

SPECIFICATIONS

Frequency Range

160 meter band	1.8 ~ 2.0 MHz
80 meter band	3.5 ~ 4.0 MHz
40 meter band	7.0 ~ 7.5 MHz
20 meter band	14.0 ~ 14.5 MHz
15 meter band	21.0 ~ 21.5 MHz
10 meter band A	28.0 ~ 28.5 MHz
10 meter band B	28.5 ~ 29.0 MHz
10 meter band C	29.0 ~ 29.5 MHz
10 meter band D	29.5 ~ 30.0 MHz
119 meter band (WWV)/JJY	15.0 ~ 15.5 MHz
Shortwave band:	
49 meter band	5.9 ~ 6.4 MHz
31 meter band	9.4 ~ 9.9 MHz
25 meter band	11.5 ~ 12.0 MHz
16 meter band	17.7 ~ 18.2 MHz

Mode

SSB, CW, AM, RTTY

Receiver Sensitivity

SSB 0.25 μ V (SW Band 0.5 μ V) S + N/N 10 dB or more
 AM 1.5 μ V (SW Band 3 μ V) S + N/N 10 dB or more

Image Ratio

Better than 80 dB (SW Band better than 50 dB)

IF Rejection

IF Frequency is 90 dB or more down from output signal
 (SW Band more than 40 dB)

Receiver Selectivity

CW (0.25) more than 250 Hz (-6 dB), less than 500 Hz
 (-6 dB) (*₁)
 CW (0.5) more than 500 Hz (-6 dB), less than 850 Hz
 (-60 dB) (*₂)
 SSB (2.4) more than 2.4 kHz (-6 dB), less than 3.9 kHz
 (-60 dB)
 AM (6) more than 6 kHz (-6 dB), less than 12 kHz (-60
 dB)

Variable Bandwidth

CW (0.5) 150 Hz ~ 500 Hz (-6 dB) fully variable (*₃)
 SSB (2.4) 600 Hz ~ 2.4 kHz (-6 dB) fully variable
 AM (6) 4.3 kHz ~ 6 kHz (-6 dB) fully variable (*₄)

*₁ Installed optional filter-YG-455CN

*₂ Installed optional filter-YG-455C

*₃ Installed optional filter-YG-88C and YG-455C

*₄ Installed optional filter-YG-88A

Notch Filter Attenuation

More than 50 dB

Frequency Stability

Within 100 Hz during any 30 minute period after warm up
 within \pm 1 kHz during the first hour after 1 minute of
 warm up.

Antenna Impedance

50 ~ 75 Ω (unbalanced)

AF Output

More than 1.5W (8 Ω load, 10% distortion)

AF Load Impedance

4 ~ 16 Ω for both speaker and headphone

Power Consumption

AC 120V, 30W
 DC 13.8V, 1.6A

Power Supply

AC 100, 120, 220, 240V, 50/60 Hz
 DC 12 ~ 15V

Semiconductors and Tubes

IC's	40
FET's	34
Transistors	89
Diodes	170
Tube	1

Dimensions

13-1/8" (W) x 6" (H) x 13-3/16" (D)
 (Protection not included)

NOTE:

The circuit and ratings may change without notice due to
 development in technology.

SCHEMATHEEK
 Beh. T. Hultermans
 Postbus 4228
 5604 EE Eindhoven

A

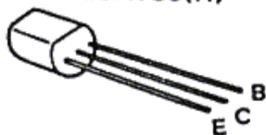
SCHEMATIC

Signal

OSC Control Circuit

Common

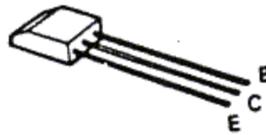
2SC458(B)
2SC945(R)
2SA733(R)



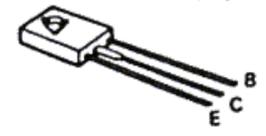
2SC373
2SC735(Y)
2SC1000(GR)
2SC732



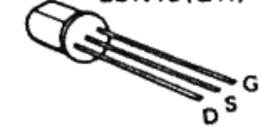
2SC460B



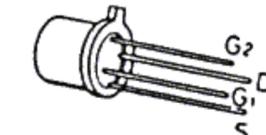
2SA496(Y)



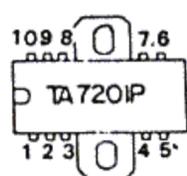
2SK19(GR)



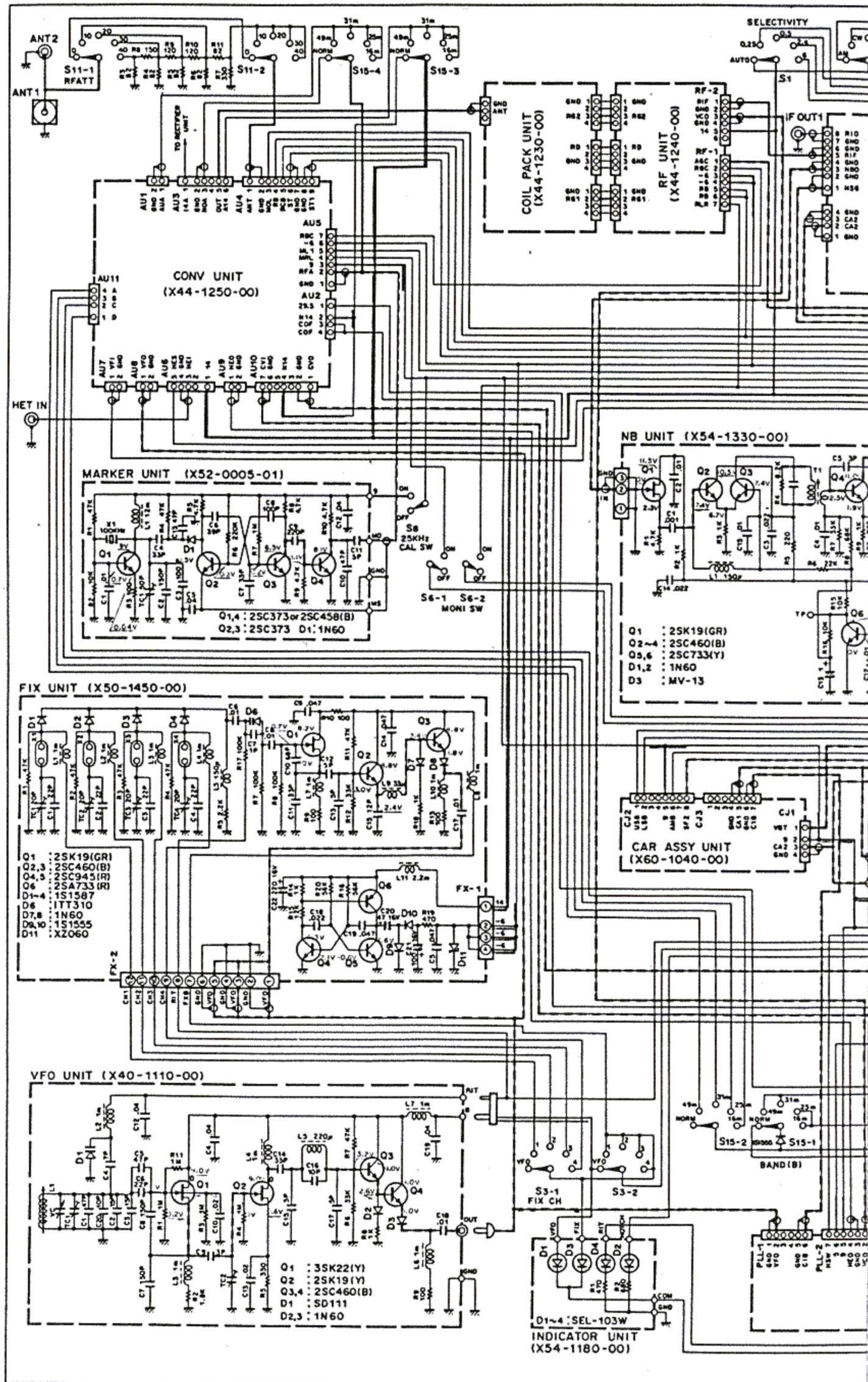
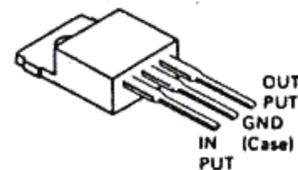
3SK22(Y)



TA7201P



μPC14305H



2

3

4

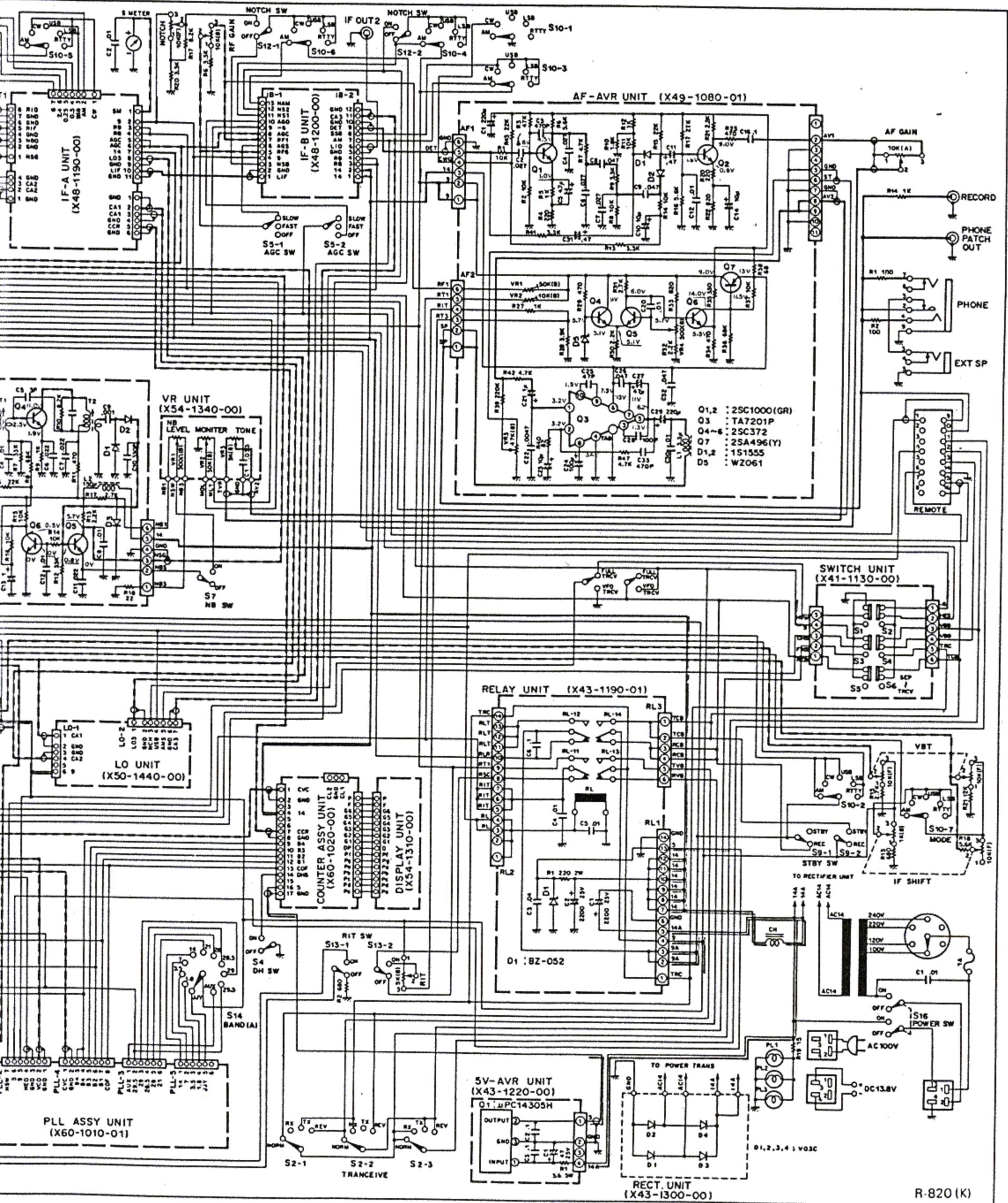
5

6

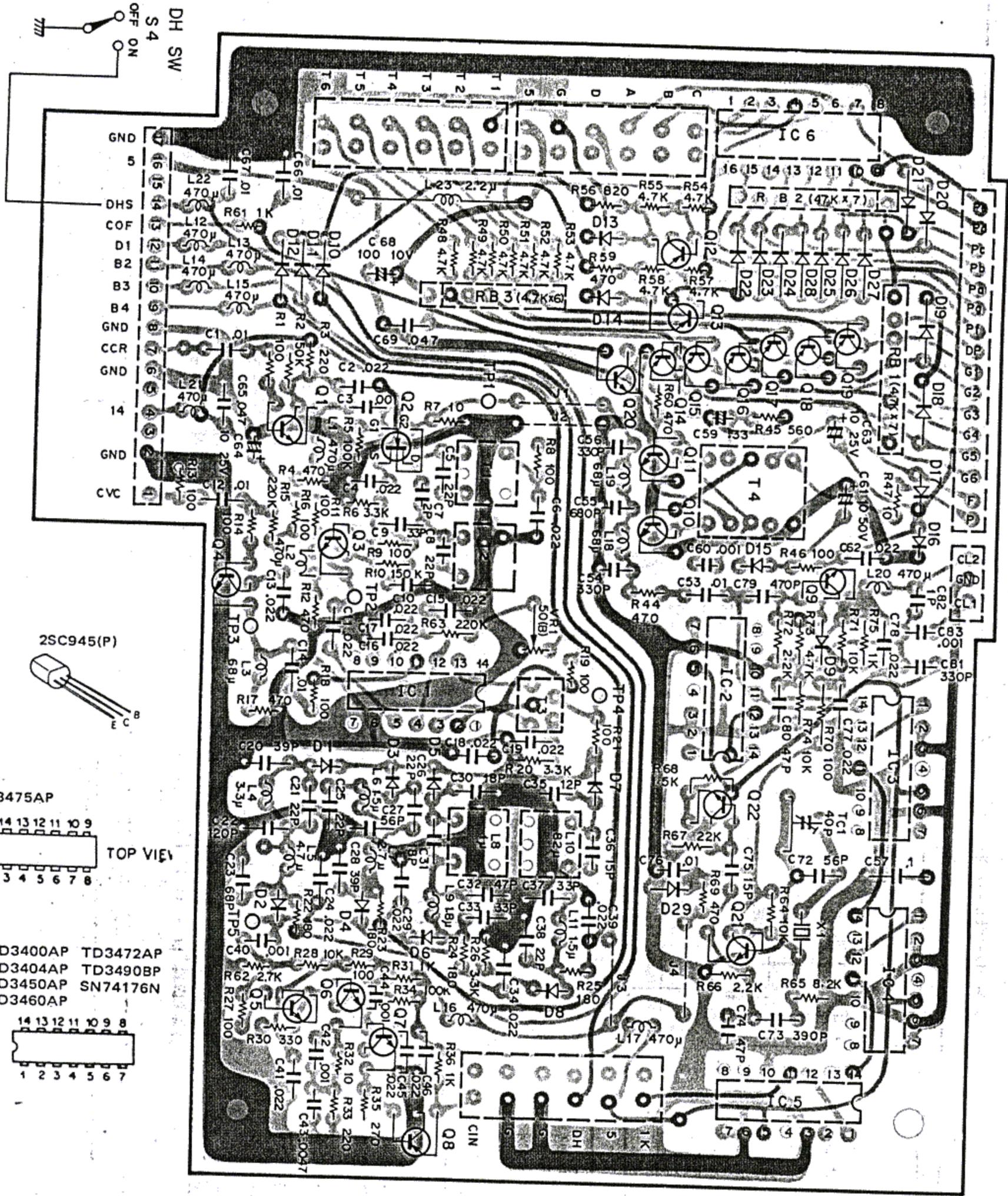
SCHEMATIC DIAGRAM

Common Power Source

The circuit and ratings may change without notice due to development in technology.



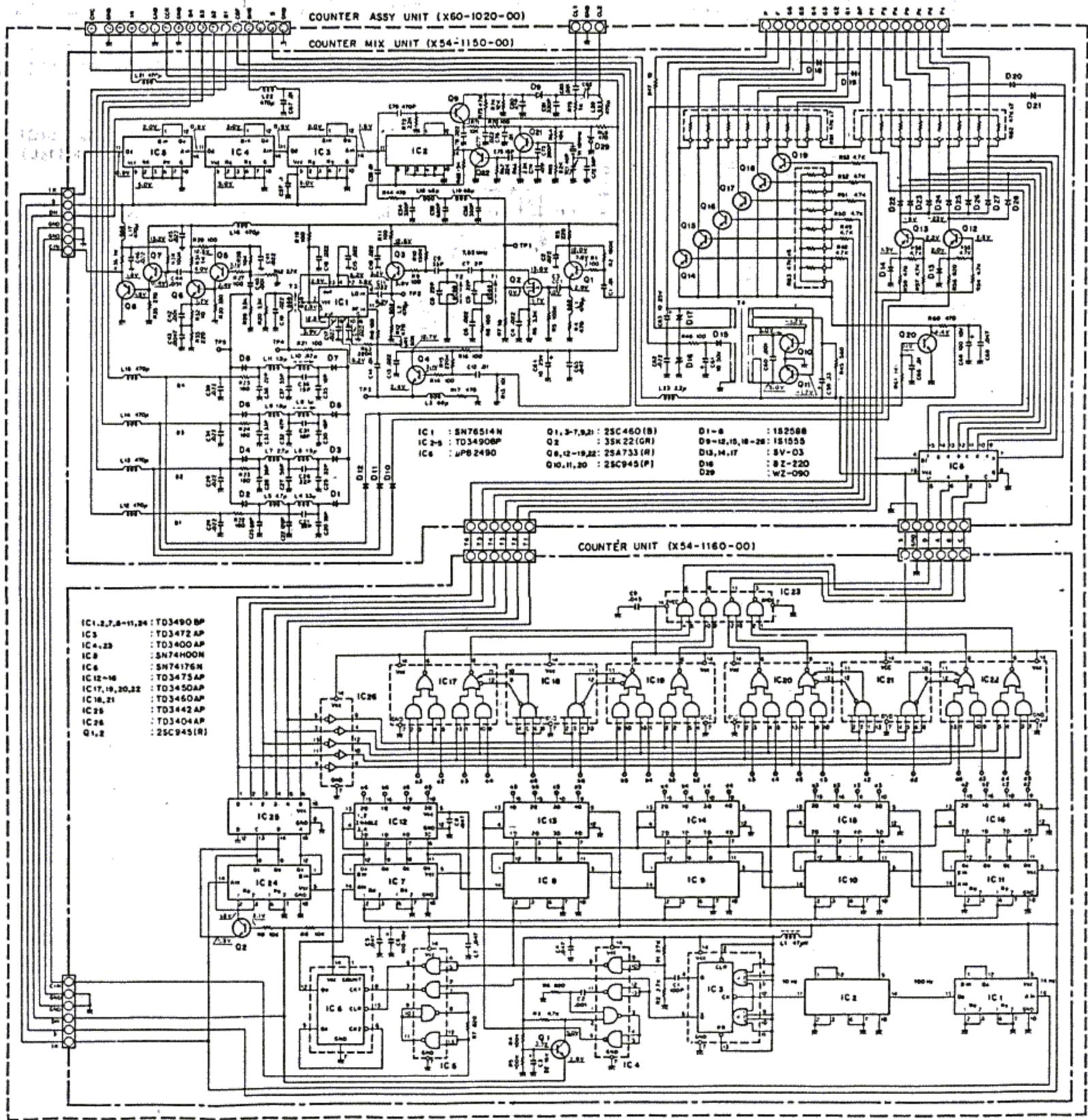
COUNTER MIXER UNIT (X54-1150-00)



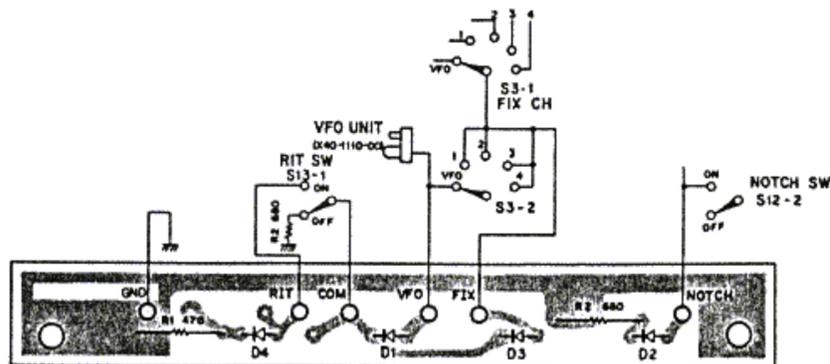
IC1: SN76514N, IC2-5: TD3490BP, IC6: μ PB249D, Q1, 3-7, 9, 21: 2SC460(B)
 Q2: 3SK22(GR), Q8, 12-19, 22: 2SA733(R), Q10, 11, 20: 2SC945(P), D1-8: 1S2588
 D9-12, 15, 18-28: 1S1555, D13, 14, 17: SV-03, D16: BZ-220, D29: WZ-090

100-045/001

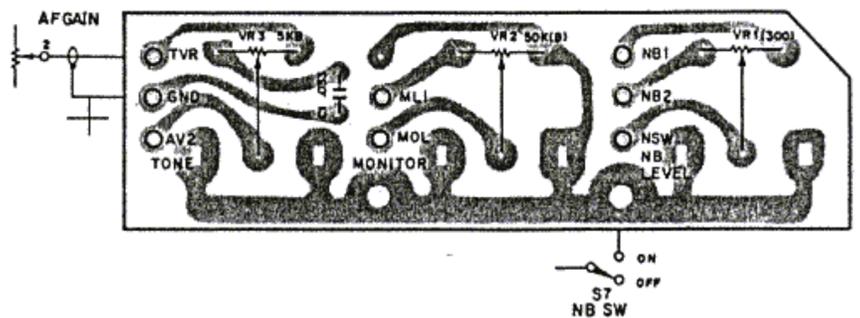
COUNTER ASS'Y UNIT (X60-1020-00)



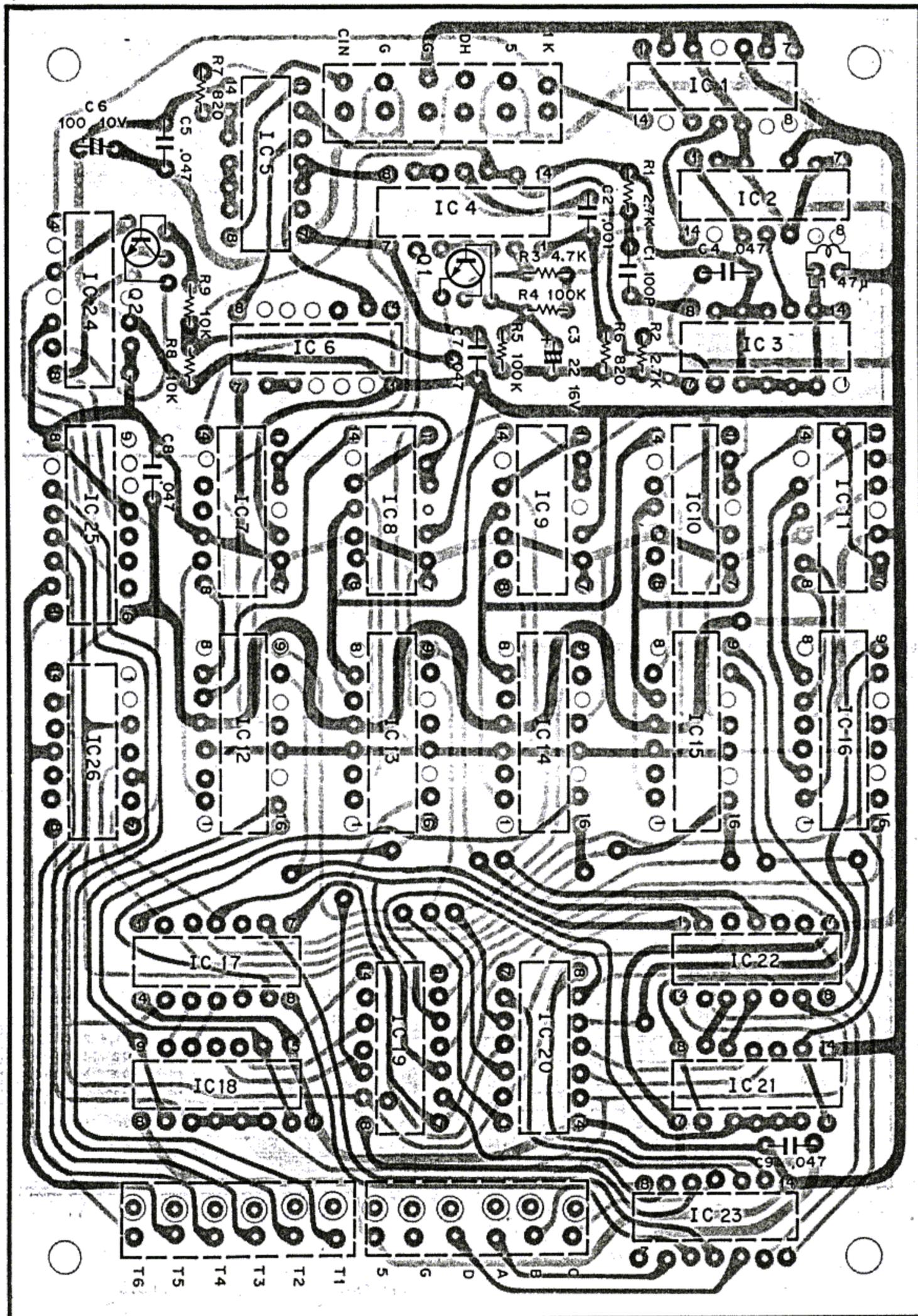
INDICATOR UNIT (X54-1180-00)



VR UNIT (X54-1340-00)



■ COUNTER UNIT (X54-1160-00)

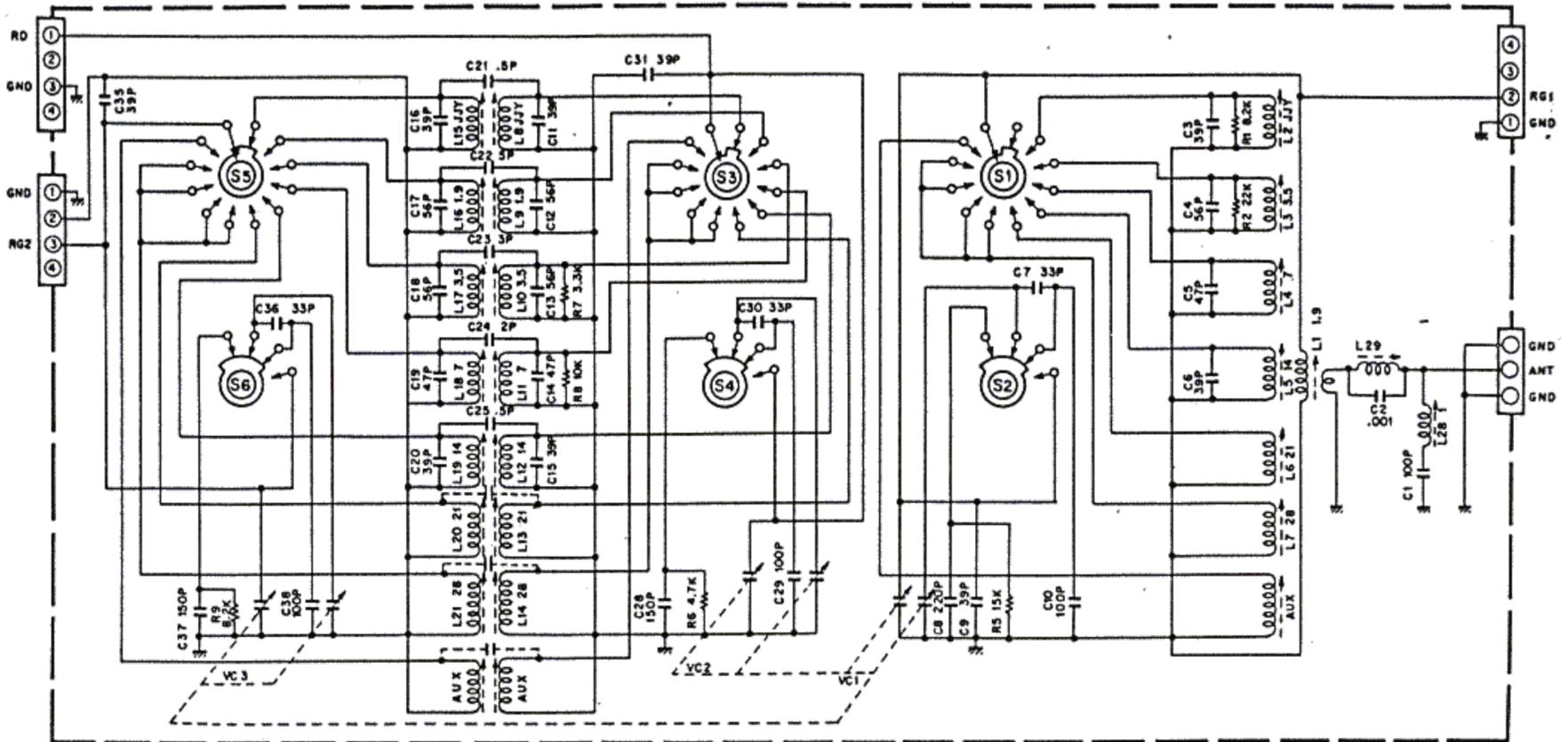


IC1, 2, 7, 8~11, 24: TD3490BP, IC3: TD3472AP, IC4, 23: TD3400AP, IC5: SN74H00N
 IC6: SN74176N, IC12~16: TD3475AP, IC17, 19, 20, 22: TD3450AP, IC18, 21: TD3460AP
 IC25: TD3442AP, IC26: TD3404AP, Q1, 2: 2SC945(R)

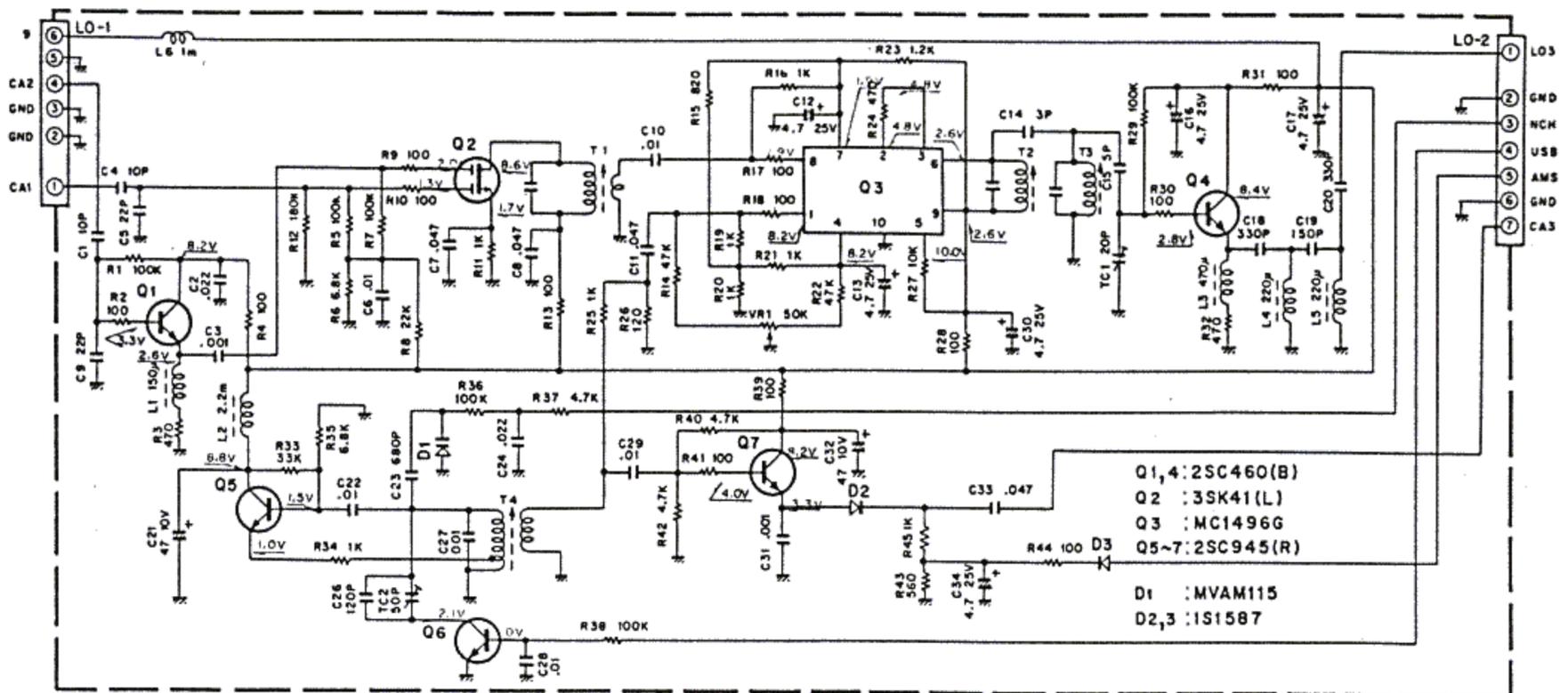
R-820

KENWOOD

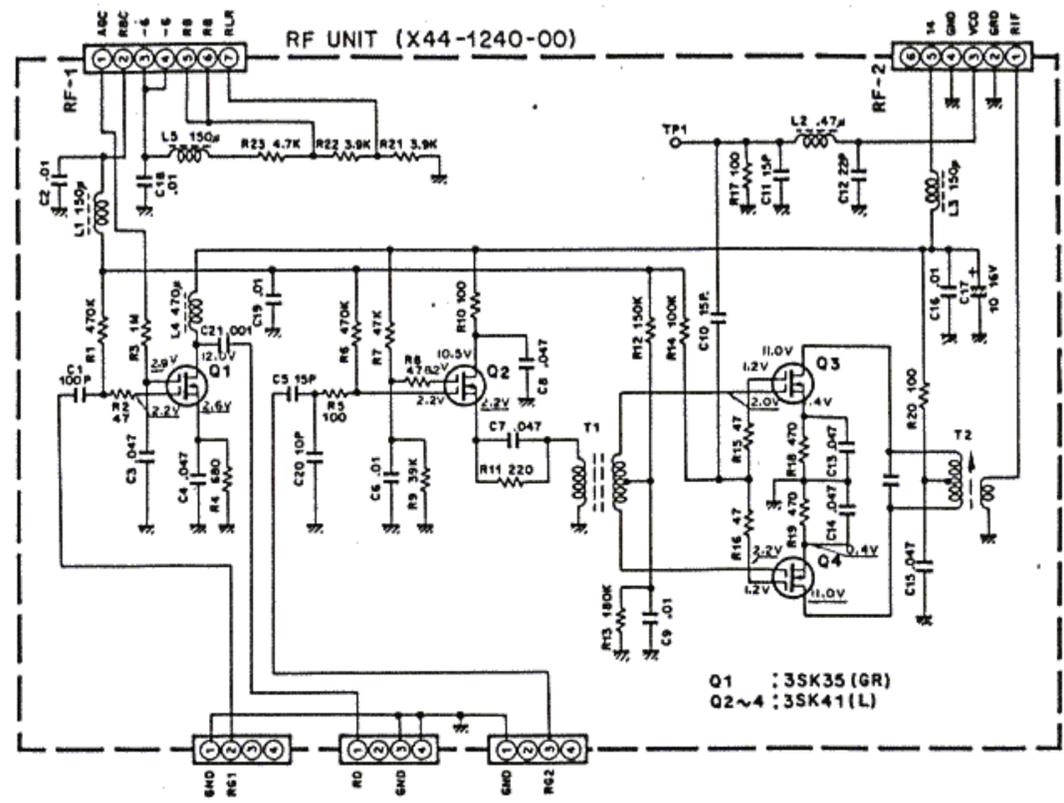
COIL PACK UNIT (X44-1230-00)



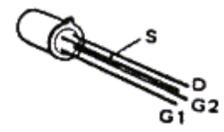
LOCAL OSCILLATOR UNIT (X50-1440-00)



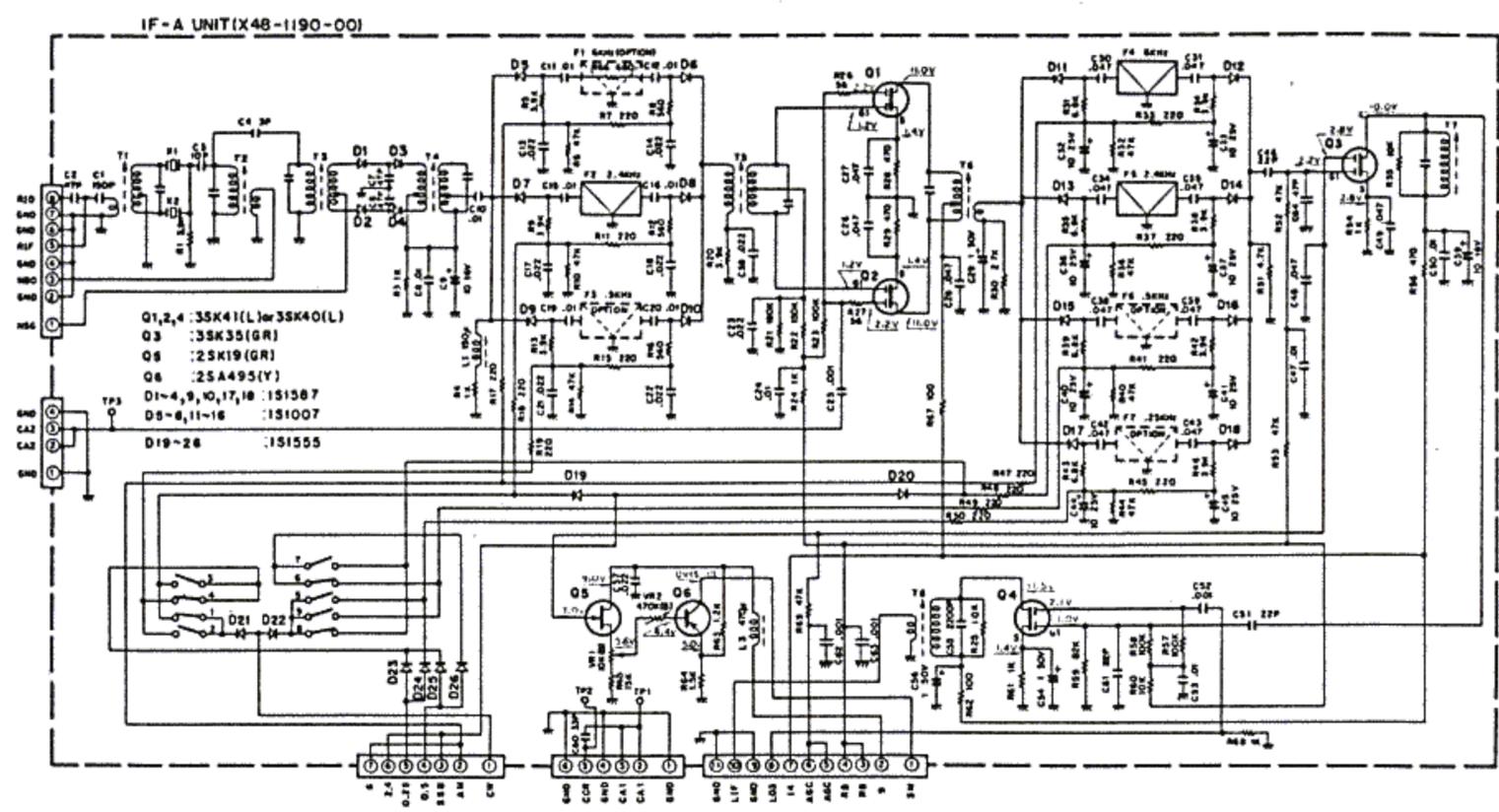
RF UNIT (X44-1240-00)



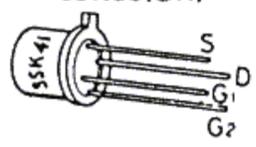
3SK35 (GR)
3SK41 (L)



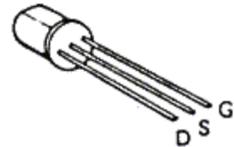
IF-A UNIT (X48-1190-00)



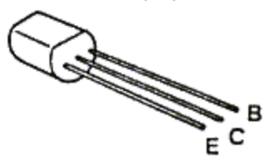
3SK41 (L) or
3SK40 (L)
3SK35 (GR)



2SK19

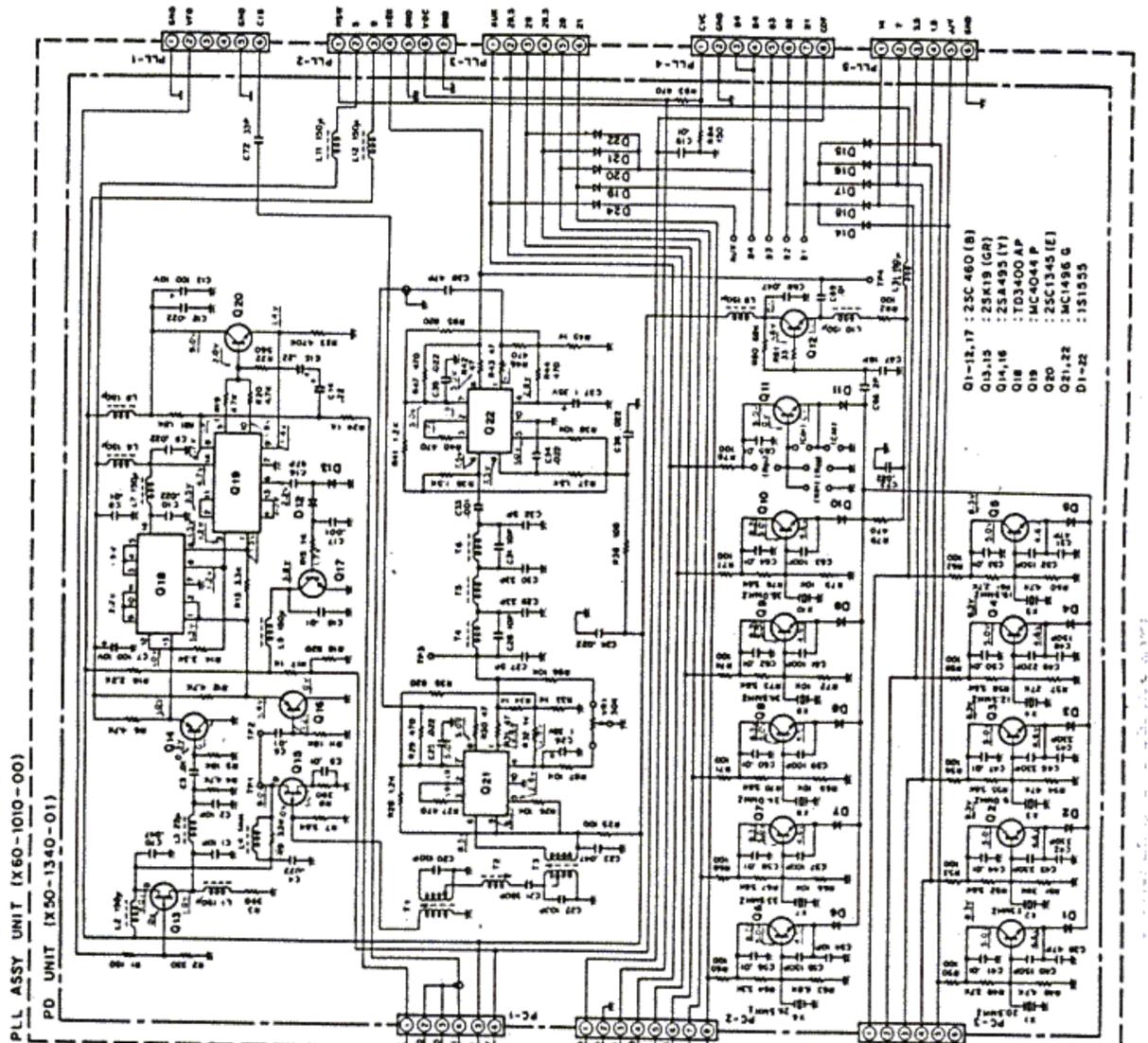


2SA495 (Y)

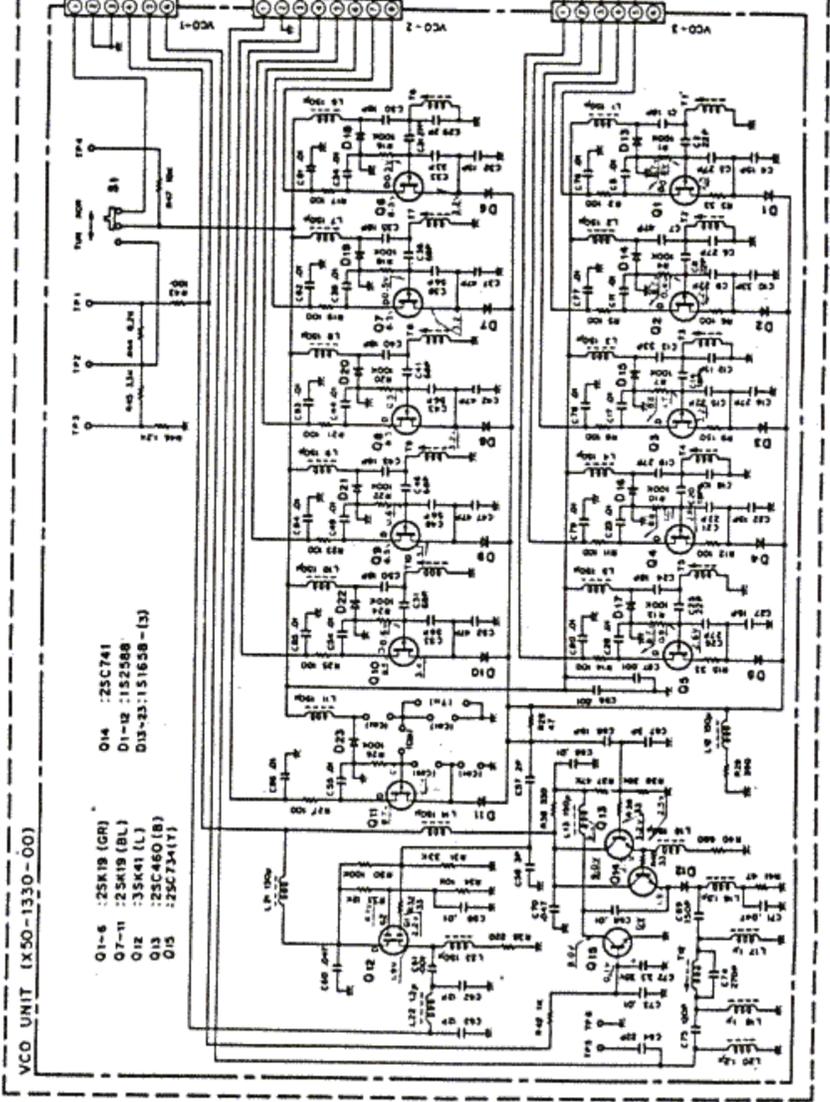
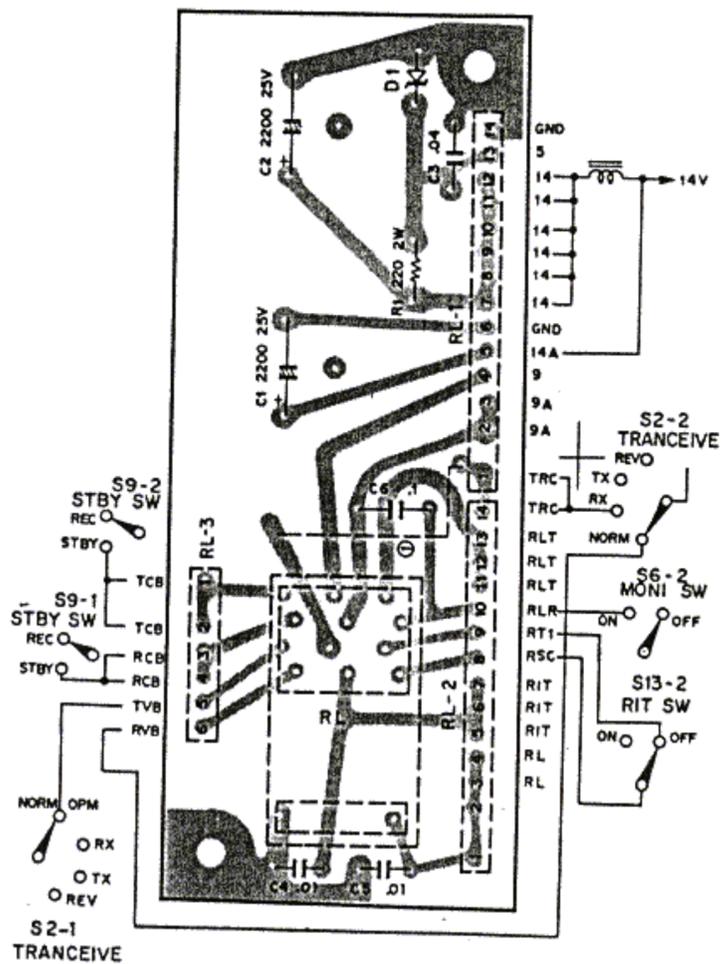


■ PLL ASS'Y UNIT (X60-1010-01)

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5604 EE Eindhoven

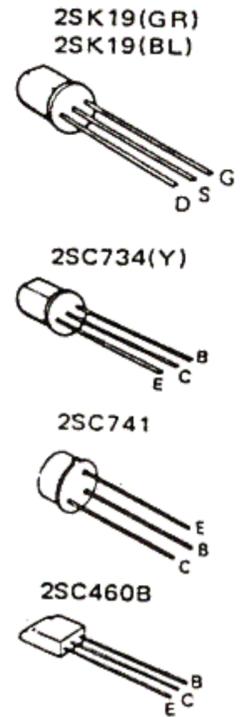
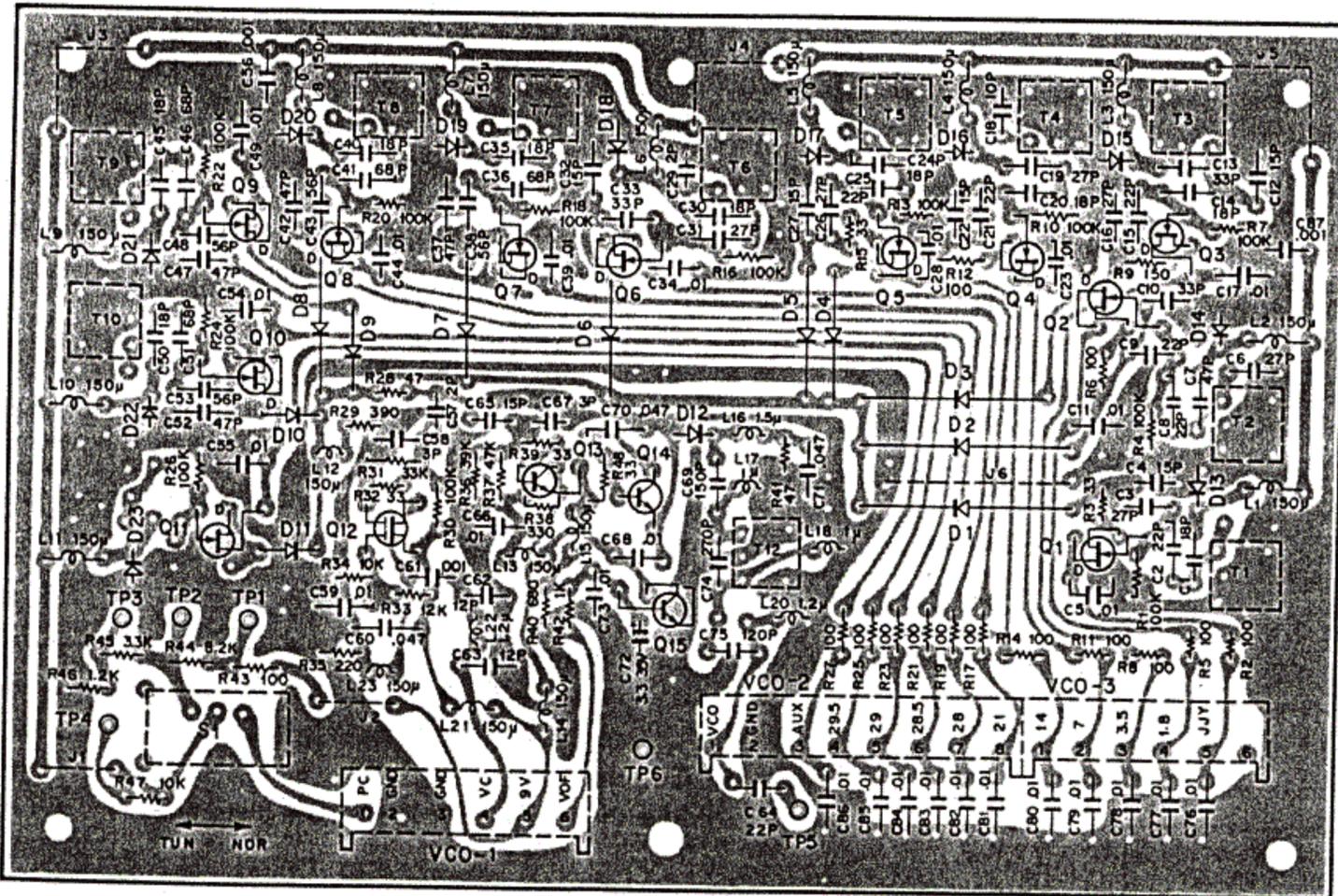


■ RELAY UNIT (X43-1190-00)



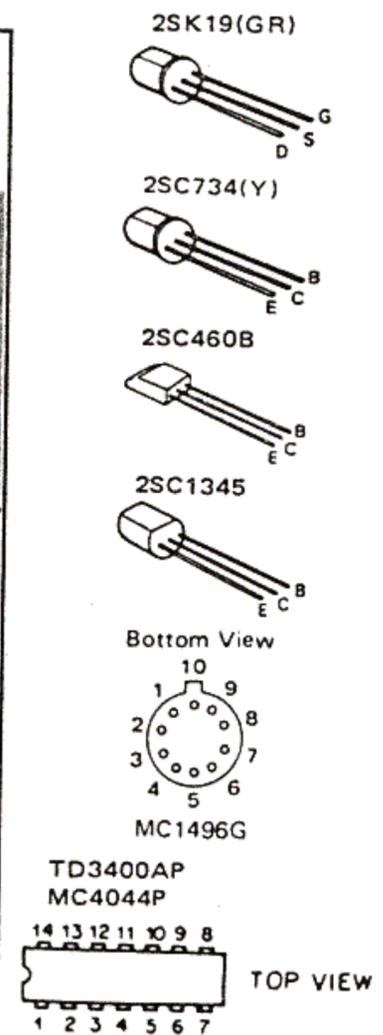
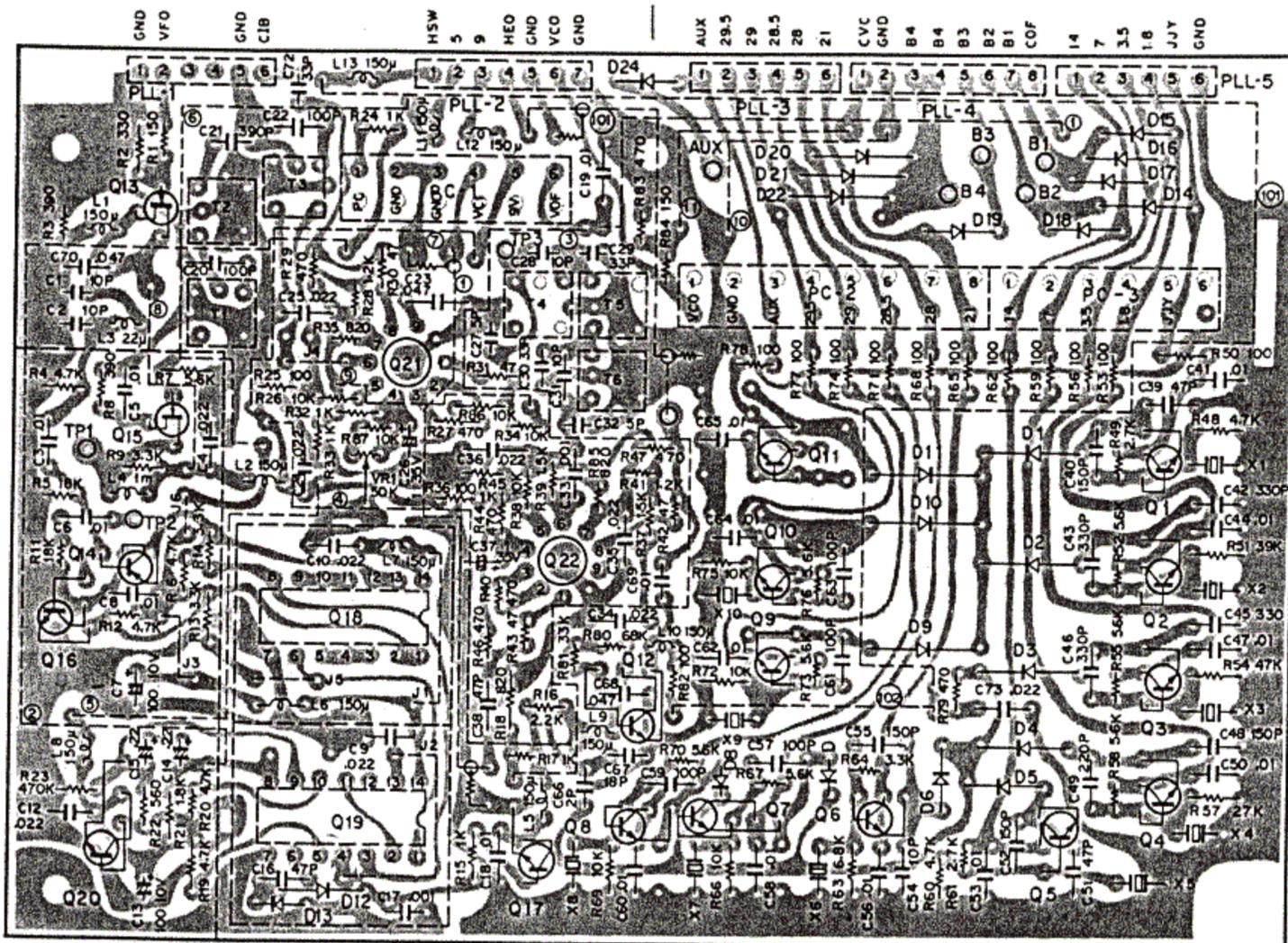
A B C D

■ VCO UNIT (X50-1330-00)



Q1 ~ 6: 2SK19(GR), Q7 ~ 11: 2SK19(BL), Q12: 3SK41(L), Q13: 2SC460(B), Q15: 2SC734(Y)
 Q14: 2SC741, D1 ~ 12: 1S2588, D13 ~ 23: 1S1658-(3)

■ PD UNIT (X50-1340-00)



Q1 ~ 12, 17: 2SC460(B), Q13, 15: 2SK19(GR), Q14, 16: 2SA495(Y), Q18: TD3400AP
 Q19: MC4044P, Q20: 2SC1345(E), Q21, 22: MC1496G, D1 ~ 22: 1S1555