AT-D868UV CodePlug Programming Guide

INTRODUCTION



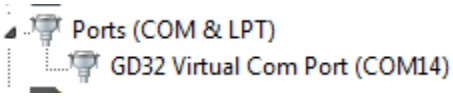
The AnyTone D868UV radio is a VHF and UHF radio with both Digital DMR (Tier I and II) and Analog capabilities. It offers a total of 4,000 channels (Analog and Digital), 10,000 Digital Talk Groups, and up to 150,000 contacts, as well as multiple DMR ID numbers (Radio ID's) for a single radio. With the enhanced capabilities of the AT-D868UV radio, this Programming Guide will help users to understand all aspects of how to program and set up the radio for maximum usability.

Please note that the AT-D868UV radio may have a locked key-board upon arrival. The FCC requires per 47CFR90.203 that an unauthorized user shall not be able to enter any frequencies and transmit on a frequency not authorized. Frequencies should only be programmed by service or maintenance personnel. This Guide is primarily provided for such service or maintenance personnel. For such person to open up the keyboard, press the "Menu" key and the "*" (star) key.

The software which programs the radio frequencies and all other user defined aspects of the operation is called a "codeplug". Creating a codeplug is a 'bottom up' process where the lowest (common) elements must be created first, then built upon until a fully functional codeplug, that can be loaded into a radio, has been created. The AT-D868UV radio has unique software for both creating the codeplug and writing it into the radio for use. When you start creating a new codeplug, many lists and groups are populated with single entries, which may be used as placeholders for initial creation of lists. The programming software (also called CPS) allows to "import" and "export" most of the programming parameters for the creation of large amount of input data to the radio – for example large lists of contact names.

1.0 GETTING STARTED

The programming cable for the AT-D868UV radio is typically provided by AnyTone. There are several different types of programming cables available, and the one to use has a very small USB connector. Others use an electronic circuit inside the USB connector, and will not work. Make sure the computer has the correct driver for the cable – see the Device Manager on your PC.



If you do not see this USB port driver, you should install the USB driver from the file GD_VirtualComDriver 1.0.1.2118 folder as an Administrator to your computer. Select the x64 or x86 version depending on the operating system of the computer you use.

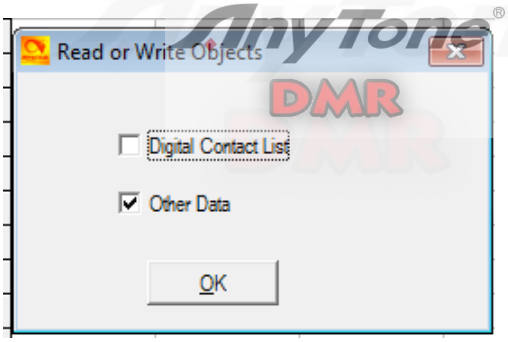
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Open the Device Manager, and then double click on the “Ports” to display the driver (GD32 Virtual Com Port) and right click on the driver to open PROPERTIES. This will display the details of the driver, and under **Port Settings** update the “Bits per second” to 128,000 for faster read and write to the radio.

Note: Before you start any programming work read the current file from the radio into your PC so you have a baseline and something to start with.

The Computer Programming Software (CPS) for the AT-D868UV radio may be updated from time to time to correspond to the firmware version used for the radio, and the AnyTone website will offer those updates http://www.qx-tele.com/about/about8.html. So CPS D868UVE_Setup_1.18.exe should be used for a radio with firmware V1.18 or V2.18 and so on.

Install the CPS Programming software on your computer, and when you read (or write) software to or from the radio, it asks the question if you want to read only the “other data” – which is all programming parameters of the radio, and/or the “Digital Contact List”. The DMR contact list could contain over 70,000 names, and as a result consume up to 10 minutes to read or write to the radio.



If you are living in an area where you may be the first to have to generate the codeplug with all your local repeater frequencies, there may be a codeplug for the AnyTone D868UV radio from another geographical area which has most of the basic data as a starting point. The Minnesota DMR websites may be a good place to start looking for the codeplug which has all the DMR ID’s already in the codeplug. That would save you a lot of time to use this codeplug as a start, and then update your local frequencies. Also, check if the “Contact Manager” made by N0GSG is available for this radio.

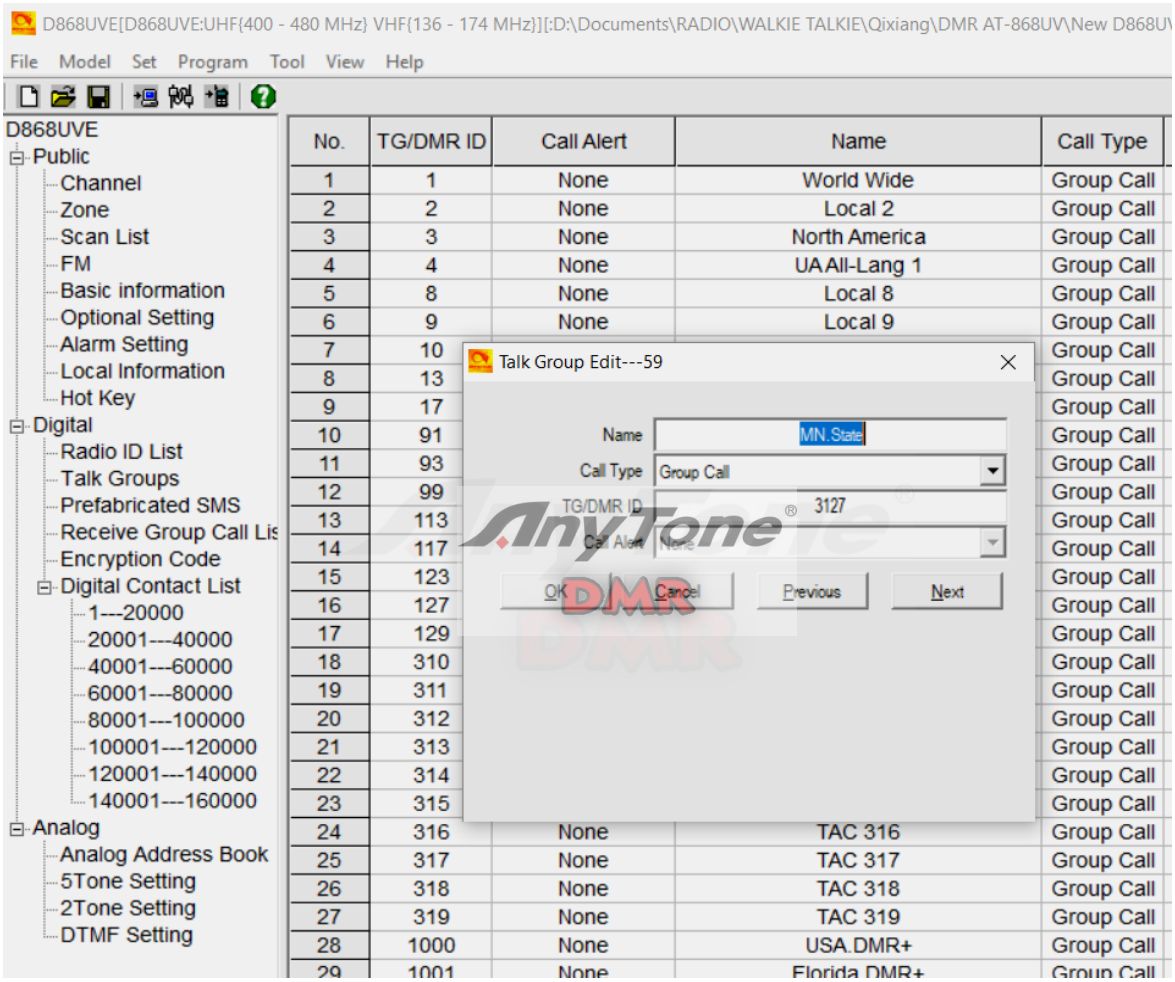
If the tool **Mode Select** shows up when you open the Programming software, just click “OK” as it is a requested option by a few users in California. If this option is selected you may use the identical name for multiple Contact names and Channel names.



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STEP 1 – TALK GROUP (DIGITAL CONTACT) LIST

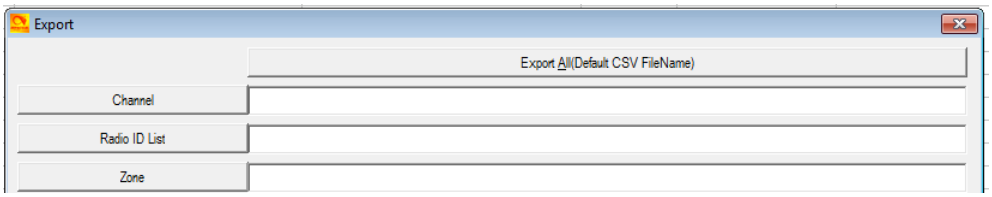
The AT-D868UV program looks like an excel spreadsheet once opened, and the left side defines the many aspects of programming. Open the DIGITAL CONTACT Talk Group tab on the left side and double click on the first line (Line No. 1). The Digital Contact List typically contains the DMR Talk Groups which the user may want to use.



Start to program all applicable DMR Talk Groups (TG uses Group Call) you which to monitor or talk on. This list of Talk Groups may include up to 100+ different groups. A list of world wide Talk Groups can be found at **http://www.dmr-marc.net/**

The Talk Group list can also be generated by exporting the original radio Digital Contacts Talk Groups and then add in to that list in an excel format. In the Programming Software there is import and export features in the taskbar – open the TOOL and do an "export". This opens up a new screen where you click on "Digital Contact". A new screen shows up where you define where to save the list on your PC.

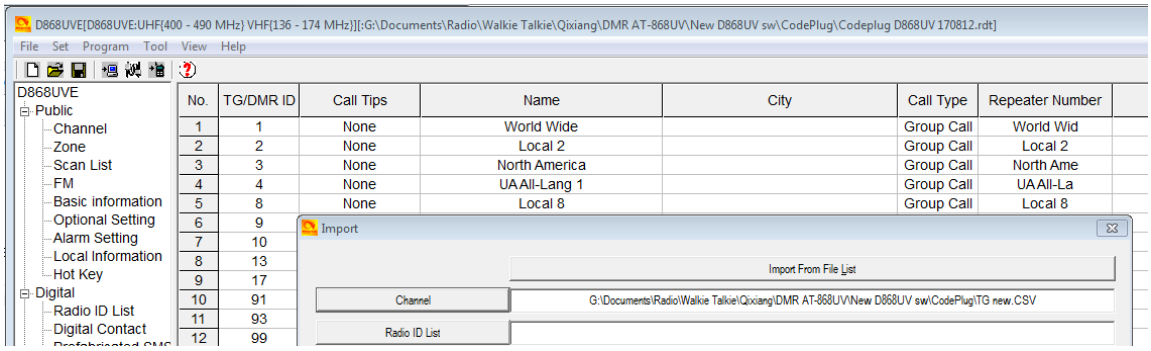
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In the .csv format you can paste all or your required Talk Groups from the DMR-MARC website into the spread sheet. You get the format from the original radio Codeplug you just exported.

	A	B	C	D	E	F	G	H	I	J
1	No.	TG/DMR ID	Repeater Number	Name	City	State/	Country	Remarks	Call Type	Call Tips
2	1	1	World Wid	World Wide					Group Cal	None
3	2	2	Local 2	Local 2					Group Cal	None
4	3	3	North Ame	North America					Group Cal	None
5	4	4	UA All-La	UA All-Lang 1					Group Cal	None
6	5	8	Local 8	Local 8					Group Cal	None
7	6	9	Local 9	Local 9					Group Cal	None
8	7	10	WW German	WW German					Group Cal	None
9	8	13	WW Englis	WW English					Group Cal	None

Once all TG's are entered, the Contact List should be "imported" back into the Programming Software the same way you exported the file. Click on TOOLS, and then "import" and in the new window click on Digital Contacts and select the .csv file you want imported.



NOTE: If you import a Talk Group list with duplicate TG numbers, then the Receive Group Call List set-up will not function correctly, and may shut down the Programming software if you try to set up your Receive Groups.

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STEP 2 – DIGITAL CONTACT LIST



The next step is to fill the radio with all possible contacts you may ever encounter. By doing this, the radio will for each contact you make display the name, DMR ID, Call sign etc. of the individual you are connected with. The DMR-MARK list is steadily growing and you may have to pare it down to your needs.

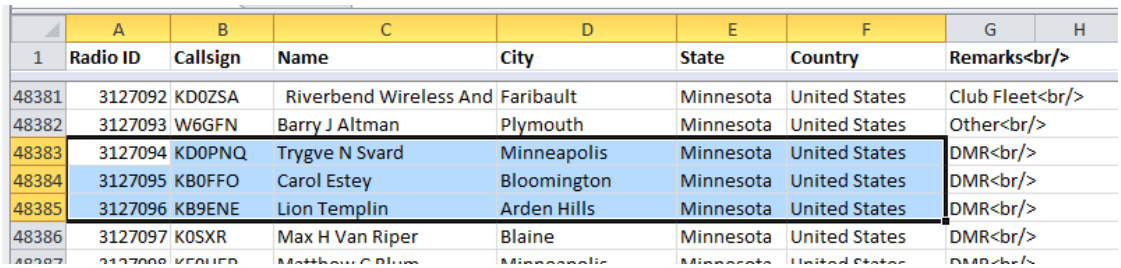
The Contact List is a “look-up” table for the radio to display all the details of the contacted person instead of only the DMR ID number. Individual entries are not allowed.



A master list of DMR contacts is available at the DMR-MARK website:

http://www.dmr-marc.net/cgi-bin/trbo-database/datadump.cgi

This database of contacts can be directly used for DMR ID’s and imported into the radio as required. Download the list and open it up as an excel spreadsheet. From the DMR database, in the .csv spreadsheet, select the country, the DMR ID’s you want to copy over to your radio as shown below (note: you may have to change the DMR database from a .cgi file type to a .csv file type to be able to open it as an excel sheet).

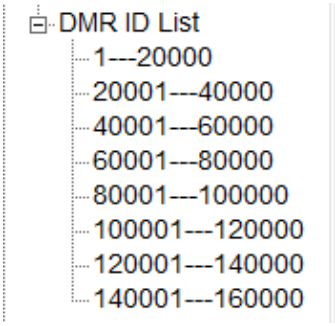


	A	B	C	D	E	F	G	H
1	Radio ID	Callsign	Name	City	State	Country	Remarks 	
48381	3127092	KD0ZSA	Riverbend Wireless And	Faribault	Minnesota	United States	Club Fleet 	
48382	3127093	W6GFN	Barry J Altman	Plymouth	Minnesota	United States	Other 	
48383	3127094	KD0PNQ	Trygve N Svard	Minneapolis	Minnesota	United States	DMR 	
48384	3127095	KB0FFO	Carol Estey	Bloomington	Minnesota	United States	DMR 	
48385	3127096	KB9ENE	Lion Templin	Arden Hills	Minnesota	United States	DMR 	
48386	3127097	K0SXR	Max H Van Riper	Blaine	Minnesota	United States	DMR 	

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In the Programming Software open the TOOL and do an “export”. This opens up a new screen where you click on “DMR ID List” and on the second screen select where you want to save it on your PC. This list is divided in sections to accommodate up to 150,000 ID’s. So if your list you work in the .csv format is more than 20,000 names, when loaded into the radio, they will split up and be distributed between the several lists in the radio.

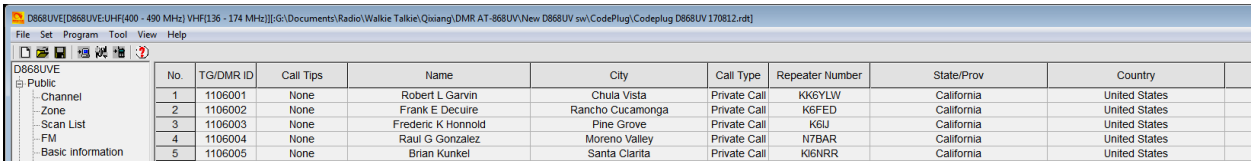


So now that you have both the DMR database and the radio original database open, copy the list of DMR ID’s you want from the DMR database into the radio .csv file. Then back to the TOOL menu, and “import” so you can import the entire .csv DMR ID list into the radio. Note: You have to enter “Private Call” in all the CALL TYPE columns of the radio .csv database before loading it into the radio. The No. column can be left blank.

This is how it looks before being loaded into the radio – make sure the columns agree with the order of the ones from the radio Programming Software

	A	B	C	D	E	F	G	H	I	J
1	No.	TG/DMR ID	Call Tips	Name	City	Call Type	Repeater N	State/Prov	Country	Remark
2	1	1106001		Robert L Garvin	Chula Vista	Private Call	KK6YLW	California	United States	
3	2	1106002		Frank E Decuire	Rancho Cucamonga	Private Call	K6FED	California	United States	
4	3	1106003		Frederic K HonnolD	Pine Grove	Private Call	K6IJ	California	United States	
5	4	1106004		Raul G Gonzalez	Moreno Valley	Private Call	N7BAR	California	United States	

Once loaded into the radio, this is what it looks like



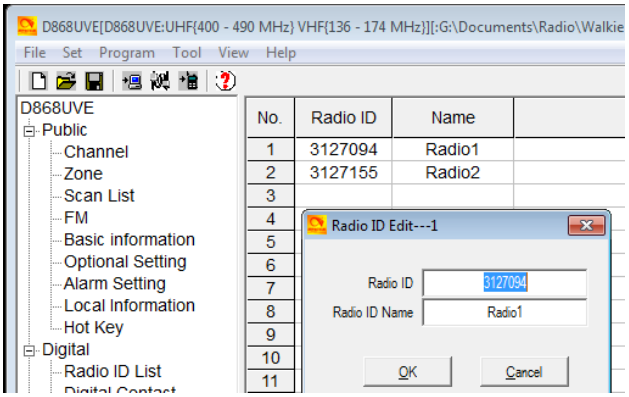
After you have created the Contact List in the radio Programming software, please save it on your PC so that you do not have to re-do this step. Depending on the size of the Contact list you decide to use, it may take some time to load and read with your PC – a full world 63,000 contact list may take 5 minutes to load into the radio!

Note: Any .cvs file being loaded back into the D868UV radio must be correct and have no stray information in any cell outside the ones being used by the radio. If the “import” seems to not work – check the .cvs for any inconsistency. The Contact database, downloaded from DMR-MARK, is not necessarily correct for each entry and have been found needing cleanup to work with the radio.

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STEP 3 - RADIO ID LIST (Multiple Radio ID's)

The AT-D868UV radio will allow multiple DMR Radio ID numbers to be used with the radio. This feature will allow one radio to be used for example as a Commercial Radio with its own DMR ID, and at the same time also be used as an Amateur radio with another DMR ID. Double click on a line and enter the data in the separate window. Click "OK" when done to save the data you entered.

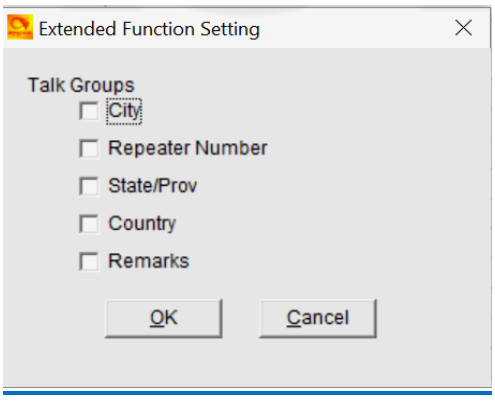


The multiple DMR ID numbers will later show up when programming the various frequencies used by the radio. So the radio can be used on multiple types of networks and be defined as appropriate for each network – Government, Commercial, and/or Amateur.

NOTE: If you download a CodePlug from the Internet for your radio, you must enter your DMR ID as per above before you load this CodePlug into the radio.

EXTENDED TG FUNCTION SETTING

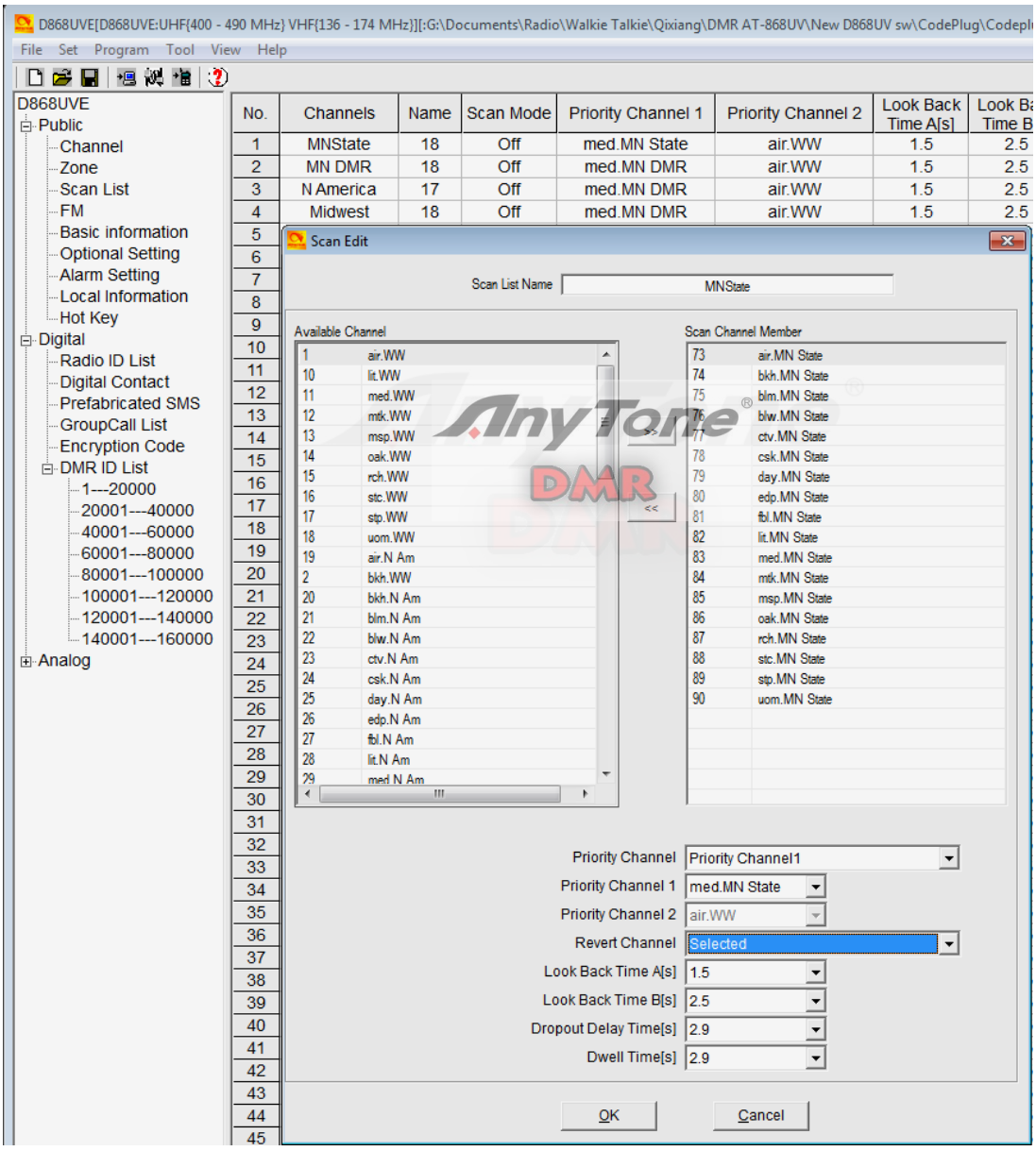
This menu is available under the TOOL pull-down as "eXtended", and define which parts of the Talk Group information in Step 1 above will be displayed on the LCD display screen during reception of a call. If nothing is selected, then the Name of the TG is displayed at the bottom of the screen, and if any of the items in this menu is selected those will be displayed at the bottom of the display.



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STEP 4 - SCAN LIST

Typically a scan list is created with one ‘channel’ for each repeater on slot 1, and one for the slot 2 channel. Initially just create an ‘empty’ scan list (with a name) to use during the channel creation step. Create the Scan list name that relates to your set of channels. In the Scan List menu, click on line No. 1 and open the Scan Edit window. NOTE: A channel number refer to the Channel Matrix (excel format) number No. to the very left of the matrix – there you can reference the DMR Talk Group for a channel.



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Scan List Name:	Name it so it relates to the scan channels
Available Channels:	Will list the channels you create
Scan Channel Memb.:	Move over the channels you need scanned to this area
Priority Channel select:	Select the priority channel or off
Priority Channel 1:	Sets which channel is priority 1
Priority Channel 2:	Sets which channel is priority 2
Revert Channel:	During scanning, when there is no call received, press the PTT key to transmit on this channel.
Look Back Time A:	During scanning, it will scan the priority channel when check the look back time A every time.
Look Back Time B:	Only for analog use. During scanning, when the priority channel has signal but with incorrect CTCSS/DCS, it will scan the priority channel when check the look back time B every time.
Dropout Delay Time:	Only for analog use. When scanning with a signal and starting a transmit, after release the PTT key, the radio will resume scanning after reaching the Dropout Delay Time.
Dwell Time:	Only for analog use. When press PTT key to transmit, after release of the PTT key, the radio will resume scanning after reaching the Dwell Time.

Once all done, click on “OK” to save this set-up.

STEP 5 - ZONE LIST CREATION

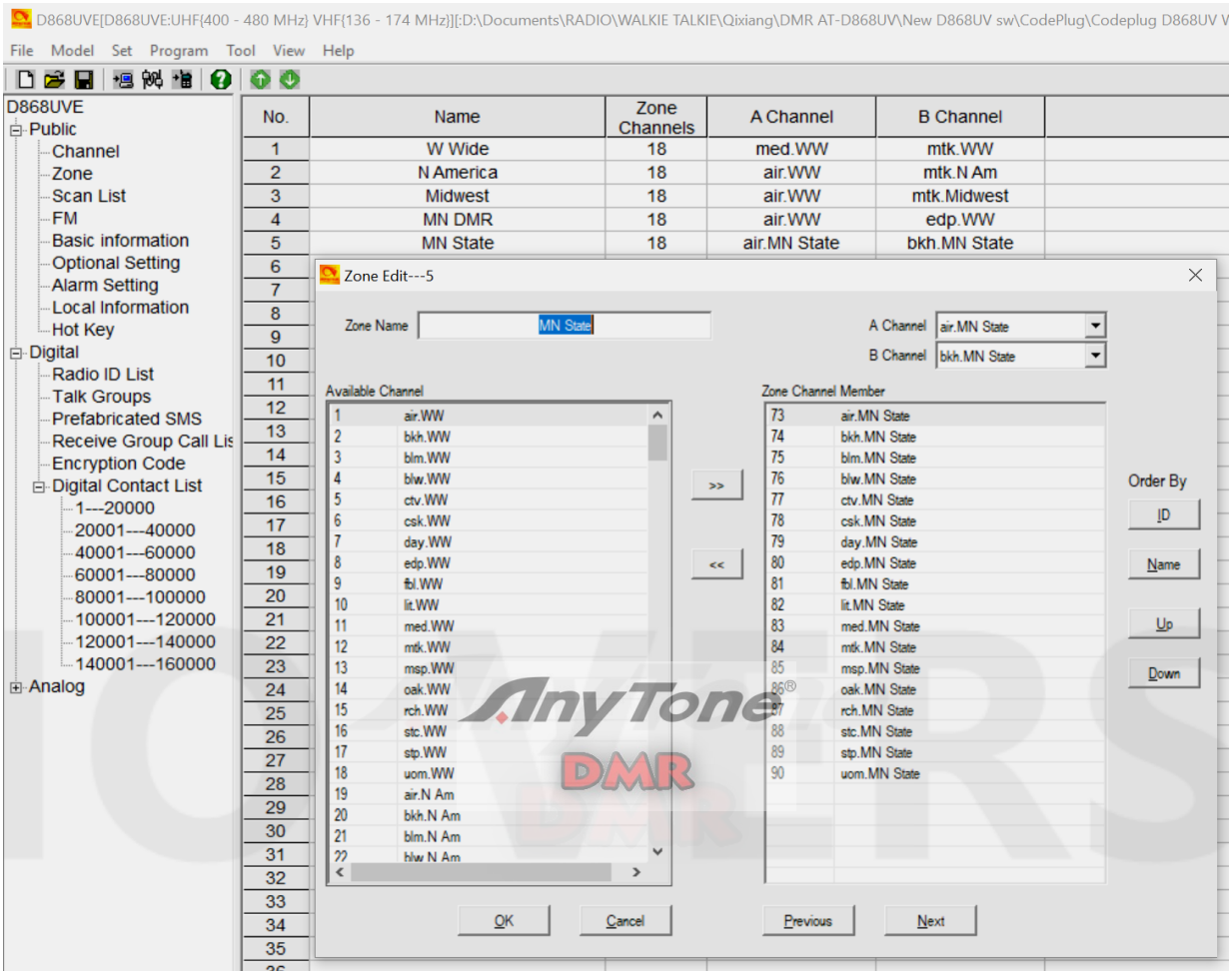
Create a ‘Zone’ name (that relates to the name of the scan list in the step above) and leave empty for the time being. Creating a ‘Zone’ allows you to put your configured ‘channels’ into logical groups. You can use the same ‘name’ for these (as your Scan List names) to help you keep things straight in your mind, they are in two different sections, so there is no conflict. You will need to create a zone in order to select the group of channels you will be adding. Naming choice is up to you, but most ‘Zones’ have a limit of 16 channels. You can name each zone by the geographical location or any other name you wish. Add your channels in the order you wish them to be accessed by the channel select knob or menu selection. You may wish to use a name for your zones that relates to its ‘Scan Lists’.

In the Zone menu, click on Line No.1 to open the Zone Edit window.

NOTE: Once you use the radio and with the up/down key switch between zones, holding the key down for up or down rapidly switches the zones instead of repetitively pushing it to switch.

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The green up and green down arrow in the picture below allow re-sorting the Zone list names to achieve a different order.



The above sample is scanning the same channel but from several different repeaters so that when driving around the city there is always an available connection. Other set-ups for scanning uses one repeater and scans all programmed Talk Groups on that repeater.

A Channel: The channel the radio starts up with for channel A
B Channel: The channel the radio starts up with for channel B



A typical display when the radio is in dual receive mode and you listen to two channels (A plus B). The upper A channel with the larger text is the TX channel. You can on the display see what channel number you listen to (83 and 137), what Talk Group T2 and that the radio uses a Repeater with a different frequency.

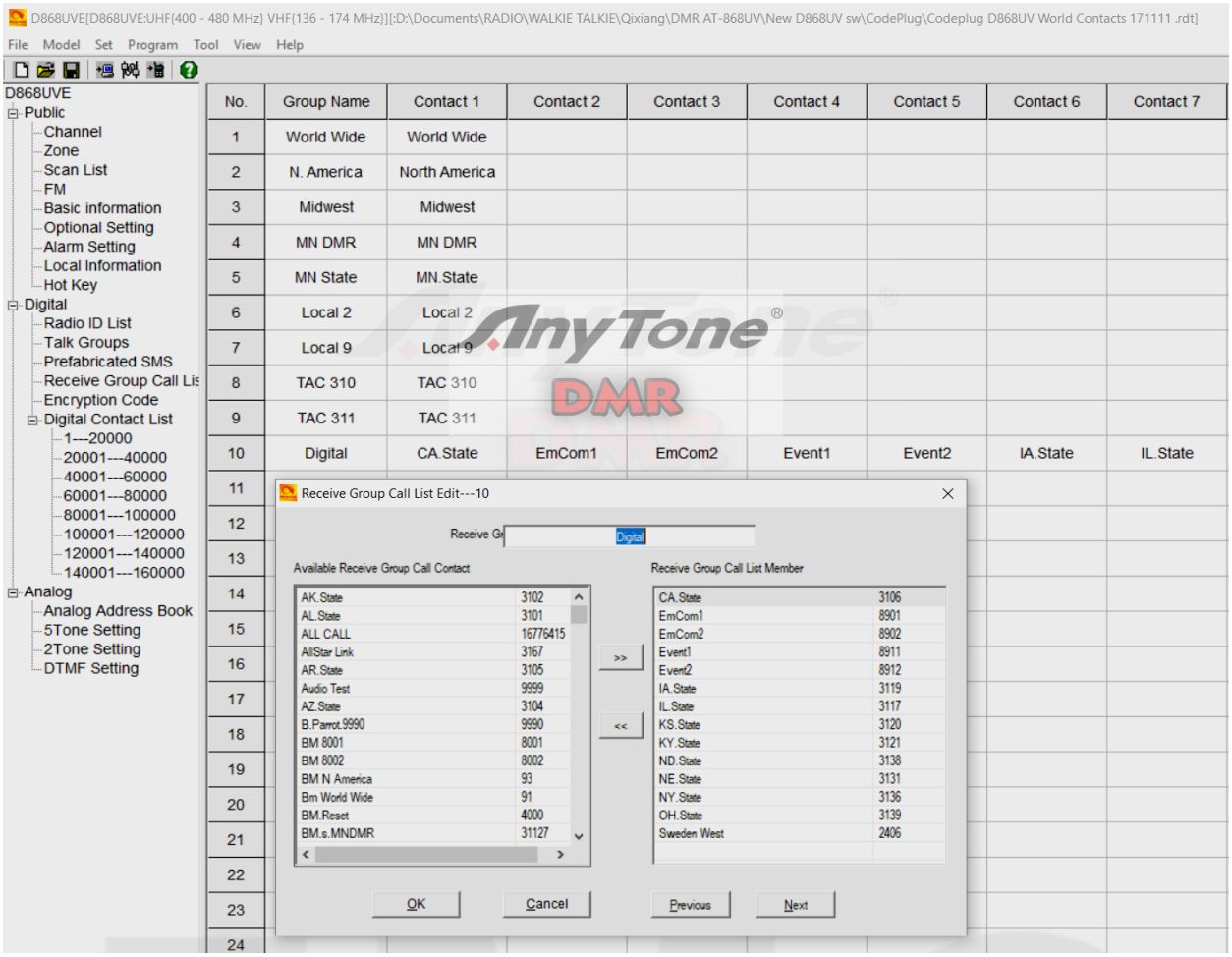
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STEP 6 – RECEIVE GROUP CALL LIST SET-UP

You can leave this blank if all you want to do is to listen to the same channel as you transmit on. Then under Channel set-up in the section below you select “NONE” for the Receive Group List.

If you want to listen to more TG’s besides the TG set up in the Channel set-up, add the TG in the Receive Group Call list, then under Channel set-up in the section below you select the list number.

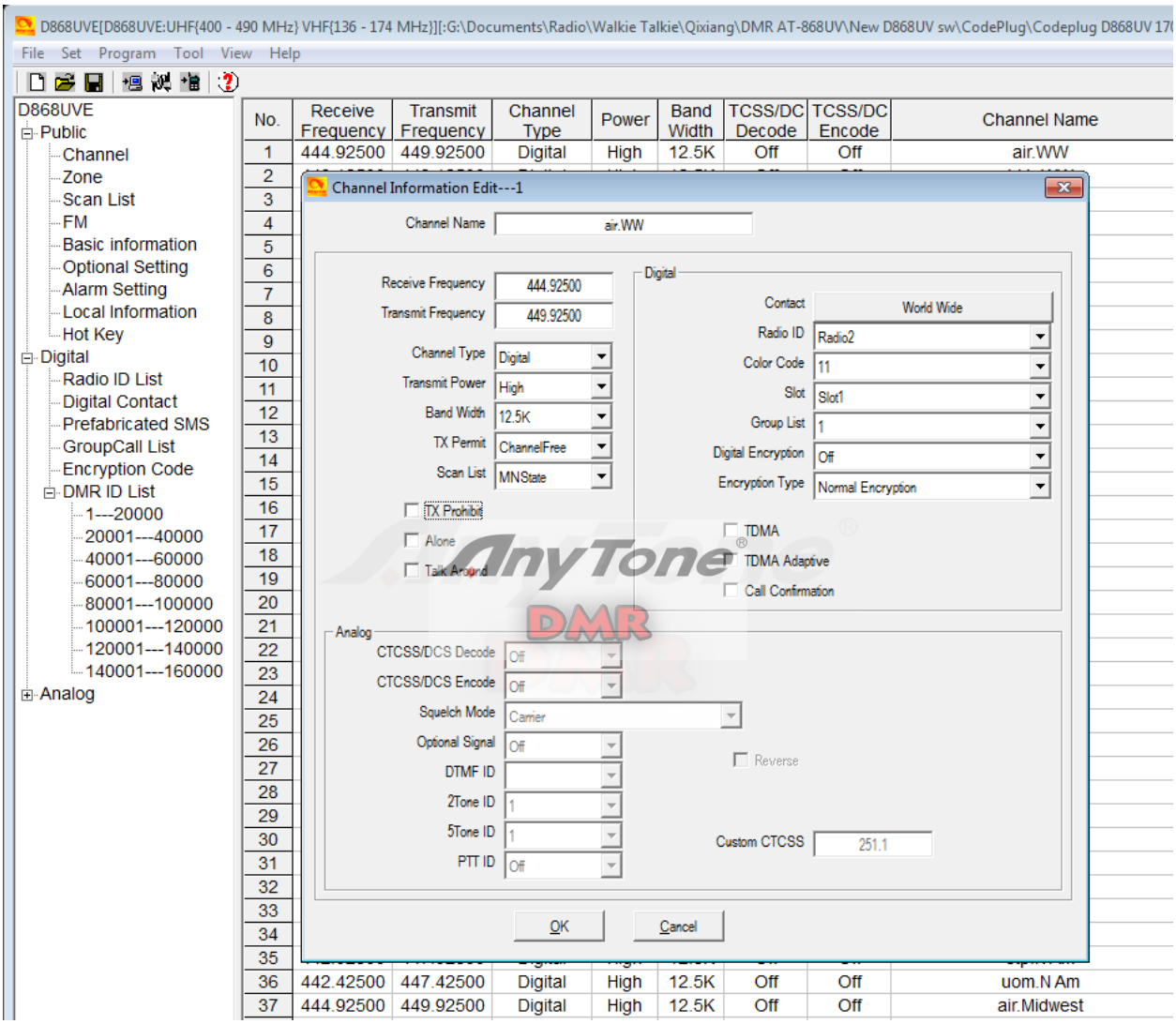
Note: If the Talk Group List contains a TG with the same number as another one, then this Receive Group List will not work.



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STEP 7 - CHANNEL – FREQUENCY SET-UP

The AT-D868UV offers programming of 4,000 channels for UHF and VHF. To start double click on the first line No.1 to open the Channel Information programming window for that channel:



The Channel Information Edit window contains several options which will be explained below:

Channel Name:	the name of the channel (typically name of repeater and TG)
Receive Freq.:	the VHF or UHF frequency
Transmit Freq.:	the VHF or UHF frequency
Channel Type:	Select Analog, Digital, Mixed Analog or Mixed Digital
Transmit Power:	Select one of four levels 6W/2.5W/1W/0.5W
Wide Narrow:	Select the bandwidth of transmit

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TX Permit:	Select type of transmit function – typically ColorCode
Scan List:	Select which Scan List this frequency belongs to
TX Prohibit:	Check if the frequency is a listening channel only
Alone:	Check if the “alone” emergency function should be allowed
Talk Around :	Check if the TX and RX frequency should be the same

Digital

Contact:	Select the Talk Group this frequency belongs to
DMR/Radio ID:	Select which of the DMR ID’s to use for this channel
Color Code:	Select which CC is related with this channel
Slot:	Select which slot (1 or 2) applies to this “Contact”
Group List:	If programmed select which list of channels you want to listen to, or select NONE to listen to only the programmed Talk Group for the transmission (TX and RX TG the same)
Digital Encryption:	Select if Off or which number to use
Encryption Type:	Select which type to use.
TDMA:	Check if working without repeater and using 2 slots
TDMA Adaptive:	Check if for adaptive slot selection between slot 1 and 2
Call Confirmation:	Check if the receiver has to transmit before accepting calls.

Analog

CTCSS/DCS Decode	Select Off or CTCSS or DCS and tone frequency
CTCSS/DCS Encode	Select Off or CTCSS or DCS and tone frequency
Squelch Mode:	Select how to use the squelch
Optional Signal:	Select Off, DTFM, 2Tone or 5Tone
DTFM ID:	Select DTFM ID
2Tone ID:	Select 2 Tone ID
5Tone ID:	Select 5 Tone ID
PTT ID:	Select off, at start, at end or both
Custom CTCSS:	Enter value when requiring a custom CTCSS tone

Once completely filled in, click OK to save this Channel. There is also an option to first “export” the channel data into a .csv file, and then work the entry of most data in the excel format. Then save it and “import” back into the codeplug. For large channel data entries, this may be the easiest method where copy and paste function will allow easier generation of a lot of channels.

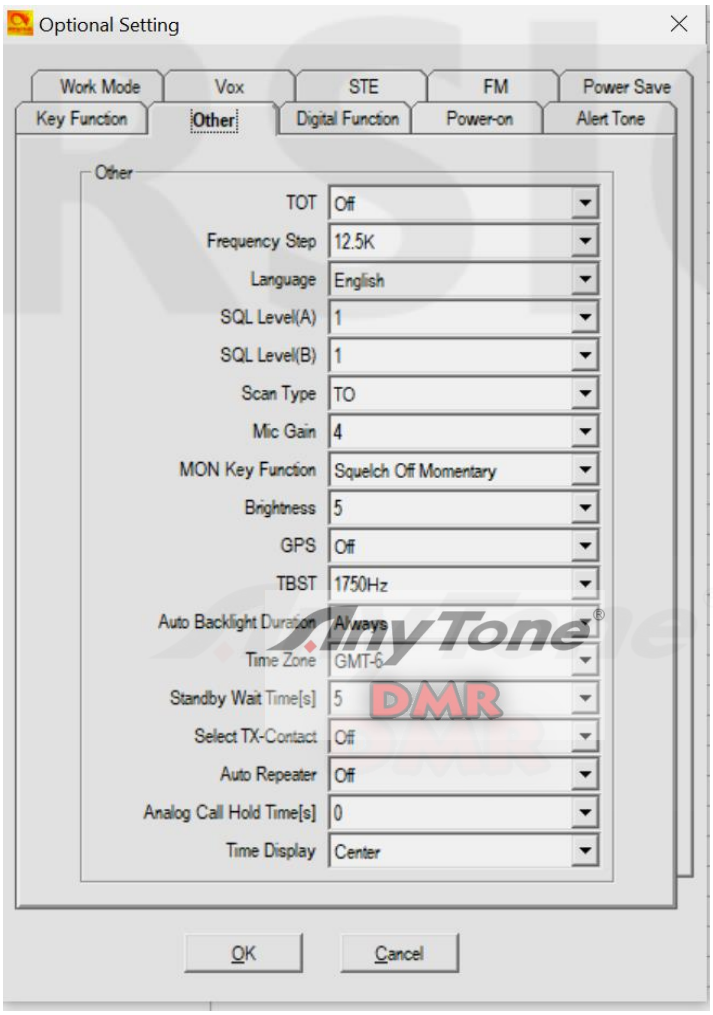
The channel set-up can also be created by first exporting the original channel set-up in the radio, and then as a .csv excel file edit, copy and paste as many channels and frequencies you need. As each repeater being programmed may have the same Talk Groups, working all of this in a excel format and then importing it all back into the radio is the most efficient method of building a large channel database for the radio.

Note: working the .csv file for channels, the No. column either should be empty, or show sequential numbers starting with 1 for channel 1, 2 for channel 2 etc.

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STEP 8 - OPTIONAL SETTING

The AT-D868UV radio basic configuration set-up is done in the Optional Setting window. This page contains a lot of important information for the radio operation.



Once the Optional Setting window is open, there are several sub-sections to program. The above window shows all the 10 sub menus available in the Optional Settings.

Work Mode

Display Mode:	Defines what the radio display will show when in receive mode – frequency or channel name
VFO/MEM A:	Select VFO or MEM for the “A” upper channel
MEM Zone A:	Selects any of the programmed Talk Groups to start on power up.
VFO/MEM B:	Select VFO or MEM for the “B” lower channel
MEM Zone B:	Selects any of the programmed Talk Groups
Main Channel Set:	Select the “A” or “B” channel to become the main channel
Sub-Channel Mode:	Select Off if only the “A” channel will be used; On for both A and B

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Digital Function

Group Call Hold Time:	Select hang time for a Group Call
Person Call Hold Time:	Select hang time for a Private Call
Prewave Time:	Select the time to wake-up the radio from a power save
Wake Head Period:	Select the time for the preamble
Record Function:	Select On or Off for the internal record function
Filter own ID in miss call:	Select On or Off, when it is on, radio will not remind of a miss call when receiving a call with same ID.
Call End Prompt Box:	Select On or Off – adds a display box indicating end of call
Digital Remote Stun Kill:	Select On or Off to allow remote shut-down of a radio
Digital Monitor:	Select On or Off; on will allow promiscuous mode

Alert Tone

SMS Alert:	Select which notification you want when receiving an SMS
Call Alert:	Select which notification you want when getting a digital call
Dig Call Reset Tone:	Select On or Off, Digital call has a group call hold time and a private call hold time to prevent voice missing after the call. When set Digi Call ResetTone is On, it will beep when the hold time terminates.
Call Tone:	Select if you want a tone for Digital and/or Analog reception
Key Tone:	Select On or Off if you want a tone for pressing a key
Idle Channel Tone:	Select On or Off if you want a tone when a channel is idle
Startup Sound:	Select On or Off if you want a tone when powering on
Maximum Volume:	Select 1 through 8; 8 gives the highest max volume
Volume Change Prompt:	Select On or Off; on will show volume screen when changed

Power On

Power-on Interface:	Select custom display or radio standard picture
Power-on Display Char.:	Enter your unique characters for the start-up display
Power-on Password:	Select On or Off
Power-on Password Ch.:	Write in keyboard characters to unlock the radio

FM

FM VFO/MEM:	Select VFO or Memory
FM Work Channel:	Select the FM channel to listen to (after set-up done)
FM Monitor:	When in FM mode select On if the radio shall receive calls

Power Save

Auto Shutdown:	Select Off or minutes before auto shut-down
Power Save:	Select Off or On

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Key Function

Key Lock:	Select Manual or Auto key lock function
PF1 Short Key:	Select from several functions for the radio key below PTT
PF2 Short Key:	Select from several functions for the radio key 2 below PTT
PF3 Short Key:	Select from several functions for the orange radio key
P1 Short Key:	Select from several functions for the P1 radio key
P2 Short Key:	Select from several functions for the P2 radio key
PF1 Long Key:	Select from several functions for the radio key below PTT
PF2 Long Key:	Select from several functions for the radio key 2 below PTT
PF3 Long Key:	Select from several functions for the orange radio key
P1 Long Key:	Select from several functions for the P1 radio key
P2 Long Key:	Select from several functions for the P2 radio key
Long Key Time:	Select how many seconds to hold the key for Long duration

SQUELCH TAIL ELIMINATE (STE)

STE Type CTCSS:	Off, Silent or a selected setting
STE When No Signal:	Select Off, 55.2 Hz or 259.2 Hz

VOX

VOX Level:	Select Off or 1 to 3
VOX Delay:	Select how many seconds of delay
VOX Detection:	Select built-in mic or external mic or both

Other

TOT:	Max Total Time of Transmit or Off
Frequency Step:	In VFO mode, selects the frequency steps
Language:	Select language for the programming software
SQL Level A:	Set the squelch level for the “upper” channel – set at 1
SQL Level B:	Set the squelch level for the “down” channel – set at 1
Scan Type:	Select TO – 5 sec stop, CO – 2 sec stop or SE stops scan
Mic Gain:	Allows increasing the mic sensitivity
MON Key Function:	Set to define the function of the side key for “Monitor”
Brightness:	Sets the display brightness – 5 is the brightest
GPS:	Set On or Off
TBST:	Tone Pulse Freq. Selection for opening certain repeaters
Auto Backlight Duration:	Sets the time the display is on or “off” for always on
Time Zone:	Set the GMT time zone for the radio
Standby wait time:	Set the standby wait time – minimum 5 sec
Select TX Contact:	When On, the radio DMR ID can be changed from keyboard
Auto Repeater:	When On, changing the TX frequency via keyboard, will also change RX with correct offset.
Analog Call Hold Time:	Select how long a call is held for Analog reception.
Time Display:	Select On for display of current time, or Off for no time

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Once all the parameters have been programmed, click on “OK” to save what you have programmed.

POPULATE YOUR SCAN LIST

Go back to your Scan List, add the ‘ON’ channels for slot 1 and 2 to this list from the just created group of channels. You may also implement the alternative method, understanding the limitations.

POPULATE THE ZONE LIST WITH CHANNELS

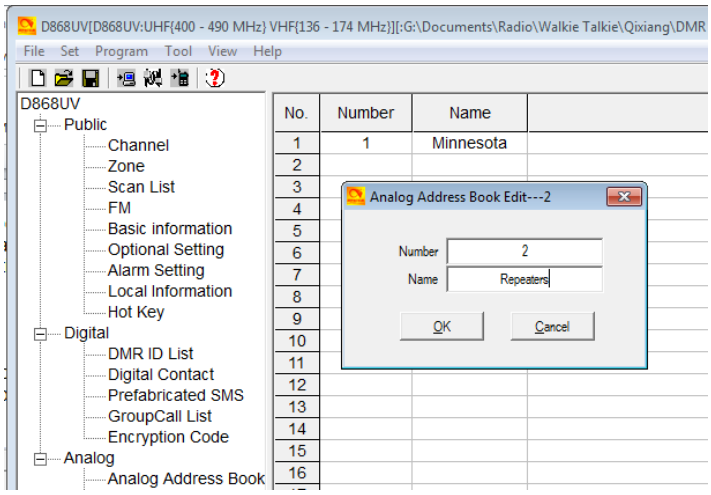
Go back to the Zone List you previously created and add in the first 16 channels of the most recent group you added. Most radios can only have 16 channels in a Zone, so pick the ones you want. If you need more, then you create another Zone List and add the ones missing. If the Talk Group is in the less used second zone, you will need to change zones and channel to reply (unless you set a sufficient delay in scanning). With this method, your scan list will scan all active talk groups on any channel, then you rotate the channel selector to that talk group to respond.

CREATE ANALOG ZONE AND CHANNELS

Add a zone for your analog channels, then add each repeater as a channel. Name your zone by its function or geography (choice is yours). Optionally you can also create scan lists for your analog channels and assign a scan list to a group of channels or an entire zone.

STEP 9 - ANALOG ADDRESS BOOK

The radio allows a set of addresses for the Analog mode. Open the Analog Address Book and click on the first line to open the Analog Address Book Edit window.



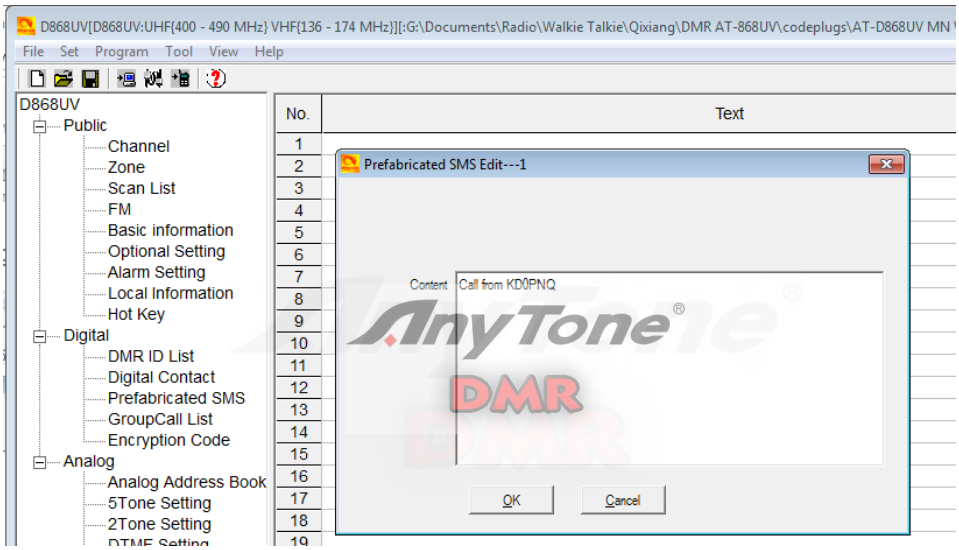
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The Call ID reference the DTMF or 5Tone number programmed under its menu

STEP 10 - PREFABRICATED SMS

The radio has a function to send SMS messages from your radio to other Digital Contacts. There is an opportunity to create advanced SMS messages and have them stored in the radio. Open the Prefabricated SMS window, and click on the first line to open the Prefabricated SMS Edit window.

Here you can program SMS messages and store in the radio – see below.



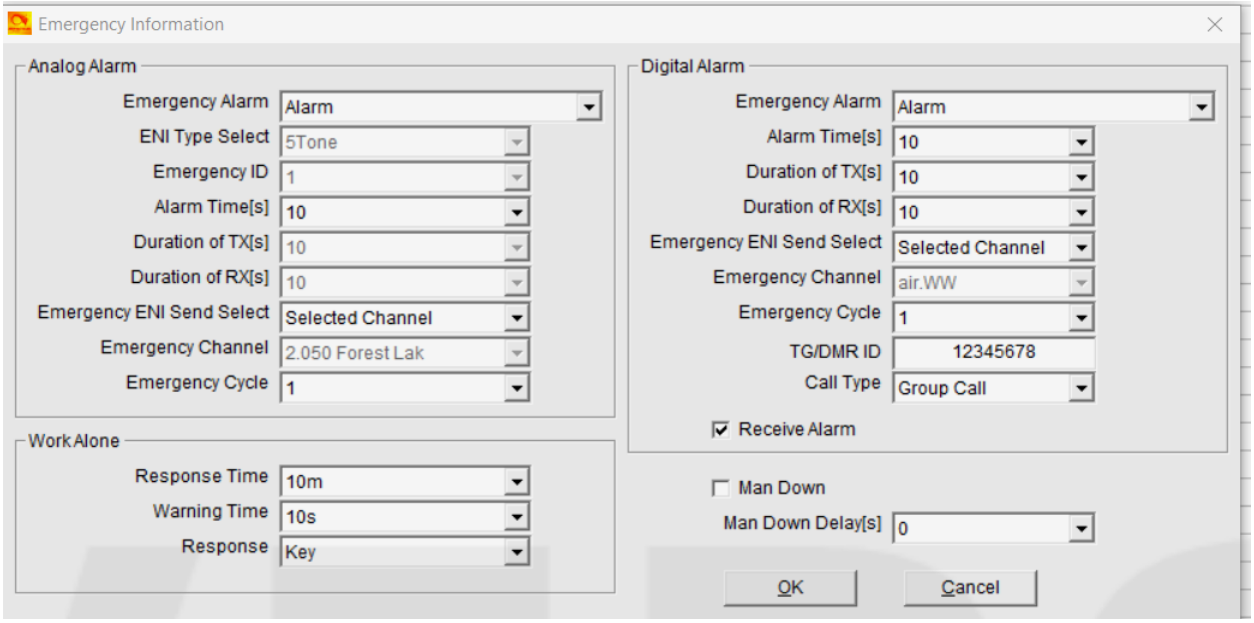
STEP 11 – ENCRYPTION CODE

You can edit the Encryption code as desired.

STEP 12 - ALARM SETTING

The radio offers a comprehensive alarm system to protect the user of the radio under several conditions. Open the Alarm Setting to gain access to the Emergency Information Edit window.

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Analog Alarm

Emergency Alarm: Select from Alarm, Transpond + Background, Transpond + Alarm, or Both
ENI Type Selected: Select from None, DTMF or 5Tone
Emergency ID: When ENI Type choose DTMF or 5Tone, you should edit the DTMF or 5Tone firstly, then choose the required number in this column
Alarm Times: Select after what time the alarm should be initiated
Duration of TX: Select the duration of the Alarm transmission
Duration of RX: Select the duration of listening mode after an alarm reset
Emergency ENI: Select which channel the Alarm should be sent out on
Emergency Ch.: Select which channel to use
Emergency Cycle: Select Continuous or a time
NOTE: A channel is the No. on the Channel Menu line for the selected frequency.

Work Alone

Response Time: Select the time for the radio to respond to an Alarm trigger
Warning Time: Select the duration if a warning transmission
Response: Select Key or Voice for a response to reset

Digital Alarm

Emergency Alarm: Select one of 4 options for how to initiate an Alarm
Alarm Time: Select after what time to initiate the Alarm
Duration of TX: Select the duration of the Alarm transmission
Duration of RX: Select the duration of listening mode after an alarm reset

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Emergency ENI: Select which channel the Alarm should be sent out on
Emergency Ch.: Select which channel to use
Emergency Cycle: Select Continuous or a time
Number: Channel number from the Channel Menu No. line
Name: Enter the name and license number you want transmitted.
City: Enter the location of your position to be transmitted
Call Type: Select the type of call you need for an Alarm
Call Tips: Select how you want the alarm to respond.

Enter OK to save.

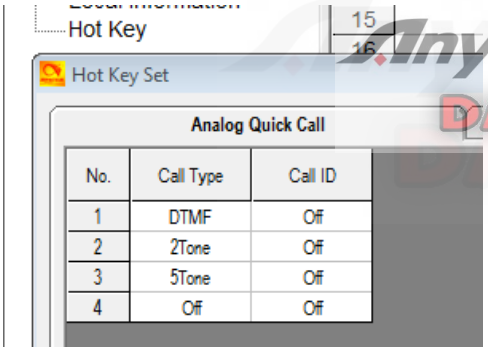
LOCAL INFORMATION

Displays the COM port information

STEP 13 - HOT KEY

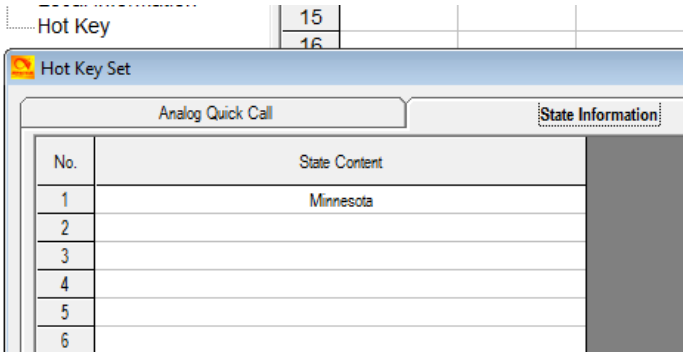
The Hot Key programming offers 3 sub-windows within the Hot Key Edit window.

Analog Quick Call



The Call ID refer to the DTMF, 2Tone or 5 Tone set up under separate menu

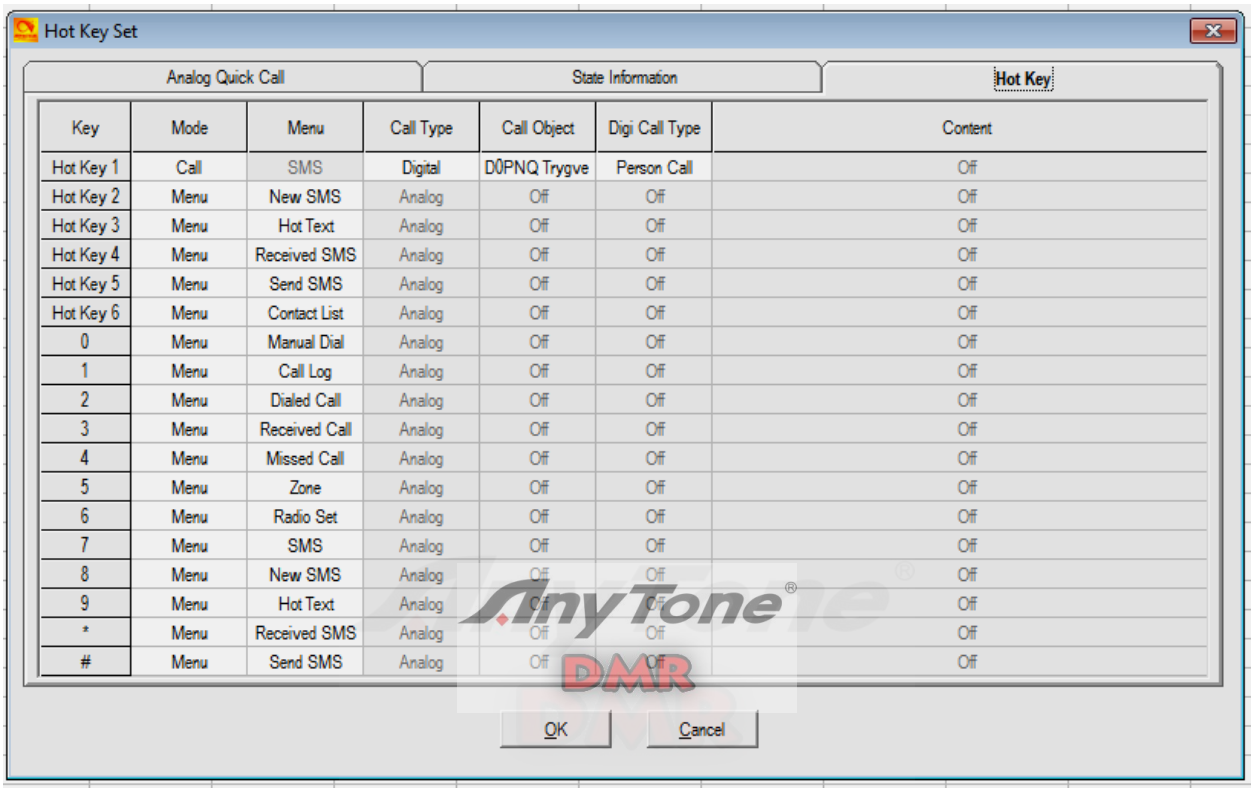
State Information



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Hot Key

The Hot Key Set window allow set-up of a keyboard key to access a function.



Key	Mode	Menu	Call Type	Call Object	Digi Call Type	Content
Hot Key 1	Call	SMS	Digital	D0PNQ Trygve	Person Call	Off
Hot Key 2	Menu	New SMS	Analog	Off	Off	Off
Hot Key 3	Menu	Hot Text	Analog	Off	Off	Off
Hot Key 4	Menu	Received SMS	Analog	Off	Off	Off
Hot Key 5	Menu	Send SMS	Analog	Off	Off	Off
Hot Key 6	Menu	Contact List	Analog	Off	Off	Off
0	Menu	Manual Dial	Analog	Off	Off	Off
1	Menu	Call Log	Analog	Off	Off	Off
2	Menu	Dialed Call	Analog	Off	Off	Off
3	Menu	Received Call	Analog	Off	Off	Off
4	Menu	Missed Call	Analog	Off	Off	Off
5	Menu	Zone	Analog	Off	Off	Off
6	Menu	Radio Set	Analog	Off	Off	Off
7	Menu	SMS	Analog	Off	Off	Off
8	Menu	New SMS	Analog	Off	Off	Off
9	Menu	Hot Text	Analog	Off	Off	Off
*	Menu	Received SMS	Analog	Off	Off	Off
#	Menu	Send SMS	Analog	Off	Off	Off

STEP 14 - ANALOG PROGRAMMING

The programming of Analog channels are done the same way as for the digital channels. Analog and digital channels can be mixed, but will be easier to find if programmed as a separate group at the end of all digital DMR channels. Exporting and working all this in the .csv format will allow to sort the channels before loading into the radio, so that the digital channels appear first, and the analog following rather than intermixed.

If you by means of this Guide feel confident to program digital channels, entering your analog channels should be very easy.

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FINAL STEP - WRITE YOUR CODEPLUG TO YOUR RADIO

The AT-D868UV radio comes with a special programming cable. This cable requires the computer to find a driver so that it will work correctly – most computers will find this driver automatically when inserted into the USB connector and radio for the first time. Per note on page 1 please update the read and write speed of the driver.

Select if you want to write just the “Other Data” (all radio parameters) and/or Digital Contact List when loading the codeplug into the radio. Write the file to your radio. Save the file to your PC with a name that you will remember. You may wish to use version numbers in your file naming to help you with progressive updates. At some point you may ‘break’ your codeplug by setting something differently and this may affect the radio operation. It helps to be able to ‘go back’ to an earlier working version. Some Codeplug Programming Software (CPS) may also require that you update the clock in the radio by another function, be sure to do this if you want an accurate time display!

2.0 AT-D868UV RADIO FIRMWARE UPDATE

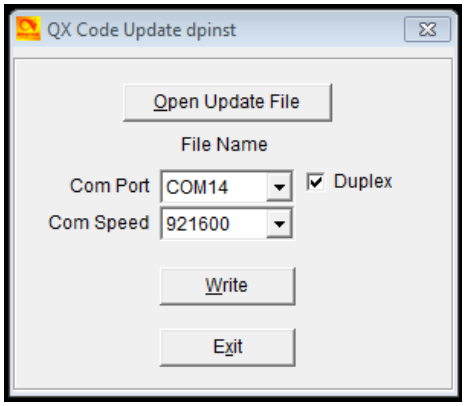
NOTE: Please follow procedures very carefully and make sure you use correct version of firmware – check radio DEVICE INFO for your version (1 or 2)!

The AT-D868UV radio is a newly designed DMR radio, and AnyTone may from time to time issue updates to the operating system (firmware) for the radio. The firmware update is done in a similar manner as loading a codeplug into the radio – it requires the programming cable.

Obtain the firmware updating software from AnyTone:

QXCodePro_Update_dpinst_Setup_x.xx.exe

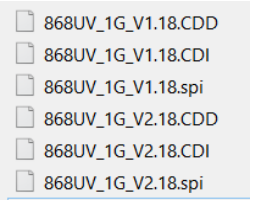
Run this program to install a small program to allow the download of the firmware into the radio. It will install **QXCodePro_Update_dpinst x.xx** on your computer. Open this program and you will see the following window



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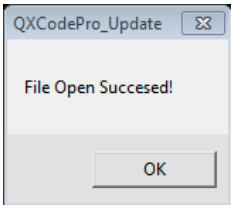
NOTE: The AT-D868UV radio may from time to time be significantly updated with features which may require a different firmware compared to earlier manufactured radios. A recent update now offers an optional memory chip inside the radio for up to 300 hours of voice recording. This model goes under Version 2 compared to the original radio being Version 1. The firmware for those different radios is also identified with V1.17 or V2.17 for example and will be supported forever. Please check your radio's Menu under Settings and Device Info for version number before loading any firmware into the radio. Also – save your CodePlug before you do a Firmware update!

Make sure that Com Speed is set to 921600, and place a checkmark in the Duplex box.



Download your 3 firmware files from
http://www.qx-tele.com/about/about8.html
and note that you need to determine what version of the radio you own so you select the 3 correct files: V1.xx, or V2.xx and place the correct files in the same folder as the above program.

Click on "Open Update File", and open the "**D868UV.spi**" file and you should see



Connect the radio (powered of) to the programming cable and connect it to the computer USB port.

Power on the radio while holding the **top orange**, and the **PTT** button pushed in – the red LED on the top of the radio should start blinking.

Click "Write" and the firmware should load into the radio. You will see the progress on a separate display on your computer. The radio will re-start after the firmware has been updated.

Certain firmware updates may specify that a Radio System Reset must be done before continuing – see below for how to do this.

2.1 AT-D868UV RADIO TOTAL SYSTEM RESET

NOTE: Do not do this without having your codeplug saved on your computer!

If the AT D868UV radio becomes un-operative, there is a solution to reset the entire radio. This is not recommended if the radio operates ok, but can become a final solution for a major problem. Also – after some firmware updates this may be a required operation.

To reset the radio, power it on while holding the **PTT** and the **PF1 button below the PTT** at the same time. The radio may ask you to confirm that you want to perform a full reset – reply Confirm. The radio will start up with a note on the display stating MCU Reset, Please Wait – and do not turn the radio off while it restarts.

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After a re-start the radio will display the setting of the date and the time. Use the up-down key to set the current year. Move to the month by pushing the **P1 key**. Set the month, and use the **P1 key** to move forward each step. Once done, click the Menu key to save the date and time.

You may now see the Chinese language. If it starts with Chinese, click Menu, scroll down to the grey cogwheel globe and click Menu, click Menu 1 more time (Radio Set) and scroll down to item #8 (Language) and click Menu and select English.

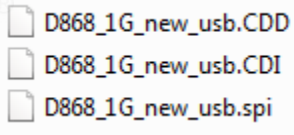
The codeplug has also been replaced as part of the system re-set, so you need to re-load your codeplug into the radio to make it work the way it should. Please remember to update your DMR ID number and the start-up display if you use a codeplug from the Internet.

2.2 AT-D868UV RADIO ICON SOFTWARE UPDATE

NOTE: This is a very rare update and may never require to be done!

Download 3 firmware files from AnyTone:

With the same QX Code Update software as above, "Open Update File" and open the D868_1G_new_usb.spi file

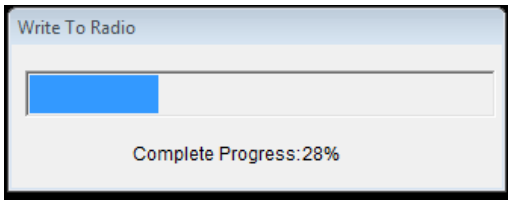


Connect the radio (powered off) to the programming cable and then to the computer USB port.

Power on the radio while holding the **PTT** and the **button with the two lines** below the PTT. The radio should display UPDATE MODE on the front display.

Click "Write" and the firmware should load into the radio showing the progress as below.

Turn off the radio, and power it back on to restart it.



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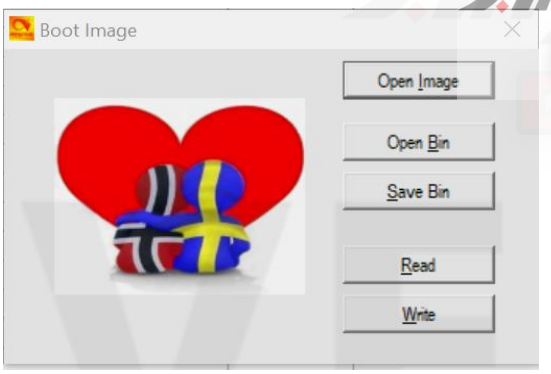
3.0 RADIO LCD DISPLAY

On the top row of the LED display the following indications can appear:

- Reception bars showing signal strength
- Within a square "**L/M/H/T**" transmit power levels showing from Low to Turbo
- Speaker = Digital Monitor is turned on for 1 or 2 slots (promiscuous mode)
- GPS symbol gray = no GPS signal received, red = GPS signal received
- "**A**" indicates a set-up for Auto Power Off
- **DCS** or **CTC** for Analog reception tone signaling
- **DIG/ANA** CH-123 – shows the channel type and number of the channel.
- **T1** or **T2** time slot shown for the digital channel used as "A" and/or "B"
- **R** next to a digital channel = connected to repeater with different RX and TX frequency.

4.0 START-UP SCREEN BOOT IMAGE CHANGE

The TOOL menu in the CPS has an option to replace the Boot Image to something you desire. Here is the options:



- Open Image – accepts JPG images from your photos or files (size not critical as software will re-size)
- Open Bin – opens a .bin image file
- Save Bin – saves the image you opened to a .bin file
- Read – read image file from the radio
- Write – write your new image file to the radio

5.0 RADIO LIST OF RECORDINGS

The TOOL pull-down menu allows a list of recordings to be displayed on your PC. Recordings need to be initiated via the radio Menu first, and will then record all call voice data from the radio. Once the List of Recordings is opened, click on "Read Record Data" to import a list of all recorded data stored in the radio. The recording can then be saved to your computer or played to hear what was said.

Note: Any updates or corrections to this Programming Guide should be forwarded to AnyTone at zsxqlx6833@qxdz.cn

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