

**SERVICE MANUAL
FOR
BSR450 SERIES**

3. SPECIFICATIONS

3-1 General

Mode of operation	:	Duplex system with two antennas
Frequency range	:	Version A 136-155MHz Version B 146-174MHz Version C 400-440MHz Version D 440-480MHz Version E 470-512MHz Version F 480-520MHz
Number of channels	:	Up to 128 synthesis programmed channels
Switchable channel bandwidth	:	3MHz
Channel spacing	:	Narrow-band 12.5kHz Wide-band 20, 25 or 30kHz
Duplex TX/RX frequency separation	:	0.5MHz minimum
Duty cycle	:	Continuous
Antenna impedance	:	50 ohms
Environmental conditions	:	Ambient temperature -30°C to +80°C Relative humidity 95% at +35°C
Dimensions and weight	:	Transceiver Unit 482 mm width 132 mm height 350 mm depth 10 kg

3-2 Transmitter

RF power output : 25-50 watts (standard)

Maximum frequency deviation : Narrow-band $\pm 2.5\text{kHz}$
Wide-band $\pm 5\text{kHz}$

Oscillation system : Direct PLL synthesizer system

Type of crystal unit : TCXO

Frequency stability : $\pm 2.5\text{kHz}$ with wide band, $\pm 1\text{kHz}$ with
Narrow band.

Frequency response : Within +1, -3dB of 6dB/octave
pre-emphasis from 0.3 to 3kHz, 1kHz
reference

Signal to noise ratio : More than 50dB at 1kHz 70% modulation

Modulation distortion : Less than 3% at 1kHz 70% modulation

Spurious and harmonics : More than 70dB down below rated power

AF input : -8dBm $\pm 3\text{dB}/600$ ohms

3-3 Receiver

Receiving system : Double conversion superheterodyne

Intermediate frequency : 1st IF 21.6MHz
2nd IF 455kHz

Frequency stability : $\pm 2.5\text{kHz}$ with wide band, $\pm 1\text{kHz}$ with
narrow band..

Sensitivity : Less than 1 μV emf. for 20dB noise
quieting
Less than 0.70 μV for 12dB SINAD

Squelch sensitivity : Less than 0.50 μV

Modulation acceptance : $\pm 7.0\text{kHz}$ for wide band, 3.5kHz for
narrow band.

Selectivity : More than 70dB at 25kHz point, 60dB
at 12.5kHz point.

Blocking : More than 90dB at $\pm 1\text{MHz}$ point

Intermodulation : More than 70dB

Spurious responses : More than 80dB

AF response : Within +1, -3dB of 6dB/octave
de-emphasis from 0.3 to 3kHz, 1kHz
reference

AF output : More than 2 watts into 4 ohm load for
local control
0dBm \pm 3dB for remote control

AF distortion : Less than 5% at 1kHz 70% modulation

Signal to noise ratio : More than 50dB at 1kHz 70% modulation

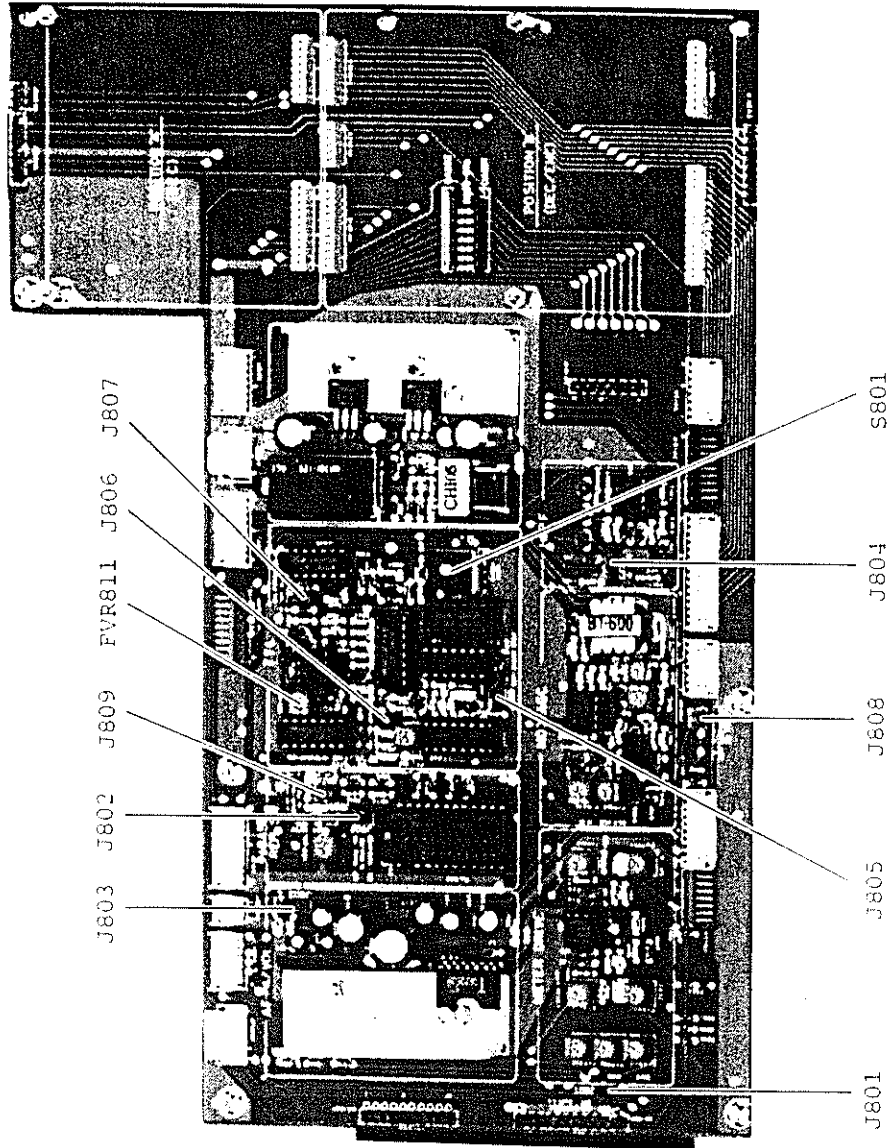
3-4 Power Supply

Power source : 13.6V DC \pm 20% negative ground.

Power consumption :

<u>Operation</u>	<u>DC</u>
Standby	0.7A
Receiving	1A
Transmitting	
at 5W	2.5A
at 10W	3.5A
at 25W	6A
at 50W	12A

4. Jumpering Positions on Terminal Unit PCB



a) J801 AUDIO CUT-OFF

To decide whether receiver output is cut-off or kept alive in transmitting periods.

ON : Audio CUT-OFF in TX period. (Simplex base station)

OFF : Audio kept alive in TX period. (Duplex base or repeater station)

b) J802 BASE/REPEATER CONTROL

To control Base/Repeater mode control relay. With jumper ON, relay operates to become Repeater mode. Jumper should remain uninserted to operate the Base/Repeater function externally.

In repeater mode, the following functions become effective:

Press control function due to SQL OUT.

"REPEATER" INDICATOR glows.

Transfer of receiver output (0dBm) to repeating modulation.

Transfer of the Variable Squelch Circuit to the internal semi-fixed setting.

Function of the Press Delay Circuit becomes effective.

c) J803 SP ON/OFF

To turn ON/OFF SP within BRS. Set to SP ON usually.

ON : SP ON

OFF : SP OFF

d) J804 HPF

Where BRS mounts Tone Squelch PCB, 10-QCT(A), or Tone Panel, this HPF jumper is to eliminate DISC output tone component.

A-side : When 10-QCT(A) or Tone Panel is mounted.

B-side : When no Tone Squelch PCB is mounted (THROUGH).

e) J805 TTL TIME STEP

This jumper is to arrange the step time setting when KG110 is operated by the TTL (Transmitter Time Limiter) circuit.

ON : 1 STEP = 30 seconds

OFF : 1 STEP = 15 seconds

Incidentally, TTL steps can freely be varied in sixteen (0 to 9 plus A to F) steps with DIP SW, S801. In other words, 30 x 15 = 450 seconds max. (7 min. 30 sec.) for J805 "ON". 15 x 15 = 225 seconds (3 min. 45 sec.) for J805 "OFF". At step "0", TTL time becomes "0"- i.e., "no TTL".

f) J806 TTL MODE

This jumper is to select either of the two alternatives:

Whether one press-to-talk time, for instance, should be taken as TTL TIME or one conversation time should be taken as TTL TIME.

The latter case is effective only when 10-5T(D) 5-TONE DECODER for Repeater Press Key is installed in KG110.

ON : 1 STEP TTL MODE

OFF : INTEGRATION TTL MODE

g) J807 PRESS DELAY CONTROL

This jumper is to hold (or extend) a transmission time interval by an optionally preset time at the termination of conversation in repeating periods.

ON : PRESS DELAY

OFF : NO DELAY

In case of "ON", the time can be set to 20 seconds, max., with FVR811 (without steps). (Usually set to 9 ±1 seconds before shipment.)

h) J808 PRESS SW CONTROL

To prevent all transmitting functions from being controlled by the microphone press-to-talk signal, when a particular TTL mode is set with PCB (option) or a function such as 10-5T(A) Encoder/Decoder having a call signal is provided.

ON : Mic press-to-talk SW only is effective (no other options)

OFF : 10-5T(A) or special TTL is installed.

i) J809 JUMPER FOR COMMUNITY REPEATER OPERATION

Where KG110 operates as a community repeater with the addition of Tone Panel (option), this jumper is to prevent KG110 from becoming TX mode merely because of signal reception. The microphone press-to-talk function works irrespective of this jumpering.

ON : When operated as a normal repeater (i.e., without Tone Panel), or, when operated with 10-QCT(D)/10-5T(D).

OFF : When Tone Panel is used for Community Repeater.

JUMPERING CHART FOR TYPICAL SYSTEM CONFIGURATIONS

		OPTION																	
Mode		10-5T (A)	10-5T (D)	10-QCT (A)	10-QCT (D)	STONE PANEL	KBC-2000	ACU-31	STR-110	BRC-110	J801	J802	J803	J804	J805	J806	J807	J808	J809
Duplex Base Station Mode	-	-	-	-	-	-	-	-	-	-	OFF	OFF	ON	B	*1	ON	ON	OFF	ON
	-	-	-	-	-	-	-	-	-	-	OFF	OFF	ON	A	*1	ON	ON	ON	ON
Repeater Station Mode	-	-	-	-	-	-	-	-	-	-	OFF	ON	ON	B	*1	ON	ON	ON	ON
	-	-	-	-	-	-	-	-	-	-	OFF	ON	ON	A	*1	OFF	ON	ON	ON
Base & Repeater Station Mode	-	-	-	-	-	-	-	-	-	-	OFF	OFF	ON	B	*1	ON	ON	ON	ON
	-	-	-	-	-	-	-	-	-	-	OFF	OFF	ON	A	*1	ON	ON	ON	ON
Simplex Base Station Mode	-	-	-	-	-	-	-	-	-	-	ON	OFF	ON	B	*1	ON	ON	ON	ON
	-	-	-	-	-	-	-	-	-	-	ON	OFF	ON	A	*1	ON	ON	OFF	ON

LEGEND:

Δ : Standard function needs modification.

o : Standard function.

*1 : Select ON or OFF.

*2 : OFF when Tone Panel is used for Community Repeater.

5. CIRCUIT DESCRIPTION

5-1 PLL Section

The 12.00MHz output frequency from the RX-UNIT-mounted reference oscillator (TCXO) is divided into 1:16 to obtain the 750kHz strobe signal to become the reference frequency division input and the frequency division data input to the PLL IC (MC145146).

In order to share the reference frequency between TX and RX, the 750kHz strobe signal is received from RX UNIT with the TX UNIT.

The 750kHz strobe signal is counted up by IC and its data output becomes the data latch address signals for the EP-ROM and PLL IC.

The PLL IC (MC145146) needs 29-bit data for one frequency. The data is divided into eight sets each of 4 bits and they are applied in parallel to the PLL IC.

Therefore, the frequency-determining data are input in eight addresses for each RX channel or TX channel as regards the addresses of the EP-ROM.

Since the one-address data is input to the PLL IC as short a time interval as $1/750\text{kHz}$, data recognition for the input of one frequency data is accomplished within as brief a time as $1 \times 8/750\text{kHz}$.

Furthermore, since the data is being refreshed at all times, the data can easily be altered with the same timing, even when the channel is changed.

Also, since the transmit and receive data are written into separate EP-ROMs, write-in operation, or programming, is feasible, even if the transmit and receive frequencies are different from each other.

Since the reference frequency division ratio can also be designated by ROM, division ratios ranging 3 to 4,096 of 750kHz are theoretically feasible. Be sure to adopt either 6.25kHz, 10kHz or 12.5kHz as the reference.

The RF signal from VCO is frequency-divided into 1:64 before application to PLL IC and further, undergoes frequency division according to the ROM data and phase comparison with the reference frequency.

The phase difference signal passes through the low-pass filter to become a DC voltage to control the oscillation frequency of VCO.

5-2 VCO Section

This section incorporates oscillation circuits independently incorporated in TX and RX units. Whereas Q201 (RX VCO) is for use with RX 1st local oscillator (LO) (F-21.6MHz), Q401 (TX VCO) is to initiate oscillations at the transmit frequency.

These two VCOs when used for a simplex base station are switched over by means of a press-to-talk switch, but they operate simultaneously when used for a duplex base station.

Control for either alternative is enabled by Jumper J801 in the terminal board.

Either oscillator output is amplified by the buffer amplifier IC PC1651 to become the input signal to amplifier Transistor 2SC2753 and a part of the prescaler IC μ PC571C. The RX LO signal is amplified by Q202 to cause the 1st mixer DBM-1 to drive.

The transmit signal is amplified by Q402 and the amplified signal becomes the input signal to the TX section. The PLL circuit when unlocked causes Q203 and Q204 in case of RX section or Q403, Q404 in case of TX Section to operate, thereby turning "OFF" the TX output.

5-3 RX Section

The RF input signal incoming from the antenna passes through the bandpass filter (BPF-1) in succession to undergo amplification by Q1. The amplified signal passes through the bandpass filter (BPF-2) to be applied as the input to the DBM-1 (diode, double-balanced mixer).

The DBM-1 is to mix the amplified RF signal with the 1st local oscillator (LO) signal to develop the 1st IF signal at 21.6MHz as its mixed output.

The output signal is further amplified by Q102, followed by still further amplification by Q103 after the initially amplified signal being applied to the crystal filter (XF101). The finally amplified signal is applied to IC107 as its input. At IC107, the 1st IF signal at 21.6MHz is converted into 455kHz through the 2nd mixer. The 455kHz signal passes through the 455kHz ceramic filter (CF101) to obtain an AF signal via the limiting amplifier and discriminating circuit.

The AF signal is then separated into the audio signal and the noise signal necessary for squelch control.

The audio signal passes through the lowpass filter IC108 (1/2), the delay circuit consisting of Q106, Q107, and IC109, the lowpass filter Q108, and the highpass filter of IC110 (1/2), the integrating circuit of IC110 (1/2), and the squelch gate circuit Q111 in succession to undergo 0dBm power amplification by IC111. The BTL 0dBm signal is applied to the Final Power Amp TA7252.

The squelch noise signal undergoes amplification by IC107 and IC108 (1/2) and detection by DC, to become a DC signal.

The DC signal passes through the switching circuit consisting of IC107 and Q104 to obtain the SQL OUT signal.

5-4 TX Section

The RF signal from VCO is amplified by Transistors Q301, Q302 to serve as power for driving the RF power amplifier module. The amplified RF signal, on the other hand, becomes a signal for driving the DRIVE meter. The signal amplified by the module is further amplified by the final-stage RF power amplifier consisting of the stripline to become the RF power output ranging from 50W to 60W.

The output is radiated from the antenna via the low-pass filter and combining network.

Part of the module output undergoes detection and DC amplification for feeding back to the 1-stage amplifier to become a control signal for the output power.

Even if the antenna is mismatched, reflected waves can be detected, causing the module input power to decrease and the module to be protected from damage.

The transceiver unit is equipped with a heatsink for sufficiently dissipate generated heat. This enables a consecutive 24-hour transmission capability.

The detected control signal is amplified to become a power alarm and a SWR alarm. The power alarm operates on reaching one-half the rated power, while the SWR alarm operates when the ANTENNA is open or shorted. No sooner than the two alarms work, LED (D606) glows "red".

5-5 Modulator Section

An audio signal produced by a human voice radiated to the MIC undergoes amplification by the ALC (Automatic Level Control) amplifier IC I803 (M51304) and IC804 (NJM4556).

Standard input level to the MIC is rated at 1kHz, -34dBm, while that in case of remote control is rated at 1kHz, -8dBm.

The amplified audio signal passes through the preemphasis circuit consisting of C356 and R346 before it is amplitude-limited by the limiting amplifier IC309 (1/2). The amplitude-limited signal passes through the lowpass filter consisting of L310 and L311 to become a modulating signal to be applied to the gate of TX VCO FET (Q401).

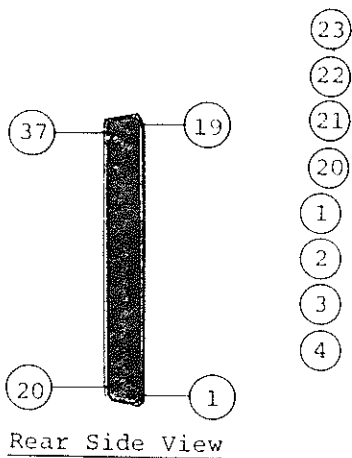
5-6 Description of Remote Control

5-6-1 37-Pin D-SUB Connector for Remote Control

Provided on the rear panel of BSR radio, the 37-PIN D-SUB CONNECTOR has 37 pins whose functions are as follows:

(36) (37) 13.6V DC

(18) , (19) , (7) GND



A1 }
 A2 }
 A3 } For CH
 A4 } DATA
 A5 }
 A6 }
 A7 }

CH1 is preceded by all "0's".
 CH128 is preceded by all "1's".
 "0" = open or 0V
 "1" = 5V to 13.6V

ROM DATA ... 5V voltage emerges on this pin after ER-ROM is programmed.

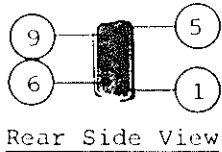
- ⑧ REMOTE ... When controlled externally from line interface unit. This PIN is grounded. When this signal is grounded, all of POW SW, SQL CONTROL, and CH can only be controlled from remote control side
- ⑨ BUSY ... 8V voltage emerges on this pin during receive period. 0V emerges when BSR is in standby status.
- ⑩ VOL (-) ... Volume control common.
- ⑪ VOL ... For volume control use. Use type 10K-B Volume.
- ⑫ SQL ... For SQL control use. Use type 10K-B Volume
- ⑬ , ⑭ AF OUT ... To obtain RX 0dBm output. A -6dBm output is available between either 13 or 14 pin and GND.
- ⑮ PRESS ... When grounded, BSR radio operates in TX mode.
- ⑯ SP ... An AF output of either 4W/4Ω or 2W/8Ω at max. is available.
- ⑰ , ⑱ , ⑲ ... No connection.

- ③1 AUX 1 ... No connection.
- ③2 TX ALARM ... This signal is used as a TX alarm. The TX alarm signal voltage ranges from 5 to 6 volts when TX power is reduced to one-half or ANTENNA is open or shorted.
- ③3 , ③4 MODULATION INPUT ... Standard modulation input is 1kHz, -8dBm.
- ③5 POW SWITCH ... To operate POW SWITCH on a REMOTE CONTROL basis. When grounded, BSR power switch turns "ON".

Note: All other pins are not used in BSR.

5-6-2 9-Pin D-SUB Connector for Tone Panel

Provided on the rear panel of KG110, the 9-Pin D-SUB Connector has nine pins whose functions are as follows:



Rear Side View

- ① +13.6V DC is available.
- ② No connection.
- ③ Not used.
- ④ No connection.
- ⑤ PRESS ... When grounded, BSR is placed in TX mode.
- ⑥ No connection.
- ⑦ } GND
- ⑧ }
- ⑨ Not used.

6. MAINTENANCE INSTRUCTIONS

6-1 General

The Base Station Radio, BSR has been designed to ensure a high degree of reliability over a long trouble-free service life without maintenance efforts.

However, occasional inspections and adjustments are required to maintain the radio in the optimal conditions.

6-2 Necessary Tools and Measuring Equipment

It is recommended that the undermentioned measuring equipment and maintenance tools be properly stored in your maintenance shop for ready use:

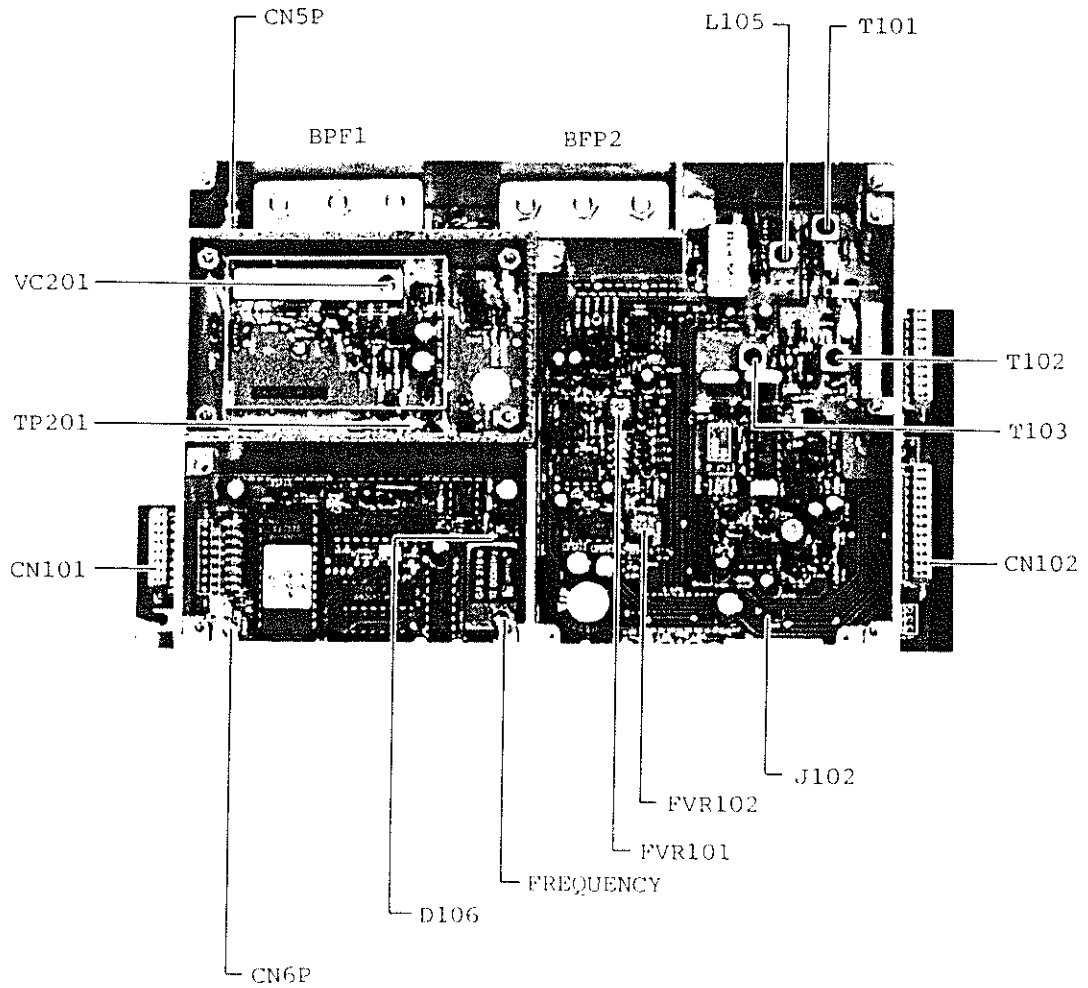
1. Circuit Tester
2. RF Power Meter
3. High Impedance Voltmeter
4. AF Generator (600 ohms, 100 through 10,000 Hz)
5. Linear Detector
6. Distortion Meter/Level Meter
7. Directional Coupler
8. Standard Signal Generator
9. Frequency Counter
10. Spectrum Analyzer

6-3 Precautions in Inspection and Adjustment

1. Always use standard-tip screwdrivers that best fit core slots in adjustment. Be very slow and cautious in turning the cores.
2. In adjusting the VCO, never turn trimmer capacitors or cores with an ordinary screwdriver. Be sure to use an RF screwdrivers. Otherwise, adjustments may result in failure due to the effect of stray capacitances.
3. Keep all measuring instruments well calibrated at all times for availability of accurate measurements.

6-4

6-4-1 RX VCO/PLL Adjustment



RX MAIN UNIT

- (1) Connect a Voltmeter to TP201 and adjust VC201 to read 3V on the Voltmeter.
- (2) Adjust the trimmer in TCXO to obtain an output frequency of 750kHz from CN6P. (No need for adjustment at the site, if the frequency tolerances of the TCXO remain within ± 1 ppm at room temperature.)

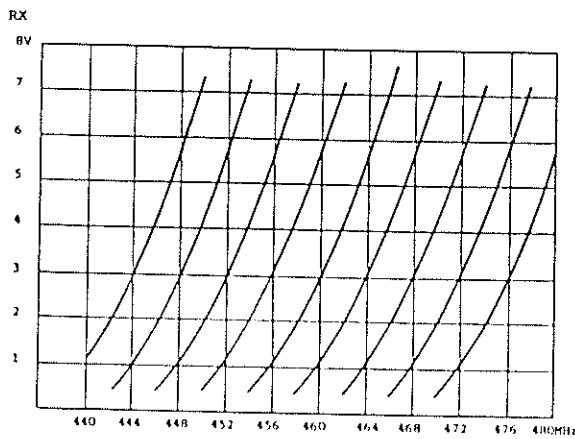
PRECAUTIONS:

The radio performs trouble-free operation within the VCO voltage range, 1 to 5V, as read on a voltmeter connected to TP201.

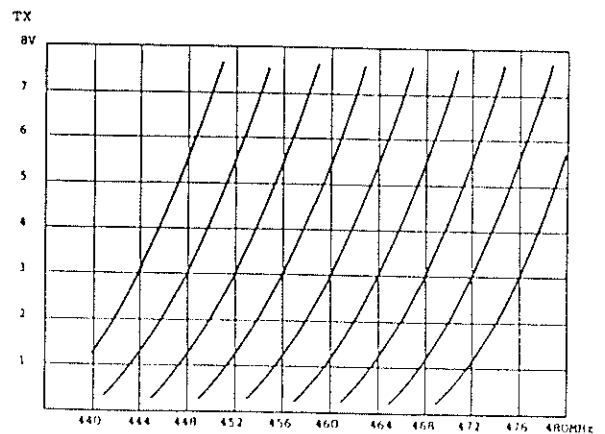
Adjust trimmer capacitor to read 3V (mid-position) on the voltmeter in case of single channel.

In case of multichannel, verify VCO voltages for the lowest and the highest frequencies and perform centering so that all fall between 1 and 5V. IF VCO is unlocked in this case, LED (D106) should glow.

Be sure to refer to the RX/TX characteristic curve in adjusting VCO.



RX FREQ - VCO VOLTAGE



TX FREQ - VCO VOLTAGE

6-4-2 Adjustment of RX Section

In adjusting the RX Unit singly (without being fixed in BSR), exercise care for the following:

- o J102 turned "ON" Be sure to turn it "OFF" before installing in BSR.
- o Connect a 10k Ω PULL DOWN resistor array to CN101.

(1) RF Stage Adjustment

Adjust BPF1 and BPF2 for maximum sensitivity points (with a screwdriver).

A better result can be obtained by measurement using a tracking generator.

Note: Where the BSR operates as a base station with a wide RX bandwidth, notify us in advance a wider bandwidth BPF you desire. As shipped from the factory, a standard 3MHz bandwidth BPF is mounted.

(2) IF Stage Adjustment

(1) L105 and T101: Adjust to sensitivity maxima.

(2) T102 and T103: Adjust to SINAD sensitivity maxima, with 1kHz, 70% MOD signal applied to Antenna.

(3) AF Stage Adjustment

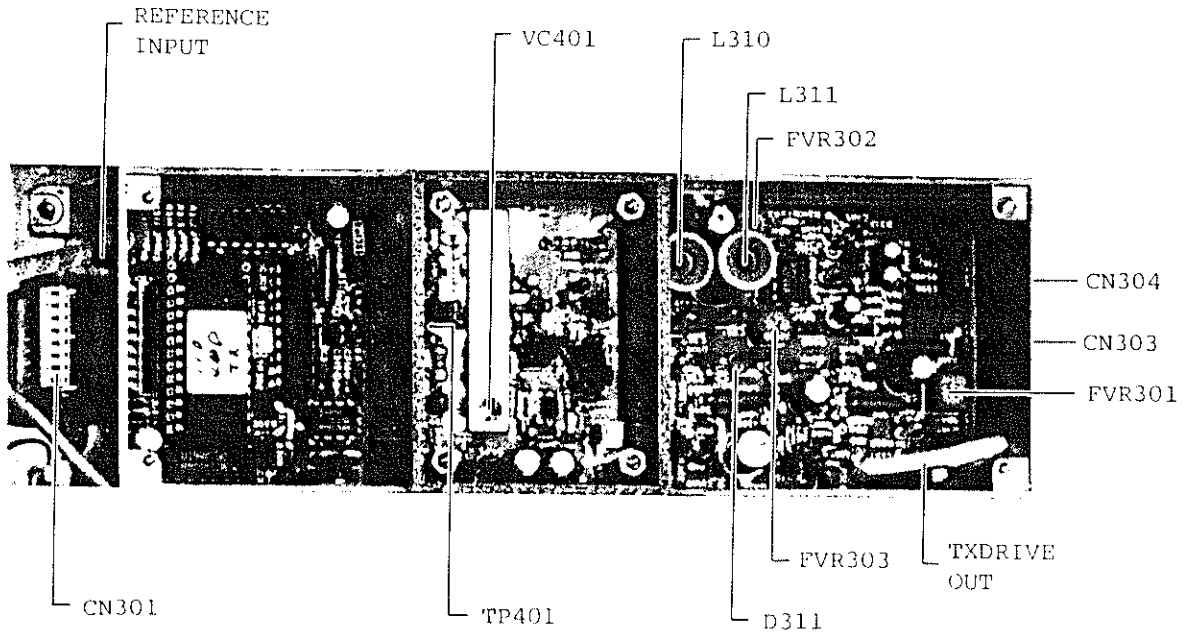
A BTL (Balanced Transformer Line) output obtains from IC111 (NJM2073) as the AF output. The AF output is usually measured with a transformer connected. In the absence of a transformer, adjust between the one-side line and GND.

With a 1kHz 70% modulation signal from a SG applied as input to CN5P, adjust FVR102 so as to make the output level between (8) and (9) of CN102 equal to 0dBm, or adjust FVR102 to obtain -6dBm between (8) or (9) and GND.

(4) RX 3kHz Frequency Response Adjustment

Apply a 1kHz 20% modulation signal from a SG to CN5P, calibrate the receive output level to 0dB, raise the modulation frequency to 3kHz, 20% modulation, and adjust FVR101 to obtain the receive output level of -9.5 ± 0.5 dB.

6-4-3 TX VCO/PLL Adjustment



- (1) Connect a Voltmeter to TP401 and adjust VC401 to read 3V.
- (2) TCXO for the reference frequency generation is not provided in TX unit; connect RX unit or apply a 750kHz 4 to 8Vp-p signal to the PLL.

PRECAUTIONS:

The radio performs trouble-free operation within the VCO voltage range, 1 to 5V, as read on a voltmeter connected to TP401.

Adjust trimmer capacitor to read 3V (mid-position) on the voltmeter in case of single channel.

In case of multichannel, verify VCO voltages for the lowest and the highest frequencies and perform centering so that all fall between 1 and 5V. If VCO is unlocked in this case, LED (D311) should glow.

6-4-4 TX Main Unit Adjustment

In adjusting TX Unit singly (without being fixed in BSR), exercise care for the following:

- o Connect a 10k Ω PULL DOWN resistor array to CN301.
- o Apply a REFERENCE 750kHz signal.

(1) DRIVE Output Adjustment

Connect a power meter to TX DRIVE output and adjust FVR301 to read 200 \pm 10mW.

(2) MODULATION Adjustment (Install TX Unit on the KG110)

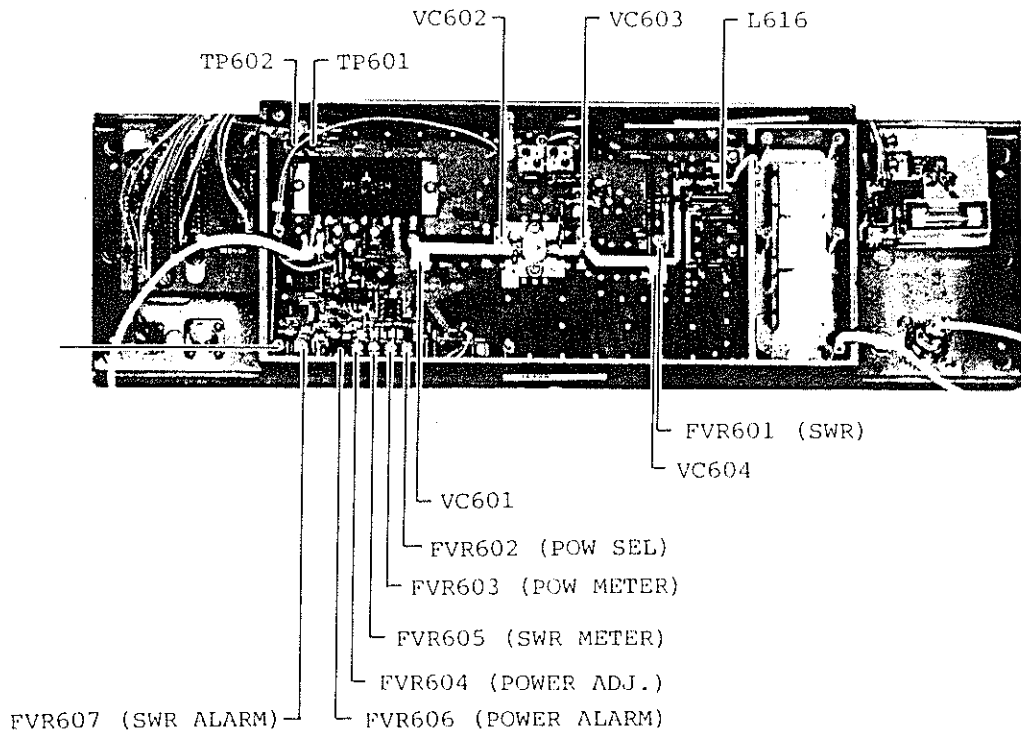
Apply a 1kHz, -34dBm signal from an Audio Generator to MIC connector and adjust FVR303 for a 70% modulation.

Then, raise the input level to 1kHz, -14dBm and adjust FVR302 for a maximum deviation. Repeat this procedure a few times.

(3) Adjustment of TX Frequency Response

Adjust L310 and L311 for a +9.5 \pm 1dB deviation when a REFERENCE 1kHz, 20% modulation signal is varied to a 3kHz, 20% modulation signal.

6-4-5 PA Unit Adjustment



(1) POWER Adjustment

Maximize POWER with FVR604 and take a balancing in turning between VC601 - VC604 for an in-band output in excess of 50W.

Then, fix VC601 - VC604 in position to manipulate them no more. Finally, adjust FVR604 to obtain the rated output of 50W.

(2) SWR Adjustment

Adjust FVR601 to minimize the L616 line voltage as read on a voltmeter.

(3) SWR ALARM Adjustment

LED (D606) should remain unlit for the rated power, as a rule. Adjust FVR607 to provide a visual alarm when ANTENNA is open or shorted.

(4) POWER ALARM Adjustment

With FVR604 set to obtain one-half the rated power, adjust FVR606 to cause LED (D606) to glow under this condition. After adjustment, be sure to restore FVR604 to the initial rated power position.

(5) POWER METER Adjustment

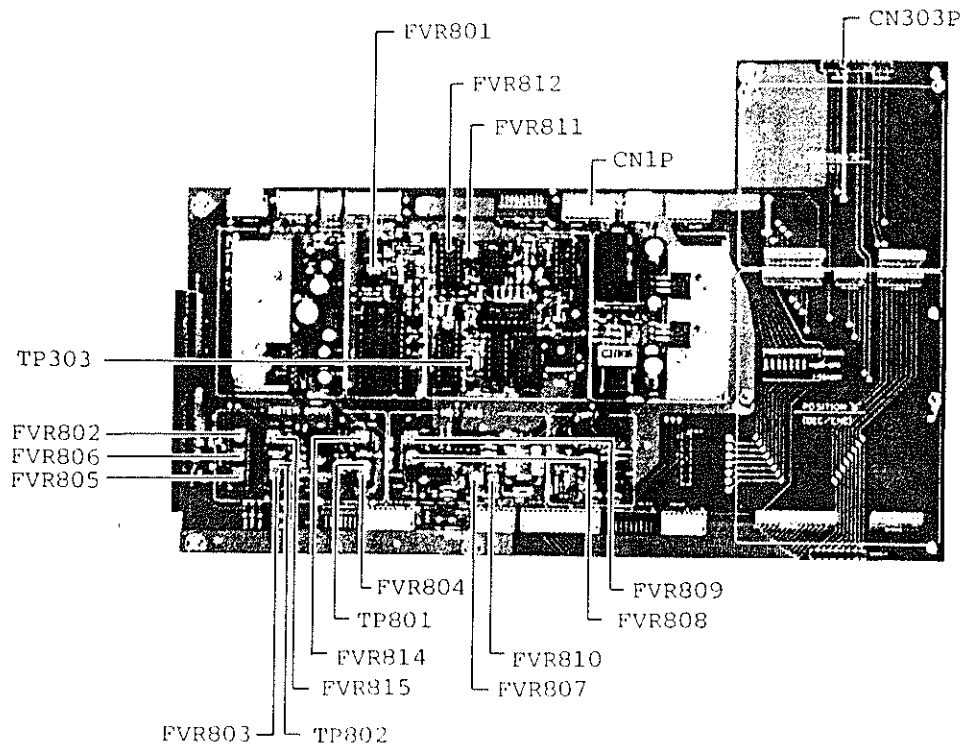
Adjust FVR603 to obtain TP601 voltage of 5.5V under rated power output conditions.

(6) SWR METER Adjustment

Adjust FVR605 to obtain TP602 voltage of 1.3V for rated power and TP602 voltage of 7.3V when ANTENNA is open.

Note: Items (2), (3), (4), (5), and (6) have been adjusted at the factory before shipment. No need for readjustment at the site, unless a trouble occurs

6-4-6 Terminal Unit Adjustment



Terminal Unit is designed not only for overall interconnections of TX Unit, RX Unit, and PA Unit, but also for incorporating functional facilities. Installed on the board which are not used in this model.

(1) Repeater Squelch Level Setting

Adjust FVR801 so that SQL opens at the specified SINAD ratio of 12dB.

(2) Modulation AGC Unit

With the MIC input set at 1kHz, -34dBm, adjust FVR807 to obtain a -8dBm output level from pins (1) and (2) of connector CN303. Then, raise MIC input level to 1kHz, -14dBm and adjust FVR809 to obtain an output level of +2dBm.

(REPEATER MODULATION Adjustment)

Apply a 1kHz, 70% modulation, 40dB μ V signal from a SG as input and adjust FVR808 to obtain a 70% modulation.

(3) MODULATION Adjustment

Apply a 1kHz, -8dBm signal as input to pins (6) and (7) of CN1P or pins (33) and (34) of D-SUB connector and adjust FVR810 to obtain a 3.5kHz deviation.

Adjustments (1), (2) and (3) have been finished at the factory before shipment. NO need for further adjustments at the site, if no trouble occurs.

6-5 Voltage Chart

(1) RX UNIT, PLL

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q101	2SC3358		0.79 V	0 V	6.9 V
Q103	2SC2669		2.3 V	1.6 V	6.6 V
Q104	2SC2458	SQ OPEN	0.67 V	0 V	0 V
		TIGHT	0 V	0 V	8.0 V
Q105	RN2202	SQ OPEN	1.1 V	8.0 V	8.0 V
		TIGHT	8.0 V	8.0 V	0 V
Q106	2SA1048		7.0 V	6.6 V	3.4 V
Q107	2SA1048		7.0 V	6.6 V	3.4 V
Q108	2SC2458		3.9 V	3.3 V	7.9 V
Q109	2SA950	J801 OFF	7.3 V	8.0 V	7.9 V
		J801 ON PRESS	8.0 V	8.0 V	0 V
Q110	RN2202	J801 OFF	8.0 V	8.0 V	7.3 V
		J801 ON PRESS	0.73 V	8.0 V	8.0 V
Q112	RN2202	RX	7.9 V	8.0 V	0 V
		RX UNLOCK	0.85V	8.0 V	8.0 V

REF.	DESCRIPTION	FUNCTION	GATE	SOURCE	DRAIN
Q102	2SK152		0.77 V	0 V	7.4 V
Q111	2SK184	MONITOR ON	4.5 V	4.0 V	4.0 V
		OFF	1.3 V	4.0 V	2.0 V

REF.	DESCRIPTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IC107	TK10420	7.9 V	7.2 V	7.4 V	7.9 V	1.1 V	1.1 V	1.2 V	7.9 V
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		3.7 V	2.0 V	2.0 V	0.92 V	0 V	0.66 V	0 V	2.1 V

REF.	DESCRIPTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IC104	μPC571C	5.1 V	2.4 V	0 V	0 V	3.9 V	5.6 V	1.13 V	1.16 V
IC108	NJM4558D	3.7 V	3.7 V	3.7 V	0 V	4.3 V	4.3 V	4.3 V	8.0 V
IC109	CX7932	4.5 V	0 V	3.5 V	0 V	4.7 V	3.4 V	0 V	7.9 V
IC110	NJM4558D	4.0 V	4.0 V	3.76 V	0 V	4.0 V	4.0 V	4.0 V	8.0 V
IC111	NJM2073	3.7 V	8.0 V	3.7 V	0 V	0.6 V	0 V	0 V	0.6 V

REF.	DESCRIPTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IC115	TA7303	1.84 V	1.87 V	0.37 V	0.5 V	0 V	3.75 V	0 V	0 V	7.9 V

(2) RX UNIT, VCO

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q202	2SC2753	J801 OFF RX	1.83 V	1.1 V	7.95 V
		J801 ON TX	0 V	0 V	0 V
Q203	2SA1048	RX	7.25 V	8.0 V	7.93 V
		TX	8.0 V	8.0 V	0 V
Q204	RN2202	RX	8.0 V	8.0 V	7.25 V
		TX	1.4 V	8.0 V	8.0 V
Q205	2SA1048	RX	6.6 V	7.34 V	7.3 V
		TX	6.9 V	7.46 V	0 V
Q206	RN2202	RX	7.3 V	7.34 V	0 V
		TX	0.72 V	7.46 V	7.45 V
Q207	2SC3623	RX	8.0 V	7.34 V	8.0 V
		TX	8.0 V	7.46 V	8.0 V
Q208	2SC2458	RX	5.6 V	4.9 V	8.0 V
		TX	5.6 V	4.9 V	8.0 V

REF.	DESCRIPTION	FUNCTION	GATE	SOURCE	DRAIN
Q201	SST310	RX	0 V	2.2 V	7.3 V
		TX	0 V	0 V	0 V

REF.	DESCRIPTION		①	②	③	④
IC201	μPC1651		4.9 V	0.85 V	0 V	3.5 V

(3) TX UNIT, PLL/VCO

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q301	2SC2644		0.5 V	0.35 V	7.9 V
Q302	2SC2131		-0.72 V	0 V	7.1 V
Q303	2SB1019		12.5 V	13.1 V	8.5 V
Q304	RN2202	TX	8.1 V	8.1 V	0 V
		TX UNLOCK	1.8 V	8.1 V	8.0 V
Q305	RN2202	RX	8.1 V	8.1 V	0 V
		TX	0.74 V	8.1 V	8.1 V
Q306	RN1202	RX	0 V	0 V	7.4 V
		TX	8.1 V	0 V	0 V

REF.	DESCRIPTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IC304	μPC571C	5.0 V	2.2 V	0 V	0 V	3.8 V	5.5 V	0 V	0 V
IC309	NJM4556D	4.5 V	4.5 V	4.5 V	0 V	4.4 V	4.4 V	4.4 V	8 V

REF.	DESCRIPTION	(1)	(2)	(3)
IC308	M5236L	11.3 V	0 V	1.23 V

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q402	2SC2753	RX	0 V	0 V	0 V
		TX	1.8 V	1.12 V	8.0 V
Q403	2SA1048	RX	8.1 V	8.1 V	0 V
		TX	7.3 V	8.1 V	8 V
Q404	RN2202	RX	0.86 V	8.1 V	8.1 V
		TX	8.1 V	8.1 V	7.3 V
Q405	2SA1048	RX	7.7 V	7.7 V	0 V
		TX	7.4 V	6.7 V	7.4 V
Q406	2SC3623	RX	8.1 V	7.7 V	8.1 V
		TX	8.1 V	7.4 V	8.1 V
Q407	2SC2458	RX	5.5 V	4.8 V	8.1 V
		TX	5.5 V	4.8 V	8.1 V

REF.	DESCRIPTION	FUNCTION	GATE	SOURCE	DRAIN
Q401	S3T310	RX	0 V	0 V	0 V
		TX	0 V	2.6 V	7.3 V

REF.	DESCRIPTION	(1)	(2)	(3)	(4)
IC401	μPC1651	4.8 V	0.79 V	0 V	3.3 V

(4) TERMINAL/CONTROL UNIT

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q801	2SC2120	POW. SW. OFF	0 V	0 V	13.8 V
		ON	0.77 V	0 V	0.15 V
Q802	RN2202	RX	13.6 V	13.7 V	0 V
		TX	0.76 V	13.1 V	13.1 V
Q803	RN2202	BASE	0 V	5.0 V	5.0 V
		REP.	5.0 V	5.0 V	0 V
Q804	RN2202	BASE	5.0 V	5.0 V	0 V
		REP.	0 V	5.0 V	5.0 V
Q805	2SC2458	BASE	2.2 V	1.8 V	4.8 V
		AT REP. MODE	0 V	0 V	4.8 V
		DURING REPEATING	1.2 V	0.57 V	0.58 V
Q806	RN2202	RX	5.0 V	5.0 V	0 V
		TX	0.54 V	5.0 V	5.0 V
Q807	2SC3623	RX	0 V	0 V	13.5 V
		J807 OFF, NO DELAY	0.68 V	0 V	0.16 V
		ON PRESS DELAY	0.66 V	0 V	0.34 V

REF.	DESCRIPTION	FUNCTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IC803	M51304L		8.0 V	0 V	0 V	1.35 V	2.9 V	1.3 V	0 V	0 V
IC804	NJM4556		4.3 V	4.3 V	4.3 V	0 V	4.3 V	4.3 V	4.3 V	8.0 V
IC811	555		0 V	5.0 V	0 V	0 V	3.35 V	0 V	0 V	5.0 V
IC812	NJM4558	RX	5.5 V	4.1 V	4.1 V	0 V	4.1 V	4.4 V	1.3 V	8.0 V
		TX	1.3 V	4.7 V	4.1 V	0 V	4.1 V	4.1 V	5.5 V	8.0 V
IC814	TA7252		1.4 V	1.4 V	6.8 V	0 V	6.7 V	13.0 V	13.7 V	
IC815	NJM4558		4.4 V	4.4 V	4.4 V	0 V	4.0 V	4.0 V	4.0 V	8.0 V

REF.	DESCRIPTION	FUNCTION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IC813	AN5733	VOLUME MIN.	4.3 V	4.4 V	8.0 V	3.1 V	3.5 V	2.4 V	0 V	2.5 V	3.0 V
		VOLUME MAX.	1.25 V	4.4 V	8.0 V	3.1 V	3.5 V	2.4 V	0 V	2.5 V	3.3 V

(5) TX PA

REF.	DESCRIPTION	FUNCTION	BASE	EMITTER	COLLECTOR
Q603	2SB1019	50W	12.6 V	13.3 V	9.0 V
		MAX.	12.4 V	13.1 V	13.0 V
Q604	2SA950	50W	12.56 V	13.3 V	13.2 V
		MAX.	12.4 V	13.1 V	13.1 V
Q605	2SC2120	50W	0.83 V	0.20 V	12.0 V
		MAX.	2.1 V	1.47 V	7.8 V

REF.	DESCRIPTION	FUNCTION	①	②	③	④	⑤	⑥	⑦	⑧
IC602	NJM4558	50W	5.5 V	1.64 V	1.62 V	0 V	2.2 V	2.9 V	1.4 V	8.0 V
		MAX.	6.45 V	1.75 V	1.73 V	0 V	2.5 V	2.9 V	1.4 V	8.0 V
		ANT. OPEN	5.2 V	1.7 V	1.7 V	0 V	7.1 V	3.7 V	7.3 V	8.0 V
IC603	NJM4556	50W	2.7 V	4.7 V	4.7 V	0 V				8.0 V
		MAX.	7.2 V	5.4 V	7.2 V	0 V				8.0 V
		ANT. OPEN	7.3 V	4.6 V	4.8 V	0 V				8.0 V
IC604	NJM4558	50W	1.3 V	3.0 V	2.2 V	0 V	3.5 V	4.7 V	1.3 V	8.0 V
		MAX.	1.3 V	3.0 V	2.45 V	0 V	3.5 V	5.3 V	1.3 V	8.0 V
		ANT. OPEN	6.7 V	3.0 V	7.0 V	0 V	3.5 V	4.6 V	1.3 V	8.0 V

7. EP-ROM PROGRAM METHOD

7-1 Calculating the "Reference Division Rate" Address Data

REFERENCE DIVISION RATE "R"

The Reference Division Rate must always be calculated for both the transmit and the receive frequencies.

The 12.000MHz TCXO output signal is divided by 16 (by the divider, IC101) to provide a 750kHz Reference Frequency. This Reference Frequency is sampled and divided by the "Reference Division Rate" to determine the channel spacing, e.g. 12.000MHz/16 = 750kHz then 750kHz/(Channel Spacing) = Reference Frequency as follows:

<u>Channel Spacings</u>	<u>Calculations</u>	<u>Ref. Div. Rate "R"</u>
25kHz	750kHz/25kHz	= 30
12.5kHz	750kHz/12.5kHz	= 60
10kHz	750kHz/10kHz	= 75
6.25kHz	750kHz/6.25kHz	= 120
5kHz	750kHz/5kHz	= 150

Next it is necessary to determine the address information by referring to the attached "A - D CONVERSION LIST".

e.g. 12.5kHz channel spacing

= Reference Division Rate "R"

$$= \frac{60}{\downarrow} \\ \text{c 3 0}$$

7-2 Calculating the Transmit and Receive Address Data

It is necessary to calculate the following information for each transmit and receive frequencies required. TX and RX allow two TX and RX data to be written respectively into their EP-ROMs.

(Note: The receive frequency is the 1st local oscillator frequency.)

D = Basic Division Rate

d = Prescaler Division Rate

N = Number of Complete Divisions

R = Remainder of the Basic Division Rate

(a) "D" Calculation

"D" is obtained by dividing the frequency required by the channel spacing required.

(b) "d" Calculation

"d" is the prescaler division rate, and it is fixed at 64.

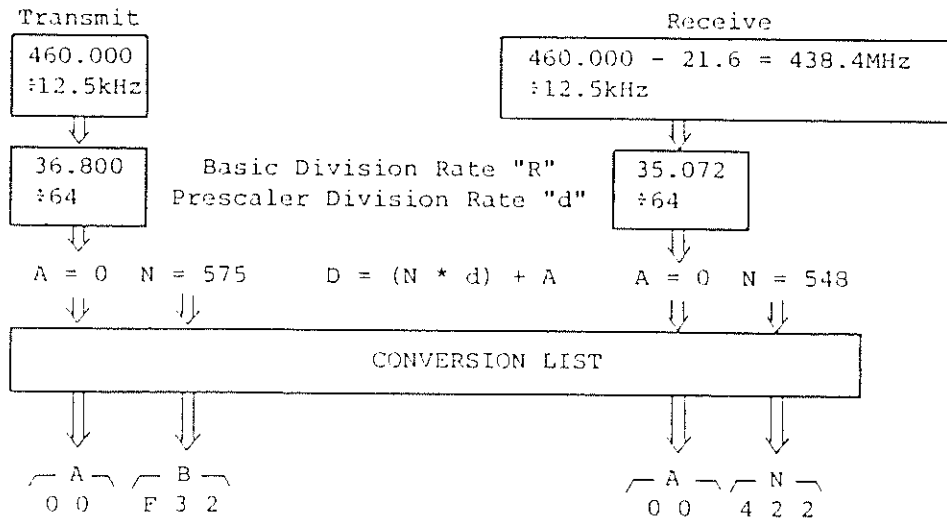
(c) "N" and "A" Calculation

"N" and "A" are calculated using the following equation:

$$D = (N * d) + A$$

(d) Example Calculation

Channel #1 460.000MHz, Simplex, 25kHz Channel Spacing



7-3 Relations between Addresses and Data

With KG110, TX and RX units each contain one EP-ROM. As a result, TX data and RX data only are written into TX and RX, respectively.

(Example) CH1 = 460MHz

		TX ADDRESS															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Channel #1/#2 address		CH1								CH2							
Buffer input data		TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	
		00	00	01	03	02	0C	03	00	FF	FF	FF	FF	FF	FF	FF	
Channel #3/#4 address		10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Buffer input data		CH3				CH4				CH3				CH4			
		TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	
		FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
Channel #5/#6 address																	
Channel #99 address		310	311	312	313	314	315	316	317	318	319	31A	31B	31C	31D	31E	31F
Buffer input data		CH99		CH99		CH99		CH99		CH99		CH99		CH99		CH99	
		TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	TX(A)	TX(N)	TX(R)	
		FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	

		RX ADDRESS															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Channel #1/#2 address																	
Buffer input data		RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	
		00	00	04	02	02	0C	03	00	FF	FF	FF	FF	FF	FF	FF	
Channel #3/#4 address		10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Buffer input data		CH3				CH4				CH3				CH4			
		RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	
		FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
Channel #5/#6 address		20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F
Channel #99 address		310	311	312	313	314	315	316	317	318	319	31A	31B	31C	31D	31E	31F
Buffer input data		CH99		CH99		CH99		CH99		CH99		CH99		CH99		CH99	
		RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	RX(A)	RX(N)	RX(R)	
		FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	

Note: An FF data input, though applied to the ROM in programming the ROM, fails to be written into it.

CONVERSION LIST (1)

No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code
1	1 0	76	C 4	151	7 9	226	2 E	301	0 2 1	376	8 7 1	451	3 C 1	526	E 0 2
2	2 0	77	0 4	152	8 9	227	3 E	302	E 2 1	377	9 7 1	452	4 C 1	527	F 0 2
3	3 0	78	E 4	153	9 9	228	4 E	303	F 2 1	378	A 7 1	453	5 C 1	528	0 1 2
4	4 0	79	F 4	154	A 9	229	5 E	304	0 3 1	379	B 7 1	454	6 C 1	529	1 1 2
5	5 0	80	0 5	155	B 9	230	6 E	305	1 3 1	380	C 7 1	455	7 C 1	530	2 1 2
6	6 0	81	1 5	156	C 9	231	7 E	306	2 3 1	381	D 7 1	456	8 C 1	531	3 1 2
7	7 0	82	2 5	157	0 9	232	8 E	307	3 3 1	382	E 7 1	457	9 C 1	532	4 1 2
8	8 0	83	3 5	158	E 9	233	9 E	308	4 3 1	383	F 7 1	458	A C 1	533	5 1 2
9	9 0	84	4 5	159	F 9	234	A E	309	5 3 1	384	0 8 1	459	B C 1	534	6 1 2
10	A 0	85	5 5	160	0 A	235	B E	310	6 3 1	385	1 8 1	460	C C 1	535	7 1 2
11	B 0	86	6 5	161	1 A	236	C E	311	7 3 1	386	2 8 1	461	D C 1	536	8 1 2
12	C 0	87	7 5	162	2 A	237	D E	312	8 3 1	387	3 8 1	462	E C 1	537	9 1 2
13	D 0	88	8 5	163	3 A	238	E E	313	9 3 1	388	4 8 1	463	F C 1	538	A 1 2
14	E 0	89	9 5	164	4 A	239	F E	314	A 3 1	389	5 8 1	464	0 D 1	539	0 1 2
15	F 0	90	A 5	165	5 A	240	0 F	315	B 3 1	390	6 8 1	465	1 D 1	540	C 1 2
16	0 1	91	B 5	166	6 A	241	1 F	316	C 3 1	391	7 8 1	466	2 0 1	541	D 1 2
17	1 1	92	C 5	167	7 A	242	2 F	317	0 3 1	392	8 8 1	467	3 0 1	542	E 1 2
18	2 1	93	0 5	168	8 A	243	3 F	318	E 3 1	393	9 8 1	468	4 0 1	543	F 1 2
19	3 1	94	E 5	169	9 A	244	4 F	319	F 3 1	394	A 8 1	469	5 0 1	544	0 2 2
20	4 1	95	F 5	170	A A	245	5 F	320	0 4 1	395	B 8 1	470	6 0 1	545	1 2 2
21	5 1	96	0 6	171	B A	246	6 F	321	1 4 1	396	C 8 1	471	7 0 1	546	2 2 2
22	6 1	97	1 6	172	C A	247	7 F	322	2 4 1	397	D 8 1	472	8 0 1	547	3 2 2
23	7 1	98	2 6	173	D A	248	8 F	323	3 4 1	398	E 8 1	473	9 0 1	548	4 2 2
24	8 1	99	3 6	174	E A	249	9 F	324	4 4 1	399	F 8 1	474	A 0 1	549	5 2 2
25	9 1	100	4 6	175	F A	250	A F	325	5 4 1	400	0 9 1	475	B 0 1	550	6 2 2
26	A 1	101	5 6	176	0 B	251	B F	326	6 4 1	401	1 9 1	476	C 0 1	551	7 2 2
27	B 1	102	6 6	177	1 B	252	C F	327	7 4 1	402	2 9 1	477	D 0 1	552	8 2 2
28	C 1	103	7 6	178	2 B	253	D F	328	8 4 1	403	3 9 1	478	E 0 1	553	9 2 2
29	D 1	104	8 6	179	3 B	254	E F	329	9 4 1	404	4 9 1	479	F 0 1	554	A 2 2
30	E 1	105	9 6	180	4 B	255	F F	330	A 4 1	405	5 9 1	480	0 E 1	555	B 2 2
31	F 1	106	A 6	181	5 B	256	0 0 1	331	B 4 1	406	6 9 1	481	1 E 1	556	C 2 2
32	0 2	107	B 6	182	6 B	257	1 0 1	332	C 4 1	407	7 9 1	482	2 E 1	557	D 2 2
33	1 2	108	C 6	183	7 B	258	2 0 1	333	D 4 1	408	8 9 1	483	3 E 1	558	E 2 2
34	2 2	109	0 6	184	8 B	259	3 0 1	334	E 4 1	409	9 9 1	484	4 E 1	559	F 2 2
35	3 2	110	E 6	185	9 B	260	4 0 1	335	F 4 1	410	A 9 1	485	5 E 1	560	0 3 2
36	4 2	111	F 6	186	A B	261	5 0 1	336	0 5 1	411	B 9 1	486	6 E 1	561	1 3 2
37	5 2	112	0 7	187	B B	262	6 0 1	337	1 5 1	412	C 9 1	487	7 E 1	562	2 3 2
38	6 2	113	1 7	188	C B	263	7 0 1	338	2 5 1	413	0 9 1	488	8 E 1	563	3 3 2
39	7 2	114	2 7	189	D B	264	8 0 1	339	3 5 1	414	E 9 1	489	9 E 1	564	4 3 2
40	8 2	115	3 7	190	E B	265	9 0 1	340	4 5 1	415	F 9 1	490	A E 1	565	5 3 2
41	9 2	116	4 7	191	F B	266	A 0 1	341	5 5 1	416	0 A 1	491	B E 1	566	6 3 2
42	A 2	117	5 7	192	0 C	267	B 0 1	342	6 5 1	417	1 A 1	492	C E 1	567	7 3 2
43	B 2	118	6 7	193	1 C	268	C 0 1	343	7 5 1	418	2 A 1	493	D E 1	568	8 3 2
44	C 2	119	7 7	194	2 C	269	D 0 1	344	8 5 1	419	3 A 1	494	E E 1	569	9 3 2
45	D 2	120	8 7	195	3 C	270	E 0 1	345	9 5 1	420	4 A 1	495	F E 1	570	A 3 2
46	E 2	121	9 7	196	4 C	271	F 0 1	346	A 5 1	421	5 A 1	496	0 F 1	571	B 3 2
47	F 2	122	A 7	197	5 C	272	0 1 1	347	B 5 1	422	6 A 1	497	1 F 1	572	C 3 2
48	0 3	123	B 7	198	6 C	273	1 1 1	348	C 5 1	423	7 A 1	498	2 F 1	573	0 3 2
49	1 3	124	C 7	199	7 C	274	2 1 1	349	D 5 1	424	8 A 1	499	3 F 1	574	E 3 2
50	2 3	125	D 7	200	8 C	275	3 1 1	350	E 5 1	425	9 A 1	500	4 F 1	575	F 3 2
51	3 3	126	E 7	201	9 C	276	4 1 1	351	F 5 1	426	A A 1	501	5 F 1	576	0 4 2
52	4 3	127	F 7	202	A C	277	5 1 1	352	0 6 1	427	B A 1	502	6 F 1	577	1 4 2
53	5 3	128	0 8	203	B C	278	6 1 1	353	1 6 1	428	C A 1	503	7 F 1	578	2 4 2
54	6 3	129	1 8	204	C C	279	7 1 1	354	2 6 1	429	D A 1	504	8 F 1	579	3 4 2
55	7 3	130	2 8	205	0 C	280	8 1 1	355	3 6 1	430	E A 1	505	9 F 1	580	4 4 2
56	8 3	131	3 8	206	E C	281	9 1 1	356	4 6 1	431	F A 1	506	A F 1	581	5 4 2
57	9 3	132	4 8	207	F C	282	A 1 1	357	5 6 1	432	0 B 1	507	B F 1	582	6 4 2
58	A 3	133	5 8	208	0 D	283	B 1 1	358	6 6 1	433	1 B 1	508	C F 1	583	7 4 2
59	B 3	134	6 8	209	1 D	284	C 1 1	359	7 6 1	434	2 0 1	509	D F 1	584	8 4 2
60	C 3	135	7 8	210	2 D	285	D 1 1	360	8 6 1	435	3 B 1	510	E F 1	585	9 4 2
61	D 3	136	8 8	211	3 D	286	E 1 1	361	9 6 1	436	4 B 1	511	F F 1	586	A 4 2
62	E 3	137	9 8	212	4 D	287	F 1 1	362	A 6 1	437	5 B 1	512	0 0 2	587	0 4 2
63	F 3	138	A 8	213	5 D	288	0 2 1	363	B 6 1	438	6 B 1	513	1 0 2	588	C 4 2
64	0 4	139	B 8	214	6 D	289	1 2 1	364	C 6 1	439	7 B 1	514	2 0 2	589	D 4 2
65	1 4	140	C 8	215	7 D	290	2 2 1	365	0 6 1	440	8 B 1	515	3 0 2	590	E 4 2
66	2 4	141	D 8	216	8 D	291	3 2 1	366	E 6 1	441	9 B 1	516	4 0 2	591	F 4 2
67	3 4	142	E 8	217	9 D	292	4 2 1	367	F 6 1	442	A 0 1	517	5 0 2	592	0 5 2
68	4 4	143	F 8	218	A D	293	5 2 1	368	0 7 1	443	B 0 1	518	6 0 2	593	1 5 2
69	5 4	144	0 9	219	B D	294	6 2 1	369	1 7 1	444	C 0 1	519	7 0 2	594	2 5 2
70	6 4	145	1 9	220	C D	295	7 2 1	370	2 7 1	445	D 0 1	520	8 0 2	595	3 5 2
71	7 4	146	2 9	221	D D	296	8 2 1	371	3 7 1	446	E 0 1	521	9 0 2	596	4 5 2
72	8 4	147	3 9	222	E D	297	9 2 1	372	4 7 1	447	F 0 1	522	A 0 2	597	5 5 2
73	9 4	148	4 9	223	F D	298	A 2 1	373	5 7 1	448	0 C 1	523	B 0 2	598	6 5 2
74	A 4	149	5 9	224	0 E	299	B 2 1	374	6 7 1	449	1 C 1	524	C 0 2	599	7 5 2
75	B 4	150	6 9	225	1 E	300	C 2 1	375	7 7 1	450	2 C 1	525	D 0 2	600	8 5 2

0-75

76-150

151-225

226-300

301-375

376-450

451-525

526-600

CONVERSION LIST (2)

No.	Code	No.	Code	No.	Code	No.	Code	No.	Code	No.	Code
601	9 5 2	676	4 A 2	751	F E 2	826	A 3 3	901	5 8 3	976	0 0 3
602	A 5 2	677	5 A 2	752	O F 2	827	B 3 3	902	6 8 3	977	1 0 3
603	B 5 2	678	6 A 2	753	1 F 2	828	C 3 3	903	7 8 3	978	2 0 3
604	C 5 2	679	7 A 2	754	2 F 2	829	D 3 3	904	8 8 3	979	3 0 3
605	D 5 2	680	8 A 2	755	3 F 2	830	E 3 3	905	9 8 3	980	4 0 3
606	E 5 2	681	9 A 2	756	4 F 2	831	F 3 3	906	A 8 3	981	5 0 3
607	F 5 2	682	A A 2	757	5 F 2	832	O 4 3	907	B 8 3	982	6 0 3
608	O 6 2	683	B A 2	758	6 F 2	833	1 4 3	908	C 8 3	983	7 0 3
609	1 6 2	684	C A 2	759	7 F 2	834	2 4 3	909	O 8 3	984	8 0 3
610	2 6 2	685	D A 2	760	B F 2	835	3 4 3	910	E 8 3	985	9 0 3
611	3 6 2	686	E A 2	761	9 F 2	836	4 4 3	911	F 8 3	986	A 0 3
612	4 6 2	687	F A 2	762	A F 2	837	5 4 3	912	O 9 3	987	B 0 3
613	5 6 2	688	O 8 2	763	B F 2	838	6 4 3	913	1 9 3	988	C 0 3
614	6 6 2	689	1 8 2	764	C F 2	839	7 4 3	914	2 9 3	989	D 0 3
615	7 6 2	690	2 8 2	765	O F 2	840	8 4 3	915	3 9 3	990	E 0 3
616	8 6 2	691	3 8 2	766	E F 2	841	9 4 3	916	4 9 3	991	F 0 3
617	9 6 2	692	4 8 2	767	F F 2	842	A 4 3	917	5 9 3	992	O E 3
618	A 6 2	693	5 8 2	768	O O 3	843	B 4 3	918	6 9 3	993	1 E 3
619	O 6 2	694	6 8 2	769	1 O 3	844	C 4 3	919	7 9 3	994	2 E 3
620	C 6 2	695	7 8 2	770	2 O 3	845	O 4 3	920	B 9 3	995	3 E 3
621	O 6 2	696	B 8 2	771	3 O 3	846	E 4 3	921	9 9 3	996	4 E 3
622	E 6 2	697	9 8 2	772	4 O 3	847	F 4 3	922	A 9 3	997	5 E 3
623	F 6 2	698	A 8 2	773	5 O 3	848	O 5 3	923	B 9 3	998	6 E 3
624	O 7 2	699	O 8 2	774	6 O 3	849	1 5 3	924	C 9 3	999	7 E 3
625	1 7 2	700	C 8 2	775	7 O 3	850	2 5 3	925	O 9 3	1000	8 E 3
626	2 7 2	701	O 8 2	776	B O 3	851	3 5 3	926	E 9 3		
627	3 7 2	702	E 8 2	777	9 O 3	852	4 5 3	927	F 9 3		
628	4 7 2	703	F 8 2	778	A O 3	853	5 5 3	928	O A 3		
629	5 7 2	704	O C 2	779	B O 3	854	6 5 3	929	1 A 3		
630	6 7 2	705	1 C 2	780	C O 3	855	7 5 3	930	2 A 3		
631	7 7 2	706	2 C 2	781	O O 3	856	8 5 3	931	J A 3		
632	8 7 2	707	3 C 2	782	E O 3	857	9 5 3	932	4 A 3		
633	9 7 2	708	4 C 2	783	F O 3	858	A 5 3	933	5 A 3		
634	A 7 2	709	5 C 2	784	O 1 3	859	B 5 3	934	6 A 3		
635	B 7 2	710	6 C 2	785	1 1 3	860	C 5 3	935	7 A 3		
636	C 7 2	711	7 C 2	786	2 1 3	861	O 5 3	936	B A 3		
637	O 7 2	712	8 C 2	787	3 1 3	862	E 5 3	937	9 A 3		
638	E 7 2	713	9 C 2	788	4 1 3	863	F 5 3	938	A A 3		
639	F 7 2	714	A C 2	789	5 1 3	864	O 6 3	939	B A 3		
640	O 8 2	715	O C 2	790	6 1 3	865	1 6 3	940	C A 3		
641	1 8 2	716	C C 2	791	7 1 3	866	2 6 3	941	D A 3		
642	2 8 2	717	D C 2	792	8 1 3	867	3 6 3	942	E A 3		
643	3 8 2	718	E C 2	793	9 1 3	868	4 6 3	943	F A 3		
644	4 8 2	719	F C 2	794	A 1 3	869	5 6 3	944	O B 3		
645	5 8 2	720	O O 2	795	B 1 3	870	6 6 3	945	1 B 3		
646	6 8 2	721	1 O 2	796	C 1 3	871	7 6 3	946	2 B 3		
647	7 8 2	722	2 O 2	797	O 1 3	872	8 6 3	947	3 O 3		
648	8 8 2	723	3 O 2	798	E 1 3	873	9 6 3	948	4 O 3		
649	9 8 2	724	4 O 2	799	F 1 3	874	A 6 3	949	5 B 3		
650	A 8 2	725	5 O 2	800	O 2 3	875	B 6 3	950	6 O 3		
651	O 8 2	726	6 O 2	801	1 2 3	876	C 6 3	951	7 O 3		
652	C 8 2	727	7 O 2	802	2 2 3	877	O 6 3	952	8 O 3		
653	O 8 2	728	8 O 2	803	3 2 3	878	E 6 3	953	9 O 3		
654	E 8 2	729	9 O 2	804	4 2 3	879	F 6 3	954	A O 3		
655	F 8 2	730	A O 2	805	5 2 3	880	O 7 3	955	B B 3		
656	O 9 2	731	B O 2	806	6 2 3	881	1 7 3	956	C B 3		
657	1 9 2	732	C O 2	807	7 2 3	882	2 7 3	957	O O 3		
658	2 9 2	733	O O 2	808	8 2 3	883	3 7 3	958	E O 3		
659	3 9 2	734	E O 2	809	9 2 3	884	4 7 3	959	F B 3		
660	4 9 2	735	F O 2	810	A 2 3	885	5 7 3	960	O C 3		
661	5 9 2	736	O E 2	811	O 2 3	886	6 7 3	961	1 C 3		
662	6 9 2	737	1 E 2	812	C 2 3	887	7 7 3	962	2 C 3		
663	7 9 2	738	2 E 2	813	O 2 3	888	B 7 3	963	3 C 3		
664	8 9 2	739	3 E 2	814	E 2 3	889	9 7 3	964	4 C 3		
665	9 9 2	740	4 C 2	815	F 2 3	890	A 7 3	965	5 C 3		
666	A 9 2	741	5 E 2	816	O 3 3	891	B 7 3	966	6 C 3		
667	O 9 2	742	6 E 2	817	1 3 3	892	C 7 3	967	7 C 3		
668	C 9 2	743	7 E 2	818	2 3 3	893	O 7 3	968	8 C 3		
669	O 9 2	744	8 E 2	819	3 3 3	894	E 7 3	969	9 C 3		
670	E 9 2	745	9 E 2	820	4 3 3	895	F 7 3	970	A C 3		
671	F 9 2	746	A E 2	821	5 3 3	896	O 8 3	971	O C 3		
672	O A 2	747	B E 2	822	6 3 3	897	1 8 3	972	C C 3		
673	1 A 2	748	C E 2	823	7 3 3	898	2 8 3	973	O C 3		
674	2 A 2	749	O E 2	824	8 3 3	899	3 8 3	974	E C 3		
675	3 A 2	750	E E 2	825	9 3 3	900	4 8 3	975	F C 3		
601-675	676-750	751-825	826-900	901-975	976-1000						

F. (MHz)	UHF TX PROGRAM							UHF RX PROGRAM									
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	
355.500	08	03	08	03	01	0C	03	00	08	03	05	0A	01	0C	03	00	
355.525	0A	03	0B	0C	01	0C	03	00	0A	03	0D	0A	01	0C	03	00	
355.550	0C	03	0B	0C	01	0C	03	00	0C	03	0D	0A	01	0C	03	00	
355.575	0E	03	0B	0C	01	0C	03	00	0E	03	0D	0A	01	0C	03	00	
355.600	00	03	0B	0C	01	0C	03	00	00	00	0E	0A	01	0C	03	00	
355.625	02	00	09	0C	01	0C	03	00	02	00	0E	0A	01	0C	03	00	
355.650	04	00	09	0C	01	0C	03	00	04	00	0E	0A	01	0C	03	00	
355.675	06	00	09	0C	01	0C	03	00	06	00	0E	0A	01	0C	03	00	
355.700	08	00	09	0C	01	0C	03	00	08	00	0E	0A	01	0C	03	00	
355.725	0A	00	09	0C	01	0C	03	00	0A	00	0E	0A	01	0C	03	00	
355.750	0C	00	09	0C	01	0C	03	00	0C	00	0E	0A	01	0C	03	00	
355.775	0E	00	09	0C	01	0C	03	00	0E	00	0E	0A	01	0C	03	00	
355.800	00	01	09	0C	01	0C	03	00	00	01	0E	0A	01	0C	03	00	
355.825	02	01	09	0C	01	0C	03	00	02	01	0E	0A	01	0C	03	00	
355.850	04	01	09	0C	01	0C	03	00	04	01	0E	0A	01	0C	03	00	
355.875	06	01	09	0C	01	0C	03	00	06	01	0E	0A	01	0C	03	00	
355.900	08	01	09	0C	01	0C	03	00	08	01	0E	0A	01	0C	03	00	
355.925	0A	01	09	0C	01	0C	03	00	0A	01	0E	0A	01	0C	03	00	
355.950	0C	01	09	0C	01	0C	03	00	0C	01	0E	0A	01	0C	03	00	
355.975	0E	01	09	0C	01	0C	03	00	0E	01	0E	0A	01	0C	03	00	
356.000	00	02	0B	0C	01	0C	03	00	00	02	0E	0A	01	0C	03	00	
356.025	02	02	09	0C	01	0C	03	00	02	02	0E	0A	01	0C	03	00	
356.050	04	02	09	0C	01	0C	03	00	04	02	0E	0A	01	0C	03	00	
356.075	06	02	09	0C	01	0C	03	00	06	02	0E	0A	01	0C	03	00	
356.100	08	02	09	0C	01	0C	03	00	08	02	0E	0A	01	0C	03	00	
356.125	0A	02	09	0C	01	0C	03	00	0A	02	0E	0A	01	0C	03	00	
356.150	0C	02	09	0C	01	0C	03	00	0C	02	0E	0A	01	0C	03	00	
356.175	0E	02	09	0C	01	0C	03	00	0E	02	0E	0A	01	0C	03	00	
356.200	00	03	09	0C	01	0C	03	00	00	03	0E	0A	01	0C	03	00	
356.225	02	03	09	0C	01	0C	03	00	02	03	0E	0A	01	0C	03	00	
356.250	04	03	09	0C	01	0C	03	00	04	03	0E	0A	01	0C	03	00	
356.275	06	03	09	0C	01	0C	03	00	06	03	0E	0A	01	0C	03	00	
356.300	08	03	09	0C	01	0C	03	00	08	03	0E	0A	01	0C	03	00	
356.325	0A	03	09	0C	01	0C	03	00	0A	03	0E	0A	01	0C	03	00	
356.350	0C	03	09	0C	01	0C	03	00	0C	03	0E	0A	01	0C	03	00	
356.375	0E	03	09	0C	01	0C	03	00	0E	03	0E	0A	01	0C	03	00	
356.400	00	04	03	09	0C	01	0C	03	00	00	04	0E	0A	01	0C	03	00
356.425	02	04	03	09	0C	01	0C	03	00	02	04	0E	0A	01	0C	03	00
356.450	04	04	03	09	0C	01	0C	03	00	04	04	0E	0A	01	0C	03	00
356.475	06	04	03	09	0C	01	0C	03	00	06	04	0E	0A	01	0C	03	00
356.500	08	04	03	09	0C	01	0C	03	00	08	04	0E	0A	01	0C	03	00
356.525	0A	04	03	09	0C	01	0C	03	00	0A	04	0E	0A	01	0C	03	00
356.550	0C	04	03	09	0C	01	0C	03	00	0C	04	0E	0A	01	0C	03	00
356.575	0E	04	03	09	0C	01	0C	03	00	0E	04	0E	0A	01	0C	03	00
356.600	00	05	03	09	0C	01	0C	03	00	00	05	0E	0A	01	0C	03	00
356.625	02	05	03	09	0C	01	0C	03	00	02	05	0E	0A	01	0C	03	00
356.650	04	05	03	09	0C	01	0C	03	00	04	05	0E	0A	01	0C	03	00
356.675	06	05	03	09	0C	01	0C	03	00	06	05	0E	0A	01	0C	03	00
356.700	08	05	03	09	0C	01	0C	03	00	08	05	0E	0A	01	0C	03	00
356.725	0A	05	03	09	0C	01	0C	03	00	0A	05	0E	0A	01	0C	03	00
356.750	0C	05	03	09	0C	01	0C	03	00	0C	05	0E	0A	01	0C	03	00
356.775	0E	05	03	09	0C	01	0C	03	00	0E	05	0E	0A	01	0C	03	00
356.800	00	06	03	09	0C	01	0C	03	00	00	06	0E	0A	01	0C	03	00
356.825	02	06	03	09	0C	01	0C	03	00	02	06	0E	0A	01	0C	03	00
356.850	04	06	03	09	0C	01	0C	03	00	04	06	0E	0A	01	0C	03	00
356.875	06	06	03	09	0C	01	0C	03	00	06	06	0E	0A	01	0C	03	00
356.900	08	06	03	09	0C	01	0C	03	00	08	06	0E	0A	01	0C	03	00
356.925	0A	06	03	09	0C	01	0C	03	00	0A	06	0E	0A	01	0C	03	00
356.950	0C	06	03	09	0C	01	0C	03	00	0C	06	0E	0A	01	0C	03	00
356.975	0E	06	03	09	0C	01	0C	03	00	0E	06	0E	0A	01	0C	03	00
357.000	00	07	03	09	0C	01	0C	03	00	00	07	0E	0A	01	0C	03	00
357.025	02	07	03	09	0C	01	0C	03	00	02	07	0E	0A	01	0C	03	00
357.050	04	07	03	09	0C	01	0C	03	00	04	07	0E	0A	01	0C	03	00
357.075	06	07	03	09	0C	01	0C	03	00	06	07	0E	0A	01	0C	03	00
357.100	08	07	03	09	0C	01	0C	03	00	08	07	0E	0A	01	0C	03	00
357.125	0A	07	03	09	0C	01	0C	03	00	0A	07	0E	0A	01	0C	03	00
357.150	0C	07	03	09	0C	01	0C	03	00	0C	07	0E	0A	01	0C	03	00
357.175	0E	07	03	09	0C	01	0C	03	00	0E	07	0E	0A	01	0C	03	00
357.200	00	01	07	0C	01	0C	03	00	00	01	0E	0A	01	0C	03	00	
357.225	02	01	07	0C	01	0C	03	00	02	01	0E	0A	01	0C	03	00	
357.250	04	01	07	0C	01	0C	03	00	04	01	0E	0A	01	0C	03	00	
357.275	06	01	07	0C	01	0C	03	00	06	01	0E	0A	01	0C	03	00	
357.300	08	01	07	0C	01	0C	03	00	08	01	0E	0A	01	0C	03	00	
357.325	0A	01	07	0C	01	0C	03	00	0A	01	0E	0A	01	0C	03	00	
357.350	0C	01	07	0C	01	0C	03	00	0C	01	0E	0A	01	0C	03	00	
357.375	0E	01	07	0C	01	0C	03	00	0E	01	0E	0A	01	0C	03	00	
357.400	00	02	07	0C	01	0C	03	00	00	02	0E	0A	01	0C	03	00	
357.425	02	02	07	0C	01	0C	03	00	02	02	0E	0A	01	0C	03	00	
357.450	04	02	07	0C	01	0C	03	00	04	02	0E	0A	01	0C	03	00	
357.475	06	02	07	0C	01	0C	03	00	06	02	0E	0A	01	0C	03	00	
357.500	08	02	07	0C	01	0C	03	00	08	02	0E	0A	01	0C	03	00	
357.525	0A	02	07	0C	01	0C	03	00	0A	02	0E	0A	01	0C	03	00	
357.550	0C	02	07	0C	01	0C	03	00	0C	02	0E	0A	01	0C	03	00	
357.575	0E	02	07	0C	01	0C	03	00	0E	02	0E	0A	01	0C	03	00	
357.600	00	03	07	0C	01	0C	03	00	00	03	0E	0A	01	0C	03	00	
357.625	02	03	07	0C	01	0C	03	00	02	03	0E	0A	01	0C	03	00	
357.650	04	03	07	0C	01	0C	03	00	04	03	0E	0A	01	0C	03	00	
357.675	06	03	07	0C	01	0C	03	00	06	03	0E	0A	01	0C	03	00	
357.700	08	03	07	0C	01	0C	03	00	08	03	0E	0A	01	0C	03	00	
357.725	0A	03	07	0C	01	0C	03	00	0A	03	0E	0A	01	0C	03	00	
357.750	0C	03	07	0C	01	0C	03	00	0C	03	0E	0A	01	0C	03	00	
357.775	0E	03	07	0C	01	0C	03	00	0E	03	0E	0A	01	0C	03	00	
357.800	00	04	03	07	0C	01	0C	03	00	00	04	0					

F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM										
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7		
367.000	00	03	0A	0C	01	0C	03	00	00	03	0F	0A	01	0C	03	00		
367.025	02	03	0A	0C	01	0C	03	00	02	03	0F	0A	01	0C	03	00		
367.050	04	03	0A	0C	01	0C	03	00	04	03	0F	0A	01	0C	03	00		
367.075	06	03	0A	0C	01	0C	03	00	06	03	0F	0A	01	0C	03	00		
367.100	08	03	0A	0C	01	0C	03	00	08	03	0F	0A	01	0C	03	00		
367.125	0A	03	0A	0C	01	0C	03	00	0A	03	0F	0A	01	0C	03	00		
367.150	0C	03	0A	0C	01	0C	03	00	0C	03	0F	0A	01	0C	03	00		
367.175	0E	03	0A	0C	01	0C	03	00	0E	03	0F	0A	01	0C	03	00		
367.200	00	00	08	0C	01	0C	03	00	0E	03	0F	0A	01	0C	03	00		
367.225	02	00	08	0C	01	0C	03	00	02	00	08	0C	01	0C	03	00		
367.250	04	00	08	0C	01	0C	03	00	04	00	08	0C	01	0C	03	00		
367.275	06	00	08	0C	01	0C	03	00	06	00	08	0C	01	0C	03	00		
367.300	08	00	08	0C	01	0C	03	00	08	00	08	0C	01	0C	03	00		
367.325	0A	00	08	0C	01	0C	03	00	0A	00	08	0C	01	0C	03	00		
367.350	0C	00	08	0C	01	0C	03	00	0C	00	08	0C	01	0C	03	00		
367.375	0E	00	08	0C	01	0C	03	00	0E	00	08	0C	01	0C	03	00		
367.400	00	01	08	0C	01	0C	03	00	00	01	08	0C	01	0C	03	00		
367.425	02	01	08	0C	01	0C	03	00	02	01	08	0C	01	0C	03	00		
367.450	04	01	08	0C	01	0C	03	00	04	01	08	0C	01	0C	03	00		
367.475	06	01	08	0C	01	0C	03	00	06	01	08	0C	01	0C	03	00		
367.500	08	01	08	0C	01	0C	03	00	08	01	08	0C	01	0C	03	00		
367.525	0A	01	08	0C	01	0C	03	00	0A	01	08	0C	01	0C	03	00		
367.550	0C	01	08	0C	01	0C	03	00	0C	01	08	0C	01	0C	03	00		
367.575	0E	01	08	0C	01	0C	03	00	0E	01	08	0C	01	0C	03	00		
367.600	00	02	08	0C	01	0C	03	00	00	02	08	0C	01	0C	03	00		
367.625	02	02	08	0C	01	0C	03	00	02	02	08	0C	01	0C	03	00		
367.650	04	02	08	0C	01	0C	03	00	04	02	08	0C	01	0C	03	00		
367.675	06	02	08	0C	01	0C	03	00	06	02	08	0C	01	0C	03	00		
367.700	08	02	08	0C	01	0C	03	00	08	02	08	0C	01	0C	03	00		
367.725	0A	02	08	0C	01	0C	03	00	0A	02	08	0C	01	0C	03	00		
367.750	0C	02	08	0C	01	0C	03	00	0C	02	08	0C	01	0C	03	00		
367.775	0E	02	08	0C	01	0C	03	00	0E	02	08	0C	01	0C	03	00		
367.800	00	03	08	0C	01	0C	03	00	00	03	08	0C	01	0C	03	00		
367.825	02	03	08	0C	01	0C	03	00	02	03	08	0C	01	0C	03	00		
367.850	04	03	08	0C	01	0C	03	00	04	03	08	0C	01	0C	03	00		
367.875	06	03	08	0C	01	0C	03	00	06	03	08	0C	01	0C	03	00		
367.900	08	03	08	0C	01	0C	03	00	08	03	08	0C	01	0C	03	00		
367.925	0A	03	08	0C	01	0C	03	00	0A	03	08	0C	01	0C	03	00		
367.950	0C	03	08	0C	01	0C	03	00	0C	03	08	0C	01	0C	03	00		
367.975	0E	03	08	0C	01	0C	03	00	0E	03	08	0C	01	0C	03	00		
368.000	00	04	03	00	0C	01	0C	03	00	00	04	03	00	0C	01	0C	03	00
368.025	02	04	03	00	0C	01	0C	03	00	02	04	03	00	0C	01	0C	03	00
368.050	04	04	03	00	0C	01	0C	03	00	04	04	03	00	0C	01	0C	03	00
368.075	06	04	03	00	0C	01	0C	03	00	06	04	03	00	0C	01	0C	03	00
368.100	08	04	03	00	0C	01	0C	03	00	08	04	03	00	0C	01	0C	03	00
368.125	0A	04	03	00	0C	01	0C	03	00	0A	04	03	00	0C	01	0C	03	00
368.150	0C	04	03	00	0C	01	0C	03	00	0C	04	03	00	0C	01	0C	03	00
368.175	0E	04	03	00	0C	01	0C	03	00	0E	04	03	00	0C	01	0C	03	00
368.200	00	05	03	00	0C	01	0C	03	00	00	05	03	00	0C	01	0C	03	00
368.225	02	05	03	00	0C	01	0C	03	00	02	05	03	00	0C	01	0C	03	00
368.250	04	05	03	00	0C	01	0C	03	00	04	05	03	00	0C	01	0C	03	00
368.275	06	05	03	00	0C	01	0C	03	00	06	05	03	00	0C	01	0C	03	00
368.300	08	05	03	00	0C	01	0C	03	00	08	05	03	00	0C	01	0C	03	00
368.325	0A	05	03	00	0C	01	0C	03	00	0A	05	03	00	0C	01	0C	03	00
368.350	0C	05	03	00	0C	01	0C	03	00	0C	05	03	00	0C	01	0C	03	00
368.375	0E	05	03	00	0C	01	0C	03	00	0E	05	03	00	0C	01	0C	03	00
368.400	00	06	02	0C	0C	01	0C	03	00	00	06	02	0C	0C	01	0C	03	00
368.425	02	06	02	0C	0C	01	0C	03	00	02	06	02	0C	0C	01	0C	03	00
368.450	04	06	02	0C	0C	01	0C	03	00	04	06	02	0C	0C	01	0C	03	00
368.475	06	06	02	0C	0C	01	0C	03	00	06	06	02	0C	0C	01	0C	03	00

F. (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
370.000	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
370.025	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
370.050	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04	04
370.075	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06
370.100	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08	08
370.125	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A
370.150	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C	0C
370.175	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E	0E
370.200	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
370.225	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
370.250	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
370.275	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
370.300	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
370.325	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
370.350	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C	1C
370.375	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E	1E
370.400	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
370.425	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
370.450	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
370.475	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
370.500	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
370.525	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A
370.550	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C
370.575	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E	2E
370.600	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
370.625	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
370.650	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
370.675	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
370.700	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
370.725	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
370.750	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C	3C
370.775	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E	3E
370.800	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
370.825	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
370.850	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
370.875	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
370.900	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
370.925	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A
370.950	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C	4C
370.975	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E	4E
371.000	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
371.025	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
371.050	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
371.075	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
371.100	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
371.125	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A	5A
371.150	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C	5C
371.175	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E	5E
371.200	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
371.225	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
371.250	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
371.275	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
371.300	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
371.325	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A	6A
371.350	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C	6C
371.375	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E	6E
371.400	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
371.425	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
371.450	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
371.475	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
371.500	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78

***B	UHF TX PROGRAM							UHF RX PROGRAM								
	F (MHz)	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6
373.000	00	01	02	00	01	0C	03	00	00	01	07	08	01	0C	03	00
373.025	02	01	02	00	01	0C	03	00	02	01	07	08	01	0C	03	00
373.050	04	01	02	00	01	0C	03	00	04	01	07	08	01	0C	03	00
373.075	06	01	02	00	01	0C	03	00	06	01	07	08	01	0C	03	00
373.100	08	01	02	00	01	0C	03	00	08	01	07	08	01	0C	03	00
373.125	0A	01	02	00	01	0C	03	00	0A	01	07	08	01	0C	03	00
373.150	0C	01	02	00	01	0C	03	00	0C	01	07	08	01	0C	03	00
373.175	0E	01	02	00	01	0C	03	00	0E	01	07	08	01	0C	03	00
373.200	10	02	00	01	0C	03	00	00	02	07	08	01	0C	03	00	
373.225	12	02	00	01	0C	03	00	02	02	07	08	01	0C	03	00	
373.250	14	02	00	01	0C	03	00	04	62	07	08	01	0C	03	00	
373.275	16	02	00	01	0C	03	00	06	02	07	08	01	0C	03	00	
373.300	18	02	00	01	0C	03	00	08	02	07	08	01	0C	03	00	
373.325	1A	02	00	01	0C	03	00	0A	02	07	08	01	0C	03	00	
373.350	1C	02	00	01	0C	03	00	0C	02	07	08	01	0C	03	00	
373.375	1E	02	00	01	0C	03	00	0E	02	07	08	01	0C	03	00	
373.400	20	02	00	01	0C	03	00	00	03	07	08	01	0C	03	00	
373.425	22	02	00	01	0C	03	00	02	03	07	08	01	0C	03	00	
373.450	24	02	00	01	0C	03	00	04	03	07	08	01	0C	03	00	
373.475	26	02	00	01	0C	03	00	06	03	07	08	01	0C	03	00	
373.500	28	02	00	01	0C	03	00	08	03	07	08	01	0C	03	00	
373.525	2A	02	00	01	0C	03	00	0A	03	07	08	01	0C	03	00	
373.550	2C	02	00	01	0C	03	00	0C	03	07	08	01	0C	03	00	
373.575	2E	02	00	01	0C	03	00	0E	03	07	08	01	0C	03	00	
373.600	30	02	00	01	0C	03	00	00	00	08	08	01	0C	03	00	
373.625	32	02	00	01	0C	03	00	02	00	08	08	01	0C	03	00	
373.650	34	02	00	01	0C	03	00	04	00	08	08	01	0C	03	00	
373.675	36	02	00	01	0C	03	00	06	00	08	08	01	0C	03	00	
373.700	38	02	00	01	0C	03	00	08	00	08	08	01	0C	03	00	
373.725	3A	02	00	01	0C	03	00	0A	00	08	08	01	0C	03	00	
373.750	3C	02	00	01	0C	03	00	0C	00	08	08	01	0C	03	00	
373.775	3E	02	00	01	0C	03	00	0E	00	08	08	01	0C	03	00	
373.800	40	02	00	01	0C	03	00	00	01	08	08	01	0C	03	00	
373.825	42	02	00	01	0C	03	00	02	01	08	08	01	0C	03	00	
373.850	44	02	00	01	0C	03	00	04	01	08	08	01	0C	03	00	
373.875	46	02	00	01	0C	03	00	06	01	08	08	01	0C	03	00	
373.900	48	02	00	01	0C	03	00	08	01	08	08	01	0C	03	00	
373.925	4A	02	00	01	0C	03	00	0A	01	08	08	01	0C	03	00	
373.950	4C	02	00	01	0C	03	00	0C	01	08	08	01	0C	03	00	
374.000	00	02	00	01	0C	03	00	0E	01	08	08	01	0C	03	00	
374.025	02	02	00	01	0C	03	00	00	02	08	08	01	0C	03	00	
374.050	04	02	00	01	0C	03	00	04	02	08	08	01	0C	03	00	
374.075	06	02	00	01	0C	03	00	06	02	08	08	01	0C	03	00	
374.100	08	02	00	01	0C	03	00	08	02	08	08	01	0C	03	00	
374.125	0A	02	00	01	0C	03	00	0A	02	08	08	01	0C	03	00	
374.150	0C	02	00	01	0C	03	00	0C	02	08	08	01	0C	03	00	
374.175	0E	02	00	01	0C	03	00	0E	02	08	08	01	0C	03	00	
374.200	10	02	00	01	0C	03	00	00	02	08	08	01	0C	03	00	
374.225	12	02	00	01	0C	03	00	02	02	08	08	01	0C	03	00	
374.250	14	02	00	01	0C	03	00	04	03	08	08	01	0C	03	00	
374.275	16	02	00	01	0C	03	00	06	03	08	08	01	0C	03	00	
374.300	18	02	00	01	0C	03	00	08	03	08	08	01	0C	03	00	
374.325	1A	02	00	01	0C	03	00	0A	03	08	08	01	0C	03	00	
374.350	1C	02	00	01	0C	03	00	0C	03	08	08	01	0C	03	00	
374.375	1E	02	00	01	0C	03	00	0E	03	08	08	01	0C	03	00	
374.400	20	02	00	01	0C	03	00	00	00	09	08	01	0C	03	00	
374.425	22	02	00	01	0C	03	00	02	00	09	08	01	0C	03	00	
374.450	24	02	00	01	0C	03	00	04	00	09	08	01	0C	03	00	
374.475	26	02	00	01	0C	03	00	06	00	09	08	01	0C	03	00	

F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
412.000	00	03	00	02	0C	03	00	00	00	08	0E	01	0C	03	00	00
412.025	02	00	03	00	02	0C	03	00	02	0A	03	05	0E	01	0C	03
412.050	04	00	03	00	02	0C	03	00	0C	03	09	0E	01	0C	03	00
412.075	06	00	03	00	02	0C	03	00	0E	03	09	0E	01	0C	03	00
412.100	08	00	03	00	02	0C	03	00	00	00	0A	0E	01	0C	03	00
412.125	0A	00	03	00	02	0C	03	00	02	00	0A	0E	01	0C	03	00
412.150	0C	00	03	00	02	0C	03	00	04	00	0A	0E	01	0C	03	00
412.175	0E	00	03	00	02	0C	03	00	06	00	0A	0E	01	0C	03	00
412.200	10	01	03	00	02	0C	03	00	08	00	0A	0E	01	0C	03	00
412.225	12	01	03	00	02	0C	03	00	0A	00	0A	0E	01	0C	03	00
412.250	14	01	03	00	02	0C	03	00	0C	00	0A	0E	01	0C	03	00
412.275	16	01	03	00	02	0C	03	00	0E	00	0A	0E	01	0C	03	00
412.300	18	01	03	00	02	0C	03	00	00	01	0A	0E	01	0C	03	00
412.325	1A	01	03	00	02	0C	03	00	02	01	0A	0E	01	0C	03	00
412.350	1C	01	03	00	02	0C	03	00	04	01	0A	0E	01	0C	03	00
412.375	1E	01	03	00	02	0C	03	00	06	01	0A	0E	01	0C	03	00
412.400	20	02	03	00	02	0C	03	00	08	01	0A	0E	01	0C	03	00
412.425	22	02	03	00	02	0C	03	00	0A	01	0A	0E	01	0C	03	00
412.450	24	02	03	00	02	0C	03	00	0C	01	0A	0E	01	0C	03	00
412.475	26	02	03	00	02	0C	03	00	0E	01	0A	0E	01	0C	03	00
412.500	28	02	03	00	02	0C	03	00	00	02	0A	0E	01	0C	03	00
412.525	2A	02	03	00	02	0C	03	00	02	0A	0E	01	0C	03	00	00
412.550	2C	02	03	00	02	0C	03	00	04	02	0A	0E	01	0C	03	00
412.575	2E	02	03	00	02	0C	03	00	06	02	0A	0E	01	0C	03	00
412.600	30	03	03	00	02	0C	03	00	08	02	0A	0E	01	0C	03	00
412.625	32	03	03	00	02	0C	03	00	0A	02	0A	0E	01	0C	03	00
412.650	34	03	03	00	02	0C	03	00	0C	02	0A	0E	01	0C	03	00
412.675	36	03	03	00	02	0C	03	00	0E	02	0A	0E	01	0C	03	00
412.700	38	03	03	00	02	0C	03	00	00	03	0A	0E	01	0C	03	00
412.725	3A	03	03	00	02	0C	03	00	02	03	0A	0E	01	0C	03	00
412.750	3C	03	03	00	02	0C	03	00	04	03	0A	0E	01	0C	03	00
412.775	3E	03	03	00	02	0C	03	00	06	03	0A	0E	01	0C	03	00
412.800	40	04	03	00	02	0C	03	00	08	03	0A	0E	01	0C	03	00
412.825	42	04	03	00	02	0C	03	00	0A	03	0A	0E	01	0C	03	00
412.850	44	04	03	00	02	0C	03	00	0C	03	0A	0E	01	0C	03	00
412.875	46	04	03	00	02	0C	03	00	0E	03	0A	0E	01	0C	03	00
412.900	48	04	03	00	02	0C	03	00	00	03	0B	0E	01	0C	03	00
412.925	4A	04	03	00	02	0C	03	00	02	00	0B	0E	01	0C	03	00
412.950	4C	04	03	00	02	0C	03	00	04	00	0B	0E	01	0C	03	00
412.975	4E	04	03	00	02	0C	03	00	06	00	0B	0E	01	0C	03	00
413.000	50	04	03	00	02	0C	03	00	08	00	0B	0E	01	0C	03	00
413.025	52	04	03	00	02	0C	03	00	0A	00	0B	0E	01	0C	03	00
413.050	54	04	03	00	02	0C	03	00	0C	00	0B	0E	01	0C	03	00
413.075	56	04	03	00	02	0C	03	00	0E	00	0B	0E	01	0C	03	00
413.100	58	04	03	00	02	0C	03	00	00	01	0B	0E	01	0C	03	00
413.125	5A	04	03	00	02	0C	03	00	02	01	0B	0E	01	0C	03	00
413.150	5C	04	03	00	02	0C	03	00	04	01	0B	0E	01	0C	03	00
413.175	5E	04	03	00	02	0C	03	00	06	01	0B	0E	01	0C	03	00
413.200	60	04	03	00	02	0C	03	00	08	01	0B	0E	01	0C	03	00
413.225	62	04	03	00	02	0C	03	00	0A	01	0B	0E	01	0C	03	00
413.250	64	04	03	00	02	0C	03	00	0C	01	0B	0E	01	0C	03	00
413.275	66	04	03	00	02	0C	03	00	0E	01	0B	0E	01	0C	03	00
413.300	68	04	03	00	02	0C	03	00	00	02	0B	0E	01	0C	03	00
413.325	6A	04	03	00	02	0C	03	00	02	02	0B	0E	01	0C	03	00
413.350	6C	04	03	00	02	0C	03	00	04	02	0B	0E	01	0C	03	00
413.375	6E	04	03	00	02	0C	03	00	06	02	0B	0E	01	0C	03	00
413.400	70	04	03	00	02	0C	03	00	08	02	0B	0E	01	0C	03	00
413.425	72	04	03	00	02	0C	03	00	0A	02	0B	0E	01	0C	03	00
413.450	74	04	03	00	02	0C	03	00	0C	02	0B	0E	01	0C	03	00
413.475	76	04	03	00	02	0C	03	00	0E	02	0B	0E	01	0C	03	00
413.500	78	04	03	00	02	0C	03	00	00	03	0B	0E	01	0C	03	00
413.525	7A	04	03	00	02	0C	03	00	02	03	0B	0E	01	0C	03	00
413.550	7C	04	03	00	02	0C	03	00	04	03	0B	0E	01	0C	03	00
413.575	7E	04	03	00	02	0C	03	00	06	03	0B	0E	01	0C	03	00

***C	UHF TX PROGRAM							UHF RX PROGRAM								
	F (MHz)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
415.000	00	03	06	00	02	0C	03	00	00	03	08	0E	01	0C	03	00
415.025	02	03	06	00	02	0C	03	00	02	03	08	0E	01	0C	03	00
415.050	04	03	06	00	02	0C	03	00	04	03	08	0E	01	0C	03	00
415.075	06	03	06	00	02	0C	03	00	06	03	08	0E	01	0C	03	00
415.100	08	03	06	00	02	0C	03	00	08	03	08	0E	01	0C	03	00
415.125	0A	03	06	00	02	0C	03	00	0A	03	08	0E	01	0C	03	00
415.150	0C	03	06	00	02	0C	03	00	0C	03	08	0E	01	0C	03	00
415.175	0E	03	06	00	02	0C	03	00	0E	03	08	0E	01	0C	03	00
415.200	00	07	00	02	0C	03	00	00	00	0C	0E	01	0C	03	00	
415.225	02	07	00	02	0C	03	00	02	00	0C	0E	01	0C	03	00	
415.250	04	07	00	02	0C	03	00	04	00	0C	0E	01	0C	03	00	
415.275	06	07	00	02	0C	03	00	06	00	0C	0E	01	0C	03	00	
415.300	08	07	00	02	0C	03	00	08	00	0C	0E	01	0C	03	00	
415.325	0A	07	00	02	0C	03	00	0A	00	0C	0E	01	0C	03	00	
415.350	0C	07	00	02	0C	03	00	0C	00	0C	0E	01	0C	03	00	
415.375	0E	07	00	02	0C	03	00	0E	00	0C	0E	01	0C	03	00	
415.400	00	07	00	02	0C	03	00	00	01	0C	0E	01	0C	03	00	
415.425	02	07	00	02	0C	03	00	02	01	0C	0E	01	0C	03	00	
415.450	04	07	00	02	0C	03	00	04	01	0C	0E	01	0C	03	00	
415.475	06	07	00	02	0C	03	00	06	01	0C	0E	01	0C	03	00	
415.500	08	07	00	02	0C	03	00	08	01	0C	0E	01	0C	03	00	
415.525	0A	07	00	02	0C	03	00	0A	01	0C	0E	01	0C	03	00	
415.550	0C	07	00	02	0C	03	00	0C	01	0C	0E	01	0C	03	00	
415.575	0E	07	00	02	0C	03	00	0E	01	0C	0E	01	0C	03	00	
415.600	00	07	00	02	0C	03	00	00	02	0C	0E	01	0C	03	00	
415.625	02	07	00	02	0C	03	00	02	0C	0E	01	0C	03	00		
415.650	04	07	00	02	0C	03	00	04	02	0C	0E	01	0C	03	00	
415.675	06	07	00	02	0C	03	00	06	02	0C	0E	01	0C	03	00	
415.700	08	07	00	02	0C	03	00	08	02	0C	0E	01	0C	03	00	
415.725	0A	07	00	02	0C	03	00	0A	02	0C	0E	01	0C	03	00	
415.750	0C	07	00	02	0C	03	00	0C	02	0C	0E	01	0C	03	00	
415.775	0E	07	00	02	0C	03	00	0E	02	0C	0E	01	0C	03	00	
415.800	00	07	00	02	0C	03	00	00	02	0C	0E	01	0C	03	00	
415.825	02	07	00	02	0C	03	00	02	0C	0E	01	0C	03	00		
415.850	04	07	00	02	0C	03	00	04	02	0C	0E	01	0C	03	00	
415.875	06	07	00	02	0C	03	00	06	02	0C	0E	01	0C	03	00	
415.900	08	07	00	02	0C	03	00	08	02	0C	0E	01	0C	03	00	
415.925	0A	07	00	02	0C	03	00	0A	02	0C	0E	01	0C	03	00	
415.950	0C	07	00	02	0C	03	00	0C	02	0C	0E	01	0C	03	00	
415.975	0E	07	00	02	0C	03	00	0E	02	0C	0E	01	0C	03	00	
416.000	00	08	00	02	0C	03	00	00	00	00	0E	01	0C	03	00	
416.025	02	08	00	02	0C	03	00	02	00	0F	0E	01	0C	03	00	
416.050	04	08	00	02	0C	03	00	04	00	0F	0E	01	0C	03	00	
416.075	06	08	00	02	0C	03	00	06	00	0F	0E	01	0C	03	00	
416.100	08	08	00	02	0C	03	00	08	00	0F	0E	01	0C	03	00	
416.125	0A	08	00	02	0C	03	00	0A	00	0F	0E	01	0C	03	00	
416.150	0C	08	00	02	0C	03	00	0C	00	0F	0E	01	0C	03	00	
416.175	0E	08	00	02	0C	03	00	0E	00	0F	0E	01	0C	03	00	
416.200	00	08	00	02	0C	03	00	00	00	0F	0E	01	0C	03	00	
416.225	02	08	00	02	0C	03	00	02	00	0F	0E	01	0C	03	00	
416.250	04	08	00	02	0C	03	00	04	00	0F	0E	01	0C	03	00	
416.275	06	08	00	02	0C	03	00	06	00	0F	0E	01	0C	03	00	
416.300	08	08	00	02	0C	03	00	08	00	0F	0E	01	0C	03	00	
416.325	0A	08	00	02	0C	03	00	0A	00	0F	0E	01	0C	03	00	
416.350	0C	08	00	02	0C	03	00	0C	00	0F	0E	01	0C	03	00	
416.375	0E	08	00	02	0C	03	00	0E	00	0F	0E	01	0C	03	00	
416.400	00	08	00	02	0C	03	00	00	00	0F	0E	01	0C	03	00	
416.425	02	08	00	02	0C	03	00	02	00	0F	0E	01	0C	03	00	
416.450	04	08	00	02	0C	03	00	04	00	0F	0E	01	0C	03	00	
416.475	06	08	00	02	0C	03	00	06	00	0F	0E	01	0C	03	00	

***D	UHF TX PROGRAM							UHF RX PROGRAM									
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	
F (MHz)	455.000	00	03	06	03	02	0C	03	00	00	03	0D	01	02	0C	03	00
	455.025	02	03	08	03	02	0C	03	00	00	03	0D	01	02	0C	03	00
	455.050	04	03	06	03	02	0C	03	00	04	03	0D	01	02	0C	03	00
	455.075	06	03	08	03	02	0C	03	00	06	03	0D	01	02	0C	03	00
	455.100	08	03	08	03	02	0C	03	00	08	03	0D	01	02	0C	03	00
	455.125	0A	03	08	03	02	0C	03	00	0A	03	0D	01	02	0C	03	00
	455.150	0C	03	08	03	02	0C	03	00	0C	03	0D	01	02	0C	03	00
	455.175	0E	03	08	03	02	0C	03	00	0E	03	0D	01	02	0C	03	00
	455.200	00	00	09	03	02	0C	03	00	00	00	0E	01	02	0C	03	00
	455.225	02	00	09	03	02	0C	03	00	02	00	0E	01	02	0C	03	00
	455.250	04	00	09	03	02	0C	03	00	04	00	0E	01	02	0C	03	00
	455.275	06	00	09	03	02	0C	03	00	06	00	0E	01	02	0C	03	00
	455.300	08	00	09	03	02	0C	03	00	08	00	0E	01	02	0C	03	00
	455.325	0A	00	09	03	02	0C	03	00	0A	00	0E	01	02	0C	03	00
	455.350	0C	00	09	03	02	0C	03	00	0C	00	0E	01	02	0C	03	00
	455.375	0E	00	09	03	02	0C	03	00	0E	00	0E	01	02	0C	03	00
	455.400	00	01	09	03	02	0C	03	00	00	01	0E	01	02	0C	03	00
	455.425	02	01	09	03	02	0C	03	00	02	01	0E	01	02	0C	03	00
	455.450	04	01	09	03	02	0C	03	00	04	01	0E	01	02	0C	03	00
	455.475	06	01	09	03	02	0C	03	00	06	01	0E	01	02	0C	03	00
	455.500	08	01	09	03	02	0C	03	00	08	01	0E	01	02	0C	03	00
	455.525	0A	01	09	03	02	0C	03	00	0A	01	0E	01	02	0C	03	00
	455.550	0C	01	09	03	02	0C	03	00	0C	01	0E	01	02	0C	03	00
	455.575	0E	01	09	03	02	0C	03	00	0E	01	0E	01	02	0C	03	00
	455.600	00	02	09	03	02	0C	03	00	00	02	0E	01	02	0C	03	00
	455.625	02	02	09	03	02	0C	03	00	02	02	0E	01	02	0C	03	00
	455.650	04	02	09	03	02	0C	03	00	04	02	0E	01	02	0C	03	00
	455.675	06	02	09	03	02	0C	03	00	06	02	0E	01	02	0C	03	00
	455.700	08	02	09	03	02	0C	03	00	08	02	0E	01	02	0C	03	00
	455.725	0A	02	09	03	02	0C	03	00	0A	02	0E	01	02	0C	03	00
	455.750	0C	02	09	03	02	0C	03	00	0C	02	0E	01	02	0C	03	00
	455.775	0E	02	09	03	02	0C	03	00	0E	02	0E	01	02	0C	03	00
	455.800	00	03	09	03	02	0C	03	00	00	03	0E	01	02	0C	03	00
	455.825	02	03	09	03	02	0C	03	00	02	03	0E	01	02	0C	03	00
	455.850	04	03	09	03	02	0C	03	00	04	03	0E	01	02	0C	03	00
	455.875	06	03	09	03	02	0C	03	00	06	03	0E	01	02	0C	03	00
	455.900	08	03	09	03	02	0C	03	00	08	03	0E	01	02	0C	03	00
	455.925	0A	03	09	03	02	0C	03	00	0A	03	0E	01	02	0C	03	00
	455.950	0C	03	09	03	02	0C	03	00	0C	03	0E	01	02	0C	03	00
	455.975	0E	03	09	03	02	0C	03	00	0E	03	0E	01	02	0C	03	00

***D	UHF IX PROGRAM							UHF RX PROGRAM									
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	
F. (MHz)	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	
458.000	00	02	0C	03	02	0C	03	00	00	02	01	02	02	0C	03	00	
458.025	02	02	0C	03	02	0C	03	00	02	02	01	02	02	0C	03	00	
458.050	04	02	0C	03	02	0C	03	00	04	02	01	02	02	0C	03	00	
458.075	06	02	0C	03	02	0C	03	00	06	02	01	02	02	0C	03	00	
458.100	08	02	0C	03	02	0C	03	00	08	02	01	02	02	0C	03	00	
458.125	0A	02	0C	03	02	0C	03	00	0A	02	01	02	02	0C	03	00	
458.150	0C	02	0C	03	02	0C	03	00	0C	02	01	02	02	0C	03	00	
458.175	0E	02	0C	03	02	0C	03	00	0E	02	01	02	02	0C	03	00	
458.200	00	03	0C	03	02	0C	03	00	00	03	01	02	02	0C	03	00	
458.225	02	03	0C	03	02	0C	03	00	02	03	01	02	02	0C	03	00	
458.250	04	03	0C	03	02	0C	03	00	04	03	01	02	02	0C	03	00	
458.275	06	03	0C	03	02	0C	03	00	06	03	01	02	02	0C	03	00	
458.300	08	03	0C	03	02	0C	03	00	08	03	01	02	02	0C	03	00	
458.325	0A	03	0C	03	02	0C	03	00	0A	03	01	02	02	0C	03	00	
458.350	0C	03	0C	03	02	0C	03	00	0C	03	01	02	02	0C	03	00	
458.375	0E	03	0C	03	02	0C	03	00	0E	03	01	02	02	0C	03	00	
458.400	00	00	00	03	02	0C	03	00	00	00	02	02	02	0C	03	00	
458.425	02	00	00	03	02	0C	03	00	02	00	02	02	02	0C	03	00	
458.450	04	00	00	03	02	0C	03	00	04	00	02	02	02	0C	03	00	
458.475	06	00	00	03	02	0C	03	00	06	00	02	02	02	0C	03	00	
458.500	08	00	00	03	02	0C	03	00	08	00	02	02	02	0C	03	00	
458.525	0A	00	00	03	02	0C	03	00	0A	00	02	02	02	0C	03	00	
458.550	0C	00	00	03	02	0C	03	00	0C	00	02	02	02	0C	03	00	
458.575	0E	00	00	03	02	0C	03	00	0E	00	02	02	02	0C	03	00	
458.600	00	01	00	03	02	0C	03	00	00	01	02	02	02	0C	03	00	
458.625	02	01	00	03	02	0C	03	00	02	01	02	02	02	0C	03	00	
458.650	04	01	00	03	02	0C	03	00	04	01	02	02	02	0C	03	00	
458.675	06	01	00	03	02	0C	03	00	06	01	02	02	02	0C	03	00	
458.700	08	01	00	03	02	0C	03	00	08	01	02	02	02	0C	03	00	
458.725	0A	01	00	03	02	0C	03	00	0A	01	02	02	02	0C	03	00	
458.750	0C	01	00	03	02	0C	03	00	0C	01	02	02	02	0C	03	00	
458.775	0E	01	00	03	02	0C	03	00	0E	01	02	02	02	0C	03	00	
458.800	00	02	00	03	02	0C	03	00	00	02	02	02	02	0C	03	00	
458.825	02	02	00	03	02	0C	03	00	02	02	02	02	02	0C	03	00	
458.850	04	02	00	03	02	0C	03	00	04	02	02	02	02	0C	03	00	
458.875	06	02	00	03	02	0C	03	00	06	02	02	02	02	0C	03	00	
458.900	08	02	00	03	02	0C	03	00	08	02	02	02	02	0C	03	00	
458.925	0A	02	00	03	02	0C	03	00	0A	02	02	02	02	0C	03	00	
458.950	0C	02	00	03	02	0C	03	00	0C	02	02	02	02	0C	03	00	
458.975	0E	02	00	03	02	0C	03	00	0E	02	02	02	02	0C	03	00	
459.000	00	03	00	03	02	0C	03	00	00	03	02	02	02	0C	03	00	
459.025	02	03	00	03	02	0C	03	00	02	03	02	02	02	0C	03	00	
459.050	04	03	00	03	02	0C	03	00	04	03	02	02	02	0C	03	00	
459.075	06	03	00	03	02	0C	03	00	06	03	02	02	02	0C	03	00	
459.100	08	03	00	03	02	0C	03	00	08	03	02	02	02	0C	03	00	
459.125	0A	03	00	03	02	0C	03	00	0A	03	02	02	02	0C	03	00	
459.150	0C	03	00	03	02	0C	03	00	0C	03	02	02	02	0C	03	00	
459.175	0E	03	00	03	02	0C	03	00	0E	03	02	02	02	0C	03	00	
459.200	00	0E	03	02	0C	03	00	00	00	0E	03	02	02	0C	03	00	
459.225	02	0E	03	02	0C	03	00	02	02	0E	03	02	02	0C	03	00	
459.250	04	0E	03	02	0C	03	00	04	04	0E	03	02	02	0C	03	00	
459.275	06	0E	03	02	0C	03	00	06	06	0E	03	02	02	0C	03	00	
459.300	08	0E	03	02	0C	03	00	08	08	0E	03	02	02	0C	03	00	
459.325	0A	0E	03	02	0C	03	00	0A	0A	0E	03	02	02	0C	03	00	
459.350	0C	0E	03	02	0C	03	00	0C	0C	0E	03	02	02	0C	03	00	
459.375	0E	0E	03	02	0C	03	00	0E	0E	0E	03	02	02	0C	03	00	
459.400	00	01	0E	03	02	0C	03	00	00	01	0E	03	02	02	0C	03	00
459.425	02	01	0E	03	02	0C	03	00	02	01	0E	03	02	02	0C	03	00
459.450	04	01	0E	03	02	0C	03	00	04	01	0E	03	02	02	0C	03	00
459.475	06	01	0E	03	02	0C	03	00	06	01	0E	03	02	02	0C	03	00

***D	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
F (MHz)	8	9	A	B	C	D	E	F	8	9	A	B	C	D	E	F
461.000	00	01	00	04	02	0C	03	00	00	01	05	02	02	0C	03	00
461.025	02	01	00	04	02	0C	03	00	02	01	05	02	02	0C	03	00
461.050	04	01	00	04	02	0C	03	00	04	01	05	02	02	0C	03	00
461.075	06	01	00	04	02	0C	03	00	05	01	05	02	02	0C	03	00
461.100	08	01	00	04	02	0C	03	00	08	01	05	02	02	0C	03	00
461.125	0A	01	00	04	02	0C	03	00	0A	01	05	02	02	0C	03	00
461.150	0C	01	00	04	02	0C	03	00	0C	01	05	02	02	0C	03	00
461.175	0E	01	00	04	02	0C	03	00	0E	01	05	02	02	0C	03	00
461.200	02	00	04	02	0C	03	00	00	02	05	02	02	0C	03	00	
461.225	02	02	00	04	02	0C	03	00	02	02	05	02	02	0C	03	00
461.250	04	02	00	04	02	0C	03	00	04	02	05	02	02	0C	03	00
461.275	06	02	00	04	02	0C	03	00	05	02	05	02	02	0C	03	00
461.300	08	02	00	04	02	0C	03	00	08	02	05	02	02	0C	03	00
461.325	0A	02	00	04	02	0C	03	00	0A	02	05	02	02	0C	03	00
461.350	0C	02	00	04	02	0C	03	00	0C	02	05	02	02	0C	03	00
461.375	0E	02	00	04	02	0C	03	00	0E	02	05	02	02	0C	03	00
461.400	00	03	00	04	02	0C	03	00	00	03	05	02	02	0C	03	00
461.425	02	03	00	04	02	0C	03	00	02	03	05	02	02	0C	03	00
461.450	04	03	00	04	02	0C	03	00	04	03	05	02	02	0C	03	00
461.475	06	03	00	04	02	0C	03	00	06	03	05	02	02	0C	03	00
461.500	08	03	00	04	02	0C	03	00	08	03	05	02	02	0C	03	00
461.525	0A	03	00	04	02	0C	03	00	0A	03	05	02	02	0C	03	00
461.550	0C	03	00	04	02	0C	03	00	0C	03	05	02	02	0C	03	00
461.575	0E	03	00	04	02	0C	03	00	0E	03	05	02	02	0C	03	00
461.600	00	01	04	02	0C	03	00	00	00	06	06	02	02	0C	03	00
461.625	02	00	01	04	02	0C	03	00	02	00	06	02	02	0C	03	00
461.650	04	00	01	04	02	0C	03	00	04	00	06	02	02	0C	03	00
461.675	06	00	01	04	02	0C	03	00	06	00	06	02	02	0C	03	00
461.700	08	00	01	04	02	0C	03	00	08	00	06	02	02	0C	03	00
461.725	0A	00	01	04	02	0C	03	00	0A	00	06	02	02	0C	03	00
461.750	0C	00	01	04	02	0C	03	00	0C	00	06	02	02	0C	03	00
461.775	0E	00	01	04	02	0C	03	00	0E	00	06	02	02	0C	03	00
461.800	00	01	04	02	0C	03	00	00	00	06	02	02	0C	03	00	
461.825	02	01	04	02	0C	03	00	02	02	06	02	02	0C	03	00	
461.850	04	01	04	02	0C	03	00	04	04	06	02	02	0C	03	00	
461.875	06	01	04	02	0C	03	00	06	06	06	02	02	0C	03	00	
461.900	08	01	04	02	0C	03	00	08	08	06	02	02	0C	03	00	
461.925	0A	01	04	02	0C	03	00	0A	0A	06	02	02	0C	03	00	
461.950	0C	01	04	02	0C	03	00	0C	0C	06	02	02	0C	03	00	
461.975	0E	01	04	02	0C	03	00	0E	0E	06	02	02	0C	03	00	
462.000	00	02	01	04	02	0C	03	00	00	02	06	02	02	0C	03	00
462.025	02	02	01	04	02	0C	03	00	02	02	06	02	02	0C	03	00
462.050	04	02	01	04	02	0C	03	00	04	02	06	02	02	0C	03	00
462.075	06	02	01	04	02	0C	03	00	06	02	06	02	02	0C	03	00
462.100	08	02	01	04	02	0C	03	00	08	02	06	02	02	0C	03	00
462.125	0A	02	01	04	02	0C	03	00	0A	02	06	02	02	0C	03	00
462.150	0C	02	01	04	02	0C	03	00	0C	02	06	02	02	0C	03	00
462.175	0E	02	01	04	02	0C	03	00	0E	02	06	02	02	0C	03	00
462.200	00	03	01	04	02	0C	03	00	00	03	06	02	02	0C	03	00
462.225	02	03	01	04	02	0C	03	00	02	03	06	02	02	0C	03	00
462.250	04	03	01	04	02	0C	03	00	04	03	06	02	02	0C	03	00
462.275	06	03	01	04	02	0C	03	00	06	03	06	02	02	0C	03	00
462.300	08	03	01	04	02	0C	03	00	08	03	06	02	02	0C	03	00
462.325	0A	03	01	04	02	0C	03	00	0A	03	06	02	02	0C	03	00
462.350	0C	03	01	04	02	0C	03	00	0C	03	06	02	02	0C	03	00
462.375	0E	03	01	04	02	0C	03	00	0E	03	06	02	02	0C	03	00
462.400	00	02	04	02	0C	03	00	00	00	07	02	02	0C	03	00	
462.425	02	00	02	04	02	0C	03	00	02	00	07	02	02	0C	03	00
462.450	04	00	02	04	02	0C	03	00	04	00	07	02	02	0C	03	00
462.475	06	00	02	04	02	0C	03	00	06	00	07	02	02	0C	03	00

***U	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
F (MHz)	8	9	A	B	C	D	E	F	8	9	A	B	C	D	E	F
473.000	00	01	0F	04	02	0C	03	00	00	01	04	03	02	0C	03	00
473.025	02	01	0F	04	02	0C	03	00	02	01	04	03	02	0C	03	00
473.050	04	01	0F	04	02	0C	03	00	04	01	04	03	02	0C	03	00
473.075	06	01	0F	04	02	0C	03	00	06	01	04	03	02	0C	03	00
473.100	08	01	0F	04	02	0C	03	00	08	01	04	03	02	0C	03	00
473.125	0A	01	0F	04	02	0C	03	00	0A	01	04	03	02	0C	03	00
473.150	0C	01	0F	04	02	0C	03	00	0C	01	04	03	02	0C	03	00
473.175	0E	01	0F	04	02	0C	03	00	0E	01	04	03	02	0C	03	00
473.200	00	02	0F	04	02	0C	03	00	00	02	04	03	02	0C	03	00
473.225	02	02	0F	04	02	0C	03	00	02	02	04	03	02	0C	03	00
473.250	04	02	0F	04	02	0C	03	00	04	02	04	03	02	0C	03	00
473.275	06	02	0F	04	02	0C	03	00	06	02	04	03	02	0C	03	00
473.300	08	02	0F	04	02	0C	03	00	08	02	04	03	02	0C	03	00
473.325	0A	02	0F	04	02	0C	03	00	0A	02	04	03	02	0C	03	00
473.350	0C	02	0F	04	02	0C	03	00	0C	02	04	03	02	0C	03	00
473.375	0E	02	0F	04	02	0C	03	00	0E	02	04	03	02	0C	03	00
473.400	00	03	0F	04	02	0C	03	00	00	03	04	03	02	0C	03	00
473.425	02	03	0F	04	02	0C	03	00	02	03	04	03	02	0C	03	00
473.450	04	03	0F	04	02	0C	03	00	04	03	04	03	02	0C	03	00
473.475	06	03	0F	04	02	0C	03	00	06	03	04	03	02	0C	03	00
473.500	08	03	0F	04	02	0C	03	00	08	03	04	03	02	0C	03	00
473.525	0A	03	0F	04	02	0C	03	00	0A	03	04	03	02	0C	03	00
473.550	0C	03	0F	04	02	0C	03	00	0C	03	04	03	02	0C	03	00
473.575	0E	03	0F	04	02	0C	03	00	0E	03	04	03	02	0C	03	00
473.600	00	00	05	02	0C	03	00	00	00	05	03	02	0C	03	00	
473.625	02	00	05	02	0C	03	00	02	00	05	03	02	0C	03	00	
473.650	04	00	05	02	0C	03	00	04	00	05	03	02	0C	03	00	
473.675	06	00	05	02	0C	03	00	06	00	05	03	02	0C	03	00	
473.700	08	00	05	02	0C	03	00	08	00	05	03	02	0C	03	00	
473.725	0A	00	05	02	0C	03	00	0A	00	05	03	02	0C	03	00	
473.750	0C	00	05	02	0C	03	00	0C	00	05	03	02	0C	03	00	
473.775	0E	00	05	02	0C	03	00	0E	00	05	03	02	0C	03	00	
473.800	00	01	05	02	0C	03	00	00	01	05	03	02	0C	03	00	
473.825	02	01	05	02	0C	03	00	02	01	05	03	02	0C	03	00	
473.850	04	01	05	02	0C	03	00	04	01	05	03	02	0C	03	00	
473.875	06	01	05	02	0C	03	00	06	01	05	03	02	0C	03	00	
473.900	08	01	05	02	0C	03	00	08	01	05	03	02	0C	03	00	
473.925	0A	01	05	02	0C	03	00	0A	01	05	03	02	0C	03	00	
473.950	0C	01	05	02	0C	03	00	0C	01	05	03	02	0C	03	00	
474.000	00	01	05	02	0C	03	00	00	01	05	03	02	0C	03	00	
474.025	02	01	05	02	0C	03	00	02	01	05	03	02	0C	03	00	
474.050	04	01	05	02	0C	03	00	04	01	05	03	02	0C	03	00	
474.075	06	02	05	02	0C	03	00	06	02	05	02	0C	03	00		
474.100	08	02	05	02	0C	03	00	08	02	05	02	0C	03	00		
474.125	0A	02	05	02	0C	03	00	0A	02	05	02	0C	03	00		
474.150	0C	02	05	02	0C	03	00	0C	02	05	02	0C	03	00		
474.175	0E	02	05	02	0C	03	00	0E	02	05	02	0C	03	00		
474.200	00	03	05	02	0C	03	00	00	03	05	02	0C	03	00		
474.225	02	03	05	02	0C	03	00	02	03	05	02	0C	03	00		
474.250	04	03	05	02	0C	03	00	04	03	05	02	0C	03	00		
474.275	06	03	05	02	0C	03	00	06	03	05	02	0C	03	00		
474.300	08	03	05	02	0C	03	00	08	03	05	02	0C	03	00		
474.325	0A	03	05	02	0C	03	00	0A	03	05	02	0C	03	00		
474.350	0C	03	05	02	0C	03	00	0C	03	05	02	0C	03	00		
474.375	0E	03	05	02	0C	03	00	0E	03	05	02	0C	03	00		
474.400	00	00	01	05	02	0C	03	00	00	00	06	03	02	0C	03	00
474.425	02	00	01	05	02	0C	03	00	02	00	06	03	02	0C	03	00
474.450	04	00	01	05	02	0C	03	00	04	00	06	03	02	0C	03	00
474.475	06	00	01	05	02	0C	03	00	06	00	06	03	02	0C	03	00

F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
476.000	00	00	03	05	02	00	03	00	00	00	08	03	02	00	03	00
476.025	02	00	03	05	02	00	03	00	02	00	08	03	02	00	03	00
476.050	04	00	03	05	02	00	03	00	04	00	08	03	02	00	03	00
476.075	06	00	03	05	02	00	03	00	06	00	08	03	02	00	03	00
476.100	08	00	03	05	02	00	03	00	08	00	08	03	02	00	03	00
476.125	0A	00	03	05	02	00	03	00	0A	00	08	03	02	00	03	00
476.150	0C	00	03	05	02	00	03	00	0C	00	08	03	02	00	03	00
476.175	0E	00	03	05	02	00	03	00	0E	00	08	03	02	00	03	00
476.200	10	01	03	05	02	00	03	00	10	01	08	03	02	00	03	00
476.225	12	01	03	05	02	00	03	00	12	01	08	03	02	00	03	00
476.250	14	01	03	05	02	00	03	00	14	01	08	03	02	00	03	00
476.275	16	01	03	05	02	00	03	00	16	01	08	03	02	00	03	00
476.300	18	01	03	05	02	00	03	00	18	01	08	03	02	00	03	00
476.325	1A	01	03	05	02	00	03	00	1A	01	08	03	02	00	03	00
476.350	1C	01	03	05	02	00	03	00	1C	01	08	03	02	00	03	00
476.375	1E	01	03	05	02	00	03	00	1E	01	08	03	02	00	03	00
476.400	20	02	03	05	02	00	03	00	20	02	08	03	02	00	03	00
476.425	22	02	03	05	02	00	03	00	22	02	08	03	02	00	03	00
476.450	24	02	03	05	02	00	03	00	24	02	08	03	02	00	03	00
476.475	26	02	03	05	02	00	03	00	26	02	08	03	02	00	03	00
476.500	28	02	03	05	02	00	03	00	28	02	08	03	02	00	03	00
476.525	2A	02	03	05	02	00	03	00	2A	02	08	03	02	00	03	00
476.550	2C	02	03	05	02	00	03	00	2C	02	08	03	02	00	03	00
476.575	2E	02	03	05	02	00	03	00	2E	02	08	03	02	00	03	00
476.600	30	03	03	05	02	00	03	00	30	03	08	03	02	00	03	00
476.625	32	03	03	05	02	00	03	00	32	03	08	03	02	00	03	00
476.650	34	03	03	05	02	00	03	00	34	03	08	03	02	00	03	00
476.675	36	03	03	05	02	00	03	00	36	03	08	03	02	00	03	00
476.700	38	03	03	05	02	00	03	00	38	03	08	03	02	00	03	00
476.725	3A	03	03	05	02	00	03	00	3A	03	08	03	02	00	03	00
476.750	3C	03	03	05	02	00	03	00	3C	03	08	03	02	00	03	00
476.775	3E	03	03	05	02	00	03	00	3E	03	08	03	02	00	03	00
476.800	40	04	03	05	02	00	03	00	40	04	08	03	02	00	03	00
476.825	42	04	03	05	02	00	03	00	42	04	08	03	02	00	03	00
476.850	44	04	03	05	02	00	03	00	44	04	08	03	02	00	03	00
476.875	46	04	03	05	02	00	03	00	46	04	08	03	02	00	03	00
476.900	48	04	03	05	02	00	03	00	48	04	08	03	02	00	03	00
476.925	4A	04	03	05	02	00	03	00	4A	04	08	03	02	00	03	00
476.950	4C	04	03	05	02	00	03	00	4C	04	08	03	02	00	03	00
476.975	4E	04	03	05	02	00	03	00	4E	04	08	03	02	00	03	00
477.000	50	05	03	05	02	00	03	00	50	05	08	03	02	00	03	00
477.025	52	05	03	05	02	00	03	00	52	05	08	03	02	00	03	00
477.050	54	05	03	05	02	00	03	00	54	05	08	03	02	00	03	00
477.075	56	05	03	05	02	00	03	00	56	05	08	03	02	00	03	00
477.100	58	05	03	05	02	00	03	00	58	05	08	03	02	00	03	00
477.125	5A	05	03	05	02	00	03	00	5A	05	08	03	02	00	03	00
477.150	5C	05	03	05	02	00	03	00	5C	05	08	03	02	00	03	00
477.175	5E	05	03	05	02	00	03	00	5E	05	08	03	02	00	03	00
477.200	60	06	03	05	02	00	03	00	60	06	08	03	02	00	03	00
477.225	62	06	03	05	02	00	03	00	62	06	08	03	02	00	03	00
477.250	64	06	03	05	02	00	03	00	64	06	08	03	02	00	03	00
477.275	66	06	03	05	02	00	03	00	66	06	08	03	02	00	03	00
477.300	68	06	03	05	02	00	03	00	68	06	08	03	02	00	03	00
477.325	6A	06	03	05	02	00	03	00	6A	06	08	03	02	00	03	00
477.350	6C	06	03	05	02	00	03	00	6C	06	08	03	02	00	03	00
477.375	6E	06	03	05	02	00	03	00	6E	06	08	03	02	00	03	00
477.400	70	07	03	05	02	00	03	00	70	07	08	03	02	00	03	00
477.425	72	07	03	05	02	00	03	00	72	07	08	03	02	00	03	00
477.450	74	07	03	05	02	00	03	00	74	07	08	03	02	00	03	00
477.475	76	07	03	05	02	00	03	00	76	07	08	03	02	00	03	00
477.500	78	07	03	05	02	00	03	00	78	07	08	03	02	00	03	00
477.525	7A	07	03	05	02	00	03	00	7A	07	08	03	02	00	03	00
477.550	7C	07	03	05	02	00	03	00	7C	07	08	03	02	00	03	00
477.575	7E	07	03	05	02	00	03	00	7E	07	08	03	02	00	03	00
477.600	80	08	03	05	02	00	03	00	80	08	08	03	02	00	03	00
477.625	82	08	03	05	02	00	03	00	82	08	08	03	02	00	03	00
477.650	84	08	03	05	02	00	03	00	84	08	08	03	02	00	03	00
477.675	86	08	03	05	02	00	03	00	86	08	08	03	02	00	03	00
477.700	88	08	03	05	02	00	03	00	88	08	08	03	02	00	03	00
477.725	8A	08	03	05	02	00	03	00	8A	08	08	03	02	00	03	00
477.750	8C	08	03	05	02	00	03	00	8C	08	08	03	02	00	03	00
477.775	8E	08	03	05	02	00	03	00	8E	08	08	03	02	00	03	00
477.800	90	09	03	05	02	00	03	00	90	09	08	03	02	00	03	00
477.825	92	09	03	05	02	00	03	00	92	09	08	03	02	00	03	00
477.850	94	09	03	05	02	00	03	00	94	09	08	03	02	00	03	00
477.875	96	09	03	05	02	00	03	00	96	09	08	03	02	00	03	00
477.900	98	09	03	05	02	00	03	00	98	09	08	03	02	00	03	00
477.925	9A	09	03	05	02	00	03	00	9A	09	08	03	02	00	03	00
477.950	9C	09	03	05	02	00	03	00	9C	09	08	03	02	00	03	00
477.975	9E	09	03	05	02	00	03	00	9E	09	08	03	02	00	03	00
478.000	A0	0A	03	05	02	00	03	00	A0	0A	08	03	02	00	03	00
478.025	A2	0A	03	05	02	00	03	00	A2	0A	08	03	02	00	03	00
478.050	A4	0A	03													

F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
479.000	00	03	06	05	02	0C	03	00	00	03	08	03	02	0C	03	00
479.025	02	03	06	05	02	0C	03	00	02	03	08	03	02	0C	03	00
479.050	04	03	06	05	02	0C	03	00	04	03	08	03	02	0C	03	00
479.075	06	03	06	05	02	0C	03	00	06	03	08	03	02	0C	03	00
479.100	08	03	06	05	02	0C	03	00	08	03	08	03	02	0C	03	00
479.125	0A	03	06	05	02	0C	03	00	0A	03	08	03	02	0C	03	00
479.150	0C	03	06	05	02	0C	03	00	0C	03	08	03	02	0C	03	00
479.175	0E	03	06	05	02	0C	03	00	0E	03	08	03	02	0C	03	00
479.200	00	00	07	05	02	0C	03	00	00	00	0C	03	02	0C	03	00
479.225	02	00	07	05	02	0C	03	00	02	00	0C	03	02	0C	03	00
479.250	04	00	07	05	02	0C	03	00	04	00	0C	03	02	0C	03	00
479.275	06	00	07	05	02	0C	03	00	06	00	0C	03	02	0C	03	00
479.300	08	00	07	05	02	0C	03	00	08	00	0C	03	02	0C	03	00
479.325	0A	00	07	05	02	0C	03	00	0A	00	0C	03	02	0C	03	00
479.350	0C	00	07	05	02	0C	03	00	0C	00	0C	03	02	0C	03	00
479.375	0E	00	07	05	02	0C	03	00	0E	00	0C	03	02	0C	03	00
479.400	00	01	07	05	02	0C	03	00	00	01	0C	03	02	0C	03	00
479.425	02	01	07	05	02	0C	03	00	02	01	0C	03	02	0C	03	00
479.450	04	01	07	05	02	0C	03	00	04	01	0C	03	02	0C	03	00
479.475	06	01	07	05	02	0C	03	00	06	01	0C	03	02	0C	03	00
479.500	08	01	07	05	02	0C	03	00	08	01	0C	03	02	0C	03	00
479.525	0A	01	07	05	02	0C	03	00	0A	01	0C	03	02	0C	03	00
479.550	0C	01	07	05	02	0C	03	00	0C	01	0C	03	02	0C	03	00
479.575	0E	01	07	05	02	0C	03	00	0E	01	0C	03	02	0C	03	00
479.600	00	02	07	05	02	0C	03	00	00	02	0C	03	02	0C	03	00
479.625	02	02	07	05	02	0C	03	00	02	02	0C	03	02	0C	03	00
479.650	04	02	07	05	02	0C	03	00	04	02	0C	03	02	0C	03	00
479.675	06	02	07	05	02	0C	03	00	06	02	0C	03	02	0C	03	00
479.700	08	02	07	05	02	0C	03	00	08	02	0C	03	02	0C	03	00
479.725	0A	02	07	05	02	0C	03	00	0A	02	0C	03	02	0C	03	00
479.750	0C	02	07	05	02	0C	03	00	0C	02	0C	03	02	0C	03	00
479.775	0E	02	07	05	02	0C	03	00	0E	02	0C	03	02	0C	03	00
479.800	00	03	07	05	02	0C	03	00	00	03	0C	03	02	0C	03	00
479.825	0C	03	07	05	02	0C	03	00	0C	03	0C	03	02	0C	03	00
479.850	04	03	07	05	02	0C	03	00	04	03	0C	03	02	0C	03	00
479.875	06	03	07	05	02	0C	03	00	06	03	0C	03	02	0C	03	00
479.900	08	03	07	05	02	0C	03	00	08	03	0C	03	02	0C	03	00
479.925	0A	03	07	05	02	0C	03	00	0A	03	0C	03	02	0C	03	00
479.950	0C	03	07	05	02	0C	03	00	0C	03	0C	03	02	0C	03	00
479.975	0E	03	07	05	02	0C	03	00	0E	03	0C	03	02	0C	03	00

F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
483.000	00	03	08	05	02	0C	03	00	00	03	00	04	02	0C	03	00
483.025	02	03	08	05	02	0C	03	00	00	03	00	04	02	0C	03	00
483.050	04	03	08	05	02	0C	03	00	01	03	00	04	02	0C	03	00
483.075	06	03	08	05	02	0C	03	00	05	03	00	04	02	0C	03	00
483.100	09	03	08	05	02	0C	03	00	08	03	00	04	02	0C	03	00
483.125	0A	03	08	05	02	0C	03	00	0A	03	00	04	02	0C	03	00
483.150	0C	03	08	05	02	0C	03	00	0C	03	00	04	02	0C	03	00
483.175	0E	03	08	05	02	0C	03	00	0E	03	00	04	02	0C	03	00
483.200	00	00	0C	05	02	0C	03	00	00	00	01	04	02	0C	03	00
483.225	02	00	0C	05	02	0C	03	00	02	00	01	04	02	0C	03	00
483.250	04	00	0C	05	02	0C	03	00	04	00	01	04	02	0C	03	00
483.275	06	00	0C	05	02	0C	03	00	06	00	01	04	02	0C	03	00
483.300	08	00	0C	05	02	0C	03	00	08	00	01	04	02	0C	03	00
483.325	0A	00	0C	05	02	0C	03	00	0A	00	01	04	02	0C	03	00
483.350	0C	00	0C	05	02	0C	03	00	0C	00	01	04	02	0C	03	00
483.375	0E	00	0C	05	02	0C	03	00	0E	00	01	04	02	0C	03	00
483.400	00	01	0C	05	02	0C	03	00	00	01	01	04	02	0C	03	00
483.425	02	01	0C	05	02	0C	03	00	02	01	01	04	02	0C	03	00
483.450	04	01	0C	05	02	0C	03	00	04	01	01	04	02	0C	03	00
483.475	06	01	0C	05	02	0C	03	00	06	01	01	04	02	0C	03	00
483.500	08	01	0C	05	02	0C	03	00	08	01	01	04	02	0C	03	00
483.525	0A	01	0C	05	02	0C	03	00	0A	01	01	04	02	0C	03	00
483.550	0C	01	0C	05	02	0C	03	00	0C	01	01	04	02	0C	03	00
483.575	0E	01	0C	05	02	0C	03	00	0E	01	01	04	02	0C	03	00
483.600	00	02	0C	05	02	0C	03	00	00	02	01	04	02	0C	03	00
483.625	02	02	0C	05	02	0C	03	00	02	02	01	04	02	0C	03	00
483.650	04	02	0C	05	02	0C	03	00	04	02	01	04	02	0C	03	00
483.675	06	02	0C	05	02	0C	03	00	06	02	01	04	02	0C	03	00
483.700	08	02	0C	05	02	0C	03	00	08	02	01	04	02	0C	03	00
483.725	0A	02	0C	05	02	0C	03	00	0A	02	01	04	02	0C	03	00
483.750	0C	02	0C	05	02	0C	03	00	0C	02	01	04	02	0C	03	00
483.775	0E	02	0C	05	02	0C	03	00	0E	02	01	04	02	0C	03	00
483.800	00	03	0C	05	02	0C	03	00	00	03	01	04	02	0C	03	00
483.825	02	03	0C	05	02	0C	03	00	02	03	01	04	02	0C	03	00
483.850	04	03	0C	05	02	0C	03	00	04	03	01	04	02	0C	03	00
483.875	06	03	0C	05	02	0C	03	00	06	03	01	04	02	0C	03	00
483.900	08	03	0C	05	02	0C	03	00	08	03	01	04	02	0C	03	00
483.925	0A	03	0C	05	02	0C	03	00	0A	03	01	04	02	0C	03	00
483.950	0C	03	0C	05	02	0C	03	00	0C	03	01	04	02	0C	03	00
483.975	0E	03	0C	05	02	0C	03	00	0E	03	01	04	02	0C	03	00
484.000	00	04	0C	05	02	0C	03	00	00	04	02	04	02	0C	03	00
484.025	02	04	0C	05	02	0C	03	00	02	04	02	04	02	0C	03	00
484.050	04	04	0C	05	02	0C	03	00	04	04	02	04	02	0C	03	00
484.075	06	04	0C	05	02	0C	03	00	06	04	02	04	02	0C	03	00
484.100	08	04	0C	05	02	0C	03	00	08	04	02	04	02	0C	03	00
484.125	0A	04	0C	05	02	0C	03	00	0A	04	02	04	02	0C	03	00
484.150	0C	04	0C	05	02	0C	03	00	0C	04	02	04	02	0C	03	00
484.175	0E	04	0C	05	02	0C	03	00	0E	04	02	04	02	0C	03	00
484.200	00	05	0C	05	02	0C	03	00	00	05	02	04	02	0C	03	00
484.225	02	05	0C	05	02	0C	03	00	02	05	02	04	02	0C	03	00
484.250	04	05	0C	05	02	0C	03	00	04	05	02	04	02	0C	03	00
484.275	06	05	0C	05	02	0C	03	00	06	05	02	04	02	0C	03	00
484.300	08	05	0C	05	02	0C	03	00	08	05	02	04	02	0C	03	00
484.325	0A	05	0C	05	02	0C	03	00	0A	05	02	04	02	0C	03	00
484.350	0C	05	0C	05	02	0C	03	00	0C	05	02	04	02	0C	03	00
484.375	0E	05	0C	05	02	0C	03	00	0E	05	02	04	02	0C	03	00
484.400	00	06	0C	05	02	0C	03	00	00	06	02	04	02	0C	03	00
484.425	02	06	0C	05	02	0C	03	00	02	06	02	04	02	0C	03	00
484.450	04	06	0C	05	02	0C	03	00	04	06	02	04	02	0C	03	00
484.475	06	06	0C	05	02	0C	03	00	06	06	02	04	02	0C	03	00

***E	UHF TX PROGRAM							UHF RX PROGRAM										
	F (MHz)	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	
501.000	00	01	02	07	02	00	00	00	01	07	05	02	00	00	03	00	00	
501.025	02	01	02	07	02	00	00	00	01	07	05	02	00	00	03	00	00	
501.050	04	01	02	07	02	00	00	00	01	07	05	02	00	00	03	00	00	
501.075	06	01	02	07	02	00	00	00	01	07	05	02	00	00	03	00	00	
501.100	08	01	02	07	02	00	00	00	01	07	05	02	00	00	03	00	00	
501.125	0A	01	02	07	02	00	00	00	0A	01	07	05	02	00	03	00	00	
501.150	0C	01	02	07	02	00	00	00	0C	01	07	05	02	00	03	00	00	
501.175	0E	01	02	07	02	00	00	00	0E	01	07	05	02	00	03	00	00	
501.200	00	02	01	07	02	00	00	00	00	02	07	05	02	00	03	00	00	
501.225	02	02	01	07	02	00	00	00	02	07	05	02	00	00	03	00	00	
501.250	04	02	02	07	02	00	00	00	04	02	07	05	02	00	03	00	00	
501.275	06	02	02	07	02	00	00	00	06	02	07	05	02	00	03	00	00	
501.300	08	02	02	07	02	00	00	00	08	02	07	05	02	00	03	00	00	
501.325	0A	02	02	07	02	00	00	00	0A	02	07	05	02	00	03	00	00	
501.350	0C	02	02	07	02	00	00	00	0C	02	07	05	02	00	03	00	00	
501.375	0E	02	02	07	02	00	00	00	0E	02	07	05	02	00	03	00	00	
501.400	00	03	02	07	02	00	00	00	00	03	07	05	02	00	03	00	00	
501.425	02	03	02	07	02	00	00	00	02	03	07	05	02	00	03	00	00	
501.450	04	03	02	07	02	00	00	00	04	03	07	05	02	00	03	00	00	
501.475	06	03	02	07	02	00	00	00	06	03	07	05	02	00	03	00	00	
501.500	08	03	02	07	02	00	00	00	08	03	07	05	02	00	03	00	00	
501.525	0A	03	02	07	02	00	00	00	0A	03	07	05	02	00	03	00	00	
501.550	0C	03	02	07	02	00	00	00	0C	03	07	05	02	00	03	00	00	
501.575	0E	03	02	07	02	00	00	00	0E	03	07	05	02	00	03	00	00	
501.600	00	04	03	07	02	00	00	00	00	04	07	05	02	00	03	00	00	
501.625	01	04	03	07	02	00	00	00	01	04	07	05	02	00	03	00	00	
501.650	02	04	03	07	02	00	00	00	02	04	07	05	02	00	03	00	00	
501.675	03	04	03	07	02	00	00	00	03	04	07	05	02	00	03	00	00	
501.700	04	04	03	07	02	00	00	00	04	04	07	05	02	00	03	00	00	
501.725	05	04	03	07	02	00	00	00	05	04	07	05	02	00	03	00	00	
501.750	06	04	03	07	02	00	00	00	06	04	07	05	02	00	03	00	00	
501.775	07	04	03	07	02	00	00	00	07	04	07	05	02	00	03	00	00	
501.800	08	04	03	07	02	00	00	00	08	04	07	05	02	00	03	00	00	
501.825	09	04	03	07	02	00	00	00	09	04	07	05	02	00	03	00	00	
501.850	0A	04	03	07	02	00	00	00	0A	04	07	05	02	00	03	00	00	
501.875	0B	04	03	07	02	00	00	00	0B	04	07	05	02	00	03	00	00	
501.900	0C	04	03	07	02	00	00	00	0C	04	07	05	02	00	03	00	00	
501.925	0D	04	03	07	02	00	00	00	0D	04	07	05	02	00	03	00	00	
501.950	0E	04	03	07	02	00	00	00	0E	04	07	05	02	00	03	00	00	
501.975	0F	04	03	07	02	00	00	00	0F	04	07	05	02	00	03	00	00	
502.000	00	05	04	07	02	00	00	00	00	05	07	05	02	00	03	00	00	
502.025	01	05	04	07	02	00	00	00	01	05	07	05	02	00	03	00	00	
502.050	02	05	04	07	02	00	00	00	02	05	07	05	02	00	03	00	00	
502.075	03	05	04	07	02	00	00	00	03	05	07	05	02	00	03	00	00	
502.100	04	05	04	07	02	00	00	00	04	05	07	05	02	00	03	00	00	
502.125	05	05	04	07	02	00	00	00	05	05	07	05	02	00	03	00	00	
502.150	06	05	04	07	02	00	00	00	06	05	07	05	02	00	03	00	00	
502.175	07	05	04	07	02	00	00	00	07	05	07	05	02	00	03	00	00	
502.200	08	05	04	07	02	00	00	00	08	05	07	05	02	00	03	00	00	
502.225	09	05	04	07	02	00	00	00	09	05	07	05	02	00	03	00	00	
502.250	0A	05	04	07	02	00	00	00	0A	05	07	05	02	00	03	00	00	
502.275	0B	05	04	07	02	00	00	00	0B	05	07	05	02	00	03	00	00	
502.300	0C	05	04	07	02	00	00	00	0C	05	07	05	02	00	03	00	00	
502.325	0D	05	04	07	02	00	00	00	0D	05	07	05	02	00	03	00	00	
502.350	0E	05	04	07	02	00	00	00	0E	05	07	05	02	00	03	00	00	
502.375	0F	05	04	07	02	00	00	00	0F	05	07	05	02	00	03	00	00	
502.400	00	06	05	07	02	00	00	00	00	06	07	05	02	00	03	00	00	
502.425	01	06	05	07	02	00	00	00	01	06	07	05	02	00	03	00	00	
502.450	02	06	05	07	02	00	00	00	02	06	07	05	02	00	03	00	00	
502.475	03	06	05	07	02	00	00	00	03	06	07	05	02	00	03	00	00	
502.500	04	06	05	07	02	00	00	00	04	06	07	05	02	00	03	00	00	
502.525	05	06	05	07	02	00	00	00	05	06	07	05	02	00	03	00	00	
502.550	06	06	05	07	02	00	00	00	06	06	07	05	02	00	03	00	00	
502.575	07	06	05	07	02	00	00	00	07	06	07	05	02	00	03	00	00	
502.600	08	06	05	07	02	00	00	00	08	06	07	05	02	00	03	00	00	
502.625	09	06	05	07	02	00	00	00	09	06	07	05	02	00	03	00	00	
502.650	0A	06	05	07	02	00	00	00	0A	06	07	05	02	00	03	00	00	
502.675	0B	06	05	07	02	00	00	00	0B	06	07	05	02	00	03	00	00	
502.700	0C	06	05	07	02	00	00	00	0C	06	07	05	02	00	03	00	00	
502.725	0D	06	05	07	02	00	00	00	0D	06	07	05	02	00	03	00	00	
502.750	0E	06	05	07	02	00	00	00	0E	06	07	05	02	00	03	00	00	
502.775	0F	06	05	07	02	00	00	00	0F	06	07	05	02	00	03	00	00	
502.800	00	07	06	07	02	00	00	00	00	07	06	07	05	02	00	03	00	00
502.825	01	07	06	07	02	00	00	00	01	07	06	07	05	02	00	03	00	00
502.850	02	07	06	07	02	00	00	00	02	07	06	07	05	02	00	03	00	00
502.875	03	07	06	07	02	00	00	00	03	07	06	07	05	02	00	03	00	00
502.900	04	07	06	07	02	00	00	00	04	07	06	07	05	02	00	03	00	00
502.925	05	07	06	07	02	00	00	00	05	07	06	07	05	02	00	03	00	00
502.950	06	07	06	07	02	00	00	00	06	07	06	07	05	02	00	03	00	00
502.975	07	06	07	02	00	00	00	00	07	06	07	05	02	00	03	00	00	00
503.000	08	07	06	07	02	00	00	00	08	07	06	07	05	02	00	03	00	00
503.025	09	07	06	07	02	00	00	00	09	07	06	07	05	02	00	03	00	00
503.050	0A	07	06	07	02	00	00	00	0A	07	06	07	05	02	00	03	00	00
503.075	0B	07	06	07	02	00	00	00	0B	07	06	07	05	02	00	03	00	00
503.100	0C	07	06	07	02	00	00	00	0C	07	06	07	05	02	00	03	00	00
503.125	0D	07	06	07	02	00	00	00	0D	07	06	07	05	02	00	03	00	00
503.150	0E	07	06	07	02	00	00	00	0E	07	06	07	05	02	00	03	00	00
503.175	0F	07	06	07	02	00	00	00	0F	07	06	07	05	02	00	03	00	00
503.200	00	08	07	06	07	02	00	00	00	08								

*** F (MHz)	UHF TX PROGRAM							UHF RX PROGRAM								
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
507.000	00	03	09	07	02	0C	03	00	00	03	0E	05	02	0C	03	00
507.025	02	03	09	07	02	0C	03	00	02	03	0E	05	02	0C	03	00
507.050	04	03	09	07	02	0C	03	00	04	03	0E	05	02	0C	03	00
507.075	06	03	09	07	02	0C	03	00	06	03	0E	05	02	0C	03	00
507.100	08	03	09	07	02	0C	03	00	08	03	0E	05	02	0C	03	00
507.125	0A	03	09	07	02	0C	03	00	0A	03	0E	05	02	0C	03	00
507.150	0C	03	09	07	02	0C	03	00	0C	03	0E	05	02	0C	03	00
507.175	0E	03	09	07	02	0C	03	00	0E	03	0E	05	02	0C	03	00
507.200	00	0A	07	02	0C	03	00	00	00	0F	05	02	0C	03	00	
507.225	02	00	0A	07	02	0C	03	00	02	00	0F	05	02	0C	03	00
507.250	04	00	0A	07	02	0C	03	00	04	00	0F	05	02	0C	03	00
507.275	06	00	0A	07	02	0C	03	00	06	00	0F	05	02	0C	03	00
507.300	08	00	0A	07	02	0C	03	00	08	00	0F	05	02	0C	03	00
507.325	0A	00	0A	07	02	0C	03	00	0A	00	0F	05	02	0C	03	00
507.350	0C	00	0A	07	02	0C	03	00	0C	00	0F	05	02	0C	03	00
507.375	0E	00	0A	07	02	0C	03	00	0E	00	0F	05	02	0C	03	00
507.400	00	01	0A	07	02	0C	03	00	00	01	0F	05	02	0C	03	00
507.425	02	01	0A	07	02	0C	03	00	02	01	0F	05	02	0C	03	00
507.450	04	01	0A	07	02	0C	03	00	04	01	0F	05	02	0C	03	00
507.475	06	01	0A	07	02	0C	03	00	06	01	0F	05	02	0C	03	00
507.500	08	01	0A	07	02	0C	03	00	08	01	0F	05	02	0C	03	00
507.525	0A	01	0A	07	02	0C	03	00	0A	01	0F	05	02	0C	03	00
507.550	0C	01	0A	07	02	0C	03	00	0C	01	0F	05	02	0C	03	00
507.575	0E	01	0A	07	02	0C	03	00	0E	01	0F	05	02	0C	03	00
507.600	00	02	0A	07	02	0C	03	00	00	02	0F	05	02	0C	03	00
507.625	02	02	0A	07	02	0C	03	00	02	02	0F	05	02	0C	03	00
507.650	04	02	0A	07	02	0C	03	00	04	02	0F	05	02	0C	03	00
507.675	06	02	0A	07	02	0C	03	00	06	02	0F	05	02	0C	03	00
507.700	08	02	0A	07	02	0C	03	00	08	02	0F	05	02	0C	03	00
507.725	0A	02	0A	07	02	0C	03	00	0A	02	0F	05	02	0C	03	00
507.750	0C	02	0A	07	02	0C	03	00	0C	02	0F	05	02	0C	03	00
507.775	0E	02	0A	07	02	0C	03	00	0E	02	0F	05	02	0C	03	00
507.800	00	03	0A	07	02	0C	03	00	00	03	0F	05	02	0C	03	00
507.825	02	03	0A	07	02	0C	03	00	02	03	0F	05	02	0C	03	00
507.850	04	03	0A	07	02	0C	03	00	04	03	0F	05	02	0C	03	00
507.875	06	03	0A	07	02	0C	03	00	06	03	0F	05	02	0C	03	00
507.900	08	03	0A	07	02	0C	03	00	08	03	0F	05	02	0C	03	00
507.925	0A	03	0A	07	02	0C	03	00	0A	03	0F	05	02	0C	03	00
507.950	0C	03	0A	07	02	0C	03	00	0C	03	0F	05	02	0C	03	00
507.975	0E	03	0A	07	02	0C	03	00	0E	03	0F	05	02	0C	03	00
508.000	00	04	07	02	0C	03	00	00	00	04	07	02	0C	03	00	
508.025	02	00	05	07	02	0C	03	00	02	00	05	07	02	0C	03	00
508.050	04	00	05	07	02	0C	03	00	04	00	05	07	02	0C	03	00
508.075	06	00	05	07	02	0C	03	00	06	00	05	07	02	0C	03	00
508.100	08	00	05	07	02	0C	03	00	08	00	05	07	02	0C	03	00
508.125	0A	00	05	07	02	0C	03	00	0A	00	05	07	02	0C	03	00
508.150	0C	00	05	07	02	0C	03	00	0C	00	05	07	02	0C	03	00
508.175	0E	00	05	07	02	0C	03	00	0E	00	05	07	02	0C	03	00
508.200	00	01	05	07	02	0C	03	00	00	01	05	07	02	0C	03	00
508.225	02	01	05	07	02	0C	03	00	02	01	05	07	02	0C	03	00
508.250	04	01	05	07	02	0C	03	00	04	01	05	07	02	0C	03	00
508.275	06	01	05	07	02	0C	03	00	06	01	05	07	02	0C	03	00
508.300	08	01	05	07	02	0C	03	00	08	01	05	07	02	0C	03	00
508.325	0A	01	05	07	02	0C	03	00	0A	01	05	07	02	0C	03	00
508.350	0C	01	05	07	02	0C	03	00	0C	01	05	07	02	0C	03	00
508.375	0E	01	05	07	02	0C	03	00	0E	01	05	07	02	0C	03	00
508.400	00	02	05	07	02	0C	03	00	00	02	05	07	02	0C	03	00
508.425	02	02	05	07	02	0C	03	00	02	02	05	07	02	0C	03	00
508.450	04	02	05	07	02	0C	03	00	04	02	05	07	02	0C	03	00
508.475	06	02	05	07	02	0C	03	00	06	02	05	07	02	0C	03	00

PARTS LIST

MODEL : BSR450

CODE : BSR450/UN

UNIT : R X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
1	IC	CX7932	IC109	1
2	IC	MC14504BP	IC102	1
3	IC	MC145146P	IC103	1
4	IC	NJM2073	IC111	1
5	IC	NJM4558D	IC108,10	2
6	IC	TC5027P	IC105	1
7	IC	TC5036P	IC106	1
8	IC	TA7303P	IC115	1
9	IC	TK10420D	IC107	1
10	IC	UPB571C	IC104	1
11	EP-ROM	UPD2764D	IC101	1
12	IC	78M08	IC114	1
13	IC	78M05	IC112	1
14	IC	AN78N08	IC113	1
15	BALANCED MIXER	M-8	DBM101	1
16	DIODE ARRAY	NAL-8CS	DA101	1
17	FET	2SK152	Q102	1
18	FET	2SK184Y	Q111	1
19	TRANSISTOR	2SC3358	Q101	1
20	TRANSISTOR	2SA1048LY	Q106-07	2
21	TRANSISTOR	2SA950Y	Q109	1
22	TRANSISTOR	2SC2458LY	Q104,08	2
23	TRANSISTOR	2SC2669Y	Q103	1
24	TRANSISTOR	RN2202	Q105,10,12	3
25	LED	TLS164	D106	1
26	DIODE	1SS177	D101-05,07,10,12-15	11
27	DIODE	1SS227	D108,11	2
28	DIODE	1SS237	D116,17	2
29	DIODE	M1308	D109	1
30	CRYSTAL	21.145MHZ	X101	1
31	CRYSTAL FILTER	21P08A NARROW	XF102	1
32	CRYSTAL FILTER	21P10A NARROW	XF101	1
33	TCXO	GFS210X NARROW	TCX01	1
34	DISCRIMINATOR	CDB455C7	CD101	1
35	CERAMIC FILTER	CFG455G NARROW	CF101	1
36	THERMISTER	360-D5	TH101	1
37	3-RX BPF	RFC450N-3.33	BPF101-02	2
38	TEST POINT	3022-02A	TP101	1
39	TEST POINT	LC-2-S(QRN)	TP103	1
40	TEST POINT	LC-2-S(YEL)	TP104	1
41	JUMPER PLUG	DSP02-002-431G	JP102	1
42	MICRO INDUCTOR	LA03NA 100UH	L107A	1
43	MICRO INDUCTOR	LA03NA 10UH	L106	1
44	LEAD CHOKE	15M(LN0009)	L101-102	2
45	COIL	G02 10MH	L108	1
46	COIL	M2 680UH	L107B,09	2
47	COIL	BC-2	L103	1
48	COIL	#1054	L105	1
49	COIL	#1053	T101,03	2
50	COIL	#1058	T102	1

MODEL : BSR450

CODE : BSR450/UN

UNIT : R X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
51	COIL	4A-S235	L104	1
52	MONOLYTHIC M.	B32529-104K	C114,83-84	3
53	CERAMIC C.	CH 3PF	C122	1
54	CERAMIC C.	CH 2PF	C192A,08	2
55	CERAMIC C.	RH 5PF	C133	1
56	CERAMIC C.	CH 7PF	C123	1
57	CERAMIC C.	CH 10PF	C128-29,50	3
58	CERAMIC C.	CH 33PF	C137	1
59	CERAMIC C.	RH 39PF	C125,30	2
60	CERAMIC C.	RH 56PF	C126,34	2
61	CERAMIC C.	CH 68PF	C138	1
62	CERAMIC C.	CH 82PF	C147	1
63	CERAMIC C.	CH 150PF	C142	1
64	CERAMIC C.	SL 220PF	C144	1
65	CERAMIC C.	UJ 470PF	C124	1
66	CERAMIC C.	B 470PF	C117-20	4
67	CERAMIC C.	B 1000PF	C106-07,31,36,92B	5
68	CERAMIC C.	B 2200PF	C127,32,35	3
69	MONOLYTHIC C.	RPE121C0.1UF	C139-41	3
70	MONOLYTHIC C.	RPE121C1000PF	C109-10	2
71	ELECTROLITIC C	KMA 50V/0.1UF	C159	1
72	ELECTROLITIC C	KMA 50V/0.47UF	C148,75	2
73	ELECTROLITIC C	KMA 50V/1UF	C154	1
74	ELECTROLITIC C	KMA 50V/2.2UF	C161,89A	2
75	ELECTROLITIC C	KMA 25V/4.7UF	C160	1
76	ELECTROLITIC C	KMA 16V/22UF	C105,16,55B	3
77	ELECTROLITIC C	KMA 16V/47UF	C101,2A	2
78	ELECTROLITIC C	KMA 16V/100UF	C180-81,82A	3
79	ELECTROLITIC C	KRG 25V/1000UF	C188	1
80	ELECTROLITIC C	BP 50V/0.47UF	C155A	1
81	ELECTROLITIC C	BP 16V/10UF	C179	1
82	MYLER FILMED C	A7Z 1000PF	C166,71-74,87B,89B	7
83	MYLER FILMED C	A7Z 1200PF	C157	1
84	MYLER FILMED C	A7Z 4700PF	C151,64-65,69	4
85	MYLER FILMED C	A7Z 6800PF	C156	1
86	MYLER FILMED C	A7Z 8200PF	C170	1
87	MYLER FILMED C	A7Z 0.01UF	C177-78,91	3
88	MYLER FILMED C	A7Z 0.015UF	C167-68	2
89	MYLER FILMED C	A7Z 0.022UF	C111,90	2
90	MYLER FILMED C	UPZ 220PF	C162-63	2
91	MYLER FILMED C	UPZ 470PF	C145-46,48,49	4
92	TANTALUM C.	DN 35V/0.1UF	C113B	1
93	TANTALUM C.	DN 35V/0.47UF	C176	1
94	TANTALUM C.	DN 35V/1UF	C102B,03-04,21,43,85-86,87A	8
95	TANTALUM C.	DN 16V/2.2UF	C115,52,53	3
96	TANTALUM C.	DN 10V/47UF	C112	1
97	SST TANTALUM C	SST 35V/0.1UF	C113A	1
98	CARBON R.	1/6W(P) 0	JP101,R122A	2
99	CARBON R.	1/6W(F) 56	R123	1
100	CARBON R.	1/6W(F) 100	R126,51,21	3

MODEL : BSR450

CODE : BSR450/UN

UNIT : R X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
101	CARBON R.	1/6W(F) 150	R124,28	2
102	CARBON R.	1/6W(F) 220	R113,34	2
103	CARBON R.	1/6W(F) 470	R131	1
104	CARBON R.	1/6W(F) 820	R114,17,30	3
105	CARBON R.	1/6W(F) 1K	R109,77	2
106	CARBON R.	1/6W(F) 1.2K	R115,27	2
107	CARBON R.	1/6W(F) 1.5K	R135,68,88	3
108	CARBON R.	1/6W(F) 1.8K	R150	1
109	CARBON R.	1/6W(F) 2.2K	R137,38B	2
110	CARBON R.	1/6W(F) 2.4K	R139	1
111	CARBON R.	1/6W(F) 2.7K	R119,25	2
112	CARBON R.	1/6W(F) 3.3K	R116,57,60	3
113	CARBON R.	1/6W(F) 4.7K	R169,87	2
114	CARBON R.	1/6W(F) 8.2K	R186	1
115	CARBON R.	1/6W(F) 10K	R101-07,08B,10-12,18-29,32,42, -47,64,75-76,83,85	21
116				
117	CARBON R.	1/6W(F) 12K	R165-66	2
118	CARBON R.	1/6W(F) 15K	R140,54,49,63,20	5
119	CARBON R.	1/6W(F) 18K	R153,70	2
120	CARBON R.	1/6W(F) 22K	R133,52,80,84	4
121	CARBON R.	1/6W(F) 30K	R178	1
122	CARBON R.	1/6W(F) 33K	R144,46	2
123	CARBON R.	1/6W(F) 39K	R145	1
124	CARBON R.	1/6W(F) 47K	R108A,36,41,55-56,38A,61-62	10
125	CARBON R.	1/6W(F) 68K	R173	1
126	CARBON R.	1/6W(F) 100K	R143,48,81-82	4
127	CARBON R.	1/6W(F) 180K	R167	1
128	CARBON R.	1/6W(F) 220K	R171-72,79	3
129	CARBON R.	1/6W(F) 240K	R158-59	2
130	CARBON R.	1/6W(F) 620K	R174	1
131	SEMI FIXED R.	PK502HO 10K	FVR101-02	2
132	2-PIN SOCKET	3024-02CH	CN104S	1
133	7-PIN SOCKET	3024-07CH	CN103S	1
134	10-PIN SOCKET	3024-10CH	CN105S,07S	2
135	8-PIN SOCKET	5124-08BHPB	CN101S	1
136	10-PIN SOCKET	5124-10BHPB	CN106S	1
137	12-PIN SOCKET	5124-12BHPB	CN102S	1
138	SMB CN.	SM551	CN5S,6S	2
139	IC SOCKET	110-99-628		1
140	JUMPER SOCKET	DSP01-002-430G	JP102S	1
141	COAXIAL CORD	06-0.8D		1
142	PCB	06MPR318		1
143	SHIELD WIRE	EMR-15-MST	28CN	3
144	RX UNIT CHAS.	2A10-0105		1
145	RX UNIT COVER	3A10-0320		1
146	BIND SCREW	BD-2.6 X 5		12
147	NUT	NT-2.6PA1		2
148	OVAL SCREW	OV-2.6 X 8		12
149	SPRING WASHER	SW-2.6PA1		2
150	RX UNIT SEAL	4A10-1295		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
151	IC	UPD2764D	IC301	1
152	IC	MC14504BP	IC302	1
153	IC	MC145146P	IC303	1
154	IC	NJM4556D	IC309	1
155	IC	TC5027P	IC305	1
156	IC	UPB571C	IC304	1
157	IC	78M05	IC306	1
158	IC	78M08	IC307	1
159	IC	M5236L	IC308	1
160	DIODE ARRAY	NAL-8CS	DA301	1
161	TRANSISTOR	2SB1019Y	Q303	1
162	TRANSISTOR	2SC2131	Q302	1
163	TRANSISTOR	2SC2644	Q301	1
164	TRANSISTOR	RN1202	Q306	1
165	TRANSISTOR	RN2202	Q304-05	2
166	DIODE	1SS177	D301-06,08-10,12-13	11
167	DIODE	1SS227	D307	1
168	DIODE	1SS237	D314-15	2
169	LED	TLS164	D311	1
170	THERMISTER	50D-5	TH301	1
171	TEST POINT	3022-02A	TP301-02	1
172	TEST POINT	LC-2-S(ORN)	TP303	1
173	COIL	4A-S160	L306-07	2
174	COIL	4A-S165	L305	1
175	LEAD CHOKE	10M(LN0018)	L304	1
176	LEAD CHOKE	15M(LN0009)	L301-03,08-09	5
177	VARIABLE COIL	12VXA 68mH	L310-11	2
178	CERAMIC C.	B 100PF	C353	1
179	CERAMIC C.	B 470PF	C326-29,32-33	6
180	CERAMIC C.	B 1000PF	C313-14,41,46-48,59-60,66,67	10
181	CERAMIC C.	CH 2PF	C315(BACK SIDE)	1
182	CERAMIC C.	CH 5PF	C325,34,36	3
183	CERAMIC C.	CH 9PF	C331	1
184	CERAMIC C.	CH 10PF	C367	1
185	CERAMIC C.	SL 9PF	C330	1
186	CERAMIC C.	SL 33PF	C324,35	2
187	CERAMIC C.	SL 150PF	C361	1
188	ELECTROLITIC C	KMA 16V/100UF	C342	1
189	ELECTROLITIC C	KMA 16V/10UF	C354	1
190	ELECTROLITIC C	KMA 16V/47UF	C312,18,38	3
191	ELECTROLITIC C	KMA 25V/100UF	C345	1
192	ELECTROLITIC C	KMA 50V/0.1UF	C357-58	2
193	MYLER FILMED C	A7Z 0.015UF	C356	1
194	MYLER FILMED C	A7Z 0.01UF	C339	1
195	MYLER FILMED C	A7Z 0.022UF	C319B	1
196	MYLER FILMED C	A7Z 0.047UF	C351	1
197	MYLER FILMED C	A7Z 0.068UF	C349	1
198	MYLER FILMED C	A7Z 0.1UF	C350	1
199	MONOLYTHIC C.	RPE121C1000PF	C316-17	2
200	MONOLYTHIC M.	B32529-104K	C322	1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
201	TANTALUM C.	DN 16V/10UF	C311	1
202	TANTALUM C.	DN 10V/4.7UF	C337	1
203	TANTALUM C.	DN 10V/47UF	C319A	1
204	TANTALUM C.	DN 16V/2.2UF	C323	1
205	TANTALUM C.	DN 35V/0.1UF	C320	1
206	TANTALUM C.	DN 35V/0.22UF	C365	1
207	TANTALUM C.	DN 35V/0.47UF	C352,55	2
208	TANTALUM C.	DN 35V/1UF	C310,40,43-44	4
209	SST TANTALUM C	SST 35V/0.1UF	C321	1
210	CARBON R.	1/6W(F) 3.3	R329A,30	2
211	CARBON R.	1/6W(F) 10	R321	1
212	CARBON R.	1/6W(F) 15	R323	1
213	CARBON R.	1/6W(F) 22	R327	1
214	CARBON R.	1/6W(F) 47	R325	1
215	CARBON R.	1/6W(F) 150	R324	1
216	CARBON R.	1/6W(F) 220	R316	1
217	CARBON R.	1/6W(F) 270	R331	1
218	CARBON R.	1/6W(F) 390	R329B	1
219	CARBON R.	1/6W(F) 430	R319	1
220	CARBON R.	1/6W(F) 470	R332	1
221	CARBON R.	1/6W(F) 680	R340A,49B,52,22	4
222	CARBON R.	1/6W(F) 820	R317,37	2
223	CARBON R.	1/6W(F) 1K	R345A,28	2
224	CARBON R.	1/6W(F) 1.2K	R318	1
225	CARBON R.	1/6W(F) 1.5K	R339,46	2
226	CARBON R.	1/6W(F) 2.2K	R338	1
227	CARBON R.	1/6W(F) 2.7K	R326	1
228	CARBON R.	1/6W(F) 3.3K	R315,20	2
229	CARBON R.	1/6W(F) 3.9K	R335	1
230	CARBON R.	1/6W(F) 6.8K	R341	1
231	CARBON R.	1/6W(F) 10K	R301-07,09,11,12-14,36,45B	14
232	CARBON R.	1/6W(F) 15K	R310,33,50-51	4
233	CARBON R.	1/6W(F) 22K	R347	1
234	CARBON R.	1/6W(F) 27K	R340B	1
235	CARBON R.	1/6W(F) 39K	R334,48	2
236	CARBON R.	1/6W(F) 47K	R308,42,49A	3
237	METAL R.	RNK2E 1/4W 33K	R343	1
238	METAL R.	RNK2E 1/4W 39K	R344	1
239	SEMI FIXED R.	PK502HO 10K	FVR301	1
240	SEMI FIXED R.	PK502HO 1K	FVR302	1
241	SEMI FIXED R.	PK502HO 50K	FVR303	1
242	2-PIN SOCKET	3024-02CH	CN306S	1
243	7-PIN SOCKET	3024-07CH	CN305S	1
244	3-PIN SOCKET	5124-03BHPB	CN304S	1
245	7-PIN SOCKET	5124-07BHPB	CN303S	1
246	8-PIN SOCKET	5124-08BHPB	CN301S	1
247	COAXIAL CN.	106-TCH-1.5D	CN6P(ELIN TEH-1.5D)	1
248	COAXIAL CN.	110-YNG-1.5D	CN7P	1
249	PCB	10MPT118		1
250	IC SOCKET	110-99-628		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X M A I N

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
251	TX UNIT CHAS.	2A10-0104		1
252	TX UNIT COVER	3A10-0321		1
253	SHIELD WIRE	EMR-15-MST	22CM	2
254	BIND SCREW	BD-2.6 X 5		8
255	NUT	NT-2.6PA1		3
256	OVAL SCREW	OV-2.6 X 8		11
257	SPRING WASHER	SW-2.6PA1		3
258	TX UNIT SEAL	4A10-1296		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : R X V C O

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
259	IC	UPC1651	IC201	1
260	FET	2SK508	Q201	1
261	TRANSISTOR	2SA1048LY	Q203,05	2
262	TRANSISTOR	2SC2458LY	Q208	1
263	TRANSISTOR	2SC2753Y	Q202	1
264	TRANSISTOR	2SC3623A	Q207	1
265	TRANSISTOR	RN2202	Q204,06	2
266	DIODE	1SS177	D203-05,07	4
267	DIODE	1SS227	D202	1
268	VARICAP DIODE	1T-32	D201	1
269	ZENER DIODE	05AZ5.6Z	D206	1
270	CHOKE COIL	4A-S212	L202	1
271	COIL	4A-S166	L205	1
272	COIL	4A-S341	L204	1
273	MICRO INDUCTOR	LA03NA 0.47UH	L203	1
274	MICRO INDUCTOR	LA03NA 1UH	L201	1
275	MICRO INDUCTOR	LA04NA 10UH	L206	1
276	TEST POINT	LC-2-S(BRN)	TP201	1
277	CERAMIC C.	B 1000PF	C224	1
278	CERAMIC C.	B 220PF	C203	1
279	CERAMIC C.	B 470PF	C202,11-12,14-16,23,27	8
280	CERAMIC C.	RH 3PF	C210	1
281	CERAMIC C.	RH 15PF	C213A	1
282	CHIP CERAMIC C	GR40 RH 3PF	C205A,08A	2
283	CHIP CERAMIC C	GR40 CH 0.5PF	C208B(08A用)	1
284	CHIP CERAMIC C	GR40 RH 5PF	C207	1
285	CHIP CERAMIC C	GR40 RH 9PF	C206	1
286	CHIP CERAMIC C	GR40 RH 18PF	C209	1
287	TRIMMER C.	DTM 20PF	VC201	1
288	ELECTROLYTIC C	KMA 16V/47UF	C219-20	2
289	MONOLYTHIC C.	RPE121C0.022UF	C226	1
290	MYLER FILMED C	A7Z 0.015UF	C201	1
291	TANTALUM C.	DN 35V/1UF	C218	1
292	TANTALUM C.	DN 10V/4.7UF	C217,21-22	3
293	TANTALUM C.	DN 10V/47UF	C225	1
294	WEDGER TYPE C	SUW/50V 1000PF	C204	1
295	CARBON R.	1/6W(F) 10	R206,13	2
296	CARBON R.	1/6W(F) 68	R205	1
297	CARBON R.	1/6W(F) 220	R202	1
298	CARBON R.	1/6W(F) 270	R212	1
299	CARBON R.	1/6W(F) 430	R201	1
300	CARBON R.	1/6W(F) 1K	R204,10	2
301	CARBON R.	1/6W(F) 2.7K	R203	1
302	CARBON R.	1/6W(F) 4.7K	R209	1
303	CARBON R.	1/6W(F) 10K	R207-08	2
304	CARBON R.	1/6W(F) 15K	R211	1
305	2-PIN PLUG	SB-02P-HVQ-B	CN104P	1
306	7-PIN PLUG	SB-07P-HVQ-B	CN103P	1
307	VCO STUD	4A10-1267		4
308	VCO ISOLATOR	4A10-1041		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : R X V C O

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
309	ISOLATION RUB.	4A10-1123		1
310	PCB MAT	4A10-1273		1
311	PCB	06VCUDR216		1
312	VCO UNIT CASE	4A10-1095		1
313	VCO UNIT COVER	4A10-1193		1
314	VCO UNIT FRAME	4A10-1038		1
315	SEMS SCREW	SE-2.6 X 5		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X V C O

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
316	IC	UPC1651	1C401	1
317	FET	2SK508	4401	1
318	TRANSISTOR	2SA1048LY	4403.05	2
319	TRANSISTOR	2SC2458LY	4407	1
320	TRANSISTOR	2SC2753Y	4402	1
321	TRANSISTOR	2SC3623A	4406	1
322	TRANSISTOR	RN2202	4404	1
323	DIODE	1SS177	D403.05	2
324	DIODE	1SS227	D402	1
325	VARICAP DIODE	1T-32	D401.06	2
326	ZENER DIODE	05A75.6Z	D404	1
327	CHOKE COIL	4A-S212	L402	1
328	COIL	4A-S166	L405	1
329	COIL	4A-S210	L404	1
330	MICRO INDUCTOR	LA03NA 0.47UH	L403	1
331	MICRO INDUCTOR	LA03NA 1UH	L401	1
332	MICRO INDUCTOR	LA04NA 10UH	L406	1
333	TEST POINT	LC-2-S(BRN)	TP401	1
334	CERAMIC C.	B 1000PF	C424	1
335	CERAMIC C.	B 220PF	C404	1
336	CERAMIC C.	B 470PF	C402,12 13,15-17,19,-28,14A,32	10
337	CERAMIC C.	RH 2PF	C411	1
338	CERAMIC C.	CH 3PF	C430	1
339	CHIP CERAMIC C	GR40 RH 1PF	C403.08	2
340	CHIP CERAMIC C	GR40 RH 2.5PF	C405A	1
341	CHIP CERAMIC C	GR40 RH 5PF	C406	1
342	CHIP CERAMIC C	GR40 RH 11PF	C407	1
343	CHIP CERAMIC C	GR40 RH 18PF	C409	1
344	ELECTROLYTIC C	KMA 16V/47UF	C420-21	2
345	TRIMMER C.	DTM 20PF	VC401	1
346	MONOLYTHIC C.	RPE121C0.022UF	C426	1
347	MYLER FILMED C	A7Z 0.015UF	C401	1
348	TANTALUM C.	DN 35V/0.47UF	C429	1
349	TANTALUM C.	DN 35V/1UF	C427	1
350	TANTALUM C.	DN 10V/4.7UF	C418,22-23	3
351	TANTALUM C.	DN 10V/47UF	C425	1
352	WEDGE TYPE C.	SUW/50V 1000PF	C410	1
353	CARBON R.	1/6W(F) 10	R411,18	2
354	CARBON R.	1/6W(F) 47	R410	1
355	CARBON R.	1/6W(F) 330	R407	1
356	CARBON R.	1/6W(F) 270	R417	1
357	CARBON R.	1/6W(F) 390	R404	1
358	CARBON R.	1/6W(F) 1K	R409,16	2
359	CARBON R.	1/6W(F) 2.7K	R408	1
360	CARBON R.	1/6W(F) 4.7K	R406,15	2
361	CARBON R.	1/6W(F) 10K	R405,12-14	4
362	CARBON R.	1/6W(F) 15K	R401	1
363	CARBON R.	1/6W(F) 100K	R403	1
364	CARBON R.	1/6W(F) 150K	R402	1
365	2-PIN PLUG	SB-02P-HVQ-B	CN306P	1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X V C O

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
366	7-PIN PLUG	SB-07P-HVQ-B	CN305P	1
367	VCO STUD	4A10-1267		4
368	PCB MAT	4A10-1274		1
369	VCO ISOLATOR	4A10 1123		1
370	PCB	06VCUDT33Y		1
371	VCO UNIT CASE	4A10-1095		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X - P A

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
372	IC	78L08	IC605	1
373	POWER MODULE	M57704H	IC601	1
374	IC	NJM4556D	IC603	1
375	IC	NJM4558D	IC602,04	2
376	TRANSISTOR	2SA950Y	Q604	1
377	TRANSISTOR	2SB1019Y	Q603	1
378	TRANSISTOR	2SC2120Y	Q605	1
379	TRANSISTOR	2SC3102	Q602	1
380	DIODE	1SS177	D603,05,07-09	5
381	DIODE	1SS237	D601-02	2
382	DIODE	DS135D	D604	1
383	LED	TLS164	D606	1
384	JUMPER	1/6W(P) 0	J601	1
385	EMIFIL	BNP002-02	EM601-02	2
386	BARISTER	EBN220-D	EL601	1
387	TEST POINT	LC-2-S(BLN)	TP601	1
388	TEST POINT	LC-2-S(RED)	TP602	1
389	COIL	4A-S163	L609	1
390	COIL	4A-S364	L608	1
391	COIL	4A-S259	L620	1
392	COIL	4A-S260	L619,21	2
393	COIL	4A-S342	L618	1
394	LEAD CHOKE	10M(LN0018)	L601-04,13-14,22-24	9
395	LEAD CHOKE	15M(LN0009)	L605,17	2
396	LEAD CHOKE	20M(LN0010)	L611,15-16	3
397	CERAMIC C.	B 1000PF	C610,50,57,58A/B,61-66	7
398	CERAMIC C.	B 470PF	C601,03,05,34A/B,-35-40,51-54	15
399	ELECTROLYTIC C	KMA 16V/10UF	C649	1
400	ELECTROLYTIC C	KMA 25V/10UF	C602,04,06,11,28	5
401	ELECTROLYTIC C	KMA 25V/33UF	C609	1
402	TRIMMER C.	TC809-2/18PF	VC602-03	2
403	TRIMMER C.	TTC7-10D 10PF	VC601,04	2
404	MYLER FILMED C	A7Z 0.01UF	C655,59,62,64,68	5
405	MYLER FILMED C	A7Z 0.022UF	C627	1
406	MONOLYTICH C.	RPE121C0.01UF	C656	1
407	MONOLYTICH C.	RPE121C1000PF	C660,63,65,67	4
408	MICA C.	RM402 15PF	C630	1
409	MICA C.	RM402 56PF	C616-17	2
410	CHIP MICA C.	UC232H 5PF	C643,46	2
411	CHIP MICA C.	UC232H 10PF	C641-42,44-45	4
412	CHIP MICA C.	UC232H 33PF	C614-15	2
413	CHIP MICA C.	UC342H 220PF	C607	1
414	THROUGH C.	IHB340Y 1000PF	C629	1
415	TANTALUM C.	DN 35V/1UF	C647-48	2
416	CARBON R.	1/4W(F) 150	R602	1
417	CARBON R.	1/4W(F) 47	R609	1
418	CARBON R.	1/6W(F) 100	R606	1
419	CARBON R.	1/6W(F) 330	R617	1
420	CARBON R.	1/6W(F) 470	R601,15A	2
421	CARBON R.	1/6W(F) 68	R616	1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T X - P A

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
422	CARBON R.	1/6W(F) 1.5K	R622	1
423	CARBON R.	1/6W(F) 100K	R612	1
424	CARBON R.	1/6W(F) 10K	R614, 21, 24, 26, 28-29	6
425	CARBON R.	1/6W(F) 1K	R610	1
426	CARBON R.	1/6W(F) 2.2K	R611, 13, 15B, 18, 20	5
427	CARBON R.	1/6W(F) 22K	R619, 25	2
428	CARBON R.	1/6W(F) 330K	R623, 27	2
429	CARBON R.	1/6W(F) 4.7K	R607-08	2
430	SEMI FIXED R.	PK502HO 200	FVR601	1
431	SEMI FIXED R.	PK502HO 20K	FVR606-07	2
432	SEMI FIXED R.	PK502HO 2K	FVR603	1
433	SEMI FIXED R.	PK502HO 50K	FVR602	1
434	SEMI FIXED R.	PK502HO 5K	FVR604-05	2
435	PCB	10PAU21X		1
436	COAXIAL CORD	110-BEF-1.5D	CN7BP	1
437	THROUGH C.	DF572		2
438	COAXIAL CORD	110-NOKIA-1.5D	CN8P	1
439	COAXIAL CORD	10-1.5D		1
440	CN ASSY	110-601S	CN601S	1
441	CORD	0.2u-2050RN		1
442	CORD	0.5u-177RED		1
443	CORD	3.5W-150		1
444	PCB	10LPP116		1
445	LPF CASE	4A10-1269		3
446	LPF COVER	4A10-1270		3
447	PLATE CAPCITOR	4A10-1326		1
448	SHORT PL-A	4A10-1327		1
449	SHORT PL-B	4A10-1328		1
450	PA SILICON	3A10-0428		1
451	PA SPACER PL	3A10-0427		1

MODEL : BSR450 CODE : BSR450/UN UNIT : D C - S U P P L Y

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
452	TRANSISTOR	2SC3419Y	Q1	1
453	DIODE	20DL2C	D1	1
454	DIODE	DS135D	D2	1
455	JUMPER PLUG	DPSP02-002-431	J1P	1
456	JUMPER SOCKET	DSP01-002-430G	J1SP	1
457	FUSE HOLDER	F-40C	F1	1
458	CARBON R.	1/6W(F) 10K	R1	1
459	CN ASSY	110-6S	CN6S	1
460	2-PIN PLUG	8623-0212-000	CN16P	1
461	DC POWER CN	R01-2111	CN604P	1
462	FUSE	FU-15A		1
463	PCB	10PS218		1

MODEL : BSR450

CODE : BSR450/UN

UNIT : D - S U B

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
464	CERAMIC C.	B 1000PF	C1-C38	38
465	37-PIN D-SUB	XM2F-3710	CN602S	1
466	9-PIN D-SUB	XM2F-0910	CN603S	1
467	CN ASSY	110-607S	CN607S	1
468	CN ASSY	110-1S	CN1S	1
469	CN ASSY	110-2S	CN2S	1
470	CN ASSY	110-3S	CN3S	1
471	CN ASSY	110-4S	CN4S	1
472	37-PIN COVER	XM2T-3701		1
473	9-PIN COVER	XM2T-0901		1
474	D-SUB STUD	XM2Z-0023		4
475	CN PLATE	4A10-1256		1
476	PCB	10DSA117		1
477	NUT	NT-3PA1		4

MODEL : BSR450

CODE : BSR450/UN

UNIT : P A - C H A S S I S

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
478	CN ASSY	110-605S	CN605S	1
479	EARPHONE JACK	HSJ0780-01-010	CN606S	1
480	COAXIAL CORD	110-RX-1.5D	CN5/10	1
481	PA RADIATOR	1A10-0015		1
482	PA UNIT COVER	4A10-1251		1
483	BNC COVER	4A10-1334		1
484	N COVER	4A10-1576		1
485	STUD	4A10-1250		11
486	SEMS SCREW	SE-2.6 X 5		3
487	SEMS SCREW	SE-2.6 X 8		1
488	SEMS SCREW	SE-3 X 8		4
489	BIND SCREW	BDB-2.6 X 5		2
490	BIND SCREW	BDB-3 X 8		2
491	OVAL SCREW	OV-2.6 X 5		11
492	OVAL SCREW	OV-3 X 8		3
493	BIND SCREW	BD-2.6 X 5		4
494	FLAT WASHER	FW-3PA1		4
495	SPRING WASHER	SW-3PA1		4
496	NUT	NT-3PA1		2

MODEL : BSR450

CODE : BSR450/UN

UNIT : T E R M I N A L

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
497	IC	7805	IC802	1
498	IC	7808	IC801	1
499	IC	AN5733	IC813	1
500	IC	M51304L	IC803	1
501	IC	MC14002BP	IC808	1
502	IC	MC14013BP	IC809	1
503	IC	MC14049BP	IC810	1
504	IC	MC14585BP	IC807	1
505	IC	NJM4556D	IC804	1
506	IC	NJM4558D	IC812,15	2
507	IC	NJM555	IC811	1
508	IC	TA7252P	IC814	1
509	IC	TC5027P	IC806	1
510	IC	TC5043P	IC805	1
511	TRANSISTOR	2SC2458LY	Q801,05	2
512	TRANSISTOR	2SC2623A	Q807	1
513	TRANSISTOR	RN2202	Q802-04,06	4
514	RESISTOR ARRAY	RGLN4X473K	RA801	1
515	RESISTOR ARRAY	RGLN8X473K	RA802	1
516	DIODE ARRAY	NAL-8CS	DA801	1
517	DIODE	ISS177	D802-03,05-16,18,20	16
518	DIODE	ISS237	D821-22,23A/D,24-26	7
519	DIODE	DS135D	D801,04	2
520	RELAY	G2T4-1002R	RL802	1
521	RELAY	MR301-12S	RL801	1
522	DIP SWITCH	KDS16-112	S801	1
523	JUMPER PLUG	DSP02-002-431G	J801P-03P,05P-09P	8
524	JUMPER PLUG	DSP03-003-432G	J804P	1
525	TRANSFORMER	BT-600	MT801	1
526	CHOKE TRANS	CH-105	CH801	1
527	SERAMIC C.	B 1000PF	C807	1
528	ELETROLYTIC C.	KMA 50V/0.1UF	C831	1
529	ELETROLYTIC C.	KMA 50V/1UF	C826	1
530	ELETROLYTIC C.	KMA 25V/4.7UF	C808,29	2
531	ELETROLYTIC C.	KMA 16V/47UF	C830,34-35	3
532	ELETROLYTIC C.	KMA 16V/100UF	C803,05,36	3
533	ELETROLYTIC C.	SME 25V/470UF	C801,02,37	3
534	ELETROLYTIC C.	SME 25V/1000UF	C839	1
535	ELETROLYTIC C.	BP 50V/0.47UF	C832	1
536	MYLER FILMED C	A7Z 1000PF	C825,28	2
537	MYLER FILMED C	A7Z 2200PF	C818	1
538	MYLER FILMED C	A7Z 3300PF	C833	1
539	MYLER FILMED C	A7Z 6800PF	C844	1
540	MYLER FILMED C	A7Z 8200PF	C845	1
541	MYLER FILMED C	A7Z 0.01UF	C822,24,27,40	4
542	MYLER FILMED C	A7Z 0.015UF	C841-43	3
543	MONOLYTHIC C.	B32529-104K	C838	1
544	TANTALUM C.	DN 35V/0.1UF	C819-20,46A/B-7	5
545	TANTALUM C.	DN 35V/0.22UF	C848	1
546	TANTALUM C.	DN 35V/0.47UF	C809,11,13-16,49	7

MODEL : BSR450

CODE : BSR450/UN

UNIT : T E R M I N A L

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
547	TANTALUM C.	DN 35V/1UF	C804,06	2
548	TANTALUM C.	DN 10V/4.7UF	C810,17A/B,21	4
549	TANTALUM C.	DN 16V/10UF	C823,12	2
550	CARBON R.	1/6W(F) 100	R807,56A	2
551	CARBON R.	1/6W(F) 270	R818-19	2
552	CARBON R.	1/6W(F) 1K	R808,10A,21	3
553	CARBON R.	1/6W(F) 1.5K	R814,43,49,55B	4
554	CARBON R.	1/6W(F) 1.8K	R852	1
555	CARBON R.	1/6W(F) 2.2K	R864	1
556	CARBON R.	1/6W(F) 3.3K	R806,10B	2
557	CARBON R.	1/6W(F) 4.7K	R802-03,30,36,41-42,-45-46,53	9
558	CARBON R.	1/6W(F) 6.8K	R816	1
559	CARBON R.	1/6W(F) 10K	R801A,4,27,34,47-48,51,54A,55A,	16
560			.68-74	
561	CARBON R.	1/6W(F) 15K	R861	1
562	CARBON R.	1/6W(F) 18K	R856B,57	2
563	CARBON R.	1/6W(F) 22K	R801B,60	2
564	CARBON R.	1/6W(F) 27K	R832,37	2
565	CARBON R.	1/6W(F) 33K	R812,22,31,44,54B,67	6
566	CARBON R.	1/6W(F) 39K	R809B,13	2
567	CARBON R.	1/6W(F) 47K	R811,15,17,23A/B,65-66,24-26,33,	14
568			,35,38-39	
569	CARBON R.	1/6W(F) 68K	R820	1
570	CARBON R.	1/6W(F) 100K	R809A,28-29,40,50	5
571	CARBON R.	1/6W(F) 220K	R863	1
572	CARBON R.	1/6W(F) 270K	R862	1
573	CARBON R.	1/6W(F) 470K	R858-59	2
574	SEMI FIXED R.	PK502HO 500	FVR807	1
575	SEMI FIXED R.	PK502HO 1K	FVR810	1
576	SEMI FIXED R.	PK502HO 5K	FVR814-15	2
577	SEMI FIXED R.	PK502HO 10K	FVR801,08,12	3
578	SEMI FIXED R.	PK502HO 20K	FVR802-06,09	6
579	SEMI FIXED R.	PK502HO 1M	FVR811	1
580	2-PIN PLUG	3022-02A	TP801-803	3
581	5-PIN SOCKET	5513-05CPB	CN802S	1
582	8-PIN SOCKET	5513-08CPB	CN805S,07S	2
583	9-PIN SOCKET	5513-09CPB	CN804S	1
584	11-PIN SOCKET	5513-11CPB	CN801S,06S	2
585	15-PIN SOCKET	5513-15CPB	CN803S	1
586	5-PIN PLUG	8623-0511-000	CN6P	1
587	6-PIN PLUG	8623-0611-000	CN601P	1
588	3-PIN PLUG	8283-0311-000	CN605P	1
589	7-PIN PLUG	8283-0711-000	CN4P	1
590	7-PIN PLUG	8283-0711-002	CN12P	1
591	7-PIN PLUG	8283-0711-003	CN514P	1
592	8-PIN PLUG	8283-0811-000	CN3P	1
593	8-PIN PLUG	8283-0811-003	CN13P	1
594	9-PIN PLUG	8283-0911-000	CN1P	1
595	9-PIN PLUG	8283-0911-001	CN15P	1
596	9-PIN PLUG	8283-0911-002	CN607P	1

MODEL : BSR450

CODE : BSR450/UN

UNIT : T E R M I N A L

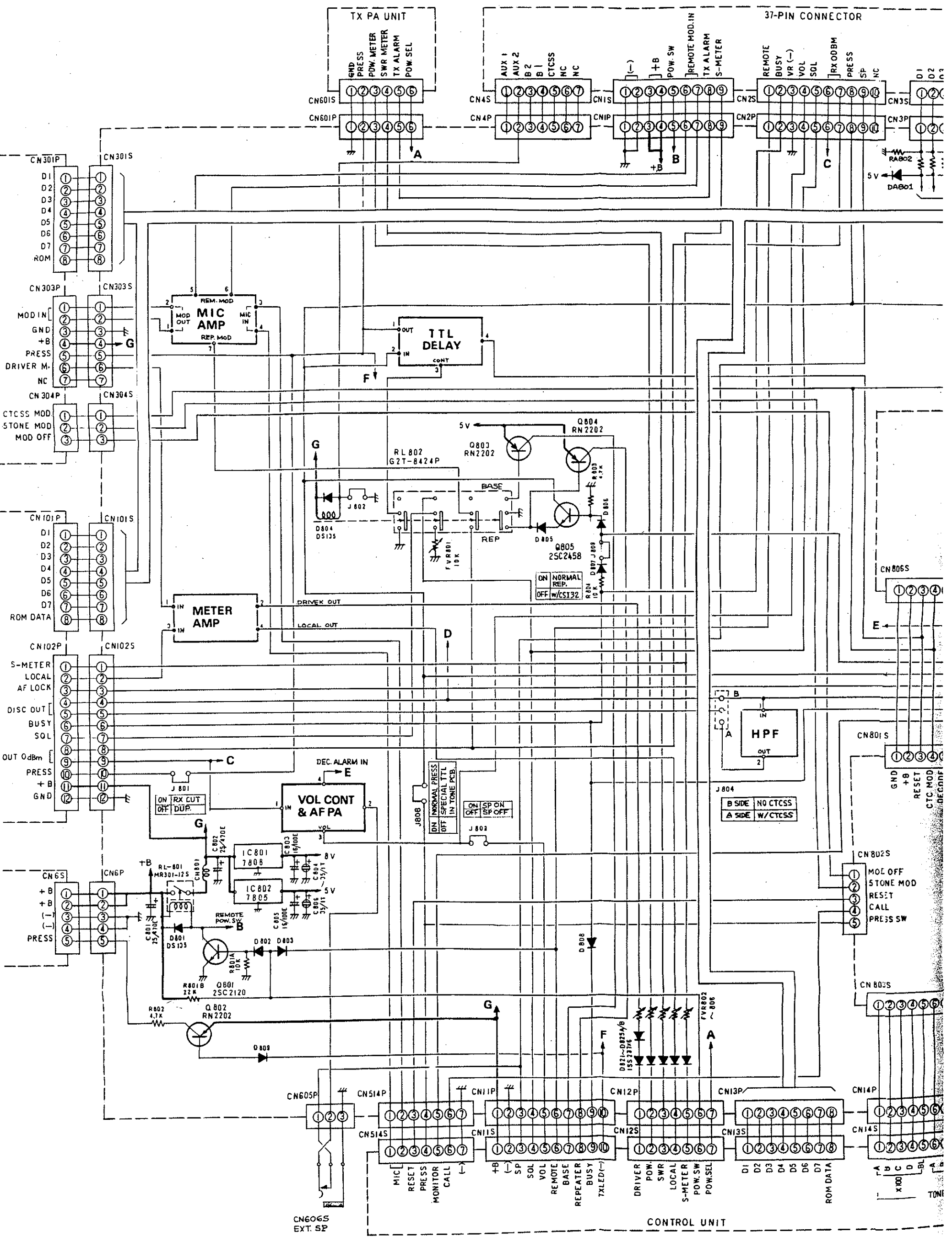
NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY.
597	10-PIN PLUG	8283-1011-000	CN2P	1
598	10-PIN PLUG	8283-1011-003	CN11P	1
599	15-PIN PLUG	8283-1511-003	CN14P	1
600	3-PIN PLUG	SB-03P-HVQ-A	CN304P	1
601	7-PIN PLUG	SB-07P-HVQ-A	CN303P	1
602	8-PIN PLUG	SB-08P-HVQ-A	CN101P,301P	2
603	10-PIN PLUG	SB-10P-HVQ-A	CN106P	1
604	12-PIN PLUG	SB-12P-HVQ-A	CN102P	1
605	IC SOCKET	ICC05-008-360T		4
606	IC SOCKET	ICC05-014-360T		3
607	IC SOCKET	ICC05-016-360T		3
608	JUMPER SOCKET	DSP01-002-430G	JP801S-09S	9
609	IC RADIATOR	4A10-1265		2
610	PCB	10NCB422		1
611	STUD	4A10-1253		4
612	PAN SCREW	PN-2.6 X 8		4
613	NUT	NT-2.6PA1		8
614	NUT	NT-3PA1		4
615	SPRING WASHER	SW-2.6PA1		8
616	SPRING WASHER	SW-3PA1		4
617	FLAT WASHER	FW-3PA1		4

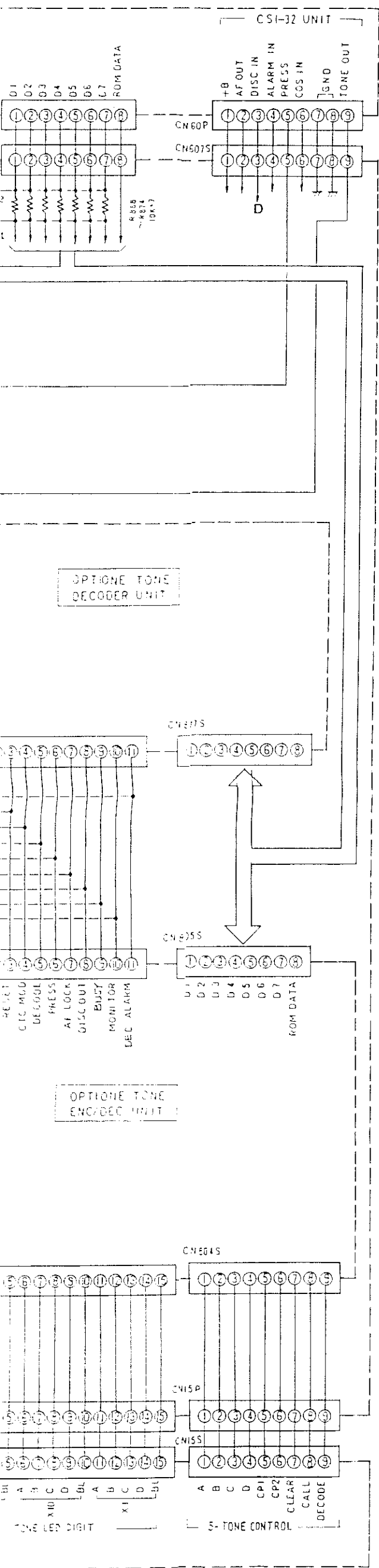
MODEL : BSR450

CODE : BSR450/UN

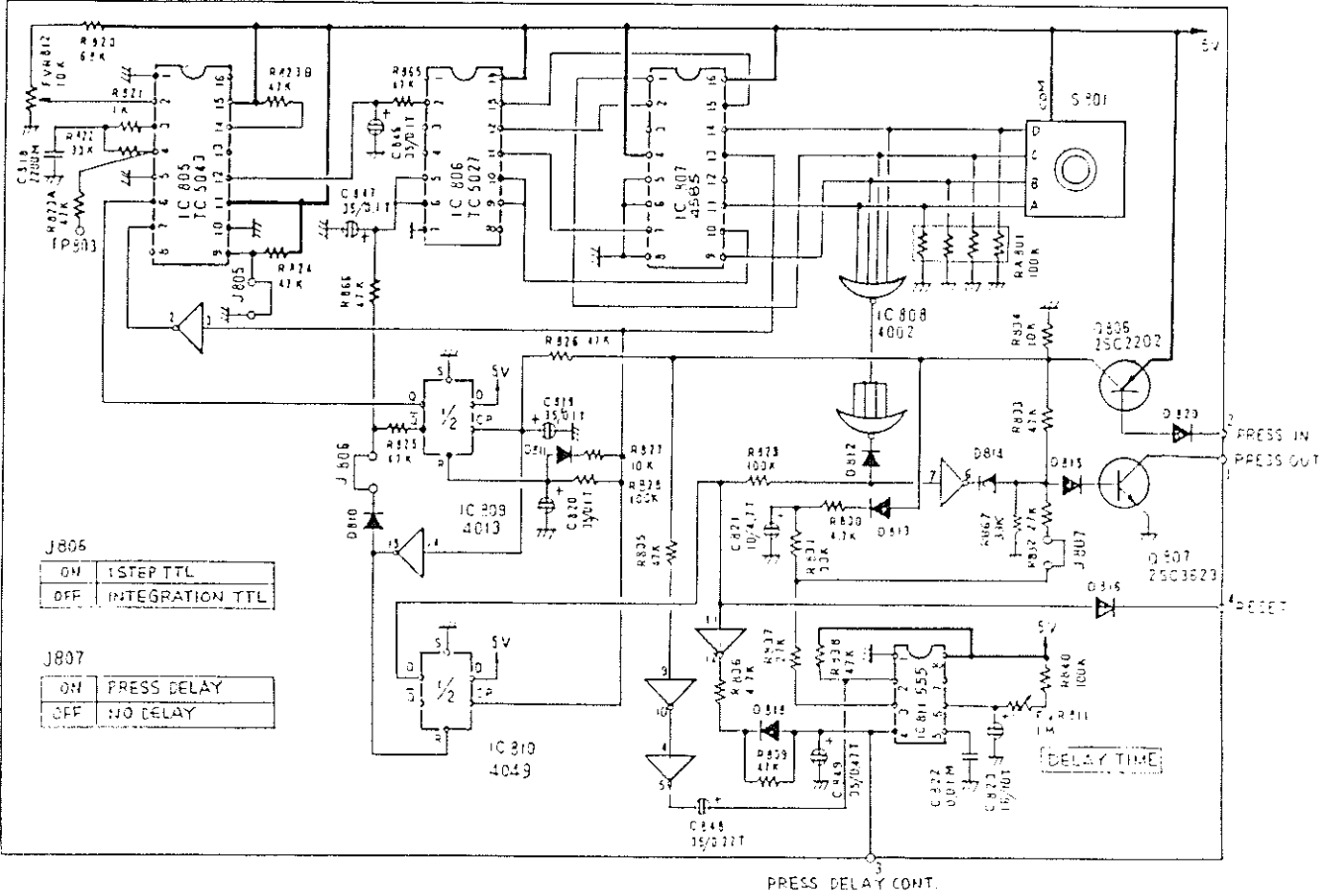
UNIT : CHASSIS

NO.	PARTS NAME	DESCRIPTION	CIRCUIT REFERENCE	Q'TY
618	FRONT PANEL	2A10-0142	FOR NOKIA	1
619	BNC-N PLUG	BNC-J/NJ(F)		1
620	LED	DB-4A	FOR NOKIA	1
621	CARBON R.	1/4W(P) 680	FOR LED	1
622	BNC-BNC PLUG	BNC-PA-JJ	CN10S	1
623	BNC-BNC CONV.	BNC 050-1450		1
624	FUSE	FU-15A		1
625	MAIN CHASSIS	3A10-0318		1
626	RIGHT SIDE PL	2A10-0114R		1
627	LEFT SIDE PL	2A10-0114L		1
628	HANDLE BLACK	4A10-1255B		2
629	TOP/BOTTOM PL	3A10-0314		2
630	CLUMPER	UL-13		3
631	37-PIN PLUG	F-37P-K117		2
632	37-PIN SHELL	F-PHGR-4		2
633	STUD	4A10-1261		9
634	CAP BOLT	CAP-4 X 10		8
635	FLAT WASHER	FWB-4PAI		4
636	BIND SCREW BL	BDB-4 X 6		8
637	BIND SCREW BL	BDB-3 X 6		12
638	BIND SCREW	BD-3 X 8		10
639	SEMS SCREW	SE-3 X 6		12
640	SEMS SCREW	SE-3 X 8		4
641	SEMS SCREW	SE-2.6 X 12		4
642	BIND SCREW	BD-2.6 X 8		1
643	BIND SCREW	SW-2.6 X 4		8
644	PL PROTECTOR	CE-12S		1
645	6-WRENCH	6-WRENCH 4PAI		1

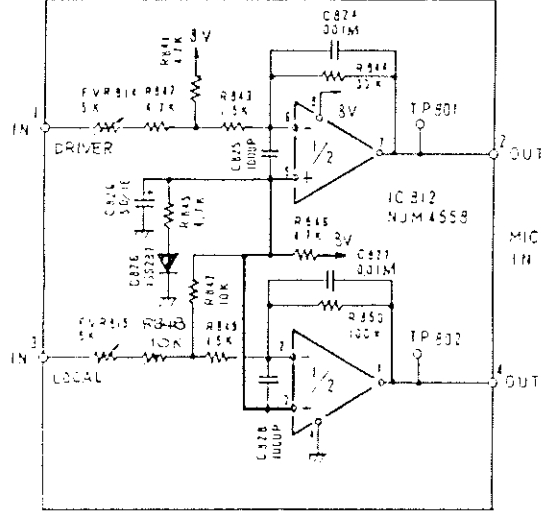




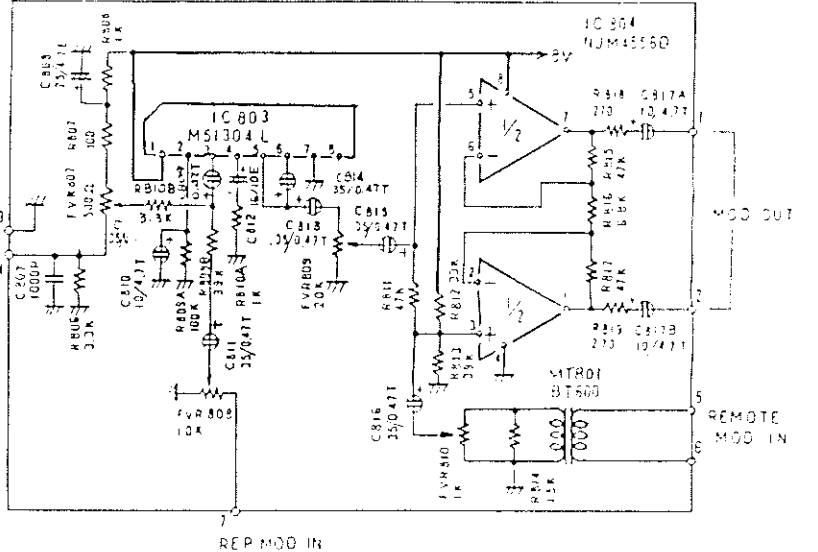
TTL & PRESS DELAY



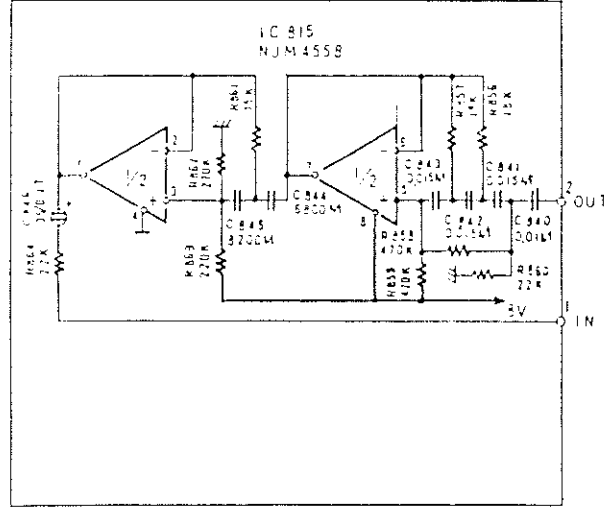
METER AMP



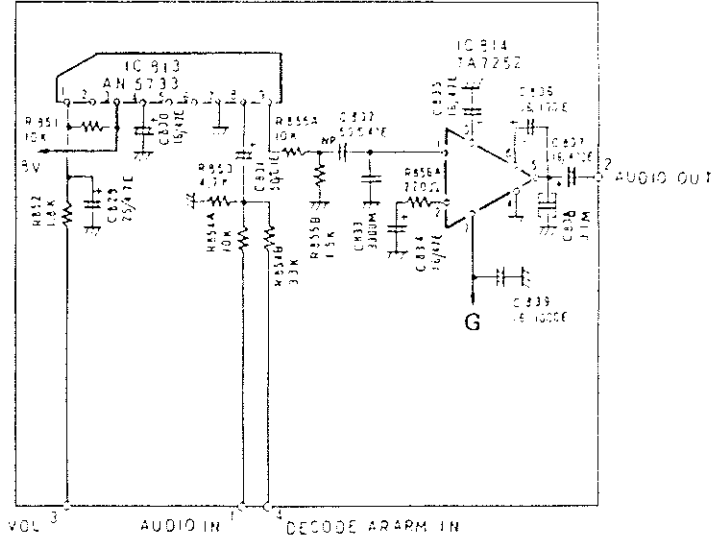
MIC AMP



H P F

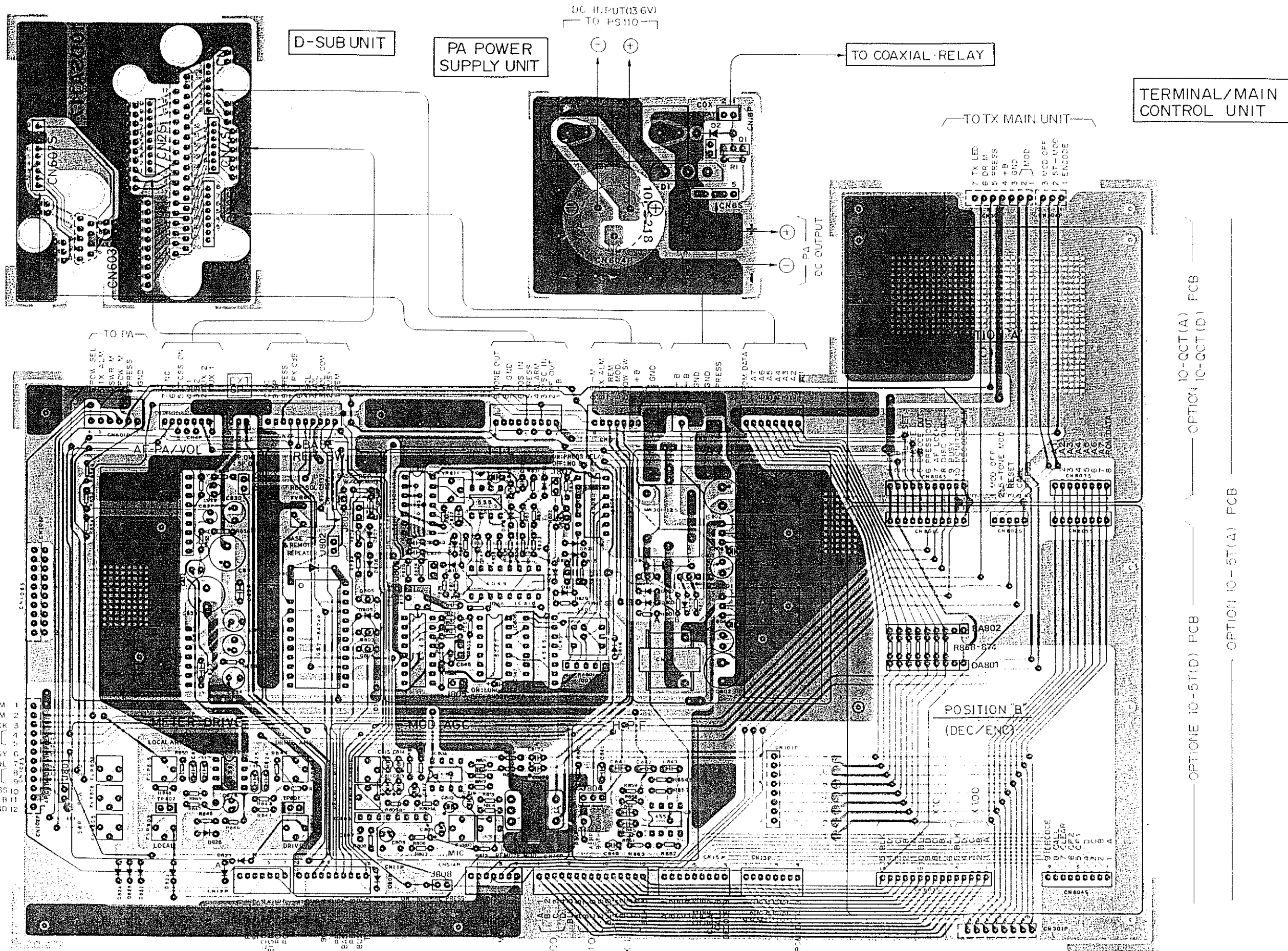


VOL CONT & AF PA



CIRCUIT DIAGRAM FOR BSR TERMINAL CONTROL UNIT

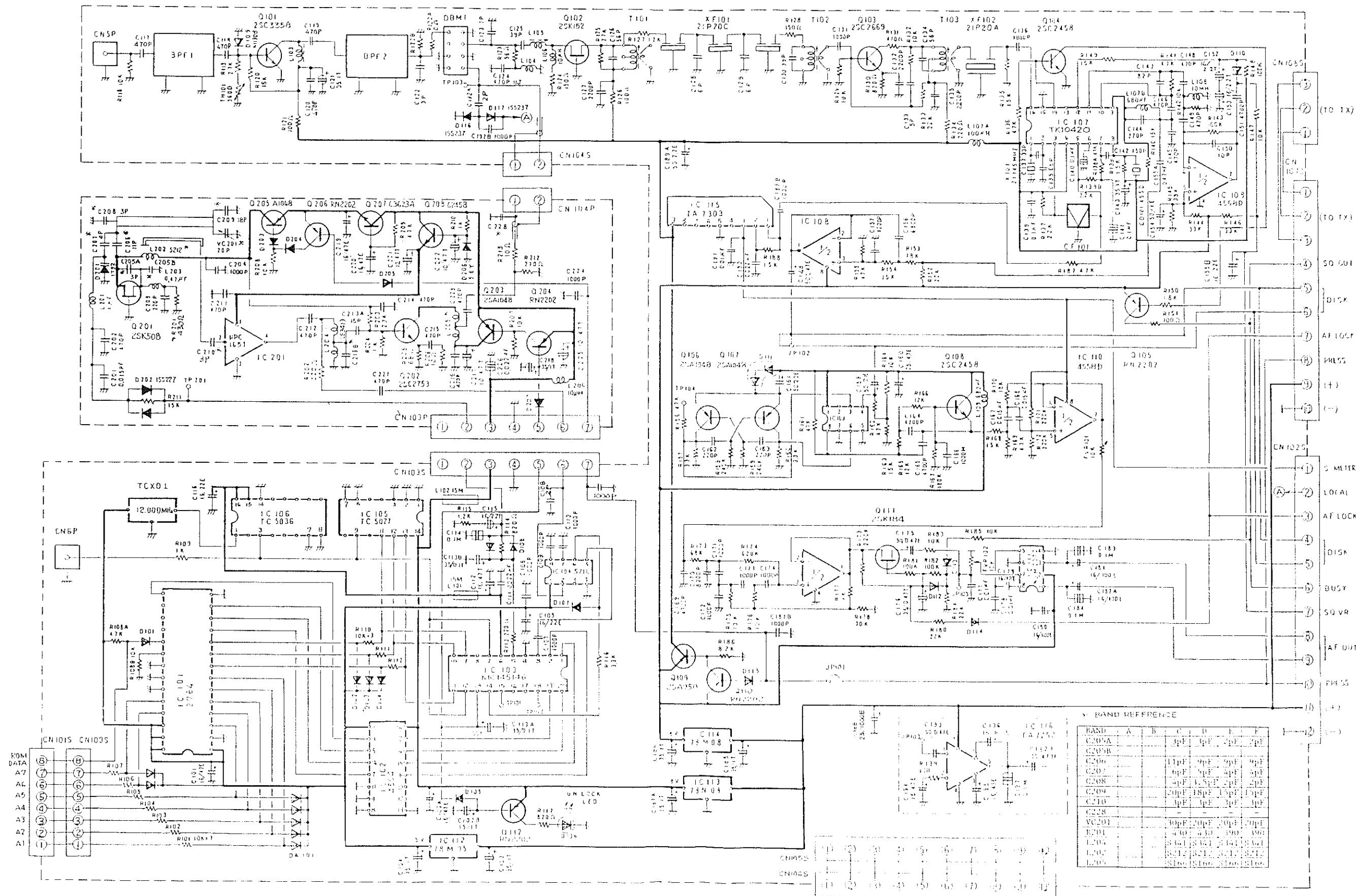
No	SIGNAL NAME
1	CH A5
2	CH A6
3	CH A7
4	ROM DATA
5	TO NE OUT
6	DISC OUT
7	GND
8	REMOTE
9	BUSY
10	VOL COM
11	VOLUME
12	SCUELCH
13	RX OdBm
14	RX OdBm
15	PRESS
16	SPEAKER
17	NC
18	GND
19	GND
20	CH A4
21	CH A3
22	CH A2
23	CH A1
24	NC
25	NC
26	5-METER
27	CLOCK ON
28	DI
29	B2
30	AUX 2
31	AUX 1
32	TX ALARM
33	MOD IN
34	MOD IN
35	POW SW
36	B -
37	B +



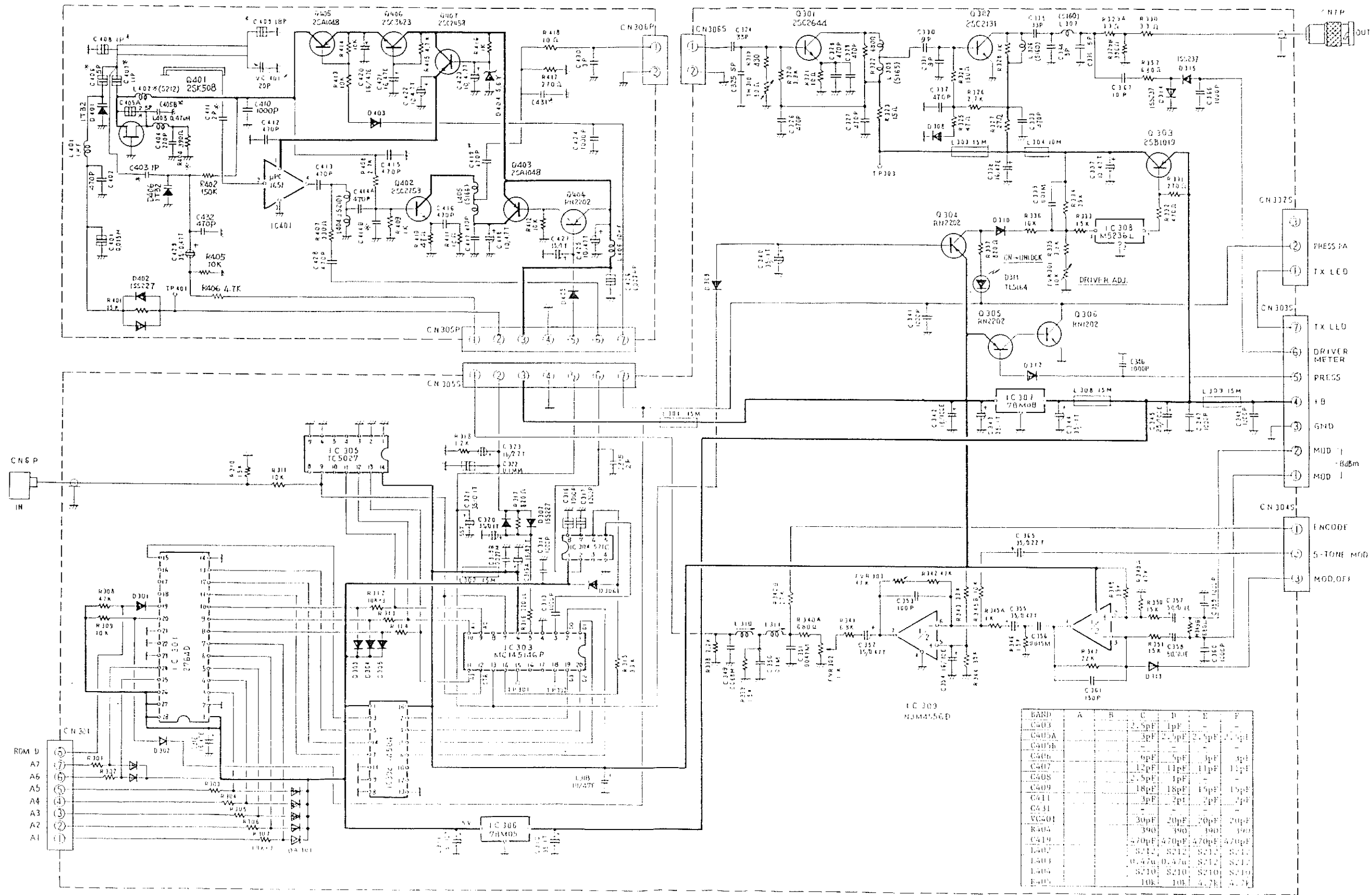
COMPONENTS LAYOUT FOR BSR TERMINAL/MAIN CONTROL UNIT

21P10C

21P10A CF 6 455 G



CIRCUIT DIAGRAM FOR BSR RX UHF MAIN UNIT

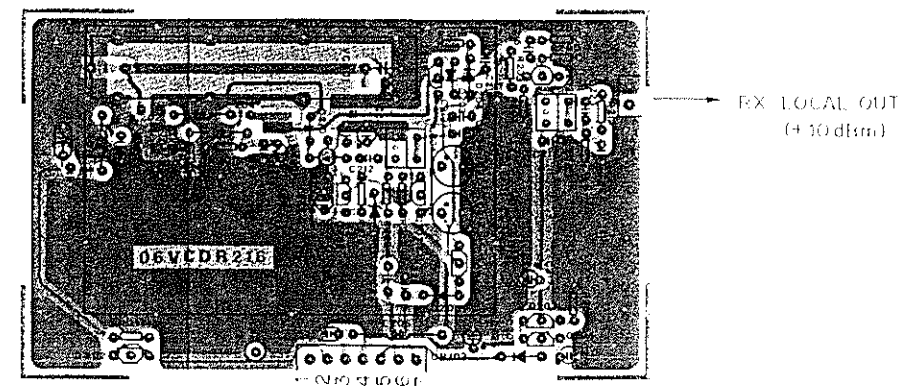
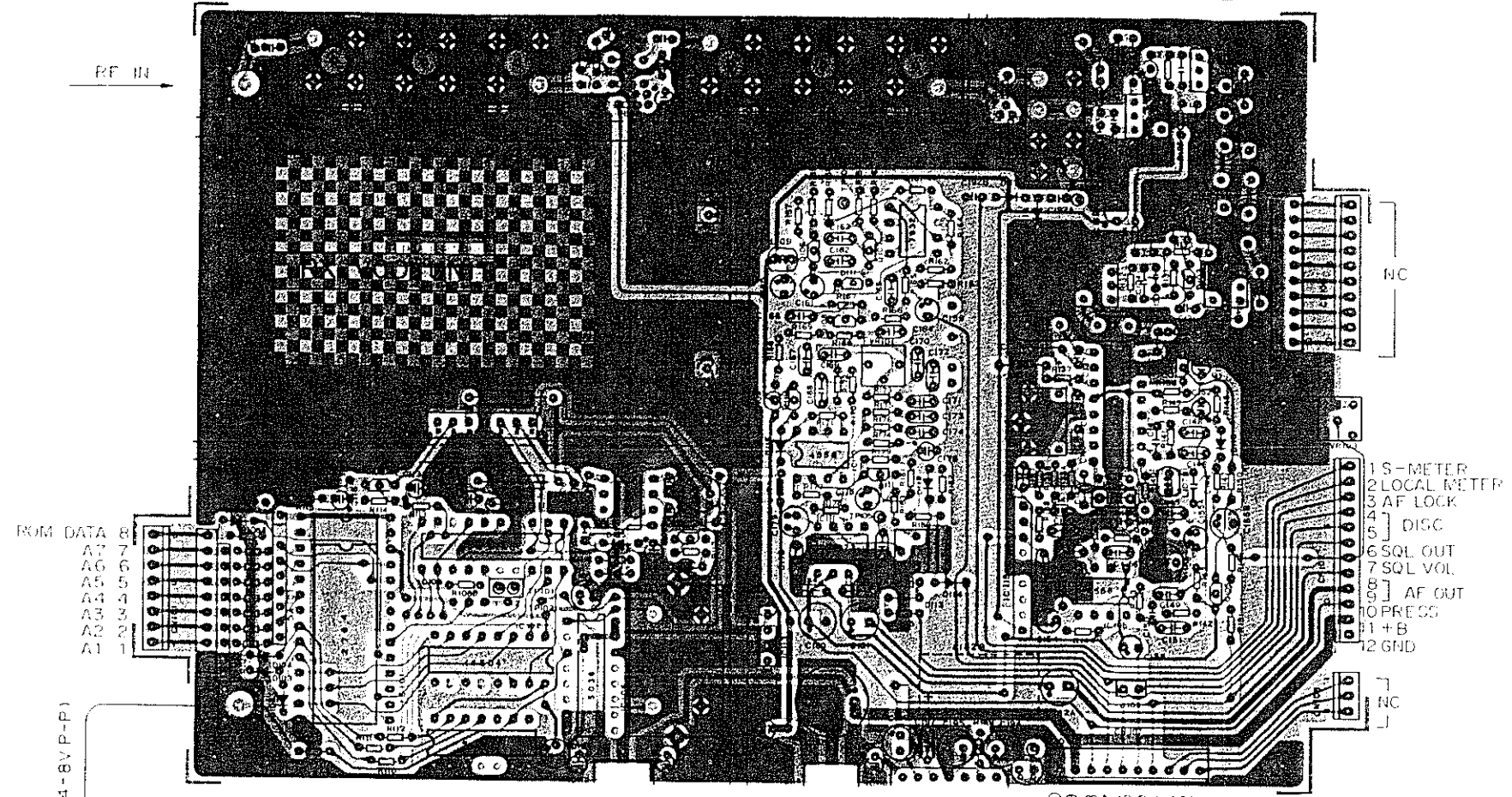


PART	A	B	C	D	E	F
C403			2.2nF	1pF		
C405a			3pF	2.2pF	2.2pF	2.2pF
C405b						
C406			9pF	5pF	3pF	3pF
C407			12pF	11pF	11pF	11pF
C408			2.5pF	1pF		
C409			18pF	18pF	15pF	15pF
C411			3pF	2pF	2pF	2pF
C431						
VC401			30pF	20pF	20pF	20pF
R404			390	390	390	390
C419			470pF	470pF	470pF	470pF
L407			S212	S212	S212	S212
L408			0.47u	0.47u	S212	S212
L409			S210	S210	S210	S210
E-05			10k	10k	4.7k	4.7k

CIRCUIT DIAGRAM
FOR
BSR TX UHF MAIN UNIT

RX MAIN UNIT

RX VCO UNIT



ROM DATA
A7 8
A6 7
A5 6
A4 5
A3 4
A2 3
A1 2
A1 1

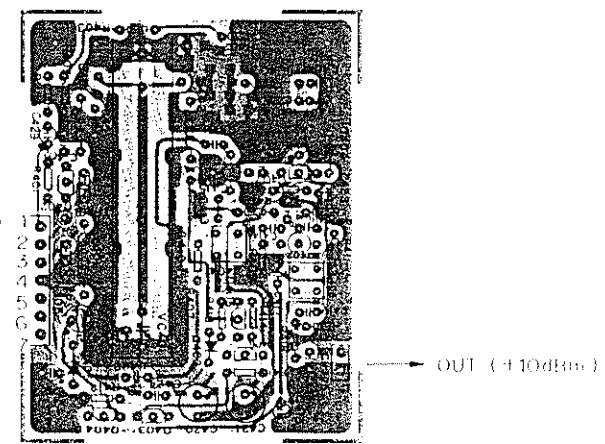
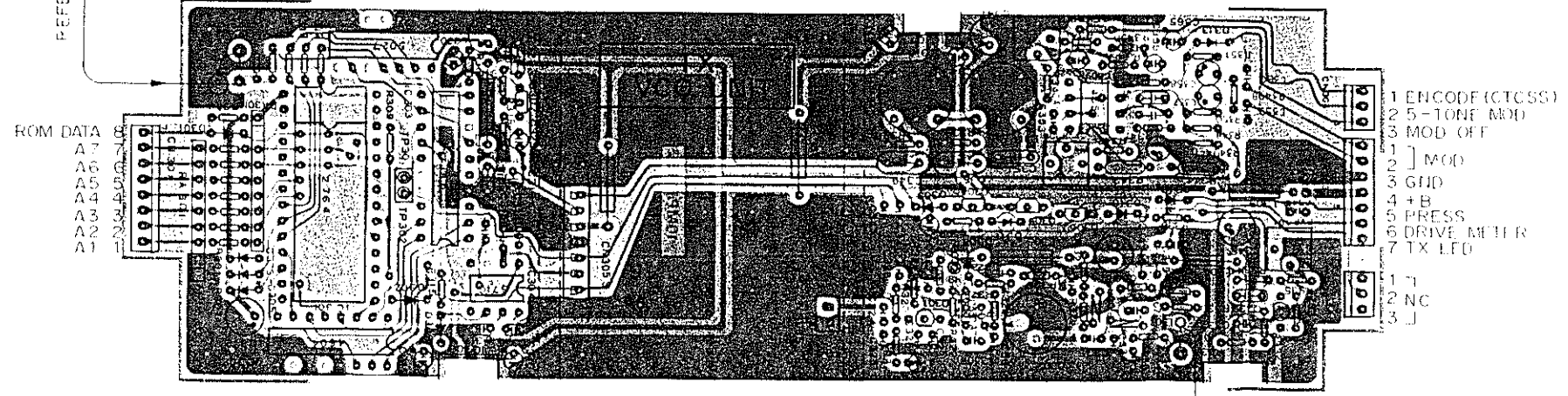
- 1 S-METER
- 2 LOCAL METER
- 3 AF LOCK
- 4] DISC
- 5]
- 6 SQL OUT
- 7 SQL VOL
- 8] AF OUT
- 9]
- 10 PRECS
- 11 +B
- 12 GND

11C
COMP OUT
BV
GND
UNLOCK PRO
RF IN
PRESS

RX LOCAL OUT
(+30dBm)

TX VCO UNIT

TX MAIN UNIT



ROM DATA
A7 8
A6 7
A5 6
A4 5
A3 4
A2 3
A1 2
A1 1

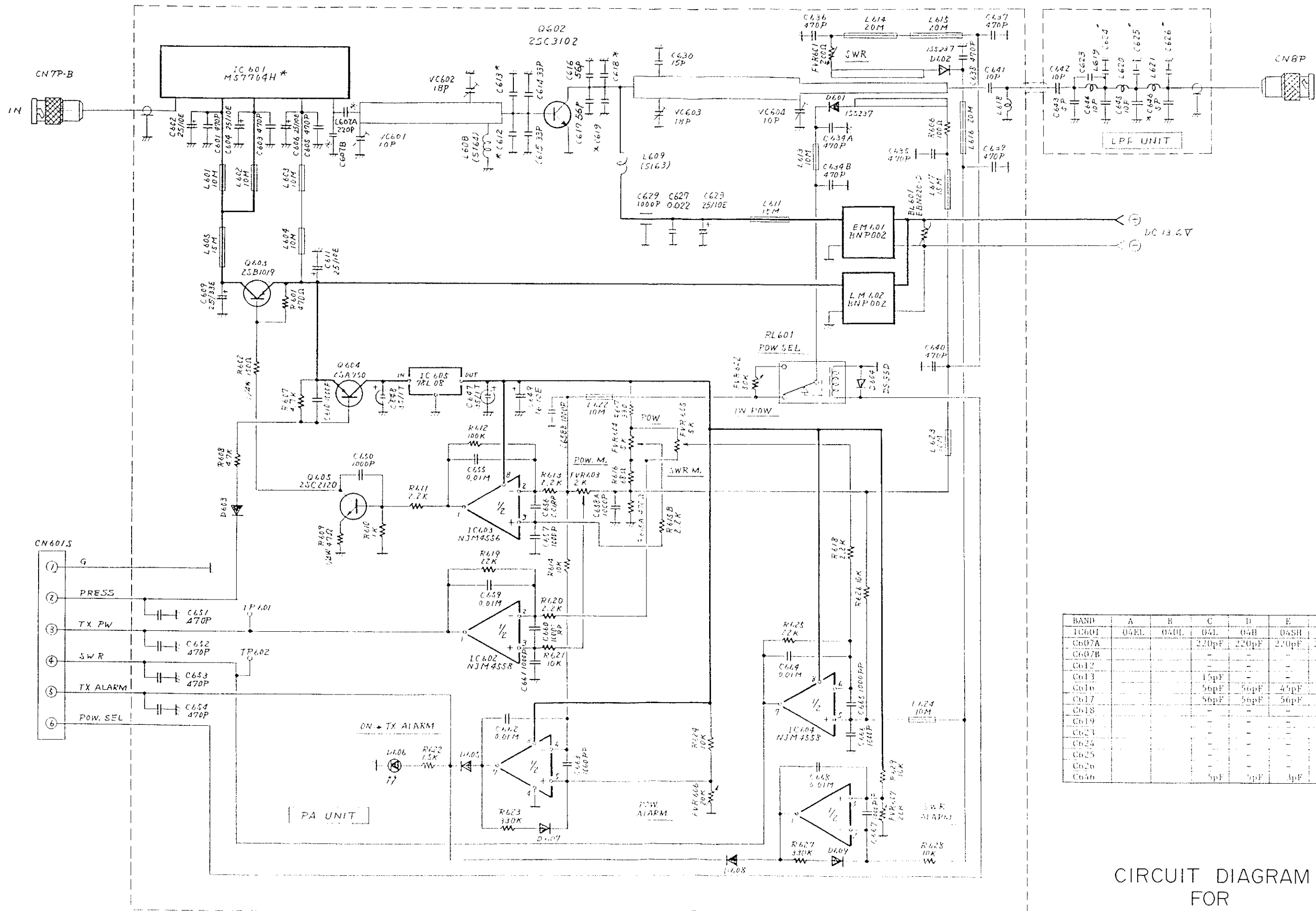
- 1 ENCODE (CTCSS)
- 2 5-TONE MOD
- 3 MOD OFF
- 4] MOD
- 5]
- 6 +B
- 7 PRESS
- 8 DRIVE METER
- 9 TX LED

MOD 1
COMP OUT 2
BV 3
GND 4
UNLOCK PRO 5
RF IN 6
PRESS 7

OUT (+10dBm)

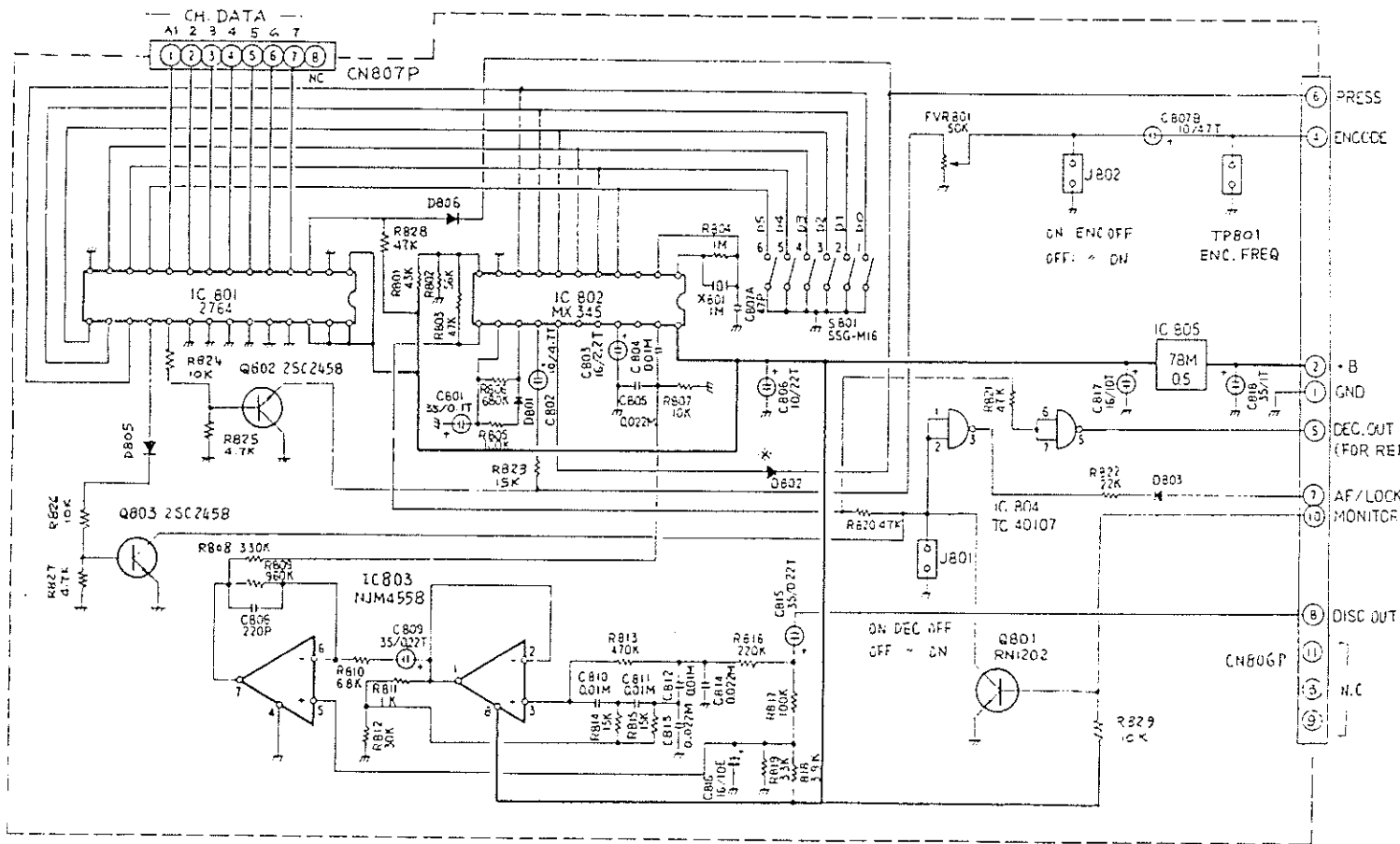
TX DRIVE OUT
(200mW)

COMPONENTS LAYOUT
FOR
BSR UHF TX/RX UNIT



BAND	A	B	C	D	E	F
IC601	04EL	04UL	04L	04H	04SH	043H
C607A			220pF	220pF	270pF	220pF
C607B						
C612						
C613			15pF			
C616			56pF	56pF	45pF	45pF
C617			56pF	56pF	56pF	56pF
C618						
C619						
C623						
C624						
C625						
C626						
C656			5pF	5pF	3pF	3pF

CIRCUIT DIAGRAM FOR BSR UHF PA UNIT



CROSS TONE FREQUENCY PROGRAM TABLE

Logic 1 = Vcc, Logic 0 = Vss

No.	EIA SPEC FREQ.	PROGRAM TABLE						EP-ROM CODE
		D5	D4	D3	D2	D1	D0	
1	A 67.0Hz	1	1	1	1	1	1	3F
2	B 71.9	0	1	1	1	1	1	3E
3	C 74.4	1	1	1	1	1	0	1F
4	A 77.0	0	0	1	1	1	1	3C
5	C 79.7	1	1	1	1	0	1	2F
6	B 82.5	0	1	1	1	1	0	1E
7	C 85.4	1	1	1	1	0	0	0F
8	A 88.5	0	0	1	1	1	0	1C
9	C 91.5	1	1	1	0	1	1	37
10	B 94.4	0	1	1	1	0	1	2E
11	- 97.4	1	1	1	0	1	0	17
12	A 100.0	0	0	1	1	0	1	2C
13	B 103.5	0	0	1	1	0	0	0E
14	A 107.2	0	0	1	1	0	0	0C
15	B 110.9	0	1	1	0	1	1	36
16	A 114.8	0	0	1	0	1	1	34
17	B 118.8	0	1	1	0	1	0	16
18	A 123.0	0	0	1	0	1	0	14
19	B 127.3	0	1	1	0	0	1	26
20	A 131.8	0	0	1	0	0	1	24
21	B 136.5	0	1	1	0	0	0	06
22	A 141.3	0	0	1	0	0	0	04
23	B 146.2	0	1	0	1	1	1	3A
24	A 151.4	0	0	0	1	1	1	3B
25	B 156.7	0	1	0	1	1	0	1A
26	A 162.2	0	0	0	1	1	0	1A
27	B 167.9	0	1	0	1	0	1	24
28	A 173.8	0	0	0	1	0	1	2B
29	B 179.9	0	1	0	1	0	0	0A
30	A 186.2	0	0	0	1	0	0	0B
31	B 192.8	0	1	0	0	1	1	32
32	A 203.5	0	0	0	0	1	1	30
33	B 210.7	0	1	0	0	1	0	12
34	A 218.1	0	0	0	0	1	0	10
35	B 225.7	0	1	0	0	0	1	22
36	A 233.6	0	0	0	0	0	1	20
37	B 241.8	0	1	0	0	0	0	02
38	A 250.3	0	0	0	0	0	0	00

Program for CTCSS/CHANNEL (EP-ROM Address)

Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Data	1E	2E	3E	4E	5E	6E	7E	8E	9E	10E	11E	12E	13E	14E	15E	16E

Address	60	61	62	63
Data	97E	98E	99E	-

Address	80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F
Data	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160

Address	D0	D1	D2	D3
Data	97D	98D	99D	-

J801 DECODE ON/OFF

ON : DECODE OFF

OFF : DECODE ON

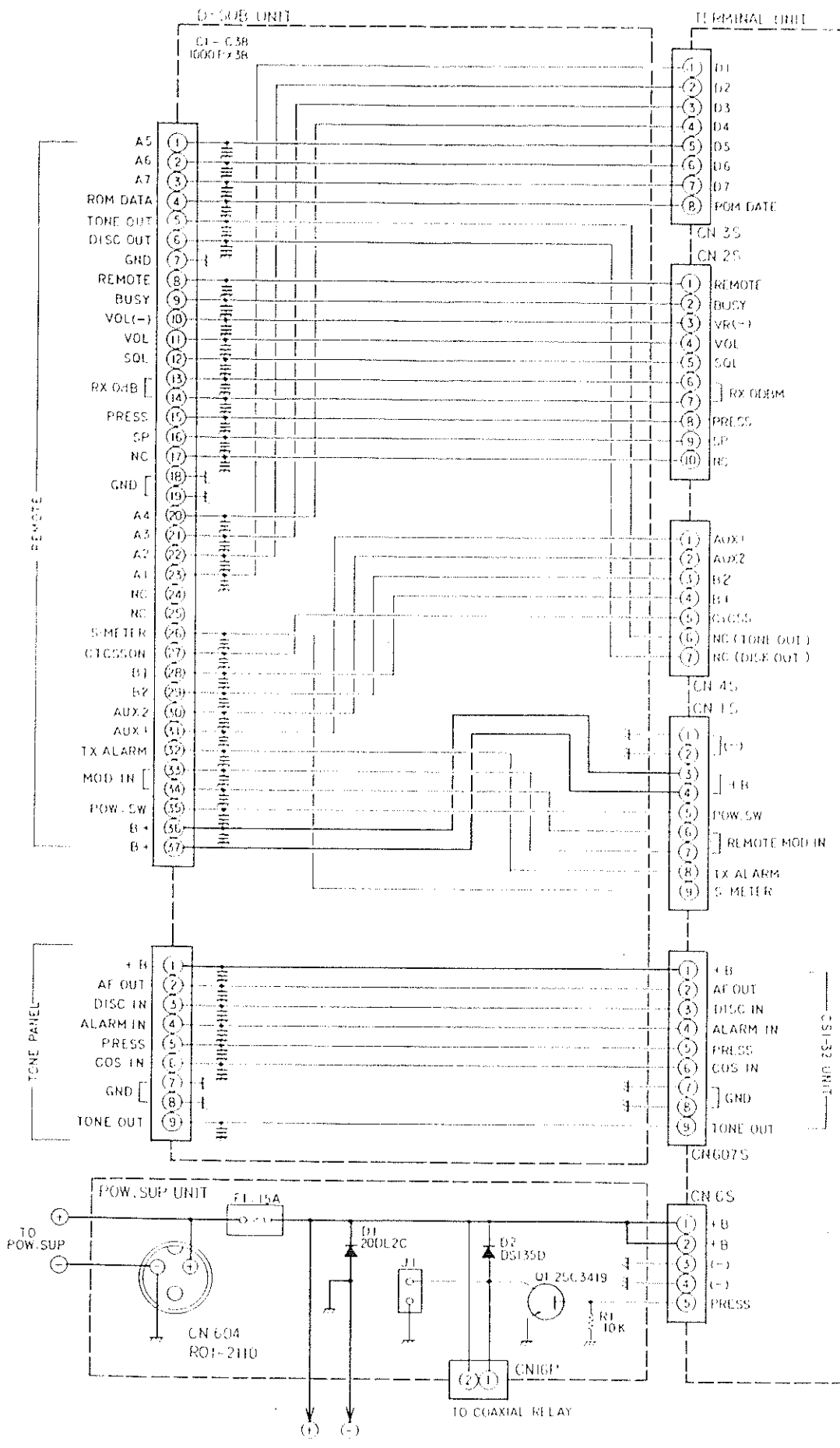
J802 ENCODE ON/OFF

ON : ENCODE OFF

OFF : ENCODE ON

* 0802 105177 1000T(A)
0802 DELETE 1000T(D)

CIRCUIT DIAGRAM FOR KG110 CTCSS ENC/DEC UNIT



CIRCUIT DIAGRAM
FOR
BSR D-SUB/POW. SUP UNIT