RL328
VHF/UHF Handheld Transceiver

Programmer Software Guide

Ver. 3.08 issued on May 15th 2006

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1 INSTALLATION

1.1 Unpacking

The following items are in the programmer's package:

(a) Compact Disc with the programming software
(b) Programming operating instructions (this book!)

1.2 System requirements

To use the Rexon Programming Software for RL328, you need the following hardware and software:

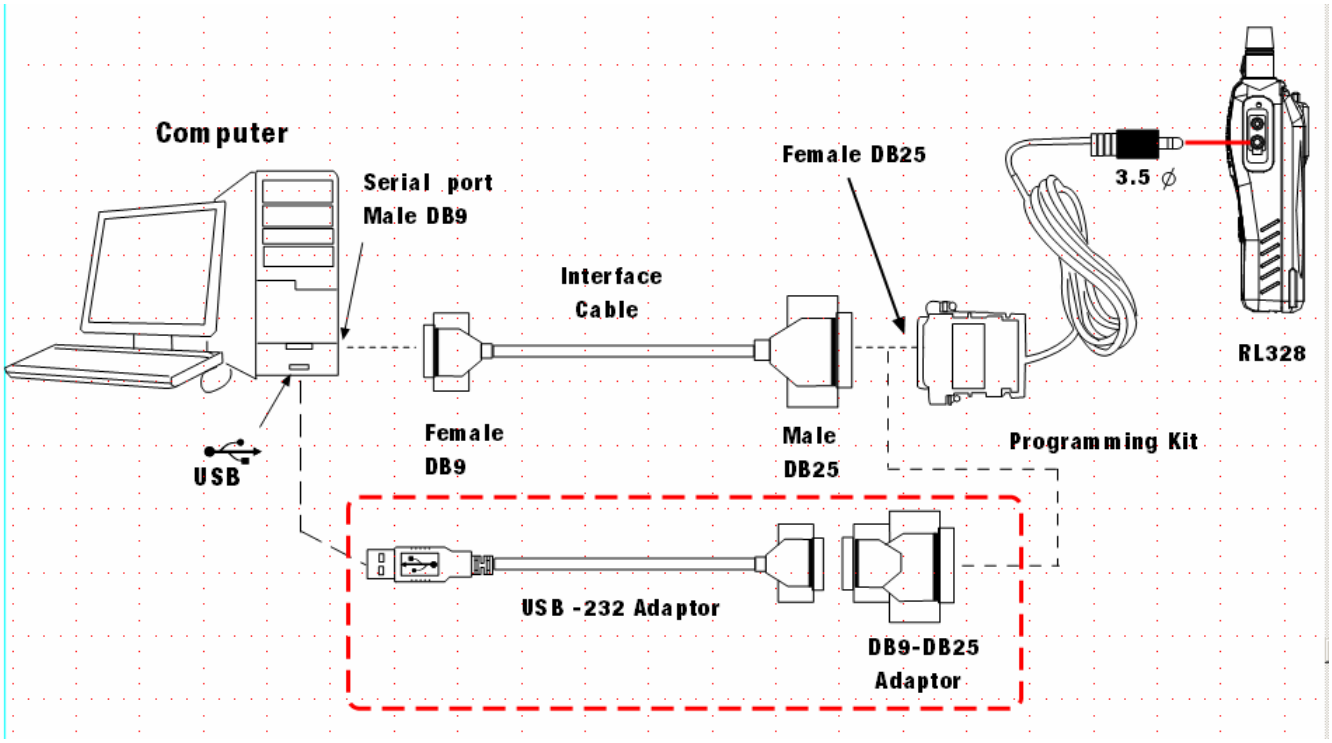
(a) IBM®-compatible personal computer with Pentium (I) processor or higher (basically depending on the operating system)
(b) Operating system Windows® 95 or higher.
(c) Hard drive - at least 1MB of free disk space and CD drive
(d) Random access memory (RAM) - basically depending on the O.S. (at least 32 MB; 64 MB recommended)

1.3 Installing programming software

1) Start Windows, if it is not already running.
2) Insert the CD with the software in your drive.
3) Press Setup.exe to install programming software from CD ROM

1.4 Arrangement to program

Configuration as following diagram



1) Make sure that the transceiver is turned off.
2) Locate the connectors protection cover in the transceiver's right side
3) With a suitable coin or screwdriver, unscrew the screw which locks the protection cover and remove it in order to access the connectors
4) Setting diagram as above illustration
5) Insert programming it supplied serial cable provided with 3.5 mm stereo jack plug
6) Push gently the cable's 3,5 mm stereo jack into the transceiver's one until it is firmly in place.
7) Connect the other end of the serial cable to your computer's serial port and make sure it's firmly in place.
8) Press **UP& DOWN** button and then turn on the radio, ready to programming or reading. LCD display will appear "CLOne"

2 PROGRAMMING

2.1 Running programming software

1) From the windows system menu Start select Programs
2) From Menu RL328 Programmer select Launch RL328VHF or Launch RL328UHF. The programming software will start running.

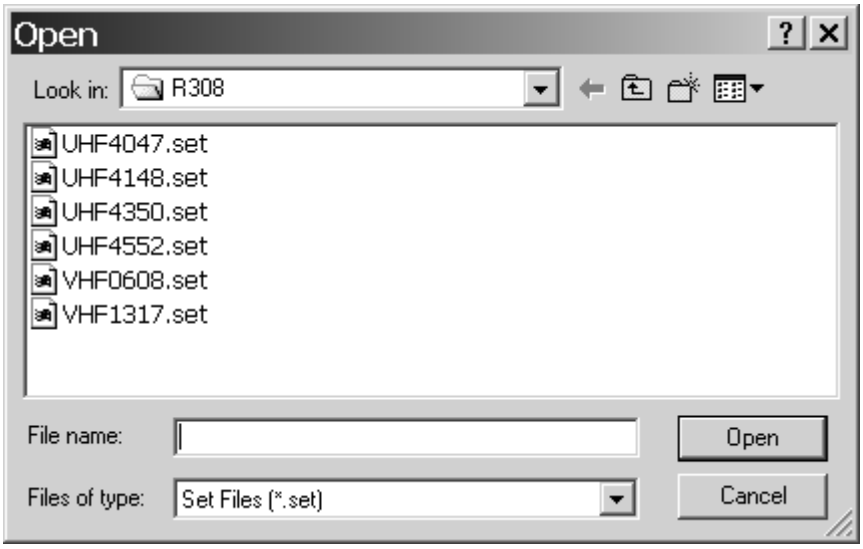
2.2 Opening existed programming setting

1) From the menu **File** select **Open**: the **Open** window will appear.
2) Select existed programming setting in the appropriate box (file name usually), then press "Open"

It is very important to open correct setting. Because these are many parameters in factory setting

Firstly, you have to open correct setting before reading or programming a radio, Because reading radio can not read factory parameters.

e.g. > Open VHF0608.set for VHF 66~88MHz.



2.3 Selecting the proper COM (serial) port

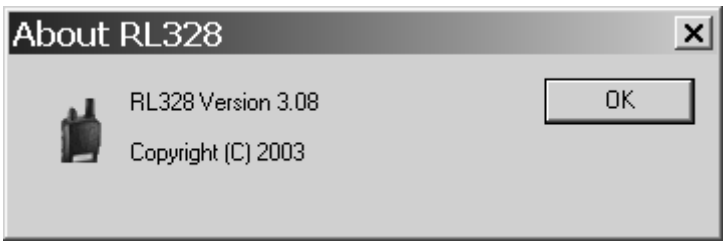
Select the communication port which is connected to the PC programming cable which is connected to the radio.

1) From the menu **Port** select **Port**, you will see the tick sign on **Com 1**.
2) Select appropriate COM port and Press OK menu to finish.

2.4 About the software version

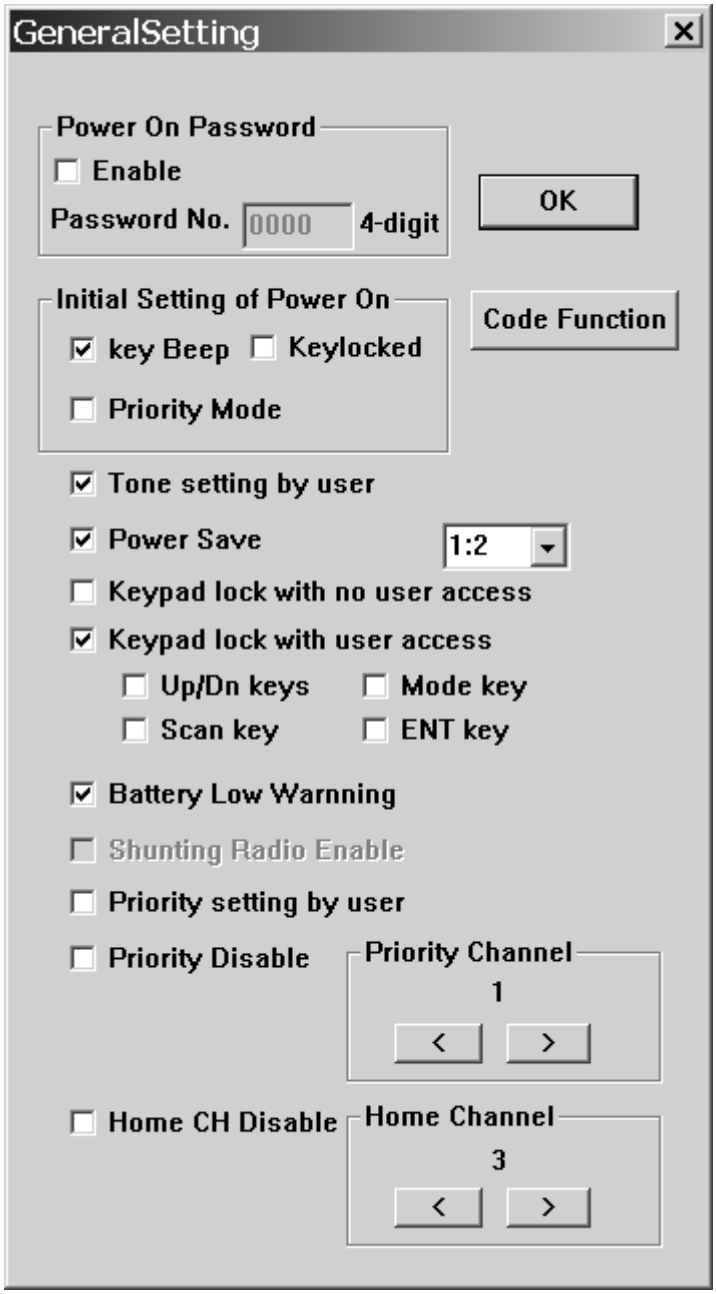
Check version for additional info,

1) From the menu **Help,** select **About**. The **About** window will open showing you the said data.



3 GENERAL SETTING

3.1 Basic parameters:



From the menu **Setting** select **General**

3.1.a Power On Password

This parameter defines whether the password function shall be "Enabled" or "Disabled" when the radio is switched on.

When this parameter is set to "Enabled," four digits password must be entered when the radio turns on.

Notice: This parameter is only configured in RL328K version

3.1.b Initial setting of power on

Following setting are initial settings when the radio turns on.

1) **Keyboard Beep:** enable beep when users operate the radio button.
2) **Keylocked:** enable keypad lock function.
3) **Priority mode:** enable priority mode.

3.1.c Tone setting by user

User is able to change or turn off tone without according to channel setting if this parameter is set to activate ".

3.1.d Power save

There are two types of scale for user selection, one is 1:1 and 1:2 in ANI mode; 1:1,1:2 and1:3 scale for normal mode.

3.1.e Keypad lock with no user access:

User does not unlock keypad at anytime if activate this parameters.

3.1.f Keypad lock with user access

These parameters set to access when user operates this radio at anytime. These are Up/Down, Mode , Scan and ENT button.

3.1.g Battery Low Warning

This parameter sets battery low warning. The radio will alert notice to user for per 30sec interval when activates this parameter.

3.1.h Shunting Radio Enable

It is designed this way as a safety feature. Should the person holding the switch leave go of it for any reason the shunting tones stop and the train that is being moved is then stopped by the driver because he can no longer hear the tones being sent.

If this parameter is set to enable that makes the radio transmit and radiate two tones, these being a 1200Hz tone and a 1400Hz tone. Each tone lasts for one second with a 100milli second space between them. They are sent alternatively for the full duration of the button being held in.

3.1.i Priority setting by user

User is able to change priority channel without according to general setting if this parameter is set to activate ".

3.1.j Priority Disable:

Priority channel is not setting when this parameter is set to activate. If priority channel is disable, emergency code function is invalid.

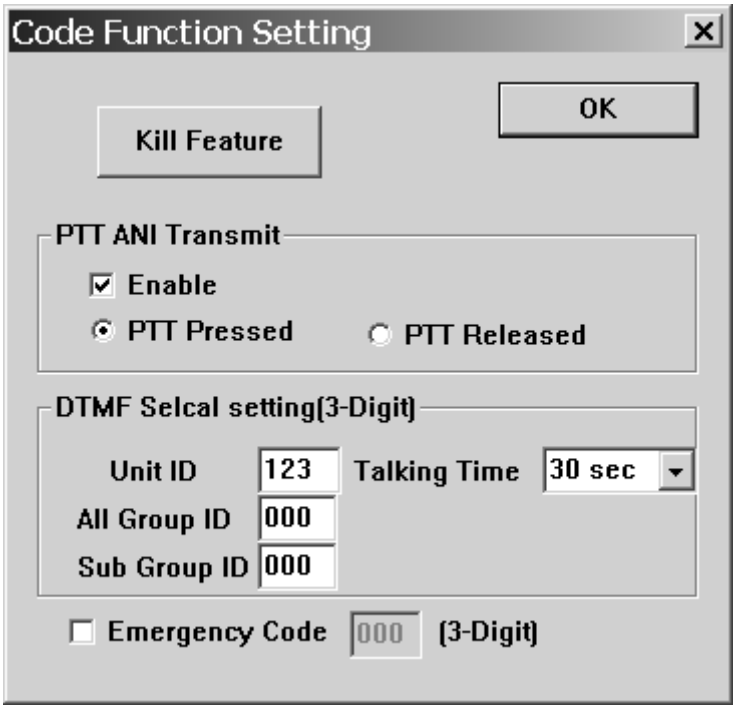
3.1.k Priority Channel:

Select a channel as priority channel. When you press PRI button The Channel will immediately toggle to priority channel in your setting.

3.1.l Home CH Disable

This parameter sets a home channel for transmission channel on scan mode. When you press PTT button in scanning mode, the transmission channel will toggle to home channel. If this parameter is set to disable, transmission channel will do currently scan channel.

3.2 Code Function Setting



3.2.a PTT ANI Transmit

This parameter sets ANI transmit. There are PTT pressed or PTT released for transmission method

3.2.b DTMF SelCal Setting

Make a Selective Call to individuals, sub-group, or whole group. These parameters are Unit ID, All Group ID and Sub group ID. In this mode, the audio is muting until Selcal feature is successfully operated.

Talking time: When Selective Calling is activated, you set talk time for this period.

To do a Selcal, please reference DTMF Selcal clause in user's manual.

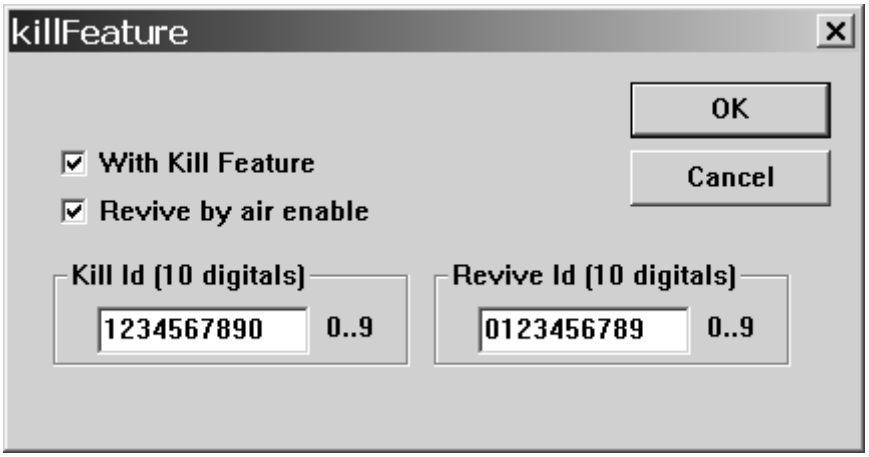
3.2.c Emergency Call

This parameters sets emergency code, To enter 3-digit numbers that will transfer emergency code to other radio when pressing PRI and MON button together for one second. This parameter for each operating channel

Notice: Kill feature, Selective Calling and emergency call are only configured in DTMF version

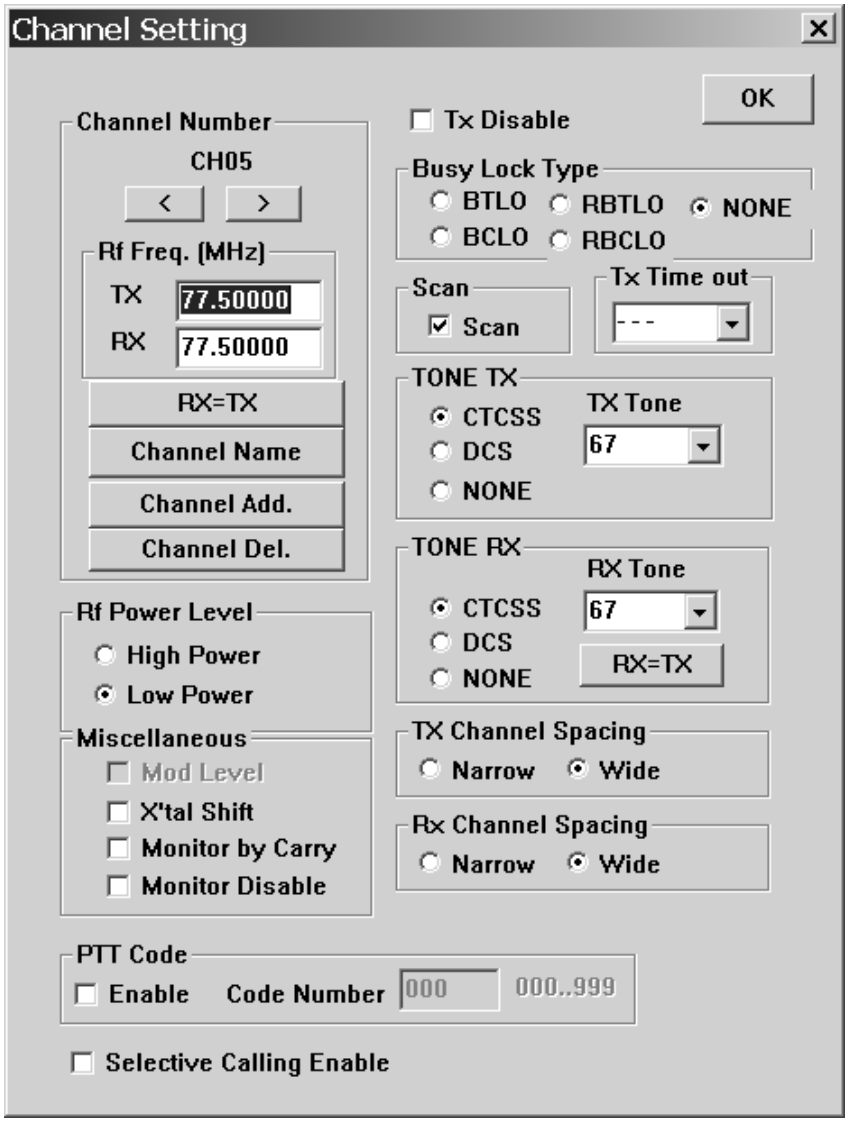
3.2.d Kill Feature

Operating the radio is overridden when activates kill feature that prevents un-authorizer to use the radio. Click Kill feature menu on code function setting, you have to activate "with kill feature", and then enter kill ID (10-Digit). The radio will die when gets a same Kill ID by air. "Revive by air enable" feature is activated, the radio can be revive by air if gets same reviving ID.



4 CHANNEL SETTING

4.1 Basic parameters :



4.1.a Channel Number : CHxx

Rf Freq (MHz): Radio Frequency Unit :Mhz

TX : Tx frequency

RX : Rx frequency

RX=TX: Tx frequency is equal to Rx frequency

Channel Add: Click menu "Channel Add " to add new channel.

Channel Del: Click menu "Channel Del "to delete this channel.

Channel Name: Click "Channel Name" menu into naming setting, Maximum 5 alphanumeric is allowed in each channel (*optional)

Normalize: Each channel is sequencing when add a new channel, and automatic additions prefix 2 characters by channel name

Channel Name : Each channel is named by user definition.

4.1.b Rf Power level

This parameter adjusts the TX (High or Low) Output Power for each operating channel.

4.1.c PTT Code:

The PTT code provides private communication. When group get same PTT code that wills un-mute loudspeakers. This parameter sets PTT code. Enter 3-digit numbers to define PTT code.

4.1.d Selective Calling Enable:

This parameter is enable to do a selective calling feature for each operating channel.

4.1.e Monitor Disable:

MON button is forbidden to operate when activates this parameters.

4.1.f Monitor by Carry

When this channel has tone setting, this parameter can select "monitor by carry". It will not mute if no carry when press MON button.

4.1.g Tx disable:

This parameter is set this radio to disable transmission for each operating channel.

4.1.h Busy Lock Type:

These parameters are set transmitter to lock transmission.

- BTLO: Busy Tone LockOut.
- RBTLO: Busy Tone LockOut in repeater feature
- BCLO: Busy Channel LockOut.

- RBCLO: Busy Tone LockOut in repeater feature.

***BTLO** and **RBTLO** is hidden when Tone RX is none*

4.1.i Scan:

This parameter sets scan function when press SCAN button.

4.1.j TX Time

This parameter sets time-out timer for transmitter.

4.1.k TONE TX

The tone feature provides private communication. This parameter sets tones of transmitter for each operating channel. There are CTCSS, DCS and none for using. Annex I tables for you reference.

4.1.l TONE RX

The tone feature provides private communication. This parameter sets tone of receiver for each operating channel. There are CTCSS, DCS and none for using. Annex I tables for you reference.

4.1.m TX Channel Spacing

This parameter sets narrow or wide band for transmitter's separation. Narrow means 12.5Khz channel separation; the wide means 25KHz channel separation.

4.1.n RX Channel Spacing:

This parameter sets narrow or wide band for receiver's channel separation. Narrow means 12.5Khz channel separation; the wide means 25Khz channel separation.

When you finish all configurations, press "OK" menu to confirm and exit

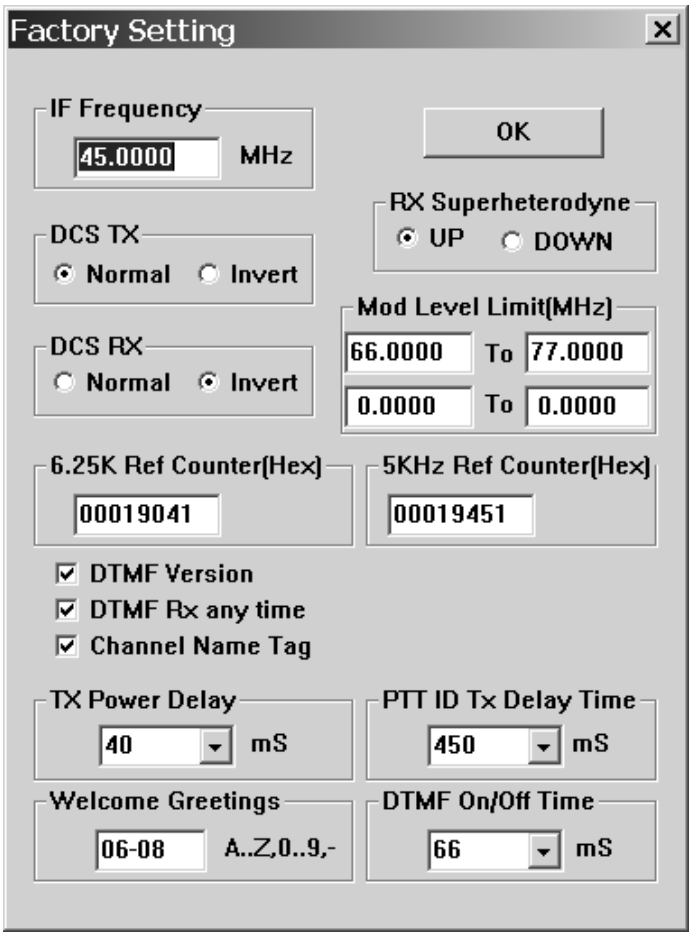
5 FACTORY SETTING

5.1 Factory Parameters:

5.1.a IF Frequency, DCS TX, DCS RX, 6.25K Ref Counter, RX Superheterodyne,

5.1.b Mod Level, 5Khz Ref Counter

Factory parameters are forbidden to edit without manufacturer assistance.



5.2 Users Parameters

Click dialogue box to enable/disable following function

5.2.a DTMF Version

Code Function is admitted when this parameter is set.

5.2.b DTMF RX any time

Enable decode (DTMF) at anytime

5.2.c Channel Name Tag

There are two types of channel name. Either is Name Tag system MAX 5-chars (e.g. Johny /Nelson) or prefix 2-chars system(e.g. Ch01~99 or HT01~99).

5.2.d TX Power Delay

This parameter delays RF power timing.

5.2.e PTT ID Delay Time

This parameter delays PTT code timing.

5.2.f DTMF On/Off Time

This parameter turns on or off DTMF timing.

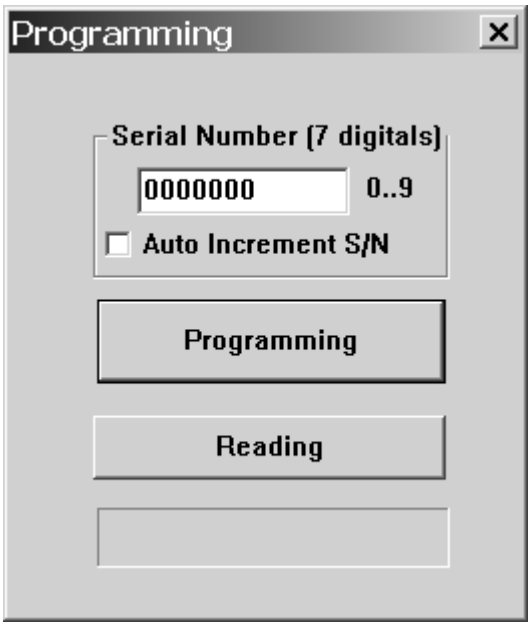
5.2.g Welcome Greetings

This parameter sets welcome greeting when the radio turns on. To enter Max. 5–digit numbers or “,”,”-“

Manufacturer does a mark in this feature to show fabrication frequency band, e.g. 13-17 is 136Mhz~174MHz

6 FINAL OPERATIONS

6.1 Programming data to the radio



Once you are sure to have properly programmed all the radio's data (at least one TX/RX frequency with basic parameters) you can transfer the said data to its memory and terminate the programming. Do as follows:

1) From the menu **Programming** select **Programming**: the **Programming** window will appears
2) Make sure the radio has been properly connected as described in figure A.
3) Switch off the radio (if switched on), then keep the **UP** & **DOWN** button pressed and switch the radio on:
4) LCD will show **CLOne** in programming mode.

Click the **Programming** button: a writing sequence will start.

6.2 Reading data from the radio

1) Make sure that connecting same as programming data.
2) When LCD display show **CLOne** , press Reading button to read data of radio.

6.3 Serial Number

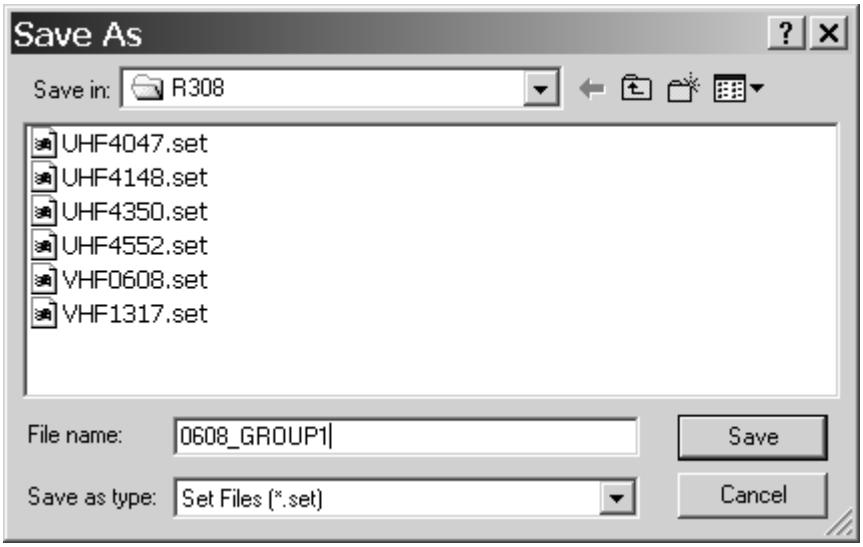
This parameter indicates the serial number of the radio.

It will automatically increase serial number when enable Auto Increment S/N parameter.

6.4 Saving programming data

It's recommended to save all the programmed data in the hard disk of your PC or diskette(s) in order to obtain a programming archive containing the data of all the radios you have programmed. This will be useful in case your customer would like to add new radios to the existing network or if you have to create new networks which have similar programming.

1) From the menu **File** select **Save as**: the **Save Radio setting as** window will appear.
2) To enter the filename in the appropriate box (file name usually)., then press **Save**



7 PRINT PREVIEW

To preview all of channel settings, you see following figure. And you can double-click the channel which do you want to modify.

```
key Beep :                          On
Keylocked :                         Off
Priority Mode :                     Off
Tone setting by user enable :       On
Power Save Enable :                 1:2
Priority Channel :                   1, Function Enable
Keypad lock with no user access :   Off
Battery Low Warnning :              On
Keypad lock with user access :      On ,
Home Channel :                       3
shuting Radio :                     Disable
Power On Password :                 Off
Sel Call :                          Talking Time=  30 Sec ,Unit ID= 123 ,Priority ID= 000 ,Group ID= 000
Emergency Code :                    Off
kill Feature:                       Off
```

Chn	TAG	Frequency Transmit	Frequency Receive	Pwr H/L	Xtal Shift	MON	Lock Out	Scan	TOT	Sub Tone TX	Sub Tone RX	Ch Spacing TX	Ch Spacing RX	PTT Code	SEL CAL
1	CH01	87.99000	87.99000	L	- - -	-Disable	- - -	On	- - -	- - -	- - -	W	W	321	On
2	CH02	66.00000	66.00000	L	- - -	-Normal	- - -	On	- - -	- - -	- - -	W	W	- - -	- -
3	CH03	77.05000	77.05000	L	- - -	-Normal	- - -	On	- - -	- - -	- - -	W	W	- - -	- -
4	CH04	88.50000	88.50000	L	- - -	-Normal	- - -	On	- - -	- - -	- - -	W	W	- - -	- -
5	CH05	77.50000	77.50000	L	- - -	-Disable	- - -	On	- - -	T: 67	T: 67	W	W	- - -	- -
6	CH06	77.50000	77.50000	L	- - -	-Disable	- - -	On	- - -	D: 031	D: 031	W	W	- - -	- -
7	CH07	77.50000	77.50000	L	- - -	-Normal	- - -	On	- - -	T: 254.1	T: 254.1	W	W	- - -	- -
8	CH08	66.00000	66.00000	L	- - -	-Normal	- - -	On	- - -	D: 031	D: 031	W	W	- - -	- -
9	CH09	87.99000	87.99000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
10	CH10	66.00000	66.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
11	CH11	86.00000	86.00000	L	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
12	CH12	68.00000	68.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
13	CH13	70.00000	70.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
14	CH14	72.00000	72.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
15	CH15	74.00000	74.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
16	CH16	76.00000	76.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
17	CH17	78.00000	78.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
18	CH18	80.00000	80.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
19	CH19	82.00000	82.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
20	CH20	84.00000	84.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
21	CH21	86.00000	86.00000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -
22	CH22	87.99000	87.99000	H	- - -	-Normal	- - -	On	- - -	- - -	- - -	N	N	- - -	- -

8 ANNEX I (CTCSS/DCS TABLE)

8.1 CTCSS Table

Code	Freq.	Code	Freq.	Code	Freq.	Code	Freq.	Code	Freq.
01	67.0	11	97.4	21	135.5	31	192.8	41	165.5
02	71.9	12	100	22	141.3	32	203.5	42	171.3
03	74.4	13	103.5	23	146.2	33	210.7	43	177.3
04	77.0	14	107.2	24	151.4	34	218.1	44	183.5
05	79.7	15	110.9	25	156.7	35	225.7	45	189.9
06	82.5	16	114.8	26	162.2	36	233.6	46	196.6
07	85.4	17	118.8	27	167.9	37	241.8	47	199.5
08	88.5	18	123.0	28	173.8	38	250.3	48	206.5
09	91.5	19	127.3	29	179.9	39	69.3	49	229.1
10	94.8	20	131.8	30	186.2	40	159.8	50	254.1
51	150	52	---						

8.2 DCS Table

023	025	026	031	032	043	047	051	054	065
071	072	073	074	114	115	116	125	131	132
134	143	152	155	156	162	165	172	174	205
223	226	243	244	245	251	261	263	265	271
306	311	315	331	343	346	351	364	365	371
411	412	413	423	431	432	445	464	465	466
503	506	516	532	546	565	606	612	624	627
631	632	654	662	664	703	712	723	731	732
734	743	754	---						

A

ANNEX I 10
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