Getting ‘on air’ in DMR-mode with your DMR Radio

V2.0, January 2022

Radioddity

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1. Intention of this document

This document can in no way replace the existing documentation for the radio you bought at Radioddity, but it is intended to get you 'on air' via the fast lane. Therefore, this document only describes the mandatory steps to get you 'on air'. In order to do so, just get along the following steps:

- Apply for and receive your *DMR ID*
- *Gather information about the DMR station(s) you want to operate*
- *Install any USB-driver that might be required*
- *Install CPS according to your DMR-capable radio*
- *Create new codeplug from scratch*
    - Enter your call-sign and your DMR-ID
    - Create your *Digital Contacts* / Talkgroups (TG)
    - Set up your *Digital RX Group Lists*
    - Program your *Channels*, and attach a *Digital Contact* for TX and attach a *Digital RX Group List* for RX to each channel.
    - Program your *Zones* by assigning *Channels* to each zone.
- Save your codeplug and transfer it to your radio
- Get 'on air' with your freshly created codeplug

2. Make yourself familiar with DMR

Before you start to programm your radio for use with DMR, make yourself familiar with DMR in general. There are lots of videos, tutorials and such things available within the internet. A good abstract on DMR in general is found at:

https://en.wikipedia.org/wiki/Digital_mobile_radio

Furthermore, the pages of the DMR association are also quite interesting.

https://www.dmrassociation.org/.

DMR radios sold to amateur radio operators normally support Tier I and Tier II. For operating a DMR repeater the radio needs to be capable of DMR Tier II as it includes the TDMA time slot feature required for use with an amateur radio DMR repeater.

One important aspect you should keep in mind is the fact, that DMR had been initially designed for commercial products and not for ham usage. As a result of that, certain DMR parameters are often not setup in a way, a ham operator would expect them to be setup. "RX groups" probably the best example for such. But we will get to that later on within this document.

3. Apply for and receive your DMR ID

To work in a DMR network, you must register for a DMR ID number. For amateur radio this is: https://www.radioid.net/
You should have a copy of your license at hand before applying for a DMR ID. Normally, new DMR IDs will be issued within one business day. If you have more than one DMR radio, you may use the very same number on all your DMR-radios. You will only get one DMR ID per call sign. The DMR ID will be used to identify your radio within the DMR network you are using.

4. Gather information about a DMR station

As for an analog repeater you would normally just need the following details:

- TX-frequency
- RX-frequency
- any info on CTCSS or DCS-encoding (if required)
- info if a 1750 HZ pilot tone is required

If you setup an analog radio for just the correct RX-frequency you would already be able to hear all traffic transmitted by your local analog repeater. Thus, analog is no big deal to get first successful results.

Unfortunately, DMR is different to the analog world and seems to be extremely complicated at first. But all of us went through that learning curve with lots of trial and error. So be patient with yourself and reread all documentation you got again and again.

For operating a digital DMR-repeater that is close to your location you need at least the following details for that DMR repeater:

- TX-frequency
- RX-frequency
- Color Code (CC, can be 0...15)
- Fixed Talk Groups (TG, some multi digit number)
- Repeater Slot / Time Slot (TS) to be used for each specific TG (1 or 2)

Only if **all** those parameters **plus** a few additional settings ("RX group" being the most important one) are correct, you will be able to successfully hear or even operate the DMR-repeater. That makes up quite a huge number of possibilities (on what may go wrong and - according to Murphy´s law - will go wrong, at least in first place). You will find out, that it is nearly impossible to get any info on which parameter is wrong if it is even just one of the parameters not being correct. Do not give up! All of us did go through this hard learning curve. And nearly, if not all of us, failed at the very beginning.

To get the details for those DMR-parameters required by your local repeater, there are different ways:

- Ask some other fellow ham operator (recommended)
- Visit local ham radio club meetings or events
- Search the internet
- Check https://repeaterbook.com/
- Check your DMR-network. Brandmeister, which has become the most common DMR network, has all required information available on its webpages
- Check social media platforms (within those you often find working codeplugs for download, but writing a codeplug yourself is strongly recommended.)

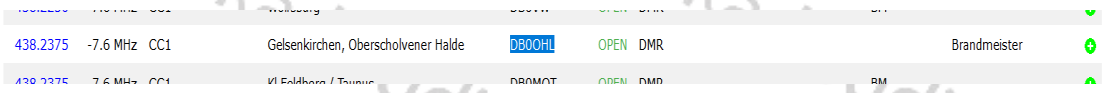
Let´s say you live in Germany at a location called "Gelsenkirchen". By scrolling through the repeaterbook (https://repeaterbook.com/) you found out that there is even a repeater with a callsign of DB0OHL close to your location and supporting DMR. Repeaterbook gave you the following details:

Frequency	Offset	Tone In / Out	Location	Call	Use	Modes
438.2375	-7.6 MHz	CC1	Gelsenkirchen, Oberscholvener Halde	DB0OHL	OPEN	DMR

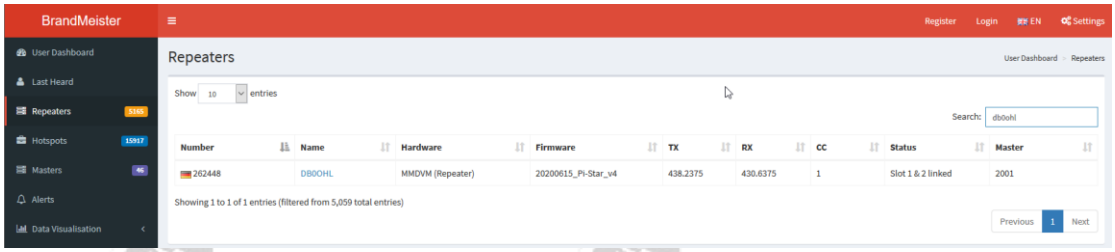
OK, so you just got the first three of the required parameters:

- TX-frequency 438.2375MHz
- RX-frequency 430.6375MHz
- Color Code (CC) required: 1 (CC1)

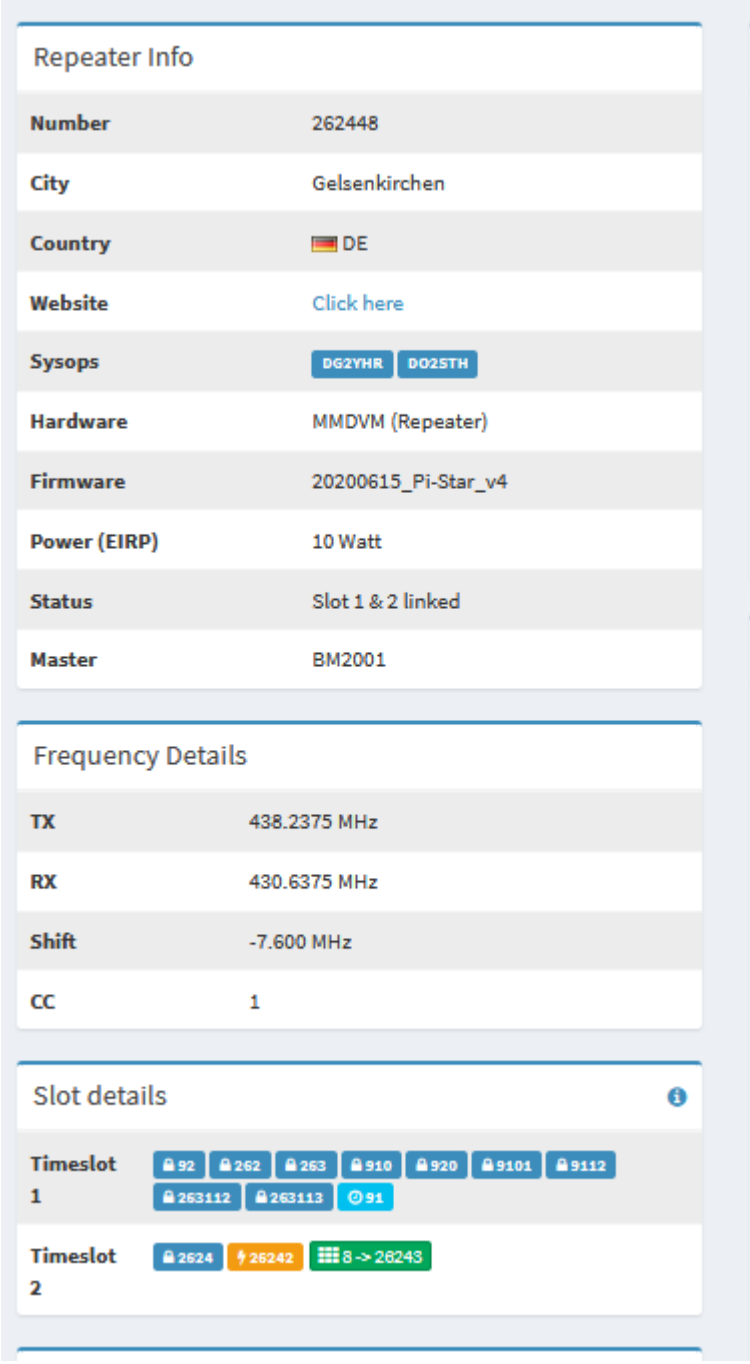
Next, we need to find out which DMR-network the repeater is associated with. Once more, repeaterbook will help on that one as well. Using https://www.repeaterbook.com/repeaters/niche/index.php?mode=DMR and then selecting the country (for the above example "Germany") and the Band (for the above example "70cm") you get closer to those details. Next search for the call sign (for the above example "DB0OHL") and you end up with the information that your local repeater is connected to the Brandmeister network.



Next, you would navigate to https://brandmeister.network/ , click on "Repeater" and then enter the repeaters call sign (for the above example "DB0OHL"). Be patient as it may take a couple of seconds for the search result to be displayed.



Now click on the callsign within the displayed entry. On the left of the next page, you will then see all the remaining details you need in order to communicate with this repeater.



Let´s summarize the details for that specific DMR repeater once more:

TX--frequency	438.2375MHz
RX-frequency	430.6375MHz
Color Code (CC) required:	1 (CC1)
Time slot 1 (TS1) serving the following talk groups	92, 262, 263, 910, 920, 9101, 9112, 263112, 263113
Time slot 1 (TS1) during certain operating times also serving the following talk group	91
Time slot 2 (TS2) serving the following talk groups	2624 and cluster TG 8 which is being redirected to TG 26243

5. Install any USB-driver that might be required

Most of the analog radios are programmed via a computers serial port. That normally does require a USB2Serial-cable which often has a K1-type connector on one side and a USB-plug on the other side. Within those cables USB2Serial-converters are built in, such as Prolific, FTDI, CH340G or similar.
In order to program a DMR-radio you need a cable, although opticaly looking about the same as for the analog world, that often is different to the above as it normally does not include a USB2Serial converter. This results in all DMR-radios requiring their own USB-driver to be installed. To give you a few examples:

Brand and model	Driver
Radioddity GD-55	Prolific USB-to-Serial Comm Port
Radioddity GD-77*, GD77S*	HID USB Input Device / MCU Mouse Demo
Radioddity GD-73*	walkie-talkie-C7000 (driver to be installed prior to first connection)
Radioddity GD-AT10G*	GD32 Virtual ComPort in FS Mode
Radioddity DB-25D	Prolific USB-to-Serial Comm Port
Radioddity x Baofeng RD-5R*	HID USB Input Device / MCU Mouse Demo
Baofeng DM-1701*	Digital Radio in USB mode - STM Device in DFU Mode
TYT MD-9600*	Digital Radio in USB mode - STM Device in DFU Mode

**) Radio has to be turned on in order for the device been recognized by your PC as there is not USB2SER converter chip included in the programming cable.*

6. Install CPS according to your DMR-capable radio

The file created by the Computer Programming Software (CPS) contains the frequencies and other operating parameters and is referred to as a 'codeplug'. Creating a codeplug is a bottom-up process where you first have to create the lowest common elements, and then combine those elements to form a codeplug that will be transferred to the radio. With the CPS we supply for your specific radio, you can create the codeplug yourself to suit your exact requirements, or you can use another person's codeplug if you wish. Don't forget to save your codeplug so you can easily make changes to your radio configuration at some time in the future.

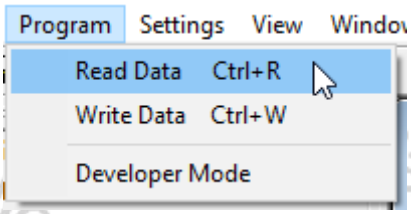
There is a specific CPS-program for each DMR radio. Check our support pages (www.radioddity.com -> Support -> select brand -> select radio model) for the most up to date version required for your radio. Installation instructions are found within the archive downloaded from our support pages.

7. General process of creating a DMR codeplug from scratch

Within the next paragraphs we just describe the general steps to create a DMR codeplug without getting into more details than necessary on a particular DMR radio. After reading this paragraph, you may continue with the specifics on your DMR radio. The following screenshots refer to our GD-73 handheld radio but you will find out that the specific CPS for your radio will look very similar to the screenshots shown.

7.1. First of all: Save existing data

Read data from the radio to your PC to create a first CPS template, and at the same time save the factory data for future use.
When reading or writing data to or from a radio the CPS often has several options, such as "Program -> Read Data".



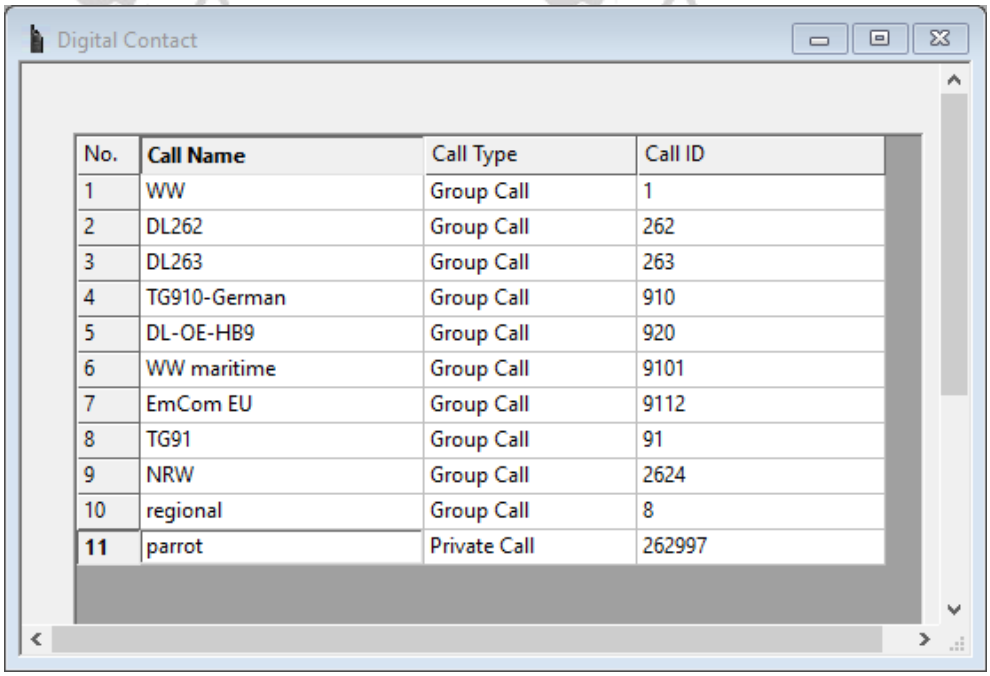
7.2. Enter your DMR ID

Next enter your DMR ID. The field for that DMR ID is a general one. Thus check those more general configuration pages for a field that states DMR ID, DMRID or similar.

Note:	*Never operate the radio with an ID that has not been assigned to you. In amateur radio networks this can lead to the loss of your license.*

7.3. Create Digital contacts

Now you need to continue with the section for digital contacts. These digital contacts are used for storing talkgroups (TG with a Call Type of "Group Call") as well as individual stations DMR ID numbers (with a Call Type of "Private Call"). Your Digital contact list might look as follows:



No.	Call Name	Call Type	Call ID
1	WW	Group Call	1
2	DL262	Group Call	262
3	DL263	Group Call	263
4	TG910-German	Group Call	910
5	DL-OE-HB9	Group Call	920
6	WW maritime	Group Call	9101
7	EmCom EU	Group Call	9112
8	TG91	Group Call	91
9	NRW	Group Call	2624
10	regional	Group Call	8
11	parrot	Private Call	262997

No	Entry in the list of digital contacts
Call Name	Display name of the contact
Call Type	You can choose between the following call types: • Group Call (required for most talk groups, TG) • Private Call (required for direct call to other station) • All Call (normally not used)
Call ID	DMR ID for an individual / private digital call or a talkgroup (TG). This ID is for identification and communication with a destination radio (DMR ID) or a group of radios listening to the very same talkgroup (TG) depending on the call type.

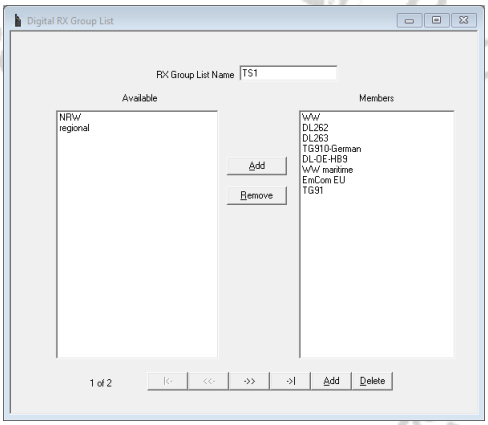
7.4. Setup Digital RX Groups

For sure you had been waiting for that one to be explained as we mentioned it already a couple of times. This is the most common parameter that causes headaches on ham operators new to DMR. Its name may be "Digital RX Group", "Digital RX Group Call", "RX Group", "RX Group List", "TG List" and some more similar to the ones already listed.
Normally each digital channel can transmit on just one single talkgroup but can receive more than just one talkgroup. The actual talkgroups that are able to be heard are defined in a so called "Digital RX Group" (or one of the other names mentioned above). For each channel you should later on assign one Digital RX group.

Creating a Digital RX group allows you to group your digital Talkgroups (TG) into logical groups so they can be targeted later on within the channel settings.

- Each group can contain as few or as many contacts as you like.
- Groups should be named with something meaningful to the user
- Only contacts that are stored as group calls can be added to a group.
- Each Digital (DMR) channel must have a Digital RX Group List, with at least the transmit Talkgroup Digital contact for the channel being a member of the group you attach to the channel.
- **If you do not attach a Digital RX Group List to a DMR channel, you won't be able to hear or receive anything on that channel.**

A typical Digital RX group may look like:



Note
To start with, it is a good idea to group all those digital contacts (TG) that are active on time slot 1 within the very same group and name it 'ts1'. For those that are active on time slot 2, name the corresponding group 'ts2'.

7.5. Setup of channels

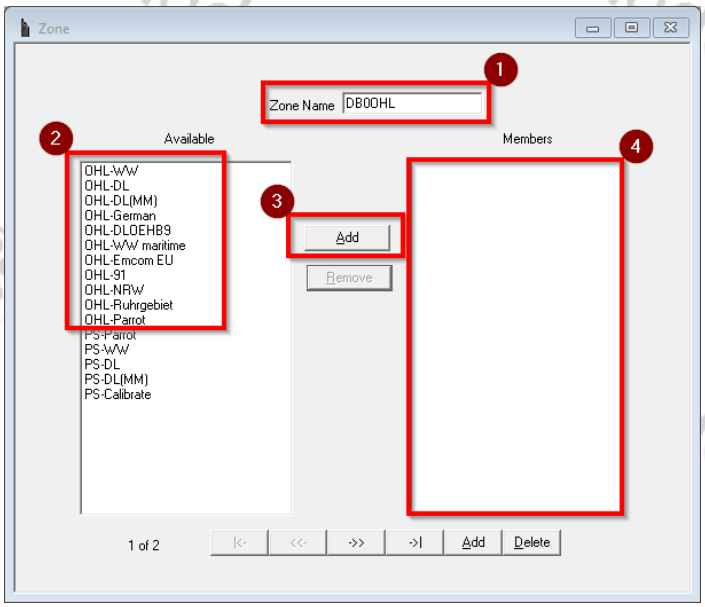
Name the channel in a way, that there is also some information about the talkgroup (TG) within its name. This will be very helpful in later operation. e.g. <trailing 3 digits of repeater*>-<talkgroup>* such as 'OHL-262'

Here is a brief explanation of the different fields required for a DMR channel. Their naming might be slightly different, depending on the DMR radio used.

Channel name	Name of the channel – this needs to be unique.
Receive Freq	The receive frequency in MHz
Transmit Freq.	The transmit frequency in MHz
TX Contact	The Talkgroup (TG) which is assigned to this channel
Slot	Selects which timeslot, 1 or 2, should be used. Often a particular Talkgroup is assigned to a particular timeslot.
Color Code	Select which colour code (CC) is associated with this channel.
RX Group List	This determines the Digital RX Group used for the channel

7.6. Bundling of channels into zones

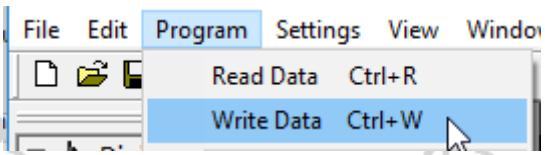
A zone is a collection or group of channels. They may be grouped any way you wish, for example a zone for each geographic area, or a zone with different talkgroups for one repeater, or any other way you find useful or convenient. Once you have defined your channels, you are ready to bundle them into zones for later use. The number of different channels and zones depends on your radio model.



- First give the zone a meaningful name (1), such as the identification of the repeater whose channels you want to store in the zone.
- Then select from the list of available radio channels (2) all those you want to bundle in that zone.
- Click the 'Add' button (3) to accept each channel.
- The added channels will then be listed as 'Members' of that zone (4).

7.7. Transfer the codeplug to the radio

After completing all the above steps, it is adviseable to save the data locally to the PC first ('File' → 'save'/'save as') before you transfer the data from your PC to the GD-73. To do so, click on 'Program'→'Write Data'



7.8. Summary

Let´s list the main keypoints required for setting up a DMR codeplug:

- A zone consists of various channels
- A digital channel is required for each DMR contact/talkgroup you want to address
- For each channel a Digital RX group is required. As a minimum that Digital RX group should contain at least the same talkgroup as the channel is defined for. However, one Digital RX group may contain several talkgroups and may be used for several channels.
- Each talkgroup has been assigned by the repeater operator to a certain time slot. That time slot (TS) is also part of the channel definition.
- Each Repeater has a common ColorCode. The ColorCode (CC) is also part of the channel definition.
- Each talkgroup or station must be defined as a Digital contact
- A Digital Contact for a Talk Group (TG) should be of Call type "Group Call", whereas a station (and often parrot as well, depending on your local repeater settings) requires a Call type of "Private Call".

Now you are prepared to get 'on air'.

8. Sample codeplugs

The following screenshots are all very similar to each other, as all of them are created for operating the very same DMR repeater (DB0OHL) using the talkgroups available on that repeater.

The following data is used for all of those sample codeplugs:

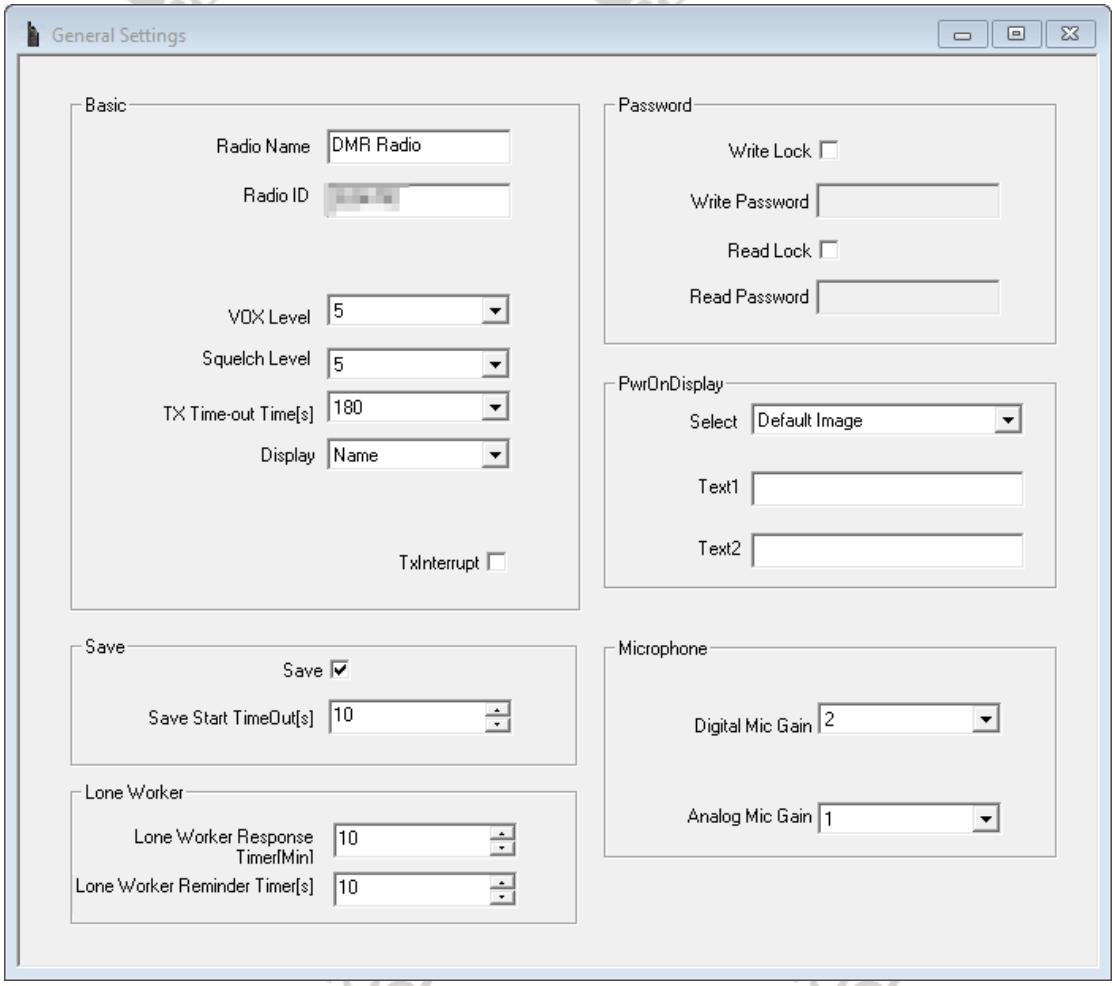
TX-frequency of repeater (becomes RX-frequency of own radio)	**438.2375 MHz**
RX-frequency of repeater (becomes TRX-frequency of own radio)	**430.6375 MHz**
Color Code (CC) required	**1** (CC1)
Time slot 1 (TS1) for talk groups	**91, 262**
Time slot 2 (TS2) for talk groups	**2624** and cluster TG **8** being redirected to TG **26243**
Parrot on that DMR repeater available at	**262997** with Call Type "Private Call"

Unless otherwise specified, these sample codeplugs are based on a blank new codeplug and its default settings.

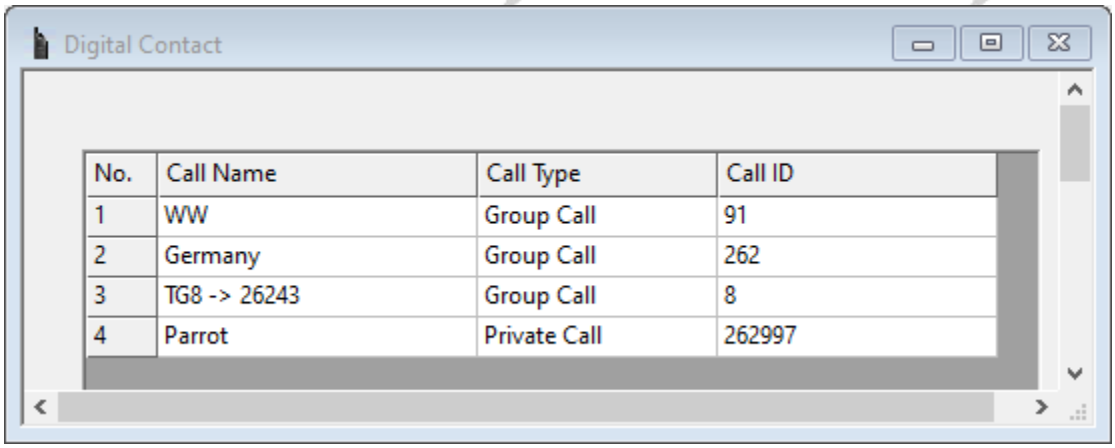
8.1. Sample codeplug for Radioddity GD-73

The following screenshots have all been taken using GD-73 CPS V1.05.

General Settings:

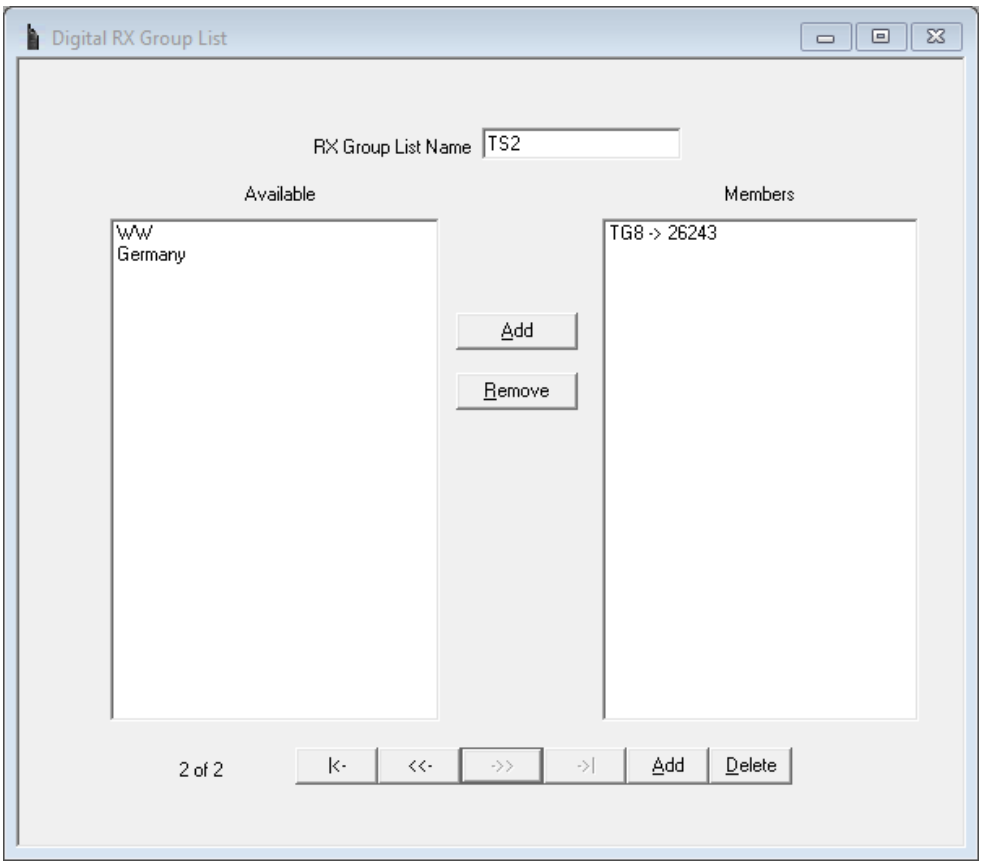


Digital Contacts:

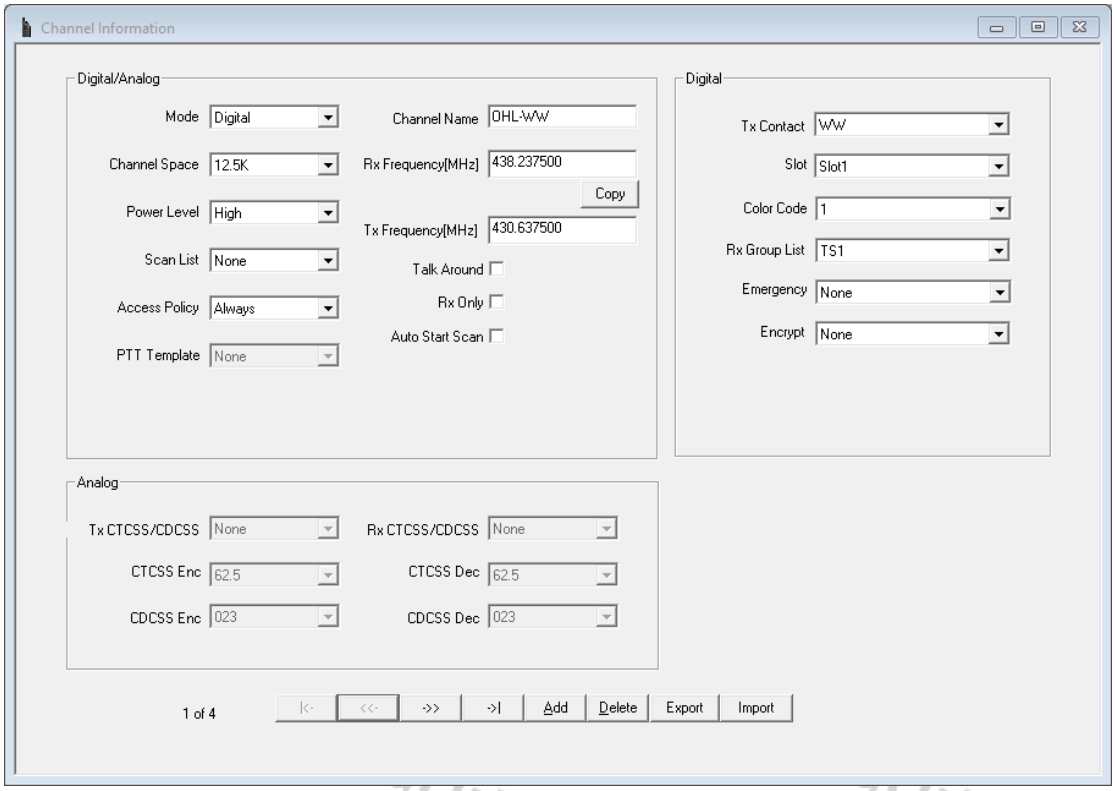


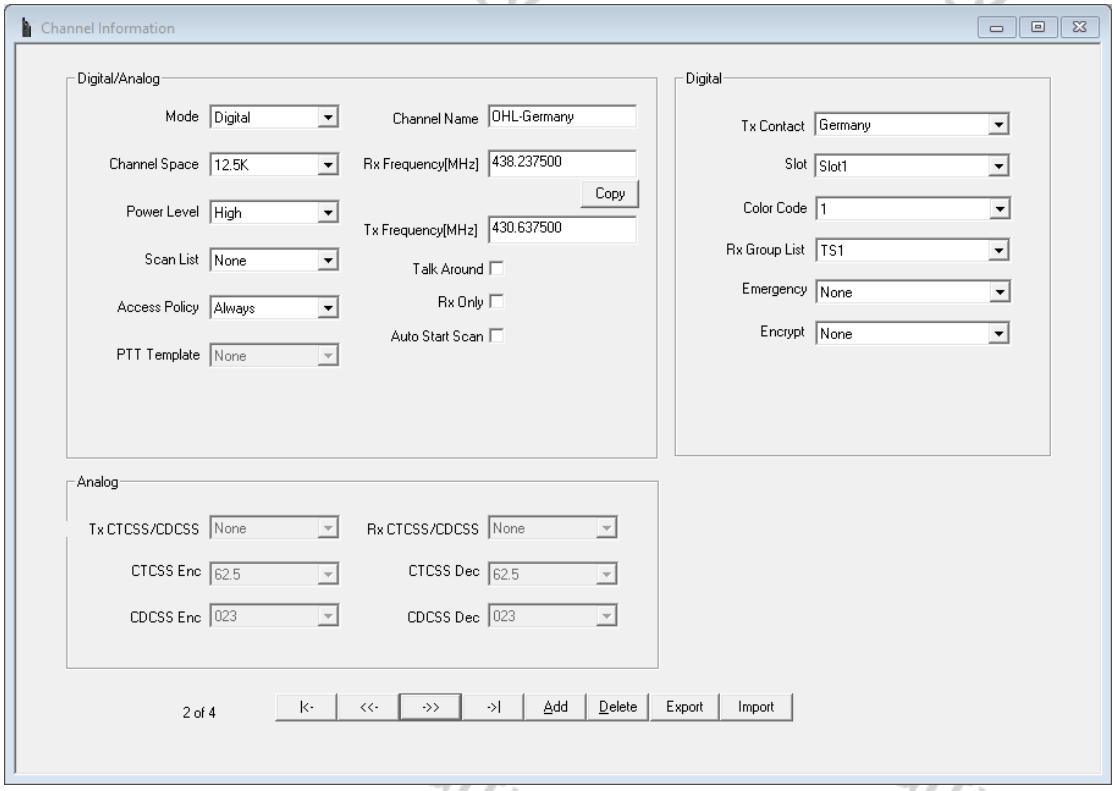
No.	Call Name	Call Type	Call ID
1	WW	Group Call	91
2	Germany	Group Call	262
3	TG8 -> 26243	Group Call	8
4	Parrot	Private Call	262997

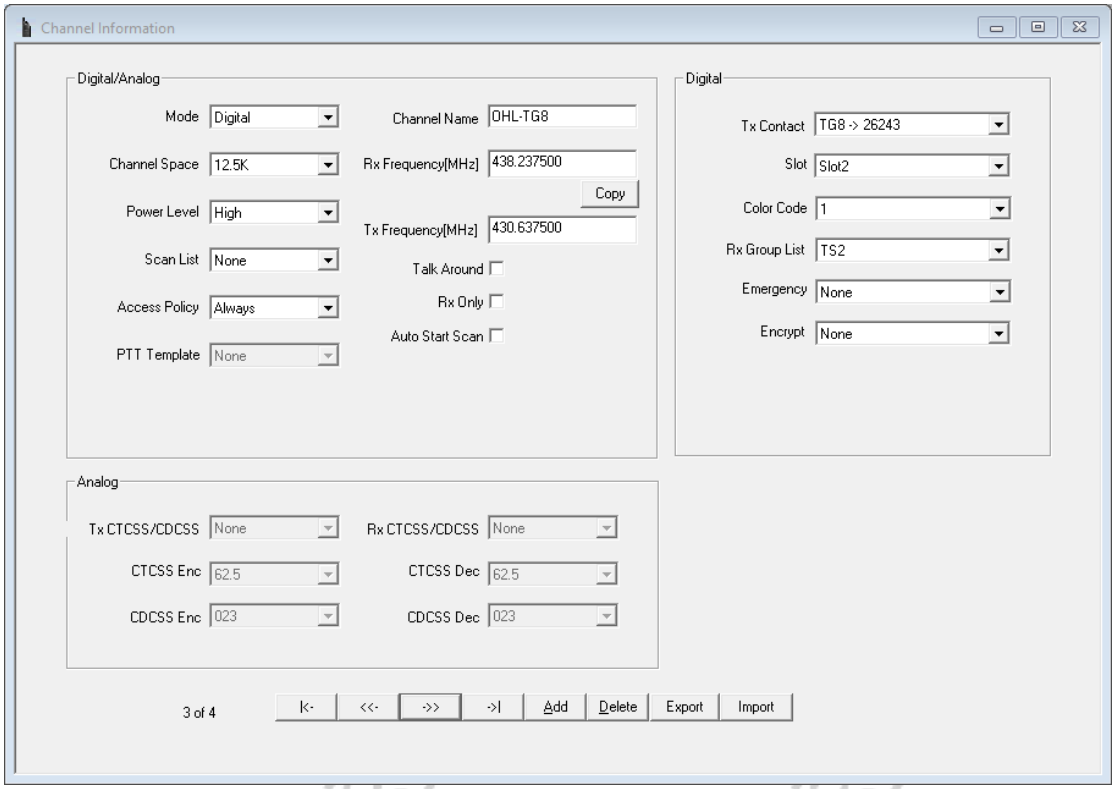
Digital RX Group List:

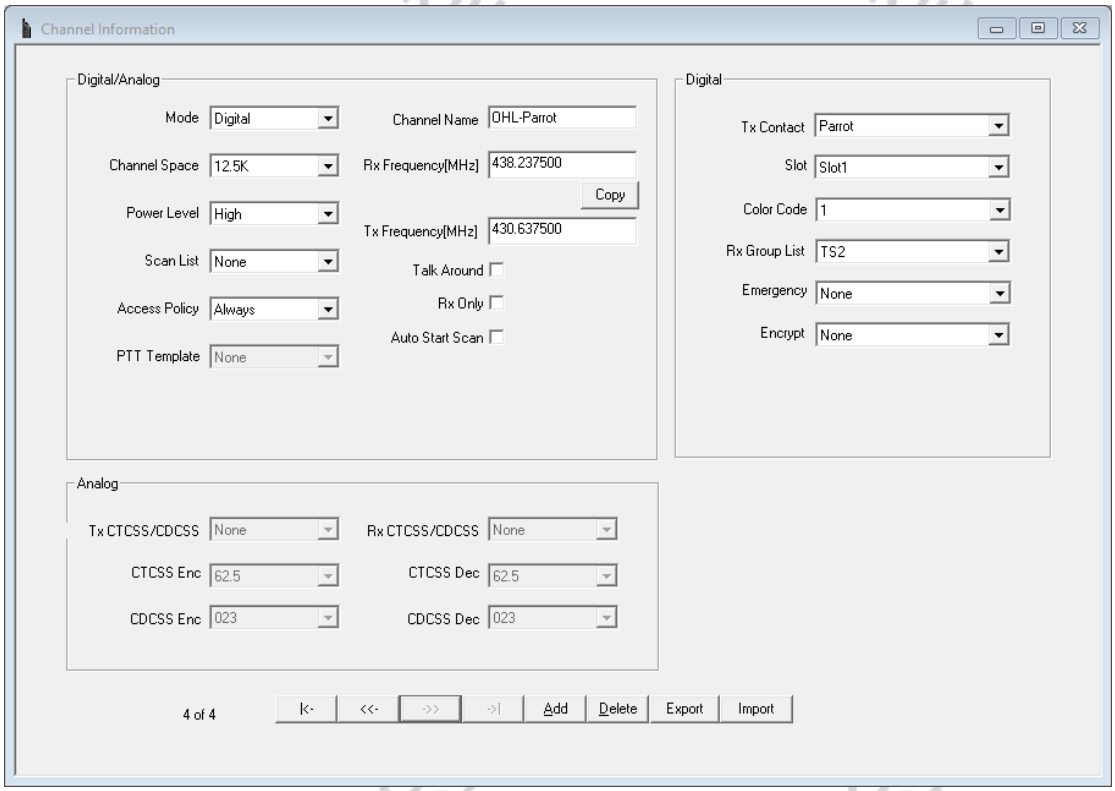


Channels:

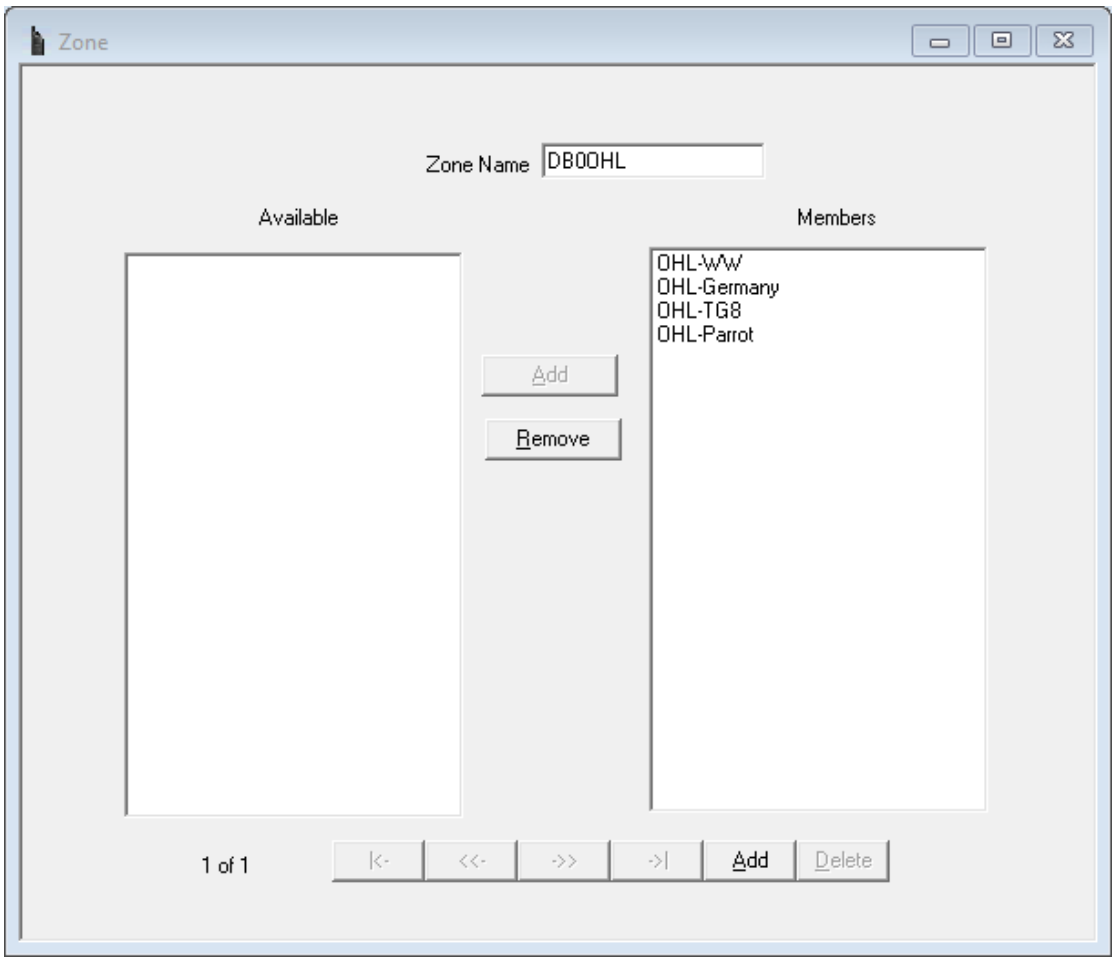

Channel Information
Digital/Analog
Mode Digital
Channel Name OHL-WW
Channel Space 12.5K
Rx Frequency[MHz] 438.237500
Copy
Power Level High
Tx Frequency[MHz] 430.637500
Scan List None
Talk Around
Access Policy Always
Rx Only
PTT Template None
Auto Start Scan
Digital
Tx Contact WW
Slot Slot1
Color Code 1
Rx Group List TS1
Emergency None
Encrypt None
Analog
Tx CTCSS/CDCSS None
Rx CTCSS/CDCSS None
CTCSS Enc 62.5
CTCSS Dec 62.5
CDCSS Enc 023
CDCSS Dec 023
1 of 4
|<- <<- ->> ->| Add Delete Export Import


Channel Information
Digital/Analog
Mode Digital
Channel Name OHL-Germany
Channel Space 12.5K
Rx Frequency[MHz] 438.237500
Copy
Power Level High
Tx Frequency[MHz] 430.637500
Scan List None
Talk Around
Access Policy Always
Rx Only
PTT Template None
Auto Start Scan
Digital
Tx Contact Germany
Slot Slot1
Color Code 1
Rx Group List TS1
Emergency None
Encrypt None
Analog
Tx CTCSS/CDCSS None
Rx CTCSS/CDCSS None
CTCSS Enc 62.5
CTCSS Dec 62.5
CDCSS Enc 023
CDCSS Dec 023
2 of 4
|<- <<- ->> ->| Add Delete Export Import


Channel Information
Digital/Analog
Mode Digital
Channel Space 12.5K
Power Level High
Scan List None
Access Policy Always
PTT Template None
Channel Name OHL-TG8
Rx Frequency[MHz] 438.237500
Copy
Tx Frequency[MHz] 430.637500
Talk Around
Rx Only
Auto Start Scan
Digital
Tx Contact TG8 -> 26243
Slot Slot2
Color Code 1
Rx Group List TS2
Emergency None
Encrypt None
Analog
Tx CTCSS/CDCSS None
Rx CTCSS/CDCSS None
CTCSS Enc 62.5
CTCSS Dec 62.5
CDCSS Enc 023
CDCSS Dec 023
3 of 4
|<- <<- ->> ->| Add Delete Export Import


Channel Information
Digital/Analog
Mode Digital
Channel Space 12.5K
Power Level High
Scan List None
Access Policy Always
PTT Template None
Channel Name OHL-Parrot
Rx Frequency[MHz] 438.237500
Copy
Tx Frequency[MHz] 430.637500
Talk Around
Rx Only
Auto Start Scan
Digital
Tx Contact Parrot
Slot Slot1
Color Code 1
Rx Group List TS2
Emergency None
Encrypt None
Analog
Tx CTCSS/CDCSS None
Rx CTCSS/CDCSS None
CTCSS Enc 62.5
CTCSS Dec 62.5
CDCSS Enc 023
CDCSS Dec 023
4 of 4
|<- <<- ->> ->| Add Delete Export Import

Zone:



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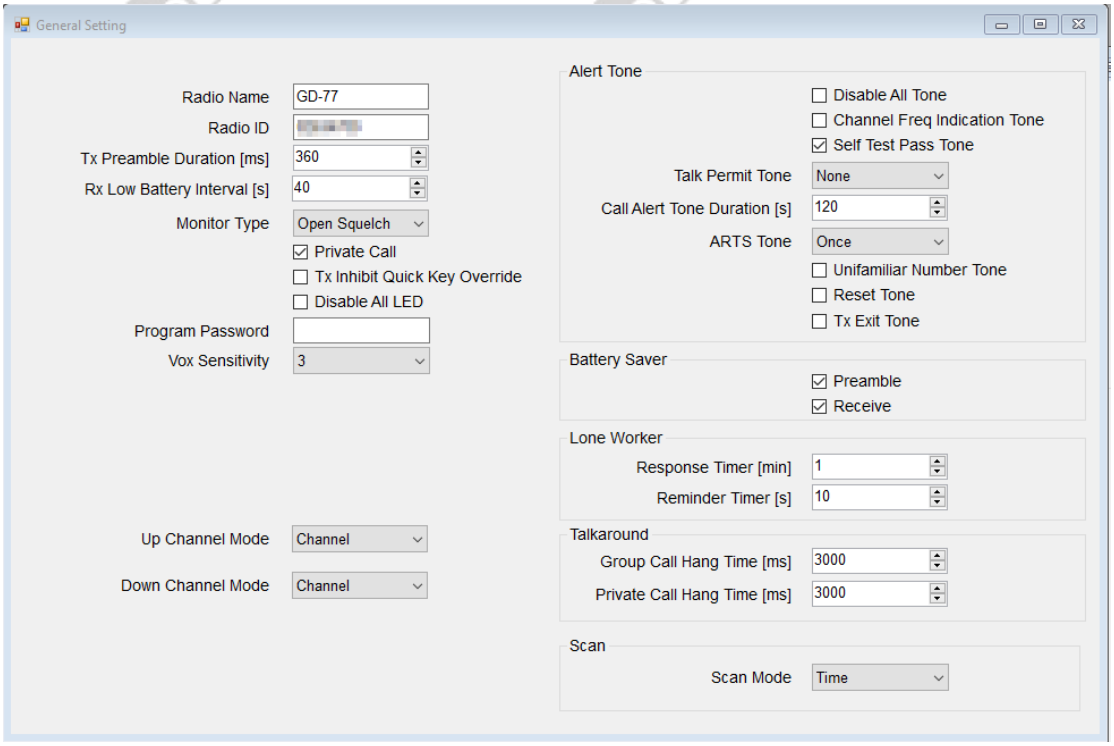
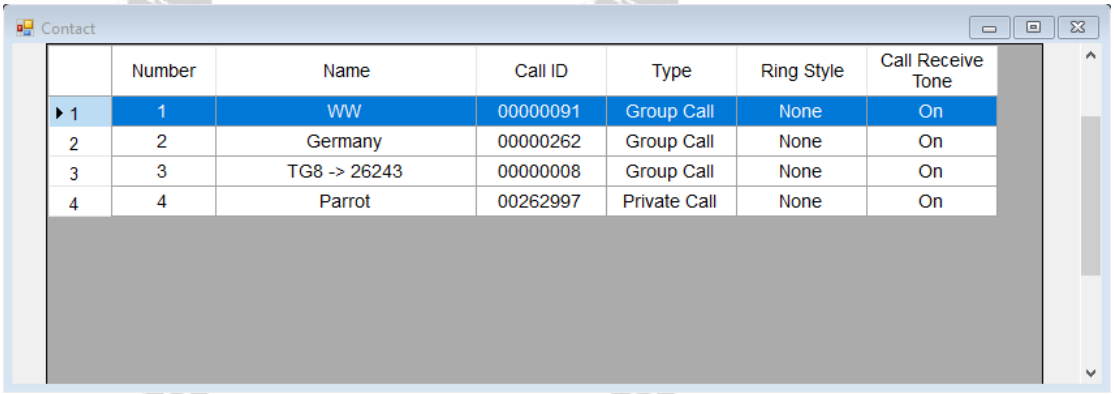
8.2. Sample codeplug for Radioddity GD-77

The following screenshots have all been taken using GD-77 CPS v3.1.9.

General Settings:



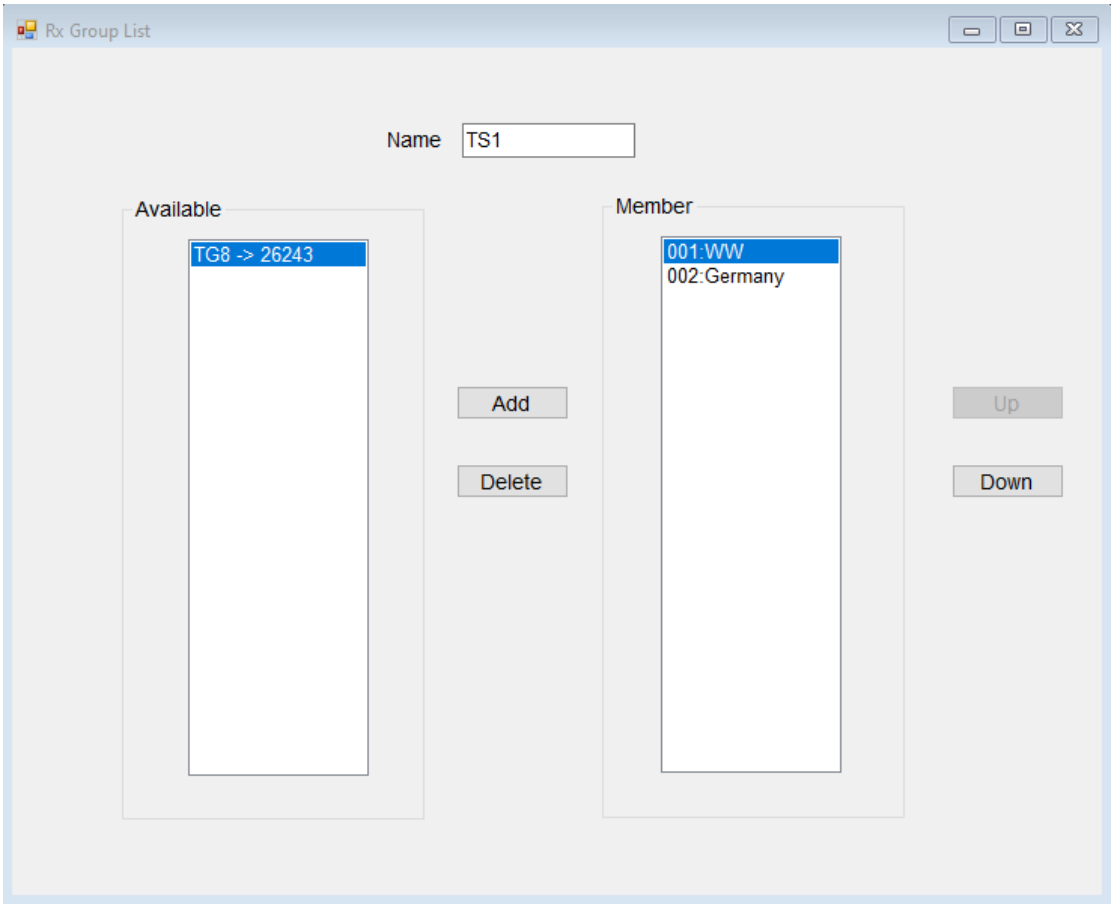
Digital Contacts:

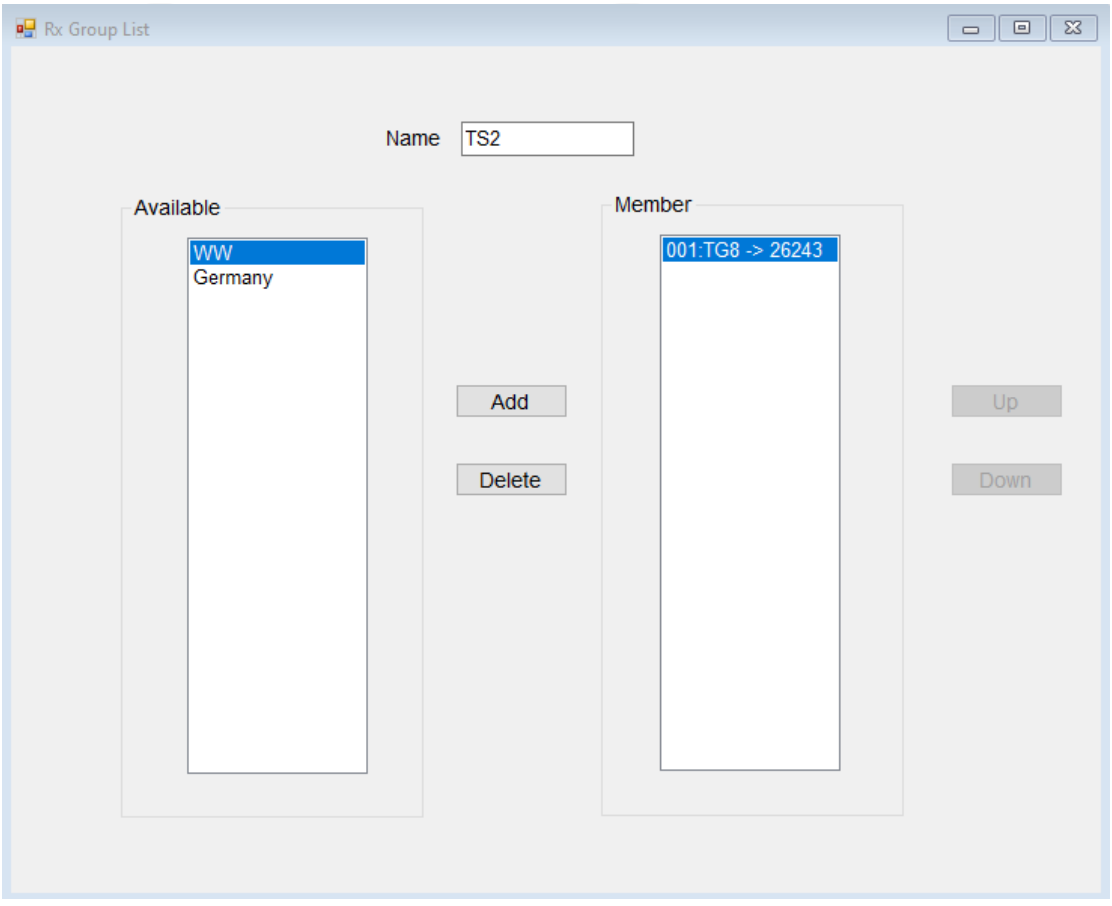


	Number	Name	Call ID	Type	Ring Style	Call Receive Tone
1	1	WW	00000091	Group Call	None	On
2	2	Germany	00000262	Group Call	None	On
3	3	TG8 -> 26243	00000008	Group Call	None	On
4	4	Parrot	00262997	Private Call	None	On

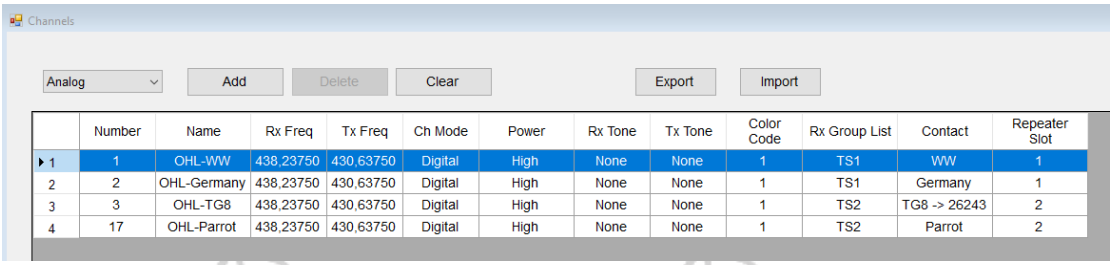
Radioddity Radioddity

RX Group List:



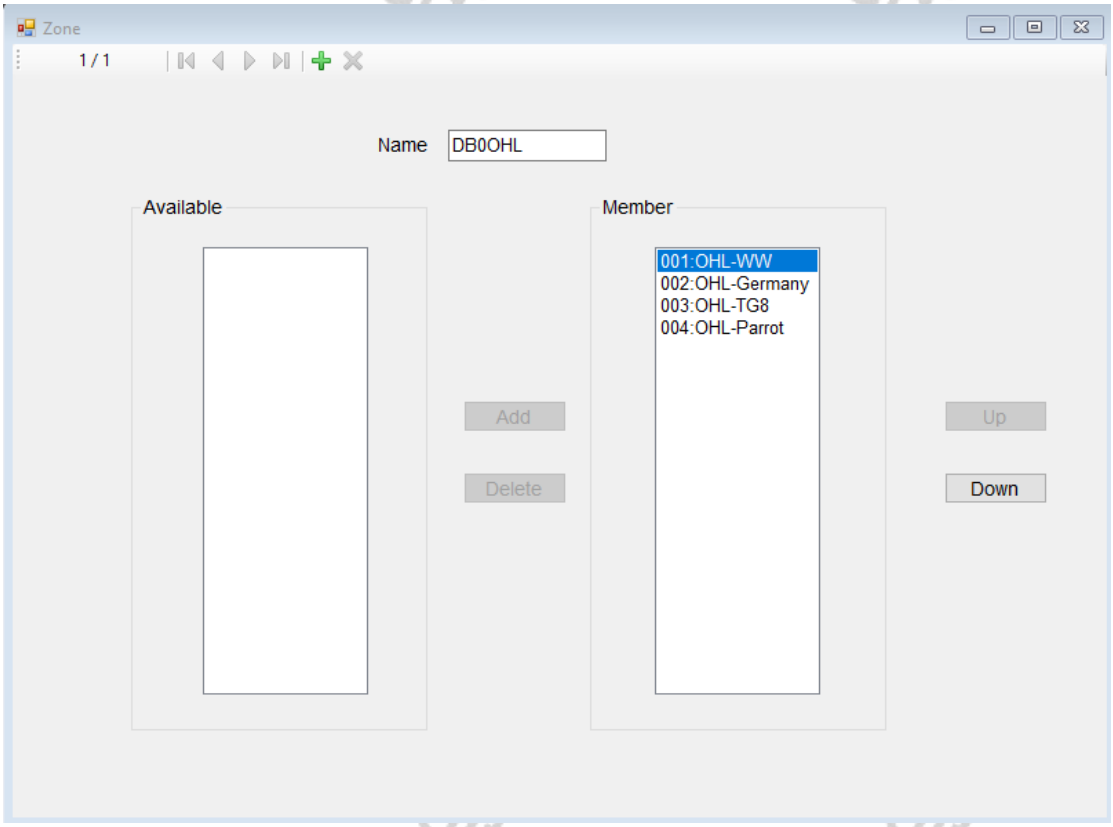


Channels:



	Number	Name	Rx Freq	Tx Freq	Ch Mode	Power	Rx Tone	Tx Tone	Color Code	Rx Group List	Contact	Repeater Slot
1	1	OHL-WW	438,23750	430,63750	Digital	High	None	None	1	TS1	WW	1
2	2	OHL-Germany	438,23750	430,63750	Digital	High	None	None	1	TS1	Germany	1
3	3	OHL-TG8	438,23750	430,63750	Digital	High	None	None	1	TS2	TG8 -> 26243	2
4	17	OHL-Parrot	438,23750	430,63750	Digital	High	None	None	1	TS2	Parrot	2

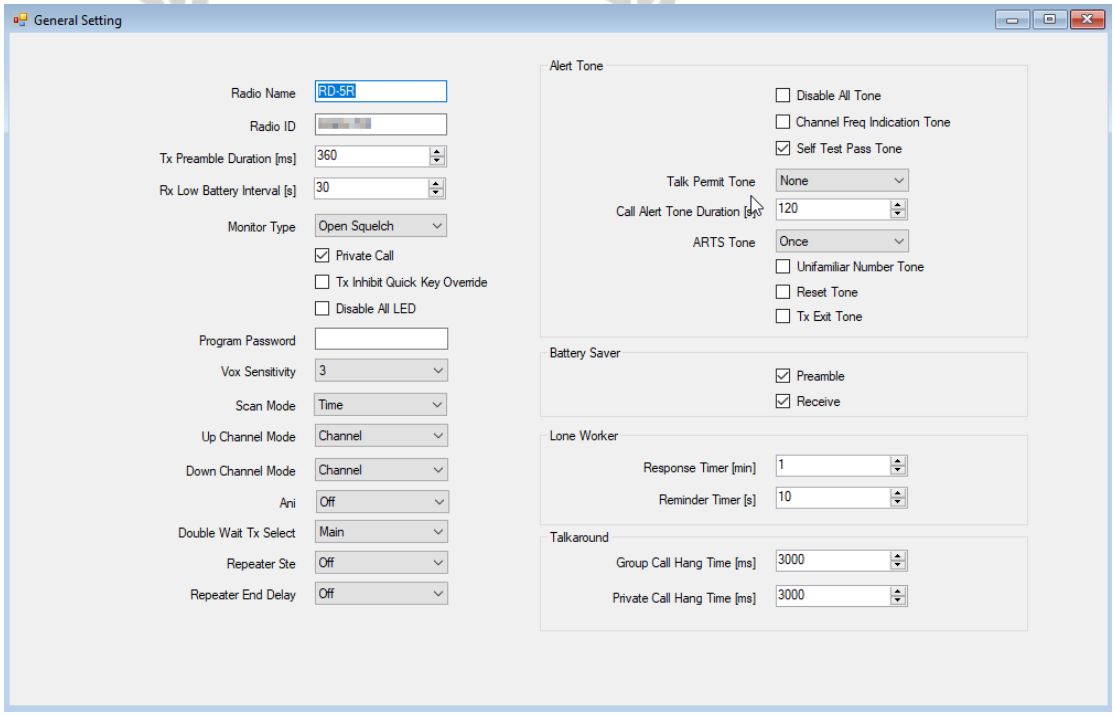
Zone:



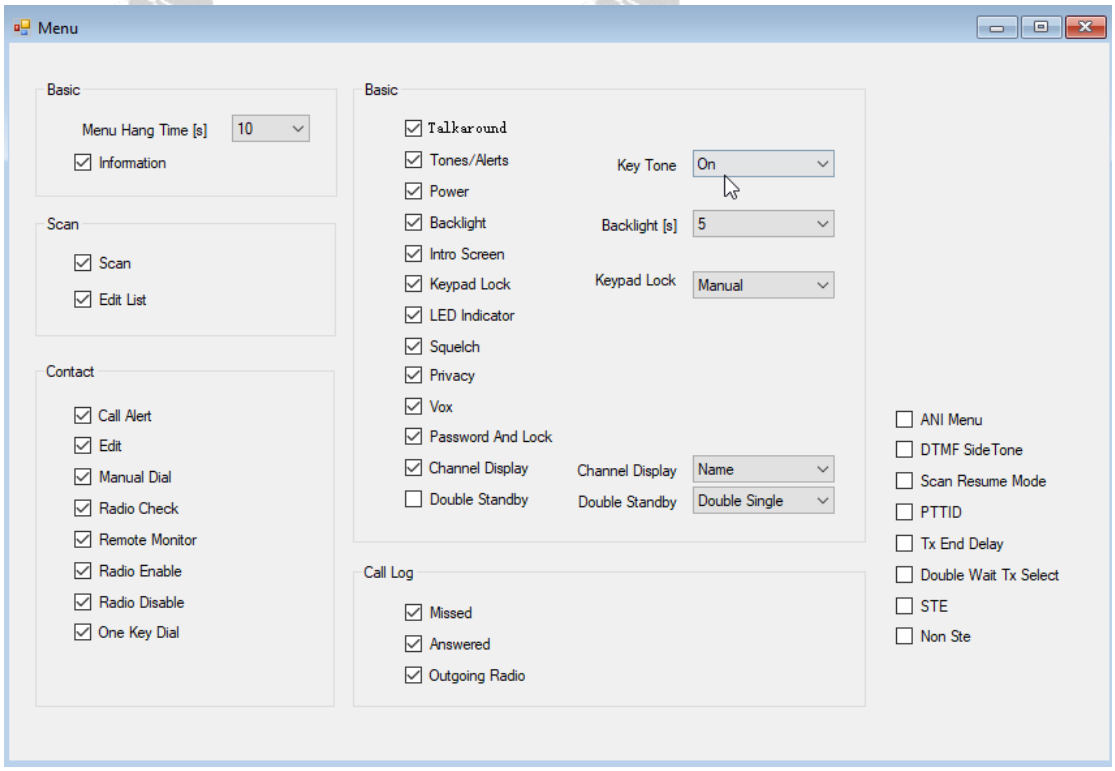
8.3. Sample codeplug for Radioddity x Baofeng RD-5R

The following screenshots have all been taken using RD-5R CPS v1.0.0.4.

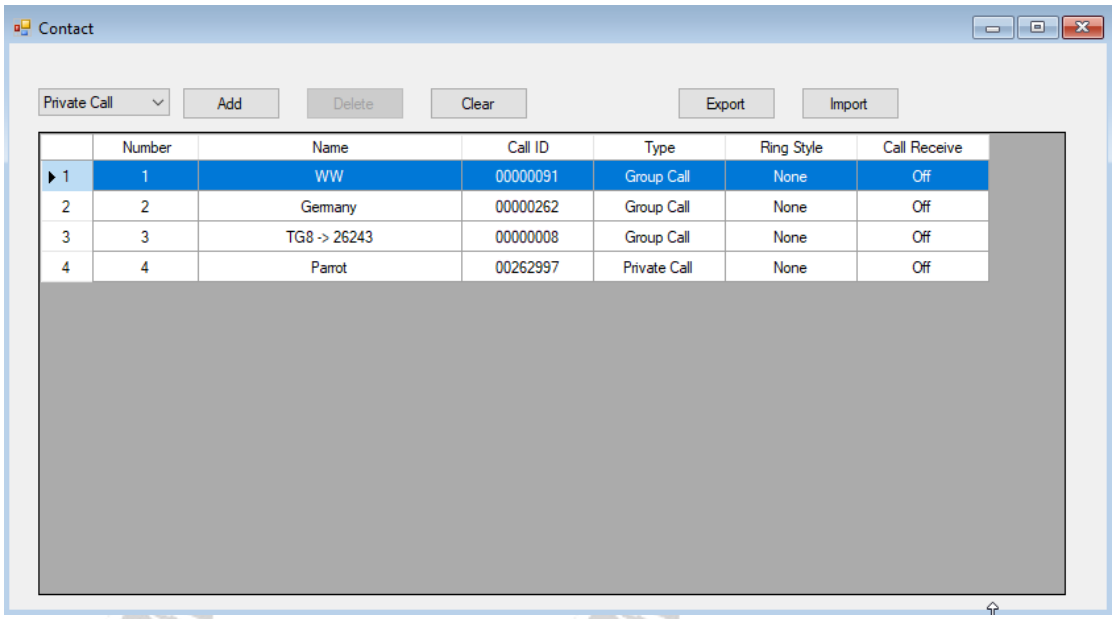
General Settings:



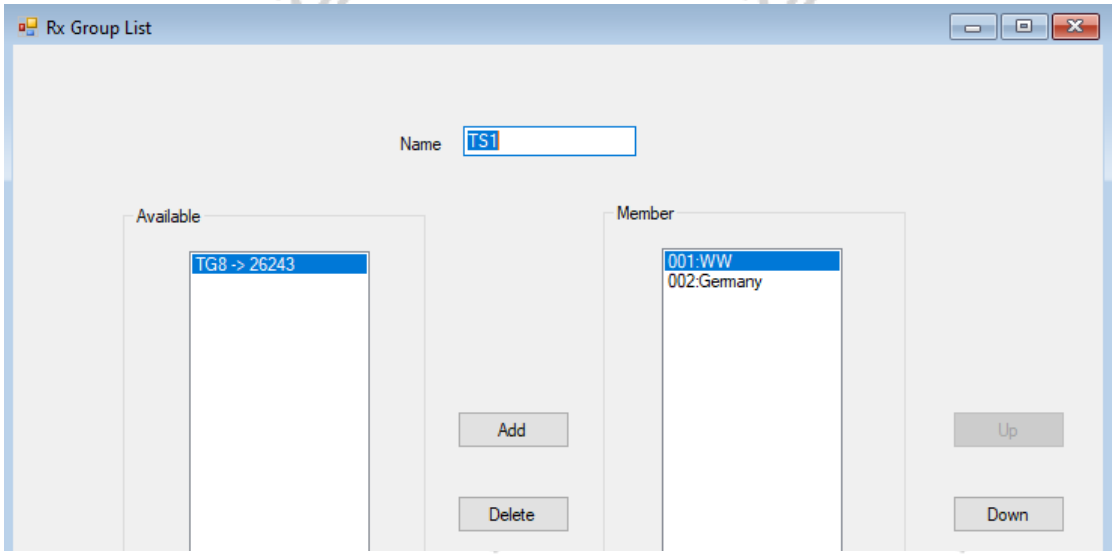
Menu:

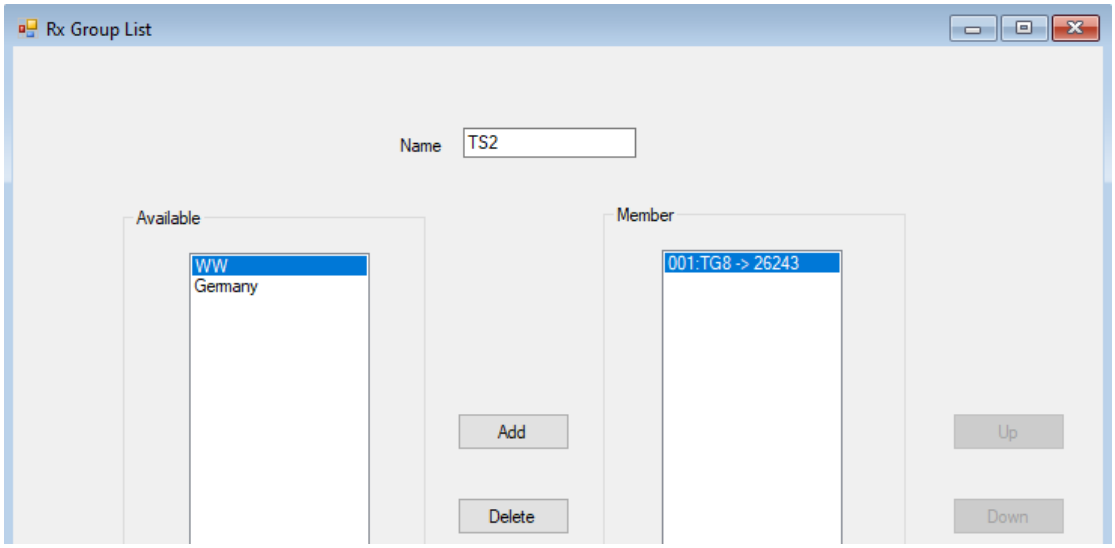


Digital Contacts:

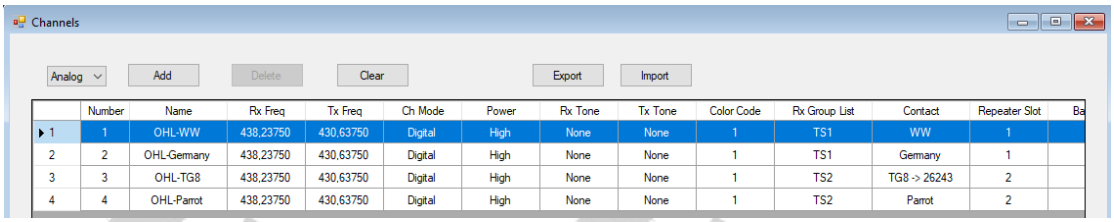


RX Group List:

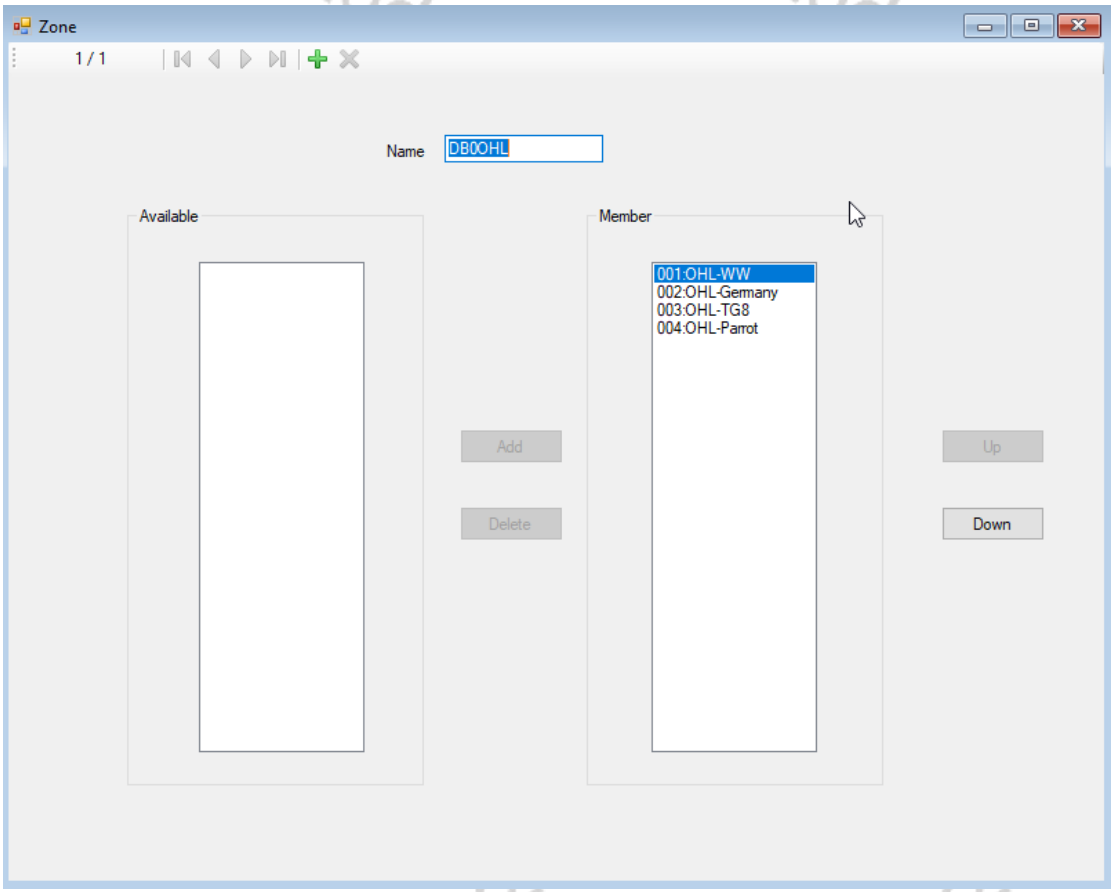




Channels:



Zone:



8.4. Sample codeplug for Radioddity GD-AT10G

The following screenshots have all been taken using GD-AT10G CPS V1.05.

Digital → Radio ID List

No.	Radio ID	Name
1	12345678	My Radio

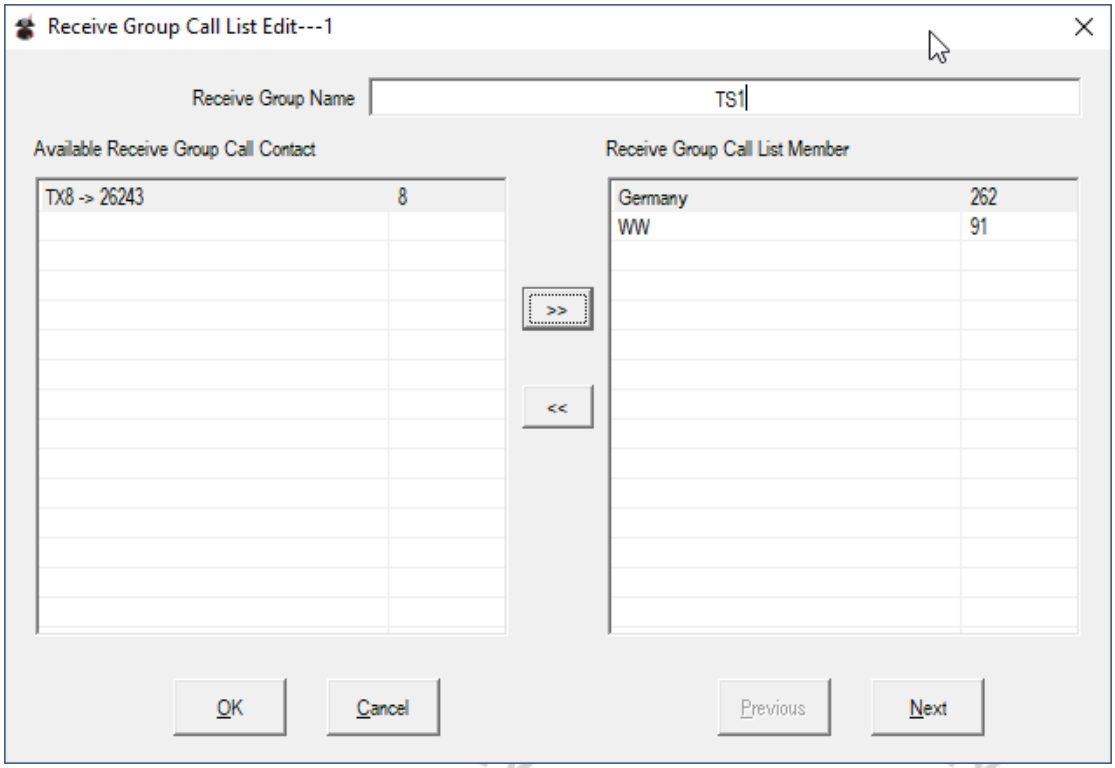
Digital → Contact/Talk Group:

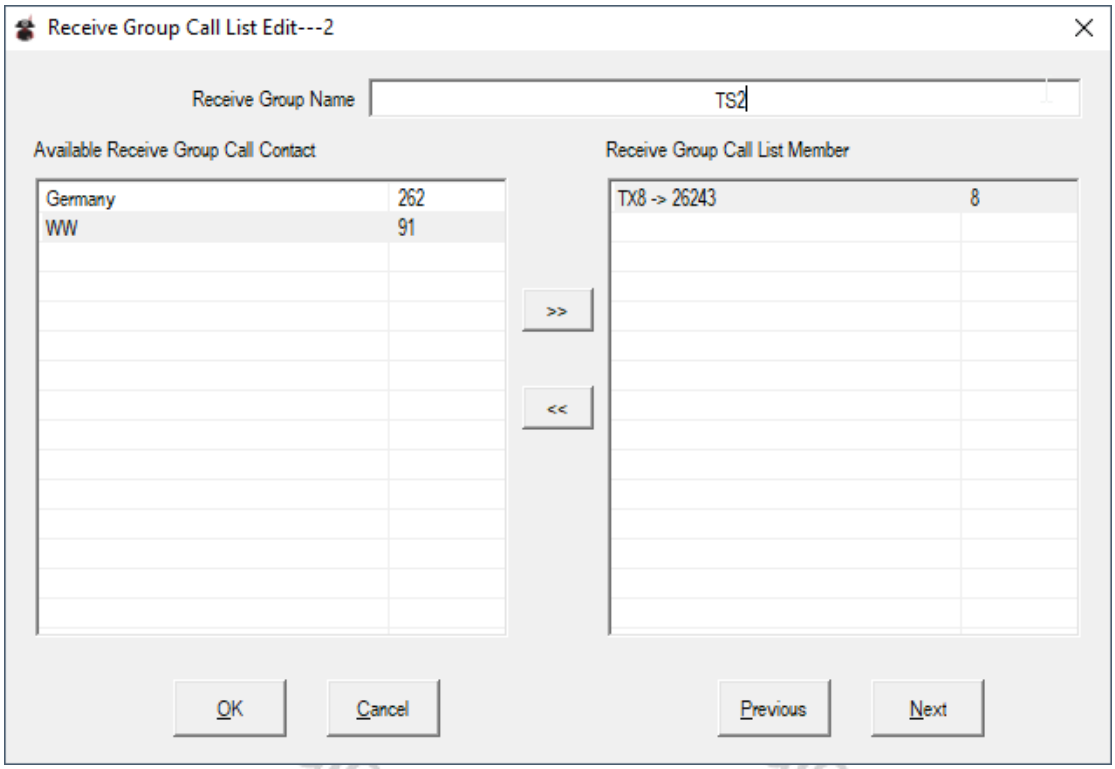
No.	TG/DMR ID	Call Alert	Name	Call Type
1	91	None	WW	Group Call
2	262	None	Germany	Group Call
3	8	None	TX8 -> 26243	Group Call
4	262997	None	Parrot	Private Call

Digital → Receive Group Call List:

No.	Group Name	Group Contacts	Contact
1	TS1	2	Germany|WW
2	TS2	1	TX8 -> 26243

Detailed views:

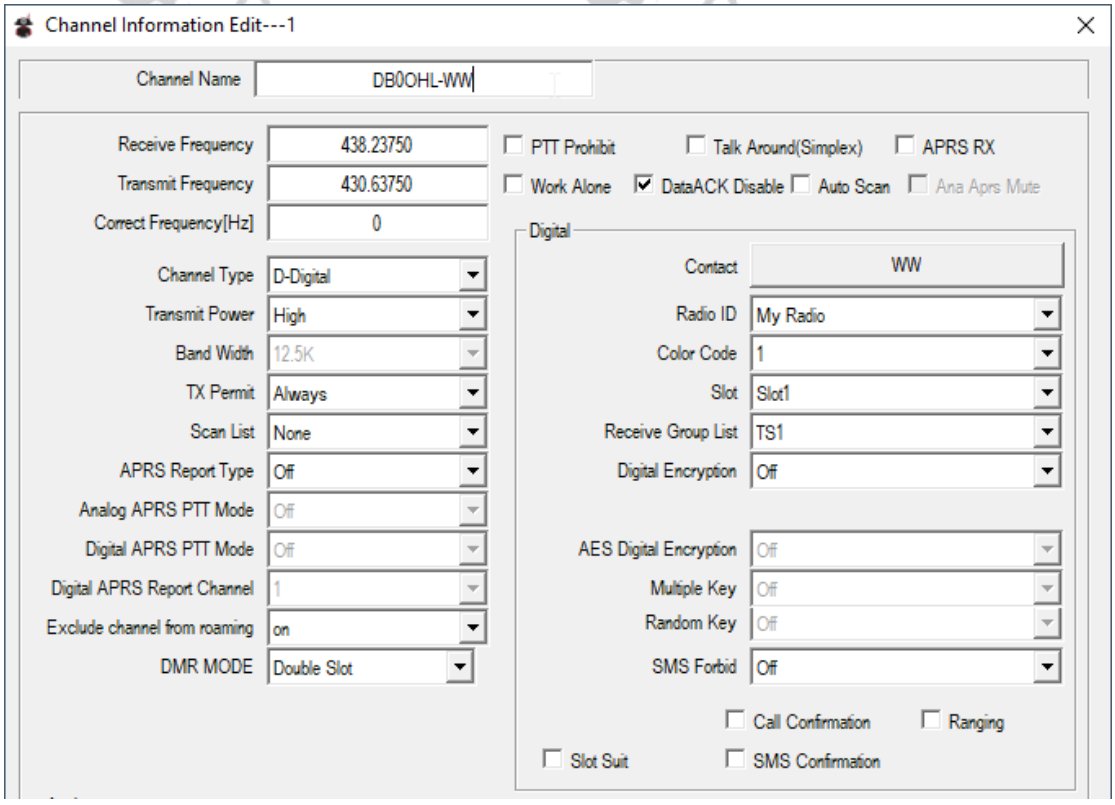


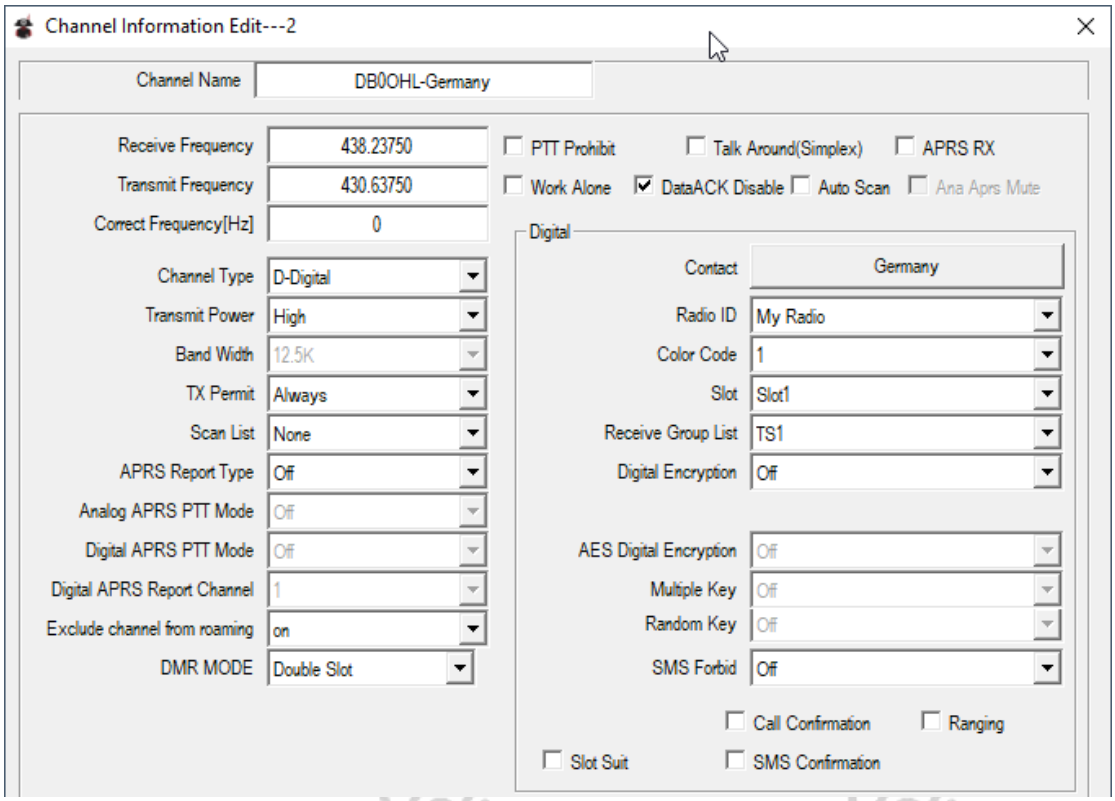


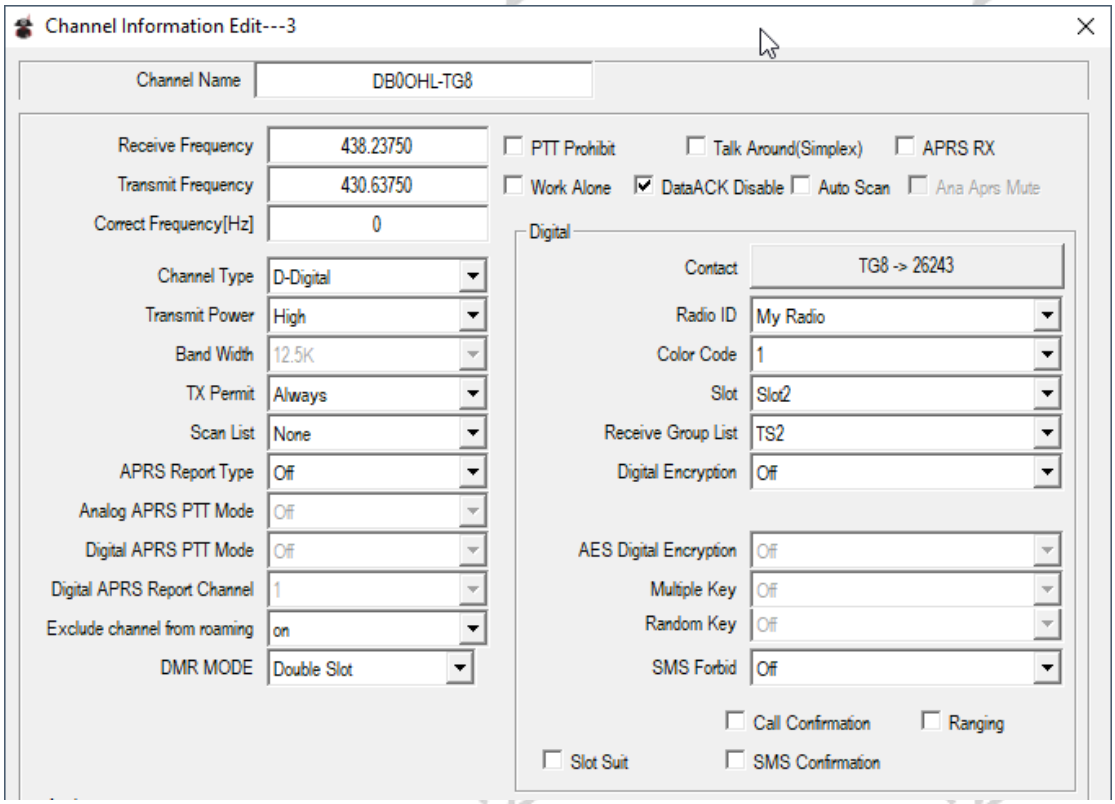
Common Setting → Channels:

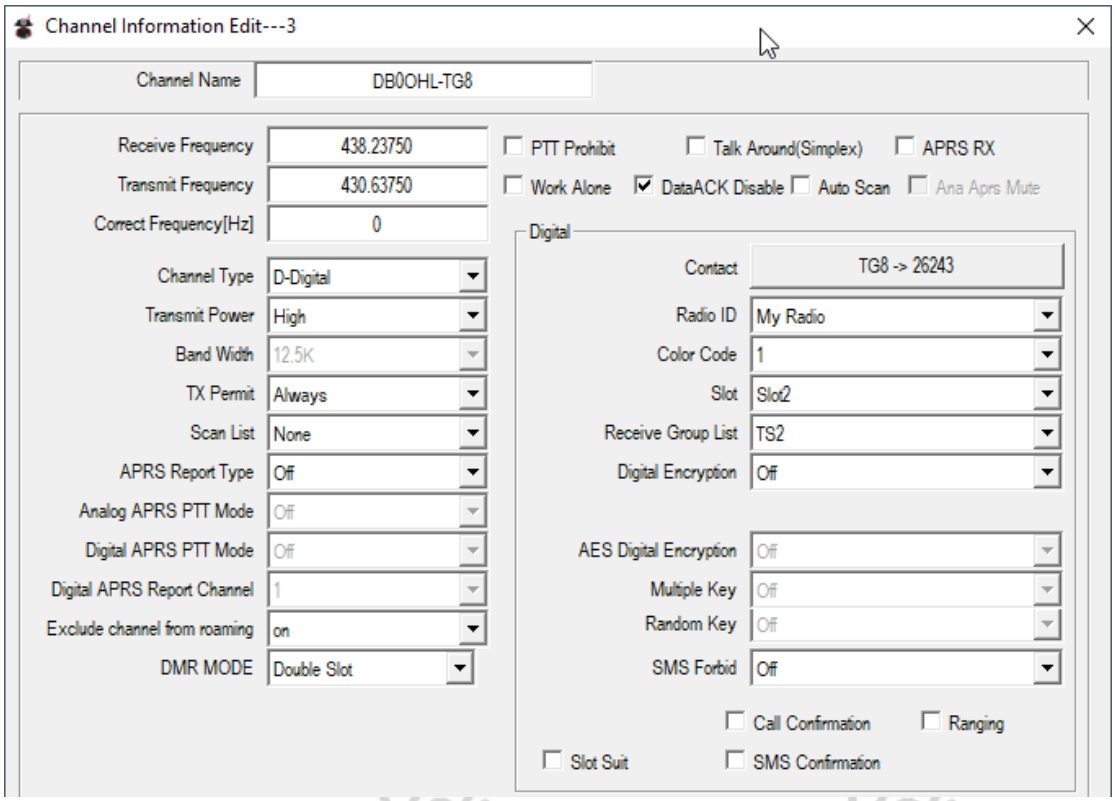
No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Band Width	CTCSS/DCS Decode	CTCSS/DCS Encode	Channel Name	Contact	Radio ID	Optional Signal
1	438.23750	430.63750	D-Digital	High	25K	Off	Off	DB0OHL-WW	WW	My Radio	Off
2	438.23750	430.63750	D-Digital	High	25K	Off	Off	DB0OHL-Germany	Germany	My Radio	Off
3	438.23750	430.63750	D-Digital	High	25K	Off	Off	DB0OHL-TG8	TG8 -> 26243	My Radio	Off
4	438.23750	430.63750	D-Digital	High	25K	Off	Off	DB0OHL-Parrot	Parrot	My Radio	Off

Detailed views (only the relevant digital settings are shown):




Channel Information Edit---2
Channel Name
DB0OHL-Germany
Receive Frequency
438.23750
Transmit Frequency
430.63750
Correct Frequency[Hz]
0
Channel Type
D-Digital
Transmit Power
High
Band Width
12.5K
TX Permit
Always
Scan List
None
APRS Report Type
Off
Analog APRS PTT Mode
Off
Digital APRS PTT Mode
Off
Digital APRS Report Channel
1
Exclude channel from roaming
on
DMR MODE
Double Slot
PTT Prohibit
Talk Around(Simplex)
APRS RX
Work Alone
DataACK Disable
Auto Scan
Ana Aprs Mute
Digital
Contact
Germany
Radio ID
My Radio
Color Code
1
Slot
Slot1
Receive Group List
TS1
Digital Encryption
Off
AES Digital Encryption
Off
Multiple Key
Off
Random Key
Off
SMS Forbid
Off
Call Confirmation
Ranging
Slot Suit
SMS Confirmation

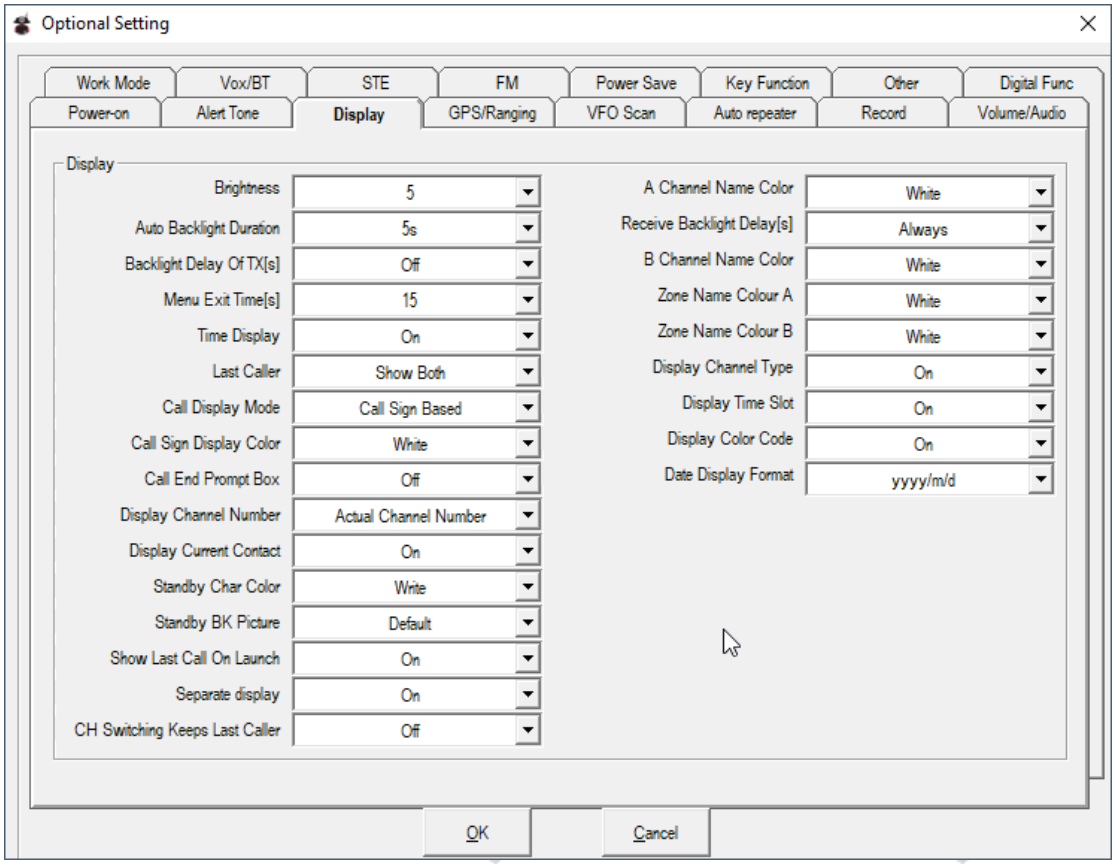

Channel Information Edit---3
Channel Name
DB0OHL-TG8
Receive Frequency
438.23750
Transmit Frequency
430.63750
Correct Frequency[Hz]
0
Channel Type
D-Digital
Transmit Power
High
Band Width
12.5K
TX Permit
Always
Scan List
None
APRS Report Type
Off
Analog APRS PTT Mode
Off
Digital APRS PTT Mode
Off
Digital APRS Report Channel
1
Exclude channel from roaming
on
DMR MODE
Double Slot
PTT Prohibit
Talk Around(Simplex)
APRS RX
Work Alone
DataACK Disable
Auto Scan
Ana Aprs Mute
Digital
Contact
TG8 -> 26243
Radio ID
My Radio
Color Code
1
Slot
Slot2
Receive Group List
TS2
Digital Encryption
Off
AES Digital Encryption
Off
Multiple Key
Off
Random Key
Off
SMS Forbid
Off
Call Confirmation
Ranging
Slot Suit
SMS Confirmation



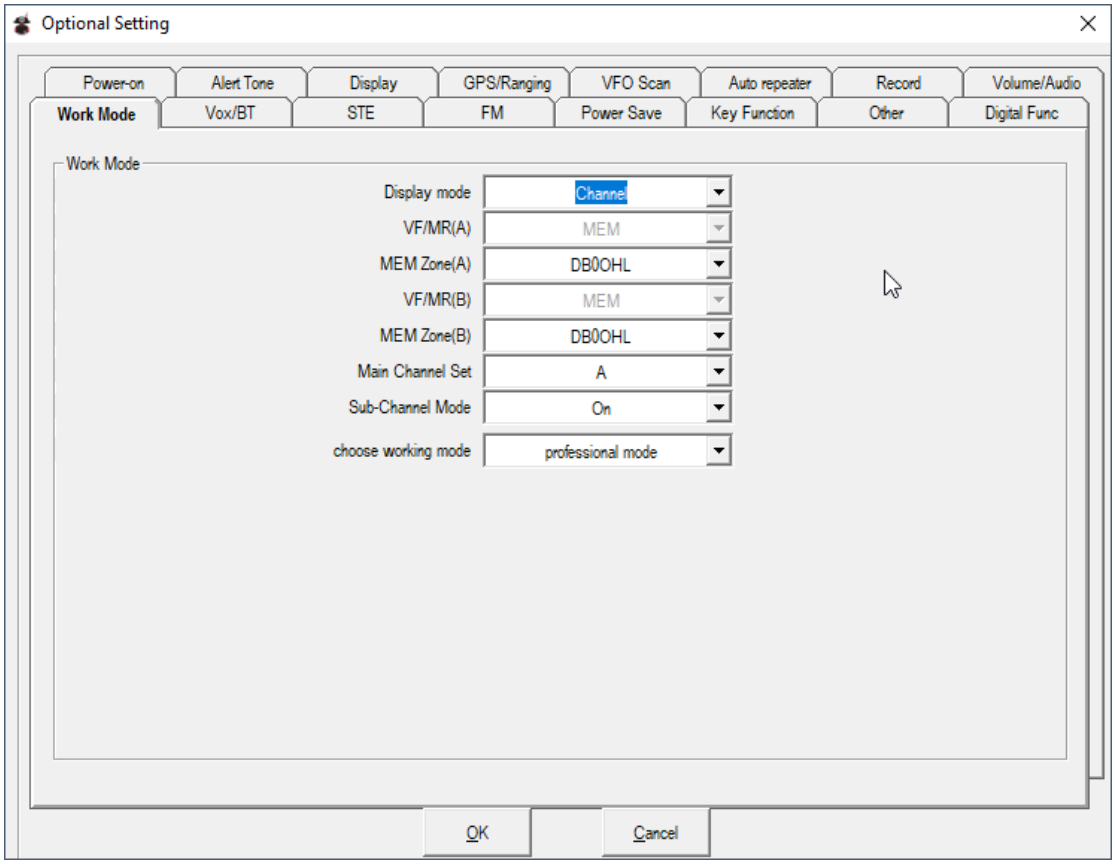
Common Setting → Zone:

No.	Name	Zone Channels	A Channel	B Channel
1	DB0OHL Gelsenk.	3	DB0OHL-WW	DB0OHL-WW

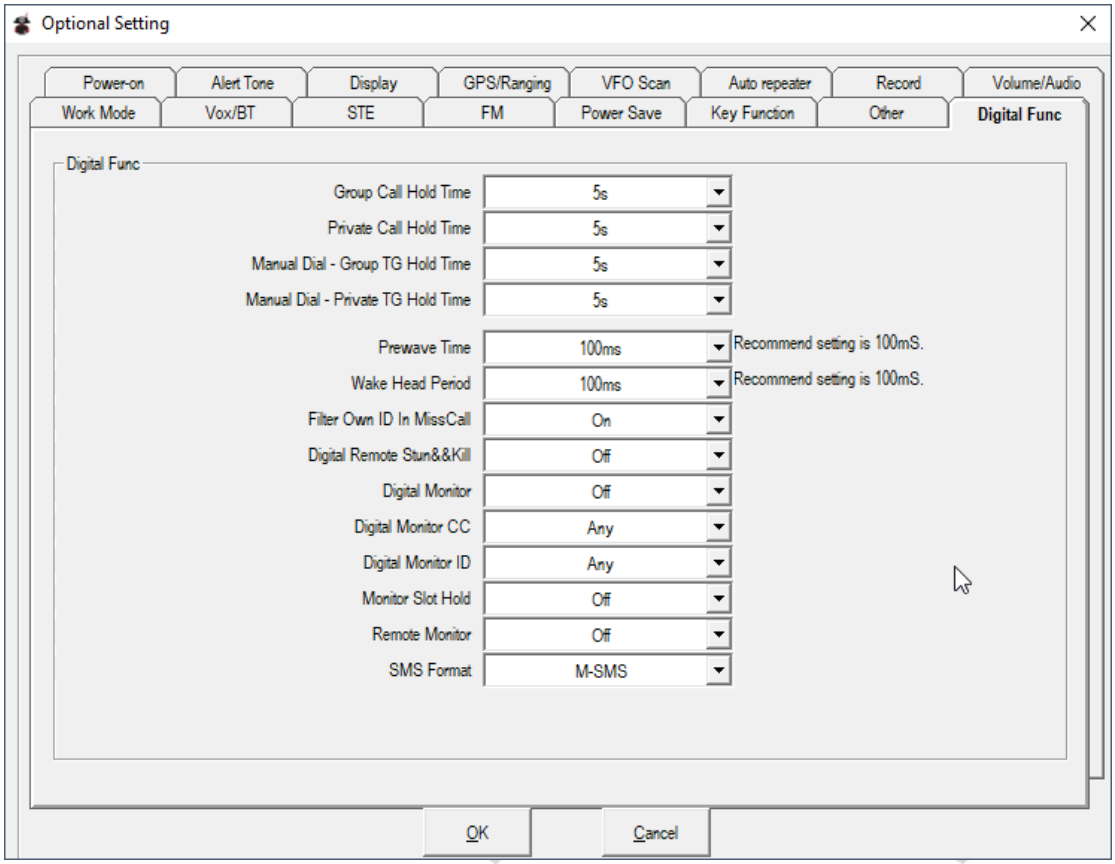
Common Setting → Optional Setting → Display



Common Setting → Optional Setting → Work Mode



Common Setting → Optional Setting → Digital Func



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8.5. Sample codeplug for Radioddity DB-25D

The following screenshots have all been taken using DB-25D CPS V3.3.

Basic Parameters:

Basic Parameter

Radio Name	My Radio	Radio ID.	1234567	☐ Rolling code
Language	English	Backlight ON/OFF	On	
TOT	120S	Keylock	Off	
Busy Channel Lockout	Off	Roaming	Off	
VOX	Off	Roaming Mode	Manual	
VOX Sensitivity	1	Rssi Set	-90dBm	
Power-saving	On	Connect Check Timer	10S	
Power Saving Ratio	1:1	Repeater Check Timer	10S	
Save power startup time	10S	Connect Timer	1	
Scan Mode	SE	Record Set	Off	
End-tone types	55Hz			
Squelch(A) Level	5			
Squelch(B) Level	5			

DMR Service:

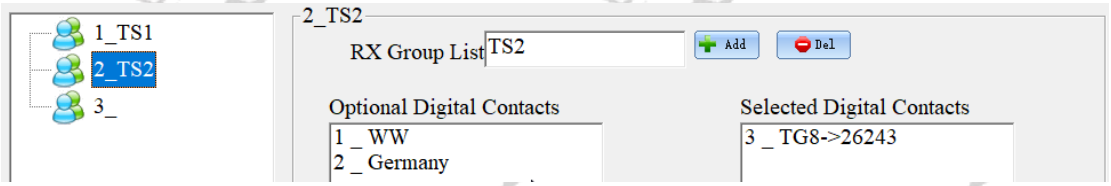
DMR service

Remote monitor duration	10S	GPS	On
Remote Monitor Decode	Off	GPS Interval	1Min
Remote Kill Decode	Off	GPS Channel	Current Channel Se
Radio Detection Decode	Off	Mandown	On
Radio Revive Decode	Off	Mandown Interval	255min
Call Alert	Off	Mandown Angle	90°
Group call hang time	7000ms	Mandown Alarm Duration	255s
Private call hang time	7000ms	Inactive time	1min
Import Delay	200ms	Pre-alarm Time	1s
DTMF Duration (On-time)	60ms	Response transmission interrupt	On
DTMF Interval (Off time)	60ms	Scrambling frequency	3600Hz
DTMF Volume (Local)	7	Keylock Password ON/OFF	On
DTMF ON/OFF ☐	1234	Keypad Password	

Contacts→ Contact List:

Serial No	Contact name	Contact ID	Call Type
1	WW	91	Group Call
2	Germany	262	Group Call
3	TG8->26243	8	Group Call
4	Parrot	262997	Private call

RX Group → RX Group list:



Zone [Channel]:

Zone	Zone Name
1	DB0OHL

Zone [Channel] → DB0OHL:

Z-1	CH mode	CH Name	RX Freq	TX Freq	Power	RX Only	Alarm ACK	Prompt	PCT	RX TS	TX TS	RX CC	TX CC	Msg Type	TX Policy	RX Group	Encryption List	Scan List	Contacts	EAS	Bandwidth	RX QT/DQT	TX QT/DQT	APRS
1	Digital	OHL-WW	438.23750	430.63750	High	Off	Off	Off	Patcs	Slot 1	Slot 1	1	1	Unconfirmed Data	Impolite	TS1	Off	Off	WW	Off	12.5	Off	Off	Off
2	Digital	OHL-DE	438.23750	430.63750	High	Off	Off	Off	Patcs	Slot 1	Slot 1	1	1	Unconfirmed Data	Impolite	TS1	Off	Off	Germany	Off	12.5	Off	Off	Off
3	Digital	OHL-TG8	438.23750	430.63750	High	Off	Off	Off	Patcs	Slot 2	Slot 2	1	1	Unconfirmed Data	Impolite	TS2	Off	Off	TG8->26243	Off	12.5	Off	Off	Off
4	Digital	OHL-Parrot	438.23750	430.63750	High	Off	Off	Off	Patcs	Slot 2	Slot 2	1	1	Unconfirmed Data	Impolite	TS2	Off	Off	Parrot	Off	12.5	Off	Off	Off

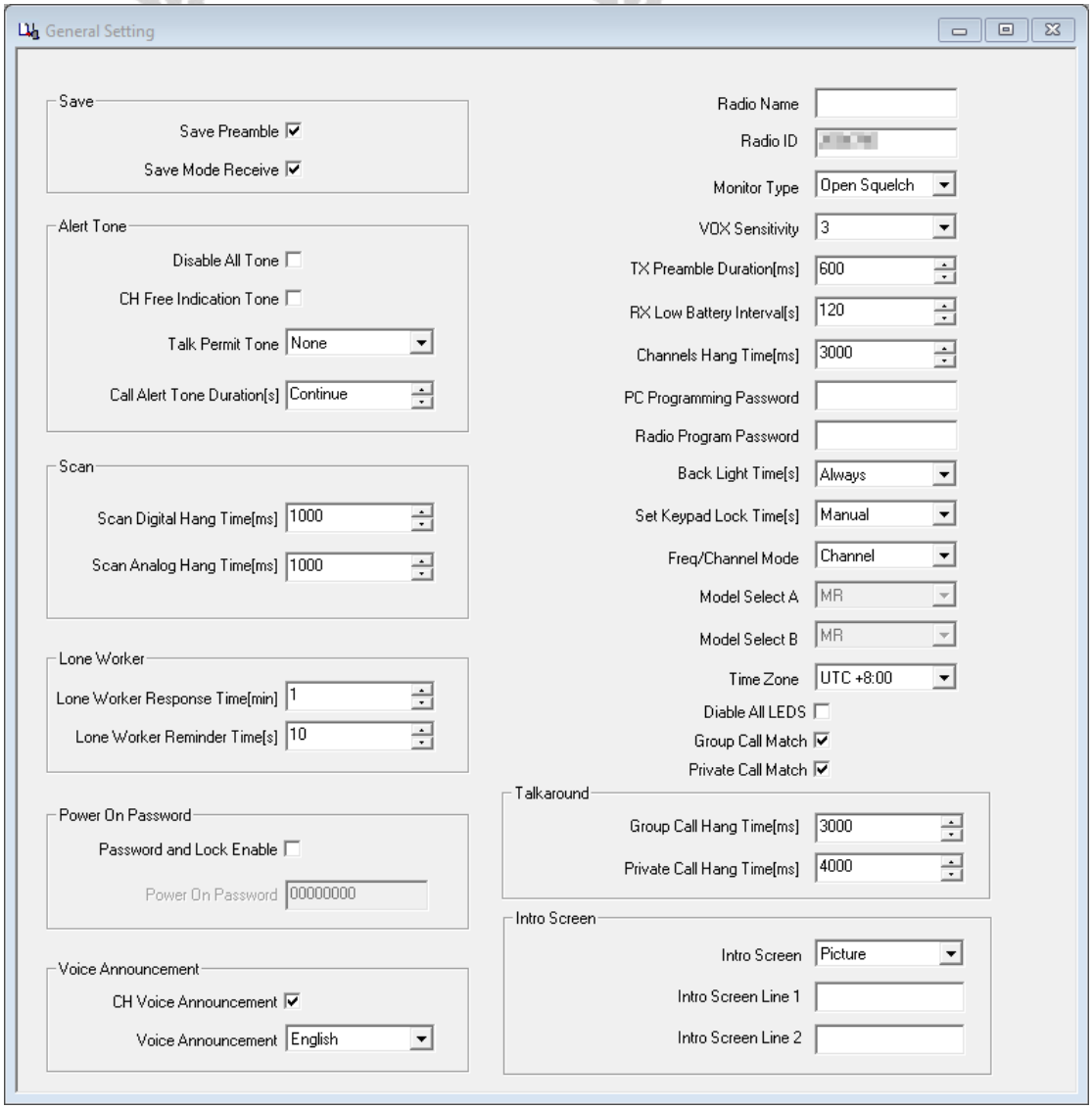
Extract with the most important ones (for better readablility):

Z-1	CH mode	CH Name	RX Freq	TX Freq	Power	RX Only	PCT	RX TS	TX TS	RX CC	TX CC	Msg Type	TX Policy	RX Group	Contacts	APRS
1	Digital	OHL-WW	438.23750	430.63750	High	Off	Patcs	Slot 1	Slot 1	1	1	Unconfirmed Data	Impolite	TS1	WW	Off
2	Digital	OHL-DE	438.23750	430.63750	High	Off	Patcs	Slot 1	Slot 1	1	1	Unconfirmed Data	Impolite	TS1	Germany	Off
3	Digital	OHL-TG8	438.23750	430.63750	High	Off	Patcs	Slot 2	Slot 2	1	1	Unconfirmed Data	Impolite	TS2	TG8->26243	Off
4	Digital	OHL-Parrot	438.23750	430.63750	High	Off	Patcs	Slot 2	Slot 2	1	1	Unconfirmed Data	Impolite	TS2	Parrot	Off

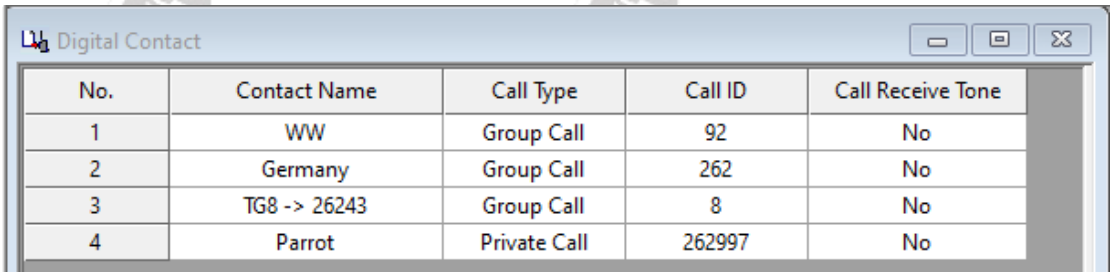
8.6. Sample codeplug for Baofeng DM-1701

The following screenshots have all been taken using DM-1701 CPS V1.05.

General Settings:

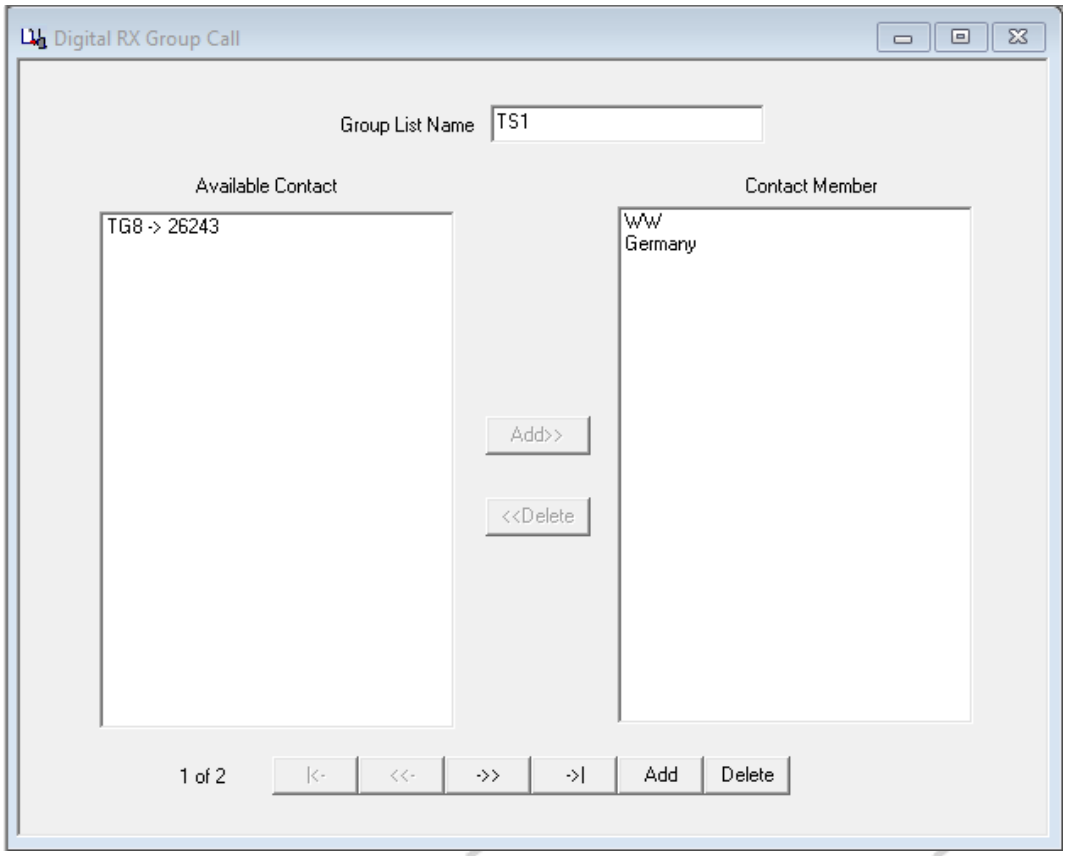


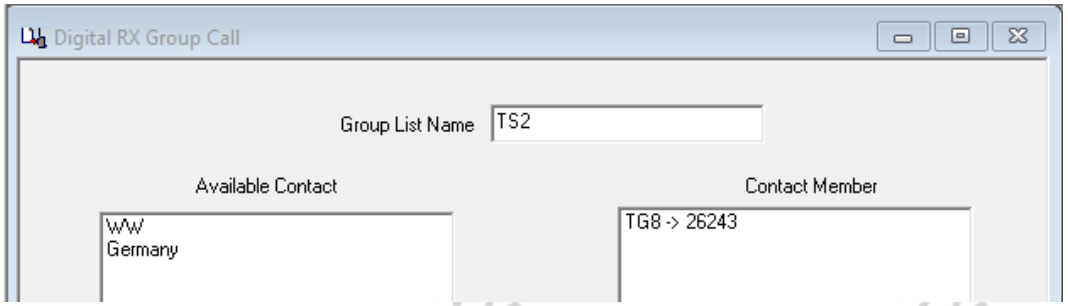
Digital Contacts:



No.	Contact Name	Call Type	Call ID	Call Receive Tone
1	WW	Group Call	92	No
2	Germany	Group Call	262	No
3	TG8 -> 26243	Group Call	8	No
4	Parrot	Private Call	262997	No

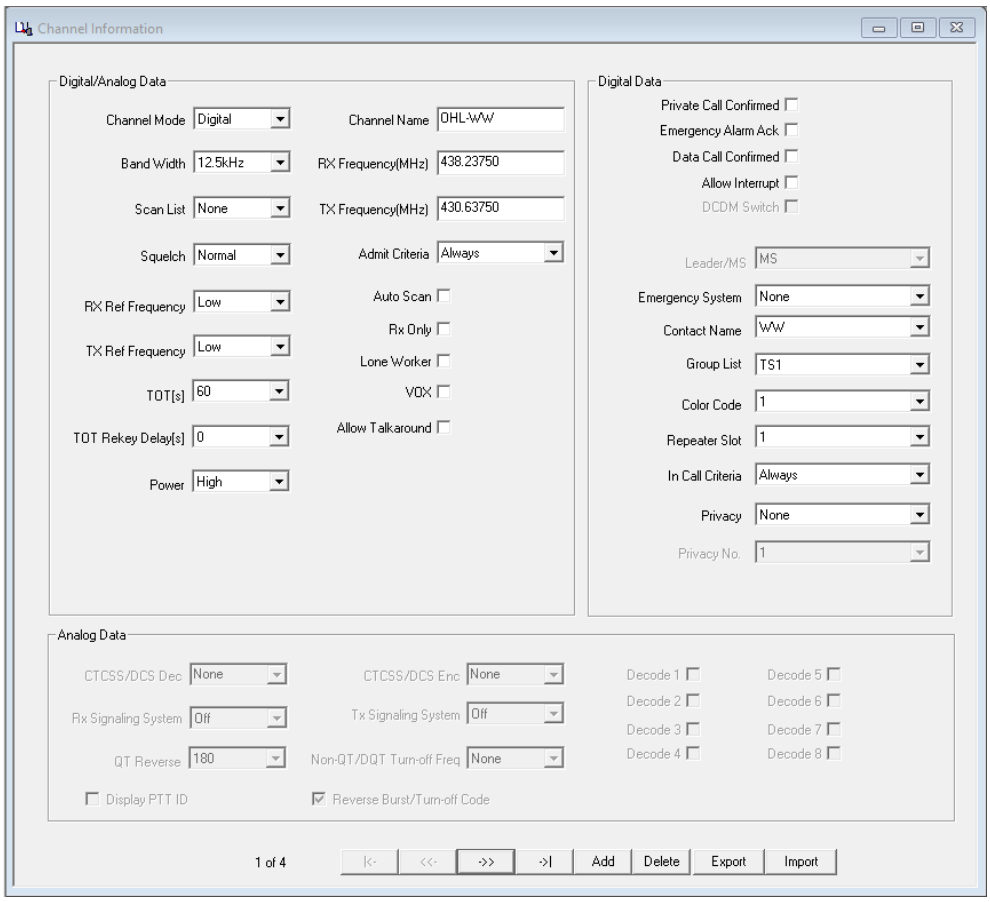
Digital RX Groups:

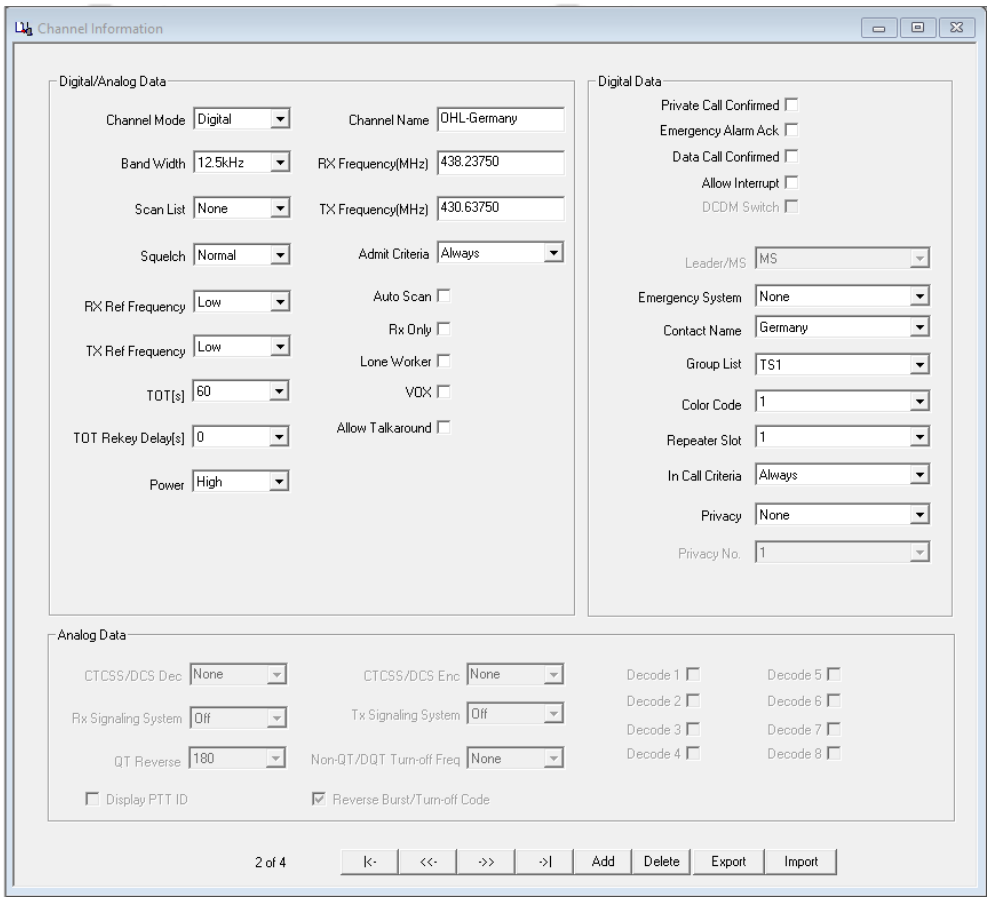


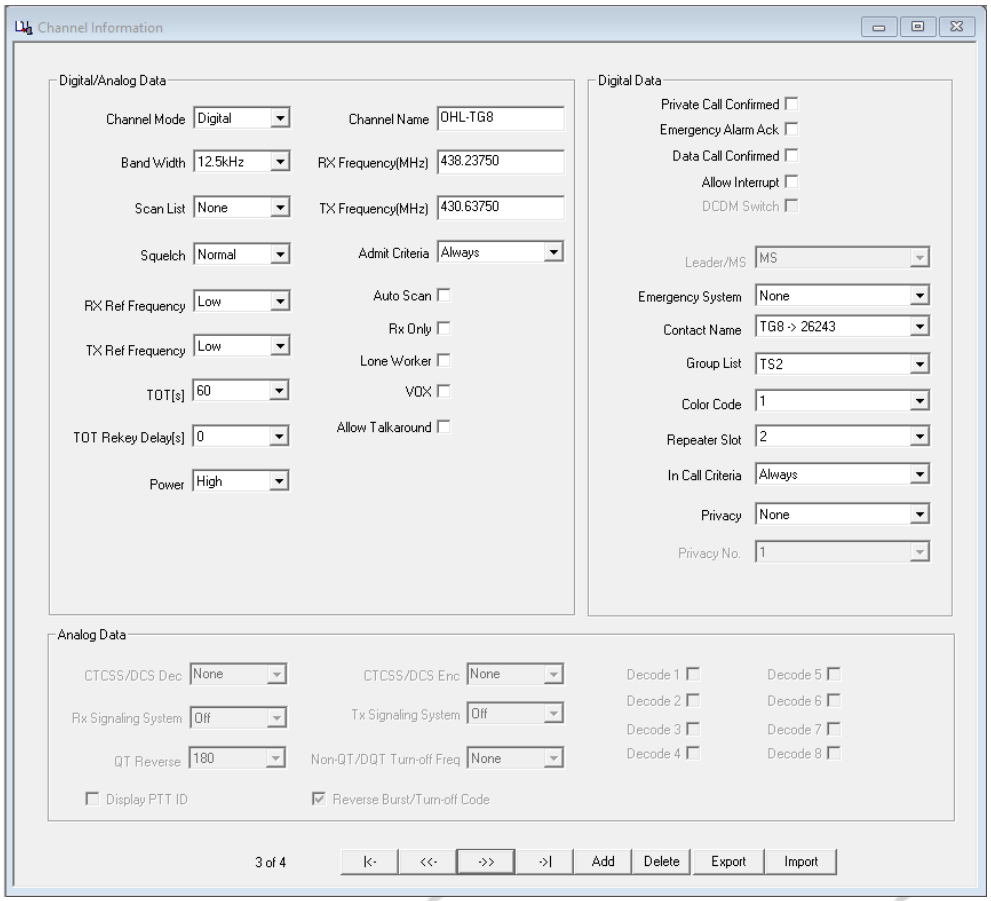


Radioddity Radioddity

Channels:


Channel Information
Digital/Analog Data
Channel Mode Digital
Channel Name OHL-WW
Band Width 12.5kHz
RX Frequency(MHz) 438.23750
Scan List None
TX Frequency(MHz) 430.63750
Squelch Normal
Admit Criteria Always
RX Ref Frequency Low
Auto Scan
TX Ref Frequency Low
Rx Only
Lone Worker
TOT[s] 60
VOX
TOT Rekey Delay[s] 0
Allow Talkaround
Power High
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name WW
Group List TS1
Color Code 1
Repeater Slot 1
In Call Criteria Always
Privacy None
Privacy No. 1
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Decode 1
Decode 5
Rx Signaling System Off
Tx Signaling System Off
Decode 2
Decode 6
QT Reverse 180
Non-QT/DQT Turn-off Freq None
Decode 3
Decode 7
Decode 4
Decode 8
Display PTT ID
Reverse Burst/Turn-off Code
1 of 4
|<-
<<-
->>
->|
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Channel Name OHL-Germany
Band Width 12.5kHz
RX Frequency(MHz) 438.23750
Scan List None
TX Frequency(MHz) 430.63750
Squelch Normal
Admit Criteria Always
RX Ref Frequency Low
Auto Scan
TX Ref Frequency Low
Rx Only
Lone Worker
TOT[s] 60
VOX
TOT Rekey Delay[s] 0
Allow Talkaround
Power High
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name Germany
Group List TS1
Color Code 1
Repeater Slot 1
In Call Criteria Always
Privacy None
Privacy No. 1
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Decode 1
Decode 5
Rx Signaling System Off
Tx Signaling System Off
Decode 2
Decode 6
QT Reverse 180
Non-QT/DQT Turn-off Freq None
Decode 3
Decode 7
Decode 4
Decode 8
Display PTT ID
Reverse Burst/Turn-off Code
2 of 4
|<-
<<-
->>
->|
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch Normal
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 60
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-TG8
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name TG8 -> 26243
Group List TS2
Color Code 1
Repeater Slot 2
In Call Criteria Always
Privacy None
Privacy No. 1
Analog Data
CTCSS/DCS Dec None
Rx Signaling System Off
QT Reverse 180
Display PTT ID
CTCSS/DCS Enc None
Tx Signaling System Off
Non-QT/DQT Turn-off Freq None
Reverse Burst/Turn-off Code
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
3 of 4
|<-
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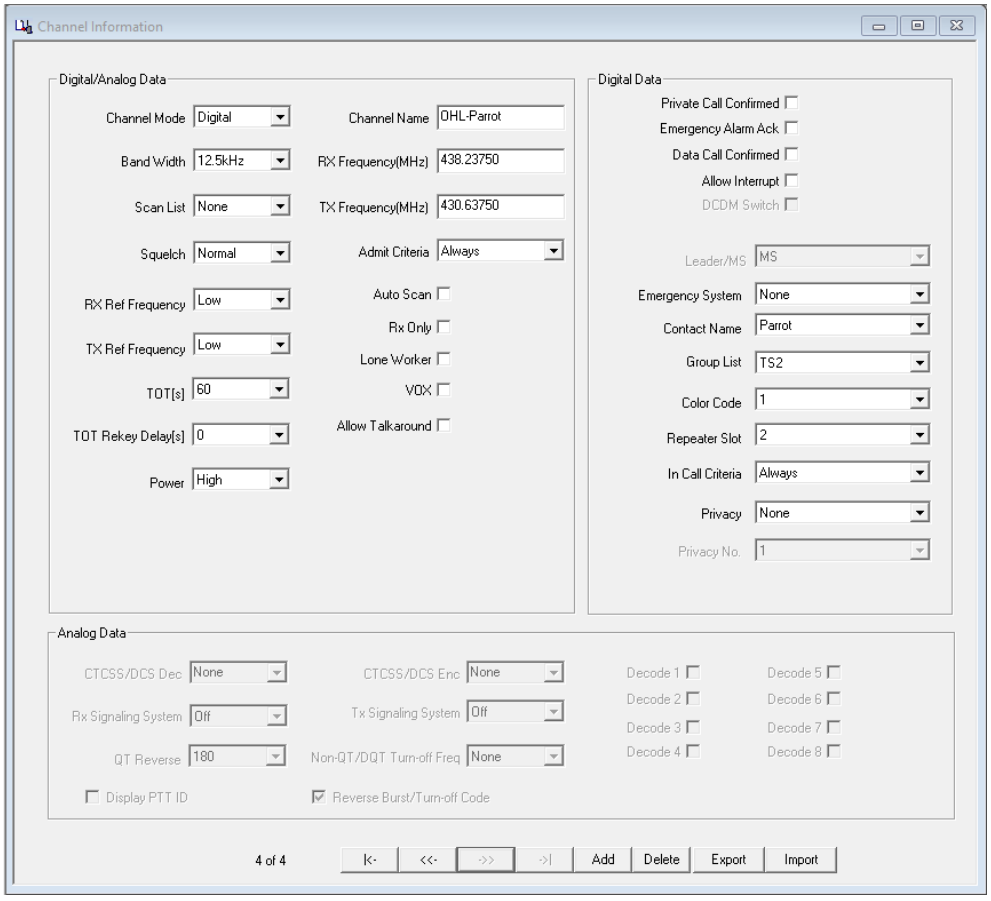
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch Normal
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 60
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-Parrot
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name Parrot
Group List TS2
Color Code 1
Repeater Slot 2
In Call Criteria Always
Privacy None
Privacy No. 1
Analog Data
CTCSS/DCS Dec None
Rx Signaling System Off
QT Reverse 180
Display PTT ID
CTCSS/DCS Enc None
Tx Signaling System Off
Non-QT/DQT Turn-off Freq None
Reverse Burst/Turn-off Code
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
4 of 4
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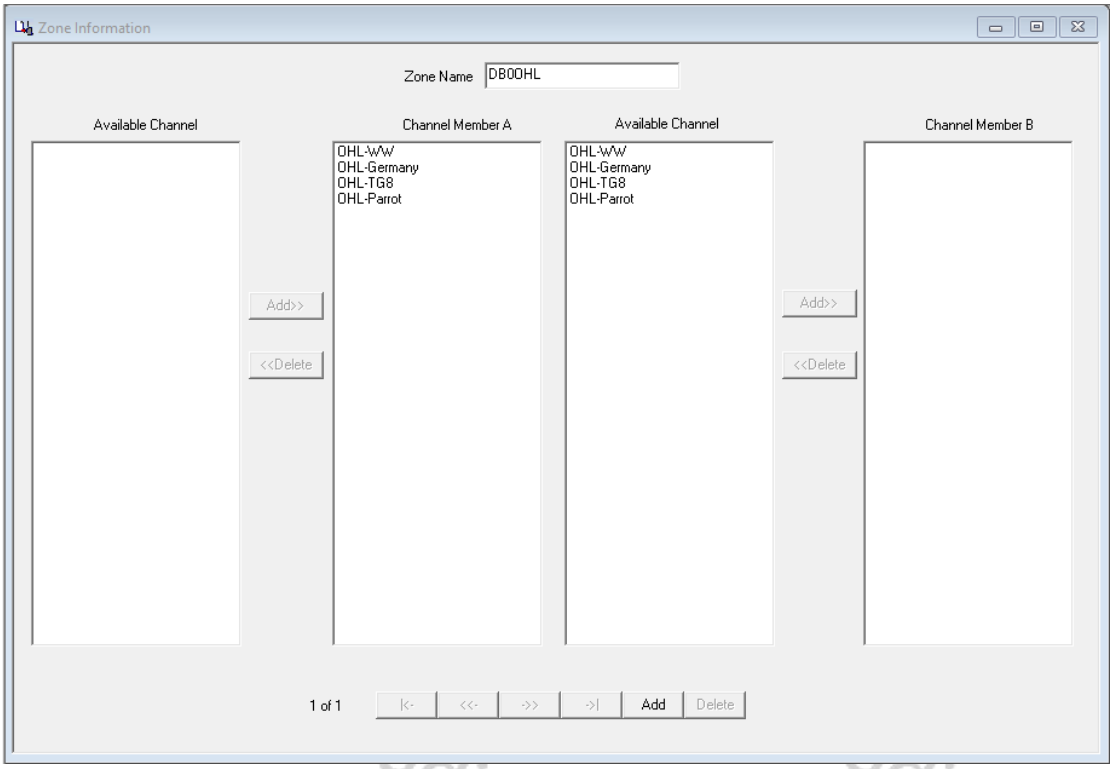
->|
Add
Delete
Export
Import

Zone:



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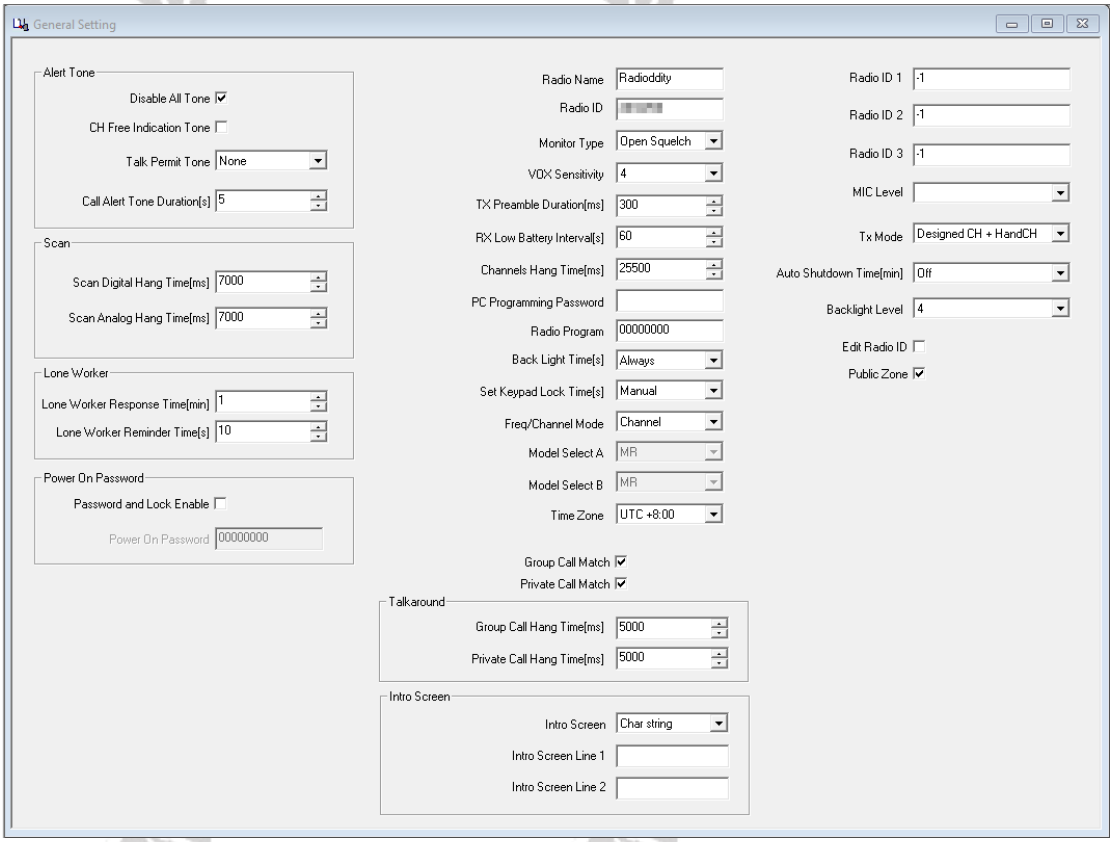
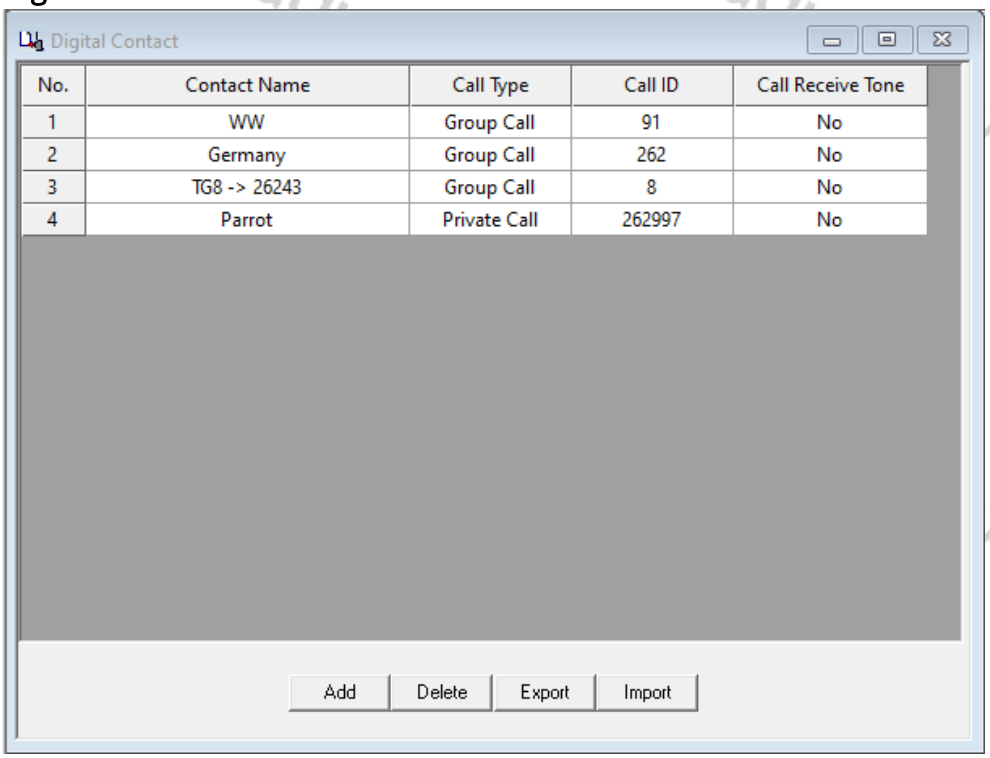
8.7. Sample codeplug for TYT MD-9600

The following screenshots have all been taken using MD-9600 CPS V.27.

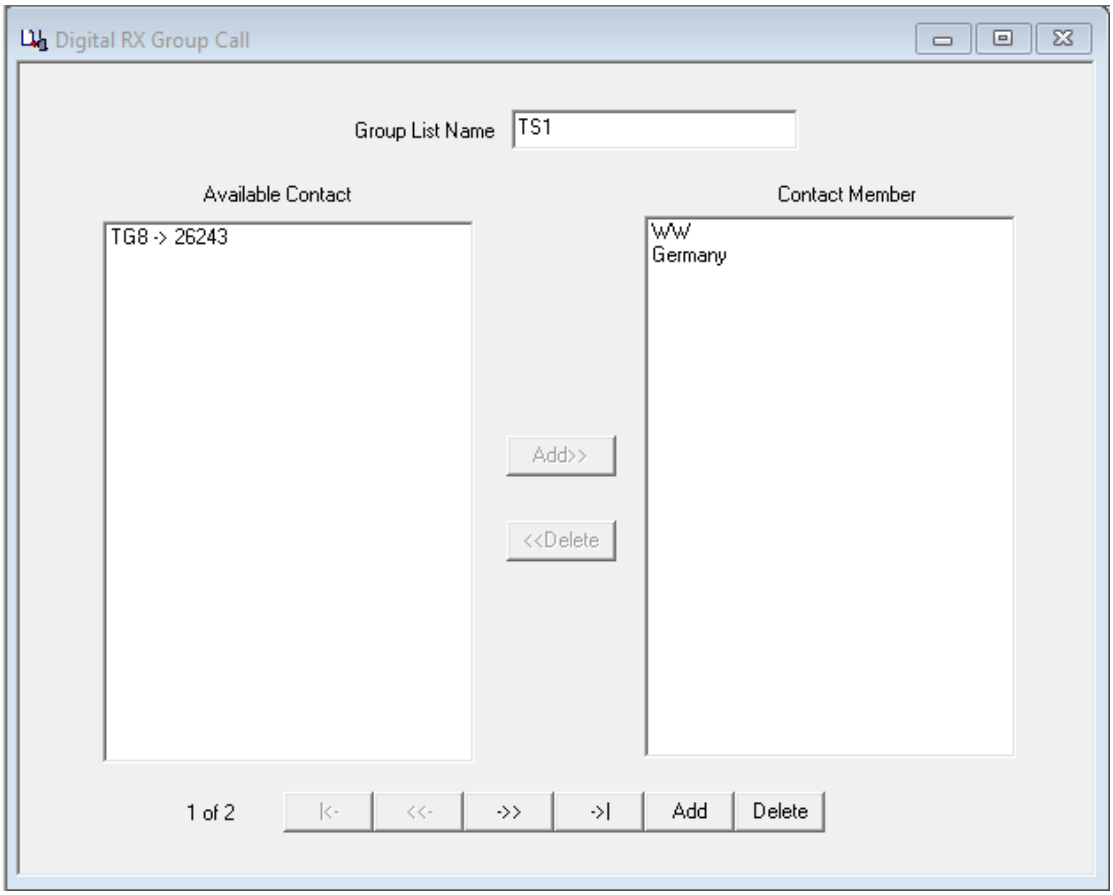
General Settings:

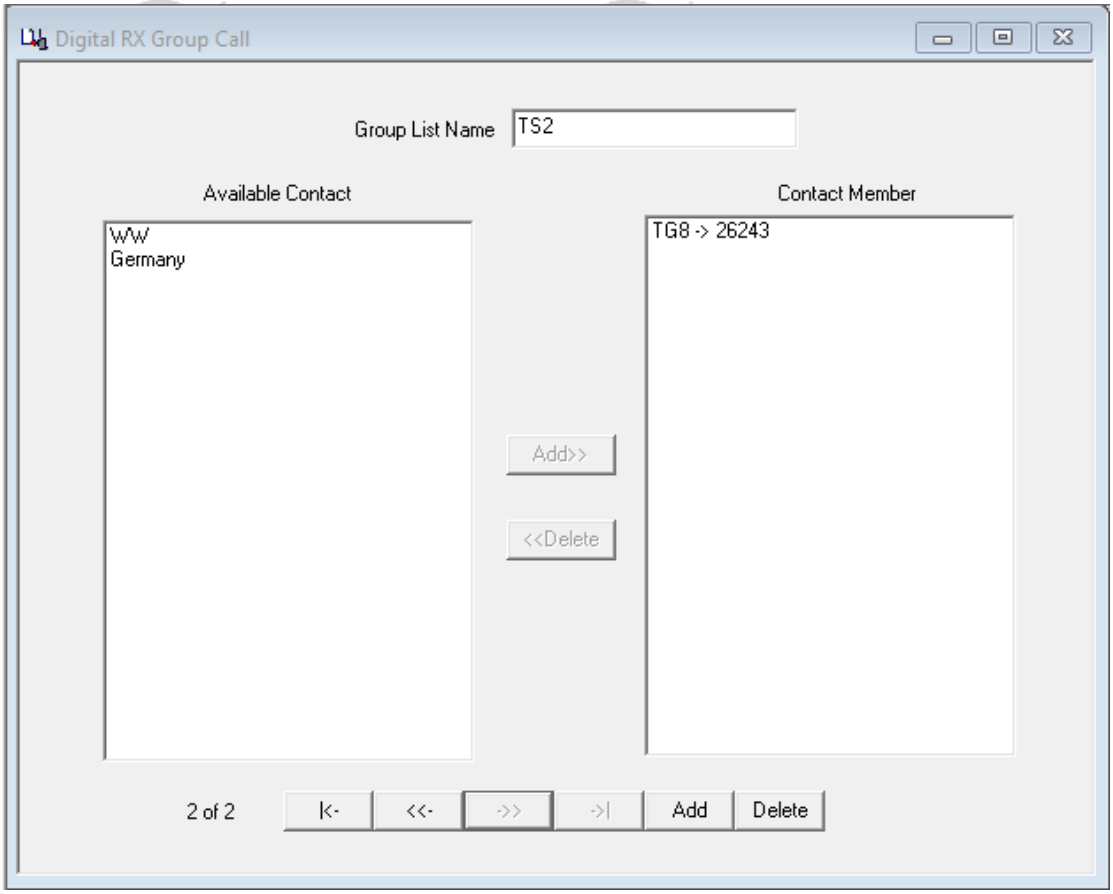


Digital Contacts:

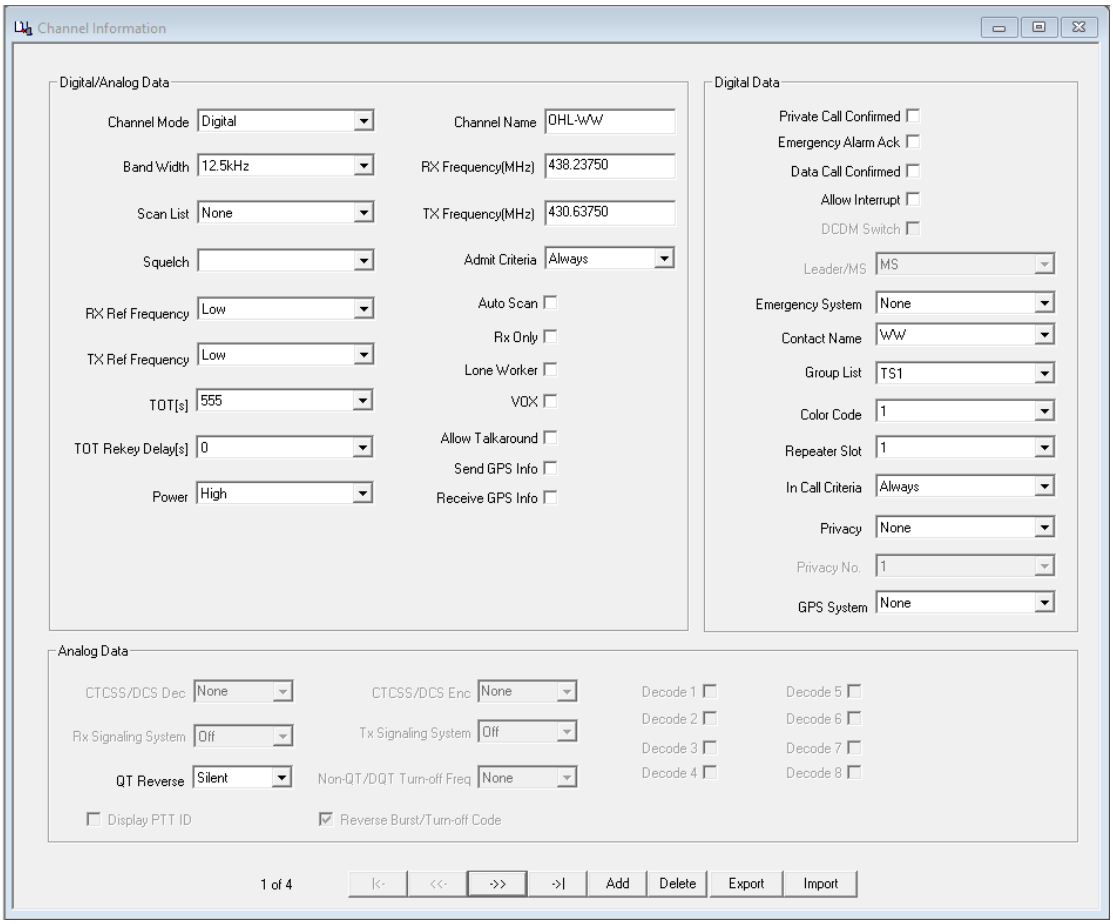


Digital RX Groups:





Channels:


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 555
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-WW
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Send GPS Info
Receive GPS Info
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name WW
Group List TS1
Color Code 1
Repeater Slot 1
In Call Criteria Always
Privacy None
Privacy No. 1
GPS System None
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Rx Signaling System Off
Tx Signaling System Off
QT Reverse Silent
Non-QT/DQT Turn-off Freq None
Display PTT ID
Reverse Burst/Turn-off Code
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
1 of 4
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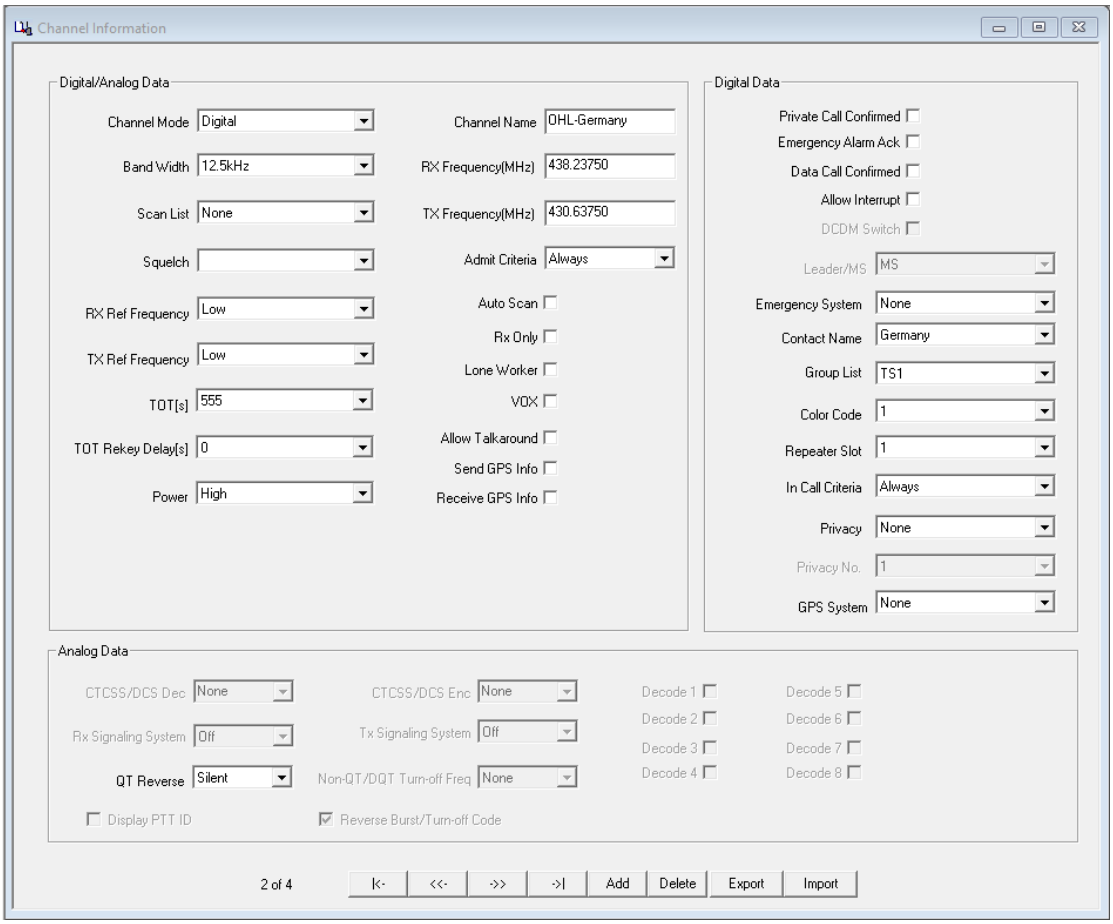
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 555
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-Germany
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Send GPS Info
Receive GPS Info
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name Germany
Group List TS1
Color Code 1
Repeater Slot 1
In Call Criteria Always
Privacy None
Privacy No. 1
GPS System None
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Rx Signaling System Off
Tx Signaling System Off
QT Reverse Silent
Non-QT/DQT Turn-off Freq None
Display PTT ID
Reverse Burst/Turn-off Code
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
2 of 4
|<-
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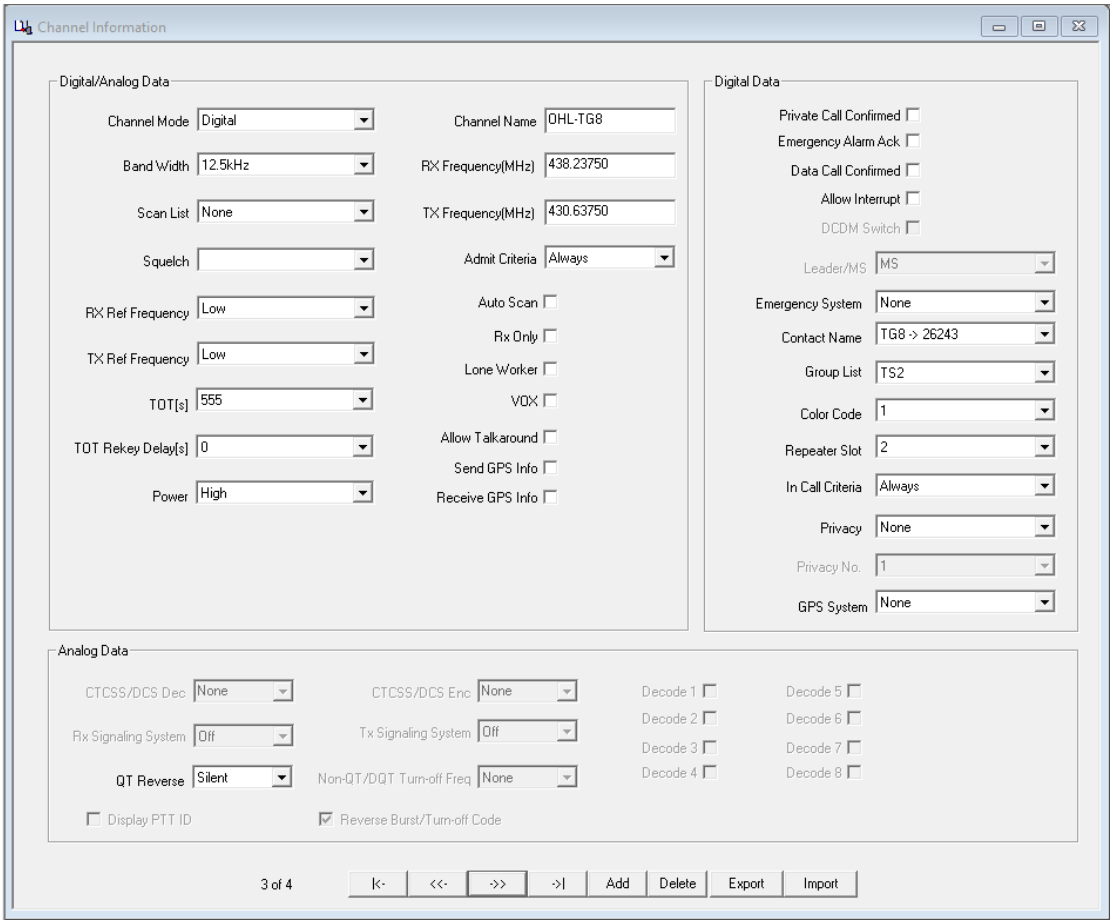
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 555
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-TG8
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Send GPS Info
Receive GPS Info
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name TG8 -> 26243
Group List TS2
Color Code 1
Repeater Slot 2
In Call Criteria Always
Privacy None
Privacy No. 1
GPS System None
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Rx Signaling System Off
Tx Signaling System Off
QT Reverse Silent
Non-QT/DQT Turn-off Freq None
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
Display PTT ID
Reverse Burst/Turn-off Code
3 of 4
|<-
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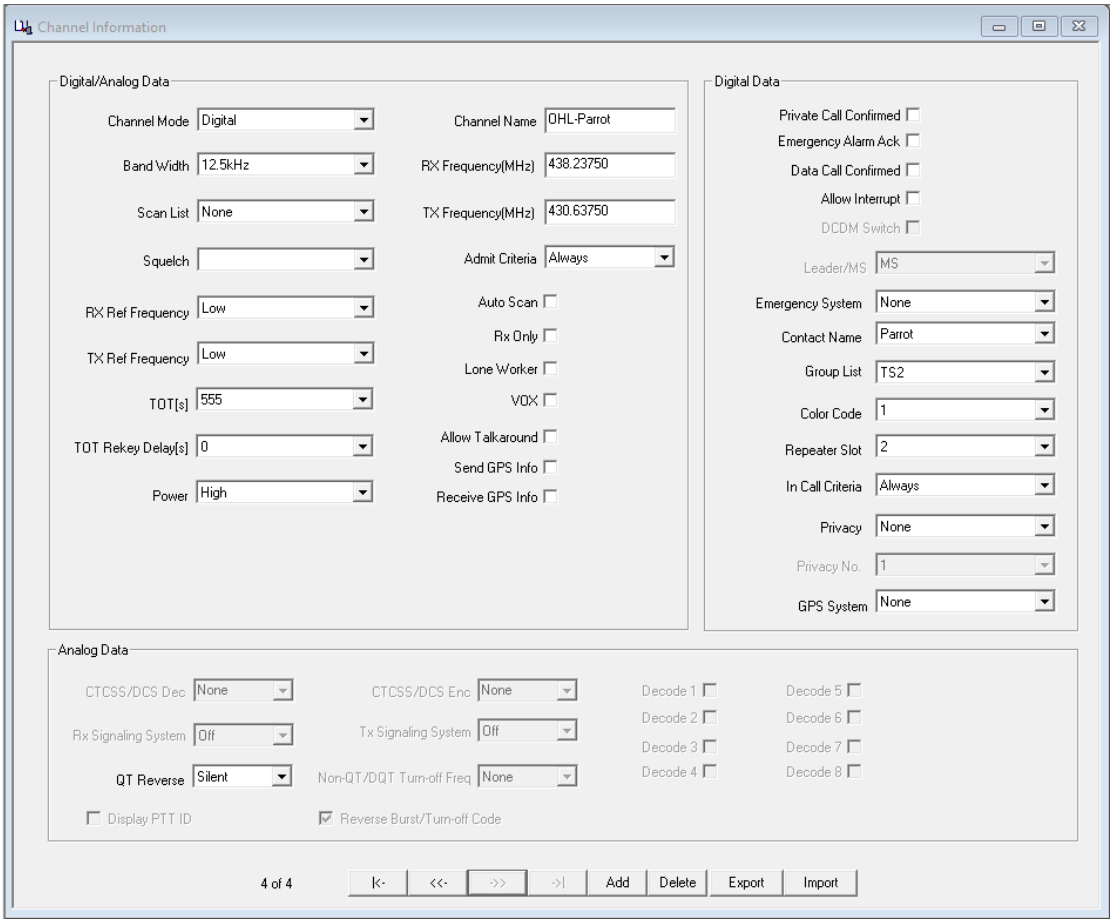
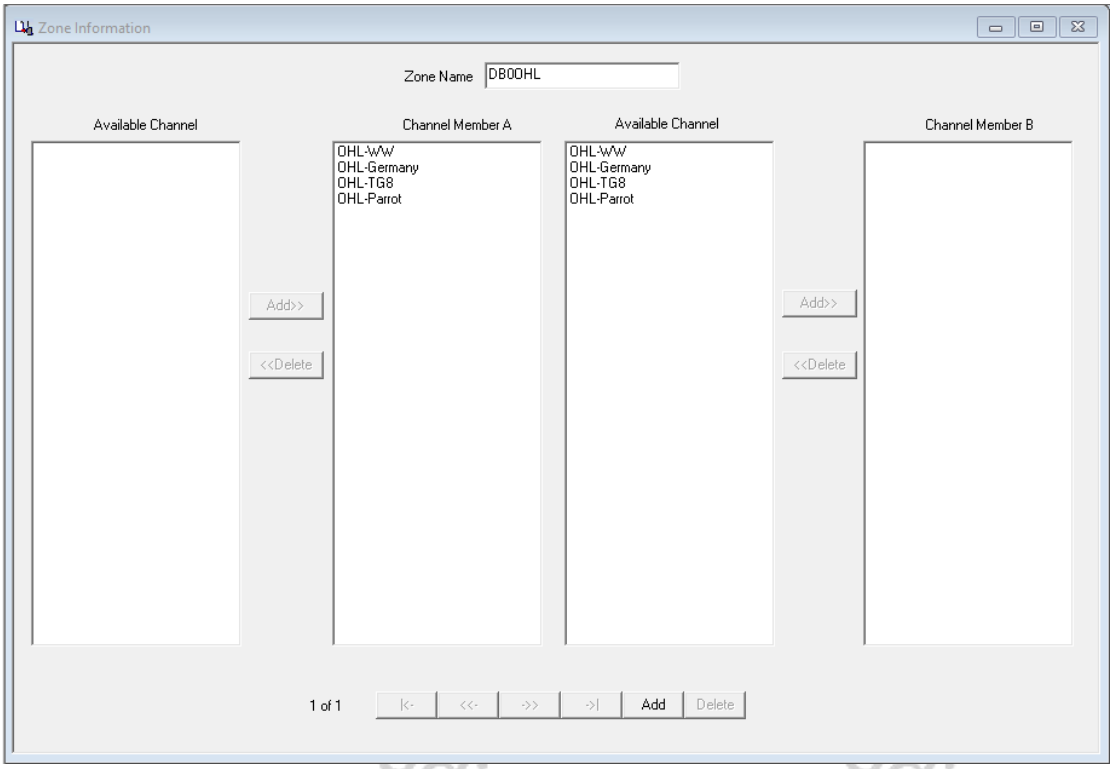
Add
Delete
Export
Import


Channel Information
Digital/Analog Data
Channel Mode Digital
Band Width 12.5kHz
Scan List None
Squelch
RX Ref Frequency Low
TX Ref Frequency Low
TOT[s] 555
TOT Rekey Delay[s] 0
Power High
Channel Name OHL-Parrot
RX Frequency(MHz) 438.23750
TX Frequency(MHz) 430.63750
Admit Criteria Always
Auto Scan
Rx Only
Lone Worker
VOX
Allow Talkaround
Send GPS Info
Receive GPS Info
Digital Data
Private Call Confirmed
Emergency Alarm Ack
Data Call Confirmed
Allow Interrupt
DCDM Switch
Leader/MS MS
Emergency System None
Contact Name Parrot
Group List TS2
Color Code 1
Repeater Slot 2
In Call Criteria Always
Privacy None
Privacy No. 1
GPS System None
Analog Data
CTCSS/DCS Dec None
CTCSS/DCS Enc None
Rx Signaling System Off
Tx Signaling System Off
QT Reverse Silent
Non-QT/DQT Turn-off Freq None
Decode 1
Decode 2
Decode 3
Decode 4
Decode 5
Decode 6
Decode 7
Decode 8
Display PTT ID
Reverse Burst/Turn-off Code
4 of 4
|<-
<<-
->>
->|
Add
Delete
Export
Import

Zone:



Radioddity

9. Revision history of this document

We are constantly trying to update our manuals according to changes resulting of new firmware versions. If you miss any aspect in this document or believe that something has been described incorrectly or in a misleading way, please feel free to give us feedback at support@radioddity.com. We will try our best to make the next version of this document of even more added value for you.

revision	Changes	released
V1.0	Initial version	2021-04-26
V2.0	Addition of details for Radioddity GD-AT10G and Radioddity DB-25D plus some minor corrections	2022-01-01

Thank you for your purchase from Radioddity!

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