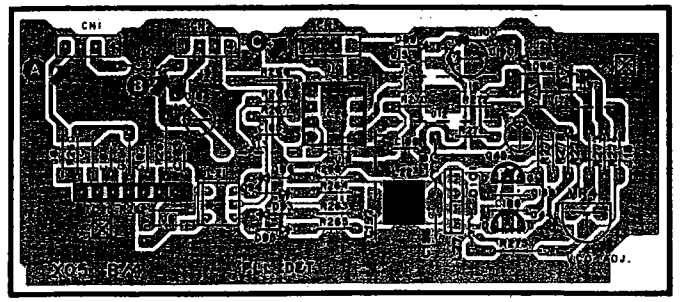


AC220V 50Hz

TUNER UN

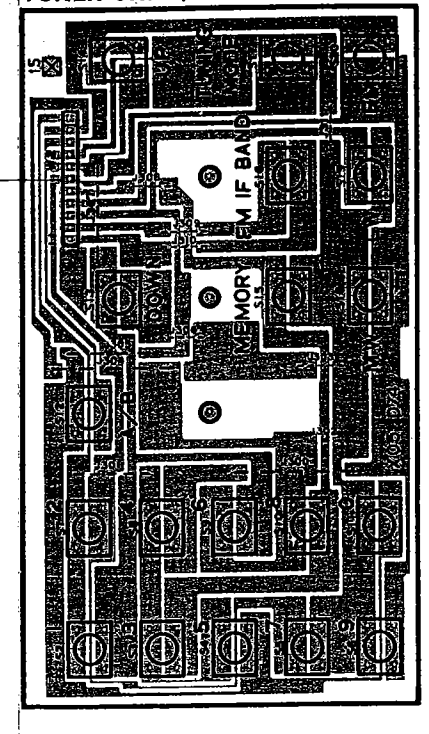


TUNER UNIT (X05-3792-71) (B/4)



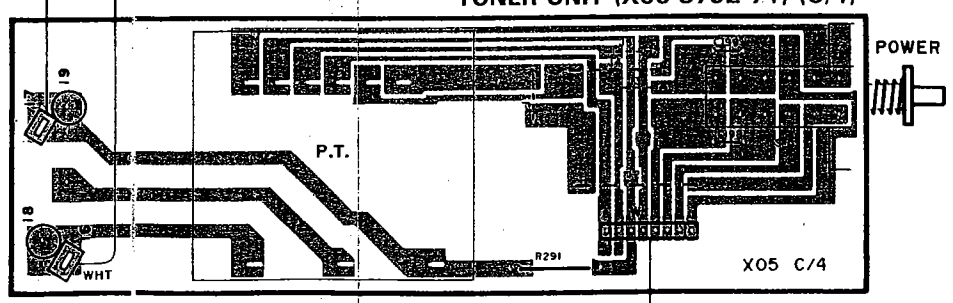
FRONT

TUNER UNIT (X05-3792-71) (D/4)



AC220V 50Hz

TUNER UNIT (X05-3792-71) (C/4)



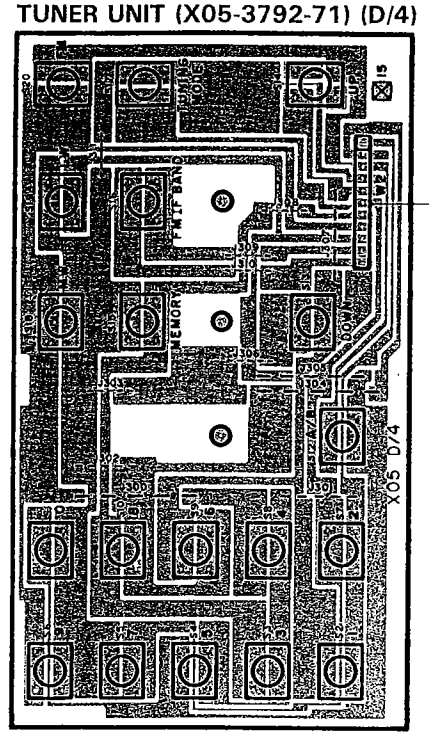
TUNER UNIT
(X05-3792-71)

Ref. No. IC	Ref. No. Q	Address
	1	1AF
	2	1AG
	3	2AG
	4	2AH
	5	2AH
	6	2AF
	7	2AG
	8	2AG
	9	3AG
	10	3AG
	11	3AG
	12	3AE
	13	3AF
	14	5AF
	15	5AF
	16	4AG
	17	4AG
	18	6AE
	19	4AI
	20	4AI
	21	6AI
	22	5AE
	25	6AG
	26	6AH
	27	6AH
	28	5AH
	31	5AI
	32	5AJ
	33	6AJ
	34	6AJ
	35	6AJ
	36	6AJ
	37	6AJ
	38	6AK
	39	6AK
	41	6AE
	42	6AE
	43	5AI
	44	2AK
	45	2AK
	46	7AE
	47	3AH
1		2AF
2		2AG
3		3AH
4		4AF
5		4AE
6		4AE
7		3AF
8		6AG
9		5AG
10		6AF
12		6AF
13		5AF
14		5AH
15		4AJ
16		6AI
17		5AI
18		5AJ
19		6AJ
20		6AJ
21		4AI
22		3AI
23		3AH
24		3AI
25		2AJ
26		1AJ
27		6AH

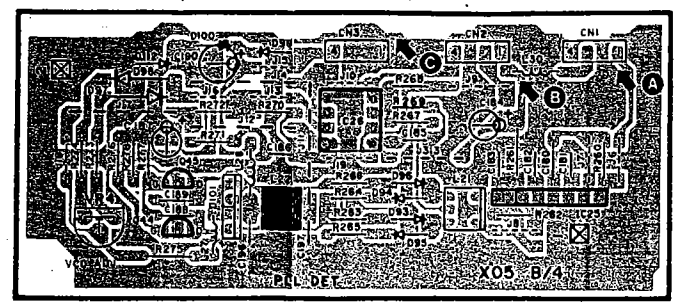
PC BOARD (Foil side view) (KT-5020L)

FRONT

TUNER UNIT (X05-3792-71) (D/4)



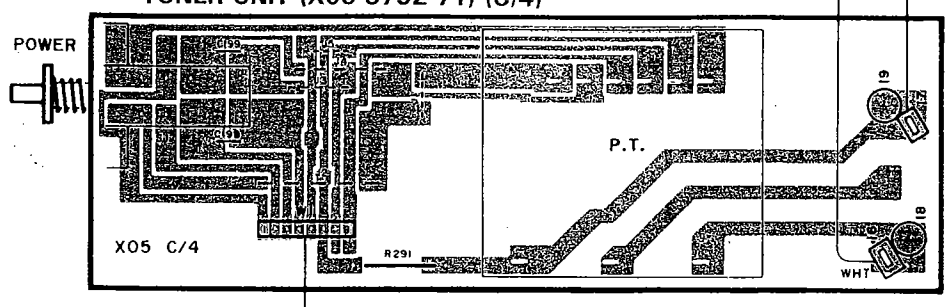
TUNER UNIT (X05-3792-71) (B/4)



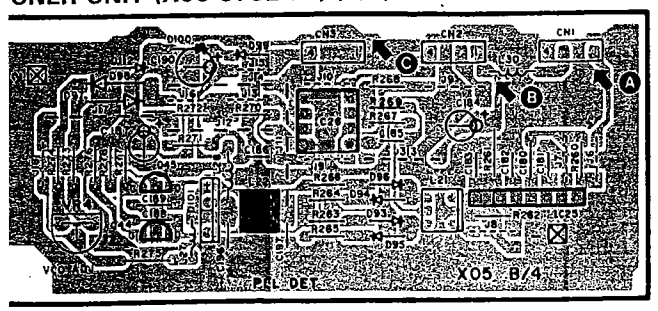
TUNER UNIT (X05-3792-71) (A/4)

AC220V 50Hz

TUNER UNIT (X05-3792-71) (C/4)



TUNER UNIT (X05-3792-71) (B/4)



TUNER UNIT (X05-3792-71) (A/4)

KT-5020L (E)

TUNER UNIT (X05-3792-71)

Ref. No. IC	Ref. No. Q	Address
	1	1BA
	2	1AZ
	3	2AZ
	4	2AY
	5	2AY
	6	2BA
	7	2AZ
	8	2AY
	9	3AZ
	10	3AY
	11	3AZ
	12	3BA
	13	3BA
	14	5BA
	15	5BA
	16	4AZ
	17	4AZ
	18	6BA
	19	4AX
	20	4AX
	21	6AX
	22	5BB
	25	6AY
	26	6AY
	27	6AY
	28	5AY
	31	5AX
	32	5AW
	33	6AV
	34	6AV
	35	6AV
	36	6AV
	37	6AV
	38	6AV
	39	6AV
	41	6BA
	42	6BB
	43	5AX
	44	2AV
	45	2AV
	46	7AZ
	47	3AY
1		2BA
2		2AZ
3		3AY
4		4BA
5		4BB
6		4BB
7		3BA
8		6AZ
9		5AZ
10		6BA
12		6BA
13		5BA
14		5AY
15		4AW
16		6AX
17		5AX
18		5AV
19		6AW
20		6AW
21		4AX
22		3AX
23		3AY
24		3AX
25		2AW
26		1AV
27		6AY

Refer to the schematic diagram for the values of resistors and capacitors.

IC15 : μPD7538AC-045
IC18 : LB1241
IC19 : LB1433N

Q33~37 : DTA114ES
Q38 : 2SA733(A)(Q,P)
or 2SA933S(Q,R)
Q39 : 2SC945(A)(Q,P)
or 2SC1740S(Q,R)

D37,41,42,49~50,52,54~65
: 1SS133 or HSS104
D46~48,53 : RD10ES(B)
or HZS10N(B)
FL1 : FIP11BAM7

+B LINE
-B LINE

(X05-3792-71)(A/4)

(X05-3792-71)(D/4)

IC15 IC18 IC19 FIP1

MICROPROCESSOR

FL DR.

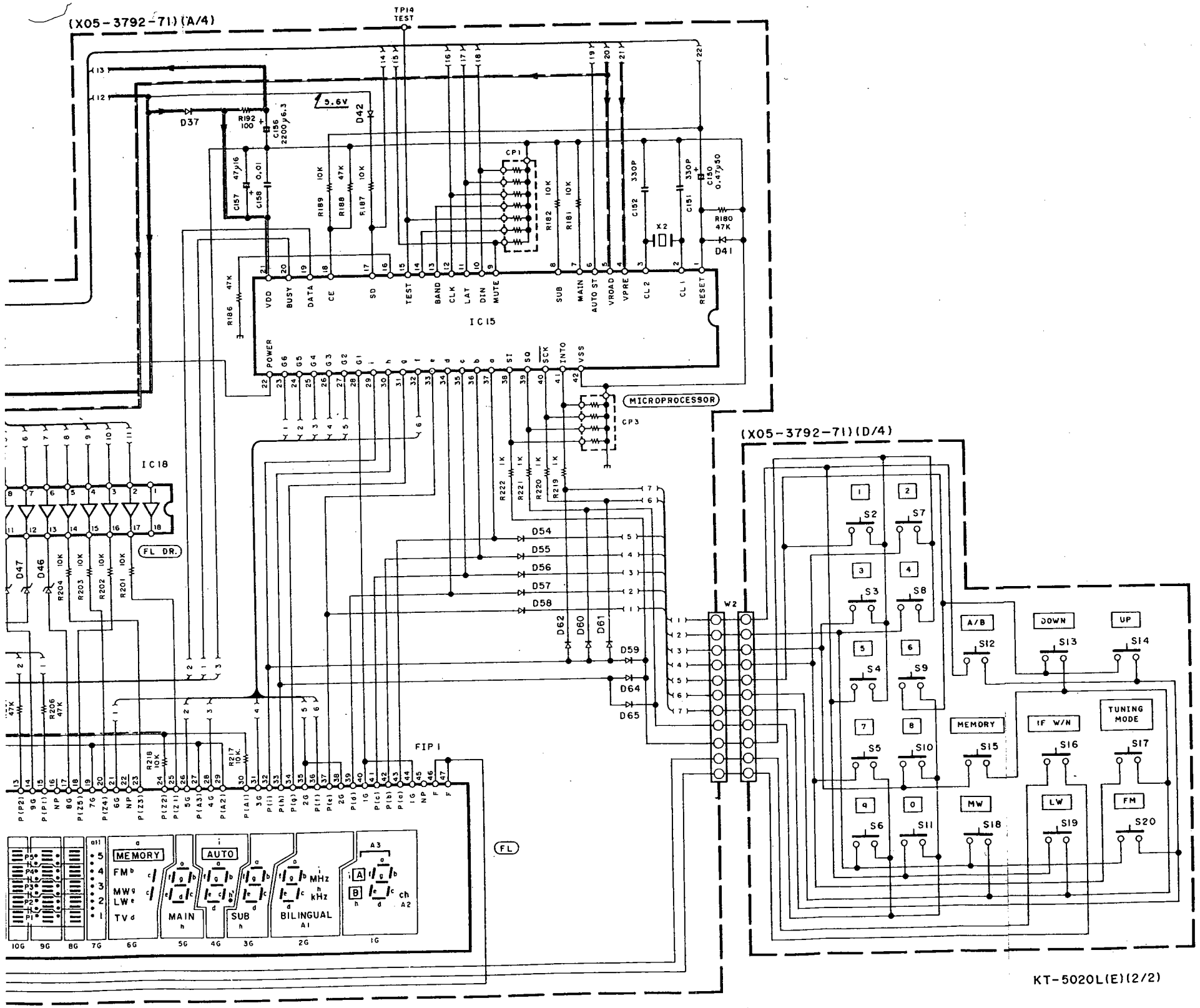
LEVEL COMP.

SYSTEM CONTROL

WIDE
FM IF BAND
NARROW
REC CAL
STEREO
MEMORY
AUTO
MAIN
SUB
BILINGUAL

S2 S7 S3 S8 A/B DOWN S12 S13 S4 S9 S5 S10 MEMORY IF W/N S15 S16 S6 S11 MW LW S18 S19

KT-502(



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).

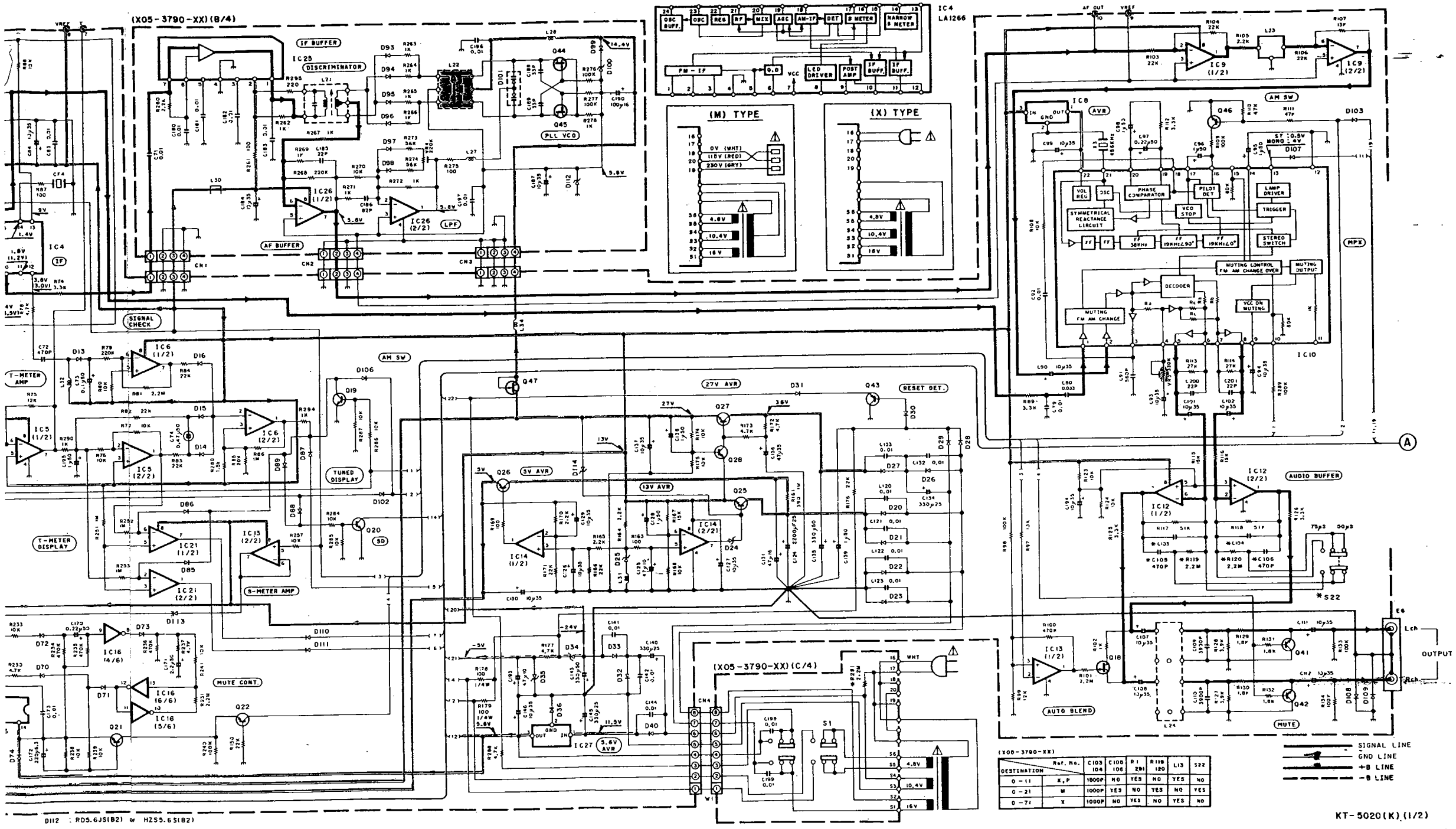
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser bei Empfang eines UKW-Signals (mit einer Feldstärke von 60 dB am Antennenanschluß) gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig. Die eingeklammerten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

(X05-3790-XX)(A/4)

(X05-3790-XX)(B/4)

IC1,2	: BA401	Q1,2	: 3SK122(L)	Q41,42	: 2SD1302(S,T)
IC3	: LM7001	Q3	: 2SK241(GR)	Q44,45	: 2SK161(Y,GR)
IC4	: LA1266	Q4,6	: 2SC1923(R,O)	Q47	: 2SK163(M)
IC5,9	: M5218P	Q5	: 2SK241(Y,GR)		
IC6,13,14,17,21	: M5223P	Q7,8	: 2SK105(F,H)	D1~3,18	: KV1320-4
IC7,8,23,24	: μPC78L10J	Q9,21,22,43	: 2SA733(A)(O,P) or 2SA933S(Q,R)	D4~8,13~16,28~31,36,38,43~45,70~74,85~89 92~96,99,102~111,113	: ISS133 or HSS104
IC10	: LA3401	Q18	: 2SK364(GR,BL)	D10	: KV1236(Z2)
IC12,26	: NJM4560D	Q19,20,28,31,32,46	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)	D20~23,26,27,32,33,40	: S5566B
IC16	: μPD4069UBC	Q14	: DTA114ES	D24	: RD4.7ES(B) or HZS4.7N(B)
IC20	: μPD4013BC	Q15	: DTC114ES	D25	: RD5.1JS(B2) or HZS5.1S(B2)
IC22	: LA7910	Q25	: 2SD1266(Q,P)	D34,35	: RD5.1ES(B2) or HZS5.1N(B2)
IC25	: μPC1163HA	Q26,27	: 2SD863(E,F)	D97,98	: IN60
IC27	: μPC7805HF			D114	: E-272

D100 : RD8.2JS(B2) or HZS8.2S(B2)
D101 : KV1226(X)
D112 : RD5.6JS(B2) or HZS5.6S(B2)



(X05-3790-XX)

DESTINATION \ Ref. No.	C103 104	C105 106	R1 281	R118 120	L13	S22
0 - 11	K, P	1800P	NO	YES	NO	YES	NO
0 - 21	M	1000P	YES	NO	YES	NO	YES
0 - 71	X	1000P	NO	YES	NO	YES	NO

KT-5020(K)(1/2)

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.

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.

Y07-3260-11

KT-502

KENWOOD

(X05-3792-71)(A/4)

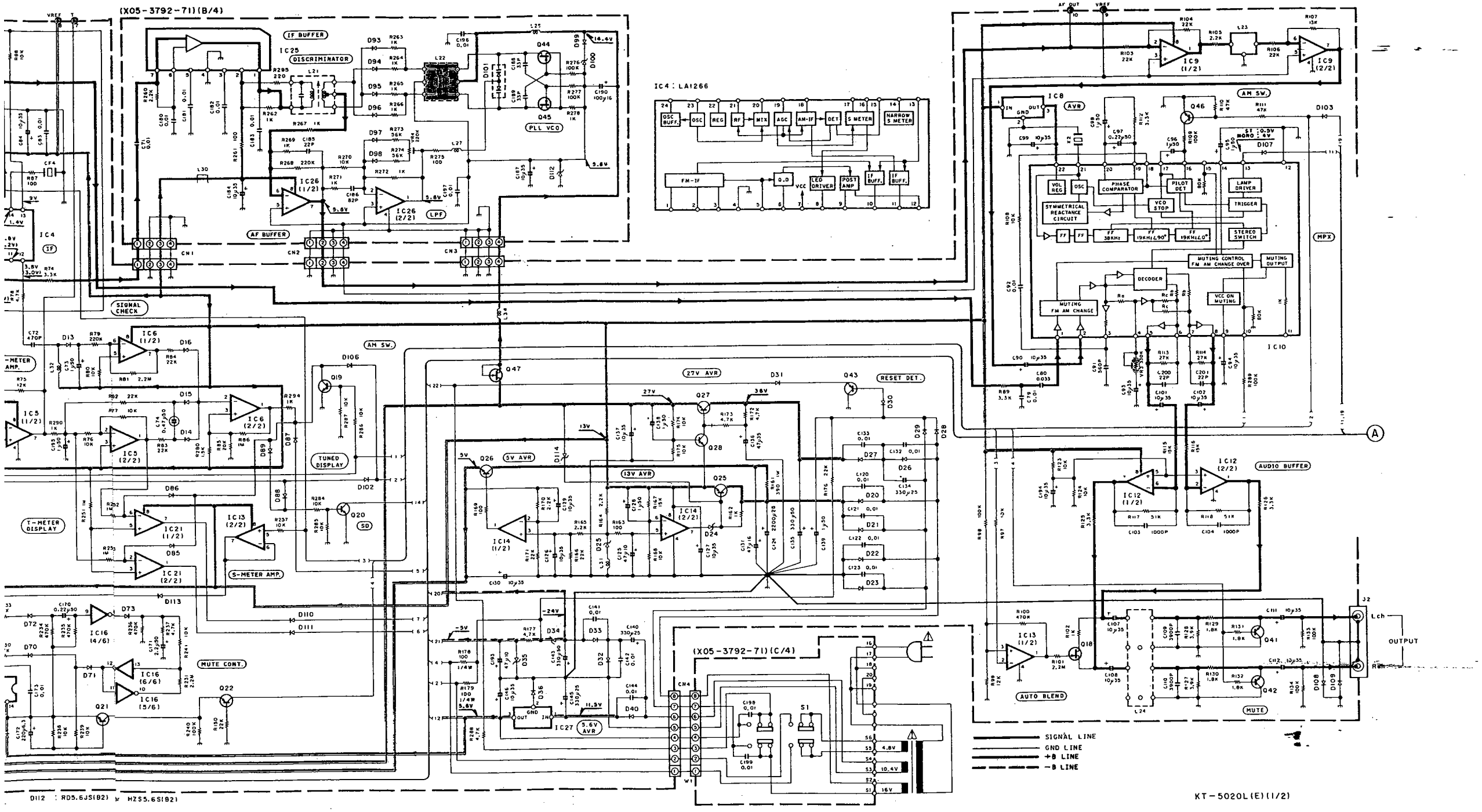
(X05-3792-71)(B/4)

IC1,2	: BA401	Q1,2	: 3SK122(L)	Q41,42	: 2SD1302(S,T)
IC3	: LM7001	Q3	: 2SK241(GR)	Q44,45	: 2SK161(Y,GR)
IC4	: LA1266	Q4,6	: 2SC1923(R,O)	Q47	: 2SK163(M)
IC5,6,9,14	: M5218P	Q5	: 2SK241(Y,GR)		
IC7,8,23,24	: μPC78L10J	Q7,8	: 2SK105(F,H)	D1~3,18	: KV1320-4
IC10	: LA3401	Q9,21,22,43	: 2SA733(A)(Q,P) or 2SA933S(Q,R)	D4~8,11~17,28~31,36,38,43~45,67~74,85~99,102	
IC12,26	: NJM4560D	Q10,16~18	: 2SK364(GR,BL)	D103,106~111,113	: 1SS133 or HSS104
IC13,17,21	: M5223P	Q11~13,19,20,28,31,32,46	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)	D9,10	: KV1236(Z2)
IC16	: μPD4069UBC	Q14	: DTA114ES	D20~23,26,27,32,33,40	: S5566B
IC20	: μPD4013BC	Q15	: DTC114ES	D24	: RD4.7ES(B) or HZS4.7N(B)
IC22	: LA7910	Q25	: 2SD1266(Q,P)	D25	: RD5.1JS(B2) or HZS5.1S(B2)
IC25	: μPC1163HA	Q26,27	: 2SD863(E,F)	D34,35	: RD5.1ES(B2) or HZS5.1N(B2)
IC27	: μPC7805HF			D114	: E-272

D100 : RD8.2JS(B2) or HZS8.2S(B2)

D101 : KV1226(X)

D112 : RD5.6JS(B2) or HZS5.6S(B2)



KT-5020L(E)(1/2)

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.

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.

Y07-3262-71

KT-5020L
KENWOOD

IC15 : μPD7538AC-045
IC18 : LB1241
IC19 : LB1433N

Q33~37 : DTA114ES
Q38,40 : 2SA733(A)(Q,P)
or 2SA933S(Q,R)
Q39 : 2SC945(A)(Q,P)
or 2SC1740S(Q,R)

D37,41,42,49,50,52,54~60
63~66,75~84 : 1SS133 or HSS104
D46~48,53 : RD10ES(B)
or HZS10N(B)
FL1 : FIP11BAM7

+B LINE
-B LINE

(X05-3790-XX)

DESTINATION	Ref. No.	C165	R223 224	D63 66	S21	D60
0-11	K,P	NO	NO	NO	NO	NO
0-21	M	YES	YES	YES	YES	NO
0-71	X	NO	NO	NO	NO	YES

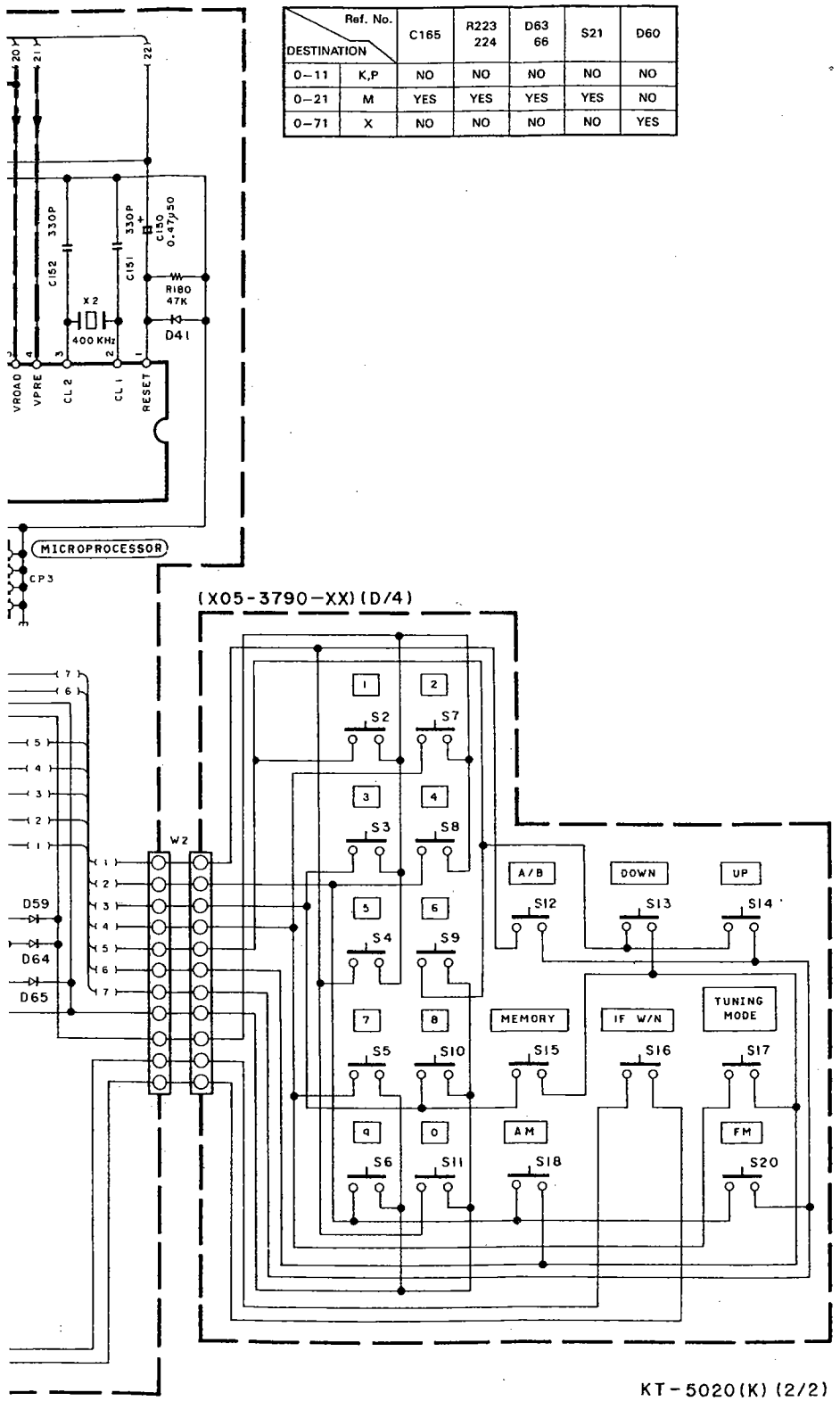
(X05-3790-XX)(A/4)

(X05-3790-XX)(D/4)

KT-502C

(X05-3790-XX)

DESTINATION \ Ref. No.		C165	R223 224	D63 66	S21	D60
0–11	K,P	NO	NO	NO	NO	NO
0–21	M	YES	YES	YES	YES	NO
0–71	X	NO	NO	NO	NO	YES



KT-5020(K)(2/2)

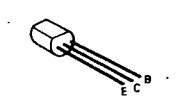
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

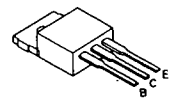
Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance pendant la réception d'un signal de programme FM (avec une force de signal de 60 dB à la borne ANT). Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.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

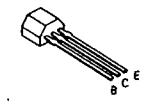
2SA733(A)
2SC1923
2SC945(A)
2SD1302
2SD863



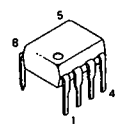
2SD1266



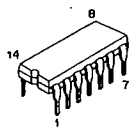
DTA114ES
DTC114ES
2SA933S
2SC1740S



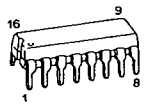
NJM4560D



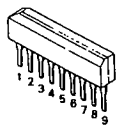
µPD4013BC
µPD4069UBC



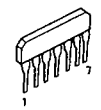
LM7001



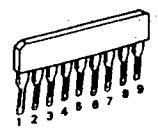
LA7910



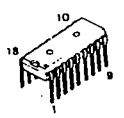
µPC1163HA



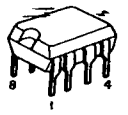
LB1433N



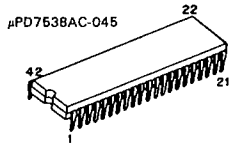
LB1241



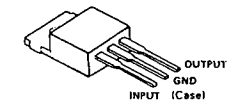
M5218P
M5223P



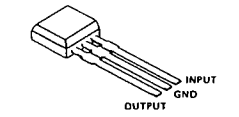
µPD7638AC-045



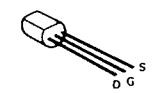
µPC7805HF



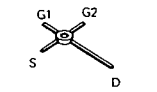
µPC78L10J



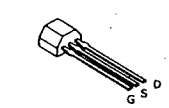
2SK105
2SK163
2SK364



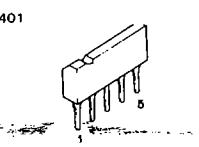
3SK122



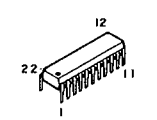
2SK161
2SK241



BA401



LA3401



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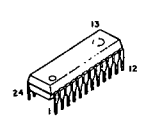

Y07-3260-11

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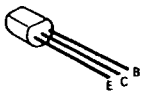
2SC1923
2SC945(A)
2SD1302
2SD863



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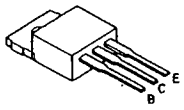

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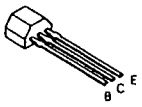
DTC114ES
2SA933S
2SC1740S



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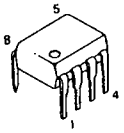

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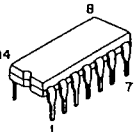
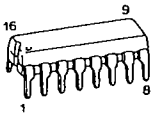
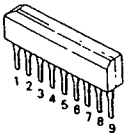
μPD4069UBC



LM7001



LA7910



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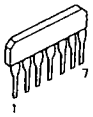
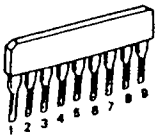


LB1433N



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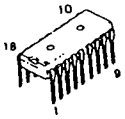

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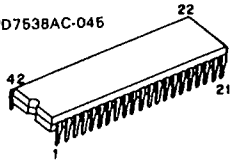
μPD7538AC-045



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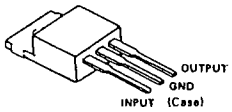

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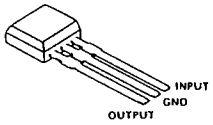
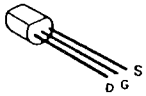
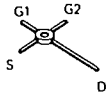


2SK105
2SK163
2SK364



3SK122



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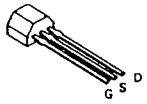
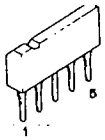
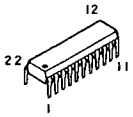
2SK241



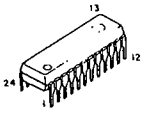
BA401



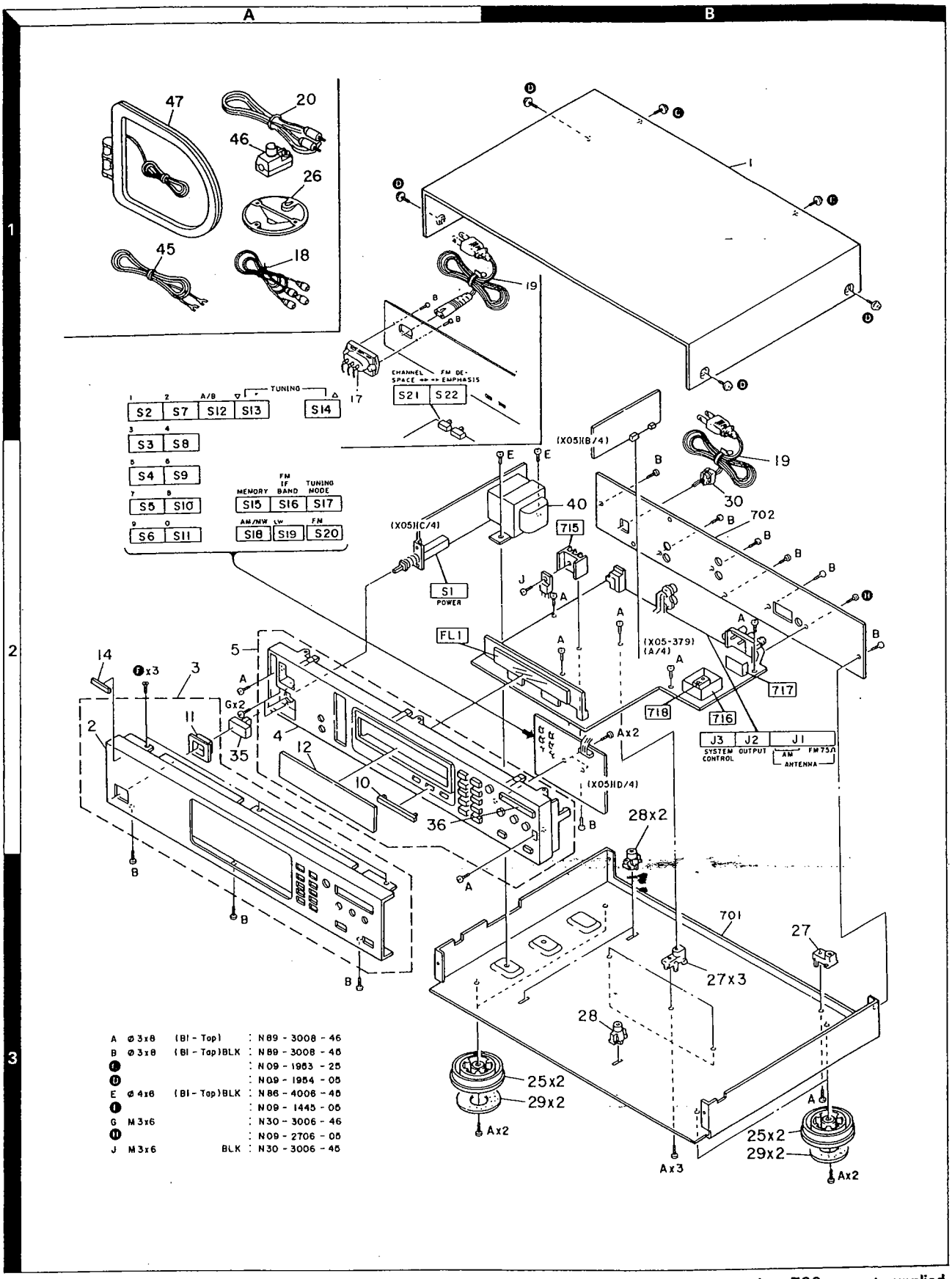
LA3401



LA1266



EXPLODED VIEW



A	Ø3x8	(Bl - Top)	:	N89 - 3008 - 46
B	Ø3x8	(Bl - Top)BLK	:	N89 - 3008 - 46
C			:	N09 - 1963 - 25
D			:	N09 - 1954 - 05
E	Ø4x8	(Bl - Top)BLK	:	N86 - 4006 - 46
F			:	N09 - 1445 - 05
G	M3x6		:	N30 - 3006 - 46
H			:	N09 - 2706 - 05
J	M3x6	BLK	:	N30 - 3006 - 46

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

PARTS LIST

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Telle 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	Destination 仕向	Remarks 備考
			KT-5020/5020L			
1	1B		A01-1801-01	METALLIC CABINET		
2	2A	*	A20-5891-02	PANEL	KPMX	
2	2A	*	A20-5892-02	PANEL	TE	
3	2A	*	A20-5911-02	PANEL ASSY	KPMX	
3	2A	*	A20-5912-02	PANEL ASSY	TE	
4	2A		A22-1128-01	SUB PANEL		
5	2A	*	A22-1144-02	SUB PANEL ASSY	KPMX	
5	2A	*	A22-1145-02	SUB PANEL ASSY	TE	
10	2A	*	B03-2584-04	DRESSING PLATE		
11	2A		B07-1911-04	ESCUTCHEON		
12	2A	*	B10-1044-04	FRONT GLASS		
14	2A		B43-0287-04	KENWOOD BADGE		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0096-13	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-03	WARRANTY CARD	T	
-		*	B50-9842-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B50-9843-00	INSTRUCTION MANUAL(FRENCH)	PME	
-		*	B50-9844-00	INSTRUCTION MANUAL(SPANISH)	M	
-		*	B50-9846-00	INSTRUCTION MANUAL(G,D,I)	E	
-			B58-0269-04	CAUTION CARD	K	
-			B58-0803-13	CAUTION CARD	E	
-		*	B58-0897-00	CAUTION CARD	K	
⚠ 17	2A		E03-0102-25	AC INLET	M	
18	1A		E30-0505-05	AUDIO CORD		
⚠ 19	2B		E30-0459-05	AC POWER CORD	E	
⚠ 19	2B		E30-0974-05	AC POWER CORD	KP	
⚠ 19	2B		E30-1329-05	AC POWER CORD (INLET)	M	
⚠ 19	2B		E30-1341-05	AC POWER CORD	X	
⚠ 19			E30-1416-05	AC POWER CORD	T	
20	1A		E30-0977-05	CORD WITH PLUG	KPMX	
-		*	H01-8624-04	ITEM CARTON CASE	KPMX	
-		*	H01-8625-04	ITEM CARTON CASE	TE	
-			H10-3886-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-3887-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
25	3B		J02-1002-05	FOOT		
26	1A		J19-2815-04	ANTENNA HOLDER		
27	3B	*	J19-3179-05	UNIT HOLDER		
28	2B, 3B		J19-3226-04	HOLDER ASSY		
29	3B		J30-0268-05	SPACER		
⚠ 30	2B		J42-0083-05	POWER CORD BUSHING	KPXTE	
-			J61-0307-05	WIRE BAND		
35	2A		K27-2004-04	KNOB (BUTTON) (POWER)		
36	3A	*	K29-3771-04	KNOB (TUNING)		
⚠ 40	2B	*	L01-8901-05	POWER TRANSFORMER	KP	
⚠ 40	2B	*	L01-8902-05	POWER TRANSFORMER	XTE	

T,E=KT-5020L

E: Scandinavia & Europe K: USA P: Canada
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UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
⚠ 40	2B	*	L01-8904-05	POWER TRANSFORMER			M	
A	2B		N89-3008-46	BINDING HEAD TAPTITE SCREW				
B	2B		N89-3008-45	BINDING HEAD TAPTITE SCREW				
C	1B		N09-1953-25	MACHINE SCREW				
D	1B		N09-1954-05	MACHINE SCREW				
E	2B		N86-4006-45	BINDING HEAD TAPTITE SCREW				
F	2A		N09-1445-05	SET SCREW	(M3X8)			
G	2A		N30-3006-46	PAN HEAD MACHINE SCREW				
H	2B		N09-2706-05	TAPTITE SCREW				
45	1A		T90-0132-05	T TYPE ANTENNA				
46	1A		T90-0136-05	ANTENNA ADAPTOR				
47	1A		T90-0173-05	LOOP ANTENNA				
47	1A		T90-0174-05	LOOP ANTENNA				
TUNER UNIT (X05-3790-11: KT-5020) (X05-3792-71: KT-5020L)								
C2			CC45FSL1H390J	CERAMIC	39PF	J		
C3			CC45FSL1H070D	CERAMIC	7.0PF	D		
C4			CC45FTH1H100D	CERAMIC	10PF	D		
C6			CC45FPH1H390J	CERAMIC	39PF	J		
C7			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C8			CK45FB1H102K	CERAMIC	1000PF	K		
C9 ,10			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C11			CC45FTH1H120J	CERAMIC	12PF	J		
C13 ,14			CC45FPH1H390J	CERAMIC	39PF	J		
C15			CC45FTH1H090D	CERAMIC	9.0PF	D		
C17 ,18			CC45FSL1H100D	CERAMIC	10PF	D		
C19			CC45FSL1H221J	CERAMIC	220PF	J		
C20			C91-0769-05	CERAMIC	0.01UF	M		
C21			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C22			CC45FSL1H030C	CERAMIC	3.0PF	C		
C23			CC45FPH1H330J	CERAMIC	33PF	J		
C24			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C25			CC45FRH1H030C	CERAMIC	3.0PF	C		
C26			CC45FTH1H080D	CERAMIC	8.0PF	D		
C27			CC45FSL1H330J	CERAMIC	33PF	J		
C28			CC45FSL1H150J	CERAMIC	15PF	J		
C29			C91-0757-05	CERAMIC	1000PF	K		
C30			CC45FSL1H010C	CERAMIC	1.0PF	C		
C31			CC45FSL1H390J	CERAMIC	39PF	J		
C32			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C33			CE04KW1V100M	ELECTRO	10UF	35WV		
C34 -38			C91-0769-05	CERAMIC	0.01UF	M		
C39			C91-0749-05	CERAMIC	220PF	K		
C40 -44			C91-0769-05	CERAMIC	0.01UF	M		
C50 ,51			CC45FCH1H390J	CERAMIC	39PF	J		
C52			C91-0769-05	CERAMIC	0.01UF	M		
C53			CE04KW1V100M	ELECTRO	10UF	35WV		
C54			CE04KW1V330M	ELECTRO	33UF	35WV		
C55			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C56			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C57			C90-1331-05	NP-ELEC	0.47UF	50WV		
C58			CE04KW1HR22M	ELECTRO	0.22UF	50WV	TE	
C59			C91-0769-05	CERAMIC	0.01UF	M		
C60			CC45FTH1H101J	CERAMIC	100PF	J	TE	
C61 ,62			CK45FF1H223Z	CERAMIC	0.022UF	Z	TE	

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T,E = KT-5020L

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PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格			Destination 仕向	Remarks 備考
C62			CK45FF1H223Z	CERAMIC	0.022UF	Z	KPMX	
C63			C91-0769-05	CERAMIC	0.01UF	M	KPMX	
C64 -69			C91-0769-05	CERAMIC	0.01UF	M	TE	
C68 ,69			C91-0769-05	CERAMIC	0.01UF	M	KPMX	
C70			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C71			C91-0769-05	CERAMIC	0.01UF	M		
C72			CK45FB1H471K	CERAMIC	470PF	K		
C73			CE04KW1H0R1M	ELECTRO	0.1UF	50WV		
C74			C90-1331-05	NP-ELEC	0.47UF	50WV		
C75			CE04KW1V100M	ELECTRO	10UF	35WV		
C76			C91-0769-05	CERAMIC	0.01UF	M		
C77			CF92FV1H473J	MF	0.047UF	J		
C78			CE04JW1C4R7M	ELECTRO	4.7UF	16WV		
C79			C91-0769-05	CERAMIC	0.01UF	M		
C80			CF92FV1H333J	MF	0.033UF	J		
C81			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C82			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C83			C91-0769-05	CERAMIC	0.01UF	M		
C84			CE04KW1V100M	ELECTRO	10UF	35WV		
C85			CC93FCH1H221J	CERAMIC	220PF	J	TE	
C86			CC93FCH1H391J	CERAMIC	390PF	J		
C87			CC45FCH1H151J	CERAMIC	150PF	J	TE	
C90			CE04KW1V100M	ELECTRO	10UF	35WV		
C91			CC45FSL1H561J	CERAMIC	560PF	J		
C92			C91-0769-05	CERAMIC	0.01UF	M		
C93 ,94			CE04KW1V100M	ELECTRO	10UF	35WV		
C95 ,96			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C97			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C98			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C99			CE04KW1V100M	ELECTRO	10UF	35WV		
C101,102			CE04KW1V100M	ELECTRO	10UF	35WV		
C103,104			CF92FV1H102J	MF	1000PF	J	MXTE	
C103,104			CF92FV1H152J	MF	1500PF	J	KP	
C105,106			CF92FV1H471J	MF	470PF	J	M	
C107,108			CE04KW1V100M	ELECTRO	10UF	35WV		
C109,110			CF92FV1H392J	MF	3900PF	J		
C111,112			CE04KW1V100M	ELECTRO	10UF	35WV		
C120-123			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C124			CE04KW1E222M	ELECTRO	2200UF	25WV		
C125			CE04KW1A470M	ELECTRO	47UF	10WV		
C126,127			CE04KW1V100M	ELECTRO	10UF	35WV		
C128			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C129,130			CE04KW1V100M	ELECTRO	10UF	35WV		
C131			CE04KW1C470M	ELECTRO	47UF	16WV		
C132,133			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C134			CE04KW1E331M	ELECTRO	330UF	25WV		
C135			CE04KW1H331M	ELECTRO	330UF	50WV		
C136			CE04KW1V470M	ELECTRO	47UF	35WV		
C137			CE04KW1V100M	ELECTRO	10UF	35WV		
C138,139			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C140			CE04KW1E331M	ELECTRO	330UF	25WV		
C141,142			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C143			CE04KW1H331M	ELECTRO	330UF	50WV		
C144			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C145			CE04KW1E331M	ELECTRO	330UF	25WV		

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C146			CE04KW1V100M	ELECTRO 10UF 35WV		
C150			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C151-155			C91-0751-05	CERAMIC 330PF K		
C156			CE04KW0J222M	ELECTRO 2200UF 6.3WV		
C157			CE04KW1C470M	ELECTRO 47UF 16WV		
C158-160			C91-0769-05	CERAMIC 0.01UF M		
C161			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C162			CE04KW1V100M	ELECTRO 10UF 35WV		
C164			CE04JW1V2R2M	ELECTRO 2.2UF 35WV		
C165			CK45FF1H103Z	CERAMIC 0.010UF Z	M	
C170			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C171			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C172			CE04KW0J221M	ELECTRO 220UF 6.3WV		
C173			C91-0769-05	CERAMIC 0.01UF M		
C174			CE04KW1C470M	ELECTRO 47UF 16WV		
C180			C91-0769-05	CERAMIC 0.01UF M		
C181-183			CK45FF1H103Z	CERAMIC 0.010UF Z		
C184			CE04KW1V100M	ELECTRO 10UF 35WV		
C185			CC45FSL1H220J	CERAMIC 22PF J		
C186			CC45FSL1H820J	CERAMIC 82PF J		
C187			CE04KW1V100M	ELECTRO 10UF 35WV		
C188,189			C91-0733-05	CERAMIC 33PF J		
C190			CE04KW1C101M	ELECTRO 100UF 16WV		
C191			CE04KW1V100M	ELECTRO 10UF 35WV		
C192			CK45FF1H103Z	CERAMIC 0.010UF Z		
C193			CE04KW1A470M	ELECTRO 47UF 10WV		
C194			CE04KW1V100M	ELECTRO 10UF 35WV		
C195			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C196-199			CK45FF1H103Z	CERAMIC 0.010UF Z		
C200,201			C91-0729-05	CERAMIC 22PF J		
TC1			C05-0302-05	CERAMIC TRIMMER CAPACITOR(11PF		
TC2			C05-0097-05	CERAMIC TRIMMER CAPACITOR(30PF	TE	
TC3			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
TC4			C05-0097-05	CERAMIC TRIMMER CAPACITOR(30PF	TE	
TC5			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
E5	2B		E20-0318-05	SCREW TERMINAL BOARD(2P)		
E6	2B		E13-0235-05	PHONO JACK (2P)(OUTPUT)		
E7	2B		E11-0188-05	MINIATURE PHONE JACK	KPMX	
CF1			L72-0536-05	CERAMIC FILTER	TE	
CF1			L72-0551-05	CERAMIC FILTER	KPMX	
CF2			L72-0541-05	CERAMIC FILTER		
CF3			L72-0536-05	CERAMIC FILTER	TE	
CF3			L72-0546-05	CERAMIC FILTER	KPMX	
CF4			L72-0096-05	CERAMIC FILTER		
L1			L31-0545-05	FM-RF COIL		
L2			L31-0546-05	FM-RF COIL		
L3			L31-0545-05	FM-RF COIL		
L4 ,5			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L6			L30-0434-05	FM IFT		
L7			L32-0270-05	FM OSCILLATING COIL		
L8			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L9 ,10			L92-0017-05	FERRITE CORE		
L11			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L12			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		

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L13			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)	KPX	
L14			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)	TE	
L15			L31-0499-05	LW-RF COIL	TE	
L16			L31-0509-05	MW-RF COIL		
L17			L32-0288-05	LW OSCILLATING COIL	TE	
L18			L32-0277-15	MW OSCILLATING COIL		
L19			L30-0439-25	FM IFT		
L20			L30-0467-05	AM IFT		
L21			L30-0434-05	FM IFT		
L22			L32-0294-05	FM OSCILLATING COIL		
L23			L79-0162-05	LC FILTER		
L24			L79-0154-05	LC FILTER		
L26			L40-1092-17	SMALL FIXED INDUCTOR(1UH,M)		
L27 ,28			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L29 ,30			L92-0017-05	FERRITE CORE		
L31			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
L32			L40-6825-29	SMALL FIXED INDUCTOR(6.8MH,J)		
L33			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L34			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
X1			L77-0578-05	CRYSTAL RESONATOR(7.2MHZ)		
X2			L78-0202-05	RESONATOR (400KHZ)		
X3			L78-0208-05	RESONATOR (456KHZ)		
B	2B		N89-3008-45	BINDING HEAD TAPTITE SCREW		
J	2B	*	N30-3006-45	PAN HEAD MACHINE SCREW		
CP1			R90-0234-05	MULTI-COMP 10KX7 J 1/6W		
CP2			R90-0274-05	MULTI-COMP 47KX5 J 1/6W		
CP3			R90-0202-05	MULTI-COMP 47KX4 J 1/6W		
R1			RC05GF2H185M	RC 1.8M M 1/2W	KP	
R63			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R161			RS14KB3A391J	FL-PROOF RS 390 J 1W		
R291			R92-0173-05	RC 2.2M M 1/2W	KP	
VR1 ,2			R12-3130-05	TRIMMING POT.(33K)		
VR3			R12-6016-05	TRIMMING POT.(330K)		
VR4		*	R12-5061-05	TRIMMING POT.(220K)		
S1	2A		S40-4061-05	PUSH SWITCH (POWER)		
S2 -18	1A,2A		S40-1064-05	PUSH SWITCH (1-0,A/B)	KPMX	
S2 -20	2A		S40-1064-05	PUSH SWITCH (1-0,A/B)	TE	
S20	2A		S40-1064-05	PUSH SWITCH (FM)	KPMX	
S21 ,22	1B		S31-2094-05	SLIDE SWITCH (CHANGE SPACE)	M	
D1 -3			KV1320-4	VARIABLE CAPACITANCE DIODE		
D4 -8			HSS104	DIODE		
D4 -8			1SS133	DIODE		
D9 ,10			KV1236(Z2)	VARIABLE CAPACITANCE DIODE	TE	
D10			KV1236(Z2)	VARIABLE CAPACITANCE DIODE	KPMX	
D11 -16			HSS104	DIODE	TE	
D11 -16			1SS133	DIODE	TE	
D13 -16			HSS104	DIODE	KPMX	
D13 -16			1SS133	DIODE	KPMX	
D18			KV1320-4	VARIABLE CAPACITANCE DIODE		
D20 -23			S5566B	DIODE		
D24			HZS4.7N(B)	ZENER DIODE		
D24			RD4.7ES(B)	ZENER DIODE		
D25			HZS5.1S(B2)	ZENER DIODE		
D25			RD5.1JS(B2)	ZENER DIODE		

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D26 ,27			S5566B	DIODE		
D28 -31			HSS104	DIODE		
D28 -31			1SS133	DIODE		
D32 ,33			S5566B	DIODE		
D34 ,35			HZS5.1N(B2)	ZENER DIODE		
D34 ,35			RD5.1ES(B2)	ZENER DIODE		
D36 -38			HSS104	DIODE		
D36 -38			1SS133	DIODE		
D40			S5566B	DIODE		
D41 -45			HSS104	DIODE		
D41 -45			1SS133	DIODE		
D46 -48			HZS10N(B)	ZENER DIODE		
D46 -48			RD10ES(B)	ZENER DIODE		
D49 ,50			HSS104	DIODE		
D49 ,50			1SS133	DIODE		
D52			HSS104	DIODE		
D52			1SS133	DIODE		
D53			HZS10N(B)	ZENER DIODE		
D53			RD10ES(B)	ZENER DIODE		
D54 -59			HSS104	DIODE	KPMX	
D54 -59			1SS133	DIODE	KPMX	
D54 -62			HSS104	DIODE	TE	
D54 -62			1SS133	DIODE	TE	
D60			HSS104	DIODE	X	
D60			1SS133	DIODE	X	
D63 -66			HSS104	DIODE	M	
D63 -66			1SS133	DIODE	M	
D64 ,65			HSS104	DIODE	KPXTE	
D64 ,65			1SS133	DIODE	KPXTE	
D70 -74			HSS104	DIODE	TE	
D70 -74			1SS133	DIODE	TE	
D70 -89			HSS104	DIODE	KPMX	
D70 -89			1SS133	DIODE	KPMX	
D85 -96			HSS104	DIODE	TE	
D85 -96			1SS133	DIODE	TE	
D92 -96			HSS104	DIODE	KPMX	
D92 -96			1SS133	DIODE	KPMX	
D97 ,98			1N60	DIODE		
D99			HSS104	DIODE		
D99			1SS133	DIODE		
D100			HZS8.2S(B2)	ZENER DIODE		
D100			RD8.2JS(B2)	ZENER DIODE		
D101			KV1226(X)	VARIABLE CAPACITANCE DIODE		
D102-111			HSS104	DIODE		
D102-111			1SS133	DIODE		
D112		*	HZS5.6S(B2)	ZENER DIODE		
D112		*	RD5.6JS(B2)	ZENER DIODE		
D113			HSS104	DIODE		
D113			1SS133	DIODE		
D114			E-272	ZENER DIODE		
FL1	2A		FIP11BAM7	FLUORESCENT INDICATOR TUBE		
IC1 ,2			BA401	IC(FM IF)		
IC3			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC4		*	LA1266	IC(AM/FM IF)		
IC5			M5218P	IC(OP AMP X2)		

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IC6			M5223P	IC(OP AMP X2)		
IC7 ,8			UPC78L10J	IC(VOLTAGE REGULATOR/ +10V)		
IC9			M5218P	IC(OP AMP X2)		
IC10			LA3401	IC(FM MPX)		
IC12			NJM4560D	IC(OP AMP X2)		
IC13,14			M5223P	IC(OP AMP X2)		
IC15			UPD7538AC-045	IC(MICROPROCESSOR)		
IC16			UPD4069UBC	IC(INVERTER X6)		
IC17			M5223P	IC(OP AMP X2)		
IC18			LB1241	IC(FL DRIVER)		
IC19			LB1433N	IC(LEVEL METER DRIVER)		
IC20			UPD4013BC	IC(D FLIP-FLOP X2)		
IC21			M5223P	IC(OP AMP X2)		
IC22			LA7910	IC(ELECTRON TV TUNER BAND SEL)		
IC23,24			UPC78L10J	IC(VOLTAGE REGULATOR/ +10V)		
IC25			UPC1163HA	IC(IF AMP)		
IC26			NJM4560D	IC(OP AMP X2)		
IC27			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
Q1 ,2			3SK122(L)	FET		
Q3			2SK241(GR)	FET		
Q4			2SC1923(R,O)	TRANSISTOR		
Q5			2SK241(Y,GR)	FET		
Q6			2SC1923(R,O)	TRANSISTOR		
Q7 ,8			2SK105(F,H)	FET		
Q9			2SA733(A)(Q,P)	TRANSISTOR		
Q9			2SA933S(Q,R)	TRANSISTOR		
Q10			2SK364(GR,BL)	FET	TE	
Q11 -13			2SC1740S(Q,R)	TRANSISTOR	TE	
Q11 -13			2SC945(A)(Q,P)	TRANSISTOR	TE	
Q14			DTA114ES	DIGITAL TRANSISTOR		
Q15			DTC114ES	DIGITAL TRANSISTOR		
Q16 -18			2SK364(GR,BL)	FET	TE	
Q18			2SK364(GR,BL)	FET	KPMX	
Q19 ,20			2SC1740S(Q,R)	TRANSISTOR		
Q19 ,20			2SC945(A)(Q,P)	TRANSISTOR		
Q21 ,22			2SA733(A)(Q,P)	TRANSISTOR		
Q21 ,22			2SA933S(Q,R)	TRANSISTOR		
Q25			2SD1266(Q,P)	TRANSISTOR		
Q26 ,27			2SD863(E,F)	TRANSISTOR		
Q28			2SC1740S(Q,R)	TRANSISTOR		
Q28			2SC945(A)(Q,P)	TRANSISTOR		
Q31 ,32			2SC1740S(Q,R)	TRANSISTOR		
Q31 ,32			2SC945(A)(Q,P)	TRANSISTOR		
Q33 -37			DTA114ES	DIGITAL TRANSISTOR		
Q38			2SA733(A)(Q,P)	TRANSISTOR		
Q38			2SA933S(Q,R)	TRANSISTOR		
Q39			2SC1740S(Q,R)	TRANSISTOR		
Q39			2SC945(A)(Q,P)	TRANSISTOR		
Q40			2SA733(A)(Q,P)	TRANSISTOR	M	
Q40			2SA933S(Q,R)	TRANSISTOR	M	
Q41 ,42			2SD1302(S,T)	TRANSISTOR		
Q43			2SA733(A)(Q,P)	TRANSISTOR		
Q43			2SA933S(Q,R)	TRANSISTOR		
Q44 ,45			2SK161(Y,GR)	FET		
Q46			2SC1740S(Q,R)	TRANSISTOR		

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Q46			2SC945(A)(Q,P)	TRANSISTOR		
Q47			2SK163(M)	FET		

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KT-5020/5020L

SPECIFICATIONS

KT-5020

FM tuner Section

Tuning frequency range	87.5 MHz – 108 MHz
Usable sensitivity (MONO)	0.95 μV/10.8 dBf
50 dB quieting sensitivity	
MONO	1.8 μV/16.2 dBf
STEREO	24 μV/38.8 dBf
Total harmonic distortion (at 1 kHz)	
MONO	0.04% (WIDE)
STEREO	0.06% (WIDE)
Signal to noise ratio (at 1 kHz, 85 dBf input)	
MONO	88 dB
STEREO	82 dB
Stereo separation	
1 kHz	55 dB (WIDE)
Captuer ratio	1.0 dB (WIDE), 2.5 dB (NARROW)
Alternate channel selectivity	
(± 400 kHz)	60 dB (WIDE)
Image rejection ratio (at 98 MHz)	82 dB
IF rejection ratio (at 98 MHz)	110 dB
Spurious rejection ratio (at 98 MHz)	105 dB
AM suppression ratio	76 dB
Frequency response	
(20 Hz – 15 kHz)	+0.5 dB, −0.5 dB
Output level/Impedance	
(at 1 kHz, 100% dev.)	0.6V/3.3kΩ

AM Tuner Section

Tuning frequency range	
531 kHz – 1,602 kHz	9 kHz step
530 kHz – 1,610 kHz	10 kHz step
Usable sensitivity	10 μV (350 μV/m)
Signal to noise ratio	
(at 30% mod. 1mV input)	52 dB
Total harmonic distortion	0.3%
Image rejection ratio (Loop)	40 dB
Selectivity	30 dB
Output level/Impedance	
(at 30% mod.)	0.18 V/3.3 kΩ

General

Power consumption	15 W
Dimension	W 440 mm (17-5/16")
	H 98 mm (3-7/8")
	D 318 mm (12-1/2")
Weight	4.3 kg (9.46 lb)

KT-5020L

FM tuner Section

Tuning frequency range	87.5 MHz – 108 MHz
Usable sensitivity (DIN)	
MONO	0.7 μV
STEREO	25μV
Limiting level (DIN at 75 Ω)	0.45 μV
Total harmonic distortion (DIN at 1 kHz)	
MONO	0.07% (WIDE)
STEREO	0.2% (WIDE)
Signal to noise ratio	
(DIN weighted at 1 kHz, 65.2 dBf input)	
MONO	78 dB
STEREO	67 dB
Stereo separation (DIN)	
1 kHz	52 dB (WIDE)
6.3 kHz	42 dB (WIDE)
Captuer ratio	1.0 dB (WIDE), 2.5 dB (NARROW)
Alternate channel selectivity	
(DIN ± 300 kHz)	75 dB (NARROW)
Image rejection ratio (at 98 MHz)	82 dB
IF rejection ratio (at 98 MHz)	110 dB
Spurious rejection ratio (at 98 MHz)	105 dB
AM suppression ratio	76 dB
Frequency response	
(20 Hz – 15 kHz)	+0.5 dB, −0.5 dB
Output level/Impedance	
(at 1 kHz, 100% dev.)	0.6V/3.3kΩ

MW Tuner Section

Tuning frequency range	531 kHz – 1,602 kHz
Usable sensitivity	10 μV (350 μV/m)
Signal to noise ratio	
(at 30% mod. 1mV input)	52 dB
Total harmonic distortion	0.3%
Image rejection ratio (Loop)	40 dB
Selectivity	30 dB
Output level/Impedance	
(at 30% mod.)	0.18 V/3.3 kΩ

LW Tuner Section

Tuning frequency range	153 kHz – 281 kHz
Usabel sensitivity	10 μV (600 μV/m)
Signal to noise ratio	
(at 30% mod. 1mV input)	50 dB
Total harmonic distortion	0.4%
Image rejection ratio (Loop)	40 dB
Selectivity	30 dB
Output level/Impedance	
(at 30% mod.)	0.18 V/3.3 kΩ

General

Power consumption	15 W
Dimension	W 440 mm
	H 98 mm
	D 318 mm
Weight (Net)	4.3 kg

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui doncerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

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