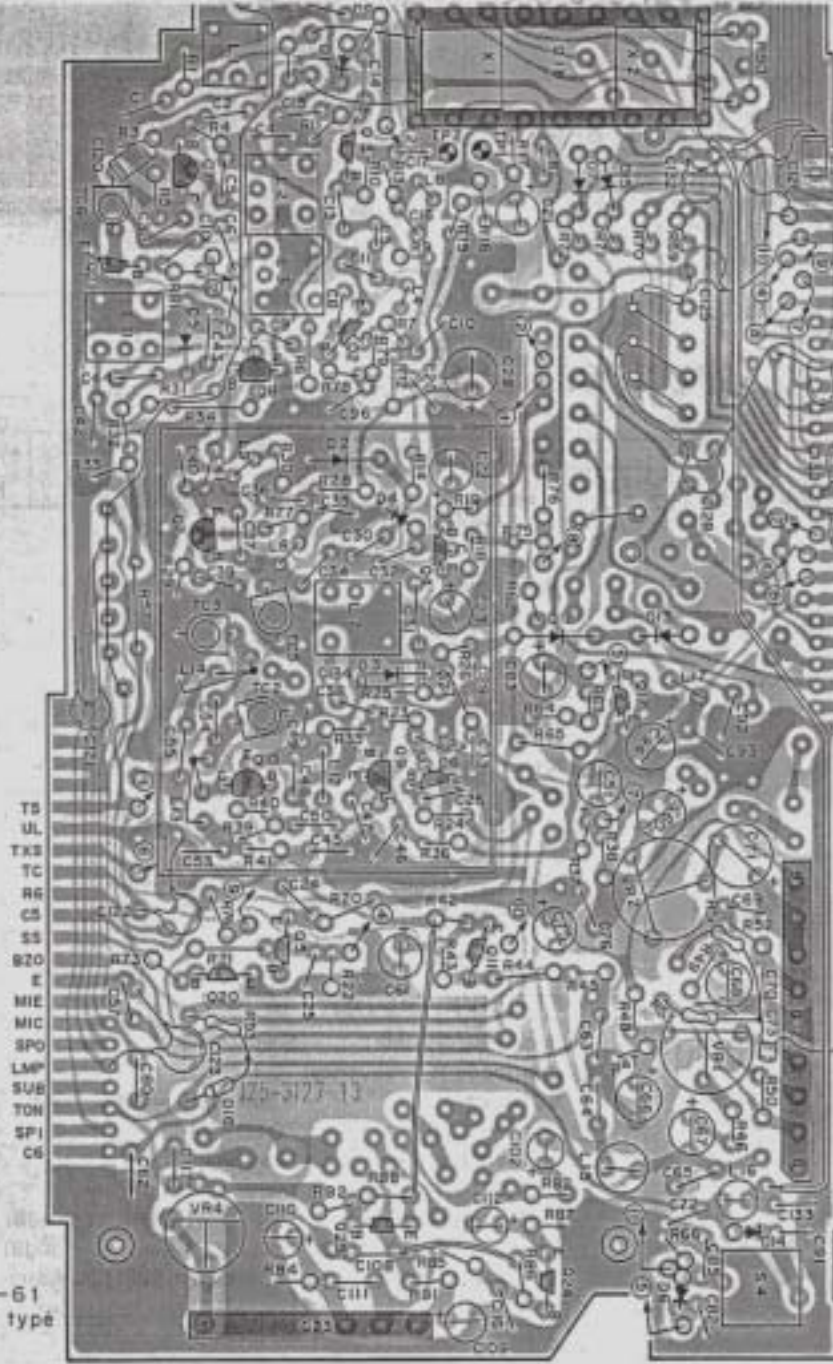




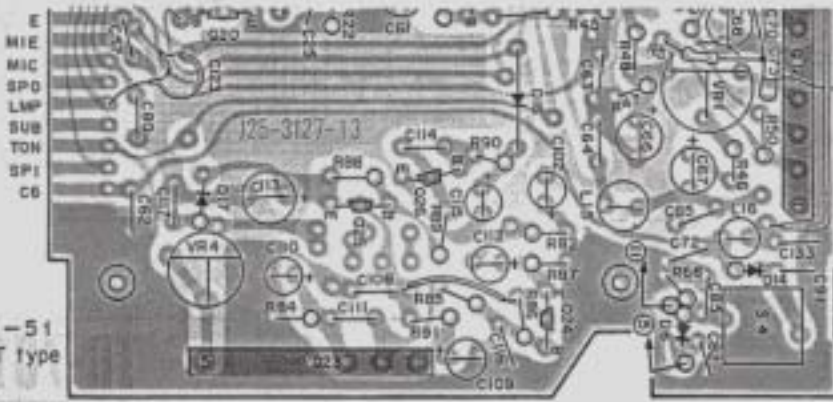
SPECIFICATIONS

[GENERAL]	
Frequency Range.....	440.000 - 449.995 MHz (K, M1, M3) 430.000 - 439.995 MHz (M2, M4, T, W, X)
Frequency Step.....	5 kHz
Memory Channels.....	10 CH
Mode.....	FM (F3)
Operating voltage.....	8.4 V DC \pm 25%
Power Requirement.....	8.4 V, 400 mA (Ni-Cd battery pack) 3V AA manganese or alkaline (not Ni-Cd) 8 pcs. (battery case optional)
Back-up Power Re- quirement.....	CR2032 Lithium battery (supplied)
Current Drain.....	Approx 35 mA in receive mode with no in- put signal Approx 700 mA in HI transmit mode (at 8.4 V) Approx 350 mA in Low transmit mode (at 8.4 V) Approx 1 μ A for memory back-up
Grounding.....	Negative
Operating Tempera- ture.....	-20°C to +50°C
Antenna Impedance.....	50 Ω
Semiconductors.....	Microcomputer 1 ICs 6 Transistors 49 (K, M, X), 52 (T), 21 (W) Diodes 45 (K, M, X), 43 (T), 41 (W) LCD 1 LED 1
Dimensions.....	With Ni-Cd battery: 66 (2.6) W x 165 (6.7) H x 40 (1.6) D mm (inch) With manganese battery: 66 (2.6) W x 176 (7.0) H x 40 (1.6) D mm (inch)
Weight.....	With Ni-Cd battery: 540 g (1.2 lbs.) With manganese battery: 530 g (1.2 lbs.)
[TRANSMITTER]	
RF Output Power.....	HI = 1.5 W LOW = 0.3 W approx.
Modulation.....	Variable reactance direct shift
Frequency Tolerance.....	Less than $\pm 20 \times 10^{-6}$ [-10°C ~ +50°C]
[RECEIVER]	
Maximum Frequency Deviation.....	± 5 kHz
Spurious Radiation.....	Less than -60 dB
Circuitry.....	Double conversion superheterodyne
Intermediate Fre- quency.....	1st IF = 21.5 MHz 2nd IF = 455 kHz
Sensitivity.....	Better than 1 μ V for 5/N 30 dB Less than 0.25 μ V for 12 dB SINAD
Pass-Band Width.....	12 kHz (More than -6 dB)
Selectivity.....	24 kHz (Better than -45 dB)
Spurious Response.....	Better than 50dB
Squelch Sensitivity.....	Less than 0.25 μ V (threshold)
Audio Output Power.....	More than 400mW (at 10% distorti- on and 8 Ω load)
Note: Circuit and ratings may change without notice due to devel- opments in technology.	
SC-4: Except USA market	
TU-1: Available only for USA	

PLL UNIT (X50-1890-61,-51) Foil side view



-61
W type

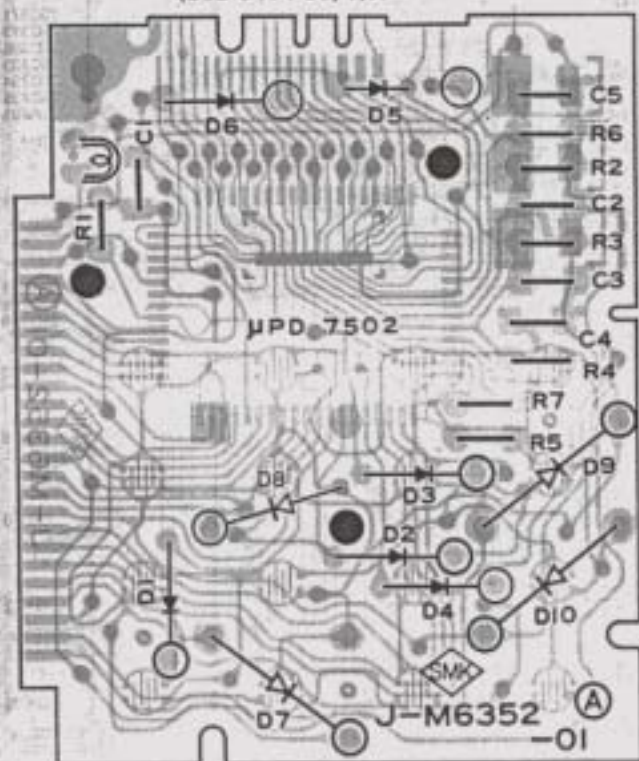


-51
T type

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- Q1,8: 25C2347 Q2,21: 25C2668 (Y) Q3,6: 25C2669 (Y) Q4,5,11,25: 2SA1115 (E) Q7: 25C2212
- Q8,10: 25C2026 Q12: AN6551 Q17,19,20,24,26 (T): 25C2603 (E) Q18: MC145155P Q23: AFG05F1750A2
- D1,4: 152588 D2,3: 15V50 D5: 152208 D6,7,10 ~ 16, 17 (T): 151555 D8,9: 1N60

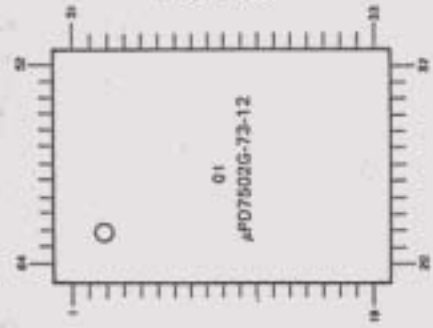
KEY BOARD (S59-0413-05) K,M,X
(S59-0414-05) T,W



Q1: μPD750G-73-12
D1 ~ 6: 1S1555
D7 ~ 10: 1N50
V1: F2179-30

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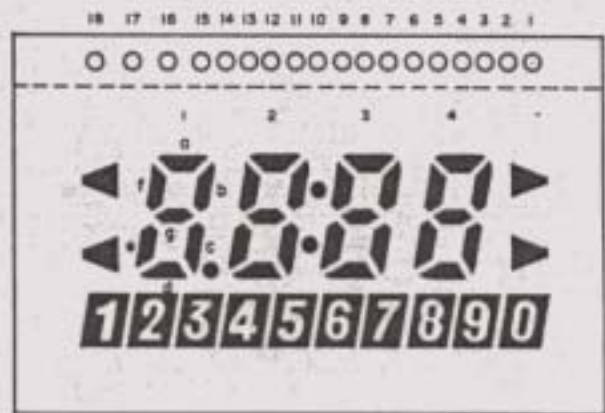
Top View



LCD PIN CONNECTION

Pin No.	Segment	Pin No.	Segment
1	a, D, 0	12	1bcp
2	4bc, 9	13	1agd
3	4agd	14	1fa, 2
4	4fa, 8	15	<, <, 1
5	3bc, 7	16	< (Upper) 1fab, 2 fab, COL (Upper) 3fab, 4fab, b (Upper)
6	3agd	17	< (Lower) 1egc, 2egc, COL (Lower) 3agc, 4agc, b (Lower)
7	3fa, 6	18	1, 2, 1dp, 3, 2d, 4, 5, 6, 3d, 7, 8, 4d, 9, 0
8	COL, 5		
9	2bc, 4		
10	2agd		
11	2fa, 3		

Pin connection



LCD F2179-30 (Display unit V1)
Max rating (Absolute max. rating)

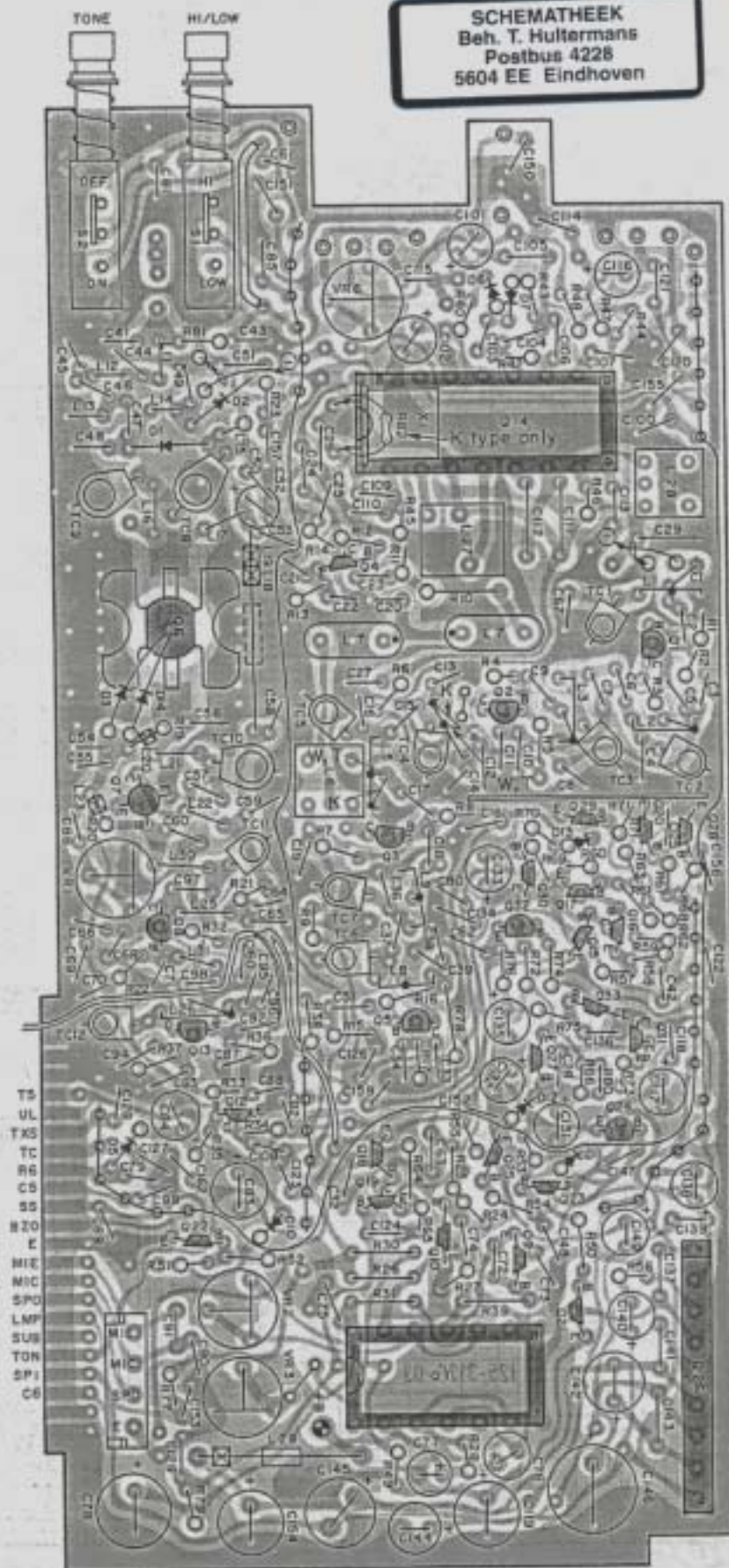
Item	Symbol	Min.	Max.	Unit
Storage temperature	T _{stg}	-20	60	°C
Operation temperature	T _{op}	-20	40	°C
Applied voltage			10	V
Allowable DC voltage			0.5	V

Recommendable operating condition

Item	Symbol	Min.	Norm.	Max.	Unit
Operating voltage	V _{op}	2.95	3.1	3.25	V
Operating frequency	f _{op}	80	100	200	Hz
Operating temperature	T _{op}	0	25	40	°C

TX-RX UNIT (X44-1500-00) Component side view

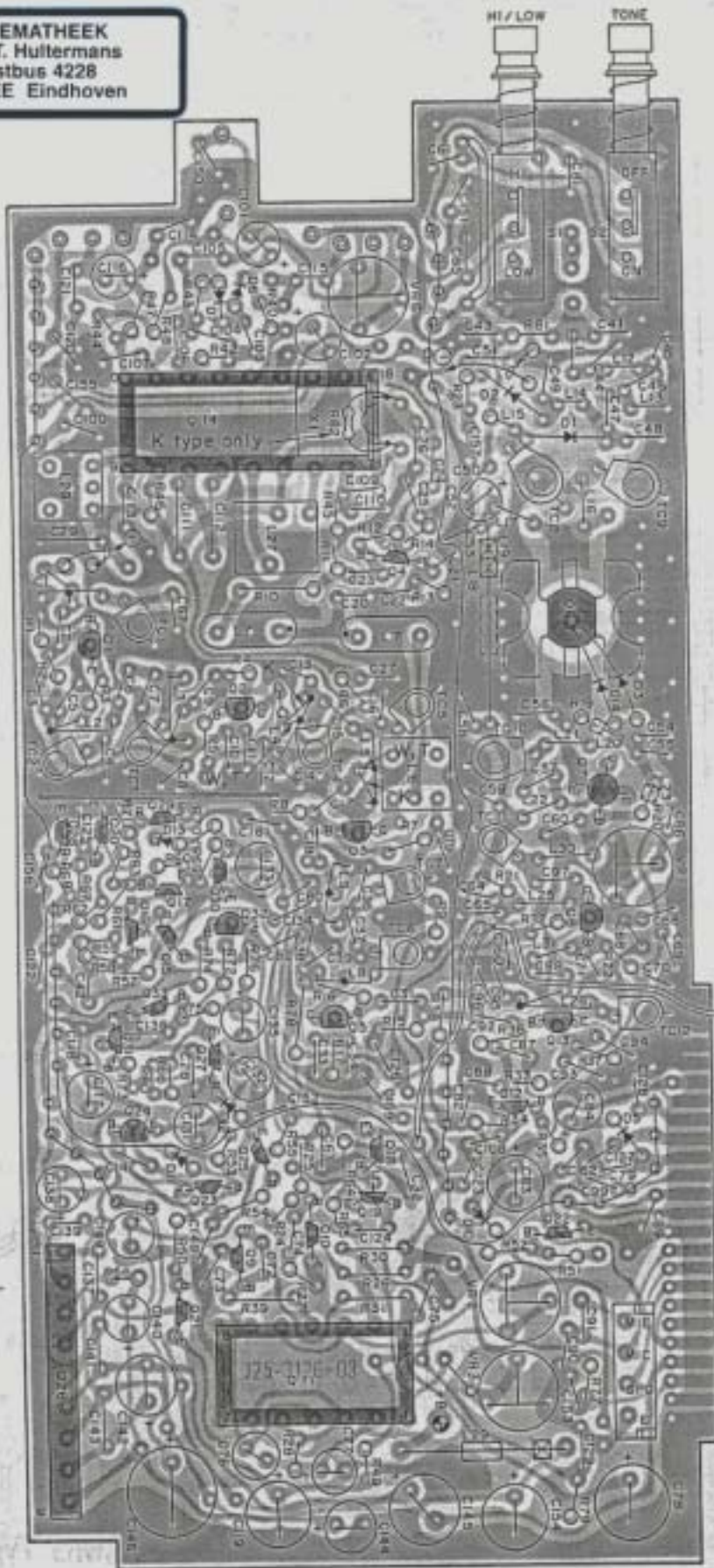
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Q1,2,3,5: 2SC2026 Q4: 2SC2668 (Y) Q8: 2SC2283M Q7: 2SC3019 Q8: 2SC2407
Q9,15,17,18,21,27,30: 2SA1115 (E) Q10,12,16,19,20,22,23,25,28,29,31,33: 2SC2603 (E)
Q11: TC4001BP Q13: 2SC2549 Q14: MC3359P Q24,32: 2SB698 Q26: TA7313AP
D1,2: M301 D3,5,10,13,14: 1S1555 D4: SR-538D D6,7: IN60 D11: WZ-081 D12: 05Z5,1-Y

TX · RX UNIT (X44-1500-00) Foil side view

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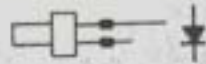
25C283M



25A1115
25C3603
25C3668
25C3669



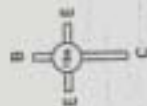
5H-538D



25B698



25C3019

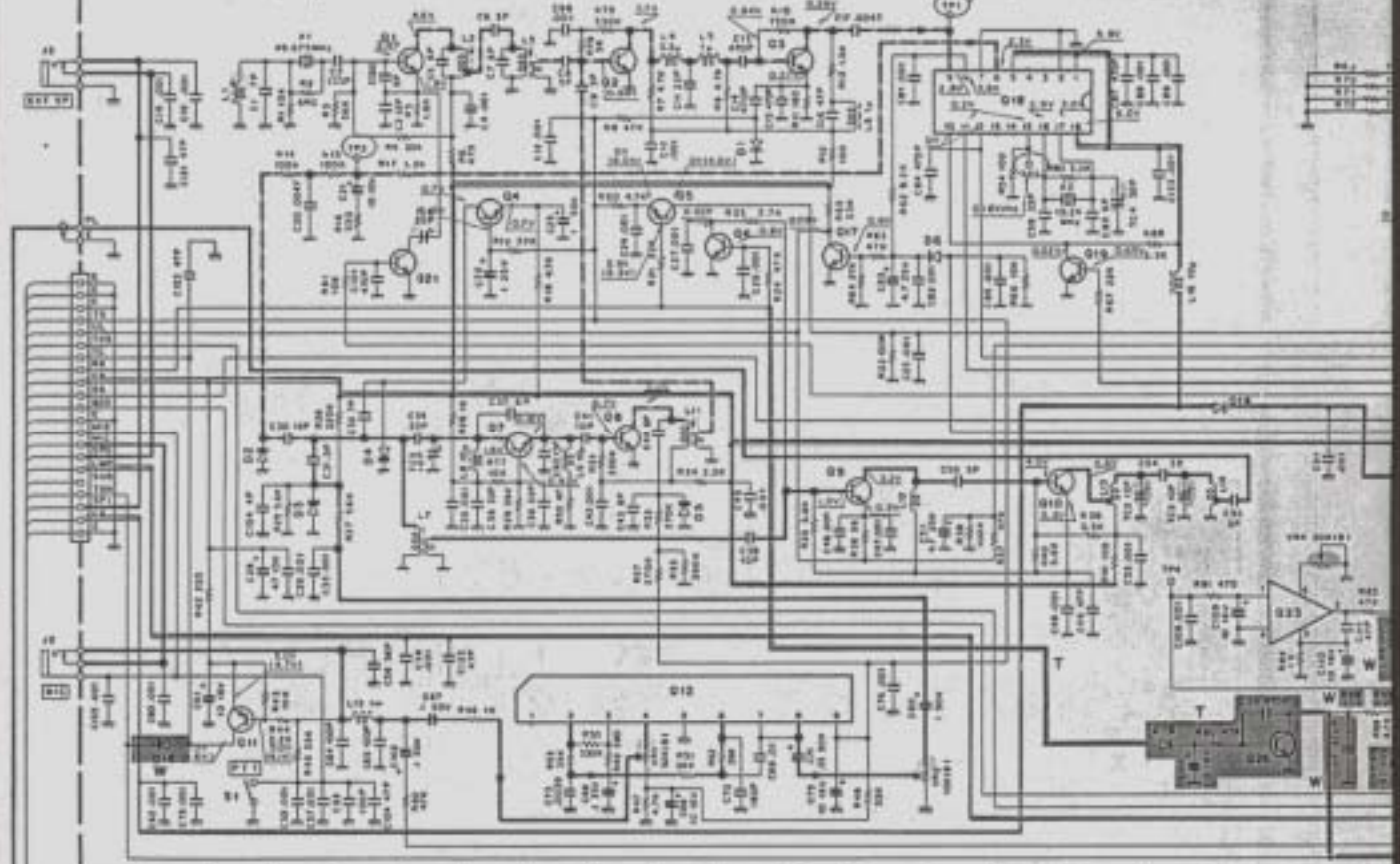


25C2026
25C3407
25C2540

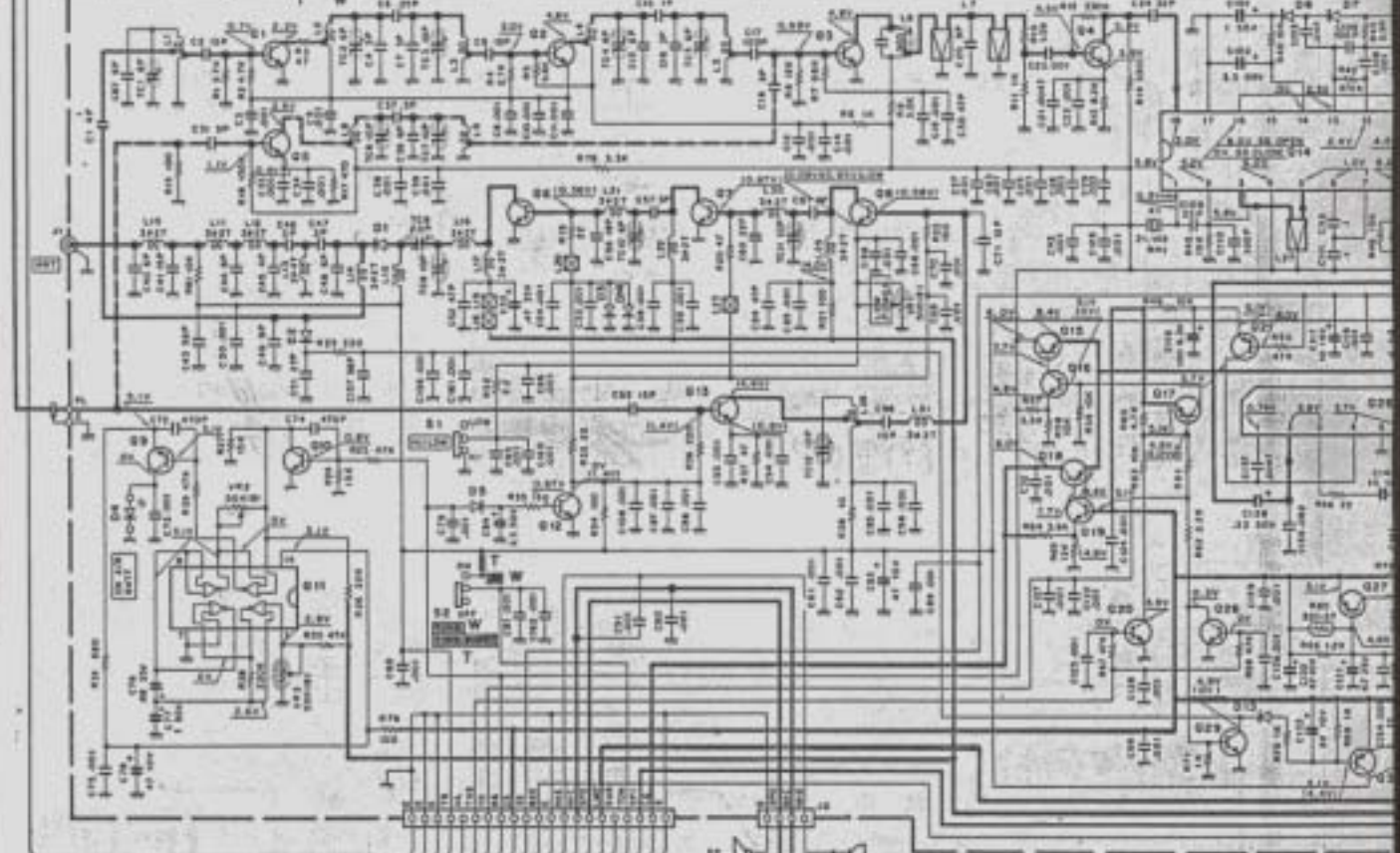


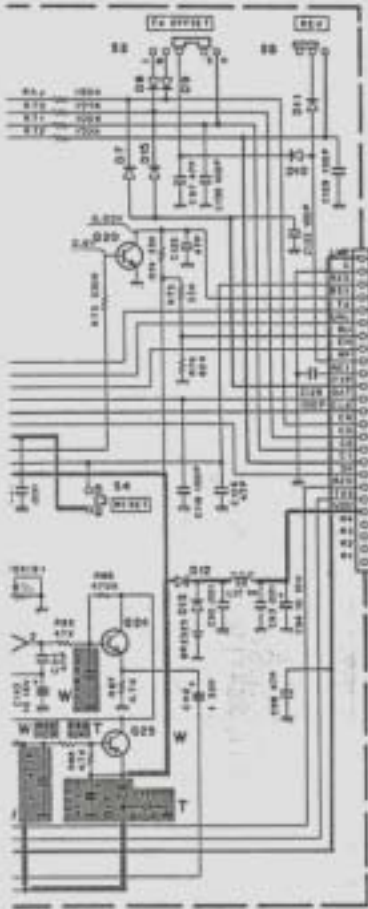
A B C D

PLL UNIT (X50-1090)



TX-RX UNIT (X44-1500)



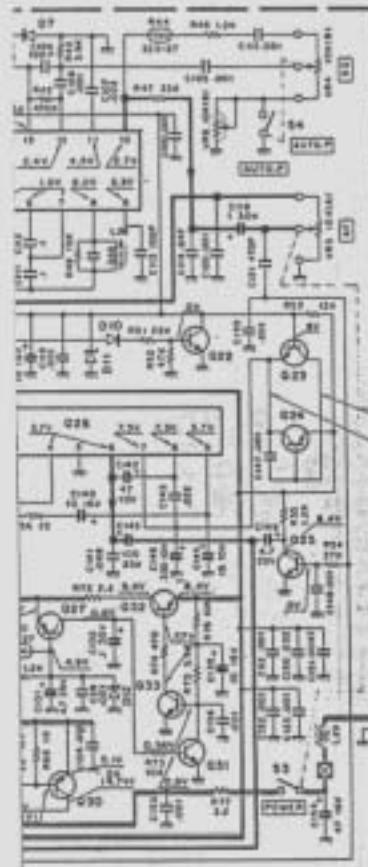
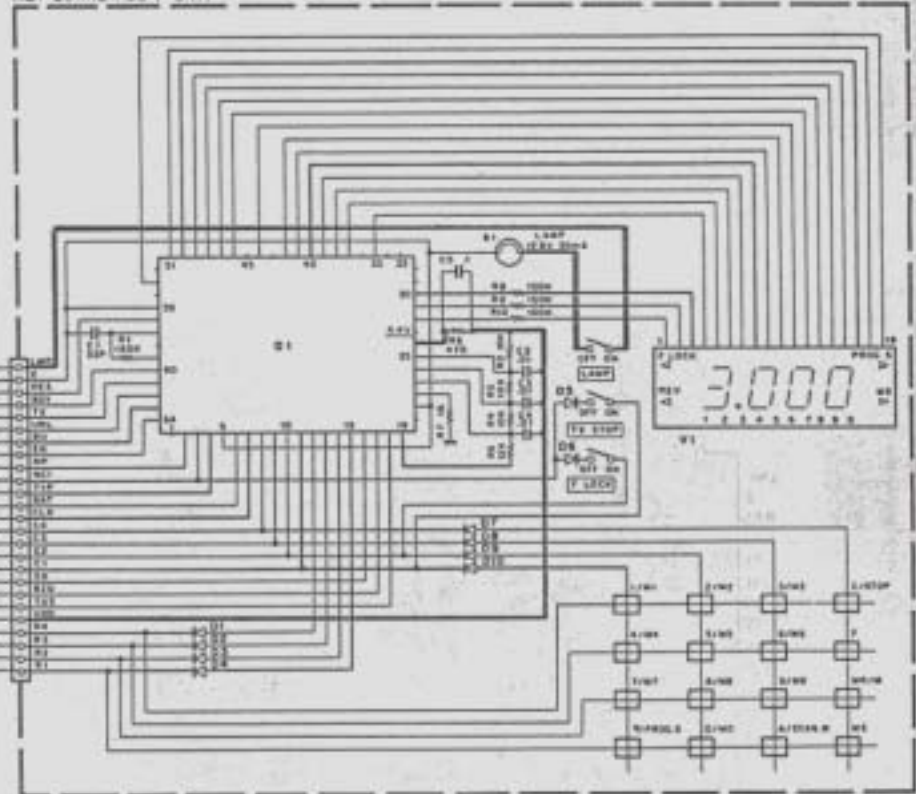


Q1, 9	25C2347	Q9, 10	25C2026	Q1, 4	152548
Q2, 21	25C2668(T)	Q17, 19, 20, 24, 26 T		Q2, 3	15V90
Q3, 6	25C2603(T)	Q8	25C2603(E)	Q5	152208
Q4, 5, 11, 23	25A1115(E)	Q18	MC145133P	Q6, 7, 12-16	151553
Q7	25C2212	Q25	AFG05P1750A2	Q8, 9	1N460
		Q12	4N6551		

— Signal line
 - - - Control line
 --- Common DC line

Voltage measurement conditions
 F = 425,000 MHz
 I : TX

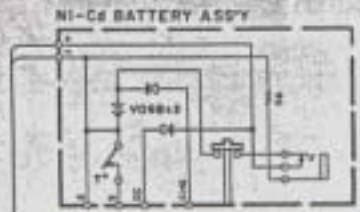
KEY BOARD ASS'Y UNIT



Q1-3, 5	25C2026	Q1, 7	W1201
Q4	25C2668(T)	Q3, 30, 31, 4	151555
Q6	25C2283M	Q4	SR-238D
Q7	25C3019	Q8, 7	1N460
Q8	25C2407	Q11	W2-081
Q9, 15, 17, 19, 21, 27, 30		Q12	0825-1-T
	25A1115(E)		
Q10, 12, 14, 16, 20, 22, 23, 25, 28, 29, 31, 32			
Q11	25C2603(E)		
Q13	TC4051BP		
Q14	25C2249		
Q24, 32	25B998		
Q26	T473154P		

U1 : μPD75026-75-12
 Q1-8 : 151525
 Q7-10 : 1N460
 V1 : F2179-30

- 25A1115
- 25C2603
- 25C2668
- 25C2669
- 25B998
- 25C2347
- 25C2026
- 25C2407
- 25C2549
- 25C2212
- 25C3019

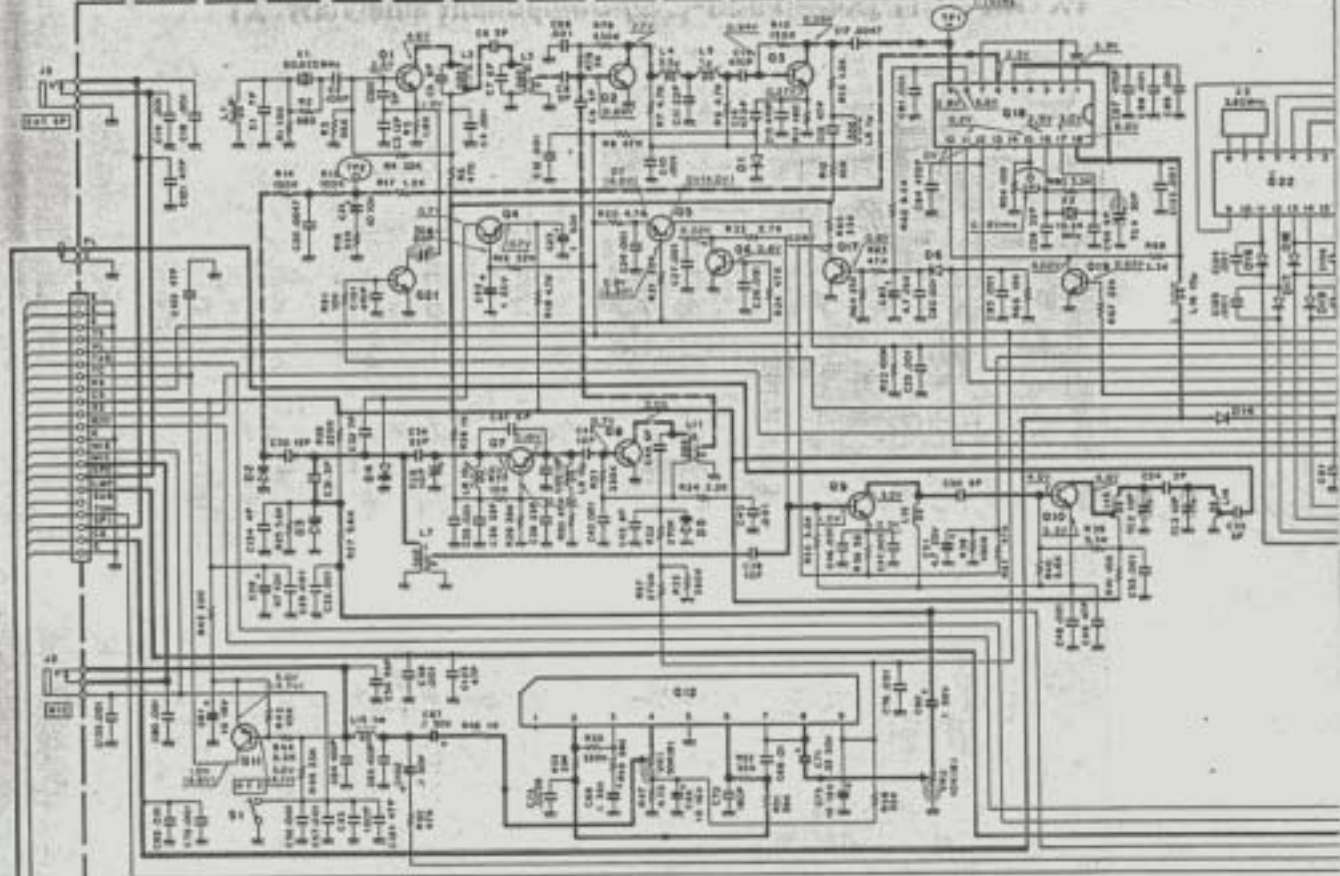


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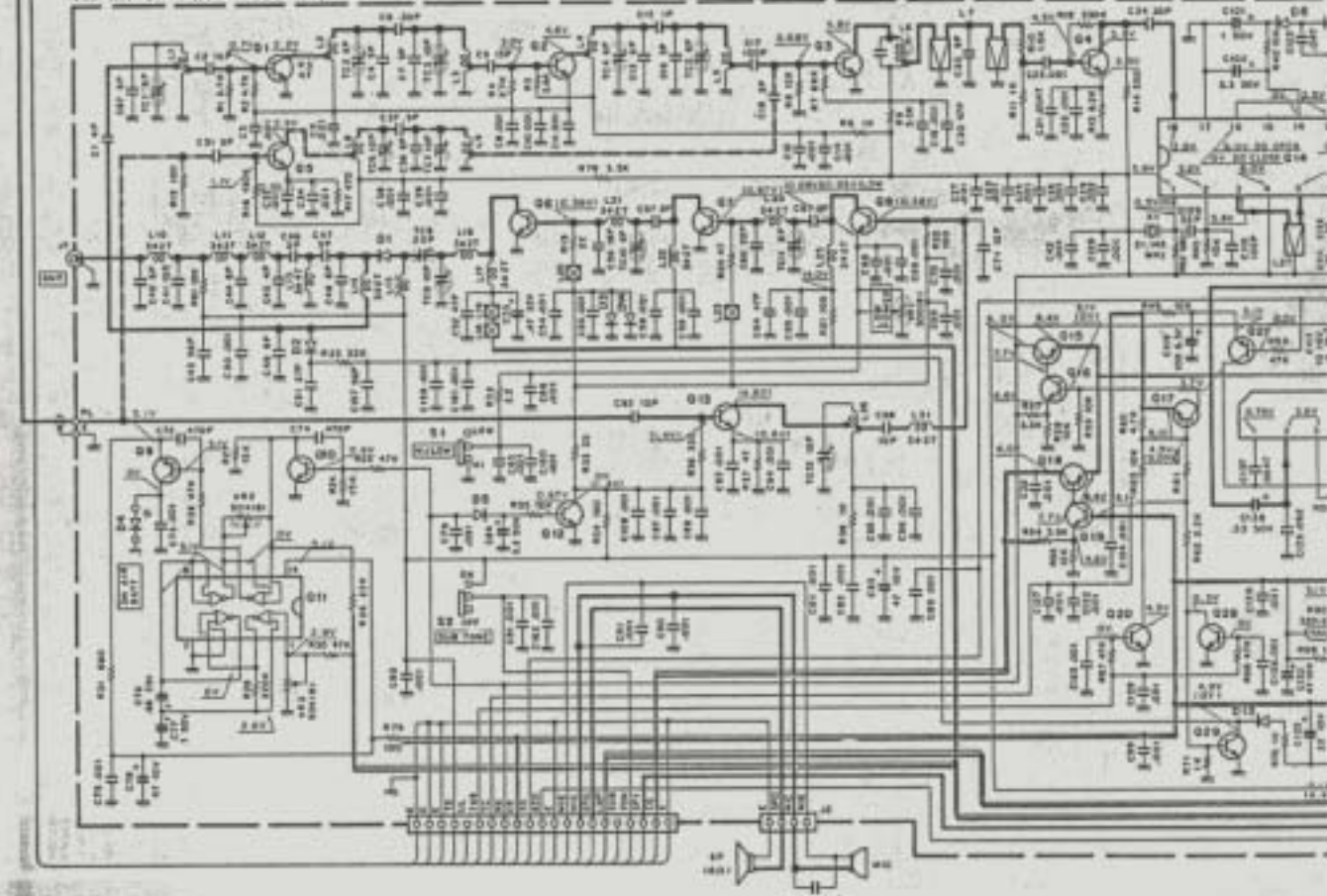


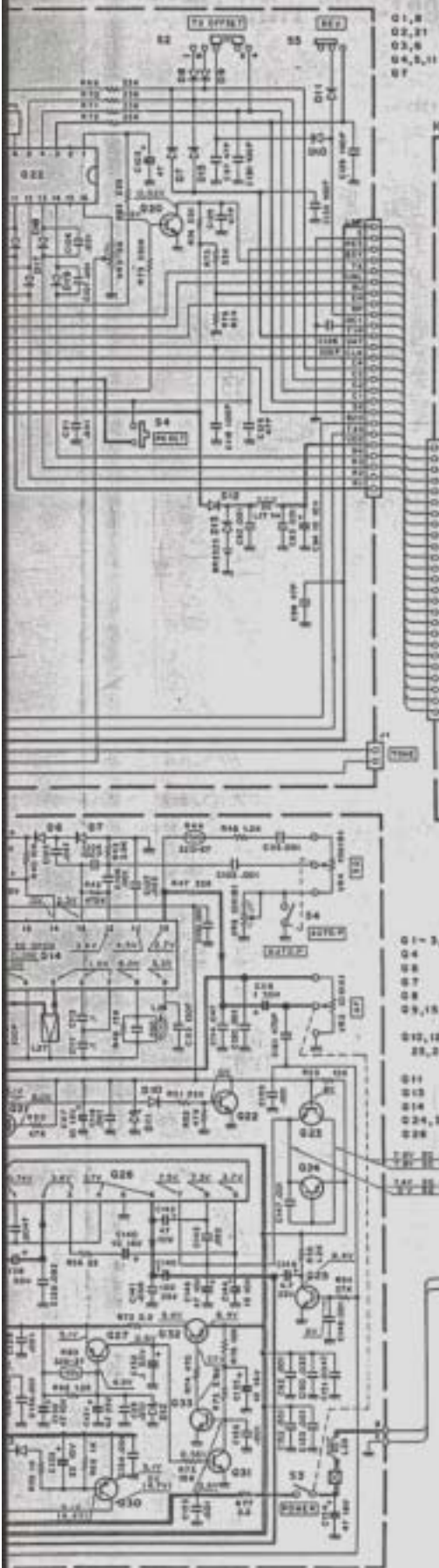
(T,W Type)

PLL UNIT (K50-1890-11)



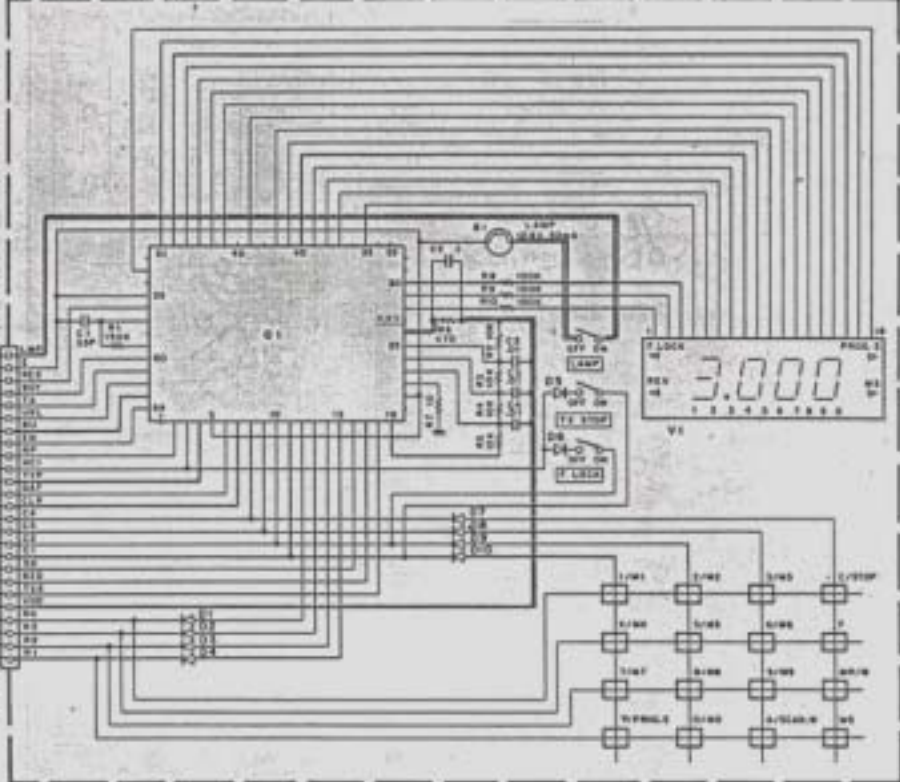
TX-RX UNIT (K44-1500-11)





- Q1, 8 : 25C234Y
 Q2, 7 : 25C2668(Y)
 Q3, 6 : 25C2609(Y)
 Q4, 5, 11 : 25A1115(CE)
 Q7 : 25C2212
- Q8, 10 : 25C2026
 Q17, 18, 20 : 25C2603(CE)
 Q18 : MC142135P
 Q22 : MK5087N
 Q12 : 4N6221
- D1, 4 : 152386
 D2, 3 : 15V50
 D5 : 152208
 D6, 7, 10-15 : 151555
 D8, 9, 16-19 : 1N60
- Signal line
 Control line
 Common DC line
- Voltage measurement conditions:
 F = 445.000 MHz
 1 : TX

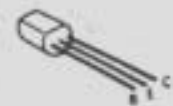
KEY BOARD ASS'Y UNIT



- Q1-3, 5 : 25C2026
 Q4 : 25C2668(Y)
 Q6 : 25C2263M
 Q7 : 25C3019
 Q8 : 25C2407
 Q9, 15, 17, 18, 21, 27, 30 : 25A1115(CE)
 Q12, 13, 16, 18, 20, 22, 27, 28, 29, 31, 33 : 25C2603(CE)
 Q11 : TC4001BP
 Q13 : 25C2549
 Q14 : MC142135P
 Q24, 25 : 25B698
 Q26 : TAT313AP
- D1, 2 : W1301
 D3, 5, 6, 13, 14 : 151555
 D4 : 3N-5349
 D6, 7 : 1N60
 D11 : W2-081
 D12 : 0525.1-Y

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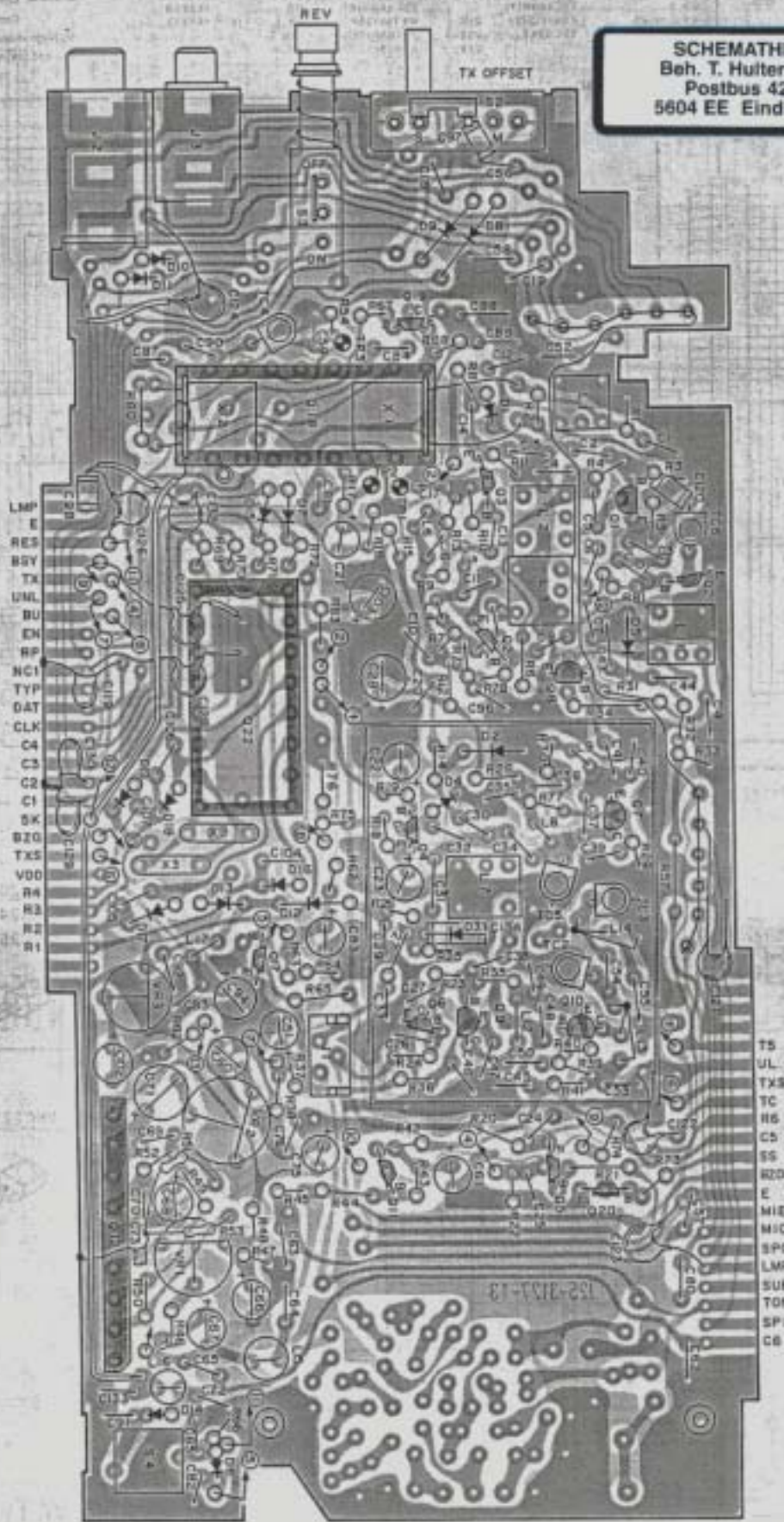
- 25A1115
 25C2603
 25C2668
 25C2669
- 25C2026
 25C2407
 25C2549



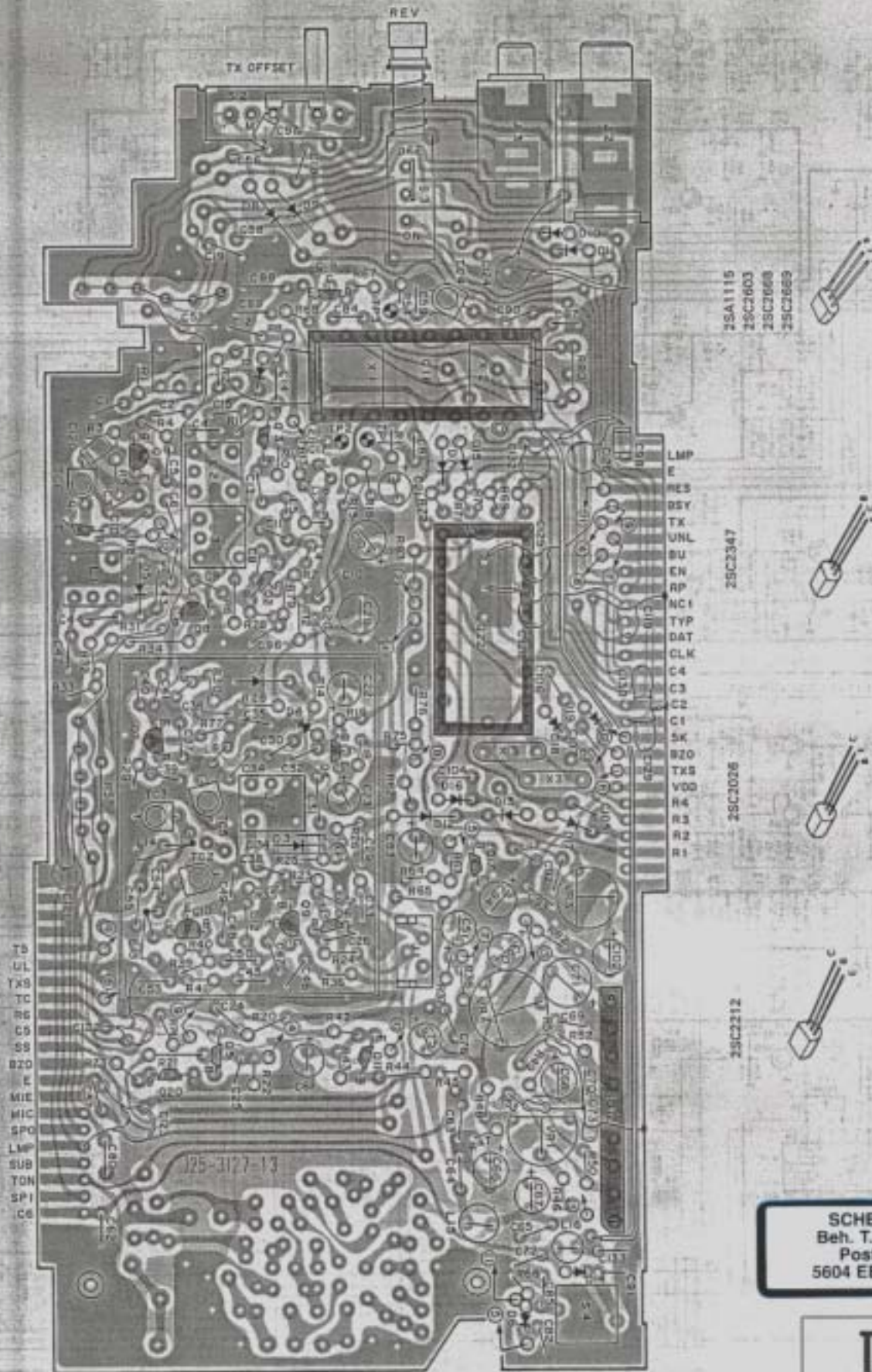
(K, M_{1,3} Type)

PLL UNIT (X50-1890-00) Component side view

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PLL UNIT (X50-1890-00) Foil side view



25A1115
25C2603
25C2608
25C2609

25C2347

25C1026

25C2212

LMP
E
RES
DSY
TX
UNL
BU
EN
RP
NC1
TYP
DAT
CLK
C4
C3
C2
C1
5K
B20
TXS
V00
R4
R3
R2
R1

T9
UL
YX9
TC
R6
C9
S8
B20
E
MIC
MIC
SPO
LMP
SUB
TON
SP1
IC6

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