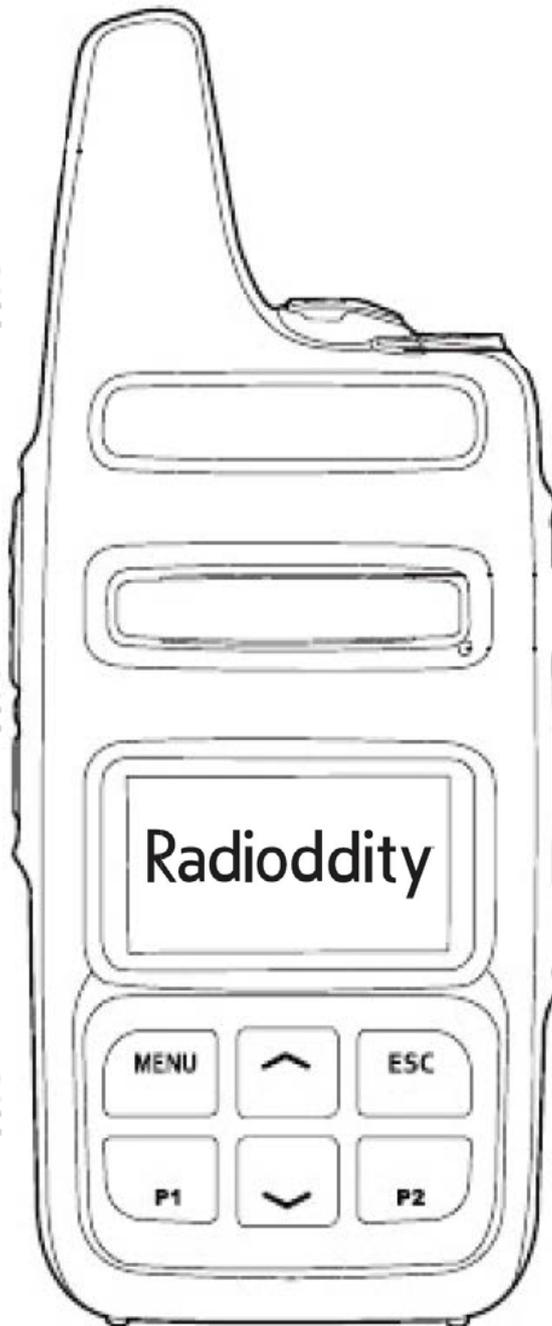


Getting 'on air' in DMR-mode with your Radioddity GD-73



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Intention of this document

This document can in no way replace the existing documentation for your Radioddity GD-73 but it is intended to get you 'on air' the direct way. Therefore this document only describes the mandatory steps to get you 'on air'. In order to do so, just get along the following steps:

1. Apply for and receive your *DMR ID*
2. *Gather information about the DMR station(s) you want to operate*
3. *Install USB-driver*
4. *Install CPS*
5. *Create new codeplug from scratch*
 - a. Enter your call-sign and your DMR-ID
 - b. Create your *Digital Contacts / Talkgroups (TG)*
 - c. Set up your *Digital RX Group Lists*
 - d. Program your *Channels*, and attach a *Digital Contact* for TX and attach a *Digital RX Group List* for RX to each channel.
 - e. Program your *Zones* by attaching *Channels* to each zone.
6. Save your codeplug and transfer it to your radio
7. Get 'on air' with your freshly created codeplug

1. Requesting a DMR ID

To work in a DMR network, you must register for a DMR ID number. For amateur radio this can be <https://www.radioid.net/> or <https://register.ham-digital.org/> depending on where you live. Normally, new DMR IDs will be issued within 24 hours.

2. Gather information about a DMR station

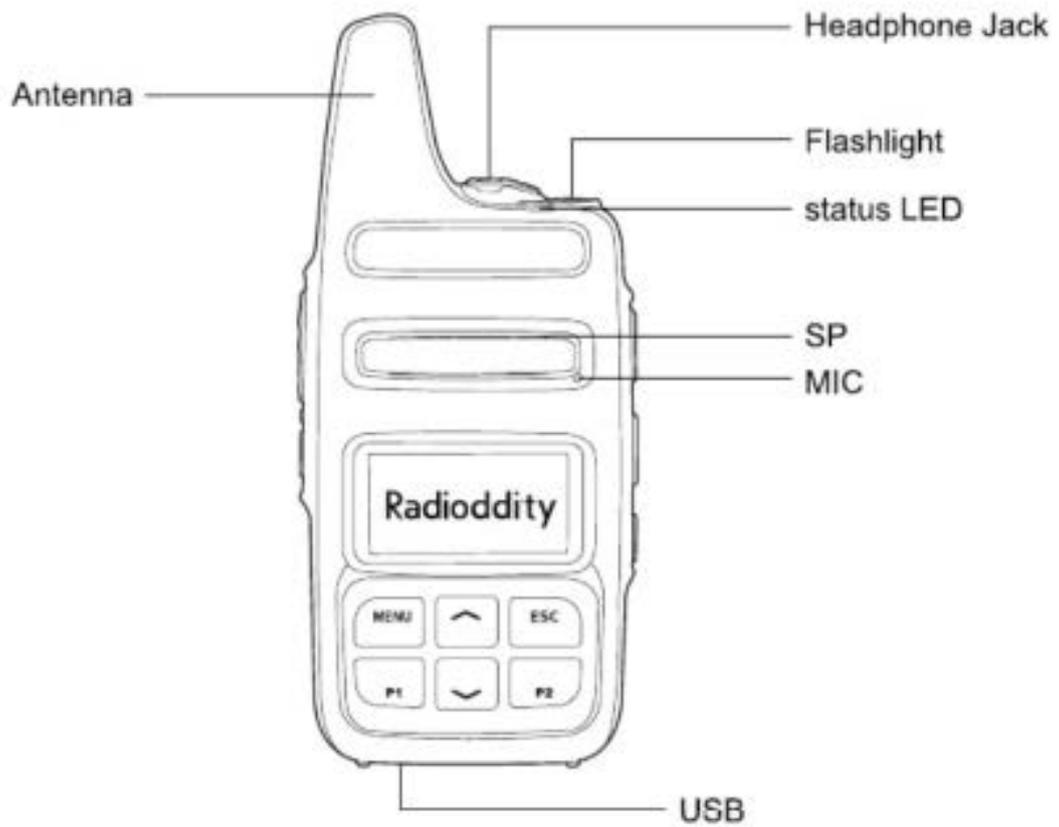
There are various sources to gather the details required to setup a channel for operating a specific station such as:

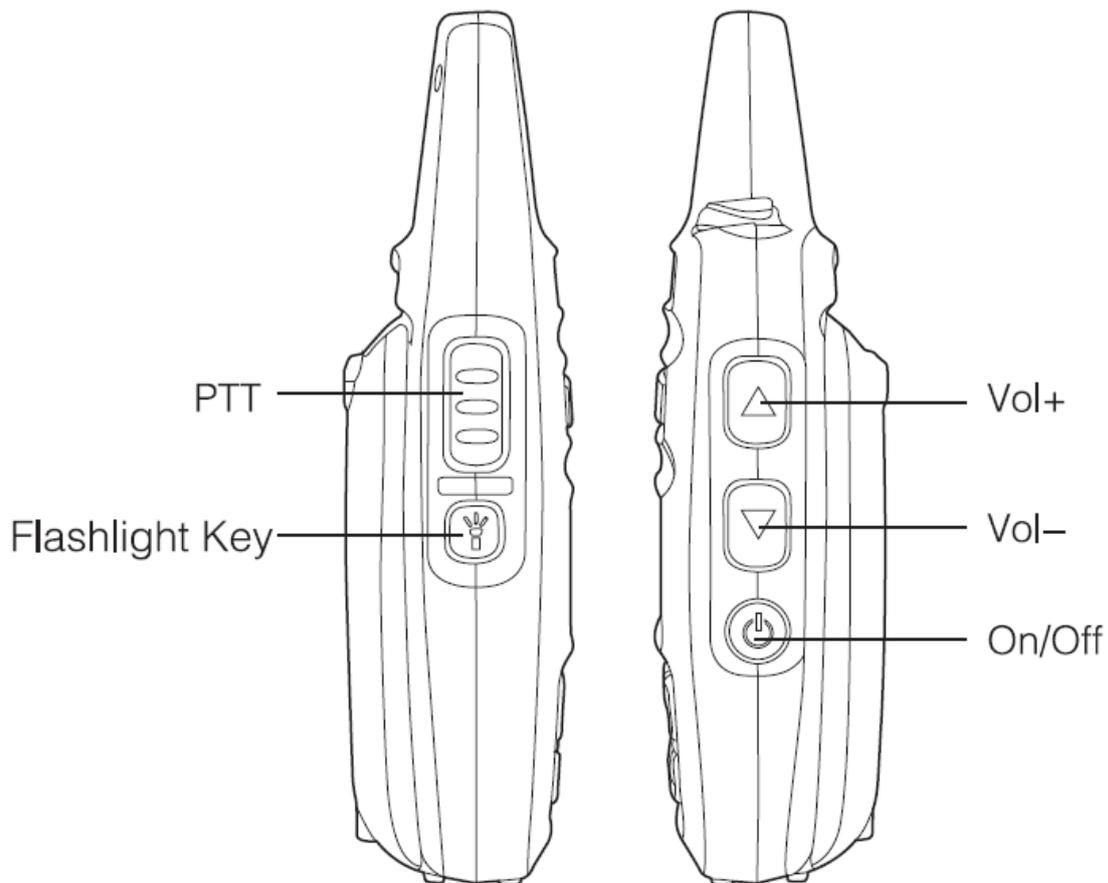
<https://brandmeister.network/>

<http://www.dmr-marc.net/repeaters.html>

Or just check with your local amateur radio group.

Radio controls





General

Turning on the radio

The power on/off switch is located on the right side of the radio. Press and hold it for about 3 seconds to turn on the radio. The Radioddity logo appears on the display, the status LED lights up red briefly and an ascending 4-tone sequence sounds.

Turning off the radio

Press and hold the power on/off button for about 3 seconds to turn the radio off. The display goes off.

Adjust the volume

Above the power on/off button are the volume up (▲) and volume down (▼) buttons, use these to adjust the volume of the built in speaker or any attached external earphone.

Note:

Later on in this document the symbols ▲ and ▼ will refer to the front panel up/down selector of the GD-73, underneath the LCD display.

Programming the GD-73

The GD-73 is a UHF radio with digital DMR (true tier I and II) as well as analogue FM. It offers a total of 1024 channels (analogue and digital), arranged in up to 64 zones. Each zone can accommodate a maximum of 16 channels each. In addition, up to 1024 contacts with the CPS can be stored on the radio.

The file created by the Computer Programming Software (CPS) contains the frequencies and other operating parameters and is referred to as a 'code plug'. Creating a code plug is a bottom-up process where you first have to create the lowest common elements, and then combine those elements to form a code plug that will be transferred to the radio. With the GD-73's CPS, you can create the code plug yourself to suit your exact requirements, or you can use another person's code plug if you wish. Don't forget to save your code plug so you can easily make changes to your radio configuration at some time in the future.

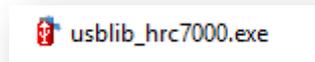
The programming cable for the GD-73 is an included accessory. The USB programming cable has a Type A USB connector for connection to USB port of a PC and a micro USB connector on the other side for connection to the GD-73. This is a standard USB cable, the same as many smartphone USB cables. The cable does not contain any special electronics. For the PC to identify the GD-73, it must be connected to the PC by this cable and the GD-73 turned on.

Note

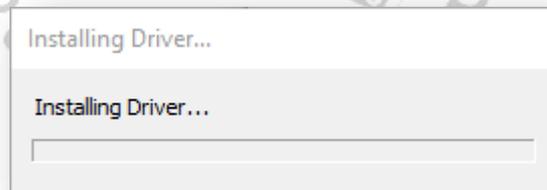
There is no chip or electronics in the cable so the radio's internal communications port can only be identified when the radio is switched on.

3. Installation of the USB driver

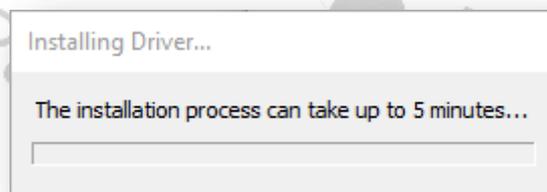
1. Locate the file 'usblib_hrc7000.exe' in the software package.



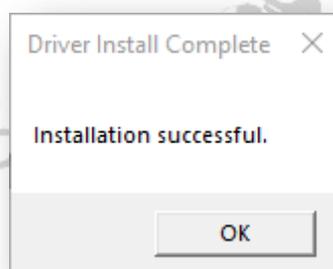
2. Run this program as an Administrator
3. If possible, do not save the generated .inf driver on the desktop, but place a different directory of your boot drive.
4. The driver is then automatically installed



5. Wait until the installation is complete



6. Once driver installation is complete you will see a message indicating success



In case of an error, stop the installation process and then repeat the process one more time by saving the file 'walkie-talkie-C7000.inf' and the other files in a different location.

Use Windows Device Manager to verify that the computer has loaded the appropriate driver for the device. Additional configuration of the driver is not required.



If the driver does not load automatically, you can download the correct 32-bit and 64-bit drivers at <https://www.radioddity.com>

CPS and firmware updates provided by Radioddity

The computer programming software (CPS) for the GD-73 is updated by Radioddity as new features are added, detected bugs are fixed or other improvements made. For updates, visit the Radioddity website at <https://www.radioddity.com>

Note

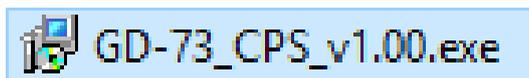
The software version should always match the firmware version i.e. software version 1.00 should always be used with the firmware version 1.00, etc.

This firmware is specific to this model only. Loading a firmware from another model radio will not add extra functionality to the GD-73, but will most likely render it inoperable.

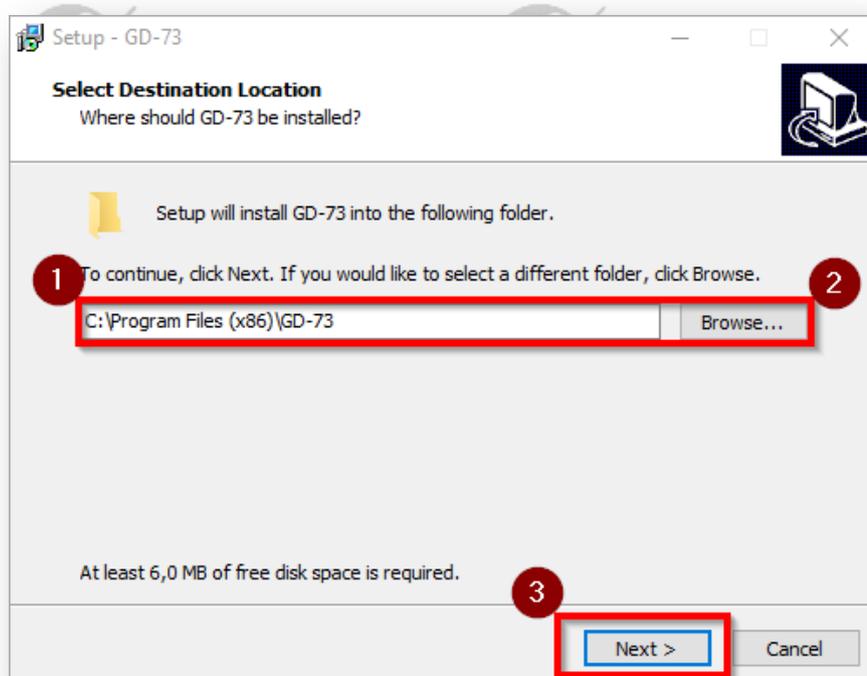
4. Installation of the CPS

Before you may start programming your codeplug using the Radioddity CPS you need to install the USB-Driver as described in the previous chapter and the CPS as described in this chapter.

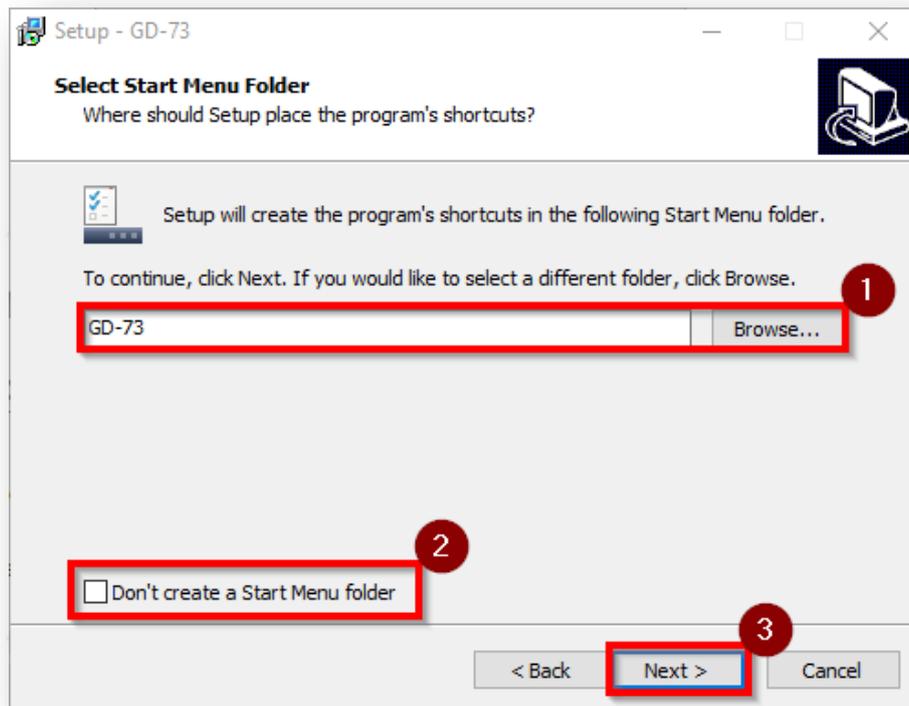
1. Locate the installer for your CPS, named e.g. 'GD-73_CPS_v1.00.exe ' in the software package.



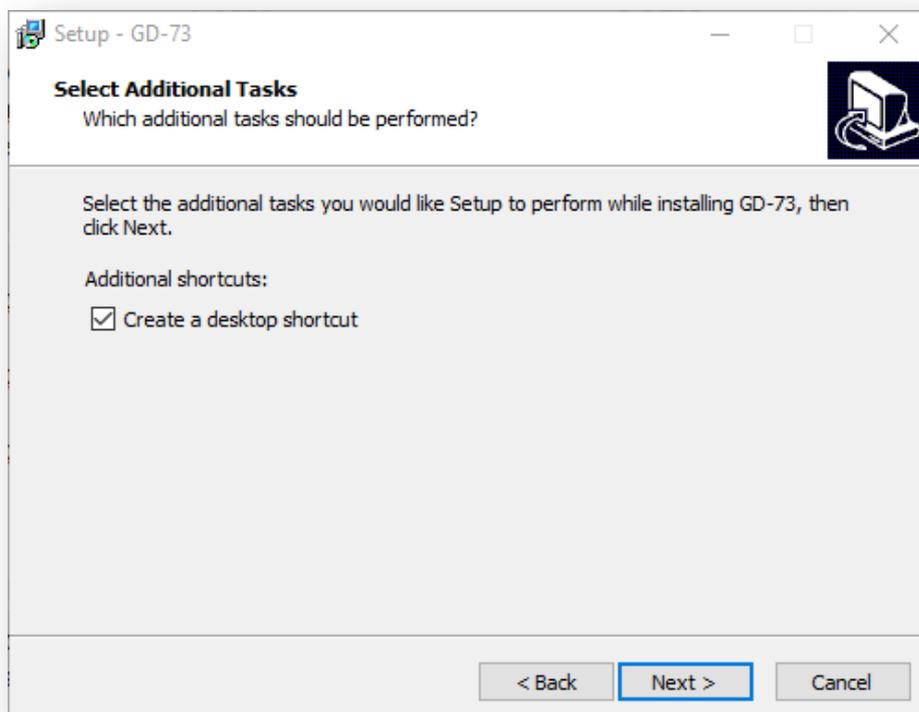
2. Run this program as an Administrator



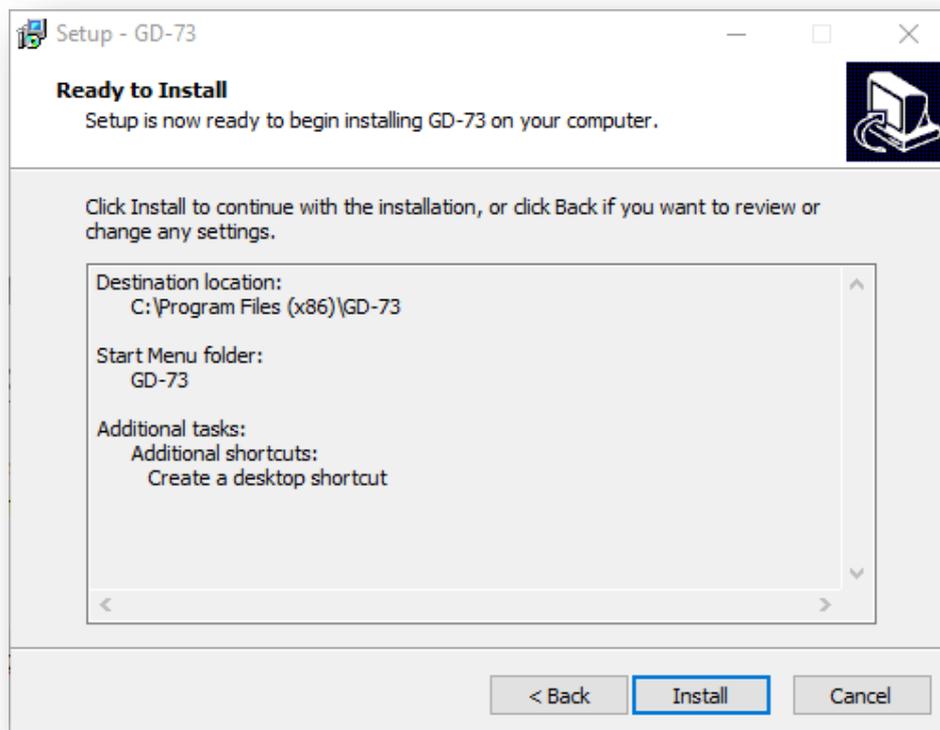
3. The path (1) you want the CPS to be installed may be changed (2) before hitting the next-button (3) to continue installation of the CPS:



4. If you want to change the folder name (1) or don't want the installer to create a startmenu folder (2), feel free to change those options before hitting the Next-key (3).



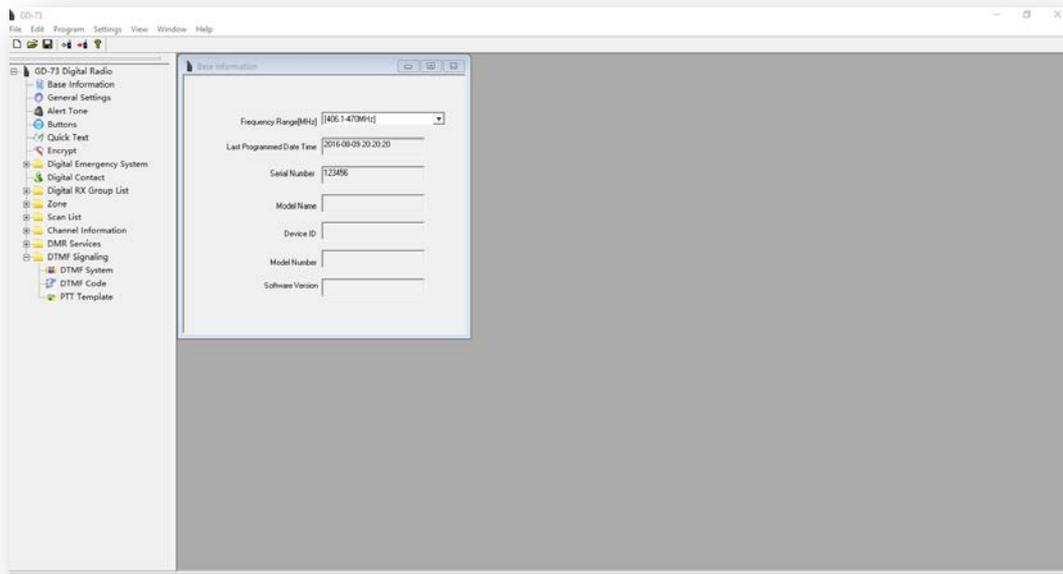
5. It is a good idea to tick the checkbox in order to create a desktop shortcut before once more hitting the Next-key.



6. The final click on 'Install' now installs the CPS with the settings you provided.



7. After just a few seconds, the installation process will be completed and a click on 'Finish' will get you right to the CPS.

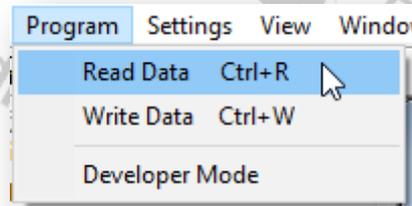


Congratulations, that's it!

5. Create a code plug from scratch

To begin creating a code plug for your GD-73, first 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 the GD-73, the software offers several options:



Read Data

To read all frequency settings and other settings of your GD-73 radio, use this option.

Write Data

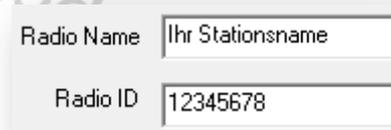
Whenever you have made your changes and additions to the settings of your GD-73 radio, use this option to transfer your settings to the radio.

Note

It is highly advised to create a code plug from scratch rather than taking a code plug from someone else.

4a. Enter Call sign and DMR ID into code plug

To store your personal DMR ID into your codeplug, click on 'Edit' → 'General Settings'

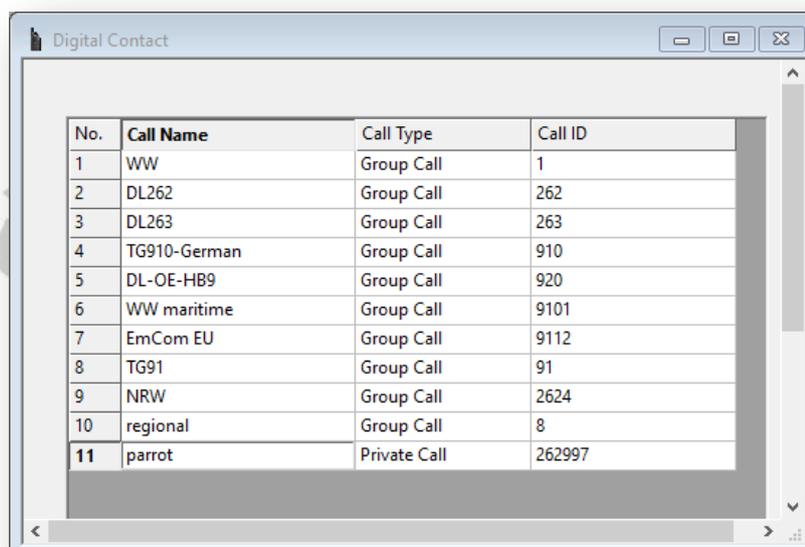
A screenshot of a dialog box with two input fields. The first field is labeled 'Radio Name' and contains the text 'Ihr Stationsname'. The second field is labeled 'Radio ID' and contains the number '12345678'.

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.

4b. Create Digital contacts

Up to 1024 digital contacts can be stored. These digital contacts are used for storing talkgroups (TG) as well as individual stations DMR ID numbers. Select 'Edit' → 'Digital Contacts' to edit the digital contacts.



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 (up to 1024 entries)
Call Name	Display name of the contact
Call Type	You can choose between the following call types: <ul style="list-style-type: none"> • Group Call • Private Call • All Call
Call ID	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 (TG) depending on the call type.
Call Receive Tone	A warning tone will sound on the receiving radio before it mutes during a Group Call, Private Call, or All Call. This feature is set on a call basis.

4c Setup Digital RX Groups

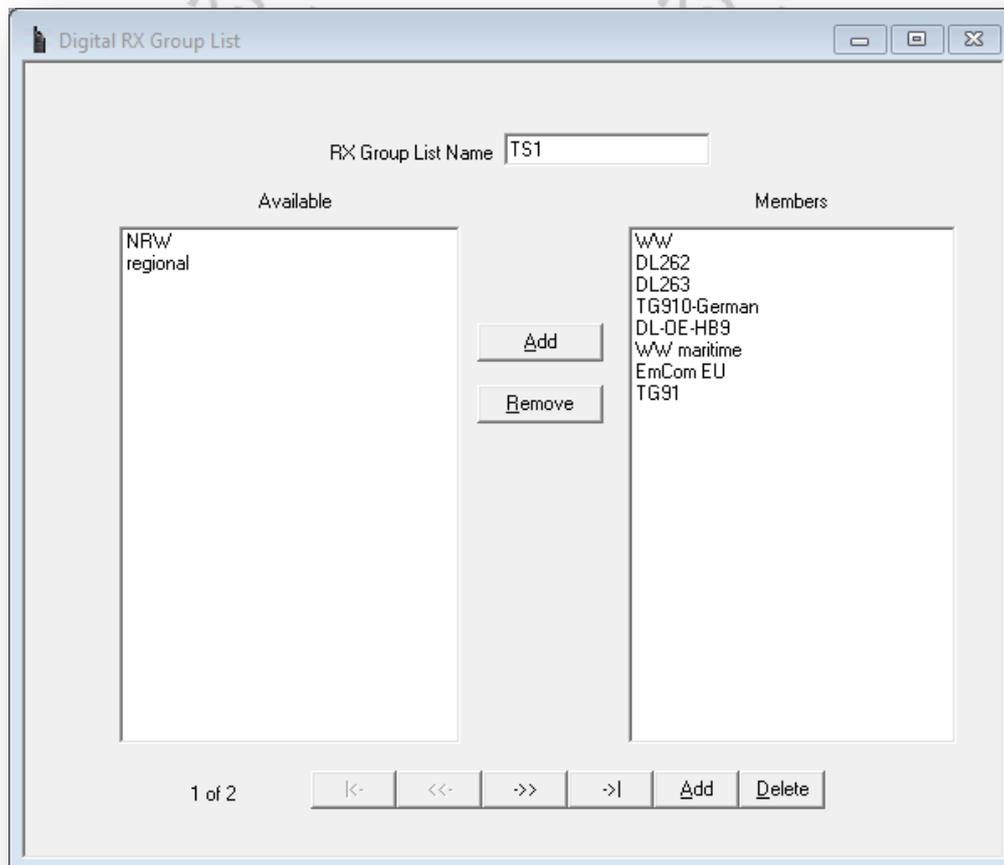
Each digital channel can receive one or many talkgroups. The actual talkgroups that are able to be heard are defined in a Digital RX Group and attached to the channel.

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.

- Up to 250 individual Digital RX groups can be created and named to identify each group
- 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 contact for the channel 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.

To edit these groups, use 'Edit' → 'Digital RX Group List'. A typical group may look like:



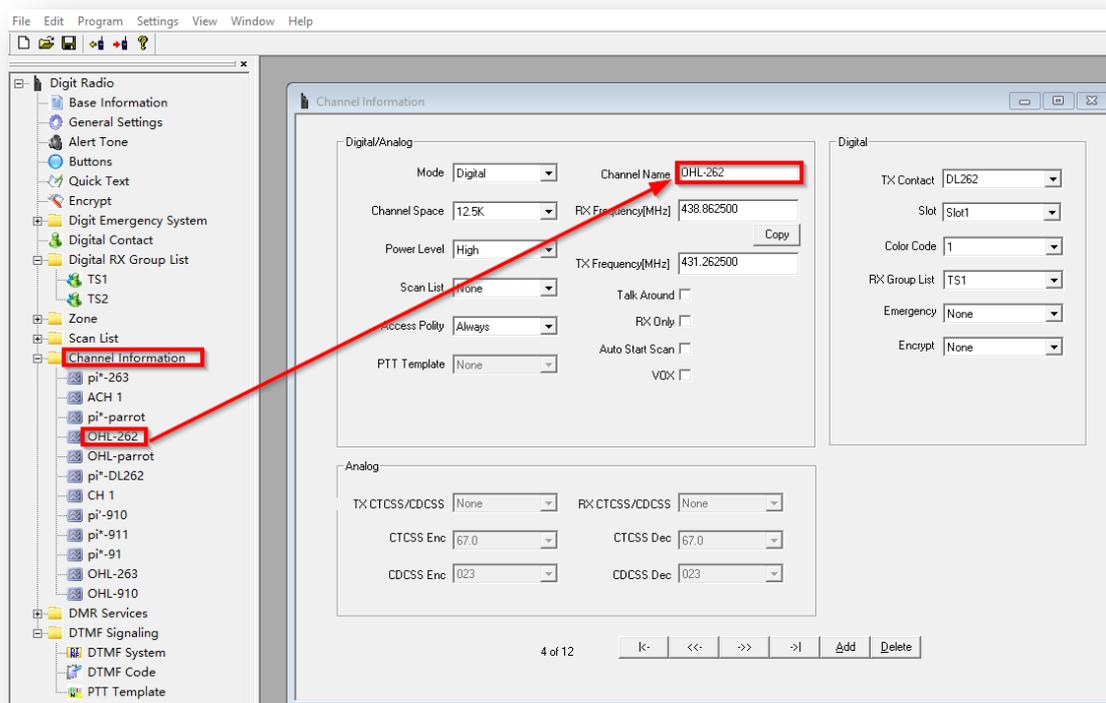
By clicking on the 'Add' button, you can now add another 'Digital RX Group'. A click on the 'Delete' button deletes the displayed 'Digital RX Group'.

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'.

4d Setup of channels

To edit the channels, click on 'Edit' → 'Channel Information'. You can then select one of the existing 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. <location of station/repeater>-<talkgroup> such as 'Cologne-262'



By clicking on the 'Add' button, you can add another channel.

Here is a brief explanation of the different fields you can customize for each channel:

Digital+Analog	
Mode	Choose between 'analogue' and 'digital'
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
Channel Space	Select the transmit / receive bandwidth here. In digital mode this is fixed at 12.5 kHz
Power	Selection of RF output power (cannot be changed for PMR)
Scan List	Select what scan list to scan when a scan is initiated on this channel.
Talk Around	Enables the ability to swap transmit and receive frequencies
Access Policy	Also known as 'admit criteria' this selects how a transmission is allowed to be sent
RX Only	Sets the channel to receive only, transmit is disabled.
Auto Start Scan	As soon as this channel is selected, scanning automatically starts with the scan list specified under 'Scan List'
PTT Template	For an analogue channel, the PTT template to be used can be specified here.
VOX	Selects if VOX (voice activated transmit) is active for this channel

Digital	
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 RX Group List used for the channel
Emergency	Defines which emergency system is relevant for this channel
Encrypt	Sets encryption to be used for this channel
Analog	
TX CTCSS/DCS	Choice of sub audible variant for sending: 'None' 'CTCSS', 'DCS' and 'DCS Invert'
RX CTCSS/DCS	Selecting the sub audible variant for the receiving: 'None' 'CTCSS', 'DCS' and 'DCS Invert'
CTCSS Enc	If CTCSS has been selected for transmission, the corresponding sub audible frequency to be transmitted is selected here
CTCSS Dec	If CTCSS has been selected for receiving, the corresponding sub audible frequency for reception is selected here
DCS Enc	If DCS or DCS Invert signalling has been selected for transmission, the corresponding sub audible DCS signalling code to be transmitted is selected here
DCS Dec	If DCS or DCS Invert signalling has been selected for reception, the corresponding sub audible DCS signalling code to be received is selected here

When complete, click OK to save this channel.

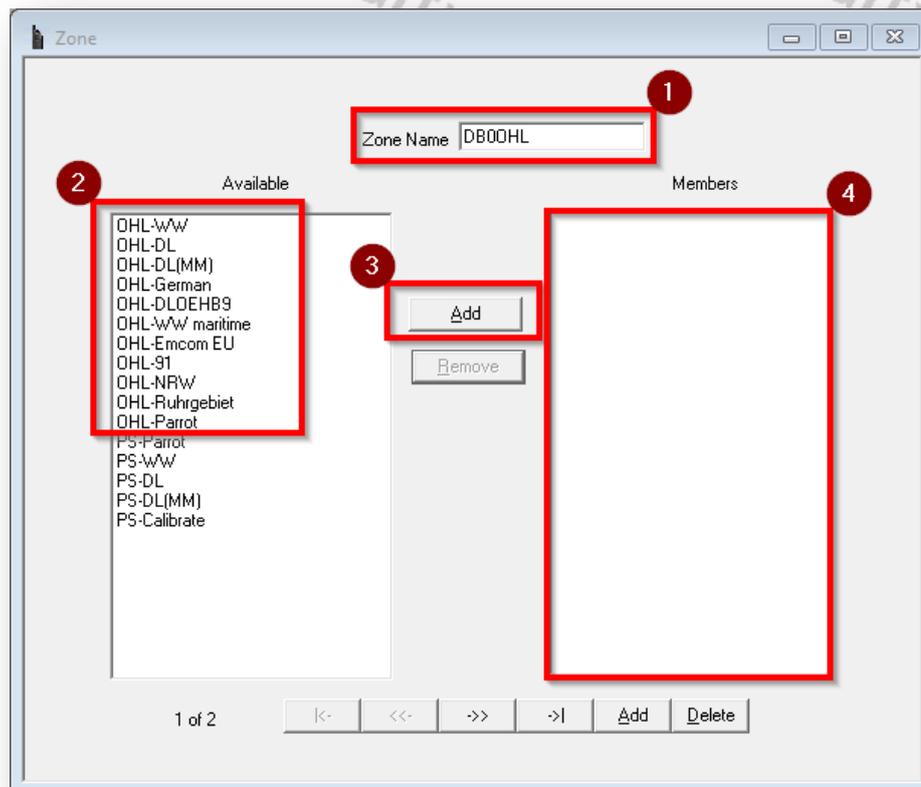
Note:

It is helpful, but not essential, to have the DMR channel name indicate what TX talkgroup is assigned to the channel.

*Most of the fields will be prefilled with the proper values. For DMR-operation it is mainly the fields **Mode, Channel Name, RX/TX frequency, TX Contact, Slot, Color Code, RX Group List** that need to be aligned to the specific station you want to operate.*

4e. 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. Up to 16 radio channels can be stored in one zone of your GD-73. A total of up to 64 zones are possible. It makes sense to bundle channels according to their use. For example, it makes sense to bundle all channels of a DMR repeater within one zone. Another zone could contain all analogue radio channels of a geographical region.

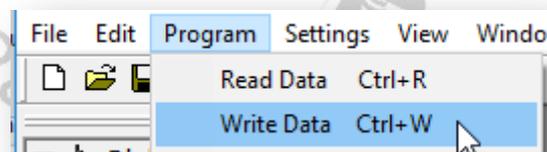


1. First give the zone a meaningful name (1), such as the identification of the repeater whose channels you want to store in the zone.
2. Then select from the list of available radio channels (2) on the left all those you want to bundle in that zone.
3. Click the 'Add' button (3) to accept each channel.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

That is all what is required.

6. 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 'Program'→'Write Data'



7. Get 'on air'

Now you are prepared to get 'on air'.

Selecting a Zone

A zone is a collection of radio channels grouped together. Your radio can store up to 64 such zones, each with up to 16 channels.

1. Press the **MENU** button to enter the menu.
2. Using the buttons **▲** and **▼** navigate in the menu and confirm your selection by pressing the **MENU** button again.
3. Select 'settings' in the menu
4. Then select 'zone' in the sub-menu
5. Using the buttons **▲** and **▼** navigate to the desired zone and confirm selection of your chosen zone with the **MENU** button.
6. The display now shows the selected zone in the middle.
7. The line below shows the currently selected channel in the zone.

Selection of a channel

Navigate with the buttons **▲** and **▼** to select the desired channel. Confirmation with the **MENU** key is not required here.

Receive and answer a DMR group call

In order to receive a DMR group call, a group (talkgroup or TG) must first be selected on the radio. Each DMR channel can be assigned exactly one group using the CPS.

Receiving DMR group calls

First, a channel must be selected on the radio to which a group (talkgroup or TG) is assigned. Only then can a group call be received.

1. The status LED lights up green
2. If the channel is not active, then the display shows:
 - in the middle line the name of the zone
 - in the bottom line the name of the selected group
3. If the channel becomes active, then the display shows:
 - in the top row 'Group'
 - in the middle line, the DMR ID of the caller
 - in the bottom line 'Calling', followed by 'end call' if the channel was not previously active.

Answering a DMR group call

1. Hold the radio vertically, about 2.5 to 5cm from your mouth
2. Now press the PTT key to answer the call. The status LED lights up red. You can talk now.
3. Once finished speaking, release the PTT key to return to receive
4. If a response is not heard within a predetermined time, the call is terminated.

Initiating a DMR group call

All radios that you wish to communicate with must be on the same group.

1. Select the desired channel using the  and  buttons. Programming channel names with a name that associates with the Talkgroup is useful to facilitate this.
2. Hold the radio vertically, about 2.5 to 5cm from your mouth
3. Now press the PTT key to transmit. The status LED lights up red. The group name appears on the display
4. Once finished speaking, release the PTT button to return to receive. If a response is not heard within a predetermined time, the call is terminated.
5. When the call is answered, you will see the status LED light up green.
6. On the display you will see:
 - in the top line 'Group'
 - in the middle line the DMR-ID of the caller
 - in the bottom line 'Calling' is displayed, followed by 'end call' if the channel was not previously active.
7. If the Channel Free Indication Tone feature is enabled, you will hear a short beep as soon as the transmission has finished.
8. When the group call is over, the display changes back to the previous display.
9. A group call can also be initiated from the contacts.

Thank you for your purchase from Radioddity!

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