

# MODEL NRD-535

## SERVICE MANUAL

**JRC** *Japan Radio Co., Ltd.*



# HF RECEIVER

# PREFACE

This document describes required information for the acquisition of the basic principle of operation, the maintenance and the troubleshooting of the Model NRD-535 HF Receiver. For the operation and handling, refer to the Model NRD-535 Instruction Manual attached to the product.

The circuits of the NRD-535 are constituted on the plug-in type printed circuit boards and this facilitates the repair for defective circuit and the replacement of the circuitry. For the removal of the plug-in type printed circuit board, use the board pulling tool furnished to the extension card, NJZ-667 (available at option), for the service use.

To perform an appropriate service and troubleshooting, it is desirable to well know the basic principle of operation about the product. The circuits of the NRD-535 have been designed with taking account that those adjustable parts are possibly lessened, the secular change of which may go into question, so that they may operate stably. Accordingly, unless an abnormal condition is proved otherwise, there is no need for the adjustment.

Upon the order of any unit for the repair, refer to the Blocks and Units List in Table 6-1, always write the name and the type of the unit and then send the order. In addition, upon the order of any parts, refer to Section 10 Parts List, always write the parts number, the type and the code and then send the order.

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# SECTION 1: SPECIFICATIONS

<b>Operating frequency</b>	0.1 to 30 MHz
<b>Modes of operation</b>	AM, USB, LSB, CW, RTTY, FAX and Narrow FM
<b>Frequency stability</b>	±2 ppm or better after 5 to 50 minutes warm-up period (±0.5 ppm with optional CGD-135 High Stability crystal oscillator unit installed)
<b>Tuning increments</b>	Selectable .001, .01 and .1 kHz steps with main tuning dial; .01, .1 and 1 kHz steps with up/down buttons
<b>Memory capacity</b>	200 tunable memories
<b>Receiving system</b>	Triple superheterodyne (double superheterodyne for FM)
<b>Intermediate frequencies</b>	First IF: 70.455 MHz Second IF: 455 kHz Third IF: 97 kHz

**Sensitivity:**

BAND	RTTY/FAX/CW/SSB	AM	FM
0.1-0.5 MHz	14 dBμ (5 μV)	24 dBμ (15.8 μV)	—
0.5-1.6 MHz	6 dBμ (2 μV)	16 dBμ (6.3 μV)	—
1.6-30 MHz	-10 dBμ (0.32 μV)	6 dBμ (2 μV)	-6 dBμ (0.5 μV)

S/N: 10 dB; Bandwidth: INTER; Modulation: 400 Hz, 30 %, AM mode (12 dB SINAD FM)

**Selectivity:**

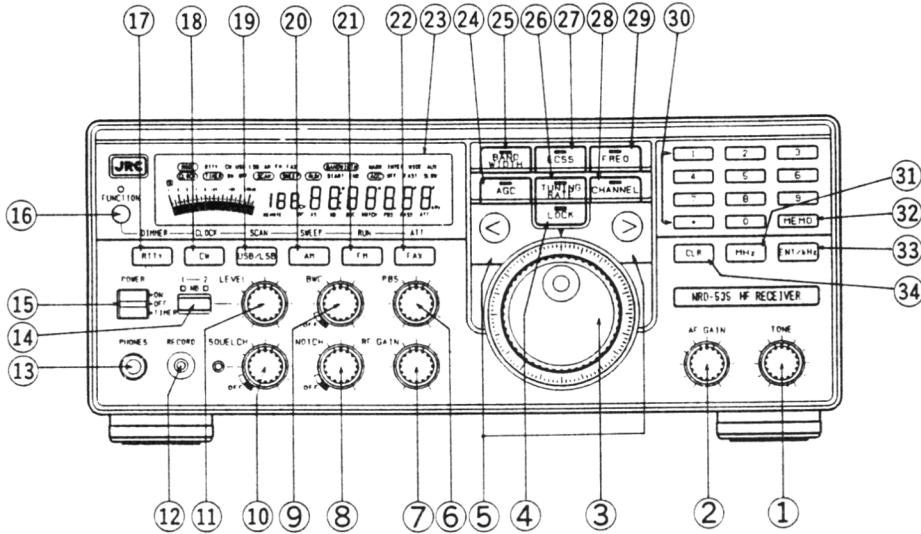
BANDWIDTH	6 dB	60 dB
AUX	12 kHz or more	—
WIDE	4 kHz or more	10 kHz or less
INTER	2 kHz or more	6 kHz or less
NARR	1 kHz or more	3 kHz or less
FM	12 kHz or more	—

**NOTE:** The NARR bandwidth characteristics measured with CFL-233 filter installed.

<b>Dynamic range</b>	106 dB (300 Hz bandwidth)
<b>Image rejection</b>	70 dB or better
<b>IF rejection</b>	70 dB or better
<b>PBS variable range</b>	±1 kHz
<b>NOTCH attenuation</b>	40 dB or more
<b>Antenna impedance</b>	50Ω at Lo-Z terminal 600Ω at Hi-Z terminal
<b>Attenuator</b>	Approx. 20 dB
<b>AGC characteristics</b>	10 dB or less AF output variation for antenna input signal change from 3 μV to 100 mV
<b>AF output</b>	Speaker output: 1 watt or more (at 4Ω load and 10% distortion) Line output: 1 mW or more (at 600Ω load and 10% distortion)
<b>RS-232C interface</b>	4800 baud, 8 data bits, 1 start bit, 1 stop bit, no parity
<b>Power requirements</b>	100/120/220/240 V AC, ±10%, 35 VA or less 12 to 16 V DC (13.8 V standard), 25 W max (approx. 2 A)
<b>Dimensions</b>	Width 330 mm × Height 130 (143) mm × 287 (324) mm. Values in parenthesis include projections
<b>Weight</b>	Approx. 9 kg

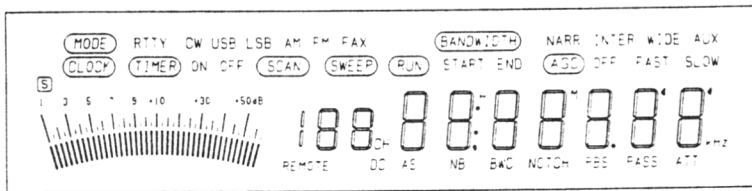
**NOTE:** The above ratings are based on standard JAIA measuring standards. All ratings are subject to change to increase performance without notice.

# SECTION 2: FRONT PANEL AND REAR PANEL

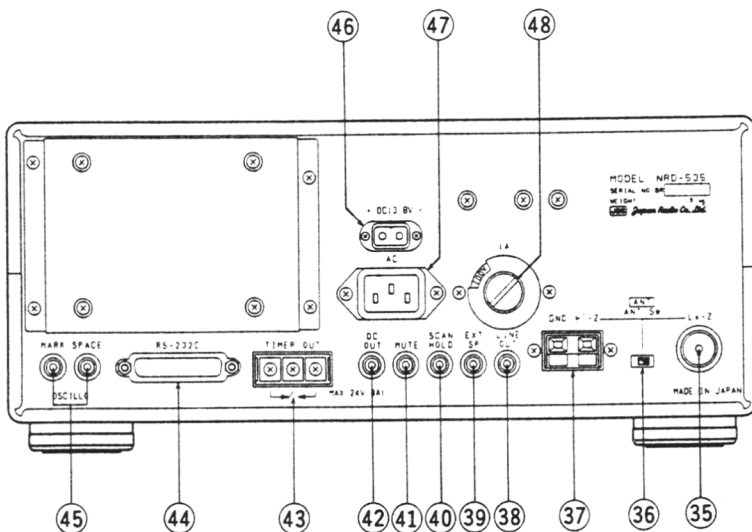


## FRONT PANEL

- ① TONE CONTROL
- ② AF GAIN CONTROL
- ③ MAIN TUNING DIAL
- ④ LOCK BUTTON
- ⑤ UP/DOWN BUTTON
- ⑥ PBS (PASSBAND SHIFT) CONTROL
- ⑦ RF GAIN CONTROL
- ⑧ NOTCH CONTROL
- ⑨ BWC (BANDWIDTH CONTROL)
- ⑩ SQUELCH CONTROL
- ⑪ NB (NOISE BLANKER) LEVEL CONTROL
- ⑫ RECORD (OUTPUT) JACK
- ⑬ PHONES (HEADPHONE) JACK
- ⑭ NB (NOISE BLANKER) BUTTON
- ⑮ POWER/TIMER ON-OFF SWITCH
- ⑯ FUNCTION BUTTON
- ⑰ RTTY MODE (DIMMER) BUTTON
- ⑱ CW MODE (CLOCK) BUTTON
- ⑲ USB/LSB MODE (SCAN) BUTTON
- ⑳ AM MODE (SWEEP) BUTTON
- ㉑ FM MODE (RUN) BUTTON
- ㉒ FAX MODE (ATTENUATOR) BUTTON
- ㉓ FLUORESCENT DISPLAY
- ㉔ AGC (AUTOMATIC GAIN CONTROL) BUTTON
- ㉕ BANDWIDTH BUTTON
- ㉖ TUNING RATE BUTTON
- ㉗ ECSS (EXALTED CARRIER, SELECTABLE SIDEBAND) BUTTON
- ㉘ CHANNEL BUTTON
- ㉙ FREQ (FREQUENCY) BUTTON
- ㉚ NUMERICAL KEYPAD
- ㉛ MHz BUTTON
- ㉜ MEMO BUTTON
- ㉝ ENT/KHz BUTTON
- ㉞ CLR (CLEAR) BUTTON



②③



## REAR PANEL

- ③⑤ ANT Lo-Z (LOW IMPEDANCE ANTENNA) CONNECTOR
- ③⑥ ANT (ANTENNA) SWITCH
- ③⑦ ANT Hi-Z (HIGH IMPEDANCE ANTENNA) CONNECTOR
- ③⑧ LINE OUT JACK
- ③⑨ EXT SP (EXTERNAL SPEAKER) JACK
- ④① SCAN HOLD JACK
- ④② MUTE JACK
- ④③ DC OUTPUT JACK
- ④④ TIMER OUT TERMINAL
- ④⑤ RS-232C PORT
- ④⑥ RTTY MARK/SPACE INDICATOR JACKS
- ④⑦ DC13.8V (DC POWER) CONNECTOR
- ④⑧ AC POWER CONNECTOR
- ④⑨ AC FUSE AND VOLTAGE SELECTOR

# SECTION 3: LAYOUT OF UNITS

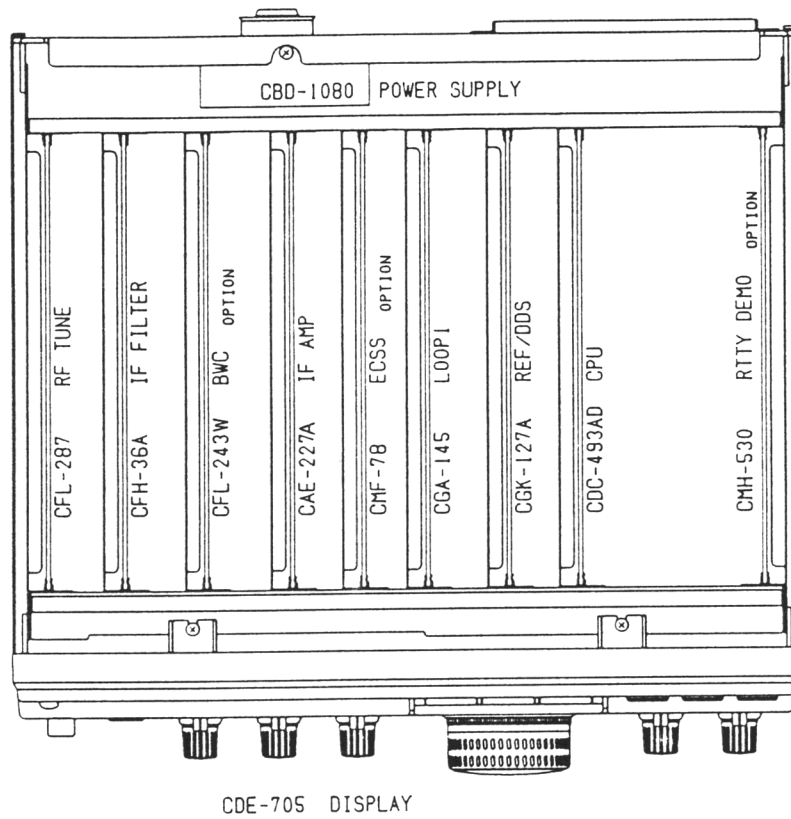


Fig. 3-1 LAYOUT OF UNITS

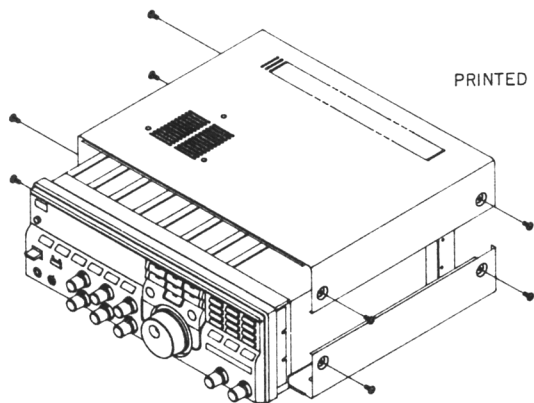


Fig. 3-2 REMOVING THE COVER

PRINTED CIRCUIT BOARD PULLER

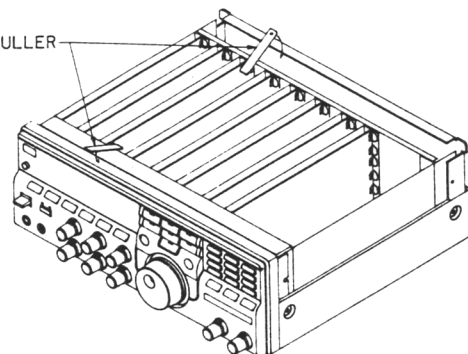
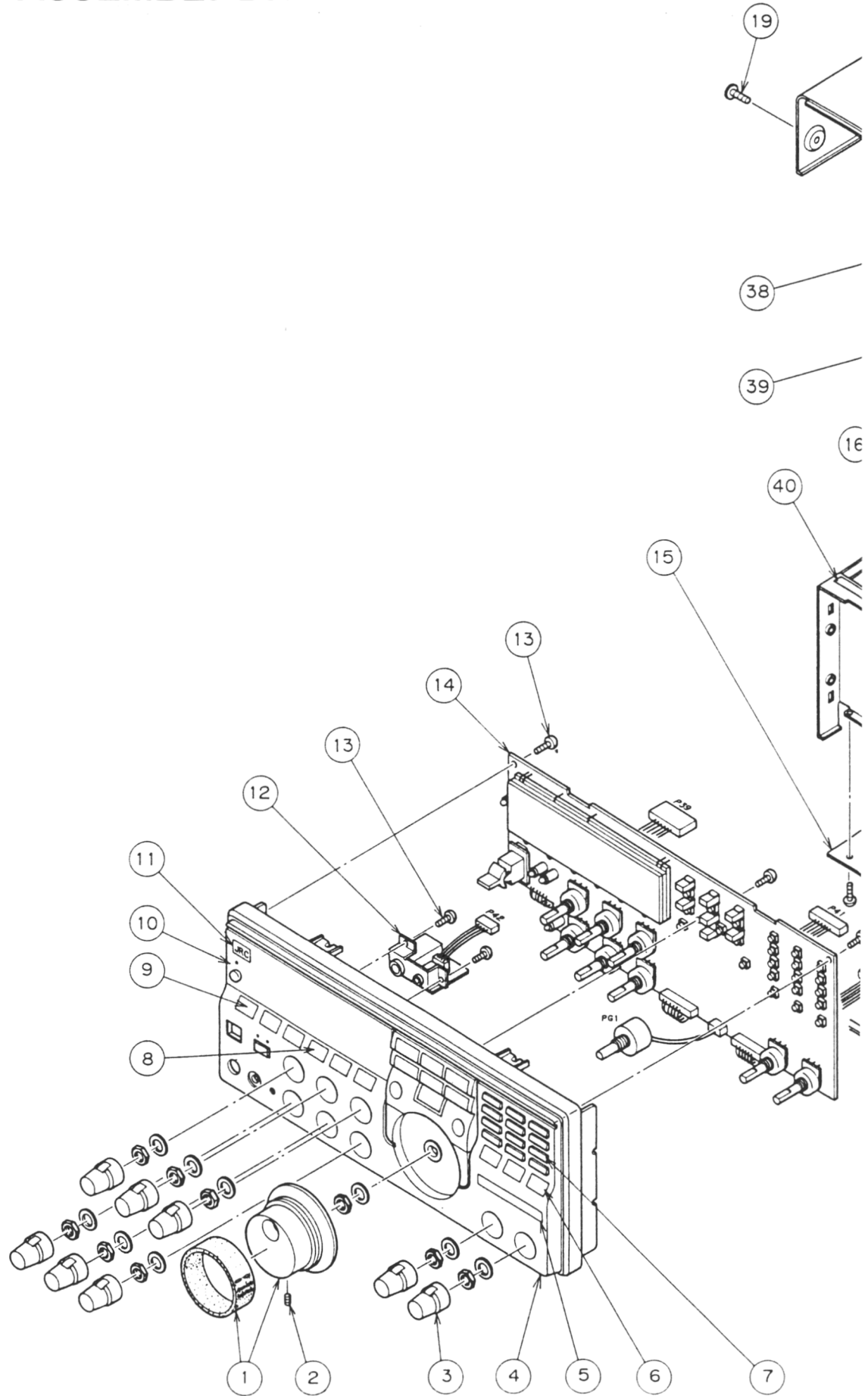
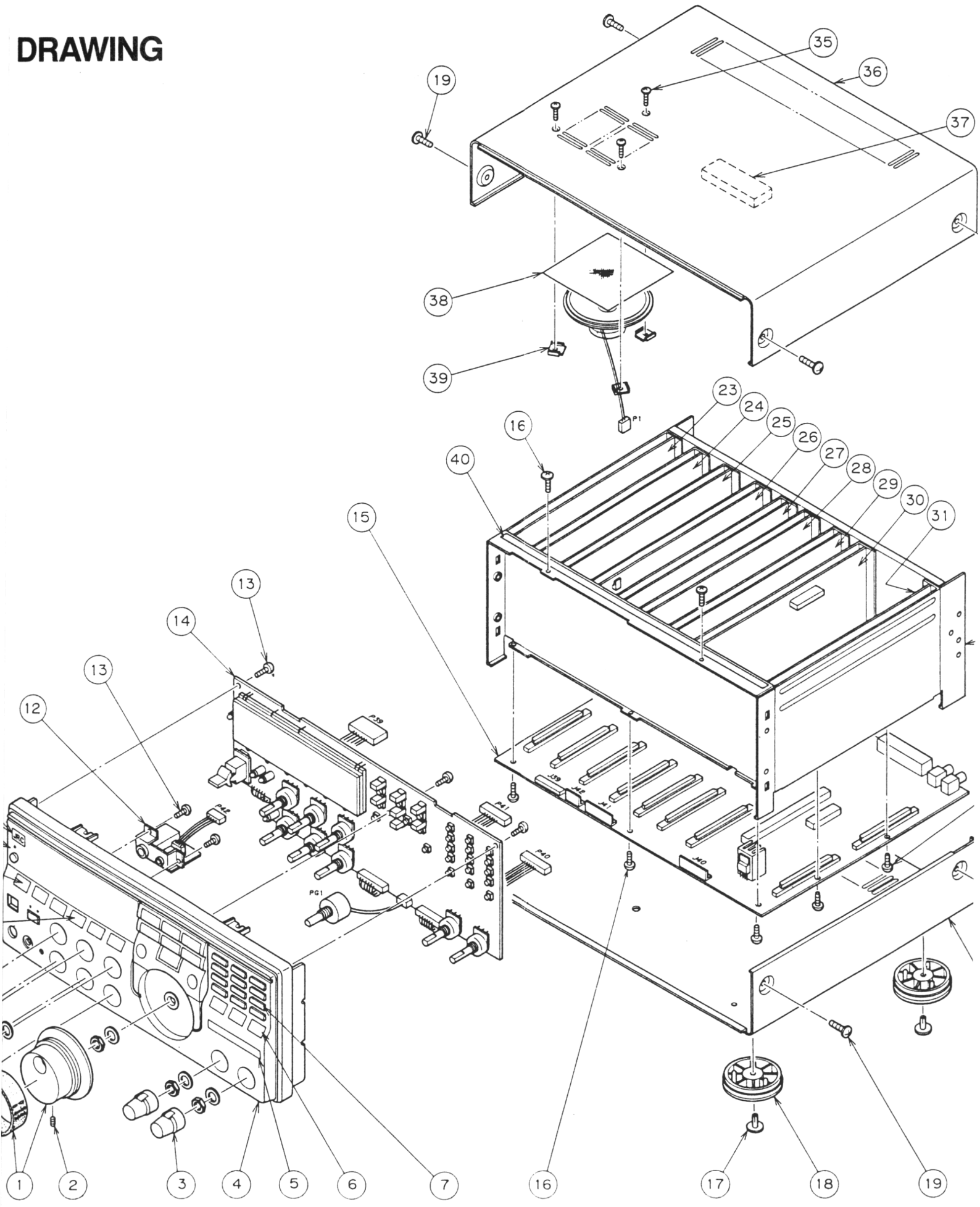


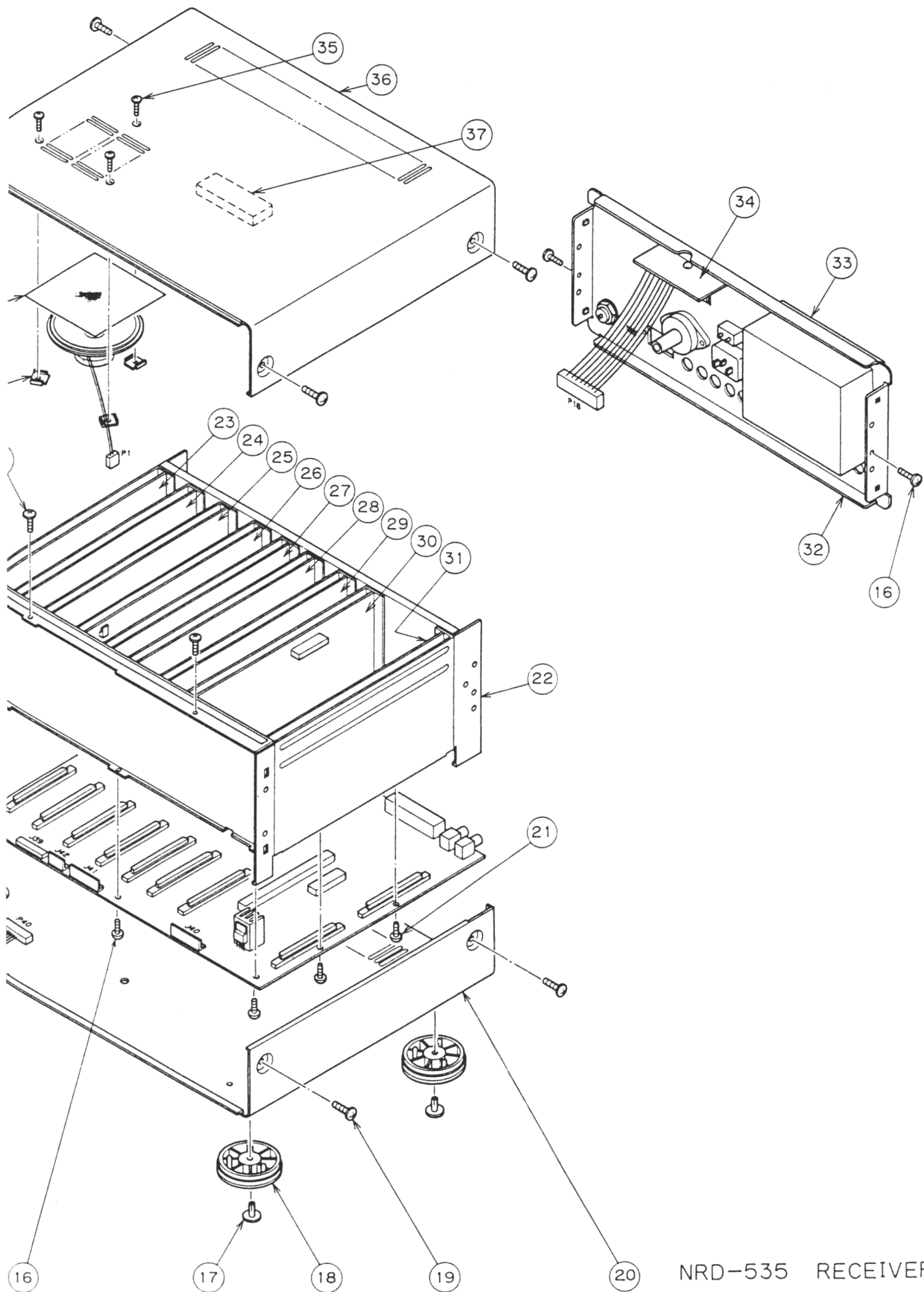
Fig. 3-3 REMOVING THE UNIT

# SECTION 4: ASSEMBLY DRAWING



# DRAWING





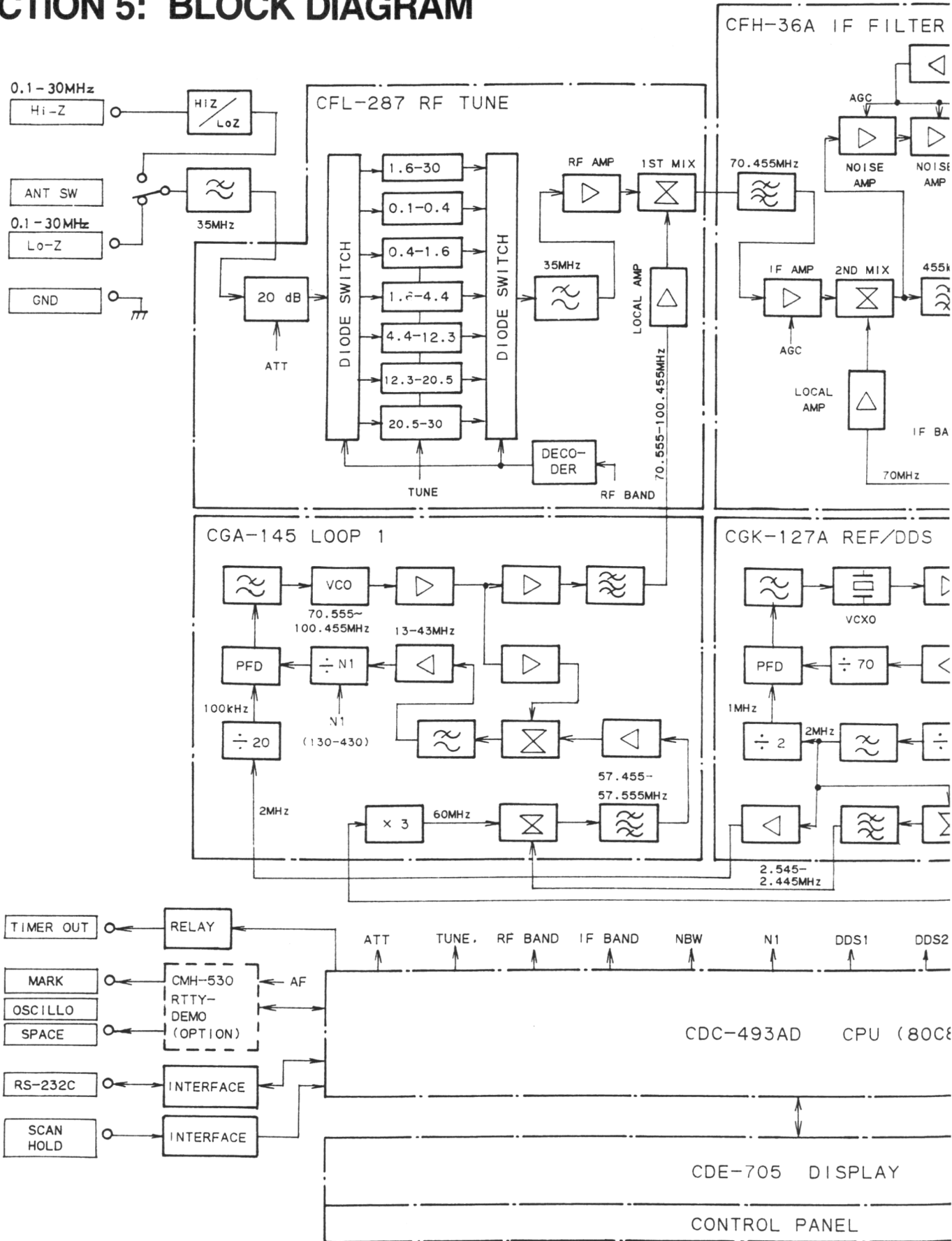
NRD-535 RECEIVER



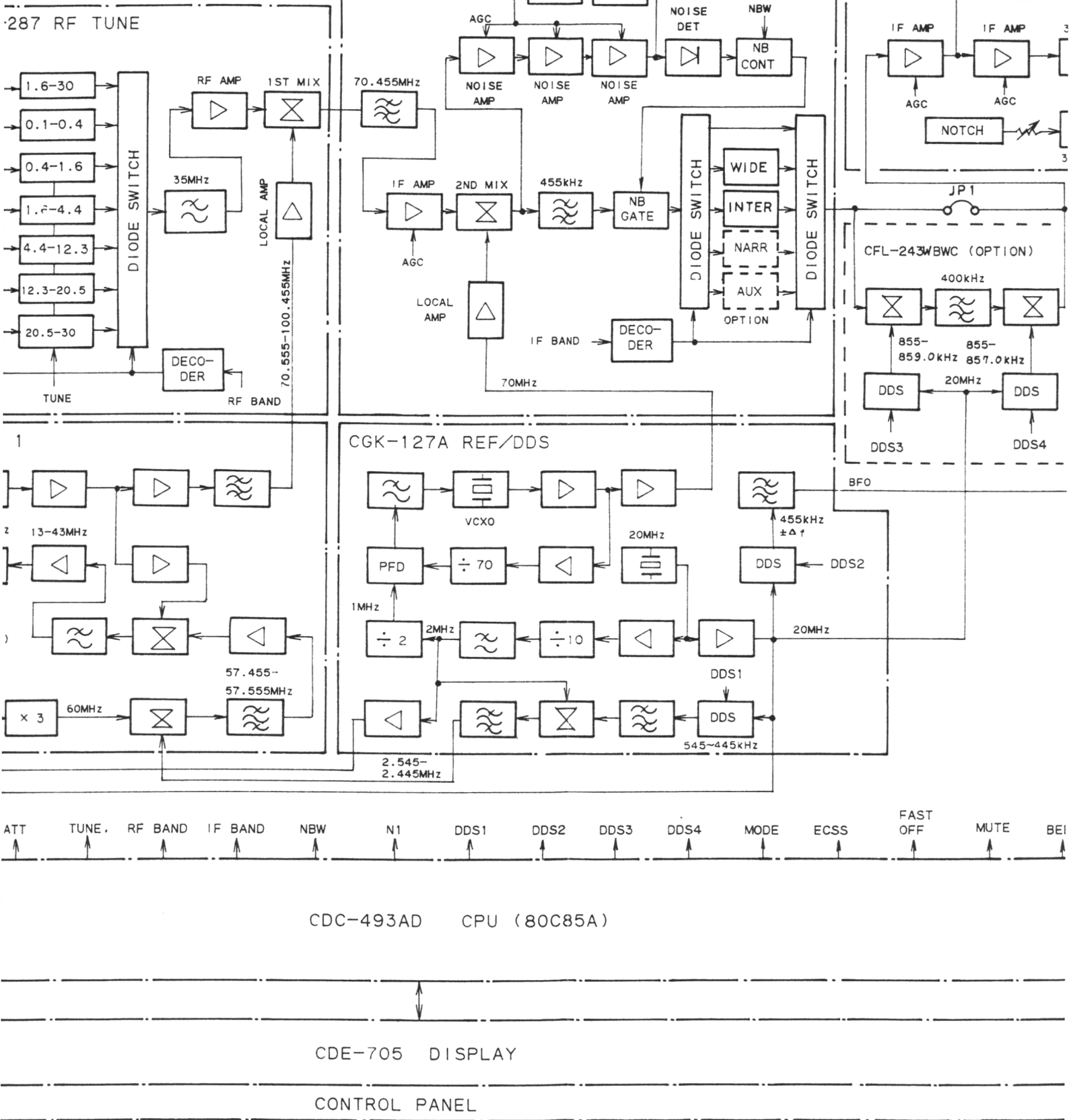
**ASSEMBLY PARTS LIST**

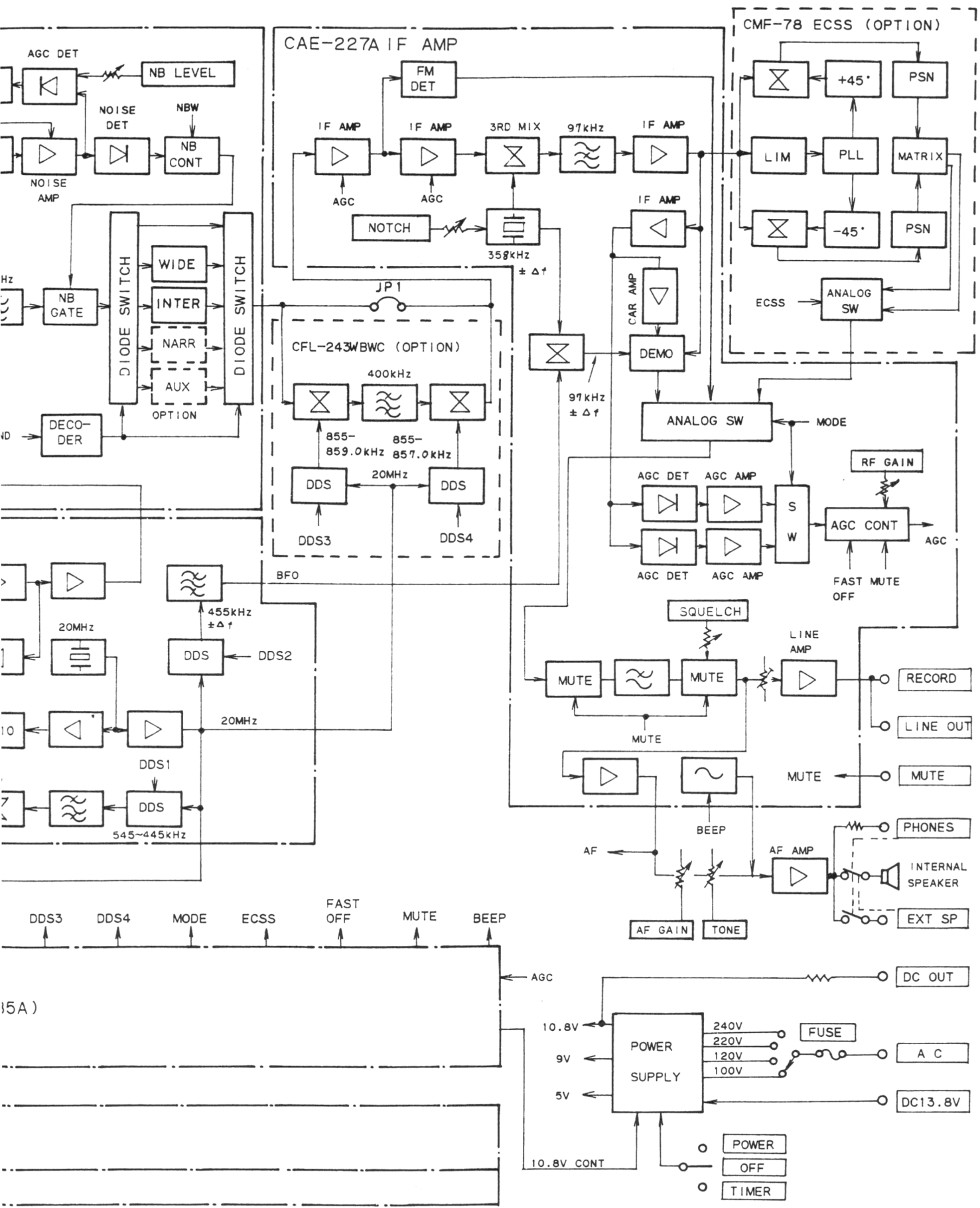
LOCATION	DESCRIPTION	PART NUMBER	QTY	REMARKS
1	DIAL	MPHD01477	1	
2	SET SCREW	BSHT03004S	(1)	3T3×4
3	KNOB	MPHD01478	8	
4	PANEL	MPBC09674	1	
5	NAME PLATE	MPNM15343	1	NRD-535
		MPNL21368	1	NRD-535D
6	KEYTOP	MTV004125	1	
7	KEYTOP	MTV004124	1	
8	KEYTOP	MTV004126	1	
9	KEYTOP	MTV004127	1	
10	FILTER	MPOL01126	1	
11	JRC BADGE	MPNL09514	1	
12	JACK UNIT	CQB-61	1	
13	SCREW	BRTG02970	8	3×8 ZMC
14	DISPLAY UNIT	CDE-705	1	
15	MOTHERBOARD	CFQ-3597	1	
16	SCREW	BRTG01225	17	3×6 ZMC
17	NYLON RIBET	BRTG01468	4	FNRP $\phi$ 4×7 BLK
18	LEG	MPKU00270	4	NRD-535
		MPKU00271	4	NRD-535D
19	SCREW	BRTG03311	8	M3×8BS BNM2
20	BOTTOM COVER	MTD004608	1	1
21	SCREW	BRTG00970	18	2. 6×6 ZMC
22	CHASSIS	MPBC09677	1	
23	RF TUNE UNIT	CFL-287	1	
24	IF FILTER UNIT	CFH-36A	1	
25	BWC UNIT	CFL-243W	1	
26	IF AMP UNIT	CAE-227A	1	
27	ECSS UNIT	CMF-78	1	
28	LOOP1 UNIT	CGA-145	1	
29	REF/DDS UNIT	CGK-127A	1	
30	CPU UNIT	CDC-493AD	1	
31	RTTY DEMO UNIT	CMH-530	1	
32	BACK BOARD	MTD004609A	1	
33	COVER	MTD004430	1	
34	AVR UNIT	CBD-1080	1	
35	SCREW	BRTG02145	3	M3×8BS BLK
36	TOP COVER	MTD004607	1	
37	RUBBER	MTT027856	1	
38	SPEAKER GRILL CLOTH	MTZ003307	1	
39	MOUNTING PLATE	MTB099587	3	
40	LABEL	MPNN25155A	1	

# SECTION 5: BLOCK DIAGRAM



# GRAM





# SECTION 6: DESCRIPTION OF CIRCUITS

## 6.1 OUTLINE OF BLOCKS

The NRD-535 is roughly divided into six blocks: Receiver block, Synthesizer block, Control block, RTTY block, panel block and chassis block. The units involved in these six blocks are listed in Table 6-1, below.

**TABLE 6-1 BLOCKS AND UNITS LIST**

BLOCK	UNIT	TYPE
Receiver block	RF TUNE unit	CFL-287
	IF FILTER unit	CFH-36A
	BWC unit	CFL-243W
	IF AMP unit	CAE-227A
	ECSS unit	CMF-78
Synthesizer block	LOOP 1 unit	CGA-145
	REF/DDS unit	CGK-127A
Control block	CPU unit	CDC-493AD
RTTY demodulator block	RTTY DEMO unit	CMH-530
Panel block	DISPLAY unit	CDE-705
	JACK unit	CQB-61
Chassis block	Mother board	CFQ-3597
	AVR unit	CBD-1080
	Chassis	NRD-535

The circuit constitution and the frequency relationship of the entire receiver are shown in the block diagram; refer to them.

The receiver adopts a triple superheterodyne system, wherein the first IF is 70.455 MHz, the second IF is 455 kHz and the third IF is 97 kHz. The double tuning circuit at the front end section adopts a variable tuning system (an electronic tuning with use of capacitor diodes), whereby the receiver block is tuned continuously in accordance with the receiving frequency.

The RF amplifier and the first mixer employ each four junction type FETs, which have low noise and excellent cross modulation characteristics, thus widening the dynamic range and improving the sensitivity. In addition, the receiver block is provided with a BWC and an ECSS circuit as a function for the elimination of the RF interference. The BWC unit, CFL-243W, is inserted between the IF FILTER unit, CFH-36A, and the IF AMP unit, CAE-227A. Accordingly, the center fre-

quency for the input/output is 455 kHz. Upon installation of the BWC unit, the jumper wire JP1 on the mother board is cut off. The ECSS unit, CMF-78, receives the third IF signal of 97 kHz as an input signal and performs the synchronous detection of this input signal.

The synthesizer block generates required frequency signals of 70.555 MHz to 100.454999 MHz and 70 MHz for the receiver block as well as the BFO signal, based on a highly stabilized reference frequency of 20 MHz. Among them, the frequency signal of 70.555 MHz to 100.454999 MHz and the BFO signal are generated by the synthesizer and it employs a DDS (direct digital synthesizer), which was developed originally by JRC.

The control block employs CPU's for switching over associated circuits and control of them. Two CPU's are incorporated, a main CPU and sub-CPU's: The main CPU is located in the CPU unit at the main frame side. The main CPU mainly performs the switching-over of the circuits in the receiver block and the frequency control of the synthesizer. The sub-CPU is located in the DISPLAY unit and it performs the display on the fluorescent display tube and the processing of key inputs as well as sending the data of them to the main CPU at the main frame side.

The RTTY demodulator block demodulates the CCITT No. 2 codes at shift widths of 170, 425 and 850 Hz and a baud rate of 37 to 75 bauds. The demodulator output may be displayed on the CRT at the computer side after sending it by way of the RSC-232C line to the computer.

The panel block is provided with switches and controls for operating the receiver. Moreover, a large type custom fluorescent display tube is employed for the display the frequencies, modes, bands, meter readings and others.

The chassis block is constituted with the mother board as a key unit, for the interconnection of associated units. Owing to the use of the mother board, the wire harnesses in the chassis have been lessened as practicable and this improves the reliability and the maintainability as the result.

## 6.2 DESCRIPTION OF UNITS

### 6.2.1 CFL-287 RF TUNE UNIT

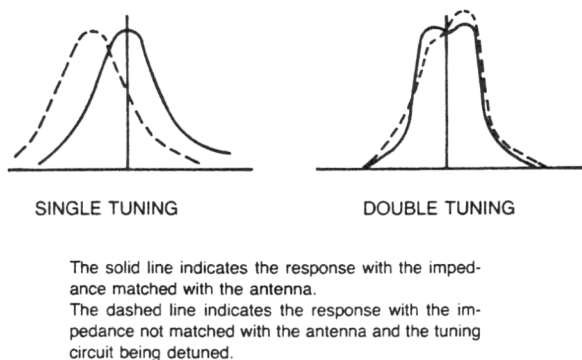
The RF TUNE unit is composed of a double tuning circuit, RF amplifier and first mixer. The received signal entering through the antenna terminal passes through a 20 dB-attenuator switching circuit with K1 to the double tuning circuit. In the double tuning circuit, the frequencies are grouped into six bands in the range from 100 kHz to 30 MHz (refer to Table 6-2, below) and the decoder of IC1 and the transistor TR1 are

operated to select desired band for the reception in response to the band switching signal fed from the CPU.

**TABLE 6-2 DIVISION OF BAND FOR THE DOUBLE TUNED CIRCUIT**

DIVISION	FREQUENCY	REMARKS
1	100 kHz–0.4 kHz	LPF
2	0.4 MHz–1.6 MHz	Double tuning circuit
3	1.6 MHz–4.4 MHz	
4	4.4 MHz–12.3 MHz	
5	12.3 MHz–20.5 MHz	
6	20.5 MHz–30 MHz	

The voltage applied to the variable capacitor in the double tuning circuit is generated in the CPU unit. This applied voltage is controlled every 10 kHz so as to obtain the best tuning characteristics in accordance with the receiving frequency. In addition, the double tuning circuit has such an advantageous point that a sharp resonance characteristic is obtained as well as the change of the impedance of the antenna has only a little influence on the detuning of the tuning circuit, that is, on the resonance characteristics of the circuit; refer to Fig. 6-1. This receiver effectively utilizes this advantageous point such that a high sensitivity will be obtainable with any antenna.



**Fig. 6-1 TUNING CHARACTERISTICS**

The received signal passed through the double tuning circuit is applied to the RF amplifier. The RF amplifier in this receiver employs a high power gain type amplifier composed of four low-noise junction type FET's TR2, TR3, TR4 and TR5 connected in parallel. Compared with an amplifier composed of one FET only, that RF amplifier provides a power gain as high as four times, 6 dB, and hence it realizes a high sensitivity of the receiver block. The received signal amplified in the RF amplifier is mixed with the first local signal in the first mixer composed of transistors TR7 through TR10 and converted into a first IF signal of 70.455 MHz.

The first mixer employs a double balanced type mixer composed of

four low-noise junction type FET. Since the double balanced type mixer suppresses the intermodulation components of the odd numbered orders, it is capable of greatly reducing the intermodulation product distortion (IMD), compared with a single balanced type mixer. Owing to this, the multiple signal characteristic is improved to thereby elevate the receiver performance.

### 6.2.2 CFH-36A IF FILTER UNIT

The IF FILTER unit is composed of a second mixer, a group of IF filters, which determine the pass bandwidth of the receiver, and a noise blanker circuit.

The first IF signal of 70.455 MHz from the RF TUNE unit is fed through a monolithic filter (MCF) FL1 to the first IF amplifier of TR1 and amplified therein. To operate the TR1 as an AGC amplifier, it employs a dual gate type MOS-FET. The signal amplified in the first IF amplifier is applied to the FET balanced mixer composed of TR2 a. TR3 and mixed with a second local signal of 70 MHz fed from the synthesizer block, thus converting into a second IF signal of 455 kHz. By the way, the second local signal of 70 MHz is amplified in the transistor TR4 and then supplied to the second mixer.

The noise blanker circuit in the next stage is composed of a gate circuit and a noise amplifier, and the second IF signal of 455 kHz is fed to these two circuits. The signal fed to the gate circuit passes through the filter FL2 and then through a balanced type gate circuit composed of diodes CD1 and CD2. The signal fed to the noise amplifier, on the other hand, is amplified by the noise amplifier composed of TR5, TR6 and TR7. To this noise amplifier an AGC is applied from the AGC circuit composed of CD4, TR8 and TR9. The signal from the output of the noise amplifier is fed to the noise detector (gate control) circuit composed of CD5, CD6, TR10, TR12, and TR13, which detects the noise component only. It switches on and off the above described gate circuit to thereby blank the noise component contained in the second IF signal of 455 kHz. The signal from the output of the gate circuit is fed to filter selected among a group of the IF filters FL3, FL4, FL5 and FL6, which provides required selectivity characteristics. Thereafter, it is sent to the BWC unit, if the BWC unit is incorporated. If the BWC unit is not incorporated, the signal from the IF filter is sent to the IF AMP unit.

### 6.2.3 CFL-243W BWC UNIT

The BWC unit is composed of two mixers for the BWC (bandwidth control), two local oscillators and crystal filter having a center frequency of 400 kHz. The signal applied from the second IF stage of 455 kHz is converted into a signal of 400 kHz by the mixer of IC1 in the front stage. This signal passes through the crystal filter FL1 of 400 kHz to the mixer of IC2 in the latter stage, wherein it is converted again into an original signal of 455 kHz, which is then applied to the IF AMP unit. The local oscillation signals to be fed to both mixers of IC1 and IC2 are

obtained from the synthesizer of IC3 and IC4 in the DDS system.

When you operate the BWC knob on the panel face, the first local frequency and two local frequencies in the BWC unit change to cause the pass bandwidth to be continuously varied. This is due to the combination of filter characteristics of the filter FL3 or FL4 in the IF FILTER unit with the filter FL1 in the BWC unit.

#### 6.2.4 CAE-227A IF AMP UNIT

The IF AMP unit is composed of a third local oscillator, third mixer, second IF amplifier, third IF amplifier, demodulator, AGC circuit, squelch circuit, line amplifier and others.

The third local oscillator is composed of a 358 kHz-oscillator of TR9 and a buffer amplifier of TR10. The 358 kHz-oscillator employs a ceramic oscillator X1. The diodes CD2 and CD28 are variable-capacitance diodes for fine adjustment of the ceramic oscillator X1 and they are controlled with the control voltage fed from TR11. The third local oscillation signal from TR9 passes through the buffer amplifier of TR10 to the gate of the third mixer of TR3 as well as the Pin 2 of IC4. The mixer of IC4 mixes the local oscillation signal of 358 kHz with the BFO signal to provide an output signal, which is used as a carrier signal for the product detection. For the carrier signal frequencies by the modes of operation, refer to Table 6-3, below.

**TABLE 6-3 CARRIER FREQUENCIES FOR PRODUCT DETECTION**

MODE	BFO FREQUENCY	CARRIER FREQUENCY
RTTY(N)	457.210 kHz	99.210 kHz
RTTY(M)	457.095 kHz	99.095 kHz
RTTY(W)	456.870 kHz	98.870 kHz
CW	455.800 kHz	97.800 kHz
USB	456.500 kHz	98.500 kHz
LSB	453.500 kHz	95.500 kHz
FAX	456.900 kHz	98.900 kHz

The IF amplifier is composed of a second IF amplifier of TR1 and TR2 (455 kHz) and third IF amplifier of TR3 (97 kHz). The second IF signal of 455 kHz is amplified by the TR1 and TR2 and then mixed in the third mixer with the third local oscillation signal of 358 kHz fed from TR10, whereby a third IF signal of 97 kHz is produced. The third IF signal is fed through the NOTCH circuit of TR4, TR5, TR6 and T4 to the third IF amplifier of TR7, which amplifies the IF signal. The TR4 and TR5 in the NOTCH circuit form a change-over switch of the NOTCH, wherein the TR4 turns ON to actuate the fixed T-NOTCH circuit of T4, when the NOTCH is ON, and the TR5 turns ON to allow the NOTCH circuit to pass the signal through, when the NOTCH is OFF. Since the notch frequency is fixed, the filtering frequency is con-

trolled by adjusting the 358 kHz local oscillator frequency.

The IC2 forms a demodulator. When the mode is AM, it operates as a synchronous detector, and when the mode is other than AM, it also operates as a product detector. The carrier for the synchronous detection is fed to the Pin 2 of IC2 from the limiter circuit of TR17. In addition, the carrier for the product detection is fed to the Pin 2 of the IC2 from the Pin 9 of IC4 through the resistor.

The FM signal is demodulated with IC8. This IC is a one-chip type IC, which incorporates a limiter circuit, quadrature detection circuit and others, and it is provided for the use of the FM demodulation only.

The AGC circuit is composed of rectifiers of CD5, CD6, TR19 and TR20, time constant circuit based on a time constant determined by C103 and R105, analog switch of IC5 and IC6, and DC amplifier of IC7. There are two rectifiers: one is a rectifier for the peak detection, which is composed of CD6 and TR19 and operates when the mode is CW or SSB, and the other is a rectifier for the mean value detection, which is composed of CD5, R98, C100 and TR20 and operates, when the mode is AM. Switching over these rectifier is performed by the analog switch of IC5. The IC6 is an analog switch for the switching-over of the time constant.

The AGC voltage is provided from the Pin 7 of IC7 and applied to control the gates 2 of TR1 and TR2. Moreover, the AGC voltage is also fed through R115 to the IF FILTER unit and used for the control of TR17 in this unit.

The squelch circuit is composed of a comparator of IC9 and tuning circuit of TR35. The NRD-535 has been designed so that the squelch may function for all modes of operation. To the Pin 5 of IC9, the AGC voltage is fed from the Pin 7 of IC7. In addition, to the Pin 6 of IC7, the control voltage for the squelch is fed from the panel control. Both two voltages are compared in IC9; when the voltage on the Pin 5 of IC9 is higher than the voltage on the Pin 6 of IC9, that is, when the squelch is closed, this causes TR35 to turn on, whereby it cuts off the AF output.

The line amplifier is an AF amplifier for the external output, which is composed of 1/2 of IC12. This amplifier cuts off the output, when the squelch is closed.

Among other circuits, there is a BEEP tone oscillator of TR41. The BEEP tone oscillator oscillates at approximately 2 kHz, when the key operation on the panel is performed. The output of this oscillator is amplified with an AF amplifier, and beep tone sounds from the speaker.

#### 6.2.5 CMF-78 ECSS UNIT

The ECSS unit is capable of receiving desired signal as an AM wave without suffering from any RF interference upon the receipt of the AM RF wave, when its one side band is suffering from the RF interference, wherein the ECSS unit extracts the other side band, without using any narrow band filter.

The ECSS unit is composed of a limiter-amplifier, synchronous car-

rier generator, mixer, phase shifter, adder-subtractor circuit and demodulated signal switch-over circuit.

The IC1 forms a limiter-amplifier, which amplifies the third IF signal of 97 kHz. The amplified signal is fed to the PLL circuit of IC2, wherein a carrier synchronous with the carrier of the AM wave is reproduced. This PLL circuit employs a 90°-type phase comparator, wherein the capture range of the PLL has been set approximately for ±1 kHz enough to ensure a good RF interference suppression effect. The reproduced carrier is fed to the phase shifters of +45° and -45°, the outputs of which are then fed to the mixers of IC3 and IC4, respectively.

In the mixers of IC3 and IC4, the carriers are mixed with the third IF signal of 97 kHz, and the outputs of these mixers are fed through the AF phase shifters to the adder-subtractor circuit of IC7. The adder circuit provides a USB component of the input signal while the subtractor circuit provides an LSB component of the signal. The circuits have been designed such that you may hear an AM voice, without suffering from the RF interference, owing to the change-over circuit of IC12, which selects either the USB component or the LSB component in accordance with the RF interference.

### 6.2.6 CGA-145 LOOP 1 UNIT

This LOOP 1 unit includes a PLL type synthesizer, which generates frequency signals in the steps of 1 Hz in a range between 70.555 MHz and 100.454999 MHz, and it is composed of a frequency converter, VCO and PLL IC.

The TR12 in the frequency converter forms a frequency tripler circuit, which converts a frequency of 20 MHz into a frequency of 60 MHz and feeds the output signal to the Pin 11 of IC6. The IC6 forms a mixer, which converts the signal of 2.545 MHz to 2.445 MHz fed from the DDS, into a signal of 57.455 MHz to 57.555 MHz. Thus converted signal is fed to the SAW filter FL3, which eliminates unwanted components, and then amplified by TR13. The amplified signal is fed to the Pin 11 of IC4.

The VCO shares the frequency signals in the range between 70.555 MHz and 100.454999 MHz with three VCO's, as described below.

TR1, VCO1: 70.555–80.454999 MHz

TR2, VCO2: 80.455–90.454999 MHz

TR3, VCO3: 90.455–100.454999 MHz

The TR9, TR10 and TR11 are transistors for switching over the VCO1, VCO2 and VCO3, and one of the transistors is set on according to the frequency under the control of the CPU. The output signal from each VCO is fed through the buffer amplifier of TR4 to the local oscillation amplifier of IC1 as well as the local oscillation amplifier of IC2. The output signal from IC1 is fed through the bandpass filter to the receiver block as a first local oscillation signal of 70.555–100.454999 MHz.

On the other hand, the output signal from IC2 is to be used for the PLL, and it is converted into a signal of 13 to 43 MHz by the mixer in the next stage and the converted signal is fed through the lowpass filter and the buffer amplifier of IC3 to the PLL IC of IC5. The internal constitution of the PLL IC of IC5 is illustrated in Fig. 6-2, below.

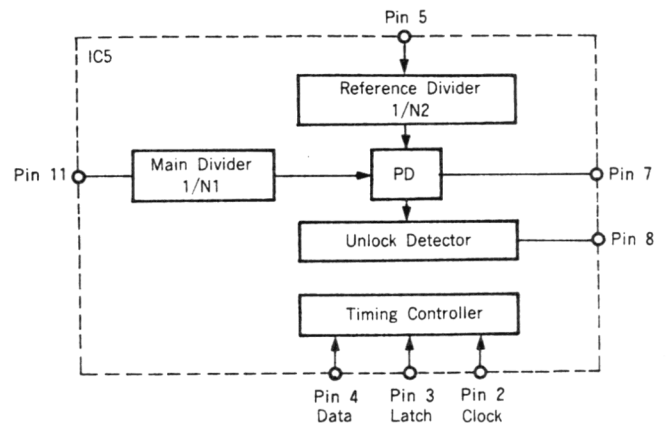


Fig. 6-2 INTERNAL CONSTITUTION OF IC5

The divider of IC5 is set to have frequency division ratios, as follows:

$$N_1 = 130 - 430$$

$$N_2 = 20$$

The setting of the frequency division ratios is performed, based on the serial data fed from the CPU. In addition, the reference frequency of the PLL has been set for 100 kHz. Accordingly, a frequency of 2 MHz has been fed to the Pin 5 of IC5.

The receiving frequency  $f_R$ , the VCO frequency  $f_{VCO}$ , the frequency  $f_{IF}$  on the Pin 11 of IC5, and the frequency division ratio  $N_1$  of the main divider are related to one another, as described below.



100.454999 MHz, synthesizer for generating the BFO signal and another synthesizer for generating the local oscillation signal of 70 MHz.

The address decoder is composed of a NAND of IC13, addressable latch of IC14, and 3-to-8 line decoder of IC15 and IC16, and it supplies the data from the CPU to the synthesizers.

The 20 MHz-STD OSC is composed of a 20 MHz-crystal oscillator of TR5, buffer amplifier of TR6, TR7 and TR8, and 1/10-frequency divider of IC19. The reference frequencies for the synthesizers are all fed from this oscillator. The output signal of 20 MHz from the TR5 is fed by way of the buffer amplifier of TR6 to the pin 14 of IC19 as well as the pins 16 of IC1 and IC2. The IC19 in the 1/10-frequency divider provides an output signal of 2 MHz. The waveform of this signal is shaped by the lowpass filter, the output of which is then fed to the pin 10 of IC12 and the pin 5 of IC17 as well as TR8. The signal amplified in TR8 is fed to the LOOP 1 unit.

The DDS is composed of a DDS of IC1, level converter of IC3 and IC4, D/A converters of RA1 and RA2, constant-current circuit of IC5 and TR1, comparator of IC7 and flip-flop of IC8. The frequency data is written into IC1 in the form of a serial data fed from the CPU. The data from the CPU is fed to the pin 18 of IC1, while the CLOCK signal is fed to the pin 19 of IC1. When the input data of 24 bits is applied to IC1, the latch signal from the CPU is applied to the pin 17 of IC1. Thus, one cycle of the write of the frequency data is completed. The IC1 converts the serial data into a parallel data and then directly synthesizes the frequency signals, based on the reference signal of 20 MHz being fed to the pin 16 of IC1 in accordance with this parallel data. The output signal from the pin 37 of IC1 has a frequency as high as twice that of the written frequency data. This output signal is a signal involving an error, which is then applied to drive TR2 and cause C11 to be discharged.

The error output data is provided on the pins 38 through 47 of IC1 and fed to the ladder circuit of RA1, which converts the digital data into an analog data. Then, the analog data is fed to the pin 10 of IC7. The operation waveforms of these circuits are illustrated in Fig. 6-3, below.

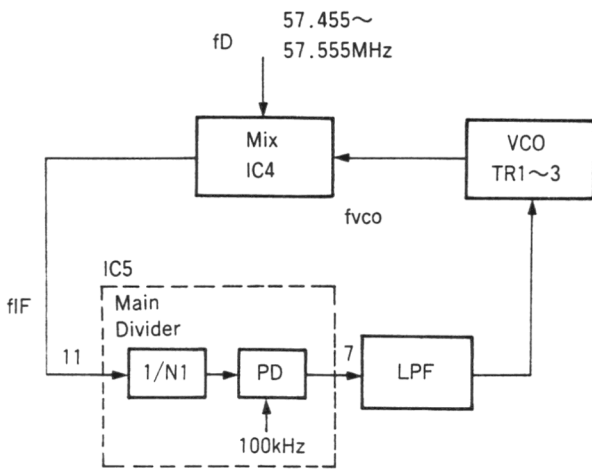


Fig. 6-3 CONSTITUTION OF LOOP 1

It is assumed that a fraction of the receiving frequency  $f_R$  at the 100 kHz-digit and higher-digits is F1 and the remaining fraction of the receiving frequency at the 10 kHz-digit and lower-digits is F2.

In the case of a frequency of 2.154 MHz, for example, F1 is 2.1 MHz and F2 is 0.054 MHz.

$$f_{VCO} = 70.455 + f_R$$

$$f_{VCO} = f_{IF} + f_D$$

$$N_1 = 10 \times (13 + F1)$$

$$f_{IF} = N_1 \times 0.1 \text{ MHz}$$

$$f_D = 57.455 \text{ MHz} + F2.$$

When  $f_R = 12.354$  MHz, for example, the parameters  $N_1$ ,  $f_{IF}$ ,  $f_D$ , and  $f_{VCO}$  are related, as shown below.

$$f_R = \underbrace{12.3}_{F1} \underbrace{54}_{F2} \text{ MHz}$$

$$f_{VCO} = 70.455 \text{ MHz} + 12.354 \text{ MHz}$$

$$= 82.809 \text{ MHz}$$

$$N_1 = 10 \times (13 + 12.3)$$

$$= 253$$

$$f_{IF} = 253 \times 0.1 \text{ MHz}$$

$$= 25.3 \text{ MHz}$$

$$f_D = 57.455 \text{ MHz} + 0.054 \text{ MHz}$$

$$= 57.509 \text{ MHz}.$$

### 6.2.7 CGK-127A REF/DDS UNIT

The REF/DDS unit includes an address decoder, 20 MHz-STD OSC part, DDS part, which forms a part of the synthesizer for generating local oscillation signals in the range between 70.555 MHz and

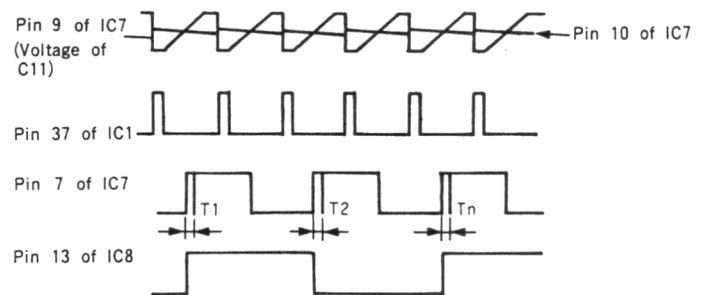


Fig. 6-3 OPERATION WAVEFORMS OF CIRCUITS IN DDS

The widths of T1 through Tn vary in a range of 0 to 50 ns in accordance with the magnitude of the error. In addition, the IC1 is provided with a frequency correction circuit for minimizing the error produced, depending on the frequency. The frequency output data is provided on the pins 26 through 35 of IC1 and digital-to-analog-converted with the ladder circuit of RA2, and resulting data is fed to IC5 in the constant-current circuit. Owing to this correction circuit, an output is obtained, the phase jitter of which is a little at any of the output frequencies in the range of 0.545 MHz to 0.445 MHz in the DDS.

The output signal (on the pin 12 of IC8) from the DDS is fed through the bandpass filter of 0.545 MHz to 0.445 MHz to the pin 1 of IC12 in the mixer. In this mixer, the signal is mixed with the signal of 2 MHz fed to the pin 10 of IC12 from the 20 MHz-STD OSC and converted into a signal in the range of 2.545 MHz to 2.445 MHz. Thus converted signal (on the pin 6 of IC12) is fed to the bandpass filter of 2.545 MHz to 2.455 MHz, which eliminates unwanted wave components, and the output signal from the filter is fed to the LOOP 1 unit, CGA-145.

The BFO signal synthesizer is composed of a DDS of IC2, D/A converter of RA3, constant-current circuit of TR3, comparator of IC6 and flip-flop of IC20. This synthesizer has the same circuit constitution as the DDS for generating the frequency signal of 0.545 MHz to 0.445 MHz. The output frequency covers the range between 453.5 kHz and 457.21 kHz in the steps of 1 Hz. The DDS is not corrected with the frequency, since the change width of the output frequency is a little. Accordingly, the pins 26 through 35 of IC2 are not used. The BFO signal (on the pin 13 of IC20) from the DDS is fed to the lowpass filter to shape the waveform of the signal and then it is fed as a BFO signal to the receiver block.

The 70 MHz PLL synthesizer is composed of a VCXO of TR9, buffer amplifier of TR10, TR11 and TR15, PLL IC of IC17, and active lowpass filter of TR12, TR13, and TR14. The output frequency of the VCXO of TR9 is 70 MHz. This signal is fed through the buffer amplifier of TR10 and TR11 to the pin 11 of IC17. The PLL IC of IC17 is the same as the IC5 used in the LOOP 1 unit, CGA-145. For the internal constitution, refer to Fig. 6-2. In this synthesizer the output frequency is fixed to 70 MHz and hence it is set for  $N_1=70$  and  $N_2=2$ .

The reference frequency of the P/D (phase detector) is 1 MHz. To the pin 5 of IC17, a frequency signal of 2 MHz is fed from the 20 MHz-STD OSC and its frequency is divided 1/2 in the interior of IC17, wherein the resultant frequency is used for the reference frequency. For the setting of the  $N_1$  of the main divider and the  $N_2$  of the reference divider, the data, latch and CLOCK signals from the CPU are supplied to the pins 4, 3 and 2 of IC17, respectively, and the settings are performed in the form of serial data. In the phase detector, the phase-compared output signal (on the pin 7 of IC17) is converted into a DC signal by the active lowpass filter composed of TR12, TR13 and TR14, and the DC signal is applied to control the frequency of the VCXO. The

output signal on the pin 8 of IC17 goes to the "H"-level, when the PLL is not locked, whereby it drives the TR17 to thereby illuminate the "UNLOCK" indicator of CD7.

### 6.2.8 CDC-493AD CPU UNIT

The CPU unit is main part for the control of the NRD-535. It employs an 8-bit type CPU of IC1 for the control of associated circuits. The programs of the CPU have been stored in an EP-ROM of 32 kbytes (IC3) and data of the memory channels and others have been stored in a CMOS RAM of 8 kbytes (IC4). This RAM has been backed up with a lithium battery BT1 and owing to this, the CPU unit is capable of holding the once stored data for a long time, even with the power switch set off.

For the control of the analog circuits, the I/O controller of IC5 and IC6 is assigned in use, while for the control of the synthesizer circuit the IC14 is assigned in use. The IC12 and IC13 are USART's; the IC12 is used for the RS-232C at 4800 bps and the IC13 is used for the data communication at 4800 bps with the CPU in the display unit, wherein each IC operates for the communication in the form of serial data. The IC7, IC17 and TR1 form a voltage generator, which generates a voltage to be applied to the variable capacitor in the double tuning circuit of the RF TUNE unit. It generates a voltage changed in a range of 5.47 V to 20 V in accordance with the receiving frequency.

### 6.2.9 CMH-530 RTTY DEMO UNIT

The RTTY DEMO unit is composed of an AGC circuit, mark filter circuit, space filter circuit, slide back detector circuit, code demodulator circuit, indicator driving circuit, printer dividing circuit and control circuit.

The AF signal fed from the IF AMP unit is fed through the A circuit of IC10 to both the mark filter circuit of IC11 and space filter circuit of IC12. The mark filter is an active bandpass filter having a center frequency of 2295 Hz and pass-band width of 30 Hz, approximately. The space filter is also an active bandpass filter having a center frequency selected among 2125 Hz, 1895 Hz and 1145 Hz and pass-band width of 30 Hz, approximately. Upon the operation of the space filter, it is switched over the three center frequencies in accordance with the shift width. The output signals from the filters are sent to the slide back detector circuit of IC13 as well as the driving circuit of IC15 for illuminating the mark and space LED lamps on the furnished indicator, CKJ-61. The slide back detector circuit synthesizes the mark signal with the space signal and detects resultant signal. The detected signal is fed through the code-normal and -reverse inversion gate to the USART of IC2 through for the serial-to-parallel conversion of the signal. Thus converted signal is sent by way of the data line to the CPU unit, CDC-493AD. The parallel interface IC of IC3 is provided for driving the printer, however, the NRD-535 is not equipped with any printer

output terminal and hence the software does not process the output data of the printer. The clock provides pulses of 727 Hz, 800 Hz, and 900 Hz for the baud rate, such that the frequency of 12 MHz is divided by 10 in the IC5 and further divided by 1650 for the 45.45 bauds, by 1500 for the 50 bauds, or by 1333 for the 75 bauds. The parallel interface IC switches over the clock for the baud rate as well as the center frequency of the space filter (the change over the shift width).

#### **6.2.10 CDE-705 DISPLAY UNIT**

The display unit is composed of a CPU for the processing of the switch data on the display panel, driving of the fluorescent display tube, and data communication with the CPU in the main frame, oscillator for the clock, and controls interlocked with the control knobs on the display panel.

The CPU circuit is, the same as the CPU unit in the main frame, composed of an 8-bit type CPU of IC1, which is the center of this circuit, 32 kbyte type EP-ROM of IC3 and I/O controller of IC5, IC6 and IC8. The IC5 has roles for driving the fluorescent display tube for the display, and taking in the switch data. The IC6 drives the fluorescent display tube on one hand and processes the data sent through the IC7 from the rotary encoder for the tuning dial, on the other hand. The IC8 is a USART, which performs the data communication at 4800 bps with the CPU in the CPU unit, CDC-493AD.

The IC9 is an IC for the clock, which is working and has been backed up with a power voltage of 5 V directly fed from the power supply circuit, even when the power switch is set off. The IC10 is an A/D converter, which takes in the conditions of the controls as well as the data for the S-meter. The IC11 and IC18 are IC's for driving the LED lamps on the display panel. The IC17 is an analog switch, which changes over the AF signal and the FINE TUNE voltage of the RTTY DEMO unit, CMH-530.

#### **6.2.11 CFQ-3597 MOTHER BOARD AND CHASSIS BLOCK**

The mother board is composed of connectors for the interconnection of associated units, AF power amplifier circuit of IC4, IC6 for the RS-232C, and 12 MHz-oscillator of X1 and IC8. The 12 MHz-oscillator oscillates when the mode is set for the FSK, and the RTTY DEMO unit, CMH-530, is incorporated. In addition, the mother board incorporates diodes CD5, CD6, CD7 and CD8 for the rectification of the AC power source, diode CD4 for preventing the DC power current from reversely flowing, relay K1 for the TIMER OUT, input/output connectors for the signals from the rear panel, and connectors for the connection with the panel block.

The chassis block includes the CBD-1080 AVR unit, power connectors J21 and J22 and power transformer T1. The speaker is mounted on the upper cover.

# SECTION 7: ADJUSTMENT

## 7.1 PREPARATION

For the adjustment of the NRD-535, the measuring instruments are required, which will be described in Paragraph 7.1.2. If the required measuring instruments are not prepared, do not adjust unreasonably.

### 7.1.1 PRELIMINARY SETTINGS

The switches and controls on the front panel should be set to avoid erroneously operating them, as listed below. In addition, return these switches and controls to the following positions, whenever adjusting them.

LOCK switch .....	OFF position
RF GAIN control .....	Fully clockwise
NOTCH control .....	Fully counterclockwise
SQUELCH control .....	Fully counterclockwise
PBS control .....	Mid position
TONE control .....	Mid position
BWC control .....	Fully counterclockwise
NB switch .....	OFF position
ATT switch .....	OFF position

### 7.1.2 REQUIRED MEASURING INSTRUMENTS FOR THE ADJUSTMENT

DC (AC) voltmeter .....	Digital voltmeter
Frequency counter .....	10 kHz to 100 MHz
High frequency voltmeter .....	455 kHz to 150 MHz,
(Vacuum tube voltmeter)	0.001–3 Vrms
Level meter .....	600 ohms, –50 dBm to 30 dBm
Distortion meter .....	600 ohms, 0.5 to 30%
AF oscillator .....	600 ohms, –70 to 20 dBm
Signal generator .....	50 ohms, –20 to 126 dBμV,
	90 kHz to 150 MHz,
	with AM and FM modulations
Tracking-scope .....	50 ohms, 400 kHz to 100 MHz
Spectrum analyzer .....	50 ohms, 400 kHz to 100 MHz
Auto keyer .....	Capable of switching on the RF signal
	for 20 mS and off for 100 mS
Oscilloscope .....	Dual display type, DC to 100 MHz
Conversion transformer .....	4 ohms: 600 ohms, 3 watts
Headphone .....	ST-3, etc.
Extension circuit board .....	NJZ-667

### 7.1.3 STANDARD MEASURING CIRCUITS

#### (1) SENSITIVITY MEASUREMENT

Connect the measuring instruments, as shown in Fig. 7-1 below.

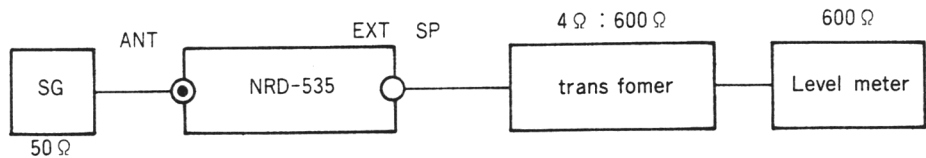
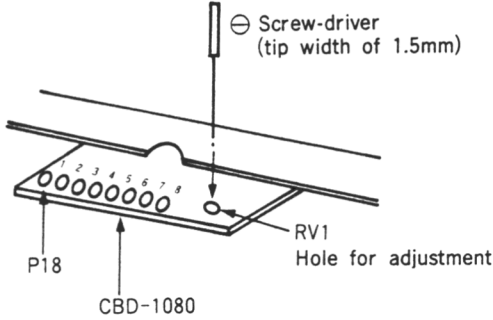


Fig. 7-1 MEASUREMENT OF SENSITIVITY

## 7.2 ADJUSTMENT OF UNITS

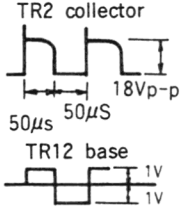
### 7.2.1 CBD-1080 AVR UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	Power voltage check	<ol style="list-style-type: none"> <li>① Check the voltages at test points, using the digital voltmeter (DC).</li> <li>② Check the voltage between CBD-1080, P18, No. 1 and chassis (earth).</li> <li>③ Check the voltage between CBD-1080, P18, No. 3 and chassis (earth).</li> <li>④ Check the voltage between CBD-1080, P18, No. 6 and chassis (earth).</li> </ol>	<p>4.8–5.2 Vdc</p> <p>8.7–9.4 Vdc</p> <p>10.7–10.9 Vdc</p>
2	10.8 Vdc adjustment	<ol style="list-style-type: none"> <li>① Adjust the control RV1 of CBD-1080, if the voltage between CBD-1080, P18, No. 6 and chassis (earth) deviates in excess of the range between 10.7 and 10.9 Vdc in the above described power voltage check.</li> </ol> <div style="text-align: center; margin-top: 20px;">  <p>⊖ Screw-driver (tip width of 1.5mm)</p> <p>P18</p> <p>CBD-1080</p> <p>RV1 Hole for adjustment</p> </div>	

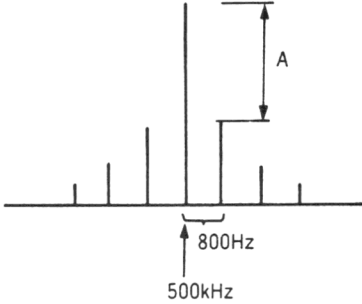
### 7.2.2 CDC-493AD CPU UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	TUNE voltage adjustment	<ol style="list-style-type: none"> <li>① Connect the digital voltage (DC) to TP1.</li> <li>② Adjust RV2 for a voltage of 5.74 Vdc on TP1 with the receiving frequency set for 400 kHz.</li> <li>③ Adjust RV1 for a voltage of 20 Vdc on TP1 with the receiving frequency set for 799.9 kHz.</li> <li>④ Repeat steps ② and ③, until both conditions are satisfied.</li> </ol>	<p>5.72–5.76 Vdc</p> <p>19.8–20.2 Vdc</p>

7.2.3 CDE-705 DISPLAY UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	Fluorescent display tube	<p>① Connect the oscilloscope to the collector of TR2 and check the waveform. In this check, there should be not any abnormal oscillation.</p>	 <p>TR2 collector 18Vp-p 50µs</p> <p>TR12 base 1V 1V</p>

7.2.4 CGK-127A REF/DDS UNIT


NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	DDS cancel adjustment	<p>① Connect the spectrum analyzer to TP1. Fcenter=500 kHz, Span=10 kHz and BW=100 Hz.</p> <p>② Settings: Fr=0.4501 MHz and MODE=AM.</p> <p>③ Adjust RV1 so that the side spurious response may be minimum (A may be maximum).</p> 	
2	2 MHz balance adjustment	<p>① Connect the spectrum analyzer to TP5. Fcenter=2.5 MHz, Span=5 MHz, BW=1 kHz.</p> <p>② Settings: Fr=0.4501 MHz, MODE=AM.</p> <p>③ Adjust RV3 so that the 2 MHz component may be minimum.</p>	
3	70 MHz PLL adjustment	<p>① Connect the digital voltmeter (DC) to TP8.</p> <p>② Check the voltage. In this time, the LED CD7 must be illuminating (indicating the locked state).</p> <p>③ Make sure the LED CD7 illuminates when grounding TP8 (unlocked state).</p> <p>④ Connect the vacuum tube voltmeter to TP9 and adjust T1 for a maximum output voltage.</p>	2-7 Vdc
4	Frequency measurement	<p>① Connect the frequency counter to TP9.</p> <p>② Measure the frequency of oscillation.</p>	70 MHz ± 50 Hz
5	BFO cancel adjustment	<p>① Connect the spectrum analyzer to TP6. Fcenter=455.8 kHz, Span=500 kHz, BW=1 kHz.</p> <p>② Set for MODE=CW and adjust RV2 for a minimum side spurious response.</p>	

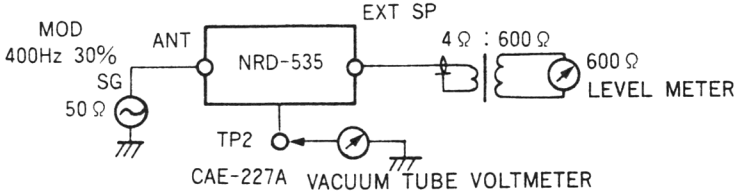
7.2.5 CGA-145 LOOP 1 UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)												
1	AVR adjustment	① Connect the digital voltmeter (DC) to TP4. ② Adjust RV1 for a voltage of 8.5 Vdc.	8.4–8.6 Vdc												
2	60 MHz tuning	① Connect the vacuum tube voltmeter to TP5. ② Adjust T1 for a maximum output.													
3	57 MHz tuning	① Connect the vacuum tube voltmeter to TP6. ② Adjust T2 for a maximum output.													
4	VCO adjustment	① Connect the digital voltmeter (DC) to TP1. ② Switching over the receiving frequency as tabulated below, and adjust the control voltage for VCO. <table border="1" data-bbox="443 913 1270 1178" style="margin-left: 20px;"> <thead> <tr> <th>Receiving frequency</th> <th>Adjusting trimmer</th> <th>Control voltage</th> </tr> </thead> <tbody> <tr> <td>9.999 MHz</td> <td>CV1</td> <td>7.5±0.1 Vdc</td> </tr> <tr> <td>19.999 MHz</td> <td>CV2</td> <td>7.5±0.1 Vdc</td> </tr> <tr> <td>29.999 MHz</td> <td>CV3</td> <td>7.5±0.1 Vdc</td> </tr> </tbody> </table> ③ Make sure the lock out does not take place at the receiving frequency ranging from 100 kHz to 29.999 MHz. ④ Make sure the LED CD11 illuminates in the unlocked state such as the change-over of the frequency. However, it should turn off immediately.	Receiving frequency	Adjusting trimmer	Control voltage	9.999 MHz	CV1	7.5±0.1 Vdc	19.999 MHz	CV2	7.5±0.1 Vdc	29.999 MHz	CV3	7.5±0.1 Vdc	LED CD11 turns off.
Receiving frequency	Adjusting trimmer	Control voltage													
9.999 MHz	CV1	7.5±0.1 Vdc													
19.999 MHz	CV2	7.5±0.1 Vdc													
29.999 MHz	CV3	7.5±0.1 Vdc													
5	Operating levels check at check points	① Check the operating levels, using the vacuum tube voltmeter. <table border="1" data-bbox="1015 1507 1508 1637" style="margin-left: 20px;"> <tbody> <tr> <td>IC5, Pin 11</td> <td>0.1 Vrms or more</td> </tr> <tr> <td>TP3</td> <td>0.12 Vrms or more</td> </tr> </tbody> </table>	IC5, Pin 11	0.1 Vrms or more	TP3	0.12 Vrms or more									
IC5, Pin 11	0.1 Vrms or more														
TP3	0.12 Vrms or more														

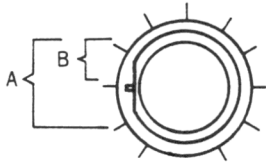


7.2.6 CAE-227A IF AMP UNIT

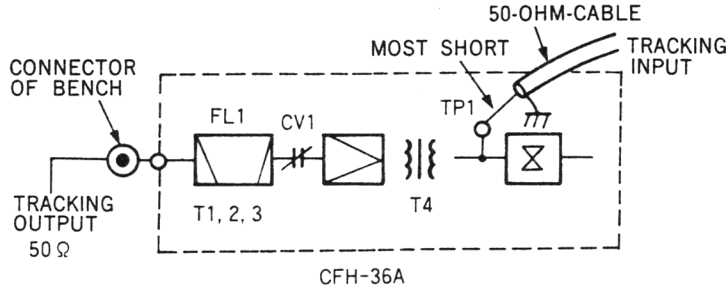
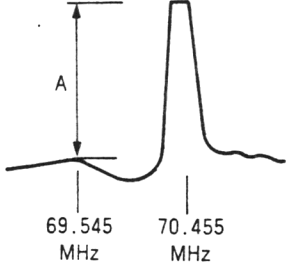
NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	NOTCH frequency adjustment	<ol style="list-style-type: none"> <li>① Connect the frequency counter and vacuum tube voltmeter to TP4.</li> <li>② Set the NOTCH control on the front panel to mid position.</li> <li>③ Adjust RV2 for a frequency of 357 kHz.</li> </ol>	
2	IF AMP tuning	<ol style="list-style-type: none"> <li>① Control settings:  RF GAIN: Fully clockwise  NOTCH: Fully counterclockwise  AGC: OFF  MODE: AM  NOTCH: OFF (LED CD4 turns off)  BANDWIDTH: INTER  ATT: OFF</li> <li>② Connect the vacuum tube voltmeter to TP2.</li> <li>③ Connect the signal generator (50 ohms, CW, 7.1 MHz, 5 dB<math>\mu</math>) to the ANT connector on the rear panel.</li> <li>④ Set the receiving frequency to 7.1 MHz.</li> <li>⑤ Adjust T1, T2, T3 and T5 for a maximum output voltage.</li> </ol>	
3	Notch ON-OFF adjustment	<ol style="list-style-type: none"> <li>① Adjust RV3 so that the LED CD4 may be turns off when the NOTCH control is set to OFF position and illuminated when set to the ON position.</li> </ol> <div style="text-align: center; margin-top: 20px;">  <p>Adjustable position →</p> </div>	
4	Notch adjustment	<ol style="list-style-type: none"> <li>① Connect the same measuring instruments as the above described IF AMP tuning and set in the same receiving conditions as in the IF AMP tuning.</li> <li>② Set the signal generator for an output level of 40 dB<math>\mu</math>.</li> <li>③ Adjust the RF GAIN control for a reading of 10 mVrms on the vacuum tube voltmeter.</li> <li>④ Adjust the AF GAIN control for a reading (of the AF output) of 20 dBm on the level meter.</li> <li>⑤ Set the NOTCH control to the mid position.</li> <li>⑥ Adjust T4 and RV1 for a minimum reading on the level meter.</li> </ol>	

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)						
5	AGC adjustment	<p>① Control settings:  Receiving frequency: 7.1 MHz  MODE: AM  BANDWIDTH: INTER  AGC: ON  NOTCH: OFF  ATT: OFF</p> <p>② Connect the measuring instruments as shown below.</p>  <p>③ Set the signal generator for an output level of 100 dB<math>\mu</math>.</p> <p>④ Adjust RV4 for a reading of 10 mVrms on the vacuum tube voltmeter.</p> <p>⑤ Set the MODE to LSB and in the same manner and measure the level on TP2.</p> <p>NOTE: Adjustable resistor: R95</p>	9-11 mVrms						
6	S-meter adjustment	<p>① Set for the condition to measure the sensitivity.</p> <p>② Control settings:  Receiving frequency: 7.1 MHz  AGC: ON  ATT: OFF  MODE: LSB  BANDWIDTH: INTER</p> <p>③ Set the signal generator for a frequency of 7.1 MHz and a level of 40 dB<math>\mu</math>, CW.</p> <p>④ Adjust RV5 for a reading of S9 on the S-meter.</p>							
7	Detector circuit carrier level	<p>① Connect and set the measuring instruments in the same receiving conditions as in the AGC adjustment described above.  Set the signal generator for a level of 40 dB<math>\mu</math>.</p> <p>② When setting the MODE to AM and LSB, and check the voltage on TP3.</p> <p>NOTE: Adjustable resistors:  AM: R90  LSB: R67</p> <table border="1" data-bbox="1007 1805 1501 1980"> <thead> <tr> <th>MODE</th> <th>VOLTAGE ON TP3</th> </tr> </thead> <tbody> <tr> <td>AM</td> <td>0.1-0.15 Vrms</td> </tr> <tr> <td>LSB</td> <td>0.04-0.06 Vrms</td> </tr> </tbody> </table>	MODE	VOLTAGE ON TP3	AM	0.1-0.15 Vrms	LSB	0.04-0.06 Vrms	
MODE	VOLTAGE ON TP3								
AM	0.1-0.15 Vrms								
LSB	0.04-0.06 Vrms								

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
8	LINE OUT adjustment	① Set for 7.1 MHz and LSB sensitivity receiving condition: AGC: SLOW SG level: 40 dB $\mu$ ② Connect the level meter of 600 ohms to the LINE OUT of the connector J36 on the rear panel. ③ Adjust RV9 for a reading of -2 dBm on the level meter.	
9	FM receiving circuit	① Set for a frequency of 7.1 MHz and FM sensitivity measuring condition: SG level: 40 dB $\mu$ ② Adjust T6 for a maximum AF output, without distortion.	
10	Squelch adjustment	① Control settings: AGC: FAST RF GAIN: Fully clockwise ANT terminal: Opened ② Set the MODE to LSB and rotate the squelch control to check at which position the squelch turns on/off. NOTE: Adjustable resistor: R167 ③ Set the MODE to FM. Adjust RV6 so that the squelch may turn on/off at specified position with rotating the squelch control.	Range A  Range B



7.2.7 CFH-36A IF FILTER UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	70.455 MHz MCF adjustment (single unit adjustment)	<p>NOTE: This adjustment have need of an exclusive test bench (not for sale) and hence do not adjust unreasonably.</p> <p>① Connect the tracking-scope as shown below.</p>  <p>② Adjust CV1 and T4 for a maximum output at point of 70.455 MHz.</p> <p>③ Adjust T1, T2 and T3 so that the 6 dB-bandwidth may exceed a range of <math>\pm 7.5</math> kHz. Adjust T1 and T2 so that the response may be flat within the pass band. Adjust T3 for desired bandwidth.</p> <p>④ Adjust T1 and T2 for an attenuation of 70 dB or more at 69.545 MHz.</p>  <p>⑤ Repeat steps ②, ③ and ④ until the specifications are satisfied.</p>	A=70 dB or more
2	Second mixer injection level	<p>① Connect the vacuum tube voltmeter to TP2 and adjust T8 for a maximum reading on the voltmeter.</p>	

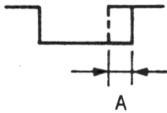
NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
3	Signal tuning	<p>① Set for 7.1 MHz and SSB sensitivity measuring conditions: AGC: OFF</p> <p>② Connect the vacuum tube voltmeter to TP2 of the CAE-227A IF AMP unit.</p> <p>③ Set the signal generator for a level of 5 dB<math>\mu</math> and adjust T4 through T7 for a maximum reading on the vacuum tube voltmeter.</p>	
4	Noise blanker adjustment	<p>① Set for 7.1 MHz and AF sensitivity measuring conditions: SG: 10 dB<math>\mu</math>, CW.</p> <p>② Connect the auto keyer and oscilloscope as shown below.</p> <div data-bbox="518 750 1109 929" data-label="Diagram"> </div> <p>③ Set the NB-1 to ON and the NB control for a maximum level (fully clockwise position).</p> <p>④ Set the auto keyer for mark hold.</p> <p>⑤ Adjust T9, T10 and T11 for a maximum output on TP3. If difficult to take the maximum point, adjust the NB level or SG level.</p> <p>⑥ Operate the auto keyer.</p> <p>⑦ Varying the output level of SG from 10 to 100 dB<math>\mu</math> and check the waveform on TP3.</p> <p>⑧ Rotate RV1 fully clockwise (maximum position)</p> <p>⑨ Set the oscilloscope for dual display mode and connect the channel 1 to TP3 of CFH-36A and the channel 2 to TP2 of CAE-227A.</p> <p>⑩ Operate the auto keyer and adjust RV2 of CFH-36A so that the spike level of the waveform on TP2 of CAE-227A may be minimum.</p> <div data-bbox="590 1657 989 1859" data-label="Diagram"> </div> <p>⑪ Make sure the above described width A enlarges when the NB switch is set to the NB-2 position.</p>	<p>0.6~0.8Vp-p</p> <div data-bbox="1316 1299 1492 1478" data-label="Diagram"> </div>
Noise AMP tuning	Noise AMP AGC	Sensitivity adjustment	Balance adjustment
NB-2			

7.2.8 CFL-287 RF TUNE UNIT

NO.	ITEM	ADJUSTING PROCEDURE			RATING (REF. VALUE)	
1	TUNE adjustment	① Connect the output of the tracking-scope to ANT and the input of the tracking-scope to TP1. ② Adjust the tuning controls as tabulated below.				
		TUNING	RECEIVING FREQUENCY	CONTROL		
		400 kHz LPF	0.4 MHz or less		300 kHz std. attenuation 400 kHz 3 dB or less 600 kHz 30 dB or more	
		0.4–1.6 MHz	SUB 0.8–1.599 MHz	0.8 MHz 1.599 MHz	T9, 10 —	TUNE deviation 3 dB or less
			MAIN 0.4–0.799 MHz	0.799 MHz 0.4 MHz	CV5, 6 —	
		1.6–4.4 MHz	SUB 2.65–4.399 MHz	2.65 MHz 4.399 MHz	T7, 8 —	
			MAIN 1.6–2.649 MHz	2.649 MHz 1.6 MHz	CV3, 4 —	
		4.4–12.3 MHz	SUB 7.4–12.299 MHz	7.4 MHz 12.299 MHz	T5, 6 —	
			MAIN 4.4–7.399 MHz	7.399 MHz 4.4 MHz	CV1, 2 —	
		12.3–20.5 MHz	12.3 MHz 20.499 MHz	T3, 4 —		
		20.5–30 MHz	20.5 MHz 29.999 MHz	T1, 2 —		
		Example: SUB 0.8–1.599 MHz (1) Set for a receiving frequency of 0.8 MHz. (2) Adjust T9 and T10 for a tuning frequency of 0.8 MHz. (3) Check if the receiver is tuned at 1.599 MHz when setting for a receiving frequency of 1.599 MHz. In this step, if the TUNE deviation takes place, return to step ② to readjust for equalizing the TUNE deviation.				

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
2	1st mixer injection level	① Set RV1 to mid position. ② Connect the vacuum tube voltmeter to TP2. ③ Switch the receiving frequency over the range from 100 kHz to 29.999 MHz in steps of 1 MHz and check the level.	0.5 Vrms or more
3	Signal tuning	① Set for 7.1 MHz and SSB sensitivity measuring condition: AGC: OFF ② Connect the vacuum tube voltmeter to TP2 of CAE-227A. ③ Set the SG for a level of 5 dB $\mu$ and adjust T12 for a maximum reading on the voltmeter.	
4	1st mixer balance	① Set for a receiving frequency of 100 kHz and the MODE to CW. ② Adjust RV1 for a minimum spurious beat.	

7.2.9 CFL-243W BWC UNIT

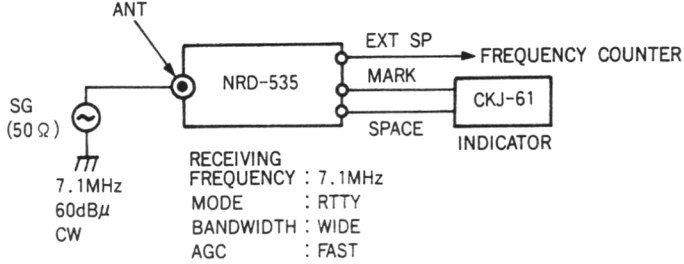
NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	20 MHz level	<ol style="list-style-type: none"> <li>① Fully counterclockwise rotate the BWC control on the front panel of NRD-535.</li> <li>② Check the level on TP5, using the oscilloscope.</li> </ol>	2 Vp-p or more
2	DDS cancel	<ol style="list-style-type: none"> <li>① Connect the oscilloscope to TP6 and adjust RV1 so that the jitter A of the waveform shown in the right diagram may be minimum.</li> </ol> <p>Connect the oscilloscope to TP7 and adjust RV2 in the same manner.</p>	
3	Local level and frequency	<ol style="list-style-type: none"> <li>① Check the levels on TP2 and TP3, using the vacuum tube voltmeter.</li> <li>② Check the frequencies on TP2 and TP3, using the frequency counter.</li> </ol>	0.1 Vrms or more
		BWC control fully counterclockwise	
	TP2	855 kHz	
	TP3	855 kHz	

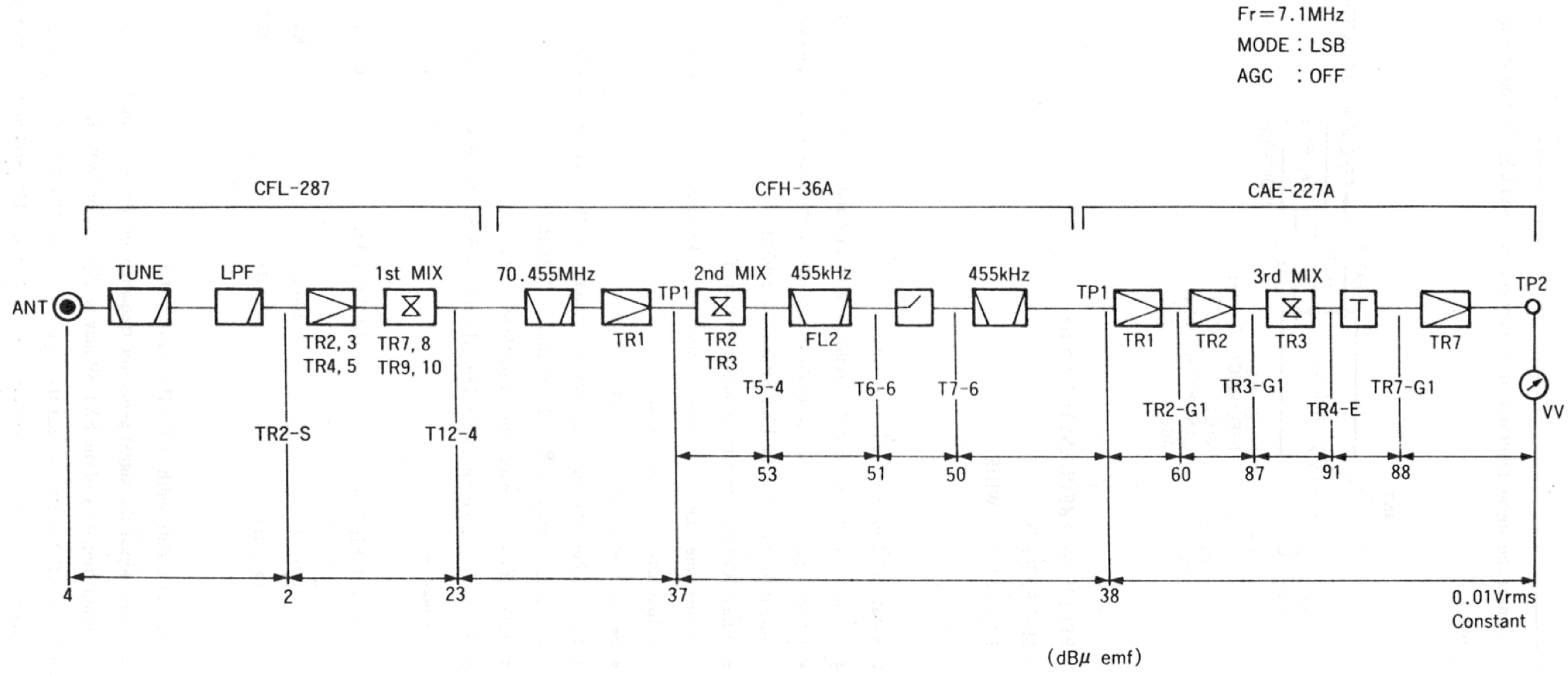
7.2.10 CMF-78 ECSS UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)
1	VCO adjustment	<ol style="list-style-type: none"> <li>① Set the receiving frequency to 7.1 MHz and the mode to AM.</li> <li>② Connect the signal generator to the antenna and set for a frequency of 7.1 MHz and output level of 40 dB<math>\mu</math>.</li> <li>③ Connect the digital voltmeter to TP4 of CMF-78.</li> <li>④ Set the ECSS to ON and adjust RV1 for a voltage of 4.5 V on TP4.</li> </ol>	4.3–4.7 Vdc



7.2.11 CMH-530 RTTY DEMO UNIT

NO.	ITEM	ADJUSTING PROCEDURE	RATING (REF. VALUE)									
1	Filter adjustment	<p>① Connect the signal generator, frequency counter, and CKJ-61 indicator as shown below.</p>  <p>RECEIVING FREQUENCY: 7.1 MHz MODE: RTTY BANDWIDTH: WIDE AGC: FAST</p> <p>② Rotate RV2 and RV3 fully clockwise.</p> <p>③ Connect the channel 1 of the oscilloscope to TP4 and the channel 2 to TP5.</p> <p>④ Finely adjust the signal generator frequency or the receiving frequency so that the output frequency of the EXT SP may be 2295 Hz.</p> <p>⑤ Adjust RV4 for a maximum output level on TP4. In this time, the output level is saturated, and hence clockwise rotate RV1, until the output level is not saturated.</p> <p>⑥ Set for a shift width of 170 Hz (<math>\pm 85</math> Hz).</p> <p>⑦ Finely adjust the signal generator frequency or the receiving frequency so that the output frequency of the EXT SP may be 2125 Hz.</p> <p>⑧ Adjust RV5 for a maximum output level on TP5.</p> <p>⑨ Adjust the space filters for 1895 Hz and 1445 Hz in the same manner as steps ⑥ through ⑧.</p> <table border="1" data-bbox="414 1585 1281 1758"> <thead> <tr> <th>SPACE FILTER</th> <th>SHIFT WIDTH</th> <th>CONTROL</th> </tr> </thead> <tbody> <tr> <td>1895 Hz</td> <td>400 Hz</td> <td>RV6</td> </tr> <tr> <td>1445 Hz</td> <td>850 Hz</td> <td>RV7</td> </tr> </tbody> </table>	SPACE FILTER	SHIFT WIDTH	CONTROL	1895 Hz	400 Hz	RV6	1445 Hz	850 Hz	RV7	
SPACE FILTER	SHIFT WIDTH	CONTROL										
1895 Hz	400 Hz	RV6										
1445 Hz	850 Hz	RV7										
2	Output level adjustment	<p>① Set for a shift width of 425 Hz (<math>\pm 212.5</math> Hz).</p> <p>② Finely adjust the signal generator frequency or the receiving frequency so that the output frequency of the EXT SP may be 2295 Hz or 1895 Hz.</p> <p>③ Adjust RV2 or RV3 so that the output levels on TP4 and TP5 may be equal.</p> <p>④ Adjust RV1 so that the output levels on TP4 and TP5 may be equal to 8 Vp-p.</p>										



# SECTION 8: TROUBLESHOOTING

## 8.1 OUTLINE OF TROUBLESHOOTING

The trouble of the receiver includes only those caused by the failures of the receiver itself but also those caused by the misunderstandings in view of the operation as well as the causes originating from other than the receiver, which results may appear on the receiver. It is, hence, essential to calmly investigate which causes the trouble between a failure of the receiver itself and any external problem.

In this section, the procedure is given for finding possible troubles of the receiver itself. Once the trouble is located, replace associated unit involving the location of the trouble, or procure new parts according to the Section 10 Parts List and replace them.

### 8.1.1 CHECK OF POWER CIRCUIT

Upon the investigation of the trouble in the receiver, the voltages of the power supply should be checked at first.

The power supply unit CBD-1080 locates at the rear panel of the main frame. The power voltages of 10.8 V, 9 V and 5 Vdc of this unit should be checked. If any abnormal condition is found, pull off all the plug-in units. In addition, pull off all the connectors on the panel block, except the connector P39. If the abnormal condition still exists in the power supply unit this time, then it may conclude that the power supply unit is defective. If, however, the voltage of 10.8 V can be adjusted again, adjust it and verify the operation.

In the case of the 5 V being abnormal, make sure there is no failure in the panel block, since this power voltage is supplied to the panel block through the connector P37. If each power voltage is not abnormal, when the plug-in units are disconnected, then return the units to the original places one after another, whereby any defective unit is found. If the substitute units are presented at hand, replace them and make sure they operate normally. For any defective unit, if any, check at first whether or not any short circuit exists in the power supply and parts due to the solder bridge or impurities. In addition, for the C-MOS IC's or the like, check whether or not they have heated abnormally. This is the measure for the check.

If any defective parts is found, replace them with new parts and check the operation.

### 8.1.2 RECEIVER SENSITIVITY POOR

The case where the sensitivity lowers will be described below.

If there are the substitutive units at hand, then try to replace the RF TUNE unit, CFL-287, at first. Successively, try to replace the IF FILTER unit, CFH-36A, IF AMP unit, CAE-227A, and CPU unit, CDC-493AD in this order, and find any defective unit. If the sensitivity still

remains poor after replacing all these units, then check the mother board, CFQ-3597, which connects associated units to the antenna.

In the case of no substitutive unit, you must find which unit is defective. The procedure for finding this will be described below.

Check whether the sensitivity is poor in all the bands (for the bands, refer to the description of the operation in the receiver block) or in a specific band only. The checking method is as follows: If the signal generator or the like is present at your hand, measure the sensitivity at each band and compare the measured value with specified value. If the signal generator or the like is not obtainable, try to receive the broadcast wave in each band, then operate the controls to pass the received signal through the tuning circuit at one hand and take the pass operation to pass the signal through the bypass filter of 1.6 MHz on the other hand. Thus, determine in which band the sensitivity is poor, based on the difference of the sensitivity between both operations.

#### (1) Sensitivity poor at specified band

In the case where the sensitivity is poor at specific band, the following three points are considerable for a defective part.

##### a) Band change-over of the tuning circuit

Some parts may be defective. Check IC1 and CD5 through CD10 in the CFL-287 unit and IC6 in the CDC-493AD unit.

##### b) Tuning circuit

Some parts may be defective and poor adjustment is possible. At first adjust again according to the adjusting procedure. If this readjustment is not effective, some parts may be defective. Check the tuning transformers in the CFL-287 unit as well as the trimmer capacitors and SUB band change-over relay.

##### c) Tuning voltage generator circuit

Some parts may be defective and poor adjustment is possible. At first adjust again according to the adjusting procedure. If this readjustment is not effective, some parts may be defective. Check the tuning voltage generator circuit in the CDC-493AD unit.

#### (2) Sensitivity in all the bands

In the case where the sensitivity is poor over all bands, a defective circuit will be found by checking the levels at some points on the route of the received signal. To do the checks, the levels at the check points are measured, with referring to the level diagrams in Paragraph 7.3. Search the circuits for a point, where the measured value is greatly different from the standard value on the

level diagram. It is noted that the standard values on the level diagram are somewhat different from the measured values.

If the defective circuit involves some adjustable points, readjust them according to the adjusting procedure. If this readjustment is not effective, some parts may be defective. Check possible parts belonging to the defective circuit.

### 8.1.3 NO SOUND FROM SPEAKER

As for the case where no sound is produced at all from the speaker, the procedure for locating a defective circuit will be described below.

At first, check whether the connecting line of the speaker is broken or not and whether the MUTE terminal on the rear panel is used or not.

Next, make sure the PLL loop in the synthesizer block is not locked out. The lock out state can be checked with the UNLOCK LED of CD10 in the CGA-145 unit and the UNLOCK LED of CD8 in the CGK-127A unit.

If the synthesizer block is operation normally, then check the squelch circuit. Try to rotate the SQUELCH control on the front panel and see the SQUELCH LED on the front panel. If this LED remains illuminated, the squelch circuit may be defective. The squelch circuit actuates different circuits between when the FM mode is selected and when other mode is selected, as explained in the Description of Operation. If, accordingly, the squelch circuit is abnormal, irrespective of the mode, then check IC9, IC10 and IC11 in the CAE-227A unit as well as the SQUELCH control RV5 on the front panel. If abnormal with the FM mode only, then check the FM detector circuit, above all, IC8 in the CAE-227A. If abnormal with other mode than the FM mode, then check the AGC circuit in the CAE-227A.

### 8.1.4 THE OPERATION NOT POSSIBLE

In the case where a failure exists in the control system, i.e., the control block and the panel block, the NRD-535 may be no more operable. The control block and the panel block in the NRD-535 incorporates their respective microcomputers. If the microcomputer faults or its peripheral IC is defective, the operation of the receiver may be also not possible. By the way, to search the control system for either defective microcomputer or any defective IC, you must be familiar with the basic performance of each IC and as well as in what way the IC is used from the viewpoint of the constitution of the circuit, and then check the IC's one after another.

In this paragraph, for occurred troubles, only clearly considerable causes will be described below.

#### a) No display with power-on

Is the power circuit for the fluorescent display tube normally operating? Check the choke coil L1, transformer T1 and transistors TR1 and TR2 with respect to the damage or the like. Is the

heater for the fluorescent display tube not broken? Visually check the heater.

#### b) No operation with the switch pressed; the display satisfactory

If one switch does not operate, check the switch itself. If several switches become defective at once, check IC5 and IC6 in the CDE-705 unit.

#### c) The receiving frequency not changeable by rotating the tuning dial; the key switches satisfactory

Check PG1 and IC7 in the CDE-705 unit.

#### d) PBS or BWC not operative

If the PBS or BWC is not operative, check the PBS control RV1 or the BWC control RV2 in the CDE-705 unit, respectively.

#### e) The internal clock deviating

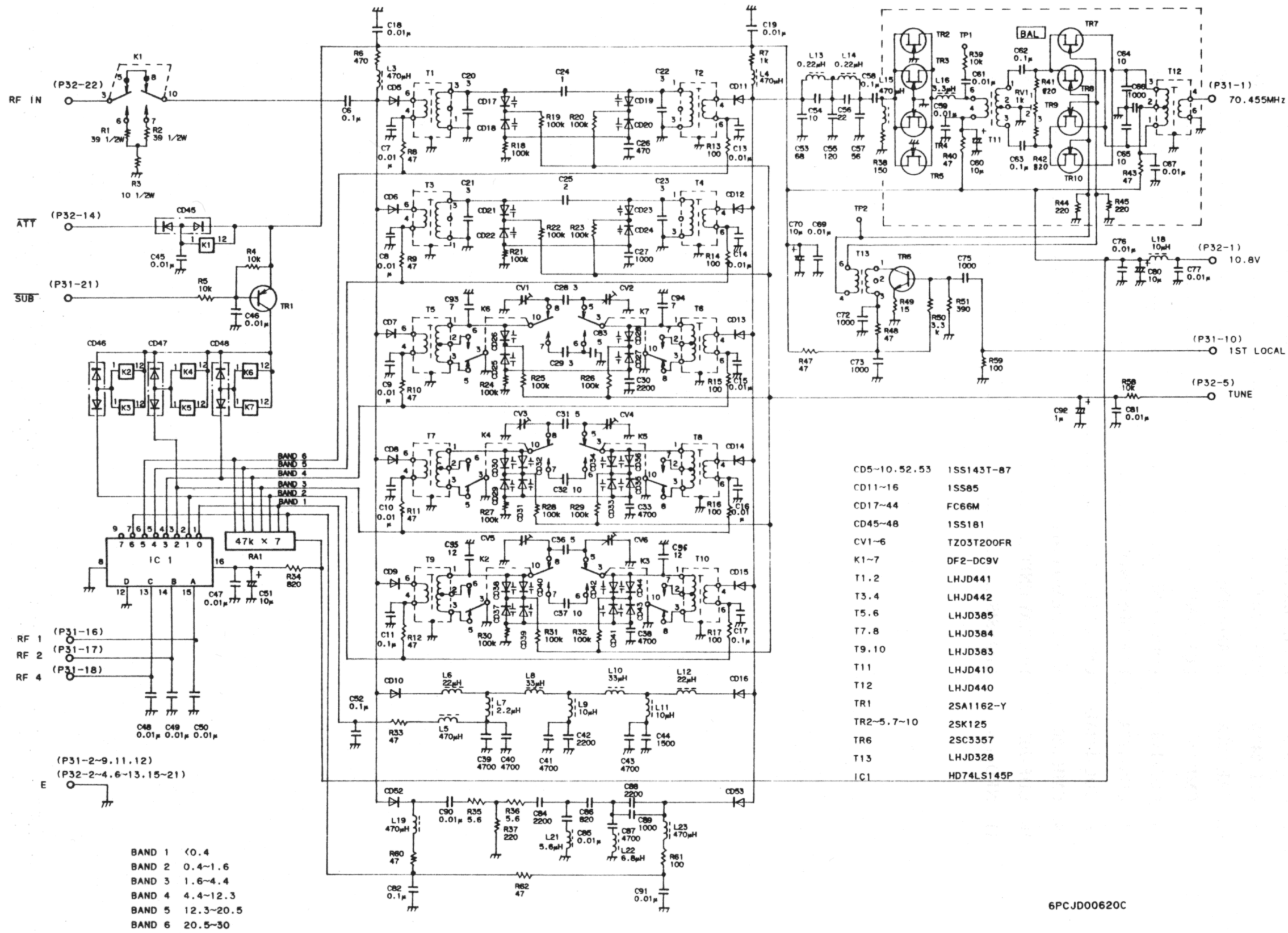
If the time deviation of the internal clock is great, then connect the frequency counter to TP1 of the CDE-705 DISPLAY unit adjust the trimmer capacitor CV1 so that the frequency of oscillation may be 64 Hz.

### 8.1.5 NOTCH NOT TURNING OFF

In the case where the NOTCH circuit remains operating even when the NOTCH control is set to OFF, readjust according to No. 3 for the CAE-227A IF AMP unit in Paragraph 7.2.6.

# SECTION 9: CIRCUIT DIAGRAM AND COMPONENT LAYOUT

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10. CDE-705	DISPLAY UNIT .....	50
11. NRD-535	CHASSIS .....	52

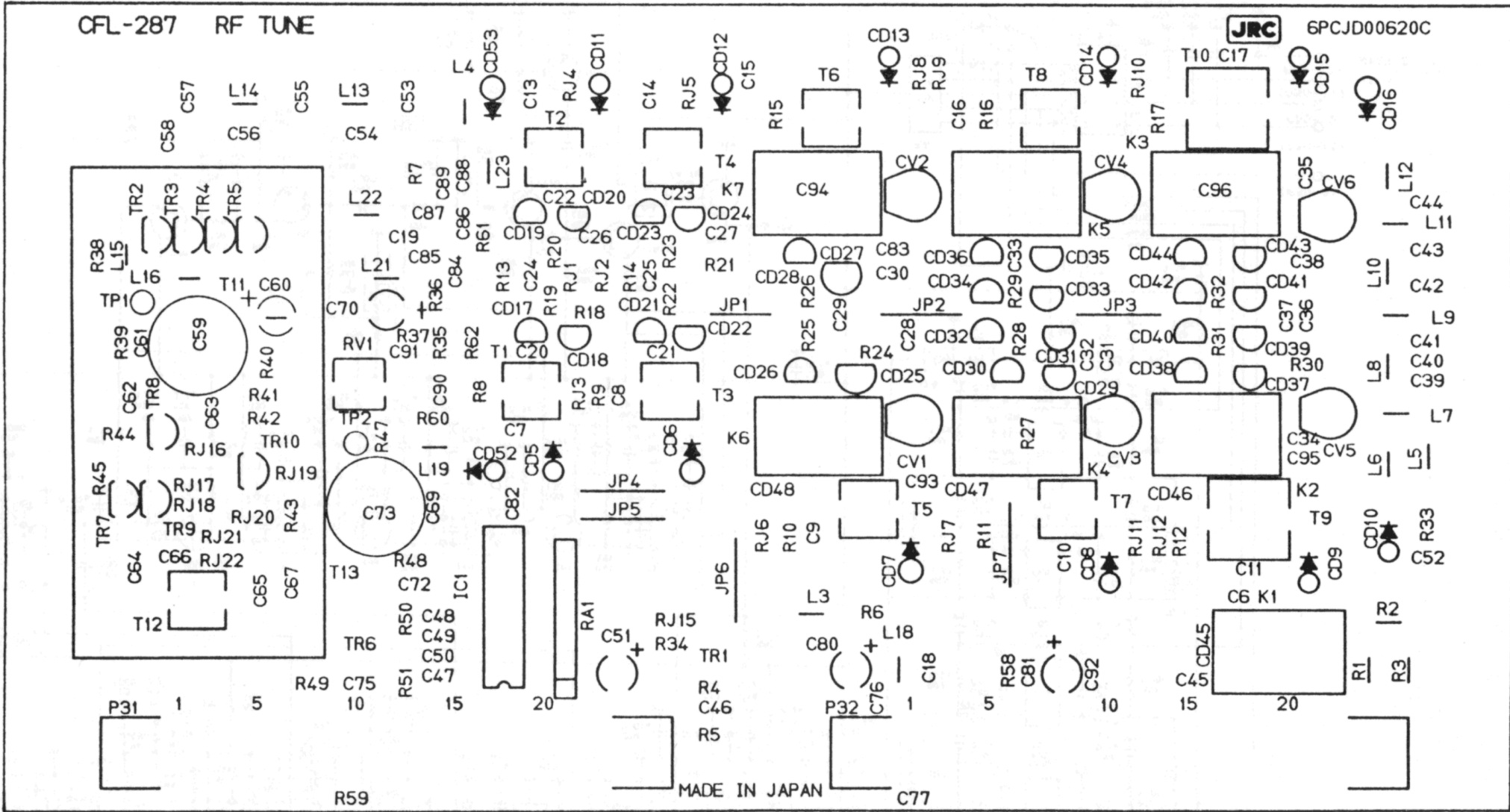


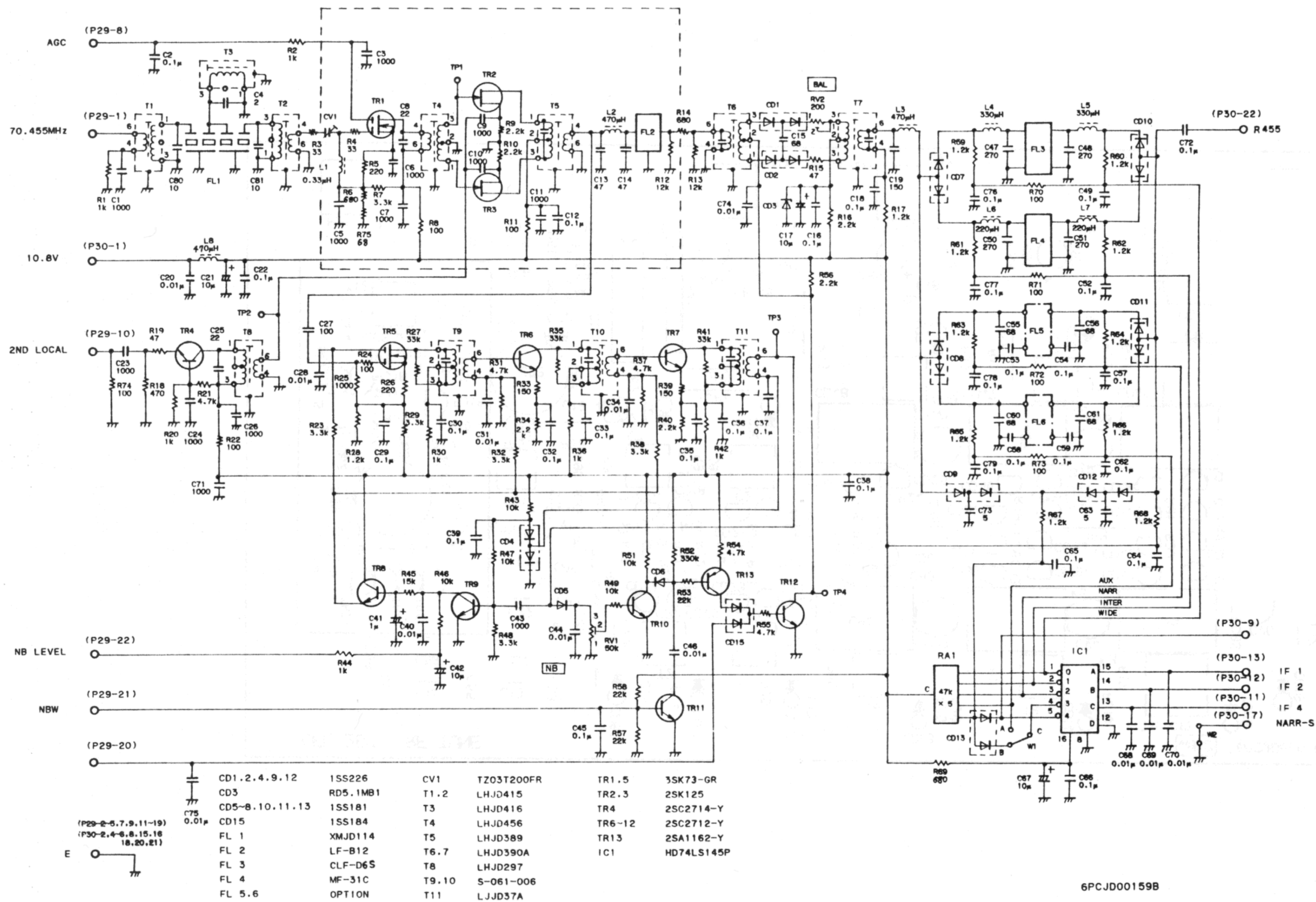
- CD5-10.52.53 1SS143T-87
- CD11-16 1SS85
- CD17-44 FC66M
- CD45-48 1SS181
- CV1-6 TZ03T200FR
- K1-7 DF2-DC9V
- T1.2 LHJD441
- T3.4 LHJD442
- T5.6 LHJD385
- T7.8 LHJD384
- T9.10 LHJD383
- T11 LHJD410
- T12 LHJD440
- TR1 2SA1162-Y
- TR2-5.7-10 2SK125
- TR6 2SC3357
- T13 LHJD328
- IC1 HD74LS145P

(P31-2-9.11.12)  
(P32-2-4.6-13.15-21)

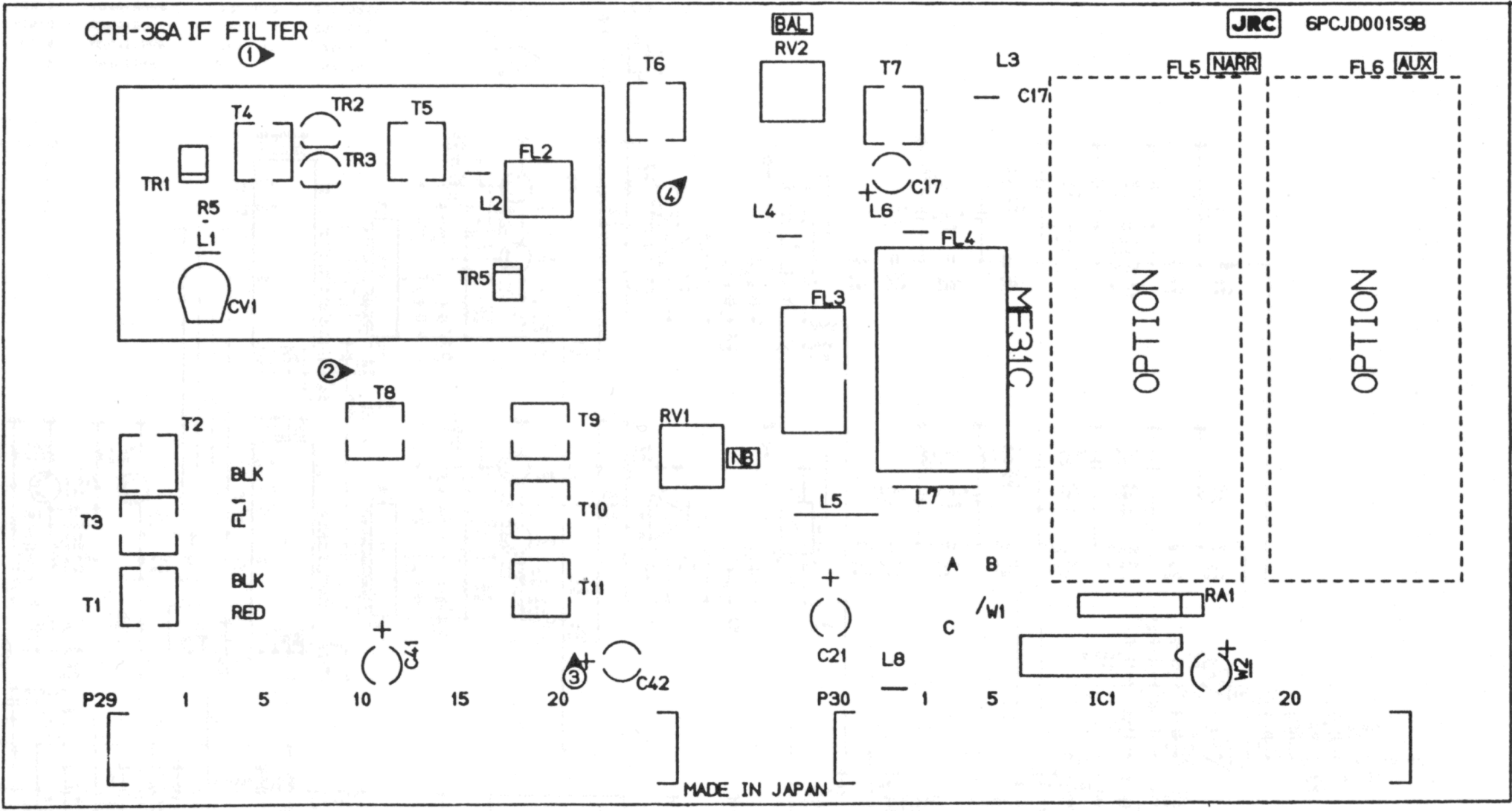
- BAND 1 <0.4
- BAND 2 0.4-1.6
- BAND 3 1.6-4.4
- BAND 4 4.4-12.3
- BAND 5 12.3-20.5
- BAND 6 20.5-30

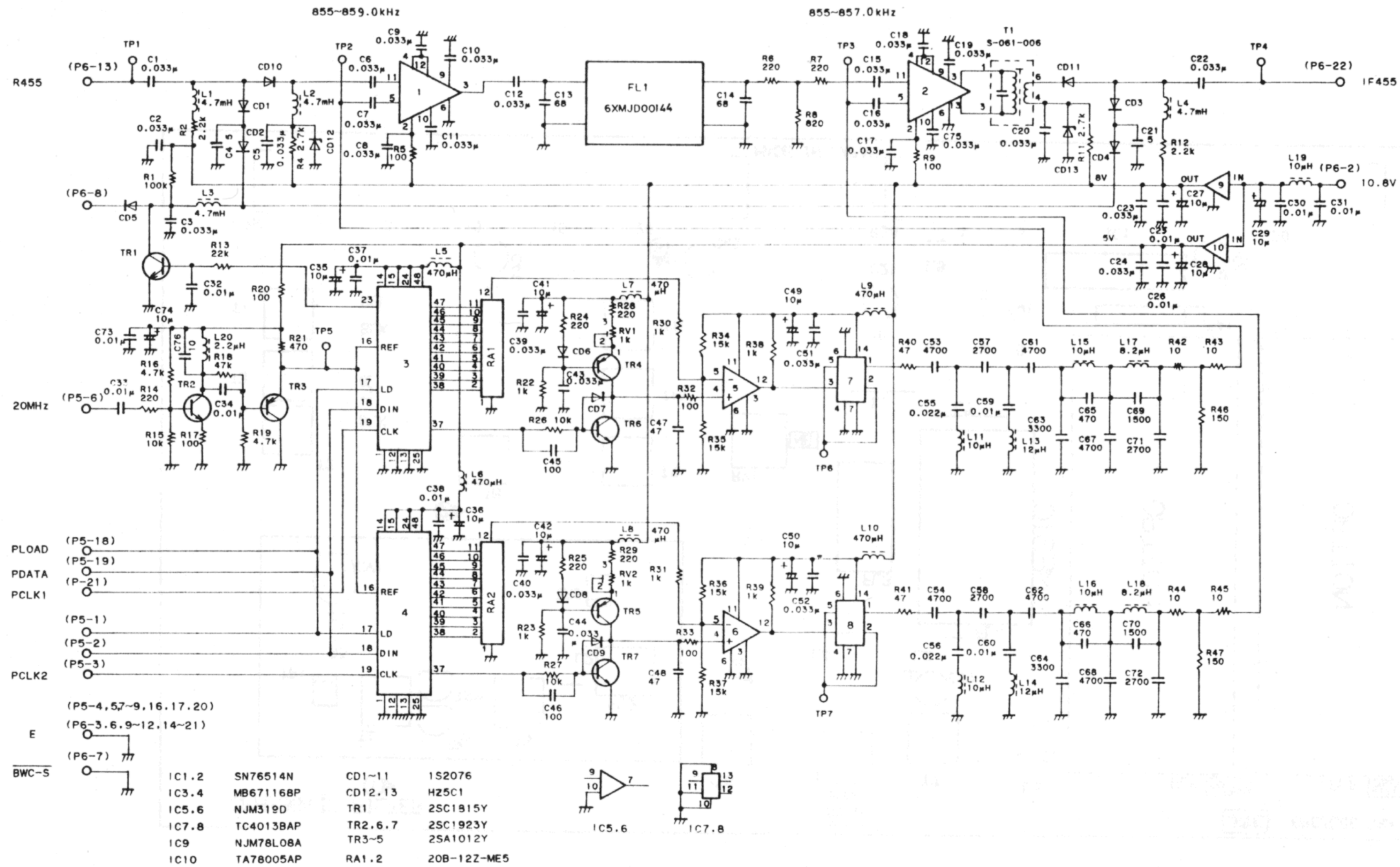
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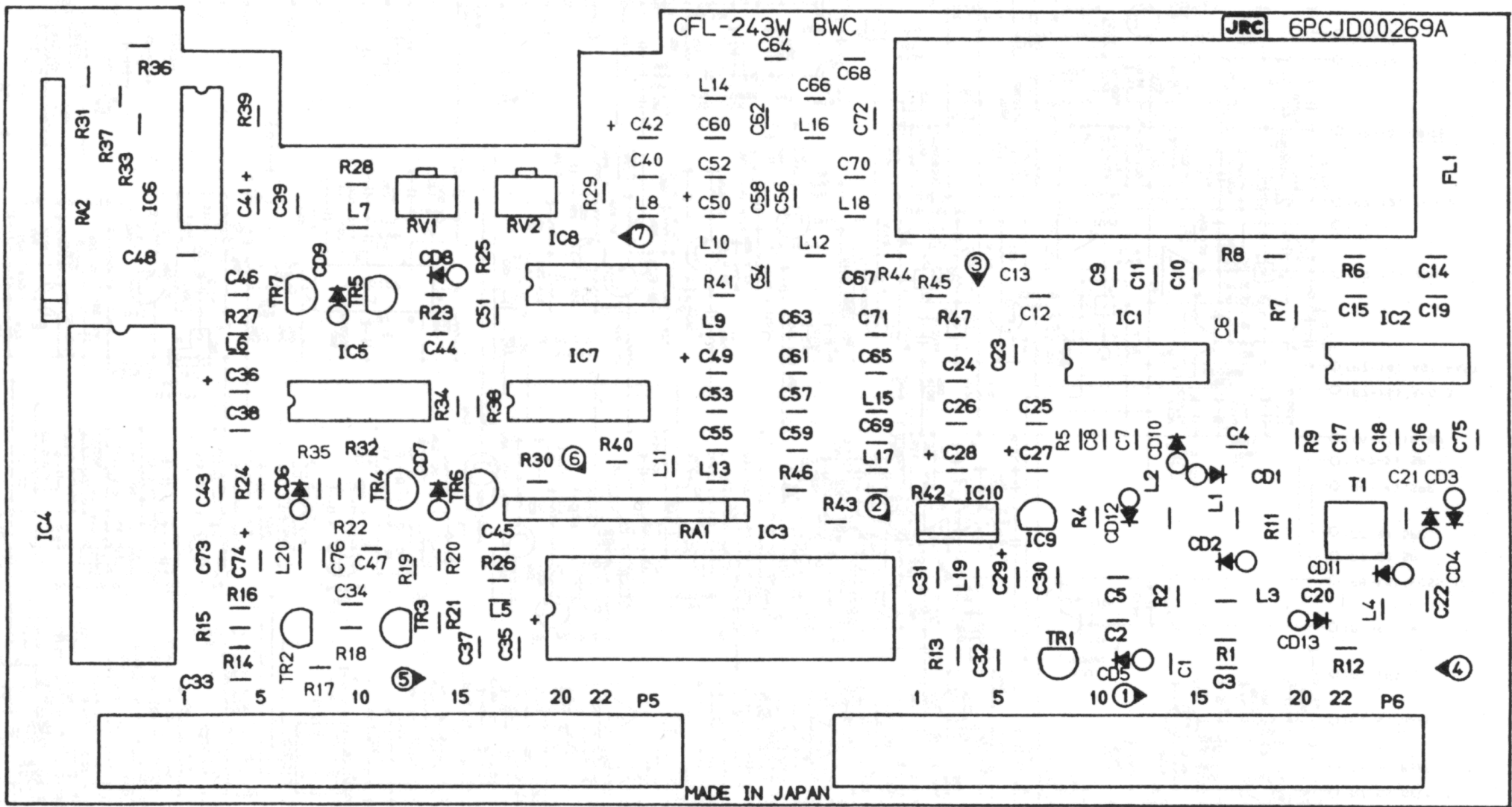


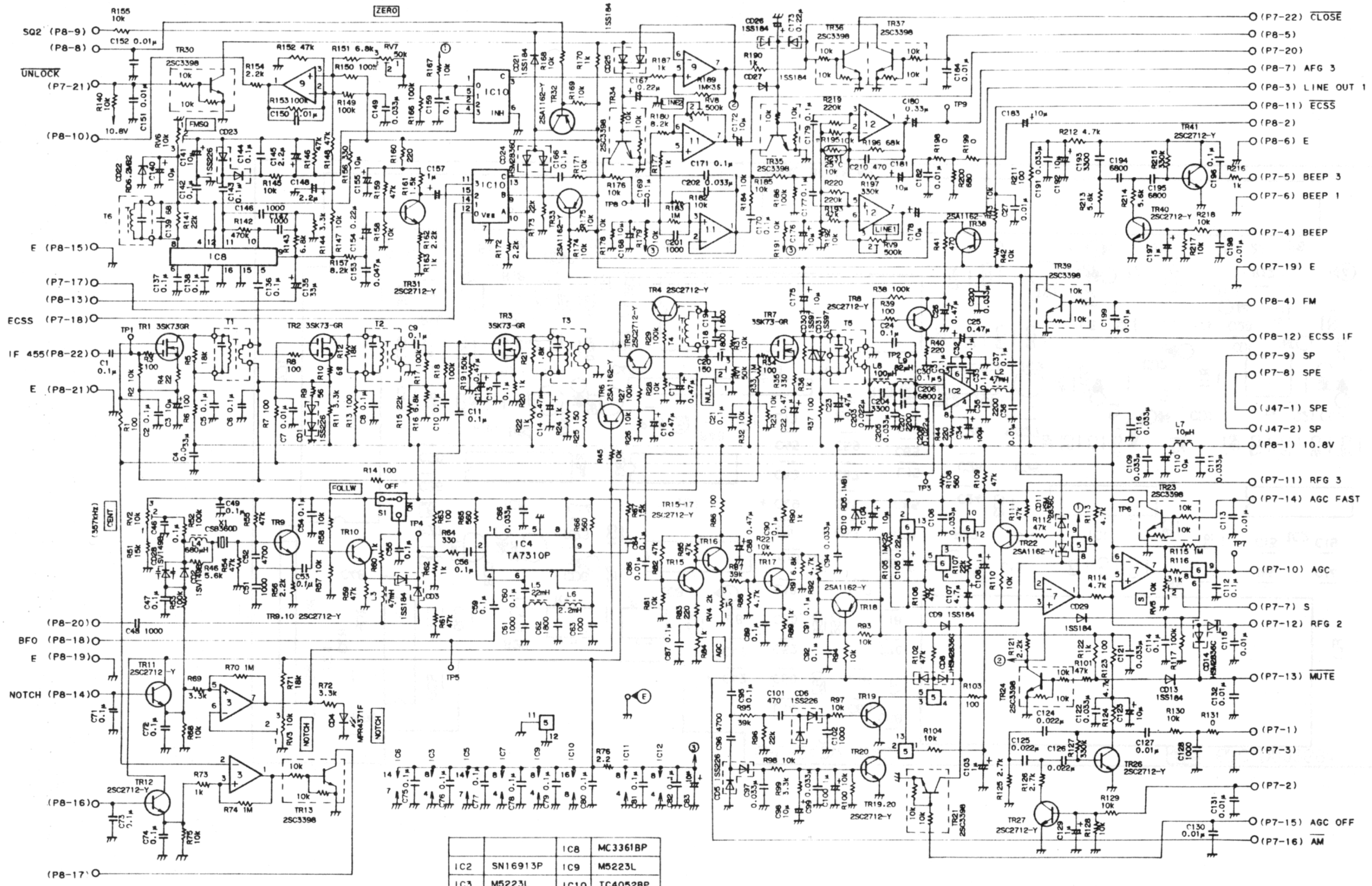






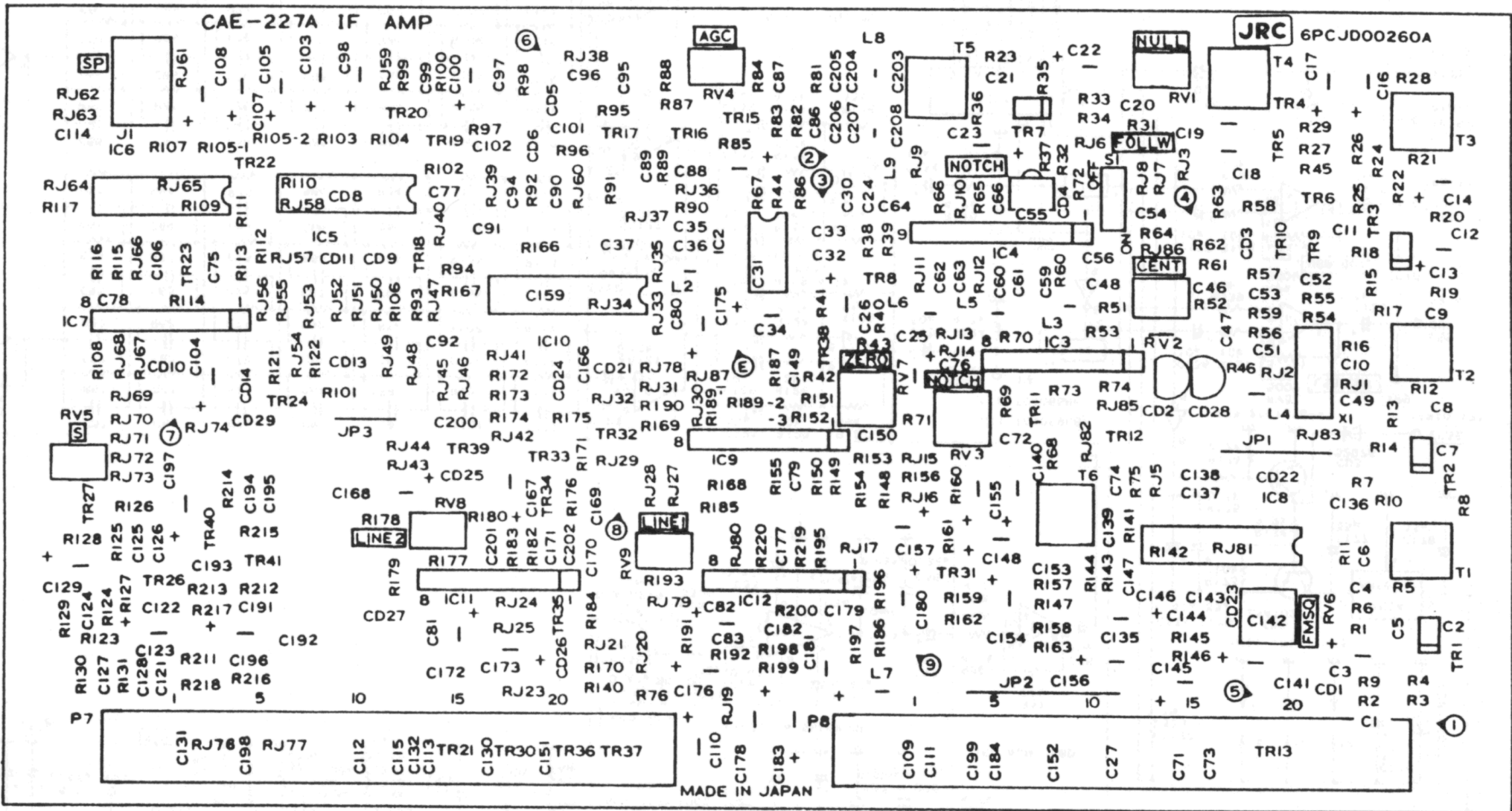


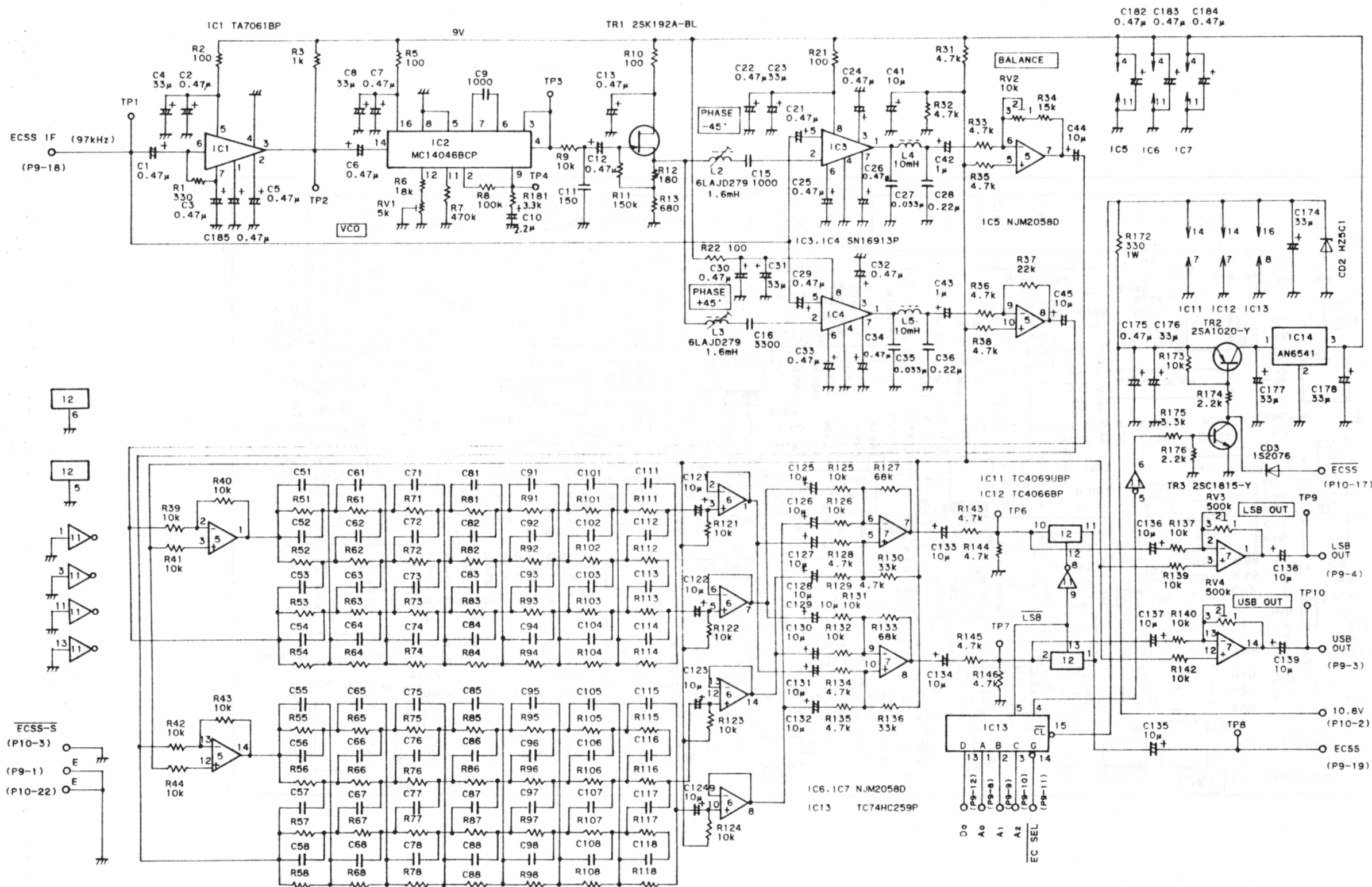




IC2	SN16913P	IC9	M5223L
IC3	M5223L	IC10	TC4052BP
IC4	TA7310P	IC11	M5218L
IC5	MC14066BCP	IC12	M5218L
IC6	MC14066BCP		
IC7	M5223L		
IC8	MC3361BP		

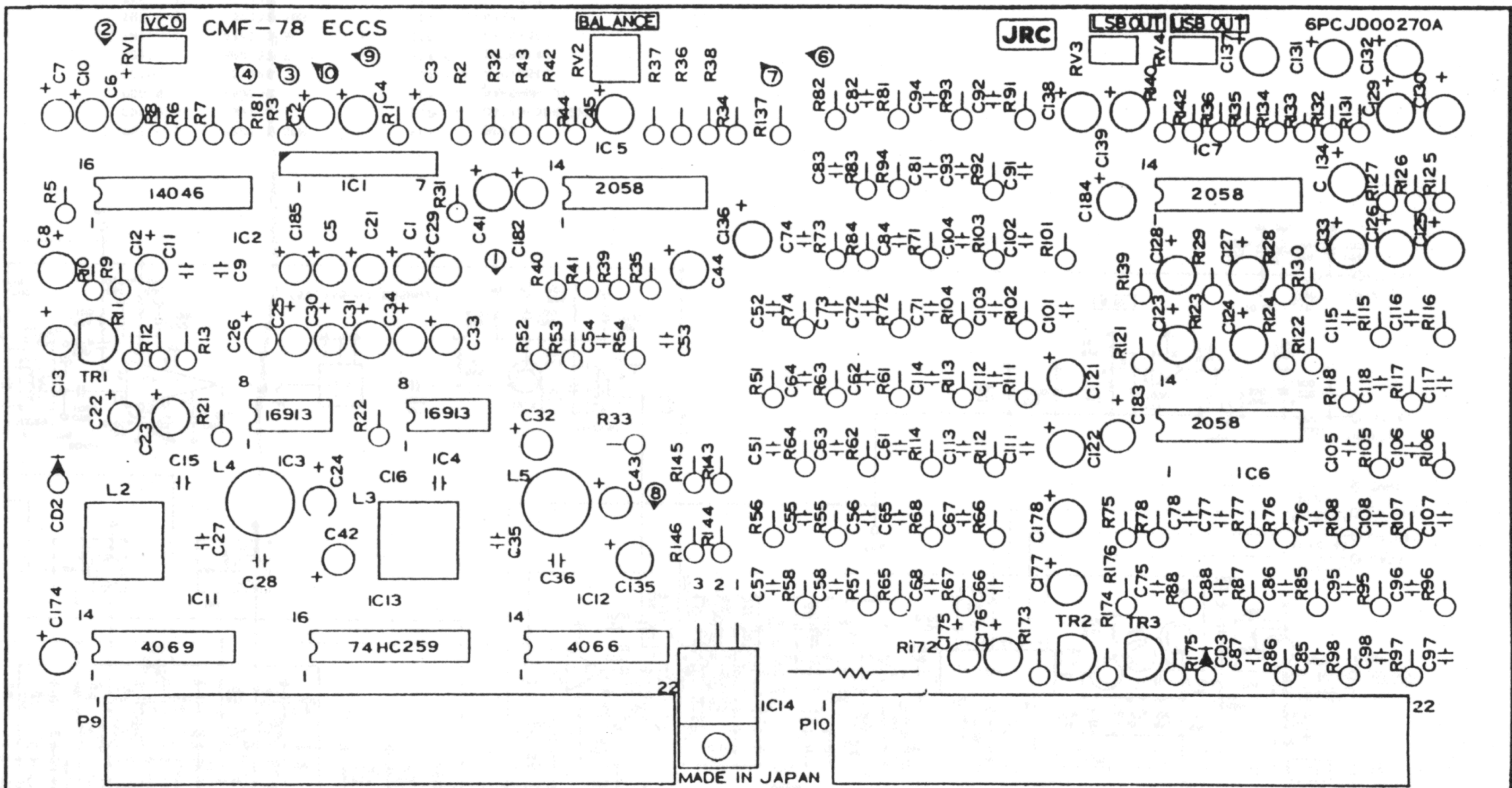
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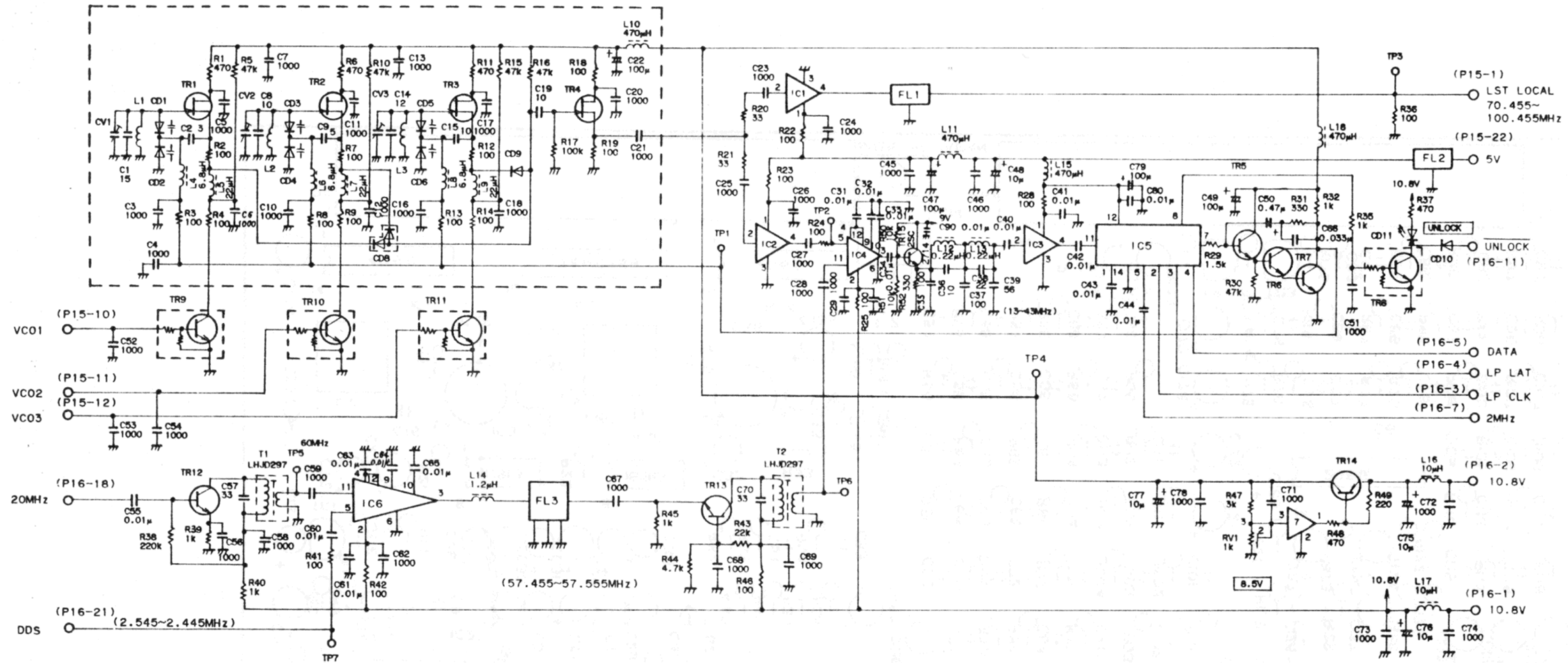




C51 ~ C58	R51~R58	150k	R91~R98	6.8k
C61 ~ C68	R61~R68	100k	R101~R108	3.3k
C71 ~ C78	R71~R78	47k	R111~R118	1.8k
C81 ~ C88	R81~R88	18k		
C91 ~ C98				
C101~ C108				
C111~ C118				

6PCJD00270A



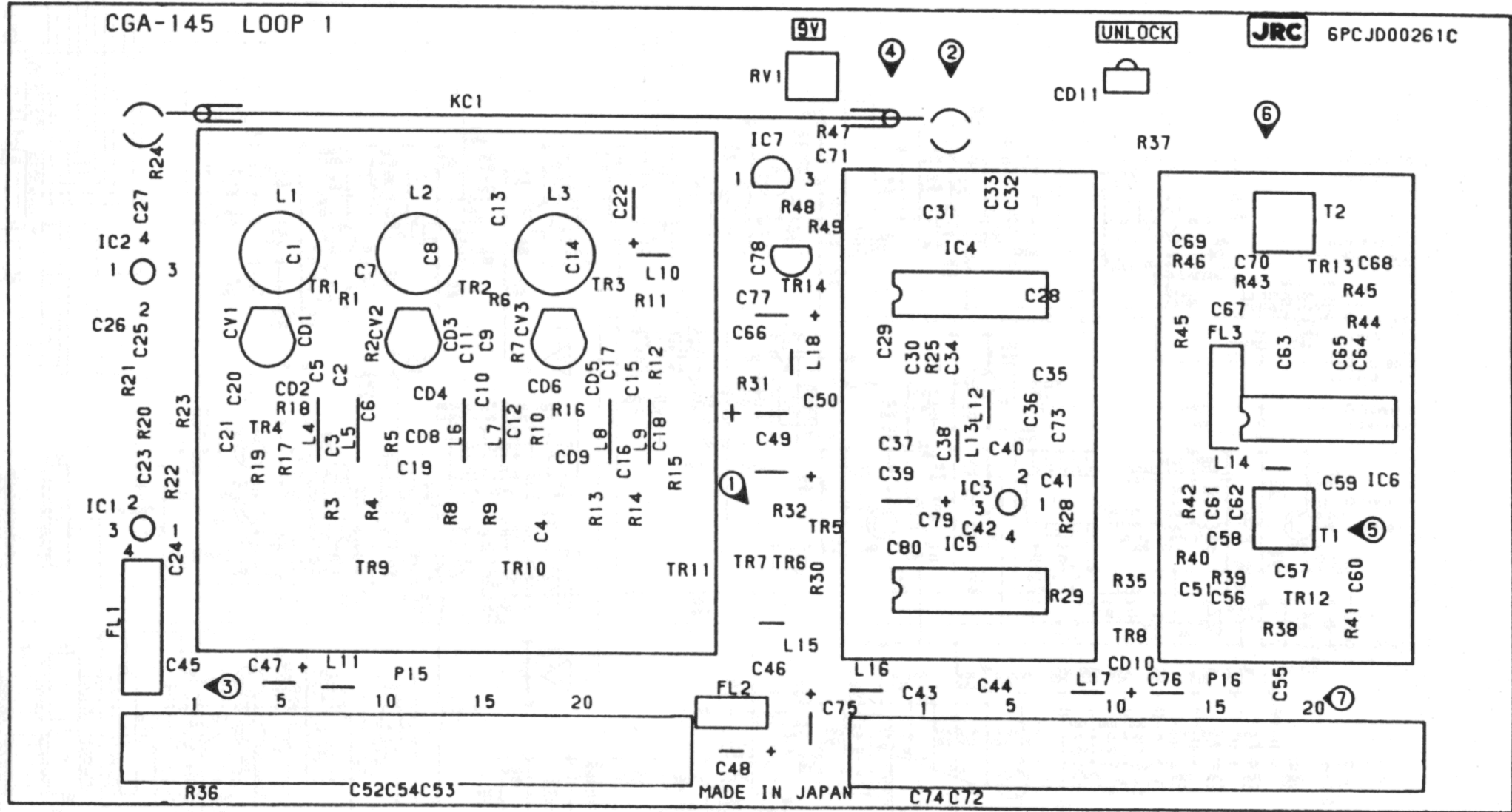


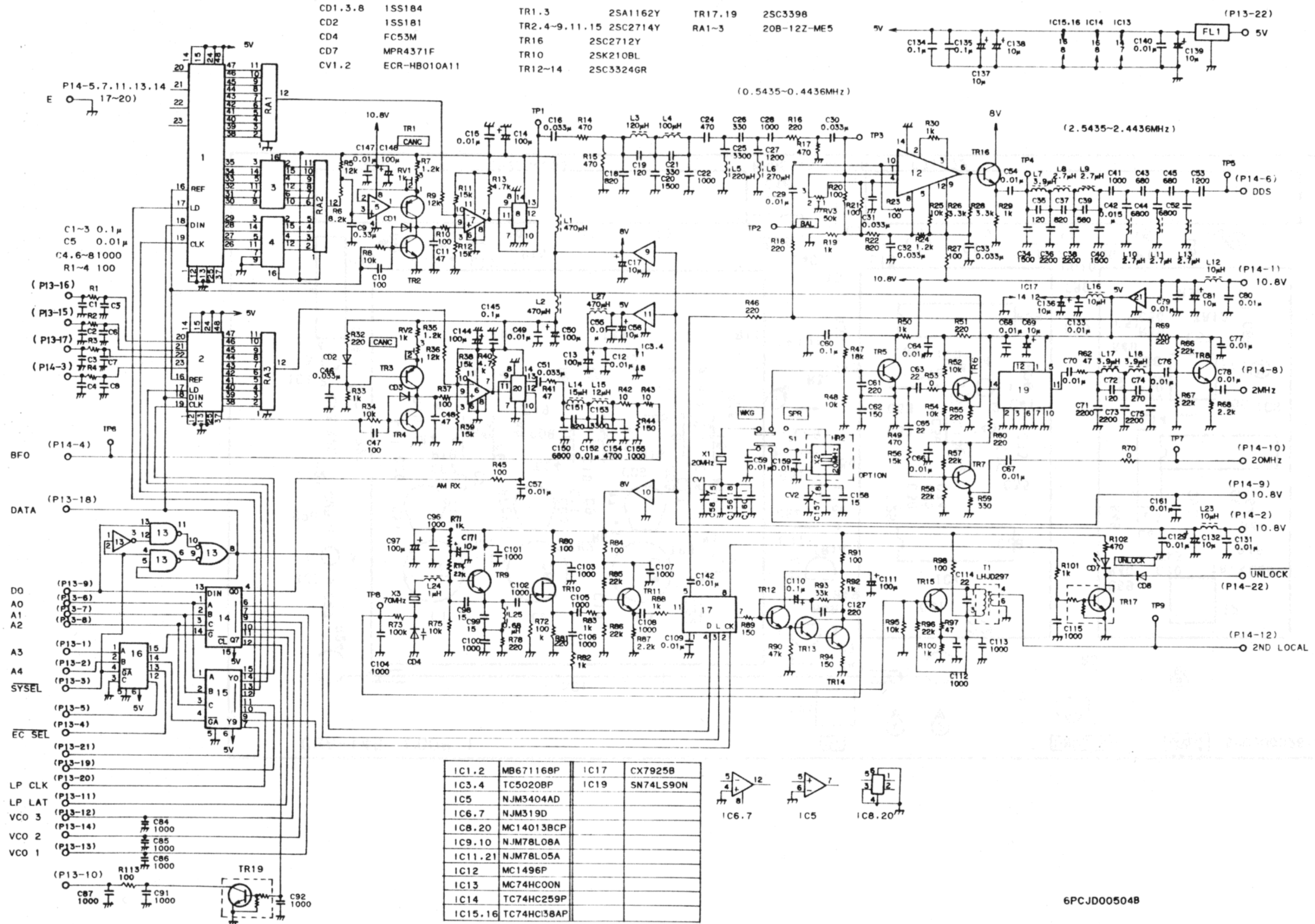
(P15-2~9, 13~16, 19~21)  
 (P16-9, 10, 12~17, 19, 20, 22)  
 E

CV1 ~ 3	TZ03Z100FR	FL1	BPEB1
CD1 ~ 6	1SV203	FL2	DS310-55B222M
CD8, 9	HSM2694	FL3	SAF58MH70Z
CD10	1SS226	IC1 ~ 3	μPC1651G
CD11	MPR4371F	IC4, 6	SN76514N
TR1 ~ 4	2SK210-BL	IC5	CX7925B
TR5 ~ 7	2SC3324-GR	IC7	M5237L
TR8 ~ 11	2SC3398	L1	SC2-55T
TR12, 13	2SC2714-Y	L2	SC2-45T
TR14	2SA1015-Y	L3	SC2-35T

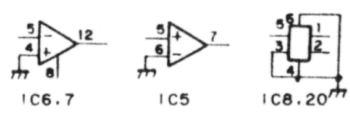
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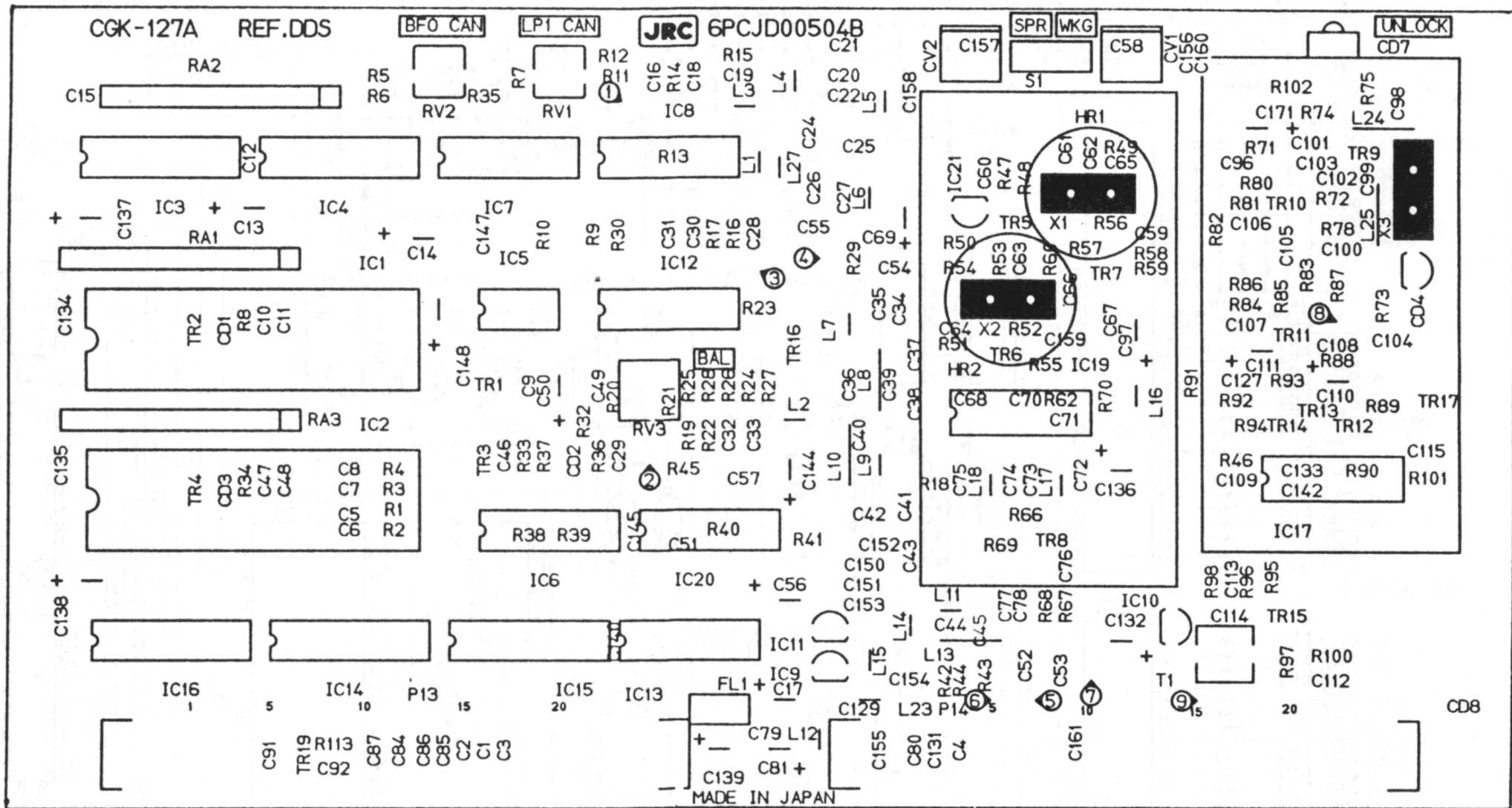


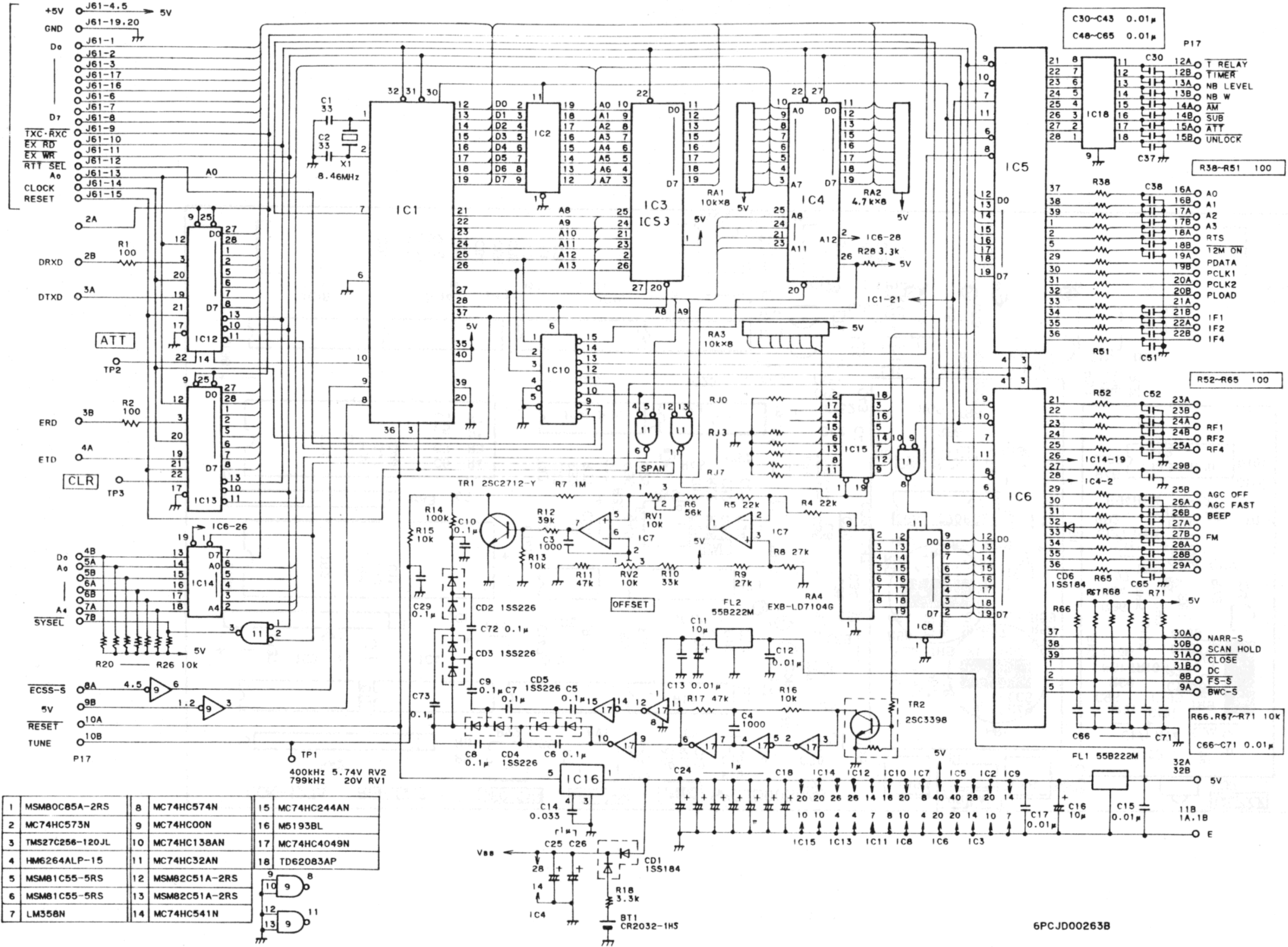


IC1.2	MB671168P	IC17	CX7925B
IC3.4	TC5020BP	IC19	SN74LS90N
IC5	NJM3404AD		
IC6.7	NJM319D		
IC8.20	MC14013BCP		
IC9.10	NJM78L08A		
IC11.21	NJM78L05A		
IC12	MC1496P		
IC13	MC74HC00N		
IC14	TC74HC259P		
IC15.16	TC74HC38AP		

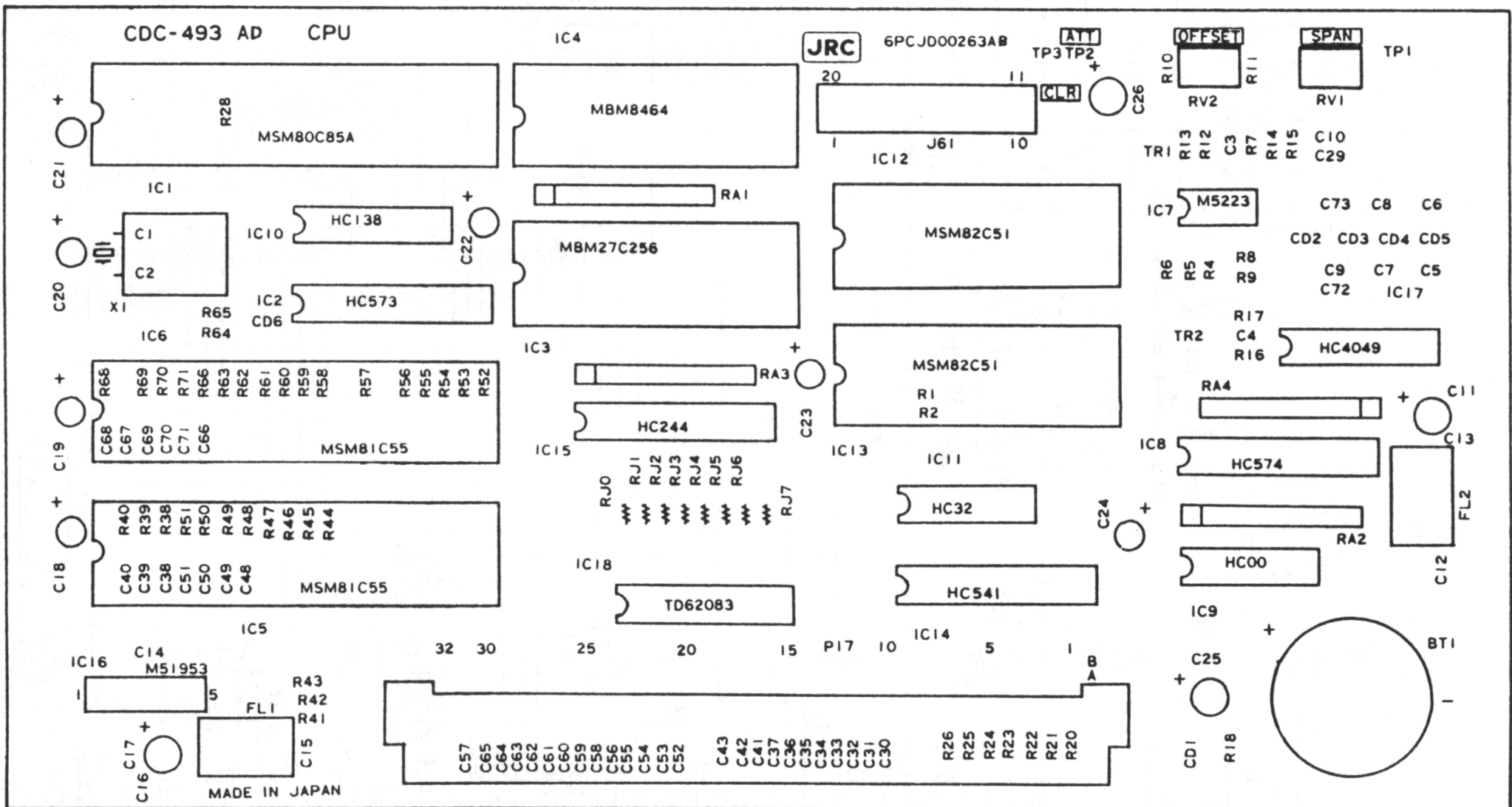


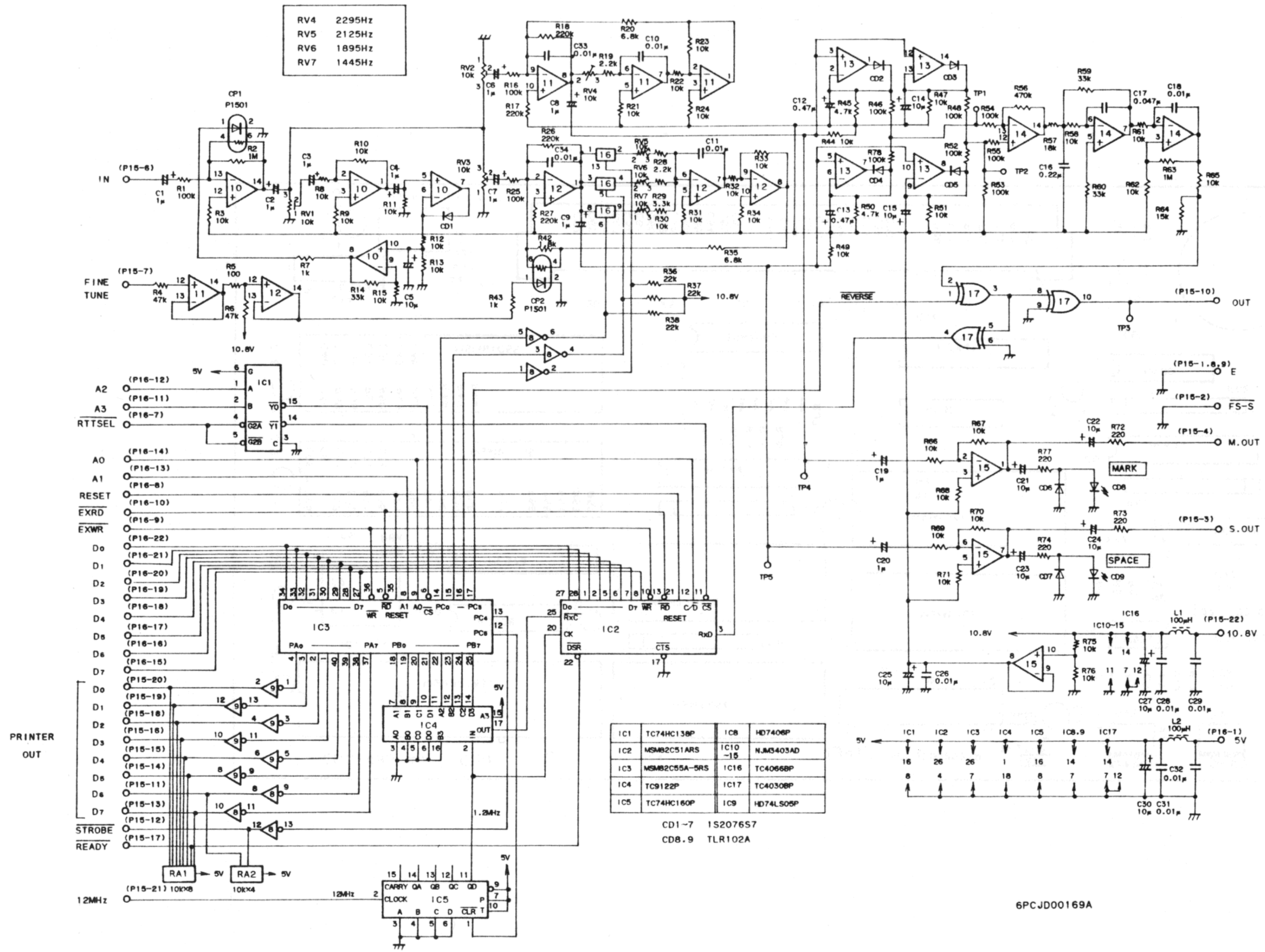
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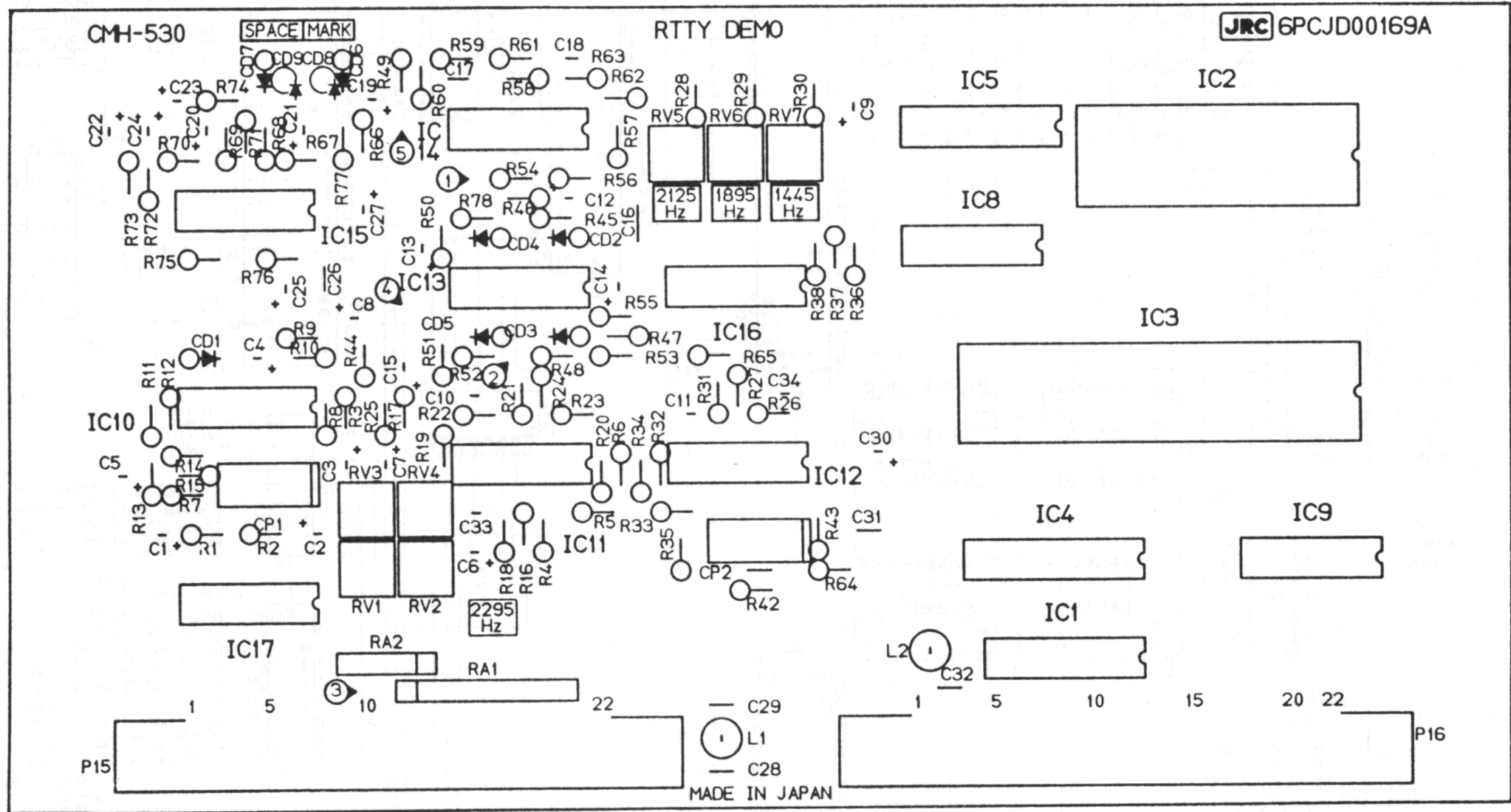


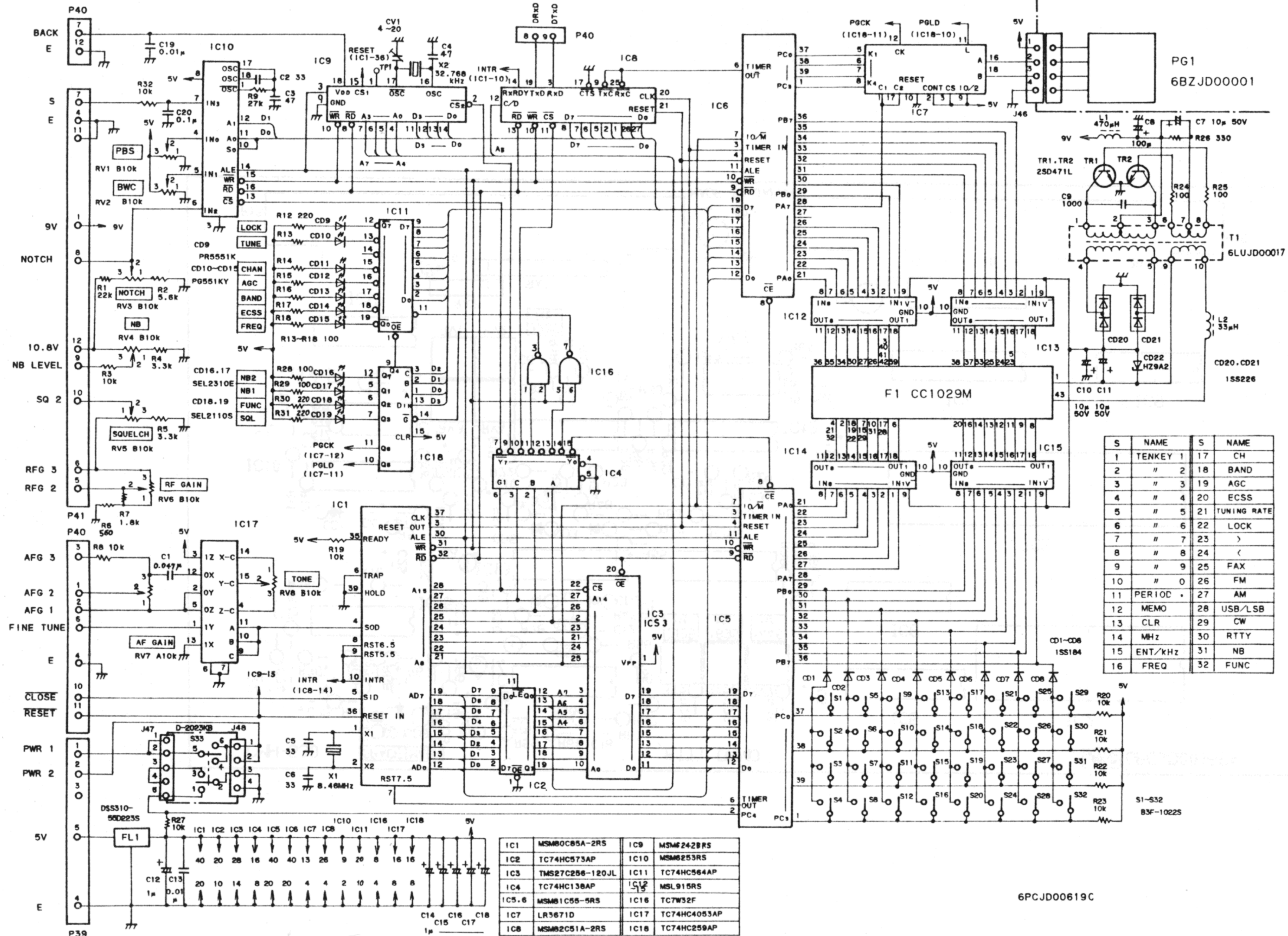


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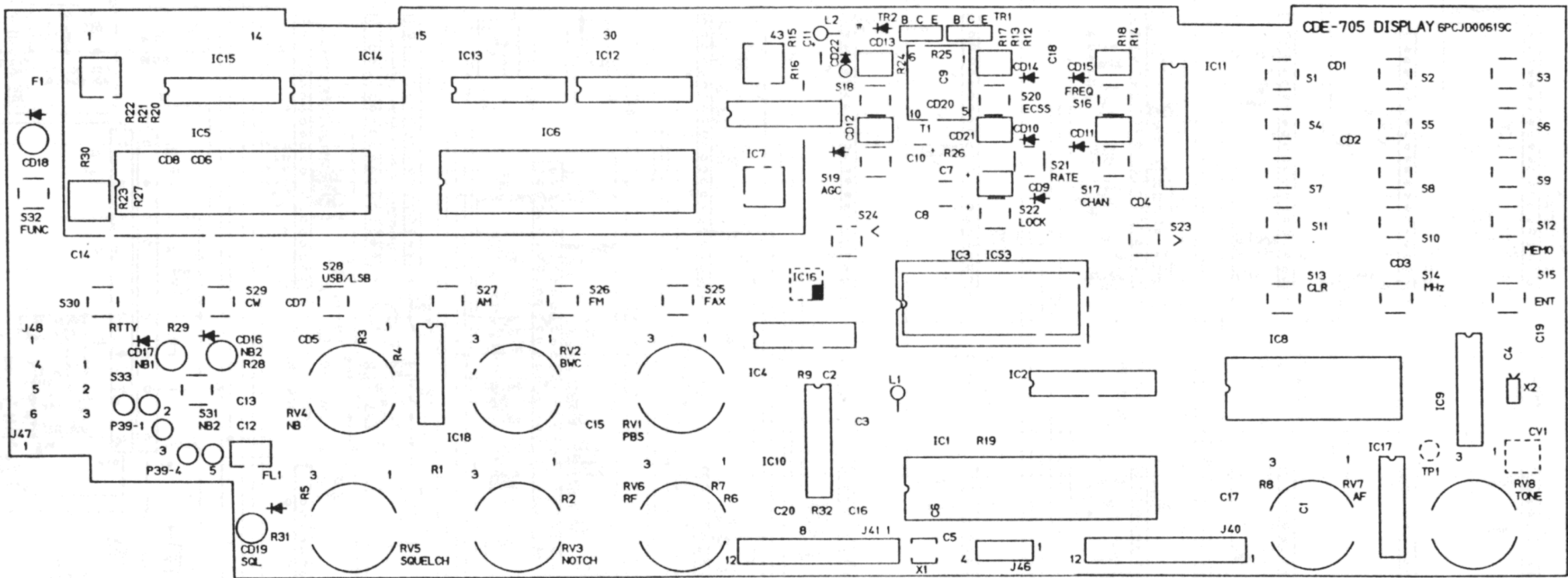


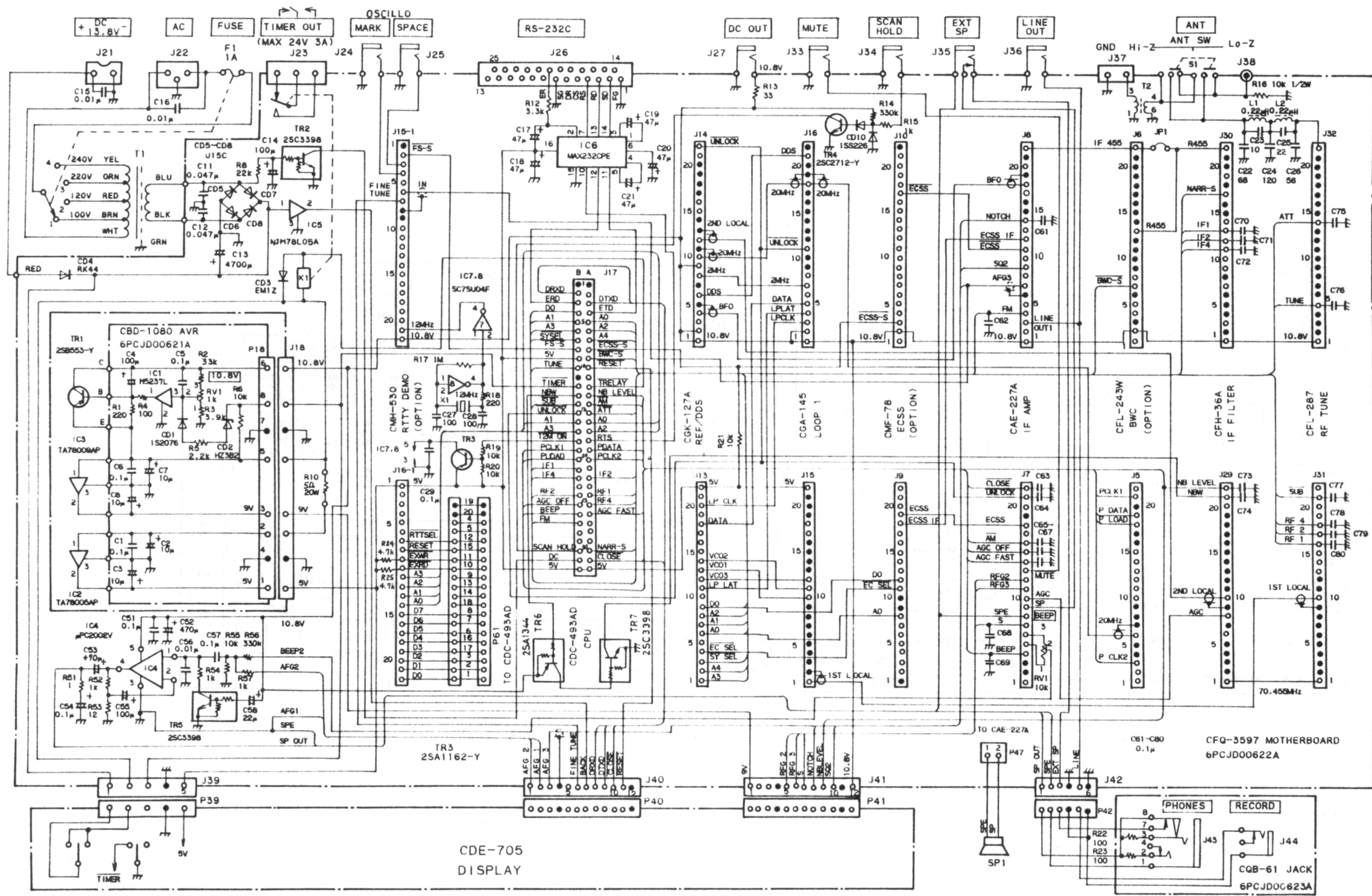
S	NAME	S	NAME
1	TENKEY 1	17	CH
2	" 2	18	BAND
3	" 3	19	AGC
4	" 4	20	ECSS
5	" 5	21	TUNING RATE
6	" 6	22	LOCK
7	" 7	23	>
8	" 8	24	<
9	" 9	25	FAX
10	" 0	26	FM
11	PERIOD +	27	AM
12	MEMO	28	USB/LSB
13	CLR	29	CW
14	MHz	30	RTTY
15	ENT/kHz	31	NB
16	FREQ	32	FUNC

IC1	MSMB0C85A-2RS	IC9	MSM6242BR5
IC2	TC74HC573AP	IC10	MSM6253RS
IC3	TMS27C256-120JL	IC11	TC74HC564AP
IC4	TC74HC138AP	IC12	MSL915RS
IC5,6	MSM61C55-5RS	IC16	TC7W32F
IC7	LR3671D	IC17	TC74HC4053AP
IC8	MSM62C51A-2RS	IC18	TC74HC259AP

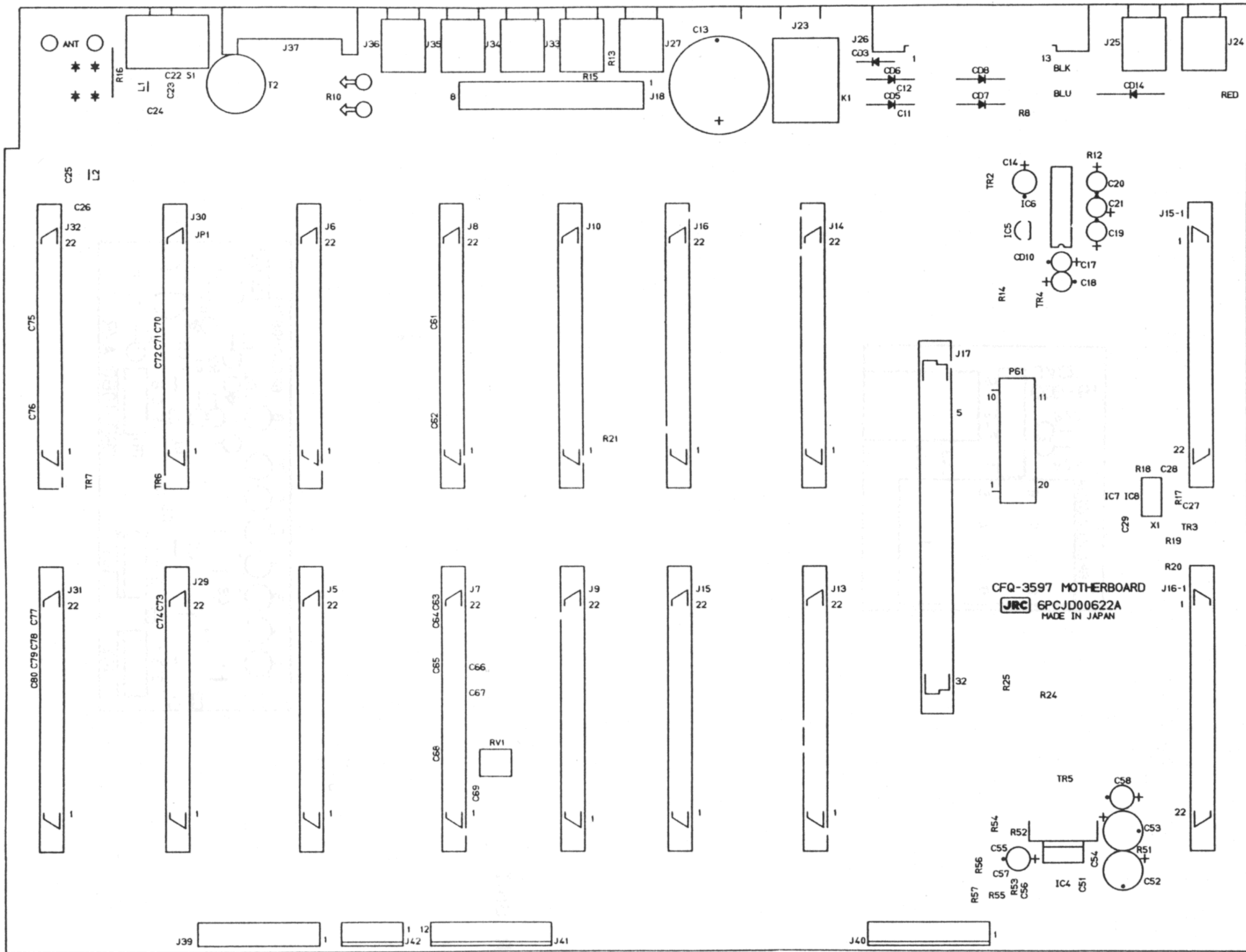
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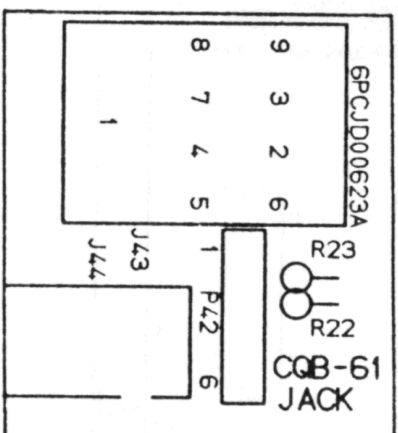




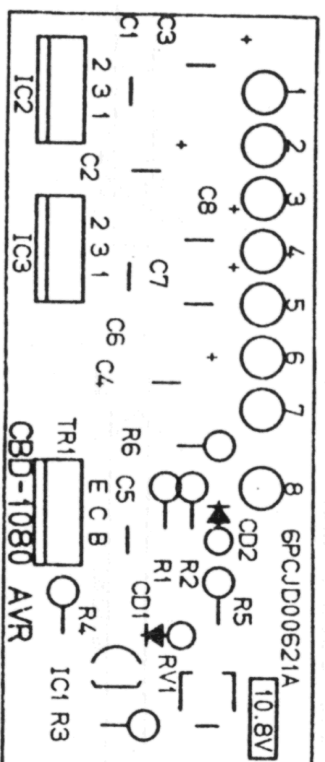
CHASSIS



CQB-61 JACK UNIT



CBD-1080 AVR UNIT



# SECTION 10: PARTS LIST

1. RF TUNE	CFL-287 .....	56
2. IF FILTER	CFH-36A .....	60
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5. ECSS	CMF-78 .....	75
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7. REF/DDS	CGK-127A .....	82
8. CPU	CDC-493AD .....	87
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## PARTS LIST

		TITLE				SHEET NO.
		RF TUNE		CFL-287		1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C6	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C7	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C8	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C9	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C10	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C11	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C13	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C14	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C15	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C16	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C17	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C18	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C19	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C20	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C21	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C22	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C23	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C24	CAP,FXD CER	C3216CH1H010C-E-TP	50V 1PF	5CAAD00795		
C25	CAP,FXD C CER	C3216CH1H020C-E-TP	50V 2PF	5CAAD00798		
C26	CAP,FXD CER	C3216CH1H471J-E-TP	470PF	5CAAD00797		
C27	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C28	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C29	CAP,FXD C CER	C3216CH1H030C-E-TP	50V 3PF	5CAAD00796		
C30	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792		
C31	CAP,FXD C CER	C3216CH1H050C-E-TP	50V 5PF	5CAAD00800		
C32	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785		
C33	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C36	CAP,FXD C CER	C3216CH1H050C-E-TP	50V 5PF	5CAAD00800		
C37	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785		
C38	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C39	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C40	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C41	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C42	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792		
C43	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		

## PARTS LIST

		TITLE				SHEET NO.
		RF TUNE		CFL-287		2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C44	CAP,FXD CER	C3216SL1H152J-E-TP	1500PF	5CAAD00791		
C45	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C46	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C47	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C48	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C49	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C50	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C51	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C52	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C53	CAP,FXD CER	C3216CH1H680J-E-TP	68PF	5CAAD00929		
C54	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785		
C55	CAP,FXD CER	C3216CH1H121J-E-TP	120PF	5CAAD00931		
C56	CAP,FXD CER	C3216CH1H220J-E-TP	22PF	5CAAD00869		
C57	CAP,FXD CER	C3216CH1H560J-E-TP		5CAAD00863		
C58	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C59	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C60	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C61	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C62	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C63	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C64	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785		
C65	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785		
C66	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C67	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C69	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C70	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C72	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C73	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C75	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C76	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C77	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C80	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C81	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C82	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268		
C83	CAP,FXD C CER	C3216CH1H050C-E-TP	50V 5PF	5CAAD00800		

## PARTS LIST

		TITLE		SHEET NO.	
		RF TUNE	CFL-287	3	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C84	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	SCAAD00792	
C85	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789	
C86	CAP,FXD CER	C3216SL1H821J-E-TP		SCAAD01068	
C87	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	SCAAD01138	
C88	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	SCAAD00792	
C89	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	SCAAD00782	
C90	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789	
C91	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789	
C92	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	SCSAC00982	
C93	CAP,FXD CER	C3216CH1H070D-E-TP	7PF	SCAAD00977	
C94	CAP,FXD CER	C3216CH1H070D-E-TP	7PF	SCAAD00977	
C95	CAP,FXD CER	C3216CH1H120J-E-TP	12P	SCAAD00784	
C96	CAP,FXD CER	C3216CH1H120J-E-TP	12P	SCAAD00784	
CD5	DIODE	1SS143T-87		STXCW00021	
CD6	DIODE	1SS143T-87		STXCW00021	
CD7	DIODE	1SS143T-87		STXCW00021	
CD8	DIODE	1SS143T-87		STXCW00021	
CD9	DIODE	1SS143T-87		STXCW00021	
CD10	DIODE	1SS143T-87		STXCW00021	
CD11	DIODE	1SS85RE		STXAE00590	
CD12	DIODE	1SS85RE		STXAE00590	
CD13	DIODE	1SS85RE		STXAE00590	
CD14	DIODE	1SS85RE		STXAE00590	
CD15	DIODE	1SS85RE		STXAE00590	
CD16	DIODE	1SS85RE		STXAE00590	
CD17	DIODE	FC66M-010		STXAB00035	
CD18	DIODE	FC66M-010		STXAB00035	
CD19	DIODE	FC66M-010		STXAB00035	
CD20	DIODE	FC66M-010		STXAB00035	
CD21	DIODE	FC66M-010		STXAB00035	
CD22	DIODE	FC66M-010		STXAB00035	
CD23	DIODE	FC66M-010		STXAB00035	
CD24	DIODE	FC66M-010		STXAB00035	
CD25	DIODE	FC66M-010		STXAB00035	
CD26	DIODE	FC66M-010		STXAB00035	

## PARTS LIST

		TITLE		SHEET NO.	
		RF TUNE	CFL-287	4	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
CD27	DIODE	FC66M-010		STXAB00035	
CD28	DIODE	FC66M-010		STXAB00035	
CD29	DIODE	FC66M-010		STXAB00035	
CD30	DIODE	FC66M-010		STXAB00035	
CD31	DIODE	FC66M-010		STXAB00035	
CD32	DIODE	FC66M-010		STXAB00035	
CD33	DIODE	FC66M-010		STXAB00035	
CD34	DIODE	FC66M-010		STXAB00035	
CD35	DIODE	FC66M-010		STXAB00035	
CD36	DIODE	FC66M-010		STXAB00035	
CD37	DIODE	FC66M-010		STXAB00035	
CD38	DIODE	FC66M-010		STXAB00035	
CD39	DIODE	FC66M-010		STXAB00035	
CD40	DIODE	FC66M-010		STXAB00035	
CD41	DIODE	FC66M-010		STXAB00035	
CD42	DIODE	FC66M-010		STXAB00035	
CD43	DIODE	FC66M-010		STXAB00035	
CD44	DIODE	FC66M-010		STXAB00035	
CD45	DIODE	1SS181 TE85L		STXAD00356	
CD46	DIODE	1SS181 TE85L		STXAD00356	
CD47	DIODE	1SS181 TE85L		STXAD00356	
CD48	DIODE	1SS181 TE85L		STXAD00356	
CD52	DIODE	1SS143T-87		STXCW00021	
CD53	DIODE	1SS143T-87		STXCW00021	
CV1	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
CV2	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
CV3	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
CV4	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
CV5	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
CV6	CAPACITOR VAR	TZ03T200FR		SCVAA00166	
IC1	IC	SN74LS145N		5DDAS00138	
JP1	TIN COATED WIRE	TA-0.6P		2717100001	
JP2	TIN COATED WIRE	TA-0.6P		2717100001	
JP3	TIN COATED WIRE	TA-0.6P		2717100001	
JP4	TIN COATED WIRE	TA-0.6P		2717100001	

## PARTS LIST

		TITLE		SHEET NO.
		RF TUNE	CFL-287	5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
JP5	TIN COATED WIRE	TA-0.6P		2717100001
JP6	TIN COATED WIRE	TA-0.6P		2717100001
JP7	TIN COATED WIRE	TA-0.6P		2717100001
K1	RELAY	DF2-DC9V		5KLAD00578
K2	RELAY	DF2-DC9V		5KLAD00578
K3	RELAY	DF2-DC9V		5KLAD00578
K4	RELAY	DF2-DC9V		5KLAD00578
K5	RELAY	DF2-DC9V		5KLAD00578
K6	RELAY	DF2-DC9V		5KLAD00578
K7	RELAY	DF2-DC9V		5KLAD00578
L3	COIL	LAL03VB471K	470UH	5LCAA00270
L4	COIL	LAL03VB471K	470UH	5LCAA00270
L5	COIL	LAL03VB471K	470UH	5LCAA00270
L6	COIL	LAL03VB220K	22UH	5LCAA00277
L7	COIL	LAL03VB2R2M	2.2UH	5LCAA00278
L8	COIL	LAL03VB330K	33UH	5LCAA00279
L9	COIL	LAL03VB100K	10UH	5LCAA00273
L10	COIL	LAL03VB330K	33UH	5LCAA00279
L11	COIL	LAL03VB100K	10UH	5LCAA00273
L12	COIL	LAL03VB220K	22UH	5LCAA00277
L13	COIL	LAL03VBR22M	0.22UH	5LCAA00280
L14	COIL	LAL03VBR22M	0.22UH	5LCAA00280
L15	COIL	LAL03VB471K	470UH	5LCAA00270
L16	COIL	LAL03VB3R3K	3.3UH	5LCAA00281
L18	COIL	LAL03VB100K	10UH	5LCAA00273
L19	COIL	LAL03VB471K	470UH	5LCAA00270
L21	COIL	LAL03VB5R6K	5.6UH	5LCAA00275
L22	COIL	LAL03VB6R8K	6.8UH	5LCAA00276
L23	COIL	LAL03VB471K	470UH	5LCAA00270
P31	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070
P32	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070
PC1	PCB	H-6PCJD00620B		6PCJD00620
R1	RESISTOR FXD	ERD-S1VJ390T		5RDAA00590
R2	RESISTOR FXD	ERD-S1VJ390T		5RDAA00590
R3	RESISTOR FXD	ERD-S1VJ100T		5RDAA01712

## PARTS LIST

		TITLE		SHEET NO.
		RF TUNE	CFL-287	6
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
R4	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAGO1750
R5	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAGO1750
R6	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAGO1734
R7	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAGO1738
R8	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R9	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R10	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R11	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R12	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R13	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R14	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R15	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R16	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R17	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R18	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R19	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R20	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R21	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R22	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R23	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R24	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R25	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R26	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R27	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R28	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R29	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R30	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R31	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R32	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAGO1762
R33	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAGO1722
R34	RESISTOR FXD	ERJ-8GEYJ821V	1/8W 820 OHM	5REAGO1737
R35	RESISTOR FXD	ERJ-8GEYK5R6V		5REAGO2207
R36	RESISTOR FXD	ERJ-8GEYK5R6V		5REAGO2207
R37	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAGO1730
R38	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAGO1728



## PARTS LIST

		TITLE			SHEET NO.
		RF TUNE	CFL-287		7
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R39	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R40	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R41	RESISTOR FXD	ERJ-8GEYJ821V	1/8W 820 OHM	5REAG01737	
R42	RESISTOR FXD	ERJ-8GEYJ821V	1/8W 820 OHM	5REAG01737	
R43	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R44	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R45	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R47	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R48	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R49	RESISTOR FXD	ERJ-8GEYJ150V	1/8W,15 OHM	5REAG01716	
R50	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R51	RESISTOR FXD	ERJ-8GEYJ391V	1/8W,390 OHM	5REAG01733	
R58	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R59	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R60	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R61	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R62	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
RA1	RESISTOR	EXB-F8E-473J	47K OHM X8	5RZAS00181	
RJ1	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ2	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ3	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ4	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ5	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ6	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ7	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ8	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ9	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ10	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ11	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ12	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ15	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ16	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ17	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ18	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ19	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	

## PARTS LIST

		TITLE			SHEET NO.
		RF TUNE	CFL-287		8
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RJ20	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ21	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ22	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RV1	RESISTOR VAR	EVN-D2AA03B13		5RVAB00422	
T1	RF XFMR	H-6LHJD00441		6LHJD00441	
T2	RF XFMR	H-6LHJD00441		6LHJD00441	
T3	RF XFMR	H-6LHJD00442		6LHJD00442	
T4	RF XFMR	H-6LHJD00442		6LHJD00442	
T5	RF XFMR	H-6LHJD00385		6LHJD00385	
T6	RF XFMR	H-6LHJD00385		6LHJD00385	
T7	RF XFMR	H-6LHJD00384		6LHJD00384	
T8	RF XFMR	H-6LHJD00384		6LHJD00384	
T9	RF XFMR	H-6LHJD00383		6LHJD00383	
T10	RF XFMR	H-6LHJD00383		6LHJD00383	
T11	RF XFMR	H-6LHJD00410		6LHJD00410	
T12	RF XFMR	H-6LHJD00440		6LHJD00440	
T13	RF XFMR	H-6LHJD00328		6LHJD00328	
TP1	TEST TERMINAL	PCN6-PEA		5JDAAD00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAAD00364	
TR1	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR2	TRANSISTOR	2SK125		5TKAH00002	
TR3	TRANSISTOR	2SK125		5TKAH00002	
TR4	TRANSISTOR	2SK125		5TKAH00002	
TR5	TRANSISTOR	2SK125		5TKAH00002	
TR6	TRANSISTOR	2SC3357-T1		5TCAB00287	
TR7	TRANSISTOR	2SK125		5TKAH00002	
TR8	TRANSISTOR	2SK125		5TKAH00002	
TR9	TRANSISTOR	2SK125		5TKAH00002	
TR10	TRANSISTOR	2SK125		5TKAH00002	

## PARTS LIST

		TITLE			SHEET NO.	
		IF FILTER		CFH-36A	1	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C1	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C2	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C3	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C4	CAP,FXD C CER		C3216CH1H020C-E-TP	50V 2PF	5CAAD00798	
C5	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C6	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C7	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C8	CAP,FXD CER		C3216CH1H220J-E-TP	22PF	5CAAD00869	
C9	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C10	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C11	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C12	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C13	CAP,FXD CER		C3216CH1H470J-E-TP	47PF	5CAAD00864	
C14	CAP,FXD CER		C3216CH1H470J-E-TP	47PF	5CAAD00864	
C15	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929	
C16	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C17	CAP,FXD ELCTLT		ECE-A1EU100B		5CEAA01864	
C18	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C19	CAP,FXD CER		C3216CH1H151J-E-TP	150PF	5CAAD00870	
C20	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C21	CAP,FXD ELCTLT		ECE-A1EU100B		5CEAA01864	
C22	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C23	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C24	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C25	CAP,FXD CER		C3216CH1H220J-E-TP	22PF	5CAAD00869	
C26	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C27	CAP,FXD C CER		C3216CH1H101J-E-TP	50V 100PF	5CAAD00780	
C28	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C29	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C30	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C31	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C32	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C33	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C34	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C35	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	

## PARTS LIST

		TITLE			SHEET NO.	
		IF FILTER		CFH-36A	2	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C36	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C37	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C38	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C39	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C40	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C41	CAP,FXD TANTAL		202L3502 105KB	35V 1UF	5CSAC00982	
C42	CAP,FXD ELCTLT		ECE-A1EU100B		5CEAA01864	
C43	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C44	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C45	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C46	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C47	CAP,FXD CER		C3216CH1H271J-E-TP	50V 270PF	5CAAD00883	
C48	CAP,FXD CER		C3216CH1H271J-E-TP	50V 270PF	5CAAD00883	
C49	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C50	CAP,FXD CER		C3216CH1H271J-E-TP	50V 270PF	5CAAD00883	
C51	CAP,FXD CER		C3216CH1H271J-E-TP	50V 270PF	5CAAD00883	
C52	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C53	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C54	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C55	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929	
C56	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929	
C57	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C58	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C59	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C60	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929	
C61	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929	
C62	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C63	CAP,FXD C CER		C3216CH1H050C-E-TP	50V 5PF	5CAAD00800	
C64	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C65	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C66	CAP,FXD C CER		C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C67	CAP,FXD ELCTLT		ECE-A1EU100B		5CEAA01864	
C68	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C69	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C70	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	

## PARTS LIST

		TITLE			SHEET NO
		IF FILTER			3
		CFH-36A			
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C71	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C72	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C73	CAP,FXD C CER	C3216CH1H050C-E-TP	50V 5PF	5CAAD00800	
C74	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C75	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C76	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C77	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C78	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C79	CAP,FXD C CER	C3216JF1H104Z-E-TP	50V 0.1UF	5CAAD01268	
C80	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785	
C81	CAP,FXD CER	C3216CH1H100D-E-TP	10PF	5CAAD00785	
CD1	DIODE	1SS226 TE85L		5TXAD00320	
CD2	DIODE	1SS226 TE85L		5TXAD00320	
CD3	DIODE	RD5.1M-T1B B1		5TXAAD0632	
CD4	DIODE	1SS226 TE85L		5TXAD00320	
CD5	DIODE	1SS181 TE85L		5TXAD00356	
CD6	DIODE	1SS181 TE85L		5TXAD00356	
CD7	DIODE	1SS181 TE85L		5TXAD00356	
CD8	DIODE	1SS181 TE85L		5TXAD00356	
CD9	DIODE	1SS226 TE85L		5TXAD00320	
CD10	DIODE	1SS181 TE85L		5TXAD00356	
CD11	DIODE	1SS181 TE85L		5TXAD00356	
CD12	DIODE	1SS226 TE85L		5TXAD00320	
CD13	DIODE	1SS181 TE85L		5TXAD00356	
CD15	DIODE	1SS184 TE85L		5TXAD00290	
CV1	CAPACITOR VAR	TZ03T200FR		5CVAA00166	
FL1	CRYSTAL CKT	H-6XMJD00114	70.455MHZ	6XMJD00114	
FL2	COIL	LF-B12		5LFAE00009	
FL3	FILTER	CLF-D6S	BW=6KHZ	5NRAD00001	
FL4	FILTER	MF-31C		5NMAA00019	
IC1	IC	SN74LS145N		5DDAS00138	
L1	COIL	LAL03VBR33M	0.33UH	5LCAA00274	
L2	COIL	LAL03VB471K	470UH	5LCAA00270	
L3	COIL	LAL03VB471K	470UH	5LCAA00270	
L4	COIL	LAL03VB331K	330UH	5LCAA00271	

## PARTS LIST

		TITLE			SHEET NO
		IF FILTER			4
		CFH-36A			
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
L5	COIL	LAL04NA331K		5LCAA00136	
L6	COIL	LAL03VB221K	220UH	5LCAA00272	
L7	COIL	LAL04NA221K		5LCAA00206	
L8	COIL	LAL03VB471K	470UH	5LCAA00270	
P29	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070	
P30	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070	
PC1	PCB	H-6PCJD00159B		6PCJD00159	
R1	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R2	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R3	RESISTOR FXD	ERJ-8GEYJ330V	1/8W 33 OHM	5REAG01720	
R4	RESISTOR FXD	ERJ-8GEYJ330V	1/8W 33 OHM	5REAG01720	
R5	RESISTOR FXD	ERD-25UJ221	1/4W 220 OHM	5RDAA01329	
R6	RESISTOR CFXD	ERJ-8GEYJ681V	1/8W 680 OHM	5REAG01736	
R7	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R8	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R9	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R10	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R11	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R12	RESISTOR FXD	ERJ-8GCSJ123T	1/8W 12K OHM	5REAG00681	
R13	RESISTOR FXD	ERJ-8GCSJ123T	1/8W 12K OHM	5REAG00681	
R14	RESISTOR CFXD	ERJ-8GEYJ681V	1/8W 680 OHM	5REAG01736	
R15	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R16	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R17	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R18	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734	
R19	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R20	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R21	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R22	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R23	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R24	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R25	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R26	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R27	RESISTOR FXD	ERJ-8GEYJ333V	1/8W 33K OHM	5REAG01756	
R28	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	

## PARTS LIST

		TITLE			SHEET NO.
		IF FILTER	CFH-36A	5	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R29	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R30	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R31	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R32	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R33	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728	
R34	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R35	RESISTOR FXD	ERJ-8GEYJ333V	1/8W 33K OHM	5REAG01756	
R36	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R37	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R38	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R39	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728	
R40	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R41	RESISTOR FXD	ERJ-8GEYJ333V	1/8W 33K OHM	5REAG01756	
R42	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R43	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R44	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R45	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752	
R46	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R47	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R48	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R49	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R51	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R52	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768	
R53	RESISTOR FXD	ERJ-8GCSJ223T	1/8W 22K OHM	5REAG00581	
R54	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R55	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R56	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R57	RESISTOR FXD	ERJ-8GCSJ223T	1/8W 22K OHM	5REAG00581	
R58	RESISTOR FXD	ERJ-8GCSJ223T	1/8W 22K OHM	5REAG00581	
R59	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R60	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R61	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R62	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R63	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R64	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	

## PARTS LIST

		TITLE			SHEET NO.
		IF FILTER	CFH-36A	6	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R65	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R66	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R67	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R68	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R69	RESISTOR CFXD	ERJ-8GEYJ681V	1/8W 680 OHM	5REAG01736	
R70	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R71	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R72	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R73	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R74	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R75	RESISTOR FXD	ERJ-8GEYJ680V	1/8W 68 OHM	5REAG01724	
RA1	RESISTOR FXD	EXB-F6E473J		5RDAAD1920	
RJ1	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ2	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ3	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ5	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ6	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ7	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ8	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ9	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ10	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ11	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ12	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ13	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ14	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ15	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ16	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ17	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ18	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ19	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ20	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ21	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ22	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ23	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	
RJ24	RESISTOR FXD	ERJ-8GEYOR00V	0 OHM	5REAG01775	

## PARTS LIST

		TITLE		SHEET NO	
		IF FILTER		7	
		CFH-36A			
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RJ25	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RV1	RESISTOR VAR	EVN-D8AA03B54		5RVAB00419	
RV2	RESISTOR VAR	EVN-D2AA03B22		5RVAB00414	
T1	RF XFMR	H-6LHJD00415	70.455MHZ	6LHJD00415	
T2	RF XFMR	H-6LHJD00415	70.455MHZ	6LHJD00415	
T3	RF XFMR	H-6LHJD00416	0.95UH	6LHJD00416	
T4	RF XFMR	H-6LHJD00456		6LHJD00456	
T5	RF XFMR	H-6LHJD00389		6LHJD00389	
T6	RF XFMR	H-6LHJD00390A		6LHJD00390	
T7	RF XFMR	H-6LHJD00390A		6LHJD00390	
T8	RF XFMR	H-6LHJD00297		6LHJD00297	
T9	RF XFMR	S-061-006		5LJAA00006	
T10	RF XFMR	S-061-006		5LJAA00006	
T11	RF XFMR	H-6LJJD00037A	455KHZ	6LJJD00037	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP4	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TR1	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR2	TRANSISTOR	2SK125		5TKAH00002	
TR3	TRANSISTOR	2SK125		5TKAH00002	
TR4	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR5	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR6	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR7	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR8	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR9	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR10	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR11	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR12	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR13	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
W1	TIN COATED WIRE	TA-0.8P		2717100002	
W2	TIN COATED WIRE	TA-0.8P		2717100002	

## PARTS LIST

		TITLE			SHEET NO.
		CFL-243W			1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C2	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C3	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C4	CAP,FXD	CER	DD104-979CH050C50	5CAAA02688	
C5	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C6	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C7	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C8	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C9	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C10	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C11	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C12	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C13	CAP,FXD	CER	DD107-979CH680J50 68PF	5CAAA02599	
C14	CAP,FXD	CER	DD107-979CH680J50 68PF	5CAAA02599	
C15	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C16	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C17	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C18	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C19	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C20	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C21	CAP,FXD	CER	DD104-979CH050C50	5CAAA02688	
C22	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C23	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C24	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C25	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C26	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C27	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C28	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C29	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C30	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C31	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C32	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C33	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C34	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C35	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	

## PARTS LIST

		TITLE			SHEET NO.
		CFL-243W			2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C36	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C37	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C38	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929	
C39	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C40	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C41	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C42	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C43	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C44	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C45	CAP,FXD	CER	DD107-979CH101J50 100PF,50V	5CAAA02783	
C46	CAP,FXD	CER	DD107-979CH101J50 100PF,50V	5CAAA02783	
C47	CAP,FXD	CER	DD106-979CH470J50	5CAAA02754	
C48	CAP,FXD	CER	DD106-979CH470J50	5CAAA02754	
C49	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C50	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C51	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C52	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804	
C53	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C54	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C55	CAP,FXD	PLSTC	ECQ-B1H223JZ3	5CRAA00834	
C56	CAP,FXD	PLSTC	ECQ-B1H223JZ3	5CRAA00834	
C57	CAP,FXD	PLSTC	ECQ-B1H272JZ3	5CRAA00835	
C58	CAP,FXD	PLSTC	ECQ-B1H272JZ3	5CRAA00835	
C59	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C60	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C61	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C62	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C63	CAP,FXD	PLSTC	ECQ-B1H332JZ3 3300PF 50V	5CRAA00586	
C64	CAP,FXD	PLSTC	ECQ-B1H332JZ3 3300PF 50V	5CRAA00586	
C65	CAP,FXD	CER	DD109-979SL471J50	5CAAA02755	
C66	CAP,FXD	CER	DD109-979SL471J50	5CAAA02755	
C67	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C68	CAP,FXD	PLSTC	ECQ-B1H472JZ3	5CRAA00833	
C69	CAP,FXD	PLSTC	ECQ-B1H152JZ3	5CRAA00727	
C70	CAP,FXD	PLSTC	ECQ-B1H152JZ3	5CRAA00727	

## PARTS LIST

		TITLE		SHEET NO.
		BWC	CFL-243W	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
C71	CAP,FXD	PLSTC	ECQ-B1H272JZ3	5CRAA00835
C72	CAP,FXD	PLSTC	ECQ-B1H272JZ3	5CRAA00835
C73	CAP,FXD	CER	DD806-979F103Z50	5CAAA02929
C74	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864
C75	CAP,FXD	PLSTC	ECQ-V1H333JZ3	5CRAA00804
C76	CAP,FXD	CER	DD104-979CH100D50	5CAAA02689
CD1	DIODE		1S2076RE	5TXAE00588
CD2	DIODE		1S2076RE	5TXAE00588
CD3	DIODE		1S2076RE	5TXAE00588
CD4	DIODE		1S2076RE	5TXAE00588
CD5	DIODE		1S2076RE	5TXAE00588
CD6	DIODE		1S2076RE	5TXAE00588
CD7	DIODE		1S2076RE	5TXAE00588
CD8	DIODE		1S2076RE	5TXAE00588
CD9	DIODE		1S2076RE	5TXAE00588
CD10	DIODE		1S2076RE	5TXAE00588
CD11	DIODE		1S2076RE	5TXAE00588
CD12	DIODE		HZ5C1 5V 1/2W	5TXAE00130
CD13	DIODE		HZ5C1 5V 1/2W	5TXAE00130
FL1	CRYSTAL	CKT	H-6XMJD00144 6KHZ	6XMJD00144
IC1	IC		SN76514N	5DDAL00251
IC2	IC		SN76514N	5DDAL00251
IC3	IC		H-6DDJD00018 MB67116	6DDJD00018
IC4	IC		H-6DDJD00018 MB67116	6DDJD00018
IC5	IC		NJM319D	5DAAN00206
IC6	IC		NJM319D	5DAAN00206
IC7	IC		TC4013BAP	5DDAE00817
IC8	IC		TC4013BAP	5DDAE00817
IC9	IC		NJM78L08A 8V 100MA	5DAAN00079
IC10	IC		TA78005AP	5DAAD00082
L1	COIL		FL-7H472J-H 4.7MH	5LCAA00635
L2	COIL		FL-7H472J-H 4.7MH	5LCAA00635
L3	COIL		FL-7H472J-H 4.7MH	5LCAA00635
L4	COIL		FL-7H472J-H 4.7MH	5LCAA00635
L5	COIL		LAL03VB471K 470UH	5LCAA00270

## PARTS LIST

		TITLE		SHEET NO.
		BWC	CFL-243W	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
L6	COIL		LAL03VB471K 470UH	5LCAA00270
L7	COIL		LAL03VB471K 470UH	5LCAA00270
L8	COIL		LAL03VB471K 470UH	5LCAA00270
L9	COIL		LAL03VB471K 470UH	5LCAA00270
L10	COIL		LAL03VB471K 470UH	5LCAA00270
L11	COIL		LAL03VB100K 10UH	5LCAA00273
L12	COIL		LAL03VB100K 10UH	5LCAA00273
L13	COIL		LAL03VB120K	5LCAA00386
L14	COIL		LAL03VB120K	5LCAA00386
L15	COIL		LAL03VB100K 10UH	5LCAA00273
L16	COIL		LAL03VB100K 10UH	5LCAA00273
L17	COIL		LAL03VB8R2K	5LCAA00335
L18	COIL		LAL03VB8R2K	5LCAA00335
L19	COIL		LAL03VB100K 10UH	5LCAA00273
L20	COIL		LAL03VB2R2M 2.2UH	5LCAA00278
P5	CONNECTOR		EC1C-22P-2.5DSA 22P	5JWBS00070
P6	CONNECTOR		EC1C-22P-2.5DSA 22P	5JWBS00070
PC1	PCB		H-6PCJD00269A	6PCJD00269
R1	RESISTOR	FXD	ERD-25UJ104T 100K OHM 1/4W	5RDAA01623
R2	RESISTOR	FXD	ERD-25UJ222T 2.2K OHM 1/4W	5RDAA01548
R4	RESISTOR	FXD	ERD-25UJ272T 2.7K OHM 1/4W	5RDAA01546
R5	RESISTOR	FXD	ERD-25UJ101T 1/4W 100 OHM	5RDAA01599
R6	RESISTOR	FXD	ERD-25UJ221T 220 OHM 1/4	5RDAA01543
R7	RESISTOR	FXD	ERD-25UJ221T 220 OHM 1/4	5RDAA01543
R8	RESISTOR	FXD	ERD-25UJ821T 820 OHM 1/4W	5RDAA01604
R9	RESISTOR	FXD	ERD-25UJ101T 1/4W 100 OHM	5RDAA01599
R11	RESISTOR	FXD	ERD-25UJ272T 2.7K OHM 1/4W	5RDAA01546
R12	RESISTOR	FXD	ERD-25UJ222T 2.2K OHM 1/4W	5RDAA01548
R13	RESISTOR	FXD	ERD-25UJ223T 22K OHM 1/4W	5RDAA01545
R14	RESISTOR	FXD	ERD-25UJ221T 220 OHM 1/4	5RDAA01543
R15	RESISTOR	FXD	ERD-25UJ103T 10K OHM 1/4W	5RDAA01547
R16	RESISTOR	FXD	ERD-25UJ472T 4.7K OHM 1/4W	5RDAA01549
R17	RESISTOR	FXD	ERD-25UJ101T 1/4W 100 OHM	5RDAA01599
R18	RESISTOR	FXD	ERD-25UJ473T 1/4W 47K OHM	5RDAA01618
R19	RESISTOR	FXD	ERD-25UJ472T 4.7K OHM 1/4W	5RDAA01549

## PARTS LIST

		TITLE		SHEET NO	
		BWC	CFL-243W	5	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R20	RESISTOR	FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599
R21	RESISTOR	FXD	ERD-25UJ471T	470 OHM 1/4W	5RDAA01541
R22	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R23	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R24	RESISTOR	FXD	ERD-25UJ221T	220 OHM 1/4	5RDAA01543
R25	RESISTOR	FXD	ERD-25UJ221T	220 OHM 1/4	5RDAA01543
R26	RESISTOR	FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547
R27	RESISTOR	FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547
R28	RESISTOR	FXD	ERD-25UJ221T	220 OHM 1/4	5RDAA01543
R29	RESISTOR	FXD	ERD-25UJ221T	220 OHM 1/4	5RDAA01543
R30	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R31	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R32	RESISTOR	FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599
R33	RESISTOR	FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599
R34	RESISTOR	FXD	ERD-25UJ153T	1/4W 15K OHM	5RDAA01594
R35	RESISTOR	FXD	ERD-25UJ153T	1/4W 15K OHM	5RDAA01594
R36	RESISTOR	FXD	ERD-25UJ153T	1/4W 15K OHM	5RDAA01594
R37	RESISTOR	FXD	ERD-25UJ153T	1/4W 15K OHM	5RDAA01594
R38	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R39	RESISTOR	FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542
R40	RESISTOR	FXD	ERD-25UJ470T		5RDAA01551
R41	RESISTOR	FXD	ERD-25UJ470T		5RDAA01551
R42	RESISTOR	FXD	ERD-25UJ100T	1/4W 10 OHM	5RDAA01576
R43	RESISTOR	FXD	ERD-25UJ100T	1/4W 10 OHM	5RDAA01576
R44	RESISTOR	FXD	ERD-25UJ100T	1/4W 10 OHM	5RDAA01576
R45	RESISTOR	FXD	ERD-25UJ100T	1/4W 10 OHM	5RDAA01576
R46	RESISTOR	FXD	ERD-25UJ151T	150 OHM 1/4W	5RDAA01601
R47	RESISTOR	FXD	ERD-25UJ151T	150 OHM 1/4W	5RDAA01601
RA1	RESISTOR	FXD	20B-12Z-ME5		5READ00836
RA2	RESISTOR	FXD	20B-12Z-ME5		5READ00836
RV1	RESISTOR	VAR	EVN-D2AA03B13		5RVAB00422
RV2	RESISTOR	VAR	EVN-D2AA03B13		5RVAB00422
T1	RF XFMR		S-061-006		5LJAA00006
TP1	TEST TERMINAL		PCN6-PEA		5JDAA00364
TP2	TEST TERMINAL		PCN6-PEA		5JDAA00364

## PARTS LIST

		TITLE		SHEET NO	
		BWC	CFL-243W	6	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
TP3	TEST TERMINAL		PCN6-PEA	5JDAA00364	
TP4	TEST TERMINAL		PCN6-PEA	5JDAA00364	
TP5	TEST TERMINAL		PCN6-PEA	5JDAA00364	
TP6	TEST TERMINAL		PCN6-PEA	5JDAA00364	
TP7	TEST TERMINAL		PCN6-PEA	5JDAA00364	
TR1	TRANSISTOR		2SC1815-Y	5TCAF00219	
TR2	TRANSISTOR		2SC1923Y	5TCAF00386	
TR3	TRANSISTOR		2SA1015-Y	5TAAG00070	
TR4	TRANSISTOR		2SA1015-Y	5TAAG00070	
TR5	TRANSISTOR		2SA1015-Y	5TAAG00070	
TR6	TRANSISTOR		2SC1923Y	5TCAF00386	
TR7	TRANSISTOR		2SC1923Y	5TCAF00386	



## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C2	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C3	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C4	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C5	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C6	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C7	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C8	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C9	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C10	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C11	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C12	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C13	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C14	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C16	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C17	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C18	CAP,FXD PLSTC	ECQ-B1H182JZ3		5CRAA00875	
C19	CAP,FXD PLSTC	ECQ-B1H182JZ3		5CRAA00875	
C20	CAP,FXD CER	C3216CH1H151J-E-TP	150PF	5CAAD00870	
C21	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C22	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C23	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C24	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C25	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C26	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C27	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C30	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C31	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C32	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C33	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C34	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813	
C35	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	
C36	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C37	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C46	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C47	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C48	CAP,FXD CER	C3216SL1H102K-E-TP		5CAAD00878	
C49	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C51	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C52	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138	
C53	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C54	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C55	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C56	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C59	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C60	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C61	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C62	CAP,FXD CER	C3216SL1H182J-E-TP		5CAAD01070	
C63	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C64	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C66	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C71	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C72	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C73	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C74	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C75	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C76	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C77	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C78	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C79	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C80	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C81	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C82	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C83	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C86	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C87	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C88	CAP,FXD TANTAL	202L3502 474KB		5CSAC01065	
C89	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C90	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C91	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	

## PARTS LIST

		TITLE			SHEET NO.	
		IF AMP			CAE-227A	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C92	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C94	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C95	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C96	CAP,FXD CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138		
C97	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C98	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C99	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C100	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982		
C101	CAP,FXD CER	C3216CH1H471J-E-TP	470PF	5CAAD00797		
C102	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C103	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982		
C104	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C105	CAP,FXD TANTAL	202L3502 224KB	0.22UF 35V	5CSAC00988		
C106	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C107	CAP,FXD TANTAL	202L2502 475KB		5CSAC00934		
C108	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982		
C109	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C110	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C111	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C112	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C113	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C114	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C115	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C116	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C121	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C122	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C123	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C124	CAP,FXD CER	C3216JB1H223K-E-TP		5CAAD01645		
C125	CAP,FXD CER	C3216JB1H223K-E-TP		5CAAD01645		
C126	CAP,FXD CER	C3216JB1H223K-E-TP		5CAAD01645		
C127	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C128	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C129	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982		
C130	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C131	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		

## PARTS LIST

		TITLE			SHEET NO.	
		IF AMP			CAE-227A	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C132	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C135	CAP,FXD ELCTLT	ECE-A1EU330B		5CEAA01822		
C136	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C137	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C138	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C139	CAP,FXD CER	C3216CH1H680J-E-TP	68PF	5CAAD00929		
C140	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C141	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C142	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C143	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C144	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C145	CAP,FXD TANTAL	202L2502 225KB	2.2UF 25V	5CSAC01129		
C146	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C147	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C148	CAP,FXD TANTAL	202L3502 225KB		5CSAC01069		
C149	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203		
C150	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C151	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C152	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C153	CAP,FXD CER	C3216JB1E473K-E-TP		5CAAD01131		
C154	CAP,FXD TANTAL	202L3502 224KB	0.22UF 35V	5CSAC00988		
C155	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C157	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982		
C159	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C166	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C167	CAP,FXD TANTAL	202L3502 224KB	0.22UF 35V	5CSAC00988		
C168	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C169	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C170	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C171	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		
C172	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C173	CAP,FXD TANTAL	202L3502 224KB	0.22UF 35V	5CSAC00988		
C175	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C176	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C177	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237		

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C178	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C179	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C180	CAP,FXD TANTAL	202L3502 334KB	35V 0.33U	5CSAC01151	
C181	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C182	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C183	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C184	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C191	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C192	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C193	CAP,FXD CER	C3216JB1H332K-E-TP	50V 3300PF	5CAAD01599	
C194	CAP,FXD CER	C3216JB1H682K-E-TP		5CAAD01137	
C195	CAP,FXD CER	C3216JB1H682K-E-TP		5CAAD01137	
C196	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C197	CAP,FXD TANTAL	202L3502 105KB	35V 1UF	5CSAC00982	
C198	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C199	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C200	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C201	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C202	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C203	CAP,FXD CER	C3216JB1H223K-E-TP		5CAAD01645	
C204	CAP,FXD CER	C3216JB1H332K-E-TP	50V 3300PF	5CAAD01599	
C205	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C206	CAP,FXD CER	C3216JB1H682K-E-TP		5CAAD01137	
C207	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	
C208	CAP,FXD CER	C3216JB1H223K-E-TP		5CAAD01645	
C210	CAP,FXD CER	C3216CH1H471J-E-TP	470PF	5CAAD00797	
CD1	DIODE	1SS226 TE85L		5TXAD00320	
CD2	DIODE	1SV149B		5TXAD00332	
CD3	DIODE	1SS184 TE85L		5TXAD00290	
CD4	DIODE	MPR4371F		5TXBG00037	
CD5	DIODE	1SS226 TE85L		5TXAD00320	
CD6	DIODE	1SS226 TE85L		5TXAD00320	
CD8	DIODE	HSM2836CTL		5TXAE00765	
CD9	DIODE	1SS184 TE85L		5TXAD00290	
CD10	DIODE	RD5.1M-T1B B1		5TXAA00632	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		6
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
CD11	DIODE	HSM2836CTL		5TXAE00765	
CD13	DIODE	1SS184 TE85L		5TXAD00290	
CD14	DIODE	HSM2836CTL		5TXAE00765	
CD21	DIODE	1SS184 TE85L		5TXAD00290	
CD22	DIODE	RD6.2M-T1B B2		5TXAA00674	
CD23	DIODE	1SS226 TE85L		5TXAD00320	
CD24	DIODE	HSM2836CTL		5TXAE00765	
CD25	DIODE	1SS184 TE85L		5TXAD00290	
CD26	DIODE	1SS184 TE85L		5TXAD00290	
CD27	DIODE	1SS184 TE85L		5TXAD00290	
CD28	DIODE	1SV149B		5TXAD00332	
CD29	DIODE	1SS184 TE85L		5TXAD00290	
CD30	DIODE	1SS97		5TXAA00326	
CD31	DIODE	1SS97		5TXAA00326	
IC2	IC	SN16913P		5DDAL00301	
IC3	IC	M5223L		5DDAB00164	
IC4	IC	TA7310P		5DAAD00091	
IC5	IC	MC14066BCP		5DAAJ00359	
IC6	IC	MC14066BCP		5DAAJ00359	
IC7	IC	M5223L		5DDAB00164	
IC8	IC	MC3361BP		5DDAS00206	
IC9	IC	M5223L		5DDAB00164	
IC10	IC	TC4052BP		5DDAE00208	
IC11	IC	M5218L		5DDAB00158	
IC12	IC	M5218L		5DDAB00158	
J1	CONNECTOR	IL-G-2P-S3L2-E		5JWAD00094	
L2	COIL	FL-7H472J-H	4.7MH	5LCAA00635	
L3	COIL	FL-7H472J-H	4.7MH	5LCAA00635	
L4	COIL	LAL03VB681K		5LCAA00442	
L5	COIL	FL-7H222J-H	2.2MH WITH TUBE	5LCAA00631	
L6	COIL	FL-7H222J-H	2.2MH WITH TUBE	5LCAA00631	
L7	COIL	LAL03VB100K	10UH	5LCAA00273	
L8	COIL	LAL03VB101K		5LCAA00333	
L9	COIL	LAL03VB820K		5LCAA00388	
P7	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070	

## PARTS LIST

		TITLE		SHEET NO.
		IF AMP	CAE-227A	7
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
P8	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070
PC1	PCB	H-6PCJD00260D		6PCJD00260
R1	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R2	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R3	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R4	RESISTOR FXD	ERJ-8GEYJ220V	1/8W 22 OHM	5REAG01718
R5	RESISTOR FXD	ERJ-8GEYJ183V	1/8W,18K OHM	5REAG01753
R6	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R7	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R8	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R9	RESISTOR FXD	ERJ-8GEYJ560V	1/8W 56 OHM	5REAG01723
R10	RESISTOR FXD	ERJ-8GEYJ680V	1/8W 68 OHM	5REAG01724
R11	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744
R12	RESISTOR FXD	ERJ-8GEYJ183V	1/8W,18K OHM	5REAG01753
R13	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R14	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R15	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754
R16	RESISTOR FXD	ERJ-8GEYJ682V	1/8W 6.8K OHM	5REAG01748
R17	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R18	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R19	RESISTOR FXD	ERJ-8GEYJ154V	1/8W 150K OHM	5REAG01764
R20	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R21	RESISTOR CFXD	ERJ-8GEYJ182V	1/8W 1.8K OHM	5REAG01741
R22	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R23	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R24	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R25	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728
R26	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R27	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R28	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R29	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R31	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R32	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R33	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774
R34	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726

## PARTS LIST

		TITLE		SHEET NO.
		IF AMP	CAE-227A	8
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
R35	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732
R36	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R37	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R38	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R39	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R40	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730
R41	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734
R42	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R43	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R44	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730
R45	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R46	RESISTOR FXD	ERJ-8GEYJ562V	1/8W 5.6K OHM	5REAG01747
R51	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752
R52	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R53	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762
R54	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758
R55	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758
R56	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742
R57	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R58	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R59	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758
R60	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R61	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758
R62	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R63	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726
R64	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732
R65	RESISTOR FXD	ERJ-8GEYJ561V	1/8W 560 OHM	5REAG01735
R66	RESISTOR FXD	ERJ-8GEYJ561V	1/8W 560 OHM	5REAG01735
R67	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752
R68	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R69	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744
R70	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774
R71	RESISTOR FXD	ERJ-8GEYJ183V	1/8W 18K OHM	5REAG01753
R72	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744
R73	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738

## PARTS LIST

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		9
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R74	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R75	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R76	RESISTOR FXD	ERJ-8GEYK2R2V		5REAG02210	
R81	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R82	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R83	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R84	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R85	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R86	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R87	RESISTOR FXD	ERJ-8GEYJ393V	1/8W 39K OHM	5REAG01757	
R88	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R89	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R90	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R91	RESISTOR FXD	ERJ-8GEYJ682V	1/8W 6.8K OHM	5REAG01748	
R92	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R93	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R94	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R95	RESISTOR FXD	ERJ-8GEYJ393V	1/8W 39K OHM	5REAG01757	
R96	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R97	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R98	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R99	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R100	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R101	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R102	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R103	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R104	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R105-1	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R105-2	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R106	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R107	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R108	RESISTOR FXD	ERJ-8GEYJ561V	1/8W 560 OHM	5REAG01735	
R109	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R110	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R111	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	

		TITLE			SHEET NO.
		IF AMP	CAE-227A		10
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R112	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R113	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R114	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R115	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R116	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R117	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R121	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R122	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R123	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R124	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R125	RESISTOR FXD	ERJ-8GEYJ272V	1/8W,2.7K OHM	5REAG01743	
R126	RESISTOR FXD	ERJ-8GEYJ272V	1/8W,2.7K OHM	5REAG01743	
R127	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768	
R128	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R129	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R130	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R131	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R140	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R141	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R142	RESISTOR FXD	ERJ-8GEYJ474V	1/8W 470K OHM	5REAG01770	
R143	RESISTOR FXD	ERJ-8GEYJ682V	1/8W 6.8K OHM	5REAG01748	
R144	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R145	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R146	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R147	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R148	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R149	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R150	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R151	RESISTOR FXD	ERJ-8GEYJ682V	1/8W 6.8K OHM	5REAG01748	
R152	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R153	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R154	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R155	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R156	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732	
R157	RESISTOR FXD	ERJ-8GEYJ822V		5REAG01749	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		11
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R158	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R159	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R160	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R161	RESISTOR FXD	ERJ-8GEYJ152V	1/8W 1.5K OHM	5REAG01740	
R162	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R163	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R166	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R167	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R168	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R169	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R170	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R171	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R172	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R173	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R174	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R175	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R176	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R177	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R178	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R179	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R180	RESISTOR FXD	ERJ-8GEYJ822V		5REAG01749	
R182	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R183	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R184	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R185	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R186	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R187	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R189-1	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R189-2	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R189-3	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774	
R190	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R191	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R192	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R193	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R195	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		12
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R196	RESISTOR FXD	ERJ-8GEYJ683V	1/8W 68K OHM	5REAG01760	
R197	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768	
R198	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R199	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R200	RESISTOR CFXD	ERJ-8GEYJ681V	1/8W 680 OHM	5REAG01736	
R211	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R212	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R213	RESISTOR FXD	ERJ-8GEYJ562V	1/8W 5.6K OHM	5REAG01747	
R214	RESISTOR FXD	ERJ-8GEYJ562V	1/8W 5.6K OHM	5REAG01747	
R215	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768	
R216	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R217	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R218	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R219	RESISTOR FXD	ERJ-8GEYJ224V	1/8W 220K OHM	5REAG01766	
R220	RESISTOR FXD	ERJ-8GEYJ224V	1/8W 220K OHM	5REAG01766	
R221	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R231	THERMISTOR	PBN-42H-S2		5RXAD00007	
RJ1	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ2	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ3	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ5	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ6	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ7	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ8	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ9	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ10	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ11	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ12	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ13	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ14	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ15	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ16	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ19	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ20	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ21	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		13
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RJ23	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ24	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ25	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ27	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ28	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ29	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ30	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ31	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ32	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ33	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ34	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ35	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ36	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ37	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ38	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ39	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ40	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ41	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ42	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ43	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ44	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ45	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ46	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ47	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ48	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ49	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ50	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ51	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ52	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ53	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ54	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ55	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ56	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ57	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ58	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	

## PARTS LIST

		TITLE			SHEET NO.
		IF AMP	CAE-227A		14
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RJ59	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ60	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ61	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ62	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ63	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ64	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ65	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ66	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ67	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ68	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ69	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ70	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ71	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ72	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ74	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ76	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ77	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ78	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ79	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ80	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ81	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ82	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ83	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ85	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ86	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RJ87	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
RV1	RESISTOR VAR	EVN-D2AA03B54		5RVAB00439	
RV2	RESISTOR VAR	EVN-D8AA03B14	10K OHM	5RVAB00428	
RV3	RESISTOR VAR	EVN-D8AA03B14	10K OHM	5RVAB00428	
RV4	RESISTOR VAR	EVN-D2AA03B23		5RVAB00429	
RV5	RESISTOR VAR	EVN-D2AA03B14		5RVAB00430	
RV6	RESISTOR VAR	EVN-D8AA03B14	10K OHM	5RVAB00428	
RV7	RESISTOR VAR	EVN-D8AA03B54		5RVAB00419	
RV8	RESISTOR VAR	EVN-D2AA03B55		5RVAB00440	
RV9	RESISTOR VAR	EVN-D2AA03B55		5RVAB00440	

## PARTS LIST

IF AMP				TITLE	SHEET NO.
IF AMP				CAE-227A	15
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
S1	TERMINAL	A2-3PA-2.54DSA(01)		5JTBX00010	
S1P	CONNECTOR	HIF3GA-2.54SP		5JFAA01151	
T1	RF XFMR	S-061-006		5LJAA00006	
T2	RF XFMR	S-061-006		5LJAA00006	
5 T3	RF XFMR	H-6LHJD00489	100KHZ	6LHJD00489	
T4	RF XFMR	H-6LHJD00490	100KHZ	6LHJD00490	
T5	RF XFMR	H-6LHJD00489	100KHZ	6LHJD00489	
T6	COIL	5D-ELD19A-41		6LAFD00018	
TP	TEST TERMINAL	PCN6-PEA		5JDAA00364	
10 TR1	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR2	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR3	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR4	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR5	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
15 TR6	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR7	TRANSISTOR	3SK73-GR-2		5TKAA00204	
TR8	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR9	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR10	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
20 TR11	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR12	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR13	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR15	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR16	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
25 TR17	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR18	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR19	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR20	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR21	TRANSISTOR	2SC3398-TB		5TCAZ00011	
30 TR22	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR23	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR24	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR26	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR27	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
35 TR30	TRANSISTOR	2SC3398-TB		5TCAZ00011	

## PARTS LIST

IF AMP				TITLE	SHEET NO.
IF AMP				CAE-227A	16
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
TR31	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR32	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR33	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR34	TRANSISTOR	2SC3398-TB		5TCAZ00011	
5 TR35	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR36	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR37	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR38	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR39	TRANSISTOR	2SC3398-TB		5TCAZ00011	
10 TR40	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR41	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
X1	RESONATOR	CSB360D		5NRAA00198	
15					
20					
25					
30					
35					



## PARTS LIST

		TITLE		SHEET NO	
		ECSS	CMF-78	1	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C2	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C3	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C4	CAP,FXD ELCTLT	ECE-A1EU330B		5CEAA01822	
C5	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C6	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C7	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C8	CAP,FXD ELCTLT	ECE-A1EU330B		5CEAA01822	
C9	CAP,FXD CER	C3216SH1H102J-E-TP	50V 1000PF	5CAAD01479	
C10	CAP,FXD TANTAL	202L3502	225KB	5CSAC01069	
C11	CAP,FXD CER	DD109-979CH151J50		5CAAA03148	
C12	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C13	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C15	CAP,FXD PLSTC	ECQ-B1H102KZ3	50V 1000P	5CRAA00811	
C16	CAP,FXD PLSTC	ECQ-B1H332KZ3	50V 0.0033U	5CRAA00815	
C21	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C22	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C23	CAP,FXD ELCTLT	ECE-A1EU330B		5CEAA01822	
C24	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C25	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C26	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C27	CAP,FXD PLSTC	ECQ-V1H333JZ3		5CRAA00804	
C28	CAP,FXD PLSTC	ECQ-V1H224JZ3	0.22UF 50V	5CRAA00482	
C29	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C30	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C31	CAP,FXD ELCTLT	ECE-A1EU330B		5CEAA01822	
C32	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C33	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C34	CAP,FXD TANTAL	202L3502	474KB	5CSAC01065	
C35	CAP,FXD PLSTC	ECQ-V1H333JZ3		5CRAA00804	
C36	CAP,FXD PLSTC	ECQ-V1H224JZ3	0.22UF 50V	5CRAA00482	
C41	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C42	CAP,FXD TANTAL	202L3502	105KB	35V 1UF	5CSAC00982
C43	CAP,FXD TANTAL	202L3502	105KB	35V 1UF	5CSAC00982
C44	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	

## PARTS LIST

		TITLE		SHEET NO	
		ECSS	CMF-78	2	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C45	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C51	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C52	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C53	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C54	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C55	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C56	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C57	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C58	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C61	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C62	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C63	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C64	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C65	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C66	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C67	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C68	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C71	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C72	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C73	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C74	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C75	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C76	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C77	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C78	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C81	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C82	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C83	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C84	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C85	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C86	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C87	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C88	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C91	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	
C92	CAP,FXD PLSTC	ECQ-B1H103JZ3		5CRAA00587	

## PARTS LIST

		TITLE			SHEET NO.
		ECSS		CMF-78	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C93	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C94	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C95	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C96	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C97	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C98	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C101	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C102	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C103	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C104	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C105	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C106	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C107	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C108	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C111	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C112	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C113	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C114	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C115	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C116	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C117	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C118	CAP,FXD	PLSTC	ECQ-B1H103JZ3	5CRAA00587	
C121	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C122	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C123	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C124	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C125	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C126	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C127	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C128	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C129	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C130	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C131	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C132	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C133	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	

## PARTS LIST

		TITLE			SHEET NO.
		ECSS		CMF-78	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C134	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C135	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C136	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C137	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C138	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C139	CAP,FXD	ELCTLT	ECE-A1EU100B	5CEAA01864	
C174	CAP,FXD	ELCTLT	ECE-A1EU330B	5CEAA01822	
C175	CAP,FXD	TANTAL	202L3502 474KB	5CSAC01065	
C176	CAP,FXD	ELCTLT	ECE-A1EU330B	5CEAA01822	
C177	CAP,FXD	ELCTLT	ECE-A1EU330B	5CEAA01822	
C178	CAP,FXD	ELCTLT	ECE-A1EU330B	5CEAA01822	
C182	CAP,FXD	TANTAL	202L3502 474KB	5CSAC01065	
C183	CAP,FXD	TANTAL	202L3502 474KB	5CSAC01065	
C184	CAP,FXD	TANTAL	202L3502 474KB	5CSAC01065	
C185	CAP,FXD	TANTAL	202L3502 474KB	5CSAC01065	
CD2	DIODE		HZ5C1RE	1/2W 5V	5TXAE00568
CD3	DIODE		1S2076RE		5TXAE00588
IC1	IC		TA7061BP		5DAAD00536
IC2	IC		MC14046BCP		5DDAS00038
IC3	IC		SN16913P		5DDAL00301
IC4	IC		SN16913P		5DDAL00301
IC5	IC		NJM2058D		5DAAN00240
IC6	IC		NJM2058D		5DAAN00240
IC7	IC		NJM2058D		5DAAN00240
IC11	IC		TC4069UBP	MOS	5DDAE00045
IC12	IC		TC4066BP		5DDAE00078
IC13	IC		MC74HC259AP		5DAAJ00975
IC14	IC		AN6541		5DAAR00021
L2	COIL		H-6LAJD00279	1.6MH	6LAJD00279
L3	COIL		H-6LAJD00279	1.6MH	6LAJD00279
L4	COIL		FL-9H103J-H	10MH	5LCAA00657
L5	COIL		FL-9H103J-H	10MH	5LCAA00657
P9	CONNECTOR		EC1C-22P-2.5DSA	22P	5JWBS00070
P10	CONNECTOR		EC1C-22P-2.5DSA	22P	5JWBS00070
PC1	PCB		H-6PCJD00270A		6PCJD00270

## PARTS LIST

		TITLE			SHEET NO.
		ECSS	CMF-78		5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R1	RESISTOR FXD	ERD-25UJ331T	1/4W 330 OHM	5RDAA01480	
R2	RESISTOR FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599	
R3	RESISTOR FXD	ERD-25UJ102T	1K OHM 1/4	5RDAA01542	
R5	RESISTOR FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599	
R6	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R7	RESISTOR FXD	ERD-25UJ474T	1/4W 470K OHM	5RDAA01634	
R8	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R9	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R10	RESISTOR FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599	
R11	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R12	RESISTOR FXD	ERD-25UJ181T	180 OHM	5RDAA01628	
R13	RESISTOR FXD	ERD-25UJ681T	1/4W 680 OHM	5RDAA01627	
R21	RESISTOR FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599	
R22	RESISTOR FXD	ERD-25UJ101T	1/4W 100 OHM	5RDAA01599	
R31	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R32	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R33	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R34	RESISTOR FXD	ERD-25UJ153T	1/4W 15K OHM	5RDAA01594	
R35	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R36	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R37	RESISTOR FXD	ERD-25UJ223T	22K OHM 1/4W	5RDAA01545	
R38	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R39	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R40	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R41	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R42	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R43	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R44	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R51	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R52	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R53	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R54	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R55	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R56	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R57	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	

## PARTS LIST

		TITLE			SHEET NO.
		ECSS	CMF-78		6
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R58	RESISTOR FXD	ERD-25UJ154T	1/4W 150K	5RDAA01807	
R61	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R62	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R63	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R64	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R65	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R66	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R67	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R68	RESISTOR FXD	ERD-25UJ104T	100K OHM 1/4W	5RDAA01623	
R71	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R72	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R73	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R74	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R75	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R76	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R77	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R78	RESISTOR FXD	ERD-25UJ473T	1/4W 47K OHM	5RDAA01618	
R81	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R82	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R83	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R84	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R85	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R86	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R87	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R88	RESISTOR FXD	ERD-25UJ183T	18K OHM 1/4W	5RDAA01605	
R91	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R92	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R93	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R94	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R95	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R96	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R97	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R98	RESISTOR FXD	ERD-25UJ682T		5RDAA01713	
R101	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R102	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	

## PARTS LIST

## PARTS LIST

		TITLE			SHEET NO.
		ECSS	CMF-78		7
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R103	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R104	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R105	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R106	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R107	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R108	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R111	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R112	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R113	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R114	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R115	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R116	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R117	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R118	RESISTOR FXD	ERD-25UJ182T	1/4W 1.8K OHM	5RDAA01617	
R121	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R122	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R123	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R124	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R125	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R126	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R127	RESISTOR FXD	ERD-25UJ683T	68K OHM 1/4W	5RDAA01705	
R128	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R129	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R130	RESISTOR FXD	ERD-25UJ333T	1/4W 33K OHM	5RDAA01591	
R131	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R132	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R133	RESISTOR FXD	ERD-25UJ683T	68K OHM 1/4W	5RDAA01705	
R134	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R135	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R136	RESISTOR FXD	ERD-25UJ333T	1/4W 33K OHM	5RDAA01591	
R137	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R139	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R140	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R142	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R143	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	

		TITLE			SHEET NO.
		ECSS	CMF-78		8
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R144	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R145	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R146	RESISTOR FXD	ERD-25UJ472T	4.7K OHM 1/4W	5RDAA01549	
R172	RESISTOR FXD	ERG-1ANJ331	330 OHM 1W	5REAG00031	
R173	RESISTOR FXD	ERD-25UJ103T	10K OHM 1/4W	5RDAA01547	
R174	RESISTOR FXD	ERD-25UJ222T	2.2K OHM 1/4W	5RDAA01548	
R175	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
R176	RESISTOR FXD	ERD-25UJ222T	2.2K OHM 1/4W	5RDAA01548	
R181	RESISTOR FXD	ERD-25UJ332T	3.3K OHM 1/4W	5RDAA01544	
RV1	RESISTOR VAR	EVN-D2AA03B53		5RVAB00435	
RV2	RESISTOR VAR	EVN-D8AA03B14	10K OHM	5RVAB00428	
RV3	RESISTOR VAR	EVN-D2AA03B55		5RVAB00440	
RV4	RESISTOR VAR	EVN-D2AA03B55		5RVAB00440	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP4	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP6	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP7	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP8	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP9	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP10	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TR1	TRANSISTOR	2SK192A-BL		5TKAA00080	
TR2	TRANSISTOR	2SA1020-Y		5TAAG00093	
TR3	TRANSISTOR	2SC1815-Y		5TCAF00219	

## PARTS LIST

		TITLE			SHEET NO.
		LOOP1	CGA-145		1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD CER		C3216CH1H150J-E-TP	15PF	SCAAD00787
C2	CAP,FXD C CER		C3216CH1H030C-E-TP	50V 3PF	SCAAD00796
C3	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C4	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C5	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C6	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C7	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C8	CAP,FXD CER		C3216CH1H100D-E-TP	10PF	SCAAD00785
C9	CAP,FXD C CER		C3216CH1H050C-E-TP	50V 5PF	SCAAD00800
C10	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C11	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C12	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C13	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C14	CAP,FXD CER		C3216CH1H120J-E-TP	12P	SCAAD00784
C15	CAP,FXD CER		C3216CH1H100D-E-TP	10PF	SCAAD00785
C16	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C17	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C18	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C19	CAP,FXD CER		C3216CH1H100D-E-TP	10PF	SCAAD00785
C20	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C21	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C22	CAP,FXD ELCTLT		ECE-A1EU101B		SCEAA01813
C23	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C24	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C25	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C26	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C27	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C28	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C29	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C30	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C31	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C32	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C33	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C34	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C35	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	SCAAD00929

## PARTS LIST

		TITLE			SHEET NO.
		LOOP1	CGA-145		2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C36	CAP,FXD CER		C3216CH1H100D-E-TP	10PF	SCAAD00785
C37	CAP,FXD C CER		C3216CH1H101J-E-TP	50V 100PF	SCAAD00780
C38	CAP,FXD CER		C3216CH1H220J-E-TP	22PF	SCAAD00869
C39	CAP,FXD CER		C3216CH1H560J-E-TP		SCAAD00863
C40	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C41	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C42	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C43	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C44	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C45	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C46	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C47	CAP,FXD ELCTLT		ECE-A1EU101B		SCEAA01813
C48	CAP,FXD ELCTLT		ECE-A1EU100B		SCEAA01864
C49	CAP,FXD ELCTLT		ECE-A1EU101B		SCEAA01813
C50	CAP,FXD TANTAL		202L3502 474KB		SCSAG01065
C51	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C52	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C53	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C54	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C55	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C56	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C57	CAP,FXD CER		C3216CH1H330J-E-TP	33PF	SCAAD00794
C58	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C59	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C60	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C61	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C62	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C63	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C64	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C65	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	SCAAD00789
C66	CAP,FXD CER		C3216X7R1E333K-E-TP	0.033U	SCAAD01203
C67	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C68	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C69	CAP,FXD CER		C3216SL1H102J-E-TP	1000PF	SCAAD00782
C70	CAP,FXD CER		C3216CH1H330J-E-TP	33PF	SCAAD00794

## PARTS LIST

		TITLE			SHEET NO.	
		LOOP1		CGA-145	3	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C71	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C72	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C73	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C74	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C75	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C76	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864		
C77	CAP,FXD TANTAL	202L1602 106KB		5CSAC00932		
C78	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782		
C79	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813		
C80	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
C90	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789		
CD1	DIODE	1SV203-7TLC		5TXAE00678		
CD2	DIODE	1SV203-7TLC		5TXAE00678		
CD3	DIODE	1SV203-7TLC		5TXAE00678		
CD4	DIODE	1SV203-7TLC		5TXAE00678		
CD5	DIODE	1SV203-7TLC		5TXAE00678		
CD6	DIODE	1SV203-7TLC		5TXAE00678		
CD8	DIODE	HSM2694TLC		5TXAE00627		
CD9	DIODE	HSM2694TLC		5TXAE00627		
CD10	DIODE	1SS226 TE85L		5TXAD00320		
CD11	DIODE	MPR4371F		5TXBG00037		
CV1	CAPACITOR VAR	TZ03Z100FR	10PF	5CVAA00190		
CV2	CAPACITOR VAR	TZ03Z100FR	10PF	5CVAA00190		
CV3	CAPACITOR VAR	TZ03Z100FR	10PF	5CVAA00190		
FL1	FILTER	BPEB1		5NBAG00011		
FL2	FILTER	DS310-55B222M	100V 0.0022UF	5NXAA00002		
FL3	FILTER	SAF58MH70Z		5NRAA00191		
IC1	IC	UPC1651G		5DAAA00171		
IC2	IC	UPC1651G		5DAAA00171		
IC3	IC	UPC1651G		5DAAA00171		
IC4	IC	SN76514N		5DDAL00251		
IC5	IC	CX7925B		5DZCJ00008		
IC6	IC	SN76514N		5DDAL00251		
IC7	IC	M5237L		5DDAB00346		
KC1	CABLE	H-6ZCJD35003		6ZCJD35003		

## PARTS LIST

		TITLE			SHEET NO.	
		LOOP1		CGA-145	4	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
L1	COIL	SC2-55T		5LZNL00001		
L2	COIL	SC2-45T		5LZNL00002		
L3	COIL	SC2-35T		5LZNL00003		
L4	COIL	LAL03KH6R8K		5LCAA00437		
L5	COIL	LAL03KH2R2M	2.2UH	5LCAA00326		
L6	COIL	LAL03KH6R8K		5LCAA00437		
L7	COIL	LAL03KH2R2M	2.2UH	5LCAA00326		
L8	COIL	LAL03KH6R8K		5LCAA00437		
L9	COIL	LAL03KH2R2M	2.2UH	5LCAA00326		
L10	COIL	LAL03VB471K	470UH	5LCAA00270		
L11	COIL	LAL03VB471K	470UH	5LCAA00270		
L12	COIL	LAL03VBR22M	0.22UH	5LCAA00280		
L13	COIL	LAL03VBR22M	0.22UH	5LCAA00280		
L14	COIL	LAL03VB1R2M		5LCAA00334		
L15	COIL	LAL03VB471K	470UH	5LCAA00270		
L16	COIL	LAL03VB100K	10UH	5LCAA00273		
L17	COIL	LAL03VB100K	10UH	5LCAA00273		
L18	COIL	LAL03VB471K	470UH	5LCAA00270		
P15	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070		
P16	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070		
PC1	PCB	H-6PCJD00261C		6PCJD00261		
R1	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734		
R2	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R3	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R4	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R5	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758		
R6	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734		
R7	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R8	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R9	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R10	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758		
R11	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734		
R12	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R13	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		
R14	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726		

## PARTS LIST

		TITLE			SHEET NO.
		LOOP1	CGA-145		5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R15	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R16	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R17	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R18	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R19	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R20	RESISTOR FXD	ERJ-8GEYJ330V	1/8W 33 OHM	5REAG01720	
R21	RESISTOR FXD	ERJ-8GEYJ330V	1/8W 33 OHM	5REAG01720	
R22	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R23	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R24	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R25	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R28	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R29	RESISTOR FXD	ERJ-8GEYJ152V	1/8W 1.5K OHM	5REAG01740	
R30	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R31	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732	
R32	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R35	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R36	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R37	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734	
R38	RESISTOR FXD	ERJ-8GEYJ224V	1/8W 220K OHM	5REAG01766	
R39	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R40	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R41	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R42	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R43	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R44	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R45	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R46	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R47	RESISTOR FXD	ERJ-8GEYJ302V	1/8W 3K OHM	5REAG02211	
R48	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734	
R49	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R50	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R51	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R52	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732	
RV1	RESISTOR VAR	EVN-D2AA03B13		5RVAB00422	

## PARTS LIST

		TITLE			SHEET NO.
		LOOP1	CGA-145		6
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
T1	RF XFMR	H-6LHJD00297		6LHJD00297	
T2	RF XFMR	H-6LHJD00297		6LHJD00297	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP4	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP5	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP6	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP7	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TR1	TRANSISTOR	2SK210-BLTE85L		5TKAA00189	
TR2	TRANSISTOR	2SK210-BLTE85L		5TKAA00189	
TR3	TRANSISTOR	2SK210-BLTE85L		5TKAA00189	
TR4	TRANSISTOR	2SK210-BLTE85L		5TKAA00189	
TR5	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	
TR6	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	
TR7	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	
TR8	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR9	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR10	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR11	TRANSISTOR	2SC3398-TB		5TCAZ00011	
TR12	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR13	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR14	TRANSISTOR	2SA1015-Y		5TAAG00070	
TR15	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C2	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C3	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C4	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C5	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C6	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C7	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C8	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C9	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C10	CAP,FXD C CER	C3216CH1H101J-E-TP	50V 100PF	5CAAD00780	
C11	CAP,FXD CER	C3216CH1H470J-E-TP	47PF	5CAAD00864	
C12	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C13	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813	
C14	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813	
C15	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C16	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C17	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C18	CAP,FXD CER	C3216SL1H821J-E-TP		5CAAD01068	
C19	CAP,FXD CER	C3216CH1H121J-E-TP	120PF	5CAAD00931	
C20	CAP,FXD CER	C3216SL1H152J-E-TP	1500PF	5CAAD00791	
C21	CAP,FXD CER	C3216CH1H331J-E-TP	330PF	5CAAD01066	
C22	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C24	CAP,FXD CER	C3216CH1H471J-E-TP	470PF	5CAAD00797	
C25	CAP,FXD CER	C3216JB1H332K-E-TP	50V 3300PF	5CAAD01599	
C26	CAP,FXD CER	C3216CH1H331J-E-TP	330PF	5CAAD01066	
C27	CAP,FXD CER	C3216SL1H122J-E-TP		5CAAD01069	
C28	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C29	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C30	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C31	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C32	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C33	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C34	CAP,FXD CER	C3216SL1H152J-E-TP	1500PF	5CAAD00791	
C35	CAP,FXD CER	C3216CH1H121J-E-TP	120PF	5CAAD00931	
C36	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C37	CAP,FXD CER	C3216SL1H821J-E-TP		5CAAD01068	
C38	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	
C39	CAP,FXD CER	C3216CH1H561J-E-TP		5CAAD01067	
C40	CAP,FXD CER	C3216SL1H152J-E-TP	1500PF	5CAAD00791	
C41	CAP,FXD CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C42	CAP,FXD CER	C3216JB1H153K-E-TP		5CAAD01600	
C43	CAP,FXD CER	C3216CH1H681J-E-TP	680P	5CAAD00788	
C44	CAP,FXD CER	C3216JB1H682K-E-TP		5CAAD01137	
C45	CAP,FXD CER	C3216CH1H681J-E-TP	680P	5CAAD00788	
C46	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C47	CAP,FXD C CER	C3216CH1H101J-E-TP	50V 100PF	5CAAD00780	
C48	CAP,FXD CER	C3216CH1H470J-E-TP	47PF	5CAAD00864	
C49	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C50	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813	
C51	CAP,FXD CER	C3216X7R1E333K-E-TP	0.033U	5CAAD01203	
C52	CAP,FXD CER	C3216JB1H682K-E-TP		5CAAD01137	
C53	CAP,FXD CER	C3216SL1H122J-E-TP		5CAAD01069	
C54	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C55	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C56	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C57	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C58	CAP,FXD CER	C3216UJ1H150J-E-TP	15PF	5CAAD01299	
C59	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C60	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C61	CAP,FXD CER	C3216CH1H221J-E-TP	220PF	5CAAD00790	
C62	CAP,FXD CER	C3216CH1H151J-E-TP	150PF	5CAAD00870	
C63	CAP,FXD CER	C3216CH1H220J-E-TP	22PF	5CAAD00869	
C64	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C65	CAP,FXD CER	C3216CH1H220J-E-TP	22PF	5CAAD00869	
C66	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C67	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C68	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C69	CAP,FXD ELCTLT	ECE-A1EU100B		5CEAA01864	
C70	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C71	CAP,FXD CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	



## PARTS LIST

## PARTS LIST

		REF/DDS			TITLE	SHEET NO
					CGK-127A	3
PART NO	PART	NAME	TYPE	DESCRIPTION	CODE	
C72	CAP,FXD	CER	C3216CH1H121J-E-TP	120PF	5CAAD00931	
C73	CAP,FXD	CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	
C74	CAP,FXD	CER	C3216CH1H271J-E-TP	50V 270PF	5CAAD00883	
C75	CAP,FXD	CER	C3216SL1H222J-E-TP	2200PF	5CAAD00792	
C76	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C77	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C78	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C79	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C80	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C81	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C84	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C85	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C86	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C87	CAP,FXD	CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C91	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C92	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C96	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C97	CAP,FXD	ELCTLT	ECE-A1EU101B		5CEAA01813	
C98	CAP,FXD	CER	C3216CH1H150J-E-TP	15PF	5CAAD00787	
C99	CAP,FXD	CER	C3216CH1H150J-E-TP	15PF	5CAAD00787	
C100	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C101	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C102	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C103	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C104	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C105	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C106	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C107	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C108	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C109	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C110	CAP,FXD	TANTAL	202L3502 104KB		5CSAC01068	
C111	CAP,FXD	ELCTLT	ECE-A1EU101B		5CEAA01813	
C112	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C113	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C114	CAP,FXD	CER	C3216CH1H220J-E-TP	22PF	5CAAD00869	

		REF/DDS			TITLE	SHEET NO
					CGK-127A	4
PART NO	PART	NAME	TYPE	DESCRIPTION	CODE	
C115	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C127	CAP,FXD	CER	C3216CH1H221J-E-TP	220PF	5CAAD00790	
C129	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C131	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C132	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C133	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C134	CAP,FXD	CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C135	CAP,FXD	CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C136	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C137	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C138	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C139	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
C140	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C142	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C144	CAP,FXD	ELCTLT	ECE-A1EU101B		5CEAA01813	
C145	CAP,FXD	CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
C147	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C148	CAP,FXD	ELCTLT	ECE-A1EU101B		5CEAA01813	
C150	CAP,FXD	CER	C3216JB1H682K-E-TP		5CAAD01137	
C151	CAP,FXD	CER	C3216SL1H821J-E-TP		5CAAD01068	
C152	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C153	CAP,FXD	CER	C3216JB1H332K-E-TP	50V 3300PF	5CAAD01599	
C154	CAP,FXD	CER	C3216JB1H472K-E-TP	4700PF	5CAAD01138	
C155	CAP,FXD	CER	C3216SL1H102J-E-TP	1000PF	5CAAD00782	
C156	CAP,FXD	CER	C3216CH1H180J-E-TP	18PF	5CAAD00868	
C157	CAP,FXD	CER	C3216CH1H180J-E-TP	18PF	5CAAD00868	
C158	CAP,FXD	CER	C3216UJ1H150J-E-TP	15PF	5CAAD01299	
C159	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C160	CAP,FXD	CER	C3216CH1H010C-E-TP	50V 1PF	5CAAD00795	
C161	CAP,FXD	C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C171	CAP,FXD	ELCTLT	ECE-A1EU100B		5CEAA01864	
CD1	DIODE		1SS184 TE85L		5TXAD00290	
CD2	DIODE		1SS181 TE85L		5TXAD00356	
CD3	DIODE		1SS184 TE85L		5TXAD00290	
CD4	DIODE		FC53M		5TXAB00022	

## PARTS LIST

		TITLE		SHEET NO.
		REF/DDS	CGK-127A	5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
CD7	DIODE	MPR4371F		5TXBG00037
CD8	DIODE	1SS184 TE85L		5TXAD00290
CV1	CAPACITOR VAR	ECR-HB010A11		5CVAC00134
CV2	CAPACITOR VAR	ECR-HB010A11		5CVAC00134
FL1	FILTER	DS310-55B222M	100V 0.0022UF	5NXAA00002
IC1	IC	H-6DDJD00018	MB67116	6DDJD00018
IC2	IC	H-6DDJD00018	MB67116	6DDJD00018
IC3	IC	TC5020BP		5DDAE00235
IC4	IC	TC5020BP		5DDAE00235
IC5	IC	NJM3404AD		5DAAN00161
IC6	IC	NJM319D		5DAAN00206
IC7	IC	NJM319D		5DAAN00206
IC8	IC	MC14013BCP		5DDAS00142
IC9	IC	NJM78L08A	8V 100MA	5DAAN00079
IC10	IC	NJM78L08A	8V 100MA	5DAAN00079
IC11	IC	NJM78L05A	5V 0.1A	5DAAN00046
IC12	IC	MC1496P		5DAAJ00083
IC13	IC	MC74HC00N		5DAAJ00142
IC14	IC	MC74HC259N		5DAAJ00207
IC15	IC	TC74HC138AP		5DDAE01239
IC16	IC	TC74HC138AP		5DDAE01239
IC17	IC	CX7925B		5DZCJ00008
IC19	IC	SN74LS90N		5DDAS00160
IC20	IC	MC14013BCP		5DDAS00142
IC21	IC	NJM78L05A	5V 0.1A	5DAAN00046
L1	COIL	LAL03VB471K	470UH	5LCAA00270
L2	COIL	LAL03VB471K	470UH	5LCAA00270
L3	COIL	LAL03VB121K		5LCAA00440
L4	COIL	LAL03VB101K		5LCAA00333
L5	COIL	LAL03VB221K	220UH	5LCAA00272
L6	COIL	LAL03VB271K		5LCAA00438
L7	COIL	LAL03VB3R9K		5LCAA00338
L8	COIL	LAL03KH2R7M		5LCAA00439
L9	COIL	LAL03VB2R7M		5LCAA00329
L10	COIL	LAL03KH2R7M		5LCAA00439

## PARTS LIST

		TITLE		SHEET NO.
		REF/DDS	CGK-127A	6
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
L11	COIL	LAL03VB2R7M		5LCAA00329
L12	COIL	LAL03VB100K	10UH	5LCAA00273
L13	COIL	LAL03KH2R7M		5LCAA00439
L14	COIL	LAL03VB150K		5LCAA00324
L15	COIL	LAL03VB120K		5LCAA00386
L16	COIL	LAL03VB100K	10UH	5LCAA00273
L17	COIL	LAL03VB3R9K		5LCAA00338
L18	COIL	LAL03VB3R9K		5LCAA00338
L23	COIL	LAL03VB100K	10UH	5LCAA00273
L24	COIL	LAL03VB1R0M	1UH	5LCAA00282
L25	COIL	LAL03VBR68M		5LCAA00339
L27	COIL	LAL03VB471K	470UH	5LCAA00270
P13	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070
P14	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070
PC1	PCB	H-6PCJD00504B		6PCJD00504
R1	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R2	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R3	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R4	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R5	RESISTOR FXD	ERJ-8GEYJ123V	1/8W 12K OHM	5REAGO1751
R6	RESISTOR FXD	ERJ-8GEYJ822V		5REAGO1749
R7	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAGO1739
R8	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAGO1750
R9	RESISTOR FXD	ERJ-8GEYJ123V	1/8W 12K OHM	5REAGO1751
R10	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726
R11	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAGO1752
R12	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAGO1752
R13	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAGO1746
R14	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAGO1734
R15	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAGO1734
R16	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAGO1730
R17	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAGO1734
R18	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAGO1730
R19	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAGO1738
R20	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAGO1726

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		7
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R21	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R22	RESISTOR FXD	ERJ-8GEYJ821V	1/8W 820 OHM	5REAG01737	
R23	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R24	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R25	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R26	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R27	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R28	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744	
R29	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R30	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R32	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R33	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R34	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R35	RESISTOR FXD	ERJ-8GEYJ122V	1/8W 1.2K OHM	5REAG01739	
R36	RESISTOR FXD	ERJ-8GEYJ123V	1/8W 12K OHM	5REAG01751	
R37	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R38	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752	
R39	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752	
R40	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746	
R41	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R42	RESISTOR FXD	ERJ-8GEYJ100V	1/8W 10 OHM	5REAG01714	
R43	RESISTOR FXD	ERJ-8GEYJ100V	1/8W 10 OHM	5REAG01714	
R44	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728	
R45	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R46	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R47	RESISTOR FXD	ERJ-8GEYJ183V	1/8W 18K OHM	5REAG01753	
R48	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R49	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734	
R50	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R51	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R52	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R53	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R54	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R55	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R56	RESISTOR FXD	ERJ-8GEYJ153V	1/8W 15K OHM	5REAG01752	

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		8
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R57	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R58	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R59	RESISTOR FXD	ERJ-8GEYJ331V	330 OHM 1/8W	5REAG01732	
R60	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R62	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R66	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R67	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R68	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R69	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R70	RESISTOR FXD	ERJ-8GEY0R00V	0 OHM	5REAG01775	
R71	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R72	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R73	RESISTOR CFXD	ERJ-8GEYJ104V	1/8W 100K OHM	5REAG01762	
R74	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R75	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R78	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R80	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R81	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730	
R82	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R83	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R84	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R85	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R86	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R87	RESISTOR FXD	ERJ-8GEYJ222V	1/8W 2.2K OHM	5REAG01742	
R88	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R89	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728	
R90	RESISTOR FXD	ERJ-8GEYJ473V	1/8W 47K OHM	5REAG01758	
R91	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R92	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R93	RESISTOR FXD	ERJ-8GEYJ333V	1/8W 33K OHM	5REAG01756	
R94	RESISTOR CFXD	ERJ-8GEYJ151V	1/8W 150 OHM	5REAG01728	
R95	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R96	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754	
R97	RESISTOR FXD	ERJ-8GEYJ470V	1/8W 47 OHM	5REAG01722	
R98	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		9
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R100	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R101	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738	
R102	RESISTOR FXD	ERJ-8GEYJ471V	1/8W 470 OHM	5REAG01734	
R113	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
5 RA1	RESISTOR FXD	20B-12Z-ME5		5READ00836	
RA2	RESISTOR FXD	20B-12Z-ME5		5READ00836	
RA3	RESISTOR FXD	20B-12Z-ME5		5READ00836	
RV1	RESISTOR VAR	EVN-D2AA03B13		5RVAB00422	
RV2	RESISTOR VAR	EVN-D2AA03B13		5RVAB00422	
10 RV3	RESISTOR VAR	EVN-D8AA03B54		5RVAB00419	
S1	TERMINAL	A2-3PA-2.54DSA(01)		5JTBX00010	
S1P	CONNECTOR	HIF3GA-2.54SP		5JFAA01151	
T1	RF XFMR	H-6LHJD00297		6LHJD00297	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
15 TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP4	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP5	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP6	TEST TERMINAL	PCN6-PEA		5JDAA00364	
20 TP7	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP8	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP9	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TR1	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR2	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
25 TR3	TRANSISTOR	2SA1162-YTE85L		5TAAG00182	
TR4	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR5	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR6	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR7	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
30 TR8	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR9	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR10	TRANSISTOR	2SK210-BLTE85L		5TKAA00189	
TR11	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR12	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	
35 TR13	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	

## PARTS LIST

		TITLE			SHEET NO.
		REF/DDS	CGK-127A		10
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
TR14	TRANSISTOR	2SC3324GR TE85L		5TCAF00711	
TR15	TRANSISTOR	2SC2714-YTE85L		5TCAF00436	
TR16	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR17	TRANSISTOR	2SC3398-TB		5TCAZ00011	
5 TR19	TRANSISTOR	2SC3398-TB		5TCAZ00011	
X1	CRYSTAL	H-6XHJD00199		6XHJD00199	
X3	CRYSTAL	H-6XHJD00230A		6XHJD00230	
10					
15					
20					
25					
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35					

## PARTS LIST

		TITLE		SHEET NO.	
		CPU		CDC-493AD	
				1	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
BT1	BATTERY		CR2032-1HS	5ZBAB00047	
C1	CAP,FXD CER		C3216CH1H330J-E-TP 33PF	5CAAD00794	
C2	CAP,FXD CER		C3216CH1H330J-E-TP 33PF	5CAAD00794	
C3	CAP,FXD CER		C3216SL1H102J-E-TP 1000PF	5CAAD00782	
C4	CAP,FXD CER		C3216SL1H102J-E-TP 1000PF	5CAAD00782	
C5	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C6	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C7	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C8	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C9	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C10	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C11	CAP,FXD TANTAL		202L1602 106KB	5CSAC00932	
C12	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C13	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C14	CAP,FXD CER		C3216X7R1E333K-E-TP 0.033U	5CAAD01203	
C15	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C16	CAP,FXD TANTAL		202L1602 106KB	5CSAC00932	
C17	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C18	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C19	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C20	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C21	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C22	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C23	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C24	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C25	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C26	CAP,FXD TANTAL		202L3502 105KB 35V 1UF	5CSAC00982	
C29	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C30	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C31	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C32	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C33	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C34	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C35	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C36	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	

## PARTS LIST

		TITLE		SHEET NO.	
		CPU		CDC-493AD	
				2	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C37	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C38	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C39	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C40	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C41	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C42	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C43	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C48	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C49	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C50	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C51	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C52	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C53	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C54	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C55	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C56	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C57	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C58	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C59	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C60	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C61	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C62	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C63	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C64	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C65	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C66	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C67	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C68	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C69	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C70	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C71	CAP,FXD C CER		C3216JB1H103K-E-TP 50V 0.01UF	5CAAD00789	
C72	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
C73	CAP,FXD CER		C3216X7R1E104K-E-TP 0.1UF	5CAAD01237	
CD1	DIODE		1SS184 TE85L	5TXAD00290	
CD2	DIODE		1SS226 TE85L	5TXAD00320	

## PARTS LIST

		TITLE		SHEET NO.
		CPU	CDC-493AD	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
CD3	DIODE	1SS226	TE85L	5TXAD00320
CD4	DIODE	1SS226	TE85L	5TXAD00320
CD5	DIODE	1SS226	TE85L	5TXAD00320
CD6	DIODE	1SS184	TE85L	5TXAD00290
5 FL1	FILTER	DS310-55B	222M 100V 0.0022UF	5NXAA00002
FL2	FILTER	DS310-55B	222M 100V 0.0022UF	5NXAA00002
IC1	IC	MSM80C85A	-2RS	5DDAG00176
IC2	IC	MC74HC573N		5DAAJ00229
IC3	IC	H-7DEJD0182B		7DEJD0182B
10 IC4	IC	HM6264ALP-15		5DAAG00380
IC5	IC	MSM81C55-5RS		5DDAG00206
IC6	IC	MSM81C55-5RS		5DDAG00206
IC7	IC	LM358N		5DAAK00205
IC8	IC	MC74HC574AN		5DAAJ00912
15 IC9	IC	MC74HC00N		5DAAJ00142
IC10	IC	MC74HC138AN		5DAAJ00755
IC11	IC	MC74HC32AN		5DAAJ00751
IC12	IC	MSM82C51A-2RS		5DDAG00184
IC13	IC	MSM82C51A-2RS		5DDAG00184
20 IC14	IC	MC74HC541AN		5DAAJ00933
IC15	IC	MC74HC244AN		5DAAJ00761
IC16	IC	M51953BL		5DAAB00150
IC17	IC	MC74HC4049N		5DAAJ00247
IC18	IC	TD62083AP		5DDAE00507
25 ICS3	SOCKET	ICC05-028-360TP		5ZJCK00056
J61	CONNECTOR	HKP-20M1		5JJAA00118
P17	CONNECTOR	XC5A-6482-1		5JWCF00043
PC1	PCB	H-6PCJD00263B		6PCJD00263
R1	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
30 R2	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R4	RESISTOR	FXD	ERJ-8GEYJ223V 1/8W 22K OHM	5REAG01754
R5	RESISTOR	FXD	ERJ-8GEYJ223V 1/8W 22K OHM	5REAG01754
R6	RESISTOR	FXD	ERJ-8GEYJ563V	5REAG01759
R7	RESISTOR	FXD	ERJ-8GEYJ105V 1/8W 1M OHM	5REAG01774
35 R8	RESISTOR	FXD	ERJ-8GEYJ273V 1/8W 27K OHM	5REAG01755

## PARTS LIST

		TITLE		SHEET NO.
		CPU	CDC-493AD	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
R9	RESISTOR	FXD	ERJ-8GEYJ273V 1/8W 27K OHM	5REAG01755
R10	RESISTOR	FXD	ERJ-8GEYJ333V 1/8W 33K OHM	5REAG01756
R11	RESISTOR	FXD	ERJ-8GEYJ473V 1/8W 47K OHM	5REAG01758
R12	RESISTOR	FXD	ERJ-8GEYJ393V 1/8W 39K OHM	5REAG01757
5 R13	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R14	RESISTOR	CFXD	ERJ-8GEYJ104V 1/8W 100K OHM	5REAG01762
R15	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R16	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R17	RESISTOR	FXD	ERJ-8GEYJ473V 1/8W 47K OHM	5REAG01758
10 R18	RESISTOR	FXD	ERJ-8GEYJ332V 1/8W 3.3K OHM	5REAG01744
R20	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R21	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R22	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R23	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
15 R24	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R25	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R26	RESISTOR	FXD	ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750
R28	RESISTOR	FXD	ERJ-8GEYJ332V 1/8W 3.3K OHM	5REAG01744
R38	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
20 R39	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R40	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R41	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R42	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R43	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
25 R44	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R45	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R46	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R47	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R48	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
30 R49	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R50	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R51	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R52	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
R53	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726
35 R54	RESISTOR	CFXD	ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726

## PARTS LIST

		TITLE		SHEET NO.	
		CPU		CDC-493AD	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
R55	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R56	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R57	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R58	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R59	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R60	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R61	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R62	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R63	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R64	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R65	RESISTOR CFXD	ERJ-8GEYJ101V	1/8W 100 OHM	5REAG01726	
R66	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R67	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R68	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R69	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R70	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
R71	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750	
RA1	RESISTOR	EXB-F9E103JY		5RZAS00499	
RA2	RESISTOR	EXB-F9E472J	4.7K OHM	5RZAS00260	
RA3	RESISTOR	EXB-F9E103JY		5RZAS00499	
RA4	RESISTOR	EXB-LD7104G		5RZAS00180	
RJ0	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RJ3	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RJ4	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RJ5	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RJ6	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RJ7	RESISTOR FXD	ERD-25UJ1R0T	1 OHM	5RDAA01733	
RV1	RESISTOR VAR	EVN-D2AA03B14		5RVAB00430	
RV2	RESISTOR VAR	EVN-D2AA03B14		5RVAB00430	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TR1	TRANSISTOR	2SC2712Y TE85L		5TAAG00186	
TR2	TRANSISTOR	2SC3398-TB		5TCAZ00011	
X1	TRANSDUCER	CSA8.46MT		5UNAB00033	

## PARTS LIST

		TITLE		SHEET NO.	
		CPU		CDC-493AD	
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
Z1	ROM LABEL	MPNN25138B		MPNN25138B	

## PARTS LIST

		TITLE				SHEET NO.
		RTTY DEMO		CMH-530		1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
C1	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C2	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C3	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C4	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C5	CAP,FXD TANTAL	202L2502 106K4	25V 10UF	5CSAC00324		
C6	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C7	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C8	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C9	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C10	CAP,FXD PLSTC	501N5002 103K1	50V 0.01UF	5CRAC00009		
C11	CAP,FXD PLSTC	501N5002 103K1	50V 0.01UF	5CRAC00009		
C12	CAP,FXD TANTAL	202L3502 474K5 471	35V 0.47UF	5CSAC00825		
C13	CAP,FXD TANTAL	202L3502 474K5 471	35V 0.47UF	5CSAC00825		
C14	CAP,FXD TANTAL	202L2502 106K4	25V 10UF	5CSAC00324		
C15	CAP,FXD TANTAL	202L2502 106K4	25V 10UF	5CSAC00324		
C16	CAP,FXD PLSTC	501N5002 224K1	50V 0.22UF	5CRAC00017		
C17	CAP,FXD PLSTC	501N5002 473K1	50V 0.047UF	5CRAC00013		
C18	CAP,FXD PLSTC	501N5002 103K1	50V 0.01UF	5CRAC00009		
C19	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C20	CAP,FXD TANTAL	202L3502 105K5471	35V 1UF	5CSAC00796		
C21	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C22	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C23	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C24	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C25	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C26	CAP,FXD CER	DD106F103Z50	50V 10000PF	5CBAB00400		
C27	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C28	CAP,FXD CER	DD106F103Z50	50V 10000PF	5CBAB00400		
C29	CAP,FXD CER	DD106F103Z50	50V 10000PF	5CBAB00400		
C30	CAP,FXD ELCTLT	ECE-A1ES100	25V10UF	5CEAA01348		
C31	CAP,FXD CER	DD106F103Z50	50V 10000PF	5CBAB00400		
C32	CAP,FXD CER	DD106F103Z50	50V 10000PF	5CBAB00400		
C33	CAP,FXD PLSTC	501N5002 103K1	50V 0.01UF	5CRAC00009		
C34	CAP,FXD PLSTC	501N5002 103K1	50V 0.01UF	5CRAC00009		
CD1	DIODE	1S2076S7		5TXAE00355		

## PARTS LIST

		TITLE				SHEET NO.
		RTTY DEMO		CMH-530		2
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
CD2	DIODE	1S2076S7		5TXAE00355		
CD3	DIODE	1S2076S7		5TXAE00355		
CD4	DIODE	1S2076S7		5TXAE00355		
CD5	DIODE	1S2076S7		5TXAE00355		
CD6	DIODE	1S2076S7		5TXAE00355		
CD7	DIODE	1S2076S7		5TXAE00355		
CD8	LED	TLR102A		5TZAD00020		
CD9	LED	TLR102A		5TZAD00020		
CP1	PHOTO COUPLER	MXD-421C		5TZBC00003		
CP2	PHOTO COUPLER	MXD-421C		5TZBC00003		
IC1	IC	TC74HC138AP		5DDAE01239		
IC2	IC	MSM82C51A-2RS		5DDAG00184		
IC3	IC	MSM82C55A-2RS		5DDAG00182		
IC4	IC	TC9122P		5DDAE00281		
IC5	IC	MC74HC160N		5DAAJ00182		
IC8	IC	HD7406P		5DDAF00113		
IC9	IC	HD74LS05P		5DDAF00291		
IC10	IC	NJM3403AD		5DAAN00085		
IC11	IC	NJM3403AD		5DAAN00085		
IC12	IC	NJM3403AD		5DAAN00085		
IC13	IC	NJM3403AD		5DAAN00085		
IC14	IC	NJM3403AD		5DAAN00085		
IC15	IC	NJM3403AD		5DAAN00085		
IC16	IC	TC4066BP		5DDAE00078		
IC17	IC	TC4030BP		5DDAE00050		
L1	COIL	FL-5H101K	100UH	5LCAA00013		
L2	COIL	FL-5H101K	100UH	5LCAA00013		
P15	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070		
P16	CONNECTOR	EC1C-22P-2.5DSA	22P	5JWBS00070		
PC1	PCB	H-6PCJD00169A		6PCJD00169		
R1	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R2	RESISTOR FXD	ERD-25UJ105	1/4W 1M OHM	5RDAA01417		
R3	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R4	RESISTOR FXD	ERD-25UJ473	1/4W 47K OHM	5RDAA01385		
R5	RESISTOR FXD	ERD-25UJ101	1/4W 100 OHM	5RDAA01321		



## PARTS LIST

		TITLE			SHEET NO.	
		RTTY DEMO			CMH-530	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
R6	RESISTOR FXD	ERD-25UJ473	1/4W 47K OHM	5RDAA01385		
R7	RESISTOR FXD	ERD-25UJ102	1/4W 1K OHM	5RDAA01345		
R8	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R9	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R10	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R11	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R12	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R13	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R14	RESISTOR FXD	ERD-25UJ333	1/4W 33K OHM	5RDAA01381		
R15	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R16	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R17	RESISTOR FXD	ERD-25UJ224	1/4W 220K OHM	5RDAA01401		
R18	RESISTOR FXD	ERD-25UJ224	1/4W 220K OHM	5RDAA01401		
R19	RESISTOR FXD	ERD-25UJ222	1/4W 2.2K OHM	5RDAA01353		
R20	RESISTOR FXD	ERD-25UJ682	1/4W 6.8K OHM	5RDAA01365		
R21	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R22	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R23	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R24	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R25	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R26	RESISTOR FXD	ERD-25UJ224	1/4W 220K OHM	5RDAA01401		
R27	RESISTOR FXD	ERD-25UJ224	1/4W 220K OHM	5RDAA01401		
R28	RESISTOR FXD	ERD-25UJ222	1/4W 2.2K OHM	5RDAA01353		
R29	RESISTOR FXD	ERD-25UJ332	1/4W 3.3K OHM	5RDAA01357		
R30	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R31	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R32	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R33	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R34	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R35	RESISTOR FXD	ERD-25UJ682	1/4W 6.8K OHM	5RDAA01365		
R36	RESISTOR FXD	ERD-25UJ223	1/4W 22K OHM	5RDAA01377		
R37	RESISTOR FXD	ERD-25UJ223	1/4W 22K OHM	5RDAA01377		
R38	RESISTOR FXD	ERD-25UJ223	1/4W 22K OHM	5RDAA01377		
R42	RESISTOR FXD	ERD-25UJ182	1/4W 1.8K OHM	5RDAA01351		
R43	RESISTOR FXD	ERD-25UJ102	1/4W 1K OHM	5RDAA01345		

## PARTS LIST

		TITLE			SHEET NO.	
		RTTY DEMO			CMH-530	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE		
R44	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R45	RESISTOR FXD	ERD-25UJ472	1/4W 4.7K OHM	5RDAA01361		
R46	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R47	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R48	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R49	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R50	RESISTOR FXD	ERD-25UJ472	1/4W 4.7K OHM	5RDAA01361		
R51	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R52	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R53	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R54	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R55	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		
R56	RESISTOR FXD	ERD-25UJ474	1/4W 470K OHM	5RDAA01409		
R57	RESISTOR FXD	ERD-25UJ183	1/4W 18K OHM	5RDAA01375		
R58	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R59	RESISTOR FXD	ERD-25UJ333	1/4W 33K OHM	5RDAA01381		
R60	RESISTOR FXD	ERD-25UJ333	1/4W 33K OHM	5RDAA01381		
R61	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R62	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R63	RESISTOR FXD	ERD-25UJ105	1/4W 1M OHM	5RDAA01417		
R64	RESISTOR FXD	ERD-25UJ153	1/4W 15K OHM	5RDAA01373		
R65	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R66	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R67	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R68	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R69	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R70	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R71	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R72	RESISTOR FXD	ERD-25UJ221	1/4W 220 OHM	5RDAA01329		
R73	RESISTOR FXD	ERD-25UJ221	1/4W 220 OHM	5RDAA01329		
R74	RESISTOR FXD	ERD-25UJ221	1/4W 220 OHM	5RDAA01329		
R75	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R76	RESISTOR FXD	ERD-25UJ103	1/4W 10K OHM	5RDAA01369		
R77	RESISTOR FXD	ERD-25UJ221	1/4W 220 OHM	5RDAA01329		
R78	RESISTOR FXD	ERD-25UJ104	1/4W 100K OHM	5RDAA01393		

## PARTS LIST

		TITLE		SHEET NO.	
		RTTY DEMO		5	
		CMH-530			
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RA1	RESISTOR	IHR-8-103JA(2.54)	10K OHM X8	5RZAB00136	
RA2	RESISTOR	IHR-4-103JA	10K OHM X4	5RZAB00043	
RV1	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV2	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV3	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV4	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV5	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV6	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
RV7	RESISTOR VAR	GF06P-10K OHM	10K OHM	5RMAB00053	
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP2	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP3	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP4	TEST TERMINAL	PCN6-PEA		5JDAA00364	
TP5	TEST TERMINAL	PCN6-PEA		5JDAA00364	

## PARTS LIST

PARTS LIST					SHEET NO.
DISPLAY				TITLE	1
CDE-705					
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C1	CAP,FXD CER	C3216JB1H473K-E-TP	0.047UF 50V	5CAAD01282	
C2	CAP,FXD CER	C3216CH1H330J-E-TP	33PF	5CAAD00794	
C3	CAP,FXD CER	C3216CH1H470J-E-TP	47PF	5CAAD00864	
C4	CAP,FXD CER	C3216CH1H470J-E-TP	47PF	5CAAD00864	
C5	CAP,FXD CER	C3216CH1H330J-E-TP	33PF	5CAAD00794	
C6	CAP,FXD CER	C3216CH1H330J-E-TP	33PF	5CAAD00794	
C7	CAP,FXD ELCTLT	ECE-A1HU100B	50V 10UF	5CEAA02184	
C8	CAP,FXD ELCTLT	ECE-A1EU101B		5CEAA01813	
C9	CAP,FXD CER	C3216JB1H102K-E-TP	1000PF 50V	5CAAD01267	
C10	CAP,FXD ELCTLT	ECE-A1HU100B	50V 10UF	5CEAA02184	
C11	CAP,FXD ELCTLT	ECE-A1HU100B	50V 10UF	5CEAA02184	
C12	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C13	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C14	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C15	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C16	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C17	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C18	CAP,FXD TANTAL	267M1602 105ML	16V 1UF	5CSAC01050	
C19	CAP,FXD C CER	C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789	
C20	CAP,FXD CER	C3216X7R1E104K-E-TP	0.1UF	5CAAD01237	
CD1	DIODE	1SS184 TE85L		5TXAD00290	
CD2	DIODE	1SS184 TE85L		5TXAD00290	
CD3	DIODE	1SS184 TE85L		5TXAD00290	
CD4	DIODE	1SS184 TE85L		5TXAD00290	
CD5	DIODE	1SS184 TE85L		5TXAD00290	
CD6	DIODE	1SS184 TE85L		5TXAD00290	
CD7	DIODE	1SS184 TE85L		5TXAD00290	
CD8	DIODE	1SS184 TE85L		5TXAD00290	
CD9	LED	PR5551K		5TZAW00035	
CD10	LED	PG5551KY		5TZAW00055	
CD11	LED	PG5551KY		5TZAW00055	
CD12	LED	PG5551KY		5TZAW00055	
CD13	LED	PG5551KY		5TZAW00055	
CD14	LED	PG5551KY		5TZAW00055	
CD15	LED	PG5551KY		5TZAW00055	

## PARTS LIST

PARTS LIST					SHEET NO.
DISPLAY				TITLE	2
CDE-705					
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
CD16	LED	SEL2310E		5TZAA00165	
CD17	LED	SEL2310E		5TZAA00165	
CD18	DIODE	SEL2110S		5TXAN00205	
CD19	DIODE	SEL2110S		5TXAN00205	
CD20	DIODE	1SS226 TE85L		5TXAD00320	
CD21	DIODE	1SS226 TE85L		5TXAD00320	
CD22	DIODE	HZ9A2RE		5TXAE00592	
CV1	CAPACITOR VAR	ECV-1ZW20X60		5CVAC00034	
F1	VFD	CC1029M		5NZBE00004	
FL1	FILTER	DSS310-55D223S	50V 0.022UF	5NXAA00006	
IC1	IC	MSM80C85A-2RS		5DDAG00176	
IC2	IC	TC74HC573AP		5DDAE01345	
IC3	IC	H-7DEJD0183B		7DEJD0183B	
IC4	IC	TC74HC138AP		5DDAE01239	
IC5	IC	MSM81C55-5RS		5DDAG00206	
IC6	IC	MSM81C55-5RS		5DDAG00206	
IC7	IC	LR3671D		5DDBN00037	
IC8	IC	MSM82C51A-2RS		5DDAG00184	
IC9	IC	MSM6242BRS		5DDAG00226	
IC10	IC	MSM6253RS		5DDAG00305	
IC11	IC	MC74HC564N		5DAAJ00228	
IC12	IC	MSL915RS		5DDAG00052	
IC13	IC	MSL915RS		5DDAG00052	
IC14	IC	MSL915RS		5DDAG00052	
IC15	IC	MSL915RS		5DDAG00052	
IC16	IC	TC7W32F TE12L		5DDAE01894	
IC17	IC	MC74HC4053N		5DAAJ00251	
IC18	IC	MC74HC259N		5DAAJ00207	
ICS3	SOCKET	ICC05-028-360TP		5ZJCK00056	
J46	CONNECTOR	B4B-EH-A		5JWAP00226	
J47	TERMINAL	FFC-5CM1		5JTCA00238	
J48	TERMINAL	FFC-4CM1		5JTCA00218	
L1	COIL	FL-9H471J-H		5LCAA00700	
L2	COIL	LAL04NA330K		5LCAA00196	
P39	CABLE	H-6ZCJD00348A		6ZCJD00348	

## PARTS LIST

		TITLE			SHEET NO.
		DISPLAY	CDE-705		3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
P40	CABLE		H-6ZCJD00124	6ZCJD00124	
P41	CABLE		H-6ZCJD00125	6ZCJD00125	
PC1	PCB		H-6PCJD00619C	6PCJD00619	
PG1	ENCODER		H-6BZJD00001	6BZJD00001	
R1	RESISTOR FXD		ERJ-8GEYJ223V 1/8W 22K OHM	5REAG01754	
R2	RESISTOR FXD		ERJ-8GEYJ562V 1/8W 5.6K OHM	5REAG01747	
R3	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R4	RESISTOR FXD		ERJ-8GEYJ332V 1/8W 3.3K OHM	5REAG01744	
R5	RESISTOR FXD		ERJ-8GEYJ332V 1/8W 3.3K OHM	5REAG01744	
R6	RESISTOR FXD		ERJ-8GEYJ561V 1/8W 560 OHM	5REAG01735	
R7	RESISTOR CFXD		ERJ-8GEYJ182V 1/8W 1.8K OHM	5REAG01741	
R8	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R9	RESISTOR FXD		ERJ-8GEYJ273V 1/8W 27K OHM	5REAG01755	
R12	RESISTOR FXD		ERJ-8GEYJ221V 1/8W 220 OHM	5REAG01730	
R13	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R14	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R15	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R16	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R17	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R18	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R19	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R20	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R21	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R22	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R23	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R24	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R25	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R26	RESISTOR FXD		ERJ-8GEYJ331V 330 OHM 1/8W	5REAG01732	
R27	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
R28	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R29	RESISTOR CFXD		ERJ-8GEYJ101V 1/8W 100 OHM	5REAG01726	
R30	RESISTOR FXD		ERJ-8GEYJ221V 1/8W 220 OHM	5REAG01730	
R31	RESISTOR FXD		ERJ-8GEYJ221V 1/8W 220 OHM	5REAG01730	
R32	RESISTOR FXD		ERJ-8GEYJ103V 1/8W 10K OHM	5REAG01750	
RV1	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	

## PARTS LIST

		TITLE			SHEET NO.
		DISPLAY	CDE-705		4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
RV2	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
RV3	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
RV4	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
RV5	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
RV6	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
RV7	RESISTOR VAR		EVH-0XA009A14	5RVAB00261	
RV8	RESISTOR VAR		EVH-0XA009B14	5RVAB00262	
S1	SWITCH		SKHAR	5SCAF00194	
S2	SWITCH		SKHAR	5SCAF00194	
S3	SWITCH		SKHAR	5SCAF00194	
S4	SWITCH		SKHAR	5SCAF00194	
S5	SWITCH		SKHAR	5SCAF00194	
S6	SWITCH		SKHAR	5SCAF00194	
S7	SWITCH		SKHAR	5SCAF00194	
S8	SWITCH		SKHAR	5SCAF00194	
S9	SWITCH		SKHAR	5SCAF00194	
S10	SWITCH		SKHAR	5SCAF00194	
S11	SWITCH		SKHAR	5SCAF00194	
S12	SWITCH		SKHAR	5SCAF00194	
S13	SWITCH		SKHAR	5SCAF00194	
S14	SWITCH		SKHAR	5SCAF00194	
S15	SWITCH		SKHAR	5SCAF00194	
S16	SWITCH		SKHAR	5SCAF00194	
S17	SWITCH		SKHAR	5SCAF00194	
S18	SWITCH		SKHAR	5SCAF00194	
S19	SWITCH		SKHAR	5SCAF00194	
S20	SWITCH		SKHAR	5SCAF00194	
S21	SWITCH		SKHAR	5SCAF00194	
S22	SWITCH		SKHAR	5SCAF00194	
S23	SWITCH		SKHAR	5SCAF00194	
S24	SWITCH		SKHAR	5SCAF00194	
S25	SWITCH		SKHAR	5SCAF00194	
S26	SWITCH		SKHAR	5SCAF00194	
S27	SWITCH		SKHAR	5SCAF00194	
S28	SWITCH		SKHAR	5SCAF00194	

PARTS LIST

		TITLE		SHEET NO.
		DISPLAY	CDE-705	5
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
S29	SWITCH	SKHHAR		5SCAF00194
S30	SWITCH	SKHHAR		5SCAF00194
S31	SWITCH	SKHHAR		5SCAF00194
S32	SWITCH	SKHHAR		5SCAF00194
S33	SWITCH	D-2023KB-J3D AT-451		5SAAB00737
T1	TRANSFORMER	H-6LUJD00017		6LUJD00017
TP1	TEST TERMINAL	PCN6-PEA		5JDAA00364
TR1	TRANSISTOR	2SD471 LA	HFE135-270	5TDAB00020
TR2	TRANSISTOR	2SD471 LA	HFE135-270	5TDAB00020
X1	TRANSDUCER	CSA8.46MT		5UNAB00033
X2	CRYSTAL	MX-38T 32.768KHZ		5XHAA00509
Z1	ROM LABEL	MPNN25139B		MPNN25139B

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## PARTS LIST

		TITLE			SHEET NO.
		CHASSIS			NRD-535
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C11	CAP,FXD CER		C3216JB1H473K-E-TP	0.047UF 50V	5CAAD01282
C12	CAP,FXD CER		C3216JB1H473K-E-TP	0.047UF 50V	5CAAD01282
C13	CAP,FXD ELCTLT		ECES1VU472G	35WV 4700UF	5CEAA01681
C14	CAP,FXD ELCTLT		ECE-A1EU101	25V 100UF	5CEAA01839
C15	CAP,FXD CER		DD106F103Z50	50V 10000PF	5CBAB00400
C16	CAP,FXD CER		DE7150FZ103PVA1		5CBAB01618
C17	CAP,FXD ELCTLT		ECE-A1EU470	47UF 25V	5CEAA01820
C18	CAP,FXD ELCTLT		ECE-A1EU470	47UF 25V	5CEAA01820
C19	CAP,FXD ELCTLT		ECE-A1EU470	47UF 25V	5CEAA01820
C20	CAP,FXD ELCTLT		ECE-A1EU470	47UF 25V	5CEAA01820
C21	CAP,FXD ELCTLT		ECE-A1EU470	47UF 25V	5CEAA01820
C22	CAP,FXD CER		C3216CH1H680J-E-TP	68PF	5CAAD00929
C23	CAP,FXD CER		C3216CH1H100D-E-TP	10PF	5CAAD00785
C24	CAP,FXD CER		C3216CH1H121J-E-TP	120PF	5CAAD00931
C25	CAP,FXD CER		C3216CH1H220J-E-TP	22PF	5CAAD00869
C26	CAP,FXD CER		C3216CH1H560J-E-TP		5CAAD00863
C27	CAP,FXD C CER		C3216CH1H101J-E-TP	50V 100PF	5CAAD00780
C28	CAP,FXD C CER		C3216CH1H101J-E-TP	50V 100PF	5CAAD00780
C29	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C51	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C52	CAP,FXD ELCTLT		ECEA1EU471	25V 470UF	5CEAA01756
C53	CAP,FXD ELCTLT		ECEA1EU471	25V 470UF	5CEAA01756
C54	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C55	CAP,FXD ELCTLT		ECE-A1EU101	25V 100UF	5CEAA01839
C56	CAP,FXD C CER		C3216JB1H103K-E-TP	50V 0.01UF	5CAAD00789
C57	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C58	CAP,FXD ELCTLT		ECE-A1EU220	16V 22UF	5CEAA01908
C61	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C62	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C63	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C64	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C65	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C66	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C67	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C68	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237

## PARTS LIST

		TITLE			SHEET NO.
		CHASSIS			NRD-535
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
C69	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C70	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C71	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C72	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C73	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C74	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C75	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C76	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C77	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C78	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C79	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
C80	CAP,FXD CER		C3216X7R1E104K-E-TP	0.1UF	5CAAD01237
CD3	DIODE		EM1Z	200V 1A	5TXAN00061
CD4	DIODE		RK44		5TXAN00114
CD5	DIODE		U15C TYPE 1		5TXAE00851
CD6	DIODE		U15C TYPE 1		5TXAE00851
CD7	DIODE		U15C TYPE 1		5TXAE00851
CD8	DIODE		U15C TYPE 1		5TXAE00851
CD10	DIODE		1SS226 TE85L		5TXAD00320
F2	FUSE		MF61NR1	1A	5ZFAD00403
FS1	VTG CHANGER		S-17221#9 100,120,22		5ZZEG00002
IC4	IC		0,240 UPC2002V		5DAAA00299
IC4-1	HEAT SINK		IC-1625-ST		5ZKAE00042
IC5	IC		NJM78L05A	5V 0.1A	5DAAN00046
IC6	IC		MAX232CPE		5DDED00001
IC7	IC		SC7SU04FEL		5DDAS00176
IC8	IC		SC7SU04FEL		5DDAS00176
J5	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J6	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J7	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J8	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J9	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J10	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J13	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082
J14	CONNECTOR		PCN6-22S-2.5DS		5JDAA00082

## PARTS LIST

		TITLE		SHEET NO.
		CHASSIS	NRD-535	3
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
J15	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J15-1	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J16	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J16-1	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J17	CONNECTOR	XC5B-6431-0	64P	5JWCF00012
J18	CONNECTOR	B8P9-VB-2		5JWAP00458
J21	JACK	S-I0814#01		5ZZEG00003
J22	CONNECTOR	AC-P01CF01	UL	5JWEZ00005
J23	TERMINAL	M-110C-3		5JTBFO0369
J24	PIN JACK	S-Q3097#03		5JJAL00055
J25	PIN JACK	S-Q3097#03		5JJAL00055
J26	CONNECTOR	XM3B-2532-112	25P	5JWCF00013
J27	PIN JACK	S-Q3097#03		5JJAL00055
J29	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J30	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J31	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J32	CONNECTOR	PCN6-22S-2.5DS		5JDAA00082
J33	PIN JACK	S-Q3097#03		5JJAL00055
J34	PIN JACK	S-Q3097#03		5JJAL00055
J35	PIN JACK	S-Q3096#03		5JJAL00056
J36	PIN JACK	S-Q3097#03		5JJAL00055
J37	TERMINAL	PT-C02P01		5JJAK00003
J38	CONNECTOR	FM-MR-M(FM-205)		5JWBK00004
J39	CONNECTOR	B5P6-VB-2		5JWAP00459
J40	CONNECTOR	IL-G-12P-S3T2-E		5JWAD00082
J41	CONNECTOR	IL-G-12P-S3T2-E		5JWAD00082
J42	CONNECTOR	IL-G-6P-S3T2-E		5JWAD00099
K1	RELAY	LZ12H		5KLAB00033
L1	COIL	LAL03VSR22M		5LCAA00284
L2	COIL	LAL03VSR22M		5LCAA00284
P47	CONNECTOR	H-6ZCJD00100		6ZCJD00100
P61	CABLE	HIF2B(A)3BA-20D-BC-1		5ZCAG00117
PC1	PCB	H-6PCJD00622A		6PCJD00622
R8	RESISTOR FXD	ERJ-8GEYJ223V	1/8W 22K OHM	5REAG01754
R10	RESISTOR FXD	CRH20G5 OHM J		5RHAA01300

## PARTS LIST

		TITLE		SHEET NO.
		CHASSIS	NRD-535	4
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
R10-1		0 20W		5ZJAP00003
R12	RESISTOR FXD	ERJ-8GEYJ332V	1/8W 3.3K OHM	5REAG01744
R13	RESISTOR FXD	ERJ-8GEYJ330V	1/8W 33 OHM	5REAG01720
R14	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768
R15	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R16	RESISTOR FXD	ERD-50TJ103	1/2W 10K OHM	5RDAA00859
R17	RESISTOR FXD	ERJ-8GEYJ105V	1/8W 1M OHM	5REAG01774
R18	RESISTOR FXD	ERJ-8GEYJ221V	1/8W 220 OHM	5REAG01730
R19	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R20	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R21	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R24	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746
R25	RESISTOR FXD	ERJ-8GEYJ472V	1/8W 4.7K OHM	5REAG01746
R51	RESISTOR FXD	ERJ-8GEYK1R0V		5REAG02208
R52	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R53	RESISTOR FXD	ERJ-8GEYJ120V	1/8W 12 OHM	5REAG01715
R54	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
R55	RESISTOR FXD	ERJ-8GEYJ103V	1/8W 10K OHM	5REAG01750
R56	RESISTOR FXD	ERJ-8GEYJ334V	1/8W 330K OHM	5REAG01768
R57	RESISTOR FXD	ERJ-8GEYJ102V	1/8W 1K OHM	5REAG01738
RV1	RESISTOR VAR	EVN-D8AA03B14	10K OHM	5RVAB00428
S1	SWITCH	SSP322		5SBAB00206
SP1	SPEAKER	EAS-8P29		5USAE00047
T1	TRANSFORMER	H-6LTJD00015		6LTJD00015
T2	RF XFMR	H-6LHJD00380		6LHJD00380
TR2	TRANSISTOR	2SC3398-TB		5TCAZ00011
TR3	TRANSISTOR	2SA1162-YTE85L		5TAAG00182
TR4	TRANSISTOR	2SC2712Y TE85L		5TAAG00186
TR5	TRANSISTOR	2SC3398-TB		5TCAZ00011
TR6	TRANSISTOR	2SA1344-TB		5TAAL00004
TR7	TRANSISTOR	2SC3398-TB		5TCAZ00011
X1	TRANSDUCER	CSA12.0MT040		5UNAB00035

## PARTS LIST

		TITLE		SHEET NO.
		JACK	CQB-61	1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
J43	JACK		HLJ4305-01-3070	5JJAM00061
J44	JACK		HSJ0786-01-010	5JJAM00022
P42	CONNECTOR		H-6ZCJD00104	6ZCJD00104
PC1	PCB		H-6PCJD00623A	6PCJD00623
R22	RESISTOR FXD		ERD-S1VJ101T 0.5W	5RDAA01711
R23	RESISTOR FXD		ERD-S1VJ101T 0.5W	5RDAA01711

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## PARTS LIST

		TITLE		SHEET NO.
		AVR	CBD-1080	1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE
C1	CAP,FXD PLSTC		ECQ-V1H104JZ3	5CRAA00617
C2	CAP,FXD ELCTLT		ECE-A1EU100B	5CEAA01864
C3	CAP,FXD ELCTLT		ECE-A1EU100B	5CEAA01864
C4	CAP,FXD ELCTLT		ECE-A1EU101B	5CEAA01813
C5	CAP,FXD PLSTC		ECQ-V1H104JZ3	5CRAA00617
C6	CAP,FXD PLSTC		ECQ-V1H104JZ3	5CRAA00617
C7	CAP,FXD ELCTLT		ECE-A1EU100B	5CEAA01864
C8	CAP,FXD ELCTLT		ECE-A1EU100B	5CEAA01864
CD1	DIODE		1S2076RE	5TXAE00588
CD2	DIODE		HZ3B-2RE	5TXAE00566
IC1	IC		M5237L	5DDAB00346
IC2	IC		TA78005AP	5DAAD00082
IC3	IC		TA78009AP	5DAAD00124
P18	CABLE		H-6ZCJD00349A	6ZCJD00349
PC1	PCB		H-6PCJD00621A	6PCJD00621
R1	RESISTOR FXD		ERD-25UJ221T 220 OHM 1/4	5RDAA01543
R2	RESISTOR FXD		ERD-25UJ333T 1/4W 33K OHM	5RDAA01591
R3	RESISTOR FXD		ERD-25UJ392T 1/4W 3.9K OHM	5RDAA01608
R4	RESISTOR FXD		ERD-25UJ101T 1/4W 100 OHM	5RDAA01599
R5	RESISTOR FXD		ERD-25UJ222T 2.2K OHM 1/4W	5RDAA01548
R6	RESISTOR FXD		ERD-25UJ103T 10K OHM 1/4W	5RDAA01547
RV1	RESISTOR VAR		EVN-D8AA03B13 1K OHM	5RVAB00433
TR1	TRANSISTOR		2SB553-Y	5TBAE00036
TR1-2	ACCESSORY		AC229	5ZKAH00020
TR1-3	BUSING		YC-40B	5ZZDY00005

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PARTS LIST

		ACCESSORY		TITLE	SHEET NO.
				NRD-535FUZOKU	1
PART NO	PART NAME	TYPE	DESCRIPTION	CODE	
AC1	CONNECTOR	M-P-3		5JAAN00010	
AC2	PIN PLUG	AR-568M		5JWGC00004	
AC3	2P PLUG	PJ-2272		5JAJ00167	
AC4	PLUG	AP314		5JJB00006	
AC5	FUSE	MF61NR1	1A	5ZFAD00403	
AC6	DC POWER CABLE	H-6ZCJD00127		6ZCJD00127	

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For further information, contact:

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