
ROBYN International Inc.

MODEL T-240D  **D**®

5 WATT 40 CHANNEL
CITIZENS
BAND TRANSCEIVER



ROBYN International Inc.

ROBYN EQUIPMENT GUARANTEE

ROBYN INTERNATIONAL agrees to repair or replace, without charge, any equipment, parts, or accessories which are defective as to workmanship or materials and which are returned to ROBYN transportation prepaid, provided:

- (1) The enclosed warranty card is returned within 15 days of purchase.
- (2) Notice of claimed defect is given ROBYN INTERNATIONAL in writing within 90 days from the date of purchase and goods are returned in accordance with ROBYN instructions.
- (3) Any failure due to use of equipment in excess of that contemplated in normal operations shall not be deemed a defect within the meaning of these provisions.

The guarantee of these paragraphs is void if the equipment is altered or repaired by others than ROBYN INTERNATIONAL or its authorized representatives.

ROBYN INTERNATIONAL reserves the right to make any change in design or to make addition to or improvements in ROBYN products without imposing any obligations upon ROBYN to install the changes in previously manufactured ROBYN products.

No other warranties, expressed or implied, shall be applicable to this equipment and the foregoing shall constitute the Buyer's sole right and remedy under the agreements contained in these paragraphs. In no event shall ROBYN have any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause.

WARRANTY REPAIRS

If it should be necessary to return equipment or materials under the above guarantee, direct your correspondence to:

ROBYN INTERNATIONAL, INC.,
Service Repair Department
Northland Drive
Rockford, Michigan 49341
P.O. Box 478

Give full particulars including the applicable details listed below. If an item is thought to be defective, such notice must give full information as to nature of defect and identification of part considered defective. Upon receipt of this notice, ROBYN INTERNATIONAL will promptly advise you with instructions for returning the equipment or materials.

Failure to follow these instructions will cause us unnecessary delay in handling your returned merchandise.

INFORMATION NEEDED

1. Type, number, and name of equipment.
2. Sales receipt or copy to validate date of purchase.
3. Nature of trouble, cause if known, and hours of service.
4. Complete instructions detailing work to be done by us.
5. Your name and return address.

It is important to use the same protective packing and to include a copy of the above information when returning the unit to us for service or repairs.

SPECIFICATIONS

Dimensions 12" W × 5" H × 8-1/4" D
 Net Weight 17 lbs
 Power Supply 105 — 120 volt, 50/60 Hz AC; 12 volt DC
 Power Consumption AC — 80 watts
 DC — 6.2A REC; 7 A TX. (13.6 volt)
 Channels 40

RECEIVER

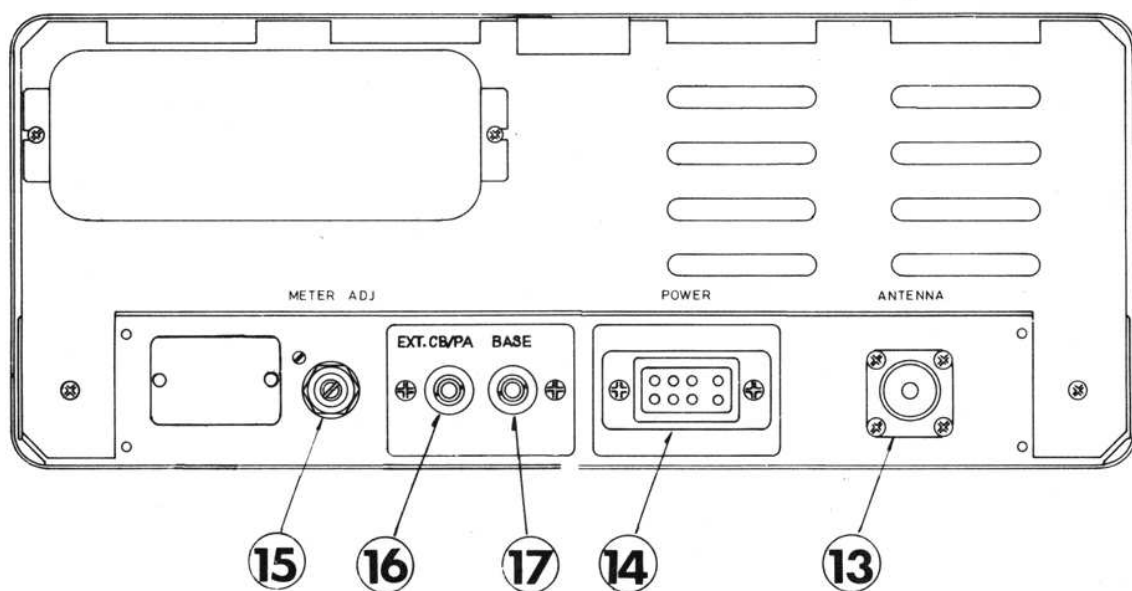
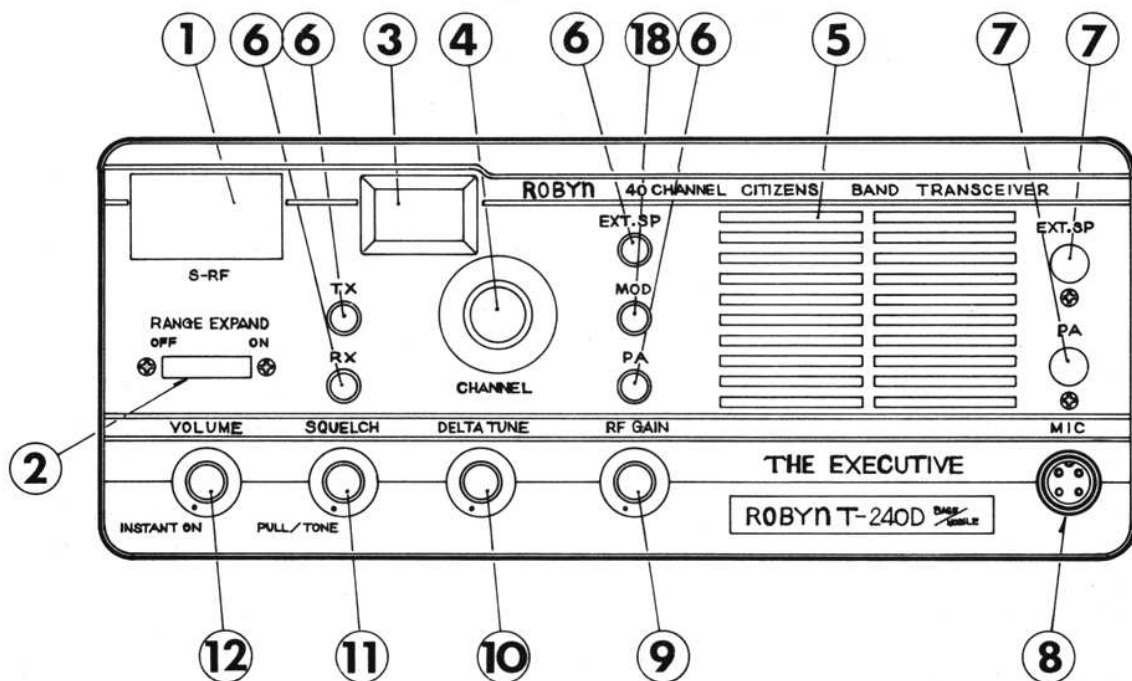
Input Impedance 50 — 52 ohms
 Sensitivity 0.8uV for 10dB S + N to N ratio
 Selectivity 6 KHz bandwidth —6dB
 Intermediate Frequency 1st IF 9.785 MHz; 2nd IF 455 kHz
 Image Rejection —75 dB
 Audio Output 4 watts
 External Speaker Impedance 8 ohms

TRANSMITTER

RF Power Output 4 watts
 Modulation AM
 Harmonic Suppression Better than 60dB down
 Frequency Stability Better than 0.005%
 Output Impedance 50 — 52 ohms

CHANNEL INDICATION NUMBERS VS CHANNEL FREQUENCY CHART

MHz	CH	MHz	CH	MHz	CH	MHz	CH
26.965	1	27.085	11	27.215	21	27.315	31
26.975	2	27.105	12	27.225	22	27.325	32
26.985	3	27.115	13	27.255	23	27.335	33
27.005	4	27.125	14	27.235	24	27.345	34
27.015	5	27.135	15	27.245	25	27.355	35
27.025	6	27.155	16	27.265	26	27.365	36
27.035	7	27.165	17	27.275	27	27.375	37
27.055	8	27.175	18	27.285	28	27.385	38
27.065	9	27.185	19	27.295	29	27.395	39
27.075	10	27.205	20	27.305	30	27.405	40



OPERATING CONTROLS

- 1) Illuminated Meter — indicates strength of incoming signal in "S" unit; or RF antenna power of the transmitter.
- 2) Range Expand Switch — switch to ON position to increase modulation when communicating with distance stations.
- 3) Channel Indicator — Desital dial show channel to the transceiver is set.
- 4) Channel Selector — rotating switch selects any one of 40 CB channels.
- 5) Speaker — 5 round speaker mounted behind front plate.
- 6) Mode Indicators — TX(BLUE) ON while transmitting — RX(GREEN) is ON during receive. These lights will not light if PA switch is pushed in. — PA (WHITE) is ON when PA switch is pushed in. — EXT. SPKR (GOLD) ON comes when this switch is pushed. — It is necessary that both the PA switch and the EXT. SPKR switch be pushed in for PA operation.
- 7) CB/PA switch — CB position provides normal CB operations PA position permits use of the transceiver as a public address system when in the transmit mode. This push type switch puts your transceiver either in the normal CB operation or makes it operate as a public address system. (EXT. SPKR switch must also be pushed in for PA operation.)
- 8) Microphone Connector — four pin connector for push-to-talk microphone provided with the unit.
- 9) RF Gain — not just a switch but a full 270° of RF control.
- 10) Delta Tune — Enables you to "tune-in" stations that are off frequency.
- 11) Squelch Control — this control is used to block out background noise when no signal is on the channel. Squelch is adjustable with higher sensitivity in the full clockwise position. PUSH-PULL TONE SWITCH is located on this control. Pull out for base sound.
- 12) Volume/Instant-on Switch — controls output level from the speaker. When in the full counter clockwise position it operates as an OFF/instant-on switch. The instant ON feature maintains 3 volts on the filaments when on AC.
- 13) Antenna Connector — this connector will accept a standard PL-259 from your base or mobile antenna.
- 14) Power Connector — this connector connects to either the AC or DC power cord.
- 15) Meter Adjust — this adjustment adjusts the needle of the "S" Meter.
- 16) EXT PA/CB Speaker Jack — standard phone jack for PA/CB external speaker.
- 17) BASE Speaker Jack — standard phone jack for CB external speaker or headphone.
- 18) MOD. light (RED) — will flash while talking into microphone (PA or CB position).

BASE STATION INSTALLATION

AC POWER CONNECTION

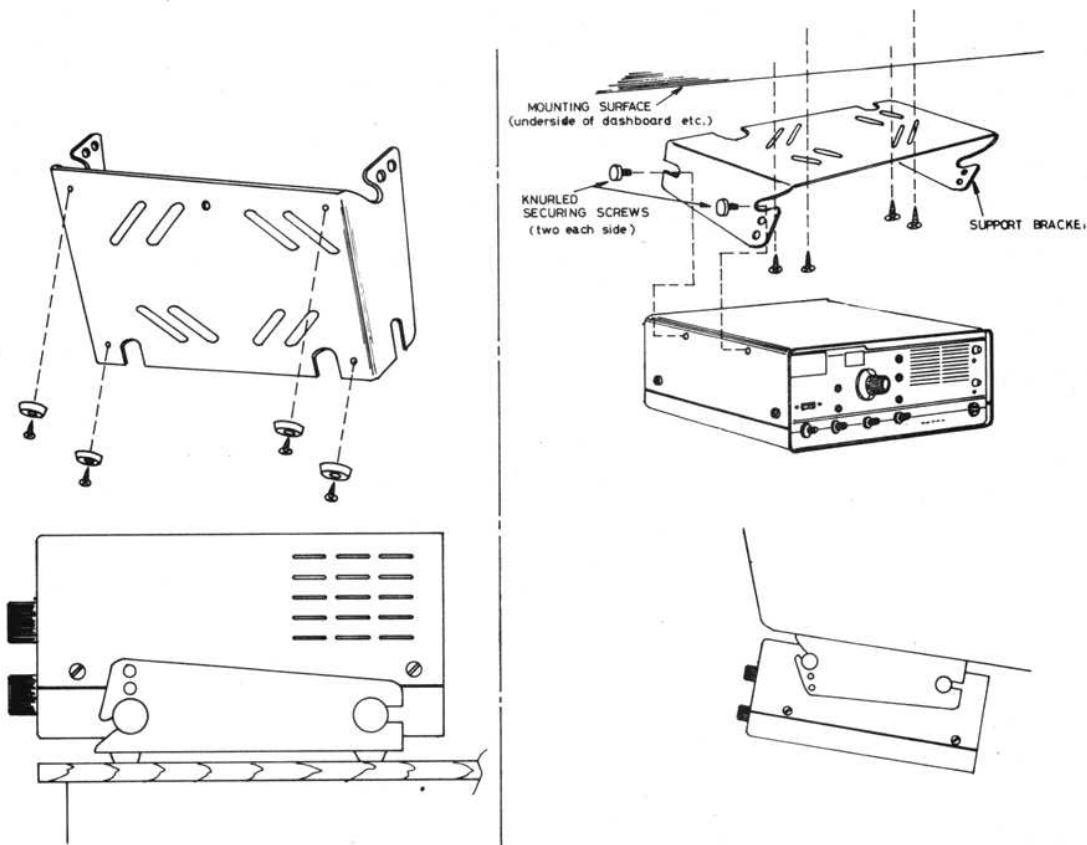
Select the AC power cord and attach the 8-pin connector to the 8-pin connector at the rear of the unit. ALWAYS LINE UP THE KEY WAY PROPERLY BEFORE PUSHING THE CABLE CONNECTOR ONTO THE TRANSCEIVER. DO NOT ATTEMPT TO FORCE THE CONNECTOR ONTO THE PINS, WHEN IT IS PROPERLY LINED UP, THE CONNECTOR WILL SLIP ON EASILY. MAKE CERTAIN THE TRANSCEIVER IS OFF (THE SWITCH IS LOCATED AT THE EXTREME COUNTER CLOCKWISE POSITION OF THE VOLUME CONTROL), THEN INSERT THE AC PLUG INTO THE AC OUTLET. FOR PROTECTION, THE AC INPUT TO THE TRANSCEIVER IS FUSED WITHIN THE UNIT.

MICROPHONE CONNECTION

Attach the four pin connector at the end of the microphone coil cord into the transceivers microphone connector in the center of the front panel. Be certain that it is secured firmly with the knurled ring.

ANTENNA CONNECTION

The antenna lead-in cable (RG-58U or RG8U) should be terminated with a PL-259 type coaxial connector which should then be attached to the antenna connector at the rear of the transceiver.



MOUNTING BRACKET

The mobile mounting bracket may be used in a base installation by attaching it to the underside of the transceiver. When so used the four rubber feet may be attached with a bracket. This will allow the transceiver to be set at an angle, providing a better view of the front panel.

MOBILE INSTALLATION

TRANSCEIVER LOCATION

Before installing the transceiver in the car, truck, boat, etc. . . make certain to use a location which permits the driver to operate the controls of the unit without interfering with his driving functions. The transceiver can be mounted to the underside of the instrument panel, on the floor, or above the drivers head if in a truck cab. Remove the bracket from the transceiver by loosening the four (4) knurled screws at the sides. Using the bracket as a pattern, locate the positions of the screws and drill holes for the four (4) self-threading screws which are provided.

After mounting the bracket, secure the transceiver to the bracket by means of a large narrow screws.

DC POWER CONNECTION

CAUTION: THE TRANSCEIVER IS DESIGNED FOR USE ONLY IN VEHICLES EMPLOYING A NEGATIVE GROUND SYSTEM. DO NOT USE IN POSITIVE GROUND VEHICLES!

The red wire in the DC power cable should be connected to the positive battery source of the vehicle. This lead is fused for 8 amps. Points normally available for connection are the accessory posts on the ignition switch, the accessory side of the fuse block, or directly to the positive lead of the vehicles battery. The black lead should be connected to any metal portion of the vehicle chassis.

When the red and black leads have been properly connected, the 8-pin connector of the DC power cord should then be attached to the power connector at the rear of the transceiver. Always line up the keyway properly before pushing the cable connector into the transceiver. Do not attempt to force the connector onto the pins, when properly lined up the connector will slip on easily.

MICROPHONE CONNECTION

Attach the 4-pin connector at the end of the microphones coil cord to the microphone connector on the transceivers front plate. Secure it firmly by means of the narrowed securing ring.

ANTENNA

The type of antenna best suited for mobile operation is a vertically polarized whip which can be either of the loaded type, or a full quarter wave. Both types use a metal body of the vehicles as a ground plane. The antenna can be mounted on the trunk deck, either of the rear fenders or on the roof.. When purchasing your mobile antenna, you will find full instructions for installation included with the antenna.

For optimum results of the mobile installation, the length of the coaxial cable should be ideally 11' 9" or multiples thereof. However, length other than multiples can provide optimum results if the antenna used can be tuned.

The lead-in cable should be terminated with a PL-259 Coaxial Connector which is then attached to the antenna connector at the rear of the transceiver.

GENERAL DESCRIPTION

RECEIVER SECTION

This Robyn Transceiver is designed to receive AM signals in the 26.965 to 27.405 MHz Citizens Band. The circuit is a highly sensitive and selective dual-conversion super-heterodyne type with one RF and IF amplifiers. Full 40 channels, crystal-controlled operation is provided by a PLL frequency-synthesized circuit consisting of 3 crystals.

The receiver section includes an S Meter for reading signal strength, an RF gain control, a tone control, an adjustable squelch control to eliminate background noise when no signal is being received, an automatic noise limiter to suppress atmospheric and man-made interference, and a delta tune which has a range of 2KHz, which permits reception of stations that are transmitting slightly off frequency. The exclusive instant-on actually increases tube life. The CB/PA switch permits remote listening to the receive from the PA speaker.

TRANSMITTER SECTION

The transmitter is designed to transmit AM signals in the 26.965 to 27.405 MHz Citizens Band. The PLL synthesized circuit used in the receive section is common to the transmitter, and provides full 40 channel PLL controlled operation. A push-to-talk ceramic microphone controls the reliable relay switching. Plate modulation with approximately 100% capability is used with up to 4 watts RF output power to the final RF stage. An RF meter indicate relative RF power at the antenna during the transmit mode.

OPERATING INSTRUCTIONS

RECEIVE MODE (GREEN LIGHT)

Place the CB/PA Switch in the CB position. Rotate the squelch control to the extreme counter clockwise position, and select desired channel. Rotate the volume control knob until the instant-on switch clicks, and the unit is in the on position. The meter light will glow softly. Advance the volume control about 50%. After approximately 4 seconds the tubes will warm up and you will hear the characteristic rushing sound of the receiver. Adjust the volume control to a comfortable listening level.

SQUELCH ADJUSTMENT

The squelch control is used to eliminate background noise when there are no signals present on the channel. To adjust the squelch control select a channel where there is no signal.

Turn the volume up to a fairly high level. Rotate the squelch control clockwise until the noise background disappears. This point is called the "squelch threshold"; and at this squelch position the receiver will be quite when there is no signal on the channel, but an incoming signal will be able to overcome the squelch action and be heard. This control is variable, and as it is advanced the squelch action is increased and consequently a stronger signal is required to break the threshold. To receive extremely weak signals or to disable the squelch circuit, merely turn the control fully counter-clockwise — do not operate the stand-by switch.

In the PULL/TONE position of the squelch control the tone of the receiver is deepened when the switch is pulled out. This does not effect the squelch.

DELTA TUNE

The delta tune control has a range of approximately 2 KHz; and can be used for tuning in a station that is slightly off frequency. The switch can be rotated either clockwise or counter clockwise to fine tune stations that are either high or low in frequency. When using this control, tune for the best reception and the highest "S" meter reading.

S/RF METER

During the receive mode, the "S" meter provides a relative indication of the signal strength of incoming signals. The S meter circuit has been preadjusted at the factory to indicate "S-9" with 100 microvolts at the antenna input. The "S" meter should read "0" when in a receive position and with no antenna connected. To adjust the meter if it is not at the "0" position, adjust the "Meter Adjust" slot at the rear of the set.

In the transmit mode, the meter will read relative antenna power output. The RF meter will read a true value only when the transceiver is connected to a 50-ohm resistive load. If the antenna and transmission line do not offer such a load, the meter reading will be inaccurate.

RF GAIN

This control permits the listener to control the RF input signal separate from the audio gain. Thus, when talking to a close station the RF can be turned down to prevent blasting.

TRANSMIT MODE (RED LIGHT)

IT IS ILLEGAL TO OPERATE THE TRANSMITTER SECTION OF THIS TRANSCEIVER PRIOR TO RECEIVING A VALID STATION LICENSE AND CALL SIGN. PART 95 OF THE F.C.C. RULES AND REGULATIONS DEALING WITH THE CITIZENS RADIO SERVICE MUST BE OBTAINED, READ AND UNDERSTOOD.

Before using the unit to transmit, make sure that the —PA CB— switch is in the CB position. Select the channel on which you want to operate, making certain that there is no other traffic on that channel. To transmit, simply press the microphone button, then while holding it at approximately a 45 degree angle, speak into it at a normal voice level. The meter will indicate that you are radiating a signal.

When talking to a local station switch the range expand switch to the off position. This decreases your microphone gain and will sound better to your contact. Throw this switch on for distant contacts.

When the unit is transmitting, the receiver is silent — consequently reception is impossible when you are in the transmit mode. In like fashion, your signal cannot be heard by another station when it is transmitting. Each station must take its turn.

PUBLIC ADDRESS OPERATION

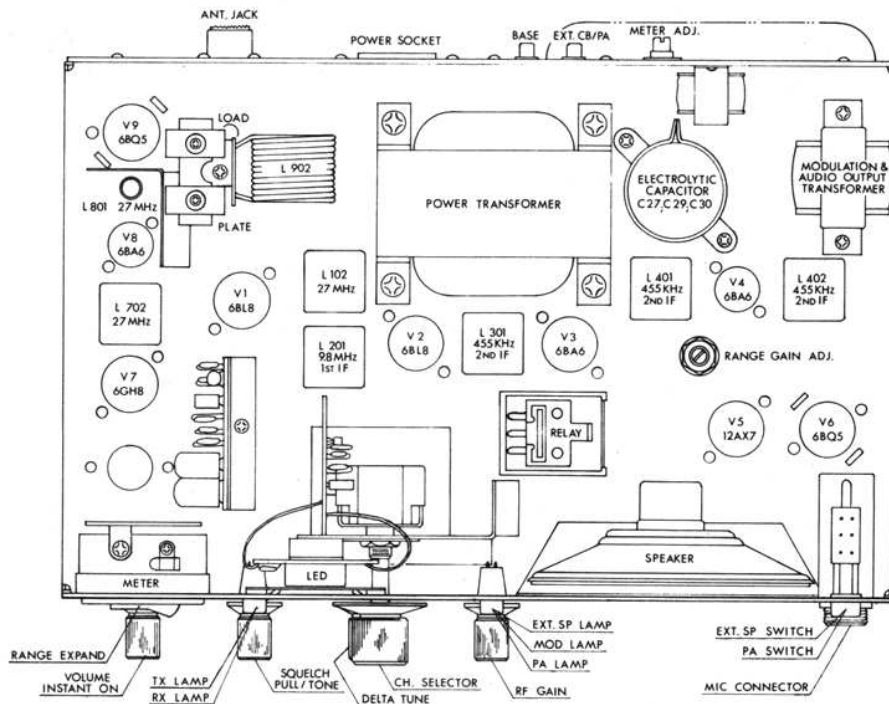
Provision has been made for utilizing this unit for public address operation. For PA; connect an external 8 ohm speaker into the EXT PA/CB jack in the back of the unit. Push the CB/PA switch, press the push-to-talk switch on the microphone and talk into it as you would when transmitting on a CB channel. Your voice will be heard on the external speaker it will not radiate into your antenna.

The rear BASE jack may also be used to connect a headset for normal CB operations. When headsets are plugged into this BASE jack and EXT. SP switch is unpushed in, the internal speaker is disengaged and the headphones are operational.

WARNING

FCC REGULATIONS REQUIRE THAT ANY ADJUSTMENT MADE TO THE TRANSMITTER MUST BE MADE UNDER THE SUPERVISION OF, OR BY, A PERSON HOLDING A VALID FIRST OR SECOND CLASS RADIO TELEPHONE OPERATOR'S LICENSE.

As an aid to the service technician, this manual contains a complete voltage chart, a layout diagram identifying components, a schematic diagram, and a functional block diagram. Also included are instructions for aligning receiver and transmitter sections.



SIMPLE TROUBLE SHOOTING

TUBES

Tubes may be checked in a do-it-yourself tube tester in a neighborhood store, or may be taken to a service shop for testing. Replace any weak or defective tubes with new ones of identical type. Before replacing tubes in the transceiver, refer to the diagram (on a following page) which shows the correct tube location.

SOLID-STATE DC POWER SUPPLY

This transceiver employs a solid-state (2-transistor) power supply circuit during 12 volts DC operation (no vibrator is used). The transistors, which are located on the rear panel, have been treated with a light protective coating to avoid possible oxidation. Under no circumstances should the

transistors be allowed to come into contact with the vehicle chassis, metal brackets, etc. This will cause a shortcircuit and may destroy the transistors.

PILOT LAMPS

There are a pilot lamp and five mode indicator lamps used in the transceiver. The pilot lamp is built into the meter. This is run considerably below their maximum rating and should therefore last almost indefinitely.

FUSES

The 12-volt DC power cable uses an "in-line" fuse. The value of this fuse is 8 amp. Provision has also been made for fusing the primary circuit during 117 volt AC operation by means of a 2 amp fuse located within the transceiver (remove bottom cover for access to the fuse).

In the event of complete failure (tube filaments and pilot lamps not lighting), the fuse should always be checked first. If it has failed, replace only with one of a similar rating. Repeated failure of a fuse would indicate a serious fault in the transceiver which should be investigated.

FEDERAL COMMUNICATIONS COMMISSIONS REQUIREMENTS

Your new Robyn transceiver is a combination receiver-transmitter designed and built for licensed Class D operation on any of the 40 frequencies designed as citizens band channels by Federal Communications Commission. You are required to read and understand Part 95 of the FCC rules and regulations prior to operation of this unit. You are also required to complete FCC FORM 555B and FCC FORM 505 your license to operate this unit. FCC regulations will be violated if you transmit with this unit prior to receipt of your license.

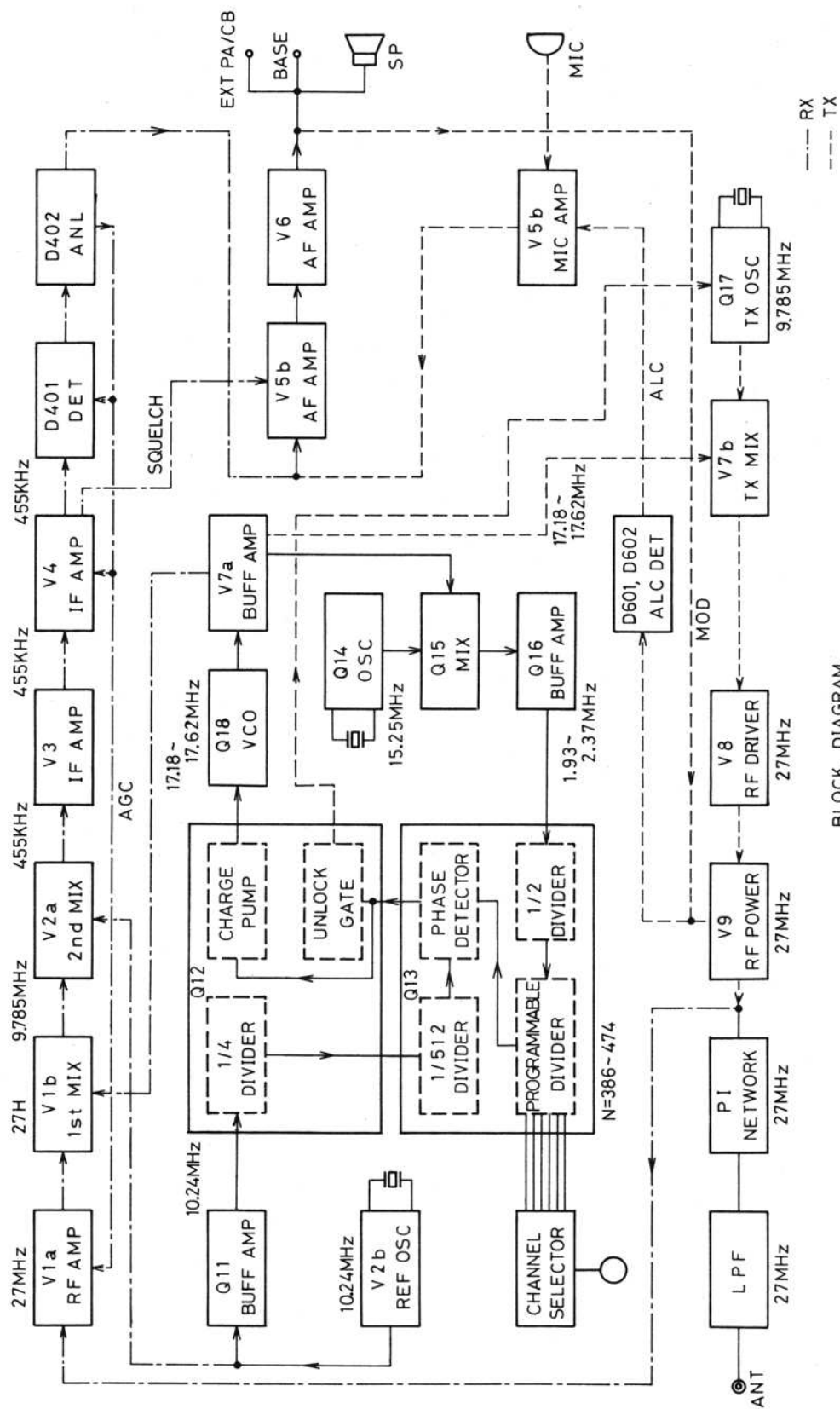
NOTE:

The technical information, diagrams, and charts provided in this manual are supplied for the use of a qualified holder of a first or second class radiotelephone license in servicing this transceiver. It is the users responsibility to see that this unit is operating at all times in accordance with the F.C.C. Citizens Radio Service regulations.

If you install or service your own transceiver, do not attempt to make any transmitter tuning adjustment. Transmitter adjustments are prohibited by the F.C.C. unless you hold a first or second class radiotelephone license or are in the presence of a person holding such a license. A Citizens Band or Amateur license is not sufficient.

ROBYN INTERNATIONAL. INC. HEREBY
CERTIFIES THAT THIS UNIT HAS BEEN DESIGNED
AND MANUFACTURED IN ACCORDANCE WITH PART 15,
PART 95 OF THE CURRENT FCC RULES AND REGULATIONS.
AS OF THE DATE OF MANUFACTURE.

ROBYN INTERNATIONAL INC.
Rockford, Michigan 49341, U.S.A.



BLOCK DIAGRAM