Dual

Service-Anleitung
Service Manual
Instructions de Service

CT 3700

Technische Daten (typische Werte)	**Specifications** (typical values)	**Caractéristiques techniques** (valeurs types)	**Dati tecnici** (valori tipici)	**Dual CT 3700**
Empfangsbereiche FM (UKW) AM (MW) AM (LW)	**Reception wavebands** FM (VHF) AM (MW) AM (LW)	**Games de fréquences** FM (OC) AM (OM) AM (LW)	**Campi di ricezione** FM (OUC) AM (onde medie) AM (LW)	87– 108 MHz 522–1611 kHz 146– 290 kHz
Empfindlichkeit (an 75 Ω) FM – Mono (26 dB) FM – Stereo (46 dB)	**Sensitivity** (at 75 Ω) FM – mono (26 dB) FM – stereo (46 dB)	**Sensibilité** (à 75 ohms) FM – Mono (26 dB) FM – Stéréo (46 dB)	**Sensibilità** (su 75 ohm) FM – mono (26 dB) FM – stereo (46 dB)	1,1 µV 32 µV
Trennschärfe FM stat./dyn.	**FM selectivity** stat./dyn.	**Sélectivité** FM stat./dyn.	**Selettività** FM stat./din.	75/65 dB
Geräuschspannungsabstand	**Signal/noise ratio**	**Rapport signal/bruit**	**Rapporto segnale disturbo**	67 dB
Netzspannung Model Europa Model USA/Kanada	**Mains voltage** European model US/Canadian model	**Voltage secteur** Modèle Europe Modèle USA/Canada	**Tensione di rete** modello Europa modello Stati Uniti/Canada	230 V/50 Hz 115 V/60 Hz
Maße (Breite × Höhe × Tiefe)	**Dimensions** (width × height × depth)	**Dimensions** (largeur × hauteur × profondeur)	**Dimensioni** (larghezza × altezza × profondità)	360 × 70 × 280 mm

Dual GmbH · Postfach 1144 · 7742 St. Georgen/Schwarzwald

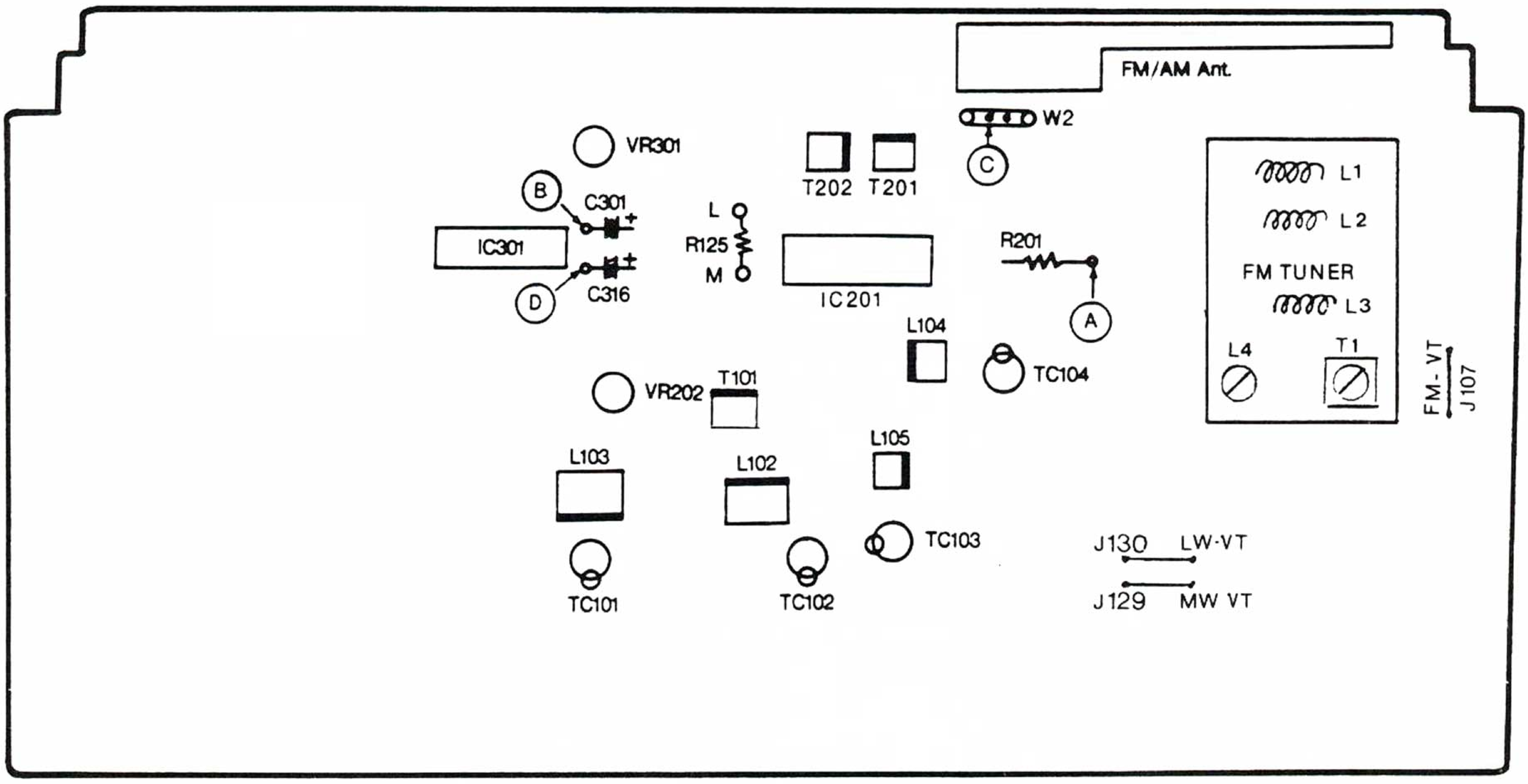
921 659 0792

Abgleichanleitung CT 3700

Signalquelle	Einstellung Gerät	Einstellung Signalquelle	Meßgerät-Anschluß	Abgleichposition	Abgleich, Bemerkung
1) FM-Oszillator					
	108 MHz		DC-Voltmeter an TP-VT	L 4	8 V DC ± 0,10 V
	87,5 MHz			Kontrolle	ca. 1,6 V DC
2) FM-ZF, Vorkreis					
FM-Meßsender an 75 Ohm Antenneneingang	Senderfreie Frequenz ca. 98 MHz	0–1 mV, Hub ± 40 kHz, Mod. 1 kHz ca. 98 MHz auf Deckung	Klirrfaktormeßbrücke, Oszilloskop an NF-Ausgang	T 1, T 102	NF-Maximum
				T 201	NF und Klirrfaktor Minimum
	ca. 90 MHz	ca. 90 MHz auf Deckung		Luftspulen L 1, L 2, L 3	NF-Maximum
3) FM-ZF (Feinabgleich)					
Antenne an 75 Ohm Antenneneingang	Starken FM-Sender auf seiner Sollfrequenz empfangen		DC-Voltmeter über R 125	T 201	DC Max. und DC Min. ermittteln
				T 201	Spannungsmitte einstellen
				T 202	0 V ± 10 mV DC
				Abgleich wiederholen	
4) Mono-Stereo-Übergang-Suchlaufschwelle, Kanaltrennung					
FM-Meßsender an 75 Ohm Antenneneingang	Senderfreie Frequenz ca. 98 MHz	ca. 98 MHz auf Deckung Hub ± 40 kHz, Mod. 1 kHz, 19 kHz Pilot ein 5 µV	Kontrolle am Display	VR 202	„TUNED"-Anzeige muß aufleuchten
	Mode-Taste: Stereo	1 mV	NF-Voltmeter, Oszilloskop an NF-Ausgang	VR 301	Max. Kanaltrennung
5) Unterdrückung Pilotton (19 kHz)					
FM-Meßsender an 75 Ohm Antenneneingang	Senderfreie Frequenz ca. 98 MHz	ca. 98 MHz auf Deckung 1–2 mV 19 kHz Pilot ein	NF-Voltmeter, Oszilloskop an NF-Ausgang	LPF 301 (LK)	Minimum
				LPF 302 (RK)	
6) AM-Oszillator					
	MW 522 kHz		DC-Voltmeter an MW-VT	L 105	1,6 V DC ± 0,05 V
	MW 1611 kHz			TC 103	8,3 V DC ± 0,1 V
	LW 146 kHz		DC-Voltmeter an LW-VT	L 104	3,8 V DC ± 0,05 V
	LW 290 kHz			TC 104	8,3 V DC ± 0,1 V
7) AM-ZF, Vorkreis					
AM-Meßsender an AM-Antennen-eingang	MW 999 kHz	20µV–1 mV, 1 kHz Mod. 30 %. 999 kHz	NF-Voltmeter Oszilloskop an NF-Ausgang	T 101	Maximum
	MW 604 kHz	604 kHz		L 103	
	MW 1404 kHz	1404 kHz		TC 101	
	LW 164 kHz	164 kHz		L 102	
	LW 254 kHz	254 kHz		TC 102	
				Abgleich wiederholen	

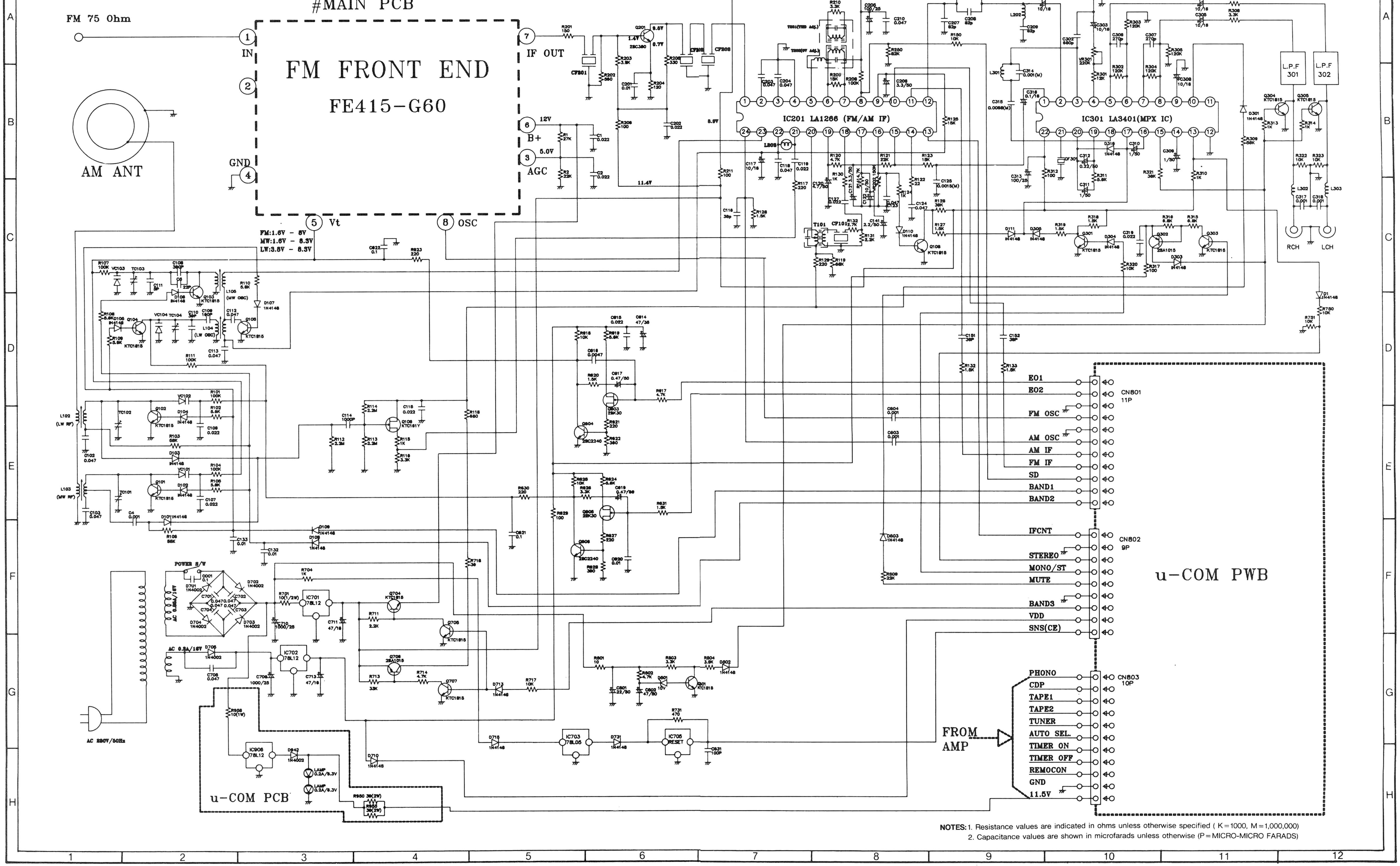
Tuning Instructions for CT 3700

Signal source	Equipment setting	Signal source setting	Connection of measuring instrument	Item to be tuned	Tuning, Remarks
1) FM oscillator					
	108 MHz		DC voltmeter to FM-VT	L 4	8 V DC ± 0,10 V
	87,5 MHz			Check	approx. 1,6 V DC
2) FM IF, input circuit					
FM signal generator to 75 ohm antenna input	Frequency without transmitters approx. 98 MHz	0–1 mV, Shift ± 40 kHz, Mod. 1 kHz Tune to approx. 98 MHz	Harmonic detector oscilloscope to AF output	T 1, T 102	AF maximum
				T 201	AF and harmonic distortion minimum
	90 MHz	Tune to approx. 90 MHz		aircoils L 1, L 2, L 3	AF maximum
3) FM IF (fine tuning)					
Antenna to 75 ohm antenna input	Receive strong FM transmitter at its nominal frequency		DC voltmeter to R 125	T 201	Determine DC max. and DC min.
				T 201	Adjust power mean
				T 202	0 V ± 10 mV DC
				Repeat tuning	
4) Transition between monaural, stereo and muting; signal indication, channel separation					
FM signal generator to 75 ohm antenna input	Frequency without transmitters approx. 98 MHz	Tune to approx. 98 MHz Shift ± 40 kHz, Mod. 1 kHz, 19 kHz pilot ON 5 µV	Test the display	VR 202	“TUNED“ must light up
	Mode Key: Stereo	1 mV	AF voltmeter, oscilloscope to AF output	VR 301	Maximum channel separation
5) Suppression of residual pilot frequencies (19 kHz)					
FM signal generator to 75 Ohm antenna input	Frequency without transmitters approx. 98 MHz	Tune to approx. 98 MHz 1–2 mV 19 kHz pilot ON	AF voltmeter, oscilloscope to AF output	LPF 301 (left channel)	Minimum
				LPF 302 (right channel)	
6) AM oscillator					
	AM 522 kHz		DC voltmeter to AM-VT	L 105	1.6 V DC ± 0.05 V
	AM 1611 kHz			TC 103	8.3 V DC ± 0.1 V
	LW 146 kHz		DC voltmeter to LW-VT	L 104	3.8 V DC ± 0.05 V
	LW 290 kHz			TC 104	8.3 V DC ± 0.1 V
7) AM IF, input circuit					
AM signal generator to AM antenna input	AM 999 kHz	20µV–1 mV, 1 kHz Mod. 30 %. 999 kHz	AF voltmeter oscilloscope to AF output	T 101	Maximum
	AM 604 kHz	604 kHz		L 103	
	AM 1404 kHz	1404 kHz		TC 101	
	LW 164 kHz	164 kHz		L 102	
	LW 254 kHz	254 kHz		TC 102	
				Repeat input circuit tuning	



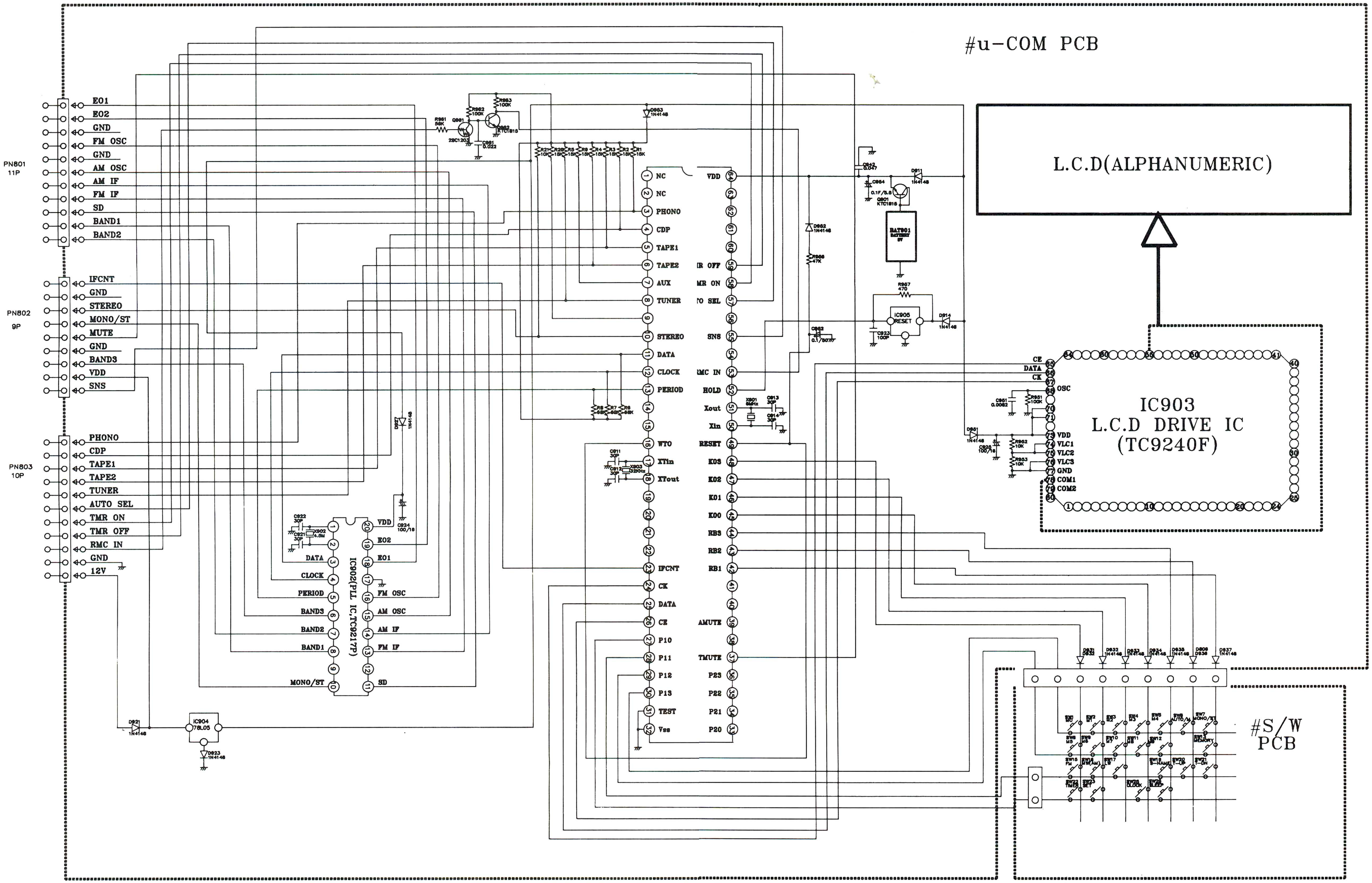
FM/AM Ant.
W2
C
VR301
T202
T201
B
C301
L
R125
M
IC301
D
C316
IC201
R201
A
L1
L2
FM TUNER
L3
L4
T1
FM-VT
J107
L104
TC104
VR202
T101
L105
L103
L102
TC103
TC101
TC102
J130
LW-VT
J129
MW VT

SCHEMATIC DIAGRAM

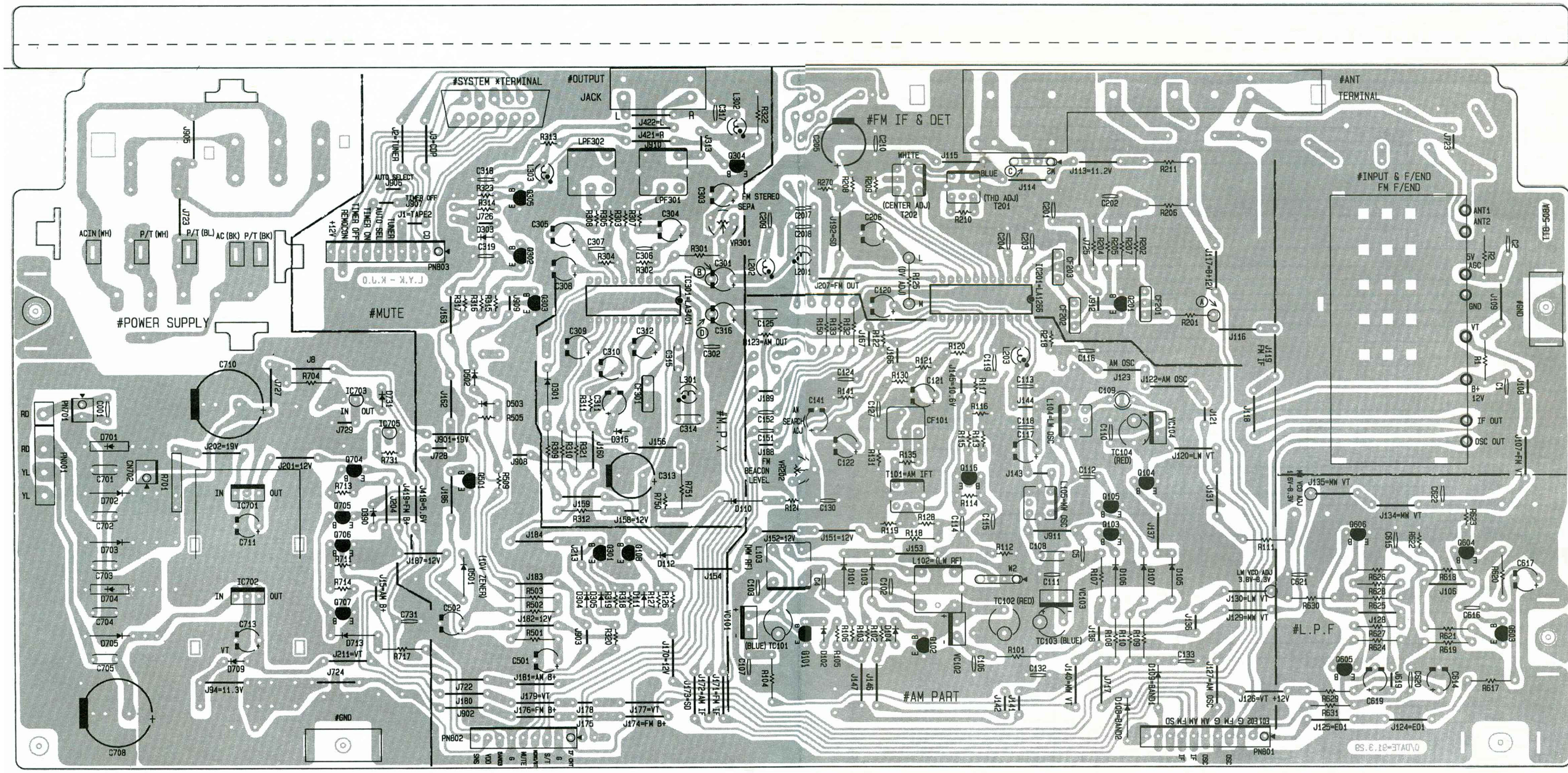


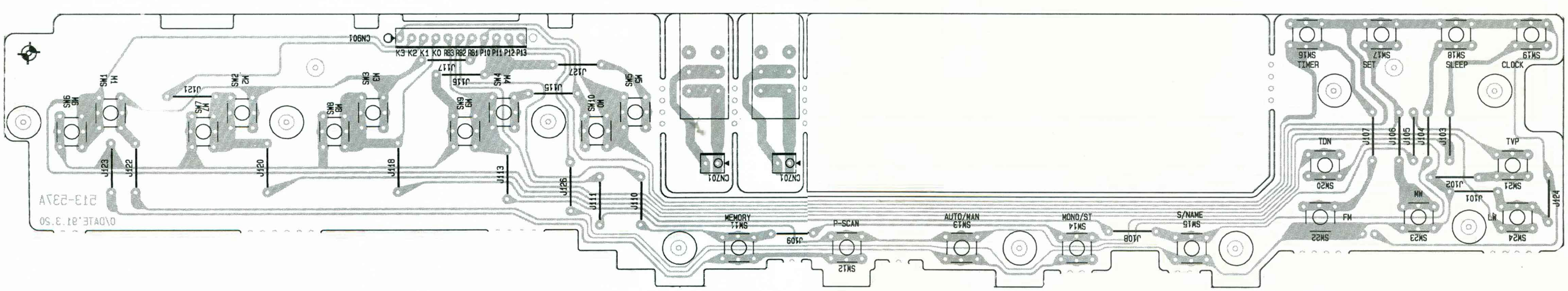
NOTES: 1. Resistance values are indicated in ohms unless otherwise specified (K=1000, M=1,000,000)
2. Capacitance values are shown in microfarads unless otherwise (P=MICRO-MICRO FARADS)

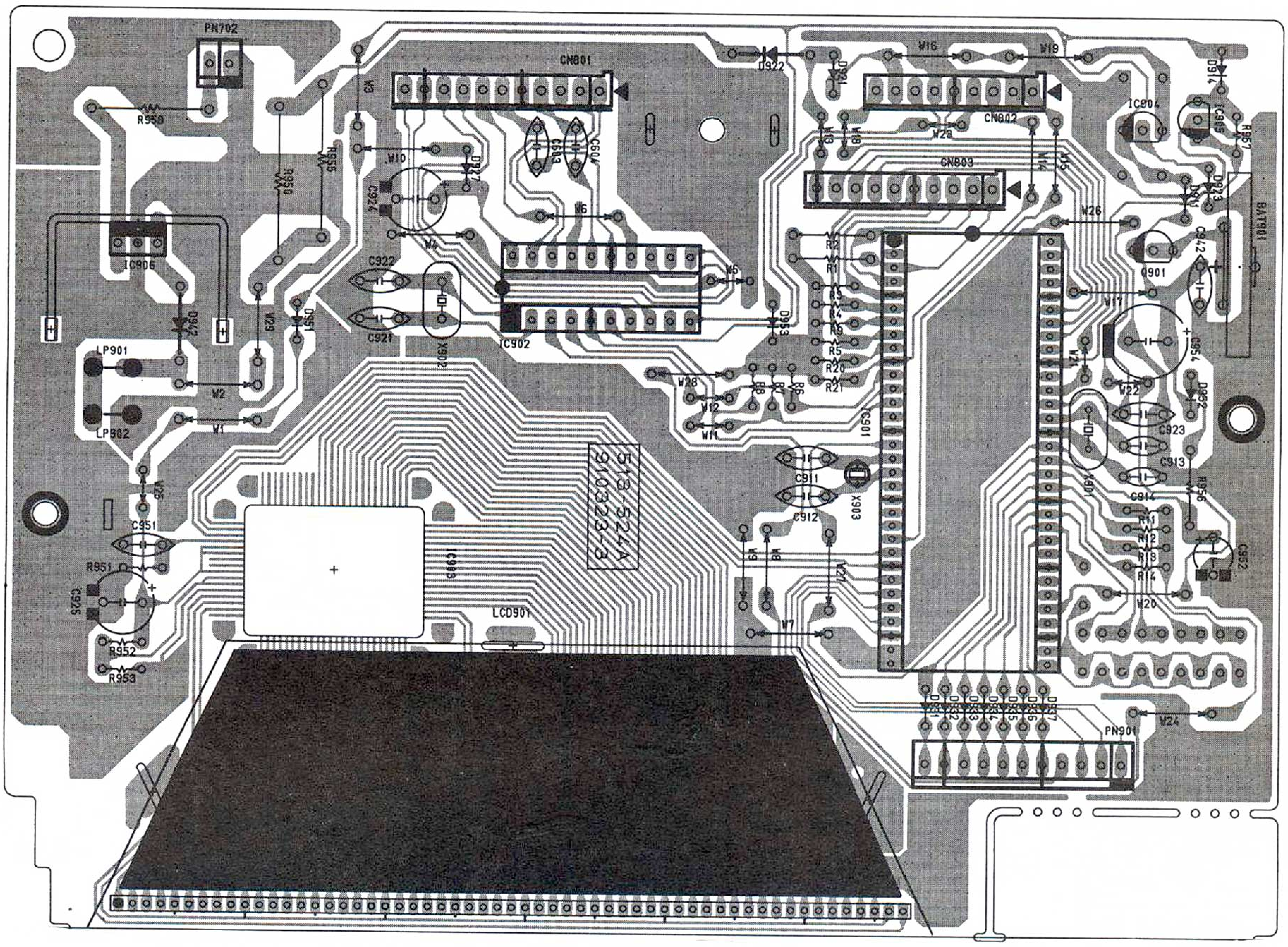
SCHEMATIC DIAGRAM



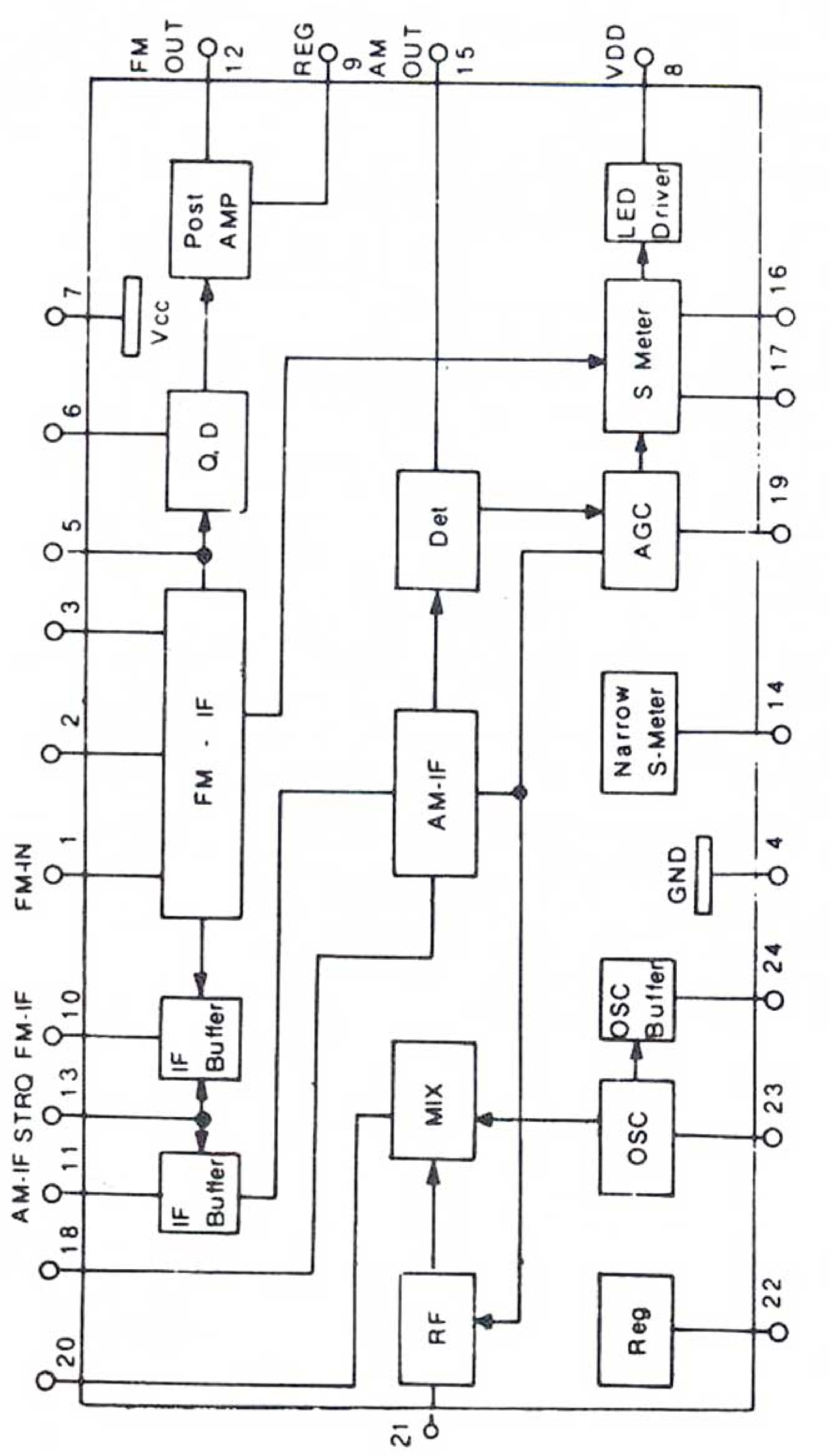
NOTES: 1. Resistance values are indicated in ohms unless otherwise specified (K=1000, M=1,000,000)
2. Capacitance values are shown in microfarads unless otherwise (P=MICRO-MICRO FARADS)


#SYSTEM *TERMINAL
#OUTPUT JACK
#FM IF & DET
#ANT TERMINAL
#INPUT & F/END FM F/END
#POWER SUPPLY
#MUTE
#M.P.X
#AM PART
#L.P.F
#GND

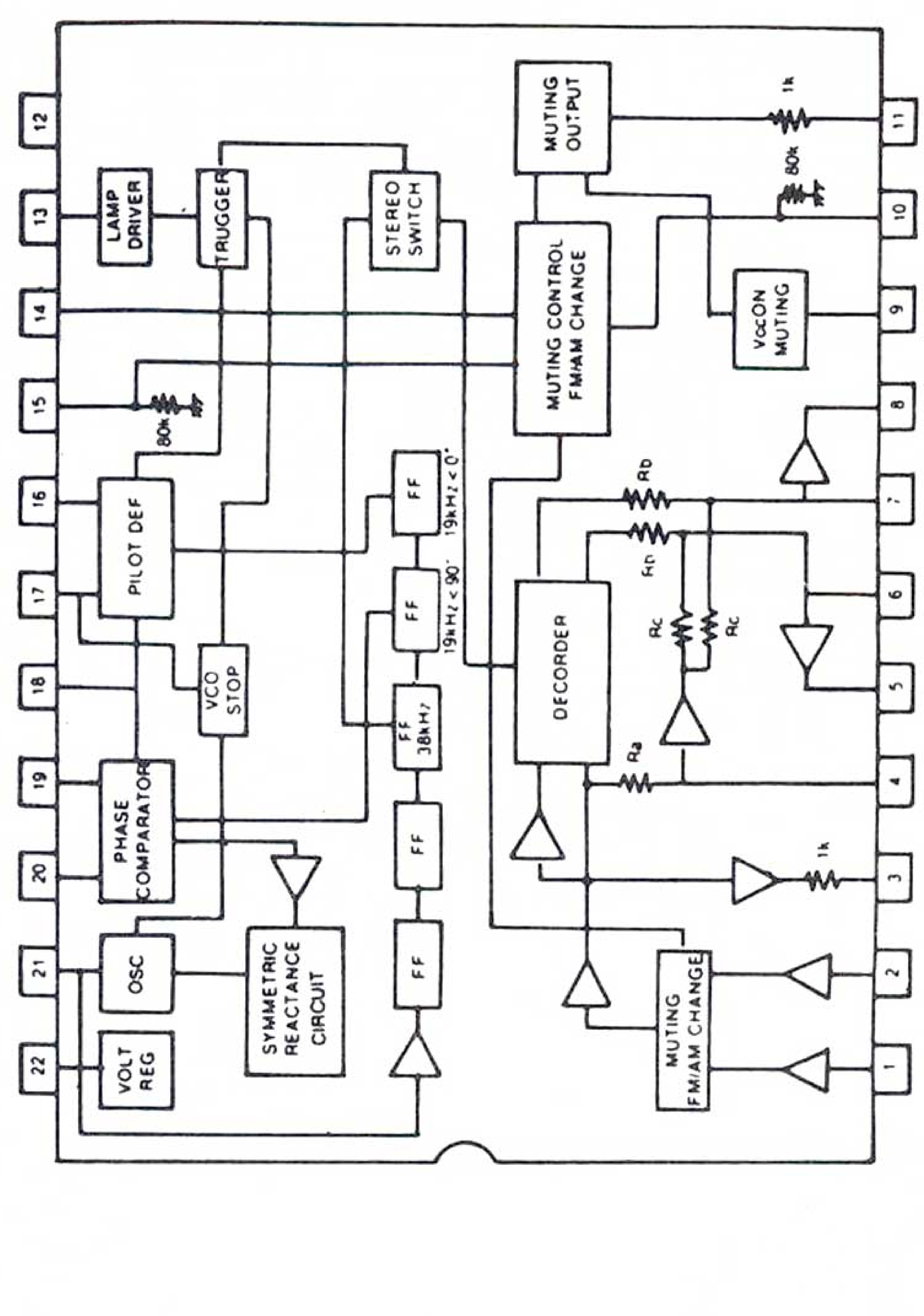

CN901
MEMORY
P-SCAN
AUTO/MAN
MONO/ST
S/NAME
TIMER
SET
SLEEP
CLOCK
TDN
TVP
FM
MW
LW



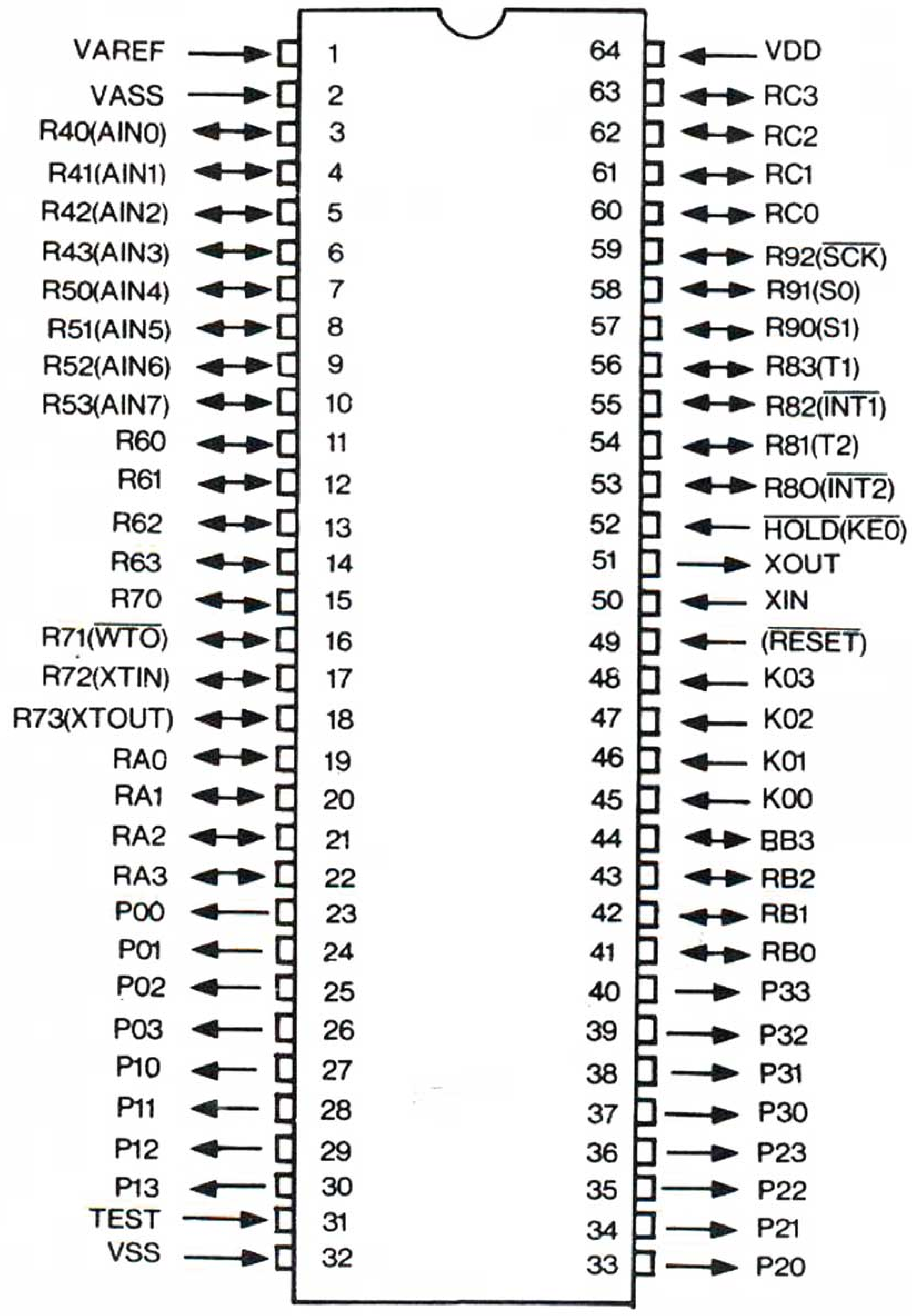
IC201 LA1266

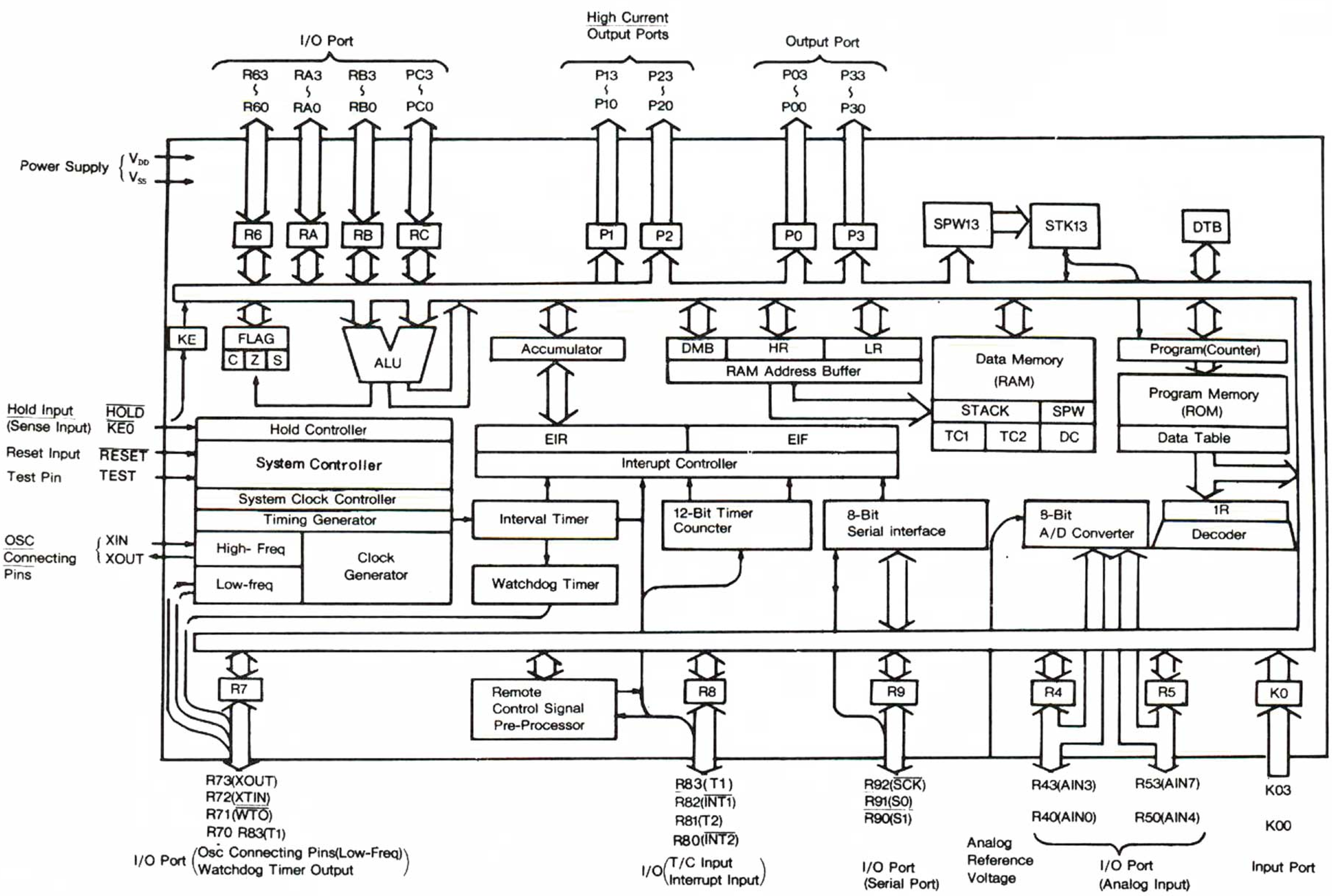


IC301 LA3401

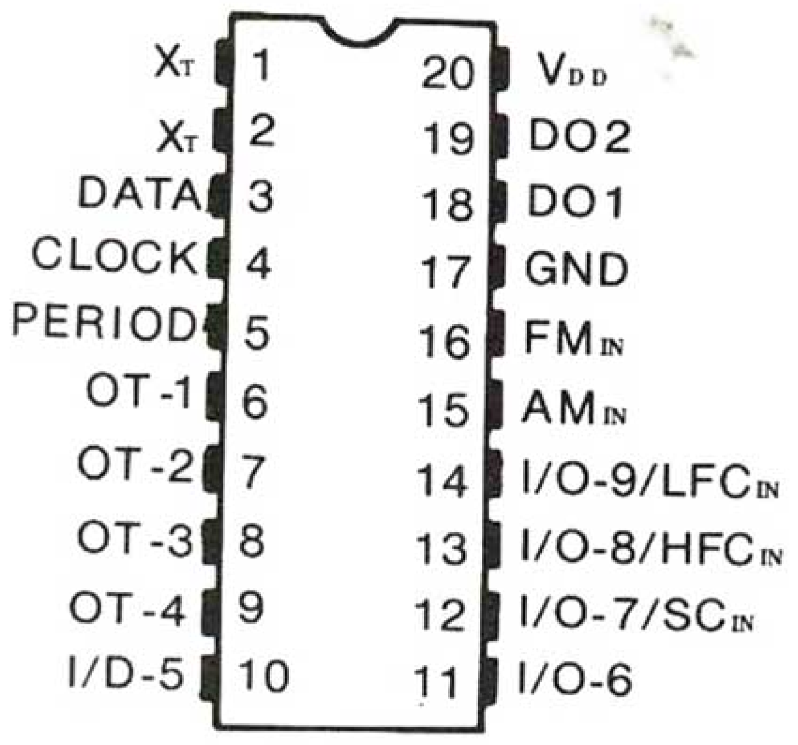


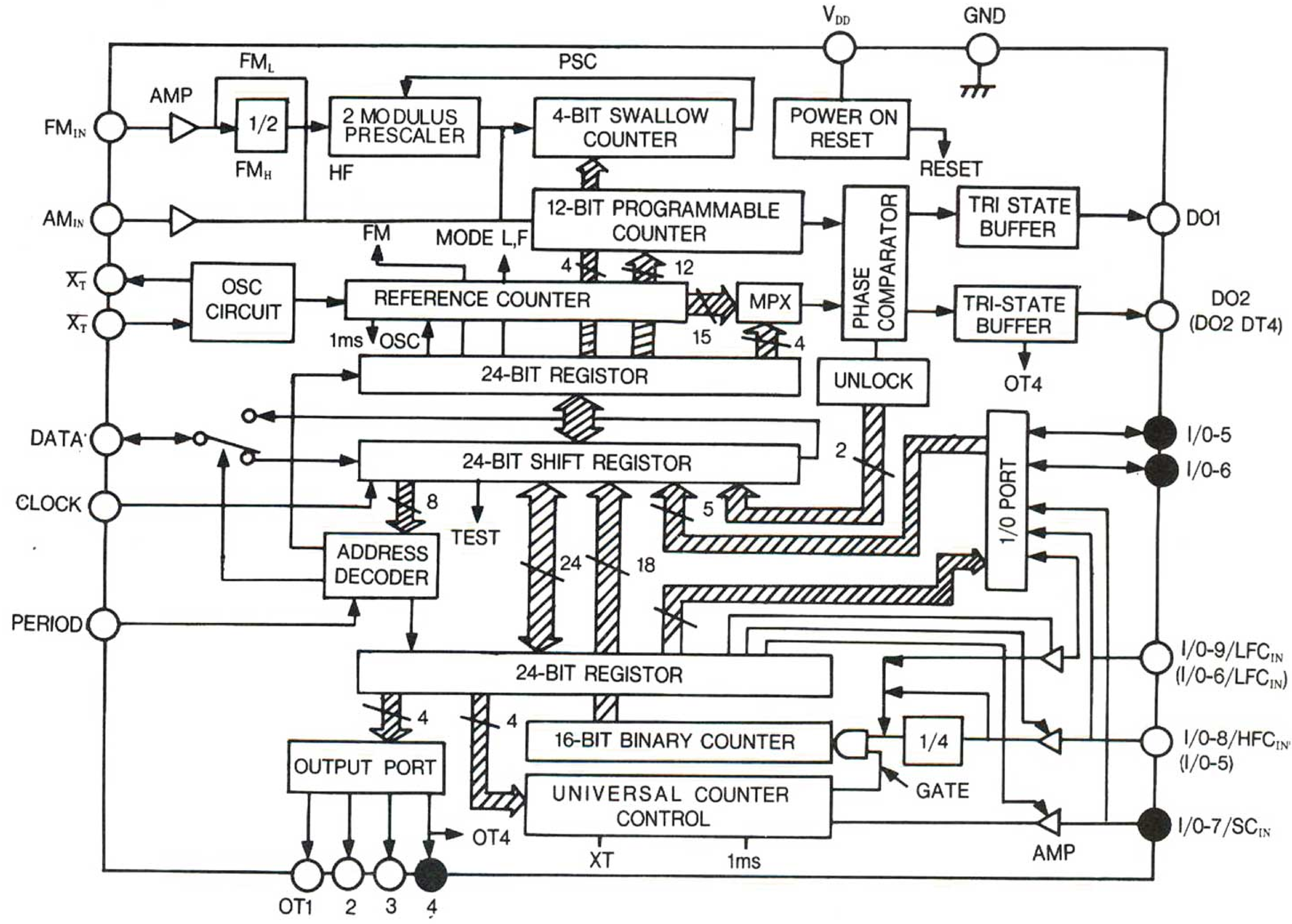
IC901 TMP47C1260N



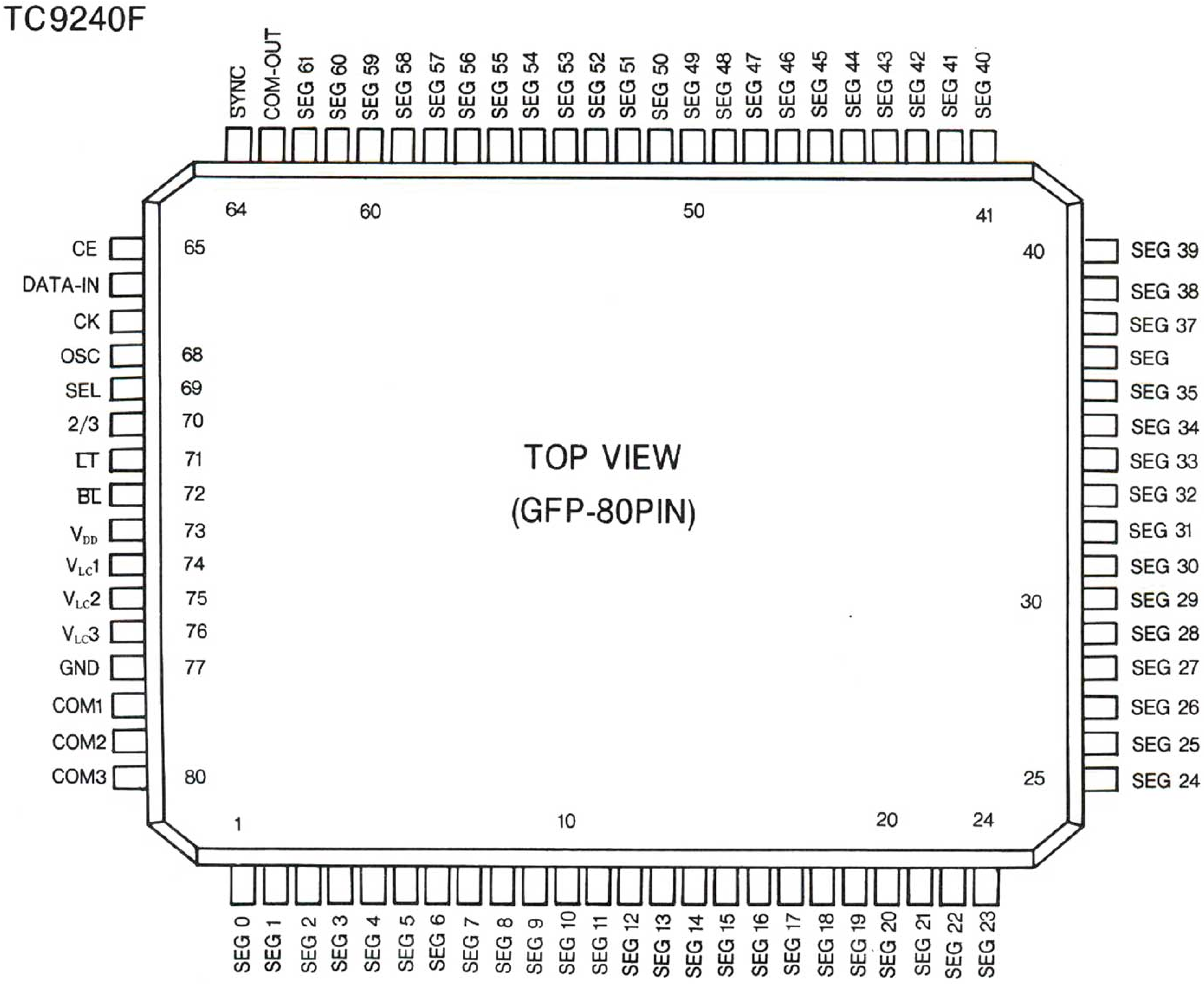


IC902 TC9217P

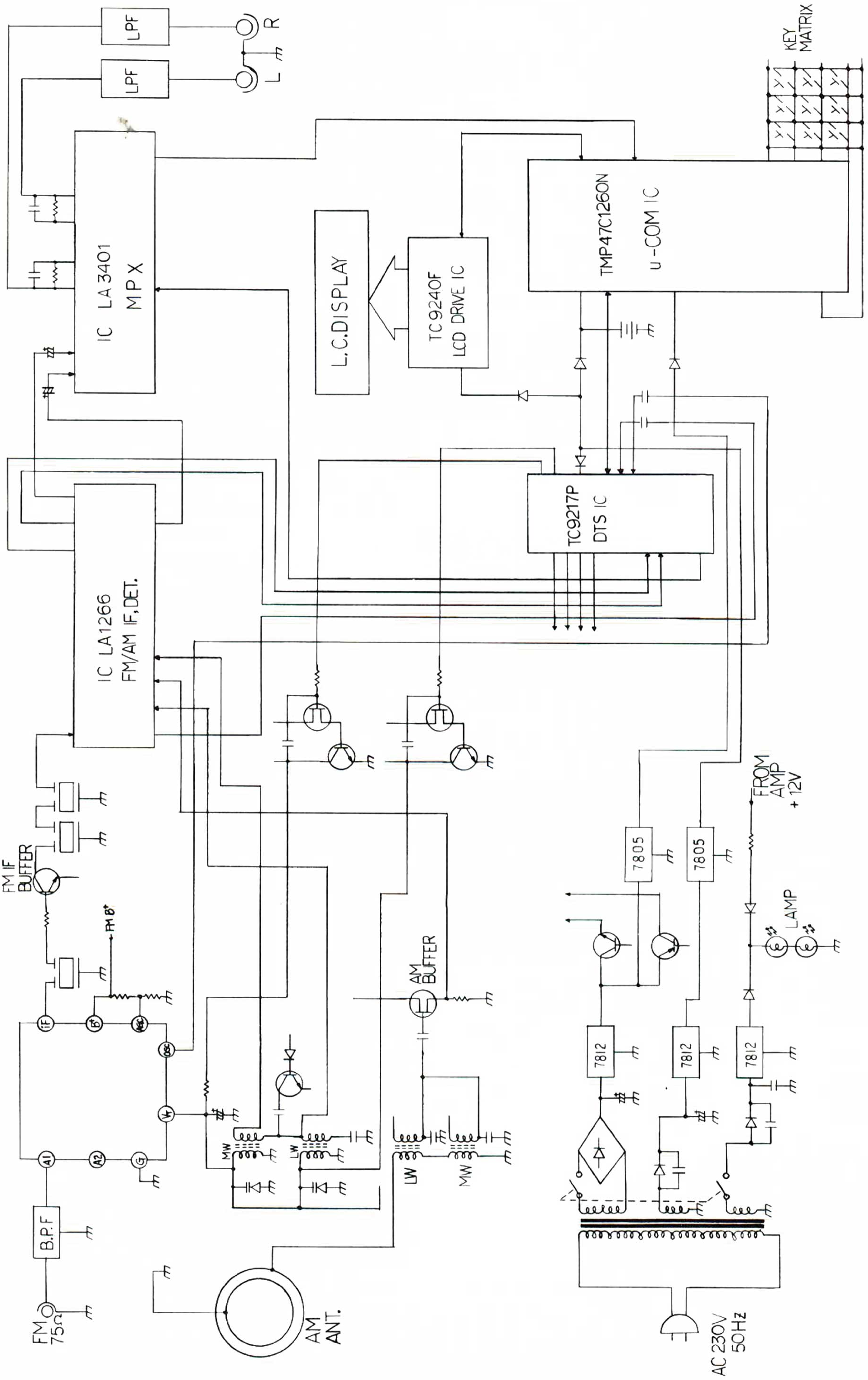


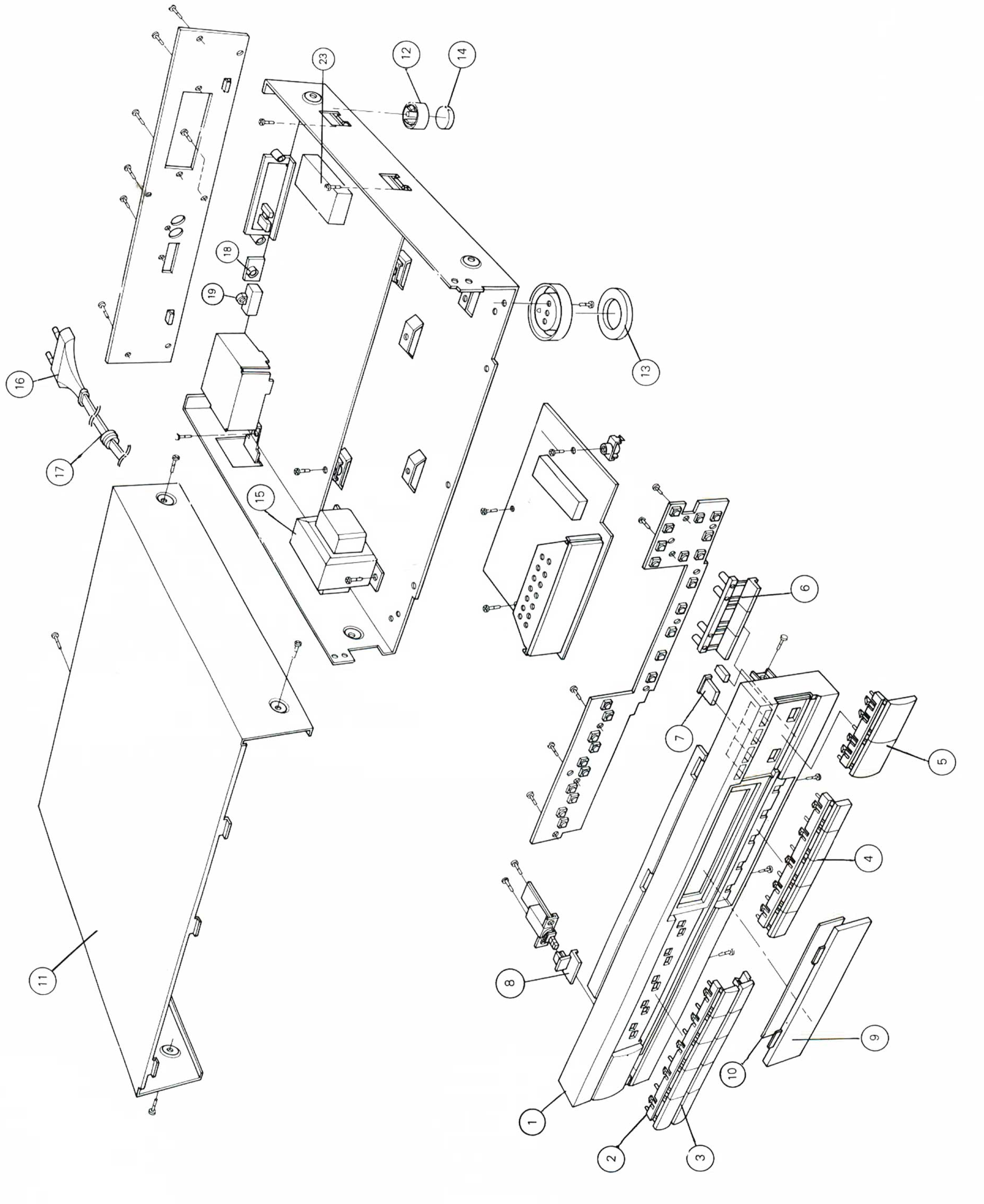


IC903 TC9240F



BLOCK DIAGRAM





1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
23

Ersatzteile · Replacement parts · Pièces détachées · CT 3700

Pos.	Art.-Nr.	Bezeichnung
1	289 047	Frontblende
2	289 048	Taste Preset 1–5
3	289 049	Taste Preset 6–0
4	289 050	Taste Funktion Memory-Station N
5	289 051	Taste Tuning Down, Up
6	289 052	Taste Band FM, MW, LW
7	289 053	Taste Timer-Clock
8	289 054	Taste Power
9	289 055	Fenster
10	289 056	Fenster innen
11	289 058	Gehäuseblech
12	286 692	Fuß
13	289 014	Filz B
14	289 015	Filz C
15	289 057	Netztrafo
16	232 996	Netzkabel Europa
17	237 548	Kabeldurchführung
18	289 484	Cinchbuchse 2-fach
19	289 485	Anschlußbuchse 11-polig
20	289 486	Anschlußkabel 11-polig
	289 473	AM-Antenne / rod antenna
	289 475	FM-Hilfsantenne / wire antenna
	287 963	Bedienungsanleitung / Operating instruction
BAT 901	289 118	Akku
CF 101	283 350	Filter SFP 450
CF 201	283 351	Filter SFE 10,7
bis		
CF 203	283 351	Filter SFE 10,7
CF 301	283 352	Spule CSB 456
C 954/962	289 483	Elyt-Kond. 0,01 F/5,5 V
D 101	223 906	Diode 1 N 4148
D 102	283 327	Diode 1 SS 132
D 103	223 906	Diode 1 N 4148
D 104	283 327	Diode 1 SS 132
D 105	223 906	Diode 1 N 4148
bis		
D 110	223 906	Diode 1 N 4148
D 111	283 327	Diode 1 SS 132
bis		
D 112	283 327	Diode 1 SS 132
D 301	223 906	Diode 1 N 4148
D 303	283 327	Diode 1 SS 132
bis		
D 390	283 327	Diode 1 SS 132
D 501	283 379	Diode DZ 10 B
D 502	283 327	Diode 1 SS 132
bis		
D 503	283 327	Diode 1 SS 132
D 701	226 501	Diode 1 N 4002
bis		
D 705	226 501	Diode 1 N 4002
D 709	283 327	Diode 1 SS 132
D 713	223 906	Diode 1 N 4148
23	289 116	FM-Teil
D 731	283 327	Diode 1 SS 132
bis		
D 937	283 327	Diode 1 SS 132
D 941	226 501	Diode 1 N 4002
bis		
D 944	226 501	Diode 1 N 4002
D 951	283 327	Diode 1 SS 132
bis		
D 953	283 327	Diode 1 SS 132
IC 201	287 486	IC LA 1266
IC 301	286 720	IC LA 3401
IC 701	284 588	IC NJM 7812
bis		
IC 702	284 588	IC NJM 7812
IC 703	289 491	IC LM 78 L 05
IC 705/905	289 119	IC PST 572 E
IC 901	289 120	IC TMP 47 C 1260 N
IC 902	289 121	IC TC 9217 P
IC 903	289 122	IC TC 9240 F
IC 904	271 075	IC NJM 78 M 05 A
IC 906	284 588	IC NJM 7812
LCD 901	289 123	Display
LPF 301/302	286 723	Spule
LP 901/902	289 487	Lampe
L 102	289 124	Spule Antenne
L 103	286 726	Spule
L 104	289 125	Spule
L 105	286 728	Spule
L 201/202	283 366	Spule 20,8 MH
L 203	286 729	Spule
L 301	283 367	Spule 7,8 MH
L 302/303	283 368	Spule 47 MH
Q 101/108	282 076	Transistor KTC 1815 Y
Q 116	282 169	Transistor KTK 161 Y
Q 201	289 126	Transistor KTC 3192
Q 301	282 076	Transistor KTC 1815 Y
Q 302	282 077	Transistor KTA 1015 Y
Q 303/501	282 076	Transistor KTC 1815 Y
Q 603	283 383	Transistor KTK 30 AY
Q 604	286 731	Transistor KTC 2240 GR
Q 605	283 383	Transistor KTK 30 AY
Q 606	286 731	Transistor KTC 2240 GR
Q 704/901	282 076	Transistor KTC 1815 Y
Q 961	289 039	Transistor
Q 962	282 076	Transistor KTC 1815 Y
SW 1-24	286 732	Schalter
TC 101	283 354	Trimmer CVN 610
TC 102	283 355	Trimmer CVN 620
TC 103	283 354	Trimmer CVN 610
TC 104	283 355	Trimmer CVN 620
T 101	286 733	Spule
T 201	286 734	Spule
T 202	286 735	Spule
VC 101	289 127	Diode KV 1236
X 901	289 046	Keramikfilter
X 903	289 128	Quarz 32,768 kHz
X 902	286 737	Quarz 4,5 MHz

Änderungen vorbehalten! Subject to change! Sous réserve de modification!

WIRING DIAGRAM