

OpenGD77

Installation Instructions Overview

1. Download the required files as indicated in the Online Guide. Note the location where you saved the files.

https://github.com/LibreDMR/OpenGD77_UserGuide/blob/master/OpenGD77_User_Guide.md#download-links-and-other-resources

Example of the download folder for the MD-380/RT3S and similar radios:

Name	Last Modified
Parent Directory	
<u>OpenDM1701.zip</u>	2024-08-03 15:48
OpenDM1701_Japanese.zip	2024-08-03 15:48
<u>OpenMDUV380.zip</u>	2024-08-03 15:48
<u>OpenMDUV380_10W_PLUS.zip</u>	2024-08-03 15:48
OpenMDUV380_10W_PLUS_Japanese.zip	2024-08-03 15:48
OpenMDUV380_Japanese.zip	2024-08-03 15:48
<u>OpenRT84.zip</u>	2024-08-03 15:48
OpenRT84_Japanese.zip	2024-08-03 15:48

2. Unzip the donor file to your computer and note the location if different from above. The OpenGD77 firmware file should not be unzipped.
3. The Online Guide recommends installing the stock CPS and capturing the stock codeplug before changing to the OpenGD77 firmware.
4. Install the OpenGD77CPS program, including the drivers at the end.

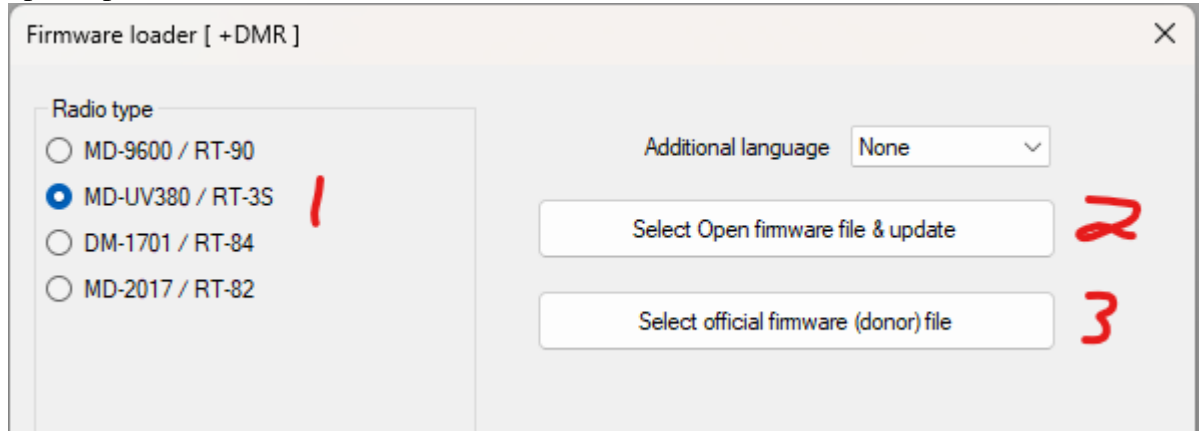
For GD-77 | GD-77S | DM-1801 | DM-1801A and RD-5R no other driver is required. For all other radios the STM DFUSe driver is required. It can be downloaded from <https://www.retevis.com/rt3s-dual-band-dmr-radio-built-in-gps-us#software>

NOTE: some DM-1701 and RT3S radios appear to need the PL23xx driver which can be found on the same page as above. I find this strange but the OpenGD77 CPS would not see the radio until this Prolific driver was installed. Ran into a DM-1701 that had a CH-340 chip in it, which needed a different driver.

5. Put the radio into firmware update mode as per the online guide and connect it to the computer. Make sure the connector is seated all the way into the radio's jacks!

https://github.com/LibreDMR/OpenGD77_UserGuide/blob/master/OpenGD77_User_Guide.md#transferring-data-to-radio

6. Start the OpenGD77 CPS and select the radio type from the Menu.
7. Go to Extras, Firmware Loader. Select the radio type, then identify the location of the donor bin file. Finally, select the appropriate zipped firmware file for your radio, which will start the upload process.



8. When the firmware has successfully uploaded, restart the radio in standard mode.
9. BEFORE uploading a codeplug, save backups of the EEPROM, Flash, MCU/ROM, and Calibration as shown in the guide:
https://github.com/LibreDMR/OpenGD77_UserGuide/blob/master/OpenGD77_User_Guide.md#backup-before-you-do-anything-else NOTE: only the GD77, GD77S, DM1801, and RD-5R radios back up all 4. The other models just do Flash and MCU. These backups can be used to restore the factory configurations should you ever want to go back to stock. Personally, I would not go back for any of my radios with the OpenGD77 firmware!
10. You can now upload an OpenGD77 compatible codeplug to the radio. All radios with the OpenGD77 firmware use the same format of codeplug, so if you already have one from another OpenGD77 radio, you can upload it. Otherwise, you will need to create a new codeplug.

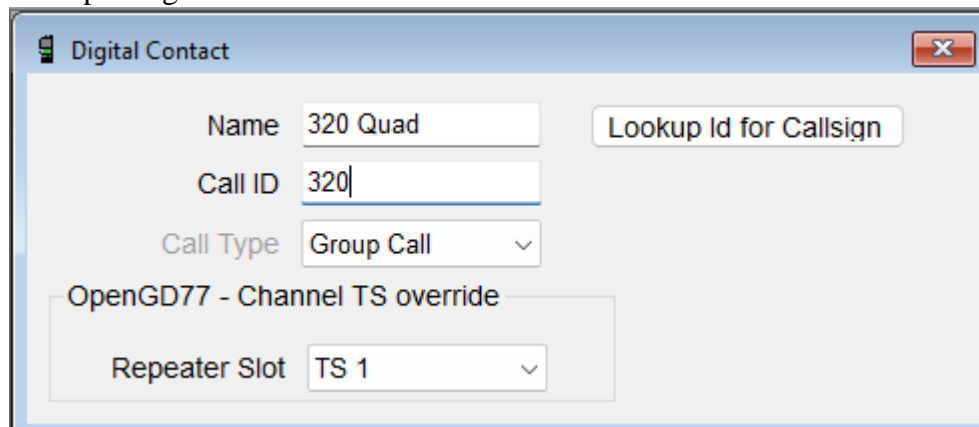
OpenGD77 CPS Overview

Basic CPS steps for DMR via a repeater or duplex hotspot:

1. If you do not already have a DMR ID, go to <https://radioid.net> and apply for one. Without an ID, you will only be able to listen to DMR signals.
2. Create Contacts (Group Call) for the various Talkgroups you want to connect to on the repeater
3. Create a TG List for Timeslot 1 and one for Timeslot 2; add the TG's to the appropriate TG List (based on how the repeater is configured)
4. Create 2 channels for your DMR repeater, one for each TS (perhaps named with the repeater's call sign plus -1 or -2 for the timeslot), specifying the appropriate TG List for each plus the TS and Color Code (leave Contact as N/A)
5. Add the 2 channels to a Zone. A Zone can contain both analog and digital channels.

The steps for a simplex hotspot are much the same, except only one TG List is required for the single timeslot used by the hotspot.

Example Digital Contact



A dialog box titled "Digital Contact" with a close button in the top right corner. It contains several input fields and a button. The "Name" field is set to "320 Quad". The "Call ID" field is set to "320". The "Call Type" dropdown menu is set to "Group Call". There is a button labeled "Lookup Id for Callsign". Below these fields is a section titled "OpenGD77 - Channel TS override" which contains a "Repeater Slot" dropdown menu set to "TS 1".

Name: 320 Quad

Call ID: 320

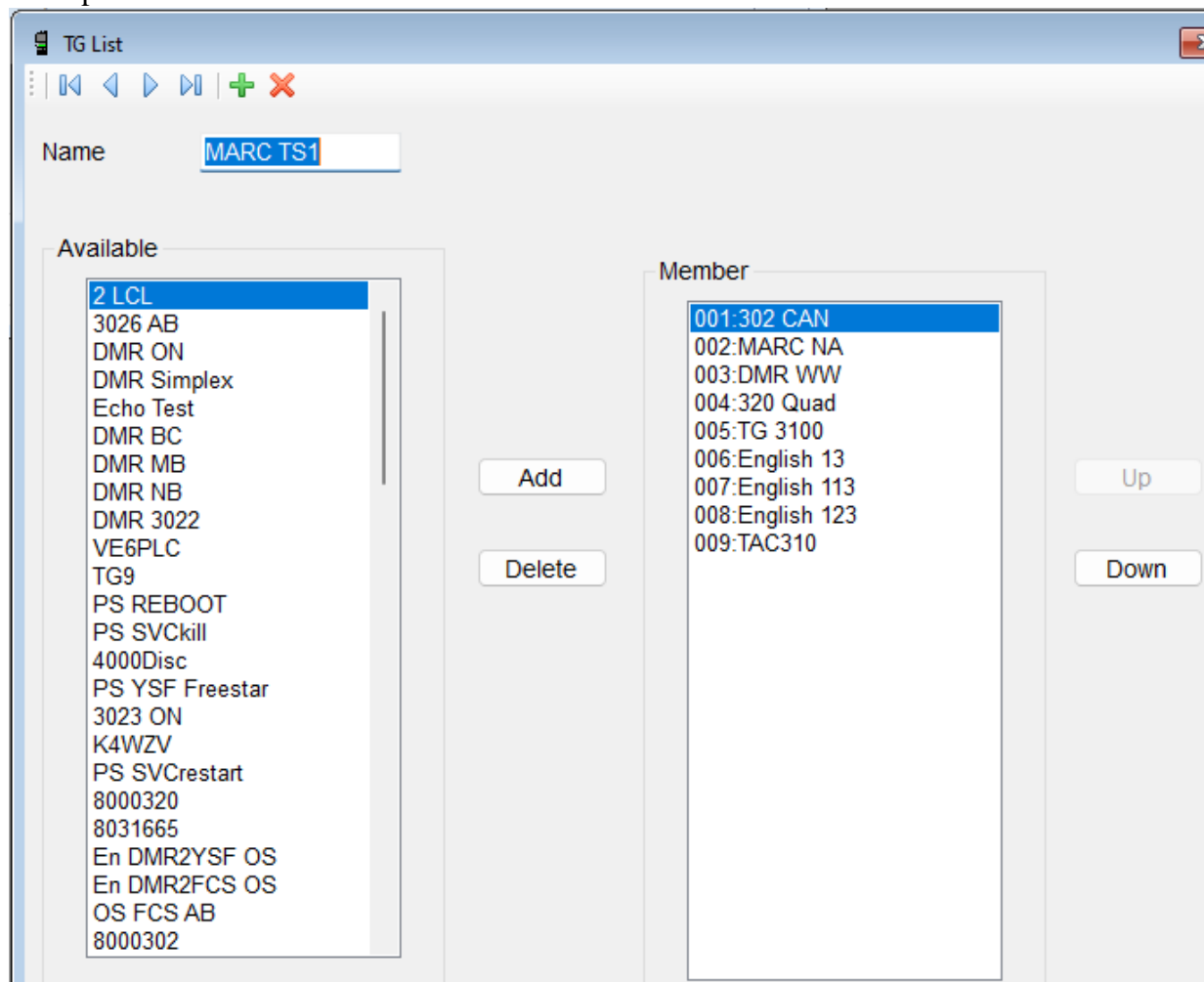
Call Type: Group Call

Lookup Id for Callsign

OpenGD77 - Channel TS override

Repeater Slot: TS 1

Example TG List



A dialog box titled "TG List" with a close button in the top right corner. It features a toolbar with navigation icons (back, forward, search, etc.) and a "+" button. The "Name" field is set to "MARC TS1". Below this are two list boxes: "Available" and "Member". The "Available" list contains 30 items, with "2 LCL" selected. The "Member" list contains 9 items, with "001:302 CAN" selected. Between the lists are "Add" and "Delete" buttons. To the right of the "Member" list are "Up" and "Down" buttons.

Name: MARC TS1

Available

- 2 LCL
- 3026 AB
- DMR ON
- DMR Simplex
- Echo Test
- DMR BC
- DMR MB
- DMR NB
- DMR 3022
- VE6PLC
- TG9
- PS REBOOT
- PS SVCKill
- 4000Disc
- PS YSF Freestar
- 3023 ON
- K4WZV
- PS SVCrestart
- 8000320
- 8031665
- En DMR2YSF OS
- En DMR2FCS OS
- OS FCS AB
- 8000302

Member

- 001:302 CAN
- 002:MARC NA
- 003:DMR WW
- 004:320 Quad
- 005:TG 3100
- 006:English 13
- 007:English 113
- 008:English 123
- 009:TAC310

Add

Delete

Up

Down

Example Digital Channel

Channel 39 / 47

Mode: Digital Rx Freq [MHz]: 444.00000 Tx Freq [MHz]: 449.00000

Name: RYC-TS1 Power Level: 4W | 5W | 25W TOT [s]: 180

Latitude: 4 Longitude: 0.008 ☐ Use Location

Bandwidth [KHz]: 12.5

Rx Tone [Hz]: None Tx Tone [Hz]: None

OpenGD77 Squelch Level: Master APRS: None

☐ Scan: Zone skip
☐ Scan: All skip
☐ Vox
☐ Rx Only
☐ No Beep
☐ No Eco

Digital

DMR ID:

TG List: MARC-TS1

Color Code: 1

Contact: N/A

Repeater Slot: 1

TS1 Talker Alias Tx: Off

TS2 Talker Alias Tx: Off

☐ Force DMO

Example Analog Channel

Channel 1 / 47

Mode: Analog Rx Freq [MHz]: 147.13500 Tx Freq [MHz]: 147.73500

Name: VA6CAL-V Power Level: 4W | 5W | 25W TOT [s]: 180

Latitude: 0 Longitude: 0.008 ☐ Use Location

Bandwidth [KHz]: 25

Rx Tone [Hz]: 110.9 Tx Tone [Hz]: 110.9

OpenGD77 Squelch Level: Master APRS: None

☐ Scan: Zone skip
☐ Scan: All skip
☐ Vox
☐ Rx Only
☐ No Beep
☐ No Eco

Digital

DMR ID:

TG List: None

Color Code: 0

Contact: N/A

Repeater Slot: 1

TS1 Talker Alias Tx: Off

TS2 Talker Alias Tx: Off

☐ Force DMO

Example Zone

The 'Zone' window displays a list of zones. The 'Name' field is set to 'ShortScan'. The 'Available' list contains the following items: OS Scan BM, VA6CAL-U, HS3 FAVS, MARC 1&2, VE6KQ-U, DRU-V420net, VE6QCW, 52 Simplex, VE6OIL-V, 55 Simplex, VE6OIL-U, 446 Simplex, OS Freestar, VA6CAL-D, pi-starpl, VA6DRU, 446.75simp, MyFox-U, MyFox-V, and PS REBOOT. The 'Member' list contains the following items: 001:VA6CAL-V, 002:PS77 Scan, 003:HS5 TS1, 004:HS5 TS2, 005:OS DMR2Fusion, 006:DRO TS1, 007:DRO TS2, 008:RYC TS1, 009:RYC TS2, 010:VE6RYC, 011:445.900 simp, 012:441 D Simp, 013:VE6EHX-U, and 014:VE6CTV. There are 'Add', 'Delete', 'Up', and 'Down' buttons between the lists.

Available	Member
OS Scan BM	001:VA6CAL-V
VA6CAL-U	002:PS77 Scan
HS3 FAVS	003:HS5 TS1
MARC 1&2	004:HS5 TS2
VE6KQ-U	005:OS DMR2Fusion
DRU-V420net	006:DRO TS1
VE6QCW	007:DRO TS2
52 Simplex	008:RYC TS1
VE6OIL-V	009:RYC TS2
55 Simplex	010:VE6RYC
VE6OIL-U	011:445.900 simp
446 Simplex	012:441 D Simp
OS Freestar	013:VE6EHX-U
VA6CAL-D	014:VE6CTV
pi-starpl	
VA6DRU	
446.75simp	
MyFox-U	
MyFox-V	
PS REBOOT	

Extras, OpenGD77 Support Window

For MD-UV380/RT3S, MD-9600/ RT90, DM-1701, RT84, MD-2017/RT82 Radios

The 'OpenGD77 Support' window contains several utility buttons: Backup MCU ROM, Read codeplug, Download screengrab, Write codeplug, Backup Flash, Write voice prompts, Restore Flash, Clear voice prompts, Backup Registers, Save NMEA log, and Install satellite keps. A URL field contains <https://www.celestrak.com/NORAD/elements/amateur.txt>. The 'Fun things' section includes a 'Select boot image' button and a 'Boot melody' input field with the text '38,6,0,2,38,2,0,2,38,6,0,2,38,2,0,2,38,6'. A 'Play tune' button is also present.

Fun things
Select boot image
Boot melody 38,6,0,2,38,2,0,2,38,6,0,2,38,2,0,2,38,6
Play tune

Extras, Download callsign database

Download callsign database

Downloading...

Region HamDigital - Inactivity filter (days)

Column filter

☒ 1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 Separator

ID	Callsign	Details	Last heard (days ago)
*			

Write parameters

Data record length Number of characters

These settings work well for radios with a large storage space.

Selecting Zones, Channels, and Talkgroups

Use the green Menu button then the up or down arrow buttons to select the Zone option. Press the Menu button again to bring up the list of Zones. Select the Zone using the up/down buttons and press the Menu button again. For GD-77 and similar radios, use the Up/Down arrows to select the channel within the Zone and the Left/Right arrows to select the TG within the channel.

The TYT MD-UV380, Retevis RT-3S, and Baofeng DM-1701 radios do not have Right and Left arrow buttons, but have a rotary control on top of the radio. On the VFO and Channel screens, the **Up** and **Down** buttons function like the Right and Left button on the GD-77. The rotary control operates functions like the **Up** and **Down** buttons on the GD-77 and can be used to change the channel or VFO frequency.

Radio Control Keys and Buttons “Cheat Sheets”




The control keys and button used for the various functions on each radio can be found at:

https://github.com/LibreDMR/OpenGD77_UserGuide/blob/master/OpenGD77_User_Guide.md#the-control-keys-and-buttons

Here is an example:

OpenGD-77 TYT MD UV-380/UV-390 / Retevis RT-3S



Common settings DMR / FM:

RF Power	[SK2] + [▲] or [SK2] + [▼]
Channel details	[SK1]
Reverse mode	long press [#]
DMR or FM selection	[SK2] + [*]
Freq. / channel select	[select] knob
VFO or Memory mode	
Memory mode: channel selection	turn [select] knob
VFO mode: VFO A or B	long press 
VFO mode: Tx / Rx select	[SK2] + [select]
VFO mode: Freq. entry	num keys, store with 
Scanning ON	long press [▲]
Scanning OFF	any num key or rotate [select] ↻

FM mode:

Squelch setting	short press [▲] or [▼]
Monitor mode	long press [SK2]
Send 1750 Hz tone	[SK2] + [PTT]


Other functions:

[PTT] lock (disable [PTT])	 followed by [#]
Keyboard lock	 followed by [*]

[SK1] +  = Quick Menu
 [SK2] +  = Menu Channel details
 [SK1] + PTT - ON = Firmware Load
 [SK2] - ON = Firmware Reset



DMR settings:

TG list, selection	[▲] or [▼]
Private call, accept	
TG, manual input	[#] + enter TG number
Private call	[#] [#] + enter ID number
Contact	[#] [#] [#], sel. with [▲] or [▼]

Above [#] entries must be entered in fast sequence, entries terminated with an: 