

RH256N PROGRAMMING

By the Key Pad

Locating the programming plug:

1. Remove the five screws, which attach the top and bottom outer case together.
2. Remove the bottom and reposition the top case to allow access to the main board.
3. With the front of the radio face you, locate the 12 pin gray flex cable (plugs into the main board from the control board).
4. Look to the left of the gray cable, approximately ¼inches, then to the rear of the radio approximately ¼inches.
5. There will be will be three pins in a row with a white plug covering two of the three pins. To the front of the radio the word "PARK" stenciled on the board upside down, and to the rear of the pins "PROG" is stenciled upside down.
6. With the radio off, move the white plug to the "PROG" or program position. * **Important: The plug will need to be moved to the "PARK" position after programming is complete. If the plug is not installed the transmitter will not operate properly.**
7. Supply 13vdc to the radio and turn it on. A "P" should appear in the display, which indicates that the radio is ready to program.

Entering Program Data

1. **Simplex** = Receive and transmit frequency are the same.
 - A. Enter all six digits of the frequency
 - B. Enter two zeros by using the number 10 key.
 - C. Enter a two digit tone code from Table 1 below.
* **Important: There must be exactly ten digits when programming a simplex channel.**
 - D. Press the "ENT" or Enter key.
 - E. Press the channel number being programmed. Only a single channel number should be enter for channels 1 through 10. Two-digit numbers are required for channels 11 through 16.
Example: Channel one receive and transmit frequency is 155.160 MHz with a tone of 100Hz. When the "P" is in the display, you would program the channel by pressing **155160 00 12** press "ENT", then channel number (1)
2. **Half Duplex** = Receive frequency is not the same as Transmit
 - A. Enter the six digit receive frequency
 - B. Enter 8, then 0.
 - C. Enter the two-digit receive tone code from Table 1.
 - D. Enter the two-digit transmit tone code from Table 1.
 - E. Enter the six-digit transmit frequency.
 - F. Press "ENT" or the Enter key.
 - G. Enter the channel number.
Example: Channel 2 the receive frequency is 154.800MHz, the transmit is 155.130MHz with a tone of 100Hz. When the "P" is in the display, you would program the channel by pressing **154800 80 12 12 155130** Press "ENT", then the channel number(2).

***Important: There must exactly 18 digits when programming a half duplex channels.**

3. **Entering Data for a receive only channel.**
 - A. Enter the six digits for the frequency.
 - B. Enter 0, then 4.
 - C. Enter a two digit tone code from Table 1 or two zeros.
 - D. Press the Enter key.
 - E. Enter the channel Number.
Example: **162550 04 00** then "ENT", then a channel number(5).
4. **Entering Data for a Simplex Frequency with Transmit tone (Encode) only.**
 - A. Enter the six digits of the frequency.
 - B. Enter 8000.
 - C. Enter the two-digit tone code from Table 1.
 - D. Enter the frequency again.
 - E. Press the Enter key.

F. Enter the channel number.

Example: **155475 8000 12 155475** press "ENT", then the channel number(**16**).

To review programming:

A. Press the "Man" or "Manual" key.

B. Enter the channel number.

- The radio will display the Data one digit at a time.

TABLE 1

| Tone Code | Tone(Hz) | Tone Code | Tone(Hz) | Tone Code | Tone(Hz) | Tone Code | Tone(Hz) |
|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| "00 | No tone | 13 | 103.5 | 26 | 162.2 | 39 | 69.4 |
| "01 | 67 | 14 | 107.2 | 27 | 167.9 | 40 | 159.8 |
| "02 | 71.9 | 15 | 110.9 | 28 | 173.8 | 41 | 165.5 |
| "03 | 74.4 | 16 | 114.8 | 29 | 179.9 | 42 | 171.3 |
| "04 | 77 | 17 | 118.8 | 30 | 186.2 | 43 | 177.3 |
| "05 | 79.7 | 18 | 123 | 31 | 192.8 | 44 | 183.5 |
| "06 | 82.5 | 19 | 127.3 | 32 | 203.5 | 45 | 189.9 |
| "07 | 85.4 | 20 | 131.8 | 33 | 210.7 | 46 | 196.6 |
| "08 | 88.5 | 21 | 136.5 | 34 | 218.1 | 47 | 199.5 |
| "09 | 91.5 | 22 | 141.3 | 35 | 225.7 | 48 | 206.5 |
| 10 | 94.8 | 23 | 146.2 | 36 | 233.6 | 49 | 229.1 |
| 11 | 97.4 | 24 | 151.4 | 37 | 241.8 | 50 | 254.1 |
| 12 | 100 | 25 | 156.7 | 38 | 250.3 | | |

Deleting a channel

To delete a channel from memory. (Once the radio is in the user mode the deleted channel number can not be accessed from the keypad. All unused channels should be deleted from memory.) While in the program mode:

- A. Press the delete key.
- B. Press the "ENT" or enter key.
- C. Press the channel number.

Radio Configuration Data:

If any of the following options needs to be changed, then a five-digit number must be entered, so that the options will change. If less than five numbers are entered, the microprocessor will not except the entry. All five options must be entered when making a change. The entry should only made once and effects all of the programmed channels. These options can not be programmed differently for each channel.

A. Scan Delay - The amount of time the radio will stay on a received channel, after the signal goes away, before resuming scan. (Pick only one number)

- Code 0 = .7 seconds
- Code 2 = 1.4 seconds
- Code 4 = 2.0 seconds

B. Transmit Time-Out-Timer - The amount of time the radio will stay in the transmit mode. If the Push-To-Talk switch is still depressed after this time, the radio will stop transmitting and emit a busy signal or tone through the speaker.(Pick only one number)

- Code 0 = disabled - no time limit.
- Code 1 = 30 seconds
- Code 2 = 60 seconds
- Code 4 = 90 seconds

C. A Zero should always be used for this option, to enable the internal tone functions.

D. This digit will enable or disable three options. (1) Keypad beep active, yes or no. (2) Power up on channel one, yes or no. - If answered with a "yes" the radio will come up on channel one any time the radio is turned off then on, or the battery or supply voltage drops below approximately 10vdc. It will interrupt all other functions occurring before the voltage drop and go directly to channel one. If answered with a "no" the radio will resume its previous task, such as transmit or scan, or receiving a signal. (3) Transmit always on the priority channel when priority is enabled, yes or no. If answered with a "yes" the radio will go to the priority channel regardless of the channel in the display, provided that the Priority function is activated. This occurs when the microphone is taken off hook. (If Off-Hook-Scan is enabled, then the switch to the priority channel occurs when the PTT switch is pressed.) If answered as "no" it will transmit on the channel in the display at the time the PTT button is pressed. (Pick only one number)

| Key Pad Beep | Power - up on CH. 1 | TX on Priority Ch when in Pri mode | Code |
|--------------|---------------------|------------------------------------|------|
| Yes | No | Yes | 0 |
| Yes | No | No | 1 |
| Yes | Yes | Yes | 2 |
| Yes | Yes | No | 3 |
| No | No | Yes | 4 |
| No | No | No | 5 |
| No | Yes | Yes | 6 |
| No | Yes | No | 7 |

E. (1) Transmit carrier delay, 100 or 300 milliseconds. This is the amount of time that the radio stays in transmit mode after the PTT is released. (2) Off Hook Scan, yes or no. If answered with a "yes" and when a channel programmed with receive tone is selected, the radio will not transmit when there is a signal present with a different tone, or no tone. However, the radio does scan with the microphone off-hook. If answered as "no" , the microphone must be hung-up to use the scan mode. Transmit is not inhibited unless the microphone is on hook.(Pick only one number)

| TX Carrier delay | Off Hook scan | Code |
|------------------|---------------|------|
| 100 millisec. | No | 0 |
| 100 millisec. | Yes | 1 |
| 300 millisec. | No | 2 |
| 300 millisec. | Yes | 3 |

Programming the Configuration Data:

While in the Program mode enter the five digits that you have selected (one for each table or option). Press the "ENT" or Enter key.

Press the "Scan" key. A small u should appear in the display.

A B C D E

Factory programming is: 2 2 0 1 0.

Even if the configuration is not being changed it is recommended to verify the five digits are correct. A wrong digit in the third position, other than 0, will cause no tone in receive and transmit. Channels programmed with tone will display a 94 in place of the correct tone code.

Returning to the user mode:

* To enter the user mode, turn the radio off and move the program plug back to the "Park" position. Turn the radio on. This plug is required for the radio to operate properly in the transmit mode.

PCKIT Programming:

For RELM dealers, the RELM PCKIT030 will allow you to program the RH256N, RH256NB, RFH252N, and the RFH252NB without opening the radio. The current PCKit works on most IBM clone computers in a DOS only mode. It will not work while in "Windows" or "OS/2", or any other Graphical User Interface programs. The GUI programs interrupt the real time data to and from the radio. The most current version of software is 3.01.