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.

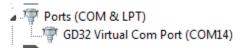


Please note that the AT-D868UV radio may have a locked key-board upon arrival. The FCC requires per 47CFR90.203 that an unauthorized user shall not be able to enter any frequencies and transmit on a frequency not authorized. Frequencies should only be programmed by service or maintenance personnel. This 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.



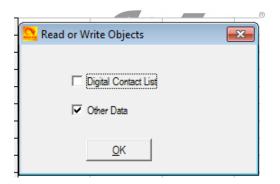
If you do not see this USB port driver, you should install the USB driver from the file GD_VirtualComDriver 1.0.1.2118 folder <u>as an Administrator</u> to your computer. Select the x64 or x86 version depending on the operating system of the computer you use.

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 at <u>http://www.qx-tele.com/about/about8.html</u>. So the CPS D868UV Setup 1.23.exe should be used for a radio with firmware V1.23 or V2.23 and so on. Do not mix versions of the CPS with non-matching firmware versions.

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 80,000 names, and as a result consume up to 5 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 menu **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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Contacts name is not unique	
Channel name is not unique	
-	
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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.

File Model Set Program To	ol View	Help			
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D868UVE	No.	TG/DMR ID	Call Alert	Name	Call Type
- Public - Channel	1	1	None	World Wide	Group Call
Zone	2	2	None	Local 2	Group Call
Scan List	3	3	None	North America	Group Call
FM	4	4	None	UA All-Lang 1	Group Call
-Basic information	5	8	None	Local 8	Group Call
Optional Setting	6	9	None	Local 9	Group Call
-Alarm Setting	7	10 👝	Talk Group Edit59	×	Group Call
Local Information	8	13	Talk Group Edit59	×	Group Call
Hot Key	9	17			Group Call
∃ Digital	10	91	Name	MN.State	Group Call
-Radio ID List	11	93		Group Call	Group Call
Talk Groups Prefabricated SMS	12	99	TG/DMR ID	3127	Group Call
-Receive Group Call Lis	13	113			Group Call
Encryption Code	14	117	Call Alert	None 👻	Group Call
Digital Contact List	15	123		Secol Desciona Neuri	Group Call
120000	16	127	<u>OK</u>	ancel <u>Previous N</u> ext	Group Call
2000140000	17	129			Group Call
4000160000	18	310			Group Call
6000180000	19	311			Group Call
80001100000	20	312			Group Call
100001 120000	21	313			Group Call
	22	314			Group Call
140001160000	23	315			Group Call
Analog	24	316	None	TAC 316	Group Call
Analog Address Book	25	317	None	TAC 317	Group Call
5Tone Setting	26	318	None	TAC 318	Group Call
-2Tone Setting	27	319	None	TAC 319	Group Call
DTMF Setting	28	1000	None	USA.DMR+	Group Call
	29	1001	None	Florida DMR+	Group Call

Start to program all applicable DMR Talk <u>Groups</u> (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 <u>http://www.dmr-marc.net/</u>

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 menu 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.

Export	
	Export <u>A</u> ll(Default CSV FileName)
Channel	
Radio ID List	
Zone	

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.

	А	В	С	D	E	F	G	Н	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

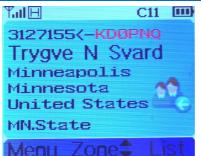


Once all TG's are entered, the Contact List should be "imported" back into the Programming Software the same way you exported the file. Click on TOOL menu, and then "import" and in the new window click on Digital Contacts and select the .csv file you want imported.

File Set Program Tool	View	Help						
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D868UVE	No.	TG/DMR ID	Call Tips	Name	City	Call Type	Repeater Number	
Channel	1	1	None	World Wide		Group Call	World Wid	
Zone	2	2	None	Local 2		Group Call	Local 2	
-Scan List	Scan List 3 3 None			North America	North America			
FM	4 4 None		UA All-Lang 1		Group Call	UA All-La		
 Basic information 	5	8	None	Local 8		Group Call	Local 8	
Optional Setting	6	9 (C. Import					
 Alarm Setting 	7	10	anipore .					
-Local Information	8	13			Import From File Lis			
Hot Key	9	17			import for file ga	s		
Digital	10	91	Chann	el G:\Documen	ts\Radio\Walkie Talkie\Qixiang\DMR AT-868UV\I	New D868UV sw\CodePlug\	TG new.CSV	
-Radio ID List	11 93							
-Digital Contact	12	99	Radio ID	List				

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.

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. See page 28 for an alternate display emphasizing the Call Sign instead of the name of the caller.

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.

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Public	No.	TG/DMR ID	Call Alert	Name	City	Call Type	Repeater Number	State/Prov	Country
Channel	54495	3127093	None	Barry J Altman	Plymouth	Private Call	W6GFN	Minnesota	USA
-Zone	54496	3127094	None	Trygve N Svard	Minneapolis	Private Call	KDOPNQ	Minnesota	USA
-Scan List	54497	3127095	None	Carol Estey	Bloomington	Private Call	KB0FFO	Minnesota	USA
-FM	54498	3127096	None	Lion Templin	Arden Hills	Private Call	KB9ENE	Minnesota	USA
-Basic information	54499	3127097	None	Max H Van Riper	Blaine	Private Call	KOSXR	Minnesota	USA
- Optional Setting	54500	3127098	None	Matthew C Blum	Minneapolis	Private Call	KEOHEP	Minnesota	USA
-Alarm Setting	54501	3127099	None	John W Erickson	Roseville	Private Call	KE0EXC	Minnesota	USA
-Local Information	54502	3127100	None	Andy J Michels	Sleepy Eye	Private Call	NOJON	Minnesota	USA
Hot Key	54503	3127101	None	lan J Boje	Minnetonka	Private Call	KCOITQ	Minnesota	USA
Digital	54504	3127102	None	James D Hammock	Le Sueur	Private Call	KIODN	Minnesota	USA
-Radio ID List	54505	3127103	None	Pamela A Hammock	Le Sueur	Private Call	KC0FWC	Minnesota	USA
- Talk Groups - Prefabricated SMS	54506	3127104	None	Galen L Erickson	Falcon Hgts	Private Call	KC0BBK	Minnesota	USA
- Receive Group Call Lis	54507	3127105	None	James B Hagen	Robbinsdale	Private Call	AJOCM	Minnesota	USA
-Encryption Code	54508	3127106	None	Eric J Osterberg	Minneapolis	Private Call	NONKI	Minnesota	USA
Digital Contact List	54509	3127107	None	Catherine M Hage	Robbinsdale	Private Call	AJOYL	Minnesota	USA
-120000	54510	3127108	None	Donald J Klier	Faribault	Private Call	WODJK	Minnesota	USA
-2000140000	54511	3127109	None	Michael Englehor	Hopkins	Private Call	KOHAX	Minnesota	USA
4000160000	54512	3127110	None	Marvin G Nelms	Faribault	Private Call	NOPCD	Minnesota	USA
6000180000	54513	3127111	None	Kelly D Murphy	New Hope	Private Call	KBOLTY	Minnesota	USA
-80001100000	54514	3127112	None	Joshua C Davis	Richfield	Private Call	KEOALI	Minnesota	USA
100001120000	54515	3127113	None	Brandon M Paplow	Maple Grove	Private Call	KEOIFU	Minnesota	USA
-120001140000	54516	3127114	None	Gary D Wilson	Centerville	Private Call	WD8CBO	Minnesota	USA
140001160000	54517	3127115	None	Steven R Mcgrath	Saint Paul	Private Call	KOMCG	Minnesota	USA
Analog	54518	3127116	None	Scott T Hill	Brooklyn Park	Private Call	KC0DZY	Minnesota	USA
-Analog Address Book	54519	3127117	None	Peter W Corbett	Saint Paul	Private Call	KD8GBL	Minnesota	USA
-5Tone Setting	54520	3127118	None	Paul Haggerty	Bloomington	Private Call	KDOKTT	Minnesota	USA
-2Tone Setting	54521	3127119	None	Sara E Thomas	Bloomington	Private Call	NOOWO	Minnesota	USA
DTMF Setting	54522	3127120	None	Daniel E Peitso	Blaine	Private Call	NOPIY	Minnesota	USA
	54523	3127121	None	Todd A Haralson	Blaine	Private Call	KEOHDX	Minnesota	USA

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).

	А	В	С	D	E	F	G	Н
1	Radio ID	Callsign	Name	City	State	Country	Remarks 	
48381	3127092	KD0ZSA	Riverbend Wireless And	Faribault	Minnesota	United States	Club Fleet <td>/></td>	/>
48382	3127093	W6GFN	Barry J Altman	Plymouth	Minnesota	United States	Other 	
48383	3127094	KDOPNQ	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	KOSXR	Max H Van Riper	Blaine	Minnesota	United States	DMR 	
10207	2122000	KEOLIED	Matthew C Blum	Minnoapolic	Minnocoto	United States	DMD-be/s	

In the Programming Software open the TOOL menu 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.

⊡ DMR ID List
120000
2000140000
4000160000
6000180000
80001100000
100001120000
120001140000
140001160000

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. <u>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.</u>

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

1	No.	Radio ID	Callsign	Name	City	State	County	Remarks	Call Type	Call Alert
57945	57944	3127092	KD0ZSA	Riverbend Wirele	Faribault	Minnesota	United States			
57946	57945	3127093	W6GFN	Barry J Altman	Plymouth	Minnesota	United States			
57947	57946	3127094	KD0PNQ	Trygve N Svard	Minneapolis	Minnesota	United States			
57948	57947	3127095	KB0FFO	Carol Estey	Bloomington	Minnesota	United States			
57949	57948	3127096	KB9ENE	Lion Templin	Arden Hills	Minnesota	United States			

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

D868UVE/D868UVE/UHF(400 - 480 MHz) VHF(136 - 174 MHz))];D\Documents\RADIO/WALKIE TALKIE\Qixiang\DMR AT-D868UV\New D868UV sw\CodePlug\CodePlug\CodePlug D868UV World Contacts 171212.rdt]

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C	ጅ 🖬 🖷 🚧 🏙 🚯									
	58UVE Public	No.	TG/DMR ID	Call Alert	Name	City	Call Type	Repeater Number	State/Prov	Country
	Channel	57944	3127092	None	Riverbend Wirele	Faribault	Private Call	KD0ZSA	Minnesota	United States
	Zone	57945	3127093	None	Barry J Altman	Plymouth	Private Call	W6GFN	Minnesota	United States
	Scan List	57946	3127094	None	Trygve N Svard	Minneapolis	Private Call	KD0PNQ	Minnesota	United States
	FM	57947	3127095	None	Carol Estey	Bloomington	Private Call	KB0FFO	Minnesota	United States
	-Auto Repeater Offset F	57948	3127096	None	Lion Templin	Arden Hills	Private Call	KB9ENE	Minnesota	United States

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 80,000 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.

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.

D868UVE[D868UVE:UHF{400 - 49	0 MHz}	VHF{136 - 174	MHz}][:G:\Docume	ents\Radio\Walkie			
File Set Program Tool Viev	v Help)					
0 🗃 🖬 🖷 👯 🐮 🕐							
D868UVE ⊡ Public	No.	Radio ID	Name				
Channel	1	3127094	Radio1				
Zone	2	3127155	Radio2				
-Scan List	3						
FM	4	Radio ID I	💁 Radio ID Edit1				
-Basic information	5		Lunc 1	X			
Optional Setting	6						
-Alarm Setting	7	Radi	o ID 3127	094			
- Local Information	8	Radio ID N	ame Radi	o1			
Hot Key	9		1				
Digital	10						
-Radio ID List	11		<u>O</u> K <u>(</u>	<u>D</u> ancel			

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.



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 channels. 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.

Please note – when you want to change the scan list using the Menu on the radio, go to Scan List > Scan List > select the TG list you want > then go to bottom of the list and "Select Current List" to make the one you selected become the new scan list. Then go back to Scan List and select "Scan On/Off" and turn the scan on.

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D868UVE ≟∵Public	No.	Channels	Name	Scan Mode	Priority	Channe	el 1	Priority Channel 2	Look Back Time A[s]	Look Time
Channel	1	MNState	18	Off	med.	MN State	е	air.WW	1.5	2
Zone	2	MN DMR	18	Off	med.	MN DMF	२	air.WW	1.5	2
Scan List	3	N America	17	Off	med.	MN DMF	२ 🔹	air.WW	1.5	2
FM	4	Midwest	18	Off	med.	MN DMF	۲ ا	air.WW	1.5	2
-Basic information	5	💁 Scan Edit		•						-2
- Optional Setting	6									
-Alarm Setting	7			Scan List Name			M	INState	_	
Local Information	8							INOIdic		
Hot Key	9	Available Channel					e	Channel Member		
Digital	10	r			<u>^</u>		73			
Radio ID List	11	. 1 air.W 10 lit.WV			Â		74	air.MN State bkh.MN State		
Digital Contact	12	11 med.					75	bkn.MIN State		
Prefabricated SMS	13	12 mtk.V					76	blw.MN State		
GroupCall List	14	12 moc.v			Ξ	>>	177	ctv.MN State		
Encryption Code	15	14 oak.V					78	csk.MN State		
DMR ID List		15 rch.W					79	day.MN State		
20000	16	16 stc.W					80	edp.MN State		
2000140000	17	17 stp.W	w			<<	81	fbl.MN State		
4000160000	18	18 uom.!	ww				82	lit.MN State		
6000180000	19	. 19 air.N	Am				83	med.MN State		
80001100000	20	2 bkh.V	w				84	mtk.MN State		
- 100001120000	21	20 bkh.N	l Am				85	msp.MN State		
	22	21 blm.N					86	oak.MN State		
140001160000	23	22 blw.N					87	rch.MN State		
Analog	24	23 ctv.N					88	stc.MN State		
	25	24 csk.N					89	stp.MN State		
	26	25 day.1					90	uom.MN State		
	27	26 edp.N					-			
	28	27 fbl.N					-			
	29	28 lit.N /			-		L			
	30	7.9 med ∢	N Am III		•		-			
	31						-			
	32	•								
	33				Priority	Channel	Prio	rity Channel1	-	
	34				Priority Ch	hannel 1	med	d.MN State <		
	35				Priority Ch	hannel 2	air.\			
	36						-			
	37				Revert	Channel	Sele	ected	-	
	38			Lo	ook Back T	Time A[s]	1.5	•		
		Look Back Tim								
	40			Dro	pout Delay	/Time[s]	2.9	-		
	Dwell						Owell Time[s] 2.9			
	42						'	_		
	43							1		
	44				<u>0</u> K			<u>C</u> ancel		
	45									

Scan List Name: Name it so it relates to the scan channels Available Channels: Will list the channels you create Move over the channels you need scanned to this area Scan Channel Memb.: Select the priority channel or off Priority Channel select: Priority Channel 1: Sets which channel is priority 1 Priority Channel 2: Sets which channel is priority 2 During scanning, when there is no call received, press the **Revert Channel:** PTT key to transmit on this channel. During scanning, it will scan the priority channel when Look Back Time A: 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

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

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, and the 'Zones' do not have a limit of 16 channels on this radio. 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. Please note that you are able to sort the order of the channels or move one up or down to better reflect where you want it when turning the channel knob. You may wish to use a name for your zones that relates to its 'Scan Lists'.

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

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

The below sample for MN State allows 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.

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Public	No.	Name	Zone Channels	A Channel	B Channel	
Channel	1	W Wide	18	med.WW	mtk.WW	
Zone	2	N America	18	air.WW	mtk.N Am	
-Scan List	3	Midwest	18	air.WW	mtk.Midwest	
FM	4	MN DMR	18	air.WW	edp.WW	
-Basic information	5	MN State	18	air.MN State	bkh.MN State	
- Optional Setting	6					
Alarm Setting	7	Zone Edit5				>
- Local Information	8			-		
Hot Key	9	Zone Name Mi	N State		A Channel air.MN State	-
Digital	10				B Channel bkh.MN State	-
-Radio ID List	11	-			,	
Talk Groups	12	Available Channel		Zone Channel M		
-Prefabricated SMS		1 air.WW	^		ir.MN State	
-Receive Group Call Lis	13	2 bkh.WW			okh.MN State	
- Encryption Code	14	3 blm.WW			olm.MN State	
Digital Contact List	15	4 blw.WW 5 ctv.WW		>>	w.MN State	Order By
	16	5 ctv.WW 6 csk.WW			tv.MN State sk.MN State	<u>I</u> D
2000140000	17	7 day.WW			lay.MN State	
4000160000	18	8 edp.WW			dp.MN State	Name
6000180000	19	9 fb.WW			bl.MN State	INdille
80001100000	20	10 lit.WW			t.MN State	
	21	11 med.WW			ned.MN State	Up
120001140000	22	12 mtk.WW		84 1	ntk.MN State	
140001160000	23	13 msp.WW		85 1	nsp.MN State	Down
Analog	24	14 oak.WW		86 0	ak.MN State	
	25	15 rch.WW			ch.MN State	
	26	16 stc.WW			stc.MN State	
	27	17 stp.WW			tp.MN State	
	28	18 uom.WW		90 u	iom.MN State	
	29	- 19 air.N Am				
	30	20 bkh.N Am				
		21 blm.N Am				
	31 32	22 blw N Am	>			
		-	-	1		
	33	<u>о</u> к	Cancel	Denviewe	Next	
	34		<u>C</u> ancel	Previous	Next	
	35					

A Channel: B Channel: The channel the radio starts up with for channel A 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 (CH-83 and CH- 29), what Talk Group **T2** and an Repeater with a different frequency. On the top bar the ColorCode **C11** is also displayed. The date line may from time to time change and show sequentially the TG, last call person name, and time if you are in dual mode. In single mode the bottom of the display will show this info.

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. You can program up to 64 TG's per receive group.

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

🗅 📂 🖬 🖷 🕬 🏦 👔											
868UVE - Public	No.	Group Name	Contact 1	Contact 2	Contact 3	Contact 4	Contact 5	Contact 6	Contact 7		
Channel	1	World Wide	World Wide								
Zone Scan List	2	N. America	North America								
FM Basic information	3	Midwest	Midwest								
Optional Setting											
Alarm Setting Local Information	4	MN DMR	MN DMR								
-Hot Key	5	MN State	MN.State								
Digital Radio ID List	6	Local 2	Local 2								
Talk Groups	7	Local 9	Local 9								
Prefabricated SMS Receive Group Call Lis	8	TAC 310	TAC 310								
Encryption Code Digital Contact List	9	TAC 311	TAC 311								
	10	Digital	CA.State	EmCom1	EmCom2	Event1	Event2	IA.State	IL.State		
	11	Receive Group	Call List Edit10				×				
80001100000	12	neceive Group	Call List Edit To				~				
	12		Receive Gr Digital								
	13	Available Receive (Group Call Contact		Receive Group Call	List Member					
Analog	14	AK.State		3102 ^	CA.State		3106				
-Analog Address Book	15	AL.State		3101	EmCom1		8901				
-2Tone Setting	15	ALL CALL AllStar Link		16776415 3167	EmCom2 Event1		8902 8911				
DTMF Setting	16	AR.State		3105	Event2		8912				
	47	Audio Test		9999	IA.State		3119				
	17	AZ.State		3104	IL.State		3117				
	18	B.Parrot.9990		9990 <-			3120				
		BM 8001		8001	KY.State		3121				
	19	BM 8002 BM N America		8002 93	ND.State NE.State		3138 3131				
		BM N America Bm World Wide		91	NY.State		3136				
	20	BM.Reset		4000	OH.State		3139				
	21	BM.s.MNDMR		31127	Sweden West		2406				
	22	<		>							
	22										
		-		1		4					

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:

D868UVE[D868UVE:UHF{400 - 4	90 MH	z} VHF{136 - 17	4 MHz}][:G:\Doc	uments\Radio	\Walkie Ta	alkie\Qixiar	ng\DMR AT-8	68UV\New E	1868UV sw\CodePlug\Codeplug D868UV 17
File Set Program Tool Vie	w He	lp							
🗅 🚅 🔛 🖷 🖓 🏦 🚺									
D868UVE	No.	Receive	Transmit	Channel	Power	Band	TCSS/DC	TCSS/DC	Channel Name
Public		Frequency		Туре		Width	Decode	Encode	
Channel	1	444.92500	449.92500	Digital	High	12.5K	Off	Off	air.WW
Zone	2	Channel	Information Edi	it1					×
-Scan List	3						_		
FM Basic information	4	+1	Channel Name		air.WW				
Optional Setting	5								
Alarm Setting	6	F F	Receive Frequency	444,92500)igital ———			
Local Information	7	H .	ransmit Frequency	449.92500	-		Contact		World Wide
Hot Key	8	H '	ranomic requerey	443.32300			Radio ID	Radio2	
⊡ Digital	9 10	41	Channel Type	Digital	•		Color Code		
Radio ID List	11	+	Transmit Power	High	T			<u> </u>	<u> </u>
- Digital Contact	12	+	Band Width	<u> </u>			Slot	Slot1	
Prefabricated SMS	13	+		12.5K	<u> </u>		Group List	1	•
GroupCall List	14	+1	TX Permit	ChannelFree	•	D	igital Encryption	Off	
Encryption Code	14	+1	Scan List	MNState	-		Encryption Type	1	
DMR ID List	16	+1	TX Prohibit	,	_		- norypeon rype	INormal Encry	/ption
120000	17	+1	······				TDMA		
2000140000 4000160000	18		Alone						
6000180000	19	+1	Talk Around				TDMA Ada		
80001100000	20	+1					Call Confirm	nation	
100001120000	21	- Analas							
	22	Analog —	TCSS/DCS Decode						
140001160000	23				<u> </u>				
Analog	24		TCSS/DCS Encode		~				
	25		Squelch Mode	e Carrier			-		
	26		Optional Signa	l Off	-				
	27	†1	DTMF ID				🔲 Reverse		
	28	1	2Tone IE						
	29			1	<u> </u>				
	30		5Tone IE		-	(Custom CTCSS	251.1	
	31		PTT IE) _{Off}	-				
	32			,					
	33						1		
	34			<u>O</u> K		<u>C</u> ancel			
	35	L							
	36		447.42500	Digital	High	12.5K	Off	Off	uom.N Am
	37	444.92500	449.92500	Digital	High	12.5K	Off	Off	air.Midwest

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

TX Permit: Scan List: TX Prohibit: Alone: Talk Around :

Digital

Contact: DMR/Radio ID: Color Code: Slot: Group List:

Digital Encryption: Encryption Type: TDMA: TDMA Adaptive: Call Confirmation:

Analog

CTCSS/DCS Decode CTCSS/DCS Encode Squelch Mode: Optional Signal: DTFM ID: 2Tone ID: 5Tone ID: PTT ID: Custom CTCSS: Selects PTT transmit criteria – typically Same ColorCode Select which Scan List to start scanning from Check if the frequency is a listening channel only Check if the "alone" emergency function should be allowed Check for RX freq. the same as the TX freq. (Simplex).

Select the Talk Group this frequency belongs to Select which of the DMR ID's to use for this channel Select which CC is related with this channel Select which slot (1 or 2) applies to this "Channel" If programmed select which Talk Groups 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) Select if Off or which number to use Select which type to use. Check if working without repeater and using 2 slots Check if for adaptive slot selection between slot 1 and 2 Check if the receiver has to transmit before accepting private calls.

Select Off or CTCSS or DCS and tone frequency Select Off or CTCSS or DCS and tone frequency Select how to use the squelch Select Off, DTFM, 2Tone or 5Tone Select DTFM ID Select 2 Tone ID Select 5 Tone ID Select off, at start, at end or both 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.

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.

Vork Mode Vox	STE	FM	Power Save	Key Function	Other	Digital Fun	Power-on	Alert Ton
- Other TOT	Off		-		Time Display	On		•
Frequency Step	12.5K		-	VFO Scan	Start Freq(UHF)	<u> </u>	0.00000	
Language	English		•	VFO Scar	End Freq(UHF)	İ I	0.00000	
SQL Level(A)	1		•	VFO Scan	Start Freq(VHF)		0.00000	
SQL Level(B)	1		•	VFO Scar	End Freq(VHF)		0.00000	
Scan Type	то		-	Auto	Repeater(UHF)	Off		•
Mic Gain	4		•	Aut	o Repeater(VHF)	Off		-
Brightness	5		•	call char	nel is maintained	Off		•
GPS	Off		•	Enhance	ed Sound Quality	Off		•
TBST	1750Hz		•	N	laximum Volume	6		•
Auto Backlight Duration	Always		•	Max He	adphone Volume	3		•
Time Zone	GMT-6		•					
Menu Exit Time[s]	20		•					
Select TX-Contact	Off		•					
Auto Repeater	Off		•					
Analog Call Hold Time[s]	1		-					

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 Zones 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 Zones
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

Digital Function

Select the time to wake-up the radio from a power save Select the time for the preamble Select Off or On to record each TX and RX internally Select Off or On then the radio will not remind of a miss call when receiving a call with same ID. Select Off or On to add a display box indicating end of call Select Off or On to allow remote shut-down of a radio Select Off or Single or Dual Slot to allow promiscuous mode Select Any or Same to allow same Color Code monitor Select Any or Same to allow monitor for a DMR ID Select Off or On to monitor Slot continuously Select Off or On to allow other radio to check this radio Select Off or On to allow other radio to check this radio Select Off or which zone should become priority Select Off or which zone should become priority Select Off or On to allow an SMS to be confirmed recommend On if sending SMS Select Off or which of your zones you have programmed
Select Off or which of your zones you have programmed Select Off or what to display on the screen
Select Name or Call Sign as primary display Select Off or On to define the format of the GPS display
Select which notification you want when receiving an SMS Select which notification you want when getting a digital call Select Off or On, 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 Reset Tone is On, it will beep when the hold time terminates.
Select if you want a tone confirming Digital and/or Analog repeater connection at the start of a call
Select Off or On if you want a tone for pressing a key Select Off or On if you want a tone when a channel is idle Select Off or On if you want a tone when powering on Select Off or On to show a volume screen when changed ows you to program the tone frequency for the Idle Channel he Call Reset Tone as well as the duration of those tones.

Power On

Power-on Interface: Select Default, Custom Char. or Custom Picture at start-up

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 1:1 or 2:1 for saving power

Key Function

Key Lock: PF1 Short Key: PF2 Short Key: PF3 Short Key: P1 Short Key:	Select Manual or Auto key lock function Select from several functions for the radio key below PTT Select from several functions for the radio key 2 below PTT 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:	Select Off, Silent or a selected setting
STE When No Signal:	Select Off or 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: Scan Type: Mic Gain: Brightness: GPS: TBST:	Set the squelch level for the "down" channel – set at 1 Select TO – 5 sec stop, CO – 2 sec stop or SE stops scan Allows increasing the mic sensitivity from 1 to 5 times Sets the display brightness – 5 is the brightest Set On or Off (can also be changed under Menu) Tone Pulse Freq. Selection to open certain repeaters – to
	PTT + PF1 key below the PTT together to send tone!
Auto Backlight Duration:	Sets the time the display is on or "Always" for always on
Time Zone:	Set the GMT time zone for the radio
Menu exit time:	Set the time the Menu selection is left on - 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 to show current time, or Off
VFO Scan Start UHF:	Set start frequency for a UHF Analog scan
VFO Scan End UHF:	Set stop frequency for a UHF Analog scan
VFO Scan Start VHF:	Set start frequency for a VHF Analog scan
VFO Scan End VHF:	Set stop frequency for a VHF Analog scan
Auto Repeater UHF:	Set to Off or set the offset for the RX frequency for UHF
Auto Repeater VHF:	Set to Off or set the offset for the RX frequency for VHF
Call Channel maintained:	Set to Off or On allows a transmit on the sub-channel B if done within 5 seconds after the call carrier was dropped
Enhanced Sound Qual.:	Set to On for increased high pitch voice or Off for normal.
Maximum Volume:	Select 1 > 8 for higher max volume – 8 is max
Max Headphone Volume:	Select Indoor, or $1 > 8$ for max volume when using a
headphone	

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.

OTHER SET-UP OPTIONS

ALARM SETTING

Emergency Information				>
Analog Alarm		Digital Alarm		
Emergency Alarm	Alarm	Emergency Alarm	Alarm	-
ENI Type Select	None	Alarm Time[s]	20	-
Emergency ID		Duration of TX[s]	15	-
Alarm Time[s]	20 🗸	Duration of RX[s]	30	•
Duration of TX[s]	31 🗸	Emergency ENI Send Select	Assigned Channel	•
Duration of RX[s]	31 🗸	Emergency Channel	med.MN State	•
Emergency ENI Send Select	Assigned Channel 💌	Emergency Cycle	Continuous	•
Emergency Channel	4.125 Edina 💌	TG/DMR ID	0	
Emergency Cycle	Continuous 🗸	Call Type	Group Call	•
WorkAlone		🔲 Receive Alarm		
Response Time	1m 💌	🕅 Man Down		
Warning Time	1s 💌	Man Down Delay[s]	5	•
Response	Key]1	·
		<u>0</u> K	Cancel	

Analog and Digital alarm settings can be programmed via above set-up.

LOCAL INFORMATION

With the radio attached to the USB port on your computer, you can access Embedded Message information about the radio. To change or add any of the information it requires a separate software package from AnyTone only provided to dealers.

DAR

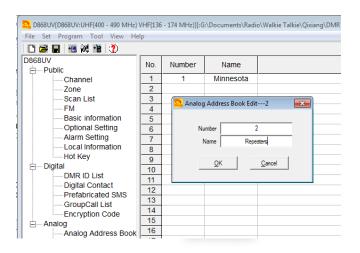
Sembedded Message		×
Arra Orda		
Area Code	1	
Manufacture Code		
Radio Type	D868UVE	
Frequency	UHF{400 - 480 MHz} VHF{136 - 174 MHz}	
Sorial Number	17101800500D0006	
Producted Date	2017-10-27	
Maintained Date		
Maintained		
Description		
Dealer Information		
Dealer Code		
Stock Date		
Sell Date		
Seller		
	Class	
	Close	

CREATE ANALOG ZONE AND CHANNELS

Add a zone for your analog channels, and 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.



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.

D868UV[D868UV:UHF{400 - 490 MHz}	/HF{136	- 174 MHz]][:G:\Documents\Radio\Walkie Talkie\Qixiang\DMR AT-868UV\codeplugs\AT-D868UV M
File Set Program Tool View He	lp	
🗋 🗃 🔚 🖷 🚧 🛍 😲		
D868UV	No.	Text
🖨 Public		lexi
Channel	1	
Zone	2	Prefabricated SMS Edit1
Scan List	3	
FM	4	
Basic information	5	
Optional Setting	6	
Alarm Setting	7	Content Call from KD0PNQ
Local Information	8	Content Call from KDUPING
Hot Key	9	
🚊 Digital	10	
DMR ID List	11	
Digital Contact	12	
Prefabricated SMS	13	
GroupCall List	14	
Encryption Code	15	
🖻 Analog	16	
Analog Address Book	17	
5Tone Setting	17	<u>OK</u> <u>Cancel</u>
2Tone Setting	18	

STEP 11 – ENCRYPTION CODE

You can edit the Encryption code as desired but this should not be used in the USA.

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.

Emergency Information					\times
Analog Alarm			Digital Alarm		
Emergency Alarm	Alarm	-	Emergency Alarm	Alarm	•
ENI Type Select	5Tone	-	Alarm Time[s]	10	•
Emergency ID	1	-	Duration of TX[s]	10	•
Alarm Time[s]	10 .	-	Duration of RX[s]	10	•
Duration of TX[s]	10	-	Emergency ENI Send Select	Selected Channel	•
Duration of RX[s]	10	-	Emergency Channel	air.WW	~
Emergency ENI Send Select	Selected Channel	•	Emergency Cycle	1	•
Emergency Channel	2.050 Forest Lak	~	TG/DMR ID	12345678	
Emergency Cycle	1	•	Call Type	Group Call	•
- Work Alone			Receive Alarm		
Response Time	10m ·	•	🖂 Man Down		
Warning Time	10s ·	•	Man Down Delay[s]	0	•
Response	Key	•		1-	_
			QK	<u>C</u> ancel	

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

u	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
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 USB COM port information

STEP 13 - HOT KEY

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

Any Tone[®]

0	Hot Ke	ey Set		🔁 Hot Ke	y Set		
ſ		Analog G	Quick Call		Analog Quick Call	State Ir	formation
	No.	Operation Type	Call ID	No.	State Content		
	1	Off	Off	1	Status Message 1		
	2	Off	Off	2			
	3	Off	Off	3			
	4	Off	Off	4			

Analog Quick Call

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

State Information

Allows text messages to be entered and made available for digital calls and can be selected when using Hot Key's functions

Hot Key

The Hot Key window allows set-up of a keyboard key to access a function. See page 12 in your AT-D868UV Operating Manual for more details.

ode Menu	Call Type		1 1	
		Call Object	Digi Call Type	Content
all SMS	Digital	D0PNQ Trygve	Person Call	Off
enu New SMS	Analog	Off	Off	Off
enu Hot Text	Analog	Off	Off	Off
enu Received SMS	Analog	Off	Off	Off
enu Send SMS	Analog	Off	Off	Off
enu Contact List	Analog	Off	Off	Off
enu Manual Dial	Analog	Off	Off	Off
enu Call Log	Analog	Off	Off	Off
enu Dialed Call	Analog	Off	Off	Off
enu Received Call	Analog	Off	Off	Off
enu Missed Call	Analog	Off	Off	Off
enu Zone	Analog	Off	Off	Off
enu Radio Set	Analog	Off	Off	Off
enu SMS	Analog	Off	Off	Off
enu New SMS	Analog	Off	Off	Off
enu Hot Text	Analog	Off	Off	Off
enu Received SMS	Analog	Off	Off	Off
enu Send SMS	Analog	Off	Off	Off
	enu Hot Text enu Received SMS enu Send SMS enu Contact List enu Manual Dial enu Call Log enu Dialed Call enu Received Call enu Received Call enu Zone enu SMS enu SMS enu New SMS enu Hot Text enu Received SMS	enu Hot Text Analog enu Received SMS Analog enu Send SMS Analog enu Contact List Analog enu Contact List Analog enu Call Log Analog enu Call Log Analog enu Dialed Call Analog enu Received Call Analog enu Zone Analog enu Zone Analog enu SMS Analog enu SMS Analog enu New SMS Analog enu Hot Text Analog enu Received SMS Analog	enu Hot Text Analog Off enu Received SMS Analog Off enu Send SMS Analog Off enu Send SMS Analog Off enu Contact List Analog Off enu Contact List Analog Off enu Manual Dial Analog Off enu Call Log Analog Off enu Call Log Analog Off enu Dialed Call Analog Off enu Received Call Analog Off enu Missed Call Analog Off enu Zone Analog Off enu SMS Analog Off enu SMS Analog Off enu New SMS Analog Off enu Hot Text Analog Off enu Received SMS Analog Off	Hot Text Analog Off Off enu Received SMS Analog Off Off Off enu Send SMS Analog Off Off Off Off enu Send SMS Analog Off Off Off Off enu Send SMS Analog Off Off Off Off enu Contact List Analog Off Off Off Off enu Call Log Analog Off Off Off off enu Call Log Analog Off Off Off off enu Baled Call Analog Off Off off off enu Received Call Analog Off Off off off enu Zone Analog Off Off off off enu SMS Analog Off off off off enu

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.

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.

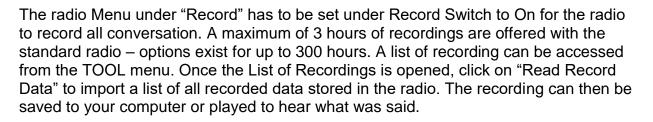
Select if you want to write just the "Other Data" (all radio parameters) and/or Digital Contact List when loading the CodePlug into the radio. Write the file to your radio. Save the file to your PC with a name that you will remember. You may wish to use version numbers in your file naming to help you 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 TOOL Pull-down Menu

The pull-down TOOL menu offers several unique features such as listening to all recorded information, importing and exporting file data to an excel format for separate programming, mode function, extended settings, firmware updating, adding a boot image, and default channel settings.

DMP

2.1 RECORD



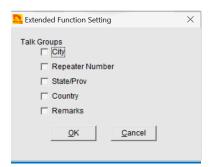
2.2 IMPORT and EXPORT

This feature allow importing to an excel spreadsheet each of the programming features so that all the features of excel can be used to build and enhance a CopePlug. Some details are described above in the Contact Information section.

2.3 MODE

The Mode Selection allows the CPS software not to check for Channel names and Contact names to be identical. This feature has been requested by the California Amateur clubs due to the amount of repeaters they cover. Add a check to allow same Contact and Channel numbers.

2.4 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.

2.5 FIRMWARE UPDATES

If you have the Firmware Update Software (described in section 4.0 below) installed on your computer, this is a direct way to access this firmware.

2.6 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 are 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 your loaded image file from the radio (if you loaded one)
- Write write your new image file to the radio

2.7 DEFAULT CHANNEL INFORM.....

This TOOL Menu accesses the first channel of your list of channels.

2.8 EXPORT DATA CONVERSION FILE

This function is used to export the codeplug to a format .dcf which can be read by the Contact Manager described in section 6.0 below where it then can be fully manipulated.

2.9 MODEL INFO

The Model pull-down menu allows to check which of the 10 frequency bands the radio is programmed for. To check – read in the current codeplug with the CPS, and open the Model > Model Information to see what Band the radio is set for. Changes can only be done by the manufacturer here.

3.0 RADIO LCD DISPLAY

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

- Reception bars left side is 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)
- Microphone = You have turned On the recording feature of the radio (3 hours)
- GPS symbol gray = no GPS signal received, red = GPS signal received
- "A" indicates a set-up for Automatic Power Off
- **CC11** for Digital reception shows the ColorCode for the primary channel
- DCS or CTC for Analog reception indicates a tone signaling squelch
- The date line changes and shows sequentially date/last heard/current TG
- **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 = repeater with different RX and TX frequency. A red
 R indicates reversed RX and TX frequencies.

4.0 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. This could also be accessed via the TOOL menu if you have the above program installed on your computer.

QX Code Upd	ate dpinst
<u>(</u>	Open Update File
	File Name
Com Port	COM14 V Duplex
Com Speed	921600 💌
	Write
	Exit

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 (Hdw V.1.10) compared to the original radio being Version 1 (Hdw V. 1.00). The firmware for those different radios is also identified with V1.19 or V2.19 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. <u>Also – save your CodePlug before you do a Firmware update!</u>

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

 868UV_1G_V1.18.CDD 868UV_1G_V1.18.CDI 868UV_1G_V1.18.spi 868UV_1G_V2.18.CDD 868UV_1G_V2.18.CDI 	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
868UV_1G_V2.18.CDI	you own so you select the 3 correct files: V1.xx, or V2.xx and
868UV_1G_V2.18.spi	place the correct files in the same folder as the above program.

Click on "Open Update File", and open the "**D868UV_xxxx.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.

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

Write To Radio
Complete Progress:28%

File Open Succesed!

OK

4.1 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 <u>not recommended</u> 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.

After a re-start the radio will display the setting for time zone, the date and the time. Use the up-down key to set the current time zone. Move to the year by pushing the **P1 key**. Set the year, and use the **P1 key** to move forward each step. Once done, click the Menu key to save the time zone, 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 #11 (Language) and click Menu and select English.

The codeplug has also been replaced as part of the system re-set, so you need to reload 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.

4.2 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

D868_1G_new_usb.CDD
 D868_1G_new_usb.CDI
 D868_1G_new_usb.spi

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.

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

5.0 CPS Programmer – Programming Software Helper for AT D868UV

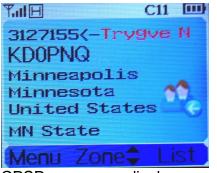
A German Amateur Klaus DL5MCC has developed a comprehensive software program to help with coduplug programming for several types of DMR radios, now also the D868UV radio. His software can be downloaded from: http://dl5mcc.de/cpsprogrammer/

Download the two software files and open the **CPSProgramer_**xxxxx.exe This small program first of all will allow you to convert the DMR-MARK contact list to the format needed by the D868UV radio. Download the database from:

http://www.dmr-marc.net/cgi-bin/trbo-database/datadump.cgi?table=users&format=csv&header=1 Then in the CPSProgrammer use the pull-down menu Convert CSV and select **Convert Contacts CSV** – once opened you see a new window where you under "Select Contacts CSV" open the downloaded contacts database which may be in a .cgi format, but that is ok. Make sure the "Target" displays AT-D868UV. Then at the bottom of the open window, click **Convert CSV**, and you will see the program operate for a while converting all the contacts to the D868UV format.

	GMCC CPSProgramme		ols Help	×
Scan	list (2,4) Roaming (2,4) Channels (3) Z	ones (5) Info + Tools	••
— Pr	ogramming Select Channellist	D:\AFU\DMR\C Step 3:	CS700\V03-201611\Ch Write Channels	an
Logfi	le			
	0 Wamings 0 Channels Clear Log	Inconsistent Line Inconsistent Line Inconsistent Line	#55049: 3119379,KE0 #55262: 3120024,K0W #55861: 3121302,KI4M #56675: 3124146,WB: #58205: 3126433,KE8	/J IL BG
	Save Log as	<	:	×
	Exit	Select CPS:	HD1	~
0	0.000	idle		- ×
	Users\trygv\Downloads	\datadump.cgi	Tar	get: AT-D868UV V
"59029", "3127264", "Dan Frede "59030", "3127265", "George D "59031", "3127266", "George D "59032", "3127266", "Jesse L A "59033", "3127269", "Aaron J L "59034", "3127269", "Kay M We "59035", "3127271", "Joe Show "59036", "3127271", "Joe Show "59036", "3127271", "Joe Show "59038", "3127273", "Richard G "59039", "3127274", "David J K "59040", "3127275", "Frederick I	Lavallee", "NOSBU", "I Lavallee", "NOSBU", "I fotaler", "KCOTAB", "Sa irson", "WB9CFN", "Ma Isand", "KB0CEF", "St walter", "NOJOL", "Isant ister", "KD0DAC", "Isant jels", "KD0DAC", "St. C Bopp", "KC0VPA", "St illner", "KG0CV", "Cod	Hugo", "Minnesota" Hugo", "Minnesota", irtell", "Minnesota", aple Grove ", "Minnesota", Cloud", "Minnesota", "Lu ti", "Minnesota", "Un Cloud", "Minnesota" nakopee", "Minnesota Spring ", "Minnesota	, "United States", "", " , "United States", "", " "United States", "", " withing States", ", Inited States", "", "DI , "United States", "", "DI , "United States", "", "DI , "United States", ", ", "DI ta", "United States", ", ", "	", "DMR" ", "DMR" "DMR" "", "DMR" "", "DMR" MR" R" ", "DMR" ", "", "MR"
<				>
Convert	CSV Save as	Clear	Cancel	

After the conversion, Save the file in a place so you can open it under the D868UV Programming Software as a file to Import for all the Contacts. This makes updates of the Contact List very easy and quick. Please note that this program changes the position of the "name" and the "call sign" in the excel .csv program so that the display on the radio will emphasize the Call Sing instead of the Name as follows:





CPSProgrammer display

Normal D-868UV display

The 1.23 version of the CPS allow selection which format as shown abover you like: Open the Optional Settings > Digital Function > Call Display Mode to set the radio display to either of above formats.

6.0 Contact Manager - CodePlug Converter Help for the AT-D868UV

A US Amateur Tom NOGSG has created a **Contact Manager** piece of software which can convert an .rdt codeplug software from several different radios to the D868UV specific format. This software can also update the contact list with all the 80,000+ DMR names and help to input this into the radio. This software is available at his web site http://n0gsg.com/contact-manager/

NØGSG DMR Con Edit Data H	act Manager 2.46 (c) 2015-2018 elp	3 Tom A. Wheeler			- 🗆 ×	Please note that saved .ro
orking Codeplug File	Save Codeplug File				Support this Project	codeplug files saved direct
:\Documents\RADI	D\WALKIE TALKIE\Qixiang\DMR /	AT-D868L Open (Codeplug File		Donate	from the CPS software ma
atus		Radio N	ame	F	adio DMR-MARC ID Number	
otal of 79587 conta	ts and 260 channels in Codeplug	Radio	1	- 1	3127094	not work correctly with the
				F	Radio Type	Contact Manager. The CF
					AT868UV -	U U U U U U U U U U U U U U U U U U U
ontacts Channels	Zones Scan Lists Rx Groups	Structural Import		,	_	offers under TOOLS >
No. DMR-M/	RCID Contact Name	Contact Type	Alert Tone	^		Export Data Conversion F
58199 3127091	Brandon M Perrin	Private Call	No			•
8200 3127092 8201 3127093		Private Call Private Call	No No		Import More Contacts from	the option to export the
8202 3127094	Trygve N Svard	Private Call	No		Another Codeplug	
58203 3127095	Carol Estey	Private Call	No			codeplug into a .dcf file
58204 3127096		Private Call	No		Import More Contacts from	
58205 3127097 58206 3127098	Max H Van Riper Matthew C Blum	Private Call Private Call	No No		a CSV File	which the Contact Manage
8207 312709		Private Call	No		Export All Contacts to a	5
58208 3127100	Andy J Michels	Private Call	No		CSV File	can open and work correct
8209 312710	lan J Boje	Private Call	No			
58210 3127102 58211 3127103		Private Call Private Call	No No		Import Contacts from	with. This process is requi
8212 312710	Galen L Erickson	Private Call	No		DMR-MARC Database	
8213 312710	James B Hagen	Private Call	No			for all of the CPS codeplu
8214 3127106		Private Call	No			
8215 312710 8216 312710	Catherine M Hage Donald J Klier	Private Call Private Call	No No			programs after version 2.2
58216 312710 58217 312710		Private Call	No			
58218 3127110		Private Call	No			
58218 3127110	Kelly D Murphy	Private Call	No			

The best feature of the Contact Manager is the conversion of for example the TYT MD-2017 codeplug (or any other similar dual band codeplug ending in .rdt) to the AnyTone D868UV format. Here is what you do:

- Open the Contact Manager 2,46 or later.
- Open the AnyTone CPS program and save the "blank" codeplug from there
- Now open the "blank" AT D-868UV codeplug you just saved.

- You may see some errors, but ignore them for the moment
- Then click the Structural Imports
- Select all checkmarks and click Import Selected Structures...
- Select the TYT MD-2017 codeplug you want to use for the conversion
- You will see a window telling what you have imported for the D868UV codeplug
- To add any missing DMR ID's click Import Contacts from DMR-MARK Database
- Click Entire Database (WW) and the program loads 80,000+ names
- Or type a country in the search area and click "search" if you do not want all.
- Click Add All Records and you will add any missing DMR contact
- Click **Done Searching** to complete the addition into the codeplug
- Update the Radio DMR-MARK ID Number on the top right with your number
- Save the new D868UV codeplug so you can open it with the CPS program

You need to review the **Optional Settings** in the CPS to make it unique for your needs. Then load it into the D868UV radio and you have a new codeplug originally made for another radio!

7.0 Custom Digital Contact Wizard

Marshall Dias W0OTM is offering a **Contact Wizard** on-line program which can download contact names for the AnyTone D868UV radio sorted from the entire list, by country only, or even by State alone and then it will generate a .csv file you can load into the AnyTone Programming Software (CPS) via the TOOL submenu > Import > Contacts. The on-line help can be found at: <u>http://www.amateurradio.digital/wizard.php</u>

elect rac	lio custo	omize	download finished
Step 1	Step 2	Step 3	
elect Ra	adio:		
			AnyTone AT-D868UV
			Login to save/enable your User Preferences
			Login to save/enable your User Preferences
N	EW		Login to save/enable your User Preterences
N	IEW EATUI	RES	Login to save/enable your User Preterences
	EW EATUI ser Preferer	nces u	Login to save/enable your User Preferences Droce logged in, each time you "Download" from the Digital Contacts Wizard, your Filter By, Country and State selections are stored to your save account preferences. If you havn't created your account, you can egister here, or login before you continue.
U		nces u ntry s	Drice logged in, each time you "Download" from the Digital Contacts Wizard, your Filter By, Country and State selections are stored to your ser account preferences. If you han't created your account, you can

Select the radio, then click on Step 2 and then Step 3 for your .csv file.