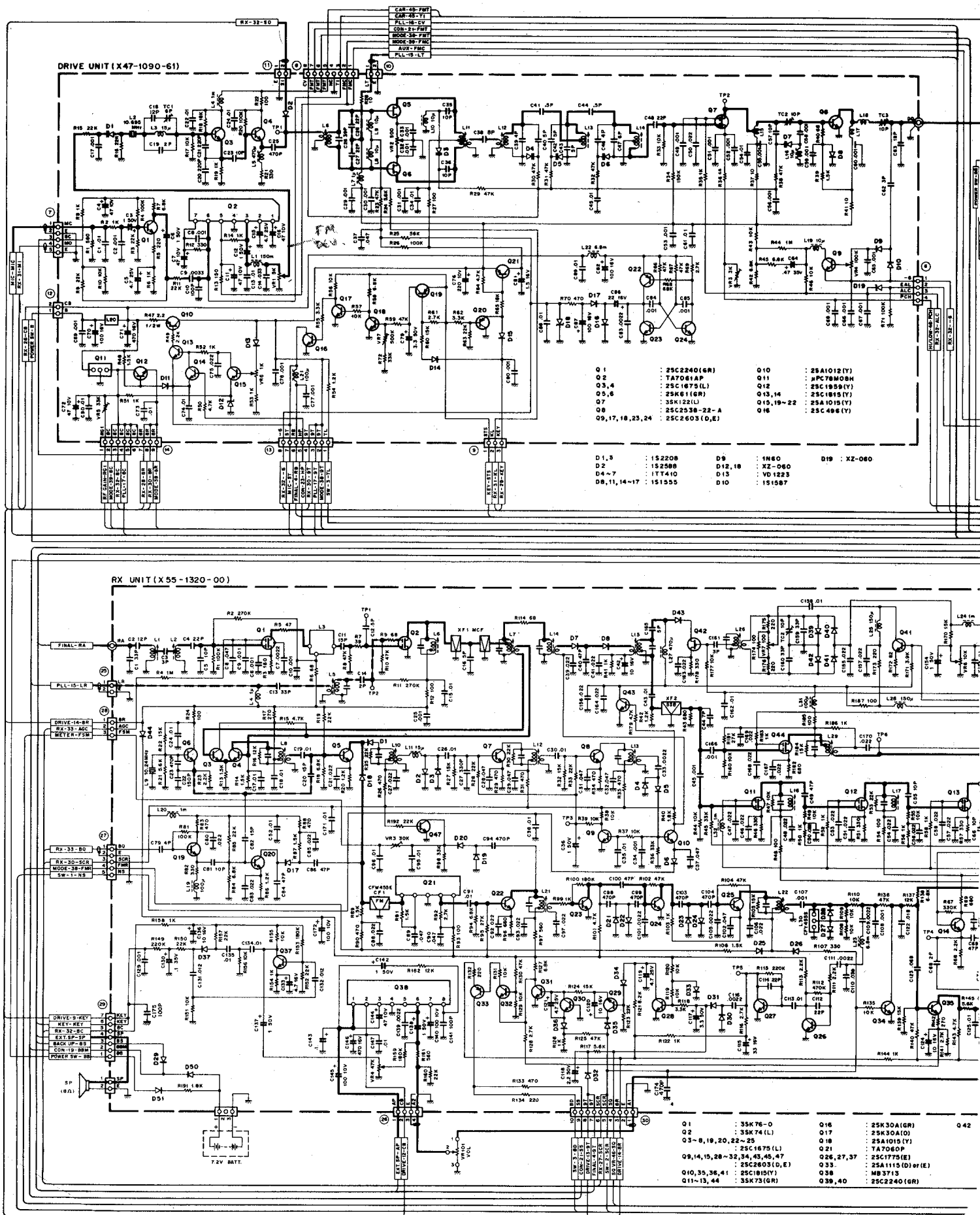
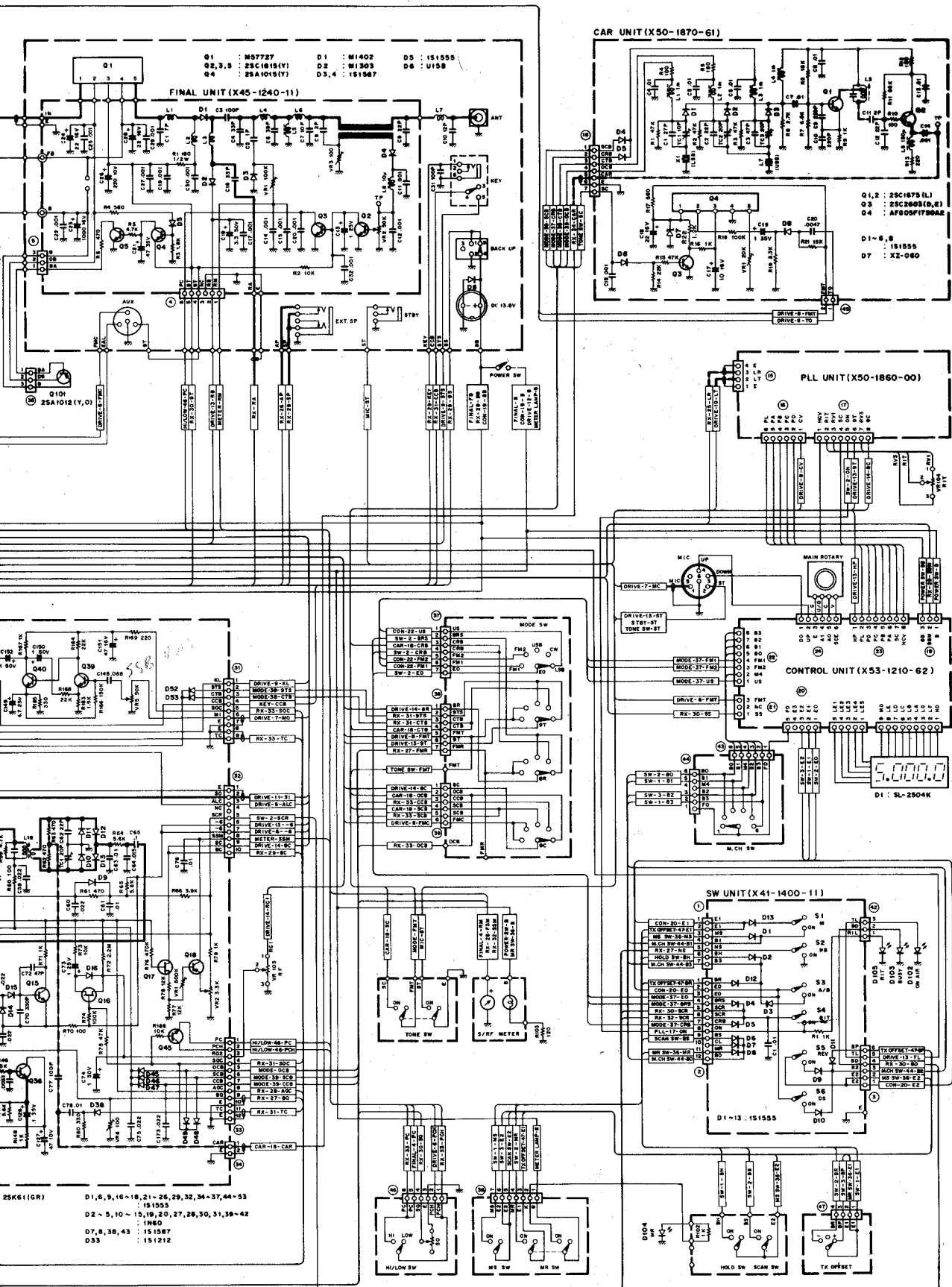


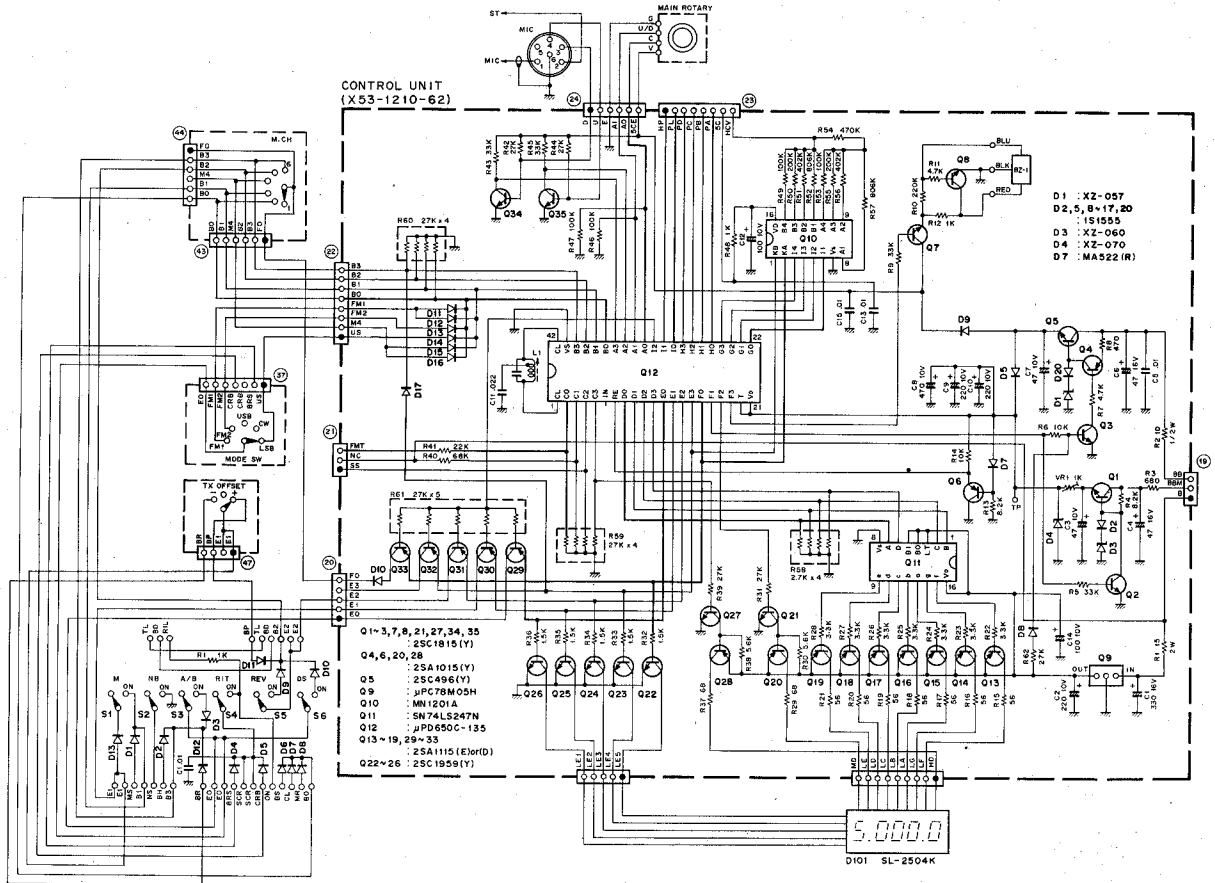
TR-9130 SCHEMATIC



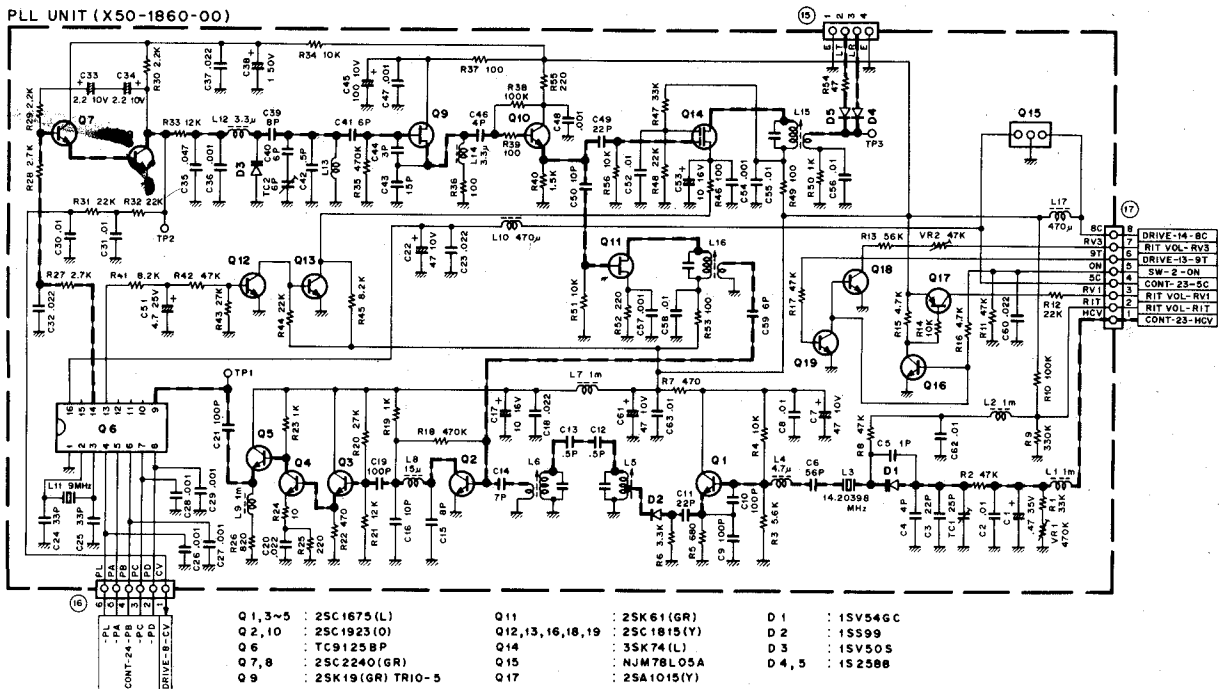


SCHEMATIC DIAGRAM

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PLL UNIT (X50-1860-00)

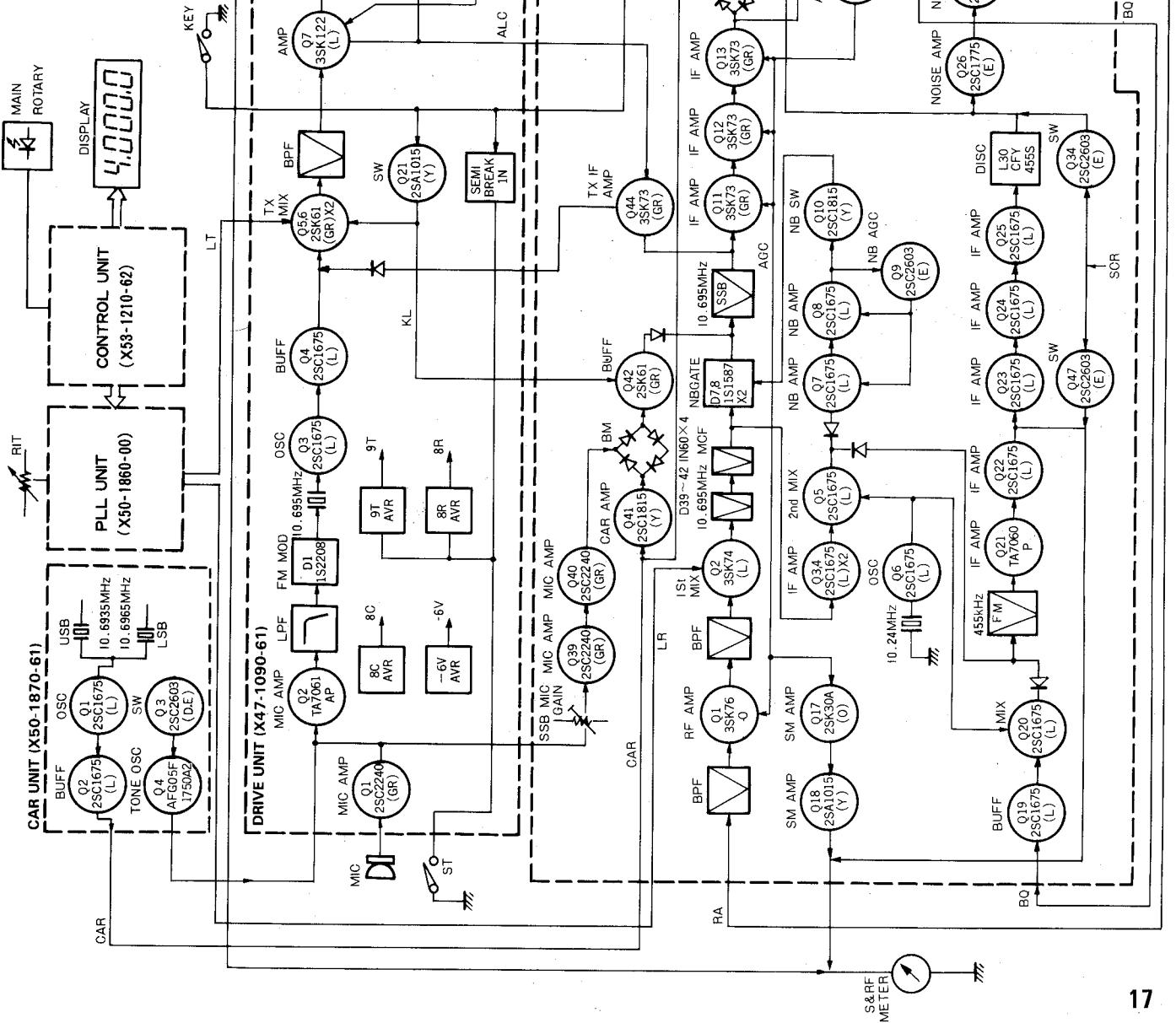


BLOCK DIAGRAM

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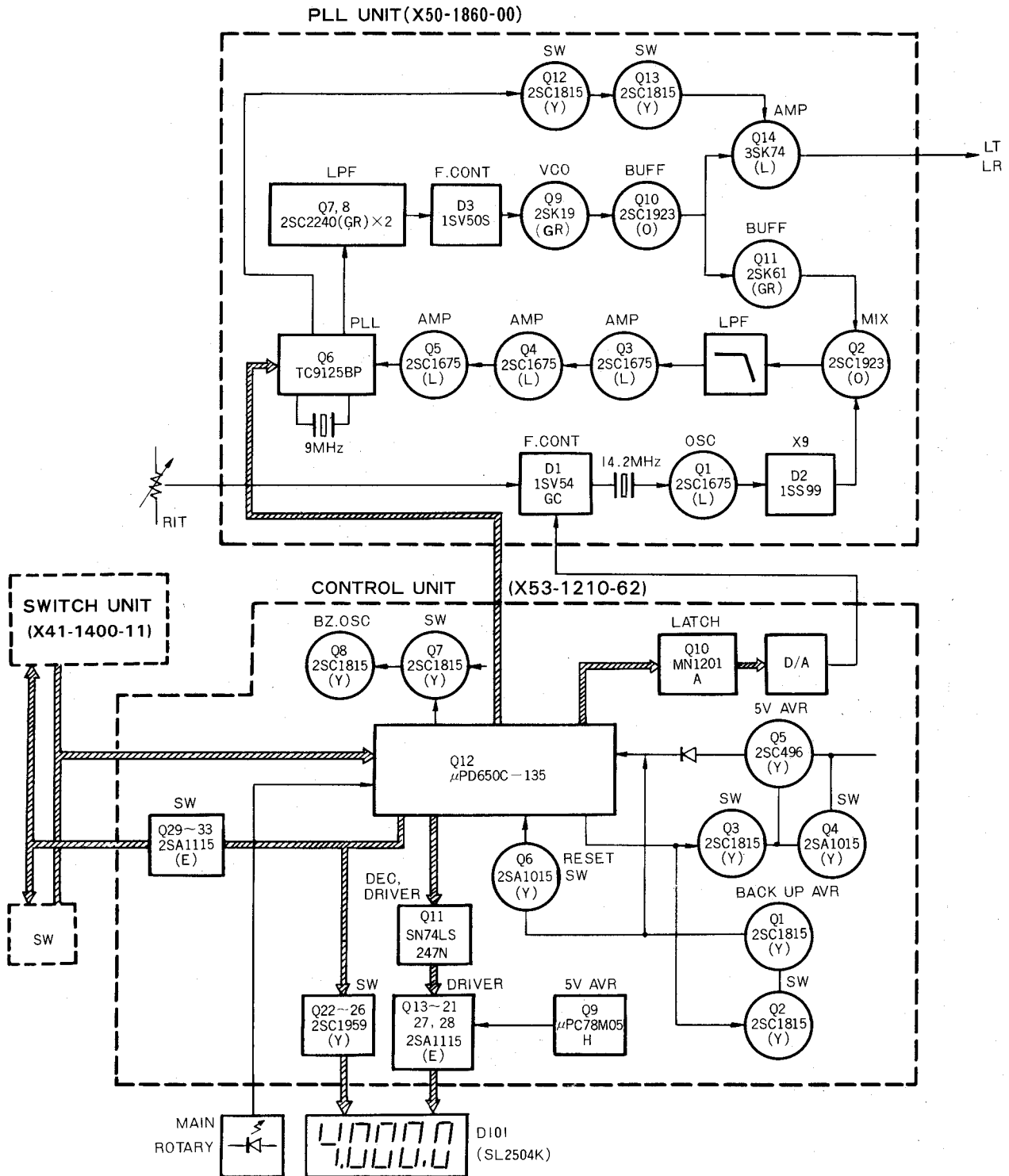
CAR FREQUENCY		HET FREQUENCY (VCO)	
MODE	FREQUENCY (MHz)	MODE	FREQUENCY (MHz)
USB	10.6935	FM	133.305
CW(R)	10.6935		~135.304
CW(T)	10.6943	USB	133.3065
LSB	10.6965	CW	~135.3064
		LSB	133.3035
			~135.3034

CAR FREQUENCY		HET FREQUENCY (VCO)	
MODE	FREQUENCY (MHz)	MODE	FREQUENCY (MHz)
USB	10.6935	FM	133.305
CW(R)	10.6935		~135.304
CW(T)	10.6943	USB	133.3065
LSB	10.6965	CW	~135.3064
		LSB	133.3035
			~135.3034



BLOCK DIAGRAM

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[General]

Semiconductors	ICs	12
	FETs	15
	Transistors	105
	Diodes	126
Frequency range	144 to 146 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).	
Power requirement	13.8V DC $\pm 15\%$	
Grounding	Negative	
Operating temperature	- 20°C to + 50°C	
Current drain	0.7A in receive mode with no input signal	
	6.0A in HI transmit mode (Approx.)	
	3.5A in LOW transmit mode (Approx.)	
	Less than 3.0mA for memory back up	
Dimensions	170mm (6-11/16") wide	
	68mm (2-11/16") high	
	241mm (9-1/2") deep	
	(projections not included)	
Weight	2.4kg (5.5lbs)	

[Transmitter Section]

RF output power (at 13.8V DC, 50 Ω load)	HI (SSB, FM, CW) 25W min.	
	Low (FM, CW) 5W approx.	
Modulation	FM	Variable reactance direct shift
	SSB	Balanced modulation
Tone frequency	1750Hz	
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 - 53dB
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 12dB SINAD
	SSB, CW	0.2 μV for 10dB S/N
Receiver selectivity	FM	More than 14kHz (- 6dB)
		Less than 30kHz (- 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 8ohms load (10% dist.)	

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