

# Radio Shack Pro-97 Step-by-Step EDACS Programming Guide Written by David Cabatu, AH7E

## INTRODUCTION

This white page will give you step-by-step instructions to program the Radio Shack Pro-97 scanner to properly receive Ericsson EDACS type radio systems. Do keep in mind that your scanner can only decode non-digital (in order words, analog only) transmissions. Also, it is also important that you follow all instructions in order. If something doesn't go your way, you may have overlooked something in this list of instructions.

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## PROGRAMMING INSTRUCTIONS

In this practice programming example, we will program the five (5) channel Waikiki repeater into Bank 0 of your Radio Shack Pro-97 scanner.

First, here are the system frequencies that MUST be entered in LCN (Logical Channel Number) order:

- (1) 866.2500
- (2) 866.7500
- (3) 867.0625
- (4) 867.3125
- (5) 867.6125

### PART A. CLEAR YOUR SCANNERS MEMORY BANKS.

1. Clear the scanners memory by turning your scanner OFF, then ON, and pressing [0] and [1] keys while the main greeting is showing.
2. After initialization, your scanner should now show a display that defaults to M000 (Bank 0, Channel 00)

### PART B. PREPARING THE GROUP ID BANK TO TRACK EDACS

**FAILURE TO PROPERLY SET GROUP ID TO EDACS MODE WILL CAUSE YOUR SCANNER TO TRACK IMPROPERLY.**

1. Press [PGM], [TRUNK]. The top line of the display changes to ONE of the following:
  - ID Bank 0 -- If trunking mode is NOT selected.
  - ID Bank 0-1 ON -- If trunking bank IS selected.
2. Press [MODE] until EDACS appears on the third line. This indicates that the trunking mode is correctly set to EDACS.
3. Press [PGM] to return to frequency programming mode. The display should read P001FM 0.00000, with "P" indicating that you are in programming mode.
  - a) If the display reads P00xFM, and 'x' does NOT equal "1", press the UP/DOWN arrow keys to set it accordingly.
  - b) If the display reads M00xFM, you are in MANUAL mode. Press [PGM] to return to programming mode.

### PART C. PROGRAMMING SYSTEM FREQUENCIES

**ALL EDACS PROGRAMMING MUST BEGIN IN CHANNEL X01 OF A BANK 'X'.**

Using the LCN frequencies above, follow steps 1-5.

1. Enter LCN-1, Press [8] [6] [6] [.] [2] [5] [0] [0] [ENTER].
2. Press [MODE] until the display reads P001ED, indicating that EDACS mode is set for that frequency.
3. Press [PGM] to move to the next channel. Check step B3b above if the display does NOT read P00x (to program LCN-x).
4. Enter the rest of the frequencies in LCN order, following steps 1 through 3 above.
5. Press [SCAN] to begin trunk tracking.

If your scanner is programmed correctly, active talkgroup IDs will be displayed in decimal format until you assign a text tag to it.

If you don't hear anything after a few minutes of listening, the scanner just hasn't found the control channel. You can press [SCAN] to quicken the process. Also, make sure that you do not lock out the control channel.

To program other banks, follow all steps in Parts B and C. The number of steps will vary depending on how many channels need to be programmed in that bank.

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### PART D. PROGRAMMING TALKGROUP IDs

Talkgroup IDs are programmed in numerical order from lowest to highest. All analog talkgroup IDs have been programmed with alpha tags so when moving into a new repeater area, you will only need to reprogram the frequencies in LCN order, rather than reprogramming frequencies and talkgroup IDs with their associated alpha tags.

1. Press [PGM], [TRUNK]. The second line of the display shows EDACS TGID#xx.
2. Enter talkgroup IDs using the keypad. You can enter them using one, two, three, or four digits. I suggest entering them in four digit blocks since the display defaults to four digits.
  - a. Example: Enter the HFD DISP talkgroup ID, 785. Press [0] [7] [8] [5] [ENTER]. The scanner accepts the talkgroup.
  - b. Press the UP ARROW key. The display switches to EDACS TGID#xx. In this example, my display shows TGID#01. Enter the next talkgroup, repeating steps a and b above.

### PART E. PROGRAMMING TEXT-TAGS TO BANKS

**NOTE:** This mode works in both conventional and trunking mode.

1. Press [PGM].
2. Press [F] or [FUNC] followed by the bank number. To program Bank 0, press [F] + [0].
  - a. **CAUTION:** Pressing [F] + [CLR] deletes ALL frequencies.
  - b. Pressing [TEXT] edits the bank tag.
3. The cursor flashes on line 3. Enter the text using the keypad and press [ENTER] to accept.

### PART F. PROGRAMMING TEXT-TAGS INTO MEMORY CHANNELS

Also, programming text-tags to talkgroup IDs, see #7.

1. Press [MANUAL], enter the channel number where you want to enter the text, then press [MANUAL] again. M and the channel number appear in the upper left corner of the display. For example, M001.
2. Press [PGM]. The display changes from an M to a P, indicating programming mode.
3. Press [TEXT]. The cursor appears on the third line of the display.
4. Enter the text using the numeric keypad:  
For example, input WAIKIKI-1 as follows:  
  
W - Press 9 then 1  
  
A - Press 2 then 1  
  
I - Press 4 then 3  
  
K - Press 5 then 2  
  
I - Press 4 then 3  
  
K - Press 5 then 2  
  
I - Press 4 then 3  
  
- - Press 0 then 2  
  
1 - Press 1 then 1
5. Press [ENTER] to accept the text-tag.
6. In general, repeat all steps in this section to tag the other memory channels. That is, channels starting with Mxxx. Be sure that the display shows "P", indicating programming mode.
7. To program text into Talkgroup IDs, press [PGM], [TRUNK], [TEXT]. The cursor on the 3rd line blinks, then follow step 4 above to program the actual text. (This will ONLY work if there is a talkgroup ID programmed). See Part D before continuing with this step to program text tags to talkgroup IDs.

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### **PART G. EDACS FREQUENTLY ASKED QUESTIONS**

Here is some important information regarding EDACS systems.

1. Ericsson system frequencies are arranged in a Logical Channel Number (LCN) order at each repeater location. What this means is that each system has its own set of frequencies per repeater arranged in a certain order. You must program your scanner in the LCN order given. Otherwise, your scanner may not trunk track properly.
2. Not all areas in the same district transmit on the same frequency. What this means is that each repeater covers a specific area on different frequencies. As you move into a different repeater area in the same district or even a different district, a stronger repeater covering that area will broadcast the same information, but on another frequency.
3. On EDACS capable scanners, only ONE EDACS system may be programmed in each bank. Programming multiple EDACS systems will confuse the scanner because:
  - a. The scanner can only monitor one control channel at a time.
  - b. The control channel you're listening to is associated with a particular LCN order.
  - c. Each channel has its own LCN order, the scanner will not know which LCN to switch to.
4. The Pro-97 EDACS talkgroups are in decimal format as opposed to the Agency-Fleet-Subfleet (AFS) format found on many Uniden and other Radio Shack scanners. Talkgroup conversion tables can be found at <http://gtrac.ztn.net>.
5. All EDACS programming of LCN Channel 1 begins in Channel x01 of a Bank "X".
6. The control channel must NOT be locked out.
7. The scanner must be able to lock onto the control channel in order to trunk track properly. Trunked systems rely on the control channel to find the correct data for the radio system you're monitoring. When you lose reception of the control channel, the scanner loses the ability to track the system properly.
8. It is okay to program conventional frequencies in an EDACS trunking bank, but be sure that you DO NOT disturb the LCN order or otherwise program the scanner out of LCN order. Mixing a different type of trunking system with an EDACS system may cause your scanner to track improperly.

### **PART H. PRO-97 ADDENDUM**

Things you should know about the Pro-97 and EDACS systems...

It is easy to determine the LCN order of the control channel - manually tune to a control channel, and if you're in manual mode, the display will show CTL-xx when the system is not busy. If it reads CTL-01, the frequency belongs to LCN #1 of that particular system.

However, DETERMINING THE OVERALL LCN ORDER OF AN EDACS SYSTEM ON THE PRO-97 IS VERY DIFFICULT -- especially if there are a lot of frequencies in use for a single system (large systems can have up to 25 or so voice channels on top of the control channel).

If the display shows CTL-02 or CTL-03, the control channel is on LCN-2 or 3, respectively.

If a user keys their radio, the display will change from CTL-01 to 1043. The format is no longer LCN-Talkgroup, but simply the talkgroup. Earlier radios like the Pro-92 (v1.00) for example, used to show this information as 02-1043, indicating LCN #2, TG 1043. It makes it easy to figure out what frequency belongs to what slot just by listening and taking careful notes...BUT...

The Pro-97 DOES NOT DO THIS. If you do not have system information available, you'll need to get an older scanner, or determine the system order the old fashioned way using a second 800 MHz scanner, noting down active frequencies, and shuffling frequencies around until the correct order is determined.

Note that due to the prevalence of EDACS system and availability of EDACS-capable scanner over the last couple of years, system information should be readily available from various scanning sources specific to the area that you're monitoring. Good luck!