

TY MD380 Tools

<https://kg5rki.com/new/>

“making a good radio, a GREAT radio”



Welcome to the official TY MD380 Tools.



KG5RKI Ty Weaver a experienced developer and new ham radio operator who has really enjoyed DMR, TYT MD380/90 and the MD380 Tools hack, He has put his skills to work on the hack and website.

This document is designed to explain the existing features of “MD 380tools” and the features that Ty has added to his “TY MD 380tools”.

The MD380 Tools is actively being developed by Travis Goodspeed, KK4VCZ and many others and deserve much credit for their work on MD 380tools without witch we would not be enjoying these great hacks.

The "patched" firmware is developed primarily for the UHF MD380 Radio. The VHF Radio will support most features due to the smaller SPI Flash chip vs the UHF model.

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 - Open alternate menu with #
 - Set talk group option (type in talk group number and will be applied to current channel)
 - Private call option (type in dmr ID)
 - Removed missed calls window (get rid of annoying popup every time you disconnect or use private call)
 - Exit all windows using end call instead of 7
 - Removed volume meter
 - Last heard user info to screen while transmitting. Select Mic bar -> Vertical + LH
 - screen indicator for ad-hoc talk groups / private calls
 - color code scanner
 - faster response time

- private call last heard station with side button
- private call manual opens with LH station ID filled in
- channel names starting with TG- will automatically override talk group number. So you can program contacts without CPS.
- removed program radio password locking
- double tap # for shortcut to edit AdHoc TG
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- TYT’s website at <http://www.tyt888.com/?mod=download>
- OR use
- Ty’s **TY MD380Tools AIO** “All In One” Windows Application
- OR use
- Ty’s Android App “**TyMD380Tool**”

2. To get “**TY MD380 Tools**” bin file,
 - Get it here (bottom of page) <https://kg5rki.com/new/>
 - Or <https://www.facebook.com/groups/DMRTrac k/> (files area)
 - or the App will retrieve the latest from Ty’s site automatically.

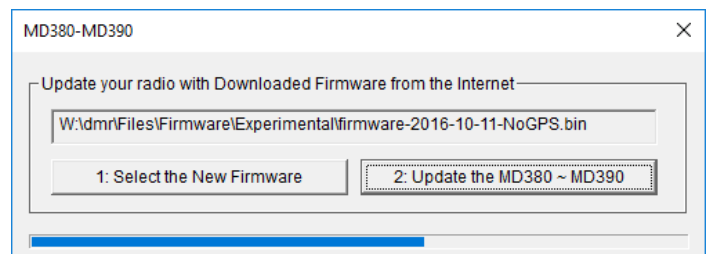
HOW TO UPDATE YOUR RADIO FIRMWARE with UPDATER:

- Turn off your radio using the volume knob
- Attach the Tytera USB cable to the SP and MIC ports of your radio (Baofeng cable will **NOT** work!)
- Attach the Tytera USB cable to your host computer
- **Push and Hold 2 buttons on the side of the radio, the large PTT and the smaller button above the PTT button (not the button with the "M" on it)**
- While holding the 2 buttons, Power ON your radio using the volume knob
- Release the buttons on the radio
- The status LED should be on and alternating between Red & Green, indicating you're in flash upgrade mode
- Go back and retry the previous steps if you do not see flashing Red & Green on top of your radio
- **The radio will not accept the new firmware unless the LED is flashing RED & GREEN**

Installing TY MD380 Tools

HOW TO UPDATE YOUR RADIO FIRMWARE with Updater windows:

1. To install TY MD380 Tools you need a “**Updater**” program to install the Radio Firmware (.bin)
 - The loader program can be found at
 - <http://www.foxhollow.ca/DMR/?menu=experimental> **Best choice!** Along with instructions and latest MD380 Tools program from Travis Goodspeed group



- Start the "Upgrader.exe" program
- Click "1: Select the New Firmware" and choose one of the .bin files you downloaded above.

- Click "2: Update the MD380 ~ MD390" and wait for the flash update process to finish. It takes about a minute to complete (VE3PZR: my radio takes 70 seconds to flash)
- Turn **off** your radio using the volume knob
- Disconnect the USB cable from your radio and host computer
- Turn the radio back on, and you should see the Welcome screen. You're running patched firmware!

For more information visit the MD380Tools GitHub website (This information is recycled or derived from the Github)

<https://github.com/travisgoodspeed/md380tools>

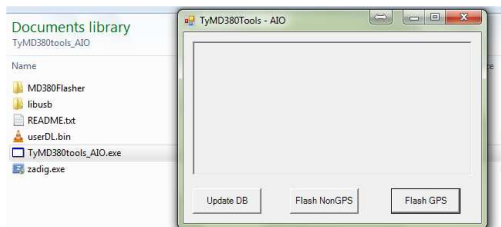
HOW TO UPDATE YOUR RADIO FIRMWARE with TY MD380Tools AIO for windows:

BEFORE USING PROGRAM

- Plug program cable in radio and PC
- Turn on Radio in DFU mode
- Run zadig.exe
 - Options > List All devices
 - For device, select Patched MD380 or Radio in DFU mode
 - Change Target to libusb0
 - Hit 'Install Driver'

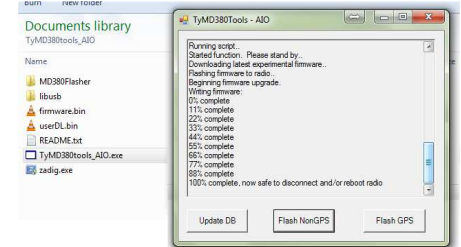
Using Program

- Run TyMD380tools.exe



- Update to the latest firmware if needed
 - Attach the Tytera USB cable to the SP and MIC ports of your
 - Attach the Tytera USB cable to your host computer
 - Push and Hold 2 buttons on the side of the radio, the large PTT and the smaller button above the PTT button (not the button with the "M" on it)
 - While holding the 2 buttons, Power ON your radio using the volume knob
 - Release the buttons on the radio

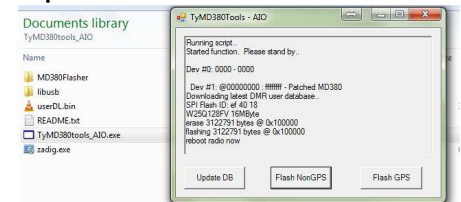
- The status LED should be on and alternating between Red & Green, indicating you're in flash upgrade DFU mode
- Go back and retry the previous steps if you do not see flashing Red & Green on top of your radio
- The radio will not accept the new firmware unless the LED is flashing RED & GREEN
- Press **Flash Non GPS** or **Flash GPS** depending on your radio model



- Wait until you see the 100% complete

- Update to the latest User.CSV if needed

- Attach the Tytera USB cable to the SP and MIC ports of your
- Attach the Tytera USB cable to your host computer
- Power ON your radio using the volume knob (NOT in DFU mode)
- Press the **Update DB** button



- When the radio reboots, it is finished.

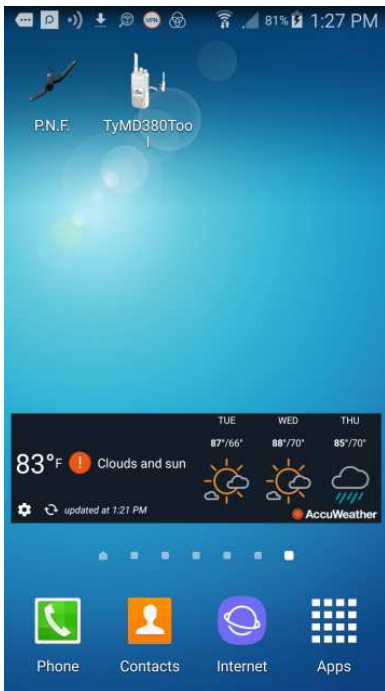
AFTER USING PROGRAM

- Go to Control Panel
 - Right click computer (or This PC) in start menu and hit manage
 - (or) Start- Control Panel
- Select device manager
- Find the libusb-win32 device (Digital Radio in USB mode)

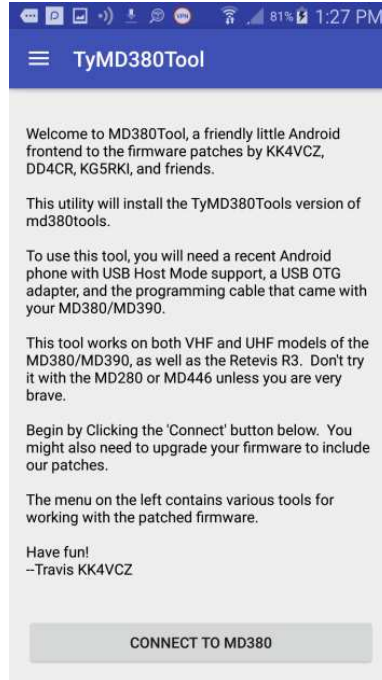
- and right click > uninstall
- Check the box that says 'Delete the driver software for this device'

HOW TO UPDATE YOUR RADIO FIRMWARE with Android TyMD380Tool :

To use the android device with the TYT MD380/90 you must use your programming cable and a OTG cable/adapter

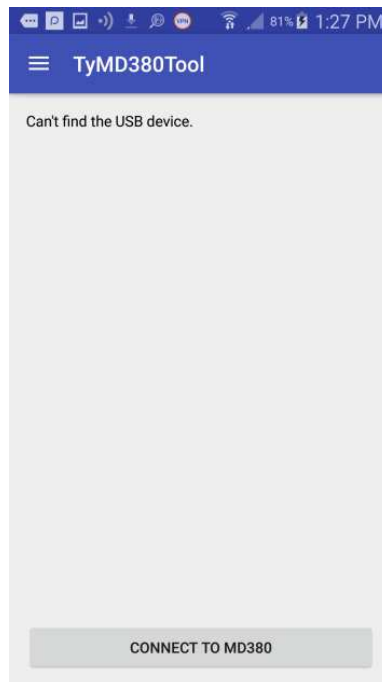


After Installing TyMD380Tool you should see this white Icon on screen or in Apps screen.



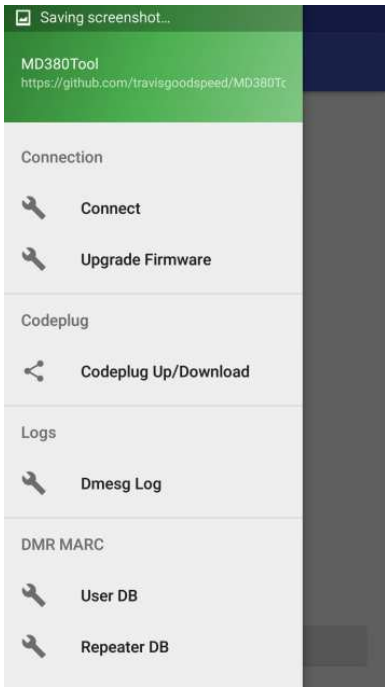
The main screen with the connect button on bottom

- Connect OTG to Android Device
- Plug Programming cable to OTG cable
- Plug Programming cable to radio
- Turn on radio (in DFU mode)
- Press the connect button



If the android can't read the radio it will show this screen

- If all looks good
- Press the 3 bar icon on upper left to open menu options



- Press Upgrade firmware
- Wait for the process to finish
- When complete
 - Turn off radio
 - Unplug radio cable
 - Turn on radio and enjoy the latest TyMD380Tools in your radio

Get the Bin File

Some applications will get the latest version on their own, others require you to have the Bin file on hand. So where can you get the latest version?

- <https://www.facebook.com/groups/DMRTrack/>
 - in the files area.
- <https://kg5rki.com/new/index.php#md380tools>
-

Loading Custom.csv file

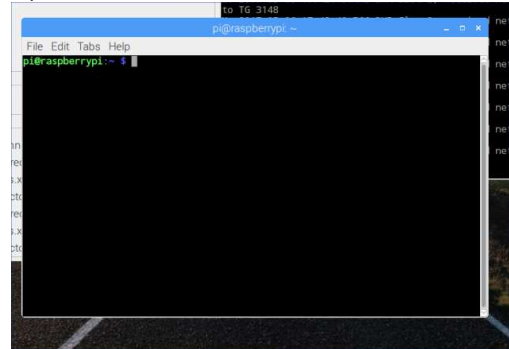
Loading Custom.csv file gives the radio the database of ALL DMR user ID information to display if using the MD380 tools.

There are more than one way (computer OS) to Load Custom.csv file to the radio, but it relies on linux to do this.

- Linux PC
- Raspberry Pi
- Windows via a VM(Virtual Machine) in linux

This is How I do it on a Raspberry Pi

- Open a terminal window



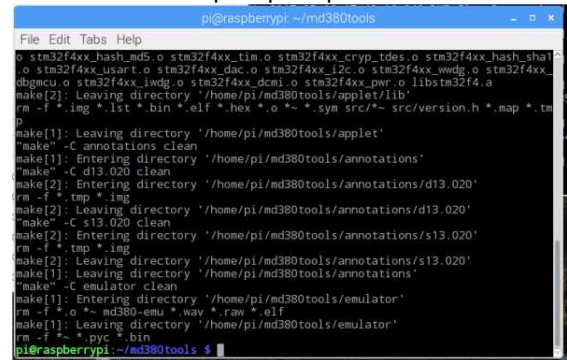
- Type in to change directory

```
pi@raspberrypi:~ $ cd md380tools
pi@raspberrypi:~/md380tools $
```

- Type in to clear space to load file to

```
pi@raspberrypi:~ $ cd md380tools
pi@raspberrypi:~/md380tools $
pi@raspberrypi:~/md380tools $ sudo make clean
```

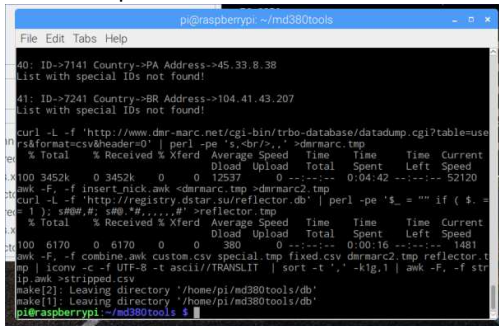
-
- Once finished it will have scrolled many things on screen then stop on prompt



- Type in to get the info and create the file

```
pi@raspberrypi:~/md380tools $ sudo make updatedb
```

- This takes a **while** to do
- It looks at 41 places to update data from so you have complete data
- "list with special id not found" is ok



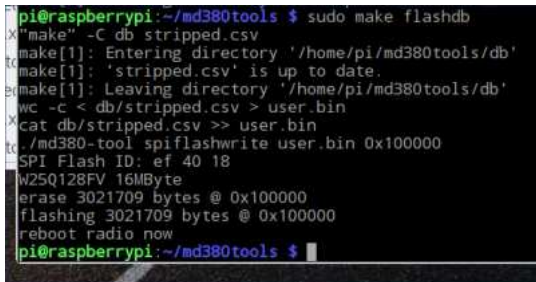
- if the last 2 areas (longest) finish with no errors or several retry, it's done

• **To transfer database to radio**

- Turn off your radio using the volume knob
- Attach the Tytera USB cable to the SP and MIC ports of your radio (Baofeng cable will NOT work!)
- Attach the Tytera USB cable to your host computer (Raspberry Pi)
- Power ON your radio using the volume knob
 - Do not push any buttons while turning on.

• Type in raspberry pi terminal

- Cd md380tools
- Sudo make flashdb



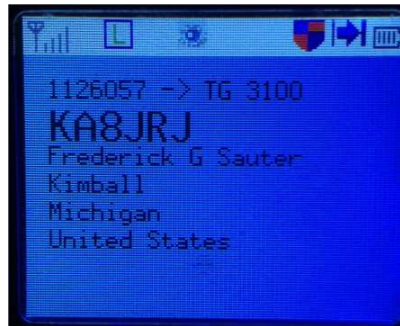
- This will take a while
- It first makes space for the DB by clearing out the chinese character space
- Then writes the data base to that area in radio
- At the prompt you are finished
- Turn off radio
- Unplug cable
- Turn on radio and enjoy

Ty MD380 Tools Firmware

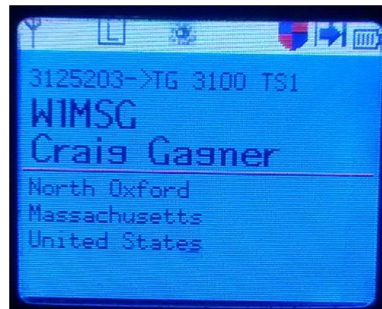
Features

Worldwide Contact Database

A complete copy of the DMR MARC database can be stored in SPI Flash, allowing your radio to show the name, callsign, and location of a distant QSO.



Shown on display when the station is heard
Also shown inf the DMR ID and Talk Group heard.



Latest update displays like this
Displays channel TS, and red separator line.

Promiscuous Mode

Promiscuous mode allows you to hear all talk groups, even those that are not listed in your codeplug as long as they are on the same frequency and Time Slot. The talk group numbers are displayed on your radio's screen, so that you know to program them in later.

Replacement font

makes the screen more pleasant to read.

USB Logging

USB logging allows an attached Linux computer to record calls, text messages, and digital audio.
On-Device Programming

New menu items

allow for on-device programming without the need to find a laptop computer and transfer codeplugs.

change to your DMR ID number

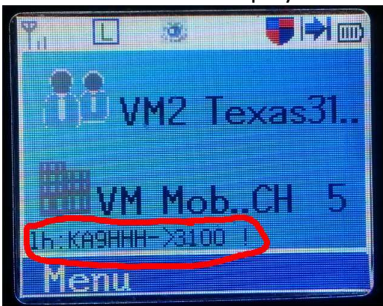
for using a friends radio with your DMR ID, so you don't have to explain to each contact that you are not your friend.

change side buttons

change the function of the side buttons above and below the PTT With a short or long press.

Last Heard on Main Display

When enabled the last heard of the call sign and talk group is displayed where the date/time is normally displayed at the bottom of the main display.



Change the settings for the backlight

by setting the high and low intensity and timer.

Talker Alias Support

The new Talker Alias is now shown on the display. You will need to enable this in the menus. This will show the Alias information from the radio.

Microphone gain

Boost Mic gain 3db or 6db options

Side button toggle option for promiscuous mode

Now you can quickly enter and exit promiscius mode by pressing a defined side button.

Show last heard station info by pressing *

Will call up the last user heard with full screen information

Open alternate menu with #

This menu deals with new feature of changing display colors



Set talk group option

(type in talk group number and will be applied to current channel)

Private call option

type in DMR ID to have a private conversation

Removed missed calls window

(get rid of annoying popup every time you disconnect or use private call)

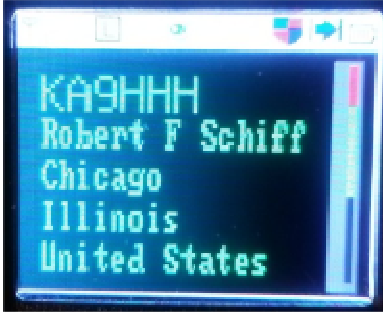
Exit all menu windows

using end call instead of 7

Removed volume meter

This screen was annoying and useless, so it was removed

Last heard user info to screen while transmitting



Vertical Mic Bar

Select Mic bar -> Vertical + Last Heard Station



Private call manual opens with LH station ID filled in

Channel names starting with TG- will automatically override talk group number.

So you can program contacts without CPS.

Removed program radio password locking

So you can't get locked out of radio

double tap # for shortcut to edit TG



Screen indicator for ad-hoc talk groups / priv calls



Menu Options & Settings

MD 380 Tools Menu



Color code scanner



Faster response time

Private call last heard station with side button

- o To access Menu options press (green) button from the main screen for "Menu"



- o Scroll up/down to the Utilities selection

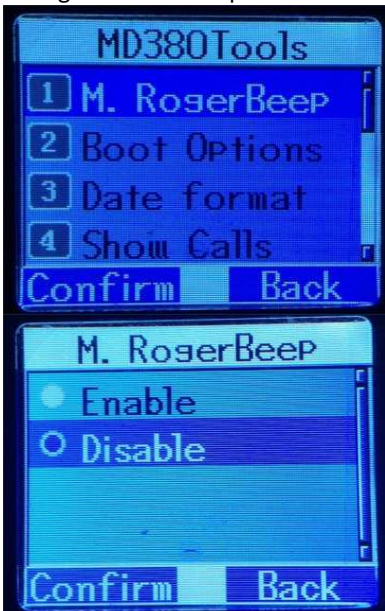
- Press green button to confirm



- - Scroll up/down to the "MD380Tools" selection
 - Press green button to confirm

- **M. RogerBeep**

- Changes the PTT Beep to a more subtle tone.



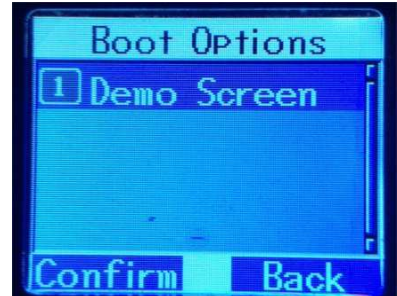
- - Note: the solid filled blue O indicates current selection

- **2. Boot Options**

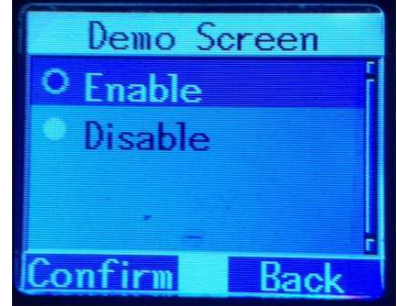
- Enables or Disables the Boot Screen at startup



-



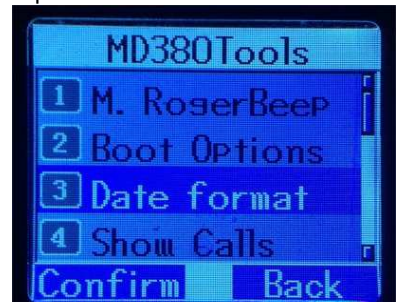
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- **Date Format**

- Allows you to change the Date Format on the front display. If "Lastheard" is chosen it replaces the clock with the last heard feature.



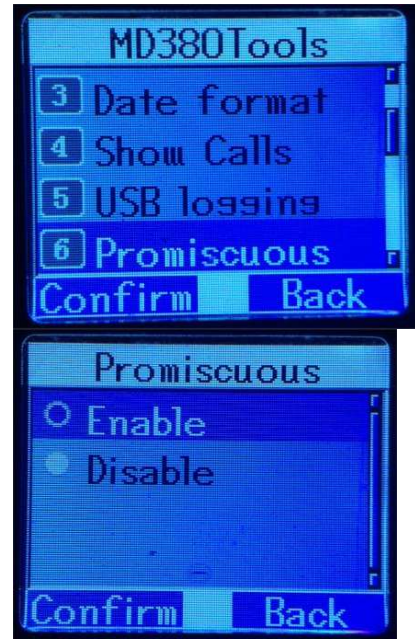
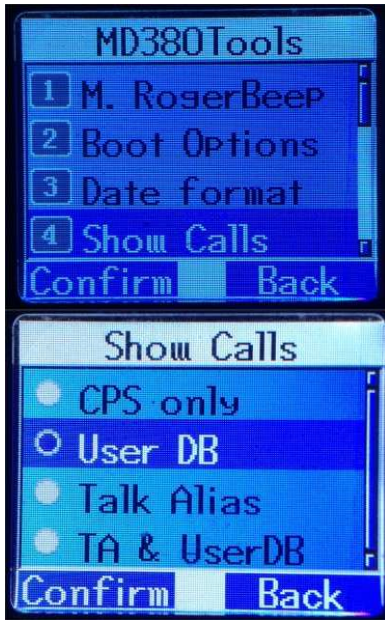
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- **Show Call (formally userscsv)**

- Select source of callsign display - CPS, UserDB, or TalkerAlias



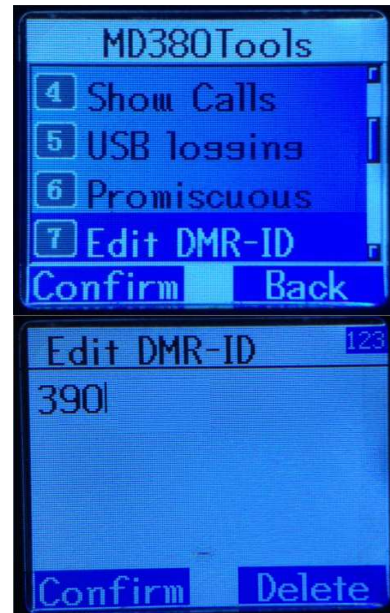
- **USB Logging**

- Used to log radio information for debugging



- **Edit DMR-ID**

- Edit DMR ID

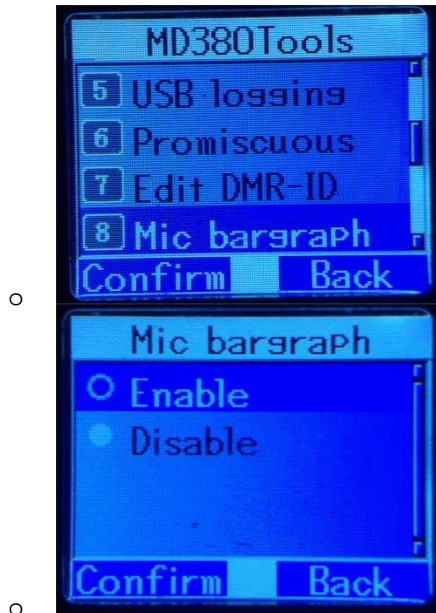


- **Promiscuous**

- Allows radio to monitor by Timeslot no matter what Talk Group. (Monitor feature)

- **Mic Bargraph**

- Graphical display of your microphone audio



○ Examples



- Dark shows audio level too low



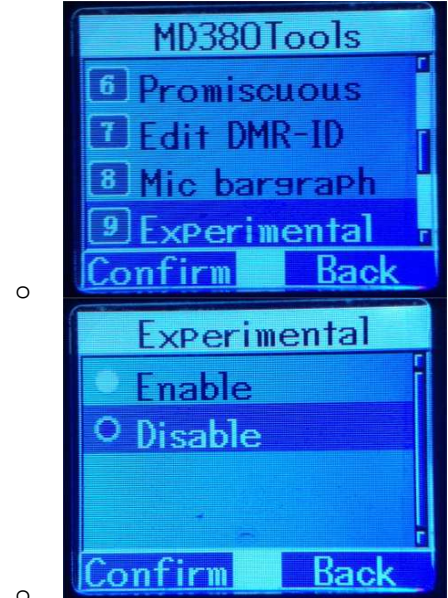
- Green show perfect audio level



- Red shows Audio level too high

- **Experimental**

- Experimental Mode



- **Side Buttons**

- Change the Side Button Configurations



- The 2 buttons (above & below PTT button) can be programmed here, For both short and long press



- Some of many things that can be assigned to a button

• **Config Rest**

- Reset all configurations related to the MD380 Tools.



-

• **Backlight**

- Change backlight settings.



-



-
- Level Low is the brightness level when the radio activity times out.
- Level High is the brightness level when the radio is active.

- Backlight Tmr is the time that the radio screen goes into inactive display mode.

-



-
- Level Low & Hi have their own adjustments as shown here.



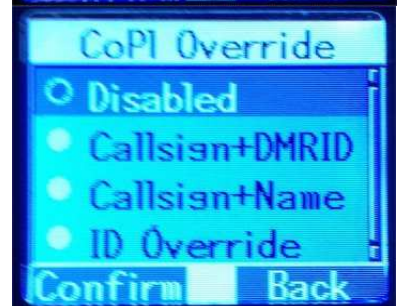
-
- These timer settings seem to override the man menu settings
-

• **CoPI Override**

- Change during the bootup how information is displayed.



-



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- **DevOnly!!**
 - Dev Only type features. NetMonitor and Radio Vitals information.



- The Dev Only mode enables the Net monitor and dev information pages which are accessible via the keypad.

Using Radio with MD380 Tools

Key	Action
0	Netmon 6 - Channel LH List, shows where activity was received (helpful on longer monitoring)
1	SMS Test
2	Netmon 5 - lastheard + LH Channel and Page Status Mark >>>> channel << #n after 9 lines
3	Copy TG ID to Contact List (while in Netmon 4 Screen)
4	Netmon 4 - Last Heard Screen with Talker Alias
5	Clear Last Heard Screen
6	Dump Sys Log (USB Logger)
7	Netmon Off - Exit, Back to Main Screen
8	Netmon 1
9	Netmon 2
#	New menu to change colors on screen
*	Redisplay contact screen of last heard station
##	shortcut to edit TG or Private call

Links

DMR Track

<https://kg5rki.com/new/index.php>

Facebook

<https://www.facebook.com/groups/DMRTrack/>

Forum

<http://nflarc.org/smf/index.php?board=85.0>

Beta Testers Forum

<http://nflarc.org/smf/index.php?board=84.0>

Zello VOIP chat program
Channel "DMR Track"

Newsletter

To subscribe send an email to
'tymd380tools-subscribe@nflarc.org'.

To unsubscribe send an email to
'tymd380tools-unsubscribe@nflarc.org'.

73 DE KG5RKI

Written by Doug KE5CDK
Ke5cdk@yahoo.com

Pavel UB9MDF