

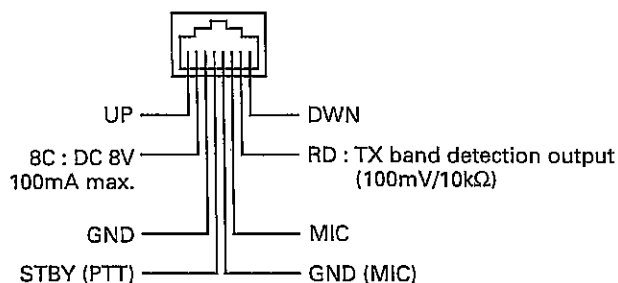
## ADJUSTMENT

### Measuring Equipment for Adjustment

1. Tester  
Input impedance: High
2. RF valve voltmeter (RF V.M)  
Input impedance:  $1M\Omega$  or more, 2pF or less  
Voltage range: Full scale = 10mV to 300V  
Measurable frequency range: Up to 450MHz
3. Frequency counter (f. counter)  
Input sensitivity: About 50mV  
Measurable frequency: 450MHz or more
4. DC power supply  
Voltage: Variable in the range 10 to 17V  
Current: 13A or more
5. Power meter  
Measurement power: 60W, 3W, 1W  
Impedance:  $50\Omega$   
Measurable frequency: 450MHz
6. AF valve voltmeter (AF V.M)  
Input range: Full scale = 1mV to 30V  
Measurable frequency range: 50Hz to 10kHz
7. AF generator (AG)  
Output frequency: 100Hz to 10kHz  
Output voltage: 0.5mV to 1V
8. Line detector  
Measurable frequency: 450MHz
9. Spectrum analyzer  
Measurable frequency: 450MHz
10. Directional coupler
11. Oscilloscope  
High sensitivity with horizontal input terminal
12. Standard signal generator (SSG)  
The standard signal generator must be able to generate the 144 and 430MHz band frequencies and vary the amplitude and frequency.  
Output:  $-20$  to  $100\text{dB}\mu$
13. Dummy load  
 $8\Omega$  about 5W
14. Noise generator  
The noise generator must be able to generate noise similar to ignition noise containing high-frequency components of 450MHz or more.
15. Sweep generator  
The sweep generator must be able to sweep the 144 and 430MHz bands.
16. Tracking generator

### Preparation

- Set the controls and switches to the positions listed below unless otherwise specified.  
VOL control ..... Fully counterclockwise  
SQL control ..... Fully counterclockwise  
POWER switch ..... OFF  
DC power supply POWER switch  
(For fixed stations) ..... OFF



**Microphone socket**  
(as viewed from the front of the set)

- Use an insulated rod, such as a plastic rod, for adjustment (especially for trimmers, coils, etc.).
- To protect the signal generator, never connect the microphone socket when the receiver section is adjusted.
- Before the power cord is connected, make sure the power switch is off.
- See the instruction manual for transmit and receive operations.

## ADJUSTMENT

### Common Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Setting	1) Source voltage : DC 13.8V POWER : OFF VOL, SQL knob : Minimum							
2. Reset	1) MR key + POWER ON After the check, MR key : Press						Check	All indicator of LCD on.
3. PLL	1) Frequency : 146.000MHz Transmit/Receive	DC V.M Dummy load	TX-RX Rear panel	TP2 ANT			Check	RX : 1.2 to 9.0V TX : 1.2 to 9.0V
4. Transmission frequency	1) Frequency : 146.000MHz Transmit	f. counter Power meter	Rear panel	ANT	TX-RX	TC1	146.000MHz	±100Hz

### Receiver Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks	
		Test-equipment	Unit	Terminal	Unit	Parts	Method		
1. BPF	1) Frequency : 146.05MHz <b>K,M2,M3</b> 145.04MHz <b>M</b> SSG output : -93dBm MOD : 1.0kHz DEV : ±3.0kHz	Tester SSG Oscilloscope	TX-RX Rear panel	TP1 ANT EXT. SP	TX-RX	L1~L6	For max. voltage of TP1, align from L1 to L6.		
	2) SSG output : -113dBm						For max. voltage of TP1, repeat the alignment from L1 to L6, twist.		
2. Sensitivity	1) Frequency <b>K,M2,M3</b> : 146.05, 144.05, 147.95MHz <b>M</b> : 145.04, 144.04, 145.94MHz SSG output : -121dBm <b>K</b> -122dBm <b>M,M2,M3</b> AF : 0.63V/8Ω	SSG Distortion meter AF V.M Oscilloscope	Rear panel	ANT EXT. SP			Check	More than SINAD 12dB	
3. Distortion	1) Frequency : 146.05MHz <b>K,M2,M3</b> 145.04MHz <b>M</b> SSG output : -53dBm AF : 4.0V/8Ω						Check		Less than 3.0%
4. Hum and Noise ratio	1) Frequency : 146.05MHz <b>K,M2,M3</b> 145.04MHz <b>M</b> SSG output : -53dBm MOD : OFF AF : 2.83V/8Ω	SSG AF V.M Oscilloscope	Rear panel	ANT EXT. SP			Check	More than S/N 46dB	
5. S-meter	1) Frequency : 146.05MHz <b>K,M2,M3</b> 145.04MHz <b>M</b> SSG output : -95dBm						SSG LCD		Rear panel
	2) SSG output : -93dBm	Check	All S-meter segments on.						
	3) SSG output : OFF		S-meter segments off.						

## ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
6. Squelch	1) Frequency : 146.05MHz <b>K,M2,M3</b> 145.04MHz <b>M</b> SSG output : OFF Align so that noise is not audible by SQL knob.	SSG Ammeter	Rear panel	ANT			Check	Maker position of SQL knob 8 : 00~11 : 00 BUSY indication off. Less than 0.6A
	2) SSG output : -127dBm	Oscilloscope		EXT. SP			Check	Squelch opens. BUSY indication on.
	3) SSG output : -113dBm SQL knob : Maximum After the check, SQL knob : Minimum						Check	Squelch opens.

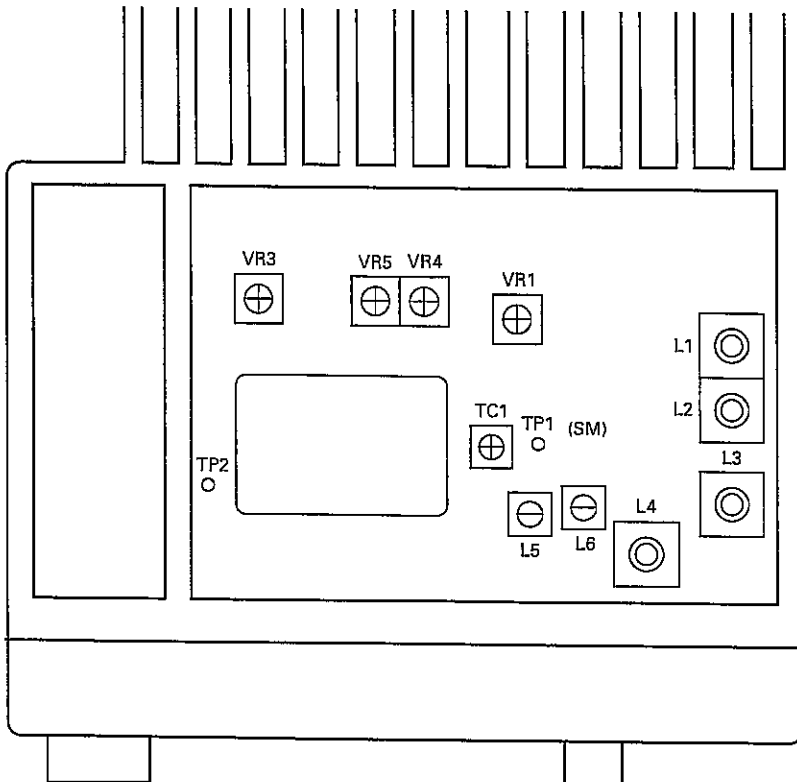
### Transmitter Section

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Power	1) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> TX-RX unit VR4 : Maximum Transmit	Power meter Ammeter	Rear panel	ANT			Check	More than 55.0W <b>K,M2,M3</b> More than 13.0W <b>M</b> ON AIR indication on. All RF-meter segments on.
	2) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> Transmit				TX-RX	VR4	52.0W <b>K,M2,M3</b> 12.0W <b>M</b>	±1.0W, Less than 11.0A <b>K,M2,M3</b> ±1.0W, Less than 3.5A <b>M</b>
	3) Frequency : <b>K,M2,M3</b> : 144.00, 147.975MHz <b>M</b> : 144.00, 145.98MHz Transmit						Check	44.0~60.0W, Less than 11.0A <b>K,M2,M3</b> 10.0~14.0W, Less than 3.5A <b>M</b>
	4) F key → LOW key (M on.) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> Transmit				TX-RX	VR5	12.0W <b>K,M2,M3</b> 1.0W <b>M</b>	±1.0W <b>K,M2,M3</b> ±0.15W <b>M</b>
	5) F key → LOW key (L on.) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> Transmit						Check	3.0~8.0W <b>K,M2,M3</b> 0.3~0.8W <b>M</b>
2. DEV	1) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> AG : 1kHz/50mV <b>K,M2,M3</b> 1kHz/25mV <b>M</b> Transmit	Modulation analyzer Oscilloscope	Rear panel	ANT	TX-RX	VR3	±4.4kHz (Align absolute value of + or - value.)	±0.2kHz No abnormal oscilloscope wave.
	2) AG : 1kHz/5mV <b>K,M2,M3</b> 1kHz/2.5mV <b>M</b> Transmit	AG AF V.M	Front panel	MIC			Check	±2.2~3.6kHz Nor abnormal oscilloscope wave.
3. Tone	1) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> TONE key : Press (T on.) Transmit After the check, TONE key : Press (T off.)	Modulation analyzer Oscilloscope	Rear panel	ANT			Check	±0.5~1.5kHz

## ADJUSTMENT

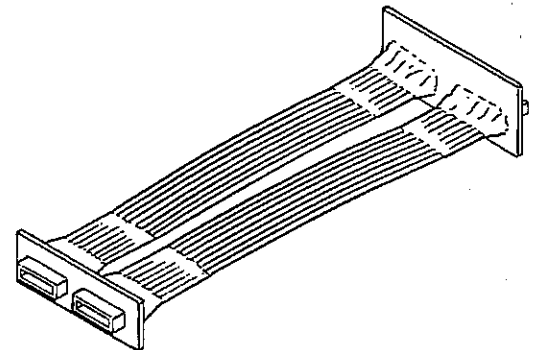
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
4. Single tone	1) POWER : OFF MHz key + REV key + POWER ON Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> Transmit	Modulation analyzer Oscilloscope	Rear panel	ANT			Check	±0.8~1.5kHz
5. DTMF	1) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> Press the DTMF key of transmission jig.						Check	More than ±2.2kHz
6. Protection	1) Frequency : 146.000MHz <b>K,M2,M3</b> 144.98MHz <b>M</b> POWER : HI (F key + LOW key) ANT : Open and short Transmit	Ammeter					Check	Less than 11.0A <b>K,M2,M3</b> Less than 4.0A <b>M</b>
7. CTCSS	1) Only TSU-8 is installed set. Frequency : 145.100MHz (CTCSS : 88.5Hz) TX-RX-communicate between testing set and monitor set.	Monitor 50Ω dummy load	Rear panel	ANT			Check	Their sets are able to TX-RX-communicate.
	2) Frequency : 145.100MHz (CTCSS : 103.5Hz)							Their sets are not able to TX-RX-communicate.

### Adjustment Points



### Jig (13 Pin Flat cable)

This is the same cable as TM-241's cable.



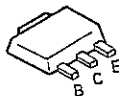
TC1 : Transmission frequency  
L1~6 : BPF  
VR1 : S-meter  
VR3 : DEV  
VR4 : HI power  
VR5 : MID power

# SCHEMATIC DAIGRAM TM-261A

DTA114YK 2SA1037K  
 DTC114EK 2SA1519  
 DTC123JK 2SC2059K  
 DTC124EK 2SC2412K  
 DTC143EK 2SC2713  
 DTC144EK 2SC3120  
 DTC144WK 2SC4116  
 DTC363EK 2SC3324



2SB1132  
 2SB1302



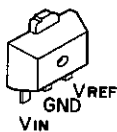
2SD1406



TA78L06F



NJM78L05UA



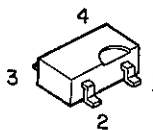
2SJ106  
 2SK208  
 2SK508NV



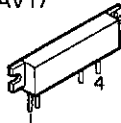
TA7808S



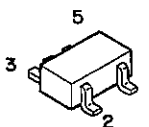
3SK131  
 3SK184



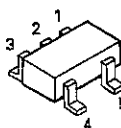
M57737  
 S-AV17



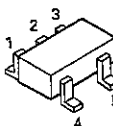
FMW1



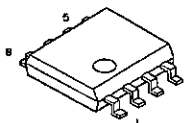
BU4S66



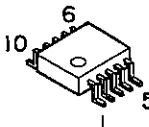
PST9130NR



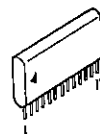
LA5010M  
 NJM4558E



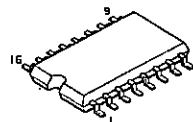
LC73881M



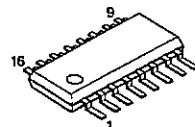
LA4446



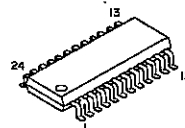
TA7787AF



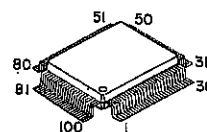
BU2090FS

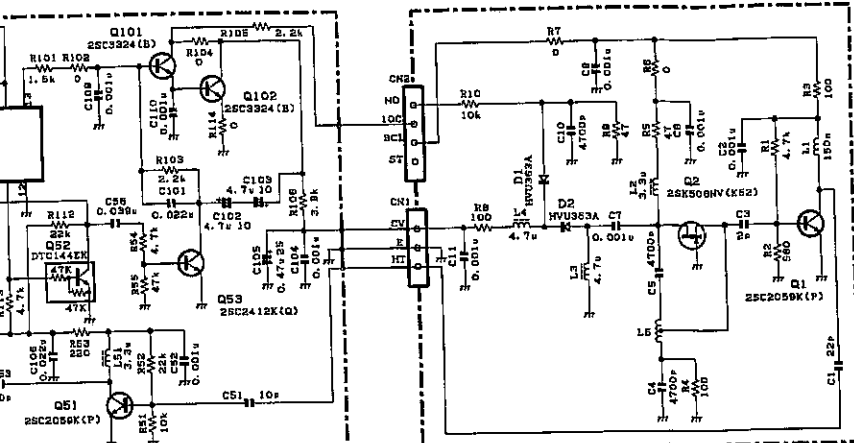


M54959FP



M38267M8L103FP  
 M38267M8L104FP  
 M38267M8L105FP

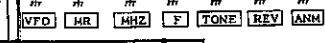
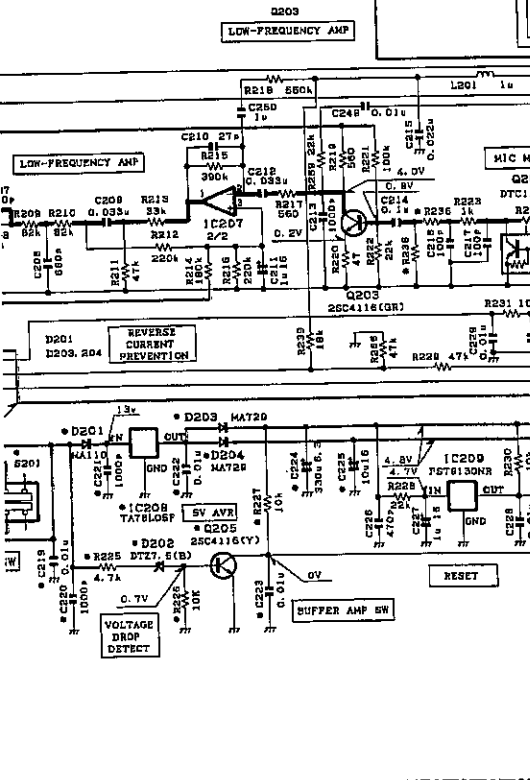
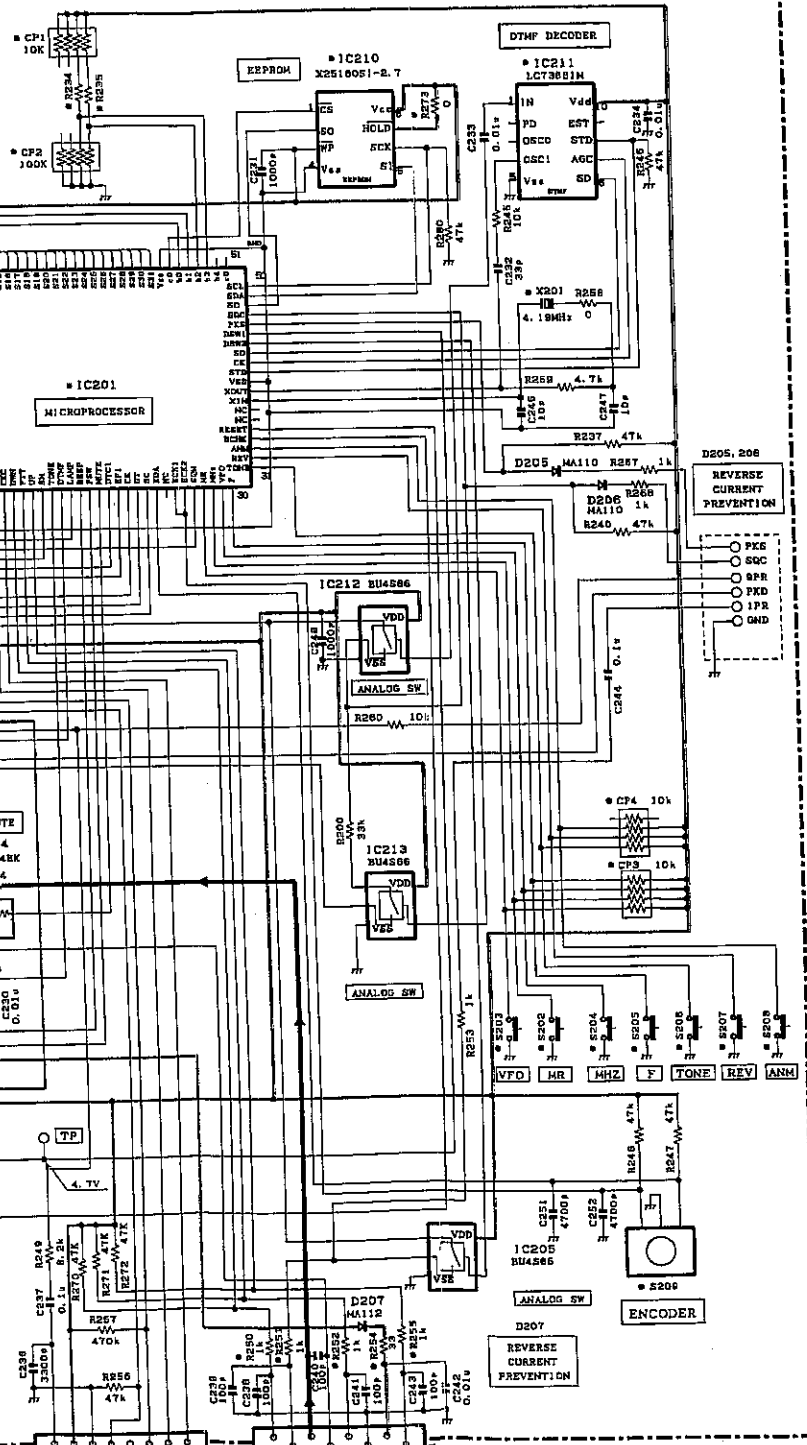
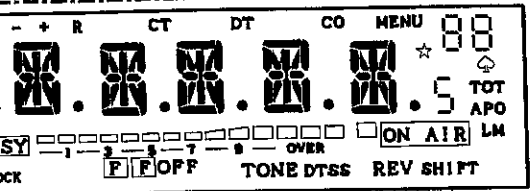


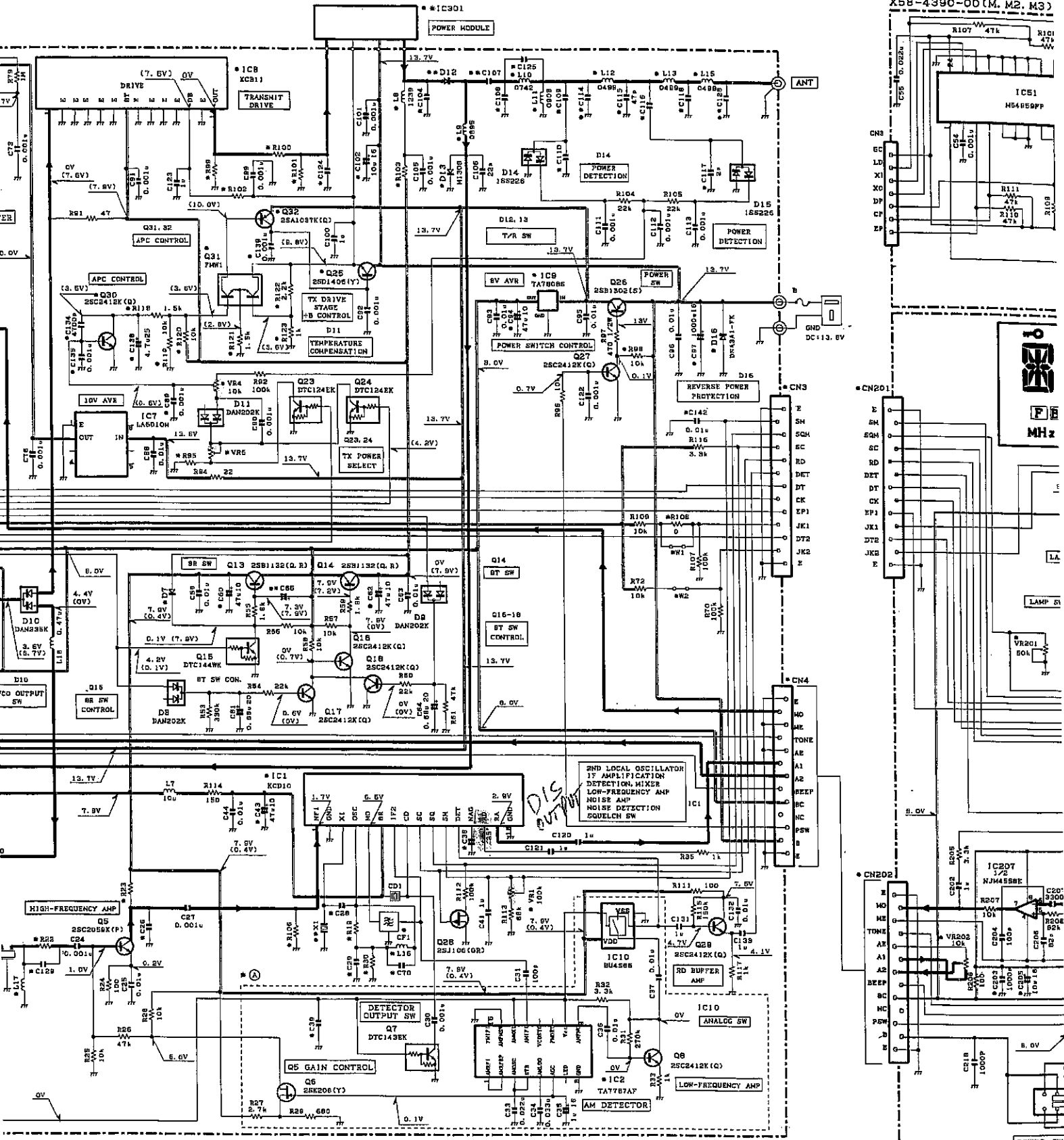


- IC201:M38267M81.104P
- IC205, 212, 213:BU4566
- IC207:NMJ4568E
- IC208:TA78105F
- IC209:PT8130NR
- IC210:X25160S1-2.7
- IC211:LC73881M

- Q201:2SA1519
- Q202, 204:DTC114EK
- Q203:2SC4116(GR)
- Q205:2SC4116(Y)

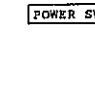
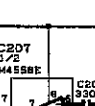
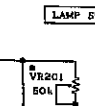
- D201, 205, 206, 208, 209:MA110
- D202:DTZ7.5(CB)
- D203, 204:MA728
- D207:MA112

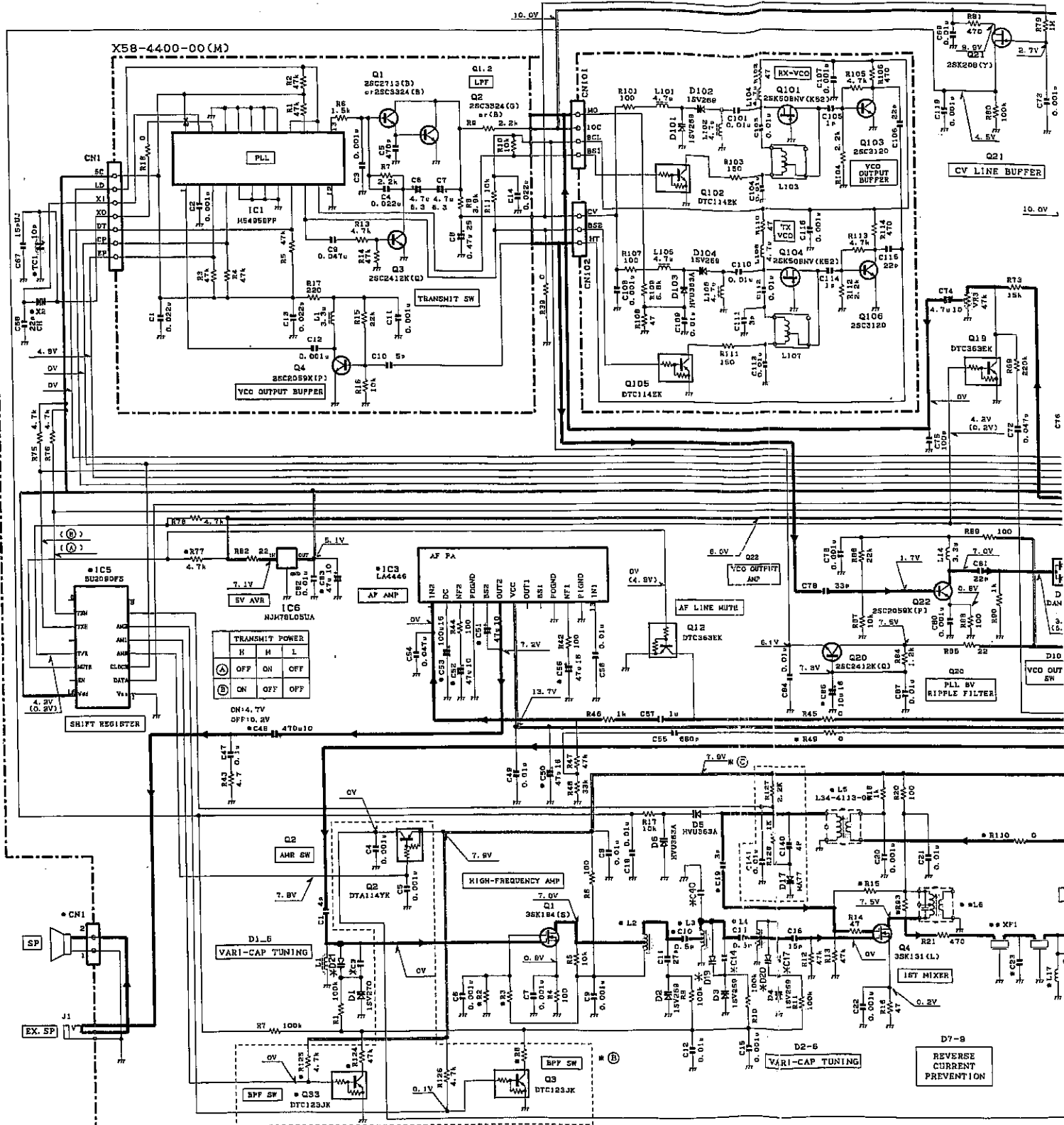




- Q13: 14: 25B1132(Q, R)
- Q15: DTC144WK
- Q18: DTC363EK
- Q21: 25K208(Y)
- Q23: 24: DTC124EK
- Q25: 25D1406(Y)
- Q26: 25B1302(S)
- Q28: 28J106(GR)
- Q31: PMW1
- Q32: 25A1037K(Q)
- D1: 1SV270
- D2: 4: 1SV268
- D5: 6: RVU363A
- D7: MA110
- D8: 9, 11: DAN202K
- D10: DAN235K
- D12: HJ407
- D13: HJ308
- D14: 15: 1SS226
- D16: DSA9A1\_FK
- D17: MA77

B	C10	C14	C16	C18	C12A	C12B	C12C	C12D	C12E	C142	L6	L16	L17	D7	D12	VRS	X1	XF1	A1	A	B	C	W1	W2	D15	IC801	IC301
1	30	30B	0.5P	47P	27P	5P	15P	27P	0.01u	L34-2167-05	1u	1.8u	-	MA107	10K	L77-1312-05	L71-0270-05	X58-4400-00	O	O	O	O	O	O	O	H38267M6L105FP	S-AV17
2	30	30B	0.5P	47P	27P	5P	15P	27P	0.01u	L30-0005-06	-	-	MA110	H1308	47K	L77-1473-05	L71-0228-15	X58-4390-00	-	-	-	-	-	-	-	H38267M6L104FP	M97715
3	30	30B	0.5P	47P	27P	5P	15P	27P	0.01u	L30-0005-05	-	-	MA110	H1407	10K	L77-1473-05	L71-0228-1E	X58-4390-00	-	-	-	-	-	-	-	H38267M6L103FP	S-AV17
4	30	30B	0.5P	47P	27P	5P	15P	27P	0.01u	L30-0005-05	-	-	MA110	H1407	10K	L77-1473-05	L71-0228-15	X58-4390-00	-	-	-	-	-	-	-	H38267M6L103FP	S-AV17





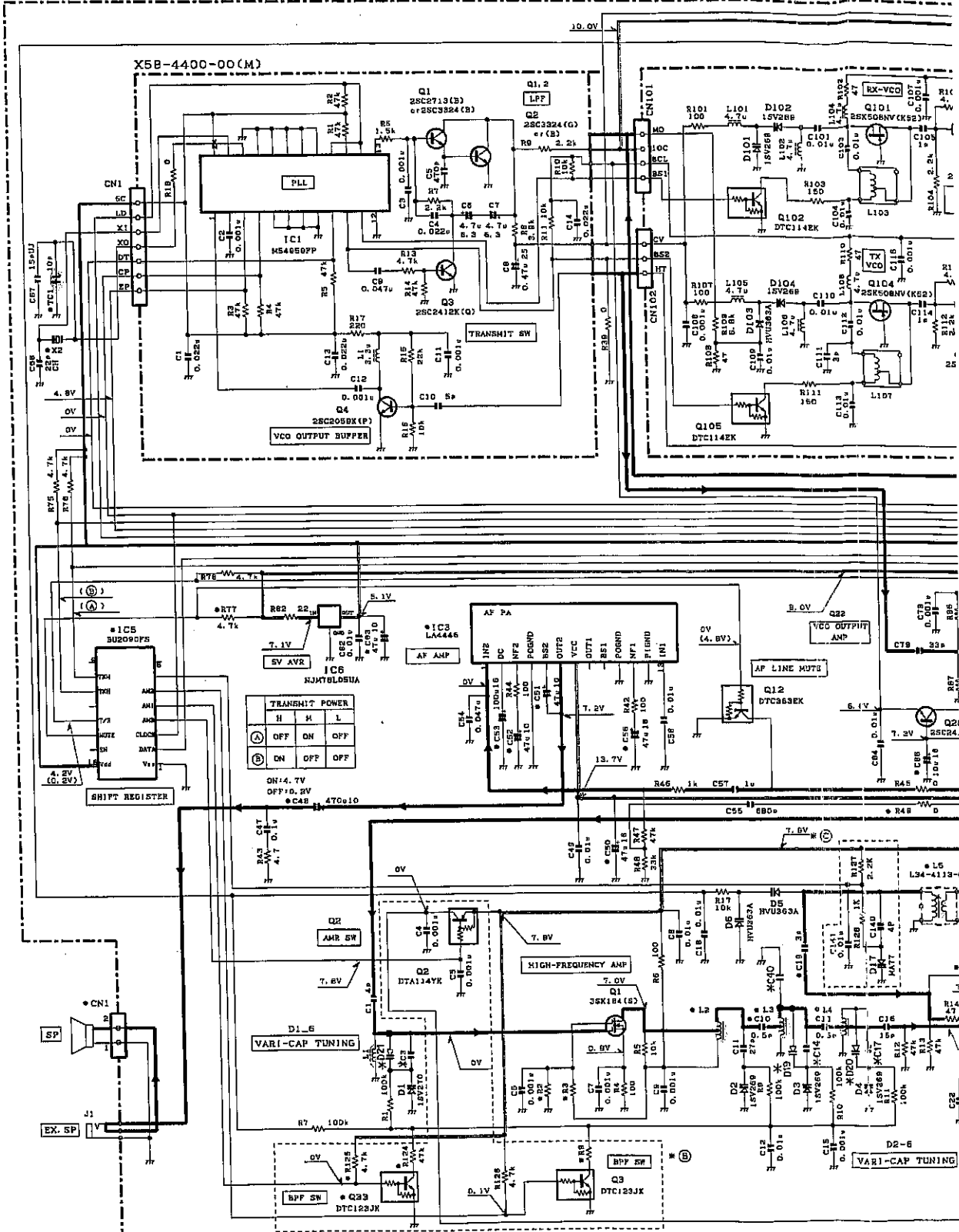
- IC1: KCD10      IC5: BU2080FS      IC8: KCB11      IC9: LA4446      Q1: 3SK184(S)      Q4: 3SK131(L)      Q7: DTC143EK  
 IC2: TA7787AF      IC6: NJM78L05UA      IC9: TA7808S      IC10: BU4566      Q2: DTA114YK      Q5, 22: 2SC2059K(P)      Q8, 16, 18, 20, 27, 28, 30: 2SC2412K(Q)  
 IC3: LA4446      IC7: LA5010M      IC10: BU4566      Q3, 33: DTC123JK      Q6: 2SK208(Y)      Q12, 19: DTC363EK

D19-21

-	-	-
-	-	-
-	-	-

X57-4970-XX	R2	R3	R8	R15	R16	R22	R23	R30	R36	R39	R55	R59	R100	R101	R102	R103	R106	R108	R235	R234	R236	R238	C17	C28	C29	C30	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C104	C107	C128	C109	C110			
K 0-11	0	-	27k	-	-	-	1k	10k	-	1k	3.9k	-	0	-	22 2 1/2	100 1/2	-	-	0	-	0	2.2k	3.9k	27p	5p	100p	100p	0.02u	3u	-	39p	22p	1000p	18k	0.5p	3p	-	-	-	-	-	-	-	
M 0-21	10k	270k	-	270k	0	1.5k	470	15k	0	-	100k	270	18	270	33 1/2	120 1/2	300k	0	-	0	820	56k	22p	5p	47p	33p	150p	0.47u	25	-	47u	16	-	3p	100p	33p	1p	5p	3p	-	-	-	-	-
MP 0-22	10k	270k	-	270k	0	1.5k	470	15k	0	-	3.9k	-	0	-	22 1/2	100 1/2	270k	-	-	-	2.2k	3.9k	-	5p	22p	33p	150p	0.68u	20	-	47u	16	-	22p	1000p	18k	0.5p	3p	-	-	-	-	-	-
H3 0-23	10k	270k	-	270k	0	1.5k	470	15k	0	-	3.9k	-	0	-	22 1/2	100 1/2	270k	-	-	-	2.2k	3.9k	-	5p	22p	33p	150p	0.68u	20	-	47u	16	-	22p	1000p	18k	0.5p	3p	-	-	-	-	-	





X57-497X-XX	C3	C14	C40	D19-21
K 0-11	16P	27P	-	-
M 0-21	18P	27P	-	-
M2 0-22	-	-	1.5P	15V269
M3 0-23	-	-	1.5P	15V269

IC1:KCD10	IC5:BU2060FS	IC8:KCB11	IC301:*	Q1:35K184(S)	Q4:35K131(L)	Q7:DTC1
IC2:TA7767AF	IC6:NJM78L05UA	IC9:TA78D85		Q2:DTA114YK	Q5:2P:25SC2059K(P)	Q8:16-1
IC3:LA4446	IC7:LA5010M	IC10:BU4566		Q3:33:DTC123JK	Q6:2SK208(Y)	Q12:19-

X57-4970-XX	R2	R3	R8	R15	R19	R22	R23	R30	R39	R42	R45	R49	R100	R103	R102	R103	R105	R108	R235	R234	R236	R238	C17	C23	C26	C28	C29	C30
K 0-11	0	-	27k	-	-	1k	10k	-	1k	5.9k	-	0	22 2/2w	100 1/2w	-	-	-	0	-	2.2k	3.9k	27k	5k	10k	1000k	0.22u	95	
M 0-21	10k	270k	-	270k	0	1.5k	470	15k	0	100k	270	18	270	33 1/2w	120 1/2w	260k	0	-	0	820	95k	22k	5k	47k	33k	180k	0.47u	25
M2 0-22	10k	270k	-	270k	0	1.5k	470	15k	0	5.9k	-	0	-	22 1/2w	100 1/2w	270k	-	-	-	2.2k	3.9k	-	5k	22k	33k	150k	0.58u	20
M3 0-23	10k	270k	-	270k	0	1.5k	470	15k	0	5.9k	-	0	-	22 1/2w	100 1/2w	270k	-	-	-	2.2k	3.9k	-	5k	22k	33k	180k	0.58u	20