

DMR CodePlug 101

AnyTone AT-D878UV

Code Plug Basics for the AnyTone 868/878

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- Part V Setting up Digital APRS
- Part VI Programmable bells and whistles

AT D878 CodePlug 101

Part I

Introduction to basic concepts

Basic Concepts (1)

- Code Plug: This is the program that is loaded into the radio to define its operational “personality”, in terms of Zones, Channels, Scanning, etc.
- CPS (Customer Programming Software): This is the Software that runs on a PC and is used to create, load and maintain the “Code Plug”.

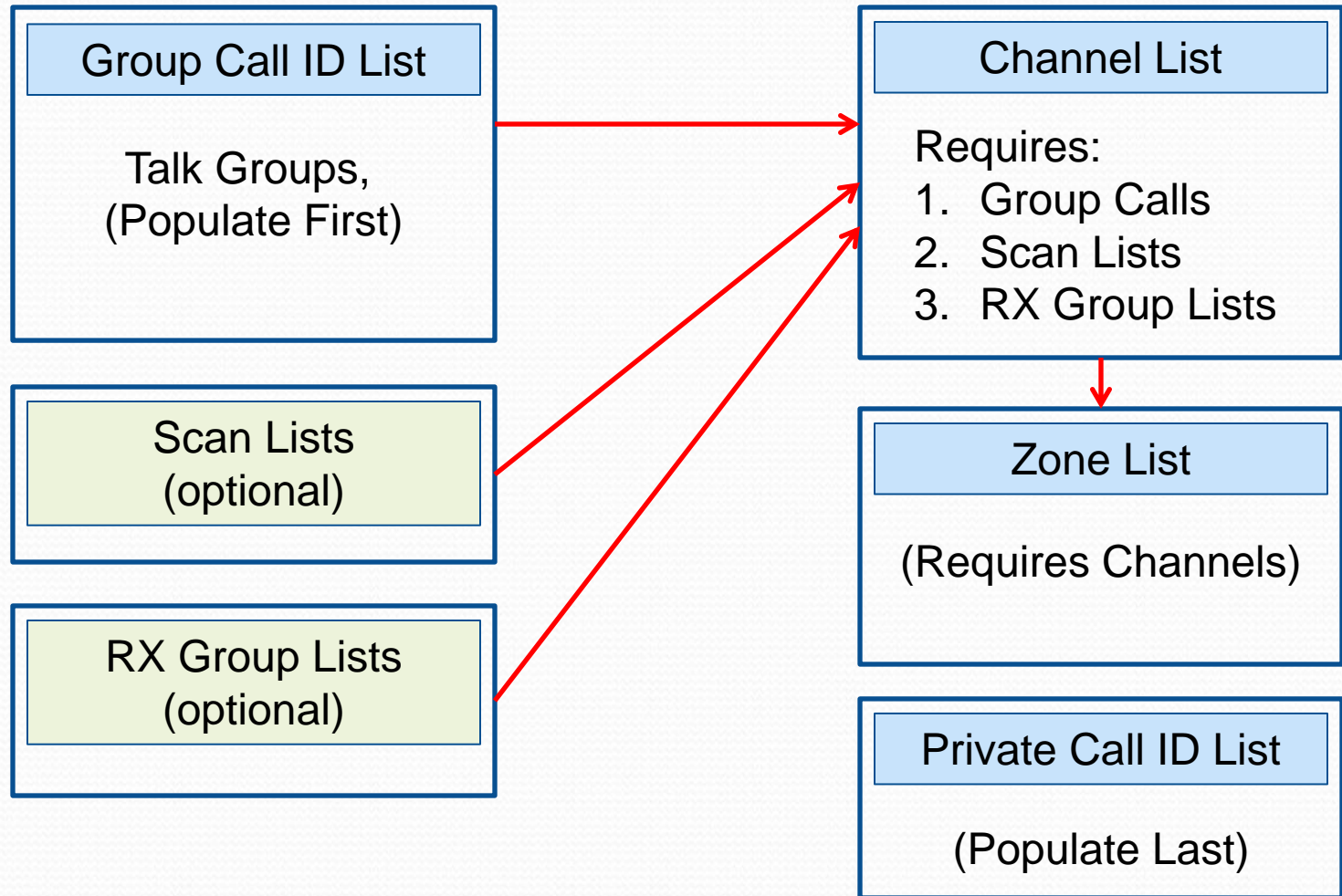
Basic Concepts (2)

- Zones: Folders containing channels
 - Collects together a group of channels
 - Often dedicated to a physical repeater
 - Sometimes dedicated to a specific location
 - May contain DMR and Analog channels
- Channels: specific talk setup within a zone
 - Digital: Frequency, Color Code, Talk Group
 - Analog: Frequency, PL Tone/DCSS

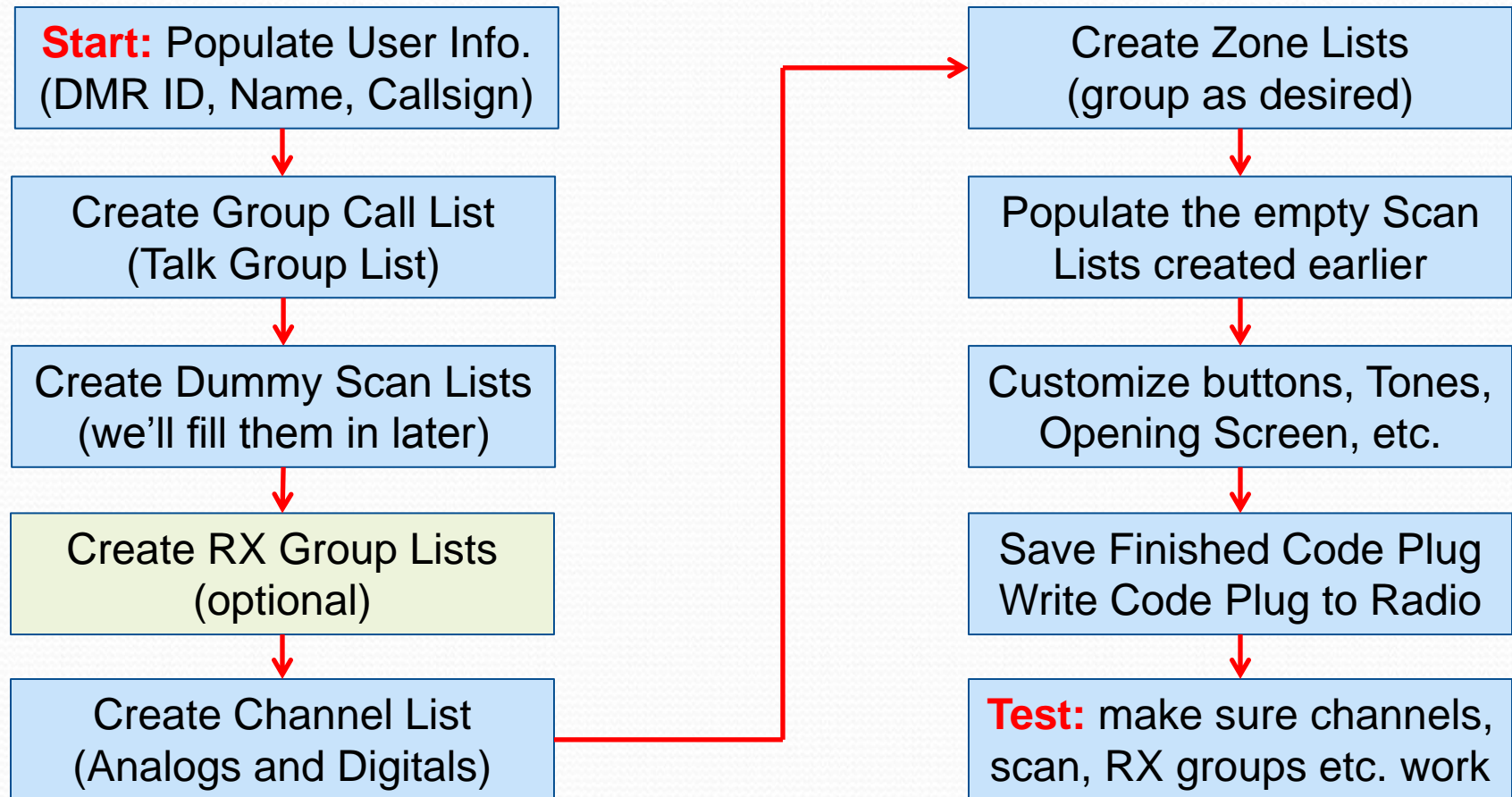
Basic Concepts (3)

- Scan Groups: Defines channels to scan
 - Each channel references a specific SG
 - There may be a max number of channels
 - Scan is usually focused on a specific Zone
- Contacts: DMR offers several types but only two are used in amateur radio:
 - Private Call: User ID / Call Sign
 - Group Call: Talk Group Name / TG ID #

Database relationships



DMR Code Plug Workflow



AnyTone CPS opening Screen

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)]([C:\Users\dhul\Documents\CodePlugs\AnyTone D868UV\20181222_AT878_KC6Nc.rdt])

File Model Set Program Tool View Help

D878UV

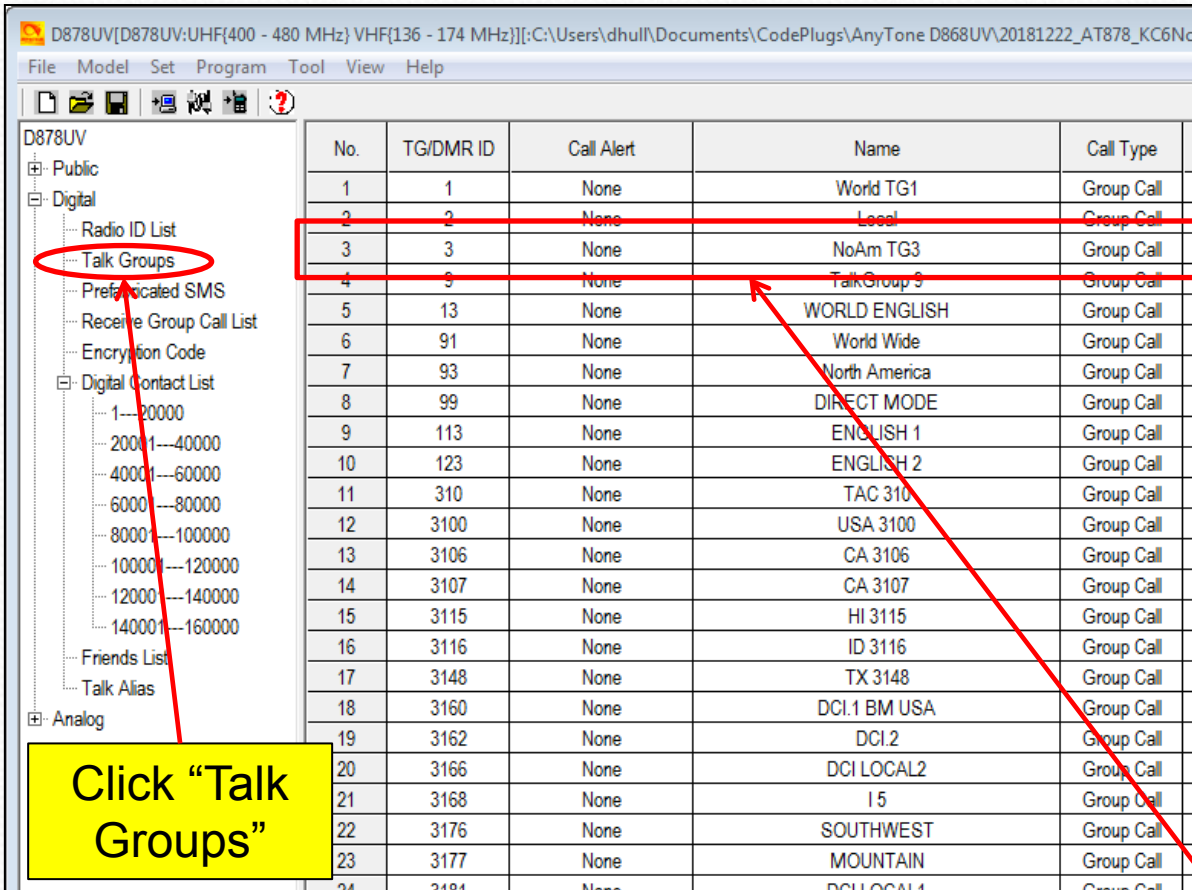
- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequer
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

Channel list panel

You will create and configure your channels here

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID	Optional Signal
1	146.52000	146.52000	A-Analog	High	25K	Off	Off	146.520 Analog	World TG1	KC6N	
2	446.00000	446.00000	A-Analog	High	25K	Off	Off	446.0000 Analog	World TG1	KC6N	
3	446.50000	446.50000	A-Analog	High	25K	Off	Off	446.5000 Analog	World TG1	KC6N	
4	441.00000	441.00000	A-Analog	High	25K	Off	Off	441.0000 Analog	World TG1	KC6N	
5											
6	433.45000	433.45000	D-Digital	High	12.5K	Off	Off	DMR 433.4500	DIRECT MODE	KC6N	
7	438.95000	438.95000	D-Digital	High	12.5K	Off	Off	DMR 438.9500	DIRECT MODE	KC6N	
8	438.97500	438.97500	D-Digital	High	12.5K	Off	Off	DMR 438.9750	DIRECT MODE	KC6N	
9	439.00000	439.00000	D-Digital	High	12.5K	Off	Off	DMR 439.0000	DIRECT MODE	KC6N	
10	439.02500	439.02500	D-Digital	High	12.5K	Off	Off	DMR 439.0250	DIRECT MODE	KC6N	
11	439.05000	439.05000	D-Digital	High	12.5K	Off	Off	DMR 439.0500	DIRECT MODE	KC6N	
12	441.00000	441.00000	D-Digital	High	12.5K	Off	Off	DMR 441.0000	DIRECT MODE	KC6N	
13	441.01250	441.01250	D-Digital	High	12.5K	Off	Off	DMR 441.0125	DIRECT MODE	KC6N	
14	446.07500	446.07500								KC6N	
15	446.50000	446.50000								KC6N	
16	446.51250	446.51250								KC6N	
	446.58000	441.58000								KC6N	
	446.76000	441.76000	A-Analog	High	25K	127.3	127.3	PAPA 3	World TG1	KC6N	
20	445.42000	440.42000	A-Analog	High	25K	127.3	127.3	PAPA 4	World TG1	KC6N	
21	449.28000	445.28000	A-Analog	High	25K	127.3	127.3	PAPA 5	World TG1	KC6N	
22	446.76000	441.76000	A-Analog	High	25K	Off	156.7	PAPA 6	World TG1	KC6N	
23	446.38000	441.38000	A-Analog	High	25K	156.7	156.7	PAPA 7	World TG1	KC6N	
24	445.14000	440.14000	A-Analog	High	25K	127.3	127.3	PAPA 8	World TG1	KC6N	
25	446.58000	441.58000	A-Analog	High	25K	Off	156.7	PAPA 9	World TG1	KC6N	
26	448.54000	443.54000	A-Analog	High	25K	91.5	91.5	PAPA 10	World TG1	KC6N	
27	449.38000	444.38000	A-Analog	High	25K	100.0	100.0	PAPA 11	World TG1	KC6N	
28	446.58000	441.58000	A-Analog	High	25K	100.0	100.0	PAPA 14	World TG1	KC6N	
29	445.86000	440.86000	A-Analog	High	25K	100.0	100.0	PAPA 18	World TG1	KC6N	
30	448.88000	443.88000	A-Analog	High	25K	100.0	100.0	PAPA 19	World TG1	KC6N	
31											
32	446.58000	441.58000	A-Analog	High	25K	100.0	127.3	OAT P1	World TG1	KC6N	

Talk Groups(group call list):



The screenshot shows the D878UV software interface. On the left, the 'Talk Groups' menu item is highlighted with a red circle. A red arrow points from this menu item to a yellow box containing the text 'Click "Talk Groups"'. The main window displays a table of group call data. A red rectangle highlights the first four rows of the table, and a red arrow points from this rectangle to a yellow box containing the text 'Example: Group Call North America, Call ID (TG)=3'.

No.	TG/DMR ID	Call Alert	Name	Call Type
1	1	None	World TG1	Group Call
2	2	None	Local	Group Call
3	3	None	NoAm TG3	Group Call
4	9	None	TalkGroup 9	Group Call
5	13	None	WORLD ENGLISH	Group Call
6	91	None	World Wide	Group Call
7	93	None	North America	Group Call
8	99	None	DIRECT MODE	Group Call
9	113	None	ENGLISH 1	Group Call
10	123	None	ENGLISH 2	Group Call
11	310	None	TAC 310	Group Call
12	3100	None	USA 3100	Group Call
13	3106	None	CA 3106	Group Call
14	3107	None	CA 3107	Group Call
15	3115	None	HI 3115	Group Call
16	3116	None	ID 3116	Group Call
17	3148	None	TX 3148	Group Call
18	3160	None	DCI.1 BM USA	Group Call
19	3162	None	DCI.2	Group Call
20	3166	None	DCI LOCAL2	Group Call
21	3168	None	I 5	Group Call
22	3176	None	SOUTHWEST	Group Call
23	3177	None	MOUNTAIN	Group Call
24	3184	None	DCI LOCAL1	Group Call

Click "Talk Groups" in the menu tree as shown and add your group call ID's as shown to the left. If your radio is unprogrammed you will need to add the ones you need. Otherwise it will have some entries as shown here. You will reference this list when you program your channels.

Example: Group Call North America, Call ID (TG)=3

Scan Lists:

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181222_AT878_KC6Nc.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequer
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Channels	Priority Channel 1	Priority Channel 2	Look Back Time A[s]	Look Back Time B[s]	Dropout Delay Time[s]	Dwell Time[s]
1	Woodson	8	Off	Off	2.0	3.0	3.1	3.1
2	BlueRidge	4	Off	Off	2.0	3.0	3.1	3.1
3	Lukins	4	Off	Off	2.0	3.0	3.1	3.1
4	OatMt	4	Off	Off	2.0	3.0	3.1	3.1
5	Otay	4	Off	Off	2.0	3.0	3.1	3.1
6	PlmSprings	4	Off	Off	2.0	3.0	3.1	3.1
7	Palomar	4	Off	Off	2.0	3.0	3.1	3.1
8	PalomarMM	4	Off	Off	2.0	3.0	3.1	3.1
9	PAPA Portable	4	Off	Off	2.0	3.0	3.1	3.1
10	PAPA Saddle	4	Off	Off	2.0	3.0	3.1	3.1
11	San Marcos	4	Off	Off	2.0	3.0	3.1	3.1
12	SantaBarbara	4	Off	Off	2.0	3.0	3.1	3.1
13	Santiago	4	Off	Off	2.0	3.0	3.1	3.1
14	Sunset	4	Off	Off	2.0	3.0	3.1	3.1
15	ToroPk	4	Off	Off	2.0	3.0	3.1	3.1

Each channel may reference a scan list (but doesn't have to). A scan list is a list of channels that will be scanned when a channel referencing that list is selected (and "scan" is enabled).

A scan list generally scans a collection of channels within a specific zone and can include both analog and digital channels and a mix of channels from different repeaters. Most of the time it will pick up channels from a given repeater as shown here for PAPA Woodson. There may be a limit to how many channels your radio can have in a given scan group (16 is not uncommon).

Available Channels

Included in Woodson "Scan Group"

Scan Edit---

Scan List Name: Woodson

Available Channel		Scan Channel Member	
1	146.520 Analog	179	WUD Local
2	446.0000 Analog	180	WUD PAPA
3	446.5000 Analog	182	WUD SoCal
4	441.0000 Analog	184	WUD CA 3106
6	DMR 433.4500	197	WUD Hangout
7	DMR 438.9500	78	WUD DRUNK Otay
8	DMR 438.9750	81	WUD K&X 449.440
9	DMR 439.0000	83	WUD P10 Pal
10	DMR 439.0250		
11	DMR 439.0500		
12	DMR 441.0000		
13	DMR 441.0125		
14	DMR 446.0750		
15	DMR 446.5000		
16	DMR 446.5125		
18	PAPA 1		
19	PAPA 3		
20	PAPA 4		
21	PAPA 5		
22	PAPA 6		
23	PAPA 7		
24	PAPA 8		

Order By: ID Name Up Down

Priority Channel Select: Off

Priority Channel 1: Off

Priority Channel 2: Off

Revert Channel: Selected

Look Back Time A[s]: 2.0

Look Back Time B[s]: 3.0

Dropout Delay Time[s]: 3.1

Dwell Time[s]: 3.1

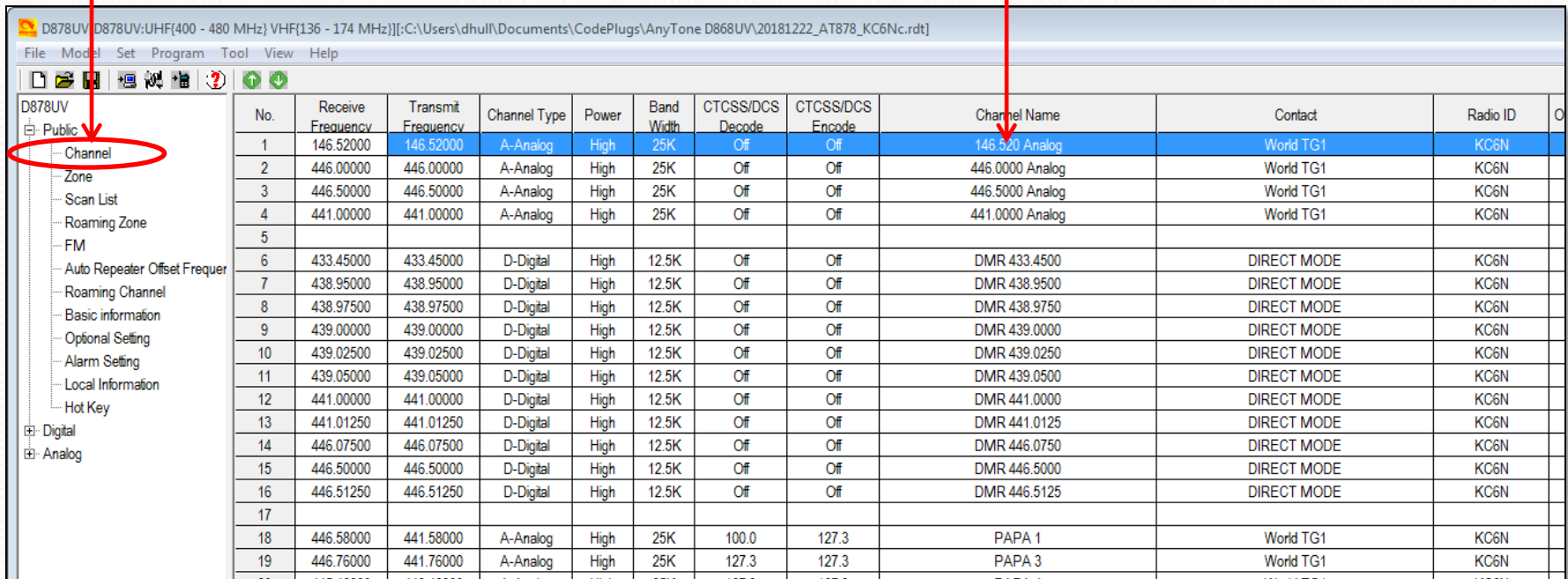
OK Cancel Previous Next

Channels:

Channels are displayed in spreadsheet form in the AnyTone CPS. A channel definition pop-up will appear if you double click on a line in the channel table. If the line is blank, you may create a new channel, if it is populated, you may edit the information for that channel. This will be shown on the next two pages.

Click Channel

Double Click channel entry to open edit window



D878UV D878UV:UHF{400 - 480 MHz} VHF{136 - 174 MHz}[:C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181222_AT878_KC6Nc.rdt]

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 - Hot Key
- Digital
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID	
1	146.52000	146.52000	A-Analog	High	25K	Off	Off	146.520 Analog	World TG1	KC6N	
2	446.00000	446.00000	A-Analog	High	25K	Off	Off	446.0000 Analog	World TG1	KC6N	
3	446.50000	446.50000	A-Analog	High	25K	Off	Off	446.5000 Analog	World TG1	KC6N	
4	441.00000	441.00000	A-Analog	High	25K	Off	Off	441.0000 Analog	World TG1	KC6N	
5											
6	433.45000	433.45000	D-Digital	High	12.5K	Off	Off	DMR 433.4500	DIRECT MODE	KC6N	
7	438.95000	438.95000	D-Digital	High	12.5K	Off	Off	DMR 438.9500	DIRECT MODE	KC6N	
8	438.97500	438.97500	D-Digital	High	12.5K	Off	Off	DMR 438.9750	DIRECT MODE	KC6N	
9	439.00000	439.00000	D-Digital	High	12.5K	Off	Off	DMR 439.0000	DIRECT MODE	KC6N	
10	439.02500	439.02500	D-Digital	High	12.5K	Off	Off	DMR 439.0250	DIRECT MODE	KC6N	
11	439.05000	439.05000	D-Digital	High	12.5K	Off	Off	DMR 439.0500	DIRECT MODE	KC6N	
12	441.00000	441.00000	D-Digital	High	12.5K	Off	Off	DMR 441.0000	DIRECT MODE	KC6N	
13	441.01250	441.01250	D-Digital	High	12.5K	Off	Off	DMR 441.0125	DIRECT MODE	KC6N	
14	446.07500	446.07500	D-Digital	High	12.5K	Off	Off	DMR 446.0750	DIRECT MODE	KC6N	
15	446.50000	446.50000	D-Digital	High	12.5K	Off	Off	DMR 446.5000	DIRECT MODE	KC6N	
16	446.51250	446.51250	D-Digital	High	12.5K	Off	Off	DMR 446.5125	DIRECT MODE	KC6N	
17											
18	446.58000	441.58000	A-Analog	High	25K	100.0	127.3	PAPA 1	World TG1	KC6N	
19	446.76000	441.76000	A-Analog	High	25K	127.3	127.3	PAPA 3	World TG1	KC6N	

Analog Channel detail:

RX Frequency

TX Frequency

Channel Type

TX Power Level

Channel BW

Admit Criteria

Channel Information Edit---51

Channel Name: K6XI 449.440

Receive Frequency: 449.44000
Transmit Frequency: 444.44000
Correct Frequency[Hz]: 0

Channel Type: A-Analog
Transmit Power: High
Band Width: 25K
Busy Lock: Off
Scan List: None

Exclude channel from roaming: off

Digital

Contact: TAC 310
Radio ID: KC6N
Color Code: 1
Slot: Slot1
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☒ SMS Confirmation

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: CTCSS 107.2
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse

2TONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

Double click on a populated channel in the channel list and This dialog will appear.

Channel Name

TX Prohibit, Talk-around, etc.

Area pertaining to digital channels is grayed out

CTCSS (PL) setup Info.

Digital Channel detail:

RX Frequency

TX Frequency

Analog/Digital

TX Power Level

Bandwidth

Admit Criteria

Double click on a digital channel to bring up this dialog.

Note that the Analog Channel Specifics are greyed out for digital Channels.

Channel Information Edit---179

Channel Name: WUD Local

Receive Frequency: 445.96000
Transmit Frequency: 440.96000
Correct Frequency(Hz): 0

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Different Color Code
Scan List: Woodson

Exclude channel from roaming: off

Analog
CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

Digital
Contact: Local
Radio ID: KC6N
Color Code: 1
Slot: Slot2
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption
☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☒ SMS Confirmation

2TONE Decode: 1
Custom CTCSS: 0.0

OK Cancel Previous Next

Channel Name

Talk Around

TX Contact
(Talk Group)

DMR ID or User

Repeater Color
Code

Channel
Timeslot

RX Group List

Digital Channel Info

Scan List

Zones:

Click "Zone" in the folder tree to bring up the zone list as shown

Double click on a zone to bring up the "Zone Edit" dialog, PAPA Edom (Palm Springs) is shown below

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlug\AnyTone D868UV\20181222_AT878_KC6Nc.rdt]

File Model Set Program Tool View Help

D878UV

- Public
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 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Zone Channels	A Channel	B Channel
1	Simplex	15	146.520 Analog	446.0000 Analog
2	Analog VHF	12	DR0NK 147.990	SANDRA 146.640
3	Analog UHF	20	DR0NK Olay	
4	PAPA Analog	13	PAPA 10	
5	ZumSpot 1	21	ZS1 SoCal	
6	ZumSpot 2	21	ZS2 SoCal	
7	ZumSpot 3	21	ZS3 SoCal	
8	PAPA Blue Ridge	19	BLU Hangout	
9	PAPA Lukins	18	LUK Hangout	
10	PAPA Oat Mt	19	OAT Hangout	
11	PAPA Olay	19	OTY Hangout	
12	PAPA PalmSprings	19	PSP Hangout	
13	PAPA Palomar	19	PAL Hangout	
14	PAPA Palomar MM	18	PAM Hangout	
15	PAPA Portable	17	PRT Hangout	
16	PAPA Saddle Pk	19	SDL Hangout	
17	PAPA San Marcos	19	SMP Hangout	
18	PAPA SantaBarbara	20	SYZ Hangout	
19	PAPA Santiago	19	STG Hangout	
20	PAPA Sunset	18	SUN Hangout	
21	PAPA Toro Peak	19	TOR Hangout	
22	PAPA Vista Pk	17	VST Hangout	
23	PAPA Woodson	31	WUD Hangout	

Zone Edit---12

Zone Name: PAPA PalmSprings

A Channel: PSP Hangout
B Channel: PSP CA 3106

Available Channel	Zone Channel Member
1 146.520 Analog	231 PSP Local
2 446.0000 Analog	232 PSP PAPA
3 446.5000 Analog	233 PSP PAPA Bridge
4 441.0000 Analog	234 PSP SoCal
6 DMR 433.4500	235 PSP SoCal1
7 DMR 438.9500	236 PSP CA 3106
8 DMR 438.9750	237 PSP CAL 1
9 DMR 439.0000	238 PSP Zone6
10 DMR 439.0250	239 PSP USA3100
11 DMR 439.0500	240 PSP NA
12 DMR 441.0000	241 PSP World
13 DMR 441.0125	242 PSP Hangout
14 DMR 446.0750	243 PSP SNARS
15 DMR 446.5000	244 PSP TX 3148
16 DMR 446.5125	245 PSP TAC 310
18 PAPA 1	246 PSP TAC 311
19 PAPA 3	247 PSP TAC 312
20 PAPA 4	248 PSP Parrot
21 PAPA 5	41 PSP P18
22 PAPA 6	
23 PAPA 7	
24 PAPA 8	

Order By: ID Name

OK Cancel Previous Next

Highlight items in the available channels list on the right and use these arrows to move channels to the zone list and back

Digital Contact List:

The AnyTone AT D878 is unique in that it separates Group Calls (Talk Groups) and Private Calls (Radio ID's) into separate databases. Private calls associate a radio ID with a call sign (and other information) as shown below. This radio can hold up to 160,000 private call ID's which is quite a lot. Obviously, you cannot enter all these by hand so an automated methodology is required (and exists). However, you can add, move and edit by hand if need be. Use of this list is optional. If you don't care to see caller ID info, you can leave it empty – many users do.

Click “Digital Contact List”

Typical “Private Call” entry.

No.	TG/DMR ID	Call Alert	Name	City	Call Type	Repeater Number	State/Prov	Country	Remarks
1	0	None			Private Call				
2	6034	None	Nigel Utting	St Saviour	Private Call	GJ7LJJ	Jersey	United Kingdom	
3	44300	None	Andy	Deeside	Private Call	GW1SYG		United Kingdom	
4	1023001	None	Wayne Edward	Toronto	Private Call	VE3THW	Ontario	Canada	DMR
5	1023002	None	Mathieu Goulet	Ottawa	Private Call	VA3ECM	Ontario	Canada	CCS7
6	1023003	None	Guy Charron	Gloucester	Private Call	VE3QC	Ontario	Canada	CCS7
7	1023004	None	Louella Noble	Little Current	Private Call	VE3LDY	Ontario	Canada	DMR
8	1023005	None	Jeffrey Noble	Little Current	Private Call	VE3JFN	Ontario	Canada	DMR
9	1023006	None	Allan Harvey	Sparta	Private Call	VA3UZ	Ontario	Canada	DMR
10	1023007	None	Hans Bockholt	Cornwall	Private Call	VA3BQC	Ontario	Canada	DMR
11	1023008	None	Mark Robinson	Niagara Falls	Private Call	VE3JMR	Ontario	Canada	DMR
12	1023009	None	Rolando Parlo	Scarborough	Private Call	VA3RWO	Ontario	Canada	DMR
13	1023010	None	Rolando Parlo	Scarborough	Private Call	VA3AMO	Ontario	Canada	DMR
14	1023013	None	Barry Brousseau	Guelph	Private Call	VE3SLD	Ontario	Canada	DMR
15	1023014	None	Diane Bruce	Nepean	Private Call	VA3DB	Ontario	Canada	DMR
16	1023015	None	Friedrich Vogler	Ajax	Private Call	VE3FVD	Ontario	Canada	DMR
17	1023016	None	John Christensen	Almonte	Private Call	VE3IAO	Ontario	Canada	DMR
18	1023017	None	John Visser	London	Private Call	VA3MSV	Ontario	Canada	DMR
19	1023018	None	Jacqueline Norma	Nestleton Stati	Private Call	VA3BTQ	Ontario	Canada	DMR

AT D878 CodePlug 101

Part II

So, you got a new radio – now what?

(Saving your current code plug, loading a known good plug)

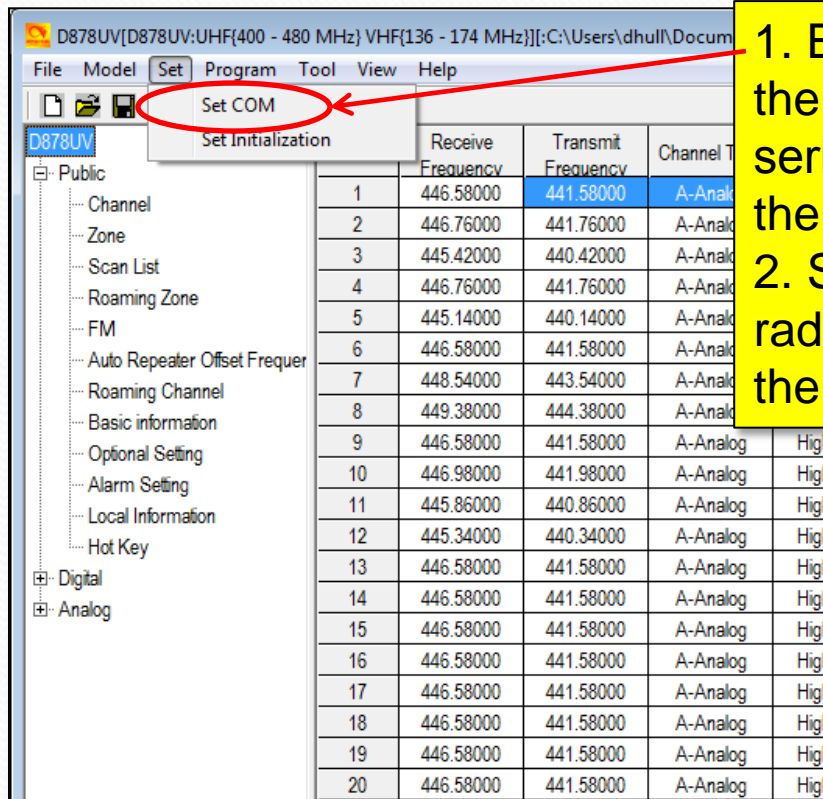
New radio – first steps (1)

- Unpack radio and charge the battery
- Download and install the USB driver
- Download and install the CPS
- Connect the USB cable to your radio
- Connect the other end to your computer
- Turn on your radio, wait for the radio to connect.

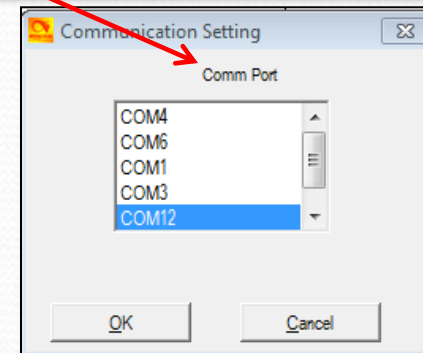
New radio – first steps (2)

- Launch the CPS
- Set your serial port.
- Read the radio and save the Virgin Code Plug.
- Load the new code plug
- Set your DMR ID
- Test the radio

Set your Comm Port:

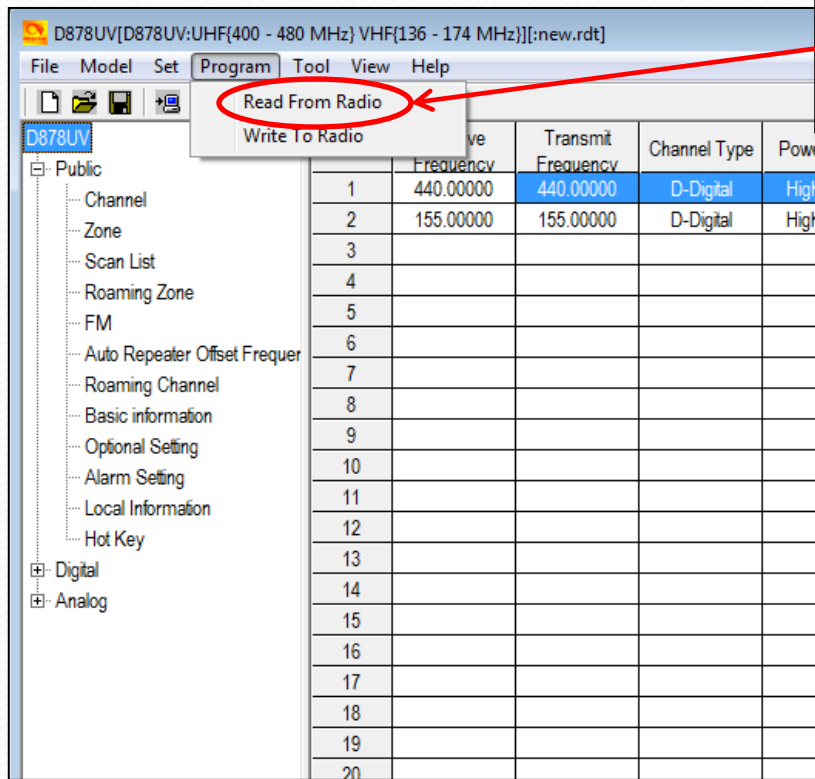


1. Before you can do anything with the UV-878 you have to set up the serial port. Click "Set COM" under the Set Pull-down.
2. Select the comm port for your radio from the options provided in the pop-up.

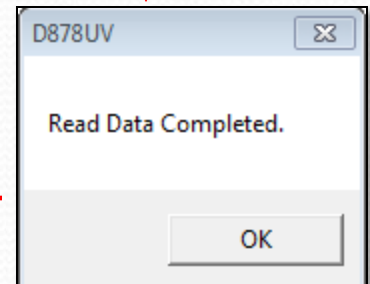
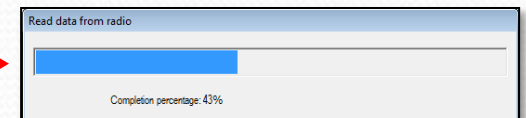
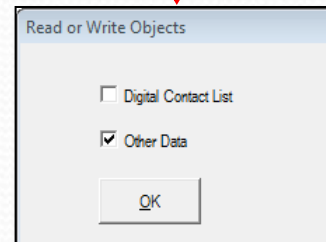
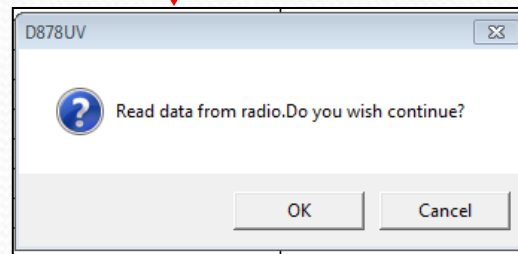


NOTE: Mine is usually COM12 but this will depend on your computer. You may want to try this with your radio off and note the com ports present. Then turn the radio on and do it again. The correct port should be the new one that showed up. You will need to have installed the driver.

Save your initial code plug:



1. In CPS, Click "Read From Radio"
2. Click, OK, and follow the dialogs



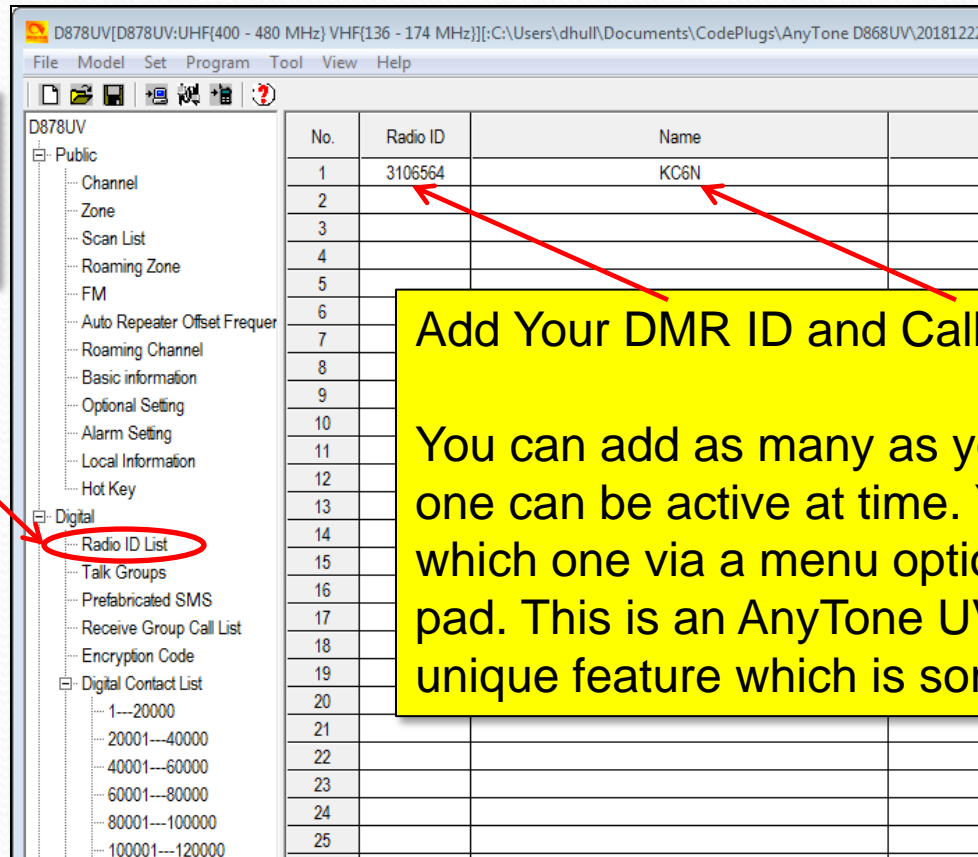
3. Click "File", "Save As", give it a name like "20190218_YourCall_AT-878_VirginCP". Now you have a record of the un-programmed code plug for reference.

Load your new code plug

- Locate a code plug that you like
 - Download from a web site
 - From a friends radio
 - Write from scratch
- Add your DMR ID
- Save your (now customized) code plug
- Flash the new code plug into the radio.

Add your DMR User ID:

Select "Radio ID List" under "Digital" in the tree

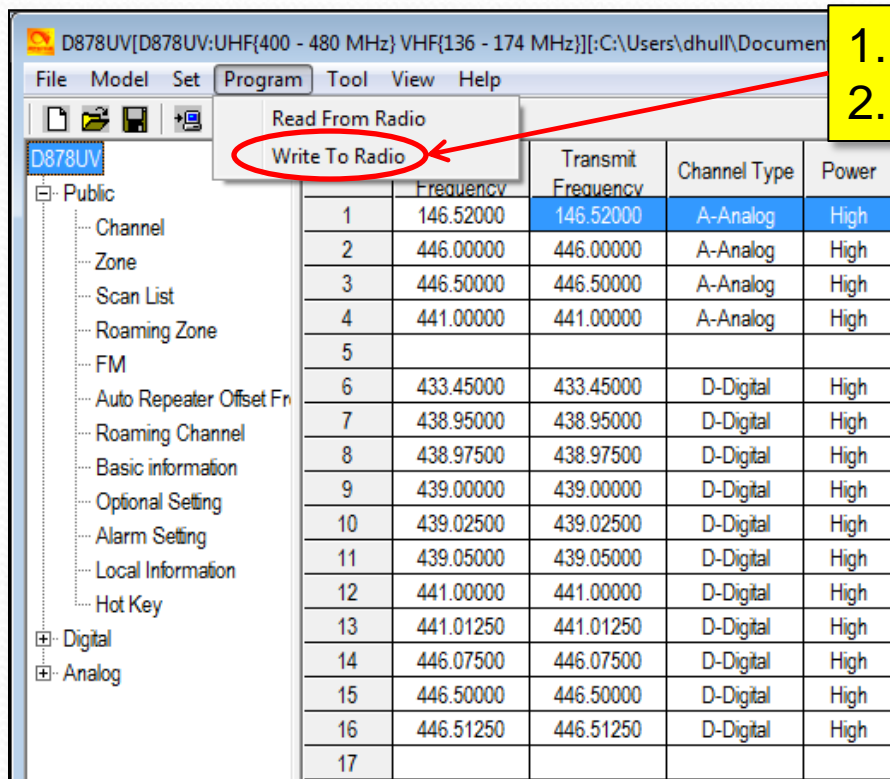


Add Your DMR ID and Call Sign to the list.

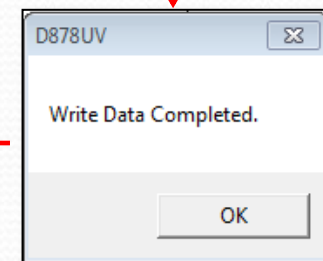
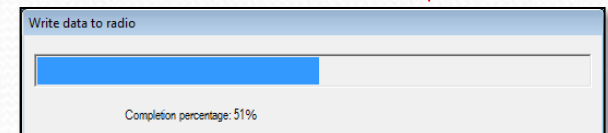
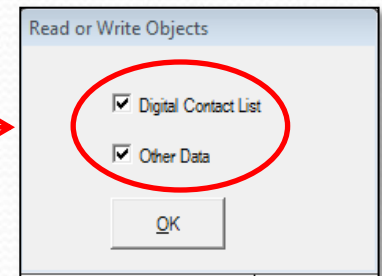
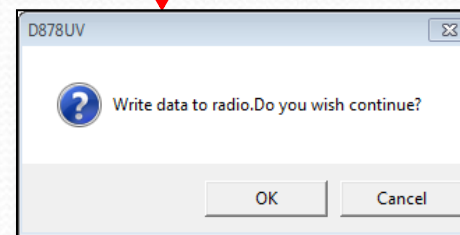
You can add as many as you like, but only one can be active at time. You will select which one via a menu option from the key pad. This is an AnyTone UV-8x8 series unique feature which is sort of nice.

Once you have done this, save your new code plug and write it to your radio as shown on the next slide.

Load your new code plug:



1. In CPS, Click "Write to Radio"
2. Follow the dialogues



3. Save your new code plug. Give it a name like "20190218_YourCall_AT-878". So you have a copy of the code plug for reference and further customization.

You should be good to go

- Make sure your analog channels work
- You can check the digital channels by looking at a “last heard” website such as Brandmeister.
- Pop onto California (or other active talk group) and ask for a radio check.
- If you have loaded a pre-built code plug, then you are done – enjoy your radio!

AT D878 CodePlug 101

Part III

Code Plug management concepts

Code Plug Creation

- The workflow for code plug creation is:
 - Enter your User ID (Section II)
 - Enter the contact data (specifically the talk-groups). Private calls are optional.
 - Create a blank Scan List and a blank Zone
 - Create the channels for the zone
 - Populate the Zone and Scan Lists
 - Configure the programmable buttons
 - *Remember to save periodically*

AT D878 CodePlug 101

Part IIIa

Code Plug Management Concepts
(Creating and Managing Group ID's)

Contact Basics

- Contact information determines how your radio interacts with the DMR network
- Contacts come in four flavors:
 - **Private Call:** Calls to (or from) single radios (your “Contact List”)
 - **Group Call:** Calls to Groups of users (your selection of Talk Group ID’s)
 - **All Call:** Not usually used in Ham Radio
 - **Broadcast Call:** Not used in Ham Radio

Contacts (group/private Calls):

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virg

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FIM
 - Auto Repeater Offset Frequen
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups**
 - Prohibited SVIS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000

No.	TG/DMR ID	Call Alert	Name	Call Type
1	12345678	None	Contact1	Group Call
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

The "Virgin" form, has the single default entry shown here.

2. Double Click any entry (or blank line) to get the Talk Group edit dialog. Enter or Edit the TG info then click OK or Next.

Talk Group Edit---1

Name: Contact1

Call Type: Group Call

TG/DMR ID: 12345678

Call Alert: None

OK Cancel Previous Next

1. Click "Talk Groups" to get the Talk Group entry form.

Adding contacts

- We will add the following contacts to a “virgin” code plug:
 - Talk Groups: Local, PAPA, SoCal, SoCal1, Cal 3106, CA 1, Zone6, Bridge, NoAmer, World, TAC310, BM Parrot GC, Direct 99 and San Diego Hangout.
- This will allow us to create Channels, as well as Scan and Zone Lists
- We will use the PAPA system TG profiles

PAPA Group Lineup

PAPA DMR Talkgroup / Timeslot Matrix

[Click for a complete list of BrandMeister Talkgroups](#)

Time Slot 1

California
TG 3106

California-1
TG 31061

Call Zone 6
TG 31096

North America
TG 93

Worldwide
TG 91

TAC 310
TG 310

USA/3100
TG 3100

EMCOM
TG 9911

Static

Dynamic

Use Slot 1 for connecting to other BrandMeister talkgroups

Time Slot 2

PAPA Chat
TG 31077

SoCal
TG 31066

SoCal 1
TG 31067

PAPA Bridge
TG 31078

Local
TG 2

Static

Dynamic

The talk group ID for the San Diego Hangout TG is 310014

Contacts (group Calls):

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virg

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequen
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups**
 - Pretabricated SMS
 - Receive Group Call List
 - Encryption Code
- Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000

No.	TG/DMR ID	Call Alert	Name	Call Type
1	12345678	None	Contact1	Group Call
2	3106	None	California	Group Call
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

1. Open the Talk Group entry form.

2. Double Click on an entry line to edit an existing entry. Double click on a blank line to create a new entry.

3. Right click any entry to bring up a menu of management options

Name	Call Type
Contact1	Group Call
California	

- Copy Ctrl+C
- Cut Ctrl+X
- Paste Ctrl+V
- Insert(Paste) Ctrl+I
- Delete Del

Populate the Group Call List:

D878UV[D878UV:UHF{400 - 480 MHz} VHF{136 - 174 MHz}][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequen
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000

No.	TG/DMR ID	Call Alert	Name	Call Type
1	3106	None	California	Group Call
2	31061	None	CA1	Group Call
3	31096	None	Zone 6	Group Call
4	93	None	NorthAmer	Group Call
5				
6				
7				
8				
20				
21				
22				
23				
24				
25				

Step down through the list, double click each line, Fill in "Name", "Call Type" and "TG/DMR ID" for each entry as shown here.

Talk Group Edit---5

Name: WorldWide

Call Type: Group Call

TG/DMR ID: 91

Call Alert: None

OK Cancel Previous Next

Final Populated Group Call List:

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virginia						
File Model Set Program Tool View Help						
D878UV						
Public						
Channel	No.	TG/DMR ID	Call Alert	Name	Call Type	
Zone	1	3106	None	California	Group Call	
Scan List	2	31061	None	CA1	Group Call	
Roaming Zone	3	31096	None	Zone 6	Group Call	
FM	4	93	None	NorthAmer	Group Call	
Auto Repeater Offset Fre	5	91	None	WorldWide	Group Call	
Roaming Channel	6	310	None	TAC 310	Group Call	
Basic information	7	3100	None	USA 3100	Group Call	
Optional Setting	8	31077	None	PAPA Chat	Group Call	
Alarm Setting	9	31066	None	SoCal	Group Call	
Local Information	10	31067	None	SoCal1	Group Call	
Hot Key	11	31078	None	PAPA Bridge	Group Call	
Digital	12	2	None	Local	Group Call	
Radio ID List	13	310014	None	SA Hangout	Group Call	
Talk Groups	14	31000	None	BM Parror GC	Group Call	
Prefabricated SMS	15	99	None	Direct 99	Group Call	
Receive Group Call List	16					
Encryption Code	17					
Digital Contact List	18					
1---20000	19					
20001---40000	20					
	21					
	22					

Final list showing the talk groups to be used in this exercise. This is enough to create all of the PAPA repeater zones. If you are outside SoCal, your list will be different. Contact your local club or local repeater owners for the talk group profiles for repeaters in your local area.

“Private Call” ID’s

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)](C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin.rdt)

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Freq
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000
 - 120001---140000
 - 140001---160000
 - Friends List
 - Talk Alias
- Analog

No.	TG/DMR ID	Call Alert	Name	City	Call Type	Repeater Number	State/Prov	Country	Remarks
1	6034	None	Nigel	Nigel Utting	Private Call	GJ7LJJ	St. Saviour	Jersey	United Kingdom
2	44300	None	Andy	Andy	Private Call	GW1SYG	Deeside		United Kingdom
3	1023001	None	Wayne	Wayne Edward	Private Call	VE3THW	Toronto	Ontario	Canada
4	1023002	None	Mathieu	Mathieu Goulet	Private Call	VA3ECM	Ottawa	Ontario	Canada
5	1023003	None	Guy	Guy Charron	Private Call	VE3QC	Gloucester	Ontario	Canada
6	1023004	None	Louella	Louella Noble	Private Call	VE3LDY	Little Current	Ontario	Canada
7	1023005	None	Jeffrey	Jeffrey Noble	Private Call	VE3JFN	Little Current	Ontario	Canada
8	1023006	None	Allan	Allan Harvey	Private Call	VA3UZ	Sparta	Ontario	Canada
9	1023007	None	Hans	Hans Bockholt	Private Call	VA3BOC	Cornwall	Ontario	Canada
10	1023								
11	1023								
12	1023								
13	1023								
14	1023								
15	1023								
16	1023								
17	1023								
18	1023								
19	1023								
20	1023								
21	1023								
22	1023								
23	1023								
24	1023								
25	1023025	None	Gregory	Gregory Green	Private Call	VA3ZDX	Alisa Craig	Ontario	Canada
26	1023026	None	David	David Bohan	Private Call	VE3ELX	London	Ontario	Canada
27	1023027	None	Louis	Louis Piccolo	Private Call	VE3LPY	Windsor	Ontario	Canada
28	1023028	None	Kevin	Kevin Bousquet	Private Call	VA3API	Burlington	Ontario	Canada
29	1023029	None	David	David Sangwin	Private Call	VA3NSC	Port Perry	Ontario	Canada
30	1023030	None	Alexander	Alexander Blais	Private Call	VE3OZT	Kitchener	Ontario	Canada
31	1023031	None	Perry	Perry Rubin	Private Call	VA3PMR	Thornhill	Ontario	Canada
32	1023032	None	Tedd	Tedd Doda	Private Call	VE3TJD	Petersburg	Ontario	Canada
33	1023033	None	Andrew	Andrew Moss	Private Call	VE3YES	Caledon	Ontario	Canada
34	1023034	None	Paul	Paul Becker	Private Call	VE3KPB	Oshawa	Ontario	Canada
35	1023035	None	William	William Riddell	Private Call	VE3WFR	Kitchener	Ontario	Canada
36	1023036	None	Richard	Richard William	Private Call	VE3UOD	Cannington	Ontario	Canada
37	1023037	None	Rejean	Rejean Potvin	Private Call	VA3RMP	Kapuskasing	Ontario	Canada
38	1023038	None	Michael	Michael Kosch	Private Call	VE3MMX	Shedden	Ontario	Canada
39	1023039	None	Kevin	Kevin Bousquet	Private Call	VA3API	Burlington	Ontario	Canada
40	1023040	None	George	George Baukham	Private Call	VA3GCB	Guelph	Ontario	Canada
41	1023041	None	David	David Bell	Private Call	VE3CSB	Kitchener	Ontario	Canada
42	1023042	None	John	John Enns	Private Call	VE3BB	Kitchener	Ontario	Canada
43	1023043	None	John	John Enns	Private Call	VE3BB	Waterloo	Ontario	Canada
44	1023044	None	Frederick	Frederick Hicks	Private Call	VE3MTS	Kitchener	Ontario	Canada
45	1023045	None	Ralph	Ralph Korzhensk	Private Call	VE3EUK	Petersburg	Ontario	Canada

You add and manage Private Call ID's (Radio ID numbers) the same way you do Group Call (Talk Group) ID's but there is an automated way to do this which we'll cover later. As you see here, there will be lots of these. It is an immense database, with ~160k entries. AnyTone provides an automated methodology for this.

AT D878 CodePlug 101

Part IIIb

Code Plug management Concepts
(Adding Channels)

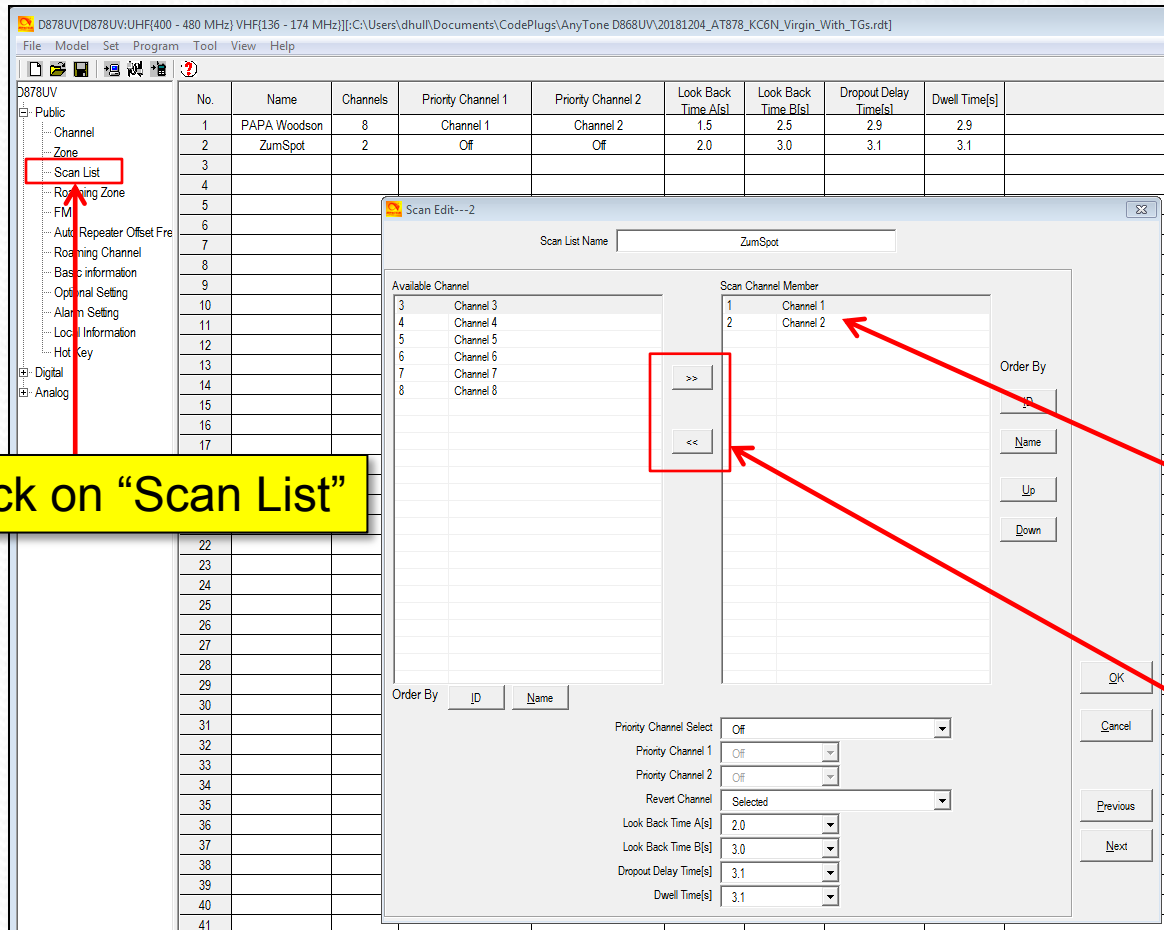
Adding Channels

- We did Group Calls first since we need these for the digital channel definitions
- We do the channels next since they have to be in place in order to define the Zone and to finalize the Scan lists.
- We will create:
 - The PAPA Woodson zone,
 - A Hot Spot zone, and
 - Analog and Simplex Channels

Scan List Place holders

- Before we create the channels, we need to create a placeholder for their scan lists
- We will create the following two scan lists to be populated later:
 - PAPA Woodson
 - ZumSpot
- At this point you should enter your DMR ID as described in Section II

Create two scan groups



1. Double Click on the default entry and rename it PAPA Woodson
2. Add a second entry and call it ZumSpot

Make sure that there are a couple channels in there (or it won't save)

Move channels into the "membership list" (and out) using these buttons. It doesn't matter which at this point.

Create two scan groups

D878UV[D878UV:UHF{400 - 480 MHz} VHF{136 - 174 MHz}][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TGs.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Fre
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Channels	Priority Channel 1	Priority Channel 2	Look Back Time A[s]	Look Back Time B[s]	Dropout Delay Time[s]	Dwell Time[s]
1	PAPA Woodson	8	Channel 1	Channel 2	1.5	2.5	2.9	2.9
2	ZumSpot	2	Off	Off	2.0	3.0	3.1	3.1
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Your scan should now look like this, with two “dummy” scan groups as shown. We will reference these when we create channels and populate them later.

Digital Channels

- We now have a dummy scan list for each zone (but haven't populated them yet)
- We will create channels for two Zones
 - PAPA Woodson (448.520 (-) Color Code 1)
 - HotSpot (438.250 (Simplex) Color Code 1)
- We will then proceed to build the Zone lists and populate the Scan lists that we just created.

Building PAPA Woodson

- The TG Setup for PAPA Woodson is shown in the table below:

PAPA DMR Talkgroup / Timeslot Matrix	
Click for a complete list of BrandMeister Talkgroups	
Time Slot 1	Time Slot 2
California TG 3106	PAPA Chat TG 31077
California-1 TG 31061	SoCal TG 31066
Call Zone 6 TG 31096	SoCal 1 TG 31067
North America TG 93	PAPA Bridge TG 31078
Worldwide TG 91	Local TG 2
TAC 310 TG 310	Static
USA/3100 TG 3100	Dynamic
EMCOM TG 9911	
Static	
Dynamic	
Use Slot 1 for connecting to other BrandMeister talkgroups	

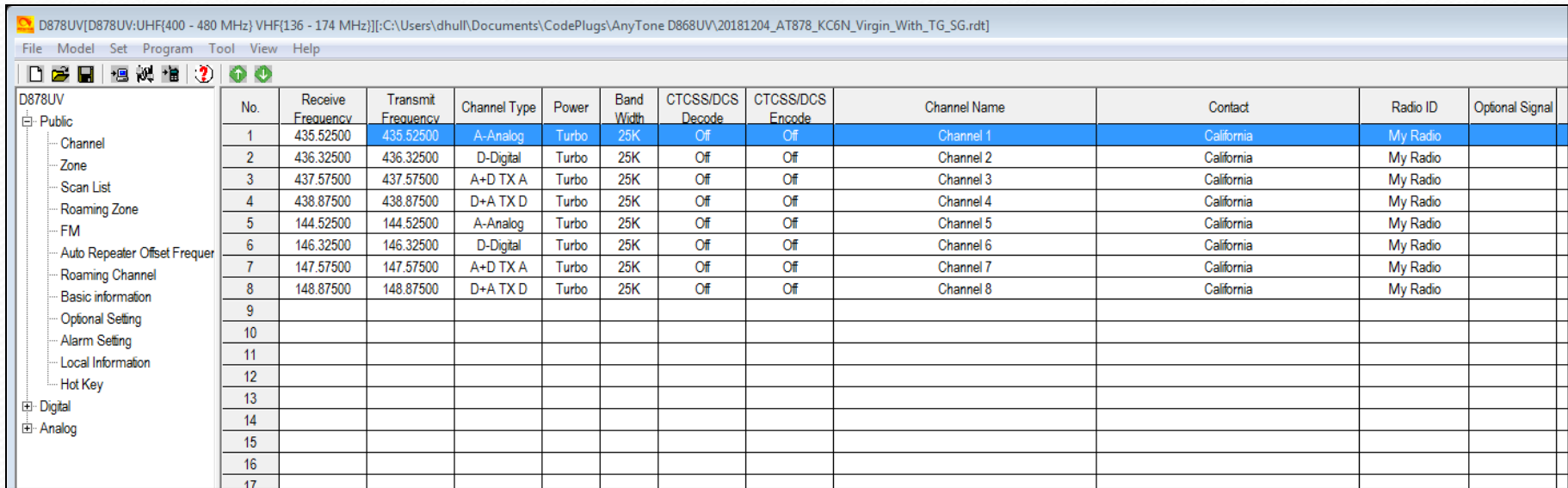
The talk group ID for the SD Hangout TG is 310014

Digital Channel Creation

- We are going to create 14 digital channels for the PAPA Woodson Zone as follows:
 - We will make one master channel which will have the pair Frequencies, Color Code, Scan Group, Power level etc.
 - We will then replicate this “template channel” 13 more times
 - We will then edit each of these channels, to add the Name, Time Slot and TG ID

PAPA Woodson Channels

- The blank channel form is shown below



The screenshot shows the D878UV software interface. The title bar reads: D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]. The menu bar includes File, Model, Set, Program, Tool, View, and Help. A toolbar with various icons is located below the menu bar. On the left, a tree view shows the following structure: D878UV, Public, Channel, Zone, Scan List, Roaming Zone, FM, Auto Repeater Offset Frequencies, Roaming Channel, Basic information, Optional Setting, Alarm Setting, Local Information, Hot Key, Digital, and Analog. The main area displays a table with 12 columns: No., Receive Frequency, Transmit Frequency, Channel Type, Power, Band Width, CTCSS/DCS Decode, CTCSS/DCS Encode, Channel Name, Contact, Radio ID, and Optional Signal. The table contains 17 rows. Rows 1 through 8 are populated with data, while rows 9 through 17 are blank.

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID	Optional Signal
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	My Radio	
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	My Radio	
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	My Radio	
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	My Radio	
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	My Radio	
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	My Radio	
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	My Radio	
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	My Radio	
9											
10											
11											
12											
13											
14											
15											
16											
17											

My “virgin” radio already had a few channels populated as shown above. These are examples. You can copy and paste from these or create your own. For the purposes of this discussion we will leave these and create 14 new ones of our own, starting at line 10.

Build Woodson Template

1. Select the Channel entry form.

2. Double click row 10 to launch the channel Information dialog.

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	KC6N
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	KC6N
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	KC6N
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	KC6N
9										
10	448.52000	443.52000	D-Digital	High	12.5K					
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										

Channel Information Edit---10

Channel Name: Channel 9

Receive Frequency: 448.52000
Transmit Frequency: 443.52000
Correct Frequency[Hz]: 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Same Color Code
Scan List: PAPA Woodson

Digital: Contact: California
Radio ID: KC6N
Color Code: 1
Slot: Slot1
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

Analog: CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

Exclude channel from roaming: off

Simplex TDMA: ☐ Call Confirmation: ☐ Ranging: ☐
TDMA Adaptive: ☐ SMS Confirmation: ☐

2TONE Decode: 1
Custom CTCSS: 251.1

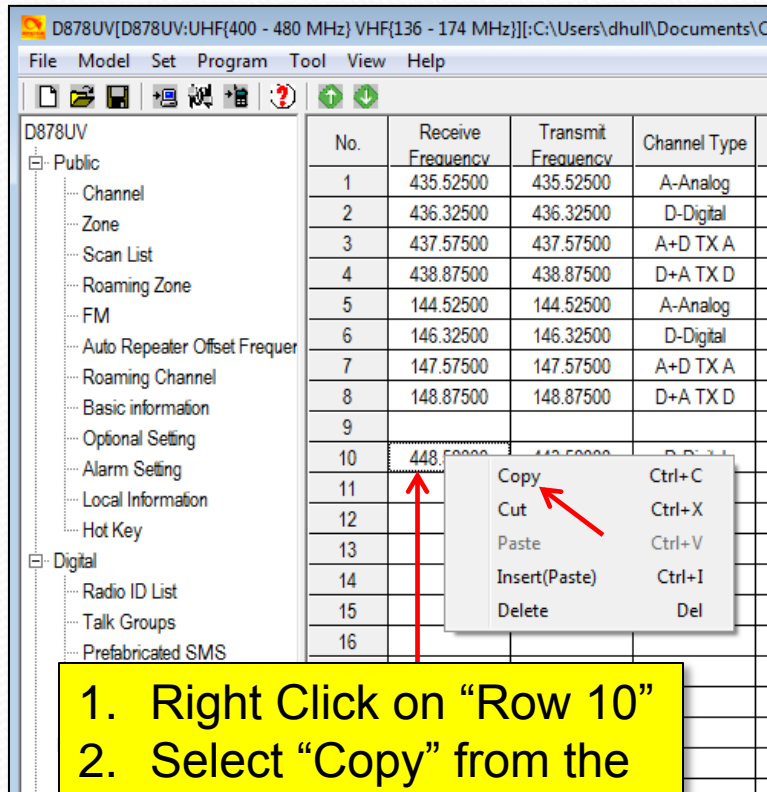
OK Cancel Previous Next

3. Edit the page as shown:

- Color code = 1
- Scan List=PAPA WUD
- RX = 448.520
- TX = 443.520
- Power Level = High
- TX Admit=Color Code
- Time Out=180 sec
- Parameters should match here
- Click "OK"

Replicate the Template

- Add Placeholders for the 14 channels



1. Right Click on "Row 10"
2. Select "Copy" from the pulldown

D878UV [D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequ
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8
9								
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel 9
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel10
12								
13								
14								
15								

3. Right Click on "Row 11"
4. Click "Insert" to insert a copy of the Row 11 information (the Woodson template)
5. Repeat this until you have 14 rows created as shown on the next page. I added an extra one just in case.

Woodson CH Templates

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequer
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	KC6N
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	KC6N
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	KC6N
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	KC6N
9										
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel 9	California	KC6N
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel10	California	KC6N
12	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel11	California	KC6N
13	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel12	California	KC6N
14	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel13	California	KC6N
15	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel14	California	KC6N
16	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel15	California	KC6N
17	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel16	California	KC6N
18	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel17	California	KC6N
19	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel24	California	KC6N
20	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel23	California	KC6N
21	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel22	California	KC6N
22	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel21	California	KC6N
23	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel20	California	KC6N
24	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	Channel19	California	KC6N
25										

You should have 15 channels which are all the same (except for the auto-assigned names) you will now edit each, providing the proper name, talk group and time-slot to match the PAPA channel profile shown earlier.

PAPA Woodson Channels

Off	Off	Channel 7	California	KC6N
Off	Off	Channel 8	California	KC6N

Channel Information Edit---10

Channel Name: **WUD Local**

Receive Frequency: 448.52000
Transmit Frequency: 443.52000
Correct Frequency[Hz]: 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Same Color Code
Scan List: PAPA Woodson

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

Digital
Contact: **Local**
Radio ID: KC6N
Color Code: 1
Slot: **Slot2**
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

Exclude channel from roaming: off

Analog
CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse
2TONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

Make Woodson Local:

- Set Channel Name = "Local WUD"
- Set Contact = "Local" (click the button then double click the correct TGID from selections)
- Set Repeater/Time slot = "Slot 2"

Do this for all 15 of the channel place-holders that you created So that each channel has a unique name, references the proper talk group and correct TDMA time slot.

Enter remaining channels

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Freq
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID	Opt
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N	
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N	
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N	
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N	
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	KC6N	
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	KC6N	
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	KC6N	
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	KC6N	
9											
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD Local	Local	KC6N	
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD SoCal	SoCal	KC6N	
12	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD SoCal 1	SoCal1	KC6N	
13	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	PAPA Bridge	PAPA Bridge	KC6N	
14	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	PAPA Chat	PAPA Chat	KC6N	
15	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD California	California	KC6N	
16	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD CAL 1	CA1	KC6N	
17	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD Zone 6	Zone 6	KC6N	
18	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD USA	USA 3100	KC6N	
19	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD NoAmer	NorthAmer	KC6N	
20	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD WorldWide	WorldWide	KC6N	
21	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD TAC 310	TAC 310	KC6N	
22	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD Parrot GC	BM Parrot GC	KC6N	
23	448.52000	443.52000	D-Digital	High	12.5K	Off	Off	WUD SD Hangout	SA Hangout	KC6N	
24											
25											

Your final channel list should look like this. Double check all the channels. Name, TS, TG should be correct. This would be a really good time to Save your file

Analog Repeater

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][:CA\Users\dhul\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Fr
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000
 - 120001---140000
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off			
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off			
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off			
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off			
9										
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
12	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
13	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
14	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
15	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
16	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
17	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
18	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
19	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
20	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
21	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
22	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
23	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
24										
25										
26										

Channel Information Edit---25

Channel Name: PAPA P11

Receive Frequency: 449.38000
Transmit Frequency: 444.38000
Correct Frequency(Hz): 0

Channel Type: A-Analog
Transmit Power: High
Band Width: 25K
Busy Lock: Off
Scan List: PAPA Woodson

☐ TX Prohibit ☒ Talk Around ☐ Through Mode
☐ Work Alone

Digital
Contact: California
Radio ID: KC6N
Color Code: 1
Slot: Slot1
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

Exclude channel from roaming: off

Analog
CTCSS/DCS Decode: Off
CTCSS/DCS Encode: CTCSS 100.0
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse
2TONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

Add Analog Repeater (PAPA 11 Oday) Double Click Position 25 And fill out the pop-up as shown.

Analog Simplex Channel

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Fr
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000
 - 120001---140000
 - 140001---160000
 - Friends List
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	KC6N
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	KC6N
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	KC6N
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	KC6N
9										
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
12	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
13	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
14	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
15	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
16	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
17	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
18	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
19	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
20	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
21	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
22	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
23	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
24										
25	449.38000	444.38000	A-Analog	High	25K	Off	Off			
26										
27										
28										
29										

Channel Information Edit---26

Channel Name: ALOG 449.52

Receive Frequency: 449.52000
Transmit Frequency: 449.52000
Correct Frequency(Hz): 0

Channel Type: A-Analog
Transmit Power: High
Band Width: 25K
Busy Lock: Off
Scan List: None

☐ TX Prohibit ☒ Talk Around ☐ Through Mode
☐ Work Alone

Digital

Contact: Direct 99
Radio ID: KC6N
Color Code: 1
Slot: Slot1
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

Exclude channel from roaming: off

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse

2TONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

Create the Analog Simplex CH (449.52 MHz) Double Click Position 26, fill out the pop-up as shown.

Digital Simplex Channel

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][:C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Fm
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
 - Radio ID List
 - Talk Groups
 - Prefabricated SMS
 - Receive Group Call List
 - Encryption Code
 - Digital Contact List
 - 1---20000
 - 20001---40000
 - 40001---60000
 - 60001---80000
 - 80001---100000
 - 100001---120000
 - 120001---140000
 - 140001---160000
 - Friends List
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1	California	KC6N
2	436.32500	436.32500	D-Digital	Turbo	25K	Off	Off	Channel 2	California	KC6N
3	437.57500	437.57500	A+D TX A	Turbo	25K	Off	Off	Channel 3	California	KC6N
4	438.87500	438.87500	D+A TX D	Turbo	25K	Off	Off	Channel 4	California	KC6N
5	144.52500	144.52500	A-Analog	Turbo	25K	Off	Off	Channel 5	California	KC6N
6	146.32500	146.32500	D-Digital	Turbo	25K	Off	Off	Channel 6	California	KC6N
7	147.57500	147.57500	A+D TX A	Turbo	25K	Off	Off	Channel 7	California	KC6N
8	148.87500	148.87500	D+A TX D	Turbo	25K	Off	Off	Channel 8	California	KC6N
9										
10	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
11	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
12	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
13	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
14	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
15	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
16	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
17	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
18	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
19	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
20	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
21	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
22	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
23	448.52000	443.52000	D-Digital	High	12.5K	Off	Off			
24										
25	449.38000	444.38000	A-Analog	High	25K	Off	Off			
26	449.52000	449.52000	A-Analog	High	25K	Off	Off			
27										
28										

Channel Information Edit---27

Channel Name: Channel 9

Receive Frequency: 441.12500
Transmit Frequency: 441.12500
Correct Frequency[Hz]: 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Always
Scan List: None

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

Digital

Contact: Direct 99
Radio ID: KC6N
Color Code: 1
Slot: Slot1
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

Exclude channel from roaming: off

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse

ZTONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

Create a DMR Simplex Channel (441.125 MHz): Double Click Pos 27, fill out the pop-up as shown.

AT D878 CodePlug 101

Part IIIc

Code Plug management Concepts
(Populate the zone and scan lists)

Create Woodson Zone

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequer
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Zone Channels	A Channel	B Channel
1	Zone 1	8	Channel 1	Channel 1
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

Zone Edit---1

Zone Name: Zone 1

A Channel: Channel 1

B Channel: Channel 1

Available Channel

10	WUD Local
11	WUD SoCal
12	WUD SoCal 1
13	PAPA Bridge
14	PAPA Chat
15	WUD California
16	WUD CAL 1
17	WUD Zone 6
18	WUD USA
19	WUD NoAmer
20	WUD WorldWide
21	WUD TAC 310
22	WUD Parrot GC
23	WUD SD Hangout
25	PAPA P11
26	ALOG 449.52
27	Channel 9

Zone Channel Member

1	Channel 1
2	Channel 2
3	Channel 3
4	Channel 4
5	Channel 5
6	Channel 6
7	Channel 7
8	Channel 8

1. Click "Zone" and then Double Click "Zone1".

2. Rename Zone 1 to PAPA Woodson

3. Highlight and remove the existing channels from the current member list using the "remove" (<<) button.

4. Select each WUD channel and "Add" it to the Woodson Zone using the "Add" (>>) button.

OK Cancel Previous Next

Final Woodson Zone

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Freq
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Zone Channels	A Channel	B Channel
1	PAPA Woodson	14	WUD Local	PAPA Chat
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				

Zone Edit---1

Zone Name: PAPA Woodson

A Channel: WUD Local

B Channel: PAPA Chat

Available Channel

1	Channel 1
2	Channel 2
3	Channel 3
4	Channel 4
5	Channel 5
6	Channel 6
7	Channel 7
8	Channel 8
25	PAPA P11
26	ALOG 449.52
27	Channel 9

Zone Channel Member

10	WUD Local
14	PAPA Chat
13	PAPA Bridge
11	WUD SoCal
12	WUD SoCal 1
15	WUD California
16	WUD CAL 1
17	WUD Zone 6
18	WUD USA
19	WUD NoAmer
20	WUD WorldWide
23	WUD SD Hangout
21	WUD TAC 310
22	WUD Parrot GC

Order By: ID

OK Cancel Previous Next

PAPA Woodson Zone

Channel A and B will appear in the main display when the zone is selected

Zone editing tools

Zone Editor showing the final contents of the PAPA Woodson Zone

Create Woodson Scan List

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][:C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH_ZN.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequ
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Channels	Priority Channel 1	Priority Channel 2	Look Back Time A[s]	Look Back Time B[s]	Dropout Delay Time[s]	Dwell Time[s]
1	PAPA Woodson	8	Channel 1	Channel 2	1.5	2.5	2.9	2.9
2	ZumSpot	2	Off	Off	2.0	3.0	3.1	3.1
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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36								
37								
38								
39								
40								

Scan Edit--1

Scan List Name: PAPA Woodson

Available Channel

- 10 WUD Local
- 11 WUD SoCal
- 12 WUD SoCal 1
- 13 PAPA Bridge
- 14 PAPA Chat
- 15 WUD California
- 16 WUD CAL 1
- 17 WUD Zone 6
- 18 WUD USA
- 19 WUD NoAmer
- 20 WUD WorldWide
- 21 WUD TAC 310
- 22 WUD Parrot GC
- 23 WUD SD Hangout
- 25 PAPA P11
- 26 ALOG 449.52
- 27 Channel 9

Scan Channel Member

- 1 Channel 1
- 2 Channel 2
- 3 Channel 3
- 4 Channel 4
- 5 Channel 5
- 6 Channel 6
- 7 Channel 7
- 8 Channel 8

Order By: ID, Name

Priority Channel Select: Off

Priority Channel 1: Channel 1

Priority Channel 2: Channel 2

Revert Channel: Selected

Look Back Time A[s]: 1.5

Look Back Time B[s]: 2.5

Dropout Delay Time[s]: 2.9

Dwell Time[s]: 2.9

Buttons: Add (>>), Remove (<<), Up, Down, Cancel, Previous, Next

2. Highlight and remove the existing channels from the current member list using the “remove” (<<) button.
3. Select the desired WUD channels and “Add” it to the Woodson Zone using the “Add” (>>) button.

Final Woodson Scan List

D878UV[D878UV:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH_ZN.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequ
 - Roaming Channel
 - Basic Information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Channels	Priority Channel 1	Priority Channel 2	Look Back Time A[s]	Look Back Time B[s]	Dropout Delay Time[s]	Dwell Time[s]
1	PAPA Woodson	8	Channel 1	Channel 2	1.5	2.5	2.9	2.9
2	ZumSpot	2	Off	Off	2.0	3.0	3.1	3.1
3								
4								
5								
6								
7								
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39								
40								

Scan Edit---1

Scan List Name: PAPA Woodson

Available Channel

- 10 WUD Local
- 12 WUD SoCal 1
- 13 PAPA Bridge
- 14 PAPA Chat
- 16 WUD CAL 1
- 17 WUD Zone 6
- 18 WUD USA
- 19 WUD NoAmer
- 20 WUD WorldWide
- 21 WUD TAC 310
- 22 WUD Parrot GC
- 23 WUD SD Hangout
- 26 ALOG 449.52
- 27 Channel 9
- 1 Channel 1
- 2 Channel 2
- 3 Channel 3
- 4 Channel 4
- 5 Channel 5
- 6 Channel 6
- 7 Channel 7
- 8 Channel 8

Scan Channel Member

- 11 WUD SoCal
- 15 WUD California
- 25 PAPA P11

Order By: ID, Name

Priority Channel Select: Off

Priority Channel 1: Off

Priority Channel 2: Off

Revert Channel: Selected

Look Back Time A[s]: 1.5

Look Back Time B[s]: 2.5

Dropout Delay Time[s]: 2.9

Dwell Time[s]: 2.9

1. Scan List name: "PAPA Woodson"

2. Scan Group members here. Note that the order is not important for scan.

Note that there are not too many channels to be scanned – this is on purpose to make it fast.

In the AT UV-878, most of the time you will use the monitor functions rather than scan (IMO).

AT D878 CodePlug 101

Part IIId

Code Plug management Concepts

(Overview: Adding a hotspot zone)

Creating a HotSpot Zone

- The steps to create a HotSpot zone are the same as for any other zone except:
 - The TX and RX Frequencies are the same.
 - The CC is 1 and the Time slot is “2”
 - You don’t program “Local”
 - You may not want to program “PAPA”
 - You can scan your hot spot zone and have analogs if you like.
- We’ll just show the completed screens

HotSpot CH Template

D878UV[D878UV:UHF[400 - 480 MHz] VHF[136 - 174 MHz]][:C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH_ZN_Scan.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequer
 - Roaming Channel
 - Basic information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1
2	436.32500							
3	437.57500							
4	438.87500							
5	144.52500							
6	146.32500							
7	147.57500							
8	148.87500							
9								
10	448.52000							
11	448.52000							
12	448.52000							
13	448.52000							
14	448.52000							
15	448.52000							
16	448.52000							
17	448.52000							
18	448.52000							
19	448.52000							
20	448.52000							
21	448.52000							
22	448.52000							
23	448.52000							
24								
25	449.38000							
26	449.52000							
27	441.12500							
28								
29	438.02500							
30								
31								
32								
33								
34								
35								

Channel Information Edit---29

Channel Name: Channel10

Receive Frequency: 438.02500
Transmit Frequency: 438.02500
Correct Frequency(Hz): 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Always
Scan List: ZumSpot

Exclude channel from roaming: off

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

Digital

Contact: California
Radio ID: KC6N
Color Code: 1
Slot: Slot2
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

☐ Reverse

2TONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

1. Create a digital channel
2. Set Scan List to "ZumSpot"
3. Power=Low
4. RX and TX Freq to your choice (I chose 438.250)
5. Admit=CC Free
6. Un-check "Talkaround"
7. Set CC=1
8. Set TS=1 or 2*
9. Replicate this as before.

* Note: Check which is best for your brand of HotSpot

HotSpot SoCal Channel

D878UV

Public

- Channel
- Zone
- Scan List
- Roaming Zone
- FM
- Auto Repeater Off
- Roaming Channel
- Basic information
- Optional Setting
- Alarm Setting
- Local Information
- Hot Key
- Digital
- Analog

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name
1	435.52500	435.52500	A-Analog	Turbo	25K	Off	Off	Channel 1
								Channel 2
								Channel 3
								Channel 4
								Channel 5
								Channel 6
								Channel 7
								Channel 8
								WUD Local
								WUD SoCal
								WUD SoCal 1
								PAPA Bridge
								PAPA Chat
								WUD California
								WUD CAL 1
								WUD Zone 6
								WUD USA
								WUD NoAmer
								WUD WorldWide
								WUD TAC 310
								WUD Parrot GC
								WUD SD Hangout
								PAPA P11
								ALOG 449.52
								Channel 9
								ZS SoCal
								ZS SoCal 1
								ZS PAPA Bridge
								ZS PAPA Chat
								ZS CA 3106
								ZS CA 1
								ZS Zone 6
								ZS USA 3100
								ZS NoAm 93
								ZS World 91
								ZS SD Hangout

Channel Information Edit---29

Channel Name: **ZS SoCal**

Receive Frequency: 438.02500
Transmit Frequency: 438.02500
Correct Frequency[Hz]: 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Always
Scan List: ZumSpot

☐ TX Prohibit ☐ Talk Around ☐ Through Mode
☐ Work Alone

Digital

Contact: **SoCal**
Radio ID: KCSN
Color Code: 1
Slot: Slot2
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

☐ Simplex TDMA ☐ Call Confirmation ☐ Ranging
☐ TDMA Adaptive ☐ SMS Confirmation

Exclude channel from roaming: off

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

☐ Reverse

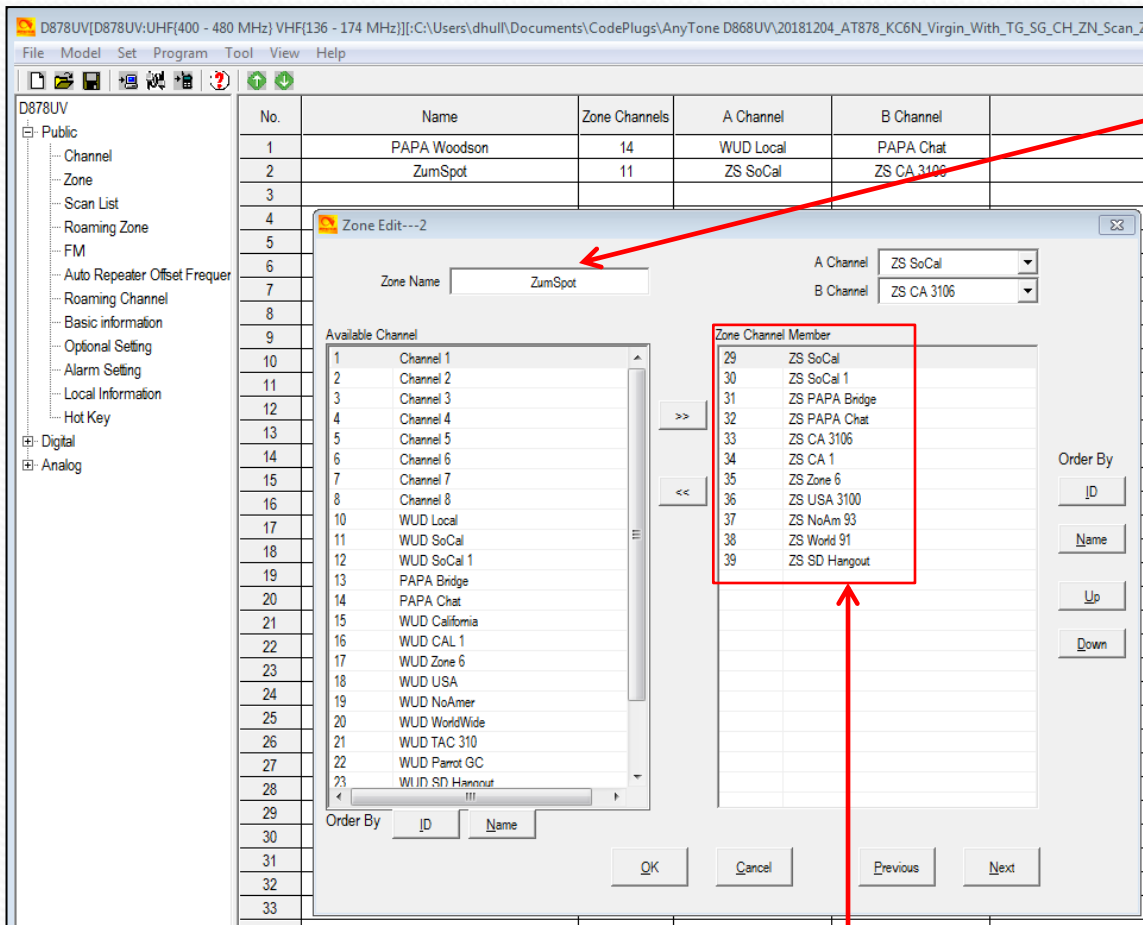
ZTONE Decode: 1
Custom CTCSS: 251.1

OK Cancel Previous Next

1. Edit Name: "HS SoCal"
2. Edit TX Contact to: "SNARS"

3. Repeat for all 12 channels with correct name and TG ID

HotSpot Zone List



Zone Name: "ZumSpot" appears here

Create and populate a zone for your ZumSpot the same way we did for the woodson zone.

Select the channels to include from the panel on the left and use ">>" to move them over to the member panel on the right. Use the up/down buttons to adjust the order.

Populated Zone List

HotSpot Scan List

D878UV[D878UV:UHF(400 - 480 MHz)/VHF(136 - 174 MHz)]:[C:\Users\dhull\Documents\CodePlugs\AnyTone D868UV\20181204_AT878_KC6N_Virgin_With_TG_SG_CH_ZN_Scan_ZsCh.rdt]

File Model Set Program Tool View Help

D878UV

- Public
 - Channel
 - Zone
 - Scan List
 - Roaming Zone
 - FM
 - Auto Repeater Offset Frequ
 - Roaming Channel
 - Basic Information
 - Optional Setting
 - Alarm Setting
 - Local Information
 - Hot Key
- Digital
- Analog

No.	Name	Channels	Priority Channel 1	Priority Channel 2	Look Back Time A[s]	Look Back Time B[s]	Dropout Delay Time[s]	Dwell Time[s]
1	PAPA Woodson	8	Channel 1	Channel 2	1.5	2.5	2.9	2.9
2	ZumSpot	2	Off	Off	2.0	3.0	3.1	3.1
3								
4								
5								
6								
7								
8								
9								
10								
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39								
40								

Scan Edit--2

Scan List Name: ZumSpot

Available Channel

- 17 WUD Zone 6
- 18 WUD USA
- 19 WUD NoAmer
- 20 WUD WorldWide
- 21 WUD TAC 310
- 22 WUD Parrot GC
- 23 WUD SD Hangout
- 25 PAPA P11
- 26 ALOG 449.52
- 27 Channel 9
- 30 ZS SoCal 1
- 31 ZS PAPA Bridge
- 32 ZS PAPA Chat
- 34 ZS CA 1
- 35 ZS Zone 6
- 36 ZS USA 3100
- 37 ZS NoAm 93
- 38 ZS World 91
- 39 ZS SD Hangout
- 1 Channel 1
- 2 Channel 2

Scan Channel Member

- 29 ZS SoCal
- 33 ZS CA 3106

Order By

- ID
- Name

Priority Channel Select: Off

Priority Channel 1: Off

Priority Channel 2: Off

Revert Channel: Selected

Look Back Time A[s]: 2.0

Look Back Time B[s]: 3.0

Dropout Delay Time[s]: 3.1

Dwell Time[s]: 3.1

OK

Cancel

Previous

Next

Scan List Name:

“ZumSpot” appears here (Remember, we created it previously).

Populate the scan list as previously shown. Order isn't important. I usually scan static TG's only (and not very many at that).

Scanning is something that these radios don't really do that well and the monitor function is a very effective alternative.

AT D868 CodePlug 101

Part IIIe

Code Plug management Concepts
(Contact List Maintenance)

Contact List Operations (1)

- We will populate the Private Call “Contact List” as follows:
 - Go to: <http://amateurradio.digital/#wizard>
 - Follow the instructions on the site (next page) to generate .csv file You may need to open an account.
 - Import the .csv file into your radio using the tools provided in the CPS.

Contact List Operations (2)

Go to: <http://amateurradio.digital/#wizard>

Option 1: Use the "Digital Contacts Wizard", Choose your radio and follow the step-by-step instructions.

The screenshot shows the 'Digital Contacts Wizard' website. The browser address bar shows 'http://amateurradio.digital/#wizard'. The page has a navigation bar with links like Google, My D..., WebM..., Face..., Call..., cano..., PAPA..., Davi..., foru..., Elec..., San..., DMR..., Amat..., X Re..., KC6N..., KC6N..., D-ST..., Link..., DPLU..., Rele..., GitH..., and DMRp... The main content area is titled 'Digital Contacts Wizard' and features a progress bar with four steps: 1. select radio, 2. customize, 3. download, and 4. finished. The 'Step 1' section is titled 'Select Radio' and displays a list of radio models: AnyTone AT-D868UV, AnyTone AT-D878UV, Ailunce HD1, Btech DMR-6X2, Connect Systems CS800, Connect Systems CS800D, Radioddity GD-77, Retevis RT3S, Retevis RT82, Retevis RT90, Tera TR-7400, TYT MD-380/390, TYT MD-2017 & UV380/390, TYT MD-9600, Generic (RAW), DMRX c-Bridge, and NOGSG DMR Contact Manager. A 'Next' button is visible. Below the list is a large image of a 'Dual Band DMR Mobile Radio' with the text 'Click here' and 'RT90'. At the bottom, it says 'Proud to be working with the following Digital Radio manufacturers to offer you the best integration possible.' and lists manufacturers: TYT, AnyTone, Retevis, Radioddity, Connect Systems, Hytera, Ailunce, and Motorola. On the right side, there is a 'Popular Radios' section with a note: 'NOTE: The csv files listed below include all 122,167 DMR ID records.' It lists 'AnyTone AT-D868UV' and 'AnyTone AT-D878UV' with a 'Preview' button and a '!! NOTICE !! --- Firmware Specific' warning. Below this are 'Default Display - FW 2.21' and 'Default Display - FW 2.25+' with 'Download' buttons. Further down is 'Callsign Large (in Name Field) FW 2.21' with a 'Download' button. At the bottom right, there is a 'RAW CSV' section with a 'Generic CSV' option and a 'Download Contact List - RAW format' button with a 'Download' link.

Option 2: Select ready made file if it is provided here.

Alternate database source

Go to: <https://kf5iw.com/contactdb.php>

This is an alternative source for the Private Call Contacts file.

Anyone AT-D868UV, AT-D878UV compatible digital contact list

Every morning we automatically generate a new worldwide digital contact list compatible with the Anytone AT-D868UV and AT-D878UV handheld transceivers. Click on a link below to download a zip file that contains a CSV file ready for import to your radio. Please note that the newest available contact list is at the top.

File	# DMR IDs	# Unique Callsigns	# Countries
contacts_20190214060901.zip	122872	104963	162
contacts_20190213060901.zip	122781	104895	162
contacts_20190212060901.zip	122676	104805	162
contacts_20190211060901.zip	122578	104727	162
contacts_20190210060901.zip	122455	104615	162

[contacts_20190214060901.zip](#) ← **Newest**
[contacts_20190213060901.zip](#)
[contacts_20190212060901.zip](#)
[contacts_20190211060901.zip](#)
[contacts_20190210060901.zip](#)

Select the newest file here, download and unzip.

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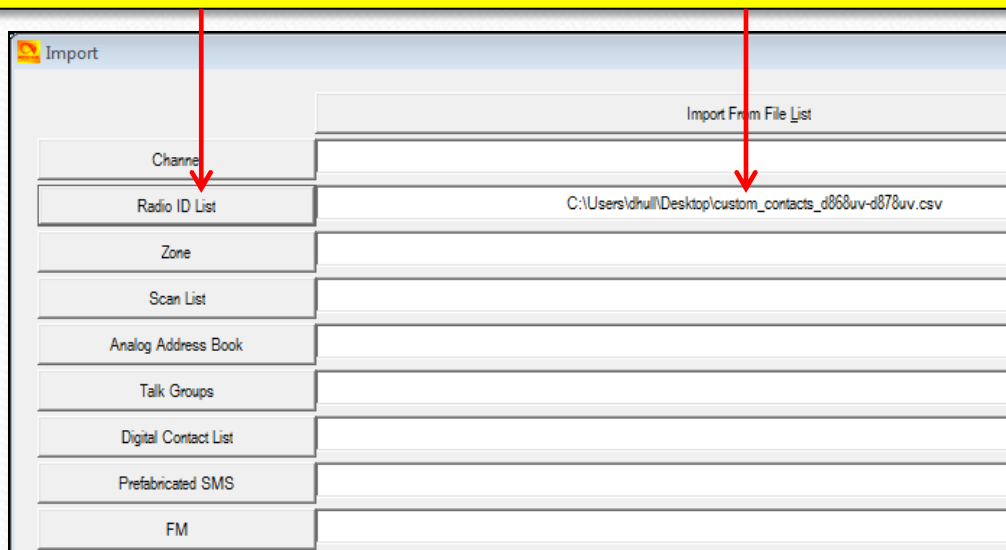
Contact List Operations (3)

The screenshot shows the D878UV software interface. The 'Tools' menu is open, and 'Import' is selected. The 'Import' dialog box is open, showing a list of fields to import. A yellow callout box with a red arrow points to the 'Import' option in the 'Tools' menu and another red arrow points to the 'Import' button in the dialog box.

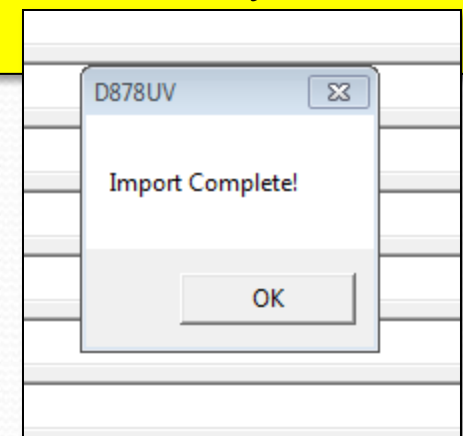
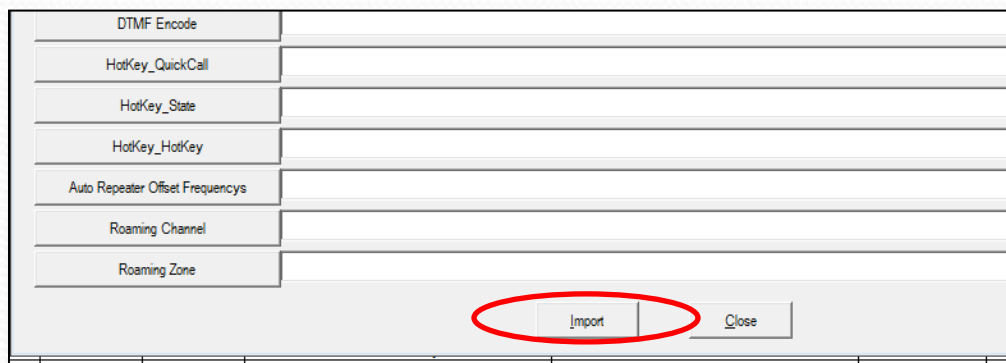
From the “Tools” drop-down, select “Import” to bring up the “Import” dialog.

Contact List Operations (4)

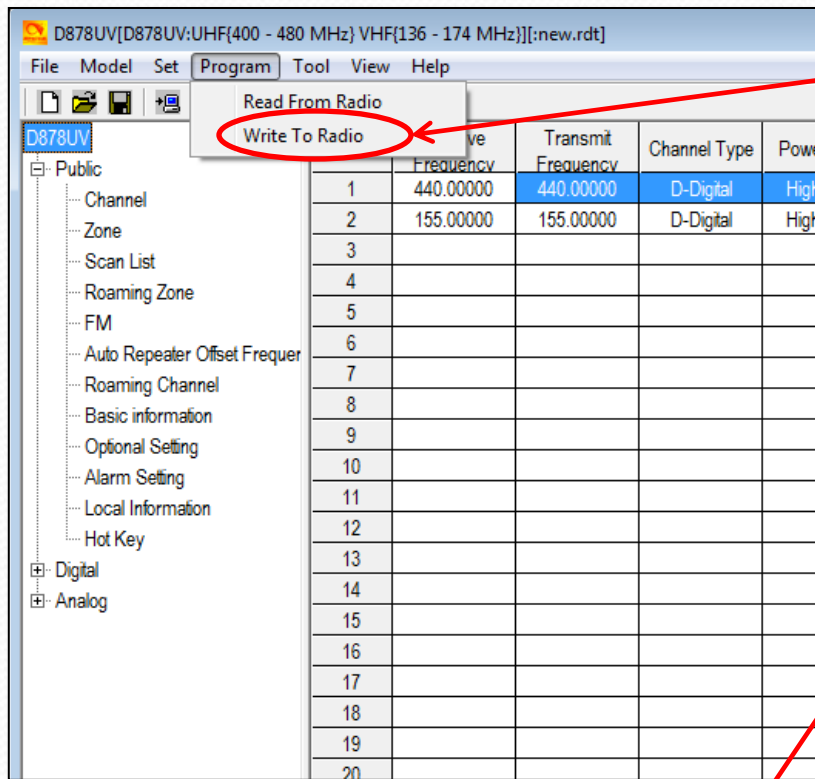
Click “Radio ID List and navigate to the newly created CSV file. It should have a name something like: “custom_contacts_d868uv-d878uv.csv”



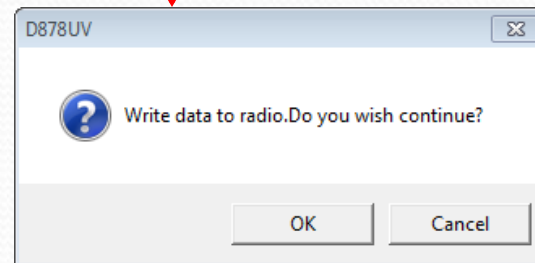
Click the “Import” button at the bottom of the dialog box. And wait for the “Import Complete” pop-up. At which point you are done. You can check the contacts section in the cps to make sure that they are there, if you like. Save your code plug.



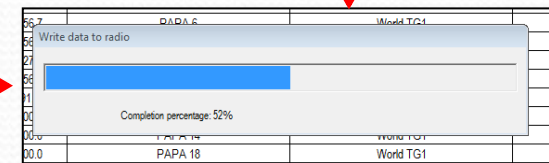
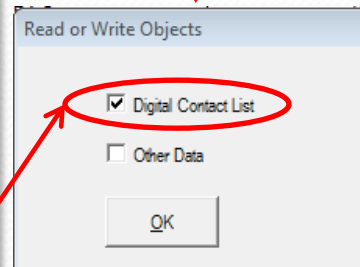
Contact List Operations (5)



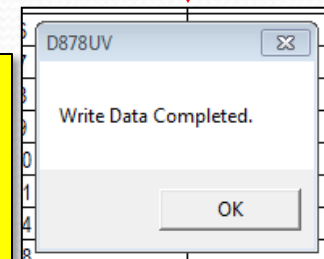
In CPS, Click "Write To Radio" and follow the dialogs



The progress bar will take several minutes for a large contact list



Make sure "Digital Contact List" is checked. This tells the CPS to copy the Digital contacts (which takes a while). Other Data is the code plug info. You can do either or both. In cases where you only care about the code plug, just check "Other Data". Things will go a lot faster.



AT D868 CodePlug 101

Part IV

Code Plug management Concepts
(Setting up Roaming)

Setting up Roaming

- Roaming allows your radio to find a usable repeater as you travel
- To set up Roaming on the AT-UV878:
 - Decide what you want to roam and set up “Roaming Channels”
 - Set up “Roaming Zones”
 - Go to “Options Settings” and select the “Auto Repeater” tab to configure roaming.

Set up Roaming Channels

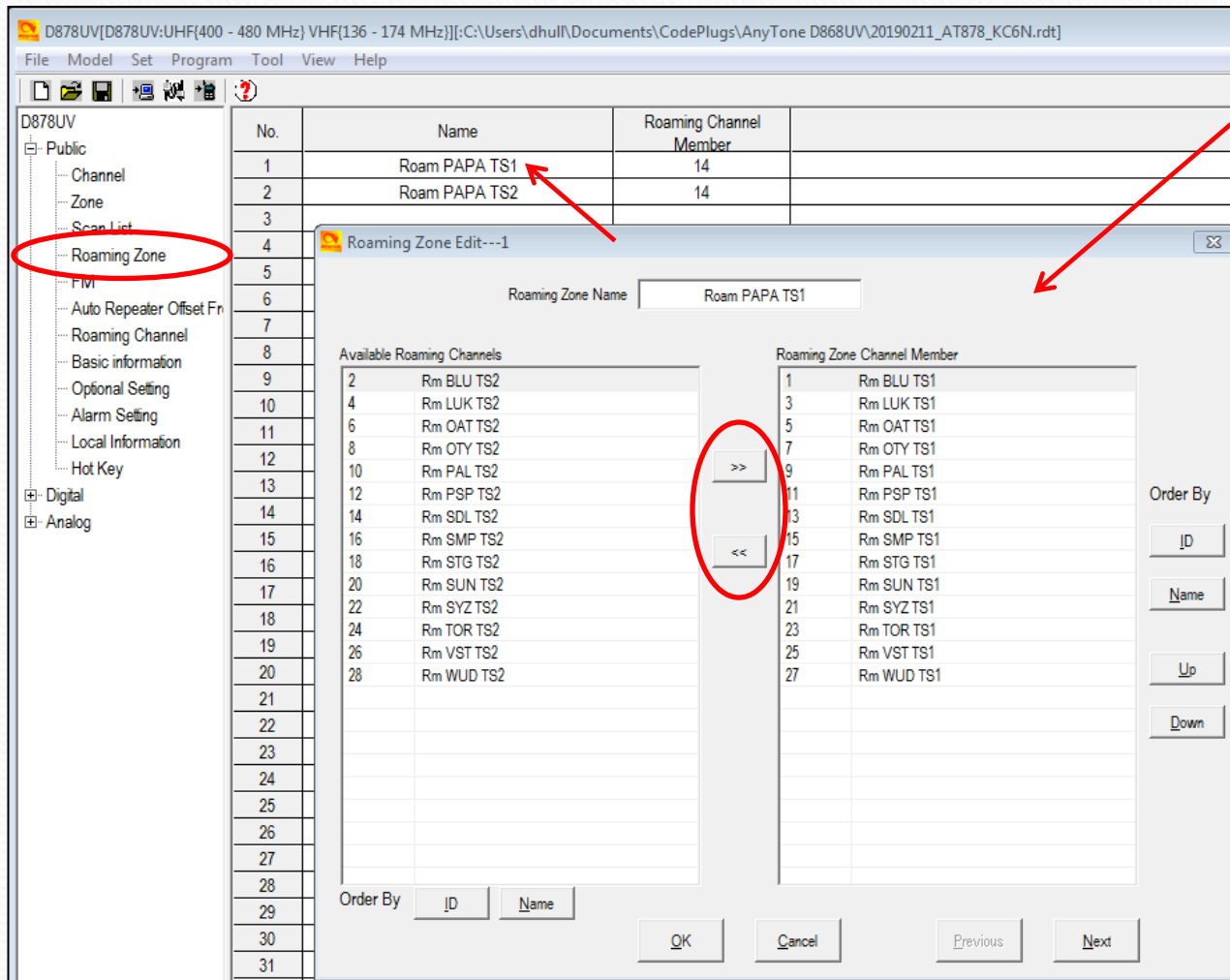
The screenshot shows the D878UV software interface. On the left, a tree view shows the 'Roaming Channel' option selected. The main window displays a table of roaming channels with columns: No., Receive Frequency, Transmit Frequency, Color Code, Slot, and Name. A red circle highlights the 'Roaming Channel' option in the tree view. A red arrow points from the 'Roaming Channel Edit---1' dialog box to the 'Roaming Channel' option in the tree view. The dialog box shows fields for Receive Frequency (449.74000), Transmit Frequency (444.74000), Name (Rm BLU Slot 1), Color Code (7), and Slot (Slot1). The 'Previous' and 'Next' buttons are highlighted with a red arrow.

No.	Receive Frequency	Transmit Frequency	Color Code	Slot	Name
1	449.74000	444.74000	7	Slot1	Rm BLU Slot 1
2	449.74000	444.74000	7	Slot2	Rm BLU Slot 2
3	449.38000	444.38000	1	Slot1	Rm LUK Slot 1
4	449.38000	444.38000	1	Slot2	Rm LUK Slot 2
5	447.26000	442.26000	1	Slot1	Rm OAT Slot 1
6	447.26000	442.26000	1	Slot2	Rm OAT Slot 2
7	447.26000	442.26000	3	Slot1	Rm Otay Slot 1
8	447.26000	442.26000	3	Slot2	Rm Otay Slot 2
9	445.86000	440.86000	1	Slot1	Rm Pal Slot 1
10	445.86000	440.86000	1	Slot2	Rm Pal Slot 2
11	446.58000	441.58000	1	Slot1	Rm PSP Slot 1
12	446.58000	441.58000	1	Slot2	Rm PSP Slot 2
13	446.08000	441.08000	1	Slot1	Rm SDL Slot 1
14	446.08000	441.08000	1	Slot2	Rm SDL Slot 2
15	445.88000	440.88000	3	Slot1	Rm SMP Slot 1
16	445.88000	440.88000	3	Slot2	Rm SMP Slot 2
17	446.82000	441.82000	1	Slot1	Rm WUD Slot 1
18	446.82000	441.82000	1	Slot2	Rm WUD Slot 2
19	449.36000	444.36000	1	Slot1	Rm WUD Slot 1
20	449.36000	444.36000	1	Slot2	Rm WUD Slot 2
21	446.98000	441.98000	1	Slot1	Rm WUD Slot 1
22	446.98000	441.98000	1	Slot2	Rm WUD Slot 2
23	447.26000	442.26000	5	Slot1	Rm WUD Slot 1
24	447.26000	442.26000	5	Slot2	Rm WUD Slot 2
25	447.30000	442.30000	1	Slot1	Rm WUD Slot 1
26	447.30000	442.30000	1	Slot2	Rm WUD Slot 2
27	445.96000	440.96000	1	Slot1	Rm WUD Slot 1
28	445.96000	440.96000	1	Slot2	Rm WUD Slot 2
29					

Set up your roaming channels as shown on the left. You will enter the Frequencies, Color Code and Time Slot for a block of repeaters that you want to roam over. Here I have set up the entire PAPA DMR network. Two channels for each repeater one for each time slot.

Double click an entry row to bring up the entry dialog shown. Right click any entry row for the copy, paste, insert, delete drop-down.

Set up Roaming Zone(s)



Set up your roaming zones as shown. Double click on a row to launch the entry edit dialog.

Highlight desired roaming channels from the list of desired channels on the left and move them into the right hand channel membership list using the ">>" key. If you make a mistake use the "<<" key

Configure Roaming (1)

Optional Setting

Work Mode | Vox | STE | FM | Power Save | Key Function | Other | Digital Func
Power-on | Alert Tone | Display | GPS/Ranging | VFO Scan | **Auto Repeater** | Record | Volume/Audio

Auto Repeater

Auto Repeater A	Off	Min Freq Of Auto Repeater(VHF)	136.00000
Auto Repeater B	Off	Max Freq Of Auto Repeater(VHF)	174.00000
Auto Repeater(UHF)	5.00000 MHz	Min Freq Of Auto Repeater(UHF)	400.00000
Auto Repeater(VHF)	600.00 KHz	Max Freq Of Auto Repeater(UHF)	480.00000
Repeater Check	On		
Repeater Check Interval[s]	20		
Repeater Check Reconnections	1		
Alert Out Of Repeat Range	Voice		
Repeater out of range reminder(times)	1		
Auto Roaming	On		
Timed Roaming Start Condition	Fixed time		
Auto Roaming Interval[m]	1		
Roaming Effect Wait Time[s]	None		
Roaming Zone	Roam PAPA TS2		
Roaming Return Channel	current channel		

OK Cancel

Roaming Mode Settings

The roaming mode settings are found in “Optional Settings” on the “Auto Repeater” tab.

This page shows my recommended settings. You can control most of these from the radio keypad and adjust them to your taste.

Configure Roaming (2)

Optional Setting

Work Mode	Vox	STE	FM	Power Save
Power-on	Alert Tone	Display	GPS/Ranging	VFO Scan

Auto repeater

Auto Repeater A	Off	Min Freq Of Auto Rep
Auto Repeater B	Off	Max Freq Of Auto Rep
Auto Repeater(UHF)	5.00000 MHz	Min Freq Of Auto Rep
Auto Repeater(VHF)	600.00 KHz	Max Freq Of Auto Rep
Repeater Check	On	
Repeater Check Interval[s]	20	
Repeater Check Reconnections	1	
Alert Out Of Repeat Range	Voice	
Repeater out of range reminder(times)	1	
Auto Roaming	On	
Timed Roaming Start Condition	Fixed time	
Auto Roaming Interval[m]	1	
Roaming Effect Wait Time[s]	None	
Roaming Zone	Roam PAPA TS2	
Roaming Return Channel	current channel	

OK Cancel

Enables Repeater Check (must be on), determines how often to check and the number of times to check before moving on.

Should the radio alert you when scan starts and how long should the alert be.

Do you want roaming to be continuous or do you want to kick it off manually? Kick off automatically or on loss of connection?. If automatic, how often? Should it wait to start?

Zone to start in (can be changed from keypad) and Channel to return to.

How Roaming Works

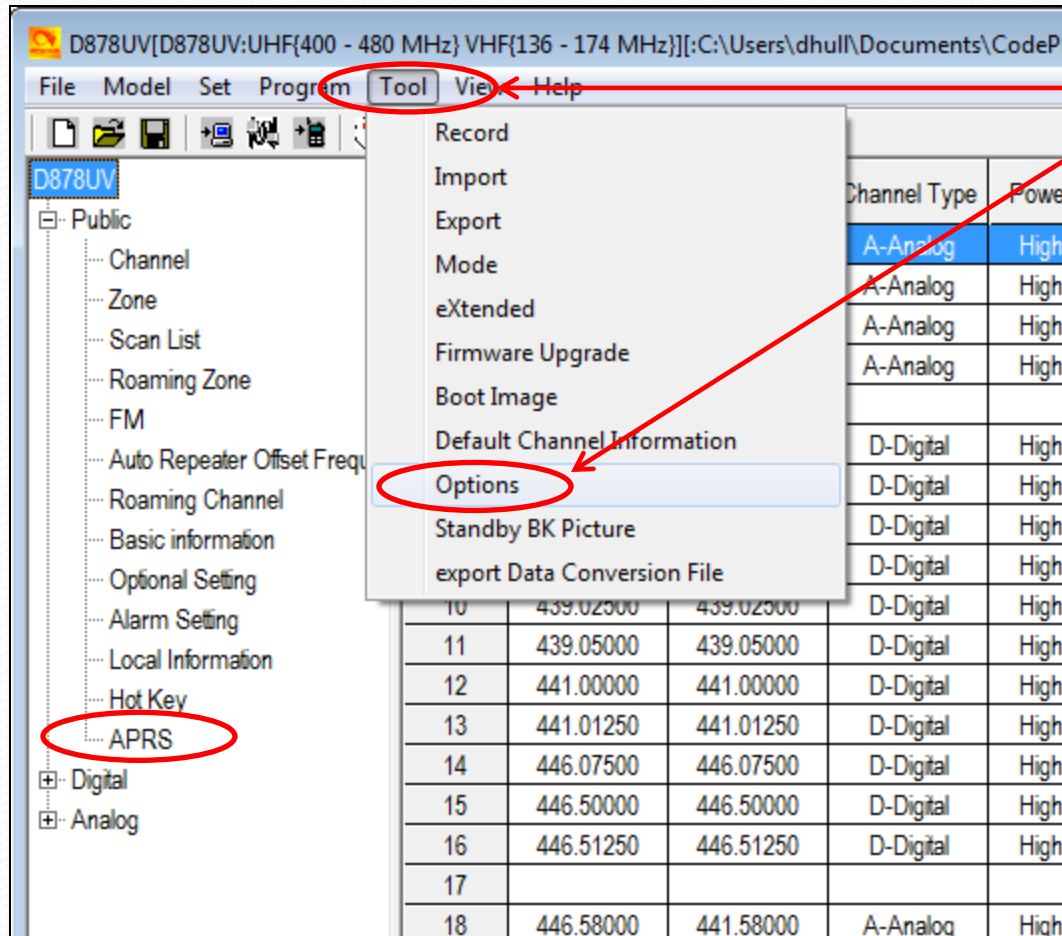
- The radio periodically (based on the “Repeater Check Interval”) “pings” the chosen repeater, assuming “Repeater Check” is “ON”
- If the “ping” fails, or if the “auto Roaming Interval” expires (depending on the roaming start condition setting), the radio will step through “Roam Zone” channels, pinging each one until it gets a response.

AT D868 CodePlug 101

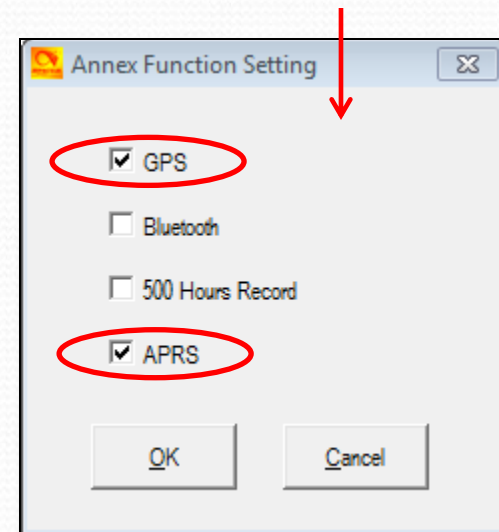
Part V

Code Plug management Concepts
(Setting up Digital APRS)

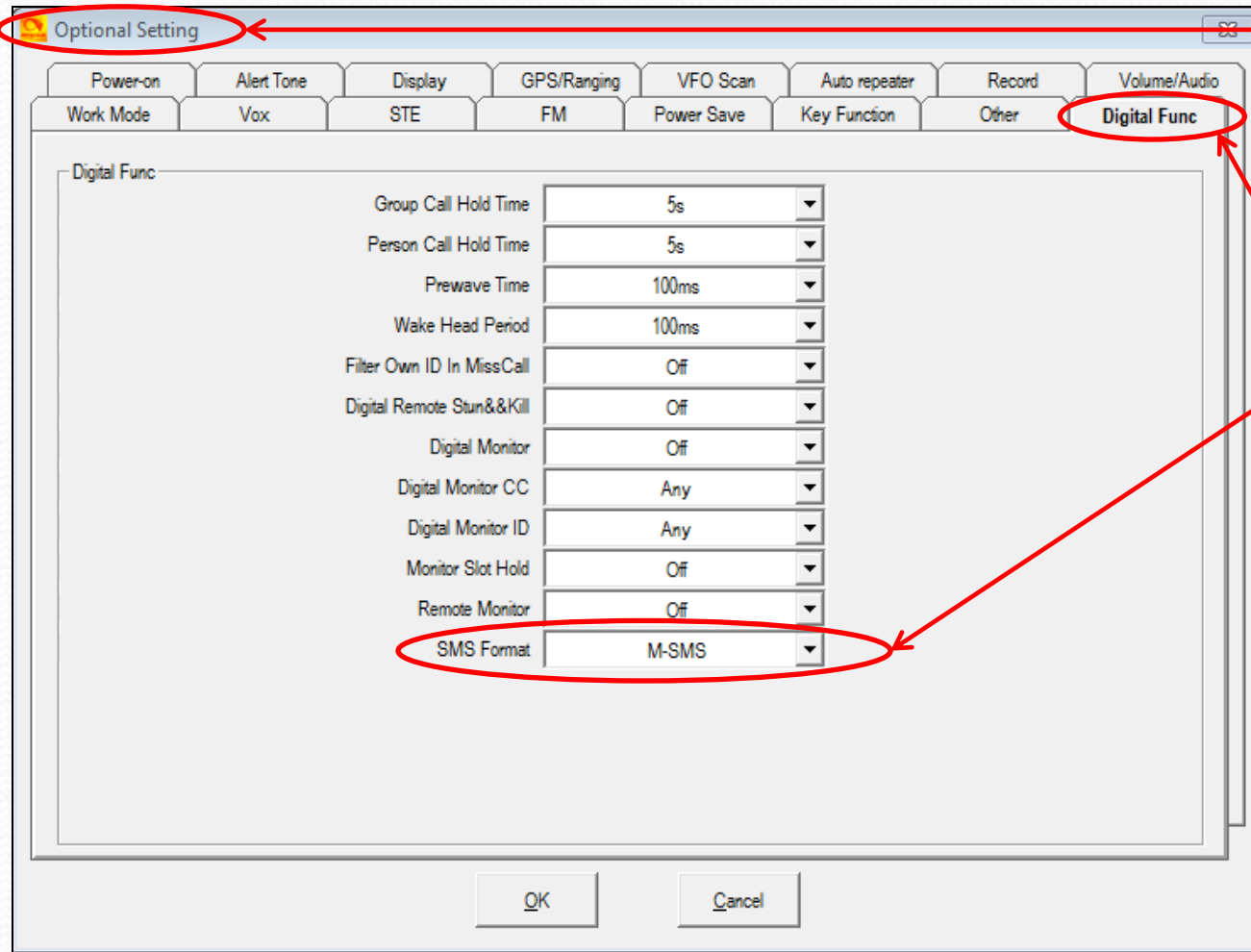
Enable GPS and APRS



1. From the “Tool” pull-down, Click “Options”
2. In the resulting pop-up, make sure that the GPS and APRS boxes are ticked as shown below.
3. Click “OK”. This will add the APRS option to the option tree

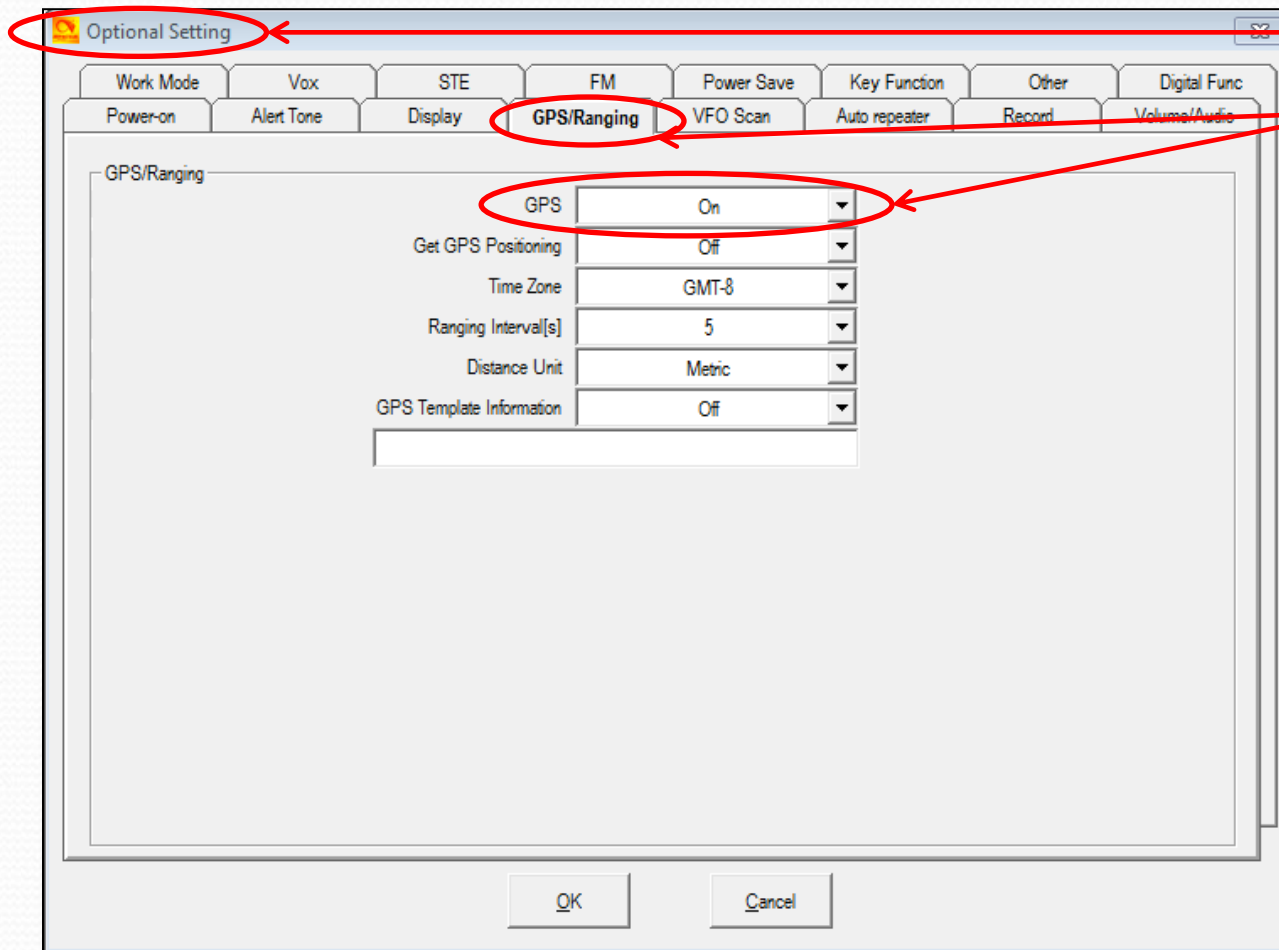


Enable Motorola SMS



1. Select "Optional Settings" from the tree on the left hand menu tree.
2. Select the "Digital Func" tab.
3. At the bottom of this tab, make sure that SMS Format is set to M-SMS

Turn on the GPS



1. While in “Optional Settings”,
2. Select the “GPS Ranging” tab and,
3. Set GPS to “ON”

Set up APRS

The screenshot shows the APRS configuration dialog box. Callout 1 points to the 'APRS' menu item in the top left. Callout 2 points to the 'Manual TX Intervals[s]' dropdown set to '30'. Callout 3 points to the 'Digital' section, which contains a table of 8 channels and other digital settings.

1

2

3

APRS

Manual TX Intervals[s] 30

APRS Auto TX Intervals[s] Off

Support For Roaming Off

Fixed Location Beacon Off

ddd.ddddd

Latitude 32.86850

North And South Latitude N

Longitude 117.20967

East And West Things E

Digital

No.	No.	No.
1	ZS3 CA3106	Channel Slot
2	ZS3 SoCal	Channel Slot
3	ZS3 SoCal1	Channel Slot
4	Current Channel	Channel Slot
5	Current Channel	Channel Slot
6	Current Channel	Channel Slot
7	Current Channel	Channel Slot
8	Current Channel	Channel Slot

APRS TG 310999

Call Type Private Call

Repeater Activation Delay[ms] Off

Analog

APRS TX Tone Off

Destination Call Sign APDR10

Destination SSID 0

Your Call Sign BG6LKT

Your SSID 0

APRS Symbol Table /

APRS Map Icon I

APRS Signal Path WIDE1-1,WIDE2-1

Enter Your Sending Text APRSCN

Transmission Frequency [MHz] 145.00000

Transmit Delay[ms] 0

Send Sub Tone Off

CTCSS 62.5

DCS D021

Prewave Time[ms] 0

Transmit Power Low

OK Cancel

1. Open the APRS configuration dialog shown here from the left hand menu tree.
2. Set "Manual TX Interval" = 30 s, Turn "APRS Auto TX Intervals" to OFF so it doesn't beacon.
3. Configure at least one channel in the "Digital" section at the top right. You may configure up to 8 of them.
4. Set APRS TG to 310999
5. Set Call Type to "Private Call"

Configure Report Channel

Channel Information Edit---1066

Channel Name: ZS3 CA3106

Receive Frequency: 439.07500
Transmit Frequency: 439.07500
Correct Frequency[Hz]: 0

Channel Type: D-Digital
Transmit Power: High
Band Width: 12.5K
TX Permit: Always
Scan List: None

APRS Report Type: Digital
Analog APRS PTT Mode: Off
Digital APRS PTT Mode: On
Digital APRS Report Channel: 1
Exclude channel from roaming: off

TX Prohibit: ☐
Talk Around: ☐
Through Mode: ☐
Work Alone: ☐
Digi APRS RX: ☐

Digital

Contact: CA 3106
Radio ID: KC6N
Color Code: 1
Slot: Slot2
Receive Group List: None
Digital Encryption: Off
Encryption Type: Normal Encryption

Simplex TDMA: ☐
Call Confirmation: ☐
Ranging: ☐
TDMA Adaptive: ☐
SMS Confirmation: ☒

Analog

CTCSS/DCS Decode: Off
CTCSS/DCS Encode: Off
Squelch Mode: Carrier
Optional Signal: Off
DTMF ID:
2Tone ID: 1
5Tone ID: 1
PTT ID: Off

Reverse: ☐
2TONE Decode: 1
Custom CTCSS: 0.0

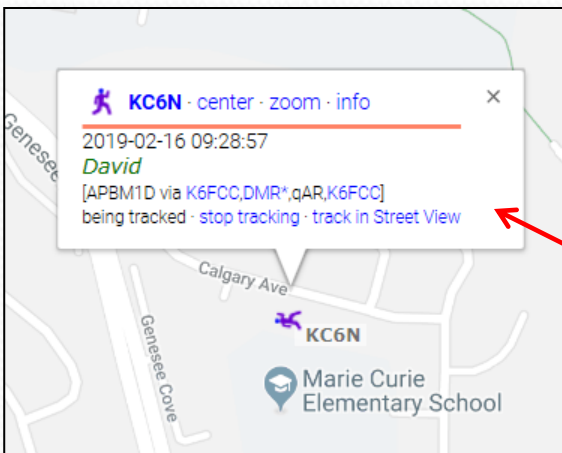
OK Cancel Previous Next

1. Go to the channel you set for reporting channel 1. In this case it was "ZS3 CA3106"
2. Set the APRS Report Type = "Digital"
3. Set Digital APRS PTT Mode = "ON"
4. Set the Digital APRS Report Channel = 1 to reference the setting in the APRS set-up panel.
5. Do this for each channel you set up in the APRS setup.

Verify Operation



1. Verify that your GPS is locked (Icon should be Red). If it is blue you will need to wait for it to find GPS lock. You may need to go outside and walk around or wait a bit.
2. Set your radio to one of the channels set up for APRS.
3. Key your radio and look for the "Sending Digital APRS data..." Response.
4. Check your position at <https://aprs.fi>

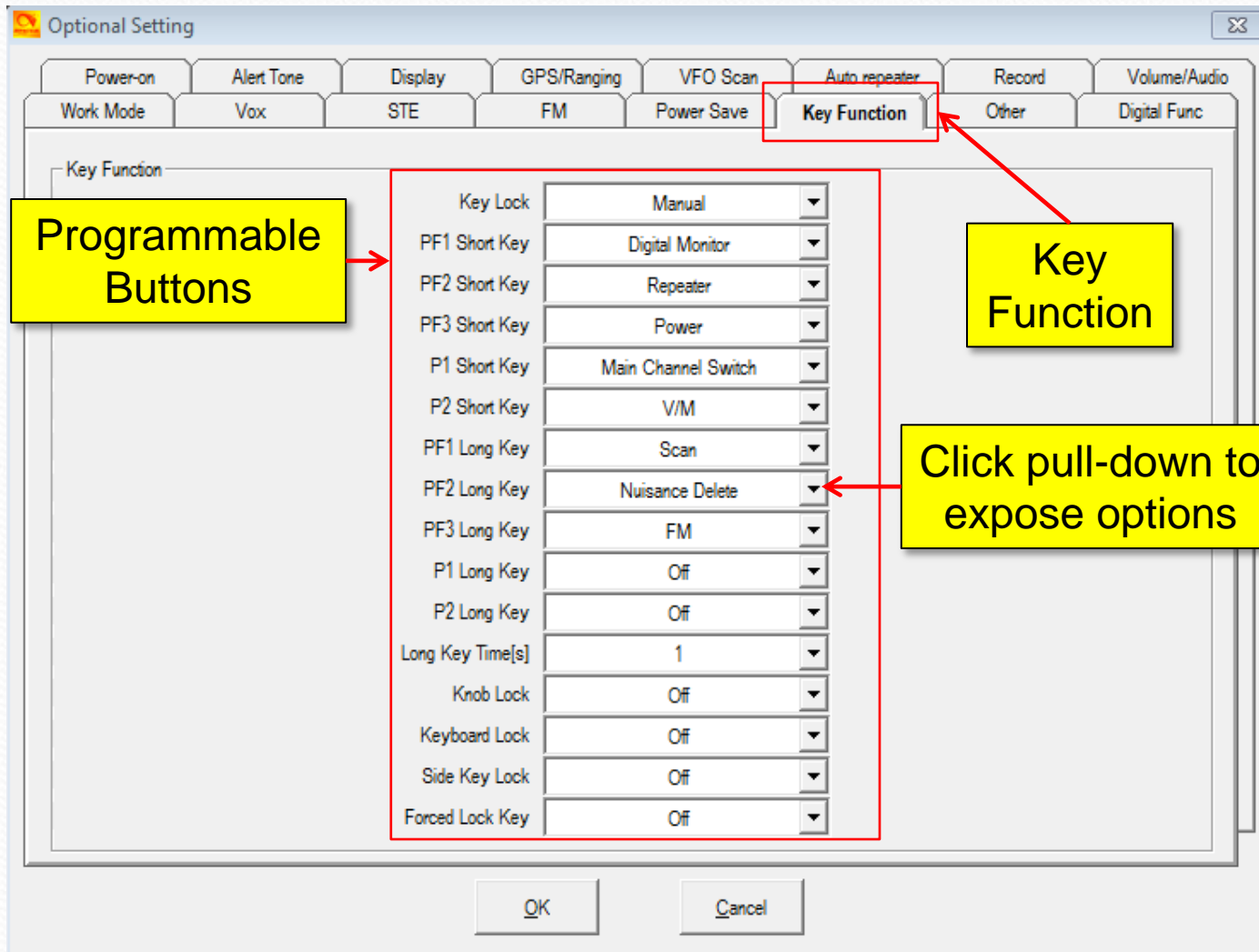


AT D868 CodePlug 101

Part VI

Code Plug management Concepts
(Bells and Whistles)

Programmable Buttons



Select the “Key Function” tab to set the function of the various buttons on the radio.

This is my setup, but you can do whatever makes sense to you.

Consult the manual for specific button locations.

Alert Tones

Alert
Tones

Optional Setting

Work Mode: Power-on | **Alert Tone** | Vox | STE | Display | FM | GPS/Ranging | Power Save | VFO Scan | Key Function | Auto repeater | Other | Record | Digital Func | Volume/Audio

Alert Tone

SMS Alert: Ring

Call Alert: Ring

Digi Call ResetTone: Off

Call Tone: Digital

Key Tone: Off

Idle Channel Tone: Off

Startup Sound: On

Volume Change Prompt: On

Key Sound Adjustable: Adjustable

Call Tone

	Frequency[Hz]	Period[ms]	Play
First Tone	1580	10	
Second Tone	1500	50	
Third Tone	1050	40	
Fourth Tone	1500	40	
Fifth Tone	1335	40	

Idle Channel Tone

	Frequency[Hz]	Period[ms]	Play
First Tone	635	100	
Second Tone	950	50	
Third Tone	0	0	
Fourth Tone	0	0	
Fifth Tone	0	0	

Call Reset Tone

	Frequency[Hz]	Period[ms]	Play
First Tone	635	100	
Second Tone	950	50	
Third Tone	0	0	
Fourth Tone	0	0	
Fifth Tone	0	0	

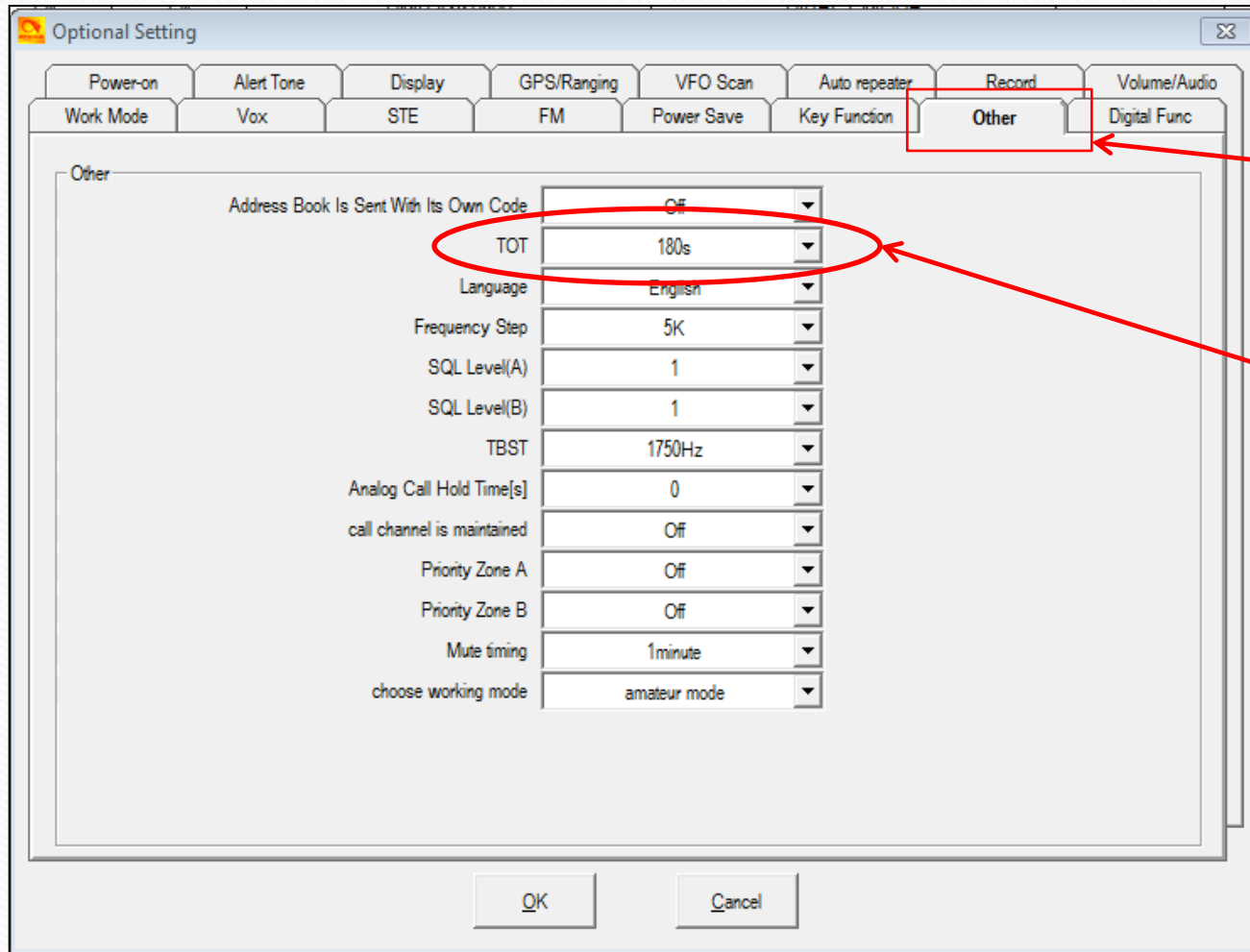
OK Cancel

This page allows one to program a different set of alert tones which affect the sounds that the radio makes as it is used.

The setup here makes the AT UV-878 sound like a Motorola XPR7550 (which is nice since it still doesn't "cost" like one).

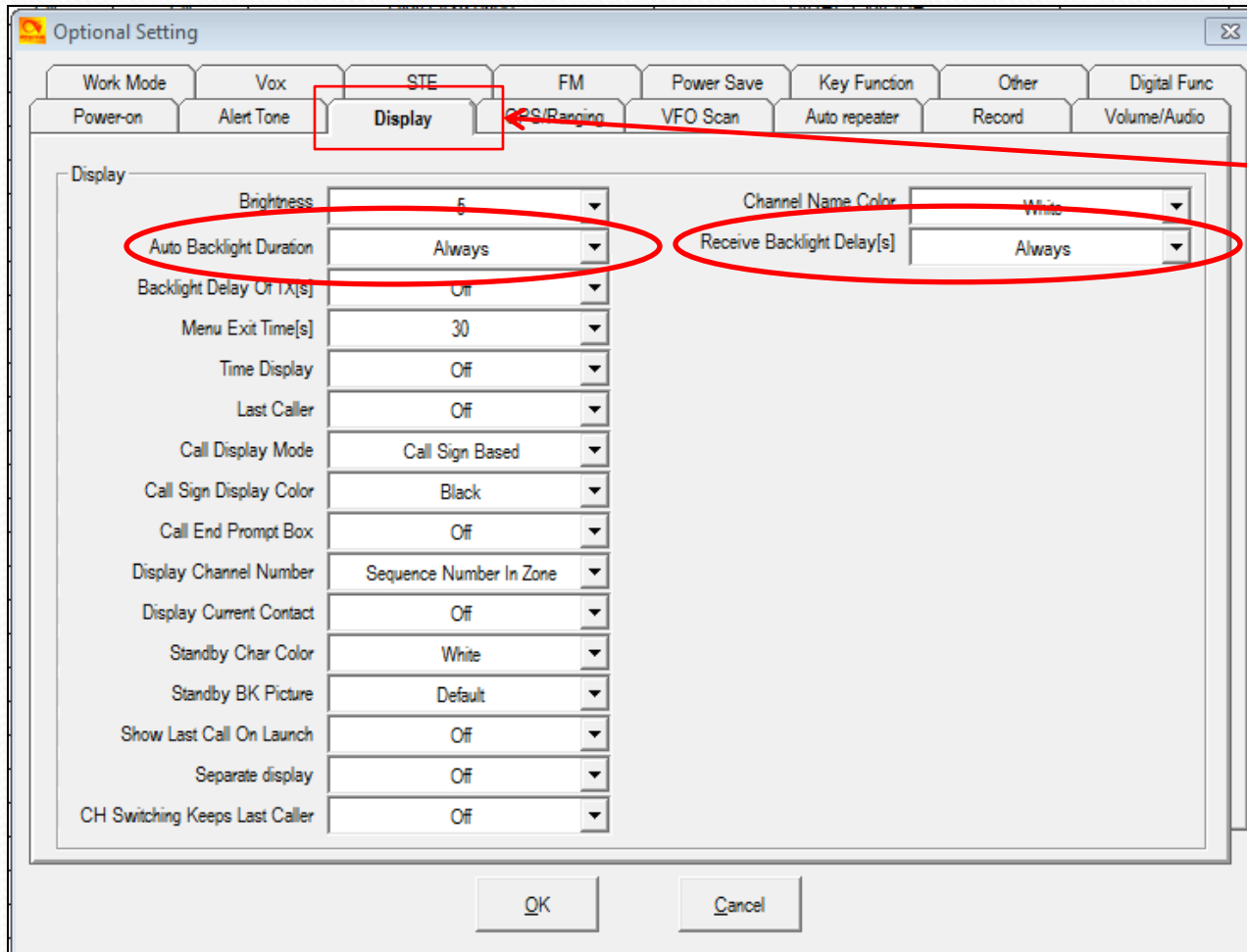
Thanks to Brian, KC2GNV for working this out.

“Blab-Off” Timer



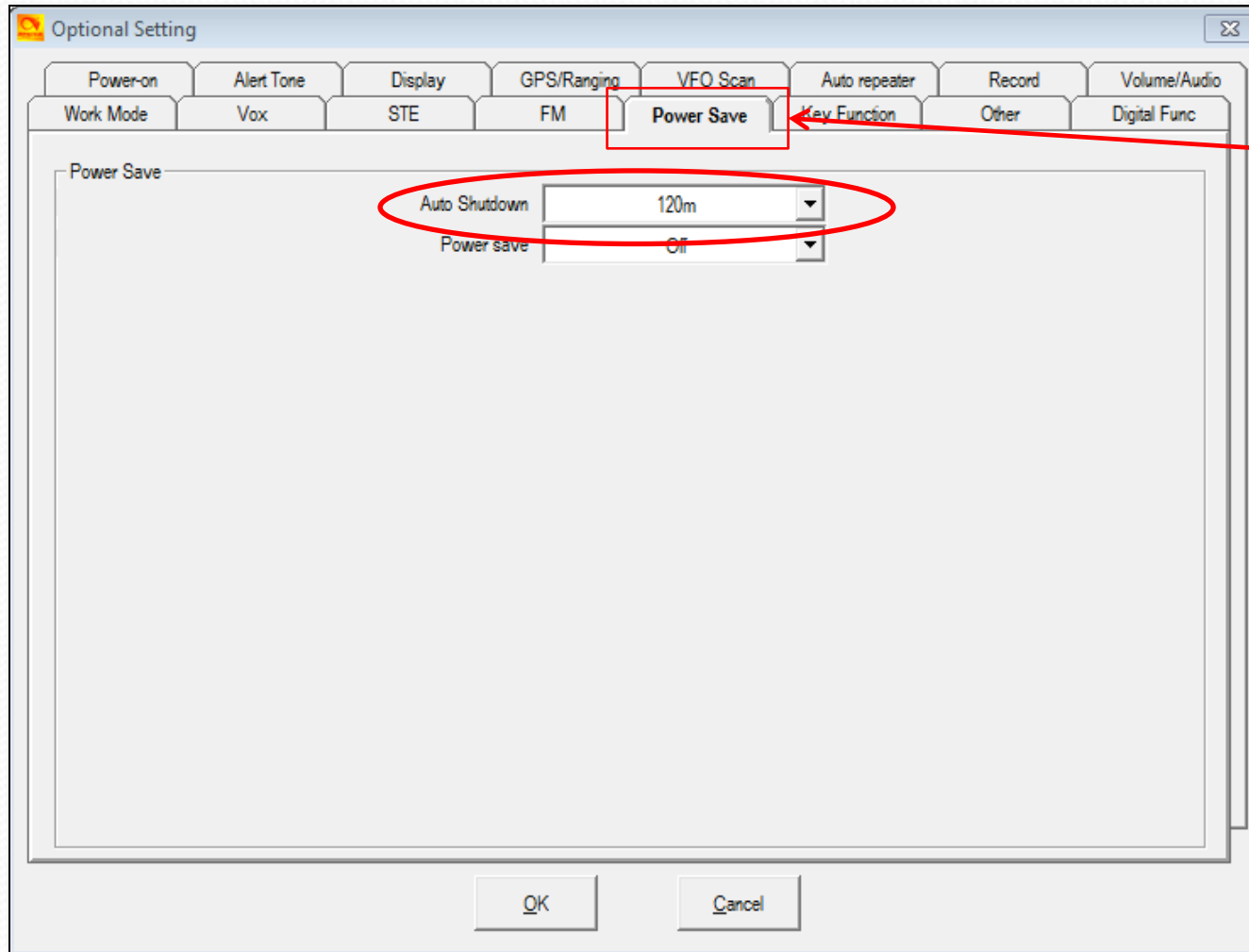
The “Other” tab provides a number of radio functions that you may want to adjust to suit your taste. One of which is the Time Out timer which will cut you off after a predetermined talk time.

Display Options



The "Display" tab provides a number of options allowing you to customize how the radio display operates. I have the backlight delays set to always. There are a lot of things you can twiddle here to customize your display.

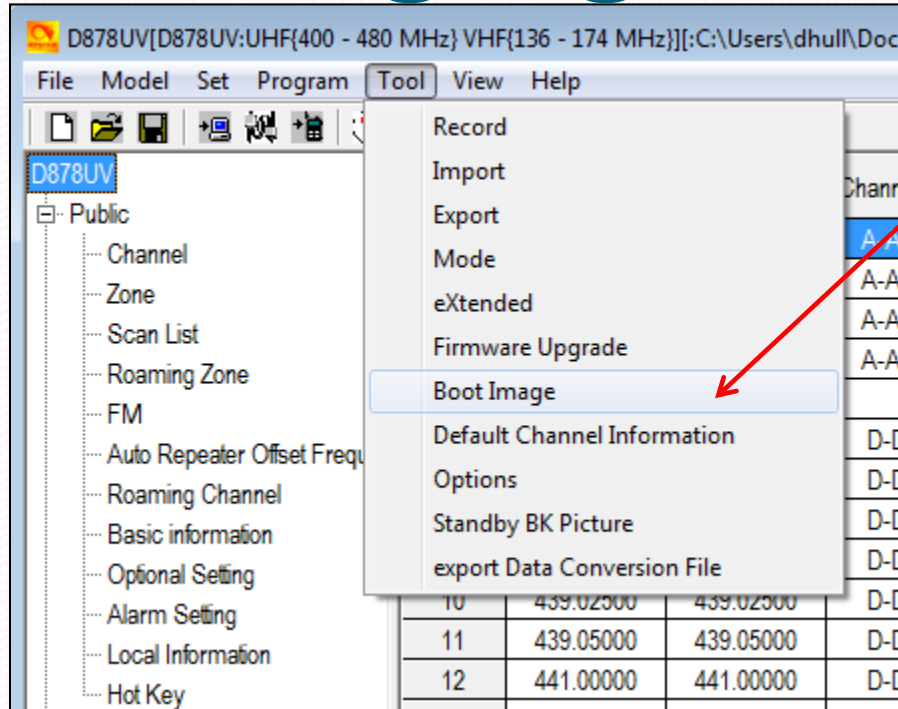
Power Save



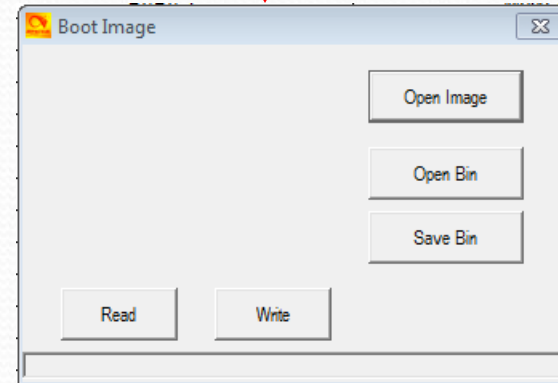
The “Power Save” tab provides an option set your to turn itself off automatically after a predetermined period of inactivity. This is a handy feature not generally provided on “commercial” radios.

You can see that I have this one set to shut off after two hours of inactivity.

Changing Screen Image (1)

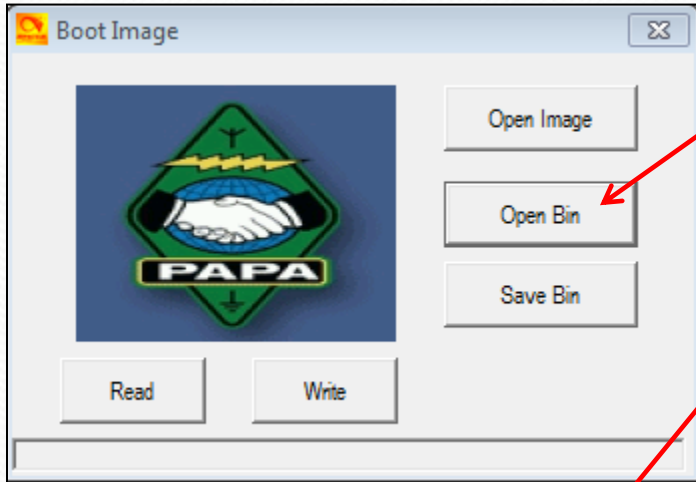


1. Select "Tool"
2. Click "Boot Image"
3. The "pop-up" below will appear



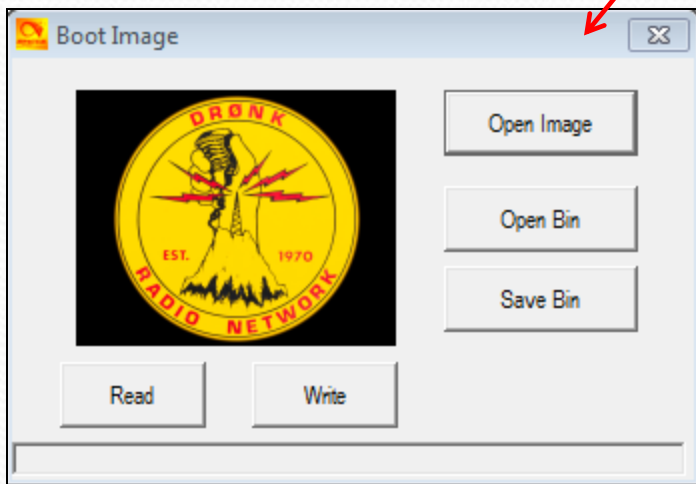
Select "Open Image" to bring up a file browser window. Point this to a JPEG file of an image you want to use as your boot image. Click "Write" to write this image to the radio. You can also use a binary file, in which case you would click "Open Bin" then select "Write" to write this image to the radio. This image will come up whenever you turn your radio on. You can save a standby image as well.

Changing Screen Image (2)

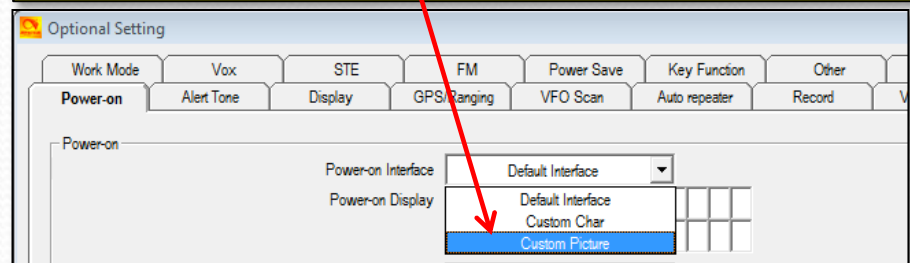


Here is an example of a .bin image available on the PAPA web site.

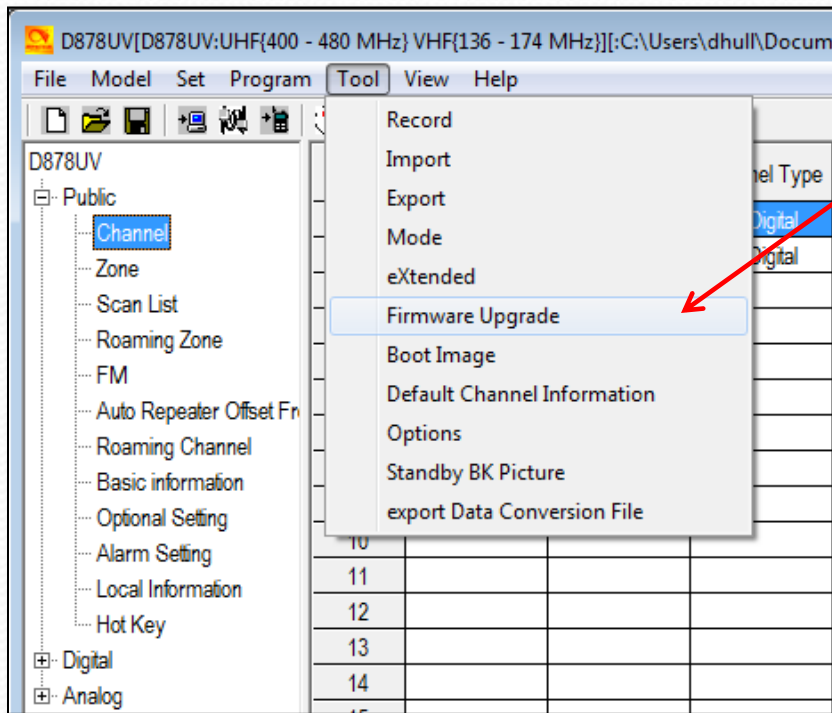
Here is an example of a .jpg image shot with a Canon 5DIV and worked in Lightroom. If you take this route, crop it to 8x10 landscape to fit the 128x160 pxl screen. There are no limitations as to color.



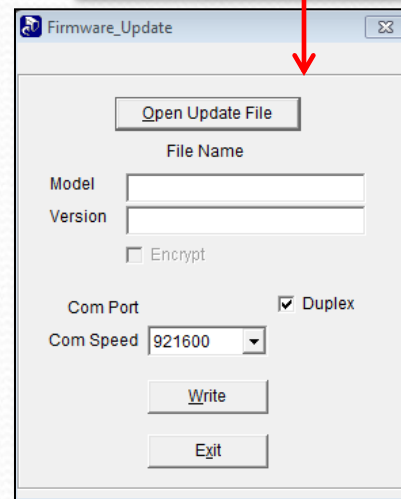
There is one more step, after this which is that you will need to go into "Optional Setting" and on the "Power-on" tab, in the "Power-on Interface" pull down, select "Custom Picture"



Upgrading Firmware



1. Select "Tool"
2. Click "Firmware Upgrade"
3. The "pop-up" below will appear



Note: The radio must be in FW Flash mode for this to work. Hold down the top button and PTT while turning the radio on.

Select "Open Update File" to bring up a file browser window. Point this to the desired FW upgrade file. Something like [D878UV_V1.10_2018-12-21.spi](#). Select the file and click "Open". The file name, Model and Version will appear in the pop-up window. Make sure these are correct, then click "Write". Once the write process completes, your radio will re-boot. Verify the new FW version in the radio menu.

That's it !

Thanks and back to Net Control.

Dave Hull, KC6N
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