

TyMD380Toolz

by KG5RKI

<https://kg5rki.com> (DMRTrack)

Doc Rev 1.0

Overview

This is a fork from the original MD380Tools originally created by Travis Goodspeed (<https://github.com/travisgoodspeed/md380tools>). It contains additional features designed to target ham radio operators to make life easier. Compatible with MD380/MD390 nonGPS and GPS models. Visit the website listed in the header to download the Tytera Flash Tool which will install this firmware to your radio.



Differences

Most of the differences in this firmware version are just additional features that have been added, but there are a few things that have been changed that may confuse you if you are used to the original image. An important one to note is that the hotkey to open the alternate menu has been moved from the red button to now be the '#' key on the radio. This was done so that the red button can be reserved as an exit key and so you do not accidentally open the menu when you are just trying to back out of something. In the toolz firmware you can safely assume that wherever you are, the red button will always back you out. Another notable change is the removal of the volume meter that appears when turning the volume knob. This was removed to avoid needless activation of the back light.

Button Layout



Configurable MD380Toolz Settings



Most of the settings that you are interested in changing are accessed via the MENU button (green button on the keypad).

Access to the toolz firmware settings are accessed via the utilities menu option. After selecting the utilities menu, you will want to edit the options under the MD380Toolz menu item.

You will find the 16 configurable items there. They are listed below with a brief description.

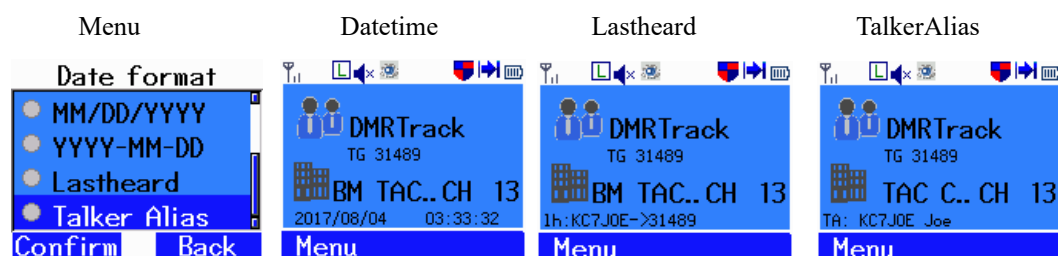
1 M Rogerbeep

This dampens the sound that the radio makes when keying up. Only used if talk permit tone option is enabled in radio settings.

2 Boot Options

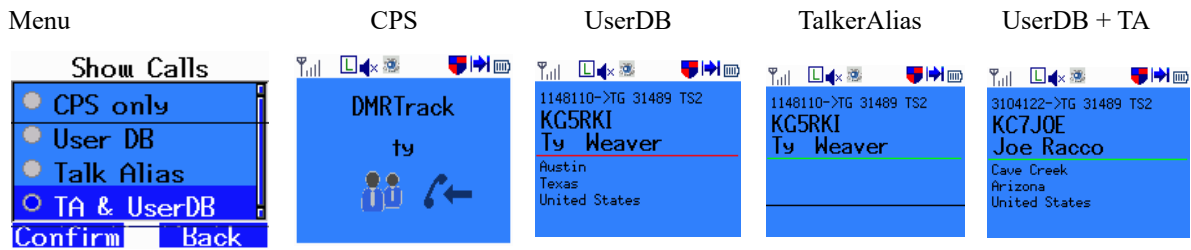
Allows the setting of the startup screen. You can select either to display the demo screen or not. It is useful to display your name and callsign on this screen,

3 Date Format



You can set your desired format ie YYYY/MM/DD, Last Heard or Talker Alias. This will show information about the last heard station at the bottom of your display, replacing the date time string. Lastheard will show only data from the UserDB, where talker alias will display the talker alias data if it is available. If no talker alias data is available it will revert to showing lastheard.

4 Show Calls



This will change the receive screen that is shown while receiving a transmission. Normally only the talkgroup name and DMR ID / contact name is shown. By changing these options, you enable the use of a user database which contains all of the data for the DMR Ids in the system. The talker alias option will display the TA data if available.

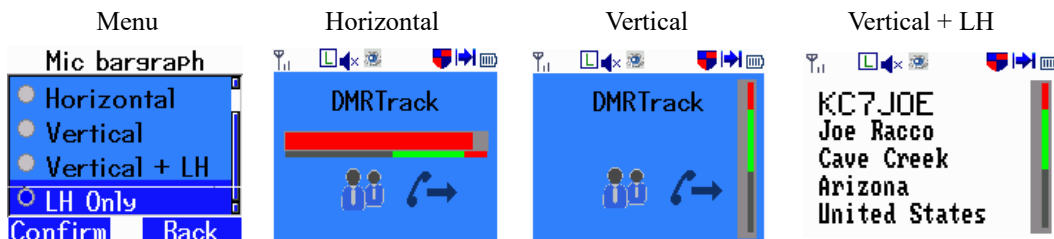
5 Promiscuous

This setting allows the reception of all of the transmissions on a DMR slot (ie Slot 1 or 2 but not both). For example, if you are on Slot 1 and TG North America for example, and you want to hear all the activity on Slot 1 on your local repeater. you can turn this ON and hear all the activity. If it is turned OFF, you will only hear the programmed channel, North America. You must still have the correct color code programmed to hear anything. If the green light on your radio is turning on but you are not hearing anything, you may need to enable this. The other reason you may not hear audio could be because the activity is on the other repeater slot. There is also an option for programming a side button to toggle promiscuous mode. When promiscuous mode is enabled, it will be indicated on the main screen with an icon that looks like an eye.

6 Edit DMR ID

Allow the editing of your actual DMR ID as set in the CPS software. This is the ID that is issued by DMR-Marc for your call sign. If this value is random or incorrect, you may be denied access to transmitting into the repeater.

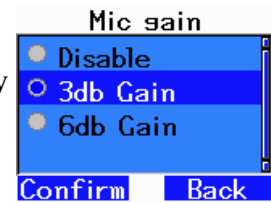
7 Mic Bar graph



Creates a bar graph showing microphone activity on screen while transmitting. Try to keep the bar in the green area for optimal audio quality. User can choose from either a horizontal or a vertical bar. If using the vertical orientation + LH the screen will display the station information for the last station that transmitted before you keyed up. Very useful to remember call signs during a QSO because it is displayed in front of you while you are holding the PTT button.

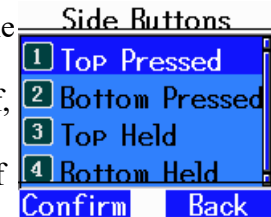
8 Mic Gain

This allows the setting of your mic gain for the radio. ie if you talk quietly you may want to increase the gain here. You can set it to +3db or +6db.



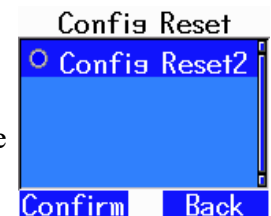
9 Side Buttons

Side buttons greatly enhance the usability of the radio and can be set to the users desired setting. I will not list all the settings here ... but some common settings you may want to use are High / Low Pwr, Scan On / Off, Zone Inc / Zone Dec / Zone Toggle or Toggle Promiscuous. You can set the side buttons to respond to either a light press of the button or a hold of the button. As a result, you can select 4 different actions depending on how you have your buttons set.



10 Config Reset

Resets the MD380Tools settings back to their default values. Useful if your radio is behaving erratically. There is a rare issue where the back light will stay dark and you are unable to see the display to navigate to the back-light settings. A config reset will solve these issues.



11 Backlight

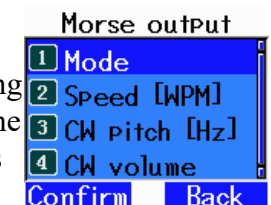
The toolz add the ability to adjust the brightness of the radio display. There are three settings, 'Level Low', 'Level High' and 'Backlight Tmr'. 'Level Low' is the brightness that the screen will go to after the timeout. This is normally set to zero if you want the display to turn off after the back-light timer period. Level High sets how bright the screen will be when you are actively pressing buttons.



'Backlight Tmr' sets the time that the back light will stay on after an action on the radio. This can be set as desired to conserve battery usage. After this period of time, the back-light brightness will be set to the level specified by 'Level Low' setting.

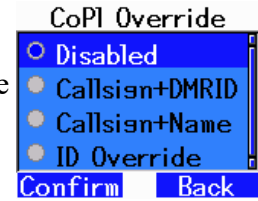
12 Morse Output

This feature was added to assist visually impaired ham operators. Enabling the options in this category will cause the radio to output in Morse code the menu text as you navigate the radio. This does not transmit anything, it is explicitly for the operator using the radio.



13 CoPI Override

Contains options for different display formats for the text shown during the radio boot screen.

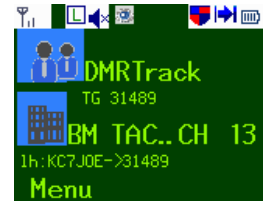


14 Netmon

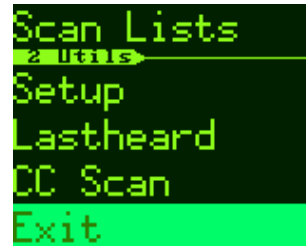
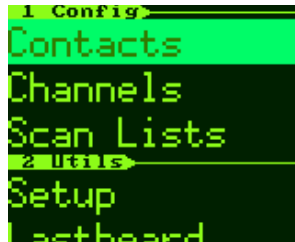
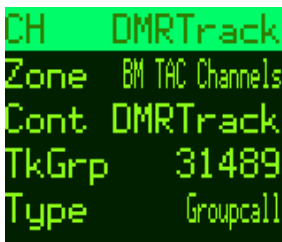
Enable or Disable the Netmon hotkeys that open things like lastheard log and debug information. The different Netmon screens and functions are tied to the number keys. This does not remove the ability to use DTMF tones while transmitting.

15 Alt UI Colors

Changes the default stock user interface layout color scheme to use the colors specified in the alternate menu. These can be customized in the setup sub menu of the alternate menu. This may make reading the text on the display easier for some users.



Alternate Menu



The alternate menu is a completely new menu added by the MD380Toolz. Access this menu by pressing the '#' key on the radio. Select an option using the green key, and exit or cancel a selection with the red button. The '#' key is also used as a special key for some menu items. Sections within each menu are labeled with a number, press the corresponding key on the keypad to quick jump to that section. When editing an item, you will sometimes use the keypad to directly type in numbers, and other times just the arrow keys to scroll through available options.

AdHoc Talkgroup

Normally the only way to enter a talkgroup is to create a channel and assign the contact containing the talkgroup number. An AdHoc talkgroup is a temporary override of the used talkgroup number. This allows you to manually type in the number of the talkgroup you want without having to reprogram the radio. Simply open the alt menu with '#' and navigate to 'TkGrp' and press the green key to



select. A shortcut is to just press the '#' button twice. The first press will open the alt menu, and the second will jump straight to the 'TkGrp' option and open it for editing. Press the numbers to enter in the talkgroup, and green to confirm. If there are extra digits at the end press the red button to delete. To revert to normal settings, you can either change channels and back, or press the '7' key. Change the 'type' option to private if you want this to be a private call instead of a group call.

Zone Management

Select the Zone option in the root of the menu to open the zone editor. The currently used zone will be highlighted. Select 'Add Zone' to create a new one. Press the green button for more options for a zone, such as switching the radio to that zone, or deleting the zone entirely.



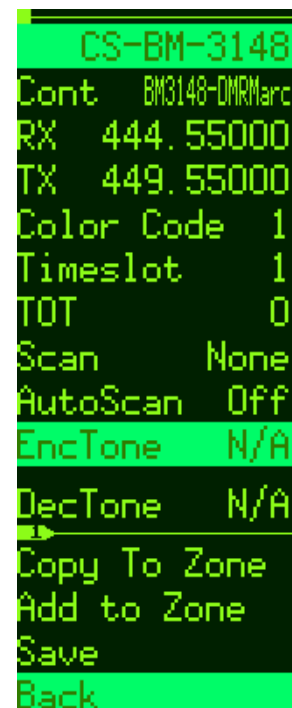
Contacts Management



Select the 'Contacts' option located in the utils section to manage and list contacts held in the radio. The icon to the left of the name indicates the contact type (group / private). Press the green key on a contact to enter the contact editor. Here you can change the ID and type. The stock firmware does not allow for group type contacts to be created through the radio.

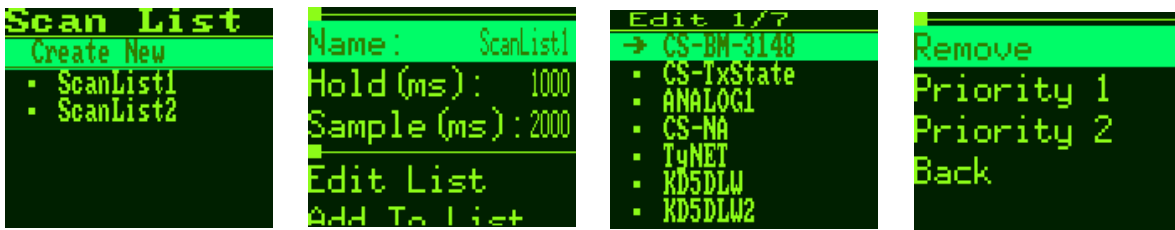
Channel Management

By either selecting 'CH' at the top of the menu, or by selecting the 'Channels' option you can open the channel editing page. Several properties of the channel can be changed and configured here. By dialing the channel knob on the top of the radio to a desired position in a zone, you can assign a channel to it by selecting 'Add to Zone'. Another option is 'Copy to Zone' which does the same thing, except it make a copy of the channel and applies the copy instead. This lets you change the settings without it affecting other zones you may have the channel assigned to. Don't forget to hit save after making any changes to



details in a channel.

Scan list Management



With this firmware, you now can create/delete and edit scan lists. Select the menu option 'Scan Lists' to display the lists on the radio. 'Create New' will add a new list to the bottom. Select one of the lists to edit the parameters and channels included in the scan. 'Edit List' will display the channels currently in the list and will allow you to remove them. 'Add to List' will open a list of all channels programmed to the radio, by selecting one you add it to the list. Don't forget to edit the channel you're in and assign a scan list to it or the scan button will not do anything.

Setup Menu - Colors



Many of the same options that are in the md380tools menu are also here. One that is not is the color scheme selection and customization. Use the 'Foregnd', 'Backgnd', 'Sel/nav fg', and 'Sel/nav bg' options to manually customize the colors used for the UI. There are also preconfigured themes that you can choose from in the 'Colour Scheme' menu. The values chosen here will be used in the alternate menu and used in the stock radio UI if the 'Alt UI Colors' setting is enabled. The RGB Colour mixer screen lets you manually mix the red, green, and blue values to create your own color. Use the '1' key to select red, '2' for green, and '3' for blue. The arrow keys will increase or decrease the value. Green button saves the value for use, and the red button will cancel and exit this screen.

Lastheard Log

```
LH 7/20
· KM5TD - 3148
· KE2SR - 3100
· KC7JOE - 0
→ KG5RKI - 31489
· KC7JOE - 31489
· KC7JOE - 31489
· KG5RKI - 31489
```

```
Name: Ty Weaver
Call: KG5RKI
ID: 1148110
TG: 31489
Time: 03:59:41
```

```
Time: 03:59:41
Private Call
Ignore
Back
```

The radio now keeps a list of details for the last 20 transmissions received. Scroll through the list and select an item to see the name, call sign, ID, talkgroup number, and time of transmission. At the bottom of the details there is a section of commands which can be issued for the station. The option 'Private Call' will automatically configure your radio for a private call to the station. The 'Ignore' option will cause the radio to not output audio when the specified call sign is transmitting. To reset the ignore list, restart the radio.

Color Code Scanner

This feature was added so that you can scan for an unknown color code for a repeater. If you know the frequency but not the color code, run this utility until it stops and tells you it is found. It will loop continuously through all codes until it is on the correct code while the repeater is transmitting.

```
--Color Code Search--
Testing Code - 2
```