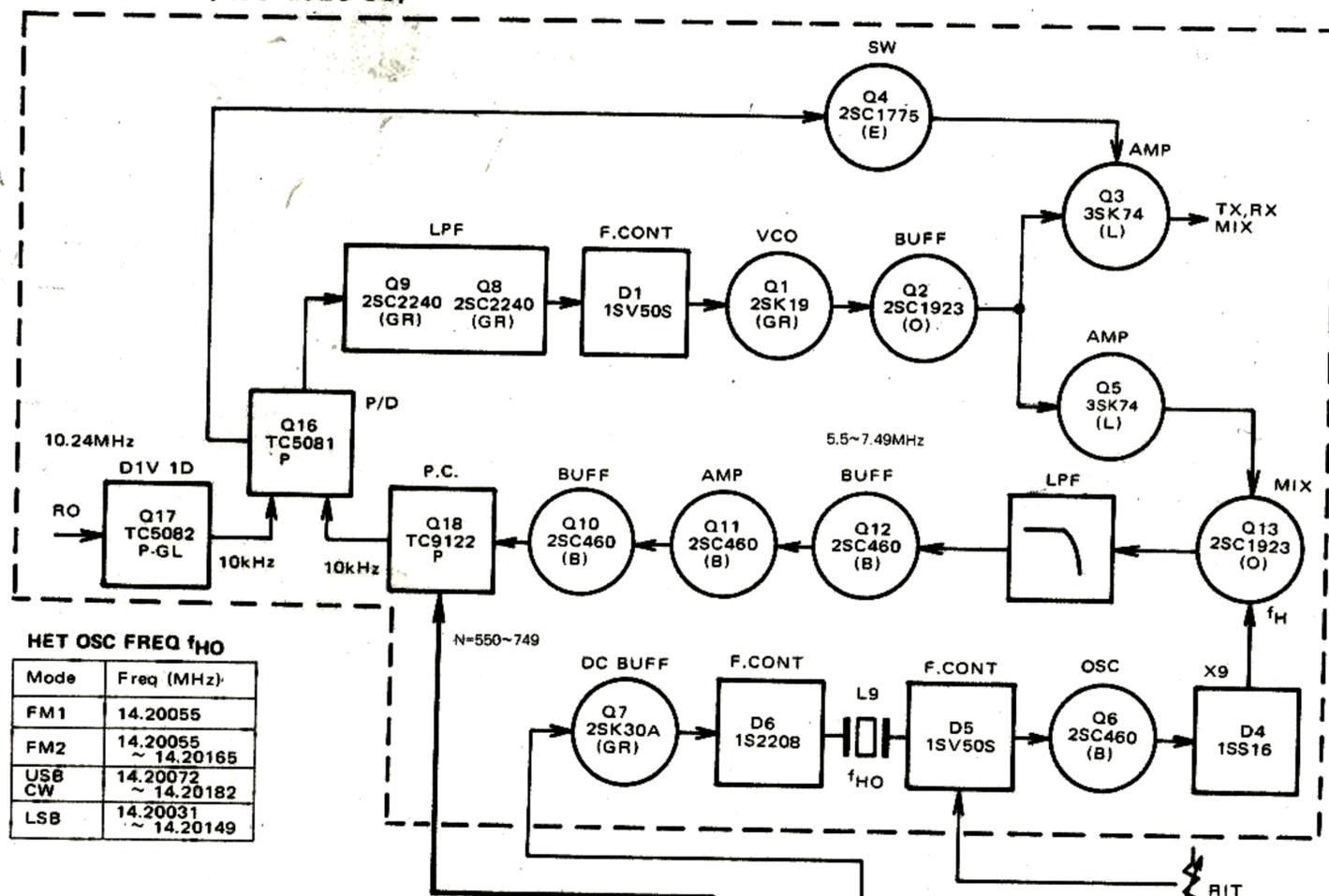


BLOCK DIAGRAM

PLL UNIT (X50-1620-00)



HET OSC FREQ f_{HO}

Mode	Freq (MHz)
FM1	14.20055
FM2	14.20055 ~ 14.20165
USB CW	14.20072 ~ 14.20182
LSB	14.20031 ~ 14.20149

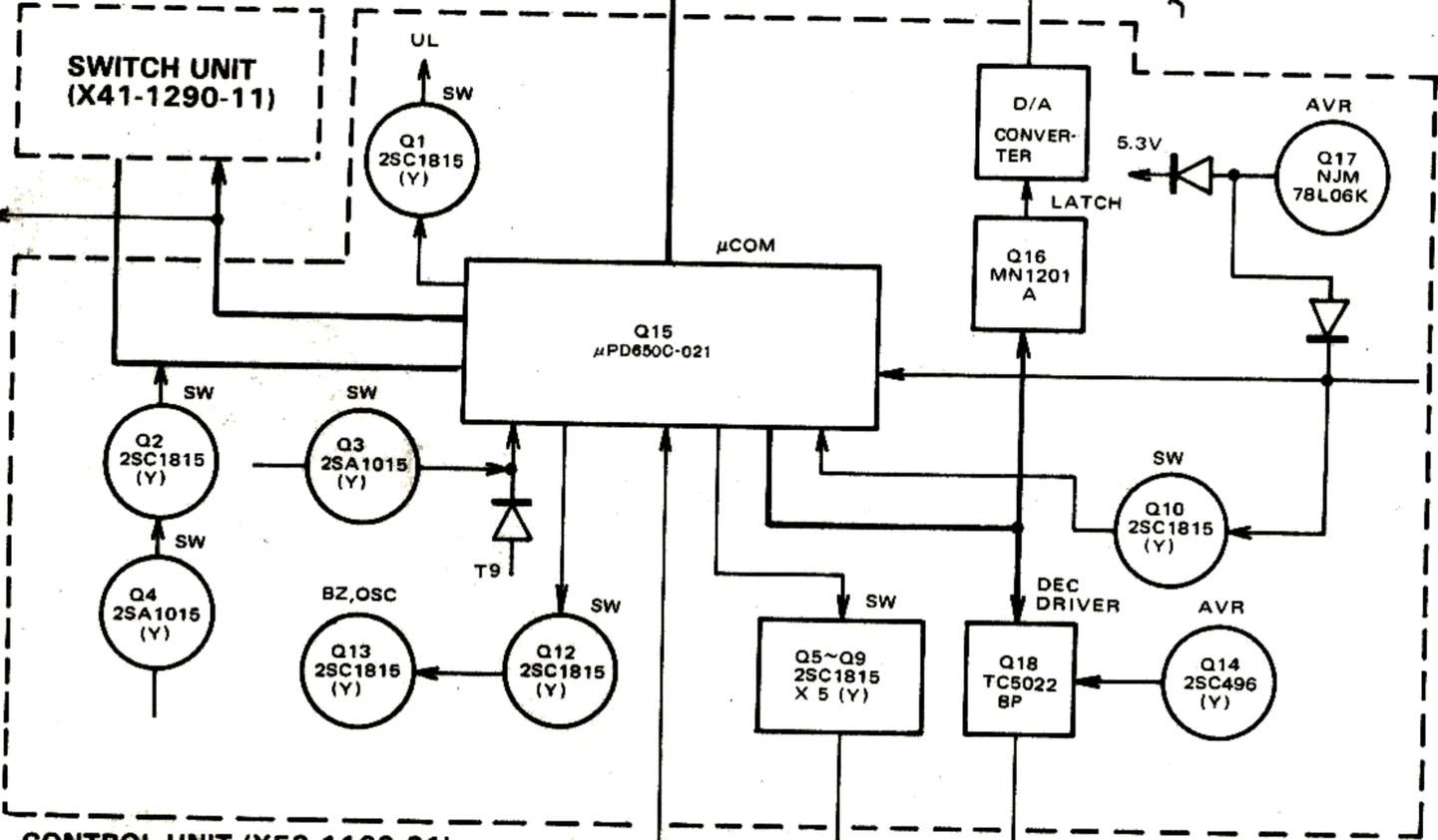
VCO FREQ

Mode	Freq (MHz)
FM1	133.305 ~ 135.280MHz
FM2	133.3050 ~ 135.3049MHz
USB CW	133.3065 ~ 135.3064MHz
LSB	133.3035 ~ 135.3034MHz

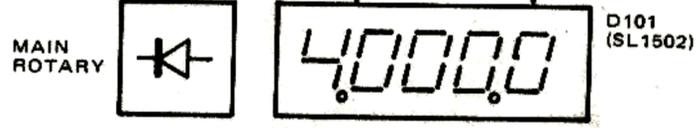
PLL HET FREQ f_H

Mode	Freq (MHz)
FM1	127.805
FM2	127.805 ~ 127.8149
USB CW	127.8065 ~ 127.8164
LSB	127.8035 ~ 127.8134

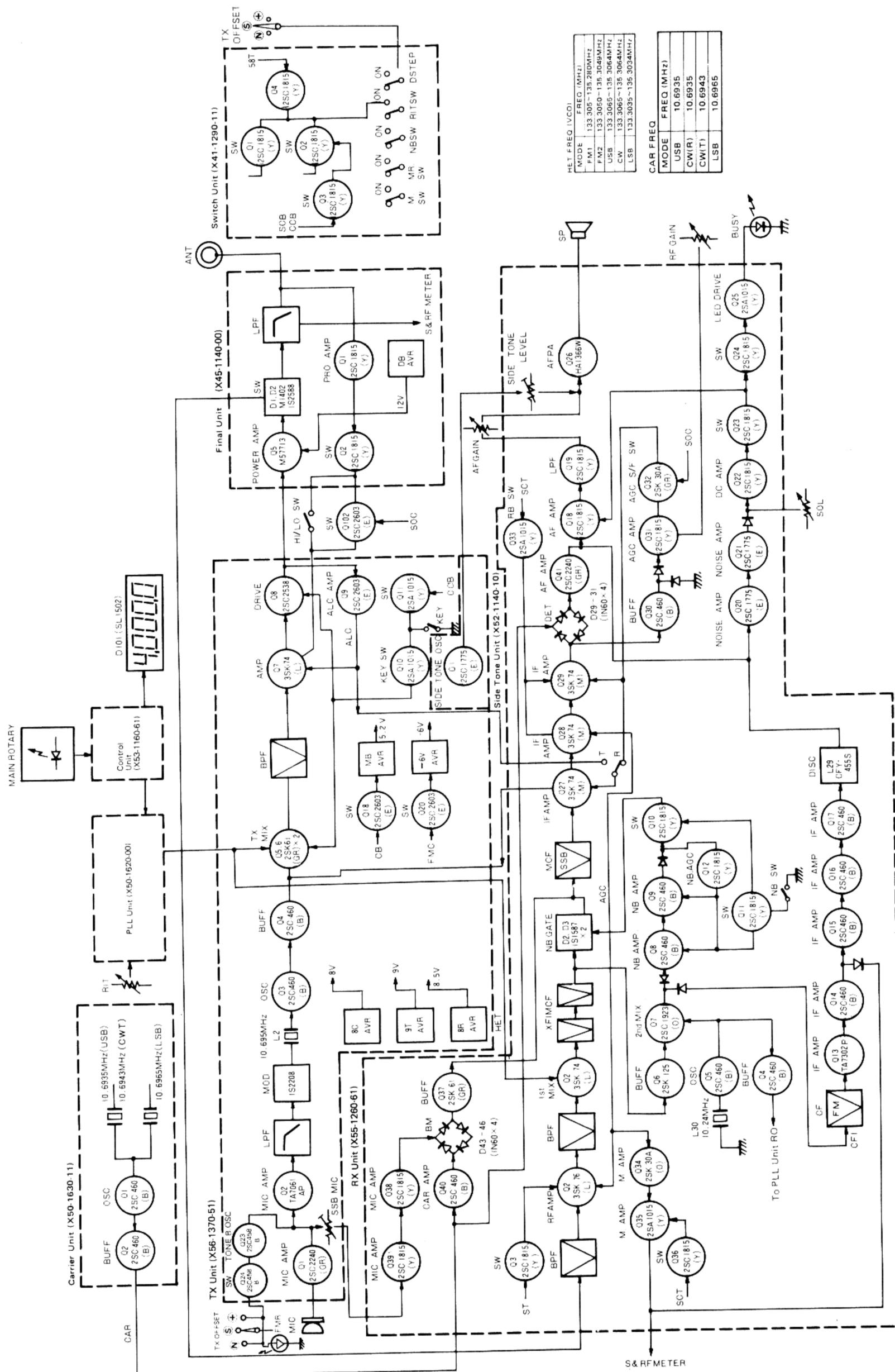
SWITCH UNIT (X41-1290-11)



CONTROL UNIT (X53-1160-61)

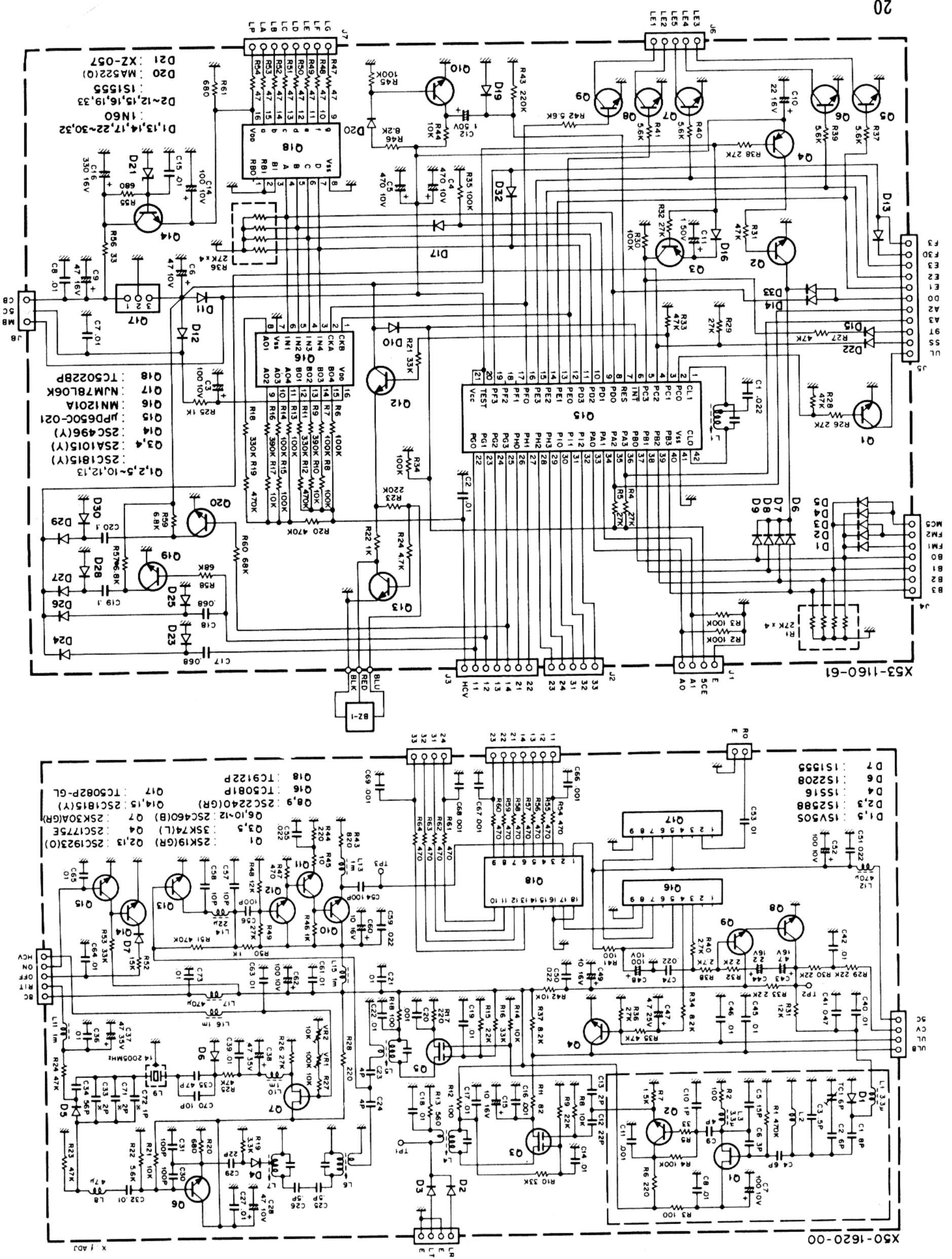


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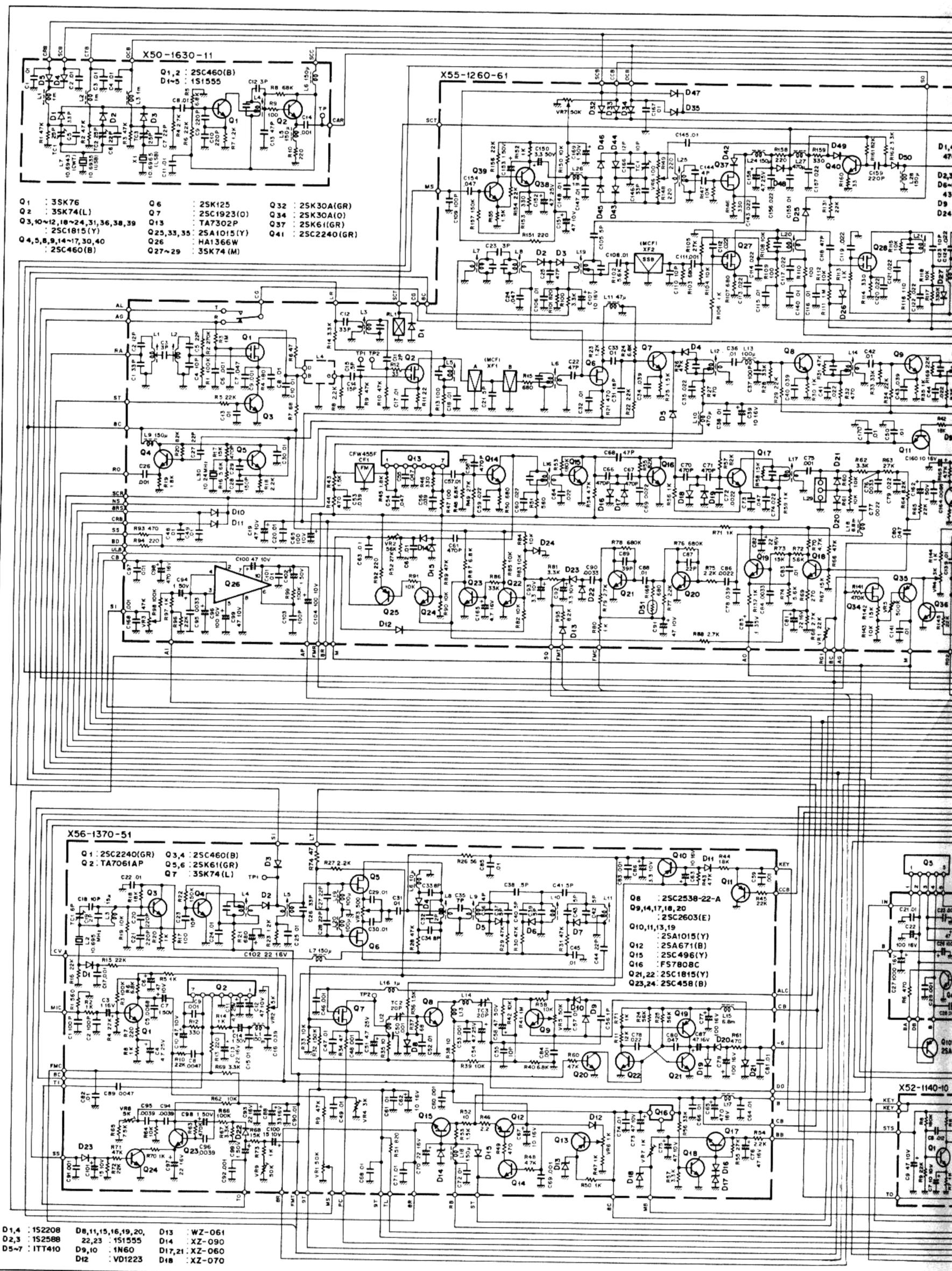
MODE	FREQ. (MHz)
FMT	133.3065-135.3064MHz
FMT	133.3065-135.3064MHz
USB	133.3065-135.3064MHz
CW	133.3065-135.3064MHz
LSB	133.3065-135.3064MHz

CAR FREQ	FREQ. (MHz)
MODE	10.6935
USB	10.6935
CW(R)	10.6935
CW(T)	10.6943
LSB	10.6965



SCHEMATIC DIAGRAM

TR-9000 SCHEMATIC DI



SPECIFICATIONS

[General]

Semiconductors	ICs	12
	FETs	16
	Transistors	88
	Diodes	143
Frequency range	144.000.0 to 145.999.9 MHz	
Frequency synthesizer	Digital control, phase locked VCO	
Mode	SSB (A3j), FM (F3), CW (A1)	
Frequency stability	Within $\pm 500\text{Hz}$ during the first hour after 1 minute of warm up, and within 50Hz any 30 minutes thereafter at 25°C (constant).	
RPT. Tone Burst Frequency	1,750 Hz	
Power requirement	13.8V DC $\pm 15\%$	
Grounding	Negative	
Operating temperature	-20°C to +60°C	
Current drain	0.4A in receive mode with no input signal 2.9A in HI transmit mode (Approx) 1.3A in LOW transmit mode (Approx) Less than 2.5mA for memory back up	
Dimensions	170mm (6-11/16) wide 68mm (2-11/16) high 234mm (9-3/16) deep (projections not included)	
Weight	2.5 kg (5.5 lbs)	

[Transmitter Section]

RF output power (at 13.8V DC, 50 Ω load)	HI (SSB, FM, CW)	10W
	Low (FM, CW)	1W approx.
Modulation	FM	Variable reactance direct shift
	SSB	Balanced modulation
Frequency tolerance	SSB, CW	Less than $\pm 10 \times 10^{-6}$
	FM	Less than $\pm 20 \times 10^{-6}$
Spurious radiation	HI	Less than -60dB
	LOW	Less than -46dB
Carrier suppression	Better than 40dB	
Unwanted side band suppression	Better than 40dB	
Maximum frequency deviation (FM)	$\pm 5\text{kHz}$	
Microphone	Dynamic microphone with PTT switch, 500 Ω	

[Receiver Section]

Circuitry	FM	Double conversion superheterodyne
	SSB, CW	Single conversion superheterodyne
Intermediate frequency	1st IF	10.695MHz
	2nd IF (FM)	455kHz
Receiver sensitivity	FM	Better than 0.5 μV for 30dB S/N Better than 0.2 μV for 12 dB SINAD
	SSB, CW	0.2 μV for 10dB S/N
Receiver selectivity	FM	More than 12kHz (-6dB) Less than 25kHz (-60dB)
	SSB, CW	More than 2.2kHz (-6dB) Less than 4.8kHz (-60dB)
Spurious interference	Better than 70dB	
Squelch sensitivity	0.16 μV (threshold)	
Auto scan stop level	Less than 0.2 μV (threshold)	
Audio output	More than 2.0 watts across 8 ohm load (10% dist.)	

Note: Circuit and ratings are subject to change without notice due to developments in technology.