



# TP-8000 Series Portable Radio

## PC Programming Manual



## TP-8000 SERIES PC PROGRAMMING MANUAL

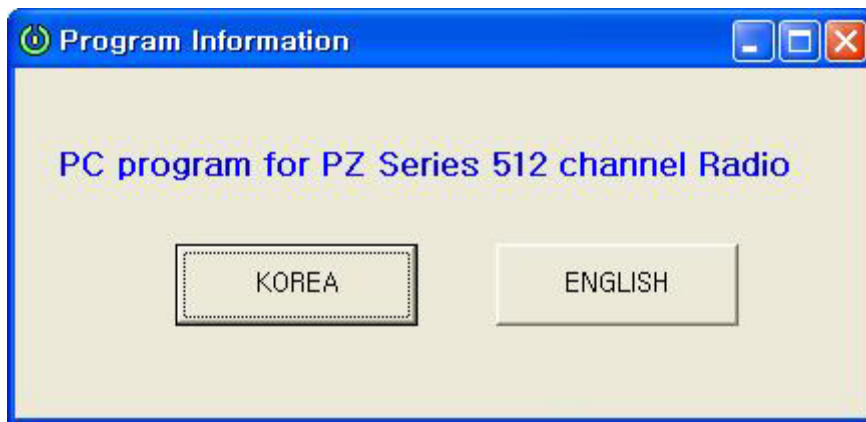
### TABLE OF CONTENTS

1-1	PROGRAM INSTALLATION	3
1-2	LANGUAGE SELECTION WINDOW	3
1-3	COMMUNICATION PORT SELECTION WINDOW	3
1-4	SCREEN SIZE SELECTION WINDOW	4
1-5	USER SELECTION WINDOW	4
1-6	RADIO TYPE SELECTION WINDOW	5
1-7	MAIN WINDOW (FREQUENCY INPUT WINDOW)	5
1-8	INPUT SETUP WINDOW	8
1-9	ID EDITOR/5-TONE	12
1-10	CONFIGURATION WINDOW	14
1-11	2-TONE SETUP WINDOW	19
1-12	KEY ASSIGNMENT SETUP WINDOW	21
1-13	GPS SETUP WINDOW	22
1-14	GPS USE METHOD	24
1-15	DEFAULT VALUE COMPARISION WINDOW	26
1-16	RADIO MANAGEMENT WINDOW	27
1-17	CLONE FREQUENCY	28
1-18	PASSWORD DELETE	28
1-19	STUN DELETE	29
1-20	WIRELESS CLONING	29
1-21	CHANNEL SWITCH LOCK	30

## 1-1 Program Installation

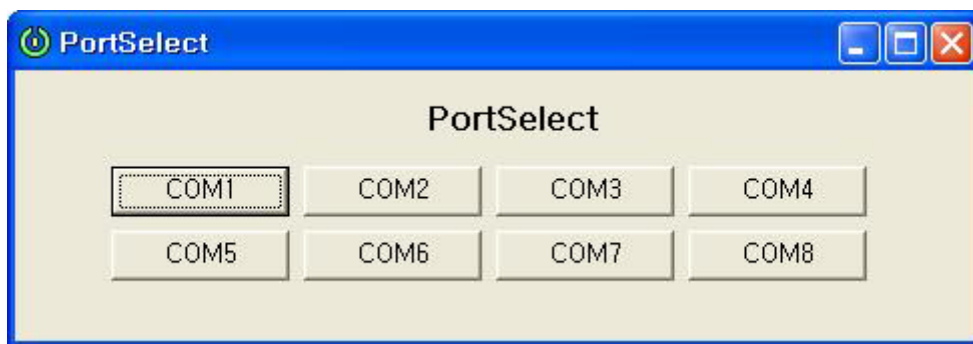
Install the CD and run the ACC-805 software. After running ACC-805\_Program\_Setup.exe, install with basic values on the screen. Caution: Do not change program installation route.

## 1-2 Language Selection Window



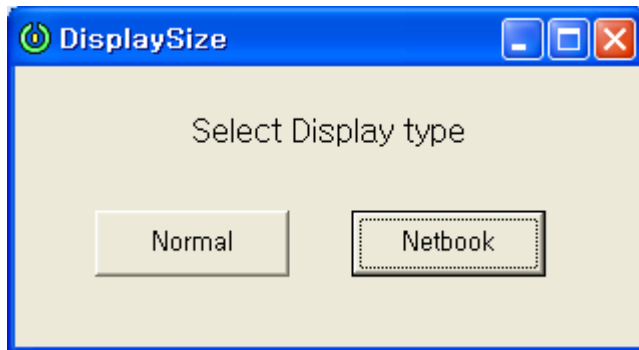
Select a language to use (after installing program, run one time).

## 1-3 Communication Port Selection Window



Select a port to use for data communication.

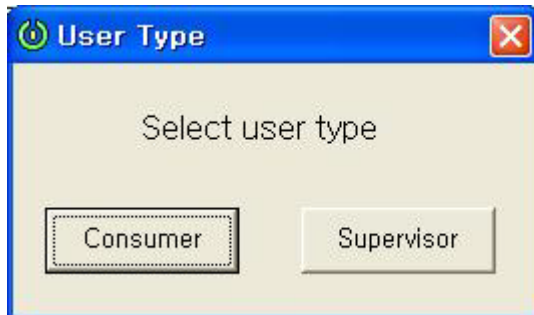
#### 1-4 Screen Size Selection Window



Select Normal button (after installing program, run one time).

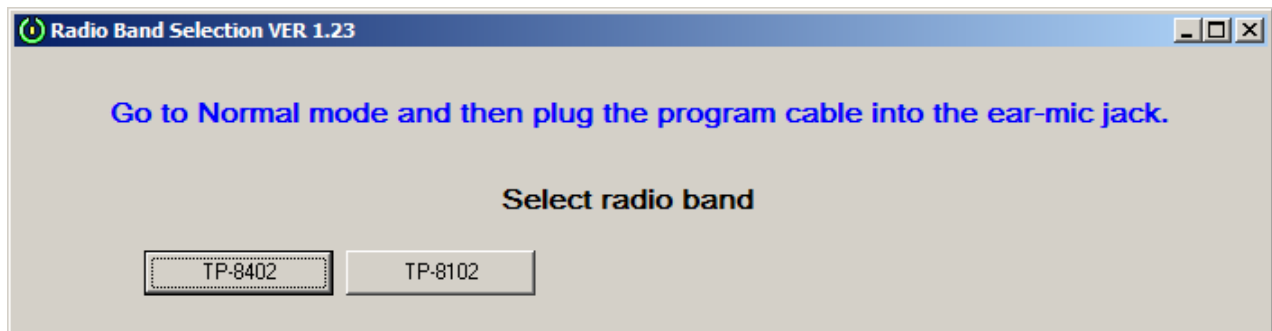
Select Netbook button when using smaller size screen.

#### 1-5 User Selection Window



Select Consumer button (after installing program, run one time).

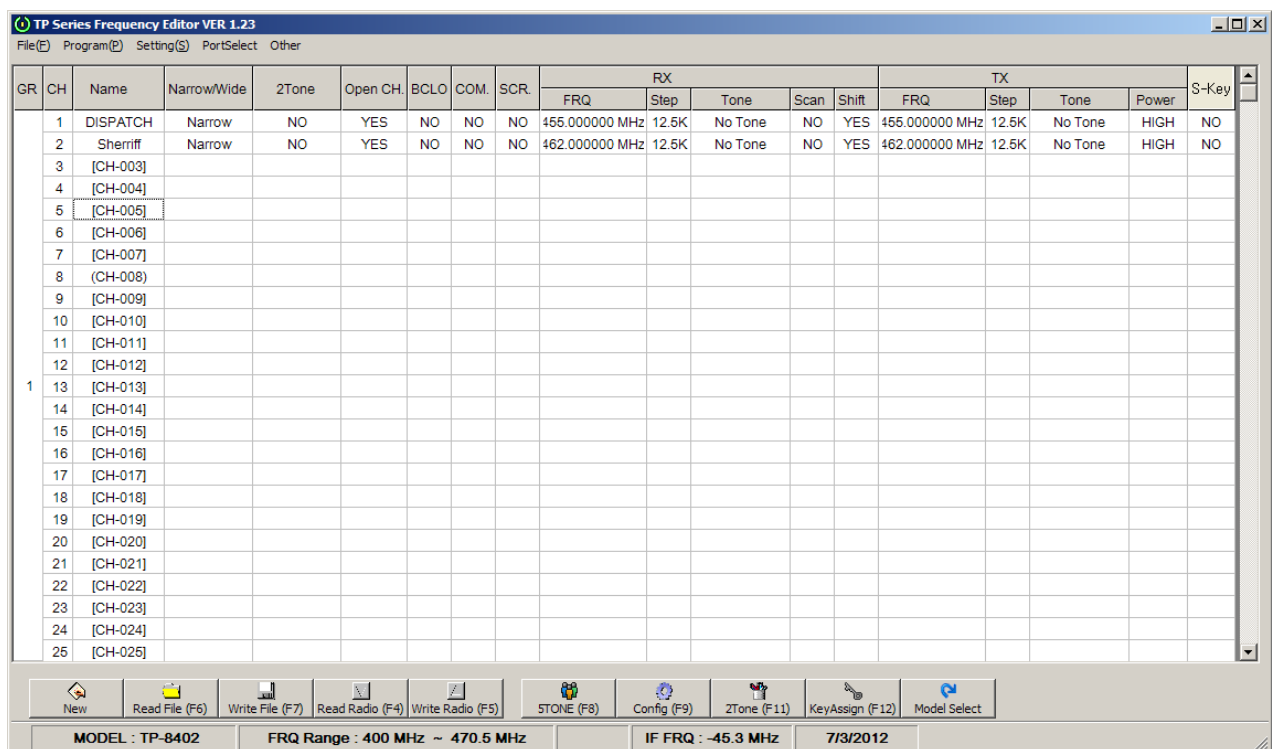
## 1-6 Radio Type Selection Window



This screen is to select type of radio.

After turning on a radio and connecting programming cable, you can select the type of radio.

## 1-7 Main Window (Frequency Input Window)



Selection for each header is as follows:

Name – Type in name as wanted to appear on display of radio for each channel (up to 10 characters).

Narrow/Wide, 2 Tone, Open CH, BCLO, Compander (COM.), Scrambler (SCR.), and S-Key – click on cell to display choices for that function.

RX Frequency (RX FRQ) – enter RX frequency then hit enter; remaining RX settings of RX Narrow/Wide (RX Step), RX Tone, Scan, Shift will appear. Click on cell to display choices for that function.

TX Frequency (TX FRQ) – enter TX frequency then hit enter; remaining TX settings of TX Narrow/Wide (RX Step), TX Tone, and Power will appear. Click on cell to display choices for that function.

**Explanations for certain programming parameters:** A special tone which is not available in the pull down menu may be inputted. (Examples: CTCSS - 54.5, DCS - H022).

The Narrow/Wide band (Step) are determined automatically according to frequency input.

When **Open CH** is YES, the radio will transmit normally. If Open CH is NO, the radio will only transmit when it receives a call from another radio/user. (Normally leave YES as default).

**Shift** allows the RX frequency input for elimination of adjacent channel interference, or the user can edit (for prevention of adjacent channel interference). When the other relevant receiving selection items (including 2 Tone) are vacant and the RX frequency is inputted, the initial values are placed automatically from the selections in the Default Value Tab of Input Setting Menu. If a value exists already, it is not changed automatically.

As per the TX transmitting setup, the same method with RX receiving is applied.

**Shortcut Key (S-Key)** allows the radio/user to obtain channel(s) that are often used. When the Shortcut option is activated via a pre-determined button on the radio, those channels with S-Key as YES will allow the radio/user to obtain those channels quickly through the channel selector switch.

#### Tab Menu Explanation

- New: Removes the input content, and return to default/initial status.
- Read File: Reads a group and channel data that are restored in \*.fre file.
- Write File: Saves data into \*.fre file.
- Print: Prints showed values in the screen.
- Input Setting: Input Setting Window.
- RX to TX Copy: Copies from receiving frequency and receiving tone, to transmitting frequency and transmitting tone.
- Read Radio: Reads the restored data in a radio.
- Write Radio: Writes data on screen into a radio.

- 5 Tone: Shifts to setup window for 5 Tone & Stun / Revive ID configurations.
- 2-Tone: Shifts to setup window for 2 Tone configurations.
- Config: Shifts to setup window for various on/off functions.
- KeyAssign: Shifts to set up window for assignment functions of each button.
- Model Select: Shifts to set up window for model of radio being programmed.
- SDS: Shifts to set up window of single message transmission.
- GPS: Shifts to set up window related to GPS and Bluetooth.
- Port Select: Select computer communication port to use.
- Default Data: Shifts to set up window for change in default file value and saved values in a radio.
- Radio Records: Shifts to window that shows radio management information.
- Password Delete: Removes the password saved in a radio.
- STUN Delete: This function is to remove stun from a radio.

Reference: In case of newer laptop, a serial port is not available. Therefore a conversion connector, USB to Serial may be utilized. The port number is usually setup over 4.

## 1-8 Input Setting Window

### 1.8.1 Input Initial Value

The screenshot shows the 'Input Setting' window with the 'Default Value' tab selected. The window contains several radio button options and dropdown menus for configuring default values.

Parameter	Default Value
Band Default Value	Narrow(12.5kHz)
2-tone Default Value	NO
Compoander Default Value	NO
Open CH Default Value	YES
Scramble Default Value	NO
BCLO Default Value	NO
Scan Default Value	NO
Power Default Value	HIGH
Channel Name	(Empty text box)
Subtone Default Value	No Tone (dropdown), Identical (dropdown)

An 'OK' button is located at the bottom center of the window.

When inputting TX and RX frequency, the default setup values are inputted automatically for Band, 2-tone, Open CH, BCLO, Compoander, Scramble, Scan, Power, Channel Name, and Subtone (sub-audible). When there are values already inputted, they are not affected.

Selecting " Identical " applies the selected subtone to all channels.

Selecting " Continual " increases in incremental order from the selected subtone.



### 1.8.2 Grouping Setup

The 'Input Setting' dialog box contains a table with four columns: 'Default Value', 'Grouping', 'Priority CH', and 'Serial Input'. The 'Grouping' column lists 32 groups (Group1 to Group32). The 'Default Value' column shows the number of channels assigned to each group. Group1 is set to 512, while Groups 2 through 32 are set to 0. The 'Priority CH' and 'Serial Input' columns are empty. Below the table, it states '0 channels remained'. At the bottom are 'Apply' and 'OK' buttons.

Default Value	Grouping	Priority CH	Serial Input
Group1	512		
Group2	0		
Group3	0		
Group4	0		
Group5	0		
Group6	0		
Group7	0		
Group8	0		
Group9	0		
Group10	0		
Group11	0		
Group12	0		
Group13	0		
Group14	0		
Group15	0		
Group16	0		
Group17	0		
Group18	0		
Group19	0		
Group20	0		
Group21	0		
Group22	0		
Group23	0		
Group24	0		
Group25	0		
Group26	0		
Group27	0		
Group28	0		
Group29	0		
Group30	0		
Group31	0		
Group32	0		

0 channels remained

Apply

OK

This window is used to assign channels to a group. Total number of channels (aggregate of groups) cannot exceed 512 channels.

After assigning channels, the " Apply " button should be pressed.

### 1.8.3 Priority Channel

The dialog box titled "Input Setting" has four tabs: "Default Value", "Grouping", "Priority CH", and "Serial Input". The "Priority CH" tab is selected. It displays a table with 32 rows, each representing a group (Group1 to Group32). Each row has a "Priority CH" column with a numeric input field, all of which are currently set to 0. Below the table is an "Apply" button, and at the bottom of the dialog is an "OK" button.

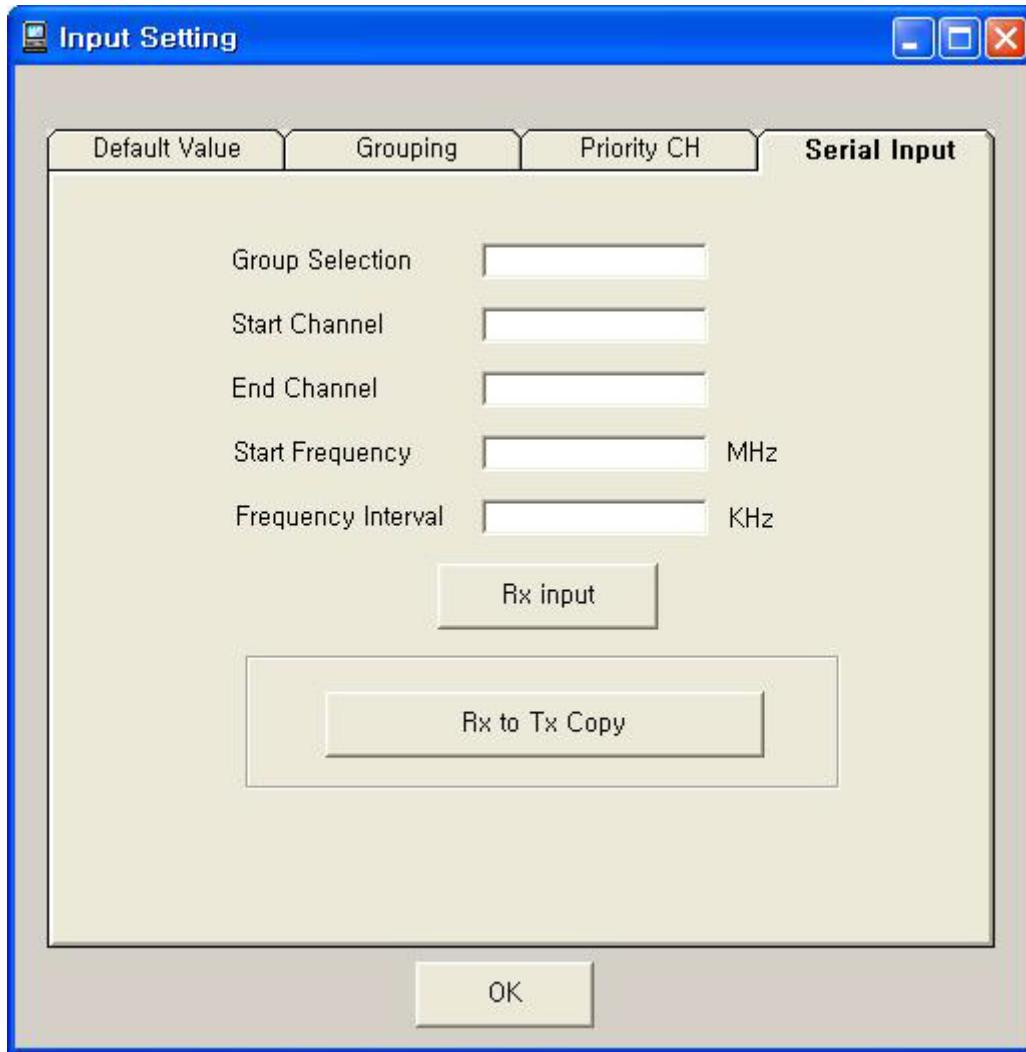
Group	Priority CH	Group	Priority CH	Group	Priority CH
Group1	0	Group12	0	Group23	0
Group2	0	Group13	0	Group24	0
Group3	0	Group14	0	Group25	0
Group4	0	Group15	0	Group26	0
Group5	0	Group16	0	Group27	0
Group6	0	Group17	0	Group28	0
Group7	0	Group18	0	Group29	0
Group8	0	Group19	0	Group30	0
Group9	0	Group20	0	Group31	0
Group10	0	Group21	0	Group32	0
Group11	0	Group22	0		

This window is for setting up Priority Scan Channel in a specified Group.

Only channels that are selected as scan channels in channel setup can be assigned as a priority scan channel.

After assigning channels, " Apply " button should be pressed.

### 1.8.4 Serial Input Frequency



The image shows a software window titled "Input Setting". It has a blue title bar with standard Windows window controls (minimize, maximize, close). Below the title bar, there are four tabs: "Default Value", "Grouping", "Priority CH", and "Serial Input". The "Serial Input" tab is currently selected. Inside the window, there are five input fields with labels to their left: "Group Selection", "Start Channel", "End Channel", "Start Frequency", and "Frequency Interval". The "Start Frequency" and "Frequency Interval" fields have "MHz" and "KHz" labels to their right, respectively. Below these fields, there are two buttons: "Rx input" and "Rx to Tx Copy". At the bottom center of the window is an "OK" button.

This window is for inputting frequency continually by same frequency interval.

- Group Selection: This is to assign a group (1-32) to input frequency.
- Start Channel: This is to assign a channel to first input frequency.
- End Channel: This is to assign a channel to last input frequency.
- Start Frequency: This to assign a frequency that the first input begins.
- Frequency Interval: This is to assign a frequency interval to be inputted continually.
- Rx Input: RX data is restored with same setup values as per the above.
- Rx to Tx Copy: This copies RX data to TX data.

## 1-9 ID Editor/5 Tone

TP Series ID Editor VER 1.24 TP-8402

**5Tone ID**

New Own ID

NO	Call Name	ID	Enable
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			

**5TONE Configuration**

**5Tone Format** CCIR

Normal Return Time 10 sec(10~60)

Lead In Delay Time 300 msec(10~700)

First Tone Time 100 msec(10~3000)

Next Tone Time 100 msec(10~700)

Lead Out Delay Time 300 msec(10~700)

**5STONE TYPE**

☒ (Repeater) + Destination

☐ (Repeater) + Destination + Own ID

**Repeater**

☐ Repeater Enable

Repeater ID NONE

**5STONE Response**

☒ NONE

☐ Own ID

☐ LIST Select NONE

☐ ONE TONE 0

ONE TONE TIME 500 msec(300~1000)

**Section Tone**

Emergency Call D (Own ID + ?)

Reset C (Destination ID + ?)

**5STONE Option**

5Tone ANI (PTT CALL) OFF

☒ 5Tone Response Alarm Enable

☐ 2/5 Tone Enable

Main Window

**STUN ID**

STUN ID

REVIVE ID

This window is to format the 5Tone signaling option.

Click on " New " to create a 5 Tone ID. A 5 Tone ID can be inputted by 200. Call Name can be inputted by English (10 letters) and Call ID is inputted by 3 to 6 characters.

When Enable is No, the tone does not transmit or receive.

ID number (1~200) is assigned to Own ID (STUN ID).

A station controls terminals.

If a station transmits Stun ID by using 5tone (CCIR), the relevant terminal(s) loses all functions.

If it transmits Revive ID, the relevant terminals are returned to normal functions. (Once a terminal is stunned, it is not normalized even if the power is on/off).

STUN / REVIVE ID can be inputted by 2~7.

- 5TONE Format: This selects 5TONE standard set.
- Lead In Delay Time: The delay time from the time requesting 5TONE ANI or 5TONE CALL generation to the time the first signal happens.
- First Tone Time: The generating time of the firstly applied tone out of composed 5 tones.
- Next Tone Time: The tone generating time applied to each tone of composed 5 tones.
- Lead Out Delay Time: The delay time from the time requesting 5TONE ANI to the time the first signal occurs.
- 5TONE Type: It is to decide whether or not transmitting own ID when transmitting 5 tone.
- Repeater: It is to decide whether or not transmitting through repeater and selecting Repeater/Transmission ID.
- 5Tone Response: It is to receive own ID, to decide whether sending response or not and to select the kind.
- Section Tone: It is to select tone to send together with emergency call or Reset Tone.
- 5Tone Option: It is to select 5 Tone ANI on or off for transmission location (front, back) and response alarm or not.

## 1-10 Configuration Window

**TP Series System Configuration TP-8402**

**DTMF**  
☒ DTMF ANI Enable (pre)  
☐ DTMF Decoding Enable  
☒ GENERAL ☐ SPECIAL  
 1234 (00000 ~ 99999)  
 Generation Time 50 msec(50~500)  
 Pause Time 50 msec(50~500)  
 Lead In Delay Time 200 msec(50~700)

**PASSWORD**  
☐ Enable  
 Password

**Emergency OPTION (Alarm)**  
☒ Enable  
☐ Emergency Call One Shot  
☒ Emergency Call Repeats  
 Emergency Call Interval Time 10 sec(1~100)  
 Send Select Current Channel  
 Send Channel  
☐ Keep PTT 30 Second

**PSC**  
☐ Enable  
 PSC On Time 200 msec(200~500)  
 PSC Off Time 100 msec(10~1000)  
 PSC Active Time 10 sec(1~60)

**Ear Mic**  
☒ Enable  
 Level 4

**EQ**  
 Equalizer OFF

**Squelch**  
 Level 5 (0 ~ 9)

**Logo**  
 Company 0  
 Brand 0

**SCAN**  
☐ Priority Scan TX ☐ Priority Only TX  
 TX Channel: ☒ Home ☐ Last Receive ☐ Current Scan  
 RX Type: ☐ Carrier ☒ S-A Combination  
 Scan Dwell Time 2000 msec(100~10000)  
 Carrier Scan Time 150 msec(100~300)  
 S-A Scan Time 300 msec(300~500)  
 Look Back Interval 5000 msec(500~10000)  
☐ Current Channel Include  
☐ Scan Mode ☐ Dwell After Tx

**TOT**  
☐ Enable  
 TX Time Out Time 60 sec(1~200)  
 TX Penalty Time 10 sec(1~60)

**VOX**  
☐ Enable  
 VOX sensitivity 5 (1~10)  
 VOX Off Time 1500 msec(1000~10000)

**Scrambler Inversion Frequency**  
 Frequency 3300 (3250 ~ 3500)

**OPERATION FLAG**  
☐ TX Inhibit  
☒ Beep ☒ Start Sound  
☒ Low Battery Alert  
☐ Korea ☒ English  
☐ Key Lock  
☒ BCL(Busy Channel Lock) Enable  
☐ DTMF/5 TONE Tx Alert  
☐ Whisper  
☐ ShortKey  
☐ Subtone Menu  
☐ Rx Phase Check  
☒ Cross Turn off  
☐ Tail Removal ☐ Short SQ Tail

☐ All Scramble

Defaults Main Window

### 1.10.1 Button Explanation

- Defaults: Changes all values to standard values.
- Main Window: Returns to main screen.

### 1.10.2 DTMF

- DTMF ANI Enable check box: Check to enable transmit DTMF ID before and after starting transmission (pre and post).
- DTMF Decoding Enable check box: To decide to show reception DTMF tone on screen or not.
- Generation Time: The time that one signal of DTMF ID generates.
- Pause Time: The time that signal does not generate between DTMF ID and ID.

- Lead In Delay Time: The delay time from the time requesting DTMF ID generation to the time the first signal happens.

### **1.10.3 PSC**

Controls setup of Power Save Control (PSC) to reduce battery current consumption.

- Enable Check box: Check to enable PSC.
- PSC On Time: The time when reception part is ON during PSC operation.
- PSC Off Time: The time when reception part is OFF during PSC operation.
- PSC Active Time: The time that PSC operates after transmission or reception finishes or channel changes.

### **1.10.4 TOT**

Controls setup of Time Out Timer (TOT) that prohibits continual transmission. When TOT is used, transmitting ceases if it exceeds time inputted.

- Enable Check box: Check to enable TOT.
- TX Time Out Time: Inputs the maximum time for one time transmission.
- TX Penalty Time: The prohibition time to transmit when transmission time exceeds time out time.

### **1.10.5 VOX**

Controls setup of VOX (voice actuation) which enables transmission by voice signal through microphone without PTT.

- Enable Check box: Check to enable VOX function.
- VOX Sensitivity: To set transmission sensitivity on input signal.
- VOX Off Time: When VOX is activated, this sets transmission stopping time after no voice input.

Reference: VOX Sensitivity means not signal size of voice input into MIC but level difference between sampling data of input signal.

### **1.10.6 Scrambler Inversion Frequency**

Controls setup of frequency input to use during security call (Default Standard 3300Hz)

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### **1.10.7 PASSWORD**

Controls setup of radio Password.

- Enable check box: Check to enable Password function.
- Password: Input Password number(s) to a maximum of 10 digits.

### **1.10.8 Ear Mic**

Controls setup of audio output of accessory.

- Enable check box: Check to enable Ear Mic setup.
- Levels: Steps of audio output 1 (Low) to 7 (High). Default is 4.

### **1.10.9 EQ**

Controls setup of Equalizer function.

- Equalizer: Emphasizes high tone and low tones in radio. Default is OFF.

### **1.10.10 Squelch**

Controls setup of Squelch sensitivity.

- Squelch: Sets level of Squelch sensitivity from 0 (Low) to 9 (High). Default is 5.

### **1.10.11 Logo**

Company and/or Brand: Names that will appear in display when radio is first turned on (maximum 14 characters) then reverts to occupied channel.

### **1.10.12 SCAN**

Controls setup of Scan operation.

- Priority Scan TX Check box: When scan operates, transmission goes via the last receiving channel before Dwell time, and goes via Priority channel after Dwell time.
- Priority Only TX Check box: When scan operates, transmission goes via priority channel.
- TX Channel Radio button: To assign transmission channel, when transmitting during scan.

Home: Radio transmits on the channel in which scan was initiated.

Last receive: Radio transmits to the last channel during scanning.



. Current scan: Radio transmits on the current scanned channel.

- RX Type Radio button: Assigns conditions for scan to cease during scanning

Carrier: If frequencies are same, scan stops.

S-A Combination: If frequency and sub-audible tone are same, scan stops.

- Scan Dwell Time: When scan stop conditions disappear during scanning, scan dwell is the time available after RX audio ceases that allows the radio to remain on the stopped channel without moving to the next channel in the scan sequence.
- Carrier Scan Time: Time being checked for whether or not a carrier exists.
- S-A Scan Time: Time being checking for whether sub-audible tones are same.
- Look Back Interval: When scan is stopped in a general channel during priority scan, look back interval is the interval time of periodical checking whether or not there is a carrier in the priority channel.
- Current Channel Include: If the current channel is not assigned in the scan channel list, the previous channel of entering scan mode is automatically included into scan channel list.
- Scan Mode: After entering scan mode, this maintains scan mode even when scan mode is not stopped and power is on/off.
- Dwell After Tx: Even after transmission ends, it keeps the current channel and the radio does not scan per the time designated in the Scan Dwell Time.
- Reference Note: During scan operation, scan stop and audio reception are not always same. In case the RX is carrier type and there is a sub-audible tone in the recent scanning channel and if carrier are same, scan stops and RX Lamp is blinking and audio does not open. Except for this scenario, scan stop and audio reception are normally same.

### **1.10.13 EMERGENCY OPTION**

Controls setup of Emergency Option (alarm) operation and related setups.

- Enable Box: This enables Emergency Option.
- Emergency Call One Shot: Makes Emergency bell ring one time.
- Emergency Call Repeats: Makes Emergency bell ring periodically.
- Emergency Call Interval Time: This setup makes Emergency bell ring periodically per time selected in Emergency Call Interval Time (1-100 seconds).
- Send Select: This is to determine the channel to transmit between current located channel or

setup channel.

- Send Channel: To select transmitting channel.

#### **1.10.14 OPERATION FLAG**

Controls various operation setup related to radio features.

- Tx Inhibit : Check to inhibit transmission.
- Beep: Check if audible sounds are desired for radio turn on and low battery indications.
- Language Selection: Check if channel annunciation is wanted per desired language.
- Key Lock: Check if Key Lock is to be applied. Does not apply to PTT.
- BCL (Busy Channel Lock): Check if BCL is desired. (Apply to frequency input window each channel).
- DTMF/5 TONE Tx Alert: Check to enable sound of DTMF and 5Tone when transmitting.
- Whisper: Check to enable whisper mode use.
- ShortKey: Check to enable channel abbreviated number (priority channel).
- Subtone Menu: Check to enable the change of subtone in menu.
- Rx Phase Check: Check to enable phase inversion after transmission end.
- Tail Removal: Check to disable squelch tail sound.
- Short SQ Tail: Check to enable short squelch tail sound.

Charts indicates transmission availability according to setup.

Carrier	Receive	CH-set	Tone Match	BCL	BCLO	TX
ON	-	No Tone	-	ON	OFF	×
					ON	○
	Tone	Tone	Match		Off	×
					On	○
	Tone	Tone	Mismatch		Off	×
					On	×
	-	-	-	Off	-	○
Off	-	-	-	-	○	

BCL/BCLO Control Table

## 1-11 2-Tone Setup Window

**Tone Selection**

1. Code Type: B 2. First Digit: 0

3. Tone Frequency

Tone NO	Tone A	Tone B
0	569.1	321.7
1	600.9	339.6
2	634.5	358.6
3	669.9	378.6
4	707.3	399.8
5	746.8	422.1
6	788.5	445.7
7	832.5	470.5
8	879.0	496.8
9	928.1	524.6

1. Choose the Code Type  
 2. Choose the First Digit  
 3. Choose the Tone A by double click frequency value  
 4. Choose the Tone B by double click frequency value  
 5. You must check '2/5 Tone Enable' in the 5 Tone screen

You can edit value of Tone A and Tone B manually by selecting "Other..." at Code Type

**Pager Codes**

B 0 0 0

TONE A: 569.1 Hz(288.5 ~ 2704)

TONE B: 321.7 Hz(288.5 ~ 2704)

Space Time: 700 msec(500 ~ 5000)

Save Main Window

This window is to setup 2- Tone frequency and space time.

### 1.11.1 Button Explanation

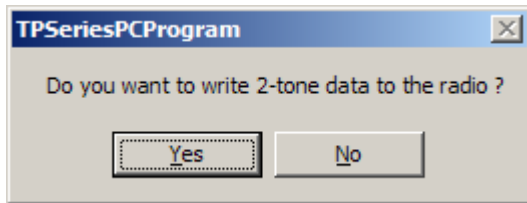
- Save: Saves decoding data and writes to radio.
- Main Window: Returns to main screen.

### 1.11.2 Tone Selection Frequencies

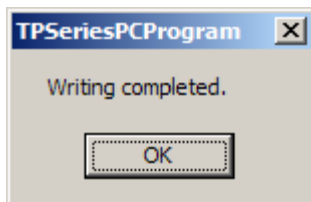
- From the Code Type pull down menu, select " Other " .
- Type in the frequency in the Tone A box being used to decode the first tone signal.
- Type in the frequency in the Tone B box being used to decode the second tone signal.
- You may also choose the Tone A and Tone B tones via the Code Type and First Digit scroll down boxes. Once the desired frequency is located in the Tone Frequency grid, double click on that frequency under Tone A column and it will automatically be inputted into the Tone A box. Perform

the same function under the Tone B column to input the frequency into the Tone B box.

- Space time: The time to distinguish between Tone A and Tone B.
- Select Save and the following window will appear. Select Yes to write.



- Confirms 2-Tone data has been saved when complete Write Radio occurs.



- **Important:** Individual Tone A and Tone B durations are entered through the 5 Tone configuration menu in the First Tone Time (Tone A) and Next Tone Time (Tone B) boxes. Set 5Tone format to CCIR.
- **Important:** The 2/5 Tone Enable box must be checked I the 5 Tone configuration menu to enable 2-Tone capability.

Caution: If a user selects ' Other...' for Code Type and inputs the frequency of Tone A and Tone B, the data is restored that values under decimal are removed during calculation process when saving data.


Accordingly, if saved values are read, there can be a little value difference

## 1-12 Key Assignment Setup Window

**TP Series KeyAssignment TP-8402**

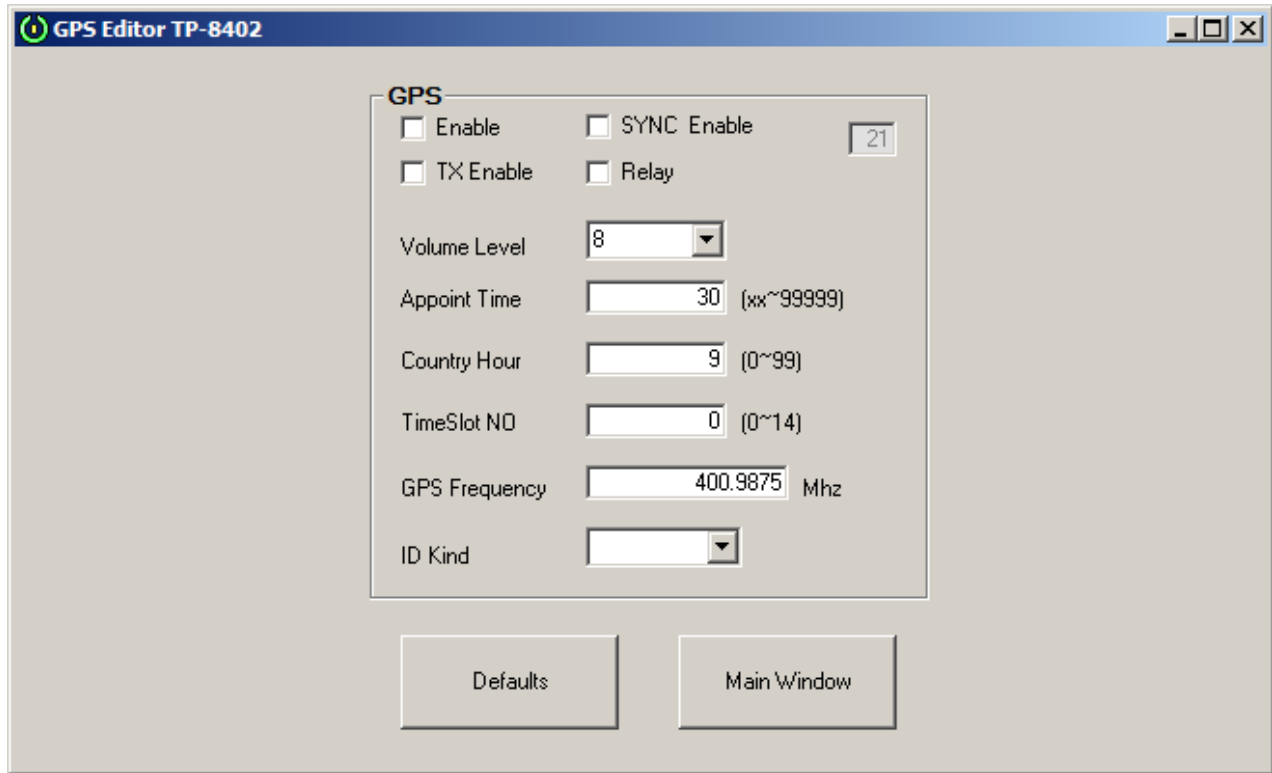
F1 Short	Channel Up
F1 Long	Channel Up Continue
F2 Short	Channel Down
F2 Long	Channel Down Continue
F3 Short	No Function
F3 Long	Menu
F4 Short	No Function
F4 Long	Scan
SIDE Short	Monitor Momentary
SIDE Long	Monitor On/Off
RED Short	Emergency
RED Long	No Function

Defaults Main Window



This window designates the function of each button on the radio. Please note that each button can perform a maximum of two different functions based on a short or long term press of that button.

### 1-13 GPS Setup Window – The radio must have GPS capability before programming can occur.



The screenshot shows the 'GPS Editor TP-8402' window. Inside, there is a 'GPS' configuration panel with the following settings:

- ☐ Enable
- ☐ TX Enable
- Volume Level: 8 (dropdown menu)
- Appoint Time: 30 (text field, with '(xx~99999)' next to it)
- Country Hour: 9 (text field, with '(0~99)' next to it)
- TimeSlot NO: 0 (text field, with '(0~14)' next to it)
- GPS Frequency: 400.9875 Mhz (text field)
- ID Kind: (dropdown menu)
- ☐ SYNC Enable (with a '21' in a box next to it)
- ☐ Relay

At the bottom of the window are two buttons: 'Defaults' and 'Main Window'.

#### 1.13.1 Enable

Check enable box to initiate GPS.

#### 1.13.2 SYNC Enable

Defines time to transmit GPS information according to Time Slot NO (only for radio of transmission) selection from 0 – 14.

#### 1.13.3 Tx Enable

Check box to transmit GPS information (only for radio of transmission).

#### 1.13.4 Relay

Check box to receive GPS information (only for radio of reception).



**Communication errors may occur with GPS initiated.**

### **1.13.5 Volume Level**

This controls volume level at radio because volume switch has been replaced with GPA antenna. Use pull down menu to decide volume level.



**Volume Level is set for the radio that has the GPS device.**

---

### **1.13.6 Appoint Time**

SYNC Enable Not-selected: GPS information is transmitted when time passes over setup value designated in Appoint Time.

SYNC Enable Selected: When time passes over setup value designated in Appoint Time, the GPS information is transmitted incrementally by time slot as defined in Time Slot Number (for multiple units in operation).

### **1.13.7 Country Hour**

Input the number of hours that the radio will operate in with the difference from General Mountain Time (GMT).



**Value of negative number shows negative number value of 24+ (ex: If it is -9, it shows 24-9 = 15 hours)**

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### **1.13.8 TimeSlot NO**

If the **SYNC Enable box is checked**, GPS information is transmitted at the time slot that is defined by the value located in the Appoint time section.

(Example: If Appoint time is 30 seconds, a maximum total of 15 (0~14) radios can be utilized).

### **1.13.9 GPS Frequency**

Frequency is same as channel designated to transmit GPS information via input wireless frequency.

GPS information is transmitted and received through this frequency.

### **1.13.10 ID Kind**

Selects ID to transmit via 5- Tone or DTMF.

## 1-14 GPS Use Method

The power switch of GPS Equipment is assigned to F4 button. Hold F4 over 2 seconds to turn on GPS functionality. To turn off, hold F4 over 2 seconds to turn off GPS functionality.

Other radio operations are same when GPS functionality is turned off.

### 1-15 1.14.1 Receiving Function

If matching to transmit frequency, the radio can receive GPS data regardless of GPS equipment.

### 1-16 1.14.2 Transmit Function

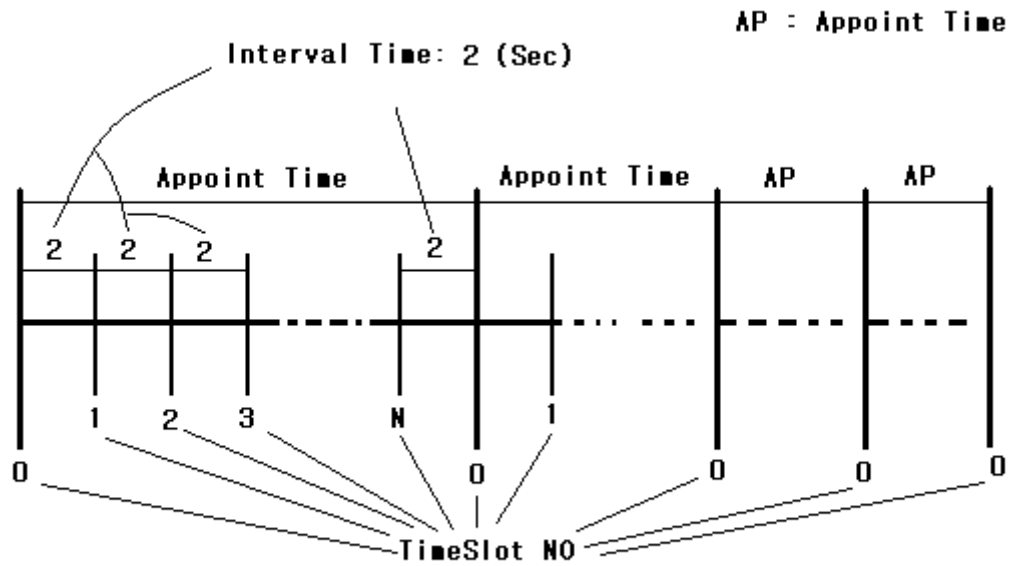
There are two Transmission modes:

The first mode is Event mode

The second mode is Time SYNC mode

- Event mode - If over the Appoint Range or Appoint Time that GPS information is transmitted, the radio numbers equipped with GPS device is small, therefore, this mode is used.
- 
- Time Sync Mode - Appoint Time indicates cycle of transmitting GPS information. < picture >
- Time Slot NO shows transmitting Time Slot order by indicating 0~N.N =  $\text{INT}(\text{Appoint Time} / 2 - 1)$ .
- This mode receives all location information from all radios equipped with GPS.





- 
- Explanation) If TimerSlot No is 0, when it is over Appoint Time, it transmits
- If TimeSlot NO is 1, when it is over Appoint Time +2 seconds, it transmits
- If TimeSlot NO is 2, when it is over Appoint Time +4 seconds, it transmits



**INT accepts only integer of calculation.**

**2 is the value of Interval Time**

## 1-17 Default Value Comparison Window

PZ Series Default Data Compare VER 1.23 PZ-400K COM 3

Default File Data		Radio Data		
IF IC Stable Time : 190 ms		IF IC Stable Time :		Read Radio(F4)
RF Power On Delay Time : 10 ms		RF Power On Delay Time :		
High Power Battery Level(Low) : 158		High Power Battery Level(Low) :		Write Default(F5)
High Power Battery Level(Middle) : 167		High Power Battery Level(Middle) :		
High Power Battery Level(High) : 172		High Power Battery Level(High) :		
Low Power Battery Level(Low) : 160		Low Power Battery Level(Low) :		
Low Power Battery Level(Middle) : 169		Low Power Battery Level(Middle) :		
Low Power Battery Level(High) : 174		Low Power Battery Level(High) :		
RX Battery Level(Low) : 164		RX Battery Level(Low) :		
RX Battery Level(Middle) : 174		RX Battery Level(Middle) :		
RX Battery Level(High) : 179		RX Battery Level(High) :		
Power Off Battery Level : 155		Power Off Battery Level :		Main Window
RSSI Level 1 : 65		RSSI Level 1 :		
RSSI Level 2 : 85		RSSI Level 2 :		
RSSI Level 3 : 105		RSSI Level 3 :		
RSSI Level 4 : 125		RSSI Level 4 :		
RSSI Level 5 : 125		RSSI Level 5 :		
(WIDE)	(NARROW)	(WIDE)	(NARROW)	
SQL Level 1 : 0	SQL Level 1 : 24	SQL Level 1 :	SQL Level 1 :	
SQL Level 2 : 0	SQL Level 2 : 23	SQL Level 2 :	SQL Level 2 :	
SQL Level 3 : 0	SQL Level 3 : 22	SQL Level 3 :	SQL Level 3 :	
SQL Level 4 : 0	SQL Level 4 : 20	SQL Level 4 :	SQL Level 4 :	
SQL Level 5 : 0	SQL Level 5 : 18	SQL Level 5 :	SQL Level 5 :	
SQL Level 6 : 0	SQL Level 6 : 16	SQL Level 6 :	SQL Level 6 :	
SQL Level 7 : 0	SQL Level 7 : 14	SQL Level 7 :	SQL Level 7 :	
SQL Level 8 : 0	SQL Level 8 : 12	SQL Level 8 :	SQL Level 8 :	
SQL Level 9 : 0	SQL Level 9 : 10	SQL Level 9 :	SQL Level 9 :	

This window is to compare the value of default file versus the values registered in the radio.

### 1.15.1 Button Explanation

- Read Radio: Reads and indicates related data which is saved in a radio.
- Write Radio: Writes default file into a radio.
- Main Window: Returns to main screen.

## 1-18 Radio Management Window



Indicates Radio Management information; this window is not related to radio performance.

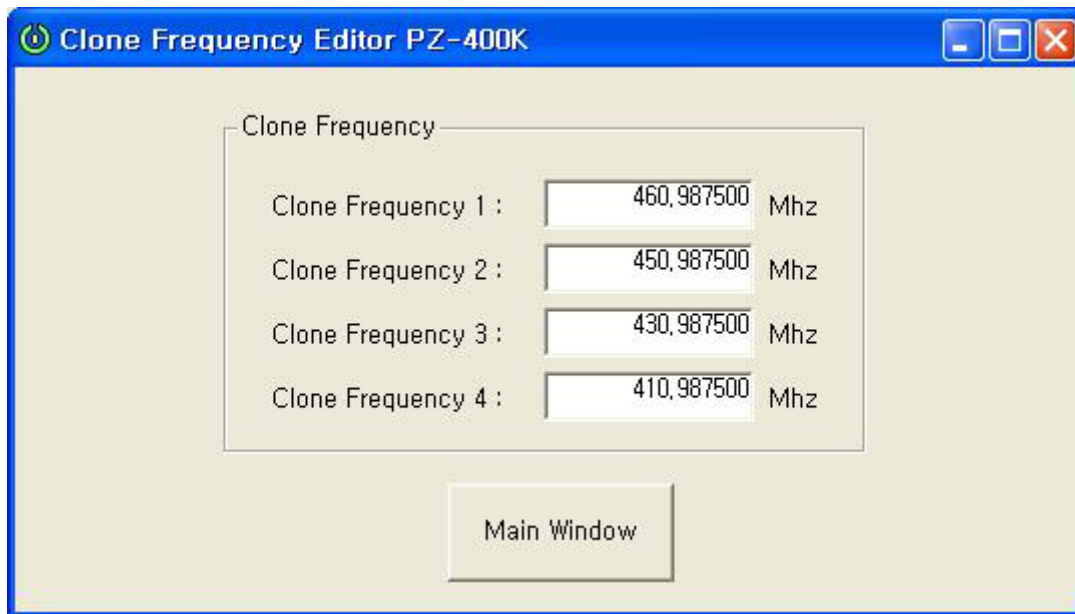
### 1.16.1 Button Explanation

- Read Records: Reads management information from a radio.
- Main Window: Returns to main screen

### 1.16.2 Content Explanation

- Model Name: Indicates radio model name.
- Serial Number: Not available..
- Manufacture Tuning Date: This indicates tuning date during manufacture process.
- A/S Tuning Date: This is the date that it is saved in Radio Adjustment Window after products outgoing.

### 1-19 Clone Frequency



This window is frequency input window to use when cloning.

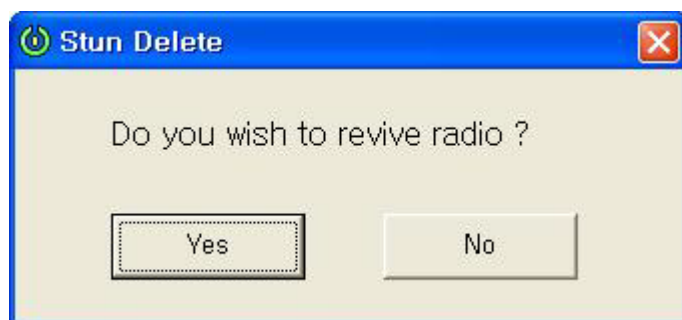
(Frequency above are Default values)

### 1-20 Password Delete



This process is to delete password saved in a radio.

## 1-21 Stun Delete



This process is to revive the radio stunned.

## 1-22 Wireless Cloning

Cloning refers to taking the programming information from one radio and copying it to one or more radios without the aid of a computer. Typically the radio sending the information is called the Master, while the radios receiving the data are the Slave radios. This terminology is used below in the cloning process.

To prepare the Slave radio(s) for receiving the new program, they must be placed into the “CLONE (RX)” mode. Start by holding the monitor button (round button on the side of the radio) and turning the radio on. The display will show “Flash Bypass” then “CLONE (LINE)”. Release the monitor button.

Press the F1 button once and the radio will display “CLONE (RX) 1”. The “1” refers to the channel number assigned to receive the data from the Master radio. This frequency is not however one of the programmed channels in the radio. It is a predefined cloning frequency. There is probably no need to change this channel but it can be changed by pressing the F1 and F3 buttons. Refer to the Owner’s Guide for specific button function.

With the Slave radio(s) in the receive mode, activate them by a press of the F3 button. You will see “READY RX CLONE”.

On the Master radio, press and hold the monitor button and turn the radio on. Release the button when the display shows “CLONE (LINE)”. Press the F1 button twice. The display will show “CLONE (TX) 1”. Since the slave radios have already been prepared, press the F3 button of the Master radio to begin cloning.

The Master radio will start at 0% and progress through to 100% completion. It will display “CLONE (TX)” when finished. The slave radio(s) will display the progress in a % sign. When complete, they will restart and display channel 1 of the new program. If the Master radio did not program the slave radio(s), they will remain on “CLONE (RX)”. Repeat the process or just press the F3 button on the Master radio.

## **1-23 1-21 Channel Switch Lock**

There may be times when someone wishes to lock the channel switch located on top of the radio. This does not disable the buttons on the front of the radio as a Key Lock would do. The procedure to lock is listed below:

With the radio turned off, press and hold the F1 button located on the front of the radio. Next turn the radio on. The display will show "SW LOCK On!". Release the F1 button. Try rotating the channel selector and you will find it does not change channels.

Note: with Switch Lock enabled, it sets the channel to the last channel used before the radio was turned off. To disable the lock function, repeat the procedure above. The display on the radio will show "SW LOCK Off!".

Note: Turning the radio off then back on will not enable the channel selector.

If a button has been programmed for Key Lock and it is enabled, all of the buttons along with the channel selector knob will be disabled. If a button is pressed or the channel selector knob rotated, the display will show "KEY LOCK !".

Note: when Switch Lock is used and the channel selector knob is rotated, there is no indication on the display.