

LIMITED WARRANTY

1. The warranty applies to the original or subsequent owners of the product for a period of 90 days from the original purchase date.
 2. We agree to repair or replace **all** parts showing defects in material or workmanship.
 3. Warranty service will be provided free of charge if unit is delivered to the Regency dealer of original purchase, or to us intact, transportation charges prepaid, within 90 days of the date of sale to the original purchaser.
 4. The warranty does not apply to units subject to misuse, neglect, accidents, incorrect wiring not our own, improper installation, or units used in violation of the instructions furnished by us. Nor does the warranty apply to units: damaged by lightning, excess current, repaired or altered by unauthorized personnel, or units with altered or removed serial numbers.
 5. To have your unit serviced under the warranty return it, freight prepaid to dealer of original purchase, or:
Customer Service Department—or—Customer Service Department
Regency Electronics, Inc. Regency Communications
7707 Records Street 1227 S. Patrick Dr.
Indianapolis, Indiana 46226 Satellite Beach, Florida 32937
- Only factory authorized personnel are authorized to perform warranty service.
6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
 7. Warranty will not be in force unless a completed warranty registration card is received by Regency.

CHANGES

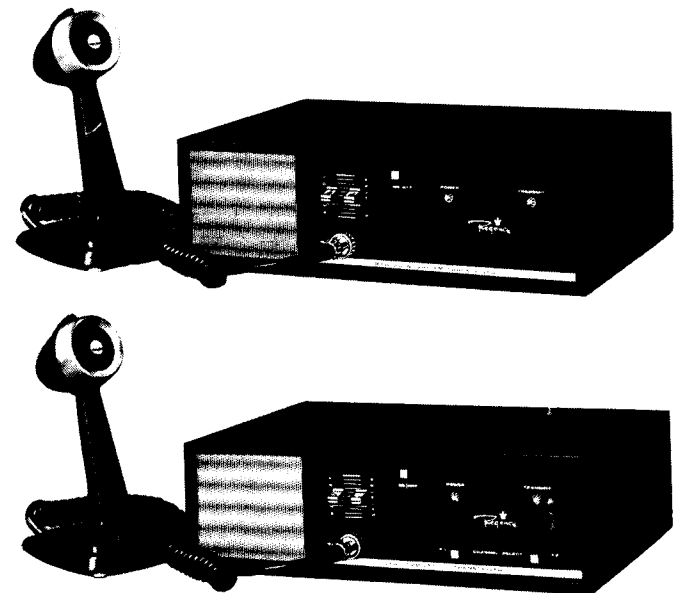
The Company reserves the right to modify or change the equipment, in whole or in part, at any time prior to delivery in order to include refinements deemed appropriate by the Company, but without incurring any liability to modify or change any equipment previously delivered, or to supply new equipment in accordance with earlier specifications.

WARNING

ALL TRANSMITTER FINAL ADJUSTMENTS ARE SEALED AT THE FACTORY. IF ANY OF THESE SEALS ARE BROKEN, THE WARRANTY ON ALL POWER SEMI-CONDUCTORS IS VOIDED.



VHF/FM BUSINESS / INDUSTRIAL TWO-WAY MOBILE TRANSCEIVER



MODEL BTH-201B and BTH-202B

INSTRUCTION MANUAL

UNPACKING

- 1 - Transceiver Unit
- 1 - AC Power Cord
- 1 - Frequency Label
- 1 - Instruction Manual
- 1 - Warranty Card

REGENCY COMMUNICATIONS, INC.
1227 S. Patrick Drive
Satellite Beach, FL 32937

To be filled out and returned to:
Regency Electronics, Inc.
7707 Records Street
Indianapolis, Indiana 46226

OPERATION

It is highly recommended that the section on Operation be read before the initial usage of this unit. A few minutes spent in reading these instructions will certainly reduce or eliminate the number of questions, and problems, that may arise concerning optimum performance and proper usage.

MAINTENANCE

It is recommended that the services of a qualified electronic technician be used for troubleshooting.

FCC Regulations require that any repairs or adjustments made on the Transmitter portion of this radio be made under the supervision of a technician holding a First or Second Class FCC Operators License.

DO NOT TAMPER WITH INTERNAL ADJUSTMENTS ---
DAMAGE TO THE EQUIPMENT AND/OR IMPROPER
OPERATION MAY RESULT.

DESCRIPTION

The Regency BTH-201B and BTH-202B are all-transistor, FM transceivers designed for base station use in the VHF (150-162 MHz) Communications Band. The BTH-201B is a single channel radio; the BTH-202B is a two-channel radio. The receiver section of these models is a double-conversion, super-hetrodyne type with plug in crystal-controlled frequency selection.

The transmitter section is crystal controlled on each channel. The transmitter employs phase modulation for the ultimate in carrier stability. Internal controls are provided for adjusting the deviation from 0 to 7 KHz. This control is factory adjusted for a maximum of 5 KHz deviation, in conformance with FCC Regulations.

The transmitter and receiver sections both employ band-pass circuitry so that maximum transmitter power and receiver sensitivity are maintained across the entire band (150-162 MHz). The receiver's input and transmitter's termination impedance is 50 ohms.

A built-in regulated power supply converts the 117 volt AC input to 13.6 volts DC for use by the radio's circuits. The power supply regulator maintains a constant voltage for optimum circuit performance under all conditions.

The BTH-201B and BTH-202B utilize silicon transistors throughout for dependability. The use of two Integrated Circuits provides for compactness and circuit reliability. In addition, a ceramic filter employed in the receiver's second I.F. ensures optimum performance in areas of the country where numerous channels are closely grouped together.

The transmitter employs 2 new ruggedized, Balanced Emitter RF power transistors for high power output (20 watts). A large copper heat sink plus a SWR bridge limiting circuit ensures maximum protection even under long periods of "key down" operation and open or shorted antenna conditions. Also, there is virtually no power drop off during lengthy transmissions. In addition, the attenuation of spurious emissions from the transmitter, transmitter power output, frequency stability, performance under varying conditions of temperature and line voltage, and other specifications exceed the limits required for Type Acceptance by the Federal Communications Commission.

NOTE: The Regency Type BTH-201B and BTH-202B Transmitters are Type Accepted under Parts 21, 81, 89, 91 and 93, of the Federal Communications Commission Rules and Regulations. The receiver is certified under Part 15, Subpart C as required by the

Some extra features include:

1. Provision for connection of an external or remote speaker.
2. A plug-in high impedance desk type microphone.
3. A front panel mounted speaker.
4. A mar-resistant vinyl covered cabinet.
5. Temperature compensated crystals which maintain their frequency accuracy over wide variations in temperature.
6. Convenient push-button channel selection on the BTH-202B.

BTH-201B & BTH-202B SPECIFICATIONS

RECEIVER

Frequency Range..... 150-162 MHz

Sensitivity..... 0.35 μ v (nom.), 20 DB Quieting

Selectivity..... 6 DB Down $\pm$ 7 KHz
50 DB Down $\pm$ 16 KHz

Image Rejection..... 45 DB

Spurious Rejections..... 60 DB

Modulation Acceptance..... $\pm$ 7 KHz

Audio Output (3-4 Ω) Speaker..... 3 Watts @ 10%,
or less, Distortion
5 Watts Maximum

Squelch System..... All Electronic Noise
Compensated

Channels..... 1 Crystal Controlled (BTH-201B)
2 Crystal Controlled (BTH-202B)

I.F. Frequencies..... 10.7 MHz & 455 KHz

TRANSMITTER

Antenna Impedance..... 50 Ohms

Frequency Range..... 150-162 MHz

Power Output..... 20 Watts (min.)

Output Frequency Stability..... $\pm$ 0.0005%
(-30 $^{\circ}$ C to +60 $^{\circ}$ C)

Spurious & Harmonic Rejection..... 57 DB (min.)

Modulation..... Phase Modulation with
automatic deviation limiting

Deviation..... Automatic Limiting with internal
adjustment from 0-7 KHz deviation
Factory adjusted to $\pm$ 5 KHz max.

Emission Designator..... 16F3

Mike Pre-Amp..... FET Input with
internal level control

Microphone..... Plug-in desk type, high Z
Ceramic supplied

Channels..... 1 Crystal Controlled (BTH-201B)
2 Crystal Controlled (BTH-202B)

Power Amp Protection..... SWR Bridge
Limiting Circuits

POWER

Power Requirements..... 117 VAC, 60 Hertz

Receive (Squelched)..... 0.20 A, 23 Watts

Receive (Max. audio output)..... 0.30 A, 35 Watts

Transmit..... 1.2 A, 140 Watts (Max.)

Fuse Size..... 1 1/2 Amp. 3AG

SEMICONDUCTORS

Integrated Circuits	2
Silicon Transistors (Total).....	29
Silicon BET Power Transistors.....	2
Field Effect Transistors.....	2
Zener Diodes.....	4
Varicap Diodes.....	2
Signal Diodes.....	3 (BTH-201B) 5 (BTH-202B)
Rectifier Diodes.....	3
Thermistor.....	1

INSTALLATION

117 VAC Installation:

The BTH-201B and BTH-202B transceivers are designed for "desk top" base station operation. Plug the AC power cable into a 117 VAC, 60 Hertz receptacle and route a 50 ohm coaxial cable from the antenna connector on the back of the unit to the antenna. Because of their solid state construction, these radios are cool-running, however it is good practice to provide normal ventilation and avoid excessively warm locations such as near radiators or heating vents.

Because of differences among individual installations and the special requirements of VHF two-way antennas, it is recommended that the radio be installed by a qualified electronic technician experienced in VHF two-way radio installation.

Crystal Installation:

The following Regency Part Number crystals are used:

Receive Crystals:	301-740
Transmit Crystals:	301-741

FCC Regulations require that transmitter crystals be installed and adjusted "on frequency" under the supervision of a technician holding a First or Second Class FCC Operators License. The use of transmit crystals other than that which is specified above may cause improper operation and/or violation of the FCC Rules and Regulations. Receive crystals should be installed by a qualified electronic technician.

After the crystals are installed, it will be necessary to have both the receiver and transmitter sections of the radio "tuned up" on the frequencies to be used. All transmitter adjustments must be made by a technician holding a First or Second Class FCC Operators License.

OPERATION

Volume Control/Off-On Switch:

This control varies the audio output level for the internal speaker. It also varies the level of audio present at the external speaker connection. Clockwise rotation of this control turns the receiver on and increases the volume.

Squelch Control:

This control eliminates background noise in the absence of a signal. Full clockwise rotation removes all squelch action. Turning this control counter-clockwise until the noise disappears permits the receiver to be "quiet" until an actual signal is received. Even if the squelch control is set fully counter-clockwise, the receiver will still operate properly and will not be locked out or prevented from receiving a signal.

BTH-202B Channel Selector Buttons:

The BTH-202B is capable of two-way communication on either of two discrete, crystal controlled frequencies or channels. Selection of the desired channel is accomplished by pressing the corresponding channel selector button on the front panel of the unit. The radio will neither receive nor transmit unless one of these buttons is depressed.

NOTE: Do NOT push more than one channel selector switch button in at a time.

Microphone:

A high impedance ceramic microphone is supplied with the unit. To install the microphone on the radio set, insert the connector plug into its socket with the locating tab toward the bottom of the radio. The connector is then locked into place by rotating the locking ring 1/4 turn clockwise.

To transmit a message, it is only necessary to turn the radio set on, press the push-to-talk button on the microphone and speak into the microphone. The Transmit Indicator Lamp will come on to signify that the transmitter is operating. Best results are obtained by speaking clearly in a normal tone of voice.