MAINTENANCE MANUAL

800MHz BOARD ASSEMBLY
19C852800P1/P2

TABLE OF CONTENTS

	Page
DESCRIPTION	C1
CIRCUIT ANALYSIS	C1
SYSTEM CONTROL BOARD	C1
FREQUENCY SYNTHESIZER BOARD	C10
EXCITER BOARD	C14
PA BOARD	C15
RECEIVER BOARD	C17

GENERAL ELECTRIC*
U.S.A.

DESCRIPTION

The transmitter/receiver/synthesizer/system control board (TRS) for RANGR provides all functions necessary for two-way communications. The TRS board is controlled by the control unit.

The TRS board interconnects with the power/control cable from the control unit and the power amplifier board.

The TRS board contains the transmitter (less PA) and receiver circuitry, microcomputer and EEPROM frequency synthesizer, audio processor, and voltage regulators. The microcomputer controls all system functions, supplies frequency data to the frequency synthesizer, and tone/code data to the Channel Guard.

All RF frequencies are generated by the frequency synthesizer.

The transmitter PA is mounted on a separate board located along the side of the radio near the heat sink assembly.

In addition to the normal radio functions, the microcomputer contains self diagnostic maintenance routines to aid in troubleshooting the radio. Included are an internal test of the microcomputer and input/output tests to assure proper operation of the data port and data bus. Details and procedures are included in the Service Section of this manual.

Centralized metering jacks for servicing are accessible from the top of the radio.

The system control and interface circuits consist of the microcomputer, electrically eraseable PROM, interface circuits for voltage shifting and protection and a watchdog timer. The EEPROM gives the user the capability to program the radio's personality as desired. The EEPROM contains the receive and transmit frequency data, Channel Guard tone frequencies/digital codes and the CCT delay on a per channel basis.

> NOTE
>
> The EEPROM may be programmed serially through the front connector using the General Electric Universal Radio Programmer Model TQ2310.

CIRCUIT ANALYSIS SYSTEM CONTROL

MICROCOMPUTER AND CONTROL

The microcomputer interfaces with the control unit through J701/J702 and responds to all user commands and control functions originating from the control unit. It provides the transmit and receive data to the frequency synthesizer, switching information for tone and digital Channel Guard, and provides the carrier control timer (CCT) function when the radio is in the transmit mode.

When the microphone is keyed the PTT line from the control unit goes low. This low is applied to the microcomputer through buffer TR702 and inverter TR703. TR702 is controlled by ignition switch A+. The ignition switch must be on and A+ applied to the base of TR702. TR702 must be turned on to permit keying of the transmitter. When Channel Guard is present, the release of the PTT signal is delayed by the microcomputer for approximately 160 milliseconds to eliminate any squelch tails.

The microcomputer immediately closes the antenna relay switch by applying a low level to DPTT at IC702-28. The microcomputer then delays 15 milliseconds before transmit 9V is switched on by applying a low

level to TX ENB at IC702-32. This is done to guarantee that the antenna relay contacts are closed before the transmitter is energized. Once DPTT is low, the receive audio is muted. Buffers TR705 and TR704 provide DPTT to the audio control circuits, and antenna relay. IC704-B provides the $\overline{\text{DPTT}}$ signal to the Tx/Rx VCO's and the audio processor.

The TX ENB line is controlled by microcomputer port 1, bit 5 (IC702-32) through inverter TR710 and buffer TR712. A low level on IC702-32 turns TR710 off, allowing the base of TR712 to rise. TR712 turns on, and applies A- to the TX ENB line. Inverter TR711 is also turned on during this time to inhibit the alert tone PTT.

CHANNEL SELECTION

The microcomputer and EEPROM provide the radio with up to 16 independent transmit and receive frequencies. Each time the PTT switch is operated the microcomputer transfers channel data from the EEPROM and converts it to frequency data assigned to the selected channel. The frequency data is then loaded serially into the frequency synthesizer.

The microcomputer continually monitors the status of tri-state buffers IC703A-D. These buffers are periodically turned off by a positive 5 volt, 1 millisecond pulse from IC702-36. At the same time PROM power switch TR708 is turned on and applies +5 VDC to the EEPROM. When the buffers are turned on, channel select data is loaded into input/output ports of the microcomputer through ports P20-P23. Power is then applied to the EEPROM and the tri-state buffers are turned off. The microcomputer converts the channel select data into address information, accesses the EEPROM, and receives the frequency data stored in the addressed location. This data then passes through the I/O ports of the EEPROM and P20-P23 of the microcomputer. The conversion process is repeated eight times in rapid succession (eight locations are required for each channel) and the data loaded serially into the frequency synthesizer over the clock and data lines. This data also includes Channel Guard information, if present, and carrier control timer information on a per channel basis. A 4-millisecond channel change pulse from port P16 of the microcomputer is also sent to the frequency synthesizer to speed up channel acquisition.

WATCHDOG TIMER

The watchdog timer, consisting of a digital counter IC701-A and TR701, monitors the operation of the microcomputer IC701-A generates a reset pulse in the unlikely condition that the microcomputer gets lost and does not execute the software properly. A 6 MHz crystal, X701, steps the microcomputer through the software. As programmed in software a random pulse appears at IC70235 and is applied to the base of inverter TR701 momentarily turning it on and inhibiting any reset pulse from timer IC701-A. A discharging circuit consisting of R710 and C705 forces the microcomputer to toggle IC701-A. If the timer does not receive any inputs for a specified period of time, TR701 turns off and IC701-A times out and applies a reset pulse to pin 4 of the microcomputer. The watchdog reset will normally restore the microcomputer to normal operation so that only one pulse will occur. In the event the microcomputer is not restored to normal operation, a 6 Hz square wave will appear on the reset line and the indicator CD710 (now unlocked) will turn on. Refer to the self diagnostic routine to determine the problem.

ADVANCE CHANGE PULSE

The advance change pulse is received

from connector J702 and applied to the microcomputer interrupt port IC702-6 through inverter TR707. The advance change pulse is important in radios equipped with PSLM. When a call is received on a priority channel the advance change pulse interrupts the microcomputer, forcing it to service immediately the I/O circuits. The tristate buffers are turned on and new channel select information read in.

CARRIER CONTROL TIMER

The carrier control timer function is executed by the microcomputer under software control on a per channel basis. When the programmed time has lapsed an alert tone is generated from P13 (IC702-30) on the microcomputer, applied to the audio PA and heard on the speaker. The CCT may be programmed for 1 or 2 minutes or disabled (programmed for no CCT).

VOLTAGE TRANSLATION

Inverter buffers IC704B-F, TR713, and TR710 translate the 5 VDC levels required by the microcomputer to the +9 VDC level used by the frequency synthesizer. Inverter TR709 restores the proper polarity to the clock.

FREQUENCY SEGMENT CONTROL

To achieve rapid wideband VCO tuning extending over the 806-825 MHz and 851-870 MHz range, two frequency segments are used.

By selecting 1 segment the operating frequency spread of the VCO is limited and frequency lock time reduced. Each segment is identified by two bits on a per channel basis and programmed into the EEPROM. Capacitors are switched in and out of the VCO tank circuit to set the VCO tuning range to cover the correct frequency segment.

The frequency segment control circuit consists of a dual "D" type flip-flop operating under control of the microcomputer. The two frequency segment identification bits appear on the channel change and data lines and inputted to dual "D" FF IC705. At the appropriate time the microcomputer applies the enable signal to clock the new segment data change through the FF. The output of the FF's is a binary expression identifying the frequency segment selected. Table 1 identifies the binary expression and the selected frequency segment.

The output of the frequency segment control circuit is applied to the modulation level control and the frequency segment selector circuits.

		FF OUTPUT		
SEGMENT	FREQUENCY SPLIT (MHz)	IC705-1 INPUT (TR216)	IC705-2 INPUT (TR217)	GROUNDED MODULATION RESISTOR
1	Tx : 806-825 Rx : 851-870	0	1	NONE
2	Tx : 851-870 Rx : 851-870	1	0	R276

TABLE 1 Frequency Segment Selection

TX AUDIO PROCESSOR

The audio processor provides audio pre-emphasis with amplitude limiting and post limiter filtering and a total gain of approximately 24 dB. Approximately 27 dB gain is provided by IC607A and 4 dB by IC607B and -7 dB by R653, R654.

The 9 Volt regulator IC606 powers the audio processor and applies regulated 9 volts to a voltage divider consisting of R651, R655 and Synmetry RV604. The +4.5 V output from the voltage divider establishes the operating reference point for operational amplifiers IC607A and IC607B. C647 provides an AC ground at the summing input of both operational amplifiers.

When the input signal to IC607A-2 is of a magnitude such that the amplifier output at IC607A-1 does not exceed 5 volts PP, the amplifier provides a nominal 27 dB gain. When the audio signal level at IC607A-1 exceeds 5 volts PP, the amplifier gain is reduced to 1. This limits the audio amplitude at IC607A-1 to 6 volts PP.

Resistors R650, R652 and C646 comprise the audio pre-emphasis network that enhances the signal-to-noise ratio. R652 and C646 control the pre-emphasis curve below limiting. R650 and C646 control the cut-off point for high frequency pre-emphasis. As high frequencies are attenuated, the gain of IC607 is increased.

Audio from the microphone is coupled to the audio processor through R650 and C646.

The amplified output of IC607A is coupled through R653, C650, R656, R657, R658 and bilateral switch IC608C to a second operational amplifier IC607B. The bilateral switch is controlled by the DPTT line so that Tx audio is transmitted only when the PTT switch is pressed.

The Channel Guard tone input is applied to IC607B-6 through R662 and bilateral switch IC608C. The CG tone is then combined with the microphone audio at IC607. IC607B provides a signal gain of approximately 4 dB.

A post limiter filter consisting of IC607B, R656-R659, C651 and C652 provides 12 dB per octave roll-off. R653 and C649 provide an additional 6 dB per octave roll-off for a total of 18 dB. The output of the post limiter filter is coupled through DVG unit or directly to the synthesizer Tx MOD.

TX enable switch IC608-D shorts out operational amplifier IC607-A when the radio is in the receive mode. The TX ENABLE signal is generated by the microcomputer when the PTT switch is released and is less than 2.7 VDC in the receive mode.

RX AUDIO

Received audio from the FM detector is applied to the input of audio pre-amplifier IC603-A. The audio output level of the audio preamplifier is

adjusted by Volume/Squelch HI level control RV602 for 300 millivolts RMS. The audio of 300 millivolts RMS is applied to the audio preamplifier (IC603-B) through the Tone Reject filter (HC605). When DVG is opptionally added, this audio is applied to DVG circuit (HC602, 603). Audio output from DVG circuit is applied to Tone Reject filter (HC605) through the pins of J603 2 & 3 . The audio is then applied to the volume and squelch controls in the control unit through connector J701-17.

Audio is returned on VOL ARM through J701-18 and applied to audio gate (bilateral switch) IC601-B. The audio gate is controlled by $\overline{\text{DPTT}}$ (delayed Push-To-Talk) and $\overline{\text{PA KEY/CCT PA ENB}}$ and is turned on when the control input (pin 5) exceeds 7 VDC. The gate is turned off when the control input is less than 2 volts. Receipt of anon-frequency signal (if present) with sufficient signal-to-noise level and the correct Channel Guard frequency

will cause the audio control circuit to apply +9 volts to IC601-B turning the audio gate on.

Audio from the audio gate is applied to the de-emphasis network consisting of a low-pass filter (HC604) and high pass filter.

The low pass filter provides a 6 dB per octave roll-off between 300 and 3000 Hz. The high pass filter attenuates frequencies below 300 Hz.

The audio output from the de-emphasis network is applied to the non-inverting input of the audio power amplifier. The audio power amplifier is comprised of IC602, and associated circuitry, and provide 10 watts (6.3 VRMS across a 4 ohm load) of audio output power at radio output terminals J702-1 and 5. The gain of IC602 is determined by the value of R615.

SQUELCH CIRCUITS

The squelch circuit(HC601) monitors noise on the SQ ARM output line and allows the receiver to be unmuted when an on frequency signal reduces the noise level below the squelch threshold setting.

The 300 millivolt output of the audio preamplifier is applied to the squelch circuit through the variable squelch control in the control unit. The squelch control sets the noise threshold level required to operate the squelch circuit. When the noise falls below the threshold level, the receiver is unmuted.

The squelch circuit(HC601) consists of a high pass filter, an averaging detector, DC amplifier, and a Schmitt trigger shown in Figure 1. The high pass filter consisting of HC601-A, removes all voice signals from the SQ ARM output and couples noise to HC601-B.

Noise in the 6-8 kHz range is applied to the averaging detector consisting of HC601-B. The noise is rectified and filtered to provide an average DC output level proportional to the noise input. DC output level is adjusted by RV605.

The average DC level is amplified by HC601-C to a level ranging from 0 to 6.0 VDC, and applied to the non-inverting input of the Schmitt trigger, HC601-D. The inverting input of HC601-D is referenced to 4.5 VDC. IC603-C provides the stable 4.5 VDC reference voltage.

When the DC level exceeds 4.5 VDC, Schmitt trigger HC601-D switches and provides a positive voltage to the CAS (Carrier Activity Sensor) and RUS (Receiver Unsquelched Sensor) control transistors in the audio control circuits. The Schmitt trigger will remain on until the threshold level falls below approximately 4.3 VDC. This difference in voltage between the firing point and turn-off point provides sufficient hystersis to eliminate "bubbling" -- i.e., noise popping in the speaker. The "bubbling" would normally be caused by transitional changes in the DC level around the reference point which allows the receiver to be unmuted.

When an on-frequency signal is received, there will be little or no noise present at the squelch input. This results in an absence of voltage at the output of the squelch circuit Schmitt trigger, allowing the receiver to be unmuted.

AUDIO CONTROL

The audio control circuits shown by Figure 2 control the operation of the audio gate (IC601-B) and the final audio PA and consists of TR601-605, inverter IC601-A and associated circuitry. The audio control circuit inputs consist of DPTT (Delayed Push-To-Talk), RX MUTE (Receiver Mute), PA KEY/CCT PA ENB(Public Address Key/Carrier Control Timer Squelch Disable), and the output of the squelch circuit.

When an on-frequency signal with the correct Channel Guard Tone is

received, CAS control transistor TR601 and RUS control transistor TR602 are turned off by the absence of a positive voltage at their bases. The CAS line from the collector of TR601 rises to +9 VDC and is supplied to J702-21.

The collector of RUS Transistor TR602 also rises to +9 VDC and turns on inverter IC601-A. A- is then applied to the base of inverter TR603, turning it off and allowing its collector to go high. The positive voltage on the collector is applied to audio gate IC601-B, turning it on. TR604 is biased on but has no affect on audio switches TR605. The base of the transistor is connected to the output of audio control switch IC601A-2 which is at A-. Therefore TR605 turned off, allowing the audio PA's to turn on and complete the audio path to the speaker.

When the microphone is keyed, the PTT/DPTT input is low. This low is applied to audio gate IC601-B through CD604B, turning IC601-B off. It is also applied to audio control switch IC601-A (through CD604A) turning it off. TR603 is also off and TR604,TR605 are on. TR605 turns off audio PA's IC602.

POWER DISTRIBUTION

Battery supply A+ enters the radio through the front connector at J750-19. A- enters through J750-21. Figure 3 is a block diagram of the power distribution system. Two heavy connections are provided for transmit A+ and transmit A- and connect to two busses. The busses are connected to the PA through a special feed through arrangement. A second set of wires is routed through the control unit and supplies power to the audio amplifier and all other radio circuitry.

CAUTION

The CMOS Integrated Circuit devices used in this equipment can be destroyed by static discharges. Before handling one of these devices, the serviceman should discharge himself by touching the case of a bench test instrument that has a 3-prong power cord connected to an outlet with known good earth ground. When soldering or desoldering a CMOS device, the soldering iron should also have a 3-pong power cord connected to an outlet with a known good earth ground. A battery-operated soldering iron may be used in place of the regular soldering iron.

CHANNEL GUARD

Channel Guard provides a means of restricting calls to specific radios through the use of a continuous tone or digitally coded squelch system (CTCSS or CDCSS). Tone frequencies range from 67 Hz to 210.7 Hz 33 standard tones and 83 unique digital codes are available. These tones/codes are identified in Tables 1 and 2.

STANDARD TONE FREQUENCIES Hz				
67.0	88.5	107.2	131.8	167.9
71.9	91.5	110.9	136.5	173.8
74.4	94.8	114.8	141.3	179.9
77.0	97.4	118.8	146.2	186.2
79.7	100.0	123.0	151.4	192.8
82.5	103.5	127.3	156.7	203.5
85.4			162.2	210.7

Table 2 - Channel Guard Tone Frequencies

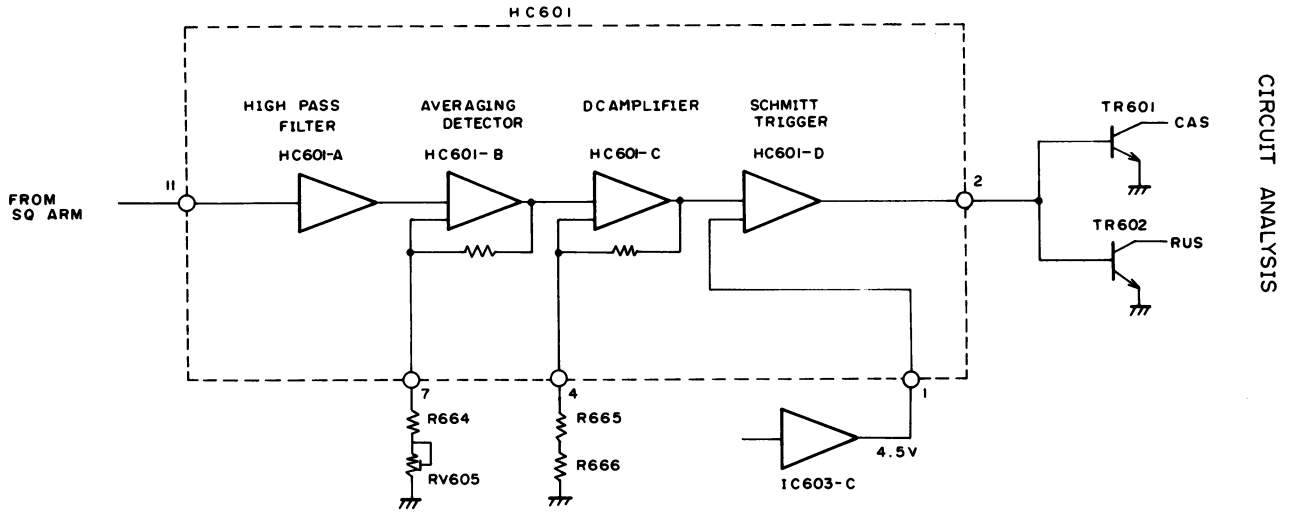


Figure 1. Squelch cercuits (HC601)

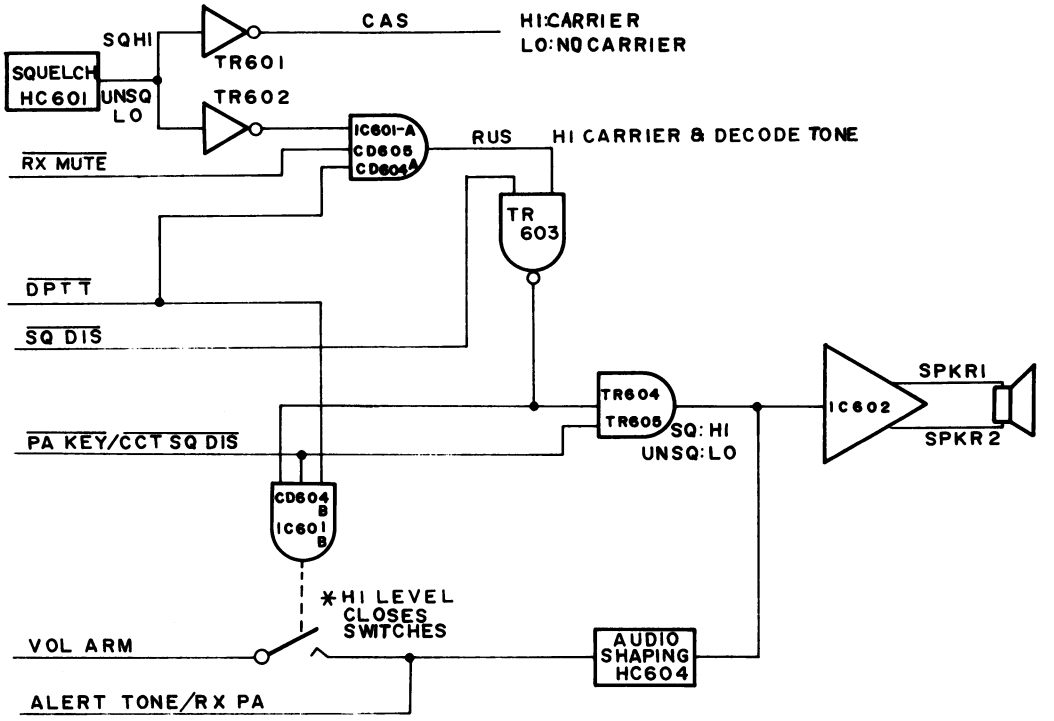


Figure 2. Audio Control Circuit

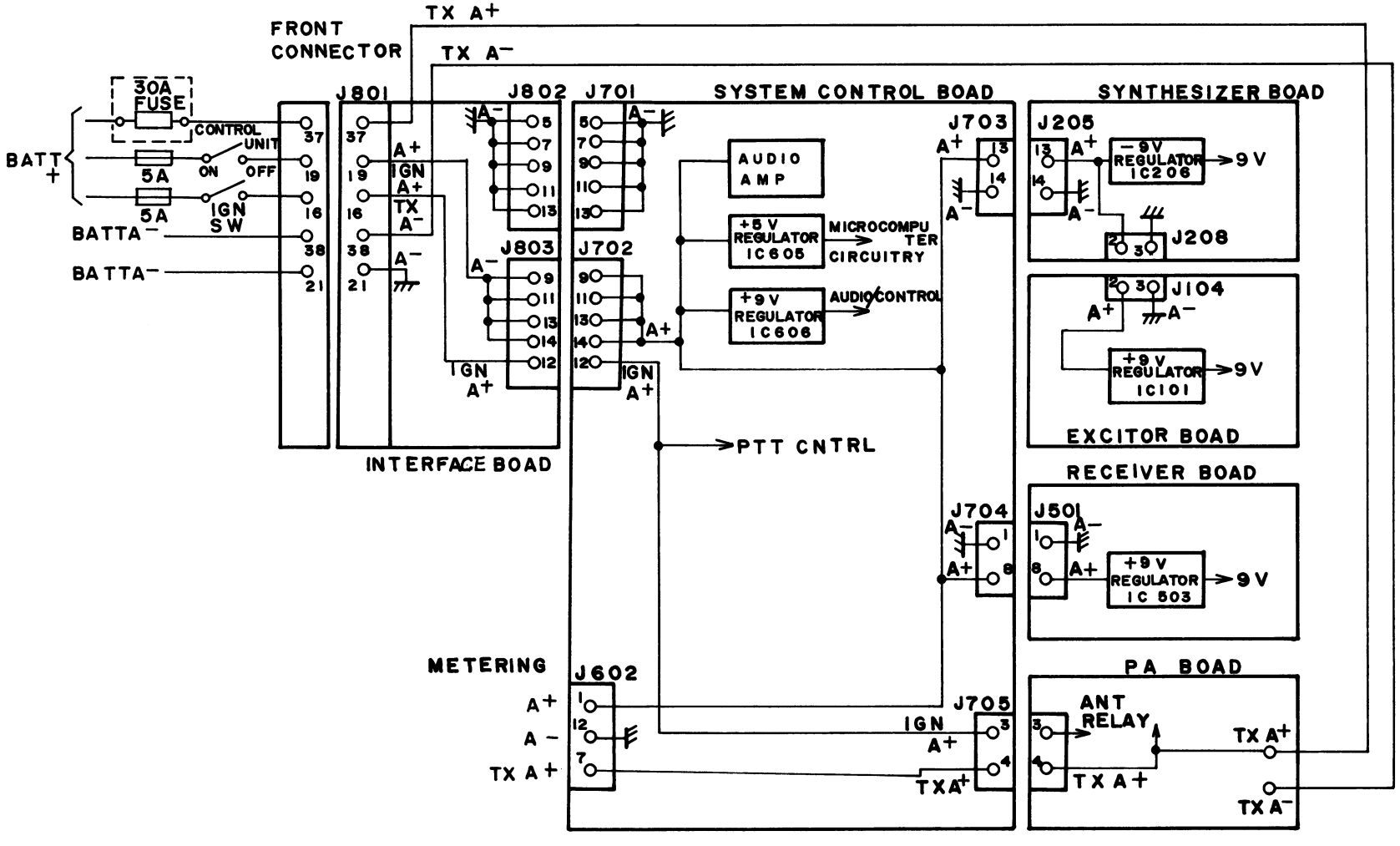


Figure 3. Power Distribution

PRIMARY CODE	EQUIVALENT CODE	PRIMARY CODE	EQUIVALENT CODE	PRIMARY CODE	EQUIVALENT CODE
023	340, 766	205	135, 610	464	237,642, 772
025		223	350, 475, 750	465	056, 656
026	566	226	104, 557	466	144, 666
031	374, 643	243	267, 342	503	157, 312
032		244	176, 417	506	224, 313, 574
043	355	245	370, 554	516	067, 720
047	375, 707	251	236, 704, 742	532	161, 345
051	520, 771	261	227, 567	546	317, 614, 751
054	405, 675	263	213, 136	565	307, 362
065	301	265	171, 426	606	153, 630
071	603, 717, 746	271	427, 510, 762	612	254, 314, 706
072	470, 701	306	147, 303, 761	624	075, 501
073	640	311	330, 456, 561	627	037, 560
074	360, 721	315	321, 673	631 745	231, 504, 636
114	327, 615	331	372, 507	632	123, 657
115	534, 674	343	324, 570	654	163, 460, 607
116	060, 737	346	616, 635, 724	662 444	363, 436, 443,
125	172	351	353, 435	664	344, 471, 715
131	572, 702	364	130, 641	703	150, 256
132	605, 634, 714	365	107	712	136, 502
134	273	371	217, 453, 530	723	235, 611, 671
143	333	411	117, 756	731	447, 473, 474
152	366, 415	412	127, 411, 711		744
155	233, 660	413	133, 620	732	164, 207
156	517, 741	423 713	234, 563, 621	734	066
162	416, 553	431	262, 316, 730	743	312, 515, 663
165	354	432	276, 326	754	076, 203
172	057	445	222, 457, 575		
174	142, 270				

Table 3 - Primary and Equivalent Digital Codes (Octal)

The Channel Guard encode and decode functions are implemented in the microcomputer under software control. The microcomputer provides digital and/or tone Channel Guard with Squelch Tail Elimination STE.

If the radio is in the receive mode, the Channel Guard tone/code is hard limited and inputted into the microcomputer through IC702-29 (LIM CG Tone Decode). If the correct tone code is present, the receiver is opened by the RX MUTE line. If the radio is in the transmit mode, the microcomputer generates the Channel Guard tone using WALSH BIT 1 and WALSH BIT 2. Those outputs are summed together and filtered on the System Control board to generate a smooth sinewave for tone Channel Guard or a digital waveform for digital Channel Guard.

The Channel Guard contains a summing amplifier, IC604-A, 8-pole active voice reject filter, HC606, limiter, IC604-C and tone/code reject filter HC605. A Channel Guard disable circuit TR606 allows the Channel Guard encode to be disabled. The Channel Guard decoder can be disabled at the microcomputer.

The microcomputer selects the assigned Channel Guard encode code/tone information from the EEPROM memory for each channel, transmit and receive, and generates the Channel Guard signal. This signal is applied as Walsh Bit 1 and 2 to summing amplifier IC604-A. The Walsh bits are summed together and filtered to provide a smooth sine wave for tone Channel Guard or a digital waveform for digital Channel Guard.

The output of audio preamplifier IC603-A is applied to the summing amplifier through bilateral switches IC601-C and D. In the encode mode DPTT is high applying A- from IC601-D to the control input of IC601-C turning it off and preventing any input from the output of audio preamplifier IC603-A from interfering with the encoding signal.

The output of summing amplifier IC604-A is applied to buffer/amplifier IC604-B through a two-pole active voice reject filter consisting of HC606. The active filter shunts all frequencies above 300 Hz to ground, thereby preventing those frequencies from interfering with the encoded signal. The output of IC604-B is the assigned CG tone or digital signal. This signal is applied to the audio processor through CG deviation control RV603. Channel Guard deviation is set for 0.75 kHz.

In the decode mode DPTT is low, turning bilateral switch IC601-D off, allowing the 9 V filtered supply to turn IC601-C on. The output of audio preamplifier IC603-A is then applied to the summing amplifier IC604-A through bilateral switch IC601-C. This signal is amplified and filtered by IC604A,B and HC606, so that only the CG signal (if present) is applied to hard limiter IC604-C. The CG signal is squared up for comparison by the microcomputer to determine if the CG signal is correct. If the microcomputer determines the CG signal to be correct, RX Mute transistor TR713, is turned off, applying +9 VDC to the RX MUTE line to open the receiver.

The Channel Guard Disable(CG DSBL) line has a double function. It can disable the encode or the decode CG function. The encode function is disabled by applying +17 V or more to J701-15. This will turn on TR606 and shunt the Channel Guard tone/code to ground while the decode function is disabled within the microcomputer software. To disable the decoder, ground the CG DSBL line at J701-15. The microcomputer will detect that the line is low, turn off TR713 and force the RX MUTE line high. The decode filter/limiter circuit is not affected, it continues to operate. The detection software also does not stop working. This allows the off-hook STE to function. When the CG DSBL line is

pulled high (9.0 VDC) the microcomputer does not sense any changes. It is buffered by protection diode CD709. Channel Guard disable transistor TR606 will turn on when the CG DSBL line goes above 8.5 V and shorts the output of the filter to ground. This will prevent any signal from going out on CG HI and will also disable the decoder since no limited CG tone will go to the microcomputer. The receiver will be muted since no CG is decoded. Disabling the decoder this way will never allow the audio to open up, while taking the radio off hook (pulling CG DSBL low) will always make the radio open up. Turning CG Disable transistor TR606 on causes the DC bias to change. It will take 2 or 3 seconds for the bias to restore itself after the encoder is disabled.

The Squelch Tail Elimination (STE) eliminates squelch tails when the radio is on-hook or off-hook. When Channel Guard is disabled (off-hook), the decoder is still looking at the received signal. The RX MUTE line is high, as would be normally expected. The Channel Guard decoder is looking for the STE burst (phase reversal in tone Channel Guard, STE tone in Digital Channel Guard). If an STE burst is detected, the RX MUTE line will go low for about 200 ms. This will prevent the squelch tail from being heard. After 200 ms, the RX MUTE line will go high again; by now the transmission has ended and the squelch will hold the audio closed. The off-hook STE does not affect the operation of the Channel Guard while on-hook. Another way of looking at it: the radio will go quiet for 200 ms any time STE is detected. If it was on-hook it will stay quiet after the 200 ms, if it was off-hook it will revert to noise squelch operation.

In some instances it is necesssary to invert the polarity of the digital Channel Guard signal to enhance system compatability. Inverted polarity normally results in a wrong code or one that cannot be used. When this occurs, restrap P604 connected between J604-2,3 and connect between J604-1,2. The encode DCG codes may be inverted by reprogramming the EEPROM.

FREQUENCY SYNTHESIZER

The frequency synthesizer receives clock, data, and control information from the microcomputer and from this generates the Tx/Rx RF frequencies. It also provides frequency lock status to the microcomputer. It consists of synthesizer chip IC201, low and high current buffers, loop filter, Tx & Rx voltage controlled oscillators (VCO's), feedback amplifiers dual modulus prescaler, and the reference oscillator. The VCO's are locked to the reference oscillator by a single direct divide synthesis loop consisting of the feedback buffer, prescaler, and synthesizer. The VCO's operate over a frequency range of 128.13 MHz to 145 MHz.

REFERENCE OSCILLATOR

The reference oscillator consists of a 2 PPM VC-TCXO(Voltage Controlled-Temperature Compensated Crystal Oscillator). The standard reference oscillator frequency is 13.2 MHz.

The 2 PPM VC-TCXO receives transmit audio from REF MOD CONTROL RV201. RV201 provides the required audio level and phase to modulate the VC-TCXO. The VC-TCXO is enclosed in an RF shielded can. Access to the oscillator trimmer is made through a hole on the top of the can. The VC-TCXO is compensated by an internal temperature compensator circuit for both the cold end and hot end. With no additional compensation the oscillators will provide 2 PPM stability from $-30^{o}C$ to $+60^{o}C$.

CAUTION

VC-TXCOs are individually compensated at the factory and cannot be repaired in the field. Any attempt to repair or change an VC-TCXOs frequency will void the warranty.

SYNTHESIZER

Synthesizer IC201 contains a programmable reference oscillator divider (÷ R), phase detector, and programmable VCO dividers (÷N, A). The reference frequency, 13.2 MHz from the reference oscillator is divided by a fixed integer number to obtain a 4.16 kHz channel refference for the synthesizer. This divide value can be changed by PROM programming. The internal phase detector compares the output of the reference divider with the output of the internal ÷N, A counter. The ÷N, A counter receives as its input the VCO frequency divided by the dual modulus prescaler and programmed by the microcomputer. This comparison results in a ± error voltage when the phases differ and a constant output voltage when the phase detector inputs compare in frequency and phase.

If a phase error is detected an error voltage is developed and applied to the VCO DC offset and high current buffers and loop filter to reset the VCO frequency. The count of the ÷N, A counters is controlled by the frequency data received on the clock and data lines from the microcomputer. Thus, when a different channel is selected or when changing to the transmit or receive mode an error voltage is generated and appears at the phase detector output, APD causing the phase locked loop to acquire the new frequency.

The enable pulse from the microcomputer enables the synthesizer and allows frequency data to be internally stored.

DC OFFSET AND HIGH CURRENT BUFFERS

DC offset buffer TR201 and diode CD201 receive the error voltage from the synthesizer and increase this level by 1.8 VDC to extend the operating range of the high current buffers. When the PLL is off frequency due to a channel change or frequency drift, the error voltage from the synthesizer(APD) rises or falls, turning either TR202 or TR203 on. These two transistors control high current buffers TR204 and TR205. TR204 and TR205 complete a high current rapid charge or discharge path for C207-C209.

If the error voltage decreases, TR203 is turned off and TR205 is turned on, completing a discharge path for C207-C209 through bilateral switches IC204. At the same time TR202 is turned on and TR204 is turned off, blocking the charge path. The opposite conditions exist when the error voltage goes positive. IC204 is turned on for 4 milliseconds when a channel is changed in the receive mode. The time is 20 milliseconds when in transmit and when changing from transmit to receive.

LOOP FILTER

The loop filter consists of R209-R211, and C207-209. This filter controls the bandwidth and stability of the synthesizer loop. Bilateral switch IC204 is controlled by the 4 millisecond, 9 volt channel change pulse. When the channel change pulse is present, the bilateral switch shorts out the low pass filter, greatly increasing the loop bandwidth to achieve the 4 millisecond channel acquisition time required for dual priority scan. The low pass filter removes noise and other extraneous signals internal to the synthesizer chip.

The output of the filter is applied to the varicaps in the transmit and receive VCO's to adjust and maintain the VCO frequnecy.

The use of two VCO's allows rapid independent selection of transmit and receive frequencies across the frequency split.

RECEIVER VOLTAGE CONTROLLED OSCILLATOR

The Receiver VCO consists of a low noise JFET oscillator, TR210, followed by high gain buffer TR211. TR211 prevents external loading and provides power gain. The VCO is a Colpitts oscillator with the various varactors, capacitors and coil forming the tank circuit.

The VCO is switched on and off under control of the DPTT line. When the DPTT line is low the Receiver VCO is turned on (TR213 is off, TR212 is on). Oscillator output is typically +10 dBm. The output is applied to the feedback buffers for VCO frequency control and as the Rx injection frequency to the receiver 1st mixer through multipliers TR214-215. The Rx VCO also uses a high Q resonator coil to achieve superior noise performance. The VCO operates over a frequency range of 128.13-131.3 MHz. The VCO voltage need only be set once at the highest frequency of the band split, after which it will operate over the entire split with no more tuning .

TRANSMITTER (VOLTAGE CONTROLLED OSCILLATOR)

The transmit VCO is basically the same as the receiver VCO. The wideband VCO allows frequency separation of 45 MHz as determined by the bandsplit the radio is operating on 806-825 MHz or 851-870 MHz. The varactors in conjunction with the frequency segment selector circuitry (TR216, TR217 and pin diode CD217) provide a voltage controlled adjustment range that extends across the entire frequency split. Buffer TR221 provides a typical output of +10 dBm to the feedback buffers for VCO frequnecy control and as the Tx Injection frequency to the exciter.

VCO control switch TR222 turns the Transmit VCO on when DPTT is high.

FEEDBACK BUFFERS/MULTIPLIERS

The Rx injection and Tx injection voltage output from the Rx VCO and Tx VCO are supplied to the receiver mixer and the exciter, respectively, and to the feedback buffers multipliers. Buffering is provided by TR206 and TR207 and the output applied to dual modulus prescaler IC202.

DUAL MODULUS PRESCALER

The dual modulus prescaler completes the PLL feedback path from the synthesizer to loop filter, to the VCO's and feedback buffers and then back to the synthesizer through the prescaler. The prescaler divides the VCO frequency by 128 or 129 under control of M CONT from the synthesizer. The output of the prescaler is applied to the synthesizer where it is divided down to 4.16 kHz by an internal N, A counter and compared in frequency and phase with the divided down frequency from the reference oscillator. The result of this comparison is the error voltage used to maintain frequency lock. The N, A counter is controlled by data received from the microcomputer. Depending on the operating frequency, the DC voltage at TP201 should be within the range 4.5 to 7.5 VDC when the PLL is locked.

LOCK DETECT

The lock detect circuit consists of comparator IC203, diodes D203 and D204, and reference oscillator mute switch TR208 and TR209. It is used to

quickly synchronize the phase relation of the divided down VCO frequency and the reference oscillator if the loop loses lock. It also provides a fast lock detect signal to the microcomputer to turn on the out-of-lock indicator. If a large change in frequency is required the ramp capacitor output (C_R) of the synthesizer may increase to near 7.5 VDC and cause the comparator output to decrease. This decrease in voltage turns TR209 off and allows TR208 to be turned on by the positive LD line from the synthesizer. Thus TR208 disables the reference oscillator and allows the PLL loop to be brought back to synchronization rapidly.

If a large frequency error exists the LD positive lead from the synthesizer will carry negative spikes to the microcomputer through CD204 to activate the lock indicator circuit. Pulse shaper IC701 is a one-shot multivibrator which increases the pulse width to span 1 computer cycle. TR209 is turned on, keeping TR208 off thereby preventing TR208 from muting the reference oscillator.

MODULATION LEVEL CONTROL

The modulation level control circuit automatically sets the Tx audio level applied to the transmit VCO modulator CD212 through VCO deviation adjust control RV202. The modulation level control circuit consists of IC205, R274, R276, R278, R279, varactor CD212, C245 and bypass capacitors C247 and C248. The modulation level is controlled by turning bilateral switches IC205 on or off (under control of IC705) to include attenuators R276 in the circuit. R274, R276 form an adjustable voltage divider to change the modulation level as required. Tables 3 and 4 also identify the resistor (if applicable) used for each frequency segment.

FREQUENCY SEGMENT SELECTOR

The frequency segment selector switches capacitance in and out of the Tx and Rx VCO tank circuits to select the frequency segment containing the selected channel. The frequency segment selector consists of TR216, TR217, CD217 and operates under control of the microcomputor through FF's IC705A & B. Capacitors C252 and C253 are selected or deselected for operation in a given segment. Table 4 identifies the circuit conditions existing for selection of each segment and the capacitors used.

Reverse bias to turn the pin diode off is provided by the +8V filtered supply through R232. Forward bias for the diode and power for the switching transistors are provided by the +8V source through R231. When segment 1 is selected, transistor TR217 is turned on and TR216 is turned off. CD217 is forward biased causing it to turn on. This effectively places a short across C252 and AC grounds C253 in the Tx VCO.

When segment 2 is selected, transistor TR216 is turned on and TR217 is turned off. CD217 is reverse biased causing it to turn off. L218 presents a high impedance to RF frequencies therefore the anode of CD217 is near DC ground and not at AC ground.

SEGMENT	TRANSISTOR SWITCH* TR216	TR217	PIN DIODE CD217	SHORTED CAPACITORS
1	0	1	ON	C252
2	1	0	OFF	NONE

* '1' indicates transistor is turned on.

TABLE 4 - Capacitor Selection

EXCITER

The exciter consists of two multiple circuits (tripler and doubler) and of three wide-band amplifier stages and operates over a frequency range of 806-870 MHz without any tuning. An attenuator pad (R101-R103) at the input of the exciter provides a constant load for the VCO and attenuates the signal from the VCO to approximately 1 milliwatt.

The exciter amplifies the 1 milliwatt signal from the VCO to provide 400 millivolts drive to the power amplifier.

The 806/6-870/6 MHz Tx injection input from the Tx VCO is applied to the transistor used for multiple TR101 (tripler) through an attenuator pad from J101, R104 and R105 set the bias voltage for TR101. A collector voltage, +9V, is applied through collector feed network R107, L102 and R108. C103 is the capacitor for noise decoupling.

The output of TR101 consists of impedance matching components C104 and L103, and is coupled to FL101 Band Pass Filter (Pass Band 806/2-870/2 MHz).

The output of FL101 is coupled to the transistor used for multipler TR102 (doubler) through the coupling capacitor C105. R109 and R110 set the bias voltage for TR102.

A collector voltage, +9V, is applied through collector feed network R112, L105 and R113. C108 is the capacitor for noise decoupling.

The output of TR102 is coupled to FL102 Band Pass Filter (Pass Band 806-870 MHz) through the coupling capacitor C109.

The output of FL102 is coupled to TR103 through the coupling capacitor C110. R114 and R115 set the bias voltage for TR103.

A collector voltage, +9V, is applied through collector feed network R117, L108 and R118. C115 is the noise decoupling capacitor.

The output of TR103 is coupled to TR104 through the coupling capacitor C117. R119 and R120 set the bias voltage for TR104.

A collector voltage, +9V, is applied through collector feed network R122, L111 and R123. C120 and C121 are noise decoupling capacitors.

The output of TR104 is coupled to FL104 Band Pass Filter (Pass Band 806-870 MHz) through impedance matching components C124 and L112.

The output of FL104 is coupled to the input of attenuator pad (R127-R129) through coupling capacitor C125.

The output of attenuator pad is coupled to HC101. HC101 amplifies input level 3 mW to 400 mW.

As the power supply for HC101, +9V is applied through R130 and R131. C127 through C130 are the capacitors for noise decoupling.

A+ supplied from frequency

synthesizer is stablized to 9V at IC101 (3-terminal regulator), and +9V is applied to HC101 through TR105 (TR101-TR104).

In case that TX ENB is High (receive mode), +9V is not applied.

Service Note

Measuring the RF levels can be executed by connecting 50 ohm dummy memter to J102 when 0dBm is inputed to J101 (806/6-870/6 MHz) and TX ENB is low.

The exciter is energized by pressing the PTT switch. A regulated 9 volts is present on all exciter stages when the radio is turned on.

Typical emitter voltages of TR102-TR104 are as follows:

Emitter voltage of TR102 : 1.1V
Emitter voltage of TR103 : 2.1V
Emitter voltage of TR104 : 2.1V

POWER AMPLIFIER

The PA assembly uses one power module and two RF power transistors to provide 35 watts of output power. One power module and two RF power transistors are used in the power control circuit.

Supply voltage for the PA is connected from power leads on the System Interface Board to J5(A+) and J6(A-) on the PA board. C53, C63, C73 and C83 prevent RF from getting on the power leads. Diode CD4 will cause fuse to blow if the polarity of the power leads is reversed. CD3 performed as a surge protector to reverse is for getting rid of the pulses from the power leads.

TP2 through TP4 are the printed board terminals for control voltage and PA voltage measurement.

PA AMPLIFIER

The exciter output is coupled through J102 on the exciter unit to PA input jack J1.

The RF input 0.4W coupled to J1 is coupled to the power module through an attenuator pad (R1 - R3).

The power module amplifies the level power from 0.4W to 15W.

The power module consists of threestep RF amplifier. The first step of module is coupled power supply voltage from power control circuit.

The output circuit consisting of L20 and R25 on power module prevents self-oscillation.

The RF amplifier consists of two Class C common base amplifiers.

The 15 watt output is coupled through jumper W1 to Wilkinson power splitter consisting of 75 ohm coaxial cable.

The power amplifier stages consist of two identical paralleled Class C power amplifiers (TR1 and TR2).

C22, Z1(stripline), C4 and C5 make up a stabilizing network in the emitter of TR1, while C23, Z2(stripline), C14 and C15 make up a stabilizing network in the emitter of TR2. Supply voltage (A+) for TR1 and TR2 is coupled through collector feed networks C26, L11, C27 and L9.

The output of TR1 and TR2 is coupled through the impedance matching circuit consisting of C6 through C8, CV2, Z2, C24 and C16 through C18, CV3, Z3, C25 to Wilkinson Power Combiner which consists of W4 and W5 coaxial cable. The output of the combiner is coupled through Z5 (50 ohm stripline) and the antenna switch consisting of C91, L18, C18, C94, CD5 and C92 to the low pass filter. The low pass filter

consists of C30 through C35, C97, C98, L13, L14 and L21. The filter output is coupled through J3 to the antenna.

The antenna switch, in the TX mode, is supplied power through L8, C94, C23, L15, C29 and R20.

R21 and R22 of TR7 set the bias, C56 prevents the noise from DPTT line from "entering".

When DPTT is low, the PA is in Tx mode and DPTT is high, it is Rx mode.

TR7 is supplied power through C76, R23 and C67 from IGNA+.

L16 and L17 consist of striplines of 1/4 input and CD6 through CD9 prevent transmitted output from entering into Rx input.

Under RX mode, RX signal enters from antenna and is coupled to C92 through the low pass filter. In this case, CD5 is in open mode, and RX signal is coupled to J2 through L16, L17 and C95.

POWER CONTROL CIRCUIT

The power control circuit provides power leveling as well as thermal protection for the PA.

When the transmitter is keyed, RF is rectified by CD1. The resulting DC turns on RF switch TR3-TR6. Turning on TR3 applies collector voltage to the 1st RF driver transistor in the PA module.

If the power output should start to increase above the level set by RV1, TR3 will start to conduct. This causes TR4-TR6 to conduct less, reducing the collector voltage of TR3 to the 1st RF driver transistor in the PA module.

Thermal protection is provided by temperature compensating resistor R24. As the heat sink temperature rises above 90°C, the resistance of R24 decreases. Since it is set to 17.5W at RV2 turning TR5 on, this causes the reducing of the power output.

CAUTION

Do not operate the transmitter at levels higher than rated output. Operating at higher than rated output will shorten the life of the RF power transistor.

RECEIVER

The FM dual conversion, superheterodyne receiver is designed for operation in the 851-870 MHz frequency range. A regulated 9.0 volts is provided to all receiver stages except the audio PA IC, which operates from the switched A+ supply.

The receiver has intermediate frequencies of 82.2 MHz and 455 kHz. Adjacent channel selectivity is obtained by using two band-pass filters: a 82.2 MHz crystal filter and a 455 kHz ceramic filter.

All of the receiver circuitry except the synthesizer, audio preamp, audio PA, and squelch circuit is mounted on the Rx board. The receiver consists of :

- o Front End and Mixer
- o 82.2 MHz 1st IF, 455 kHz 2nd IF and FM Detector
- o Audio PA
- o Squelch

CIRCUIT ANALYSIS

RECEIVER FRONT END

An RF signal from the antenna is coupled through the low pass filter, antenna switch, and dielectric band pass filter (FL401) to the input of RF amplifier HC401. The output of HC401

is coupled through dielectric band pass filter(FL402) to the input of 1st mixer HC402. Front end selectivity is provided by these dielectric band pass filter.

RECEIVER INJECTION

Receiver RF injection (384.40 to 393.9 MHz) from the synthesizer VCO is applied to doubler HC403 through J402. The input level at J402 will be between 0.5 and 1.0 milliwatts, 0.5 milliwatts minimum. Doubler HC403 multiplies the Rx injection frequency by 2 to provide a mixer injection frequency 82.2 MHz below the received RF frequency to the first mixer HC402. The output of doubler HC403 is coupled to the input of amplifier HC404. The output of amplifier HC404 is filtered by a dielectric filter (FL403). This filter is tuned to pass frequencies in the 768.8-787.8 MHz passband.

1st MIXER

The 1st mixer uses a transistor (HC402) as the active device. This transistor mixer provides high power gain and an output relatively free of intermodulation products.

In the mixer stage, RF from the front end dielectri filter is applied to the input of the mixer. Injection voltage from the multiplier stages is applied to the input of the mixer. The 82.2 MHz mixer 1st IF output signal is coupled from the output of HC402 through an impedance matching network (L501 and C503) to a 4-pole crystal filter consisting of FL501-1 and FL501-2.

1st IF

The highly-selective crystal filters FL501-1 and FL501-2 provide the first portion of the receiver IF selectivity. The output of the filters is coupled through impedance matching network L503, C505 and C506 to the 1st IF amplifier TR501.

The crystal filter output of FL501 is applied to base of the 1st IF amplifier TR501, and the amplified signal is taken from the collector. The amplifier provides approximately 20 dB of IF gain. The output is coupled through an impedance matching network, L504, C512 and R513 that matches the amplifier output to the input of FL502. The output of the filter is coupled through impedance matching network L505, C513 and R514 to the 2nd mixer HC501.

2nd MIXER

HC501 and associated circuitry consist of the 2nd oscillator and 2nd mixer.

The 82.2 MHz IF input is applied to pin 7 and mixed with an 82.655 MHz frequency supplied by crystal oscillator X501. L506 sets the frequency of X501.

2nd IF AND DETECTOR

The output of the 2nd mixer is coupled to the 4-pole ceramic filter, which provides the 455 kHz selectivity. The output of the ceramic filter is coupled to the base of TR502. The transistor provides limiting for the 455 kHz IF signal (1.4Vp-p) to prevent high level overloading of IC501.

IC501 and associated circuitry consists of IF amplifier and FM detector.

The 455 kHz IF input is applied to pin 18.

The IF signal is amplified and applied to a 4-pole ceramic filter FL504 which provides the 455 kHz selectivity. The output of the 455 kHz filter is reapplied to IC501-5. The 2nd IF signal is amplified and limited.

L508 shifts the IF signal by 90° and reapplies it to the internal FM detector. The FM detector compares the shifted IF signal to the internal IF signal to recover the audio modulation. The audio output of IC501 is applied to the system control unit.

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

GENERAL ELECTRIC*
U.S.A.

* Trademark of General Electric Company U.S.A.
Printed in Japan

TABLE OF CONTENTS

BLOCK DIAGRAM ..... D1 – D6

DRAWINGS ..... D7 – D13

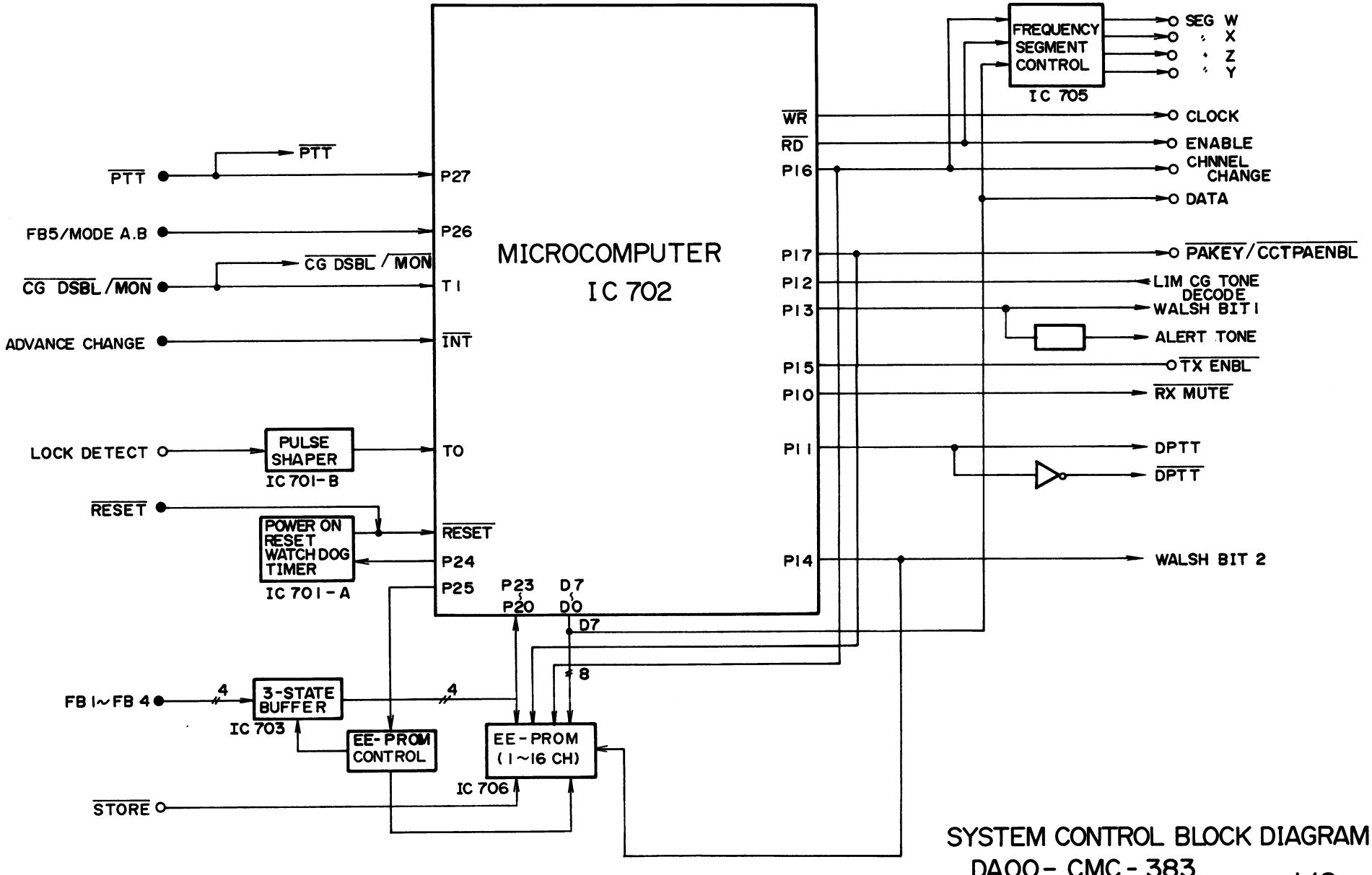
PRINTED CIRCUIT BOARD OUTVIEW ..... D14 – D25

HIBRID CIRCUIT ..... D26 – D28

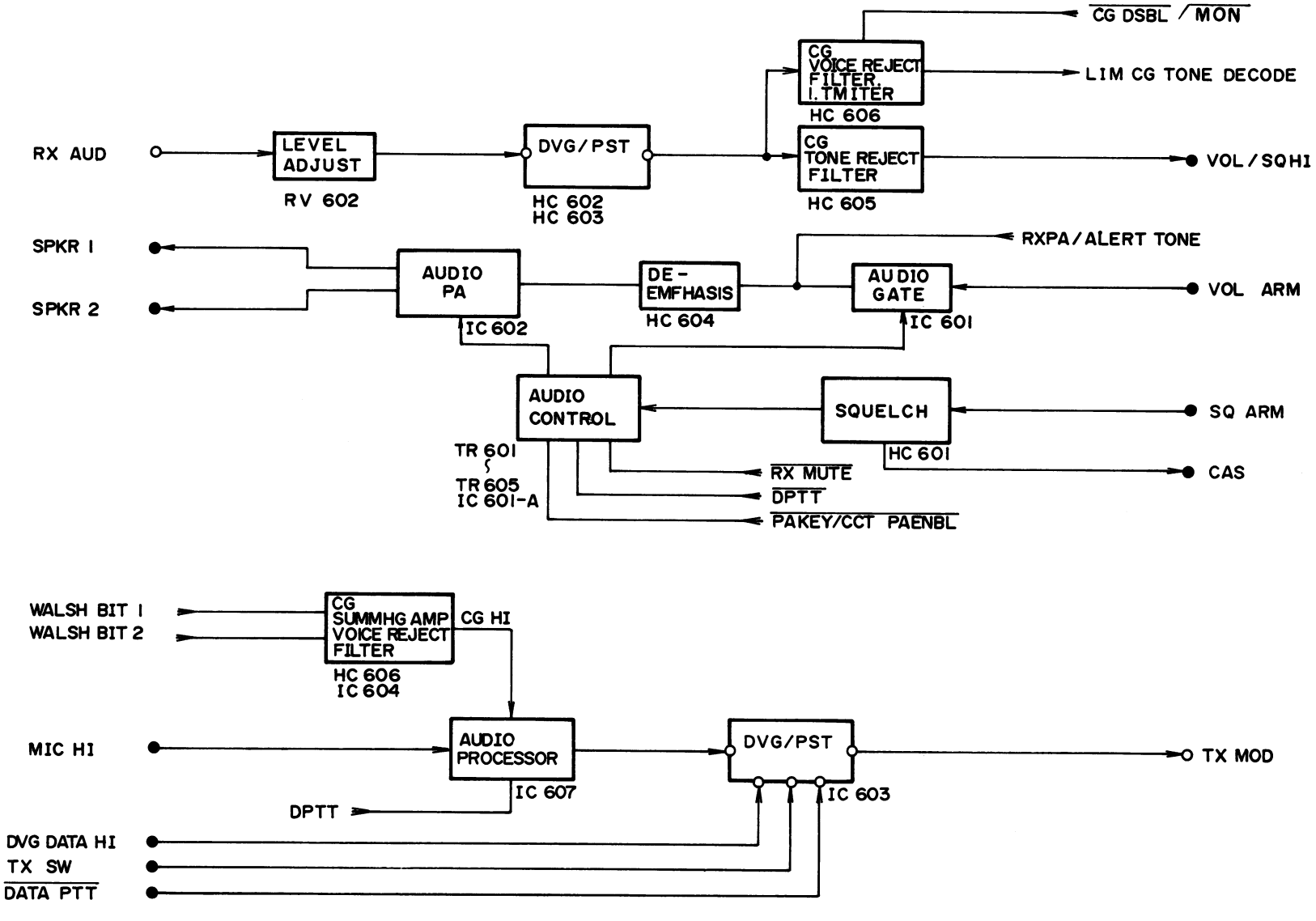
PARTS LIST ..... D29 – D41

DRAWING SHEET No.

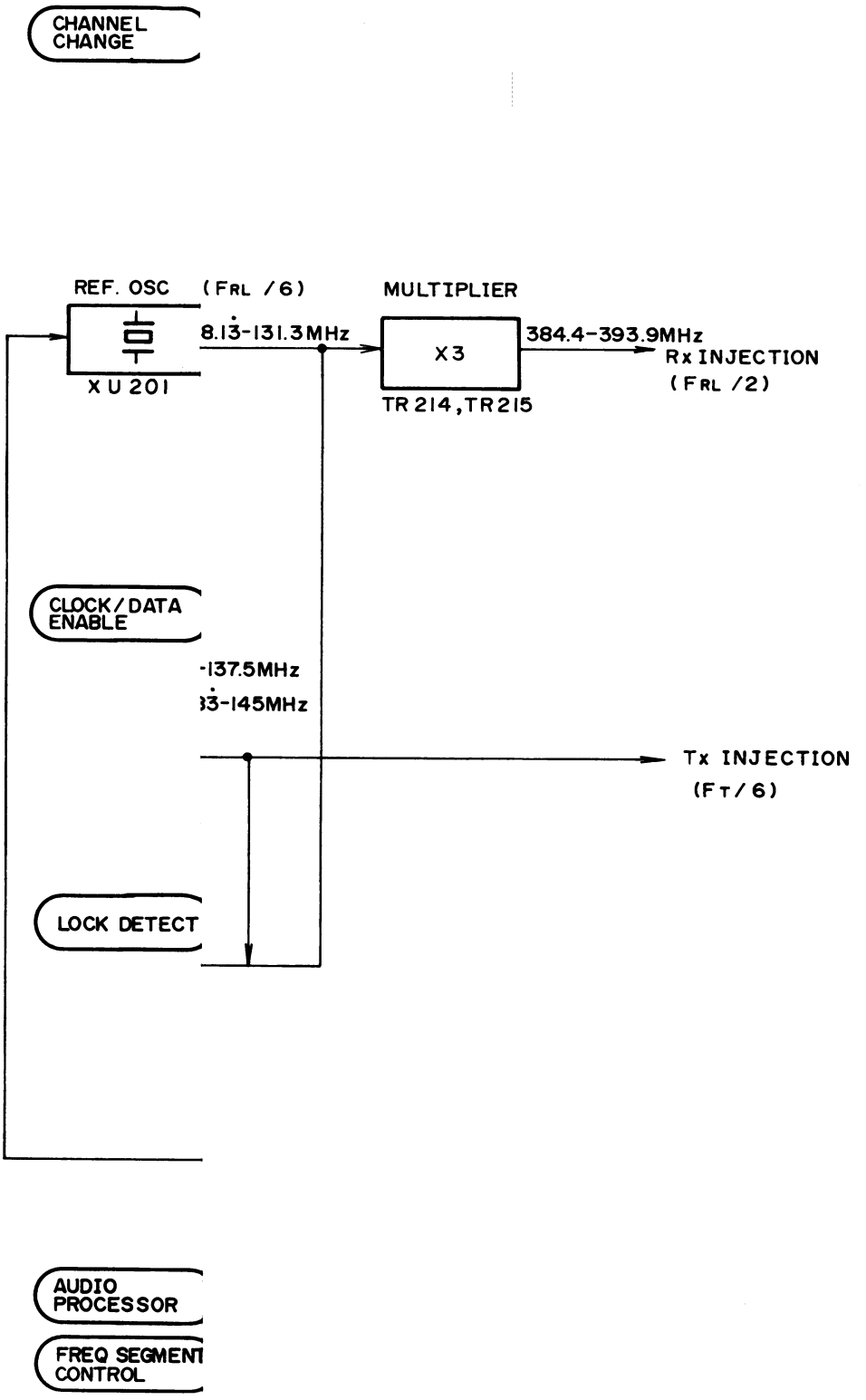
SECTION	BLOCK DIAGRAM	SHEMATIC DIAGRAM	PC BOARD
INTER CONNECTION		DD00–JHM851S35	
SYSTEM CONTROL	DA00–CMC–383	DD00–CMC–383	JRC–6PCFD00391A
FREQUENCY SYNTHESIZER	DA00–CMG–133	DD00–CMG–133	JRC–6PCFD00392
EXCITER	DA00–CAF–257	DD00–CAF–257	JRC–6PCFD00400
POWER AMPLFIER	DA00–CAH–257	DD00–CAH–257	JRC–6PCFD00404
RECEIVER	DA00–CMA–240	DD00–CMA–240	JRC–6PCFD00396
INTERFACE	DA00–CFQ2223	DD00–CFQ2223	JRC–6PCFD00405



SYSTEM CONTROL BLOCK DIAGRAM
DA00-CMC-383 1/2



SYSTEM CONTROL BLOCK DIAGRAM
DA00-CMC-383

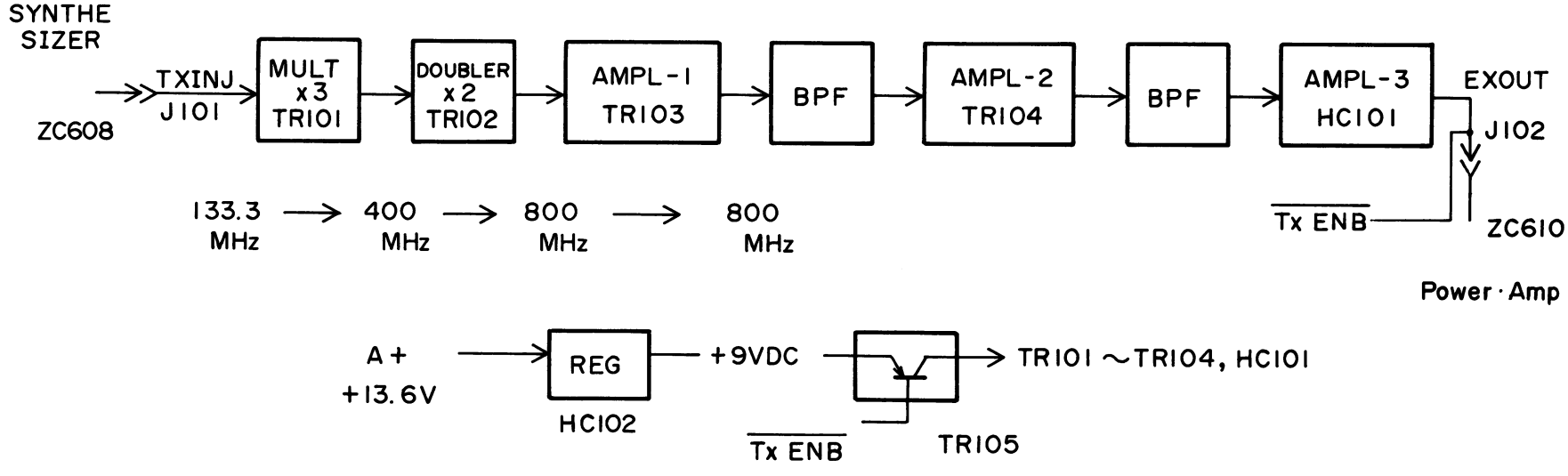


BLOCK DIAGRAM

806-825 MHz FREQUENCY SYNTHESIZER
851-870 MHz

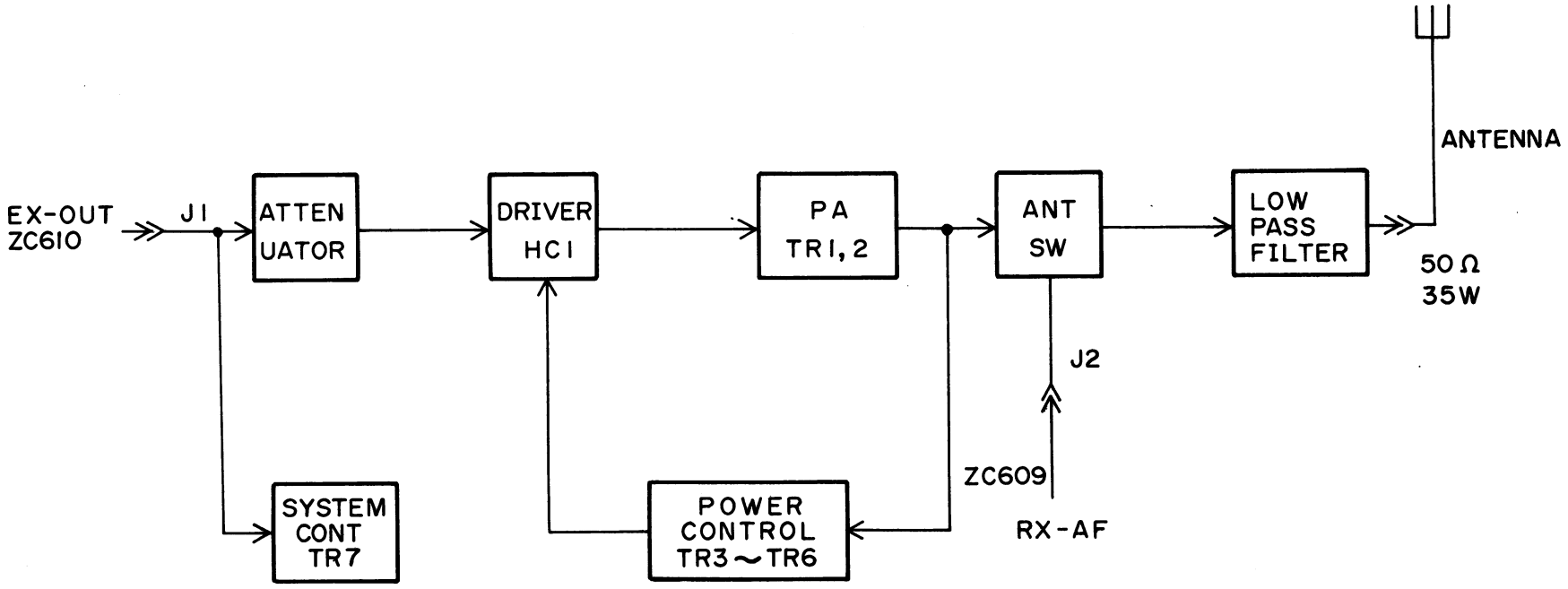
DA00-CMG-133

800MHz EXCITER BLOCK DIAGRAM

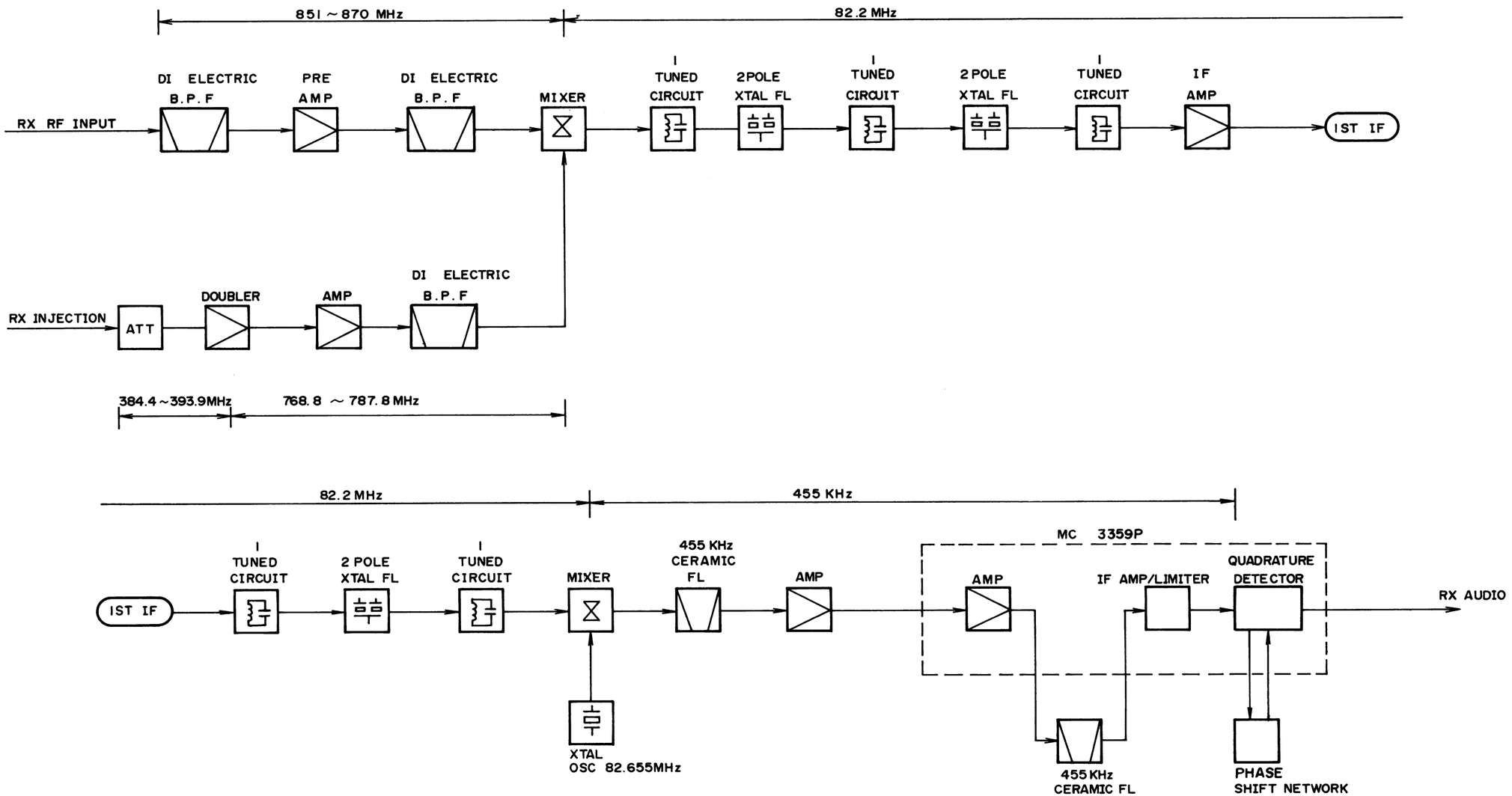


EXCITER
DA00-CAF-257

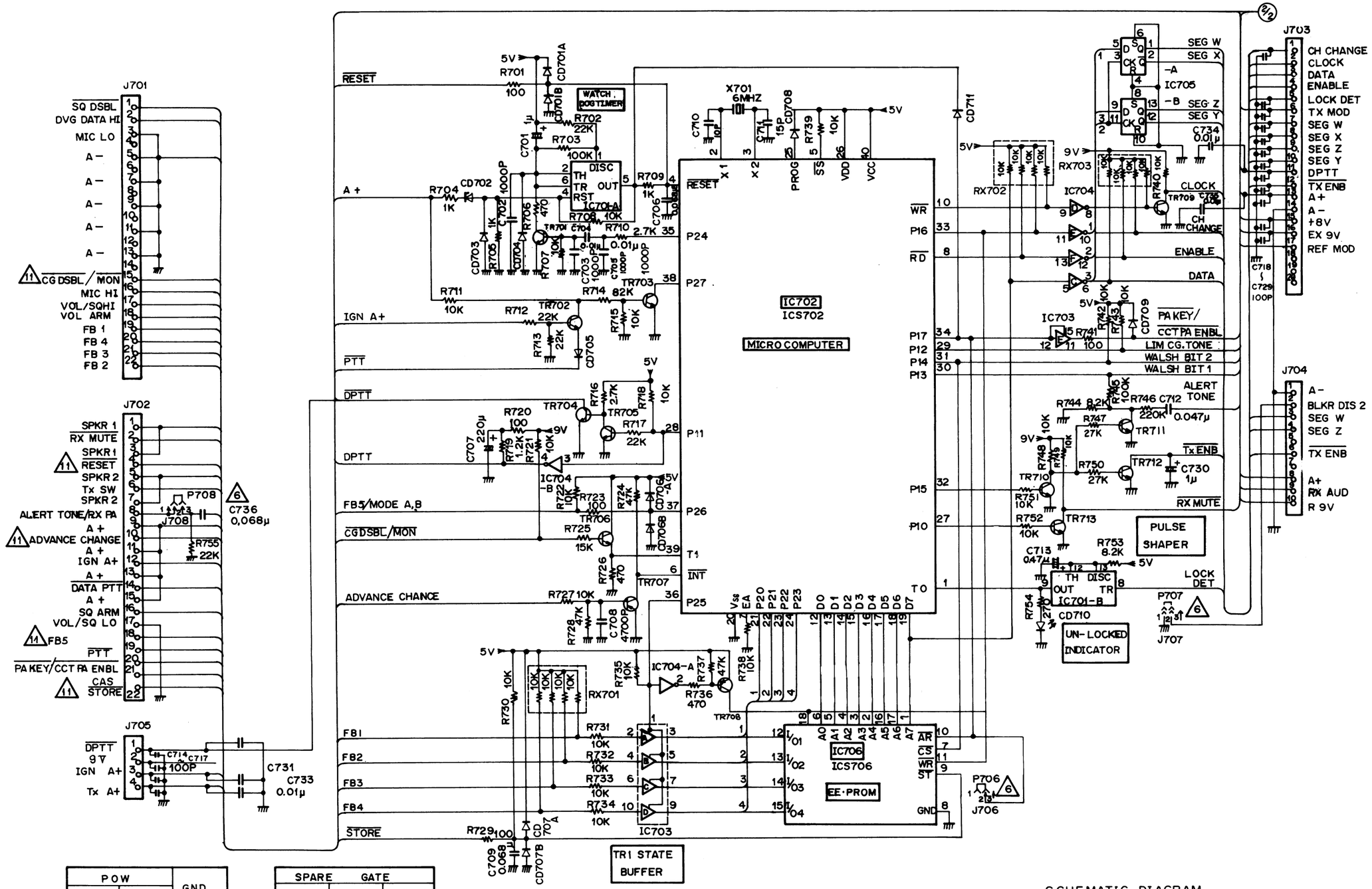
800MHz POWER AMPLIFIER BLOCK DIAGRAM



POWER AMPLIFIER
DA00-CAH-257



BLOCK DIAGRAM
800MHz RECEIVER
DA00-CMA-240



POW		GND
5 V	9 V	
IC701-14	——	IC701-7
IC703-16	——	IC703-8
IC704-14	——	IC704-7
——	IC705-14	IC705-7

SPARE GATE		
DEVICE	INPUT	OUTPUT
IC703	14	13

SCHEMATIC DIAGRAM
SYSTEM CONTROL
DDOO- CMC-383

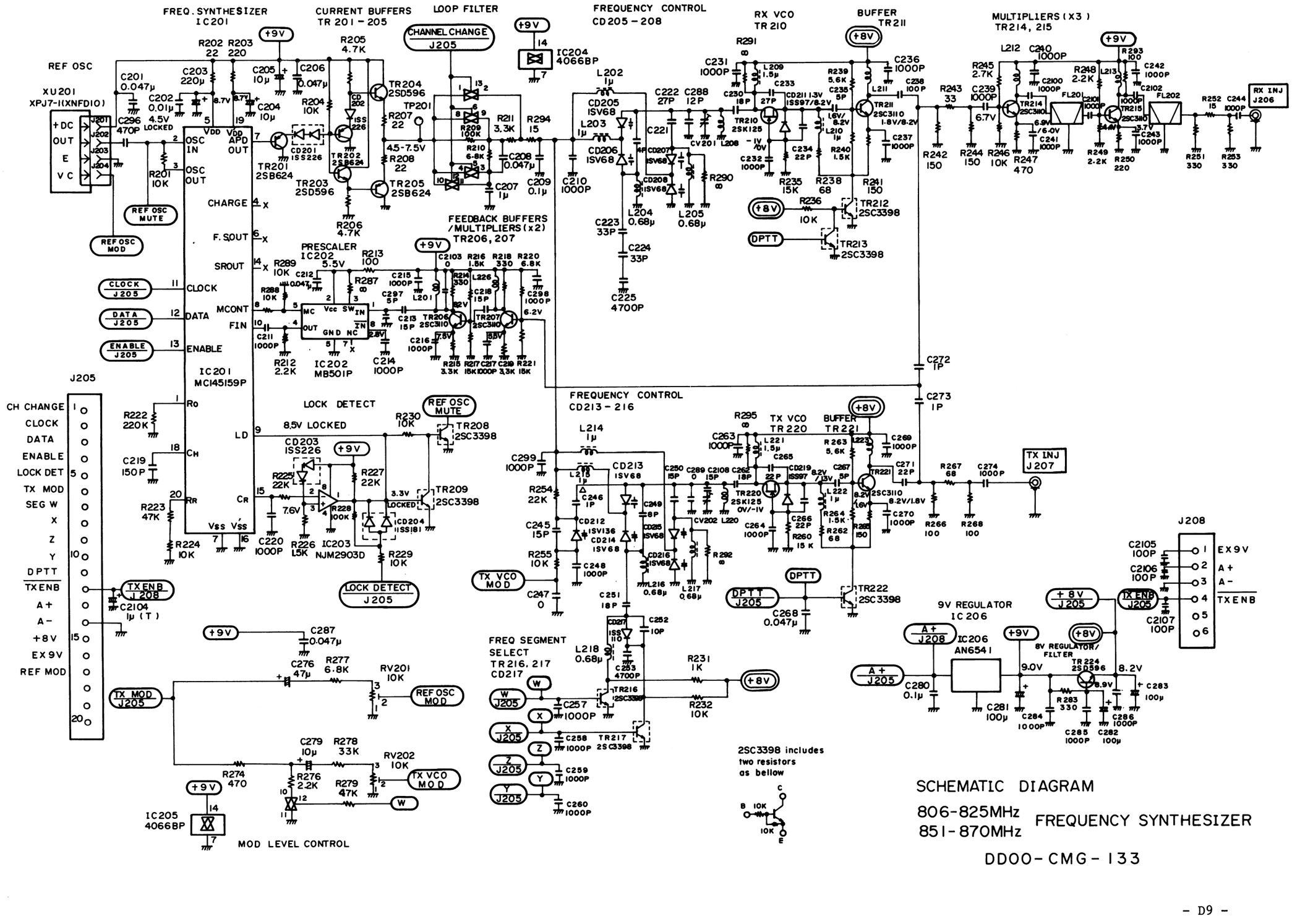
1/2

+9V	GND
IC601-14	IC601-7
IC603-4	IC603-11
IC604-4	IC604-11
———	IC607-4
IC608-14	IC608-7
IC609-14	IC609-7

SPARE GATE			
DEVICE	INPUT	OUTPUT	CONTROL
IC609	3	4	5
	8	9	6
	10	11	12

SCHEMATIC DIAGRAM
SYSTEM CONTROL 2/2
DDOO-CMC-383

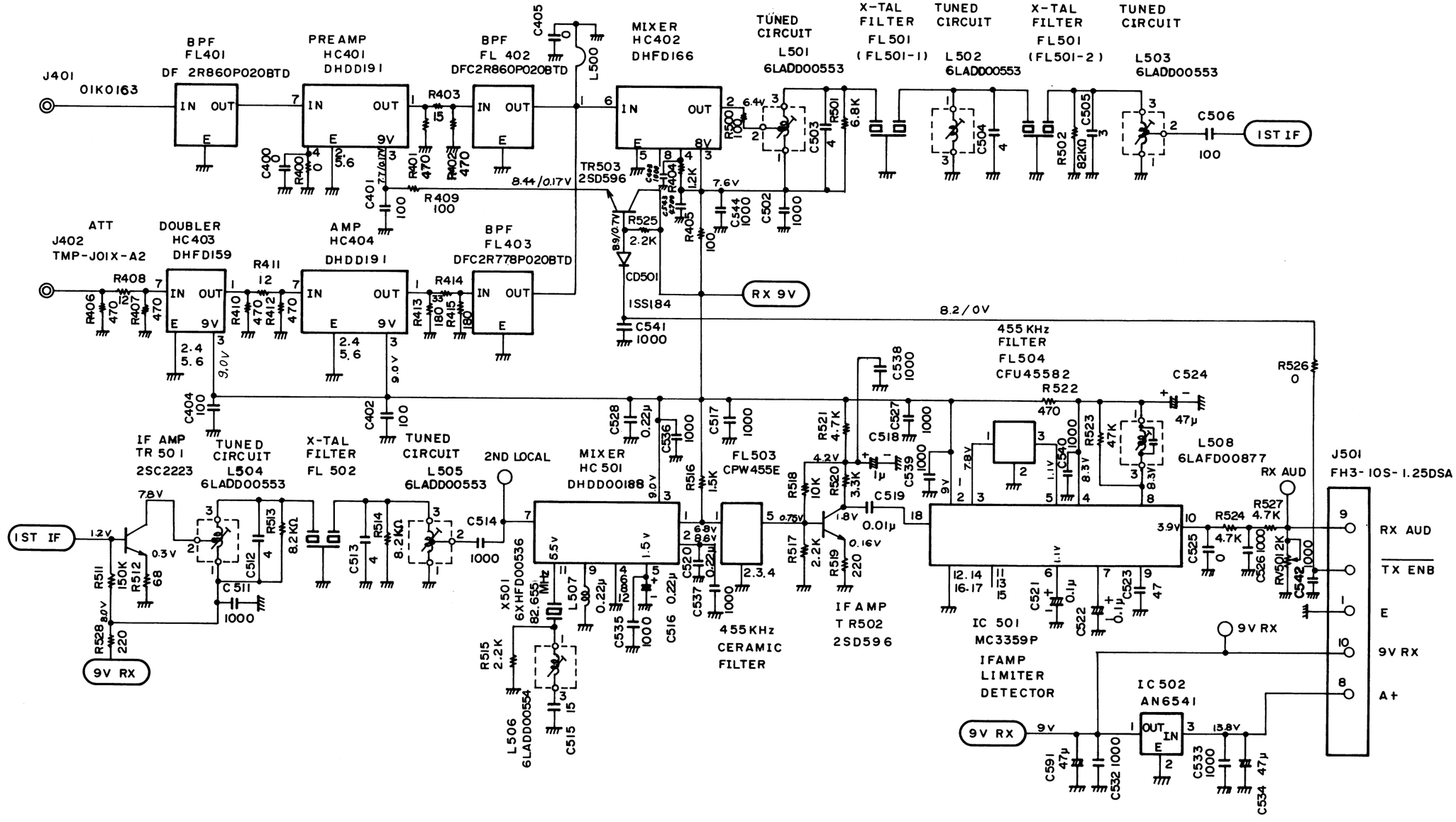
AUDIO PROCESSOR



SCHEMATIC DIAGRAM

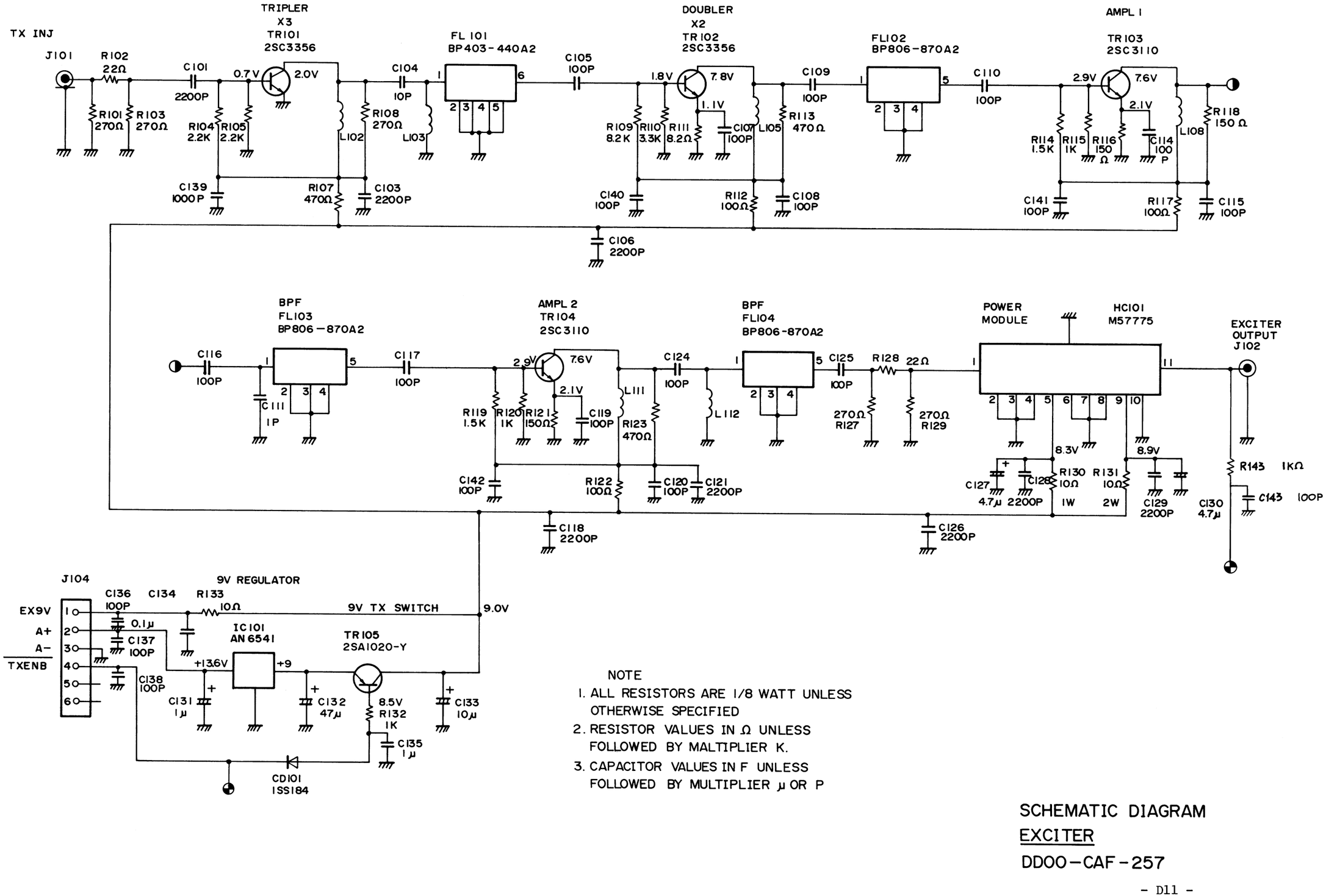
806-825MHz
851-870MHz FREQUENCY SYNTHESIZER

DDOO-CMG-133



SCHEMATIC DIAGRAM
800MHz RECEIVER

DDOO-CMA-240



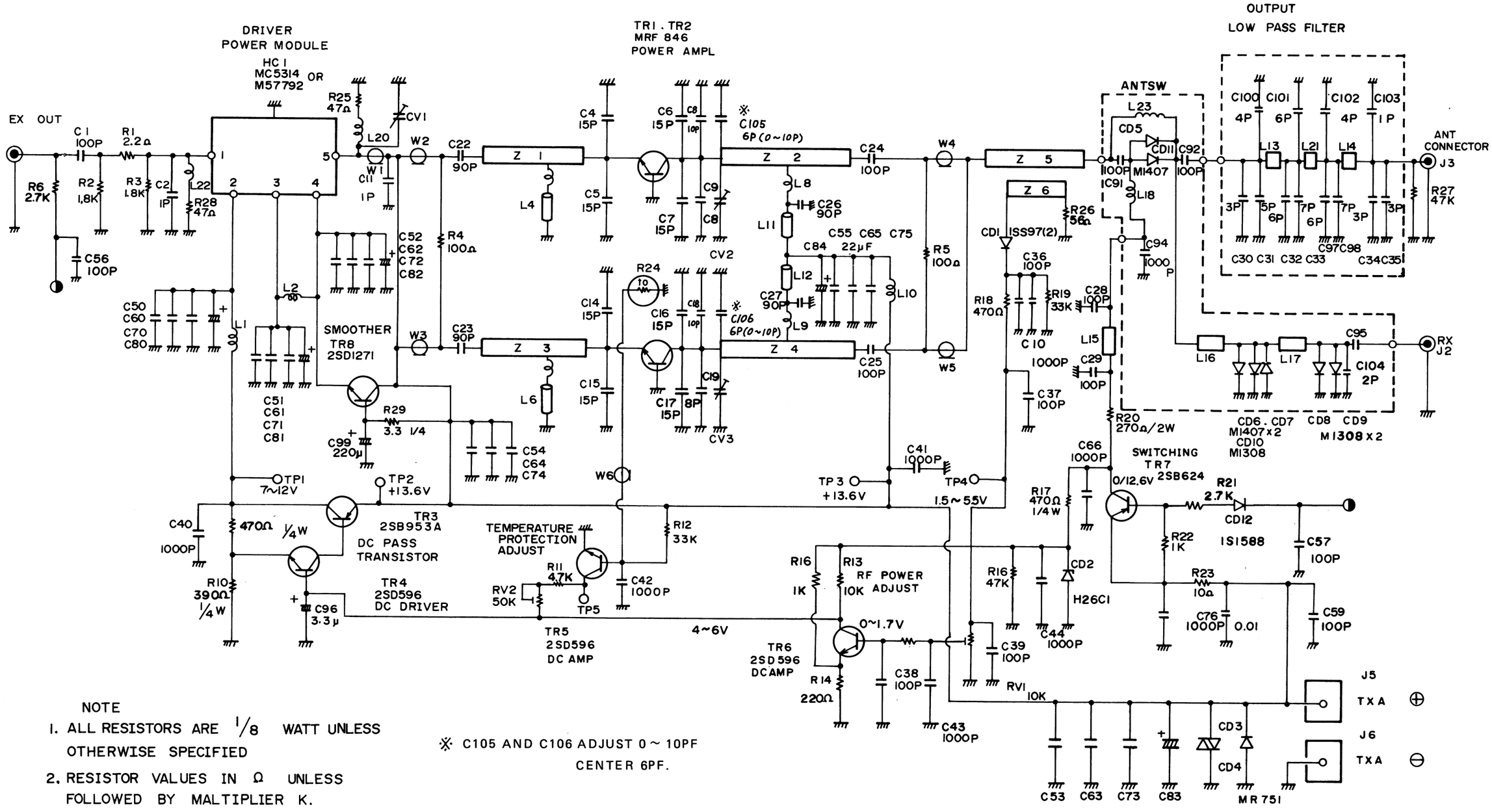
NOTE

1. ALL RESISTORS ARE 1/8 WATT UNLESS OTHERWISE SPECIFIED
2. RESISTOR VALUES IN Ω UNLESS FOLLOWED BY MALTIPLIER K.
3. CAPACITOR VALUES IN F UNLESS FOLLOWED BY MULTIPLIER μ OR P

SCHEMATIC DIAGRAM

EXCITER

DDOO-CAF-257



NOTE

1. ALL RESISTORS ARE 1/8 WATT UNLESS OTHERWISE SPECIFIED
2. RESISTOR VALUES IN Ω UNLESS FOLLOWED BY MALTIPLIER K.
3. CAPACITOR VALUES IN F UNLESS FOLLOWED BY MULTIPLIER μ OR P.

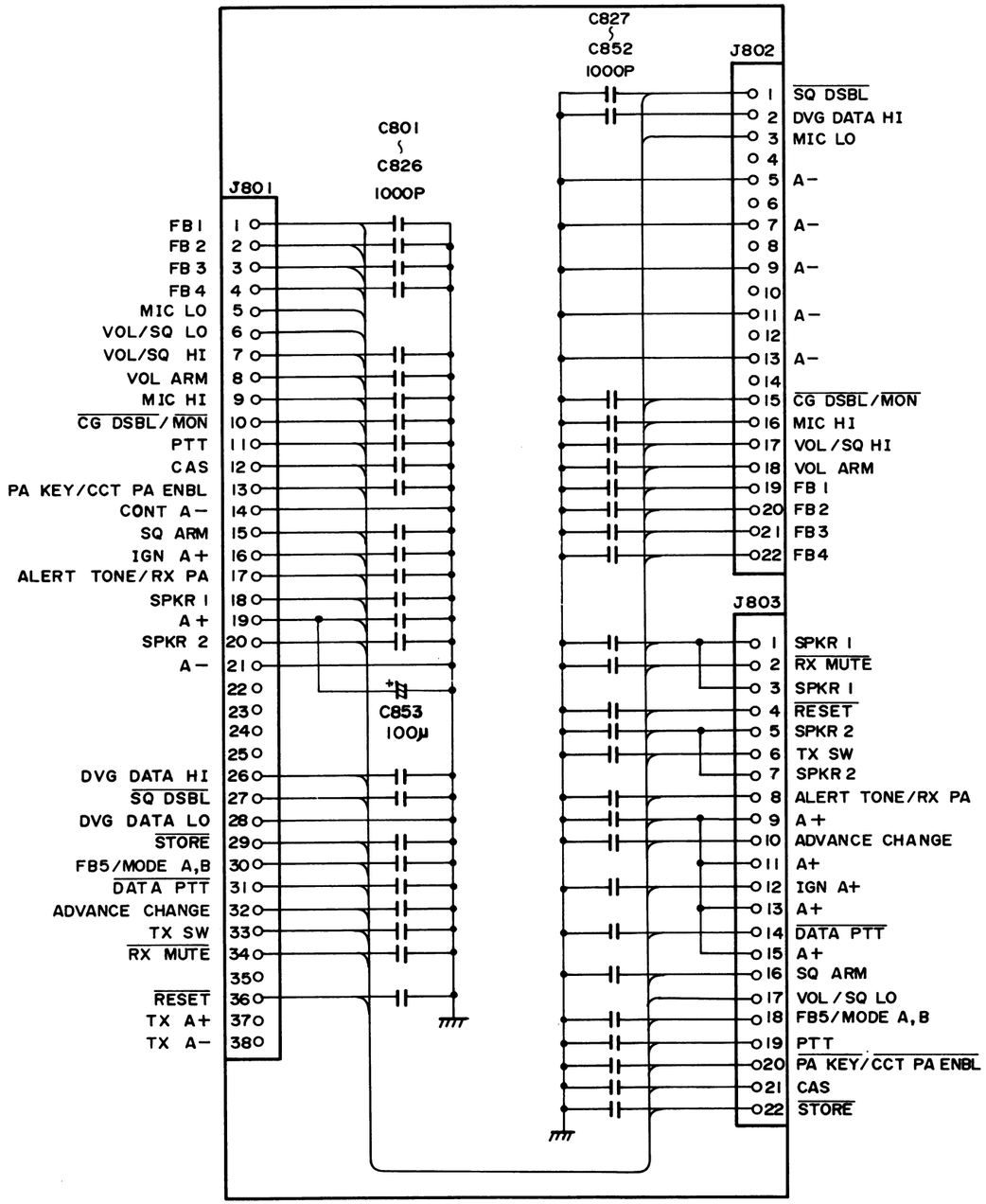
C50 ~ C59	—	100 PF
C60 ~ C67	—	1000 PF
C70 ~ C76	—	0.01μF
C80 ~ C83	—	47μF

※ C105 AND C106 ADJUST 0 ~ 10PF
CENTER 6PF.

SNR10D22L

SCHEMATIC DIAGRAM
POWER AMPLIFIER
(800MHZ)

DDOO-CAH-257

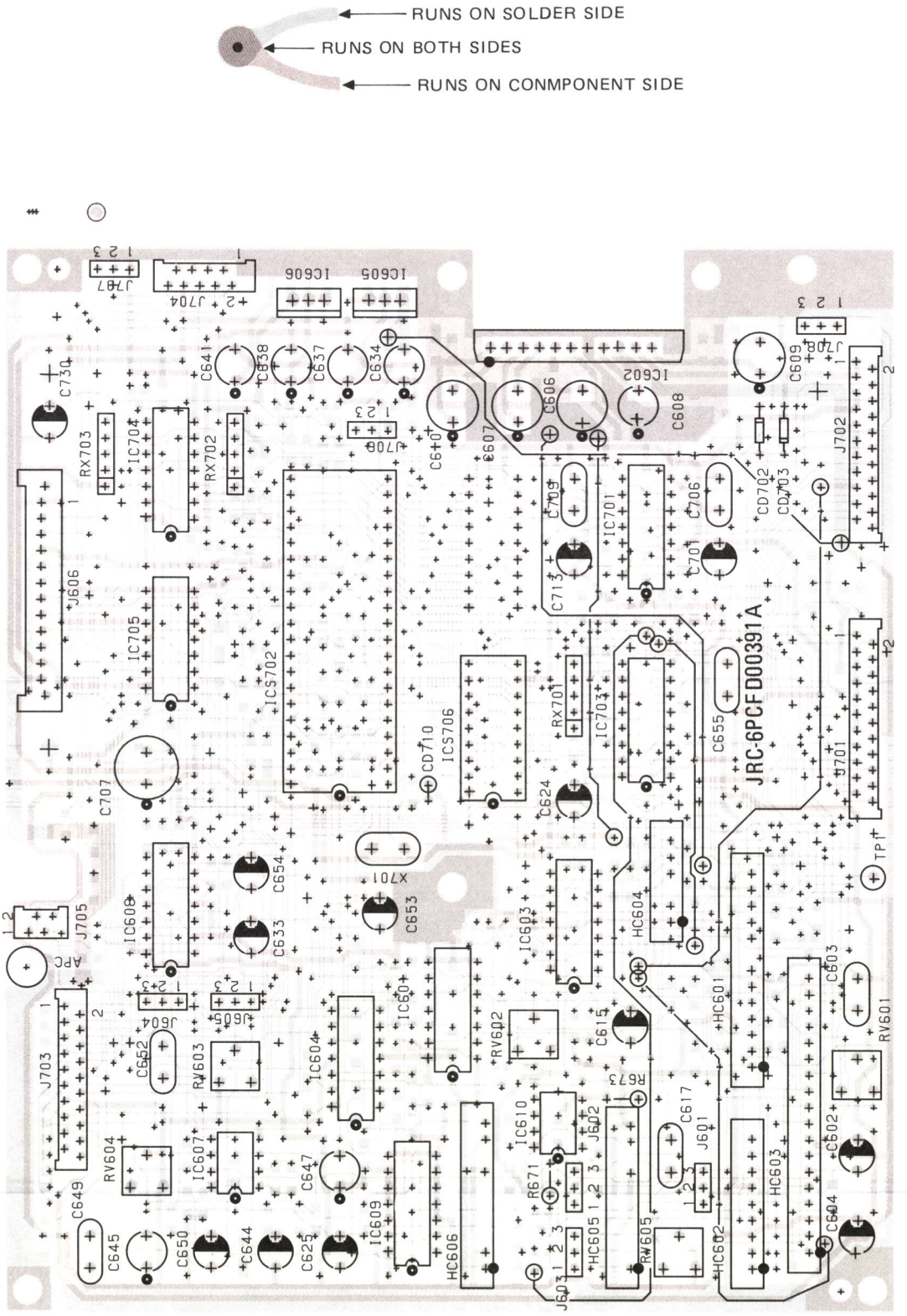


SCHEMATIC DIAGRAM

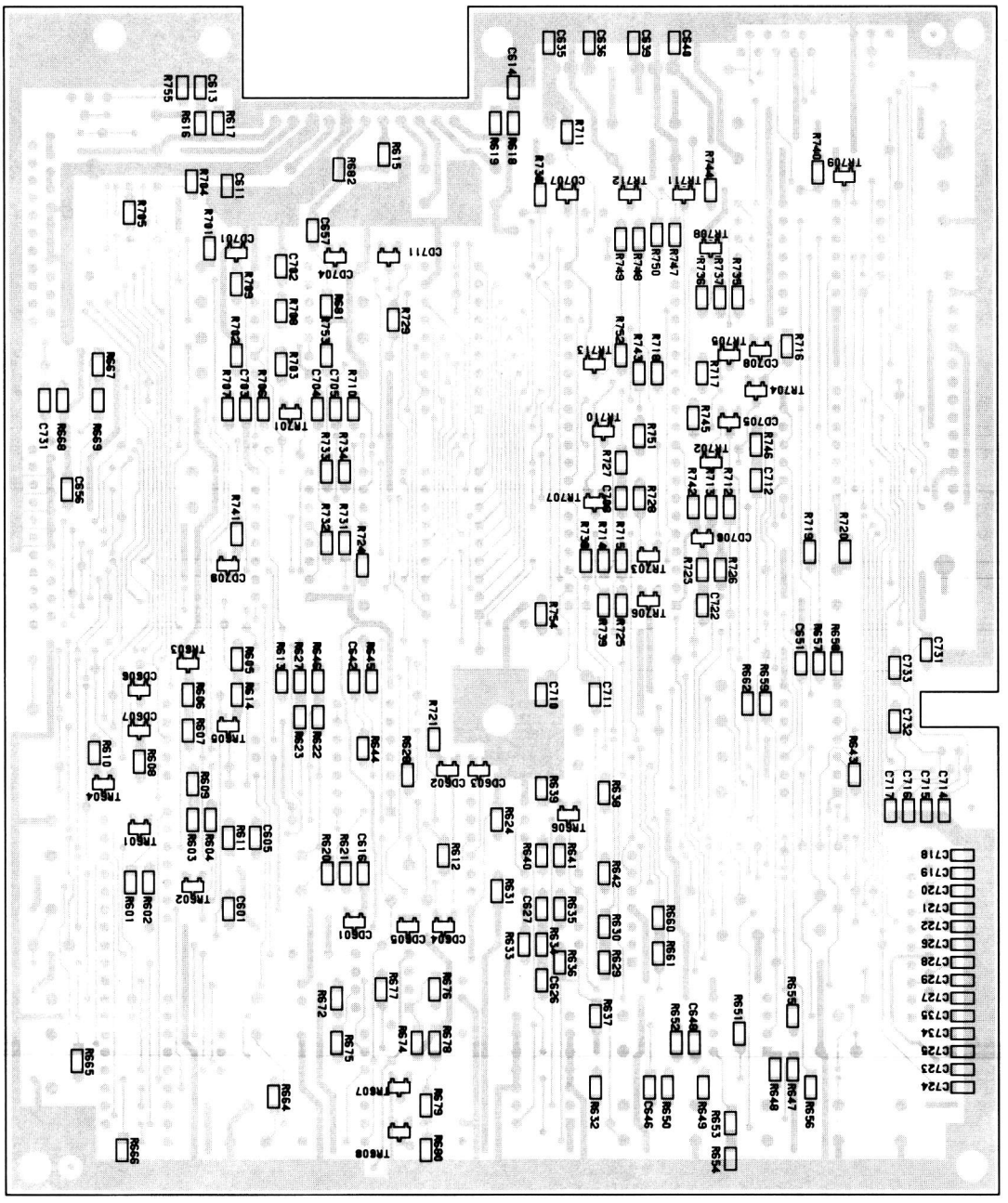
INTERFACE

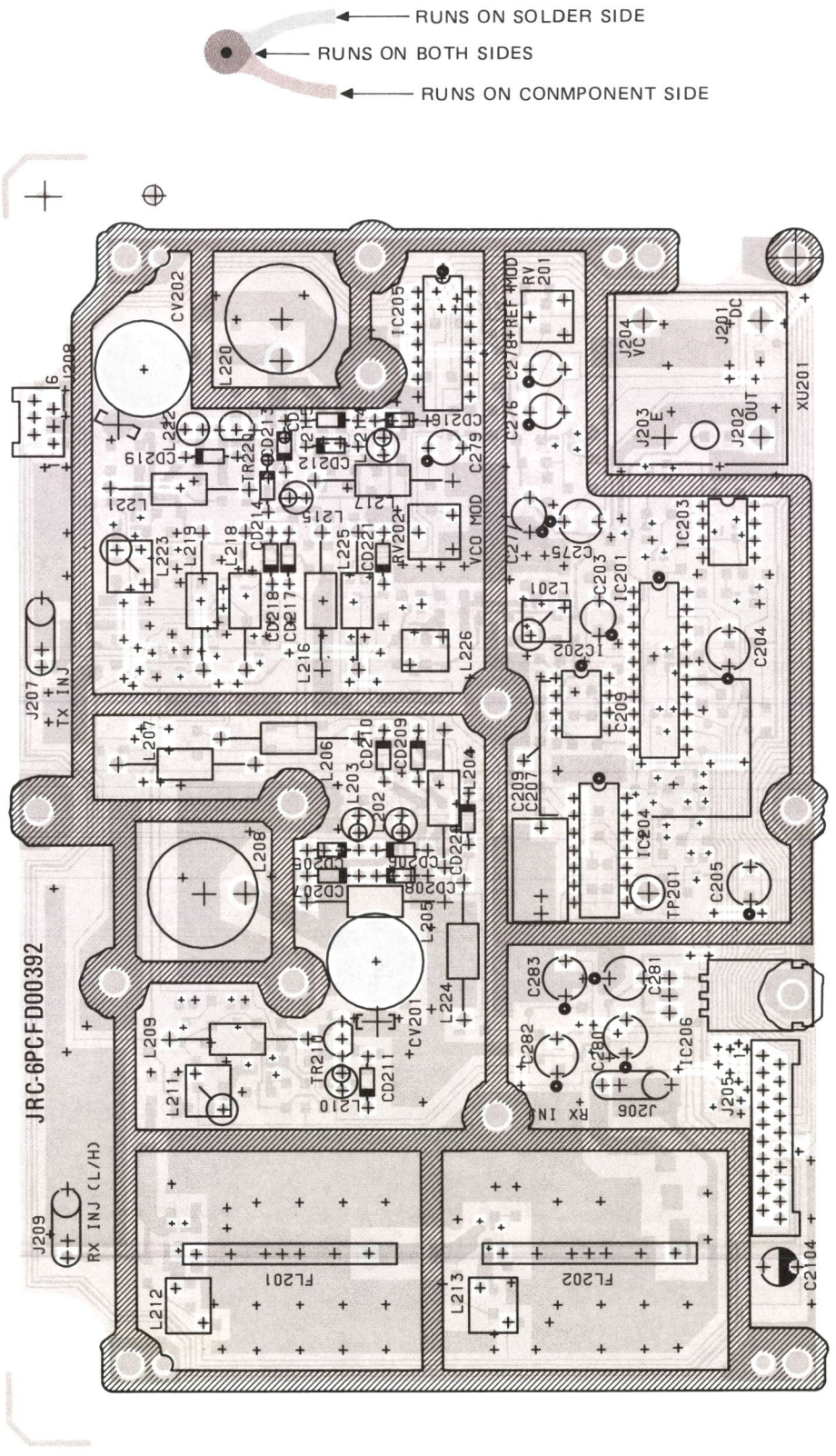
DDOO-CFQ-2223

1/1

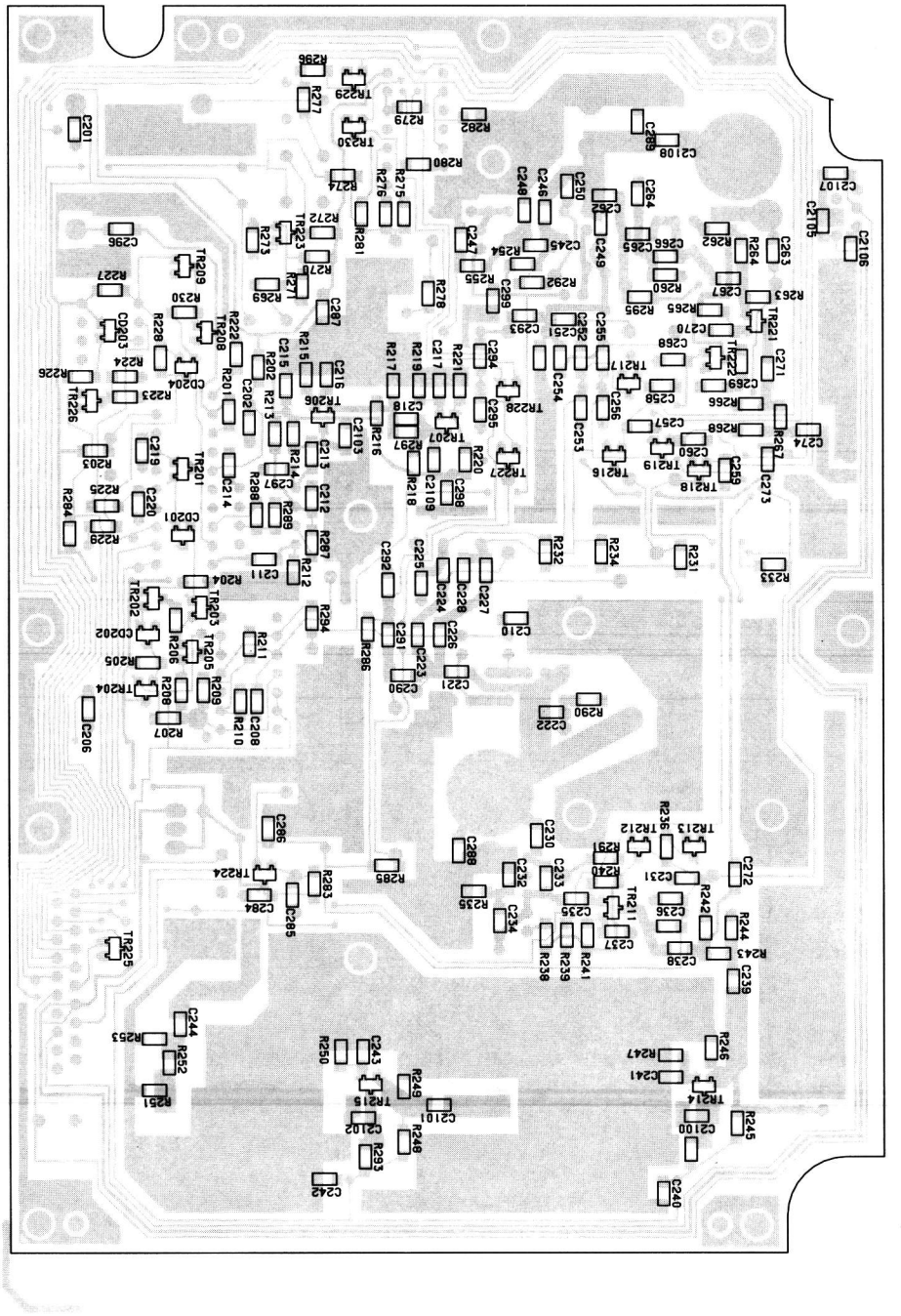


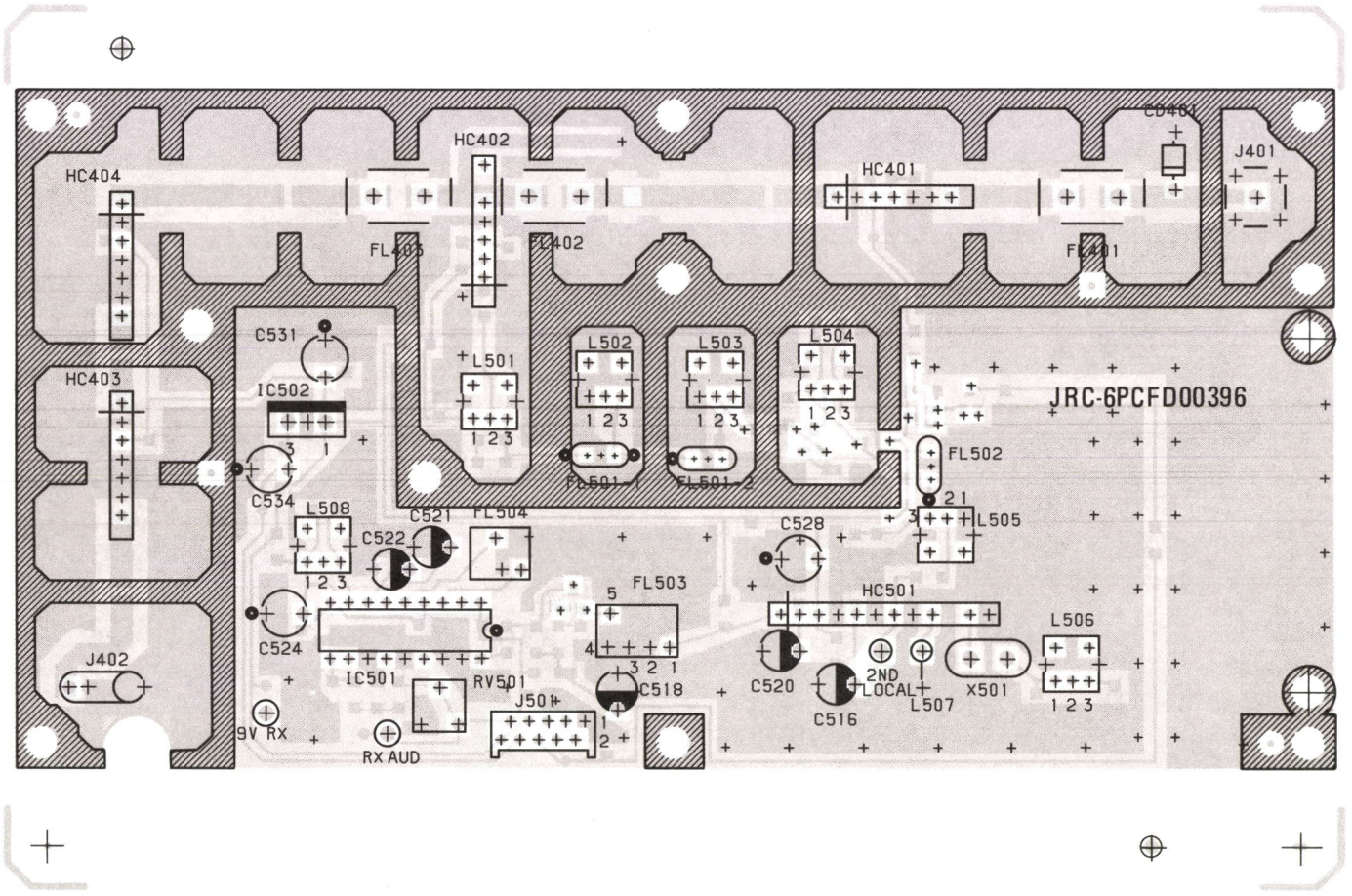
SYSTEM CONTROL



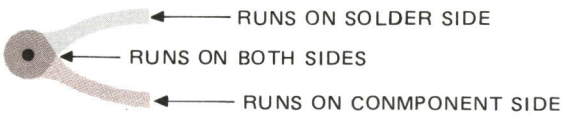


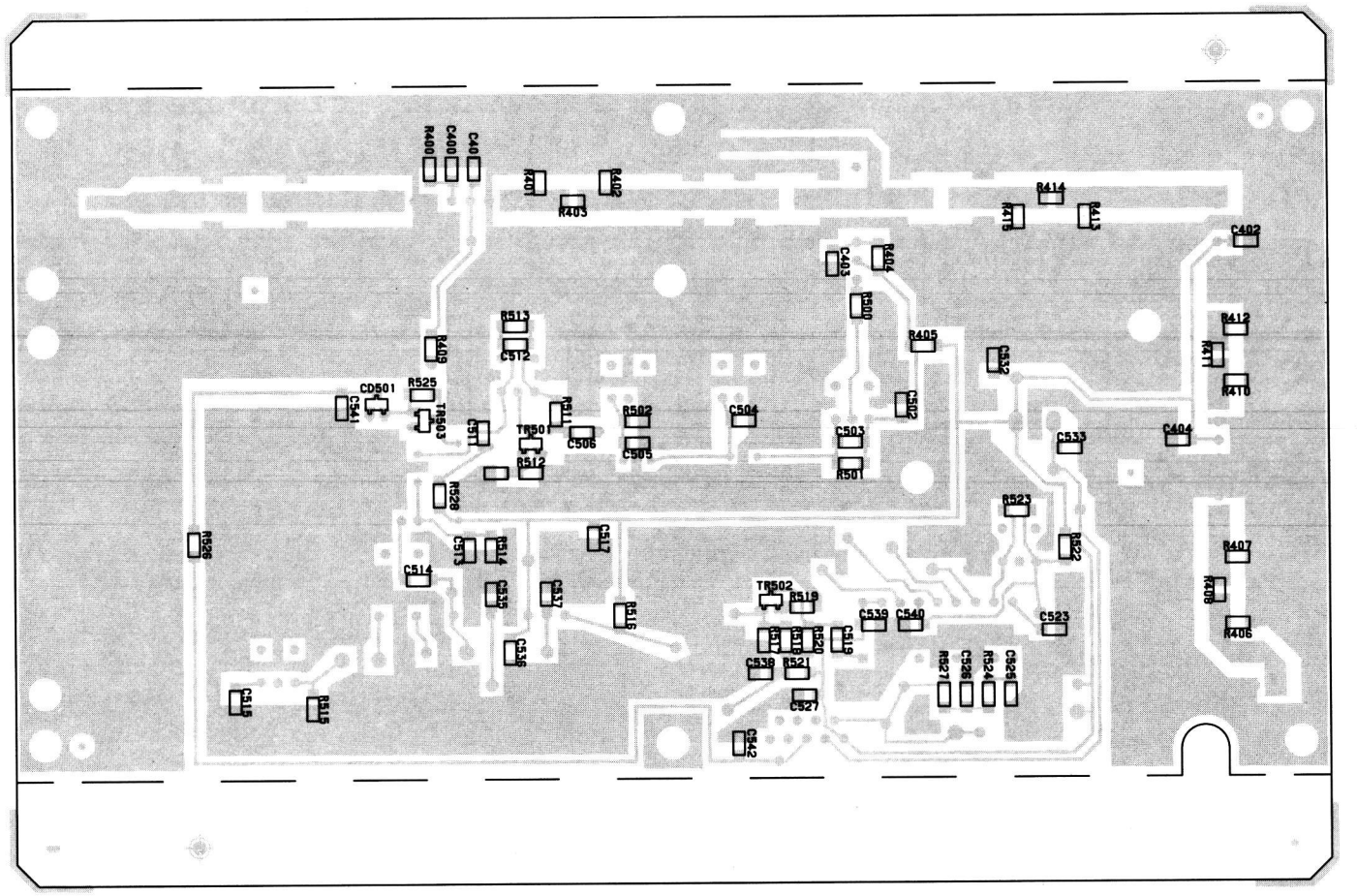
FREQUENCY SYNTHESIZER

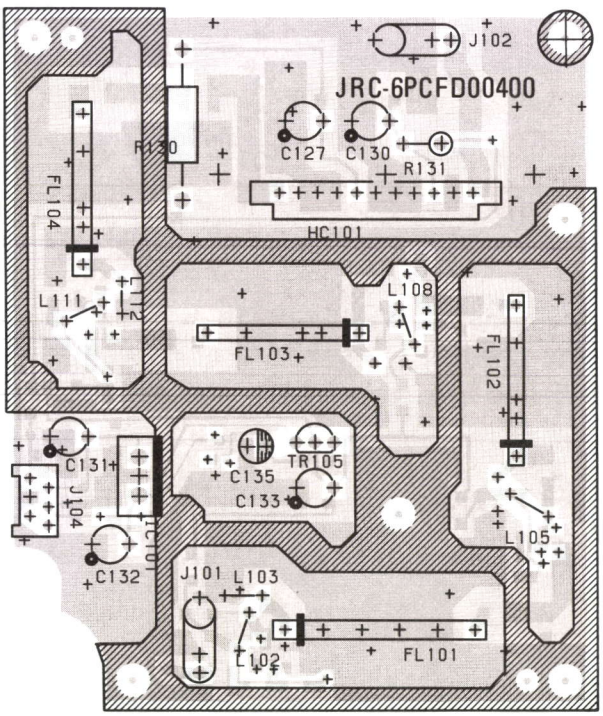



HC404
HC402
HC401
CD401
J401
FL403
FL402
FL401
C531
HC403
IC502
L501
L502
L503
L504
JRC-6PCFD00396
C534
FL501-1
FL501-2
FL502
L508
C521
C522
FL504
C528
L505
FL503
HC501
C524
L506
J402
IC501
RV501
C520
2ND LOCAL
X501
C518
J501
L507
C516
9V RX
RX AUD

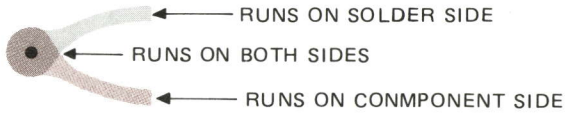
RECEIVER

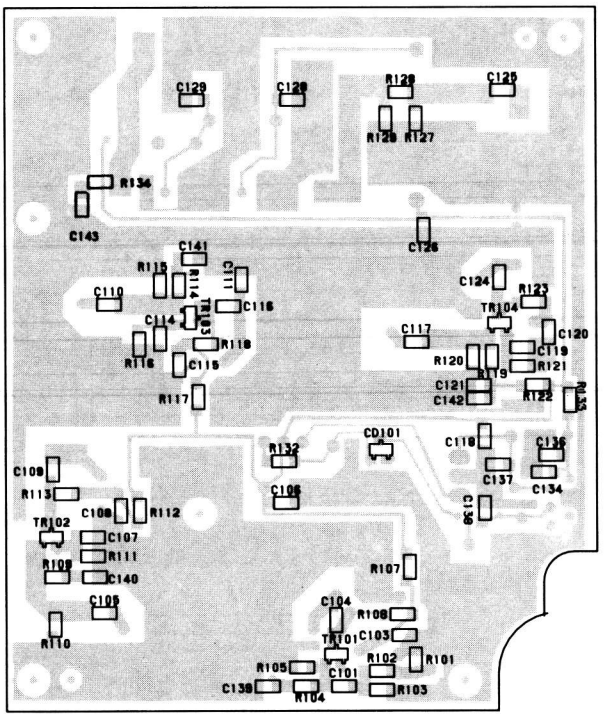

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON CONMPONENT SIDE

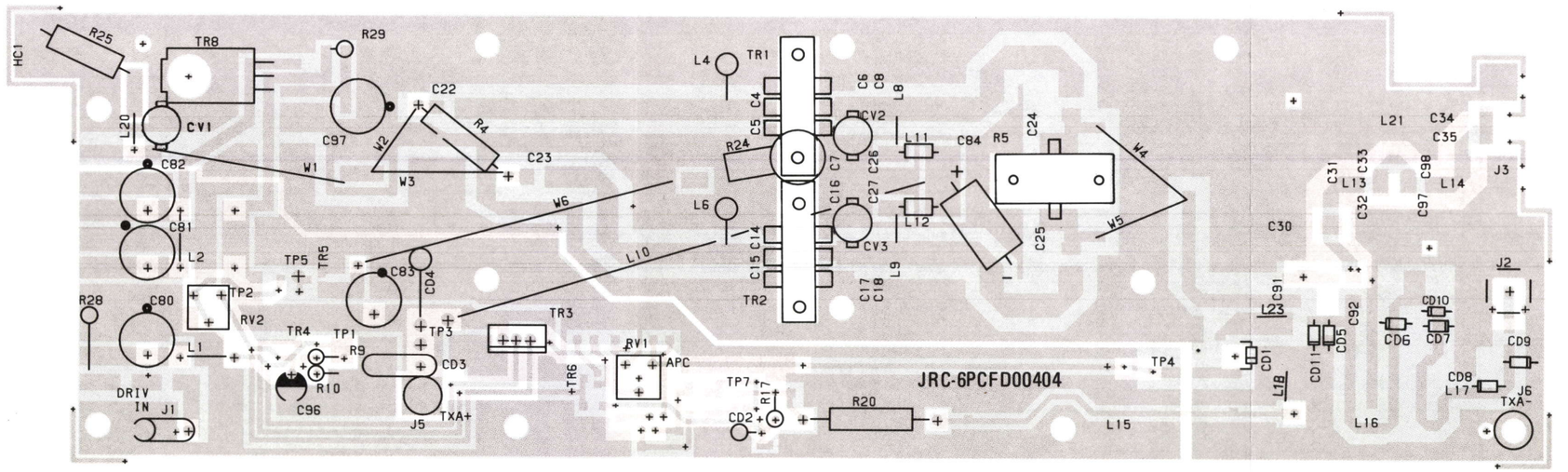

R400
C400
C40
R401
R402
R403
R414
R413
C402
C403
R404
R500
R412
R411
R405
C532
R410
CD501
R525
C541
TR503
C511
TR501
R511
C506
R502
C504
C505
R512
C502
C503
R501
C533
C404
R528
R523
R526
C513
R514
C517
R522
C514
C535
C537
TR502
R519
C539
C540
R407
R409
R406
C523
R516
R517
R518
R520
C519
C536
C538
R521
R527
C528
R524
C526
C515
R515
C527
C542


JRC-6PCFD00400
J102
C127
C130
R131
R130
FL104
HC101
L111
L108
FL103
FL102
C131
C135
TR105
C133
J104
L105
C132
J101
L103
L102
FL101

EXCITER

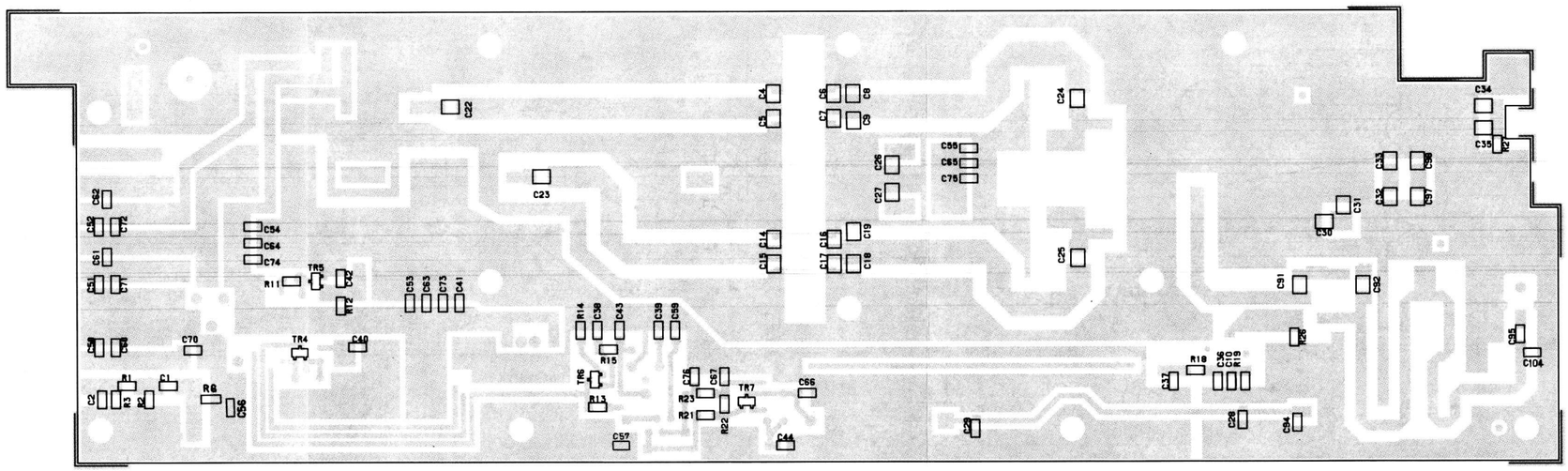

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON CONMPONENT SIDE

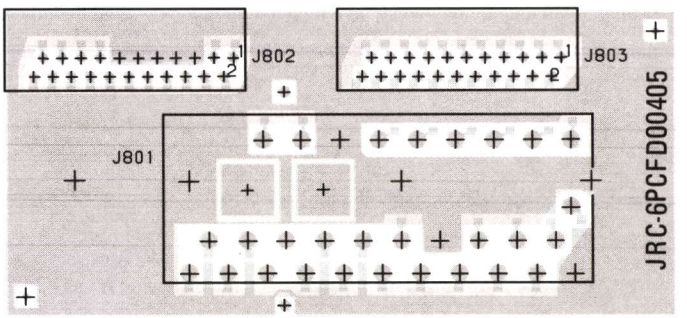

C129
C130
R128
C125
R126
R127
R134
C143
C126
C141
R115
R114
C111
C110
C116
C114
C113
R118
R116
C115
R117
C124
R123
TR104
C117
C120
C119
R120
R121
R119
C121
C142
R122
C118
C136
C137
C134
C139
CD101
R132
C109
R113
C108
R112
C106
TR102
C107
R111
R109
C140
C105
R110
R107
C104
R108
TR101
C103
R105
C101
R102
R101
C138
R104
R103



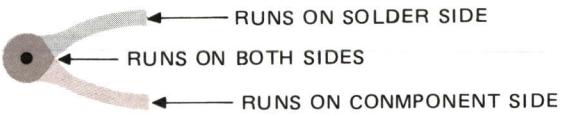
POWER AMPLIFIER

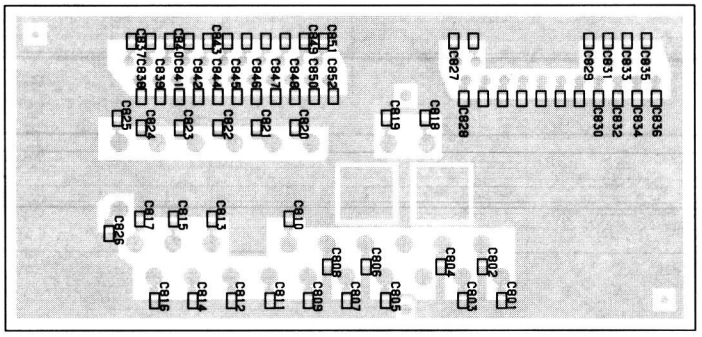
RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON CONMPONENT SIDE

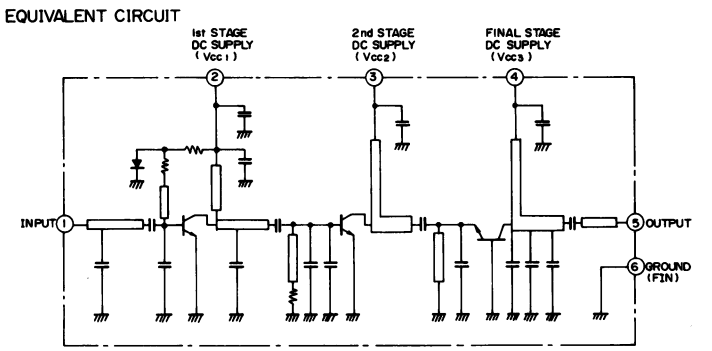
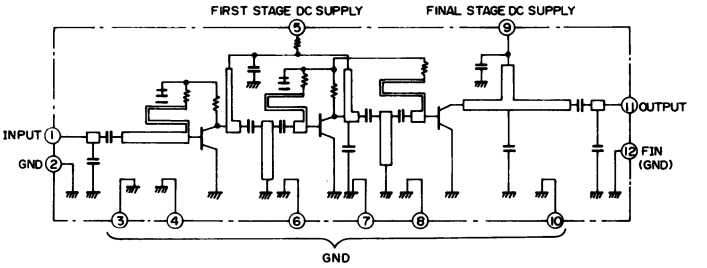
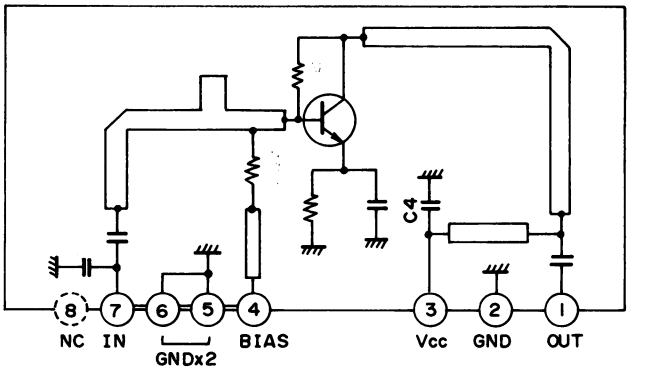
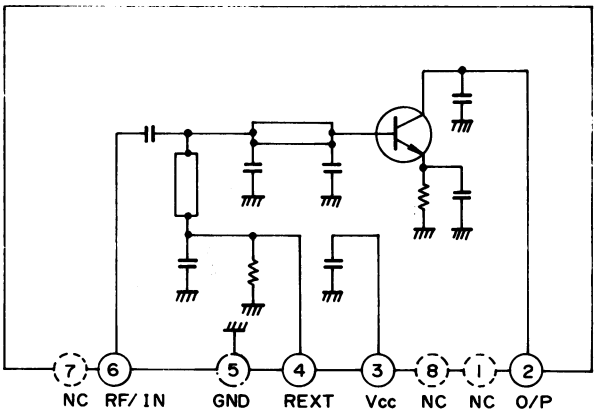

C22
C23
C24
C25
C26
C27
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C45
C46
C47
C48
C49
C50
C51
C52
C53
C54
C55
C56
C57
C58
C59
C61
C62
C63
C64
C65
C66
C67
C68
C69
C70
C73
C74
C75
C76
C77
C78
C79
C80
C81
C82
C83
C84
C85
C86
C87
C88
C89
C90
C91
C92
C93
C94
C95
C96
C97
C98
C99
C100
C101
C102
C103
C104
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
TR4
TR5
TR6
TR7

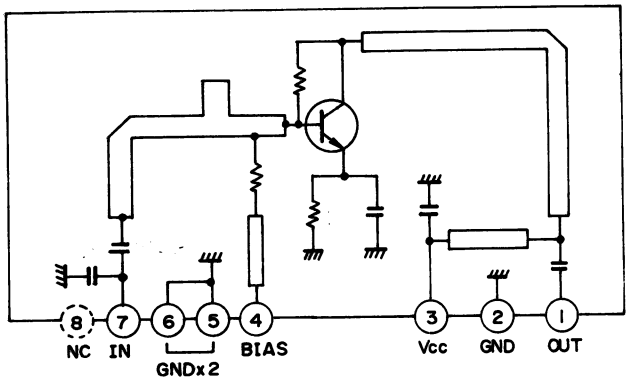
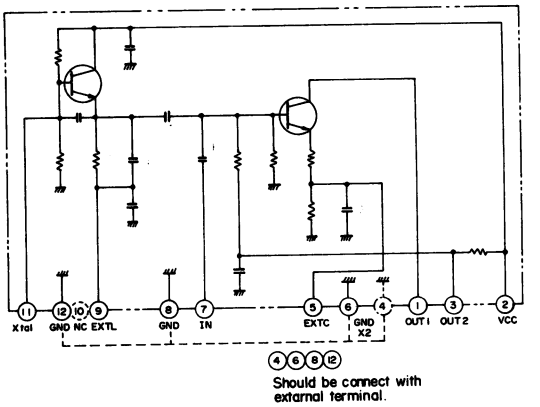
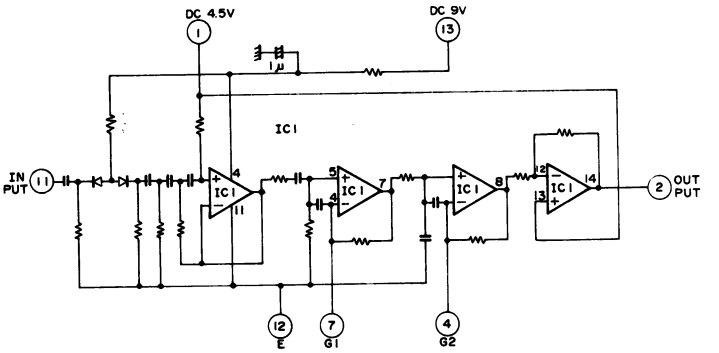
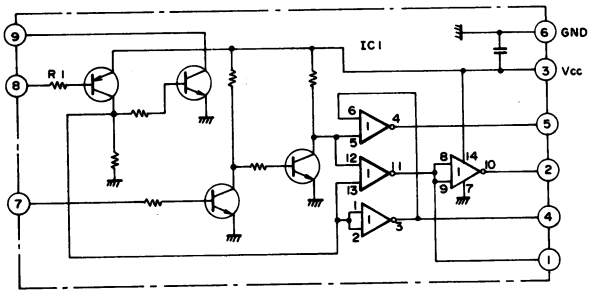

J802
J803
J801
JRC-6PCFD00405

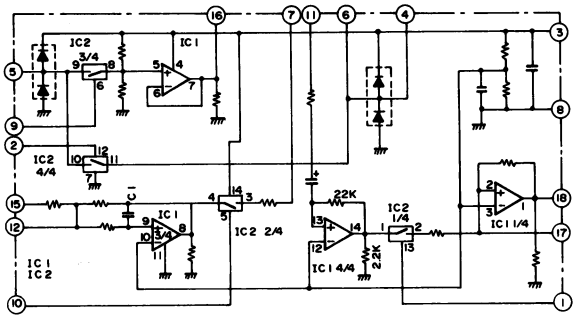
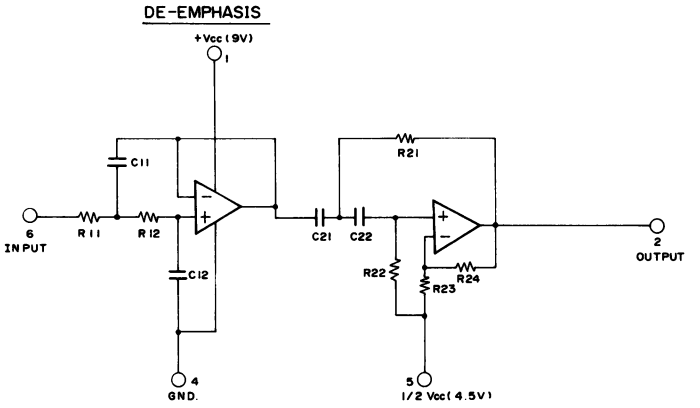
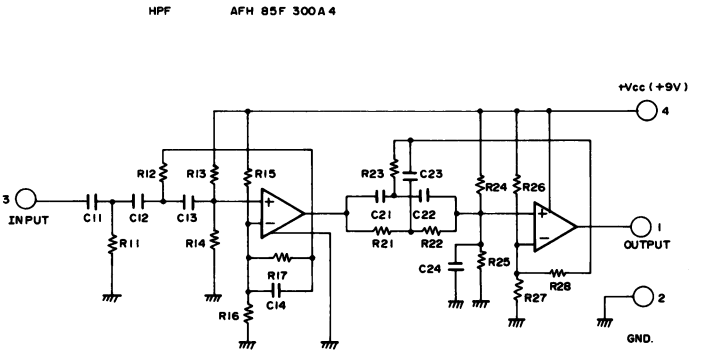
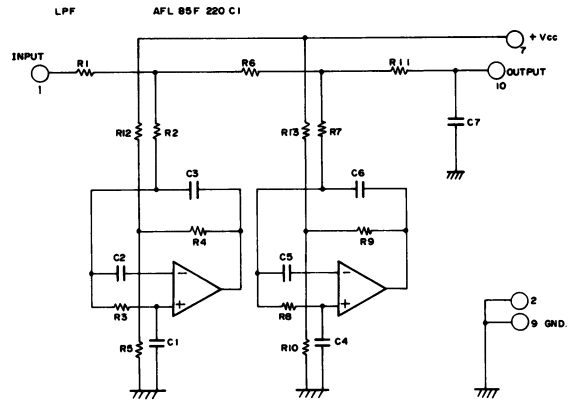
INTERFACE


RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON CONMPONENT SIDE


C851 C852
C849 C850
C847 C848
C845 C846
C843 C844
C841 C842
C839 C840
C837 C838
C835
C833
C831
C829
C827
C836
C834
C832
C830
C828
C819
C818
C817
C816
C815
C814
C813
C812
C811
C810
C809
C808
C807
C806
C805
C804
C803
C802
C801
C820
C821
C822
C823
C824
C825
C826

SYMBOL	JRC PART NO.	EQUIVALENT CIRCUIT
HC 1	JRC- 5DDAB00216	
HC101	JRC- 5DHAA00020	
HC401 HC404	JRC- 6DHDD00191	
HC402	JRC- 6DHFD00166	

SYMBOL	JRC PART NO.	EQUIVALENT CIRCUIT
HC 403	JRC- 6DHFD00159	
HC501	JRC- 6DHDD00188	
HC601	JRC- 6DHFD00160	
HC602	JRC- 6DHFD00165	

SYMBOL	JRC PART NO.	EQUIVALENT CIRCUIT
HC603	JRC- 6DHFD00164	
HC604	JRC- 6DHFD00167	
HC605	JRC- 6DHFD00168	
HC606	JRC- 6DHFD00169	

PARTS LIST

800 MHz Mobile Transceiver
19C852800P1/P2

SYMBOL	PART NO.	DESCRIPTION
		PA BOARD JRC-CAH-257
		---------- CAPACITOR ----------
C1	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C2	JRC-5CAAD00795	Ceramic: 1pF 50VDCW, temp coef 0±60ppm.
C4	JRC-5CMAB01109	Mica: 15pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C5		
C6	JRC-5CMAB01109	Mica: 15pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C7		
C8	JRC-5CMAB01091	Mica: 10pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C9	JRC-5CMAB01228	Mica: 8pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C10	JRC-5CAAD00782	Ceramic 1000pF ±5%, 500VDCW, temp coef 0±100ppm.
C11	JRC-5CMAB00986	Mica: 1pF ±0.25%, 500VDCW, temp coef 0±200ppm.
C14 and C15	JRC-5CMAB01109	Mica: 15pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C16 and C17	JRC-5CMAB01109	Mica: 15pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C18	JRC-5CMAB01091	Mica: 10pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C19	JRC-5CMAB01228	Mica: 8pF ±0.5%, 500VDCW, temp coef 0±100ppm.
C22 and C23	JRC-5CMAB01283	Mica: 90pF ±5%, 500VDCW, temp coef 0±50ppm.
C24 and C25	JRC-5CMAB01425	Mica: 100pF ±5%, 500VDCW, temp coef 0±100ppm.
C26 and C27	JRC-5CMAB01283	Mica: 90pF ±5%, 500VDCW, temp coef 0±50ppm.
C28 and C29	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C30	JRC-5CMAB00987	Mica: 3pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C31	JRC-5CMAB01113	Mica: 5pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C32	JRC-5CMAB01171	Mica: 6pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C33	JRC-5CMAB01129	Mica: 7pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C34 and C35	JRC-5CBAB01842	3pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C36 thru C39	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C40 thru C49	JRC-5CAAD00782	Ceramic: 1000pF ±5%, 50VDCW, temp coef +350 -1000ppm.
C50 thru C57	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C59	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef +350 -1000ppm.
C60 thru C67	JRC-5CAAD00782	Ceramic: 1000pF ±5%, 50VDCW, temp coef +350 -1000ppm.
C70 thru C76	JRC-5CAAD00789	Ceramic: 0.01μF ±10%, 50VDCW, temp coef ±10%.
C80 thru C83	JRC-5CEAA00439	Electrolytic: 47μF ±20%, 40VDCW.
C84	JRC-5CEAA00440	Electrolytic: 22μF ±20%, 40VDCW.
C91 and C92	JRC-5CMAB01425	Mica: 100pF ±5%, 500VDCW, temp coef 0±100ppm.
C94 and C95	JRC-5CAAD00782	Ceramic: 1000pF ±5%, 50VDCW, temp coef +350 -1000ppm.
C96	JRC-5CSAC01180	Tantalum: 3.3μF ±20%, 25VDCW, temp coef ±10%.
C97	JRC-5CMAB01171	Mica: 6pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C98	JRC-5CMAB01129	Mica: 7pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
C99	JRC-5CEAA00481	Electrolytic: 220μF 25 V
C100	JRC-5CMAB01349	Mica: 4pF ±0.25pF 500VDCW temp coef 0±200ppm.
C101	JRC-5CMAB01063	Mica: 6pF ±0.25pF 500VDCW temp coef 0±200ppm.
C102	JRC-5CMAB01349	Mica: 4pF ±0.25pF 500VDCW temp coef 0±200ppm.
C103	JRC-5CMAB00986	Mica: 1pF ±0.25pF 500VDCW temp coef 0±200ppm.
C104	JRC-5CMAB01062	Mica: 2pF ±0.25pF 500VDCW temp coef 0±200ppm.
C105 and C106	JRC-5CMAB01171	Mica: 6pF ±0.25pF, 500VDCW, temp coef 0±200ppm.
		---------- DIODES ----------
CD1	JRC-5TXAA00313	Silicon. (Schottky Barrier); sim to NEC 1SS97.
CD2	JRC-5TXAE00166	Zener: 500mW, sim to Hitachi HZ4C2.
CD3	JRC-5TZAA00045	Ceramic Varistor: Limit voltage 38 to 135 V; sim to Sanken SNR-10D22L.
CD4	JRC-5TXAM00019	Silicon: fwd current 3A, 200PIV; sim to MOTOROLA MR751.
CD5 thru CD7	JRC-5TXAR00051	Silicon, fast recovery, (RF Switch): sim to Mitsubishi MI407.
CD8 thru CD10	JRC-5TXAR00041	Silicon, fast recovery, (RF Switch): sim to Mitsubishi MI308.
CD11	JRC-5TXAR00051	MI407 (same as CD5)
CD12	JRC-5TXAD00040	IS1588 Toshiba

SYMBOL	PART NO.	DESCRIPTION
		---------- CAPACITORS ----------
CV1 thru CV3	JRC-5CVAC00070	Variable: max 4pF.
		---------- HYBRID CIRCUITS ----------
HC1	JRC-5DDAB00216	RF Power Amplifier; sim to Mitsubishi M57792.
		---------- JACKS ----------
J1	JRC-5JWCL00045	Connector, RF.
J2	JRC-5JJBL00025	Connector, RF.
J3	JRC-5JJBL00026	Connector, RF.
J5	JRC-5JTCW00060	Terminal.
L1 thru L2	JRC-6LAFD01111	Coil, RF.
L4 and L6	JRC-6LAFD01112	Coil, RF.
L8 and L9	JRC-6LAFD01113	Coil, RF.
L10	JRC-6LAFD01115	Coil, RF.
L11 and L12	JRC-6LAFD01114	Coil, RF.
L18	JRC-6LAFD01273	Coil, RF.
L20	JRC-6LAFD01116	Coil, RF.
L23	JRC-6LAFD01274	Coil, RF.
		---------- RESISTORS ----------
R1	JRC-5RDAC02331	Metal film: 2.2 ohms ±5%, 200VDCW, 1/8W.
R2 and R3	JRC-5RDAC02332	Metal film: 1.8K ohms ±5%, 200VDCW, 1/8W.
R4	JRC-5REAG00014	Metal film: 100 ohms ±5%, 350VDCW, 2W.
R5	JRC-5RZAB01038	High frequency power resister (Dumy Load); 100 ohms, 50W, DC to 1GHz.
R6	JRC-5REAG00623	Metal film: 2.7K ohms
R9	JRC-5REAA05058	Metal film: 4.7K ohms ±5%, 500VACW, 1/4W.
R10	JRC-5REAA05056	Metal film: 390 ohms ±5%, 500VACW, 1/4W.
R11	JRC-5RDAC02213	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R12	JRC-5RDAC02211	Metal film: 33K ohms ±5%, 200VDCW, 1/8W.
R13	JRC-5RDAC02269	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R14	JRC-5RDAC02212	Metal film: 220 ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R15	JRC-5RDAC02217	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R16	JRC-5RDAC02217	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R17	JRC-5REAA05058	Metal film: 470 ohms ±5%, 500VACW, 1/4W.
R18	JRC-5RDAC02215	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R19	JRC-5RDAC02211	Metal film: 33K ohms ±5%, 200VDCW, 1/8W.
R20	JRC-5REAG01440	Metal film: 270 ohms ±5%, 350VDCW, 2W.
R21	JRC-5REAG00623	Metal film: 2.7K ohms ±5%, 200VDCW, 1/8W.
R22	JRC-5RDAC02217	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R23	JRC-5RDAC02220	Metal film: 10 ohms ±5%, 200VDCW, 1/8W.
R24	JRC-5RXAE00028	
R25	JRC-5REAG00035	Metal film: 47 ohms ±5%, 350VDCW, 2W.
R26	JRC-5REAG00900	Metal film: 56 ohms ±5%, 200VDCW, 1/8W.
R27	JRC-5RDAC02214	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R28	JRC-5REAG00151	Metal film 47 ohms 1W.
R29	JRC-5REAG05015	Metal film 3.3 ohms 1/4W.
RV1	JRC-5RVAB00279	Variable: 10K ohms ±30%, 0.1W.
RV2	JRC-5RVAB00317	Variable: 50K ohms ±30%, 0.1W.
		---------- TRANSISTORS ----------
TR1 and TR2	JRC-5TZAR00014	Silicon, NPN; (800MHZ Amplifier) 35Watts, 12.5V: sim to Motorola MRF846.
TR3	JRC-5TBAR00001	Silicon, PNP; sim to Matsushita 2SB953A.
TR4	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SD596 (DV3).
TR5 and TR6	JRC-5TDAB00055	Silicon, NPN; sim to NEC 2SD596-T2 (DV3).
TR7	JRC-5TBAB00055	Silicon, PNP; sim to NEC 2SB624 (BV3).
TR8	JRC-5TDAR00012	Silicon, PNP; sim to NEC 2SD 1271Q
		---------- CABLES ----------
W1	JRC-6ZCFD00126	Coaxial Cable (50 ohms).
W2 and W3	JRC-6ZCFD00127	Coaxial Cable (70 ohms).
W4 and W5	JRC-6ZCFD00130	Coaxial Cable (70 ohms).
W6	JRC-6ZCFD00129	Coaxial Cable (50 ohms).
		EXCITOR BOARD
		---------- CAPACITORS ----------

SYMBOL	PART NO.	DESCRIPTION
C101 and C103	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%
C104	JRC-5CAAD00785	Ceramic: 10pF±0.5pF, 50VDCW, temp coef 0±60ppm.
C105	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C106	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%.
C107 thru C110	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C111	JRC-5CAAD00795	Ceramic: 1pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C114 thru C117	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C118	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%.
C119 and C120	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C121	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%.
C124 and C125	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C126	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%.
C127	JRC-5CEAA02084	Electrolytic: 4.7 F ±20%, 35VDCW.
C128 and C129	JRC-5CAAD00781	Ceramic: 2200pF ±10%, 50VDCW, temp coef ±10%.
C130	JRC-5CEAA02084	Electrolytic: 4.7 F ±20%, 35VDCW.
C131	JRC-5CEAA01831	Electrolytic: 1 F ±20%, 50VDCW.
C132	JRC-5CEAA01982	Electrolytic: 47 F ±20%, 16VDCW.
C133	JRC-5CEAA01826	Electrolytic: 10 F ±20%, 16VDCW.
C134	JRC-5CAAD01056	Ceramic: 0.1 F +80 -20%, 50VDCW.
C135	JRC-5CSAC00123	Tantalum: 1 F ±20%, 35VDCW.
C136 thru C138	JRC-5CAAD00780	Ceramic: 100pF ±5% 50VDCW temp coef 0±60 ppm
C139	JRC-5CAAD00837	Ceramic: 1000pF ±5% 50VDCW temp coef +35 -1000ppm
C140 thru C142	JRC-5CAAD00780	Ceramic: 100pF ±5% 50VDCW temp coef 0±60 ppm
		---------- DIODES ----------
CD1	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS184.
		---------- FILTERS ----------
FL101	JRC-5NLAT00016	RF B.P.F.: Pass band 403 to 435 MHz.
FL102 thru FL104	JRC-5NLAT00017	RF B.P.F.: Pass band 806 to 870 MHz.

SYMBOL	PART NO.	DESCRIPTION
		---------- HYBRID CIRCUITS ----------
HC101	JRC-5DHAA00020	RF Power Amplifier; sim to Mitsubishi M57775.
		--------- INTEGRATED CIRCUITS --------
IC101	JRC-5DAAR00021	Linear, Positive Voltage Regulator; sim to Matsushita AN6541.
		---------- JACKS ----------
J101 and J102	JRC-5JWCL00045	Connector, RF.
J104	JRC-5JWBS00174	Connector, 6 pins.
		---------- COILS ----------
L102	JRC-6LAFD01144	Coil, RF.
L103	JRC-6LAFD01145	Coil, RF.
L105	JRC-6LAFD01146	Coil, RF.
L108	JRC-6LAFD01157	Coil, RF.
L111	JRC-6LAFD01148	Coil, RF.
L112	JRC-6LAFD01149	Coil, RF.
		---------- RESISTORS ----------
R101	JRC-5RDAC02163	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R102	JRC-5RDAC02210	Metal film: 22 ohms ±5%, 200VDCW, 1/8W.
R103	JRC-5RDAC02163	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R104 and R105	JRC-5RDAC02124	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R107	JRC-5RDAC02153	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R108	JRC-5RDAC02163	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R109	JRC-5RDAC02158	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R110	JRC-5RDAC02147	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.
R111	JRC-5RDAC02226	Metal film: 82 ohms ±5%, 200VDCW, 1/8W.
R112	JRC-5RDAC02137	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R113	JRC-5RDAC02153	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R114	JRC-5RDAC02133	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R115	JRC-5RDAC02132	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R116	JRC-5RDAC02135	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R117	JRC-5RDAC02137	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R118	JRC-5RDAC02135	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R119	JRC-5RDAC02133	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R120	JRC-5RDAC02132	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R121	JRC-5RDAC02135	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R122	JRC-5RDAC02137	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R123	JRC-5RDAC02153	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R127	JRC-5RDAC02163	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R128	JRC-5RDAC02210	Metal film: 22 ohms ±5%, 200VDCW, 1/8W.
R129	JRC-5RDAC02163	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R130	JRC-5REAG00295	Metal film: 10 ohms ±5%, 350VDCW, 1W.
R131	JRC-5REAG00048	Metal film: 10 ohms ±5%, 350VDCW, 2W.
R132	JRC-5RDAC02132	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R133	JRC-5RDAC02141	Metal film: 10 ohms ±5%, 200VDCW, 1/8W.
R134	JRC-5RDAC02132	Metal film: 1K ohms ±5%, 200VDCW 1/8W.
		---------- TRANSISTORS ----------
TR101 and TR102	JRC-5TCAB00288	Silicon, NPN; sim to NEC 2SC3356.
TR103 and TR104	JRC-5TCAG00047	Silicon, NPN; sim to Matsushita 2SC3110.
TR105	JRC-5TAAG00093	Silicon, PNP; sim to Toshiba 2SA1020-Y.
		SYNTHESIZER BOARD
		---------- CAPACITORS ----------
C201	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C202	JRC-5CAAD00789	Ceramic: 0.01μF ±10%, 50VDCW, temp coef ±10%.
C203	JRC-5CEAA01982	Electrolytic: 220μF ±20%, 15VDCW.
C204 and C205	JRC-5CEAA01826	Electrolytic: 10μF ±20%, 16VDCW.
C206	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C207	JRC-5CRAX00001	Polypropylene: 1μF ±10%, 100VDCW.
C208	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C209	JRC-5CRAA00680	Polyprepylene: 0.1μF ±5%, 50VDCW.
C210 and C211	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C212	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C213	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.

SYMBOL	PART NO.	DESCRIPTION
C214 thru C217	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C218	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.
C219	JRC-5CAAD00870	Ceramic: 150pF ±5%, 50VDCW, temp coef 0±60ppm.
C220	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C221	JRC-5CAAD00801	Ceramic: 4pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C222	JRC-5CAAD00793	Ceramic: 27pF ±5%, 50VDCW, temp coef 0±60ppm.
C223 and C224	JRC-5CAAD00794	Ceramic: 33pF ±5%, 50VDCW, temp coef 0±60ppm.
C225	JRC-5CAAD00783	Ceramic: 4700pF ±10%, 50VDCW, temp coef ±10%.
C230	JRC-5CAAD00868	Ceramic: 18pF ±5%, 50VDCW, temp coef 0±60ppm.
C231 and C232	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C233	JRC-5CAAD00793	Ceramic: 27pF ±5%, 50VDCW, temp coef 0±60ppm.
C234	JRC-5CAAD00869	Ceramic: 22pF ±5%, 50VDCW, temp coef 0±60ppm.
C235	JRC-5CAAD00800	Ceramic: 5pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C236 and C237	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C238	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C239 thru C244	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C245	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.
C246	JRC-5CAAD00795	Ceramic: 1pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C248	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C249	JRC-5CAAD00822	Ceramic: 8pF ±0.5pF, 50VDCW, temp coef 0±60ppm.
C250	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.
C251	JRC-5CAAD00868	Ceramic: 18pF ±5%, 50VDCW, temp coef 0±60DDM.
C252	JRC-5CAAD00785	Ceramic: 10pF ±0.5pF, 50VDCW, temp coef 0±60ppm.
C253	JRC-5CAAD00783	Ceramic: 4700pF ±10%, 50VDCW, temp coef ±10%.
C257 thru C260	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C262	JRC-5CAAD00868	Ceramic: 18pF ±5%, 50VDCW, temp coef 0±60ppm.

SYMBOL	PART NO.	DESCRIPTION
C263 and C264	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C265 and C266	JRC-5CAAD00869	Ceramic: 22pF ±5%, 50VDCW, temp coef 0±60ppm.
C267	JRC-5CAAD00800	Ceramic: 5pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C268	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C269 and C270	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C271	JRC-5CAAD00869	Ceramic: 22pF ±5%, 50VDCW, temp coef 0±60ppm.
C272 and C273	JRC-5CAAD00795	Ceramic: 1pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C274	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C276	JRC-5CEAA01982	Electrolytic: 47μF ±20%, 16VDCW.
C279	JRC-5CEAA01826	Electrolytic: 10μF ±20%, 16VDCW.
C280	JRC-5CRAA00576	Metalized Plastic 0.1μF ±5% 50VDCW.
C281 thru C283	JRC-5CEAA01827	Electrolytic: 100μF ±20%, 16VDCW.
C284 thru C286	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C287	JRC-5CAAD01131	Ceramic: 0.047μF ±10%, 25VDCW.
C288	JRC-5CAAD00784	Ceramic: 12pF ±5%, 50VDCW, temp coef 0±60ppm.
C296	JRC-5CAAD00797	Ceramic: 470pF ±5%, 50VDCW, temp coef 0±60ppm.
C297	JRC-5CAAD00800	Ceramic: 5pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C298 thru C2102	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C2104	JRC-5CSAC00982	Tantalum: 1μF ±20%, 35VDCW.
C2105 thru C2107	JRC-5CAAD00780	Ceramic: 100pF ±10% 50VDCW, temp coef 0±60ppm.
C2108	JRC-5CAAD00787	Ceramic: 15pF ±10%, 50VDCW, temp coef 0±60ppm.
		---------- DIODES ----------
CD201 thru CD203	JRC-5TXAD00320	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS226.
CD204	JRC-5TXAD00356	Silicon, fast recovery (2 diodes in anode common); sim to Toshiba 1SS181.
CD205 thru CD208	JRC-5TXAE00170	Silicon, Variable Capacitance Diodes; sim to Hitachi 1SV68.
CD211	JRC-5TXAA00326	Silicon. (Schottky Barrier); sim to NEC 1SS97.
CD212	JRC-5TXAE00453	Silicon. Variable Capacitance Diode sim to Hitachi 1SV136.
CD213 thru CD216	JRC-5TXAE00170	Silicon, Variable Capacitance Diodes; sim to Hitachi 1SV68.
CD217	JRC-5TXAE00230	Silicon, fast recovery: fwd current 100mA, 35PIV; sim to Hitachi 1SS110.
CD219	JRC-5TXAA00326	Silicon. (Schottky Barrier); sim to NEC 1SS97.
		---------- CAPACITORS ----------
CV201	JRC-5CVAD00165	Variable: 10PF max.
CV202	JRC-5CVAD00165	Variable: 10PF max.
		---------- FILTERS ----------
FL201 and FL202	JRC-5NLAT00014	RF B.P.F.: Pass Band 384 to 430MHz.
		--------- INTEGRATED CIRCUITS --------
IC201	JRC-5DAAJ00328	Synthesizer: C MOS serial input.
IC202	JRC-5DDAT00206	Prescaler; sim to Fujitsu MB501P.
IC203	JRC-5DAAN00016	Liner, Dual Comparator; sim to NJRC NJM2903D.
IC204 and IC205	JRC-5DAAJ00359	Digital, Bilateral switch; sim to Motorola MC14066.
IC206	JRC-5DAAR00021	Liner, Positive Voltage Regulator; sim to Matsushita AN6541.
		---------- JACKS ----------
J201 thru J204	JRC-5ZJTL00001	Crystal socket.
J205	JRC-5JWBS00173	Connector, 20 pins.
J206 and J207	JRC-5JWCL00045	Connector, RF.
J208	JRC-5JWBS00174	Connector, 6 pins.
		---------- COILS ----------
L201	JRC-5LAAC00052	Coil, RF.
L202 and L203	JRC-5LCAB00012	Coil, RF: 1μH ±10%.
L204 and L205	JRC-5LCAC00174	Coil, RF: 0.68μH ±10%.
L208	JRC-5LAAC00049	Coil, RF.
L209	JRC-5LCAC00156	Coil, RF: 1.5μH ±10%.
L210	JRC-5LCAB00012	Coil, RF: 1μH ±10%.
L211	JRC-5LAAC00051	Coil, RF.
L212 and L213	JRC-5LAAC00052	Coil, RF.
L214 and L215	JRC-5LCAB00012	Coil, RF: 1μH ±10%.

SYMBOL	PART NO.	DESCRIPTION
L216 thru L218	JRC-5LCAC00174	Coil, RF: 0.68μH ±10%.
L220	JRC-5LAAC00047	Coil, RF.
L221	JRC-5LCAC00156	Coil, RF: 1.5μH ±10%.
L222	JRC-5LCAB00012	Coil, RF: 1μH ±10%.
L223	JRC-5LAAC00051	Coil, RF.
L226	JRC-5LAAC00050	Coil, RF.
		---------- RESISTORS ----------
R201	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R202	JRC-5REAG00619	Metal film: 22 ohms ±5%, 200VDCW, 1/8W.
R203	JRC-5REAG00594	Metal film: 220 ohms ±5%, 200VDCW, 1/8W.
R204	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R205 and R206	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R207 and R208	JRC-5REAG00619	Metal film: 22 ohms ±5%, 200VDCW, 1/8W.
R209	JRC-5REAG00587	Metal film: 100K ohms ±5%, 200VDCW, 1/8W.
R210	JRC-5REAG00577	Metal film: 6.8K ohms ±5%, 200VDCW, 1/8W.
R211	JRC-5REAG00589	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.
R212	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R213	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R214	JRC-5REAG00597	Metal film: 330 ohms ±5%, 200VDCW, 1/8W.
R215	JRC-5REAG00589	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.
R216	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R217	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R218	JRC-5REAG00597	Metal film: 330 ohms ±5%, 200VDCW, 1/8W.
R219	JRC-5REAG00589	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.
R220	JRC-5REAG00577	Metal film: 6.8K ohms ±5%, 200VDCW, 1/8W.
R221	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R222	JRC-5REAG00631	Metal film: 220K ohms ±5%, 200VDCW, 1/8W.
R223	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R224	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R225	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R226	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R227	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R228	JRC-5REAG00587	Metal film: 100K ohms ±5%, 200VDCW, 1/8W.
R229 and R230	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R231	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R232	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R235	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R236	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R238	JRC-5REAG00621	Metal film: 68 ohms ±5%, 200VDCW, 1/8W.
R239	JRC-5REAG00625	Metal film: 5.6K ohms ±5%, 200VDCW, 1/8W.
R240	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R241 and R242	JRC-5REAG00583	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R243	JRC-5REAG00620	Metal film: 33 ohms ±5%, 200VDCW, 1/8W.
R244	JRC-5REAG00583	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R245	JRC-5REAG00623	Metal film: 2.7K ohms ±5%, 200VDCW, 1/8W.
R246	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R247	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R248 and R249	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R250	JRC-5REAG00594	Metal film: 220 ohms ±5%, 200VDCW, 1/8W.
R251	JRC-5REAG00597	Metal film: 330 ohms ±5%, 200VDCW, 1/8W.
R252	JRC-5REAG00618	Metal film: 15 ohms ±5%, 200VDCW, 1/8W.
R253	JRC-5REAG00597	Metal film: 330 ohms ±5%, 200VDCW, 1/8W.
R254	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R255	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R260	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R262	JRC-5REAG00621	Metal film: 68 ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R263	JRC-5REAG00625	Metal film: 5.6K ohms ±5%, 200VDCW, 1/8W.
R264	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R265	JRC-5REAG00583	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R266	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R267	JRC-5REAG00621	Metal film: 68 ohms ±5%, 200VDCW, 1/8W.
R268	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R274	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R276	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R277	JRC-5REAG00577	Metal film: 6.8K ohms ±5%, 200VDCW, 1/8W.
R278	JRC-5REAG00592	Metal film: 33K ohms ±5%, 200VDCW, 1/8W.
R279	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R283	JRC-5REAG00597	Metal film: 330 ohms ±5%, 200VDCW, 1/8W.
R288 and R289	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R293	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R294	JRC-5REAG00618	Metal film: 15 ohms ±5%, 200VDCW, 1/8W.
RV201 and RV202	JRC-5RVAB00279	Variable: 10K ohms ±30%, 0.1W.
		---------- TRANSISTORS ----------
TR201 and TR202	JRC-5TBAB00055	Silicon, PNP; sim to NEC 2SB624(BV3).
TR203 and TR204	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SD596 (DV3).
TR205	JRC-5TBAB00055	Silicon, PNP; sim to NEC 2SB624 (BV3).
TR206 and TR207	JRC-5TCAG00047	Silicon, NPN; sim to Matsushita 2SC3110.
TR208 and TR209	JRC-5TCAZ00011	Silicon, NPN; sim to Sanyo 2SC3398.
TR210	JRC-5TKAH00002	N-channel, field effect. (MOS Single Gate); sim to Sony 2SK125.
TR211	JRC-5TCAG00047	Silicon, NPN; sim to Matsushita 2SC3110.
TR212 and TR213	JRC-5TCAZ00011	Silicon, NPN; sim to Sanyo 2SC3398.
TR214 and TR215	JRC-5TCAG00047	Silicon, NPN; sim to Matsushita 2SC3110.
TR216 and TR217	JRC-5TCAZ00011	Silicon, NPN; sim to Sanyo 2SC3398.
TR220	JRC-5TKAH00002	N-channel, field effect. (MOS Single Gate); sim to Sony 2SK125.
TR221	JRC-5TCAG00047	Silicon, NPN; sim to Matsushita 2SC3110.
TR222	JRC-5TCAZ00011	Silicon, NPN; sim to Sanyo 2SC3398.
TR224	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SC596 (DV3).
		--------- CRYSTAL OSCILLATORS --------
XU201	6XNFD00010	Reference Oscillator unit.
		RECEIVER BOARD
		---------- CAPACITORS ----------
C401 and C402	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C403	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C404	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C502	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C503 and C504	JRC-5CAAD00801	Ceramic: 4pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C505	JRC-5CAAD00796	Ceramic: 3pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C506	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C511	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C512 and C513	JRC-5CAAD00801	Ceramic: 4pF ±0.25pF, 50VDCW, temp coef 0±60ppm.
C514	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C515	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.
C516	JRC-5CSAC00988	Tantalum: 0.22μF ±20%, 35VDCW.
C517	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C518	JRC-5CSAC00982	Tantalum: 1μF ±20%, 35VDCW.
C519	JRC-5CAAD00877	Ceramic: 0.01μF ±10%, 50VDCW, temp coef ±10%.
C520	JRC-5CSAC00988	Tantalum: 0.22μF ±20%, 35VDCW.
C521 and C522	JRC-5CSAC01068	Tantalum: 0.1μF ±20%, 35VDCW.
C523	JRC-5CAAD00864	Ceramic: 47pF ±5%, 50VDCW, temp coef 0±60ppm.
C524	JRC-5CEAA01816	Electrolytic: 47μF ±20%, 25VDCW.

SYMBOL	PART NO.	DESCRIPTION
C526 and C527	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C528	JRC-5CSAC00988	Tantalum: 0.22μF ±20%, 35VDCW.
C531	JRC-5CEAA01816	Electolytic: 47μF ±20%, 25VDCW.
C532 and C533	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C534	JRC-5CEAA01816	Electolytic: 47μF ±20%, 25VDCW.
C535 thru C542	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C543 and C544	JRC-5CAAD00783	Ceramic: 4700pF ±10%, 50VDCW, temp coef ±10%
CD501	JRC-5TXAD00290	Silicon: tast recovery 2 diodes in cathod common: Sim to Toshiba 1SS184.
		---------- FILTERS ----------
FL401 and FL402	JRC-5NBAH00023	Dielectric RF filter.
FL403	JRC-5NBAH00024	Dielectric RF filter.
FL501	JRC-5XHAA00780	Crystal, filter: 82.2MHz; 4pole, 2 coupled-dual crystals.
FL502	JRC-5XHAA00781	Crystal, filter: 82.2MHz; 2 pole, coupled-dual crystals.
FL503	JRC-5NRAA00094	Ceramic, filter: 455KHz.
FL504	JRC-5NRAA00041	Ceramic, filter: 455KHz.
		---------- HYBRID CIRCUITS ----------
HC401	JRC-6DHDD00191	Linear, RF Amplifier: sim to JRC DHDD191.
HC402	JRC-6DHFD00166	Linear, Mixer: sim to JRC DHFD166.
HC403	JRC-6DHFD00159	Linear, RF Amplifier: sim to JRC DHDD159.
HC404	JRC-6DHDD00191	Linear, RF Amplifier: sim to JRC DHDD191.
HC501	JRC-6DHDD00188	Linear, 2'nd Mixer: sim to JRC DHDD188.
		--------- INTEGRATED CIRCUITS --------
IC501	JRC-5DDAS00074	Linear, IF Amplifier & Detector; sim to Motorola MC3359P.
IC502	JRC-5DAAR00021	Linear, Positive Voltage Regulator; sim to Matsushita AN6541.
		---------- JACKS ----------
J401	JRC-5JJBL00025	Connector, RF.
J402	JRC-5JWCL00045	Connector, RF.
J501	JRC-5JWBS00178	Connector, 10 pins.
		---------- COILS ----------
L501 thru L505	JRC-6LADD00553	Coil, RF; Variable.
L506	JRC-6LADD00554	Coil, IF: Variable.
L507	JRC-5LCAC00165	Coil, RF: 0.22 H ±10%.
L508	JRC-6LAFD00877	Coil, RF: Variable.
		---------- RESISTORS ----------
R400	JRC-5REAG00590	Metal film: 0 ohm.
R401 and R402	JRC-5REAG00594	Metal film: 470 ohms ±5%, 200VDCW. 1/8W.
R403	JRC-5REAG00619	Metal film: 15 ohms ±5%, 200VDCW, 1/8W.
R404	JRC-5REAG00585	Metal film: 1.2K ohms ±5%, 200VDCW, 1/8W.
R405	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R406 and R407	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R408	JRC-5REAG00907	Metal film: 12 ohms ±5%, 200VDCW, 1/8W.
R409	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R410	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R411	JRC-5REAG00907	Metal film: 12 ohms ±5%, 200VDCW, 1/8W.
R412	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R413	JRC-5REAG00908	Metal film: 180 ohms ±5%, 200VDCW, 1/8W.
R414	JRC-5REAG00620	Metal film: 33 ohms ±5%, 200VDCW, 1/8W.
R415	JRC-5REAG00908	Metal film: 180 ohms ±5%, 200VDCW, 1/8W.
R500	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R501	JRC-5REAG00577	Metal film: 6.8K ohms ±5%, 200VDCW, 1/8W.
R502	JRC-5REAG00584	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R511	JRC-5REAG00630	Metal film: 150K ohms +5%, 200VDCW, 1/8W.
R512	JRC-5REAG00621	Metal film: 68 ohms +5%, 200VDCW, 1/8W.
R513 and R514	JRC-5REAG00584	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R515	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R516	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R517	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R518	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R519	JRC-5REAG00594	Metal film: 220 ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R520	JRC-5REAG00589	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.
R521	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R522	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R523	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R524	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R525	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R526	JRC-5REAG00590	Metal film: 0K ohms ±5%, 200VDCW, 1/8W.
R527	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R528	JRC-5REAG00594	Metal film: 220K ohms ±5%, 200VDCW, 1/8W.
		---------- TRANSISTORS ----------
TR501	JRC-5TCAB01107	Silicon, NPN; sim to NEC 2SC2223.
TR502 and TR503	JRC-5TDAB00078	Silicon, NPN; sim to NEC 2SD596.
		---------- CRYSTALS ----------
X501	JRC-5XHAA00782	Quartz crystal: 82.655MHz.
		---------- SOCKETS ----------
XS501-A and XS501-B	JRC-5ZJDF00001	Crystal socket.
		CONTROL BOARD
		---------- CAPACITORS ----------
C601	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C602	JRC-5CSAC00939	Tantalum: 22µF ±20%, 16VDCW.
C603	JRC-5CRAA00585	Polyester: 1000pF ±5%, 50VDCW.
C604	JRC-5CSAC01069	Tantalum: 2.2µF ±20%, 35VDCW.
C605	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C606 and C607	JRC-5CEAA01827	Electrolytic: 100µF ±20%, 16VDCW.
C608	JRC-5CEAA01982	Electrolytic: 47µF ±20%, 16VDCW.
C609 and C610	JRC-5CEAA01827	Electrolytic: 100µF ±20%, 16VDCW.
C611	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C613 and C614	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C615	JRC-5CSAC01065	Tantalum: 0.47µF ±20%, 35VDCW.

SYMBOL	PART NO.	DESCRIPTION
C616	JRC-5CAAD00797	Ceramic: 470pF ±5%, 50VDCW, temp coef 0±60ppm.
C617	JRC-5CRAA00597	Polyester: 0.068µF ±5%, 50VDCW.
C624	JRC-5CSAC00982	Tantalum: 1µF ±20%, 35VDCW.
C625	JRC-5CSAC00939	Tantalum: 22µF ±20%, 16VDCW.
C626 and C627	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C633	JRC-5CSAC00912	Tantalum: 10µF ±20%, 35VDCW.
C634	JRC-5CEAA01816	Electrolytic: 47µF ±20%, 25VDCW.
C635 and C636	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C637 and C638	JRC-5CEAA01816	Electolytic: 47µF ±20%, 25VDCW.
C639 and C640	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C641	JRC-5CEAA01816	Electrolytic: 47µF ±20%, 25VDCW.
C642	JRC-5CAAD01237	Ceramic: 0.1µF ±10%, 25VDCW, temp coef ±15%.
C644	JRC-5CSAC00939	Tantalum: 22µF ±20%, 16VDCW.
C645	JRC-5CEAA01982	Electrolytic: 47µF ±20%, 16VDCW.
C646	JRC-5CAAD00789	Ceramic: 0.01µF ±10%, 50VDCW, temp coef ±10%.
C647	JRC-5CEAA01982	Electrolytic: 47µF ±20%, 16VDCW.
C649	JRC-5CRAA00617	Polyester: 0.1µF ±5%, 50VDCW.
C650	JRC-5CSAC00912	Tantalum: 10µF ±20%, 35VDCW.
C651	JRC-5CAAD00789	Ceramic: 0.01µF ±10%, 50VDCW, temp coef ±10%.
C652	JRC-5CRAA00585	Polyester: 1000pF ±5%, 50VDCW.
C653 and C654	JRC-5CSAC00939	Tantalum: 22µF ±20%, 16VDCW.
C655	JRC-5CRAA00576	Polyester: 0.1µF ±5%, 50VDCW.
C656	JRC-5CAAD00789	Ceramic: 0.01µF ±10%, 50VDCW, temp coef ±10%.
C701	JRC-5CSAC00982	Tantalum: 1µF ±20%, 35VDCW.
C702 and C703	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C704	JRC-5CAAD00789	Ceramic: 0.01µF ±10%, 50VDCW, temp coef ±10%.
C705	JRC-5CAAD00878	Ceramic: 1000pF ±10%, 50VDCW, temp coef +350 -1000ppm.
C706	JRC-5CRAA00597	Polyester: 0.068µF ±5%, 50VDCW.
C707	JRC-5CEAA01721	Electrolytic: 220µF ±20%, 25VDCW.
C708	JRC-5CAAD00783	Ceramic: 4700pF ±10%, 50VDCW, temp coef ±10%.
C709	JRC-5CRAA00597	Polyester: 0.068µF ±5%, 50VDCW.
C710	JRC-5CAAD00785	Ceramic: 10pF ±0.5pF, 50VDCW, temp coef 0±60ppm.

SYMBOL	PART NO.	DESCRIPTION
C711	JRC-5CAAD00787	Ceramic: 15pF ±5%, 50VDCW, temp coef 0±60ppm.
C712	JRC-5CAAD01204	Ceramic: 0.047μF ±10%, 25VDCW, temp coef ±15%.
C713	JRC-5CSAC01065	Tantalum: 0.47μF ±20%, 35VDCW.
C714 thru C729	JRC-5CAAD00780	Ceramic: 100pF ±5%, 50VDCW, temp coef 0±60ppm.
C730	JRC-5CSAC00982	Tantalum: 1μF ±20%, 35VDCW.
C731 and C735	JRC-5CAAD00789	Ceramic: 0.01μF ±10%, 50VDCW, temp coef ±10%.
C736	JRC-5CAAD01201	Ceramic: 0.068μF ±10%, 25VDCW, temp coef ±15%.
		---------- DIODES ----------
CD601 thru CD603	JRC-5TXAD00320	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS226.
CD604 and CD605	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in cathode common); sim to Toshiba 1SS184.
CD606	JRC-5TXAD00320	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS226.
CD607	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in cathode common); sim to Toshiba 1SS184.
CD608	JRC-5TXAD00040	Silicon, fast recovery: Sim to Toshiba 1S1588.
CD701	JRC-5TXAD00320	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS226.
CD702	JRC-5TXAE00257	Zener: 500mW, 6.5V, sim to Hitachi HZ7A2.
CD703	JRC-5TXAE00199	Zener: 500mW, 3.8V, sim to Hitachi HZ4B1.
CD704 and CD705	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in cathode common); sim to Toshiba 1SS184.
CD706 and CD707	JRC-5TXAD00320	Silicon, fast recovery (2 diodes in series); sim to Toshiba 1SS226.
CD708 and CD709	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in cathode common); sim to Toshiba 1SS184.
CD710	JRC-5TZAD00020	Diode, optoelectoronic: red; sim to Toshiba TLR 102A.
CD711	JRC-5TXAD00290	Silicon, fast recovery (2 diodes in cathode common); sim to Toshiba 1SS184.
		---------- HYBRID CIRCUITS ----------
HC601	JRC-6DHFD00160	Squelch; sim to JRC DHFD160.
HC602	JRC-6DHFD00165	Switch; sim to JRC DHFD165.
HC603	JRC-6DHFD00164	Filter; sim to JRC DHFD164.
HC604	JRC-6DHFD00167	Filter; sim to MURATA DHFD167.
HC605	JRC-6DHFD00168	Filter; sim to MURATA DHFD168.
HC606	JRC-6DHFD00169	Filter; sim to MURATA DHFD169.

SYMBOL	PART NO.	DESCRIPTION
		--------- INTEGRATED CIRCUITS --------
IC601	JRC-5DAAJ00359	Digital, Bilateral switch; sim to Motorola MC14066.
IC602	JRC-5DAAA00233	Linear, Audio Amplifier; sim to NEC PC1230H2.
IC603 and IC604	JRC-5DAAN00004	Linear, Quad OP AMP; sim to NJRC NJM2902N.
IC605	JRC-5DAAD00082	Linear, Positive Voltage Regulator; sim to Toshiba TA78005AP.
IC606	JRC-5DAAR00021	Linear, Positive Voltage Regulator; sim to Matsushita AN6541.
IC607	JRC-5DAAF00027	Linear, Dual OP AMP; sim to 4558 type.
IC608 and IC609	JRC-5DAAJ00359	Digital, Bilateral switch; sim to Motorola MC14066.
IC610	JRC-5DAAL00753	Linear, Voltage Detector, Sim to TI TL7700.
IC701	JRC-5DAAB00140	Linear, Timer; sim to Mitsubishi M51847P.
IC702	JRC-6ZZAB10000	Microcomputer; sim to Intel TD8749H.
IC703	JRC-5DAAJ00358	Digital, Hex Non-inverting 3-state Buffer; sim to Motorola MC14503.
IC704	JRC-5DDAF00216	Digital, Hex Inverter Buffer/Driver; sim to Hitachi HD7416.
IC705	JRC-5DDAB00209	Digital, Dual D-type Flip Flop; sim to Mitsubishi M4013.
IC706	JRC-5DDBY00026	Digital, EEPROM; sim to Xicor X2212AP.
		---------- SOCKETS ----------
ICS702	JRC-5ZJAB00029	IC Sockets. 40 pin.
ICS706	JRC-5ZJAB00030	IC Sockets. 18 pin.
		---------- JACKS ----------
J601 thru J605	JRC-5JTCA00137	Contact, electrical.
J606	JRC-5JDAG00152	Connector, Metering, 12 pins.
J701	JRC-5JWBS00179	Connector, 22 pins.
J702	JRC-5JWBS00179	Connector, 22 pins.
J703	JRC-5JWBS00173	Connector, 20 pins.
J704	JRC-5JWBS00178	Connector, 10 pins.
J705	JRC-5JWBS00176	Connector, 4 pins.
J706 thru J708	JRC-5JTCA00137	Contact, electrical.
		---------- PLUGS ----------
P601 thru P605	JRC-5JDAN00012	Receptacle: 2 position, shorting, rated at 1 amp; sim to Honda DIC-S252.

SYMBOL	PART NO.	DESCRIPTION
P706 thru P708	JRC-5JDAN00012	Receptacle: 2 position, shorting, rated at lamp; sim to Honda DSC-S252.
		---------- RESISTORS ----------
R601 thru R606	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R607	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R608	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R609	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R610	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R611	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R612	JRC-5REAG00631	Metal film: 220K ohms ±5%, 200VDCW, 1/8W.
R613	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R614	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R615	JRC-5REAG00583	Metal film: 150 ohms ±5%, 200VDCW, 1/8W.
R616 thru R619	JRC-5RDAC02223	Metal film: 2.2 ohms ±5%, 200VDCW, 1/8W.
R620	JRC-5REAG00590	Metal film: 0 ohms
R622	JRC-5REAG00897	Metal film: 180K ohms ±5%, 200VDCW, 1/8W.
R623	JRC-5REAG00584	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R624	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R627	JRC-5REAG00897	Metal film: 180K ohms ±5%, 200VDCW, 1/8W.
R628	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R629	JRC-5REAG00879	Metal film: 82K ohms ±5%, 200VDCW, 1/8W.
R630	JRC-5REAG00631	Metal film: 220K ohms ±5%, 200VDCW, 1/8W.
R631	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R632	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R633	JRC-5REAG00580	Metal film: 47 ohms ±5%, 200VDCW, 1/8W.
R634	JRC-5REAG00623	Metal film: 2.7K ohms ±5%, 200VDCW, 1/8W.
R635	JRC-5REAG00582	Metal film: 1.8K ohms ±5%, 200VDCW, 1/8W.
R636	JRC-5REAG00682	Metal film: 18K ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R637	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R638	JRC-5REAG00626	Metal film: 27K ohms ±5%, 200VDCW, 1/8W.
R639	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R640	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R641	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R642	JRC-5REAG00879	Metal film: 82K ohms ±5%, 200VDCW, 1/8W.
R643 thru R645	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R646	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R647	JRC-5REAG00591	Metal film: 680 ohms ±5%, 200VDCW, 1/8W.
R648	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R649	JRC-5REAG00591	Metal film: 680 ohms ±5%, 200VDCW, 1/8W.
R650	JRC-5REAG00574	Metal film: 1.5K ohms ±5%, 200VDCW, 1/8W.
R651	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R652	JRC-5REAG00632	Metal film: 330K ohms ±5%, 200VDCW, 1/8W.
R653	JRC-5REAG00585	Metal film: 1.2K ohms ±5%, 200VDCW, 1/8W.
R654	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R655	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R656	JRC-5REAG00682	Metal film: 18K ohms ±5%, 200VDCW, 1/8W.
R657	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R658	JRC-5REAG00579	Metal film: 470K ohms ±5%, 200VDCW, 1/8W.
R659	JRC-5REAG00626	Metal film: 27K ohms ±5%, 200VDCW, 1/8W.
R660 and R661	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R662	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R664	JRC-5REAG00577	Metal film: 6.8K ohms ±5%, 200VDCW, 1/8W.
R665	JRC-5REAG00625	Metal film: 5.6K ohms ±5%, 200VDCW, 1/8W.
R666	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R667	JRC-5REAG00589	Metal film: 3.3K ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R668	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R669	JRC-5REAG00681	Metal film: 12K ohms ±5%, 200VDCW, 1/8W.
R671	JRC-5REAG02757	Metal film: 39.2K ohms ±1%, 250VDCW, 1/4W.
R672	JRC-5REAG00575	Metal film: 2.2K ohms ±5%, 200VDCW, 1/8W.
R673	JRC-5REAA02533	Metal film: 2.21K ohms ±1%, 250VDCW, 1/4W.
R674	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R675	JRC-5REAG00897	Metal film: 180K ohms ±5%, 200VDCW, 1/8W.
R676	JRC-5REAG00573	Metal film: 4.7K ohms ±5%, 200VDCW, 1/8W.
R677 thru R680	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R681	JRC-5REAG00772	Metal film: 1M ohms ±5%, 200VDCW, 1/8W.
R682	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R683	JRC-5RDAA01162	Deposited carbon: 100K ohms ±5%, 300VDCW, 1/4W.
R701	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R702	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R703	JRC-5REAG00587	Metal film: 100K ohms ±5%, 200VDCW, 1/8W.
R704 and R705	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R706	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R707 and R708	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R709	JRC-5REAG00572	Metal film: 1K ohms ±5%, 200VDCW, 1/8W.
R710	JRC-5REAG00623	Metal film: 2.7K ohms ±5%, 200VDCW, 1/8W.
R711	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R712 and R713	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R714	JRC-5REAG00879	Metal film: 82K ohms ±5%, 200VDCW, 1/8W.
R715	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R716	JRC-5REAG00623	Metal film: 2.7K ohms ±5%, 200VDCW, 1/8W.
R717	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
R718	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.

SYMBOL	PART NO.	DESCRIPTION
R719	JRC-5REAG00585	Metal film: 1.2K ohms ±5%, 200VDCW, 1/8W.
R720	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R721 and R722	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R723	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R724	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R725	JRC-5REAG00596	Metal film: 15K ohms ±5%, 200VDCW, 1/8W.
R726	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R727	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R728	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R729	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R730 thru R735	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R736	JRC-5REAG00579	Metal film: 470 ohms ±5%, 200VDCW, 1/8W.
R737	JRC-5REAG00578	Metal film: 47K ohms ±5%, 200VDCW, 1/8W.
R738 thru R740	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R741	JRC-5REAG00586	Metal film: 100 ohms ±5%, 200VDCW, 1/8W.
R742 and R743	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R744	JRC-5REAG00584	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R745	JRC-5REAG00587	Metal film: 100K ohms ±5%, 200VDCW, 1/8W.
R746	JRC-5REAG00631	Metal film: 220K ohms ±5%, 200VDCW, 1/8W.
R747	JRC-5REAG00626	Metal film: 27K ohms ±5%, 200VDCW, 1/8W.
R748 and R749	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R750	JRC-5REAG00626	Metal film: 27K ohms ±5%, 200VDCW, 1/8W.
R751 and R752	JRC-5REAG00576	Metal film: 10K ohms ±5%, 200VDCW, 1/8W.
R753	JRC-5REAG00584	Metal film: 8.2K ohms ±5%, 200VDCW, 1/8W.
R754	JRC-5REAG00622	Metal film: 270 ohms ±5%, 200VDCW, 1/8W.
R755	JRC-5REAG00581	Metal film: 22K ohms ±5%, 200VDCW, 1/8W.
RV601	JRC-5RVAB00279	Variable: 10K ohms ±30%, 0.1W.

SYMBOL	PART NO.	DESCRIPTION
RV602	JRC-5RVAB00276	Variable: 100K ohms ±30%, 0.1W.
RV603 and RV604	JRC-5RVAB00279	Variable: 10K ohms ±30%, 0.1W.
RV605		Variable: 5K ohms ±30%, 0.1W.
RX701 thru RX703	JRC-5RZAB00133	Quad Resister array; 10K ohms ±5%, 1/8W.
		---------- TRANSISTORS ----------
TR601 thru TR608	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SD596 (DV3).
TR701 thru TR707	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SD596 (DV3).
TR708	JRC-5TBAB00055	Silicon, PNP; sim to NEC 2SB624 (BV3).
TR709 thru TR713	JRC-5TDAB00054	Silicon, NPN; sim to NEC 2SD596 (DV3).
		---------- CRYSTALS ----------
X701	JRC-5XHAA00778	Quartz crystal: 6MHz.
		---------- SOCKETS ----------
X701-A and X701-B	JRC-5ZJDF00001	Crystal Socket.
		INTERFACE BOARD
		---------- CAPACITORS ----------
C801 thru C852	JRC-5CAAD00838	Ceramic: 1000pF ±10%, 50VDCW, temp coef ±15%.
C853	JRC-5CEAA01813	Electrolytic: 100μF ±20%, 25VDCW.
		---------- JACKS ----------
J801	JRC-5JCAP00004	Connector; sim to SMK CSC5033-0201R.
J802 and J803	JRC-5JWBS00175	Connector, 22 pins.
		-------- INTERCONNECTION CABLE -------
ZC601 and ZC602	JRC-5ZCCL00020	Flexible cable:
ZC603	JRC-5ZCCL00021	Flexible cable:
ZC604	JRC-5ZCCL00022	Flexible cable:
ZC606	JRC-5ZCCL00024	Flexible cable:
ZC607	JRC-6JJFD00054	Co-axial cable:
ZC608	JRC-6JJFD00050	Co-axial cable:
ZC609	JRC-6JJFD00056	Co-axial cable:
ZC610	JRC-6JJFD00052	Co-axial cable:
ZC612	JRC-6ZCFD00124	Power cable:
ZC613	JRC-6ZCFD00146	Power cable: