



# 2. SPECIFICATIONS AND ACCESSORIES

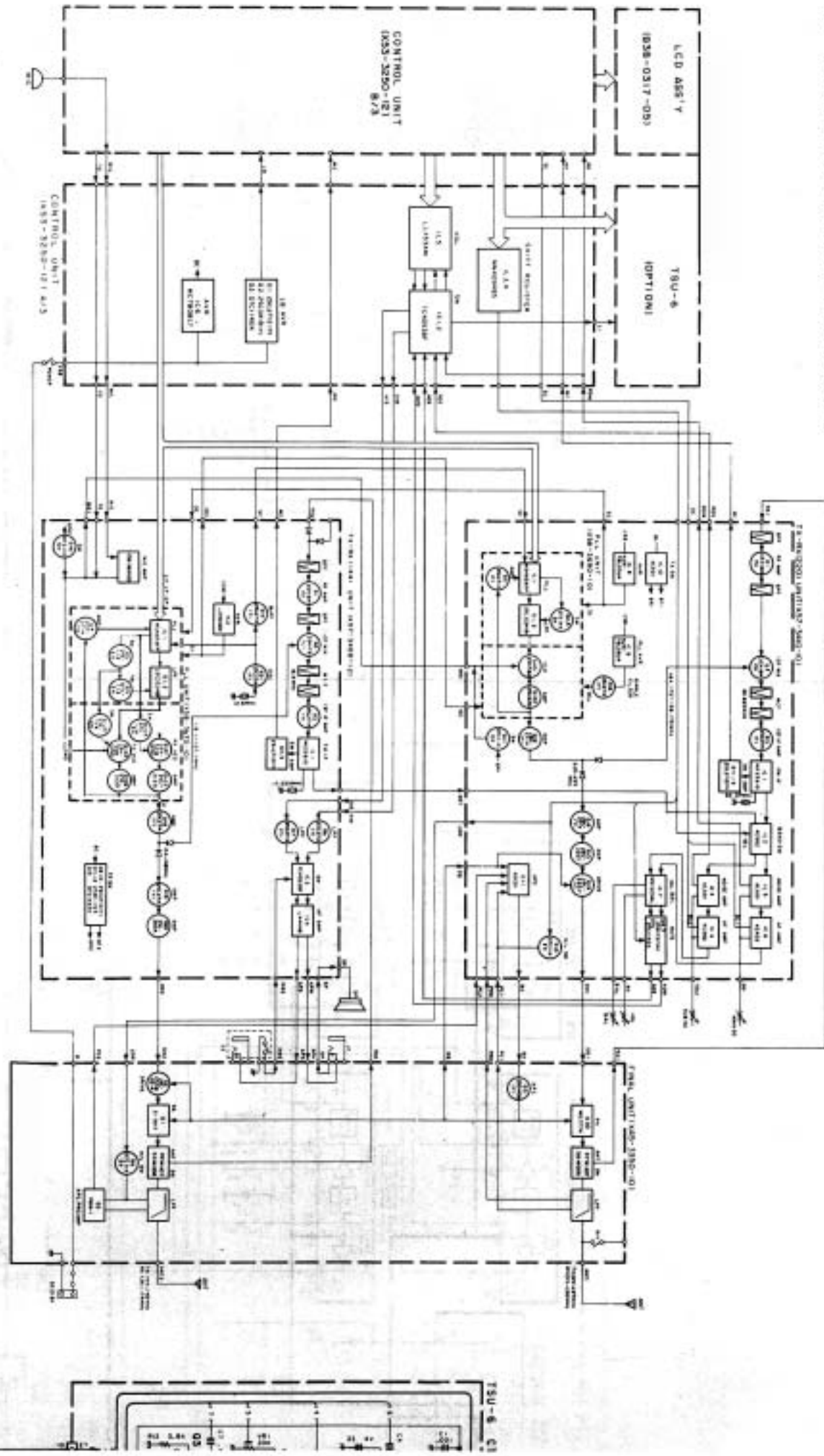
## 2-1. SPECIFICATIONS

Specifications		Model	TM-731A	TM-731E	TM-631A		
			U.S.A. version	Other markets version			
General	Frequency range		144 to 148 MHz 438 to 450 MHz	144 to 148 MHz 430 to 440 MHz	144 to 146 MHz 430 to 440 MHz	144 to 148 MHz 220 to 225 MHz	
	Mode		F3E (FM)				
	Antenna impedance		50 ohms				
	Power requirements		13.8 VDC ± 15%				
	Ground		Negative				
	Current drain	Transmit mode		Less than 11 A			
		Receive mode with no signal		Less than 0.6 A			
	Operating temperature		- 20°C to + 60°C (- 4°F to + 140°F)				
	Dimensions (W × H × D) (Projections included)		150 × 50 × 219 mm (5.9" × 2" × 8.6")				
	Weight		1.8 kg (3.97 lbs)				
Transmitter	Output power*	HI	144 MHz: 50 W, 220 MHz: 25 W, 430/440 MHz: 35 W				
		LOW	5 W				
	Modulation		Reactance modulation				
	Spurious radiation		Less than - 60 dB				
	Maximum frequency deviation		± 5 kHz				
	Audio distortion (at 60% modulation)		Less than 3% (300 to 3000 Hz)				
Microphone impedance		500 to 600 ohms					
Receiver	Circuitry		Double conversion superheterodyne				
	Intermediate frequency	U.S.A. version	144 MHz: 16.9 MHz/455 kHz, 220 MHz: 30.825 MHz/455 kHz, 440 MHz: 21.6 MHz/455 kHz				
		Other market	144 MHz: 10.7 MHz/455 kHz, 430 MHz: 30.825MHz/455 kHz				
	Sensitivity(12 dB SINAD)		144 MHz: Less than 0.2 μV, 220 MHz: Less than 0.18 μV, 430/440 MHz: Less than 0.16 μV				
	Selectivity		- 6 dB: More than 12 kHz, - 60 dB: Less than 24 kHz				
	Spurious response		Better than 60 dB				
	Squelch sensitivity		Less than 0.09 μV				
	Output		More than 2 W across 8 ohms load (5% distortion)				
External speaker impedance		8 ohms					

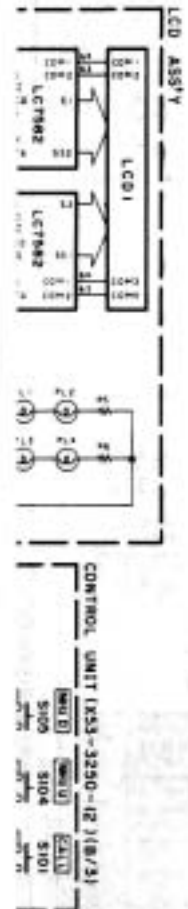
**Notes:**

1. Circuit and ratings are subject to change without notice due to advancement in technology.
2. \*Recommended duty cycle:  
1 minute Transmission, 3 minutes Reception

# 5. TM-631A BLOCK DIAGRAM

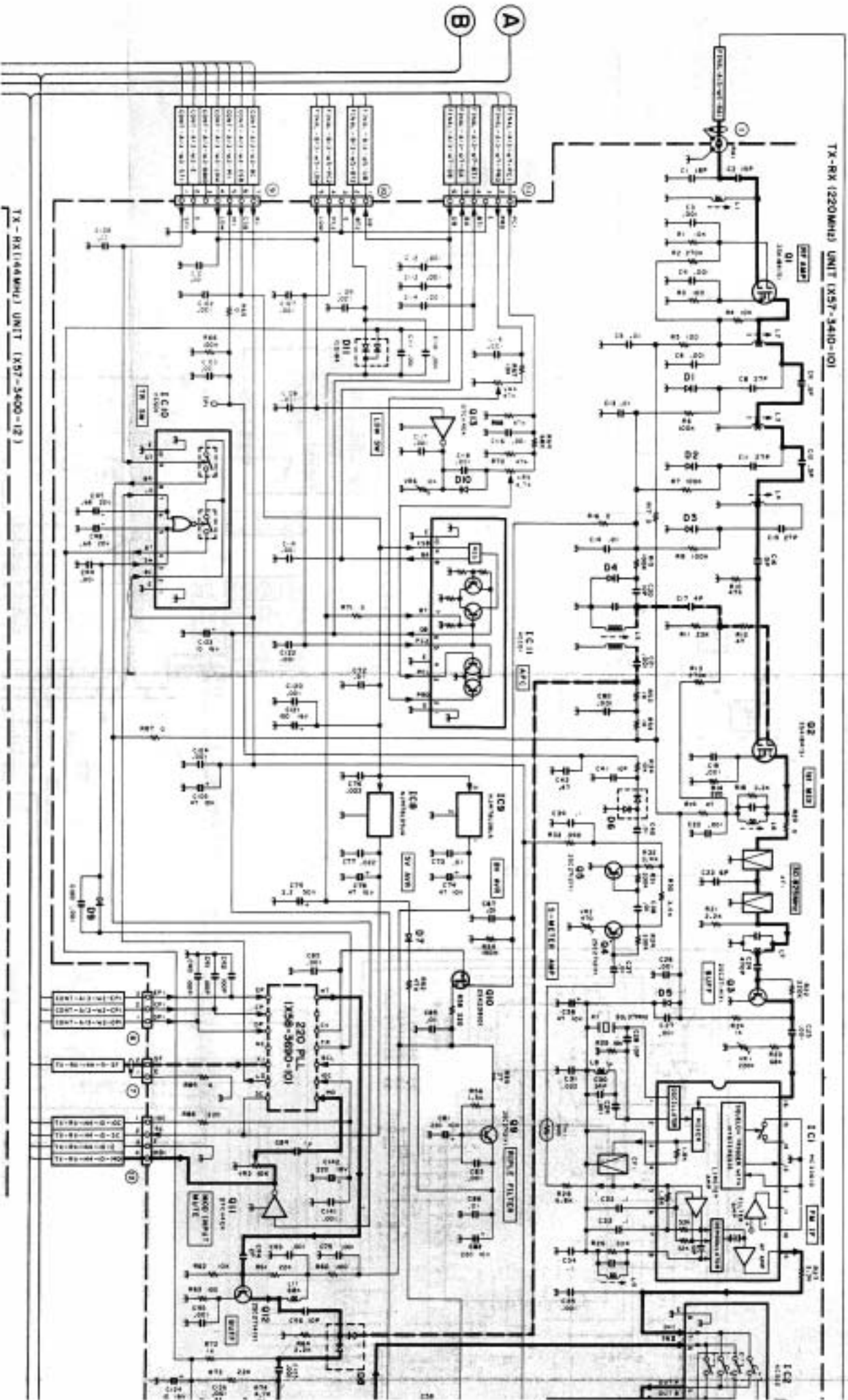


5. TM-631A SCHEMATIC DIAGRAM

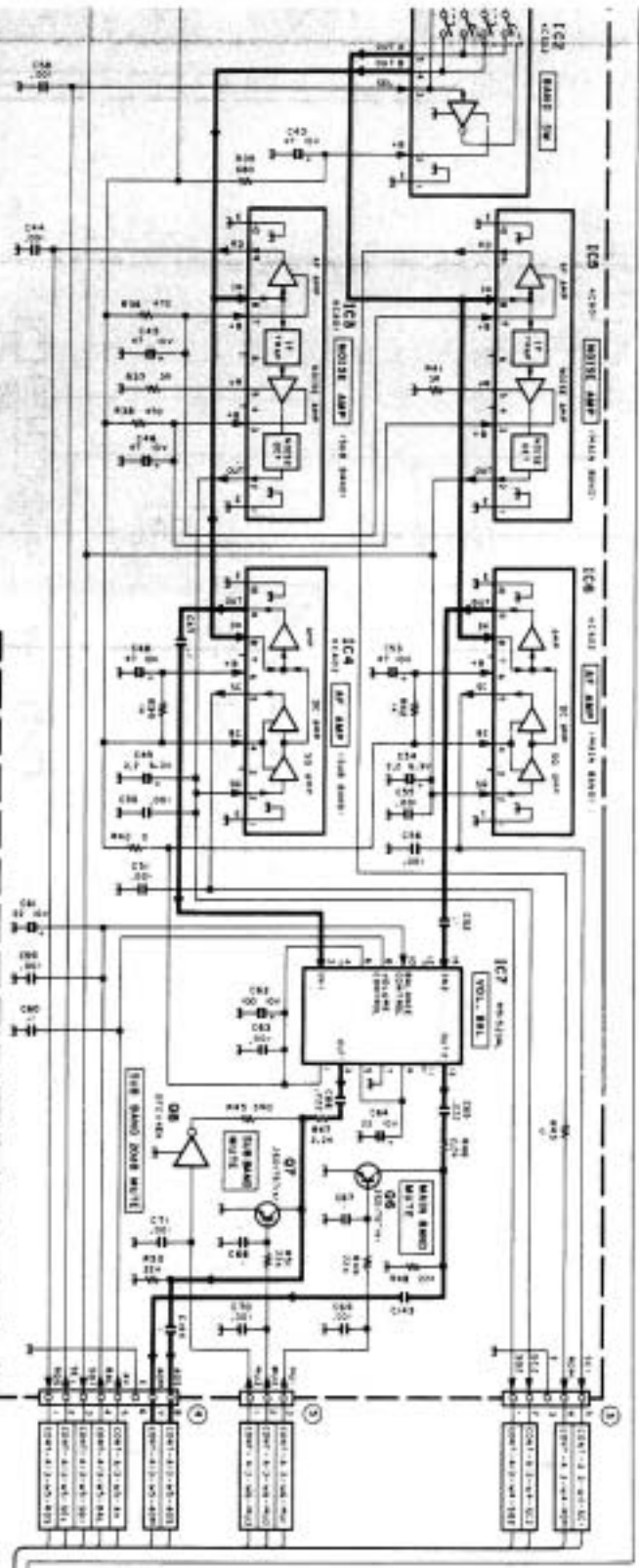


# TM631A (1)

TX-RX (220MHz) UNIT (XSF-3410-101)



TX-RX (144MHz) UNIT (XSF-3400-12)

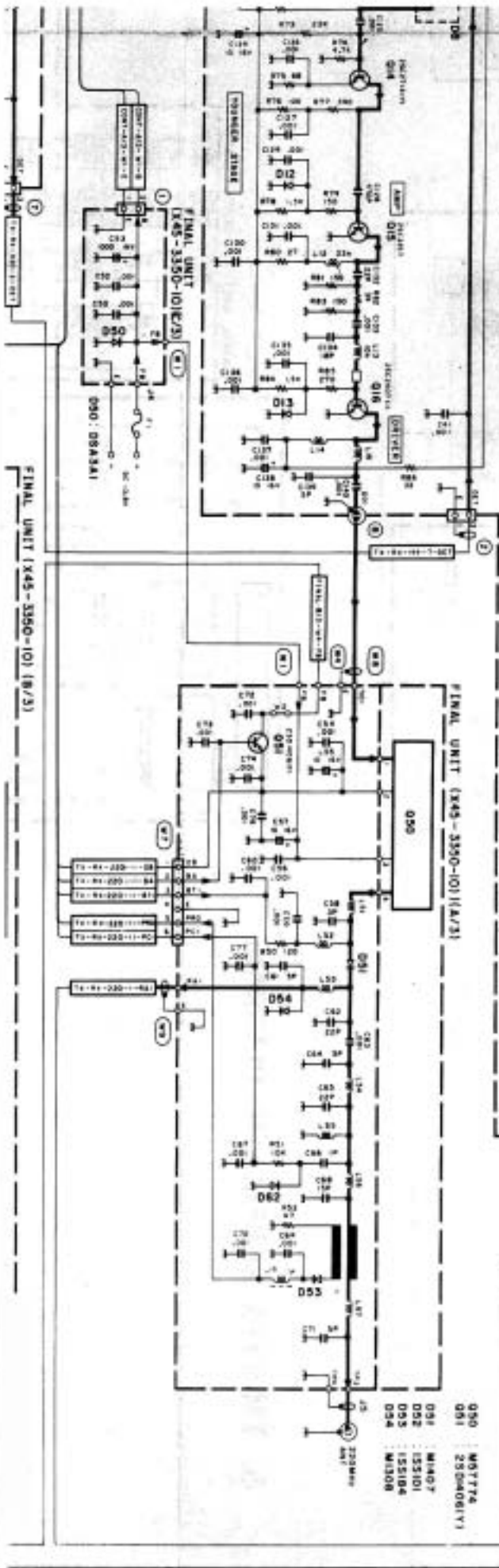


- (R07-3410-10)
- IC1 MC33610
  - IC2 KC502
  - IC3A1 KC401
  - IC3A2 KC402
  - IC4 M51523AL
  - IC5 NJM74105UA
  - IC6 NJM74105UA
  - IC7 KC501
  - IC10 KC501
  - IC11 KCC01

- Q1,2 35N16A131
- Q3,12,14 25C27161V3
- Q4,5,9 25C27121V1
- Q6,7 25D17571K1
- Q8,11,13 07C144N
- Q10 25K208101
- Q2 25C3357
- Q6 25C240711

- Q1-6 15Y704
- Q5,7,8-11 155184
- Q8 155184
- Q9 15526R
- Q12,13 155181

- Q90 M07774
- Q91 25D4081V1
- Q92 M107
- Q93 155101
- Q94 155104
- Q95 W108



FINAL UNIT (K45-3350-10) (R/3)

FINAL UNIT (K45-3350-10)(C/3)

FINAL UNIT (K45-3350-10)(H/A/3)

