



Getting 'on air' in DMR-mode with your new DMR radio

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Table of Contents

Table of Contents	2
About Radioddity	4
1 Disclaimer	5
2 Make yourself familiar with DMR	5
3 Apply for and receive your DMR ID	6
4 Gather information about a DMR station	6
5 Install any USB-driver that might be required	10
6 Install CPS according to your DMR-capable radio	11
7 General process of creating a DMR codeplug from scratch	11
7.1 <i>First of all: Save existing data</i>	11
7.2 <i>Enter your DMR ID</i>	12
7.3 <i>Create Digital contacts</i>	12
7.4 <i>Create Digital RX Groups</i>	13
7.5 <i>Create Digital channels</i>	14
7.6 <i>Create zones using channels</i>	14
7.7 <i>Transfer the codeplug to the radio</i>	14
7.8 <i>Summary</i>	14
7.9 <i>Common causes for failure:</i>	15
8 Sample codeplugs	16
8.1 <i>Additional zone for use with a simplex hotspot</i>	16
8.2 <i>Sample codeplug for Radioddity GD-73</i>	17
8.2.1 <i>GD-73 General Settings:</i>	17
8.2.2 <i>GD-73 Digital Contact:</i>	18
8.2.3 <i>GD-73 Digital RX Group List:</i>	18
8.2.4 <i>GD-73 Channels:</i>	19
8.2.5 <i>GD-73 Zone:</i>	19
8.3 <i>Sample codeplug for Radioddity GD-77 / GD-77S</i>	20
8.3.1 <i>GD-77 General Settings:</i>	20
8.3.2 <i>GD-77 Digital Contacts:</i>	20
8.3.3 <i>GD-77 RX Group List:</i>	21
8.3.4 <i>GD-77 Channels:</i>	21
8.3.5 <i>GD-77 Zone:</i>	21
8.4 <i>Sample codeplug for Radioddity GD-88 / DB-25D</i>	22
8.4.1 <i>GD-88 / DB25-D Basic Parameters:</i>	22
8.4.2 <i>GD-88 / DB25-D Contacts→ Contact List:</i>	22

8.4.3	GD-88 / DB25-D RX Group → RX Group list:	23
8.4.4	GD-88 / DB25-D Zone [Channel]:	23
8.4.5	GD-88 / DB25-D Zone [Channel] → DB00HL:	23
8.5	<i>Sample codeplug for Radioddity x Baofeng RD-5R</i>	24
8.5.1	RD-5R General Settings:	24
8.5.2	RD-5R Digital Contacts:	24
8.5.3	RD-5R RX Group List:	25
8.5.4	RD-5R Channels:	25
8.5.5	RD-5R Zone:	25
8.6	<i>Sample codeplug for Radioddity GD-AT10G</i>	26
8.6.1	GD-AT10G Digital → Radio ID List:	26
8.6.2	GD-AT10G Digital → Contact/Talk Group:	26
8.6.3	GD-AT10G Digital → Receive Group Call List:	26
8.6.4	GD-AT10G Common Setting → Channels:	26
8.6.5	GD-AT10G Common Setting → Zone:	27
8.7	<i>Sample codeplug for Baofeng DM-1701</i>	28
8.7.1	DM-1701 General Settings:	28
8.7.2	DM-1701 Digital Contacts:	28
8.7.3	DM-1701 Digital RX Group Call:	29
8.7.4	DM-1701 Channel Information:	29
8.7.5	DM-1701 Zone:	30
8.8	<i>Sample codeplug for TYT MD-9600</i>	31
8.8.1	MD-9600 General Settings:	31
8.8.2	MD-9600 Digital Contacts:	31
8.8.3	MD-9600 Digital RX Groups:	32
8.8.4	MD-9600 Channels:	32
8.8.5	MD-9600 Zone:	33
9	Revision history of this document	34
10	Where to find support material	34
11	Appendix	36
11.1	<i>Spreadsheet for DMR repeater data</i>	36
11.2	<i>Spreadsheet for DMR Contacts</i>	37
11.3	<i>Spreadsheet for Digital RX groups</i>	38
11.4	<i>Spreadsheet for DMR channels</i>	39
11.5	<i>Spreadsheet for DMR Zones</i>	40

About Radioddity

You, our friend, and customer, are our focus

At Radioddity, customers are important to us. As a customer, your time and money are important to you. When you buy radios online, you face a dilemma: buy from a reputable website at a high price, or try to save money by choosing a dealer who may or may not offer quality goods, service, and advice. At Radioddity, you do not have to choose between low prices and a secure shopping experience. Whether you are buying from us for the first time or a seasoned amateur radio operator, we always hope that with our products, prices, content, and sources, you will find exactly what you need. In recent years, Radioddity has better met the needs of wireless device buyers by creating a secure shopping experience. We do this by offering the highest quality products at an affordable price and providing you with first-class service. You deserve no less.

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Strong partnerships enable us to offer you the latest technology and outstanding value for money under the Radioddity brand name. Our thoughtful and responsive customer service teams help us deliver on our promise to you and meet your everyday needs even better.

Whether providing you with the latest and greatest DMR and analog radios, accessories, and related products, providing outstanding technical support, or by working with the leaders of the amateur radio industry to develop helpful content to assist you with your purchase: Your concerns are our concerns.

We want to connect you with high quality radios at low prices. If, in your opinion, we do not honor this promise in any way, please let us know by e-mail:

support@radioddity.com

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1 Disclaimer

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 / Talk groups (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 program 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 TimeSlot 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 operate a radio within a DMR network, you will need 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 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 of the local DMR repeater:

- TX-frequency
- RX-frequency
- Color Code (CC, can be 0...15)
- Fixed talk groups (TG, some multi digit number, normally 1 to 5 digits)
- Repeater Slot / TimeSlot (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 most 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 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 Up / Down	Location	Country	Call	Use	Mode
438.23750	-7.6 MHz	CC1	Gelsenkirchen, Oberscholvener Halde	DE	DE DB0OHL	OPEN	DMR

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

- **TX-frequency** **438.2375MHz**
- **RX-frequency** **430.6375MHz** (438.2375 MHz – 7.6 MHz)
- **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. Just click on the blue marked TX-frequency in order to view more details on that repeater.

Frequency	Offset
438.23750	-7.6 MHz

[View details](#)

SEARCH GOOGLE MAP SUBMIT UPDATE FAVORITES

Oberscholvener Halde - DB0OHL

Gelsenkirchen, Germany
Repeater ID: DE-10485

Downlink: 438.237500 **1**

Uplink: 430.637500 **2**

Offset: -7.6 MHz

DMR Enabled

Color Code: 1 **3**

DMR ID: 262448 **4**

Local Network: Brandmeister **5**

Wide Network: BrandMeister

Talkgroup Network: Brandmeister

Talkgroups: [Open Talkgroup View](#) **6**

Call: DB0OHL

Use: OPEN

Op Status: **7** On-Air

Web links: <http://db0ohl.de> **8**

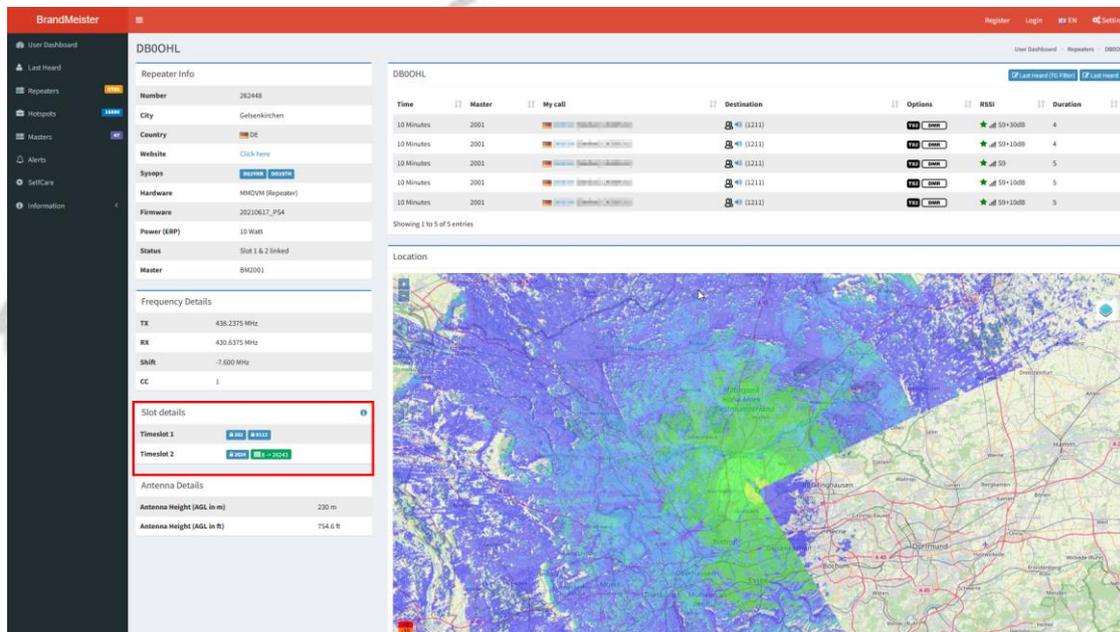
Now repeaterbook provides even more details:

- (1) TX Frequency of repeater
- (2) RX frequency of repeater
- (3) Color Code
- (4) DMR ID of repeater
- (5) DMR-network the repeater is linked to
- (6) Talk groups (this often is not correct)
- (7) Status
- (8) weblink

The accuracy of repeaterbook is dependent on the operators of the repeaters. Unfortunately, this brings in another possible cause for problems due to wrong data that may be being relied on.

Luckily nowadays most of the DMR-repeaters are linked to the Brandmeister network. So, next click on the DMR ID of the repeater (4) and you will be redirected to the Brandmeister network details webpage of that repeater.

DMR ID: [262448](#)



On that page the red boxed area does provide the remaining details that are required for you to setup channels for that DMR repeater.



As you see the following talk groups are permanently assigned to the repeater (for details, just mouse-over within the Brandmeister detail page on the talk group numbers).

TG#	TalkGroup	TimeSlot	notes
262	Germany	1	
9112	EU Emergency Communications	1	
2624	North-Rhine-Westphalia	2	
8	regional	2	Linked to cluster 26243 (Ruhrgebiet region)

So, let's summarize the details for that specific DMR repeater once more:

Parameter	Value	Name
Repeater Call sign	DB0OHL	
TX-frequency of repeater (becomes RX-frequency of own radio)	438.2375 MHz	
RX-frequency of repeater (becomes TX-frequency of own radio)	430.6375 MHz	
Color Code (CC)	1	
DMR network	Brandmeister	
Static DMR talk groups served on TimeSlot 1	262 9112	DE EU Emergency Communications
Static DMR talk groups served on TimeSlot 2	2624 8	NRW regional

Or let's take a Canadian DMR repeater in 'Little Current'. By following the very same procedure you get to the following details:

Parameter	Value	Name
Repeater Call sign	VE3RXR	
TX-frequency of repeater (becomes RX-frequency of own radio)	447.0500 MHz	
RX-frequency of repeater (becomes TX-frequency of own radio)	442.0500 MHz	
Color Code (CC)	1	
DMR network	Brandmeister	
Static DMR talk groups served on TimeSlot 1	302	Canada
	3023	Ontario
	3029	New Brunswick
	302050	<no details found>
	302310	<no details found>
Static DMR talk groups served on TimeSlot 2	302004	<no details found>

Now you know, how to get all the relevant DMR repeater details that are required to setup the channels

Notes: We prepared a spreadsheet for your personal use.
See chapter 11.1 **Spreadsheet for DMR repeater data** on page 36.

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.

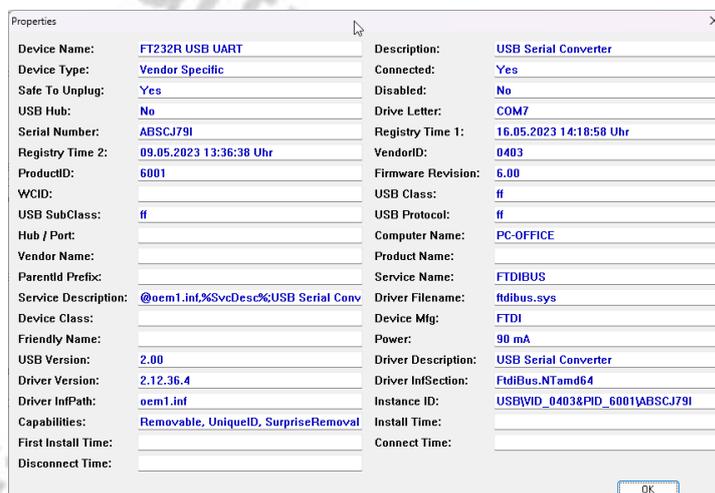
In order to program a DMR-radio you more often do need a cable, although optically looking about the same as for the analog world, is different to the above as it normally does not include a USB2Serial converter. This results in all DMR-radios requiring their own USB-driver to be installed. To give you a few examples:

Brand and model	Driver
Radioddity GD-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-88	Prolific or FTDI USB-to-Serial Comm Port, depending on cable delivered with radio
Radioddity DB-25D	Prolific or FTDI USB-to-Serial Comm Port, depending on cable delivered with radio
Radioddity GD-AT10G*	GD32 Virtual ComPort in FS Mode
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 being recognized by your PC as there is no USB2SER converter chip included in the programming cable.

For Details on how to install the required device driver please refer to the manual that came with your radio. Often those are installed automatically by the Windows OS. Additional limitations to certain port numbers or Windows versions may apply. Check the manual that came with your radio for details.

A good tool (rather than Windows device manager) to get a very precise report on a certain USB-device is called USBDeview. The following screenshot does show such details for a FTDI-based USB2Ser-programming cable. Get the tool for free at <http://www.nirsoft.net/>



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. The CPS we supply for your specific radio, allows you to create the codeplug by yourself in order to suit best to your exact requirements. Alternatively, you can use another person's codeplug if you wish (after changing it to refer to your call sign and DMR ID!). 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.

Notes: *In order to program a radio, it needs to be turned on and, for those radios requiring a USB2Ser-Programming cable, preferably with its volume set to medium*

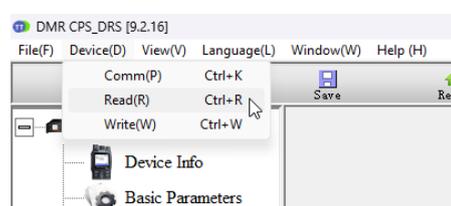
7 General process of creating a DMR codeplug from scratch

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-88 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 provides several options, such as 'Device -> Read' or similar..



Often our radios do come with a default codeplug. This causes the radios to give the impression that they have already been used, which they aren't. However, the DMR ID should be either empty, '1234567' or some other non-existing DMR ID and the call sign also being either empty or just 'MY CALL' or similar.

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, Radio ID or similar. Besides that, there are often also fields to be populated with your call sign or Talker Alias, such as Call Sign, Radio Name or similar.



Notes: Never operate a radio with a call sign or 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 talk groups (TG with a Call Type of 'Group Call') as well as individual station DMR ID numbers (with a Call Type of 'Private Call'). Your Digital contact list might look as follows:

Serial No	Contact name	Contact ID	Call Type
1	BM-Parrot	9990	Private call
2	BM-Germany	262	Group Call
3	BM-EUCom	9112	Group Call
4	BM-NRW	2624	Group Call
5	BM-region	8	Group Call
6	BM-local	9	Group Call
7	BM-WW	91	Group Call

Parameter	Value
Serial No	Entry in the list of digital contacts
Contact name	Display name of the contact
Contact ID	DMR ID for an individual / private digital call or a talk group (TG). This ID is for identification and communication with a destination radio (DMR ID) or a group of radios listening to the very same talk group (TG) depending on the call type.
Call Type	You can choose between the following call types: <ul style="list-style-type: none"> Group Call (required for most talk groups, TG) Private Call (required for direct call to other station) All Call (normally not used)

Notes: Specific digital contacts are required to later on address a certain station or talk group whereas a general DMR ID database which may be uploaded to some of the DMR radios is primarily used to identify a station during an active QSO.

Notes: We prepared a spreadsheet for your personal use. See chapter 11.2 **Spreadsheet for DMR Contacts** on page 37.

7.4 Create Digital RX Groups

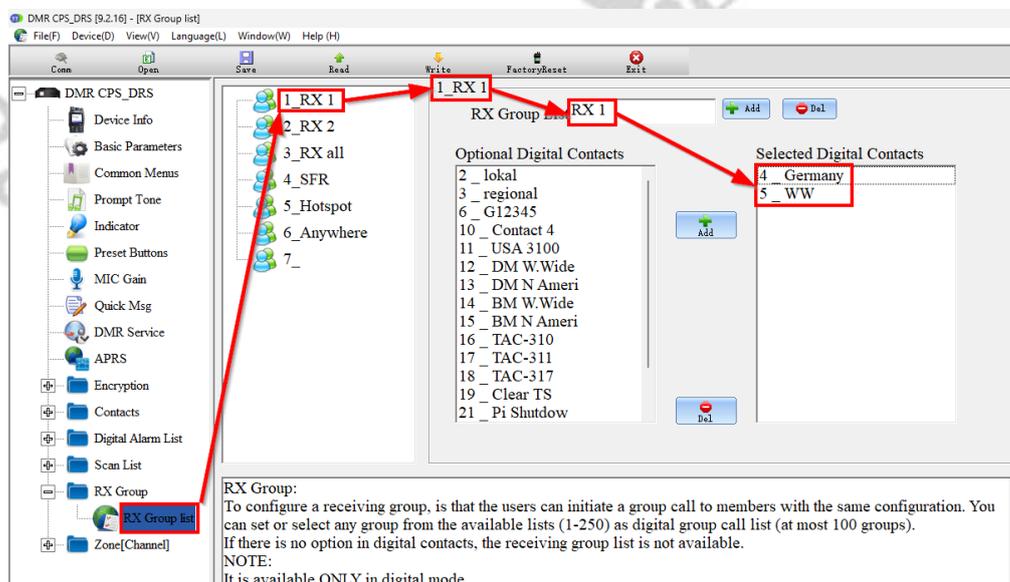
For sure you had been waiting for that one to be explained as we mentioned it already a couple of times. This is the most common parameter that causes headaches on ham operators new to DMR. Its name may be 'Digital RX Group', 'Digital RX Group Call', 'RX Group', 'RX Group List', 'TG List' and some more similar to the ones already listed.

Normally each digital channel can transmit on just one single talk group but can receive more than just one talk group. The actual talk groups 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 a few or as many contacts as you like (this may be limited by the CPS).
- Digital RX groups should be named with something meaningful to the user
- Only contacts that are stored as group calls can be added to Digital RX groups.
- Each Digital (DMR) channel must have a Digital RX group, with at least the transmit Talkgroup Digital contact for the channel being a member of the RX group you assign to the channel. With the latest firmware update the Radioddity GD-88 and Radioddity DB25-D no longer do have this requirement.
- 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:



Notes: To start with, it is a good idea to group all those digital contacts (TG) that are active on TimeSlot 1 within the very same group and name it 'TS1'. For those that are active on TimeSlot 2, name the corresponding group 'TS2'.

Notes: We prepared a spreadsheet for your personal use.
See chapter **11.3 Spreadsheet for Digital RX groups** on page 38.

7.5 Create Digital channels

Name the channel in a way, that there is also some information about the talk group (TG) within its name. This will be very helpful in later operation. e.g.

<trailing 3 digits of repeater call sign>-<talk group#> such as 'OHL-262' or 'OHL-DE'.

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.

Parameter	Value
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 Talk group (TG) which is assigned to this channel
Slot	Selects which TimeSlot, 1 or 2, should be used. Often a particular Talk group is assigned to a particular TimeSlot.
Color Code	Select which ColorCode (CC) is associated with this channel.
RX Group List	This determines the Digital RX Group used for the channel

Notes: We prepared a spreadsheet for your personal use.
See chapter **11.4 Spreadsheet for DMR channels** on page 39.

7.6 Create zones using channels

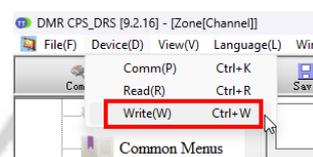
A zone is a collection or group of channels. They may be grouped any way you wish, for example a zone for each geographic area, or a zone with different talk groups for one repeater, or any other way you find useful or convenient. Once you have defined your channels, you are ready to bundle them into 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).

Notes: We prepared a spreadsheet for your personal use.
See chapter **11.5 Spreadsheet for DMR Zones** on page 40.

7.7 Transfer the codeplug to the radio

After completing all the above steps, it is advisable 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 'Device' → 'Write' (or similar).



7.8 Summary

Let's list the main key points required for setting up a DMR codeplug:

- A zone consists of various channels
- A digital channel is required for each DMR contact/talk group 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 talk group as the channel is defined for. However, one Digital RX group may contain several talk groups and may be used for several channels.
- Each talk group has been assigned by the repeater operator to a certain TimeSlot. That TimeSlot (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 talk group 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'.

7.9 Common causes for failure:

At first you should focus on getting the Parrot (within Brandmeister network this is a 'private call' to TG 9990) to repeat your transmission. If that doesn't work as expected, various things might prevent a successful transmission.

- TX/RX-frequencies mixed
- DMR repeater currently occupied by another QSO with a talk group different to the one assigned to the currently selected channel
- Gathered DMR repeater data not up to date
- Not within reach of DMR repeater

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 talk groups available on that repeater.

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

Parameter	Value	Name
Call sign	DB0OHL	DB0OHL
TX-frequency of repeater (becomes RX-frequency of own radio)	438.2375 MHz	
RX-frequency of repeater (becomes TX-frequency of own radio)	430.6375 MHz	
Color Code (CC) required	1	
DMR network	Brandmeister	
DMR talk groups served on TimeSlot 1	262 9112	DE EU EmCo
DMR talk groups served on TimeSlot 2	2624 8 9	NRW Regional local
Parrot on that DMR repeater available at	9990	with Call Type 'Private Call'

Unless otherwise specified, these sample codeplugs are based on a blank new codeplug and its default settings. All sample codeplugs have been included with the archive containing this document.

8.1 Additional zone for use with a simplex hotspot

The sample codeplugs do include additional settings for a simplex hotspot zone, operating on 430.01250 MHz, with CC1. Channels for Brandmeister Parrot (9990) and Brandmeister TalkGroup 91 (World Wide) are included in this extra zone.

8.2 Sample codeplug for Radioddity GD-73

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

8.2.1 GD-73 General Settings:

General Settings

Basic

Radio Name: **DMR Radio**

Radio ID: **1**

VOX Level: 5

Squelch Level: 5

TX Time-out Time[s]: 180

Display: Name

TxInterrupt:

Password

Write Lock:

Write Password: _____

Read Lock:

Read Password: _____

PwrOnDisplay

Select: Default Image

Text1: _____

Text2: _____

Save

Save:

Save Start TimeOut[s]: 10

Lone Worker

Lone Worker Response Timer[Min]: 10

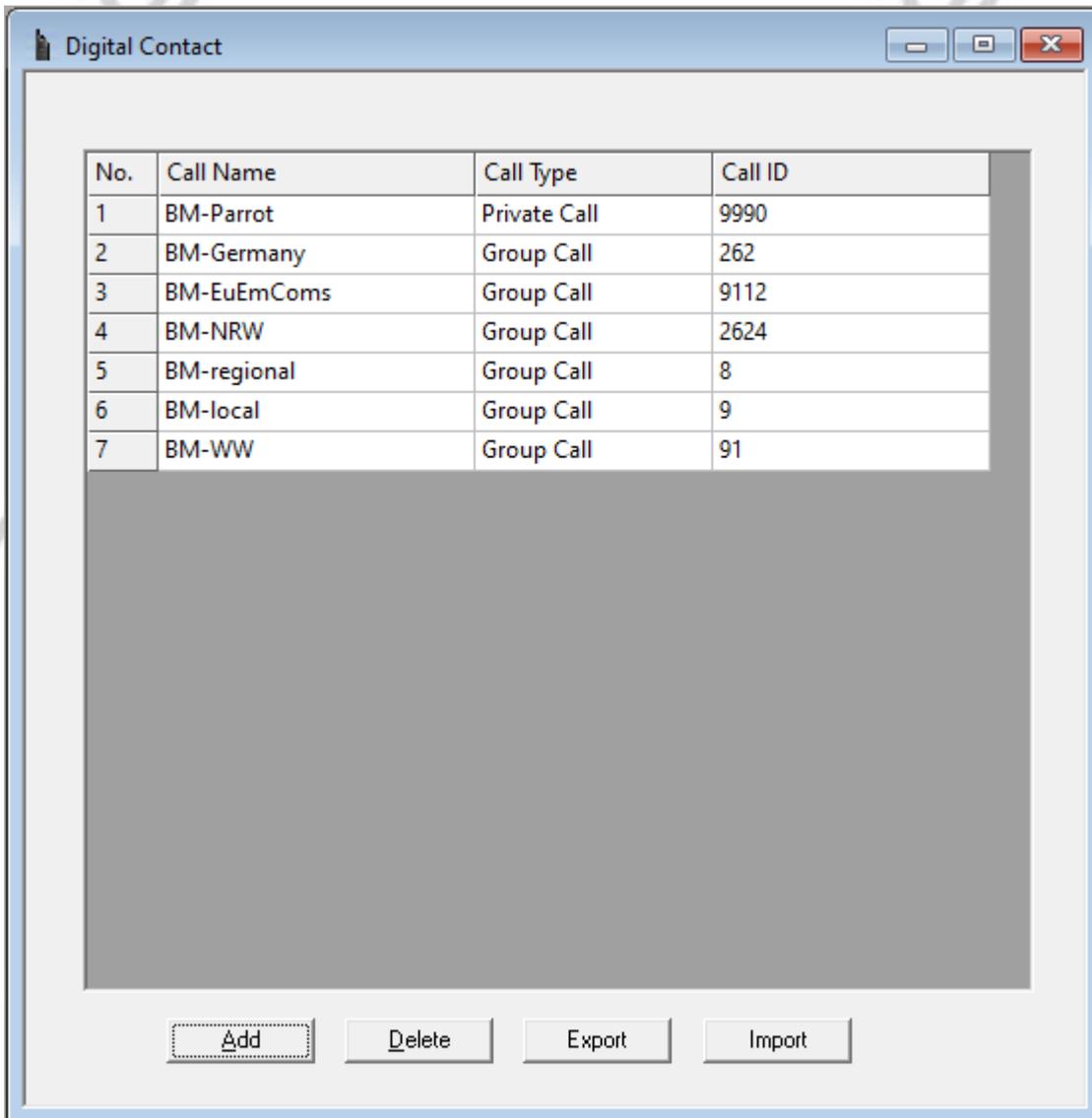
Lone Worker Reminder Timer[s]: 10

Microphone

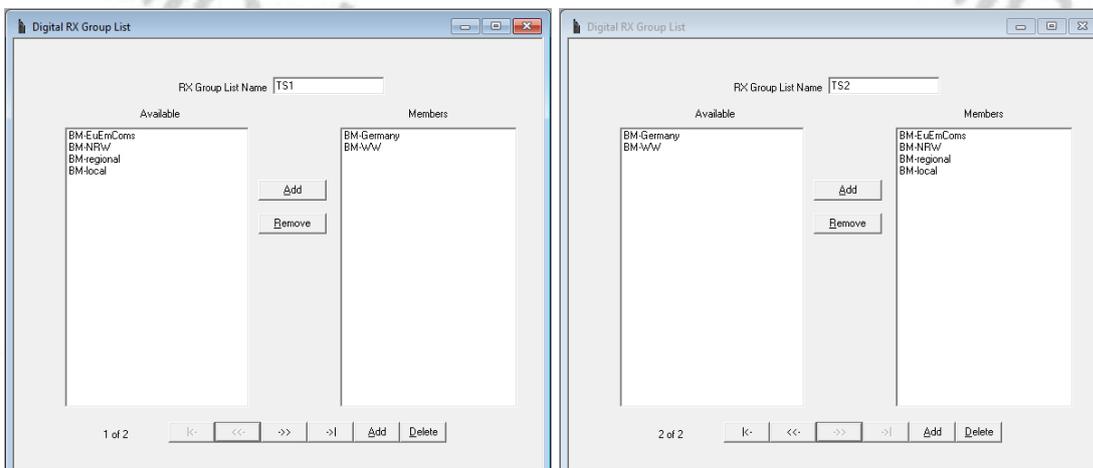
Digital Mic Gain: 2

Analog Mic Gain: 1

8.2.2 GD-73 Digital Contact:



8.2.3 GD-73 Digital RX Group List:



8.2.4 GD-73 Channels:

The image displays six screenshots of the 'Channel Information' dialog box, arranged in a 3x2 grid. Each dialog box is for a different DMR channel and contains the following fields:

- Digital/Analog:** Mode (Digital), Channel Name, Channel Space (12.5K), Power Level (High), Scan List (None), Access Policy (Always), PTT Template (None).
- Frequency:** Rx Frequency (MHz) and Tx Frequency (MHz).
- Analog:** Tx CTCSS/DCSS, Rx CTCSS/DCSS, CTCSS Enc, CTCSS Dec, CDCSS Enc, and CDCSS Dec.
- Digital:** Tx Contact, Slot, Color Code, Rx Group List, Emergency, and Encrypt.

The channels shown are: 1. DHL-Parrot, 2. DHL-Germany, 3. DHL-EUEmComs, 4. DHL-NRW, 5. DHL-regional, and 6. DHL-local. Each dialog box has a 'Copy' button next to the Rx Frequency field and a status bar at the bottom indicating its position in a list (e.g., '1 of 6').

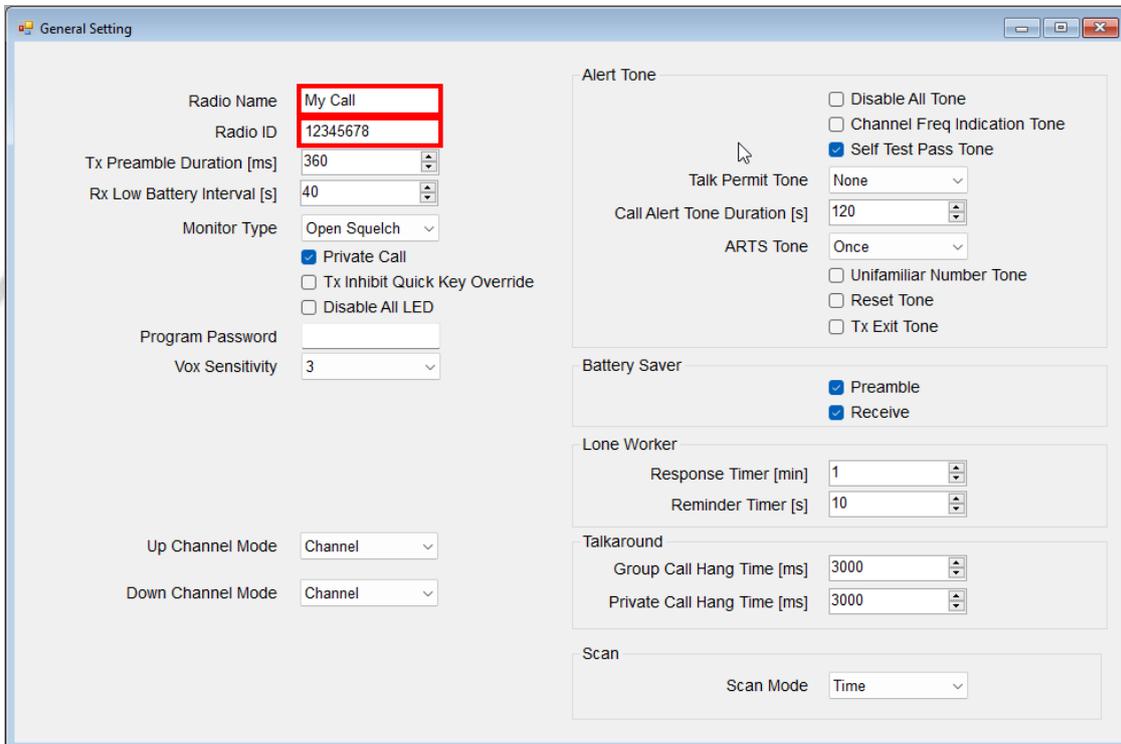
8.2.5 GD-73 Zone:

The image shows the 'Zone' configuration dialog box. It features a text input field for 'Zone Name' containing 'DB00HLL'. Below this are two list boxes: 'Available' and 'Members'. The 'Available' list contains 'SHS-Parrot' and 'SHS-WW'. The 'Members' list contains 'DHL-Parrot', 'DHL-Germany', 'DHL-EUEmComs', 'DHL-NRW', 'DHL-regional', and 'DHL-local'. Between the lists are 'Add' and 'Remove' buttons. At the bottom, there is a status bar showing '1 of 2' and navigation buttons.

8.3 Sample codeplug for Radioddity GD-77 / GD-77S

The following screenshots have all been taken using GD-77 CPS v3.1.1.

8.3.1 GD-77 General Settings:



General Setting

Radio Name: **My Call**

Radio ID: **12345678**

Tx Preamble Duration [ms]: 360

Rx Low Battery Interval [s]: 40

Monitor Type: Open Squelch

Private Call

Tx Inhibit Quick Key Override

Disable All LED

Program Password: _____

Vox Sensitivity: 3

Up Channel Mode: Channel

Down Channel Mode: Channel

Alert Tone

Disable All Tone

Channel Freq Indication Tone

Self Test Pass Tone

Talk Permit Tone: None

Call Alert Tone Duration [s]: 120

ARTS Tone: Once

Unifamiliar Number Tone

Reset Tone

Tx Exit Tone

Battery Saver

Preamble

Receive

Lone Worker

Response Timer [min]: 1

Reminder Timer [s]: 10

Talkaround

Group Call Hang Time [ms]: 3000

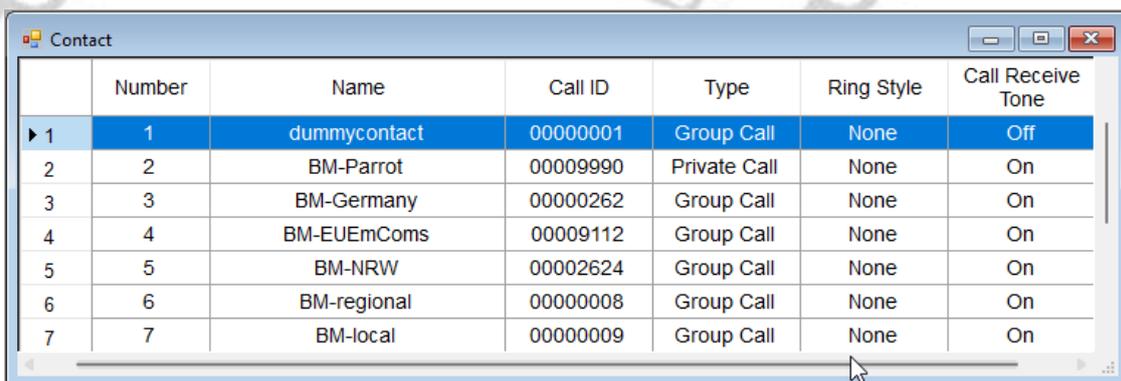
Private Call Hang Time [ms]: 3000

Scan

Scan Mode: Time

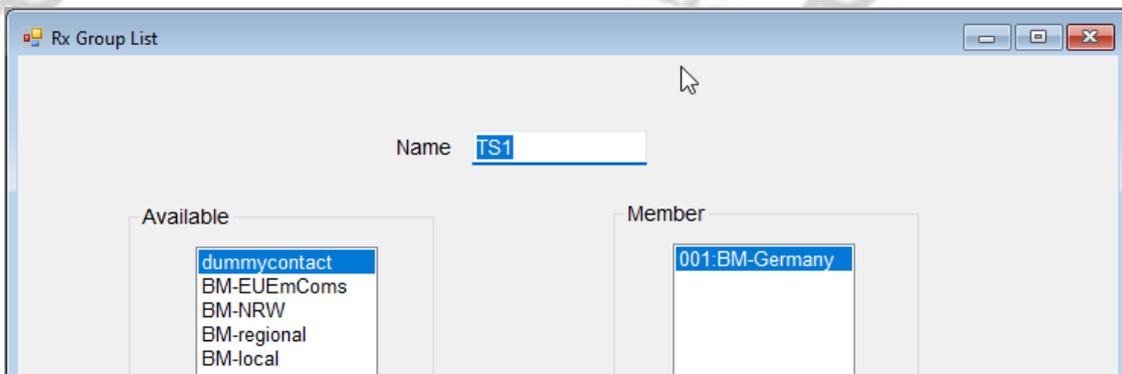
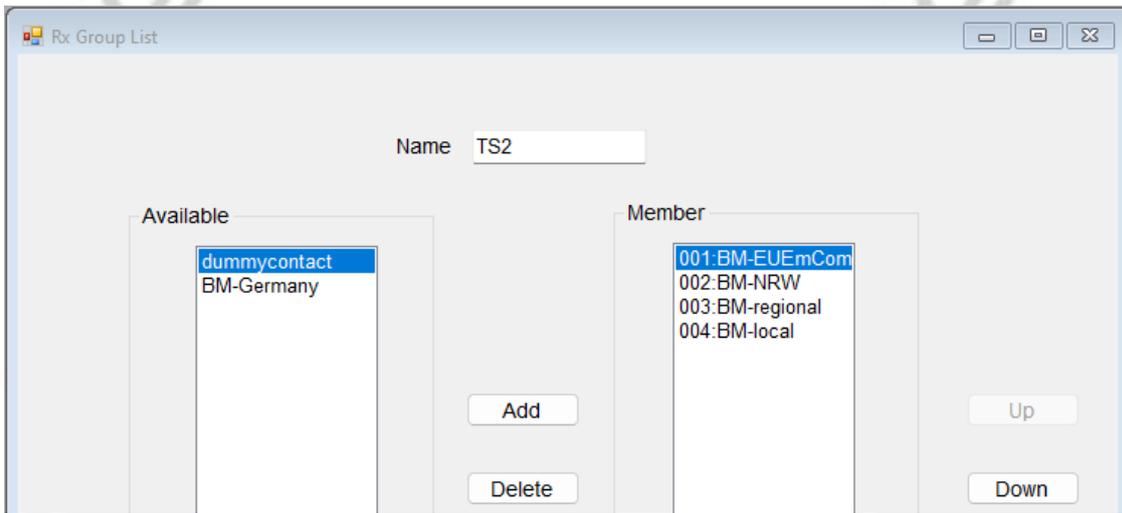
Do not forget to change the red boxed fields for your own call sign and DMR ID.

8.3.2 GD-77 Digital Contacts:



	Number	Name	Call ID	Type	Ring Style	Call Receive Tone
▶ 1	1	dummycontact	00000001	Group Call	None	Off
2	2	BM-Parrot	00009990	Private Call	None	On
3	3	BM-Germany	00000262	Group Call	None	On
4	4	BM-EUEmComs	00009112	Group Call	None	On
5	5	BM-NRW	00002624	Group Call	None	On
6	6	BM-regional	00000008	Group Call	None	On
7	7	BM-local	00000009	Group Call	None	On

8.3.3 GD-77 RX Group List:

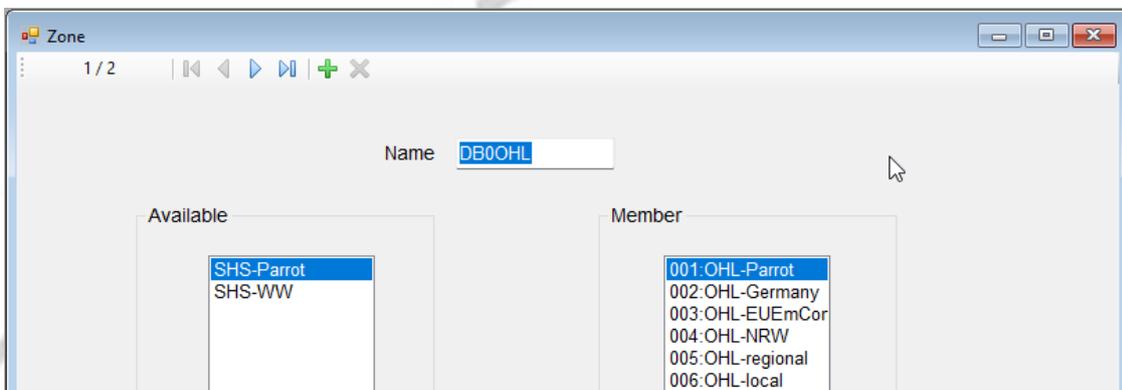


8.3.4 GD-77 Channels:

Digital

	Number	Name	Rx Freq	Tx Freq	Ch Mode	Power	Rx Tone	Tx Tone	Color Code	Rx Group List	Contact	Repeater Slot
▶ 1	1	OHL-Parrot	438.23750	430.63750	Digital	High	None	None	1	TS1	BM-Parrot	1
2	2	OHL-Germany	438.23750	430.63750	Digital	High	None	None	1	TS1	BM-Germany	1
3	3	OHL-EUEm...	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-EUEmC...	2
4	4	OHL-NRW	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-NRW	2
5	5	OHL-regional	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-regional	2
6	6	OHL-local	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-local	2

8.3.5 GD-77 Zone:



8.4 Sample codeplug for Radioddity GD-88 / DB-25D

The following screenshots have all been taken using GD-88/DB-25D CPS V3.3.

8.4.1 GD-88 / DB25-D Basic Parameters:

Basic Parameter

Radio Name	My Radio	Radio ID	1234567
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		

Do not forget to change the red boxed fields for your own call sign and DMR ID.

8.4.2 GD-88 / DB25-D Contacts→ Contact List:

Serial No	Contact name	Contact ID	Call Type
1	BM-Parrot	9990	Private call
2	BM-Germany	262	Group Call
3	BM-EUEmCom	9112	Group Call
4	BM-NRW	2624	Group Call
5	BM-region	8	Group Call
6	BM-local	9	Group Call
7	BM-WW	91	Group Call

8.4.3 GD-88 / DB25-D RX Group → RX Group list:

The image shows two screenshots of the RX Group List configuration interface. The top screenshot is for TS1, showing a list of optional digital contacts (3_BM-EUCom, 4_BM-NRW, 5_BM-region, 6_BM-local) and selected digital contacts (2_BM-Germany, 7_BM-WW). The bottom screenshot is for TS2, showing a list of optional digital contacts (2_BM-Germany, 7_BM-WW) and selected digital contacts (3_BM-EUCom, 4_BM-NRW, 5_BM-region, 6_BM-local).

As you see, 'BM-Parrot' is not offered to be assigned to a RX-group due to its call type of being 'Private Call' which is absolutely correct. Digital contacts with call type 'Private Call' cannot be assigned to a RX-group.

8.4.4 GD-88 / DB25-D Zone [Channel]:

Zone	Zone Name
1	DB0OHL

8.4.5 GD-88 / DB25-D Zone [Channel] → DB0OHL:

Z-1	CH mode	CH Name	RX Freq	TX Freq	PCT	RX TS	TX TS	RX CC	TX CC	TX Policy	RX Group	Encryption	Scan List	Contacts
1	Digital	OHL-Parrot	438.23750	430.63750	Pates	Slot 2	Slot 2	1	1	Impolite	TS2	Off	Off	BM-Parrot
2	Digital	OHL-German	438.23750	430.63750	Pates	Slot 1	Slot 1	1	1	Impolite	TS1	Off	Off	BM-Germany
3	Digital	OHL-EUComCo	438.23750	430.63750	Pates	Slot 2	Slot 2	1	1	Impolite	TS2	Off	Off	BM-EUCom
4	Digital	OHL-NRW	438.23750	430.63750	Pates	Slot 2	Slot 2	1	1	Impolite	TS2	Off	Off	BM-NRW
5	Digital	OHL-region	438.23750	430.63750	Pates	Slot 2	Slot 2	1	1	Impolite	TS2	Off	Off	BM-region
6	Digital	OHL-local	438.23750	430.63750	Pates	Slot 2	Slot 2	1	1	Impolite	TS2	Off	Off	BM-local

Extract with the most important parameters (for better readability)

8.5 Sample codeplug for Radioddity x Baofeng RD-5R

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

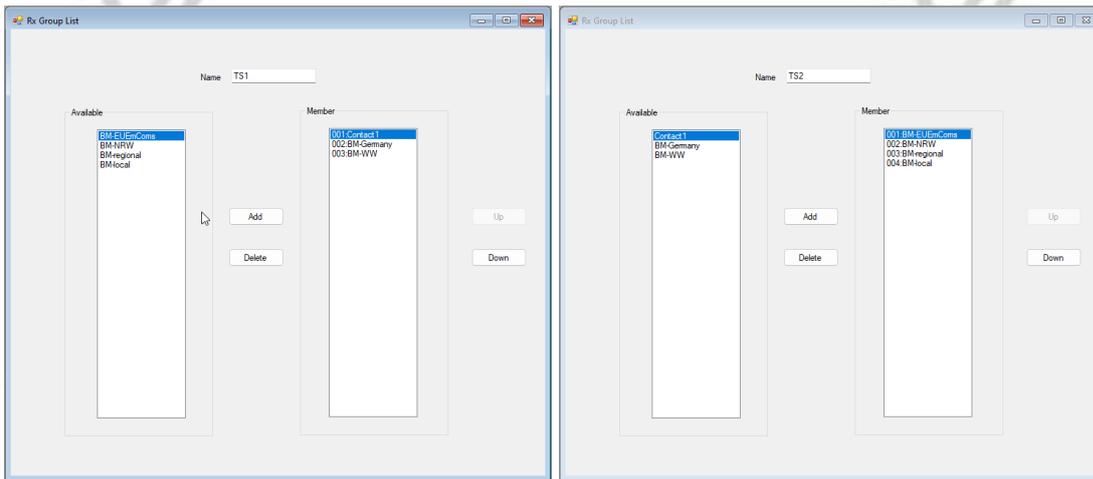
8.5.1 RD-5R General Settings:

Do not forget to change the red boxed fields for your own call sign and DMR ID.

8.5.2 RD-5R Digital Contacts:

	Number	Name	Call ID	Type	Ring Style	Call Receive
▶ 1	1	Contact1	00000001	Group Call	None	Off
2	2	BM-Parrot	00009990	Private Call	None	Off
3	3	BM-Germany	00000262	Group Call	None	Off
4	4	BM-EUEmComs	00009112	Group Call	None	Off
5	5	BM-NRW	00002624	Group Call	None	Off
6	6	BM-regional	00000008	Group Call	None	Off
7	7	BM-local	00000009	Group Call	None	Off
8	8	BM-WW	00000091	Group Call	None	Off

8.5.3 RD-5R RX Group List:

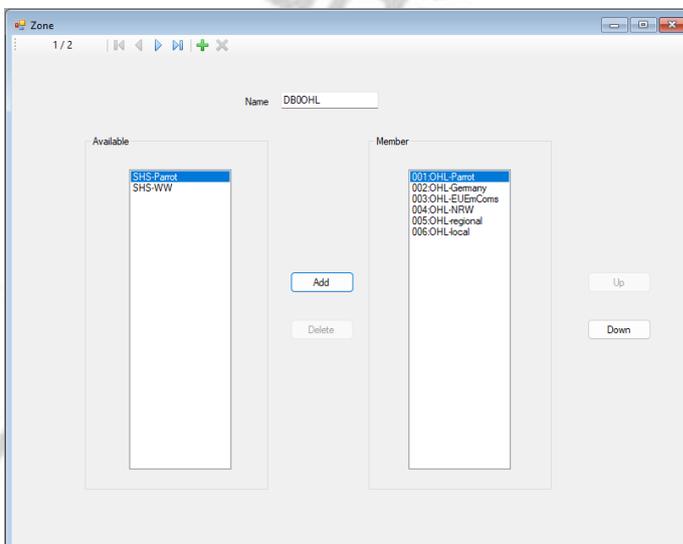


8.5.4 RD-5R Channels:

Number	Name	Rx Freq	Tx Freq	Ch Mode	Power	Rx Tone	Tx Tone	Color Code	Rx Group List	Contact	Repeater Slot	Base
1	OHL-Parrot	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-Parrot	2	
2	OHL-Germany	438.23750	430.63750	Digital	High	None	None	1	TS1	BM-Germany	1	
3	OHL-EUemComs	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-EUemComs	2	
4	OHL-NRW	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-NRW	2	
5	OHL-regional	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-regional	2	
6	OHL-local	438.23750	430.63750	Digital	High	None	None	1	TS2	BM-local	2	
7	SHS-Parrot	430.01250	430.01250	Digital	High	None	None	1	TS2	BM-Parrot	2	
8	SHS-WW	430.01250	400.00000	Digital	High	None	None	1	TS1	BM-WW	1	

Extract with the most important parameters (for better readability)

8.5.5 RD-5R Zone:



8.6 Sample codeplug for Radioddity GD-AT10G

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

8.6.1 GD-AT10G Digital → Radio ID List:

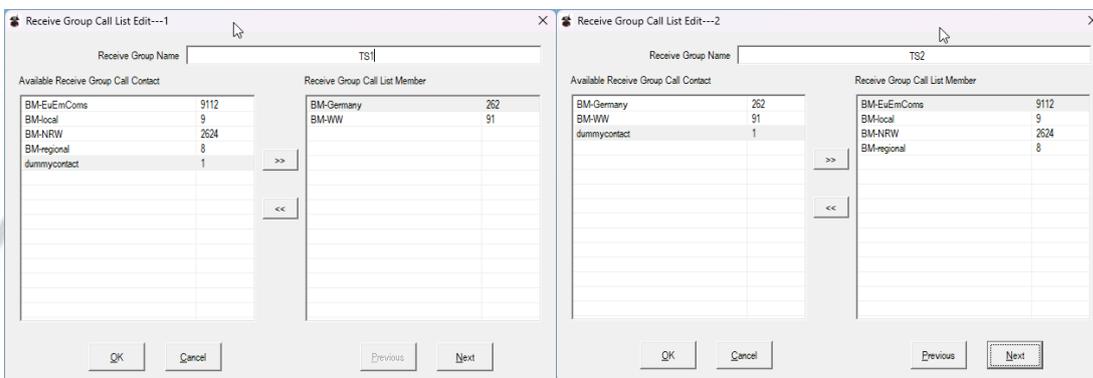
No.	Radio ID	Name
1	1234567	Radio 1

Do not forget to change the fields for your own call sign and DMR ID.

8.6.2 GD-AT10G Digital → Contact/Talk Group:

No.	TG/DMR ID	Call Alert	Name	Call Type
1	1	None	dummycontact	Group Call
2	9990	None	BM-Parrot	Private Call
3	262	None	BM-Germany	Group Call
4	9112	None	BM-EuEmComs	Group Call
5	2624	None	BM-NRW	Group Call
6	8	None	BM-regional	Group Call
7	9	None	BM-local	Group Call

8.6.3 GD-AT10G Digital → Receive Group Call List:



8.6.4 GD-AT10G Common Setting → Channels:

No.	Receive Frequency	Transmit Frequency	Channel Type	Power	Channel Name	Contact	Radio ID
1	438.23750	430.63750	D-Digital	High	OHL-Parrot	BM-Parrot	Radio 1
2	438.23750	430.63750	D-Digital	High	OHL-Germany	BM-Germany	Radio 1
3	438.23750	430.63750	D-Digital	High	OHL-EuEmComs	BM-EuEmComs	Radio 1
4	438.23750	430.63750	D-Digital	High	OHL-NRW	BM-NRW	Radio 1
5	438.23750	430.63750	D-Digital	High	OHL-regional	BM-regional	Radio 1
6	438.23750	430.63750	D-Digital	High	OHL-local	BM-local	Radio 1

Extract with the most important parameters (for better readability)

8.7 Sample codeplug for Baofeng DM-1701

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

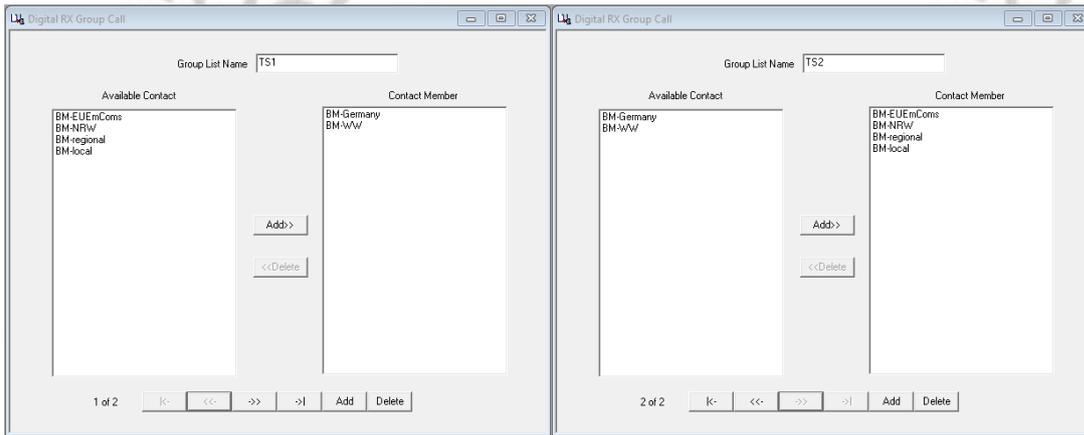
8.7.1 DM-1701 General Settings:

Do not forget to change the red boxed fields for your own call sign and DMR ID.

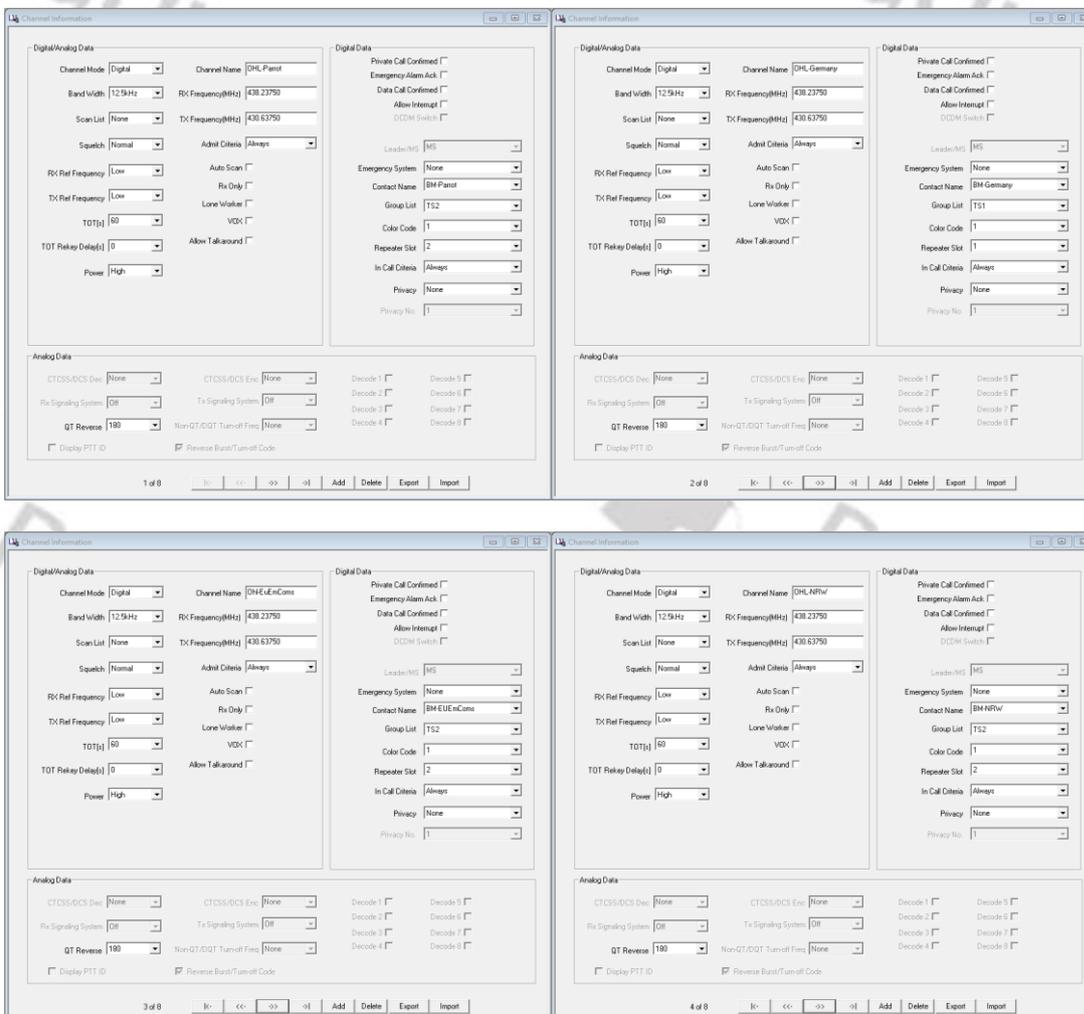
8.7.2 DM-1701 Digital Contacts:

No.	Contact Name	Call Type	Call ID	Call Receive Tone
1	BM-Parrot	Private Call	9990	No
2	BM-Germany	Group Call	262	No
3	BM-EUComs	Group Call	9112	No
4	BM-NRW	Group Call	2624	No
5	BM-regional	Group Call	8	No
6	BM-local	Group Call	9	No

8.7.3 DM-1701 Digital RX Group Call:



8.7.4 DM-1701 Channel Information:



The image shows two side-by-side screenshots of the 'Channel Information' configuration window. Both windows are for a channel named 'OHL-regional' (left) and 'OHL-local' (right). The 'Digital/Analog Data' section includes fields for Channel Mode (Digital), Channel Name, Band Width (12.5kHz), RX Frequency (430.23750), Scan List (None), TX Frequency (430.63750), Squelch (Normal), Admit Criteria (Always), RX Rel Frequency (Low), Auto Scan, TX Rel Frequency (Low), RX Only, TOT (s) (60), Lone Walkie, TOT Relay Delay (s) (0), VGM, and Power (High). The 'Analog Data' section includes CTSS/DCS Dec (None), CTSS/DCS Enc (None), Decode 1-9, Rx Signaling System (Off), Tx Signaling System (Off), QT Reverse (180), Non-QT/QT Turn-off Freq (None), and Reverse Burst/Turnoff Code. The bottom of each window shows a status bar with '5 of 8' and navigation buttons.

8.7.5 DM-1701 Zone:

The image shows the 'Zone Information' window for a zone named 'DB00HL'. It features two main columns: 'Available Channel' and 'Channel Member A'. The 'Available Channel' column contains 'SHS-Parrot' and 'SHS-WW'. The 'Channel Member A' column contains 'OHL-Parrot', 'OHL-Germany', 'OHL-EuEmComs', 'OHL-NRW', 'OHL-regional', and 'OHL-local'. There are 'Add>>' and '<<Delete' buttons between the columns. The bottom of the window shows a status bar with '1 of 2' and navigation buttons.

8.8 Sample codeplug for TYT MD-9600

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

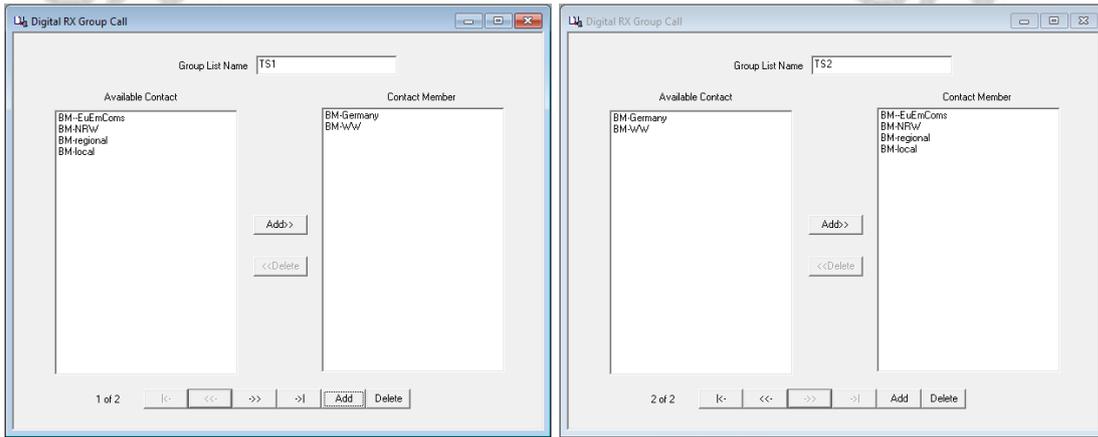
8.8.1 MD-9600 General Settings:

Do not forget to change the **red boxed** fields for your own call sign and DMR ID.

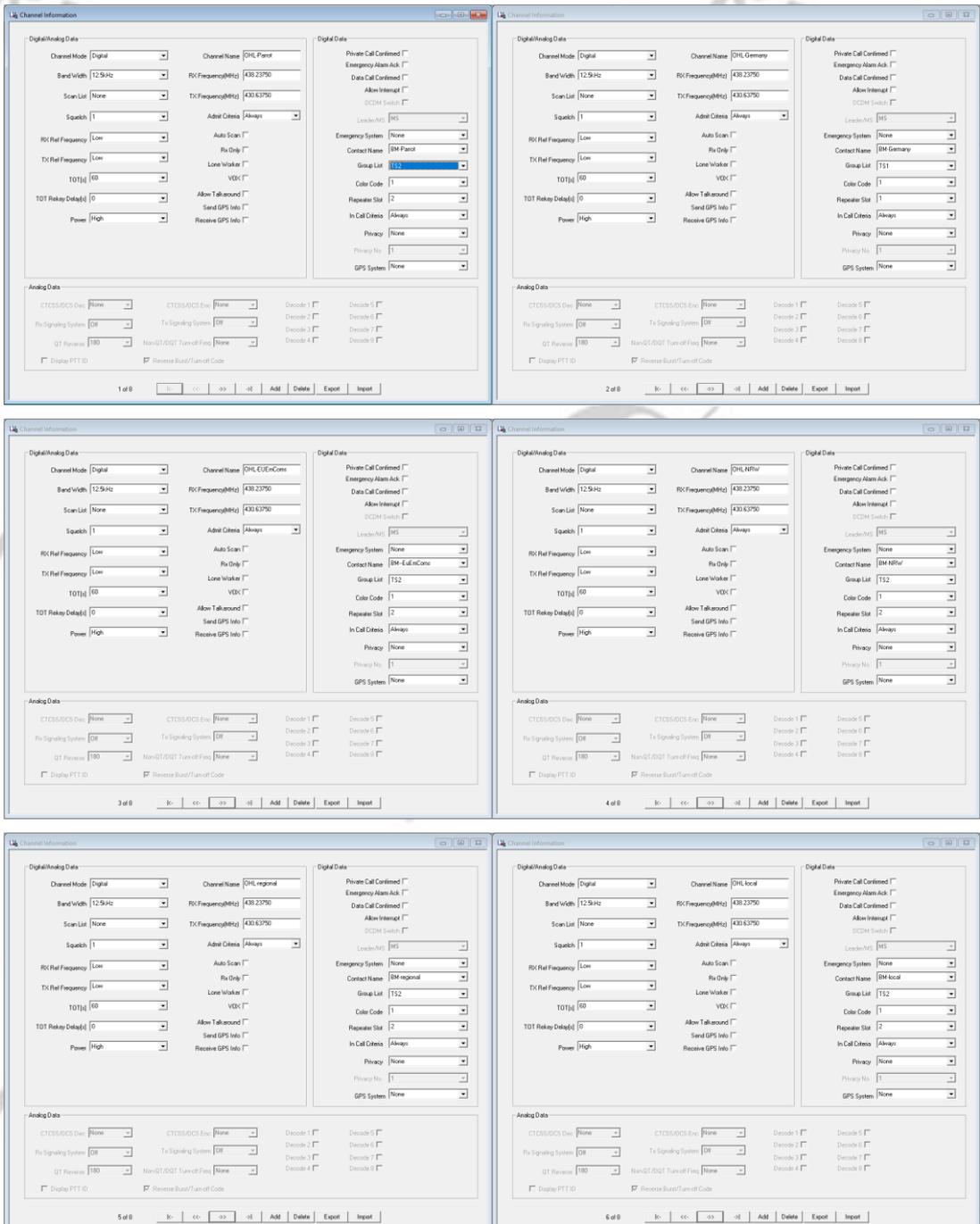
8.8.2 MD-9600 Digital Contacts:

No.	Contact Name	Call Type	Call ID	Call Receive Tone
1	BM-Parrot	Private Call	9990	No
2	BM-Germany	Group Call	262	No
3	BM--EuEmComs	Group Call	9112	No
4	BM-NRW	Group Call	2624	No
5	BM-regional	Group Call	8	No
6	BM-local	Group Call	9	No
7	BM-WW	Group Call	91	No

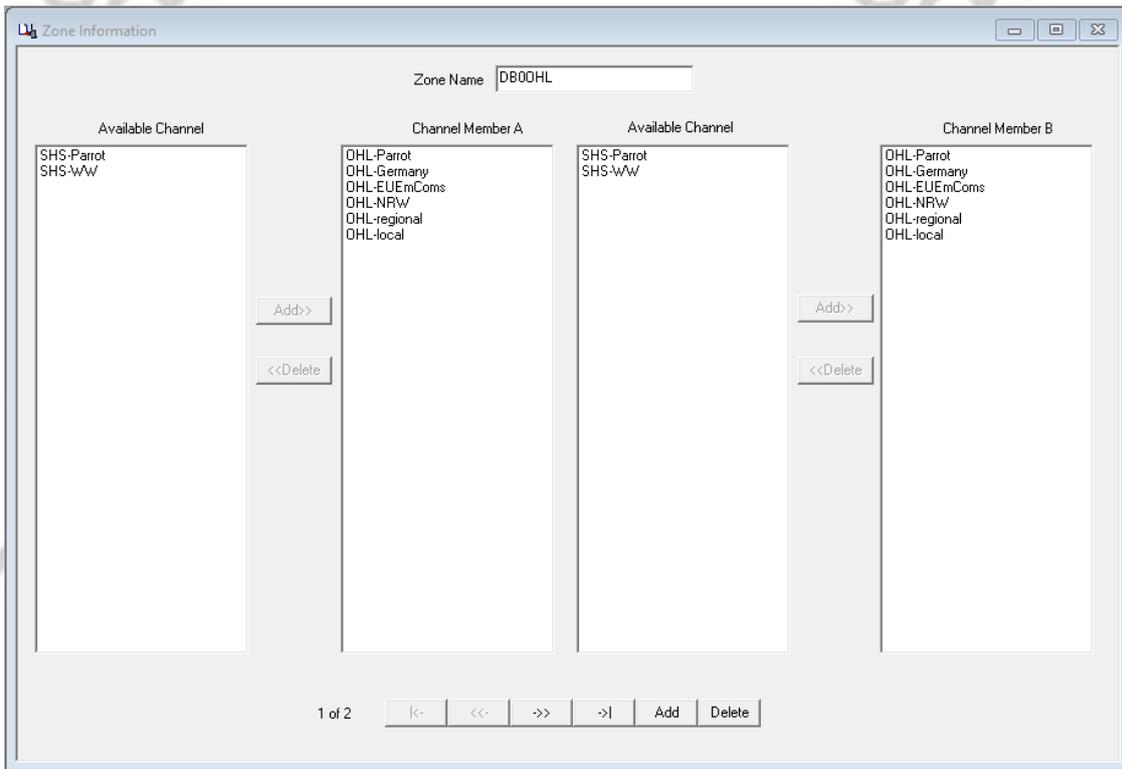
8.8.3 MD-9600 Digital RX Groups:



8.8.4 MD-9600 Channels:



8.8.5 MD-9600 Zone:



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.

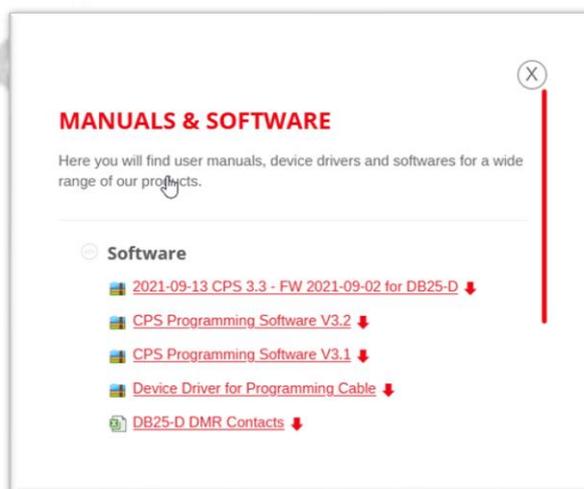
revision	Changes	released
V2.2	Review and partial rework with more focus on the latest Radioddity DMR radios. Additional zone for simplex hotspots included in sample codeplugs.	2023-05-29
V2.0	Addition of details for Radioddity GD-AT10G and Radioddity DB-25D plus some minor corrections	2022-01-01
V1.0	Initial version	2021-04-26

10 Where to find support material

Please kindly note that all the firmware, software, and user manuals can be found in the Support area of our official website by following these steps:

<https://www.radioddity.com/> → Support → Radioddity → click on 'DB25-D' or 'GD-88'

As for the Radioddity DB25-D the resulting support page will look similar to the following:



As soon as any new file becomes available (such as firmware updates, updated manuals or others), it will be published within our support area.

We would like to thank all Radioddity customers for their constructive feedback.

If you do find any bug in the radio's firmware, our CPS, this documentation or if you are missing a feature, you would have expected, write an email to support@radioddity.com. In general, the software- and firmware-updates for radios sold by Radioddity are free of charge. Using a CPS or a firmware not originating from Radioddity may void your warranty.



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11 Appendix

11.1 Spreadsheet for DMR repeater data

Parameter	Value	Name
Repeater Call sign	DB0OHL	
TX-frequency of repeater (becomes RX-frequency of own radio)	438.2375 MHz	
RX-frequency of repeater (becomes TX-frequency of own radio)	430.6375 MHz	
Color Code (CC)	1	
DMR network	Brandmeister	
Static DMR talk groups served on TimeSlot 1	262 91	Germany WW
Static DMR talk groups served on TimeSlot 2	9 8	Local regional

Parameter	Value	Name
Repeater Call sign		
TX-frequency of repeater (becomes RX-frequency of own radio)		MHz
RX-frequency of repeater (becomes TX-frequency of own radio)		MHz
Color Code (CC)		
DMR network		
Static DMR talk groups served on TimeSlot 1		
Static DMR talk groups served on TimeSlot 2		

11.3 Spreadsheet for Digital RX groups

RX group	Members	Used for
RX-Grp1	Germany WW	<input checked="" type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____
		<input type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____
		<input type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____
		<input type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____
		<input type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____
		<input type="checkbox"/> Slot 1 channels <input type="checkbox"/> Slot 2 channels <input type="checkbox"/> _____

11.5 Spreadsheet for DMR Zones

Zone name	Channel members
DB0OHL	OHL-Parrot OHL-local OHR-region OHL-DE OHL-WW